# OFFICIAL GAZETTE

# UNITED STATES PATENT OFFICE

## VOL. 868

## NOVEMBER 1969

MICRO PHOTO DIVISION JLN
BELL & HOWELL COMPANY

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 4, 1969 Volume 868 Number 1

# PATENTS

## NOTICES

### Board of Appeals Decisions Rendered in the Month of September 1969

| | |
|---|---|
| Examiner affirmed | 154 |
| Examiner affirmed in part | 20 |
| Examiner reversed | 23 |
| Total | 197 |

### Certificates of Correction for the Week of Nov. 4, 1969

3,217,746
3,225,542
3,297,602
3,305,576
3,322,059
3,328,972
3;344,643
3,345,757
3,346,638
3,359,199
3,360,372
3,362,940
3,369,004
3,373,106
3,376,254
3,376,426
3,377,730
3,378,413
3,378,834
3,380,450
3,380,962
3,381,385
3,381,615
3,382,810
3,382,839
3,383,230
3,383,267
3,383,376
3,383,956
3,384,667
3,385,508
3,385,949
3,386,001
3,386,872
3,387,984
3,388,235
3,388,385
3,388,611
3,388,895
3,388,899
3,389,105
3,402,205
3,411,148
3,419,529
3,420,006
3,425,558
3,428,908
3,429,094
3,433,259
3,437,403
3,439,031
3,439,241
3,439,792
3,440,251
3,440,289
3,441,979
3,442,152
3,442,718
3,443,610
3,444,129
3,444,153
3,445,639
3,446,028
3,446,581
3,446,681
3,447,388
3,447,469
3,448,012
3,448,183
3,448,612
3,448,683
3,449,050
3,449,441
3,449,718
3,450,596
3,450,780
3,451,444
3,451,496
3,451,767
3,451,893
3,453,271
3,453,353
3,453,681
3,453,803
3,454,195
3,454,223
3,455,096
3,455,189
3,455,331
3,455,867
3,456,126
3,456,794
3,456,871
3,456,982
3,457,238
3,457,240
3,458,429
3,461,303
3,462,031

### Erratum

In the OFFICIAL GAZETTE of January 28, 1969, vol. 858, p. 1218, column 2, under Patent No. 3,424,455 for the Abstract appearing therein substitute the following:

Groups of objects are placed on opposite sides of a balance to determine their relative total weights. From a series of group comparisons players deduce which individual objects are heavier or lighter than the others.

A plurality of cover members of identical construction are arbitrarily marked so that each is distinguishable from the others. A plurality of body members have the same external appearance when each is attached to a cover member, but have indicia indicative of their relative weights. When a body member is attached to a cover member, the weight indicia are concealed and each combined cover and body member unit (object) looks the same as each other unit except for the arbitrary markings on the cover members. In one embodiment the body members are hollow and differently weighted inner members are inserted in the hollows.

### Disclaimers

Design No. 211,633.—*David D. Granger,* Conover, N.C. SIDE PANELED CHAIR OR SIMILAR ARTICLE. Design patent dated July 9, 1968. Disclaimer filed July 22, 1969, by the assignee, *Maxwell Royal Chair Company.*

Hereby disclaims the terminal portion of the term of the patent subsequent to May 14, 1982.

Design No. 211,785.—*David D. Granger,* Conover, N.C. WINGED ARMCHAIR OR SIMILAR ARTICLE. Design patent dated July 30, 1968. Disclaimer filed July 22, 1969, by the assignee, *Maxwell Royal Chair Company.*

Hereby disclaims the terminal portion of the term of the patent subsequent to May 14, 1982.

Design No. 211,786.—*David D. Granger,* Conover, N.C. CHAIR OR SIMILAR ARTICLE. Design patent dated July 30, 1968. Disclaimer filed July 22, 1969, by the assignee, *Maxwell Royal Chair Company.*

Hereby disclaims the terminal portion of the term of the patent subsequent to May 14, 1982.

3,099,873.—*Wallace E. Brainard,* Milwaukee, and *Kenneth R. Merner,* Greendale, Wis. SHUTTLE OPERATED TAPE CONTROLLED MACHINE TOOL. Patent dated Aug. 6, 1963. Disclaimer filed Sept. 24, 1969, by the assignee, *Kearney & Trecker Corporation.*

Hereby enters this disclaimer to all the claims of said patent.

3,174,114.—*Maurice Arditi,* Clifton, N.J. ATOMIC CLOCK. Patent dated Mar. 16, 1965. Disclaimer filed July 15, 1969, by the assignee, *International Telephone and Telegraph Corporation.*

Hereby enters this disclaimer to claim 1 of said patent.

3,283,237.—*Albert J. Williams, Jr.,* Philadelphia, and *Norman E. Polster,* Southampton, Pa. PHOTOELECTRIC MODULATOR WITH TRANSPARENT ELECTROSTATIC SHIELDS. Patent dated Nov. 1, 1966. Disclaimer filed Sept. 18, 1969, by the assignee, *Leeds & Northrup Company.*

Hereby enters this disclaimer to claims 1, 2, 3, 6, 7 and 8 of said patent.

### New Applications Received During August 1969

| | |
|---|---|
| Patents | 7637 |
| Designs | 429 |
| Plant Patents | 13 |
| Reissues | 53 |
| Total | 8268 |

### Issue—November 4, 1969

| | | | |
|---|---|---|---|
| Patents | 1300—No. 3,475,765 | to No. 3,477,064, | incl. |
| Designs | 117—No. 215,800 | to No. 215,916, | incl. |
| Reissues | 9—No. 26,702 | to No. 26,710, | incl. |
| Total | 1426 | | |

3,301,165.—*John E. Stanley,* Flintridge, Calif. CEILING AIR CONDITIONING SYSTEM. Patent dated Jan. 31, 1967. Disclaimer filed June 30, 1969, by the assignee, *Duo-Flex Corporation.*

Hereby enters this disclaimer to claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11 of said patent.

3,348,698.—*Kennedy McConnell,* Riverdale, Ill. PALLET RACK. Patent dated Oct. 24, 1967. Disclaimer filed July 14, 1969, by the assignee, *Interlake Steel Corporation.*

Hereby enters this disclaimer to claims 1 to 3, inclusive, of said patent.

3,356,490.—*Francois Muller,* Griffith, Ind., and *Paul Nilles,* Embourg, and *Etienne Denis,* Grivegnee, Belgium. REFINING PIG IRON. Patent dated Dec. 5, 1967. Disclaimer filed June 30, 1969, by the assignee, *Institut de Recherches de la Siderurgie Francaise.*

Hereby enters this disclaimer to claims 1, 5 and 6 of said patent.

3,422,810.—*John C. Weiss,* Bourbonnais, Ill. BROILER FOR GAS RANGE. Patent dated Jan. 21, 1969. Disclaimer filed July 14, 1969, by the assignee, *Geo. D. Roper Corporation.*

Hereby enters this disclaimer to claims 1, 2, 3, 4 and 5 of said patent.

3,423,621.—*Martin R. Royce,* Lancaster, Pa. COLOR PICTURE DISPLAY CONTAINING A RED-EMITTING EUROPIUM-ACTIVATED YTTRIUM OXYSULFIDE PHOSPHOR. Patent dated Jan. 21, 1969. Disclaimer filed Sept. 24, 1969, by the assignee, *RCA Corporation.*

Hereby disclaims the terminal portion of the term of the patent subsequent to Dec. 24, 1985.

3,445,028.—*Omar L. Brown,* Dayton, Ohio. TAB FOR AN EASY OPENING CONTAINER. Patent dated May 20, 1969. Disclaimer filed July 28, 1969, by the assignee, *Ermal C. Fraze.*

Hereby enters this disclaimer to claims 1–4 and 6–8 of said patent.

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# PATENT EXAMINING CORPS

## R. A. WAHL, Assistant Commissioner

## CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 20, 1969

| PATENT EXAMINING GROUPS<br>*Denotes oldest new application. | Actual Filing Date of Oldest New Case Awaiting Action |
|---|---|
| **CHEMICAL EXAMINING GROUPS** | |
| GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director<br>Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices. | 10-18-67 |
| GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director<br>Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides. | 4-21-67 |
| HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director<br>Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes. | 5-22-67 |
| COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director<br>Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography. | 5-08-67 |
| SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director<br>Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes. | *3-24-67 |
| **ELECTRICAL EXAMINING GROUPS** | |
| INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director<br>Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous. | 2-21-68 |
| SECURITY, GROUP 220—S. BOYD, Director<br>Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material. | 5-08-67 |
| INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director<br>Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts. | *5-02-67 |
| ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director<br>Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring. | 10-12-67 |
| PHYSICS, GROUP 280—R. L. EVANS, Director<br>Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments. | 1-02-68 |
| DESIGNS, GROUP 290—S. BOYD, Director<br>Industrial Arts; Household, Personal and Fine Arts. | 12-26-68 |
| **MECHANICAL EXAMINING GROUPS** | |
| HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director<br>Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages. | 4-16-68 |
| MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director<br>Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks. | *12-18-67 |
| AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director<br>Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination. | 1-17-68 |
| HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director<br>Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission. | 9-03-68 |
| FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director<br>Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures. | 7-12-68 |
| TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director<br>Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling. | 2-28-68 |

| | |
|---|---|
| Total number of pending applications (excluding Designs) | 182,339 |
| Total number of Design applications pending | 3,415 |

**Expiration of patents:** The patents within the range of numbers indicated below expire during October 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

| | |
|---|---|
| Patents | Numbers 2,612,639 to 2,616,080, inclusive |
| Plant Patents | Numbers 1,136 to 1,141, inclusive |

# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

### AMERICAN CAN COMPANY *v.* DIXIE WAX PAPER COMPANY

*No. 8063. Decided March 6, 1969*

[56 CCPA —; 407 F.2d 420; 160 USPQ 721]

1. TRADEMARK — CONFUSING SIMILARITY — "DIXIE" MARKS — CONCURRENT LONG TERM USE.

"The situation here is that not only appellant and appellee but many others are legitimately doing business under 'Dixie' marks and a certain amount of actual confusion must be expected and tolerated, as one cannot expect to have the benefit of a telephone without the bother of an occasional wrong number. Considering the long period of concurrent operations of the parties under 'Dixie' marks and trade names, such minor concrete episodes as appellant has produced amount practically to nothing and appellant's more general assertions of confusion are not shown to be attributable to use of the marks here involved, rather than to appellee's trade name."

2. SAME—DISTINCTIVENESS—COMMON WORD—"DIXIE."

"We do not say appellant's mark ['Dixie'] is not distinctive, nor did the Board. We have pointed out, however, that since it is a part of the language its distinctiveness as a mark has certain definite limitations with respect to products."

APPEAL from Patent Office. Opposition Nos. 42,516, 42,517, 44,017; Cancellation No. 8,014.

AFFIRMED.

*Kenneth H. Murray* (*Nichol M. Sandoe*, of counsel) for appellant.

*Ulle C. Linton*, *William E. Schuyler, Jr.*, for appellee.

Before RICH, *Acting Chief Judge*, and Judges ALMOND, BALDWIN, and KIRKPATRICK [1]

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Trademark Trial and Appeal Board, 150 USPQ 823, insofar as it denied appellant's petition to cancel a registration of appellee [2] and dismissed four oppositions to applications by appellee to register trademarks.[3] Appellee counterclaimed, petitioning to cancel the registrations on which appellant relied but the denial of this petition by the Board has not been appealed.

This case represents a kind of "Battle of the Bulge." The litigants, for nearly half a century, have peacefully coexisted in their respective fields of operation, building their separate and non-competing businesses under the name "Dixie" to the point where, as a result of appellant's expanding product line and appellee's more aggressive trademark protectionism, they have become involved in a legal dispute over rights to "Dixie" which it becomes our duty to resolve.

Appellant came on the American scene very early in this century as the Public Cup Vendor Company to exploit the invention of the paper cup. It carried on the battle against the old tin dipper, the public drinking cup, and the office glass. It was ultimately highly successful. Originally selling a "Health Cup," which was a "flop,"

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Reg. No. 730,424, Apr. 24, 1962, claiming first use December 1958.

[3] Ser. No. 134,380, Dec. 20, 1961, claiming first use August 1961. Ser. No. 134,381, Dec. 20, 1961, claiming first use October 1961. Ser. No. 147,901, June 28, 1962, claiming first use May 1958. Ser. No. 179,326, Oct. 18, 1963, claiming first use September 1963.

within a very few years it adopted the catchier name "DIXIE CUP." The first registration of "DIXIE" [4] gives the date of first use as June 15, 1917, by which time the company name had become Individual Drinking Cup Co., Inc. Subsequent name changes were to Dixie Drinking Cup Company (1922), Dixie-Vortex Company (1936, due to a merger), and simply Dixie Cup Company (1943). In 1957 the company was merged with American Can Company, appellant, and it is now the Dixie Cup Division thereof.

Dixie or Dixieland, whatever the origin of the name—and there appear to be conflicting theories on that subject—is, as the dictionaries show, a name for the region comprising the Southern States of this country. It therefore has a strong geographical connotation. As the name describes a region, it naturally attaches to things in or from that region such as Dixieland jazz and Dixiecrats. As some 90 third party trademark registrations introduced by appellee show, "Dixie" has become a very commonly used trademark or a part of trademarks for a wide variety of goods marketed by others than the parties hereto, many of them located in Dixie.

At the same time, since its first use in 1917, by reason of the sale of untold billions [5] of "Dixie Cups" and some twenty million dollars worth of advertising, the trademarks "DIXIE CUP" and "DIXIE" have achieved a popularity comparable to that of the best known trademarks and even a dictionary status of their own, as witness the following entry in The Random House Dictionary of the English Language (unabridged ed., 1967): *Dixie Cup* * * * *Trademark*, a disposable paper cup, as for beverages, ice cream, etc.

"Dixie Cups" are found everywhere in dispensers and are sold in stores generally, packaged and prominently displayed for sale to the general public. Even as these words are written they are being advertised on TV for use in the home bathroom, as useful to prevent the spread of coughs due to colds, for removing hot electric light bulbs, for muzzling noisy dogs, and for pouring soap into the washer. They are indeed ubiquitous. The product line has been expanded from paper cups to a wide variety of paper food containers, even including complete disposable table service sets, and plastic disposable knives, forks, and spoons. Almost every American has eaten individual portions of ice cream packaged for sale in "Dixie Cups." There is no doubt that for such wares the marks are well known, favorably regarded, and of great value.

At the same time, there can be no doubt that Dixie is the name of the Southland, the name of the popular song composed by D. D. Emmett in 1859, and is an adjective defined in the above-cited dictionary as meaning "of, from, or characteristic of the southern States of the United States." We are thus presented with a peculiar situation in which a truly famous mark is also a common word and a part of the language. It was, in fact, a common word when appellant's earliest predecessor first adopted it as a trademark for paper cups under the following interesting circumstances as related by the founder of the company:

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[4] Reg. No. 120,264, granted Jan. 29, 1918, renewed to Dixie Vortex Company, and republished under the 1946 Act by Dixie Cup Company, Nov. 7, 1950. April 9, 1946, Dixie Cup Company obtained Registration No. 420,379 for "DIXIE CUP" and design for paper cups and subsequently "Dixie" in various forms of lettering has been registered seven times by appellant and its predecessors for a wide variety of paper products, mostly concerned with food or eating, and food packaging machines, Reg. Nos. 590,464; 595,550; 646,956; 665,019; 707,805; 732,447; and 753,917.

[5] Appellant's brief estimates 75 billion units in the ten years ending in 1962, over ten billion having been sold in 1962. Total dollar sales in the ten-year period were approximately $600,000,000 with sales of $85,000,000 in 1962.

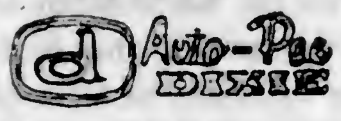
> A. You want the name of the very first trademark we used?
>
> Q33. Yes sir. A. It was Health Cup. * * * which was a flop.
>
> Q34. How long did you use it, sir? A. According to my recollection, probably two or three years.
>
> Q35. Did you then substitute another mark for it? A. Yes: Dixie Cups.
>
> * * * * * * *
>
> Q88. Mr. Moore, I failed to ask you earlier how it was that you selected "Dixie" as a trademark for your products. A. Well, as I have said, the word "Health Cups" didn't go over, and it happened that in this loft building at 220 West 19th Street we had a neighbor who was making Dixie Dolls, and I knew by this time something about manufacturing. This man who owned the Dixie Doll factory was an advertising man. I used to help him on his manufacturing problems.
>
> One night we were at dinner, and I said, "Al"—his name was Al Schindler—"What would you think of us calling our product Dixie Cups?" "Oh," he said, "that would be great, the name flips off the tongue well, it is memorable," and so we changed to Dixie Cups and thereby established what has become one of the best known trademarks in America.

A mark thus selected, one already in use by another, consisting of a common word descriptive of a region, has its obvious limitations, notwithstanding its acquisition of a "secondary meaning" even to the extent of being famous as a mark for *particular* goods. When Mr. Moore, whose testimony was just quoted, was asked on cross examination whether his companies had used the word "DIXIE" or "DIXIE CUP" the most, he replied, " 'Dixie Cup' * * * because we knew that 'Dixie' was used for other purposes; Dixie, Down South in Dixie, and so forth."

We now turn to consider the history and development of appellee's use of "DIXIE." The Dixie Wax Paper Company was incorporated under that name in Texas in 1922. Texas, we presume, is in Dixie. Its business is essentially that of a paper converter selling to industry. It buys paper from others, producing therefrom waxed and otherwise coated or treated paper printed to its customers' specifications. It does not sell to the general public or to stores or through jobbers, brokers, or wholesalers. It sells its products through its own salesmen from plants in Dallas, Texas; Memphis, Tennessee; and Burlingame, California. It has a subsidiary in Mexico City and at one time had a plant in Washington, New Jersey. Its customers are food producers and packagers, mostly in the snack field—potato chips, corn chips, peanuts, cookies, etc. It also sells to bakers of bread and pies, and to candy and ice cream manufacturers. What it sells primarily is printed webs of waxed or coated or glassine paper which the customer uses on automatic packaging machines. Such webs are sold in rolls which range from 11″ to 21¾″ in width and to 12½″ in diameter. They weigh from 50 to 100 pounds. It also sells some printed sheets and some manufactured bags to similar customers. It advertises in trade publications, not to the general public. At least since the early thirties, its name, Dixie Wax Paper Company, has been placed on its products and its customers have come to know the company well by the name "Dixie." In the minds of those customers, and potential customers who read the trade papers carrying appellee's advertising, the marks which are the subject of the registration and applications here involved are associated with Dixie Wax Paper Company. Purchasers of appellee's products buy them as a result of advertising directed to the food packaging trade, salesmen's representations, and price lists. The goods are then produced to order by printing the customer's designs and trademarks on them. Appellee's trademarks placed on such goods serve only to identify them after purchase and as type differentiation, but do not function as a selling aid.

The following are the specific marks involved on this appeal. First is the mark on which appellee already has a registration which appellant seeks to cancel:

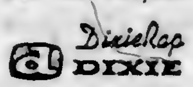
Reg. No. 730,724



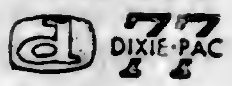
The goods named in the registration are "Continuous Webs of Printed Waxed Paper for Use by consumers in Forming Bags for Packaging Foods." The consumers, of course, are industrial organizations equipped with packaging machinery by which they can form and fill bags, not "consumers" in the usual sense who are going to wrap their children's school lunches.

The marks described in the four applications being opposed are:

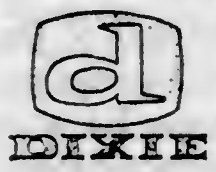
Ser. No. 134,380



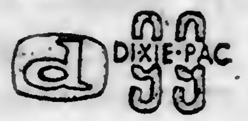
Ser. No. 134,381



Ser. No. 147,901



Ser. No. 179,326



In each of these applications the identical description of goods appears: "Continuous Webs of Printed Waxed Paper." It will be seen that all five marks have in common the combination of a lower case "d" on a dark background coupled somehow with the word "DIXIE," Ser. No. 147,901 consisting only of this, the other marks adding the designations "Auto-Pac," "Dixie Rap," "–PAC 77," and "–PAC 99." Appellee uses signs on its factories and trailer truck bodies resembling the "d-DIXIE" logotype which characterizes all of the above marks. The same logotype is used on its office stationery.

The Board, to whose published opinion we refer for greater detail, in summary, concluded that on the facts of this case there is not such likelihood of confusion, mistake, or deception as to warrant sustaining the oppositions or cancelling appellee's registration. In doing so it referred to the extensive evidence of use of "DIXIE" marks by others including not only numerous third-party registrations but pages from Thomas Register and appellee's concrete evidence, which we have examined, of actual uses of "DIXIE" on paper products. It also relied on the differences in the marks, differences in the goods, and considered appellant's alleged instances of actual confusion.

In this court appellant raises most if not all of the same issues which it presented to the Board. It has filed an unusually long and detailed brief and a reply brief which we have carefully considered together with the voluminous exhibits and testimony. Its 32-page argument is presented under the following five headings, on each of which we will comment briefly.

> "A. There is no evidence of trademark use by appellee of the word 'DIXIE' or any combination thereof prior to 1955"

The Board made the contrary finding that appellee had used marks comprising the term "DIXIE" since about 1932 and we find substantial evidence in the record to sustain that finding. Moreover, we do not consider it necessary for appellee to have proved a *technical* trademark use of such old marks as "DIXIE STAR" and "DIXIELITE." We are not here concerned with the registrability of those marks. Nor are we concerned with priority. The use of those names from an early date in connection with the sale of appellee's products was relied on by the Board as a basis for saying, in effect, that experience shows that confusion is unlikely because confusion did not occur despite the aforesaid uses.

> "B. There is substantial identity between the marks of the respective parties"

We do not agree. Inspection shows otherwise.

> "C. There is substantial identity between the products of the respective parties"

We do not agree. Appellant here attempts to confuse appellee's actual customers with those customers' customers who buy the bagged potato chips, peanuts, etc. We take particular note of the necessarily inherent inconspicuousness of appellee's trademarks on the potato chip bag or the like when it reaches the supermarket where, as appellant argues, it may be right alongside some "Dixie Cups." Appellee, though it places its trademarks on each bag element as it prints its continuous web for its customer, necessarily has to make it quite inconspicuous. The record clearly shows this. The appellee's customer is selling his potato chips or other food product and his own name or mark is what the buyer is going to see, not appellee's mark. The bag printer's mark is relegated to a location where it does not show and is printed in small type, like the union label on a garment or a book (as may be seen, for example, on the back of the title page of any volume of USPQ since vol. 51).

> "D. There is substantial evidence of actual confusion"

We do not agree that it is substantial. **[1]** The situation here is that not only appellant and appellee but many others are legitimately doing business under "Dixie" marks and a certain amount of actual confusion must be expected and tolerated, as one cannot expect to have the benefit of a telephone without the bother of an occasional wrong number. Considering the long period of concurrent operations of the parties under "Dixie" marks and trade names, such minor concrete episodes as appellant has produced amount practically to nothing and appellant's more general assertions of confusion are not shown to be attributable to use of the marks here involved, rather than to appellee's trade name.

> "E. The third party registrations and third party uses cited by appellee fail to show that appellant's mark is not distinctive"

**[2]** We do not say appellant's mark is not distinctive, nor did the Board. We have pointed out, however, that since it is a part of the language its distinctiveness as a mark has certain definite limitations with respect to products.

To conclude, we fail to find any sufficient showing in appellant's arguments of reversible error in the Board's decision and it is therefore affirmed.

AFFIRMED.

KIRKPATRICK, *J.*, took no part in the decision of this case.

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## U.S. Court of Customs and Patent Appeals

### MEYER SLETZINGER *v.* FRANK H. LINCOLN, WILLIAM P. SCHNEIDER AND GEORGE B. SPERO

*No. 8156. Decided May 29, 1969*

[56 CCPA —; 410 F.2d 808; 161 USPQ 725]

1. INTERFERENCE—DILIGENCE—CORROBORATION.

"Even so, concluding that Lincoln et al. here satisfactorily proved as facts the sequence of events at Upjohn, the question remains whether that sequence shows, as a matter of law, diligence on the part of Lincoln et al. in the critical period from just prior to Sletzinger's conception on June 6 to the Lincoln et al. filing date of August 4. Sletzinger says not, arguing that there are gaps in the Lincoln et al. activities that show lack of diligence. Principally, Sletzinger points to an alleged gap in activity between June 27 and July 9, the period in which the first rough [application] draft is supposed to have been passed successively from Lincoln to Schneider to Spero for review. As to this period, appellant argues that there is no corroboration of the review by persons other than the inventors * * *. Although the testimony of the inventors, if standing entirely alone on this point, might not suffice, we believe that if there is other evidence present from which it may be inferred that the testimony of the inventors is correct, then their testimony does not have to be wholly disregarded. Here there is the affidavit of the patent liaison man McIntosh * * *. There is the affidavit of the attorney White * * *. These affidavits provided corroboration that the draft was in the possession of the inventors and inferentially there must have been review by the inventors in this period. Why else would the inventors have suggested the changes to which White refers? That the total period of review by the inventors was not unreasonable in view of the length of the application and the nature of the technical subject matter appears clear from the affidavit of the patent department section head, Cheesman * * *."

2. SAME—SAME—SHORT LAPSES OF ACTIVITY.

"As to the * * * alleged lapses of activity urged by appellant, these are all of such short duration that we consider them to fall within the limits of reasonable diligence, referred to in the cases cited by the Board, which recognize the inevitable minor interruptions accompanying the conduct of patent prosecution."

APPEAL from Patent Office. Interference No. 91,155.

AFFIRMED.

*Frank M. Nolan* (*I. Louis Wolk, of counsel*) for appellant.

*Talivaldis Cepuritis* (*Eugene O. Retter*, *John Kekich*, of counsel) for appellees.

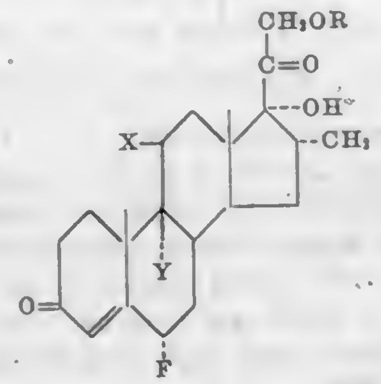
Before Rich, *Acting Chief Judge*, Holtzoff and McLaughlin, *Judges*, sitting by designation, Almond and Baldwin, *Associate Judges*

Rich, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Board of Patent Interferences awarding priority to Lincoln, Schneider and Spero (Lincoln et al.), in Interference No. 91,155, involving Lincoln et al. application Serial No. 753,157, filed August 4, 1958, entitled "Organic Compound and Process" and Sletzinger application Serial No. 746,661, filed July 7, 1958, entitled "16-Substituted Steroids."

The real parties in interest are Merck & Co., Inc., assignee of Sletzinger, and the Upjohn Company, assignee of Lincoln et al.

The invention involves steroid compounds of the pregnene series having an unusually high degree of anti-inflammatory activity without the undesirable side effects allegedly associated with certain other, currently available, anti-inflammatory steroids. The sole count of the interference reads:

> A compound of the group consisting of pregnenes of the formula:
>
> 
>
>
> and the 1–2, dehydro analogs thereof, wherein X represents a member selected from the group consisting of β-hydroxyl and keto, Y represents a member of the group consisting of hydrogen and halogen, and R represents a member of the group consisting of hydrogen and lower alkanoyl.

Neither of the parties relies upon an actual reduction to practice and the question here is whether the junior party, Lincoln et al., has established prior conception coupled with subsequent diligence to justify the award of priority of invention.

The parties stipulated that the testimony of witnesses might be submitted by affidavit and that, as to exhibits, photoprint copies might be submitted in place of original documents. In addition, the record includes other testimony taken on deposition.

Although there is controversy (to be discussed hereinafter) as to the adequacy of some of the affidavit evidence, in the following summary, for the purpose of brevity, the principal items of evidence are given the construction most favorable to the parties by whom they were submitted.

Turning first to Sletzinger, his conception of the invention of the count on June 11, 1958[1] is supported by a page bearing that date from the notebook of a co-worker Gaines to whom Sletzinger made the disclosure. On June 26 Sletzinger's superior at Merck requested the patent department there to prepare a patent application on the invention which was completed and mailed to the Patent Office on July 3 and received a July 7 filing date.

As to Lincoln et al., conception is supported by a record of conception bearing the date May 6 (Exhibit L–1) in Schneider's handwriting signed by the other inventors, and corroborated by a fully qualified steroid chemist, Nathan. White, an Upjohn patent attorney, describes a handwritten invention report (Exhibit L–27) submitted between May 19 and May 21 and Houghtaling, a secretary, describes typing a draft (Exhibit L–2) from the invention report on May 20. McClish, the docket clerk, received the typed draft on May 21, performed his duties on it, and passed it to Cheesman, the Upjohn patent department section head. Cheesman reviewed the report and on June 6 assigned it to White who received it that day. By June 10 White had completed a rough draft (Exhibit L–28) which his secretary Dickson received for typing on June 11 and completed on June 13. White was sick on June 16 but continued working on it on June 17 and June 18. On June 18 the application draft was reviewed by Cheesman who returned it with his approval on June 19. On that day it was handed over to McIntosh, an Upjohn patent liaison man, who reviewed it until June 26 when he sent it to the co-inventor Lincoln. After Lincoln's review, the application was passed some time between June 26 and July 1 to the co-inventor Schneider who stated that his review occurred on or about June 30 through July 1. The application then passed to the remaining one of the co-inventors, Spero, on or about July 2 and he completed his review on July 9. White got the rough draft back from Spero on July 14 through the Upjohn messenger service, and completed his revision of it on the same day. The secretary Dickson typed the final draft on multilith masters during the period July 14 through July 18 and copies were run off and proofread between July 18 and July 23. Copies of the final draft were sent to the inventors who reviewed it and returned it to the patent department on July 28. The inventors executed the application on July 29. The completed application was sent to Retter, the head of the Upjohn patent department, on July 30. On July 31, the docket clerk McClish mailed the application to the Patent Office where it received an August 4 filing date.

The Board's lengthy opinion contains careful consideration and discussion of each of the Lincoln et al. affidavits and exhibits to find support for each of the events described above. As a result of such consideration the Board decided:

> We have held above that Lincoln et al. established their conception as in May, 1958 and at least prior to the conception date alleged by Sletzinger of June 11, 1958. We also hold that Lincoln et al. have established reasonable diligence toward a constructive reduction to practice from immediately prior to June 11, 1958, the alleged conception date for Sletzinger, until the Lincoln et al. application was filed on August 4, 1958. Under these circumstances, it is not necessary for us to go into the case for priority for Sletzinger * * *.

Here appellant argues that much of the evidence asserted for Lincoln et al. is inadequate because of a failure to satisfactorily relate the exhibits to the affidavits. It is apparently appellant's position that the Lincoln et al. exhibits should have been physically attached to the relevant affidavits at the time of submission. Thus appellant states:

> None of the documentary exhibits referred to in the Lincoln affidavits relied on by the Board of Patent Interferences for Lincoln's conception was in any

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[1] At oral argument appellant's counsel conceded Sletzinger this date for conception. All dates hereinafter are in 1958.

> way attached to the affidavits. Purported Lincoln exhibits were believed to be submitted to the Patent Office in a sealed envelope with the notation thereon that they were exhibits submitted on behalf of Lincoln. But there is no indicia in any of the relied on Lincoln affidavits that a purported exhibit or some other document was before the Lincoln affiants when the Lincoln affidavits were executed.

The result of this alleged defect, appellant argues, is that many of the conclusions of the Board regarding conception and diligence are erroneous. Thus, for example, considering the Board's finding that Lincoln et al.'s conception on May 6 was established by the affidavits of the inventors and Nathan in conjunction with Exhibit L–1, appellant argues:

> All three applicants, Lincoln, Schneider and Spero, state in their affidavits that a written record of conception was made on May 6, 1958 and that this record appeared in Exhibit L–1 * * *. Nathan in his affidavit states that he signed his name on Exhibit L–1 on May 6, 1958 * * *. But there is nothing in the affidavits of Lincoln, Schneider or Spero or in the purported corroborating affidavit of Nathan that discloses the contents of purported Exhibit L–1. More particularly, the affidavits contain no disclosure of any of the compounds of count 1 or methods of producing such compounds. None of the other affidavits submitted on behalf of Lincoln discloses the contents of Exhibit L–1.

Turning to these affidavits, however, we find in each of them a clause which specifically relates the affidavit to the relevant exhibit. Thus, for example, the affidavit of Nathan includes the following averments:

> THAT, I have examined the original of Exhibit L–1 and have compared it with the corresponding Xerox exhibits and find the latter to be an accurate reproduction of the former, and have compared the original with the corresponding entry in the accompanying list of exhibits and find the latter to be an accurate list of the former;
>
> THAT, I am the person who signed my name to the bottom of page 25 of Upjohn research notebook No. 3815 (Exhibit L–1) on May 6, 1958;

It seems to us that this language relates the affidavit to the exhibit with a particularity and precision as sufficient as if the exhibit had been stapled to the affidavit with a reference therein to the accompanying exhibits. We are not persuaded that the Board erred when it stated:

> We consider that the exhibits referred to in the affidavits were suitably and satisfactorily designated in the affidavits by the exhibit number. * * *

We therefore conclude that the affidavits and exhibits of Lincoln et al. are adequate evidence to support the Board's finding of conception on May 6 as well as to support the existence of the events forming the sequence fully described in the Board's opinion and summarized briefly above.

**[1]** Even so, concluding that Lincoln et al. here satisfactorily proved as facts the sequence of events at Upjohn, the question remains whether that sequence shows, as a matter of law, diligence on the part of Lincoln et al. in the critical period from just prior to Sletzinger's conception on June 6 to the Lincoln et al. filing date of August 4. Sletzinger says not, arguing that there are gaps in the Lincoln et al. activities that show lack of diligence. Principally, Sletzinger points to an alleged gap in activity between June 27 and July 9, the period in which the first rough draft is supposed to have been passed successively from Lincoln to Schneider to Spero for review. As to this period, appellant argues that there is no corroboration of the review by persons other than the inventors, stating:

> But *there is no corroboration* of the asserted review of the final rough draft by any of three applicants and the decision of the Board of Patent Interferences is devoid of any holding of corroboration of the review of the final rough draft by the inventors during the period of June 27, 1958 through July 9, 1958.

And concluding:

> Without corroboration, the purported review by the three applicants of an alleged final rough draft of the Lincoln involved application could not constitute diligence. Since no other evidence has been submitted by Lincoln in support of Lincoln's asserted diligence in the period from June 27, 1958 through July 7, 1958, the filing date of Sletzinger, Lincoln has failed to establish active diligence for the critical period commencing just prior to Sletzinger's filing date of July 7, 1958.

Although the testimony of the inventors, if standing entirely alone on this point, might not suffice, we believe that if there is other evidence present from which it may be inferred that the testimony of the inventors is correct, then their testimony does not have to be wholly disregarded. Here there is the affidavit of the patent liaison man McIntosh that on June 26 he sent the final rough draft to Lincoln and that he was certain that he "conferred with the inventors several times during each of their periods of review * * *." There is the affidavit of the attorney White that:

> 10. On July 14, 1958 said revised rough draft was returned to me from George B. Spero and on the same day, I completed the revision of said final rough draft by incorporating therein certain of the changes suggested by a Vern McIntosh and the inventors and, also on the same day, I turned the draft over to my secretary, Marva H. Dickson, for typing on multilith masters for subsequent printing as a final draft suitable for filing in the Patent Office;

These affidavits provided corroboration that the draft was in the possession of the inventors and inferentially there must have been review by the inventors in this period. Why else would the inventors have suggested the changes to which White refers? That the total period of review by the inventors was not unreasonable in view of the length of the application and the nature of the technical subject matter appears clear from the affidavit of the patent department section head, Cheesman, which states:

> THAT, the time required to review Case 1344 or a case of equivalent length and complexity was three to four days per reviewer and that this was consistent with the careful technical review I desired from inventors and the patent liaison department, and that the receipt in the patent law department on July 14, of the reviewed final rough draft of Case 1344 was not in excess of that normally required of such careful technical review particularly in view of the fact that the research chemists' inventors were busily engaged conducting chemical research;
>
> THAT, the actual time involved was less than four days per reviewer; and considering that the draft had to be transferred from person to person at least five times and of which at least two transfers involved transfers by Upjohn messenger service (John L. White to a Vern McIntosh on about June 20, 1958 and George B. Spero to John L. White on about July 14, 1958) each of which could have consumed more than one-half day; the average review time for each technical reviewer was about three days each.

In view of the surrounding circumstances shown by the affidavits of McIntosh, White and Cheesman, there appears to be a reasonable basis for accepting the affidavit testimony of the inventors that they were indeed occupied in reviewing the draft from June 26–July 9. We do not consider that appellant has established lack of diligence by Lincoln et al. during that period.

**[2]** As to the other alleged lapses of activity urged by appellant, these are all of such short duration[2] that we consider them to fall within the limits of reasonable diligence, referred to in the cases cited by the Board,[3] which recognize the inevitable minor interruptions accompanying the conduct of patent prosecution.

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[2] For example, appellant points to a 2-day gap between execution of the Lincoln et al. application on July 29 and mailing it to the Patent Office on July 31.

In summary, appellant has not persuaded us of any error in the Board's conclusion that Lincoln et al. had prior conception of the invention coupled with diligence until filing from just prior to Sletzinger's conception. The decision of the Board is therefore affirmed.

AFFIRMED.

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[3] *Dickinson* v. *Swinehart*, 49 App. D.C. 222, 263 Fed. 474 (1920); *Martus & Becker* v. *Heise*, 17 CCPA 1083, 39 F.2d 715, 5 USPQ 74 (1930); *Farmer* v. *Schweyer*, 21 CCPA 865, 68 F.2d 961, 20 USPQ 281 (1934); *Powell* v. *Poupitch*, 35 CCPA 1080, 167 F.2d 514, 77 USPQ 379 (1958); *Rines* v. *Morgan*, 45 CCPA 743, 250 F.2d 365, 116 USPQ 145 (1957).

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## U.S. Court of Customs and Patent Appeals

IN RE DOUGLAS H. PACK, WAYNE O. URSENBACH AND FRANK HATTON-WARD

*No. 8176. Decided May 29, 1969*

[56 CCPA —; 410 F.2d 1386; 161 USPQ 734]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"PACKAGING FOR SLURRY EXPLOSIVES."

The decision of the Board of Appeals, refusing certain claims on an application entitled "Packaging for Slurry Explosive" as unpatentable over the prior art, is reversed as to one claim and affirmed as to the remaining claims.

APPEAL from Patent Office. Serial No. 497,587.

MODIFIED.

*Edwin M. Thomas*, for appellants.

*Joseph Schimmel* (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, HOLTZOFF and MCLAUGHLIN, *Judges*, sitting by designation, ALMOND and BALDWIN, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming the Examiner's rejections of claims 1–9, on prior art under 35 U.S.C. 102, in appellants' application entitled "Packaging for Slurry Explosives."[1] No claim has been allowed.

The invention is a unit package of explosive blasting composition or a plurality of such packages connected in a column. A filled tubular package closed at one end receives a second package to close its other end. The filling material is a pourable liquid or semi-liquid slurry which flows as a viscous liquid under ordinary temperature conditions. Packages of this type are used for blasting in slender boreholes or in wells, for example, in oil wells.

Referring to FIGS. 1–5, reproduced below, one form of the invention is shown. Individual tubular containers 11 are made by extruding or blow molding plastic material. The tube 11 is shown as having a reduced end element 13, a so-called male coupling portion, which also includes a transverse closure element 33, and an open upper end or female coupling portion. In this form, plural containers are adapted to be joined together in pairs or series as shown in FIG. 5 being secured by bayonet type joints shown in FIGS. 3 and 4. A second form, not shown, is a container adapted to be joined with others by means of screw thread joints. A plurality of sections so connected may then be lowered into a borehole or other receptacle for blasting.

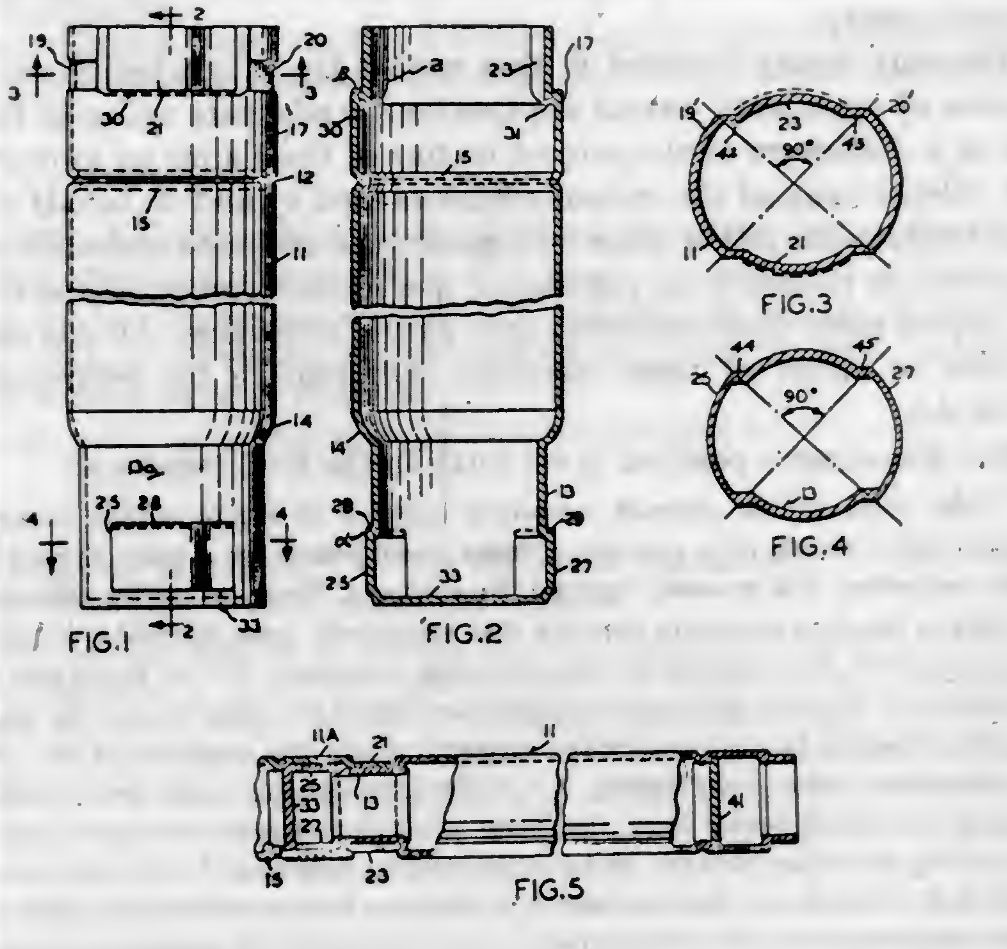

FIG.1 FIG.2 FIG.3 FIG.4 FIG.5

Claims 1 and 9 are illustrative:[2]

1. A container for explosives adapted for inter-connection with like containers to form an explosive column assembly, which comprises:

(*a*) a thin-wall elongated substantially cylindrical blown plastic container having explosive disposed therein throughout the major length of the container,

(*b*) an externally threaded male coupling and end closure on one end of the container,

(*c*) an internally threaded female coupling on the other end of the container, the female coupling extending beyond the explosive the remaining length of the container, and

(*d*) the male coupling having a reduced external diameter relative to the internal diameter of the female coupling and the end closure of said male coupling *having protrusion means to contact and to press against the explosive adjacent thereto* so that like containers of explosive slidably and threadedly interconnected by the male and female couplings to form an explosive column assembly *have the end closures of the male coupling exerting compressive force on adjacent explosive within the female couplings.*

9. A blow molded plastic container capable of being assembled with other like containers to form an elongated assembly, said container comprising an elongated tube of uniform outside diameter throughout most of its length, said tube having a male coupling on one end and a female coupling on the other end, and adapted to be filled with explosive between said couplings, said female coupling being of the same overall outside diameter as the tube and the male coupling being enough smaller to fit within a female coupling on another like tube, interengageable locking means on the inside of the female coupling and on the outside of the male coupling, the arrangement being such that on assembly of filled plural like containers, *the male coupling will tightly press upon and pack the explosive in the adjacent container, whereby a substantially rigid and continuous explosive column of explosive may be assembled*, the tubular walls being slightly deformable when filled to make possible insertion past minor obstacles into boreholes of essentially the same diameter as said outside diameter.

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[1] Serial No. 497,587, filed September 24, 1965 (continuation in part of Serial No. 330,861, filed December 16, 1963).

[2] Emphasis has been supplied to highlight the claim portions in controversy.

Claims 2 to 8 contain recitations substantially the same as those emphasized in claim 1 and need not be treated separately from it.

The references relied upon[3] admittedly meet the appealed claims, which were substantially copied therefrom, and hence their discussion is unnecessary.

The only issues involved in this appeal are: (1) whether the disclosure of appellants' parent application[4] is adequate under 35 U.S.C. 112 as a disclosure of the subject matter of the claims on appeal and (2) whether any of the several affidavits filed by and on behalf of the appellants taken either alone or together are adequate under Rule 131 to establish reduction to practice of the subject matter of the claims on appeal prior to the effective date of the references. An affirmative answer to either of these questions will remove the references as prior art.

The Examiner's position is set forth in the final rejection:

> * * * the crux of the claimed invention appears to reside in the concept of placing the contents of a container under compression by a male coupling element *contacting and pressing* against the contents. Nowhere in the affidavits or exhibits is there an adequate showing that applicants' male element contacts and presses against the contents of the adjoining container. Nor is there any basis in applicants' original disclosure (application Serial No. 330,861) for the claimed coupling wherein the male coupling element places the contents of an adjoining container under compression. * * * Furthermore, it is not seen, from applicants' disclosed device how the male coupling element can place the contents of an adjoining package under compression. Note that * * * [in] the specification it is disclosed that explosive is filled *up to the internal shoulder 15* of applicants' container. It would appear to be impossible for applicants' male coupling element to compress any explosive in an adjoining container since shoulder 15 would effectively block any longitudinal movement towards the explosive. Furthermore, from exhibit B, showing applicants' modification * * *, it is noted that there is a .05 rise in the bottom of the male coupling element. Therefore it would appear unlikely that the bottom of the coupling would ever come into contact with the explosive in an adjoining container.

In affirming, the Board considered claims 1 to 8 apart from claim 9. With respect to exemplary claim 1 of claims 1 to 8, it found that:

> * * * we are unable to read the emphasized portions of part (*d*) thereon. In the instant case, the male coupling has a flat end wall 33 in the bayonet coupling species of FIGS. 1 through 5 and a flat end wall 125 in the screw coupling species of FIGS. 6 and 7. Nowhere in the description of the original application and nowhere in the specification of the instant application (as distinguished from the claims herein presented) do we find any description of the male coupling having "protrusion means" for the purposes otherwise specified in the emphasized portion of claim 1.
>
> * * * * * * *
>
> The protrusion, as is evident, is to provide a force multiplying factor in applying pressure in addition to the force multiplying factor of screw threads.

As to claim 9, the Board referred to the parent application, finding that:

> There is no mention in the objectives of the invention of applying pressure to the explosive contents. The specification of the parent case does not disclose filling to such a degree that the lower flat end in either species is capable of contacting the explosive in the vertical position of the cartridges.

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[3] Hamilton, U.S. Patent Nos. 3,185,091 and 3,185,092, both issued May 25, 1965, and Foster, U.S. Patent No. 3,186,340, issued June 1, 1965. All were filed on January 10, 1964.

[4] Serial No. 330,861, filed December 16, 1963, and containing drawings identical to those in the application on appeal.

> The disclosure in the paragraph, and even more particularly in the sentence bridging pages 7 and 8, is "* * * The unit container can be filled with liquid or flowable slurried explosive, or with granular prills and oil, up to the internal shoulder 15 which supports the bottom of the next section when two or more units are assembled."
>
> As is evident from inspecting FIG. 2, if the explosive is up *to* internal shoulder 15, since flat wall 33 is stopped at the upper part of this shoulder, there is a slight air space.
>
> * * * * * * *
>
> In addition we call attention to the statement [in the parent specification] that states, relative to flat closure 33:
>
> > "* * * These transverse closures may sometimes be omitted, if desired, e.g., where plural sections are to be joined before filling. However, the structure shown is normally preferred."
>
> If omitted, under no circumstances can it apply pressure. * * *
>
> * * * * * * *
>
> The following description * * * [in the parent specification] is relied upon heavily. We reproduce with certain emphasis added.
>
> > "In use, any number of sections of either type may be filled one by one and assembled as they are pushed into place. In this manner, a *relatively* rigid container, filled *essentially* completely from end to end and packed to a *desired* tightness with the slurry, can be inserted into bore holes at much in the same way as solid explosive. *Except for the very minor gaps formed by the end closures 33 or 125*, the slurry explosive is continuous from one end of the assembly to the other and there is no problem of propagation of the detonation wave. In many structures of the prior art, this feature, which is often critical with slurry explosives, has not been available because the structures proposed for assembly have, in many cases allowed or necessitated substantial gaps in explosive filler. The containers of this invention are quite firm and solid when filled but they are *slightly deformable* and are thus often capable of being pushed past minor obstructions where a solid metal container of similar diameter might be blocked."
>
> It will be seen that, with the described mode of filling, leaving air gaps with a thickness dimension equal to shoulders 15 or 115, that the above description is accurate. The flexible container is made "relatively" rigid due to its own structure including its own wall thicknesses. It is filled "essentially" completely except for the minor amounts described. This air space represents the "desired" degree of tightness. "Except for the very minor gaps formed by the end closures 33 or 125," the slurry explosive is continuous. We point out that this is consonant with the disclosure of the minor air gaps formed by the enclosures 33 or 125 contacting the corresponding shoulders when the slurry comes up "to" the shoulders.

The Board also agreed with the Examiner that the affidavits were insufficient. No reconsideration of the Board's decision was sought.

We are unable to find error in the Board's position with respect to claims 1 to 8. Appellants argue in their brief that:

> The general bottom part 25, 27, 33, FIG. 2, protrudes from the upper part of the male end, e.g. below element 13. * * * See also part 33 in the assembly of FIG. 5.

Further, they state:

> * * * looking at FIG. 2, and the upper line 15 there, it is clear that the rebated corner of end element 33 could and would extend around or at least part way down past the rib 15. This protruding bottom 33, FIG. 2, definitely would put the contents under compression; certainly if the lower tube were filled any where near to the level of the upper dotted line indicated at 15 of FIG. 2. *But appellants do not ask for such a precise construction.*
>
> *In fact, appellants do not base their case on the tenuous differences between FIGS. 1 and 2* * * *. [Emphasis added.]

Neither do we. The claim language requires "the *end closure* of said male coupling having protrusion means." Appellants' parent specification refers to transverse *closure* elements 33 and it is manifest from the drawing that such do not have protrusion means nor are any described. Of the various affidavits, dealing primarily with the concept of placing the tube contents under compression, the affidavit executed by appellants and submitted on March 16, 1966 is the sole one concerned with the structure of the container and allegedly discloses in Exhibits A and B thereof working drawings of the invention. Such drawings do not appear to be substantially different from those appearing in the application and fail to disclose the protrusion means. The decision of the Board with respect to claims 1 to 8 is affirmed.

Turning to claim 9, characterized by appellants as "stat[ing] the invention most aptly and * * * [being] slightly broader than the others" and properly treated, we believe, apart from the others, we find ourselves in disagreement with the Board's interpretation of appellants' parent specification relative to it.

Having interpreted a portion of the disclosure as suggesting a slight air space between the assembled tubular sections, the Board then proceeded with an unnecessarily strained reading of pertinent portions of appellants' parent disclosure indicating the absence of air gaps in order to find them "consonant with the disclosure of the minor air gaps."

Referring to the emphasized portions of claim 9 and the portions of appellants' parent specification quoted in the Board's opinion, reproduced above, it is seen that the assembled container is filled essentially completely from end to end and packed to a desired tightness with the slurry," the only gaps being those formed by the end closures. Moreover, claim 14 of the parent application refers to an assembly in which "a continuous mass of explosive fills the assembly from one end to the other except for a single thickness of intervening end closure material at each joint." The above language precludes, in our opinion, the presence of an "air gap." Nor does the relative language "can be filled * * * up to the internal shoulder 15 which supports the bottom of the next section" require the presence of an air space, when considering the teaching of the specification as a whole. Appellants' specification also speaks of "combining the compressive strength of the contents with the tensile strength of the package wall material" to obtain rigidity, a further indication that the liquid contents are under some compression.

We note, in passing, that appellants' disclosure may be consonant with an interpretation that the tubular containers are filled and assembled in such a fashion that while no air gaps are present neither does the male coupling tightly press upon and pack the explosive thereby resulting in a precise mating of the two adjacent surfaces. However, no such construction was advanced below nor are we prepared to assume such in the face of the unlikely ability to obtain such precise control in this area of technology as well as the impracticability thereof. Since we find support for claim 9 in appellants' parent application, it is unnecessary for us to consider the affidavits in this regard. **[1]** The decision of the Board with regard to claim 9 is accordingly reversed.

MODIFIED.

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# PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

**2,395,449**, S. W. Briggs, FILTER UNIT, **filed** Aug. 6, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1307, *Southwick W. Briggs and Stone Filter Company, Inc.* v. *Fram Corporation*. Patent invalid, July 25, 1969. **Same, filed** Aug. 6, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1308, *Southwick W. Briggs and Stone Filter Co. Inc.* v. *WIX Corporation*. Patent invalid, July 25, 1969. **Same, filed** Oct. 11, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1683, *Southwick W. Briggs and Stone Filter Company, Inc.* v. *Western Auto Supply Company*. Patent invalid, July 25, 1969. **Same, filed** Oct. 11, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1684, *Southwick W. Briggs and Stone Filter Co., Inc.* v. *Montgomery Ward & Co. Incorporated*. Patent invalid, July 25, 1969. **Same, filed** Oct. 11, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1685, *Southwick W. Briggs and Stone Filter Co., Inc.* v. *Sears, Roebuck & Co.* Patent invalid, July 25, 1969.

**2,605,348**, Hall and Moe, COLOR SEPARATION NEGATIVES; **2,865,984**, W. W. Moe, EDGE CORRECTING SYSTEM FOR VISUAL IMAGE TRANSFERENCE APPARATUS; **3,109,888**, same, SCANNING MECHANISM FOR FACSIMILE REPRODUCTION SYSTEM; **3,194,883**, A. Ross, FACSIMILE SYSTEM WITH LOCAL CONTRAST CONTROL; **3,275,741**, Hughes and Channing, KNOCKOUT MASK DETECTOR IN SCANNER APPARATUS, **filed** May 27, 1969, D.C., S.D.N.Y., Doc. 69–C–2290, *Printing Developments Inc.* v. *RCA Corporation.*

**2,734,226**, W. H. Willert, INJECTION MOLDING APPARATUS, **filed** Aug. 9, 1969, D.C.N.J. (Newark), Doc. C–949–69, *Egan Machinery Company and William H. Willert* v. *Krauss-Maffei Corporation.*

**2,737,503**, Sprague and Scantlebury, Jr., METHOD OF MAKING AN EXPANDED OR CELLULAR POLYVINYL CHLORIDE COMPOSITION, **filed** July 28, 1969, D.C. Conn. (New Haven), Doc. 13303, *The B. F. Goodrich Company* v. *Cellular Industries, Inc. et al.*

**2,851,033**, J. T. Posey, SUPPORTING MEANS; **3,182,338**, B. N. Shirrod, RESTRAINING BELT, **filed** July 29, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1464–S, *J. T. Posey, doing business as J. T. Posey Company* v. *Plastisol Products, Inc.*

**2,856,984.** (See 2,605,348.)

**2,933,246**, J. Rabinow, READING MACHINE, **filed** July 8, 1969, D.C., N.D.N.Y. (Utica), Doc. 69–CV–222, *Control Data Corporation* v. *Character Recognition Corporation.*

**3,010,179**, W. Thal, METHOD OF TREATING FABRICS; **3,171,484**, same, PILE FABRICS, **filed** Aug. 7, 1969, D.C. Mass. (Boston), Doc. 69–836–F, *Malden Mills, Inc. and Gleneagles, Inc.* v. *Alamac Knitting Mills, Inc.*

**3,086,297**, L. A. Kantrowitz, TALKING BOOK, **filed** Apr. 8, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c744, *Mattel, Inc.* v. *Marvin Glass & Associates*. Action dismissed without prejudice; defendant's motion for injunctive relief is denied, May 3, 1969.

**3,108,882**, Nash and Freudenstein, METHOD OF PREPARING AN EDIBLE FISH PRODUCT, **filed** July 7, 1967, D.C., S.D.N.Y., Doc. 67–C–2619, *The B. Manischewitz Company* v. *I. Rokeach & Sons et ano.* Notice of dismissal, July 11, 1967.

**3,109,888.** (See 2,605,348.)

**3,116,557**, J. R. Trice, Jr., METHOD AND MEANS FOR LAYING SEWER PIPE, **filed** July 2, 1969, D.C., N.D. Calif. (San Francisco), Doc. 51677, *University Laboratories, Inc.* v. *Alignment Systems Inc.*

**3,120,848**, G. R. Seperack, BRASSIERE, **filed** June 3, 1966, D.C., S.D.N.Y., Doc. 66–C–1595, *Warner Brothers Company* v. *The Bali Company, Inc. et ano.* Stipulation and order that complaint and counterclaims are dismissed without prejudice, Apr. 10, 1968.

**3,171,484.** (See 3,010,179.)

**3,179,026**, A. F. Crone, SEALING ELEMENT FOR PAVEMENT GROOVES, **filed** Apr. 29, 1966, D.C., N.D. Ohio (Toledo), Doc. C–66–89, *Acme Highway Products Corporation* v. *The D. S. Brown Company and Delmont D. Brown*. Patent invalid, Aug. 5, 1969.

**3,181,205**, Frommelt and Frommelt, PAD STRUCTURES; **3,230,675**, same, DOCK PADS WITH ADJUSTABLE HEAD PAD, **filed** May 29, 1969, D.C., N.D. Ohio (Cleveland), Doc. C69–418, *Dubuque Awning & Tent Company* v. *Timbers & Associates, Inc. and Nuckley Covers Corporation.*

**3,182,338.** (See 2,851,033.)

**3,194,883.** (See 2,605,348.)

**3,275,741.** (See 2,605,348.)

**3,325,981**, Glass and Hale, HAY HARVESTING MACHINE; **3,375,643**, McCarty and Glass, HARVESTING DEVICE; **3,383,844**, Glass, Hale and McCarty, DEFLECTOR STRUCTURE; **3,386,233**, Glass and McCarty, IMPLEMENT FRAME, **filed** June 3, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1177, *Sperry Rand Corporation* v. *Deere & Company*. Filed plaintiff's Notice of Dismissal pursuant to Rule 41(a)(I), FRCP, Aug. 5, 1969.

**3,375,643.** (See 3,325,981.)

**3,383,844.** (See 3,325,981.)

**3,386,233.** (See 3,325,981.)

# REISSUES

## NOVEMBER 4, 1969

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

### 26,702

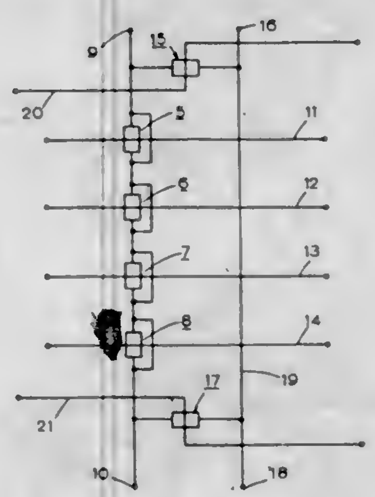
### SUPERCONDUCTIVE STORAGE CIRCUITS

**Norman Dennis Richards, Tilgate, Crawley, Sussex, England, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware**

**Original No. 3,362,018, dated Jan. 2, 1968, Ser. No. 345,700, Feb. 18, 1964. Application for reissue Oct. 2, 1968, Ser. No. 769,455**

**Int. Cl. G11b** *9/00;* **H03k** *17/00*

**U.S. Cl. 340—173.1** **16 Claims**



*The invention is a superconductive storage matrix which uses a group of series connected superconductive storage elements and a pair of superconductive devices connected across the elements and bistably switched between a normal characteristic impedance and zero impedance in response to a corresponding pair of input signals. A proper selection of the input signals to the superconductive devices determines whether the information associated with the matrix is to be stored or read out.*

### 26,703

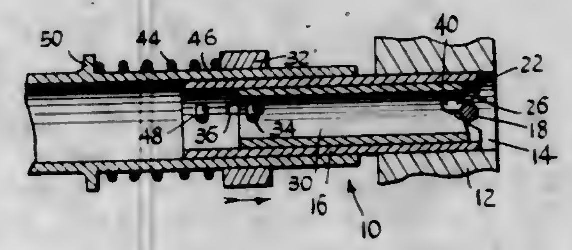
### RELEASABLE MECHANICAL COUPLING

**John J. McCarthy, Weston, Conn., assignor to Norco Incorporated, Ridgefield, Conn., a corporation of Connecticut**

**Original No. 3,345,711, dated Oct. 10, 1967, Ser. No. 390,617, Aug. 19, 1964. Application for reissue May 27, 1968, Ser. No. 742,101**

**Int. Cl. F16b** *21/10*

**U.S. Cl. 24—230** **1 Claim**



*A releasable coupling having a socket part including a transverse pin element and a plug part that includes a cylinder having inclined slots at one end. A spring-biased plug having axial slots at one end is movably mounted inside the sleeve and releasably locks the transverse pin in the inclined slots.*

### 26,704

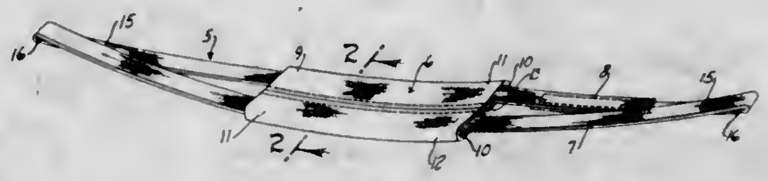
### FABRIC LOAD LIFTING SLING

**Roy Norton, Milwaukee, Wis., assignor to The Wear-Flex Corporation, Milwaukee, Wis., a corporation of Wisconsin**

**Original No. 3,290,083, dated Dec. 6, 1966, Ser. No. 457,086, May 19, 1965. Application for reissue Dec. 3, 1968, Ser. No. 786,498**

**Int. Cl. B66c** *1/12*

**U.S. Cl. 294—74** **15 Claims**



*A load lifting sling of nylon webbing in which the load contacting portion and the load carrying portion are slidably connected to permit relative movement therebetween so the inevitable stretching of the load carrying portion of the sling as a load is lifted in nowise affects the load contacting portion.*

### 26,705

### α-SUBSTITUTED-1-ADAMANTYLMETHYL PENICILLINS

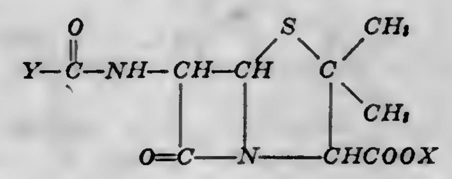
**Edward C. Hermann, Newark, and Jack A. Snyder, Claymont, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Original No. 3,284,445, dated Nov. 8, 1966, Ser. No. 411,689, Nov. 17, 1964. Application for reissue Aug. 28, 1968, Ser. No. 760,387**

**Int. Cl. C07d** *99/16;* **A61k** *21/00*

**U.S. Cl. 260—239.1** **4 Claims**

*Compounds having the following formula are disclosed:*



*Y=α-methyl-1-adamantylmethyl or 3-isopropyl-1-adamantyl*
*and*
*X=hydrogen to a non-toxic cation. These compounds find use for treatment of bacterial diseases.*

### 26,706

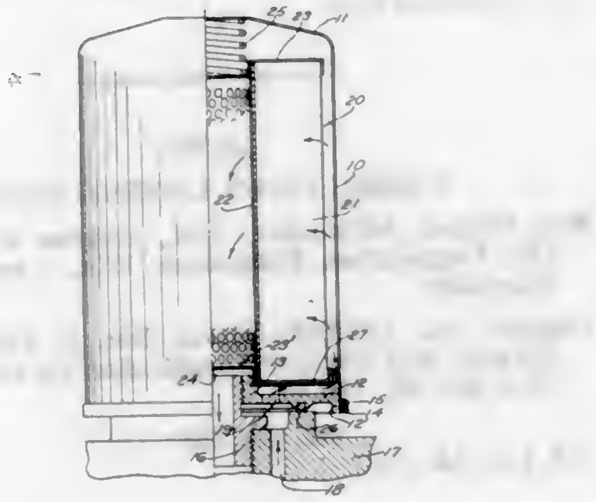
## RADIATOR WATER FILTER

**Donald I. Thornton, Warwick, R.I., assignor, by mesne assignments, to Fram Corporation, East Providence, R.I., a corporation of Delaware**

**Original No. 3,321,083, dated May 23, 1967, Ser. No. 300,826, Aug. 8, 1963. Application for reissue Oct. 16, 1968, Ser. No. 769,454**

**Int. Cl. B01d** *15/00*

**U.S. Cl. 210—198** **4 Claims**



*A water filter and conditioner for the cooling system of an internal combustion engine. The filter has a corrosion inhibitor adsorbed therein to act as the water conditioner.*

### 26,707

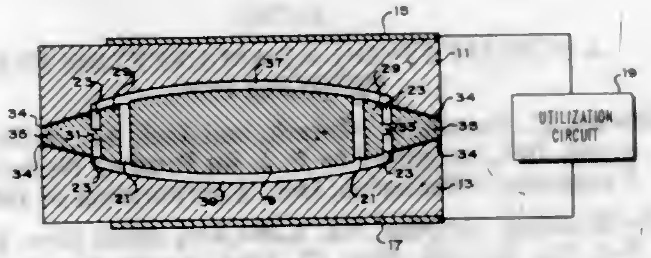
## CRYSTAL RESONATORS

**Leonard S. Cutler, Topsfield, Mass., and Donald L. Hammond, Los Altos Hills, Calif., assignors to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California**

**Original No. 3,339,091, dated Aug. 29, 1967, Ser. No. 369,934, May 25, 1964. Application for reissue Feb. 11, 1969, Ser. No. 802,287**

**Int. Cl. H03b** *5/30*

**U.S. Cl. 310—9.1** **9 Claims**



An improved quartz crystal resonator is supported on an all-quartz structure within a quartz enclosure for improved stability with time and temperature.

### 26,708

## PLURAL-PHASE CONTROLLED RECTIFIER SYSTEMS INSENSITIVE TO LINE PHASE ROTATION

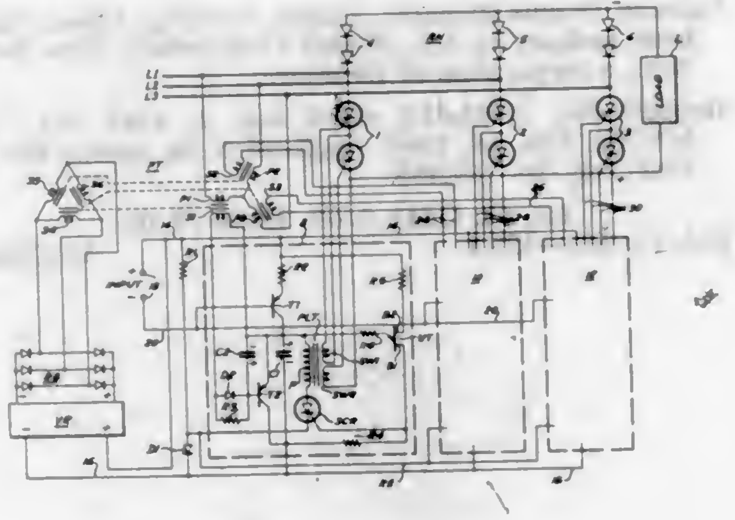
**Robert W. Spink, Wauwatosa, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware**

**Original No. 3,281,645, dated Oct. 25, 1966, Ser. No. 248,314, Dec. 31, 1962. Application for reissue Jan. 23, 1968, Ser. No. 702,144**

**Int. Cl. H02m** *7/44, 7/68*

**U.S. Cl. 321—5** **5 Claims**

*A three-phase solid state rectifier bridge system supplied from a three-phase A.C. source for controlling a D.C. load and including series-connected controlled rectifiers in the bridge circuit and firing circuits phase-synchronized with their anode voltages to apply simultaneous fast rise time firing pulses thereto and to render such system insensitive to line phase rotation. Transistor switching circuits limit firing pulses to positive anode voltage half-cycles and RC voltage stretchers afford full 180 degree firing.*



### 26,709

## HIGH FLOW RATE PERLITE FILTER AIDS

**Carl R. Vander Linden and Raymond G. Riede, by Johns-Manville Corporation, Manville, N.J., a corporation of New York, assignee**

**Original No. 3,233,740, dated Feb. 8, 1966, Ser. No. 114,495, June 2, 1961. Application for reissue Nov. 14, 1968, Ser. No. 785,820**

**Int. Cl. B01d** *39/20, 39/00*

**U.S. Cl. 210—500** **4 Claims**

PERLITE FILTER AID FROM HORIZONTAL EXPANDER 200 X

*Perlite ore is expanded in a horizontal furnace to produce aggregates having irregular internal structures characterized by relatively thick cell walls and well-developed coarse junctions between the cells. The aggregates are milled to produce a product having a high percentage of three-dimensional structures formed by the resistant internal cell junctions. The product is classified to produce a filter aid having desirable flow rate characteristics and a low floater content.*

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### 26,710

## WALL FORM SYSTEM AND CLAMP

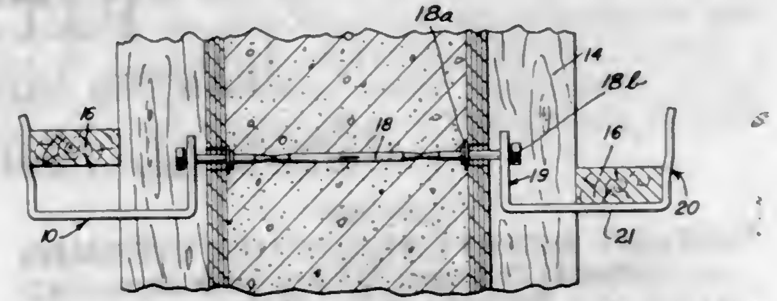
**Charles E. Barnes, 820 E. Redwood Lane,**
**Arlington Heights, Ill. 60004**

**Original No. 3,218,687, dated Nov. 23, 1965, Ser. No. 333,081, Dec. 24, 1963. Application for reissue Aug. 2, 1967, Ser. No. 661,149**

**Int. Cl. E04g** *17/06, 17/00*

**U.S. Cl. 249—40** **7 Claims**

*A waler clamp has a horizontal support for the waler with two upturned ends. The end adjacent the form wall is adapted to receive and engage a form tie. This end is spaced from the form wall. The opposite end has a first vertical portion, an outwardly extending offset and a second vertical portion.*

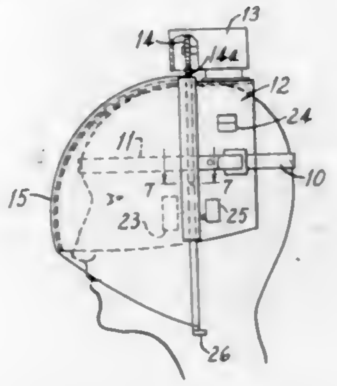


# PATENTS

## GRANTED NOVEMBER 4, 1969

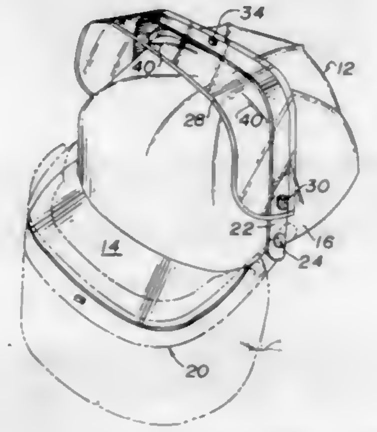
## GENERAL AND MECHANICAL

**3,475,765**
### VARIABLE DENSITY PROTECTIVE EYESHADE
**Walter F. Zeltmann, 719 Bay Ridge Ave., Brooklyn, N.Y. 11220**
**Filed Mar. 19, 1968, Ser. No. 714,261**
**Int. Cl. A42b** *1/06*
U.S. Cl. 2—8 5 Claims



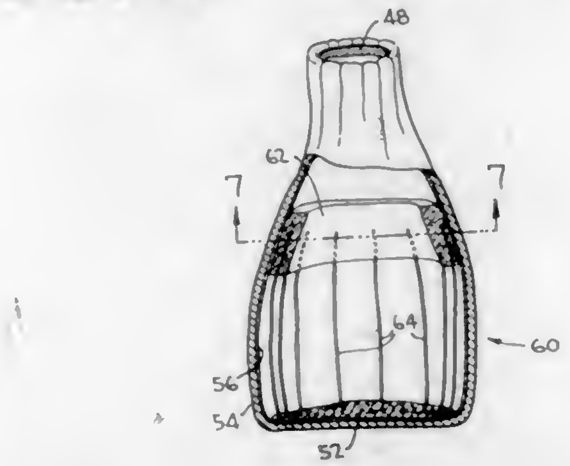
One or more photo-electric cells actuate a servomotor to rotate a light-polarized shield into confrontation with a light-polarized optical element covering the eyes of the user, thereby affording protection against light radiation to which said shield is exposed. Movement of the shield is confined by limit switches contactable therewith and operable to stop the servomotor when the shield moves to predetermined positions.

**3,475,766**
### FACE SHIELD MOUNTING APPARATUS
**Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.**
**Continuation of application Ser. No. 564,996, July 13, 1966. This application May 16, 1968, Ser. No. 731,676**
**Int. Cl. A42b** *1/06*
U.S. Cl. 2—9 4 Claims



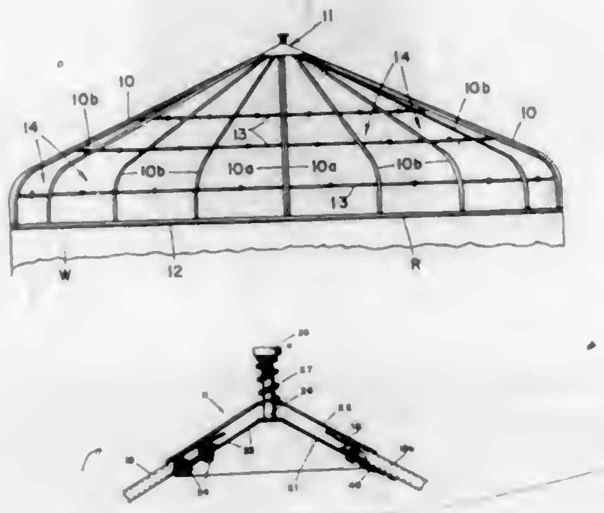
Devices for mounting face protective shields on safety helmets that include snap fastener members so located as to afford pivotable movement of the face shield relative to the hat about an axis through the snap fastener members. A device for mounting the snap fastener on a safety hat without piercing the hat or otherwise impairing its strength or electrical resistance.

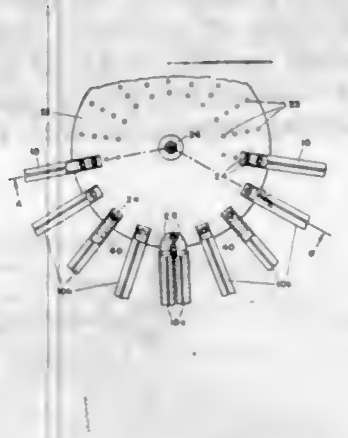
**3,475,767**
### SANITARY DISPOSABLE RECEIVER FOR LIQUID AND SOLID MATERIALS, ESPECIALLY HUMAN WASTES
**Gordon A. Friesen, Bethesda, Md., and Reavis C. Sproull, Richmond, Va., assignors to Gordon A. Friesen International, Inc., Washington, D.C., a corporation of the District of Columbia**
**Filed Dec. 22, 1966, Ser. No. 604,017**
**Int. Cl. E03d** *13/00;* **B65d** *31/02*
U.S. Cl. 4—110 33 Claims



A sanitary disposable receiver for liquid and/or solid materials is disclosed. The receiver is essentially a pouch of fibrous material coated with a substance which essentially waterproofs the same. The receiver is particularly useful in hospitals for collecting human waste and other undesirable waste materials.

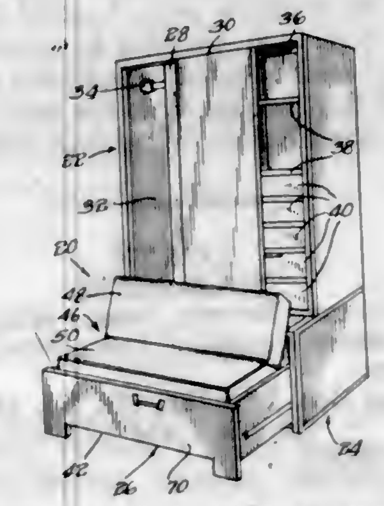
**3,475,768**
### WEATHERPROOF COVER FOR SWIMMING POOLS AND THE LIKE
**John Thomas Burton, 163 Martingrove Road, Toronto, Ontario, Canada**
**Filed Sept. 20, 1967, Ser. No. 669,039**
**Int. Cl. E04h** *3/19;* **E04b** *1/347, 1/32*
U.S. Cl. 4—172 9 Claims





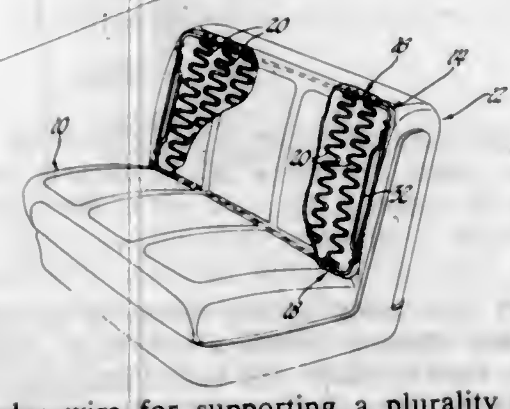
This specification discloses a weather-proof cover for so called "above-ground" swimming pools having an upstanding wall to which the cover may be attached. The cover incorporates doors for entry and exit and may be swung back around an arc of the wall to partially expose the pool to the open air, or may be closed up to permit use of the pool during less favourable weather.

**3,475,769**
### DORMITORY FURNITURE ENSEMBLE
**George S. Fasanella, Chicago Heights, Ill., assignor to The Englander Company, Inc., Chicago, Ill., a corporation of New York**
**Filed Mar. 7, 1967, Ser. No. 621,242**
**Int. Cl. A47b** *83/00, 85/00*
U.S. Cl. 5—2 7 Claims



A combined bed, bench, closet and dresser wherein the bed and bench are both concealed within a base compartment from which they may be selectively withdrawn for their functional use.

**3,475,770**
### BORDER WIRE ASSEMBLY
**Donald E. Gunlock, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Dec. 15, 1967, Ser. No. 691,007**
**Int. Cl. A47c** *7/28, 27/06*
U.S. Cl. 5—351 6 Claims

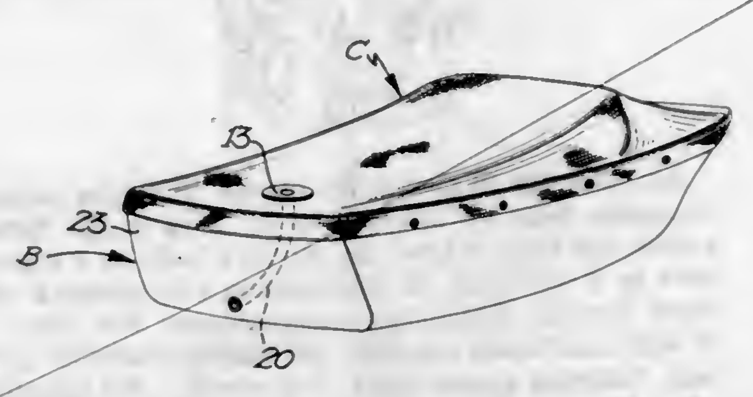


A border wire for supporting a plurality of sinuous spring members in a seat assembly. The border wire includes a pair of generally U-shaped wire elements, each of which has the legs thereof terminating with a hook-shaped portion. Each leg also has an offset portion formed intermediate the ends thereof and the arrangement is such that the hook-shaped portion on each wire element is looped through the offset portion formed in the legs of the other wire element so as to lock the wire elements together in the form of a rectangle.

**3,475,771**
### TREATMENT OF SYNTHETIC POLYAMIDE MATERIALS WITH A MIXTURE OF HALOGENATED ALKANES AND HALOGENATED MONOCARBOXYLIC ACIDS
**Richard G. Quynn, Summit, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed June 28, 1965, Ser. No. 467,729**
**Int. Cl. D06m** *3/30;* **D06p** *3/24*
U.S. Cl. 8—173 14 Claims

A method of improving the dye-receptivity properties of wet-formed, difficulty-meltable polyamide shaped polymers, such as fibers, particularly poly(polymethylene) terephthalamides, and isophthalamides and polyhexamethylene terephthalamides and isophthalamides, by treating the shaped-polymer with a mixture of a halogenated alkane and a hologenated monocarboxylic acid to swell the polymer but not dissolve it and subsequently removing mixture thereby improving the properties of the treated fiber.

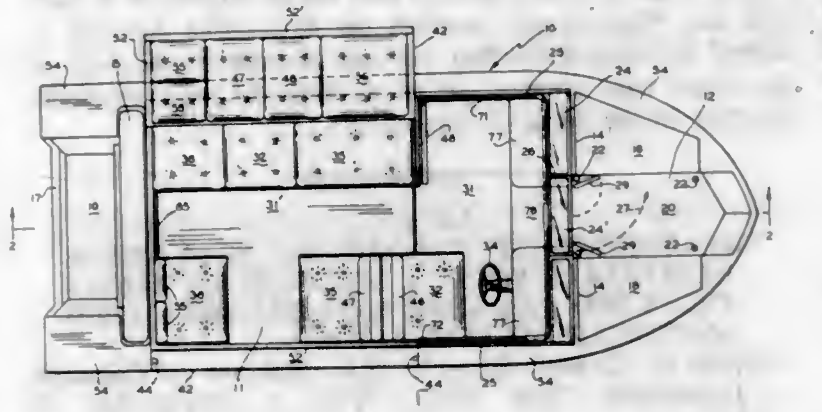
**3,475,772**
### DRAIN ATTACHMENT FOR FLEXIBLE COVER FOR BOATS
**Albert Lokken, 2400 N. Hamline Ave., St. Paul, Minn. 55113**
**Filed Feb. 13, 1968, Ser. No. 705,222**
**Int. Cl. B63b** *13/00, 17/00*
U.S. Cl. 9—1 3 Claims



A boat cover drain device including a fitting secured to a flexible boat cover and projecting through an opening in the cover. A flange and clamping element on the fitting positioned against the upper and lower surfaces of the flexible boat cover to releasably clamp the fitting to the cover. A flexible conduit connected to the fitting and to the conventional drain outlet in the transom of the boat to permit water to be drained therethrough from the upper surface of the cover.

**3,475,773**
### CONVERTIBLE BOAT HULL
**Daniel S. Codman, Jr., Utica, N.Y.**
**(132 North St., Apt. 3, Newtonville, Mass. 02160)**
**Filed May 9, 1968, Ser. No. 727,909**
**Int. Cl. B63b** *29/00*
U.S. Cl. 9—1 6 Claims

A trailable, normally open boat that can be converted into a cabin cruiser having four bunks. The bunks and other accessories that are used for the conversion normally are all folded into or stored within the hull of the boat, two of the bunks being folded into recesses in the hull sidewalls to form a part thereof. When not converted to a cruiser, the boat looks substantially like a conventional open runabout.



### 3,475,774

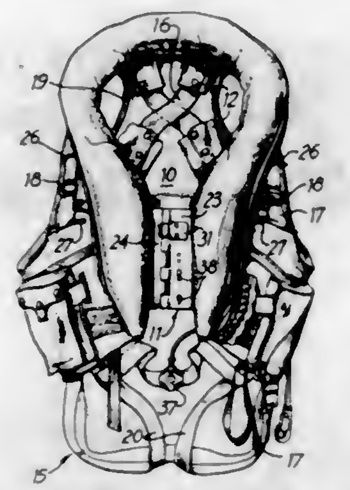
### INFLATABLE BODY-ATTACHMENTS FOR MARINE LIFESAVING

**James Mitchell Hawkins, Ashton-under-Lyne, England, assignor to Frankenstein Group Limited, a British company**

**Filed Feb. 14, 1968, Ser. No. 705,555**

**Int. Cl. B63c** *9/16;* **B64d** *17/32*

**U.S. Cl. 9—341** **2 Claims**



An inflatable likejacket for marine lifesaving having a buoyancy chamber designed to be worn in the form of a stole and located upon the wearer's body by a structure such as a waistcoat, in combination with personal parachute harness detachably mounted upon the inner side of said attachment structure and sharing therewith a common fastening means which also provides for adjustment of said harness. When the buoyancy chamber is associated with a waistcoat, the common fastening means may comprise metal plates connected to opposite edges of a medial front opening thereof and provided with self-locking slides for adjacent adjustment straps of said harness, the free edges of the two plates having rows of mutually-complementary formations adapted for engagement by a combined interdigitating and endwise sliding movement.

### 3,475,775

### PLASTIC BINDING AND APPARATUS FOR DISPENSING SAME

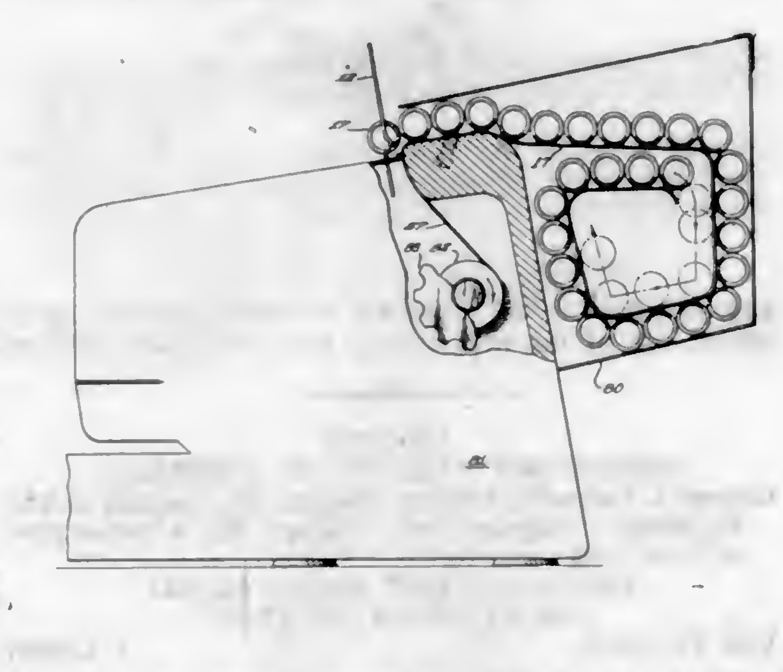
**Henry N. Staats, Deerfield, Ill., assignor to General Binding Corporation, Northbrook, Ill., a corporation of Delaware**

**Filed Mar. 20, 1967, Ser. No. 624,317**

**Int. Cl. B42c** *3/00;* **B65d** *83/00*

**U.S. Cl. 11—1** **5 Claims**

A novel binding component providing a combined supply package, or unit, of binding elements and improved dispensing means for cooperation with an improved binding machine to provide a high speed binding system. Conventional binding elements of the type having a backbone carrying a plurality of transverse curled fingers are releasably attached by their backbone to one or more flexible tapes and coiled or rolled up as thus attached with the axes of the binding elements parallel. This coil may be cut to a standard length, or number of bindings, and shipped as a coil to the ultimate user. A novel binding machine incorporates sequential detaping apparatus providing for the manual or semi-automatic sequential use of the coiled bindings, and their release from the tape one at a time in a properly aligned fashion in binding position on the machine.



### 3,475,776

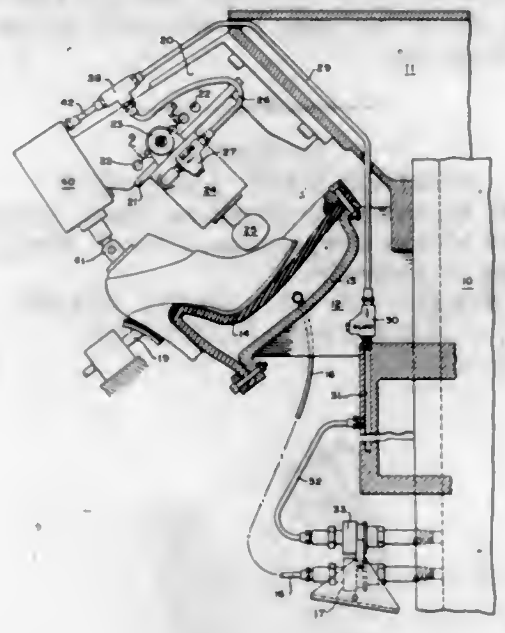
### SOLE PRESS

**Harold E. Marasco, Beverly, Mass., assignor to Marasco Shoe Machinery Company, Lynn, Mass., a corporation of Delaware**

**Filed Dec. 21, 1967, Ser. No. 692,387**

**Int. Cl. A43d** *89/00*

**U.S. Cl. 12—36.8** **6 Claims**



A turret sole press having relatively adjustable toe and heel end pressing cylinders with fluid pressure connections to each cylinders and valves admitting full pressure promptly to the heel and cylinder and less pressure thereafter to the toe end cylinder.

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### 3,475,777

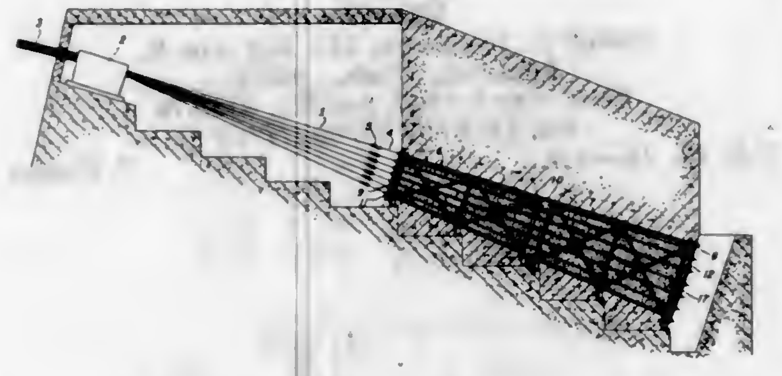
### ANCHORAGE FOR SUSPENSION BRIDGE MAIN CABLE AND THE LIKE

**John E. Robinson, Demarest, N.J., assignor to United States Steel Corporation, a corporation of Delaware**

**Filed Sept. 22, 1967, Ser. No. 669,746**

**Int. Cl. E01d** *11/00*

**U.S. Cl. 14—21** **9 Claims**



A method and apparatus for attaching the main tendons of suspended structures, such as suspension bridges and suspended roofs, to anchorage structures. In a typical application to a suspension bridge, a cage containing tubes, which are bore-sight aligned, from the rear, with the splay point of the main cable, is cast in a concrete anchorage. The tubes carry movable tension rods protruding from both ends, one end of each rod being flexibly attached to a tension component of the cable. Each rod carries a nut at its front and rear face. Sag adjustment is made at the rear of the anchorage, between a rod and its nut bearing on the rear face of the pier. Post tensioning is accomplished by stretching the rods between their front and rear nuts.

### 3,475,778

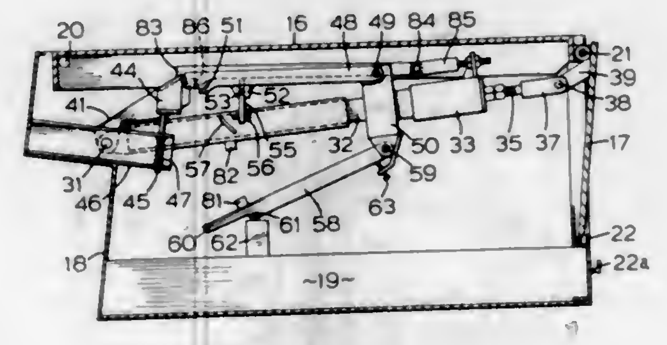
### DOCKBOARD

**John A. Merrick, Dundas, Ontario, and Adrian P. Hovestad, Burlington, Ontario, Canada, assignors to Service Steel & Engineering Limited, Hamilton, Ontario, Canada**

**Filed May 29, 1967, Ser. No. 642,089**

**Int. Cl. B65g** *11/14*

**U.S. Cl. 14—71** **32 Claims**



A new dockboard has a ramp assembly comprising a main plate pivoted to the dockboard frame, and a lip plate at the front of the main plate; means for automatically extending the lip plate comprise a latchable telescoping assembly disposed beneath the main plate, the telescoping assembly changing length as the main plate moves about its pivot, and the latch being operative during pivoting movement of the main plate in one direction to prevent telescoping of the assembly, so that it operates to extend the lip plate.

### 3,475,779

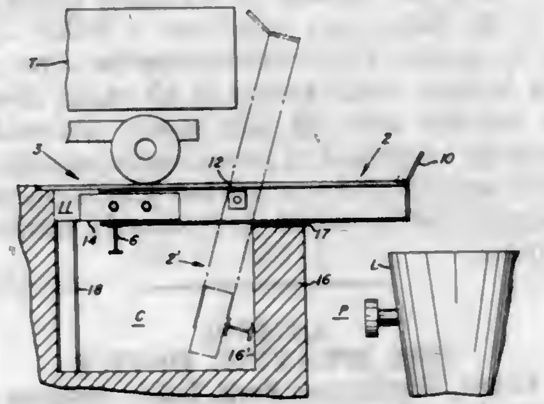
### CANTILEVER PLATFORM EXTENSION

**Robert L. Johnson, Calumet City, Ill., assignor to United States Steel Corporation, a corporation of Delaware**

**Filed Mar. 27, 1968, Ser. No. 716,603**

**Int. Cl. E01d** *15/08;* **B65g** *11/12*

**U.S. Cl. 14—71** **2 Claims**



A cantilever platform extension for extending the load-carrying area of a dock beyond the edge of the main portion of the dock platform. The platform extension is pivotally connected to the main portion of the dock platform and is weighted so that its outwardly extending load-carrying end tilts upwardly when there is no load placed on it.

### 3,475,780

### SHOE CLEANING AND POLISHING MACHINE

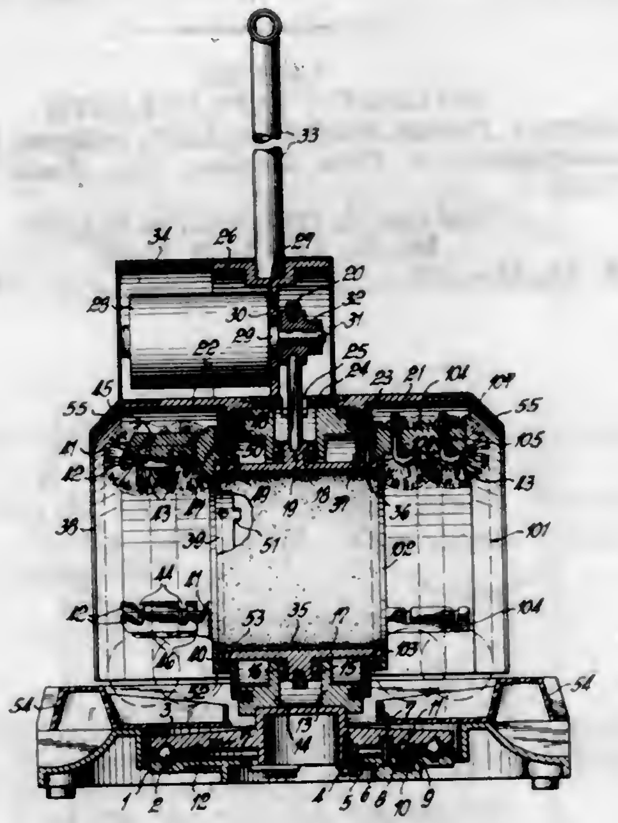
**Alfred Hettich and Fritz Schadlich, Echterdingen, Heinz Walz, Stuttgart-Nord, and Kurt Paule, Stuttgart-Oberturkheim, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany**

**Filed Jan. 23, 1968, Ser. No. 699,880**

**Claims priority, application Germany, Jan. 28, 1967, B 90,934**

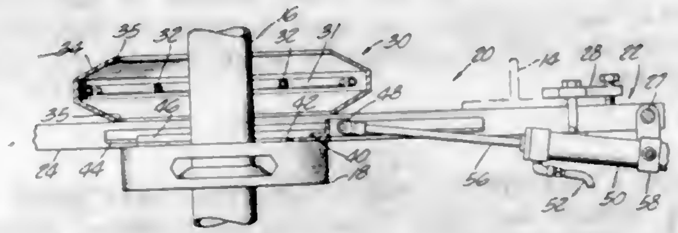
**Int. Cl. A47l** *23/02*

**U.S. Cl. 15—36** **31 Claims**



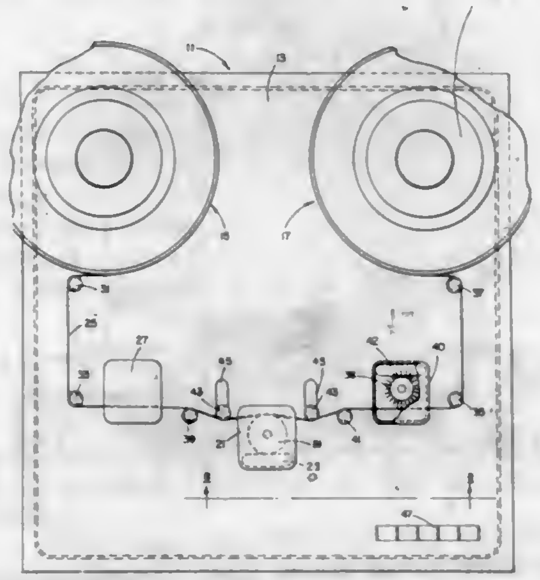
A floor-mounted motor-driven shoe cleaning and polishing machine comprises a sleeve-like brush holder which is rotatable about a horizontal axis and carries at its ends two detachable brush assemblies each of which includes one or more annular brushes having bristles extending radially inwardly toward as well as in parallelism with the axis of and away from the center of the brush holder. The latter is turnable with the motor back and forth about a vertical axis through an angle of 180 degrees and is surrounded by a system of shields and skirts which intercept flying impurities. A dirt collecting tray is releasably mounted on a base plate beneath each brush assembly. The motor can be mounted on a bracket above the brush holder or the latter may constitute a hollow cylindrical rotor of the motor. The brushes comprise cores of twisted wire and bristles which extend in all radial directions or at least radially inwardly and axially outwardly. Each brush may be assembled of two or more arcuate segments or sections and its core or cores are detachably secured to a ring-shaped carrier which is releasably coupled to the brush holder.

### 3,475,781
### PIPE SPRAYING DEVICE
**John C. Grant, Huntington Park, Calif., assignor to Byron Jackson, Inc., Long Beach, Calif., a corporation of Delaware**
**Filed Jan. 3, 1967, Ser. No. 606,973**
**Int. Cl. E21b** *33/03, 41/00*
**U.S. Cl. 15—210** **4 Claims**



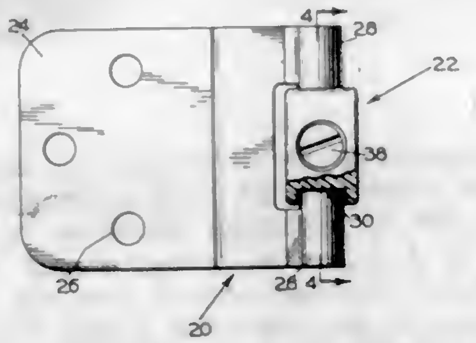
A device for spraying the surface of a pipe as the latter is drawn therethrough for the purpose of washing or applying protective coatings such as rust inhibitor to it, particularly oil well pipe as it is drawn from a well, the device including a retaining plate for supporting and positioning a pipe wiper for preliminarily cleaning the pipe prior to spraying, the plate being retractible by a lateral sliding movement to allow passage of the wiper.

### 3,475,782
### MAGNETIC TAPE CLEANER
**Anthony J. Teuber, Northridge, Calif., assignor, by mesne assignments, to Data Devices, Inc., Santa Monica, Calif.**
**Filed Dec. 4, 1967, Ser. No. 687,670**
**Int. Cl. A47l** *5/38, 15/00*
**U.S. Cl. 15—308** **6 Claims**



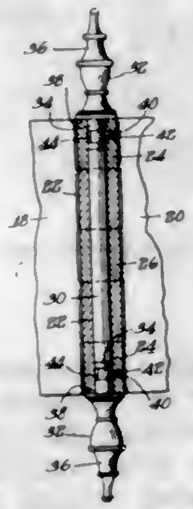
A magnetic tape cleaning device comprised of a cylindrical tube having a plurality of slots therein, such that the edges of the slots form cutting edges for cleaning a magnetic tape. The cylindrical tube is preferably driven counter to movement of magnetic tape past it, scraping material from the tape. Additionally, a vacuum line is provided to withdraw the particles cleaned from the tape away from the tape and the cleaning tube.

### 3,475,783
### HINGE
**Robert A. Jorgensen, 116 2nd Ave. S., Edmonds, Wash. 98020**
**Filed May 2, 1967, Ser. No. 635,576**
**Int. Cl. E05d** *15/00, 11/04*
**U.S. Cl. 16—128** **7 Claims**



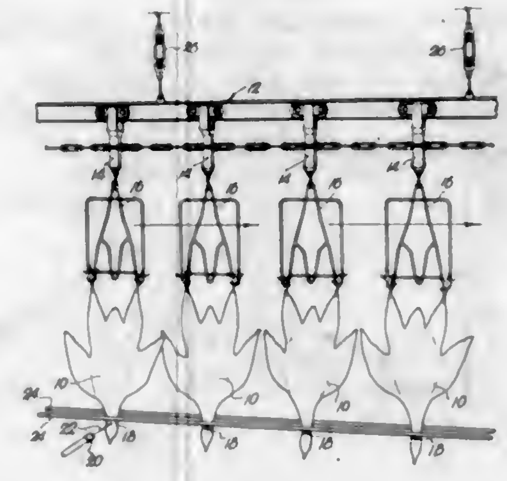
A hinge comprises a leaf part and a base part. The leaf part comprises a leaf and a pair of substantially aligned, spaced-apart hinge barrels. The base part comprises a body dimensioned for insertion in the space between the barrels and securing means for securing the base part to a structural member. Bearing-forming means are positioned one on each side of the base and arranged for forming bearing connections between the base and the adjacent hinge barrels.

### 3,475,784
### FLOATING PIN ARRANGEMENT FOR A BUTT HINGE
**Robert E. Foltz, Sterling, Ill., assignor to Lawrence Brothers, Inc., Sterling, Ill., a corporation of Illinois**
**Continuation of application Ser. No. 506,511, Nov. 5, 1965. This application June 28, 1968, Ser. No. 750,673**
**Int. Cl. E05d** *5/12*
**U.S. Cl. 16—169** **6 Claims**



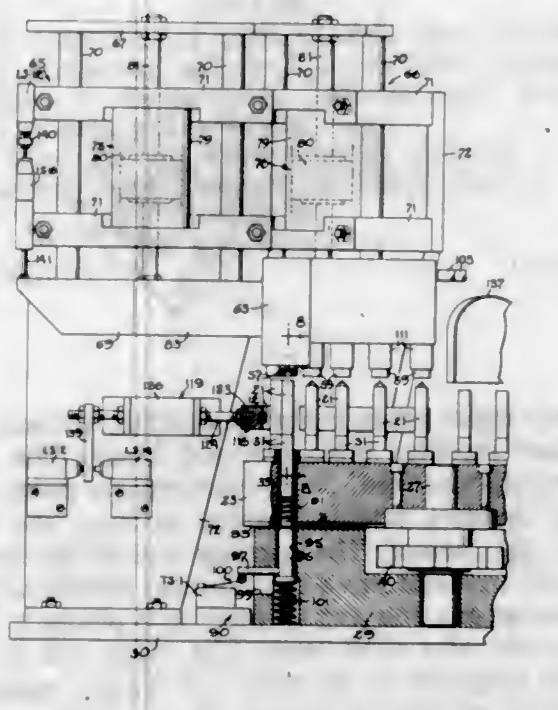
A butt hinge having a freely rotatable hinge pin positively axially located by separate end elements individually mounted in the end knuckles.

### 3,475,785
### METHOD FOR KILLING POULTRY
**William C. Woods, Forest, Miss., assignor, by mesne assignments, to Gordon Johnson Company, Kansas City, Mo., a corporation of Missouri**
**Filed July 21, 1967, Ser. No. 654,988**
**Int. Cl. A22b** *3/08;* **A22c** *21/00*
**U.S. Cl. 17—52** **13 Claims**



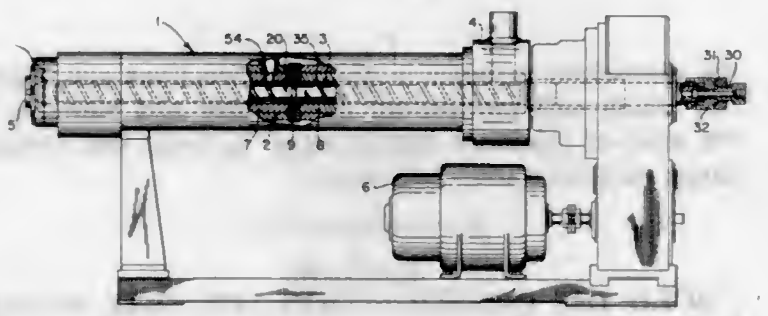
This application discloses a method of killing poultry consisting essentially of cutting the neck with a thin, high-pressure jet of water or other fluid. This method is simple, economical, and permits high-speed killing of birds suspended from moving conveyor lines moving said birds to scalding tanks preparatory to feather removal and other process steps, and has the general advantages of providing complete severance of the jugular and other major blood vessels of the neck, thereby providing rapid thorough bleeding and a more uniform "dying time," while at the same time avoiding severance of the trachea or "windpipe," and cutting or knicking of the spinal column, both of which occurrences have various undesirable results.

### 3,475,786
### TUBE CLOSING MACHINE
**Ernest A. Pearson, Rockford, Ill., assignor, by mesne assignments, to Medical Supply Company, Rockford, Ill., a corporation of Missouri**
**Filed Dec. 30, 1966, Ser. No. 613,379**
**Int. Cl. B29c** *1/00*
**U.S. Cl. 18—5** **10 Claims**



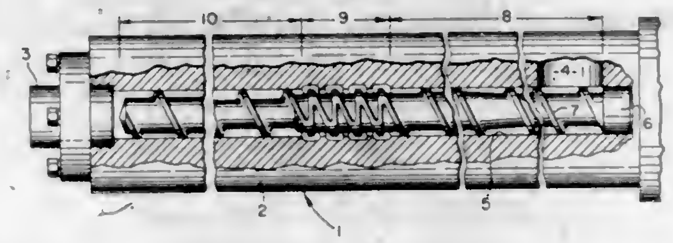
The ends of a group of plastic tubes are shaped and sealed closed by heated forming dies which are lowered over and held in contact with the tube ends until the tubes soften and move upwardly to fill the die cavities. The upward movement of the tubes is sensed by limit switches which produce a signal causing retraction of the dies when all of the tubes in the group have moved upwardly. Clamps automatically move into engagement with the sides of the tubes just before retraction of the dies to prevent the tubes from sticking to and being pulled upwardly with the dies.

### 3,475,787
### EXTRUDER
**Eugene E. Heston, Akron, Ohio, assignor to NRM Corporation, Akron, Ohio, a corporation of Ohio**
**Filed Mar. 6, 1968, Ser. No. 711,021**
**Int. Cl. B29f** *3/02*
**U.S. Cl. 18—12** **15 Claims**



An extruder having plural longitudinal flutes or grooves in a section of the cylinder barrel each receiving a portion of the material being fed by the feed screw flight to achieve mixing of the material.

### 3,475,788
### EXTRUDER
**Eugene E. Heston, Akron, Ohio, assignor to NRM Corporation, Akron, Ohio, a corporation of Ohio**
**Filed Mar. 28, 1968, Ser. No. 716,871**
**Int. Cl. B29f** *3/02*
**U.S. Cl. 18—12** **14 Claims**

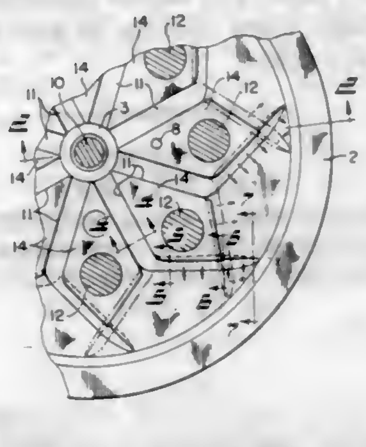


Extruder having a mixing section whereat the body of material being worked upon is subjected to thorough mixing by shearing action and material transfer between screw and cylinder channels but without severe crushing or masticating action.

### 3,475,789
### BLOWN FILM DIES
**John F. Stroup, Cuyahoga Falls, and Lloyd B. Sponaugle, Akron, Ohio, assignors to NRM Corporation, Akron, Ohio, a corporation of Ohio**
**Filed Jan. 16, 1968, Ser. No. 698,327**
**Int. Cl. B29d** *23/04*
**U.S. Cl. 18—14** **9 Claims**

Blown film die characterized in that mating die parts define therebetween an inlet port through which plasticized material as from an extruder is introduced into the die; an outlet port in the form of an annular slit from which the plastic material emerges in tubular form;

and intervening channels between said ports through which the plastic material flows in the form of separate streams which are then rejoined upstream of the outlet port, the intervening channels being disposed to direct the plasticized material in different directions and velocities which will produce an overlapping and blending in the area of rejoinder thus eliminating weld line streaks, gauge variations and weaknesses.



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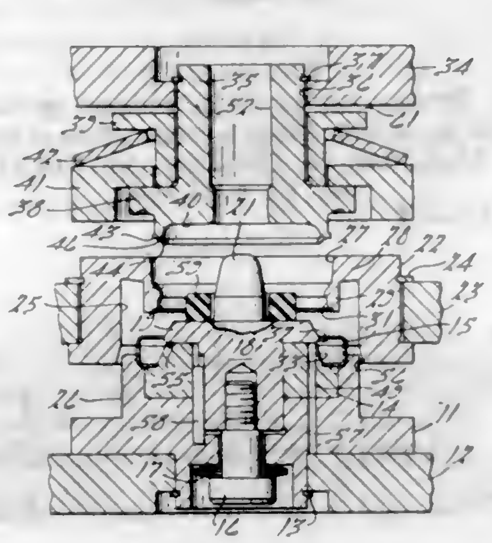
### 3,475,790
### MOLD DIE CONSTRUCTION FOR SEAL RINGS

**Jack A. Bush, Birmingham, and Stanley D. Shaull, Orchard Lake, Mich., assignors, by mesne assignments, to Microdot Inc., New York, N.Y., a corporation of California**
**Filed Nov. 24, 1967, Ser. No. 685,440**
**Int. Cl. B29d** *3/00*
**U.S. Cl. 18—36** **9 Claims**



The disclosure pertains to apparatus for molding the elastomeric sealing portion of a fluid seal while bonding it to a metal case.

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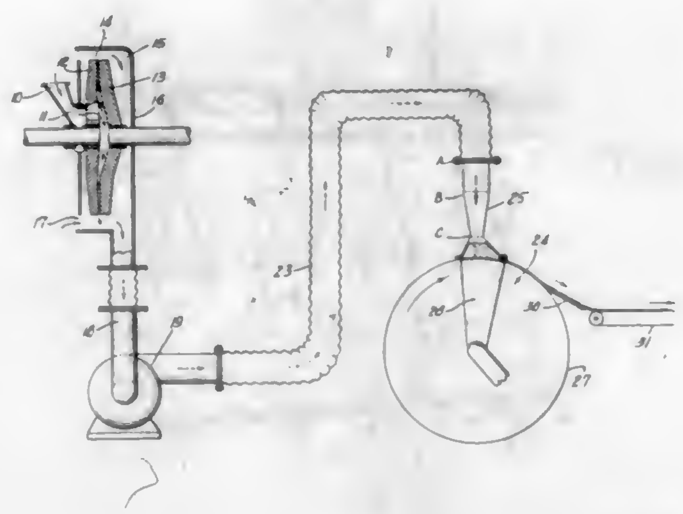
### 3,475,791
### METHOD FOR SEPARATING, CONVEYING AND COLLECTING WOODPULP FIBERS AS A UNIFORM LAYER AND APPARATUS FOR CARRYING OUT THE SAME

**Charles A. Brewster, North Brunswick, and Charles H. Plummer, Princeton, N.J., assignors to Johnson & Johnson, a corporation of New Jersey**
**Filed May 8, 1967, Ser. No. 636,742**
**Int. Cl. D01g** *25/00, 27/00*
**U.S. Cl. 19—156.3** **17 Claims**

Method and apparatus for individualizing woodpulp fibers, conveying said individualized fibers without agglomeration and collecting said individual fibers as a uniform layer of loose fibrous material. The method comprises feeding the fiber material to be separated to the center of a pair of rotatable discs and applying forces to separate the fibers. Forcing the separated fibers out the edges of the discs, continuously and substantially immediately conveying said individualized fibers at substantially right angles to the edges of the discs and conveying the fibers away from said discs in turbulent form. Collecting the fibers on a surface while removing the air from said fibers without disrupting the flow of fibers or their formation on the collecting means.



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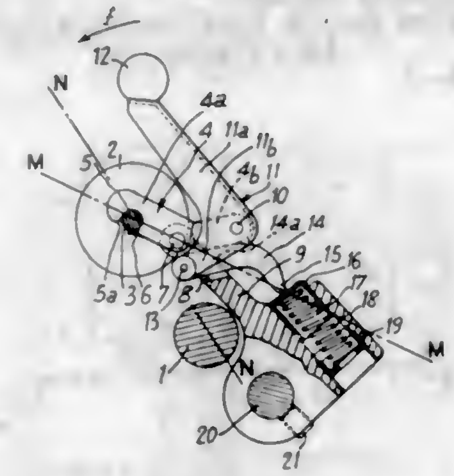
### 3,475,792
### TOP ROLLER ARRANGEMENT IN DRAFTING SYSTEMS OF TEXTILE MACHINES

**Jean Frederic Herubel, Guebwiller, France, assignor to N. Schlumberger & Cie, Guebwiller, Haut-Rhin, France, a French company**
**Filed Nov. 3, 1967, Ser. No. 680,415**
**Claims priority, application France, Nov. 7, 1966, 82,731**
**Int. Cl. D01h** *5/50, 5/74*
**U.S. Cl. 19—267** **7 Claims**



A top roller arrangement in drafting systems of textile machines includes three elbowed levers. The first lever is pivotally mounted, at an intermediate point, on a stationary support, and is adapted to carry the top roller at one end thereof. The opposite end of the first lever is pivotally connected to a second lever having an operating member at one end and its other end pivotally connected to one end of a third lever. The other end of the third lever is subjected to the action of biasing means bearing against the stationary support. The assembly constitutes a toggle mechanism serving to bring the top roller, relative to the feed roller, into three stable positions. In the first position, the top roller is withdrawn from the feed roller, in the second position, the top roller is applied to the feed roller under a relatively low pressure and, in the third position, the top roller is applied to the feed roller under a relatively high pressure.

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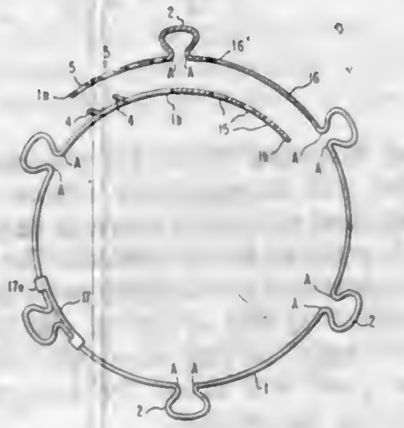
### 3,475,793
### SPRING TENSIONED BAND CLAMPING DEVICE

**Hans Oetiker, 21 Oberdorfstrasse, Postfach 93, Horgen, Zurich, Switzerland**
**Filed Oct. 23, 1965, Ser. No. 503,541**
**Claims priority, application Switzerland, June 3, 1965, 8,067/65**
**Int. Cl. F16l** *33/12;* **B25b** *27/00*
**U.S. Cl. 24—20** **21 Claims**



A clamp structure for use as a hose clamp or the like which is capable of withstanding relatively high pressures and which is formed by a band and at least one tensional spring element made of a material having a high elastic limit so as to preserve the clamping pressure which might otherwise lessen due to aging, etc.; several tensional spring elements may also be provided which are distributed over the circumference of the band. The tensional spring elements may be in the form of undulated springs or may be in the form of car-shaped folds having radially outwardly projecting band portions which pass over into the circumferentially extending band portions through arcuate portions. The ends of the band are provided with a closing mechanism permitting a preliminary step-wise fitting of the band to the diametric dimensions of the hose or other object to be clamped.

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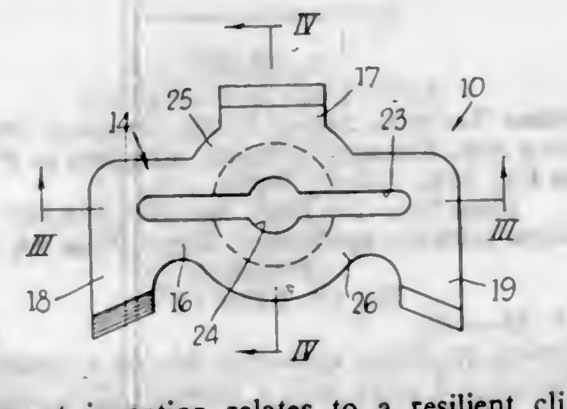
### 3,475,794
### STUD MOUNTED MOULDING FASTENER

**Clifford Alexander Seckerson, Iver Heath, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware**
**Filed Feb. 28, 1968, Ser. No. 708,914**
**Claims priority, application Great Britain, Mar. 3, 1967, 10,305/67**
**Int. Cl. F16b** *5/12*
**U.S. Cl. 24—73** **5 Claims**



The present invention relates to a resilient clip for attaching a moulding to a support surface which is provided with a projecting headed stud. The clip has a body provided with means for clamping the moulding to the support, a tapered bore extending through the body and a slot which passes through the bore and divides the body into two portions which are joined at the ends of the body and which can be deflected when the head of the stud is forced into the tapered bore thereby enabling the head of the stud to snap through the bore and clamp the clip against the support.

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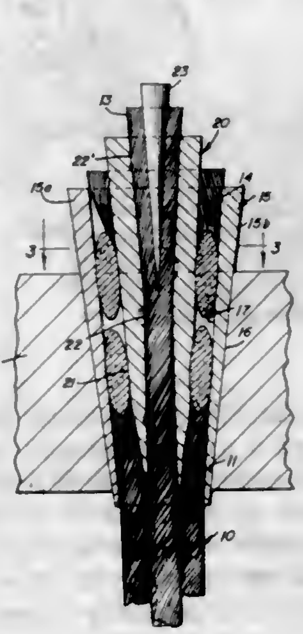
### 3,475,795
### CABLE FASTENING MEANS

**William W. Youngblood, 547 E. Fort St., Farmington, Ill. 61531**
**Filed May 5, 1967, Ser. No. 636,393**
**Int. Cl. F16g** *11/05*
**U.S. Cl. 24—122.6** **4 Claims**



Means for fastening the end portion of a cable in a frustoconical socket, consisting of a frusto-conical liner inserted in the socket and receiving the cable, a tapered hollow locking plug passed over the cable core and between the core and the surrounding strands so that the strands are wedged between the outer surface of the plug and the inner surface of the liner, and a tapered locking pin inserted in the cable core for wedging the same inside the locking plug.

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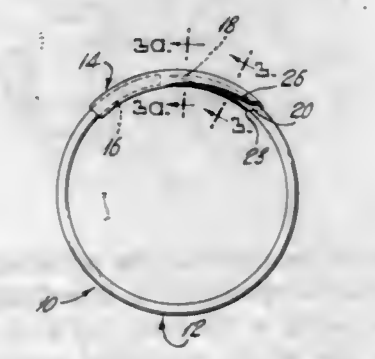
### 3,475,796
### SAFETY PIN

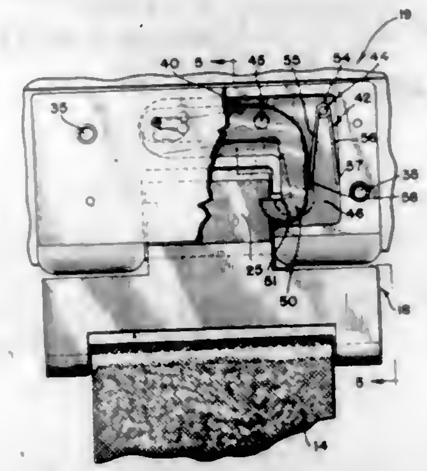
**Marie Petti, 89—53 240th St., Bellerose, N.Y. 11426**
**Filed May 24, 1968, Ser. No. 731,984**
**Int. Cl. A44b** *9/12*
**U.S. Cl. 24—156** **5 Claims**



A safety pin having a resilient shank with one end pointed and a guard at the other end, in which the pointed end of the shank is releasably retained in a slot in the guard whereby the thusly closed pin defines a closed figure lying in a plane and the shank has imparted thereto a permanent set so that the pointed end moves to a position outside the plane when it is released from the slot to open the pin.

### 3,475,797
### BELT BUCKLE ASSEMBLY

**Ben W. Rau, 320 N. Deere Park W.,**
**Highland Park, Ill. 60035**
**Filed Apr. 16, 1968, Ser. No. 721,642**
**Int. Cl. A44b** *11/06*
**U.S. Cl. 24—230** **10 Claims**

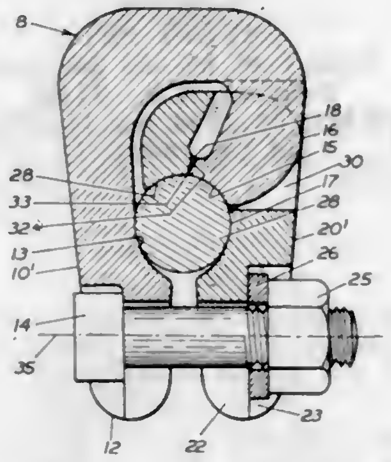


A belt buckle assembly is disclosed including a lock assembly portion and a tongue assembly in which an unnatural motion of a release button is required to unlock the same. The latch is J-shaped in configuration, and the release button shank operates through a pair of parallel compound motion slots which flank the reversely oriented slot in the latch assembly thereby insuring the compound motion.

The buckle assembly is shown as employed on a clipboard for use by an aviator but also can be employed with safety belts, shoulder harnesses, and the like.

### 3,475,798
### POLISH ROD GRIP CLAMP

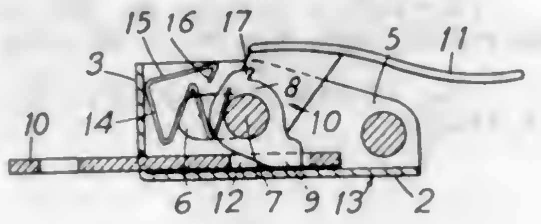
**Charles D. Crickmer, 12923 Memorial Drive,**
**Houston, Tex. 77024**
**Filed Dec. 8, 1967, Ser. No. 689,172**
**Int. Cl. F16b** *2/10*
**U.S. Cl. 24—249** **10 Claims**



A grip clamp to be used on the polished surface of an elongated member comprising two interfitting clamp members engageable along a fulcrum line at or very near the surface on one side of the elongated member to provide maximum friction force on the polished surface for a given clamping force applied to portions of the clamp members extending beyond the other side of the elongated member.

### 3,475,799
### AUTOMATIC RELEASE SEPARABLE FASTENER

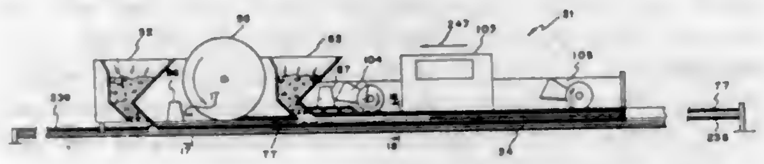
**Richard Marchfelder, 159-A Lake Ave.,**
**Greenwich, Conn. 06830**
**Filed Dec. 22, 1967. Ser. No. 693,023**
**Claims priority, application Great Britain, Dec. 30, 1966,**
**58,335/66**
**Int. Cl. A44b** *19/26, 19/00*
**U.S. Cl. 24—230** **4 Claims**



A safety belt fastening device for vehicular passengers is provided that will automatically release after impact. This enables accident victims to move or be removed from a vehicle that is engaged in an accident. The device makes use of a cam surface and an engaging pawl that move relative to each othed against a spring bias into engaging relationship on impact so that when the force of impact terminates, the pawl will cause the cam to rotate and release the latching mechanism.

### 3,475,800
### APPARATUS FOR FORMING CONTINUOUS PRE-STRESSED CONCRETE SLABS

**Cordis W. Jones, Englewood, Colo.**
**(P.O. Box 1386, Salina, Kans. 67401)**
**Filed Oct. 17, 1966, Ser. No. 587,041**
**Int. Cl. B28b** *7/18, 23/06*
**U.S. Cl. 25—41** **7 Claims**

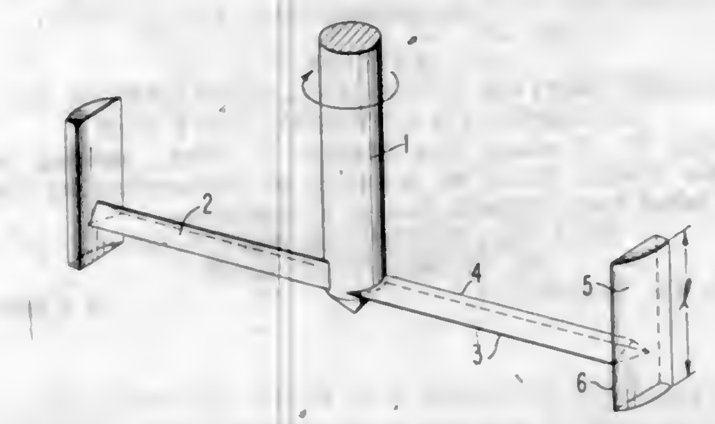


This disclosure relates to a machine and method of producing hollow cored concrete slabs in a continuous operation from an initial concrete material having a slump test in the range of 0.5 to 4.0 per ASTM testing. More particularly, this invention is an apparatus being self-propelled including a support frame having elongated upright side walls with tubular members therebetween to continuously form, vibrate, trowel, the concrete material so as to extrude an elongated pre-stressed reinforced cored concrete slab.

### 3,475,801
### CUTTING APPARATUS

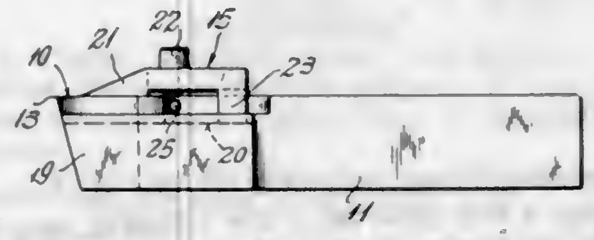
**Yoshimasa Tsunoda, Hideo Iwata, Tsutomu Okada, and Kotaro Aso, Kanagawa, Japan, assignors to Fuji Photo Film Co., Ltd., Tokyo, Japan**
**Filed June 24, 1968, Ser. No. 739,549**
**Claims priority, application Japan, June 23, 1967,**
**42/40,244**
**Int. Cl. B28b** *11/14*
**U.S. Cl. 25—105** **6 Claims**

A cutting or slicing apparatus having a rotatable shaft movable up and down with a material filled tank or container, an arm fixed to the shaft having at least two edges, one of which faces upward and the other facing in the direction of rotation, and a knife with a sharp edge facing in the direction of rotation. Gel like material within the tank is cut into the desired portions by the downward motion of the shaft into the material during rotation and the upward movement of the shaft after rotation is stopped and the shaft has reached the bottom of the tank.



### 3,475,802
### DOUBLE-ENDED CUTTING INSERT AND SHANK THEREFOR

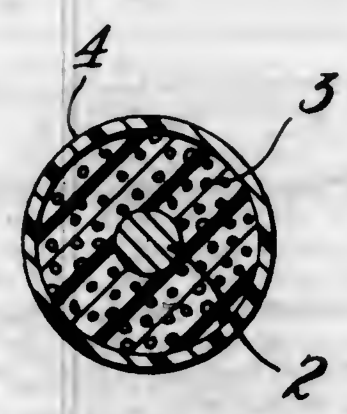
**John P. Kollar, Trumbull, Conn., assignor of one-half to Thomas J. Kollar, Milford, Conn.**
**Filed Feb. 9, 1967, Ser. No. 614,982**
**Int. Cl. B26d** *1/00*
**U.S. Cl. 29—96** **3 Claims**



An elongate double-ended cutting carbide insert having concave surfaces on opposite sides made from a blank cast to have both unfinished side surfaces sloping inwardly from both cutting tips, each side surface of the blank being ground with a circular grinding wheel having a radius to produce in one continuous grinding operation a concave chip clearance surface extending in a continuous arc from the cutting tip at one end of the blank to that at the other end.

### 3,475,803
### ROLLER FOR APPLYING PAINT, INK AND THE LIKE

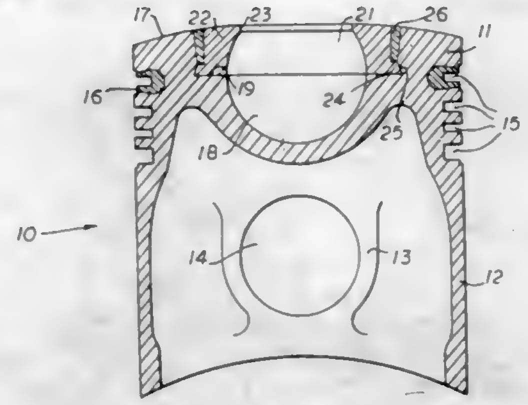
**Edward D. Hill, 11212 Edgewater Drive,**
**Cleveland, Ohio 44102**
**Filed Aug. 27, 1965, Ser. No. 483,263**
**Int. Cl. B21b** *31/08;* **B41f** *31/14*
**U.S. Cl. 29—132** **13 Claims**



A roller for applying paint, ink and the like having a substantially central shaft, a surrounding layer of a cellular material and an outer surface of a polyurethane which is the reaction product of a polyethylene glycol, a polyol cross-linking agent and an isocyanate. The cellular material may be a flexible polyurethane foam, cellular gelatin or similar materials. The polyurethane which forms the outer surface of the roller preferably has a hardness of at least approximately 45 durometers.

### 3,475,804
### INTERNAL COMBUSTION ENGINE PISTON WITH PRE-STRESSED INSERT

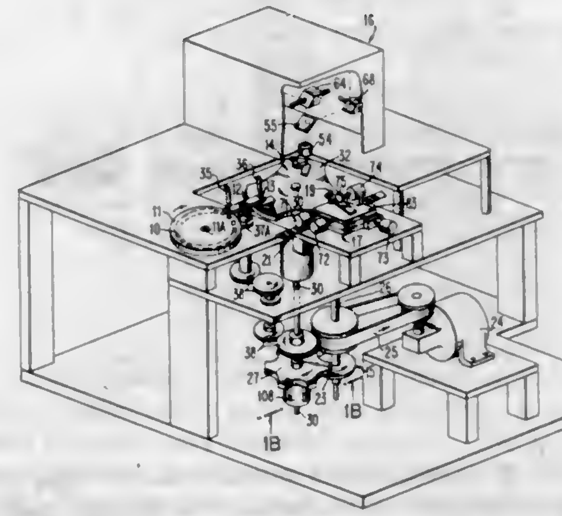
**Eugene J. Geiger, Dearborn, Mich., and Dale H. Breen, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware**
**Original application Oct. 31, 1966, Ser. No. 590,660, now Patent No. 3,402,644, dated Sept. 24, 1968. Divided and this application Apr. 19, 1968, Ser. No. 722,752**
**Int. Cl. B23p** *15/10*
**U.S. Cl. 29—156.5** **6 Claims**



An internal combustion engine piston construction of the open chamber type wherein a combustion chamber cavity is provided in the head of the piston which cavity opens to the piston face and is partially defined by an annular insert at the combustion chamber opening. The annular insert is prestressed in compression by means of an annular ring encircling the same and the coefficient of expansion of the material of which the annular ring is made is greater than the coefficient expansion of the material of which the annular insert is made and is also equal to or less than the coefficient of expansion of the material of which the piston body proper is made.

### 3,475,805
### APPARATUS FOR POSITIONING ARTICLES ON SUBSTRATES

**Hans R. Rottmann, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed June 26, 1967, Ser. No. 648,704**
**Int. Cl. B23p** *19/04*
**U.S. Cl. 29—203** **33 Claims**



Apparatus for positioning articles, particularly small articles such as semiconductor chips on substrates in preselected translational and rotary orientation. Conveying means receive the article and convey it past sensing means to placement means which transfer the article to the substrate. The sensing means determine the deviation in the article orientation from the preselected orientation and generate a signal indicating this deviation to positioning means which act on the placement means during the transfer of the sensed article to bring the article into the preselected orientation prior to the placement of the article on the substrate.

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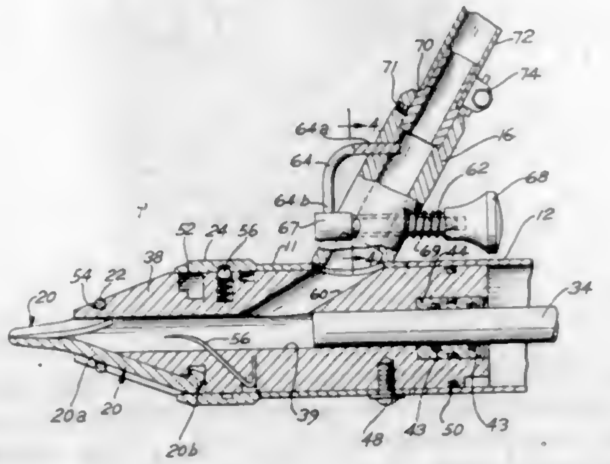
### 3,475,806
## TIRE STUD GUN

**Donald R. Center, Maineville, Ohio, assignor, by mesne assignments, to Saraband Properties, Inc., a corporation of Delaware**
**Filed Aug. 29, 1967, Ser. No. 664,062**
**Int. Cl. B23p** *19/04;* **B23q** *7/10*
**U.S. Cl. 29—212** **4 Claims**



A tire stud gun for inserting tire studs head-first into an opening in a tire tread, such gun including manually actuated plunger means mounted externally on the housing means closely adjacent to a hand grip thereon for controlling the feed of studs one at a time into the axial feed bore in the tire stud gun.

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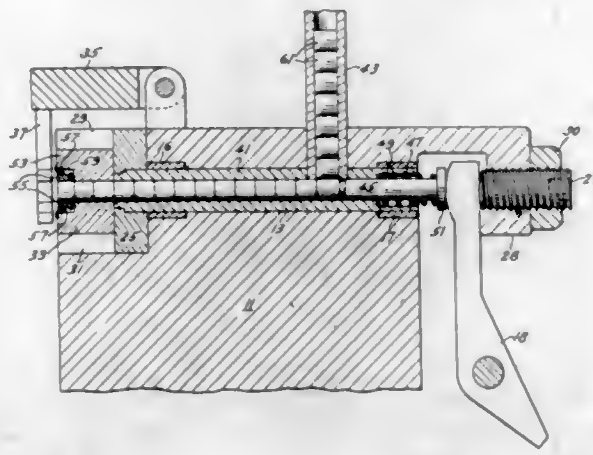
### 3,475,807
## CONVERTIBLE MACHINE UNIT AND METHOD OF CONVERTING SAME

**Warren J. Wise, Myerstown, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware**
**Filed Dec. 19, 1966, Ser. No. 602,896**
**Int. Cl. B23q** *7/10;* **B23p** *19/00*
**U.S. Cl. 29—400** **6 Claims**



A multiple working station punch and die type metalworking machine convertible from a rod feeding operation to a precut blank feeding operation by substituting at one working station a short knockout rod for the regular knockout rod and mounting a blank magazine to feed precut blanks into and through the vacated portion of the knockout orifice to blank retarders mounted in place of the original die. The station can be easily reconverted.

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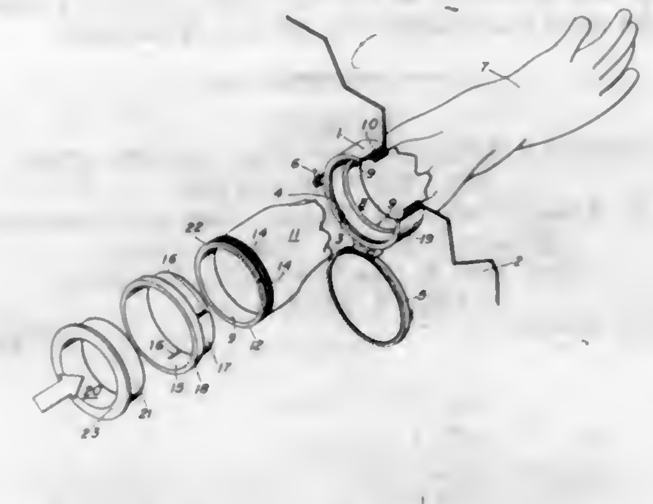
### 3,475,808
## METHOD OF CHANGING GLOVES IN A CONTROLLED ENVIRONMENT BOX

**Joseph W. Woolsey, Los Alamos, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Mar. 9, 1967, Ser. No. 623,181**
**Int. Cl. B23p** *7/00, 19/02*
**U.S. Cl. 29—401** **1 Claim**



A method of changing gloves in a box which comprises mounting a new glove on a new mounting ring, loosening the set screws on the old mounting ring, inserting the new glove inside the old glove, inserting a guide ring aligned so that the set screws of the new mounting ring are positioned in grooves of the guide ring, exerting force on a push ring placed inside the guide ring and against the old glove ring so that the old glove and mounting ring fall into the box, removing the guide ring and push ring, and tightening the set screw in the new mounting ring.

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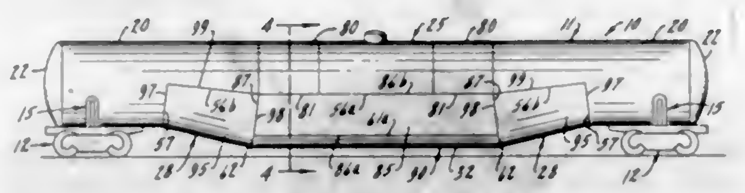
### 3,475,809
## METHOD OF EXPANDING A RAILWAY TANK CAR

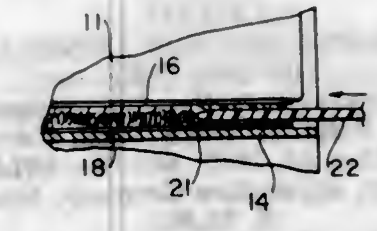
**Fred Brown, Chicago, Ill., assignor, by mesne assignments, to Union Tank Car Company, Chicago, Ill., a corporation of Delaware**
**Filed Aug. 1, 1967, Ser. No. 657,542**
**Int. Cl. B23p** *17/00*
**U.S. Cl. 29—412** **5 Claims**



A method of expanding a circular cylindrical tank car into a double truncated cylinder type car. A segment is cut from the bottom of the tank, combined with segments of a cylinder, and welded in place to form a central tank section having a double truncated cylinder configuration. Segments of a cylinder are then introduced to transition from the remaining cylindrical sections to the central section.

### 3,475,810
## SEPARATION OF RIGID MEMBERS JOINED BY HOOK AND LOOP

**Jack K. Mates, Scarsdale, N.Y., assignor to American Velcro, Inc., a corporation of New Hampshire**
**Filed Jan. 12, 1967, Ser. No. 608,875**
**Int. Cl. B23p** *19/02;* **B25b** *27/00*
**U.S. Cl. 29—427** **7 Claims**



This disclosure relates to a method of separating rigid members joined together at an interface by hook and loop fasteners by displacing the hook and loop fasteners out of their interfacial plane of engagement by moving a member through the interfacial plane and forcing the hook and loop members out of and essentially normal to the interfacial plane to progressively separate the hook and loop fasteners, and by then maintaining the fasteners out of contact with one another by inserting a barrier between the separated hook and loop fasteners. Also disclosed is an instrument having a beveled leading edge and a flat elongated separator portion for separating rigid members joined by hook and loop fasteners.

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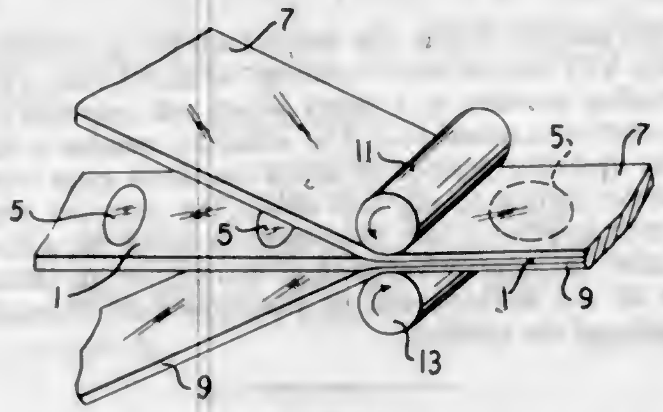
### 3,475,811
## CLAD METAL

**John F. Clarke, Attleboro, Mass., and Brian C. Coad, Fairfield, Worcester, England, assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**
**Filed Dec. 29, 1966, Ser. No. 605,836**
**Int. Cl. B23k** *31/02;* **B21b** *3/00*
**U.S. Cl. 29—472.3** **8 Claims**



A strip of metal, in which are foreshortened holes infilled with foreshortened shapes of a different metal and of thickness equal to that of the strip, is sandwiched between two strips of metal and then solid-phase, roll-bonded therebetween with a reduction in thickness of the resulting composite and conversion of the foreshortened shapes to desired shape.

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### 3,475,812
## METHOD OF PRODUCING METAL LAMINATE COMPOSITES

**George E. Kennedy, Churchill Borough, and Samuel J. Manganello, Penn Hills Township, Allegheny County, Pa., assignors to United States Steel Corporation, a corporation of Delaware**
**No Drawing. Filed Sept. 16, 1966, Ser. No. 579,829**
**Int. Cl. B23k** *31/02*
**U.S. Cl. 29—472.3** **8 Claims**

A method of making a composite of steel laminates wherein the bonding surfaces of the laminates are cleaned, assembled in a sandwich-like assembly, and the laminate interfaces evacuated to a pressure of less than 150 microns. The assembly is then hot rolled at a temperature sufficient to cause metallurgical bonding and then strengthening the bond by heating the laminate to a temperature of from 2000 to 2400° F. for a period of at least 45 minutes.

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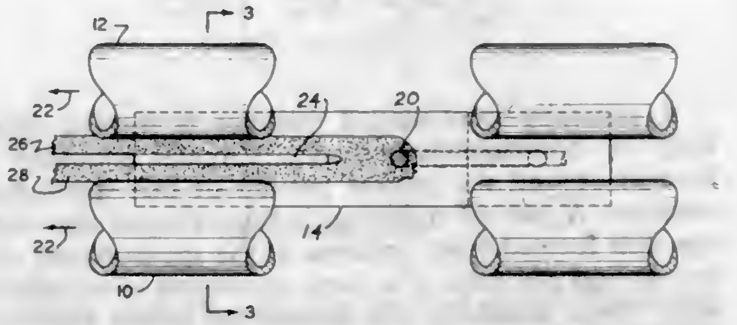
### 3,475,813
## WELDING PROCESS INVOLVING POST WELD FORMATION OF MOLTEN POOL

**Richard L. Fisher, Jr., and James L. McLain, Chattanooga, Tenn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware**
**Filed Dec. 28, 1966, Ser. No. 605,395**
**Int. Cl. B23k** *31/02, 29/00*
**U.S. Cl. 29—480** **7 Claims**



A welding process wherein the molten weld metal is deposited so that it engages the workpiece or workpieces, for example, a pair of spaced tubes. The molten weld metal as it is deposited is supported upon a suitable support and chilling bar. The weld progresses along the workpiece or workpieces and while the weld metal is in the molten condition, it is moved to a cooled forming surface where the configuration of the molten weld metal is changed to a desired shape and it is held in this shape until solidified.

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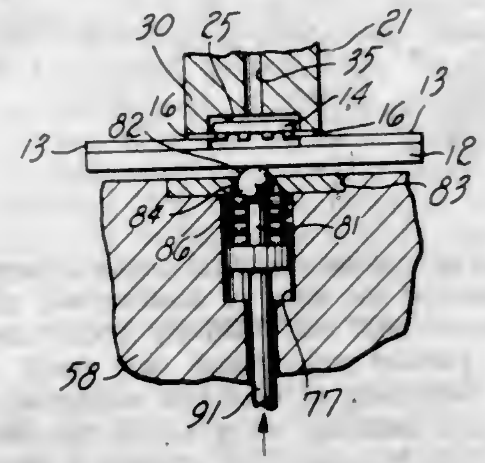
### 3,475,814
## BONDING A BEAM LEADED DEVICE TO A SUBSTRATE

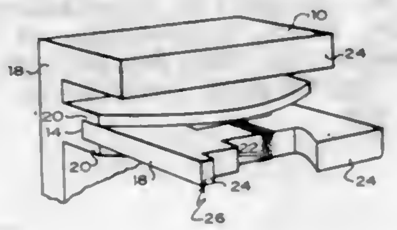
**Joseph A. Santangini, Bethlehem, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Original application June 15, 1967, Ser. No. 646,325, now Patent No. 3,442,432, dated May 6, 1969. Divided and this application Aug. 26, 1968, Ser. No. 774,554**
**Int. Cl. B23k** *31/02;* **B01j** *17/00*
**U.S. Cl. 29—589** **3 Claims**



In simultaneously bonding the leads of a beam-leaded device to conductive areas on a substrate, a bonding tool applies pressure and bonding energy to the leads. A movable ball located within a bore formed in a base which initially supports the substrate is raised into engagement with the substrate to lift and pivotally support the substrate above the base surface in equilibrium position where the bonding forces applied to each lead are equal.

### 3,475,815
### METHOD OF MAKING AN ELECTROMAGNETIC TRANSDUCER

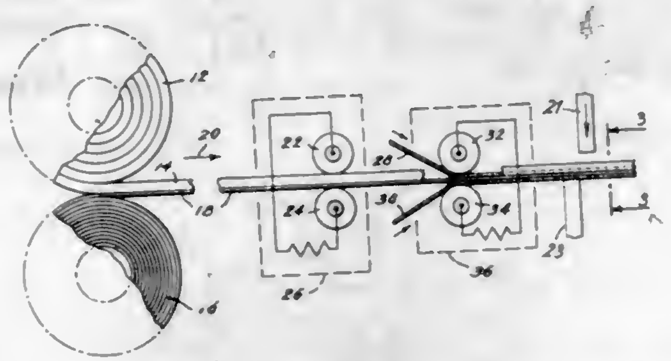
**William I. Girdner, Portola Valley, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California**
**Original application June 14, 1965, Ser. No. 463,496, now Patent No. 3,404,242, dated Oct. 1, 1968. Divided and this application May 13, 1968, Ser. No. 728,435**
**Int. Cl. H01f *7/06;* G11b *5/42***
**U.S. Cl. 29—603** **11 Claims**



A generally-spool-shaped member is formed from a body of nonmagnetic material. Circular shoulders are formed around the central portion of this spool-shaped member. A pair of matching bracket-shaped side frames are then formed from portions of the spool-shaped member on opposite sides of a plane containing its longitudinal axis. These matching side frames are joined together to provide a pair of spaced, oppositely facing, convexly arcuate inner surfaces having pairs of spaced, oppositely facing, transversely aligned shoulders. An electromagnetic transducer is fixedly engaged between each of these pairs of shoulders, and a shielding element is fixedly positioned on each side of each transducer between the oppositely facing, convexly arcuate inner surfaces of the side frames.

### 3,475,816
### METHOD OF JOINING METAL MATERIALS HAVING DIFFERENT CHARACTERISTICS

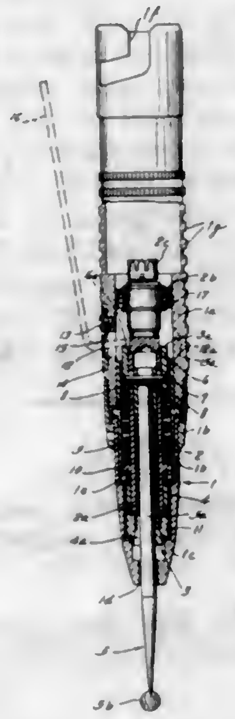
**Joseph A. Willoughby, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**
**Filed Jan. 3, 1966, Ser. No. 518,256**
**Int. Cl. H01r *9/02***
**U.S. Cl. 29—630** **1 Claim**



A method for making electrical contact assemblies is shown to comprise the steps of continuously advancing strips of relatively stiff and relatively flexible metal materials along parallel paths which only partly overlap, continuously advancing at least one elongated strip of electrical contact material along a path parallel to the path of the flexible material to overlap a part of the path of the flexible material which does not overlap the path of the stiff material, continuously bonding overlapping portions of the stiff and flexible materials together as said materials are advanced along said partly overlapping paths, continuously bonding the contact material to the flexible material as said materials are advanced along said overlapping paths and cutting the resulting bonded material in a direction perpendicular to said paths for separating said bonded material into individual contact assemblies each embodying a relatively flexible portion which is bonded to and extends from a relatively stiff portion and which has a contact material bonded to a part of said flexible portion extending from said stiff portion.

### 3,475,817
### PORTABLE HOLDER FOR DENTAL TOOLS OR THE LIKE

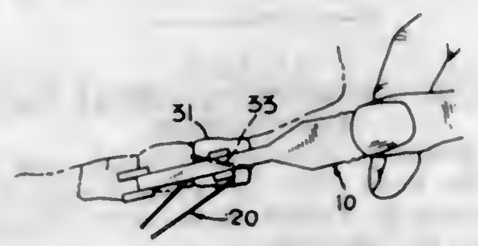
**Hans Loge, Biberach (Riss), Germany, assignor to Kaltenbach & Voigt, Biberach (Riss), Germany**
**Filed May 24, 1967, Ser. No. 641,051**
**Claims priority, application Germany, Sept. 8, 1966, K 55,462**
**Int. Cl. A61c *1/10, 1/14***
**U.S. Cl. 32—26** **9 Claims**



The portable holder for dental tools has a housing provided with one or more openings to afford access to the actuating member of a chuck which can grip and rotate the shaft of a dental tool. The actuating member is biased to an operative position in which the chuck grips and can transmit torque to the tool shaft. The user can employ a small lever or a like implement to move the actuating member to inoperative position in response to introduction of the working end of the implement through an opening of the housing.

### 3,475,818
### APPLICATOR FOR THE PLACEMENT OF ELASTIC BANDS ON ORTHODONTIC APPLIANCES

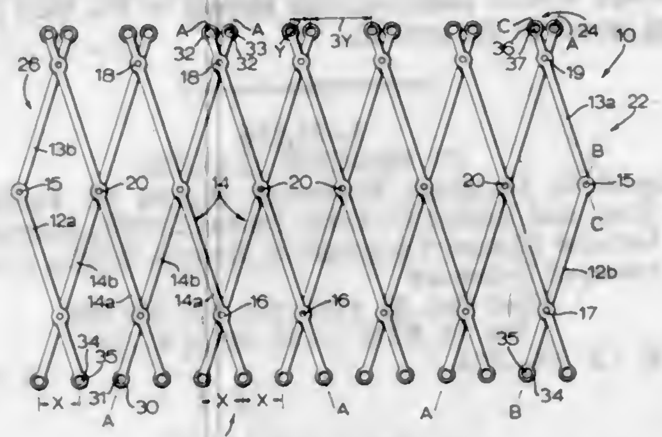
**Harold B. Abrams, 1210 Arrowhead, Olivette, Mo. 63132**
**Filed Nov. 24, 1967, Ser. No. 685,555**
**Int. Cl. A61c *7/00***
**U.S. Cl. 32—66** **4 Claims**



The applicator includes a handle having a narrowed forward end. A first pair of transversely disposed, parallel lugs projects outwardly from one side of the handle, and extends beyond the forward end. A second pair of transversely disposed parallel lugs, located rearwardly of the first pair of lugs, likewise project outwardly from the same side of the handle as the first pair, but to a greater extent. Each lug includes a hook at its extremity, and the two pairs of lugs cooperate to provide four support points holding the elastic in an open position away from the handle.

### 3,475,819
### PANTOGRAPH

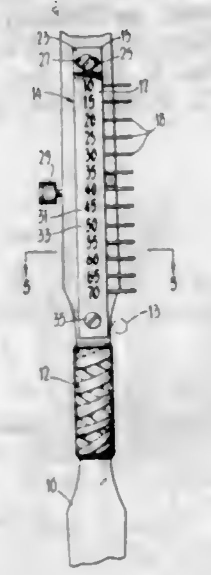
**Ivan Glavan, 1840 Victoria Park Ave., Scarborough, Ontario, Canada**
**Filed Nov. 17, 1967, Ser. No. 684,021**
**Int. Cl. B43l *13/10***
**U.S. Cl. 33—25** **6 Claims**



A pantograph having a frame consisting of a number of pivotally interconnected arms arranged in two sets, all the arms of one set being parallel to each other and all the arms of the other set being similarly parallel. Sleeves are provided at the ends of the arms to permit threaded portions of a stylus, tracing member, anchoring member and prop to be removably attached to the frame. The tracing member has a pin and a movable carriage. The threaded portion of the tracing member is associated with the carriage and when the pin contacts a drawing board, the carriage is urged upward by a spring within the carriage, thereby rotating the frame about the anchoring member and moving the stylus upwardly from the paper.

### 3,475,820
### BOW SIGHT

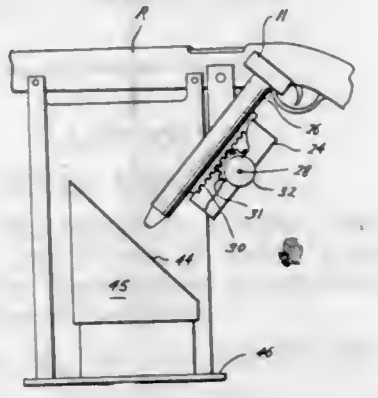
**George L. Kernan, San Pablo, Calif. (2567 Fraser Court, Pinole, Calif. 94564)**
**Filed Sept. 27, 1967, Ser. No. 670,958**
**Int. Cl. G01c *15/12***
**U.S. Cl. 33—46** **12 Claims**



A bow sight includes a support for attachment to a bow, a transport adjustably carried by the support to enable the sight to be calibrated to the individual characteristics of the bow and archer, a carrier reversibly secured to the transport and equipped along opposite faces thereof with range scales, and sighting pins affixed to the carrier and correlated with at least one of the scales and the range indicia thereof for sighting targets at the distances denoted by such indicia.

### 3,475,821
### SUB-TARGET AIMING DEVICE

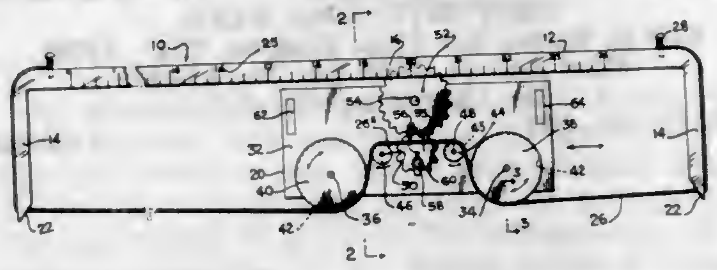
**Charles R. Huddleston, 2314 Moss Hill, Houston, Tex. 77055**
**Filed Feb. 4, 1969, Ser. No. 796,435**
**Int. Cl. G01c *15/12***
**U.S. Cl. 33—46** **3 Claims**



A highly accurate sub-target aiming device for aiming a rifle for use in benchrest shooting competition wherein the aiming device comprises a magnifying eyepiece mounted on the rifle for viewing an independent fixed point adjacent the firing mechanism for precisely aiming the rifle at an exact target.

### 3,475,822
### CHALK MARKING DEVICE

**Robert L. De Lain, 169 107th Ave., Jamaica, N.Y. 11433**
**Filed Feb. 28, 1968, Ser. No. 709,044**
**Int. Cl. B44d *3/38***
**U.S. Cl. 33—87** **9 Claims**



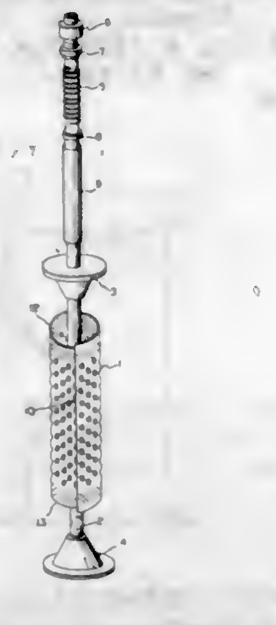
A device for chalking a string and pressing the chalked string against a surface such as a blackboard to draw dotted lines. A U-shaped frame has a string stretched across the protruding ends thereof. The string is entrained over rollers in a carriage movable along the frame. A wheel is carried by the carriage and supports a piece of chalk which is adapted to engage the string at spaced intervals. The chalked string is adapted to be pressed against a surface to be marked such as a blackboard. Means is provided for moving the carriage.

### 3,475,823
### LABORATORY APPARATUS FOR THE CHEMICAL MODIFICATION OF PACKAGED YARNS

**David J. Stanonis and Walter D. King, New Orleans, and Charles R. Esposito, Chalmette, La., assignors to the United States of America as represented by the Secretary of Agriculture**
**Filed Dec. 23, 1965, Ser. No. 516,026**
**Int. Cl. G01b *5/00***
**U.S. Cl. 33—125** **1 Claim**

1. A generally rectilinear foraminous sheet coiled resiliently to describe at least one complete convolution; a mandrel spaced centrally within the coiled foraminous

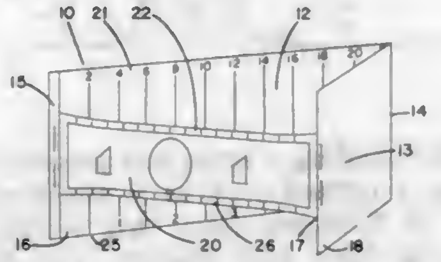
sheet; a first conic member with apex directed inwardly, located at one end of, concentric, and stationary relative said mandrel; a second conic member with apex directed inwardly, concentric, and movable axially on said mandrel; said second conic member spaced from said first conic member approximately the coiled width of said sheet; resilient means adjustable with respect to resilient load, linking said second conic member and said mandrel, said resilient means adapted to resist axial movement of said second conic member away from said first conic member; the curved surfaces of said conic members adapted to support the lateral coiled edges of said sheet; whereby compression coiling of said sheet acts to separate the conic members axially and slack uncoiling of said sheet acts to converge the conic members axially; and graduated scale indicia means on said mandrel adapted to permit measurement of the relative axial movement of the conic members.



3,475,824

### PROPORTIONING RULE

**Rolf E. Darbo, Box 2158, Madison, Wis. 53701**
**Filed Apr. 24, 1967, Ser. No. 633,170**
**Int. Cl. G01b** *3/02, 3/10*
**U.S. Cl. 33—137** **3 Claims**



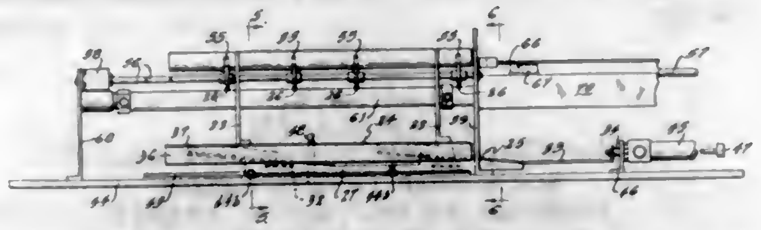
A pocket-sized fold-open proportioning rule comprising a folding fixed scale and a juxtaposed resiliently extensible scale fixed together at the ends so that the length of the extensible scale will increase when the rule is unfolded in proportion to the incremental increase of the fixed scale to original length thereby enabling corresponding proportional quantities to be read for any value on the scales.

3,475,825

### APPARATUS FOR CHECKING DISTORTION OF A REACTOR FUEL ELEMENT

**Kenneth O. Creek, Richland, Wash., and David W. Leiby, Cincinnati, Ohio, assignors to the United States of America as represented by the United States Atomic Energy Commission**
**Filed May 3, 1968, Ser. No. 726,301**
**Int. Cl. G01b** *5/30*
**U.S. Cl. 33—174** **4 Claims**

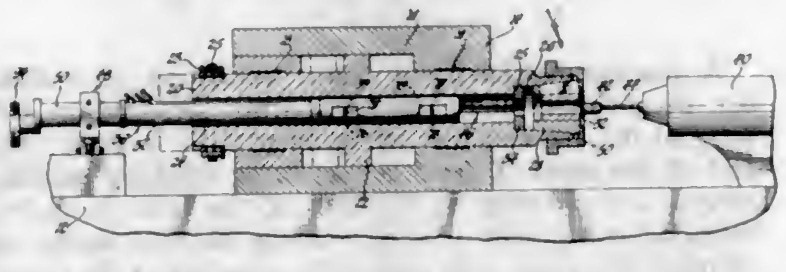
Apparatus for checking distortion of a compound reactor-fuel element by probing the space between inner and outer sections of the fuel element and the exterior of the outer section. The fuel element is placed in a semicylindrical shell simulating the reactor tube in which the fuel element has lately been operating, and is made to occupy several positions with respect to the shell during the course of the probing.



3,475,826

### IN PROCESS GAUGE

**Arnold O. De Hart, Rochester, Harold W. Ferchland, Troy, and Robert G. Lenz, Detroit, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Oct. 20, 1966, Ser. No. 588,038**
**Int. Cl. B23f** *23/08;* **B23q** *17/04*
**U.S. Cl. 33—174** **1 Claim**

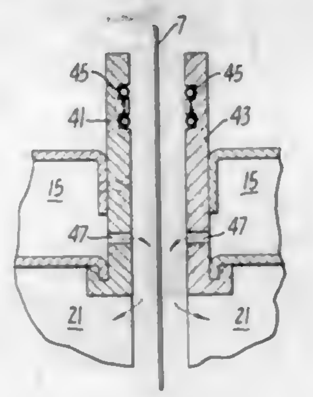


An elongated cylindrical gauge with an expandable scissors-like probe is nonrotatably secured to the support of an internal grinder and extends into the bore of a hollow spindle. The spindle is rotatable and translatable and has a calibration ring mounted inboard of a chuck which holds the workpiece at one end. The gauge and its probe are dimensioned and positioned so that the probe traverses and measures the calibration ring and the workpiece as the spindle is retracted from its working to its nonworking position.

3,475,827

### R.F. SEAL IN MICROWAVE DRIER

**David J. Goerz, Jr., Menlo Park, Calif., assignor, by mesne assignments, to Bechtel International Corporation, San Francisco, Calif., a corporation of Delaware**
**Filed Dec. 6, 1967, Ser. No. 688,468**
**Int. Cl. F26b** *3/34;* **H05b** *9/06*
**U.S. Cl. 34—1** **3 Claims**

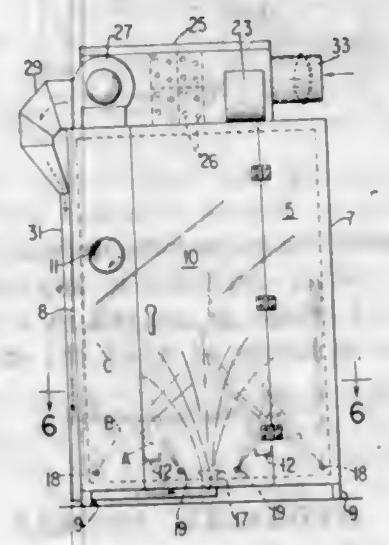


In a drying device for a web wherein solvent is removed from the web by subjecting the web to microwave heating and gas flow in a split waveguide, an apparatus for providing R.F. shielding and an air seal for the waveguide. Preferably the shield is water cooled to convey off the heat developed in the shielding. In the case of the edges of the waveguide, an air seal is also provided. In addition, means are provided for stabilizing the position of the web at the entrance and or exit of the drier.

3,475,828

### STEAM AND AIR GARMENT FINISHER

**De Neal J. Feldman, Jack J. Feldman, and Milton J. Moscowitz, Dayton, Ohio, assignors to Economy Linen & Towel Service, Inc., Dayton, Ohio, a corporation of Ohio**
**Continuation of application Ser. No. 585,135, Oct. 7, 1966. This application Dec. 20, 1968, Ser. No. 785,814**
**Int. Cl. B26b** *3/04*
**U.S. Cl. 34—22** **11 Claims**

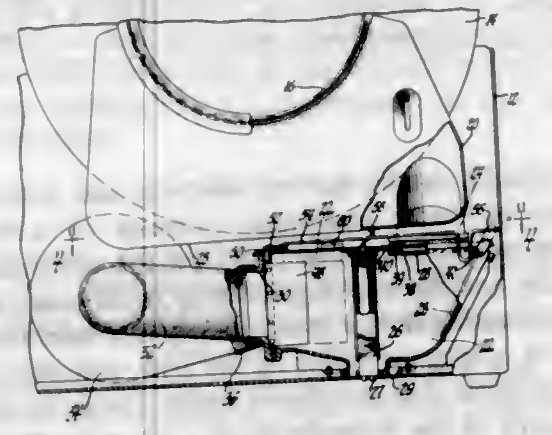


A process and apparatus for drying and finishing a washed fabric article having at least 65% polyester fibers wherein steam and hot air are blown into a freely suspended article and then hot air alone is blown therein so as to return the article to a state where ironing is not required.

3,475,829

### CLOTHES DRYER WITH LINT DISPOSER

**Thomas J. Brinkman, Dayton, Thomas H. Fogt, West Carrollton, and George B. Long and Charles C. Whistler, Jr., Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 8, 1967, Ser. No. 681,392**
**Int. Cl. F27b** *19/00, 21/12*
**U.S. Cl. 34—44** **17 Claims**

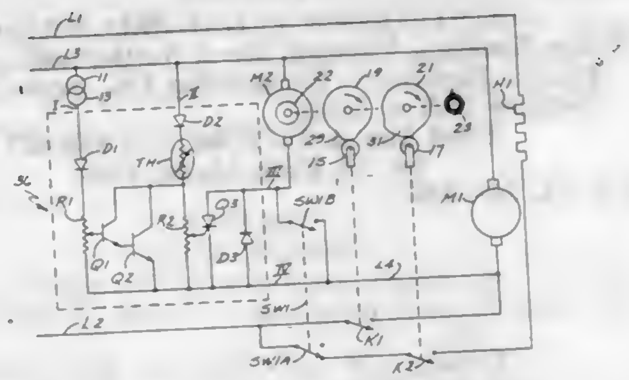


An automatic lint disposing or lint eliminating dryer in which the lint is collected on a screen in a chamber located between the clothes drum outlet and the fan used to flow the air through the drum. The collected lint is periodically burned in response to a timer control which interrupts the drying cycle. During burning, a positively controlled damper is positioned between the drum and the chamber to prevent back-flow to the drum of effluent resulting from the burning lint. The dryer fan and dryer motor are preferably maintained operable to provide a slight vacuum drawing the effluent away from the drum and to eliminate restarting of the motor at the termination of the lint burning process. In a modification, the lint burning chamber has been incorporated into the dryer door and the chamber is completely sealed.

3,475,830

### DRYER CONTROL

**Walter T. Sutton, Jr., James D. Broyles, and James B. Sims, Lexington, and Nelson F. Botts, Versailles, Ky., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**
**Filed Oct. 20, 1967, Ser. No. 679,286**
**Int. Cl. F26b** *25/22*
**U.S. Cl. 34—45** **18 Claims**



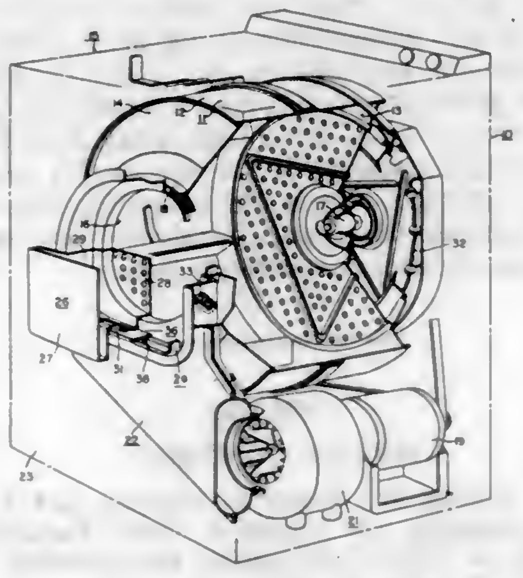
An electronic dryness control for home laundry dryers is disclosed. The control is of the type which employs the resistance of a current path extending through the load to be dried as an indication of the dryness or moisture content of the load. The response time of the control is lengthened by the thermal inertia of a heater to prevent a drying cycle from being terminated prematurely by transient variations in the resistance of the sensing path, the sensing resistance being employed to control the energization of the heater. When the temperature of the heater passes a preselected threshold a timer motor is energized, controlling the remained of the cycle.

3,475,831

### DRYER WITH TEMPERATURE VARYING AIR FLOW RESTRICTION PLATE

**Norma J. Workman, Mansfield, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Continuation of abandoned application Ser. No. 593,470, Nov. 10, 1966. This application June 21, 1968, Ser. No. 747,609**
**Int. Cl. F26b** *21/06, 11/02*
**U.S. Cl. 34—82** **4 Claims**

Laundry apparatus for drying articles of clothing. The apparatus is characterized by the provision of means in the form of an orifice plate, remotely located from the interior of the drum forming a part of the apparatus, for selectively restricting the flow of air through the apparatus in order to raise the otherwise inadequate temperature thereof to a level suitable for drying certain types of clothing.



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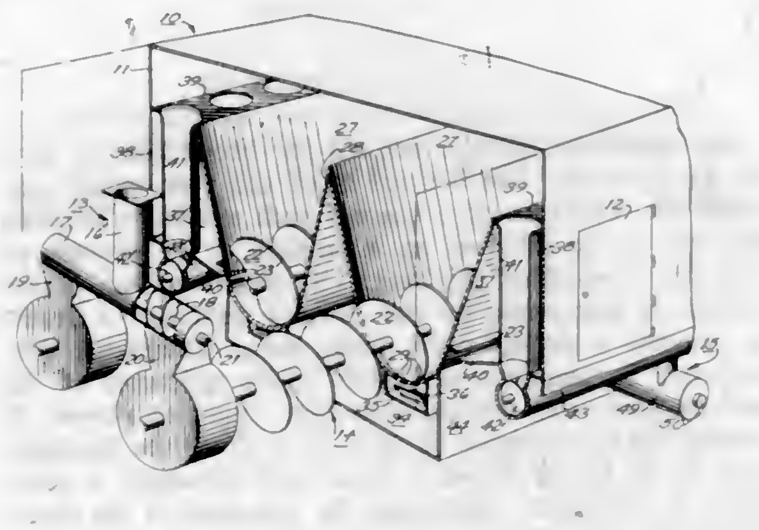
3,475,832

### CONTINUOUS FLUID BED DRYER

**Walter Kuelling, Muttenz, Basel, Switzerland, assignor to Process Equipment Engineering Co., Summit, N.J., a company of New Jersey**

**Filed Aug. 4, 1967, Ser. No. 658,453**
**Int. Cl. F26b** *11/14; 3/08*
**U.S. Cl. 34—182** **20 Claims**



The product conveyor worms move the moist product longitudinally of the housing in a tortuous path about the worm shafts while streams of hot air are directed upwardly through the worms to fluidize the product. The quantity of air is controlled by dampers and is directed out of the housing through filter bags within side passages of the housing.

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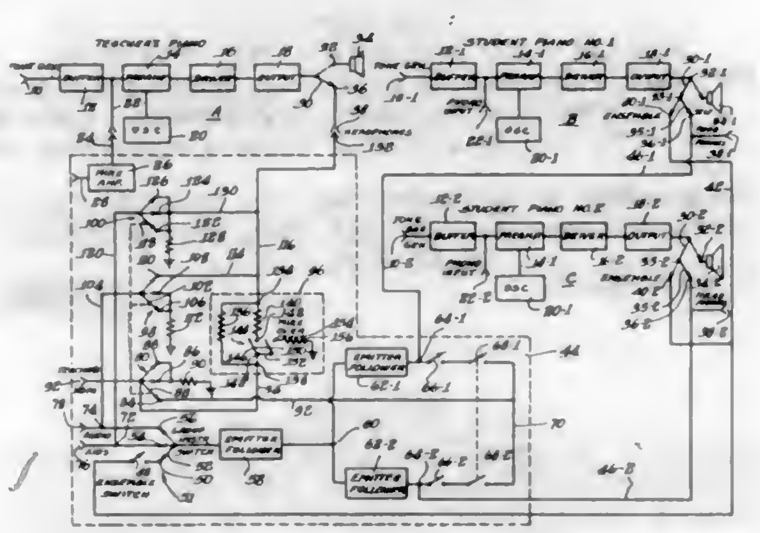
3,475,833

### ELECTRONIC COMMUNICATION SYSTEM

**Clifford W. Andersen, De Kalb, Ill., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio**

**Filed Aug. 21, 1967, Ser. No. 661,978**
**Int. Cl. G09b** *15/00, 15/08*
**U.S. Cl. 35—5** **8 Claims**

An electronic communications system for the group teaching of piano students, utilizing a plurality of electric pianos with the provision of external jumper cables for connection to the respective pianos to connect all of the electric pianos to one another and to a single monitor under the control of a teacher, the monitor having switches whereby the teacher can listen to any selected piano to the exclusion of others, or can talk to a student through the earphones by means of which the student listens to his own piano.



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3,475,834

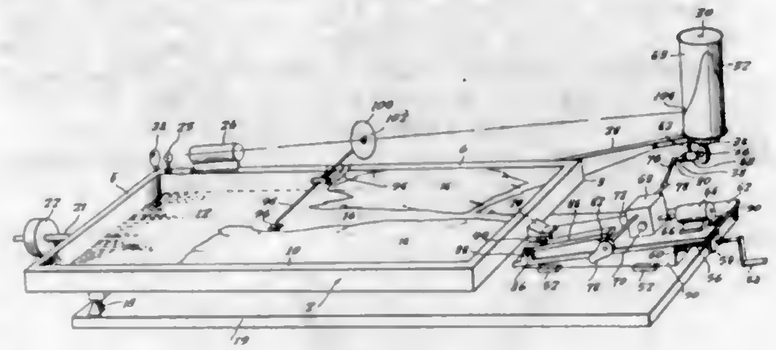
### HYDRAULIC MODELS

**Alfred Edward Bugg, Longfield, England, assignor to Sir Bruce Gordon White, William Edward Gelson, Allan Harry Beckett, and John William Theodore Tapp, London, England**

**Filed Mar. 29, 1967, Ser. No. 626,898**

**Claims priority, application Great Britain, Apr. 29, 1966, 18,957/66**

**Int. Cl. G09b** *23/06;* **G01m** *9/00*
**U.S. Cl. 35—19** **4 Claims**



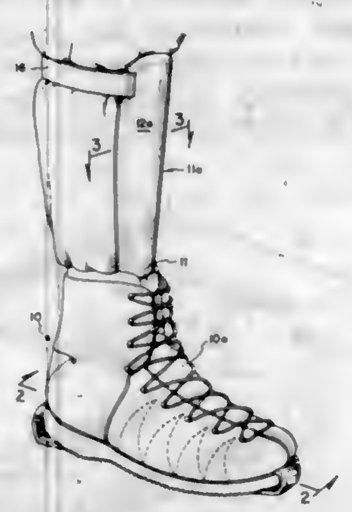
An hydraulic model for reproducing and determining the effects of water movement consists of a tray for containing water. Means is provided for adjustably tilting the tray and for rocking the tray at adjustable cyclic rate. An indicating device continuously monitors the levels of water at a selected point in the tray and comparator means compares the monitored water levels in the tray with a record of the water levels at a corresponding point in a natural area. The tilt and rocking of the tray can thus be adjusted until the water levels in the tray correspond to those on said record.

3,475,835

### SKIING SUPPORT FOR SKI BOOTS

**Leonard J. Kovar, 411 S. Church, Bozeman, Mont. 59715**

**Filed Dec. 21, 1967, Ser. No. 692,531**
**Int. Cl. A43b** *3/00;* **A41d** *13/06*
**U.S. Cl. 36—1.5** **9 Claims**



A device built into or used with the tongue of a ski boot, as an upward extension thereof, to distribute boot pressure along the shin bone and give stiffening support to a skier's lower legs during skiing.

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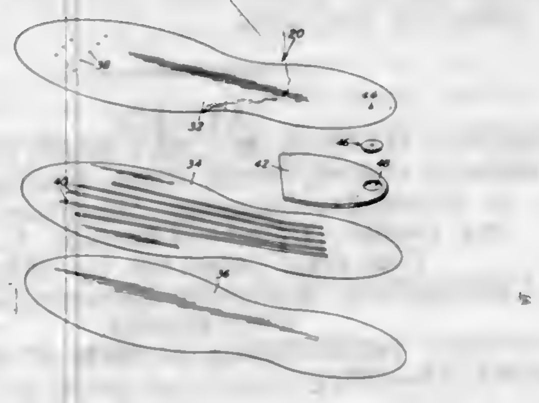
3,475,836

### AIR PUMPING INSERT FOR SHOES

**Harry Brahm, P.O. Box 1857, Balboa, Canal Zone**

**Filed Feb. 29, 1968, Ser. No. 709,336**
**Int. Cl. A43b** *7/06*
**U.S. Cl. 36—3** **10 Claims**



This invention relates to air pumping inserts for shoes comprising an insert having a heel portion with a pumping chamber having a resilient cushion member therein. A one-way airlet valve is mounted in the rearward end of the heel portion and a plurality of outlets are provided in the forward end of the insert. In the normal course of walking, intermittent heel pressure on the heel portion of the insert produces air flow through the inlet valve upon release of heel pressure and pumping such air outwardly through the outlets in the forward portion of the insert upon application of heel pressure on the heel portion of the insert.

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3,475,837

### SHOES AND LIKE FOOTWEAR AND COMPONENTS THEREOF

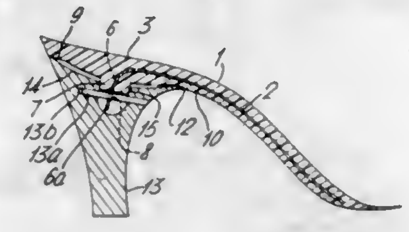
**Pedro Arnau Garcia, Calle de las Flores 5, Barcelona, Spain**

**Filed Aug. 4, 1966, Ser. No. 570,345**

**Claims priority, application Great Britain, Aug. 18, 1965, 35,492/66**

**Int. Cl. A43b** *13/28*
**U.S. Cl. 36—24.5** **5 Claims**

In connection with the production of an article of footwear, a moulded heel seat and shank unit and a heel member, the unit and the said member co-operating for relative location, the improvement being that the said unit is moulded about a shank stiffener which extends into the heel seat and has a projection from the underside of the heel seat and cross-pin means connect the said projecting portion of the shank stiffener and the heel member below the heel seat to fix the heel member firmly in located position against the heel seat. The unit or this and the heel member are preferably moulded from synthetic plastic material and advantageously a pin is inserted into a passage in the heel member opening into the breast thereof through a hole in the said projection which hole is arranged slightly out of registration with the passage and free from the moulded material so that in driving the pin therethrough the heel member is tightly secured against the heel seat. The shank member is preferably embedded in the moulded material of the said unit so that the projection aforesaid is embedded in an integrally moulded non-circular protuberance or boss moulded on the underside of the heel seat but projects therefrom and is there apertured to take the cross pin under the protuberance or boss which non-rotatably engages a correspondingly shaped socket in the heel member.



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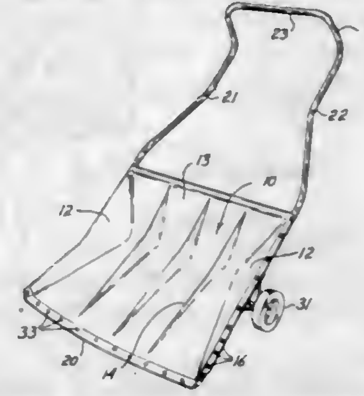
3,475,838

### SNOW SCOOP

**Kenneth G. Hagen, 650 Timber Lane, Devon, Pa. 19333, and Richard H. Horton, 580 Gulph Road, Wayne, Pa. 19087**

**Filed Mar. 22, 1966, Ser. No. 536,418**
**Int. Cl. E01h** *5/02;* **E02f** *3/76;* **B62b** *1/00*
**U.S. Cl. 37—53** **10 Claims**



A manually-operated snow-removal implement which has a handle with an upturned hand-grip portion that produces better and more efficient operation and which has a frame, blade, bucket, and wheels which are so designed and combined that a significantly superior result is accomplished.

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3,475,839

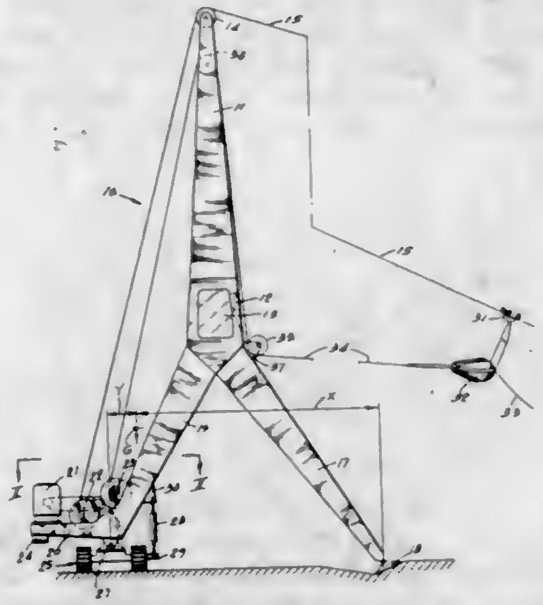
### CABLEWAY SCRAPER EXCAVATOR

**Ernest Kalve, 1934 N. Hoyne Ave., Chicago, Ill. 60647**

**Continuation of application Ser. No. 487,473, Sept. 15, 1965. This application Dec. 10, 1968, Ser. No. 785,034**

**Int. Cl. E02f** *3/46;* **B66c** *5/02;* **E04h** *12/18*
**U.S. Cl. 37—117** **7 Claims**

A cableway scraper tower has an upright cable mast, and has an operator's cabin in its lower end and tripod legs two of which diverge forwardly and have ground-engaging lower end pads and one of which extends downwardly and rearwardly and has its lower end pivotally attached to a mobilizing unit with means for pivoting the mast about the rear leg mounting pivot and counter-balancing weight related to the lower part of the rear leg whereby the center of gravity of the tower is over the rear leg and near a vertical line through the pivot to resist cable-imposed turnover forces acting toward the front legs and facilitating the pivoting of the tower and raising of the front legs.



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3,475,840

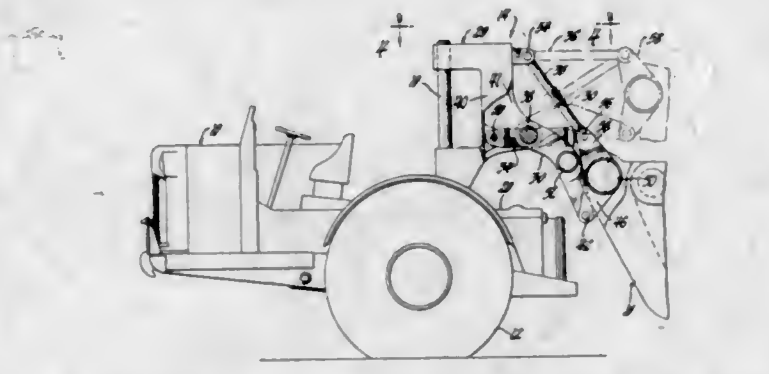
## PARALLELOGRAM DRAFT ASSEMBLY FOR SCRAPER

**Russell C. Williams, Rocky River, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed June 1, 1967, Ser. No. 642,860**

**Int. Cl. E02f** *3/85*

**U.S. Cl. 37—129** **6 Claims**



A scraper in which the tractor is connected to the trailing bowl by a parallelogram linkage which supports the bowl for movement about a transverse horizontal axis between a raised-carry position and a lowered-dig position.

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3,475,841

## SCRAPER WITH ECCENTRICALLY DRIVEN TEETH

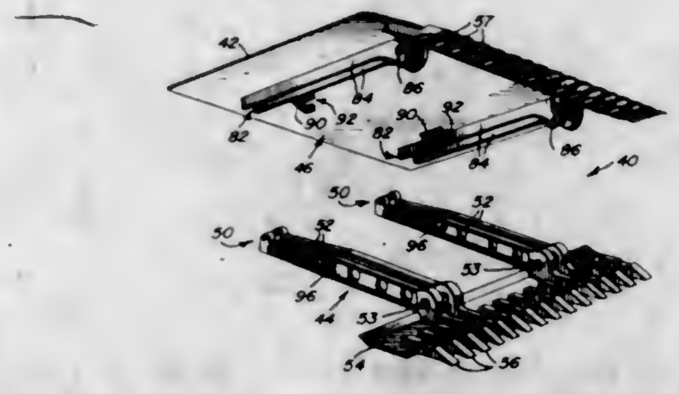
**Frank Delfino and Robert E. Pool, Bakersfield, Calif.; said Delfino assignor of fifty percent and said Pool assignor of five percent to Delfino Bros., Bakersfield, Calif., a partnership**

**Filed Sept. 14, 1967, Ser. No. 667,709**

**Int. Cl. E02f** *3/62, 3/76;* **E21c** *47/00*

**U.S. Cl. 37—141** **2 Claims**

An earth working apparatus supported by a portable frame for scraping and loading earth and provided with a plurality of scraper blades which are power driven in a generally circular path relative to the frame of the device. The circular path of the scraper blades assists the forward draft motion of the scraping device in dislodging and lifting earth into the device due to the continuous cyclic movement of the scraper blades lifting and urging the earth rearwardly. The scraper blades are carried on a plurality of support members at least one of which is pivotally mounted relative to the portable frame of the scraper and the remaining scraper blade carriers preferably being pivotally secured to the carrier pivotally mounted to the scraper frame. The scraper blade carrying members are driven in an eccentric circular path, independently of the movement of the scraping device, by power driven cam means rotatably journaled to the frame of the scraper. In addition, the load bed of the scraper device may be an integral part of one of the scraper blade support members, and preferably one of the scraper blade support members not directly pivotally connected to the portable frame, whereby earth being scraped up onto the load bed will be continuously urged rearwardly along the load bed so as to significantly reduce the power required to scrape and load earth.



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3,475,842

## DREDGE HAVING BUCKET EMPTYING MEANS

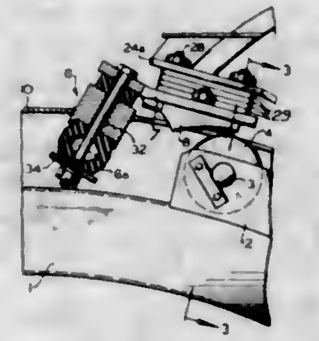
**Heinrich Heitzer, Neuss, Rhine, Germany, assignor to Demag-Lauchhammer, Maschinen- und Stahlbau GmbH., Dusseldorf-Benrath, Germany**

**Filed June 7, 1966, Ser. No. 555,821**

**Claims priority, application Germany, June 9, 1965, D 47,465**

**Int. Cl. E02f** *3/24;* **B65g** *47/40*

**U.S. Cl. 37—189** **5 Claims**



A dredging device comprises a dredging arm member which carries at its outer end a rotatable bucket wheel. The bucket wheel carries a plurality of buckets having forward opened ends and trailing closed ends. The buckets are pivotally mounted on the bucket wheels by arms which are connected around the forward ends of the buckets and which pivot adjacent the circumference of the wheels. The trailing bucket ends are connected through spring elements to the wheel and these spring elements urge the trailing ends inwardly toward the wheel circumference. As the wheel is rotated the trailing ends of the buckets are brought into contact with a lifting cam

which strikes against the trailing ends and causes it to move outwardly from the circumference of the wheel to dislodge any material which is carried therein. When the bucket moves beyond the cam again it moves inwardly under the force of its connecting spring back against the wheel, to further loosen any material which may remain in the bucket.

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3,475,843

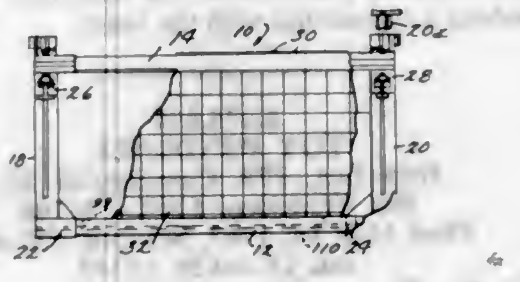
## VISUAL CONTROL SYSTEM

**William F. Pollacco, 2801 75th Place, Hyattsville, Md. 20785**

**Filed Mar. 16, 1967, Ser. No. 623,656**

**Int. Cl. G09f** *7/08, 1/12*

**U.S. Cl. 40—63** **16 Claims**



A modular device including backing tracks, frame members and diverse face pieces wherein individual columnar backing tracks track array bordering frame members and face pieces can be added to and removed from the device as needed depending upon the amount and character of the information to be displayed. The rear faces of the face pieces are provided with rearwardly projecting undercut rails by which they are slidingly, removably received on the backing tracks. The rails extend between opposite edges of respective face pieces in order to prevent buckling and ensure flushness and squareness of the face pieces with respect to one another. The foregoing abstract is not intended to be a digest of the principles or scope of the invention disclosed in this document.

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3,475,844

## AUTOMATIC BOOK PAGE TURNING APPARATUS

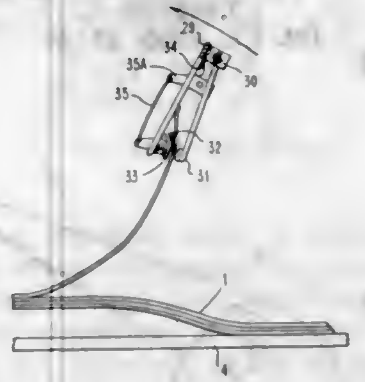
**Shukichi Uda, 7–15–10 Kugenumakaigan, Fujisawashi, Kanagawaken, Japan, and Yutaro Igarashi, 3–27–4, Taito, Taitoku, Tokyo, Japan**

**Filed Sept. 20, 1967, Ser. No. 669,110**

**Claims priority, application Japan, Sept. 22, 1966, 41/62,245**

**Int. Cl. G09f** *11/08*

**U.S. Cl. 40—104** **9 Claims**



The swinging arm **6** (FIG. 1) carries an arm extension **29** with fingers **31**, **32**. As the arm swings from the "rest" position (FIGS. 1 and 2) to the page pick-up position (FIG. 3), the arm extension **29** swings in to bring the fingers **31**, **32** within the radius of the book pages; and the fingers open, as successively shown in FIGS. 5A, 5B, 5C. The adhesive tip of finger **32** then picks up the page as the arm reverses and finger **31** closes (FIG. 5D). As the operation cycle ends, arm extension **29** swings outwardly to release the page from the fingers (FIG. 1).

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3,475,845

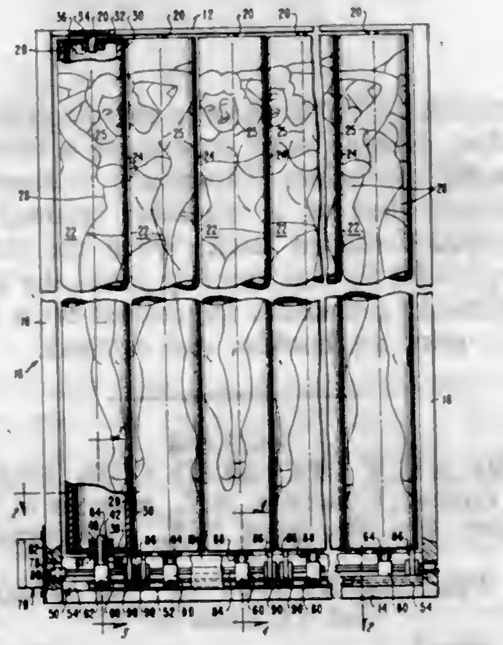
## DYNAMIC DISPLAY APPARATUS

**Charles Estvan, Jr., 5615 Valley Oak Drive, Hollywood, Calif. 90028**

**Filed Sept. 27, 1967, Ser. No. 670,903**

**Int. Cl. G09f** *19/02*

**U.S. Cl. 40—106.51** **15 Claims**



An apparatus, which may be used, for example, as a movable outdoor advertising display comprising a plurality of parallel cylinders, rotatably mounted side by side, each cylinder having an outer surface bearing a pattern, form, illustration or the like. Each cylinder is frictionally driven by a wheel in engagement with one of the end surfaces of the cylinder. The position of each wheel is adjustable, relative to the axis of rotation of the corresponding cylinder, to permit the rotational speed and/or direction of rotation of the cylinder to be varied either manually, or automatically in accordance with a predetermined program.

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3,475,846

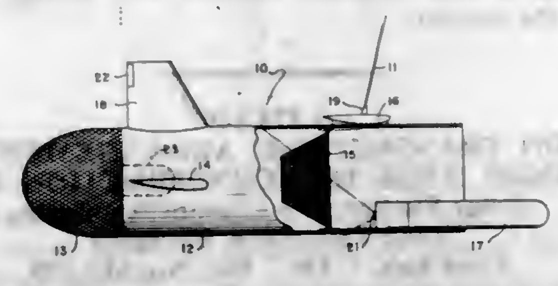
## NEKTON SAMPLER

**George B. Springston, Jr., Bethesda, Md., assignor to the United States of America as represented by the Secretary of the Navy**

**Filed Jan. 26, 1968, Ser. No. 700,990**

**Int. Cl. A01k** *73/02*

**U.S. Cl. 43—9** **9 Claims**

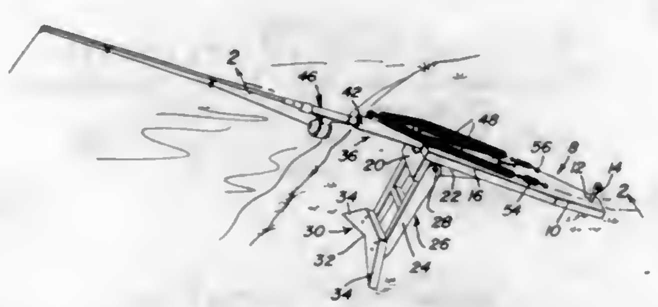


A cable towed nekton sampler includes a towed body, a tow cable and suitable handling equipment aboard ship. The towed body contains special transducers for measuring the speed, depth and water temperature and houses a closed circuit television camera for observing the captured nekton during tow.

### 3,475,847
### UNATTENDED FISH HOOKER AND CATCHER

**Nathaniel Wilson, 252 Orchard,**
**Xenia, Ohio 45385**
**Filed May 29, 1968, Ser. No. 733,015**
**Int. Cl. A01k** *97/10*

**U.S. Cl. 43—15** **10 Claims**

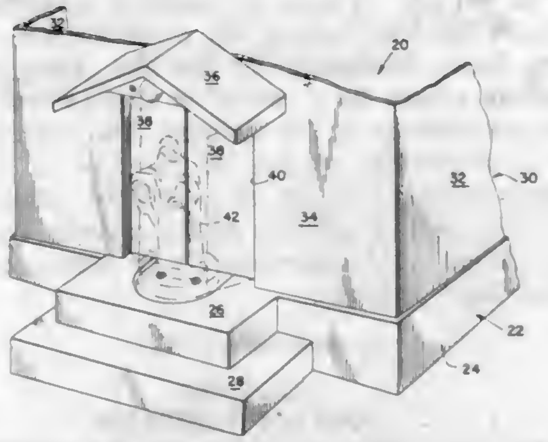


An automatic-type fish hooker characterized by a portable folding dual-leg stand supporting a tubular pivoted spring-loaded rod holder. This holder receives the handle of a rod and when set is releasably retained by pivoted spring-tripped L-shaped latch. When the fish takes the hook, the holder tips up, forcibly yanks the line, sets the baited fishhook, and makes the desired catch is a manner similar to prior art hookers and catchers.

### 3,475,848
### ELECTRICALLY OPERATED COIN BOX DEVICE

**Cyril H. Gruber, Lawrence, N.Y., assignor to Brumberger Company, Inc., Brooklyn, N.Y., a corporation of New York**
**Filed Sept. 23, 1966, Ser. No. 581,637**
**Int. Cl. A63h** *33/24*

**U.S. Cl. 46—3** **11 Claims**



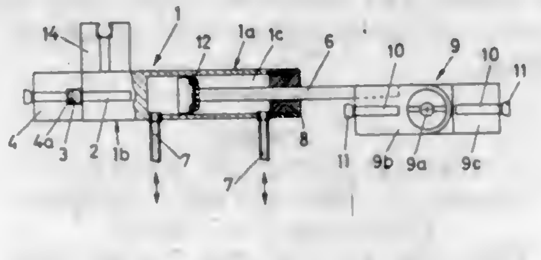
Electrically operated coinbox device having a support platform for a coin which will enable substantially unimpeded sliding movement of a coin in at least one direction and a slider movable relative to the support for engaging a coin disposed thereon and sliding the coin off of the support.

### 3,475,849
### MOTION TRANSMITTING ARRANGEMENT COMBINED WITH TOY CONSTRUCTION KIT

**Artur Fischer, 133 Grunmettstetterstr.,**
**7241 Tumlingen, Germany**
**Filed Feb. 1, 1967, Ser. No. 613,299**
**Claims priority, application Germany, Feb. 7, 1966,**
**F 48,366**
**Int. Cl. A63h** *33/00, 33/04*

**U.S. Cl. 46—16** **8 Claims**

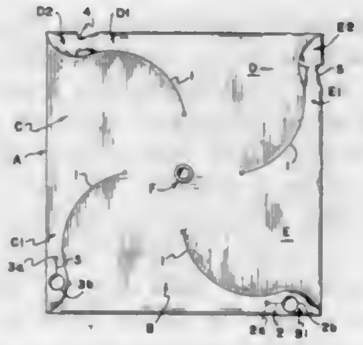
A motion-transmitting arrangement for use in toy construction kits of the type having a plurality of connectable structural elements provided with coupling portions. The arrangement includes a cylinder, and a piston reciprocable therein and comprising a piston rod extending out of the cylinder and being connectable to the structural elements of the kit. The cylinder is provided on its exterior surface with coupling portions which can mate with the coupling portions on the structural elements for establishing a connection with the latter.



### 3,475,850
### TOY WINDMILL

**Hop Lee, 779 Commercial St.,**
**San Francisco, Calif. 94108**
**Filed May 10, 1967, Ser. No. 637,469**
**Int. Cl. A63h** *33/40*

**U.S. Cl. 46—58** **4 Claims**

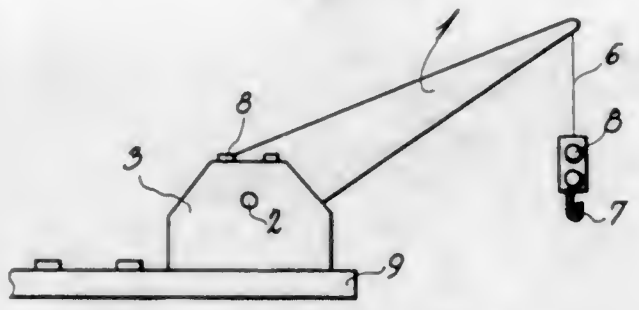


A toy windmill that is formed from a single square blank. The blank has cuts therein to define the four blades and these blades have integral extensions that are used for curving the blades when the windmill is mounted for rotation. Novel cooperating locking means is provided in the blade extensions for removably interconnecting the extensions of diagonally opposed blades to each other so that these extensions will hold the blades in a concave shape.

### 3,475,851
### TOY CRANES

**Godtfred Kirk Christiansen, Billund, Denmark, assignor to Interlego A.G., Zug, Switerland**
**Filed Oct. 24, 1967, Ser. No. 677,624**
**Claims priority, application Denmark, Oct. 31, 1966,**
**5,646/66**
**Int. Cl. A63h** *33/30*

**U.S. Cl. 46—40** **3 Claims**

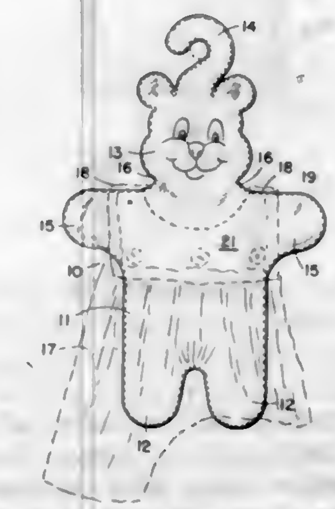


A toy crane comprising a horizontal reel shaft mounted in a frame and a jib swingably mounted in the frame around the reel shaft, the lower end of the jib being provided with at least one contact face arranged so as to contact the upper face of the base of the crane in at least one extreme position of the jib, thereby causing a load on the outer (top) end of the jib to exert a braking pressure on the reel shaft.

### 3,475,852
### COMBINED GARMENT HANGER AND HOLDER AND TOY

**Doris A. Brosk, 150 E. 69th St.,**
**New York, N.Y. 10021**
**Filed July 5, 1966, Ser. No. 562,853**
**Int. Cl. A63h** *13/00*

**U.S. Cl. 46—116** **1 Claim**

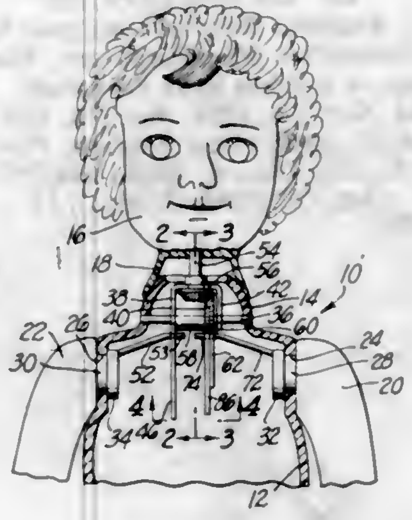


A garment hanger incorporating a stuffed toy, which may have a receptacle therein to contain small items, to be used by a child as a toy as well as a hanger.

### 3,475,853
### DOLL HEAD MOVABLE AS A RESULT OF MOVEMENT OF ANOTHER DOLL BODY PART

**Seymour Adler, El Segundo, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of California**
**Filed Nov. 22, 1966, Ser. No. 596,186**
**Int. Cl. A63h** *11/00*

**U.S. Cl. 46—120** **4 Claims**

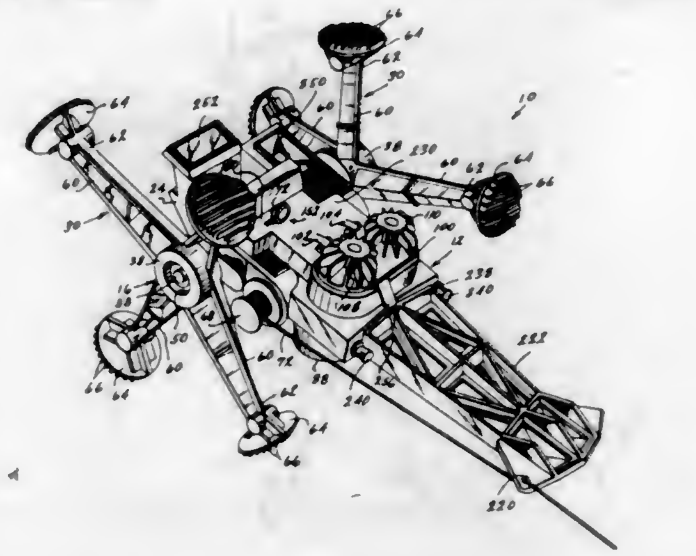


A doll head is mounted upon a conventional doll body. A double drive mechanism is connected to the doll head to drive the doll head in different directions. Part of this drive mechanism is connected to one limb of the doll while the other part of the mechanism is connected to another limb of the doll. Preferably these limbs are the doll's arms. The drive mechanisms each have crank interconnections between the limb and the mechanism, and one of the mechanisms includes bevel gears to cause rotation of the doll head on a generally vertical axis.

### 3,475,854
### SELF-PROPELLED CRAWLING TOY

**John W. Ryan, Los Angeles, Robert A. MacMeekin, Huntington Beach, and Daniel Henry Meggs, Torrance, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California**
**Filed Feb. 3, 1967, Ser. No. 613,864**
**Int. Cl. A63h** *17/00*

**U.S. Cl. 46—206** **9 Claims**

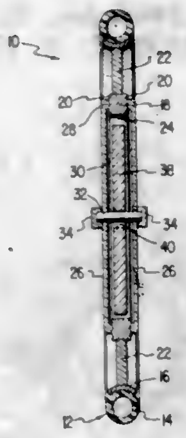


A fuselage-shaped body has ground-contacting tail and carries a powered axle transversely across a front portion thereof. The ends of the axle extend outwardly from the sides of the body and carry radially extending spokes having ground-engaging ends inscribing a circle extending substantially forwardly of the body facilitating movement of the toy over rough terrain. The toy carries a winch which is selectively driven in clockwise and counterclockwise directions by an electric motor through a gear train and clutch arrangement which also supplies power to the axle.

### 3,475,855
### TOY TRUNDLE DEVICE

**William H. Edwards, Greenville, S.C., assignor to Edwards, Boggs & Boggs Co., Inc., Greenville, S.C., a corporation of South Carolina**
**Filed Jan. 3, 1967, Ser. No. 606,923**
**Int. Cl. A63h** *33/02*

**U.S. Cl. 46—220** **6 Claims**

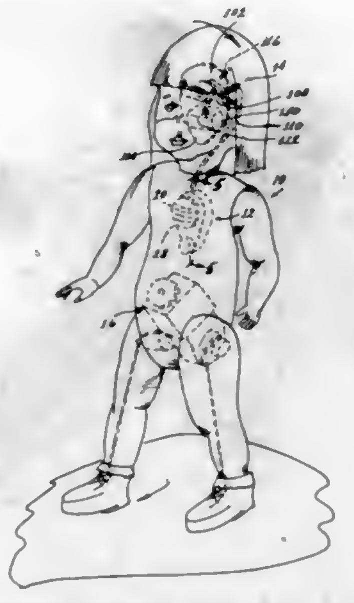


A toy trundle wheel is provided with an inner hub having a central opening therewithin. A pair of transparent cap members, mounted on opposite sides of the hub and connected together by a central shaft passing therethrough, form a central cavity. A disc, having a design printed thereon, is provided with an aperture of diameter larger than the shaft and is eccentrically and freely mounted on the shaft within the cavity. Rotation of the wheel causes the wheel, hub, cap members and central shaft to rotate while the disc remains stationary.

### 3,475,856

### MEANS FOR AUTOMATICALLY ACTUATING AN ANIMATING DEVICE IN AN OSCILLATING TOY

**Robert L. Cowell and Richard L. May, Manhattan Beach, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California**
**Filed Jan. 15, 1968, Ser. No. 697,893**
**Int. Cl. A63h** *33/26*
**U.S. Cl. 46—232** **6 Claims**

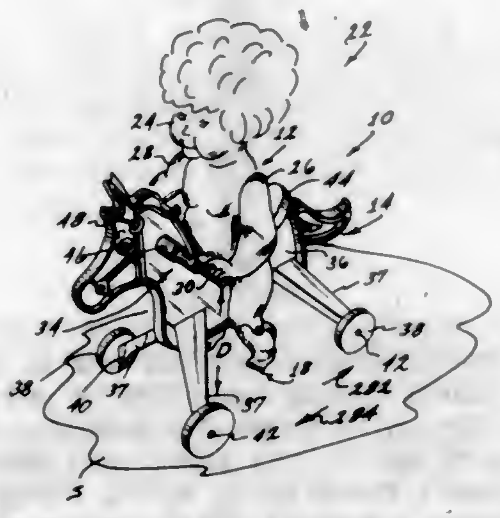


In an oscillating toy, such as a walking doll, having an animating device, such as a sound-producing device, means are provided for automatically actuating the animating device after the toy has oscillated a predetermined amount. The means shown and described herein for purposes of illustration, but not of limitation, include a rolling ball which is caged in a carrier or a reciprocating member carrying a ratchet finger which engages a ratchet wheel each time the carrier reciprocates in one direction for rotating the wheel which carries a protuberance engageable with an electric switch after a predetermined amount of rotation of the ratchet wheel.

### 3,475,857

### SELF-PROPELLED FIGURE TOY COMBINATION

**Raymond J. Douglas and Elliott Handler, Los Angeles, Cedric E. Iwasaki, Hermosa Beach, Joseph Kossoff, Hawthorne, and John W. Ryan, Los Angeles, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California**
**Filed Jan. 22, 1968, Ser. No. 699,400**
**Int. Cl. A63h** *33/26, 17/18*
**U.S. Cl. 46—247** **6 Claims**

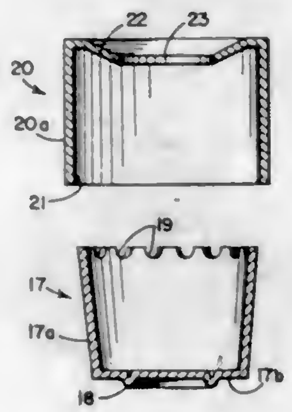


A toy torso, which may comprise a doll, is supported in a sitting position on a movable, transporter means, which may comprise a wheeled hobby horse. Limb means, which may comprise a doll's legs, are connected to the torso and are capable of engaging a surface adjacent the movable means. Suitable drive means reciprocates the limb means in selective engagement with the surface so as to move the toy with respect to the surface.

### 3,475,858

### PLANTER SHROUD AND PLANTER

**William J. Flannigan, Oxnard, Calif. (1054 Knollwood Drive, Rte. 1, Omena Lake, Sturgis, Mich. 49091)**
**Filed Dec. 14, 1967, Ser. No. 690,670**
**Int. Cl. A01g** *9/02*
**U.S. Cl. 47—34** **4 Claims**

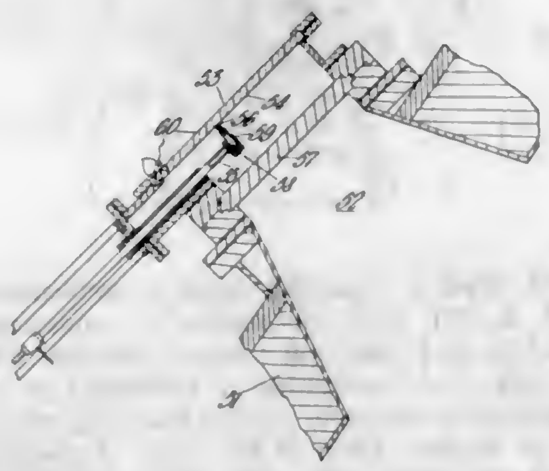


A shroud is provided for a planter of the type employed on malls for towns and cities. The shroud is in the form of a hollow body with an open bottom for positioning over the planter, the top of the shroud including an inwardly and downwardly directed lip defining a central opening through which the plant in the planter extends when the shroud is positioned over the planter. By use of such a shroud, the planter may readily be provided with a dressed appearance and the planter itself, being completely hidden by the shroud can be manufactured without the normal lip structure and thus susceptible to a matched steel die single molding operation.

### 3,475,859

### DEVICE FOR OBSERVING THE CONTENTS OF AN ENCLOSURE

**Robert Pirlet, Angleur, Belgium, assignor to Centre National de Recherches Metallurgiques, Montoyer, Brussels, Belgium, a Belgian body corporate**
**Filed Nov. 17, 1967, Ser. No. 684,004**
**Claims priority, application Belgium, Nov. 24, 1966, 52,435; Dec. 6, 1966, 690,787**
**Int. Cl. E06b** *7/00, 7/12*
**U.S. Cl. 49—70** **8 Claims**

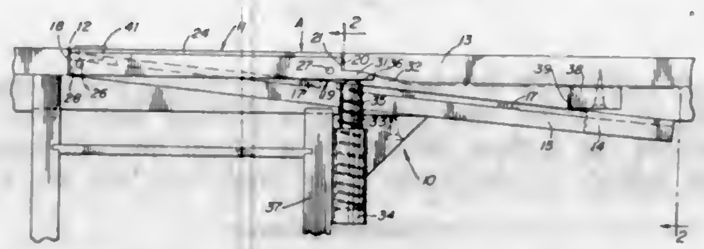


A device for observing the contents of an enclosure, comprising an observation screen or screens, each coordinated with a shutter valve arranged around the observation opening on the wall of the enclosure and operated by a screw system, and with a cleaning device consisting of one or more scrapers displaceable rectilinearly and rotarily by a fluid pressure system whose pressure is kept higher than in the enclosure and variable as a function of the speed of displacement of the scraper or scrapers.

### 3,475,860

### FLUSH SLIDING DOOR CONSTRUCTION

**Stanley Puczynski, Chicago, Ill., assignor of fifty percent to Edward Cukale, Chicago, Ill.**
**Filed Apr. 25, 1968, Ser. No. 724,090**
**Int. Cl. E05d** *15/36*
**U.S. Cl. 49—129** **7 Claims**

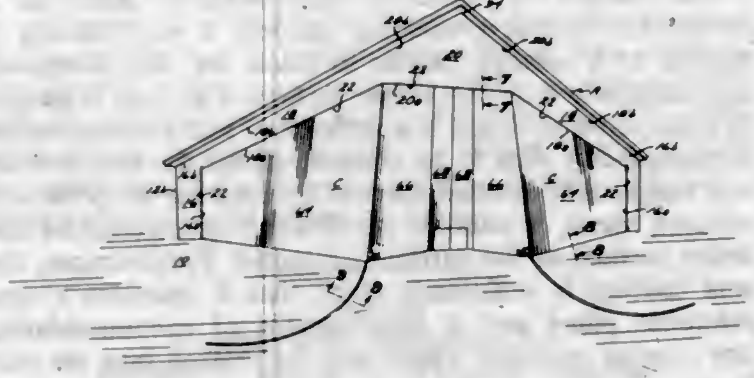


A flush sliding door construction for a wall aperture of given size and configuration in which a door of corresponding size and configuration slides along parallel tracks that extend inwardly from a trailing edge of the aperture, across the aperture, and behind the wall at a small acute angle to the wall. A spring biasing means urges the leading edge of the door outwardly of the tracks into closed position, flush with the wall, in the aperture; to open the door, the leading edge is pivoted inwardly just enough to clear the wall, through a discontinuity in the track, and then slides along the track to an open position.

### 3,475,861

### AIRCRAFT HANGAR AND DOOR STRUCTURE ASSOCIATED THEREWITH

**Paul W. Hillseth, 1937 W. 169th St., Gardena, Calif. 90247**
**Filed Aug. 3, 1967, Ser. No. 658,103**
**Int. Cl. E05f** *15/12;* **E04b** *1/342*
**U.S. Cl. 49—358** **5 Claims**

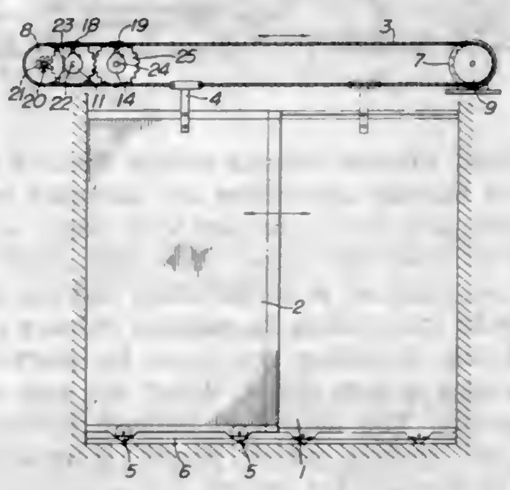


An aircraft hangar that minimizes the enclosed space required to house a plane of predetermined maximum length, width and height for the purpose of conserving the heat required to maintain the interior of the hangar at a desired temperature as well as the electrical energy necessary to air condition the hangar interior to a like temperature, together with a door structure that is particularly adapted for use with such a hangar to obstruct communication between the interior of the hangar and the ambient atmosphere.

### 3,475,862

### DEVICE FOR BRAKING AND STOPPING DOOR LEAF OF AUTOMATIC DOORS

**Kazuyoshi Ozaki, Kokudo Bldg., 23–2 chome, Sonezaki-kami, Kita-ku, Osaka, Suita-shi, Japan**
**Filed Oct. 23, 1967, Ser. No. 677,164**
**Claims priority, application Japan, Apr. 24, 1967, 42/26,522; May 24, 1967, 42/33,261**
**Int. Cl. E05f** *15/14*
**U.S. Cl. 49—360** **3 Claims**

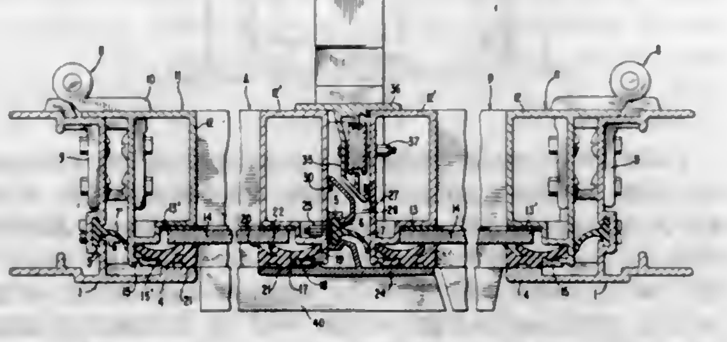


A device for controlling the braking and stopping of an automatic door is provided as a compact single unit. A sliding door is driven by a horizontally extended endless chain supported by a pair of sprocket wheels. The rotation of one of the sprocket wheels is transmitted via reduction gears to cam rotors controlling the switches effecting the braking and stopping of the door at opposite extreme positions.

### 3,475,863

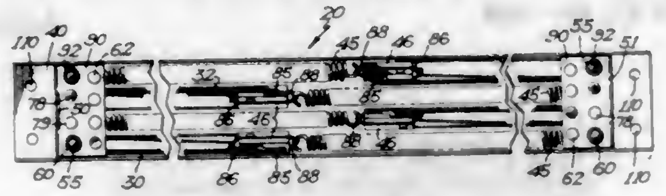
### SHUTTER WINDOW WITH AN ELASTIC ELEMENT FOR HOLDING AND RETAINING THE PLATE

**Giovanni Varlonga, P.za della Repubblica 5, Milan, Italy**
**Filed Oct. 24, 1967, Ser. No. 677,558**
**Claims priority, application Italy, Oct. 24, 1966, 29,242/66**
**Int. Cl. E05c** *7/04*
**U.S. Cl. 49—367** **7 Claims**



A shutter window wherein an annular seal is provided for simultaneously holding the glass pane in the mobile frame and providing sealing contact with the stationary frame part of the window in the closed position thereof, and including cover members having extension parts projecting into the space between the windows in the closed position thereof to form a sinuous path therethrough and additional resilient members extending between the inner circumferential surfaces of the stationary frame part and the outer circumferential surfaces of the mobile windows to form a seal therebetween.

### 3,475,864
## OVERHEAD WINDOW BALANCE
**Edward H. Wood, Sanford, N.C., assignor to D. J. Dinsmore Company, Sioux Falls, S. Dak., a corporation of South Dakota**
**Filed Jan. 22, 1968, Ser. No. 699,591**
**Int. Cl. E05d** *13/12*
**U.S. Cl. 49—445** **9 Claims**



An overhead window balance unit in which a plurality of individual balance assemblies are mounted in a side-by-side relationship for connection with single or double-hung sash to bias the same. The individual balance assemblies are identical in construction and are anchored in guide blocks mounted in the window balance unit with the guide blocks including provisions for journaling the sash cord pulley system and to direct the sash cord out of the assembly. The individual balance assemblies incorporate coil springs which permit increased spring length and spring size for greater spring rate and larger or longer sash cords with an increase in size of the window balance unit.

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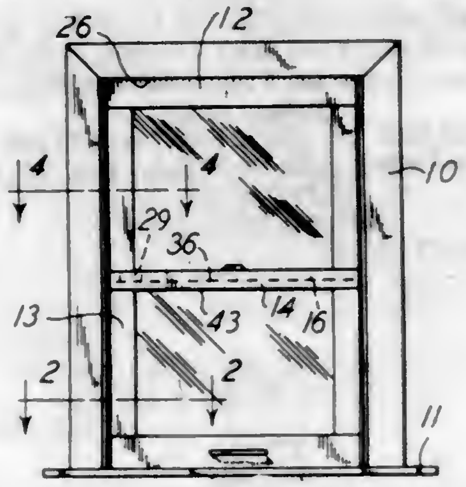
### 3,475,865
## WINDOW COUNTER-BALANCING CONSTRUCTION
**Lyle L. Ames, 3808 St. Andrews Blvd., Racine, Wis. 53405**
**Filed Feb. 29, 1968, Ser. No. 709,272**
**Int. Cl. E05d** *13/12*
**U.S. Cl. 49—445** **8 Claims**



A window counter-balancing construction for vertically movable windows guided at their lateral sides by a side rail. A pre-stressed constant-force coiled spring is disposed within a pocket in the window sash to yieldingly urge the window upwardly so that the window can be set in any vertical position and its weight will be counter-balanced, so that the window will remain in any set position, but it will be easy to move it up and down. The window sashes and the side rail are arranged with the spring so that the spring is not visible, and the spring may be readily and easily removed since it is hooked onto the side rail for removal when desired. The coiled spring is also of the type where only the degree of pre-stressing of the spring need be altered in order to have the spring exert different forces in accordance with the different conditions of window weight, rail friction, and the like in different installations. But the same connection between the spring and both the rail and the window sash are uniform between these different installations.

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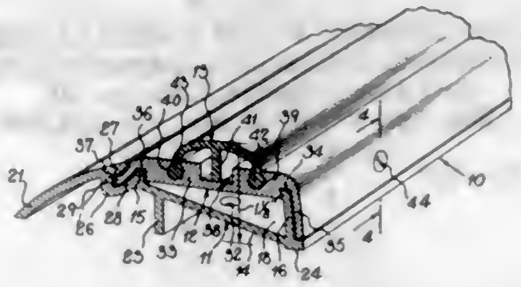
### 3,475,866
## ADJUSTABLE THRESHOLD
**Bergiton Johansen, Box 14, Monsey, N.Y. 10952**
**Filed Feb. 28, 1968, Ser. No. 709,074**
**Int. Cl. E06b** *1/70*
**U.S. Cl. 49—468** **4 Claims**



An adjustable threshold for doors having a pivotal member for raising and lowering a flexible sealing means against the bottom surface of a closed door in sealing the interior of the home from wind, rain and the like.

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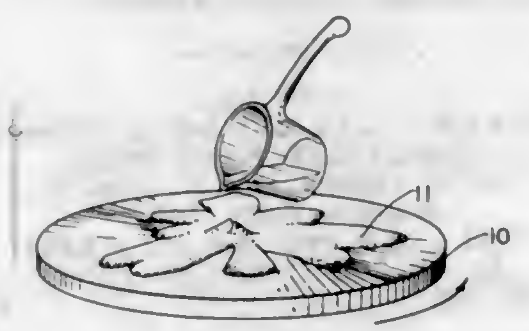
### 3,475,867
## PROCESSING OF SEMICONDUCTOR WAFERS
**Robert J. Walsh, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 603,336, Dec. 20, 1966. This application Sept. 18, 1967, Ser. No. 668,546**
**Int. Cl. B24b** *1/00, 19/00;* **B05b** *13/02*
**U.S. Cl. 51—281** **15 Claims**



The method of mounting semiconductor slices on a carrier for further processing wherein a wax coating is applied to a rotating carrier to cause the wax to spread out uniformly over the entire surface. The wax is heated to a temperature where it is sufficiently tacky to enable the semiconductor slice to be pressed against the wax surface and temporarily bonded thereto. By rotating the plate at a selected speed, a uniform distribution of wax across the entire surface of the carrier is attained. Furthermore, the wax coating is sufficiently thick that it provides a new reference plane and is also capable of accommodating any foreign particles which may be pressed into the wax layer.

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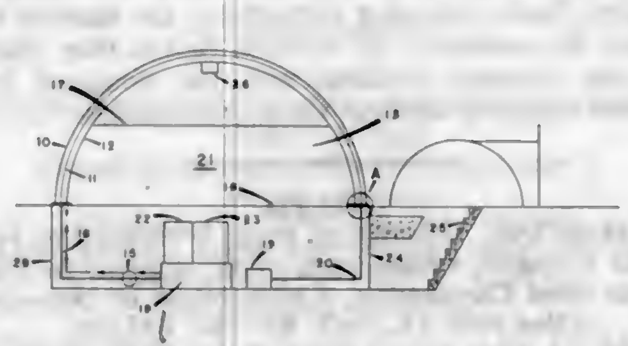
### 3,475,868
## STRUCTURE HAVING LIGHT CONTROLLING MEANS
**Marvin M. Johnson, 1103 Florence St., Colorado Springs, Colo. 80906**
**Filed Dec. 4, 1967, Ser. No. 687,767**
**Int. Cl. E04b** *1/32;* **A01g** *9/14;* **E04h** *5/08*
**U.S. Cl. 52—2** **10 Claims**

The present invention comprises a substantially closed structure comprising an inner wall at least a portion of which is transparent to light and an outer wall, at least a portion of said outer wall being transparent to light, said transparent portions of said inner and said outer wall being in substantially coinciding relationship so that light can enter the interior of said building through at least a portion of said transparent portions, said inner and said outer wall enclosing at least one liquid-tight compartment, and means for injecting a liquid into said liquid-tight compartment to partially or completely fill said compartment, said liquid having a substantially greater opacity to light than that of said transparent portions of said inner and said outer walls. Such structures are useful as human dwellings, for horticultural purposes, and for a variety of other uses.



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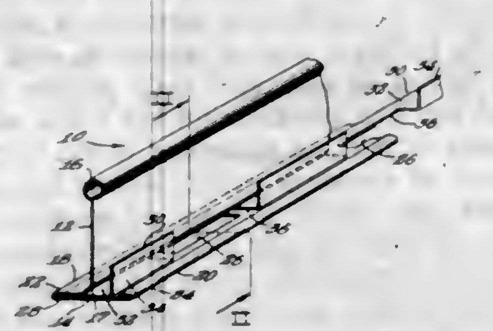
### 3,475,869
## VENTILATED SUSPENDED CEILING STRUCTURE
**Reinhardt H. Jahn, Chicago, Ill., assignor to Chicago Metallic Sash Company, Chicago, Ill., a corporation of Illinois**
**Filed Sept. 7, 1966, Ser. No. 577,689**
**Int. Cl. E04b** *5/55;* **E04f** *17/04*
**U.S. Cl. 52—173** **5 Claims**



A runner element for supporting ceiling panels having an elongated strip in which the strip has a stem portion for suspension and a folded edge portion with overlapping pieces forming a space therebetween so that a spacer with an extended portion for abutting an edge of a ceiling panel to position the edge a spaced distance from the aperture can be mounted slidably between the overlapping pieces on the elongated strip.

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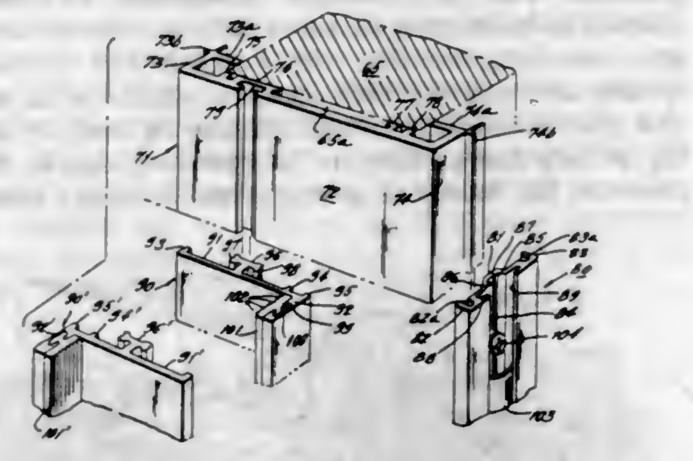
### 3,475,870
## PARTITION ASSEMBLIES
**Herbert L. Birum, Jr., Pleasant Valley, Titusville, N.J. 08560**
**Original application Mar. 18, 1966, Ser. No. 535,489, now Patent No. 3,423,897, dated Jan. 28, 1969. Divided and this application July 19, 1968, Ser. No. 763,037**
**Int. Cl. E06b** *1/18;* **E04c** *3/32*
**U.S. Cl. 52—211** **13 Claims**

Frame members preferably formed by an extrusion process for forming door and window assemblies. The window assembly includes rigid extruded frame members having slidably engaged deformable resilient members engaging the marginal edges of a transparent sheet. The door frame assembly includes a rigid channel which embraces a stud or supporting member; said channel having a double undercut groove therein for receiving a door stop, a filler strip to produce a plane surface and spaced strips holding a transparent sheet; and batten strips embracing the margins of the channel for securing the channel to said stud or supporting member.



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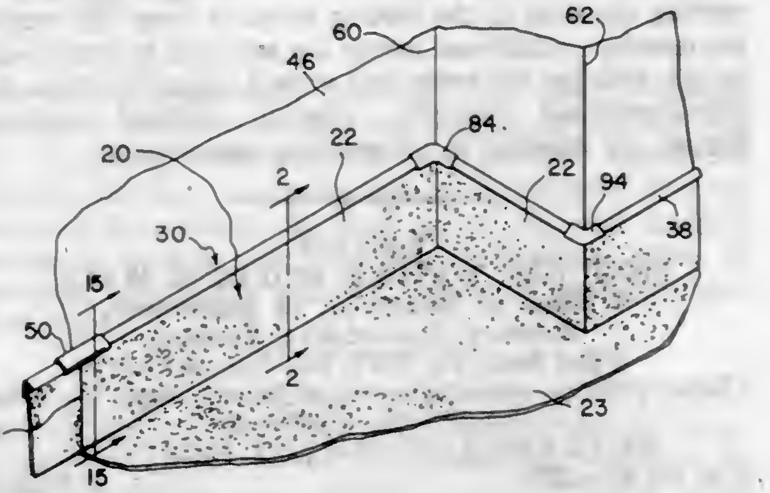
### 3,475,871
## WALL BASE CONSTRUCTION
**James L. Saunders, Short Hills, N.J., and Vincent Polimeni, Brooklyn, N.Y., assignors to Commercial Carpet Corporation, New York, N.Y., a corporation of New York**
**Filed Sept. 7, 1967, Ser. No. 666,122**
**Int. Cl. E04f** *19/04*
**U.S. Cl. 52—273** **13 Claims**



The invention covers a baseboard for a room or other construction made of resilient base carpeting having an upper edge molding means, said construction being made in a plurality of uniform lengths and adapted to be affixed to a wall, preferably by some adhesive means, and preferably adapted to match the carpeting on the floor of the room or other construction. The ends of the molding means are adapted to be connected together by connecting means, and the edges of the carpeting material portions are adapted to be matched together, adhesively or otherwise, to provide a continuous length of wall base construction. In addition, the molding means and the carpeting material portions are adapted to follow around corners as necessary, and present a finished wall base construction.

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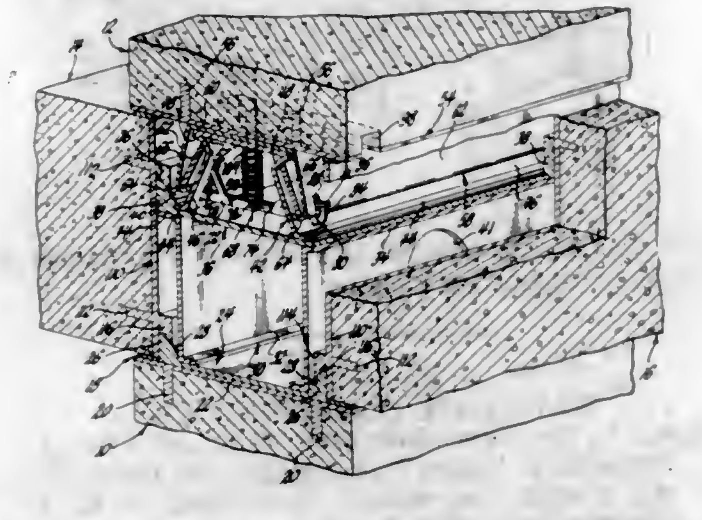
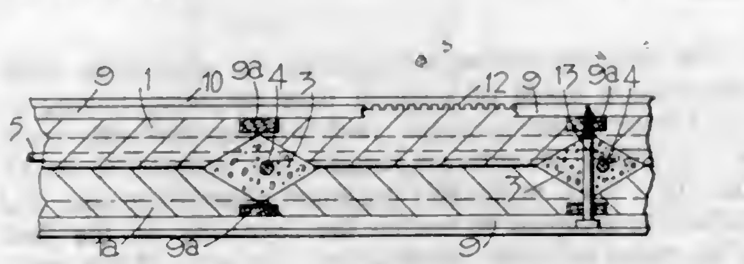
### 3,475,872
## JOINT CONSTRUCTION FOR BUILDING ELEMENTS
**John H. Suhr, 1920 Graefield, Birmingham, Mich. 48008**
**Filed Jan. 25, 1968, Ser. No. 700,605**
**Int. Cl. E04b** *1/54*
**U.S. Cl. 52—285** **19 Claims**

There is provided an improvement in joining systems for building elements, wherein such building elements are to be secured together to form the load bearing structure for a building or the like, and wherein such building elements may be precast panels, beams, posts or other components. The improvement comprises an assembly adapted to be secured on a first building element and having a receiving member with inwardly and downwardly arcuate surfaces; a joining member adapted to be secured to a second building element and having inwardly extending arcuate flanges disposed in spaced relation to the surfaces on the receiving member; and locking blades pivotally mounted in the arcuate flanges and engageable with the surfaces on the receiving member. When properly mounted, the blades are pivoted into position between the respective flanges and surfaces in strutting relation, preventing removal of the joining member from the receiving member. Additional means are provided to receive and secure building elements that extend angularly from the aforementioned elements, wherein inclined surfaced flanges are received in cooperating engagement.

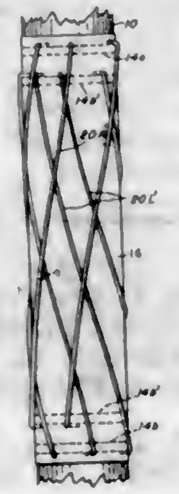


### 3,475,873
### MODULAR, BONDED BUILDING WALL
**William D. Steadman, 82 Queensway,**
**Banbury, Oxfordshire, England**
**Filed Sept. 12, 1967, Ser. No. 667,251**
**Claims priority, application Great Britain, Sept. 14, 1966,**
**41,093/66, 41,094/66**
**Int. Cl. E04b** *5/19;* **E04c** *5/01;* **E02d** *27/32*
**U.S. Cl. 52—293** **3 Claims**



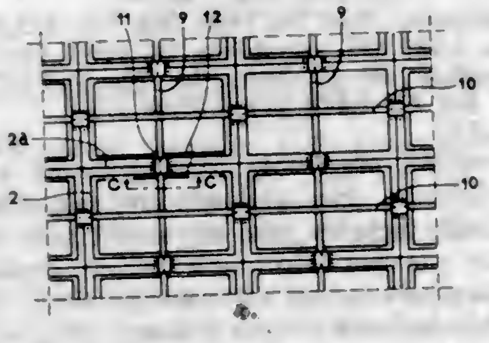
A building structure comprises a multiplicity of modules made of insulating material, each module being shaped around terminal faces to provide, between adjacent modules, channels containing a mortar set to form a structural skelton such as one comprising a lattice of intersecting orthogonal reinforced concrete filled passages. The terminal faces of adjacent modules are located in predetermined relative positions by elongated frame members which engage these adjacent faces. The frame members may be tied together by tie members, such as reinforcing rods or wires, and the elongated frame members may be provided in two orthogonal directions so that they cross at a multiplicity of intersections to form a lattice engaging and locating the terminal faces. Each module can comprise two initially separable layers positioned and retained in back-to-back relationship. A pair of such lattices may be provided, one to each side of the building structure, tied together by the bolts passing through the lattice members at the positions of intersection. A stronger concrete column is provided in an upright wall by omitting the modules and filling the space with a column of reinforced concrete monolithically cast with the skelton of the structure. The insulating material may be shaped around the terminal faces to generally concave surfaces with terminal faces provided with elongated frame engaging formations, the module being adapted for combining in terminal face-to-face relationship with adjacent modules, with the elongated frame members engaging between the adjacent faces.

### 3,475,874
### REINFORCING MEMBERS FOR A WOODEN POLE
**Donald J. Stuart, Chesterland, Ohio, assignor to United States Steel Corporation, a corporation of Delaware**
**Filed June 14, 1967, Ser. No. 645,929**
**Int. Cl. E04g** *23/02;* **E02d** *37/00;* **E04b** *12/04*
**U.S. Cl. 52—514** **8 Claims**



A combination of reinforcing members is provided for a wooden pole having a zone of weakness, each reinforcing member having an elongated body portion, a first leg and a second leg. The combination has a first reinforcing member having its first leg embedded in the wooden pole above the zone of weakness and its second leg embedded in the wooden pole below the zone of weakness in axial registry with the first leg, and a second reinforcing member having its first embedded in the wooden pole adjacent the first leg of the first reinforcing member, its elongated body portion disposed across the elongated body portion of the first reinforcing member in a helix and its second leg embedded in the wooden pole.

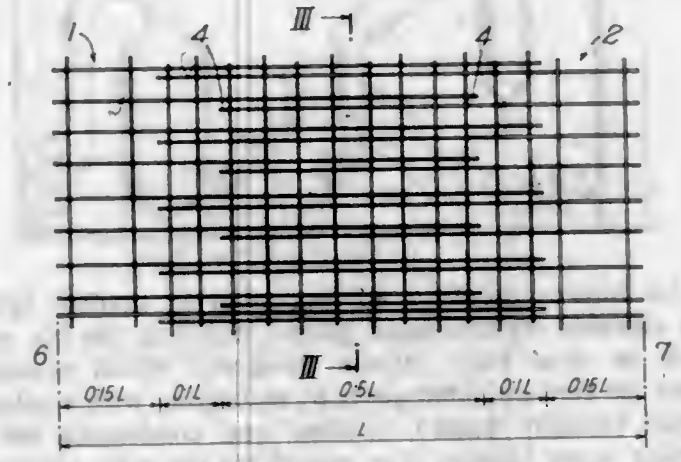
### 3,475,875
### SYSTEM FOR ASSEMBLING COMPONENTS FOR THE CONSTRUCTION OF PARTITIONS OR CEILINGS
**Jacques J. V. C. Devisme, 21 Carnot St.,**
**Bihorel-les-Rouen, France**
**Filed Aug. 2, 1967, Ser. No. 657,832**
**Claims priority, application France, Aug. 4, 1966,**
**72,166**
**Int. Cl. E04b** *5/55;* **E04c** *1/30*
**U.S. Cl. 52—581** **2 Claims**



An assembly of polygonal frames for the construction of partitions, ceilings and the like, in which the means

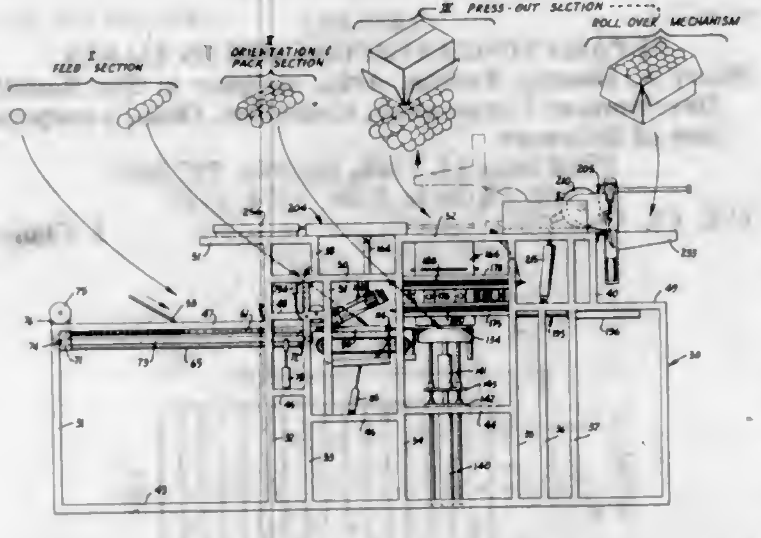
for interconnecting the frames in juxtaposed position include bolts interconnecting adjacent frames and bars extending substantially in the plane of and across at least two juxtaposed frames and extending through the grooves receiving the bolts and under the bolts, the bars serving to reinforce the connections between adjacent frames.

### 3,475,876
### STAGGERED REINFORCEMENT FOR CONCRETE STRUCTURES
**Georgi Oroschakoff, Simon-Denk-Gasse 7,**
**Vienna, Austria**
**Filed Aug. 11, 1967, Ser. No. 660,001**
**Claims priority, application Austria, Aug. 23, 1966,**
**A 7,986/66; Apr. 6, 1967, A 3,292/67**
**Int. Cl. E04c** *5/01, 3/20*
**U.S. Cl. 52—581** **12 Claims**



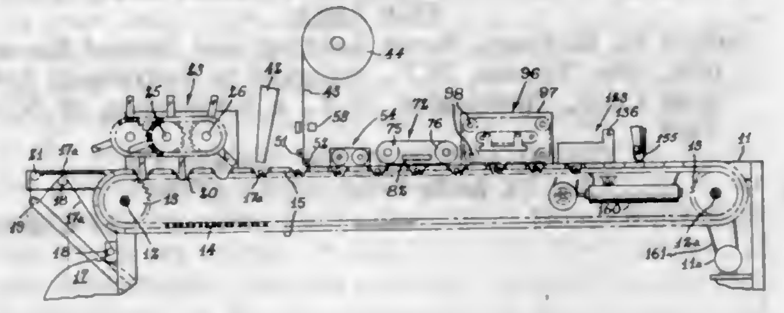
Two separate mesh sections extend from opposite ends of the reinforcement and overlap over part of the distance between said ends. The sections being in modular relationship with lengths equal to integral numbers of a unit length.

### 3,475,877
### PACKING APPARATUS
**Ralph A. Fuller, Exeter, and Earl D. Snodgrass, Lindsay, Calif., assignors to Herrick Waterman, Ralph A. Fuller, and Earl D. Snodgrass, Exeter, Calif., a joint venture**
**Filed Oct. 24, 1965, Ser. No. 504,858**
**Int. Cl. B65b** *25/04, 5/10, 35/52*
**U.S. Cl. 53—26** **28 Claims**



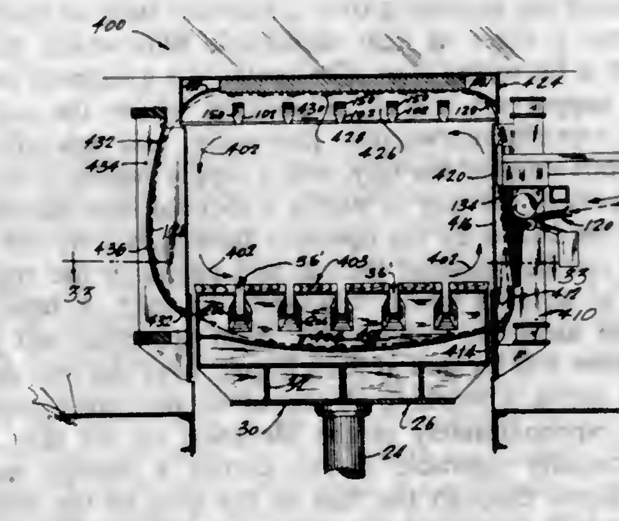
A machine for packing oranges and the like comprising a feed section, an orientation and pack section and a press-out section. The feed section comprises a conveyor-like apparatus adapted to receive bulk quantities of oranges and direct them into rows of a predetermined count. The orientation and pack section comprises a mechanism to receive the rows of oranges from the feed section and direct them into layers. During each cycle of the machine, a plurality of layers are formed in the orientation and pack section, directed into parallel abutting relationship, and laterally confined in a tight pack. The press-out section comprises, in part, a plunger-like mechanism adapted to displace the confined layers of oranges from the orientation and pack section into a carton-like container. In the preferred embodiment, the carton is packed in an inverted position and a roll-over mechanism is provided to invert the carton to an upright position after it is packed.

### 3,475,878
### PACKAGING MACHINE
**Carl J. West, Jr., deceased, late of Chicago, Ill., by Margaret Ruth Ross West, executor, Chicago, Ill., assignor to Margaret R. Ross West, Geneva, Ill.**
**Filed Oct. 22, 1965, Ser. No. 502,657**
**Int. Cl. B65b** *47/04, 51/26, 61/08*
**U.S. Cl. 53—30** **22 Claims**



A packaging machine utilizing "soft" film, including means for successively forming pockets in the film and for preventing distortion of such pockets, filling the pockets, placing an overlay film in registration with the pocketed film, sealing the films one to the other to form packages, severing the film into longitudinal strips of packages and finally severing individual packages from said strips.

### 3,475,879
### APPARATUS FOR TYING A COMPRESSED BALE
**Charles M. Merkel, Joe E. Salmon, and Thomas H. Brugh, Pratville, Ala., assignors to Continental/Moss-Gordin, Inc., Pratville, Ala., a corporation of Delaware**
**Filed June 1, 1967, Ser. No. 642,770**
**Int. Cl. B65b** *13/06, 13/20, 57/00*
**U.S. Cl. 53—124** **14 Claims**



Apparatus for tying a compressed bale of flowable material, such as steel strapping a cotton or synthetic fiber bale that has been prepared and transferred in a fixed-box press, by directing the tying or strapping members through spaced openings on one side or wall of a baling box and guiding said members transversely around the girth of the bale inside the baling box while the walls, including any normally openable doors, remain closed. The apparatus comprises a fixed baling box which receives the tamped fiber mass, pressure means closable on said fiber mass for compressing same into a dense bale, a means such as a door on one side of the box for removing the compressed bale therefrom after strapping in the box, spaced openings along one wall of said closed box through which tying means such as a plurality of steel straps are introduced in response to force applied to the tying or strapping members themselves, and guide means inside the baling box for directing and guiding the tying members simultaneously in spaced relation around the bale and back to the incoming tying or strapping members for connection, tightening, and tying. Optionally, a modification provides a single longitudinal girth strap simultaneously with the lateral or transverse girth straps.

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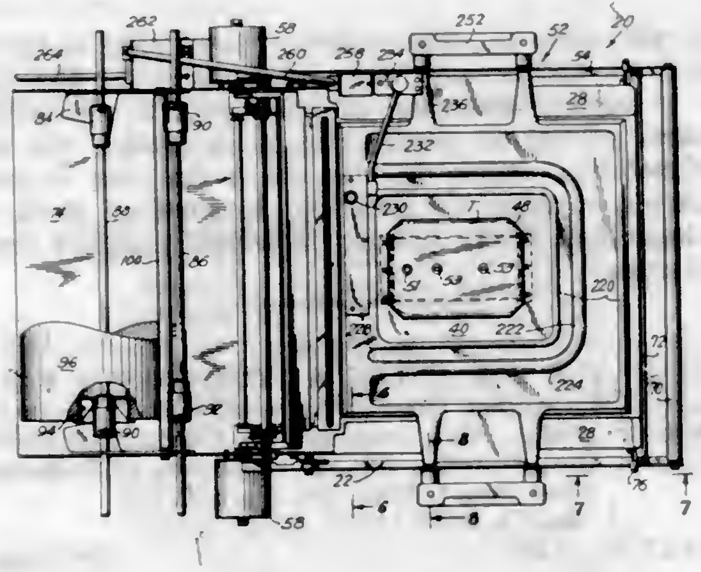
### 3,475,880
## SEALER FOR PACKAGING FOODSTUFFS AND THE LIKE

**Euland M. Bickham, North Babylon, and Samuel Rosenfeld, Islip Terrace, N.Y., assignors to Instrument Systems Corp., Huntington, N.Y., a corporation of New York**

**Filed Dec. 27, 1967, Ser. No. 693,976**
**Int. Cl. B65b** *7/16, 53/02, 61/06*
**U.S. Cl. 53—141** **14 Claims**



A sealer for providing over a material such as foodstuff in a tray a sheet of heat shrinkable film which shrinks beneath a lip of the tray. The sealer has a support means which supports a tray in a position where the support means extends rearwardly, forwardly, and laterally beyond both sides of the tray, and a supply means is located rearwardly of the tray to supply a sheet of heat-shrinkable film to be drawn by the operator forwardly over the tray resting on the material therein and engaging the support means at an area which surrounds the tray. A manually operable means is displaceable from an upper rest position where it is located at least in part over the tray downwardly along a working stroke to an operating position located approximately at the elevation of the tray, and this manually operable means carries a heating means which burns through the film at the area of the support means which surrounds the tray to provide the film with a heated edge which shrinks automatically beneath the lip of the tray. A cutting means is carried by the support means rearwardly of the tray and responds to movement of the manually operable means along its working stroke for cutting from the film a section which is then acted upon by the heating means.

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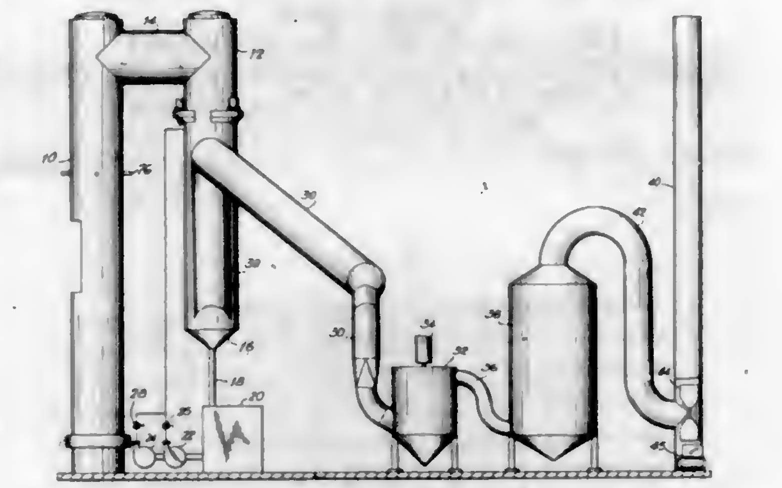
### 3,475,881
## METHOD AND APPARATUS FOR CLEANING CONTAMINATED GASES

**Orlan M. Arnold, Grosse Point Park, Victor W. Hanson, Garden City, Robert M. Jamison and Nicholas J. Panzica, Detroit, and Emil Umbricht, Northville, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.**

**Continuation of application Ser. No. 586,812, Oct. 14, 1966. This application Apr. 8, 1968, Ser. No. 719,767**
**Int. Cl. B01d** *47/06*
**U.S. Cl. 55—94** **11 Claims**



An improvement in an air pollution control system for cleaning contaminated gases (including the hot gases such as issue from cupola furnaces) which preconditions the contaminated gases by saturating with a selected liquid (usually water), cooling, and condensing the resulting vapor causing it to adsorb on the solid contaminants and thereby to form aggregations of droplet-borne contaminants which having a larger size either fall out of the gases or are more easily removed by the conventional gas washer to which they are then presented. The saturating is accomplished by a high velocity, intense spray which is generated to uniformly treat the contaminated gases with a cleaning, as well as a saturating, spray pattern. Ambient air may be introduced beyond the saturating spray, or the saturated gases may be cooled, to aid the condensation. Afterburners may be introduced before the spray to burn out many of the contaminants and simultaneously activate the remaining particles to cooperate with the foregoing improvement to result in even greater aggregation for facilitating contaminant removal.

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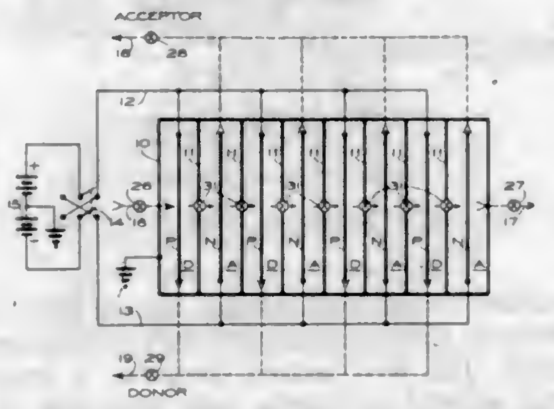
### 3,475,882
## SEPARATING COMPONENTS IN GASES

**Stuart A. Hoenig, Tucson, Ariz., assignor to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware**

**Filed June 14, 1968, Ser. No. 737,041**
**Int. Cl. B03c** *3/08, 3/74, 3/47*
**U.S. Cl. 55—179** **5 Claims**



Acceptor components of a gas are adsorbed on an n-type semiconductor surface, donor components on a p-type surface. Any excess gas is removed. The conductivities of the surfaces are then modified, as by reversing them. Acceptor components of the gas are desorbed from the now p-type semiconductor surface to an adjacent chamber. Donor components are desorbed from the now n-type surface to a different adjacent chamber. Conductivities are controlled by an electric field gradient or by radiation.

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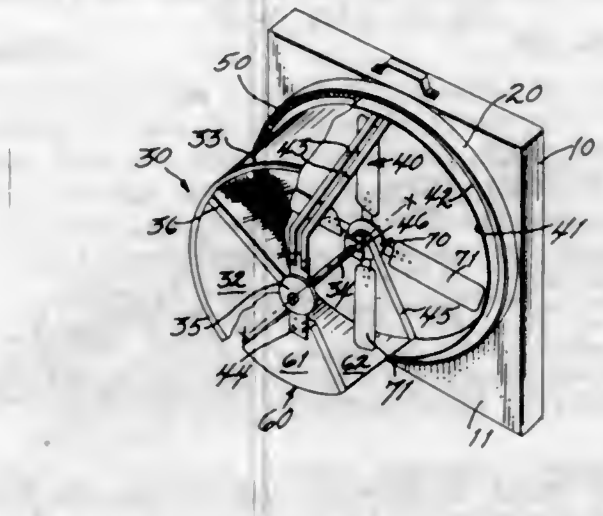
### 3,475,883
## ROTARY SCREEN SEAL

**Herbert D. Sullivan, Hinsdale, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware**

**Filed June 21, 1967, Ser. No. 650,566**
**Int. Cl. B01d** *46/26*
**U.S. Cl. 55—290** **6 Claims**



A seal for preventing the passage of dust between the peripheral edge of a rotary air filter and a stationary housing. The seal is formed of a continuous brush fixed on either the stationary housing or on the rotatable filter and is adapted to frictionally engage an annular surface of the other during rotation.

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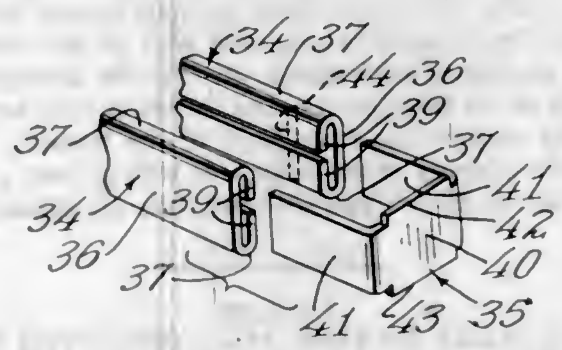
### 3,475,884
## FILTER BAG COLLAR

**Gene T. Kulzer, St. Paul, Minn., assignor to Torit Manufacturing Company, a corporation of Minnesota**

**Filed May 9, 1966, Ser. No. 548,648**
**Int. Cl. B01d** *29/24*
**U.S. Cl. 55—341** **2 Claims**



A filter bag collar to support an open ended filter bag of the type used in filter housings. The device includes a pair of parallel tubular flattened frame sides connected by end clips. The clips are V-shaped and fit into the open ends of the tubular frame sides. The open end of the bag extends upwardly through the collar and is folded down to encircle the collar and is attached thereto.

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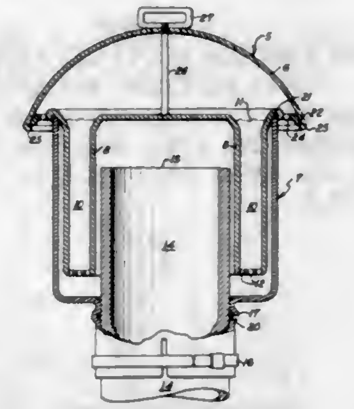
### 3,475,885
## RETAINER FOR PURIFICATION MEDIA FOR GAS FROM SEWER LINE VENTS

**Millard F. Kline, 138 Bedford St., Cumberland, Md. 21502**

**Filed May 2, 1968, Ser. No. 726,105**
**Int. Cl. B01d** *47/02*
**U.S. Cl. 55—357** **2 Claims**



A retainer for a purifying agent to purify gases escaping from sewer line vent pipes wherein the purifying agent is retained in an annular space around the vent pipe and the path escaping gases must travel is initially downward alongside the pipe into the purifying medium contained in the annular space, then is upward through the purifying medium and finally is through outlet openings in the retainer to the atmosphere; there being a cap disposed on the top of the retainer to shield it from the elements. In one embodiment, the unit carrying the purifying medium is supported by but not connected to the container and is adaptable for easy replacement. In the other embodiment the purifying medium is liquid which can be replenished through a fitting on the container.

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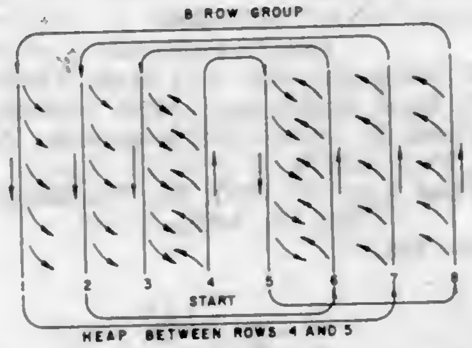
### 3,475,886
## METHOD OF HARVESTING SUGAR CANE

**Charles W. Hart, Hilo, Hawaii, assignor to C. Brewer and Company, Limited, a corporation of Hawaii**

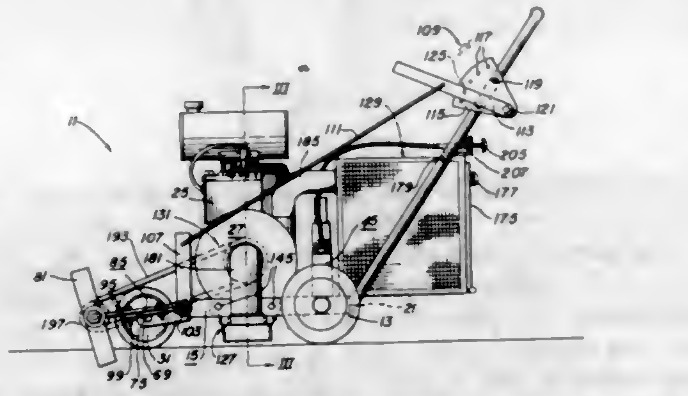
**Filed June 21, 1967, Ser. No. 647,687**
**Int. Cl. A01d** *91/04*
**U.S. Cl. 56—1** **7 Claims**



The present invention is directed to a method of cutting sugar cane and more particularly to the cutting of cane which due to variety or culture results in a condition in which (1) an erect nature of the stalk cannot be controlled, (2) the row to inter-row relationship of the field may be substantially flat as distinguished from the transverse undulation ever present in Louisiana cane fields. More specifically this harvesting method does not depend on cane being in an erect condition or on specific row hilling patterns for successful harvesting. The harvesting of sugar cane in Hawaii is a substantial departure from that method employed in Louisiana and the new method is here devised to harvest the crop in select numbers of cane row groups to sever the cane from the earth and to place all of the cane of, by way of example, cane row groups of from 3 to 8 rows on a single windrow so that a single large row may be transferred from the field to the vehicle which will transport the cane to mill. The present invention contemplates entering the center of a group of rows and cutting the cane of that row while depositing the cut cane upon standing cane of an adjacent row and thereafter going outside of the central cut and cutting from the outer limits or rows of the group toward the center while simultaneously transferring all of the cut cane from the outer rows onto a single large windrow.

### 3,475,887
### LAWN EDGER HAVING CUTTINGS COLLECTION MEANS

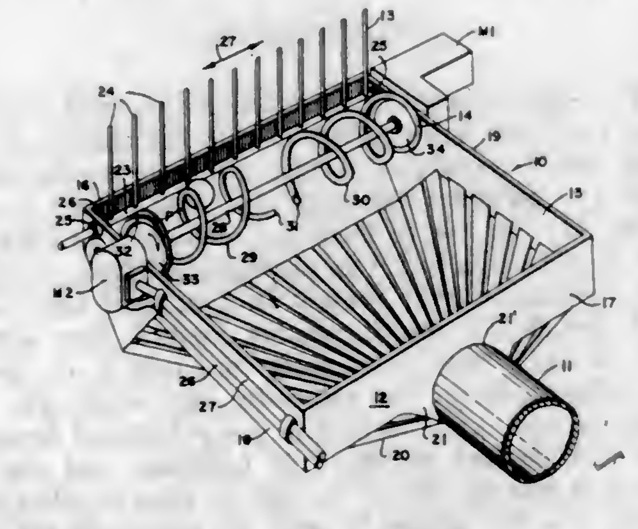
**Leon V. Price, 618 Lyncrest, Memphis, Tenn. 38122**
**Filed Dec. 26, 1967, Ser. No. 700,313**
**Int. Cl. A01d** *35/24, 53/14, 87/10*
**U.S. Cl. 56—25.4** **6 Claims**



A combination lawn edger and suction means for picking up the grass cuttings left by the edger. The lawn edger includes a wheeled carriage adapted to be manually moved along a walk or the like to cut the grass at the edge thereof. A cutting blade powered by a gasoline motor is mounted on the carriage for rotation about a horizontal axis. Lever actuated adjustment means is provided for regulating the elevation of the cutting blade. A downwardly opening head member is supported from the carriage rearwardly of the cutting blade, and fan and conduit means are in communication with the head member for creating a suction in the head member to clean up the area under the head member and deposit the matter collected into a basket mounted on the carriage.

### 3,475,888
### FRUIT PICKER

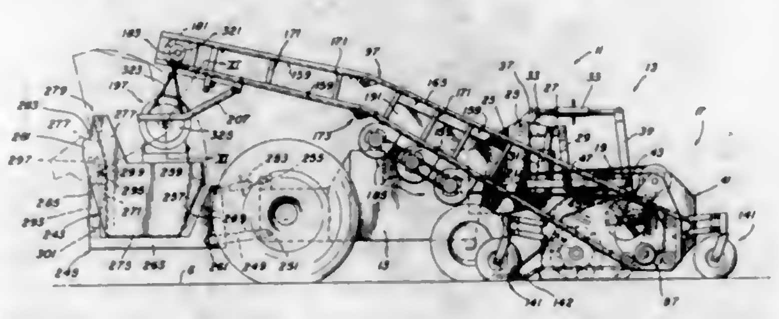
**Louis T. Staats, Sr., Rte. 1, Lincoln University, Pa. 19352; Cecil D. Misener, 1050 Minnehaha Ave.; and Frank B. Innis, 1020 Minnehaha Ave., Clermont, Fla. 32711**
**Filed Aug. 18, 1967, Ser. No. 661,649**
**Int. Cl. A01g** *19/00*
**U.S. Cl. 56—328** **14 Claims**



A mechanical fruit picking head particularly adapted for picking citrus fruit whereby the picker head exerts a pull and twisting motion on the fruit relative to the stem supporting the fruit. The picker head is mounted on an extensible support carried on a mobile platform, and comprises an open top receptacle having a bottom, a front wall, a rear wall and connecting side walls, a picker comb to engage behind the fruit and exert a pull thereon having a plurality of spaced fingers mounted across the open top of the receptacle adjacent the front wall with the picker fingers extending upwardly above the open top, and a power driven rotatable auger mounted across the open top of the receptacle just rearwardly of the picker comb to engage the fruit held by the picker comb and exert a twisting force thereon.

### 3,475,889
### HARVESTER FOR NUTS AND THE LIKE

**Le Roy B. Overstreet, Louisville, Miss., and Eugene P. Brumbaugh, Fort Valley, and Bertrand L. Brumbaugh, Perry, Ga.; said Overstreet assignor, by mesne assignments, to Thomson Machinery Company, Inc., Thibodaux, La., a corporation**
**Continuation of application Ser. No. 594,880, Nov. 16, 1966. This application Nov. 22, 1968, Ser. No. 778,350**
**Int. Cl. A01g** *19/06*
**U.S. Cl. 56—328** **11 Claims**

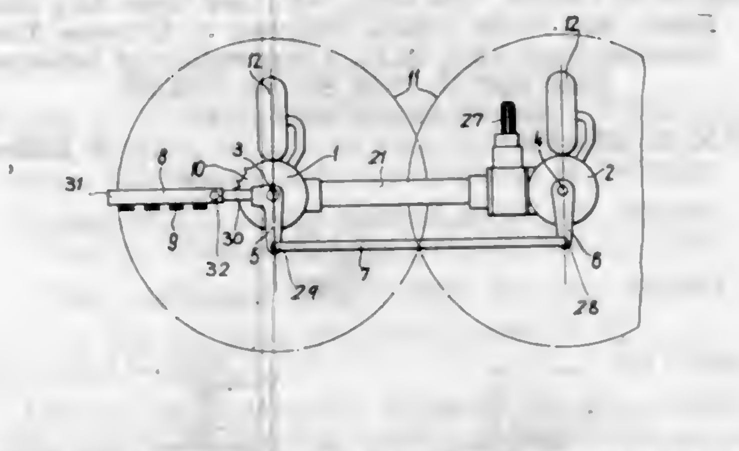


10. A harvester for gathering nuts and the like from the ground comprising, a housing having bottom, front, top, back and side walls with an opening in the bottom wall and an opening in each side wall, means for moving the housing over the ground with the bottom thereof adjacent the ground, a shaft extending transverse the direction of travel of the housing, a plurality of flexible fingers of elastomeric material mounted along the shaft and extending radially therefrom to be bent rearwardly by the ground with each rotation of the shaft, means rotating the shaft to move the fingers across the ground in the direction of travel of the housing to cause the fingers to flip nuts, leaves, and other loose debris on the ground upwardly and forwardly against the front side of the housing by the straightening of the fingers when they move out of engagement with the ground, conveyor means extending transverse the direction of travel of the housing and located adjacent the front wall to catch the nuts as they fall from the front side of the housing to carry the nuts laterally out of the housing, and blower means located in the opening in one side wall of the housing to blow a stream of air laterally through the housing across the path of the nuts, leaves, and debris as they are flipped upwardly against the front wall of the housing to blow out of the opening in the other side wall at least a portion of the leaves flipped upwardly into the air stream by the fingers.

### 3,475,890
### PLURAL RAKE HAYING MACHINE WITH MEANS FOR ADJUSTING WIDTH OF SWATH

**Josef Purrer and Martin Maier, Gottmadingen, Germany, assignors to Maschinenfabrik Fahr Aktiengesellschaft, Kreis Constance, Germany, a corporation of Germany**
**Filed June 19, 1967, Ser. No. 647,069**
**Claims priority, application Germany, June 24, 1966, M 69,952**
**Int. Cl. A01d** *57/12, 79/02*
**U.S. Cl. 56—370** **10 Claims**

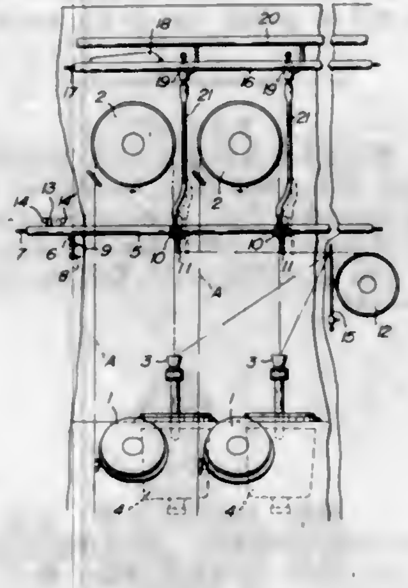
A haying machine having a pair of rotary rakes horizontally spaced upon a support beam and driven by respective bevel-gear assemblies in the rake heads on the beam and a pair of support wheels whose shafts extend through each of the rake heads and thereabove are provided with levers connected by a pivotal link rod which forms a parallelogrammatic linkage with the levers and the support beam. One of the levers is a bellcrank lever



whose arm forms a handle for swinging the beam into a position oblique to the direction of advance of the machine from a position perpendicular to this direction and has a locking pawl for setting the positions of the beam with respect to the wheels. The handle may carry rearwardly facing reflectors for visibility on a highway.

### 3,475,891
### METHOD OF AND APPARATUS FOR DOFFING YARNS IN THE CENTRIFUGAL POT SPINNING PROCESS

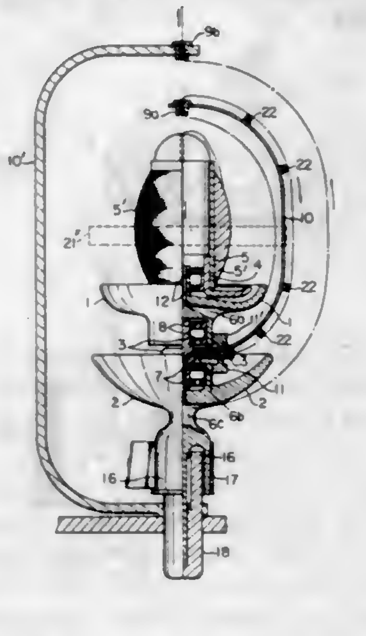
**Shigeru Matsuoka, Kiyoshi Fujisawa, Shohachi Masal, and Atsumi Asami, Nobeoka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan**
**Continuation-in-part of application Ser. No. 315,071, Oct. 9, 1963. This application Feb. 6, 1968, Ser. No. 703,317**
**Claims priority, application Japan, Oct. 11, 1962, 37/43,807**
**Int. Cl. D01h** *9/04;* **D02g** *3/02*
**U.S. Cl. 57—34** **16 Claims**



A method of doffing yarns comprising the steps of trailing yarns being spun into spinning pots in a lateral direction, taking out formed cakes from the pots while gathering the laterally trailed yarns, ejecting fluid toward the funnel tubes after the cake removal, and cutting yarns immediately thereafter so as to allow the ejected fluid to guide the cut ends of the yarns into the pots through the funnel tubes, and an apparatus used in working the said doffing method.

### 3,475,892
### MULTIPLE-TWIST SPINDLE

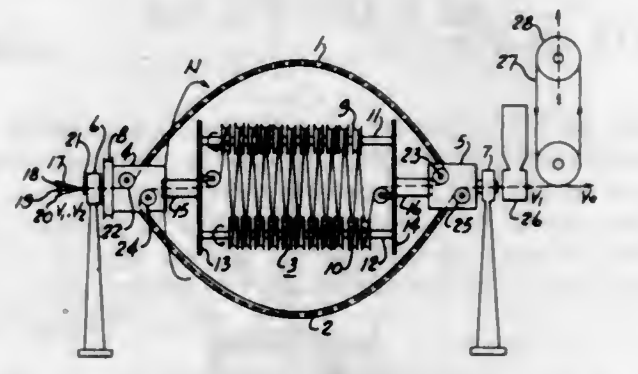
**Keon Taira and Kazuyoshi Kida, Komatsu-shi, Japan, assignors to Teijin Limited, Osaka, Japan**
**Filed Sept. 24, 1968, Ser. No. 762,037**
**Claims priority, application Japan, Sept. 28, 1967, 42/82,753; Oct. 27, 1967, 42/69,151; Feb. 20, 1968, 43/12,510; Feb. 24, 1968, 43/13,718, 43/13,719**
**Int. Cl. D01h** *1/10, 7/86*
**U.S. Cl. 57—58.61** **9 Claims**



Multiple-twist spindle of a simple structure which can impart to an untwisted yarn a multiple twist of an arithmetical progression beginning with 4 and having a common difference of 2 such as fourth-twist, sixth-twist, eighth-twist . . . , per one rotation of the twist spindle shaft and which can make a high-speed twisting possible.

### 3,475,893
### METHOD OF MANUFACTURING COMMUNICATION CABLE AND MANUFACTURING APPARATUS

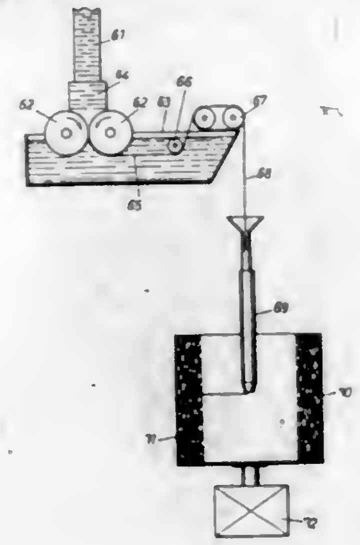
**Masao Sugi and Hiroyuki Kumamaru, Kamakura-shi, Japan, assignors to Sumitomo Electric Industries, Ltd., Osaka, Japan, a company of Japan**
**Filed Apr. 5, 1967, Ser. No. 628,713**
**Claims priority, application Japan, Apr. 8, 1966, 41/22,374**
**Int. Cl. D01h** *1/10, 7/86, 7/02*
**U.S. Cl. 57—58.84** **17 Claims**



A method and apparatus for the manufacture of communication cable having alternating twists imparted to the group of elementary wires making up the cable wherein a pair of fliers envelop and revolve about a device having spaced rows of free wheeling rollers for accumulating the group of elementary wires. The ratio of the speed of revolution of the fliers to the line speed of the group of elementary wires passing through the accumulator as a function of line length is varied to two settings for a fixed length of stranded wire.

### 3,475,894
## PRODUCTION OF STRANDS FROM FIBROUS MATERIAL, PARTICULARLY ASBESTOS FIBERS

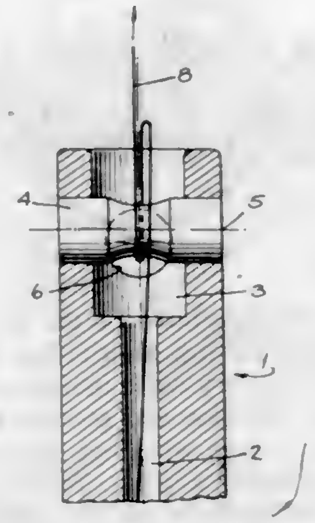
**Werner Wilke and Hans Fetzer, Schwabisch Hall, Germany, assignors to Rex Asbestwerke Graf von Rex K.G., Schwabisch Hall, Germany, a corporation of Germany**
**Continuation-in-part of application Ser. No. 635,561, May 2, 1967. This application Oct. 23, 1967, Ser. No. 681,050**
**Claims priority, application Austria, May 3, 1966, A 4,176/66; Dec. 23, 1966, A 11,853/66**
**Int. Cl. D01h** *7/00, 13/30;* **D02g** *3/20*
**U.S. Cl. 57—58.89** **21 Claims**



Yarn and other strand material is produced from a dispersion of asbestos or other short fibers by having a travelling band of dispersion contacted by a coagulant-coated surface of a cylinder or other moving structure which conveys the band away from, or out of, a nozzle. The nozzle may be formed of rotating cylinders which simultaneously serve as conveying structures. Preferably, the nozzle cylinders are serrated and intermesh to form between each other a multitude of orifices so that a multifilament band is issued. For the production of yarn, the band, when coagulated, is twisted during continuance of its forming travel.

### 3,475,895
## TWIST TUBE FOR FALSE-TWIST DEVICE

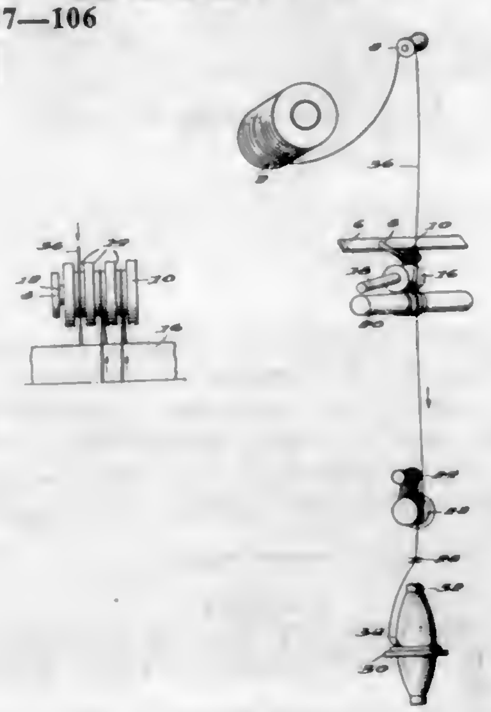
**Josef Raschle, Buetschwil, Switzerland, assignor to Heberlein Patent Corporation, New York, N.Y., a corporation of New York**
**Filed Jan. 14, 1969, Ser. No. 791,085**
**Claims priority, application Switzerland, Mar. 1, 1968, 3,149/68**
**Int. Cl. D01h** *7/92, 7/46*
**U.S. Cl. 57—77.3** **6 Claims**



Twist tube for yarn texturing false-twist devices wherein the tube has a pin extending transversely across the tube bore and the tube is bored transversely, the axis of the latter bore being slightly displaced relatively to the axis of the pin.

### 3,475,896
## STABILIZING YARN THREADLINE DURING TWISTING

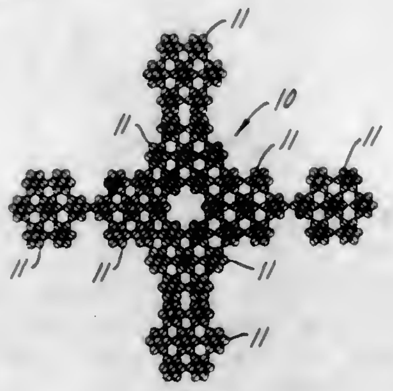
**Baylor D. Gibson, Charlotte, N.C., and Hans Jorg Otto Berne, Sao Paulo, Brazil, assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware**
**Filed Apr. 29, 1968, Ser. No. 724,905**
**Int. Cl. D01h** *13/04, 5/28*
**U.S. Cl. 57—106** **5 Claims**



Method and apparatus for drawtwisting non-circular filaments and yarn wherein the yarn passes over a rotary guide or roll having a plurality of circumferential grooves. The guide or roll is positioned between the ring traveler of a conventional spinning frame and the creel in which the yarn package is supported. Preferably, a thread guide having circumferential grooves is positioned directly above the feed roll to avoid twist from the package in the creel reaching the feed rolls, and a grooved separator roll is positioned above the bobbin to avoid twisting the yarns off the draw roll or godet, due to the twist caused by the traveler.

### 3,475,897
## STEEL CABLE-LAID BODY

**Arthur Leach, Kenosha, Wis., assignor to MacWhyte Company, Kenosha, Wis., a corporation of Wisconsin**
**Filed Nov. 16, 1967, Ser. No. 683,574**
**Int. Cl. D02g** *3/36;* **D07b** *1/06*
**U.S. Cl. 57—144** **5 Claims**



A wire rope structure especially adapted for use as a sling having eight basic ropes which are twisted in pairs to form four coreless cables, the cables in turn being twisted to form a cable laid rope structure having the same pitch as the cables, said structure being formable on conventional wire rope making machinery and having the appearance of, and kink resisting, spin resisting, flexibility and strength properties equal or superior to conventional 8-part round sling bodies. A method of forming an eye is also disclosed.

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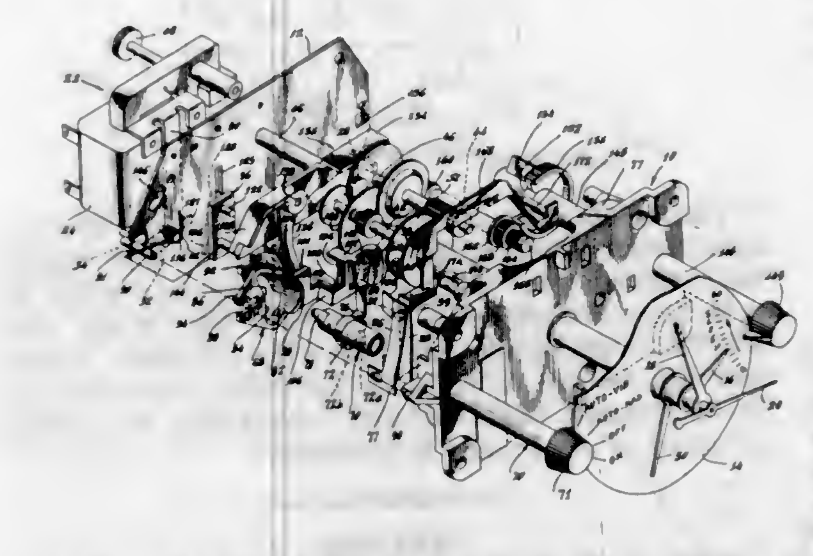
### 3,475,898
## STATIC RESISTANT FILAMENT

**Eugene E. Magat and William H. Sharkey, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Continuation-in-part of applications Ser. No. 419,807, Dec. 21, 1964, and Ser. No. 326,425, Nov. 27, 1963.**
**This application Apr. 3, 1967, Ser. No. 641,405**
**Int. Cl. D02g** *3/02;* **D01f; C08g** *27/32*
**U.S. Cl. 57—140** **22 Claims**

Antistatic and antisoiling synthetic melt-spun drawn polyamide filaments having uniformly admixed therein as a distinct phase at least about two percent by weight of a high molecular poly(alkylene ether). The poly(alkylene ether) is uniformly distributed throughout the filament structure in the form of microscopic, elongated particles of specified particle size which are oriented in overlapping relationship with their longest dimension parallel to the major axis of the filament. These modified filaments have a minimum nuclear magnetic resonance peak ratio of at least about 1.0 and are highly useful as fibers, yarns, fabrics, etc.

### 3,475,899
## RADIO AND ALARM CONTROL MECHANISM

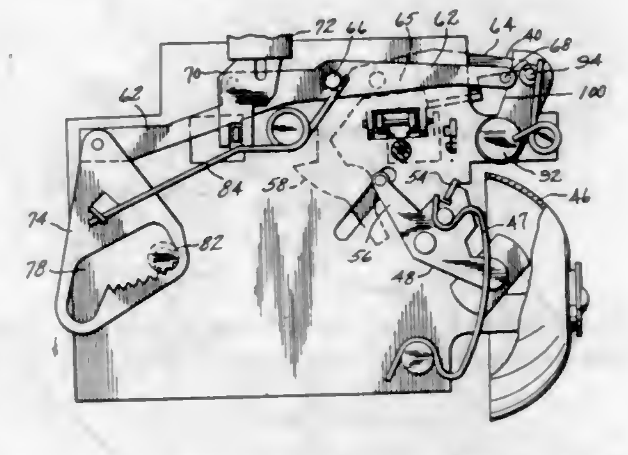
**Robert L. Boyles, Wayland, Mass., assignor to General Electric Company, a corporation of New York**
**Filed June 8, 1967, Ser. No. 644,686**
**Int. Cl. G04b** *13/02;* **G04c** *21/16*
**U.S. Cl. 58—21.155** **12 Claims**



A radio and alarm control mechanism having a plural position lever for controlling the condition of a switch and an audible vibrator alarm, the lever being loosely pivoted upon a selector shaft which controls the position of the lever in cooperation with a torsion spring and a timing device which automatically allows the lever to be moved at a preset time. A temporary alarm shutoff lever is also included to silence the alarm and a sleep control mechanism is included for closing the switch for a predetermined time interval independently of the lever position.

### 3,475,900
## ALARM CONTROL MECHANISM

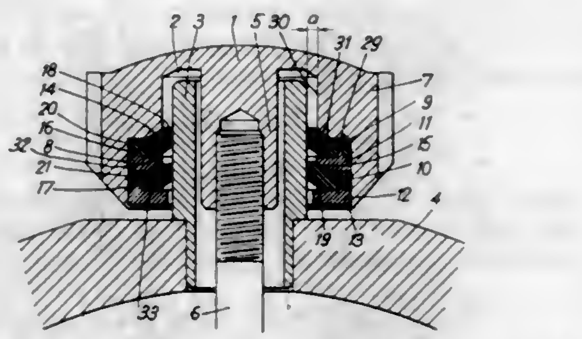
**William C. Wingler, Stow, Mass., assignor to General Electric Company, a corporation of New York**
**Filed Aug. 23, 1967, Ser. No. 662,752**
**Int. Cl. G04b** *23/06*
**U.S. Cl. 58—21.155** **5 Claims**



A temporary alarm shut off mechanism for a bell alarm clock having an alarm actuator lever **40** pivoted to a base plate of the clock. An interval control lever is also pivotally mounted on the base plate and is arranged to be selectively driven by a continuously rotated gear. A latch lever is uniquely positioned between the alarm actuator lever **40** and the interval control lever **62** and is arranged to be tripped by the interval control lever **62** at the end of a predetermined short interval to permit the alarm actuator lever to be instantaneously moved to its alarm "on" position.

### 3,475,901
## WINDING AND HAND-SETTING CROWN FOR DIVER WATCHES

**René Soguel, Rue de la Chapelle 10, Les Hauts-Geneveys, Neuchatel, Switzerland**
**Filed May 7, 1968, Ser. No. 727,161**
**Claims priority, application Switzerland, May 9, 1967, 6,528/67**
**Int. Cl. G04b** *37/08*
**U.S. Cl. 58—90** **6 Claims**

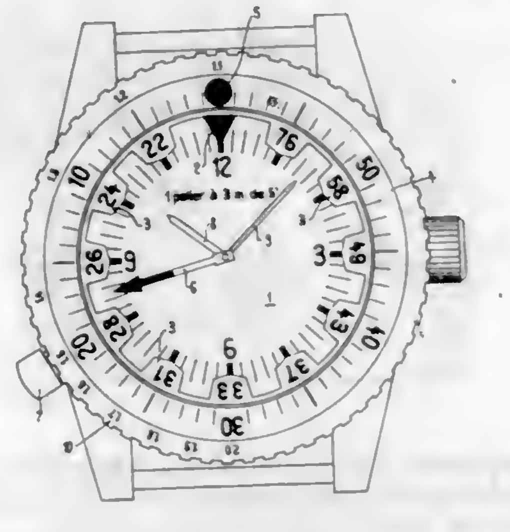


A winding and hand-setting crown for diver watches comprising a pair of identical and resilient packing members secured to the body member of the crown, each of which consists of a flat ring engaging the watchcase tube only by an edge pressed thereagainst by a bearing surface of the body member of the crown and of an intermediate ring secured thereto.

### 3,475,902
## DIVER'S WATCH

**Paul Wessel, Ronnerweg 1a, Nidau, Switzerland**
**Filed July 10, 1968, Ser. No. 743,743**
**Claims priority, application Switzerland, July 10, 1967, 9,812/67**
**Int. Cl. G04b** *19/18*
**U.S. Cl. 58—126** **4 Claims**

A diver's watch, comprising on its periphery a set of numbers indicating the depth at which the diver can stay during a time corresponding to the position of each number, said time being proportional to the angle formed between the "noon" of the dial and said number, a bezel provided with an index, rotatably mounted on the watchcase, and a minute stop-hand, the whole being such that



for a dive at a given depth, it suffices to turn the bezel so as to bring its index opposite the number indicating said depth and to start the minute stop-hand, the diver being warned that he has to go up again when said hand arrives opposite the index of the bezel.

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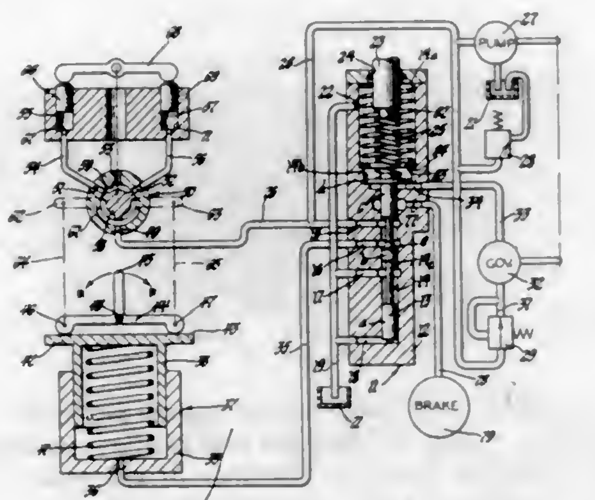
3,475,903

### C-6 HYDROSTATIC TRACTOR TRANSMISSION

**Howard W. Christenson, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Feb. 28, 1968, Ser. No. 709,007**
**Int. Cl. F15b** *15/18;* **F16h** *39/00*
**U.S. Cl. 60—19** **9 Claims**



Herein disclosed is a control for a variable displacement hydrostatic drive unit which is operable to reduce the power input to the unit from an engine, by adjusting the displacement of the unit, to prevent engine overloading. The control is comprised of a valve member, opened and closed by engine throttle and engine speed signals respectively and a stroke limiting mechanism which operates in response to control fluid delivered by the valve member to limit the displacement of a hydrostatic unit. The valve member also has a brake port which is opened at a predetermined governor speed to actuate the vehicle brakes thereby preventing engine overspeed.

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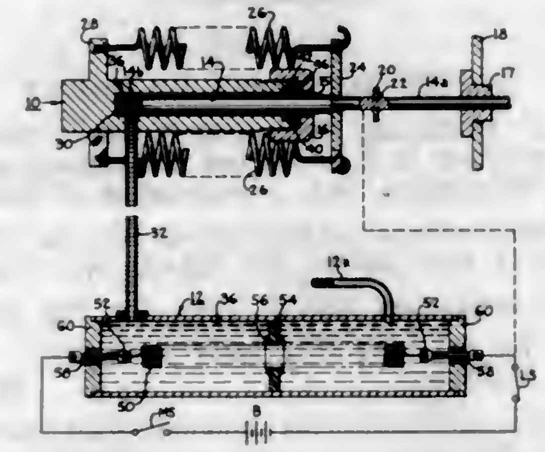
3,475,904

### HEAT MOTOR UTILIZING EXPANSIBLE FLUID FOR DRIVING A PISTON

**Thomas E. Hayes, Goshen, Ind., assignor to Penn Controls, Inc., Wheaton, Ill., a corporation of Delaware**
**Filed June 26, 1967, Ser. No. 648,629**
**Int. Cl. F03g** *7/06*
**U.S. Cl. 60—23** **9 Claims**



A piston actuatable within a cylinder in response to expansion due to heating of a fluid contained therein has a portion extending through a seal in the end wall of the cylinder for driving external mechanism. An electric resistance heater is immersed in the fluid in a second cylinder which is interconnected through capillary tubing with the first cylinder. The construction of the two cylinders and the interconnecting tubing is such as to minimize conduction of heat from the resistance heater to the seal, enabling the seal to function at relatively high pressures of up to 3,000 pounds per square inch at the seal and temperatures up to 375° F. of the fluid in the vicinity of the resistance heater.

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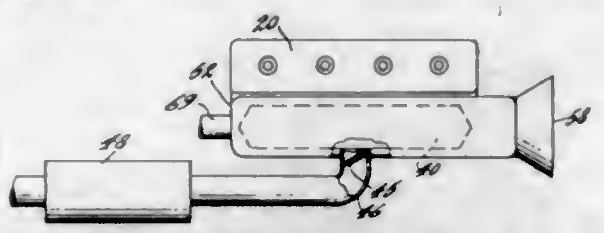
3,475,905

### INTERNAL COMBUSTION ENGINE

**Edward Burke Wilford, 300 Linden Ave., Merion Station, Pa. 19066**
**Filed Jan. 23, 1967, Ser. No. 610,985**
**Int. Cl. F01n** *3/00;* **F02d** *31/00*
**U.S. Cl. 60—30** **5 Claims**



The present invention improves the efficiency of an internal combustion engine at part throttle and reduces the toxicity of the exhaust gases, smog, and solids, by achieving more complete combustion than in the prior art. This is effected by eliminating the carburetor throttle valve on the intake manifold, installing a throttle valve in the exhaust manifold, and maintaining the exhaust manifold at an elevated temperature.

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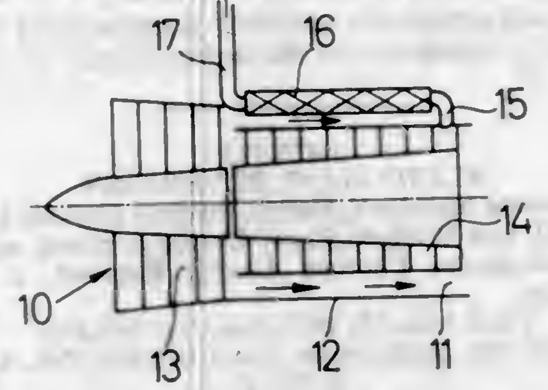
3,475,906

### HEAT EXCHANGER FOR AIRCRAFT AIR CONDITIONING SYSTEMS

**Gero Otto Madelung, Munich, Germany, assignor to Entwicklungsring Sued G.m.b.H., Munich, Germany, a corporation of Germany**
**Filed Feb. 28, 1967, Ser. No. 619,458**
**Claims priority, application Germany, Apr. 1, 1966, E 31,367**
**Int. Cl. F02c** *7/34;* **F02k** *3/02, 11/00*
**U.S. Cl. 60—39.07** **2 Claims**

An air conditioning system for aircraft of the jet engine type having a heat exchanger disposed in the path of the bypass air and having means to take air from the high-pressure section of the engine and feeding same through



the said heat exchanger. Thus, the air extracted from the high-pressure section is ultimately used as the cooling medium for air conditioning purposes.

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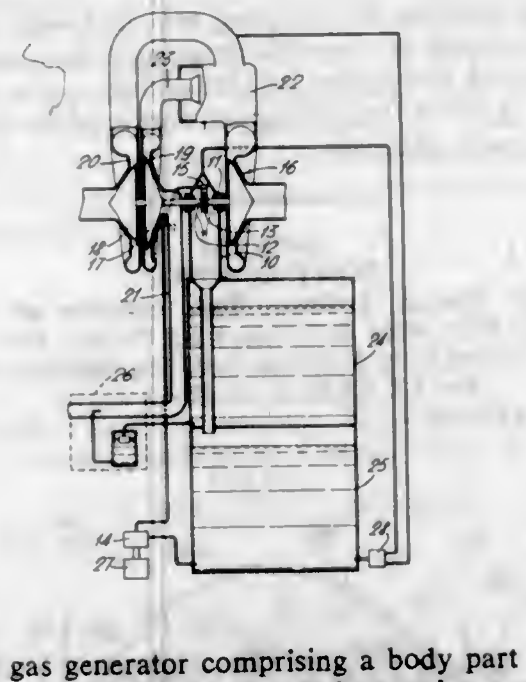
3,475,907

### GAS TURBINE WITH LUBRICANT AND FUEL SUPPLY SYSTEMS THEREFOR

**Eric Kellett, London, England, assignor to C.A.V. Limited, London, England, a British company**
**Filed Apr. 12, 1968, Ser. No. 720,942**
**Claims priority, application Great Britain, Apr. 27, 1967, 19,441/67**
**Int. Cl. F02g** *3/00;* **F04d** *17/08*
**U.S. Cl. 60—39.08** **5 Claims**



A hot gas generator comprising a body part which defines a support for a rotary shaft carrying a rotor of a turbine and the rotors of compressors, the body part being mounted on a fuel tank which in turn is mounted on a fluid reservoir motor means being provided to effect rotation of the shaft by means of fluid under pressure derived from a pump 14 driven by a motor the pump deriving fluid from the fluid reservoir.

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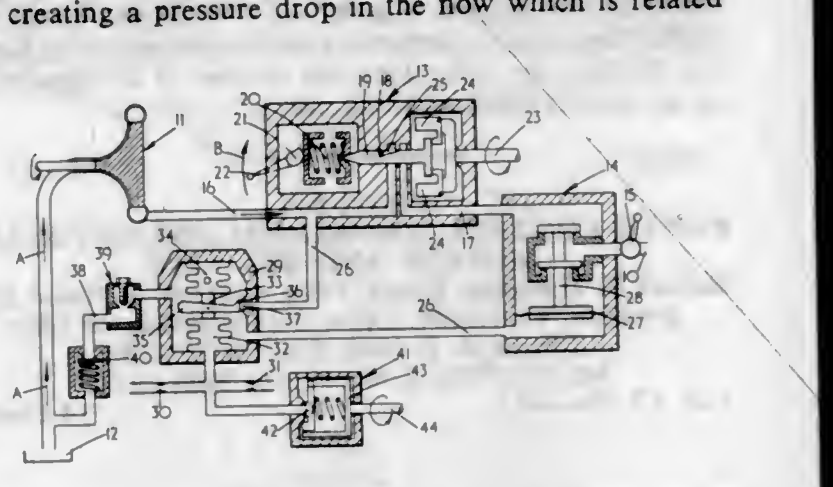
3,475,908

### FUEL SYSTEMS FOR GAS TURBINE ENGINES

**Eugene Harold Warne, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company**
**Continuation-in-part of application Ser. No. 649,687, June 28, 1967. This application Oct. 9, 1967, Ser. No. 673,902**
**Int. Cl. F02g** *3/00;* **F02c** *9/08*
**U.S. Cl. 60—39.28** **4 Claims**

In a gas turbine engine fuel system there is a centrifugal type pump which the delivery pressure depends upon speed, a servo operated throttle between the pump and the engine, a speed responsive device between the pump and the throttle, this device being operator adjustable and creating a pressure drop in the flow which is related



to speed, and the throttle servo, being controlled through a device in accordance with variations in engine generated pressures.

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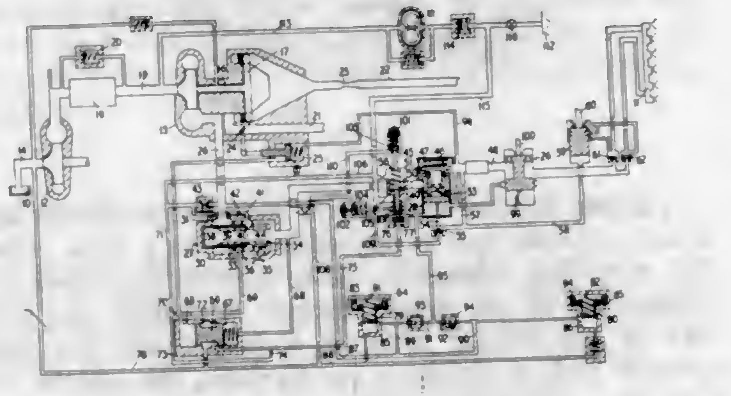
3,475,909

### PUMPING APPARATUS FOR SUPPLYING FUEL TO AN ENGINE

**Eugene Harold Warne, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England**
**Filed Oct. 10, 1967, Ser. No. 674,231**
**Int. Cl. F02c** *9/08*
**U.S. Cl. 60—39.28** **2 Claims**



Pumping apparatus for an engine fuel system comprises an engine driven pump, and an air turbine pump, the latter having an air volume controlling throttle controlled by a servo, this controlling the contribution of the second pump to the pressure output of the apparatus.

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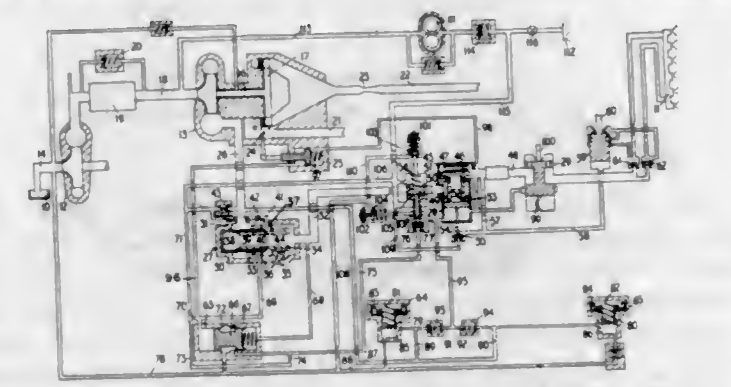
3,475,910

### FUEL SYSTEMS FOR GAS TURBINE ENGINES

**Eugene Harold Warne, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England**
**Filed Oct. 10, 1967, Ser. No. 674,232**
**Int. Cl. F02c** *9/08, 7/32, 9/10*
**U.S. Cl. 60—39.28** **6 Claims**



A fuel system for a gas turbine engine having an air driven pump and a manually operable throttle, servo operated throttle in series with the manual throttle between the pump and the engine, said servo operated throttle being responsive to changes in a plurality of parameters and also serving as a shut-off cock in the system and there being a servo responsive to the pressure drop across the throttles for controlling the volume of air supplied to an air driven turbine for the pump.

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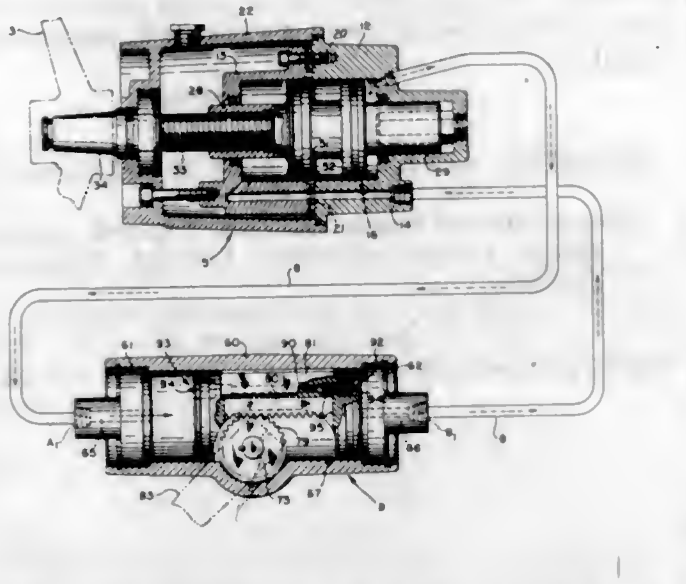
### 3,475,911
## POWER CONTROL MECHANISM FOR OUTBOARD MOTORS AND THE LIKE
**Robert R. Harrison, Elyria, Ohio, assignor to Nemo Corporation, Cleveland, Ohio, a corporation of Ohio**
**Filed Feb. 1, 1968, Ser. No. 702,255**
**Int. Cl. F15b** *7/08, 17/00;* **B60t** *11/10*
**U.S. Cl. 60—54.5** **14 Claims**



A power control mechanism including a double acting master cylinder operatively connected to a slave cylinder for supplying hydraulic fluid thereto in response to movements of the master piston. A central port in the wall of the master cylinder communicates the master cylinder with a reservoir for bleeding one or the other side of a closed hydraulic system at the end of each stroke of the master piston, and relief valves in opposite ends of the slave piston permit excessive fluid to pass from one side of the piston to the other for synchronizing the master and slave pistons in the event that the slave piston reaches the end of its stroke ahead of the master piston.

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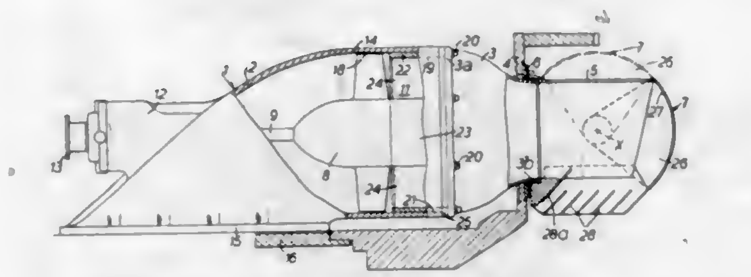
### 3,475,912
## PROPULSION UNITS
**Richard Angier, Chester, England, assignor to UA Engineering Limited, Sheffield, England**
**Filed Oct. 2, 1967, Ser. No. 672,316**
**Int. Cl. B63h** *25/46, 11/02;* **F02k** *1/20*
**U.S. Cl. 60—222** **8 Claims**



A jet propulsion unit for a vehicle propulsion system, the unit having an outlet pipe with on opening at one end which is of substantially rectangular shape and from which in use the jet issues. The internal cross-section of the pipe merges smoothly from circular at the opposite end to square at said one end in a manner which provides a continuously decreasing flow cross-section along the length of the outlet pipe. The pipe at said one end communicates with a steering box having a jet deflector thereon, and a plate-like restrictor is positionable between the outlet of the pipe and the steering box.

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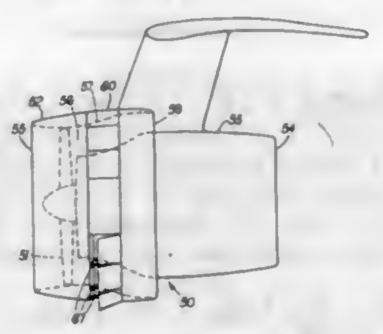
### 3,475,913
## FLUID FLOW REVERSERS
**James Oswald Mortlock, Derby, William Herbert London, Watnall, and William Shaw, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company**
**Filed June 28, 1967, Ser. No. 649,525**
**Claims priority, application Great Britain, Feb. 4, 1967, 5,477/67**
**Int. Cl. F02k** *3/06*
**U.S. Cl. 60—229** **11 Claims**



A trust reverser has a casing provided with inner and outer flaps which are movable between an inoperative position, in which they merge into the casing, and an operative position, in which they extend outwardly of the casing and direct to gases upstream.

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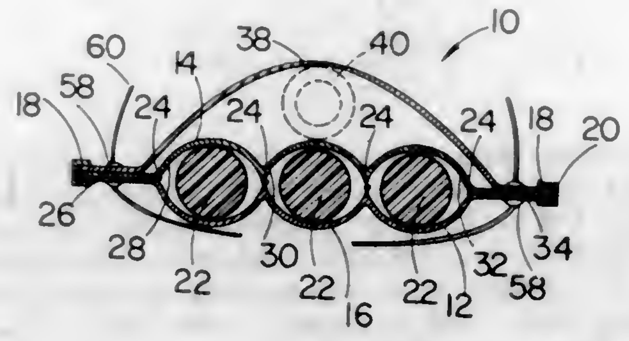
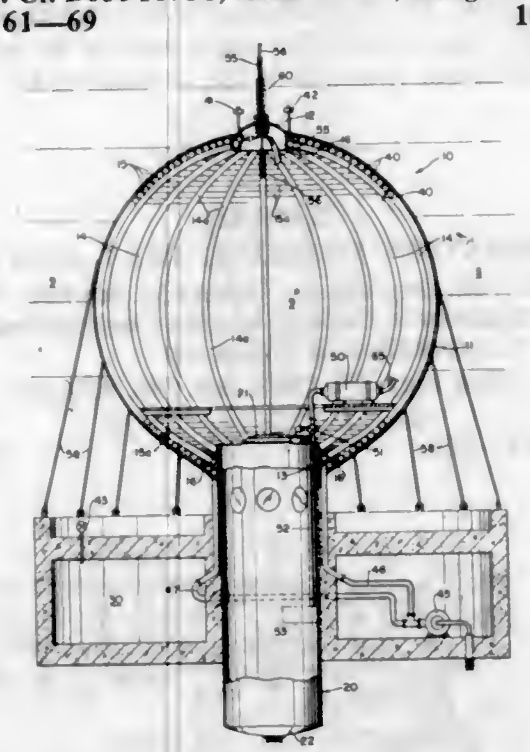
### 3,475,914
## BOAT BUMPER
**Charles D. Porter, Andrews, Ind., assignor of one-third to Mrs. John B. Leslie, Fort Wayne, Ind.**
**Filed Feb. 26, 1968, Ser. No. 708,347**
**Int. Cl. E02b** *3/20;* **B65d** *35/10*
**U.S. Cl. 61—46** **8 Claims**



A bumper comprising a flexible casing, a plurality of elongated resilient members in the casing, means forming constrictions in the casing to hold the members in a spaced-apart relationship, and means defining a pocket at one end of the casing for receiving the upper end of a post, thereby to mount the bumper on such post. Tie means is provided for shaping the bumper about the post. The casing is preferably formed by sewing together two identical rectangular panels and the constrictions are preferably formed by stitching the panels from end to end to define elongated chambers for receiving the members. Preferably, when the bumper is mounted on an upstanding post, the resilient members extend generally parallel to the post.

### 3,475,915
## UNDERWATER STRUCTURES
**Richard Caplan, New York, N.Y., assignor to Technautics Corporation, New York, N.Y., a corporation of New York**
**Filed Apr. 16, 1968, Ser. No. 721,753**
**Int. Cl. B63c** *11/36;* **E04b** *1/343;* **E04g** *11/04*
**U.S. Cl. 61—69** **10 Claims**



The present invention relates to collapsible submersibles having individual structural elements which are liquid-filled tubes of circular cross section and circular shape. The submersibles themselves are also preferably circular in overall cross-sectional configuration, being spherical, cylindrical, toroidal, or a combination of those shapes. The submersible is normally collapsed when above water and is erected by totally filling its structural elements after submersion.

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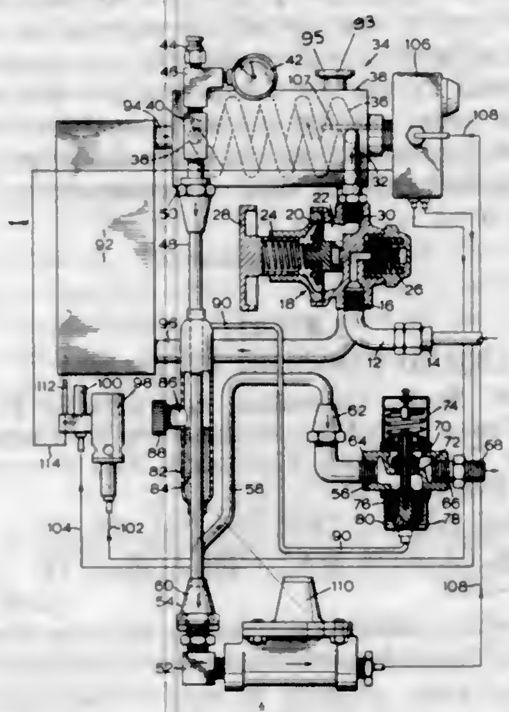
### 3,475,916
## VAPORIZER
**Sidney Smith, 44 Six Point Road, Toronto 18, Ontario, Canada**
**Filed Dec. 12, 1966, Ser. No. 600,918**
**Claims priority, application Canada, Nov. 3, 1966, 974,706**
**Int. Cl. F17c** *13/02, 7/00, 9/02*
**U.S. Cl. 62—52** **2 Claims**



A liquid vaporizer with pressurized temperature sensing means operable to deliver vapor at a predetermined minimum temperature and to prevent delivery of liquid.

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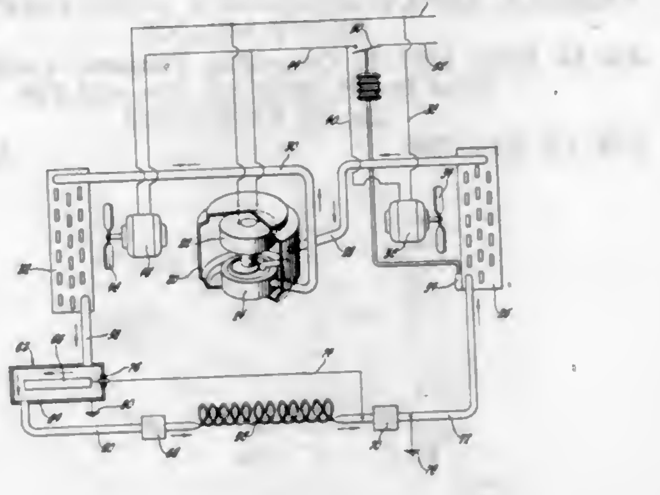
### 3,475,917
## ELECTROSTATIC CLEANER APPLICATION
**Richard C. Schwing, Troy, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed June 17, 1968, Ser. No. 737,734**
**Int. Cl. F25b** *43/00*
**U.S. Cl. 62—85** **4 Claims**



In the preferred form, the refrigerant circuit is provided with an electrostatic precipitator located at the entrance of a capillary restrictor to cause the electrostatic precipitation of particles from the refrigerant prior to its entrance into the restrictor. Preferably the capillary restrictor tube is electrically isolated in the circuit and the streaming potential generated therein by the flow of refrigerant therethrough is used to power the electrostatic precipitator.

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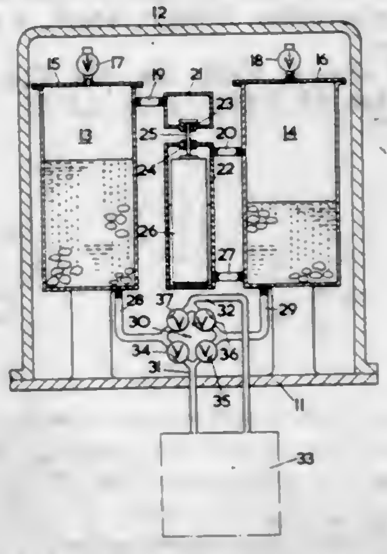
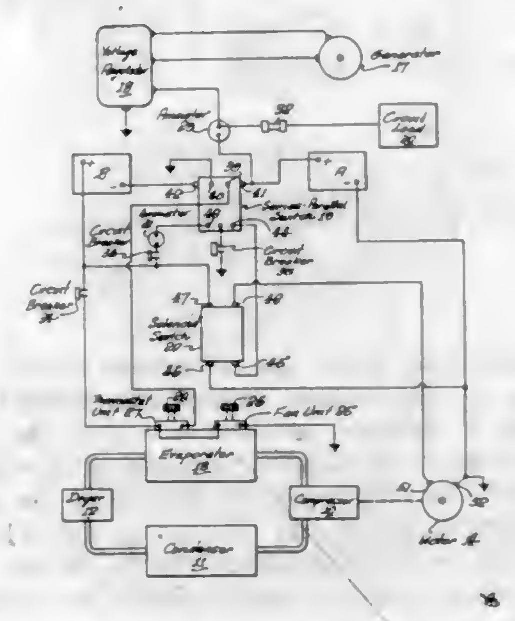
### 3,475,918
## COOLING APPARATUS EMPLOYING CARBON DIOXIDE
**Derek Rodney Burton, Highett, Victoria, Australia, assignor to Minister of Technology in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England**
**Filed Nov. 13, 1967, Ser. No. 723,957**
**Int. Cl. F25d** *3/12*
**U.S. Cl. 62—165** **4 Claims**



A supply system for supplying cooling liquid to cooling apparatus comprises a pair of pressure vessels for containing solid carbon immersed in water, control valve and connecting means for alternately effecting a unidirectional flow of coolant from one pressure vessel through cooling apparatus to the other pressure vessel along a first path and a unidirectional from the other pressure vessel through cooling apparatus to the one pressure vessel along a second path, and vent and sealing valve means connected to the pressure vessels which according to the relative fluid levels in the vessels vent one of the vessels while sealing the other so that gas pressure, developed from the carbon dioxide and water, alternately builds up withon one vessel and then the other vessel causing flow of coolant back and forth between the vessels through the control valve and connecting means.

### 3,475,919
### VEHICLE AIR CONDITIONER WITH ELECTRICAL DRIVE MEANS

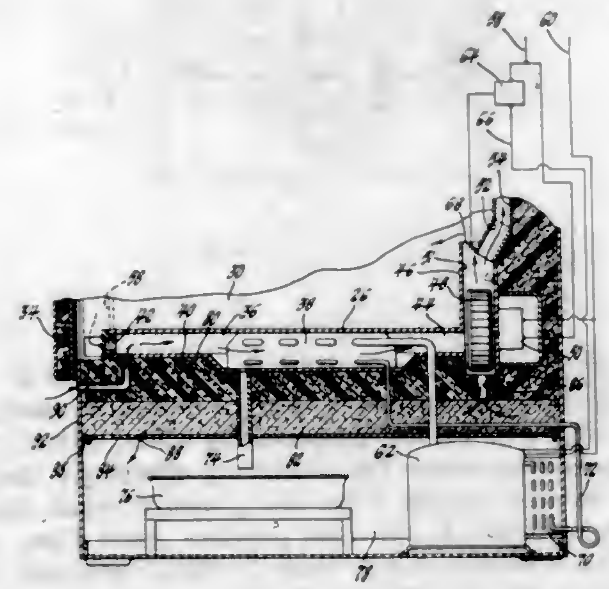
**Joe D. Ellis, 1101 E. Columbia, Pomona, Calif. 91767**
**Filed Jan. 5, 1968, Ser. No. 695,949**
**Int. Cl. F27b** *27/00*
**U.S. Cl. 62—228** **14 Claims**



An air conditioning system for motor vehicles, particularly trucks and automobiles, in which the air conditioning compressor is mechanically driven by an electric motor, and which electric motor is electrically driven, for example, by two twelve volt batteries in the system through a series-parallel switch providing an input voltage of twenty-four volts to the electric motor during those periods the electric motor is operating.

### 3,475,920
### KEEPING INSULATION DRY

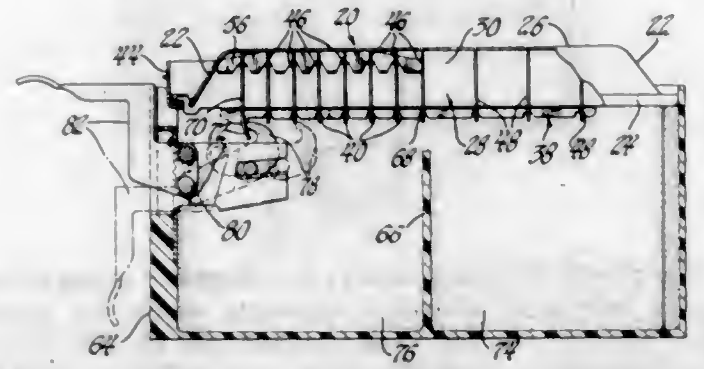
**James W. Jacobs, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed May 6, 1968, Ser. No. 726,794**
**Int. Cl. F25d** *23/06, 17/06*
**U.S. Cl. 62—273** **5 Claims**



In the preferred form of this refrigerator, a centrifugal fan draws air from the compartments to be cooled and through the evaporator before returning the air to the compartments. To keep the insulation dry, a small duct extends from the housing of the centrifugal fan to part of the insulation space which is provided with an outer layer of glass fiber insulation. The cold dry air circulates through and removes moisture from this outer layer and an inner layer of polyurethane foam insulation and can either leak out through the outer wall or be returned to an area of lower pressure in the circulating air.

### 3,475,921
### COMBINATION FREEZING TRAY AND GRID

**Joe P. Pietrzak, Dayton, and Robert M. Strahan, Vandalia, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed May 19, 1967, Ser. No. 639,846**
**Int. Cl. F25c** *1/24, 5/18*
**U.S. Cl. 62—320** **10 Claims**

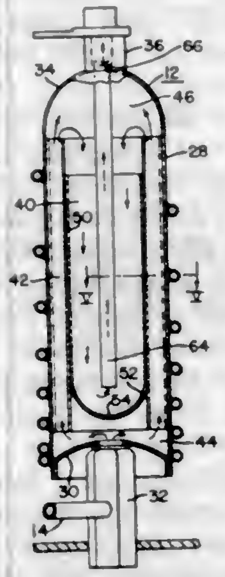


In the first form, a freezing tray is provided with a grid having half thereof provided with closely spaced transversely movable walls to provide thin freezing compartments and the other half of the tray is provided with widely spaced transverse walls to provide cubical freezing compartments. As an option, the bottoms of the closely spaced transverse walls may also be provided with angularly positioned slots receiving toothed breaker bars extending on opposite sides of the longitudinal wall to break the frozen liquid into much smaller pieces or chips or pellets. The freezing tray with its frozen contents is inverted over a receiving bin having a separating wall aligned with the midpoint of the grid so that each half of the tray is over a separate subcompartment on opposite sides of the separating wall of the bin. An ejector mechanism mounted on the bin moves the movable walls to discharge the cubes into the one subcompartment and the remainder of the frozen liquid in either the form of slices or crushed pellets into the other subcompartment.

### 3,475,922
### LIQUID COOLING CHAMBER

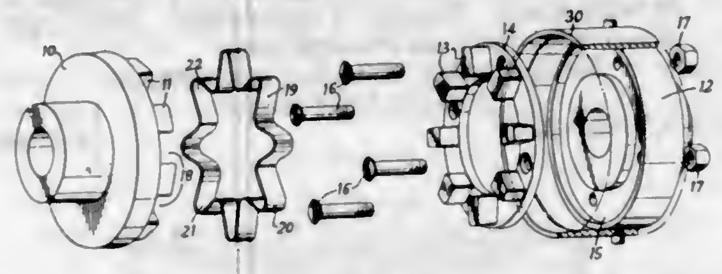
**Eugene W. Scott, Columbus, and Charles F. Ter Bush, Grove City, Ohio, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed July 31, 1967, Ser. No. 657,126**
**Int. Cl. B67d** *5/62;* **F28f** *1/36, 3/12*
**U.S. Cl. 62—394** **4 Claims**

Drinking water refrigerated cooling chamber having an annular space formed between an outer cylindrical casing and a coaxial inner cylinder to receive corrugated heat exchange fins forming a plurality of parallel flow paths through which substantially all of the incoming water is constrained to pass to avoid mixing incoming water with previously cooled water in the chamber. The individual corrugations are formed with slightly bulbous crests to close the adjacent corrugations at the inner periphery while leaving them open at the outer periphery.



### 3,475,923
### ROTARY COUPLINGS

**Iain S. Spence, Dudley, England, assignor to Fabric Bearings Limited, Old Hill, England**
**Filed Nov. 27, 1967, Ser. No. 685,820**
**Claims priority, application Great Britain, Nov. 29, 1966, 53,512/66**
**Int. Cl. F16d** *3/64, 3/56*
**U.S. Cl. 64—14** **12 Claims**

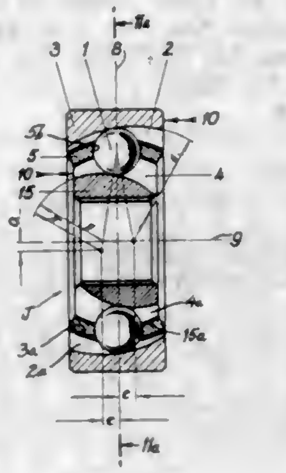


A flexible rotary coupling having a driving member with a set of axially extending, evenly spaced projections, and a driven member also with a set of axially extending, evenly spaced projections. The projections are mounted on a ring secured to the driven member by shear bolts. Four like springs of corrugated strip form are so engaged with the projections that projections of one set lie on one side of each strip and projections of the other set lie on the other side of the strip. The strips are progressively bent with increasing torque to a final configuration in which the strips are clamped between the opposing faces on the two sets of projections in alternate ones of the gaps between the projections. Other spring means than corrugated strips may be used.

### 3,475,924
### UNIVERSAL JOINT

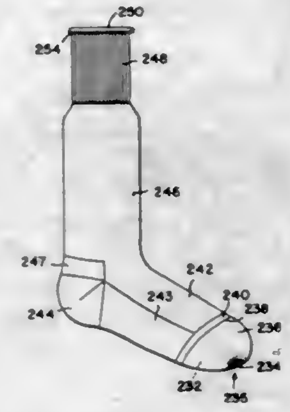
**Erich Aucktor, Offenbach (Main), Germany, assignor to Lohr & Bromkamp G.m.b.H., Offenbach (Main), Germany**
**Continuation-in-part of application Ser. No. 567,924, July 26, 1966. This application Aug. 1, 1968, Ser. No. 749,462**
**Int. Cl. F16d** *3/34*
**U.S. Cl. 64—21** **19 Claims**

A universal constant velocity sliding joint with inner and outer joint members and a circular row of ball members situated between the joint members, the joint members normally occupying a central position from where they may be axially displaced with respect to each other against a progressively increasing force which tries to return the same to their normal central position, the force being produced by cooperation of specially designed grooves in the inner and outer joint members and the ball members received therein.



### 3,475,925
### KNITTED PRODUCTS

**John A. Currier, Canterbury, N.H., assignor, by mesne assignments, to Scott & Williams, Inc., Laconia, N.H., a Corporation of Delaware**
**Original application Mar. 26, 1964, Ser. No. 354,858, now Patent No. 3,340,707, dated Sept. 12, 1967. Divided and this application Sept. 15, 1966, Ser. No. 579,576**
**The portion of the term of the patent subsequent to June 26, 1984, has been disclaimed**
**Int. Cl. A41b** *11/02;* **D04b** *9/46*
**U.S. Cl. 66—187** **9 Claims**



A knitted product comprises a fold having two circularly knit tubular plies continuous with each other across a junction and having coursewise-extending joined terminal portions with wales running continuously from the terminal portion of one ply across said junction to the terminal portion of the other ply, said plies being twisted angularly relatively to each other so that each of said wales is displaced through a substantial angle about the axis of said fold in extending from the terminal portion of one ply across said junction to the terminal portion of the other ply, said terminal portions being joined by interlocked courses of said terminal portions, and a tubular knit portion continuous with one of said plies and having wales continuous with the first mentioned wales, said tubular knit portion comprising both forwardly and reversely concatenated loops.

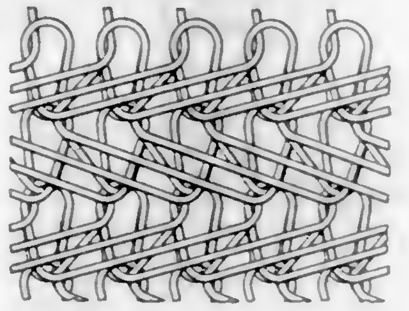
### 3,475,926
### RAISED WARP KNIT FABRICS

**Jakob E. Ruckstuhl, Zurich, Switzerland, assignor to Terlinden & Company, Kusnacht-Zurich, Switzerland, a firm**

**Continuation of application Ser. No. 558,147, June 16, 1965, which was a continuation of application Ser. No. 482,996, Aug. 10, 1965, which in turn was a continuation of application Ser. No. 278,528, May 3, 1963. This application June 13, 1967, Ser. No. 645,840**

**Int. Cl. D04b** *7/12, 9/12, 23/08*

**U.S. Cl. 66—194** **7 Claims**



A warp knitted fabric is provided which comprises a top warp and a back warp. Both the top warp and the back warp have substantially straight floats. The floats of the top warp and the back warp are raised to form a pile of unbroken loops.

### 3,475,927
### FABRIC TREATING APPARATUS

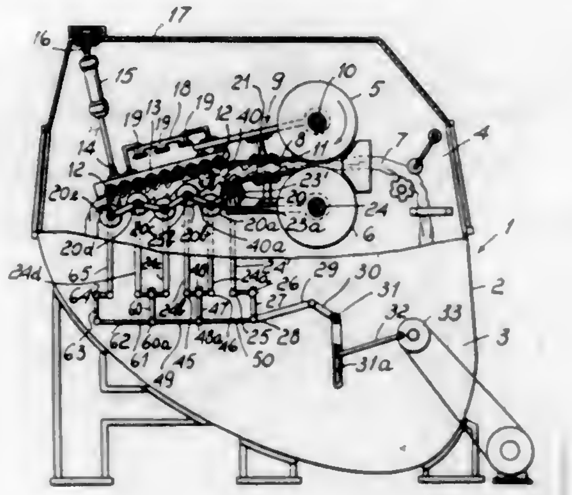
**Attilio Bertoldi, Via Luzzago 27, Manerbio, Brescia, Italy**

**Filed Sept. 5, 1967, Ser. No. 665,564**

**Claims priority, application Italy, Sept. 6, 1966, 22,096/66; Dec. 30, 1966, A 31,761/66; July 14, 1967, A 18,392/67**

**Int. Cl. D06f** *45/12, 35/00*

**U.S. Cl. 68—18** **28 Claims**



An apparatus for subjecting fabric to treatment such as washing, fulling, felting, milling, or the like, the fabric being either in a rope or twist form, or in the form of a woven sheet of fabric. During its treatment, the fabric passes through a passage means at least part of which is defined by a pair of opposed surfaces between which the fabric advances. One of these surfaces of the passage means is composed of a series of compressing elements which are arranged closely adjacent to each other in a row distributed longitudinally along the passage means, and each compressing element extends transversely of the passage means. The series of compressing elements include first and second sets of compressing elements with the elements of the first set respectively alternating with and situated between the elements of the second set. A reciprocating means is operatively connected to the compressing elements which form one of the opposed surfaces of the passage means for reciprocating all of these elements toward and away from the other of the opposed surfaces of the passage means in a manner displacing the first set of compressing elements simultaneously but oppositely to the second set of compressing elements so that the compressing elements carry out and undulatory motion while compressing and releasing the fabric in the passage means during the treatment thereof. A liquid-supply means is located over the passage means which forms a treating means in which the fabric is treated not only by the compressing elements but also with liquid derived from the liquid-supply means, this treating means providing for free downward movement of the treating liquid through a fabric, and a collecting tank is situated beneath the treating means to collect the liquid which passes downwardly therethrough. A discharge means communicates with the collecting tank for discharging liquid therefrom and a recirculating means also communicates with the collecting tank for recirculating treating liquid therefrom back to the liquid-supply means. A valve means communicates with the collecting tank, the discharge means, and the recirculating means has a pair of positions in one of which it establishes communication between the discharge means and the collecting tank and in the other of which it establishes communication between the recirculating means and the collecting tank, so that in this way the liquid which is received in the collecting tank can either be discharged or recirculated.

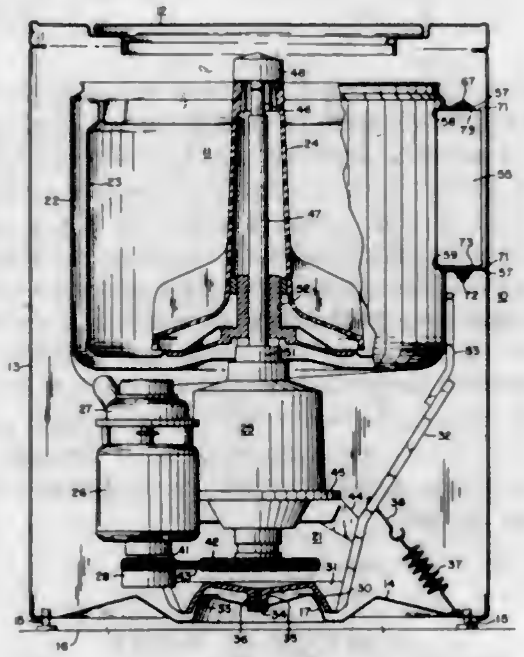
### 3,475,928
### CLOTHES WASHING MACHINE

**William A. Wasemann, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Jan. 22, 1968, Ser. No. 699,516**

**Int. Cl. D06f** *29/02*

**U.S. Cl. 68—23.2** **5 Claims**



An inertia weight and mounting structure for securing the weight to the non-rotating tub of an upright type washing machine. The weight is a preformed concrete brick or block having a longitudinal bore therethrough for receiving a fastening bolt extending through a pair of brackets attached to the outer tub, at points thereon such that the portions contacting the ends of the brick are initially spaced a greater distance than the maximum tolerance dimensions of any one brick. The brackets are so constructed as to deform to provide intimate contact and uniform pressure between the brick ends and the contacting surfaces of the brackets when the bolt is tightened the required amount.

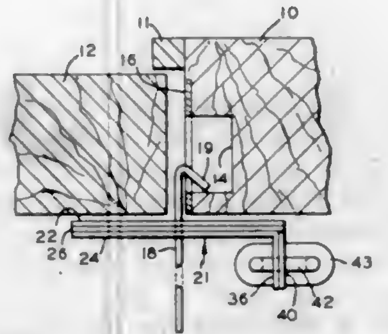
### 3,475,929
### PORTABLE LOCKING DEVICE

**Richard I. N. Weingart, Nassau, Bahama Islands**

**Continuation-in-part of applications Ser. No. 615,651, Feb. 10, 1967, and Ser. No. 645,778, June 13, 1967. This application Dec. 9, 1968, Ser. No. 782,278**

**Int. Cl. E05c** *19/18*

**U.S. Cl. 70—14** **6 Claims**



A portable auxiliary locking device for doors in frames, and including a bar provided with a hook at one end which is received in an opening in one of the members, the bar having plurality of spaced holes, a locking device carried on to the hook bar and having an opening to receive the bar in close fitting, free sliding relation, and comprising a flat housing with an internal recess, and a locking plate pivoted within said recess, and provided with a finger which enters one of the holes in the bar to lock the bar to the locking device, the plate and housing having overlaying apertured projections to receive a padlock to secure the plate in locked position.

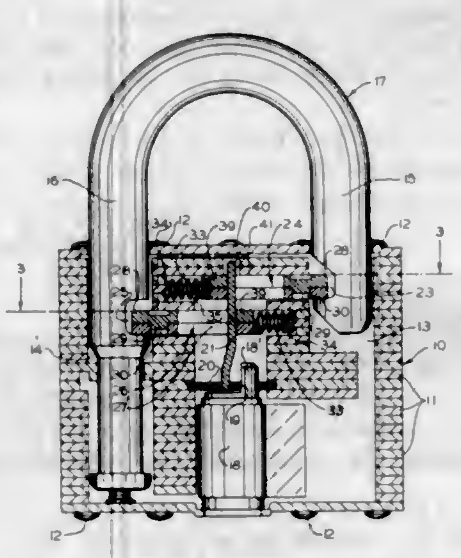
### 3,475,930
### PADLOCKS WITH DUAL LOCKING LEVER MECHANISMS

**Daniel J. Foote, Wauwatosa, Wis., assignor to Master Lock Company, Milwaukee, Wis., a corporation of Wisconsin**

**Filed Jan. 30, 1968, Ser. No. 701,689**

**Int. Cl. E05b** *67/24*

**U.S. Cl. 70—38** **6 Claims**



A padlock with a laminated case or body is provided with a pair of spring loaded locking levers movable in opposite directions and disposed in different planes so as to enter and engage notches or cuts in the padlock shackle legs on different levels to provide so-called "heel and toe" locking. The structure includes novel mechanism to move both of said locking levers simultaneously and the specified features are adaptable to relatively large padlocks to increase their safety and strength factors.

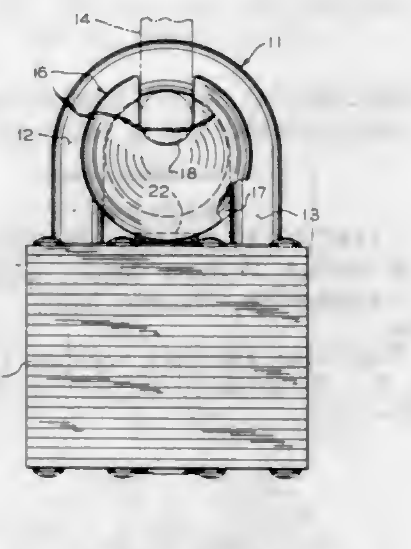
### 3,475,931
### PADLOCK SHACKLE GUARDS

**Daniel J. Foote, Wauwatosa, Wis., assignor to Master Lock Company, Milwaukee, Wis., a corporation of Wisconsin**

**Filed Apr. 12, 1968, Ser. No. 720,833**

**Int. Cl. E05b** *67/38*

**U.S. Cl. 70—54** **9 Claims**



A sheave-like disc, securely confined within the space bounded by the legs of a padlock shackle when the latter is in closed condition, is turnable in said space. The disc which functions as a shackle guard, is formed with a recess extending inwardly from a margin which provides a relatively small opening to receive a hasp, staple eye, hook or the like when the padlock is applied for closure locking purposes. The guard-forming disc, when associated with a closed padlock shackle, will prevent the insertion of a bar, rod, or tool such as might be unauthorizedly used to exert leverage and pressure between the body of the lock and the shackle in an effort to force or pry the shackle sufficiently to gain its release. Additionally, the relationship of the guard to the closed shackle is such as to thwart efforts to cut or sever the shackle, and it furthermore blocks the shackle leg openings in the padlock body to deter the insertion of shims or tools around the shackle legs for the purpose of reaching and manipulating the lock levers to surreptitiously release the same for lock opening purposes. Due to the fact that there is relative turning movement between the guard disc and the closed shackle legs, the padlock, when applied to a hasp, staple eye or the like, will hang on its normal depended position, avoiding undesired canting or tilting.

### 3,475,932
### COMBINATION LOCK

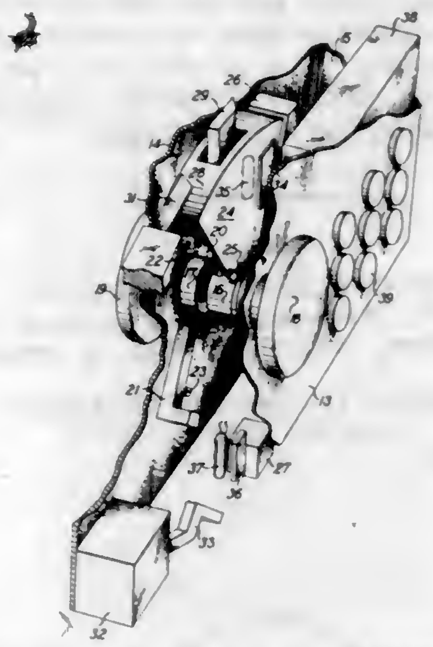
**Charles E. Germanton, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**

**Filed Mar. 28, 1967, Ser. No. 626,566**

**Int. Cl. E05b** *49/02, 47/02*

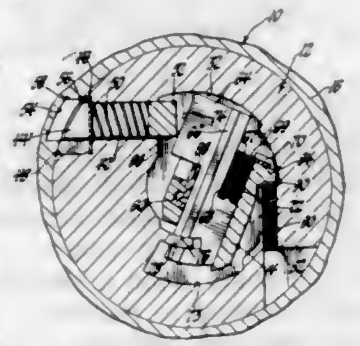
**U.S. Cl. 70—278** **6 Claims**

The outer knob of a door is interlocked with an unlatching member by deflecting an interposer member. Electrical circuitry is provided to effect deflection of the interposer member when a predetermined combination of operative steps is followed and to prevent deflection of the interposer member when a combination of steps other than the predetermined one is followed.



### 3,475,933
### LOCK CYLINDER ASSEMBLY

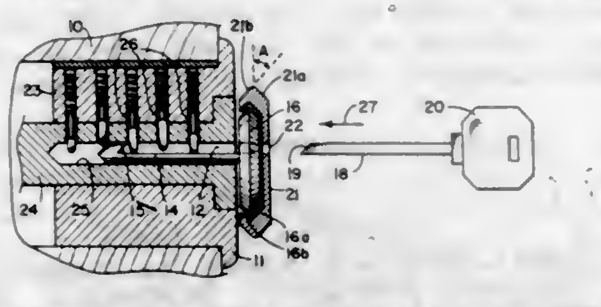
**Peter M. Kobrehel, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Mar. 29, 1968, Ser. No. 717,166**
**Int. Cl. E05b** *29/04, 15/14, 63/00*
**U.S. Cl. 70—364** **6 Claims**



A side bar lock cylinder includes an outer core rotatably mounted in a casing and rotatably mounting an inner core. Tumblers on the inner core normally block the side bar until arcuate, generally square-shaped slots in the tumblers are aligned with an arcuate flange on the first core.

### 3,475,934
### LOCK-OUT KEY ASSEMBLY

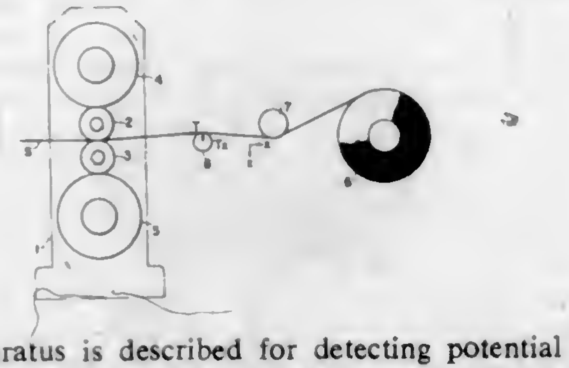
**Sam Reisner, Los Angeles, Calif., assignor to Osco Corporation, a corporation of California**
**Filed Mar. 4, 1968, Ser. No. 710,319**
**Int. Cl. E05b** *17/18, 19/00*
**U.S. Cl. 70—428** **4 Claims**



A lock-out key assembly includes a lower half key shaft terminating in a hook at one end and a disc shaped head at the other end, the plane of the head being normal to the lower half key shaft. This lower half key shaft is inserted in the key way of a lock and one of the tumblers will engage the hook and secure the half key shaft within the lock with the disc shaped head covering the exterior entrance portion of the key way. When it is desired to remove the lock-out key shaft, a mating upper half key shaft is inserted through a slot in the disc shaped head and effects disengagement of the lock tumbler with the hook, the lower and upper half key shafts defining a blank key which may then be readily removed.

### 3,475,935
### CONTROL APPARATUS AND SYSTEM FOR STRIP ROLLING

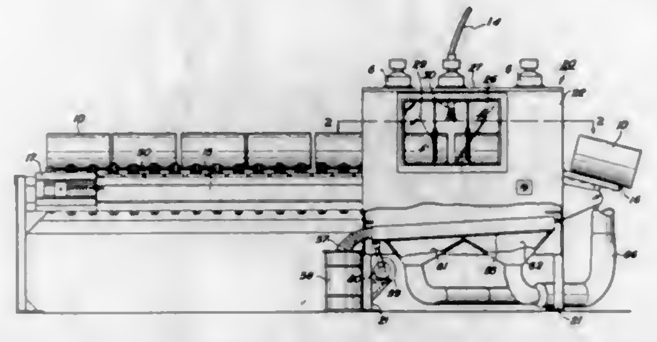
**Toshiyuki Kajiwara, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Chiyoda-ku, Tokyo-to, Japan**
**Filed Oct. 28, 1966, Ser. No. 590,405**
**Claims priority, application Japan, Oct. 29, 1965, 40/65,970**
**Int. Cl. B21b** *37/04, 37/12, 39/08*
**U.S. Cl. 72—9** **20 Claims**



An apparatus is described for detecting potential undesired variations in the flatness of a strip material during strip rolling operations in which the strip is rolled under pressure to conform the strip to a desired shape. The apparatus includes tensioning rollers for imparting a tension force to the strip together with a sensing device for sensing the tension at multiple spaced points across the width of the strip including at least one point between the edge parts of the strip. A signal developing circuit is operatively coupled to the sensing device for providing a signal corresponding to the profile of the distribution of the tension imparted to the strip across the width. The sensing device comprises a first sensor arrangement for deriving a differential force signal representative of the difference in force produced at multiple spaced points across the width of the strip due to tension, and signal processing circuitry for deriving a turning moment signal representative of the turning moment produced about at least one of the spaced points due to tension whereby a profile of the tension distribution corresponding to undesired undulations in the shape of the finished strip under non-tensioned conditions is obtained.

### 3,475,936
### TRANSPORT SYSTEM

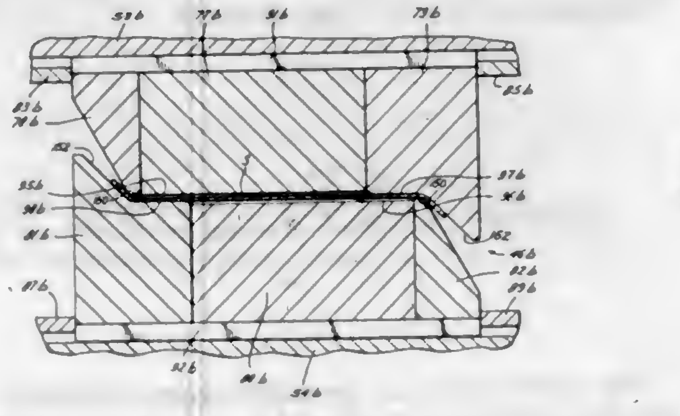
**Guy Steele, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**
**Filed Oct. 24, 1966, Ser. No. 589,100**
**Int. Cl. B21j; B65g** *47/24;* **B24b** *1/00*
**U.S. Cl. 72—53** **8 Claims**



Apparatus for conveying a relatively small cylindrical work element through a work zone, said apparatus being adapted to impart a spiral motion to the cylindrical work element as it passes through said work zone.

### 3,475,937
### ROLL FORMING APPARATUS

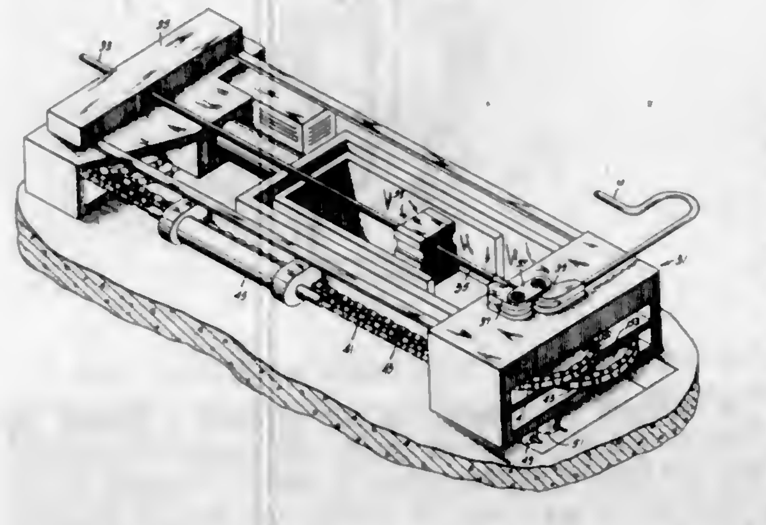
**James R. Lawler, 3102 Dunvale, Houston, Tex. 77042**
**Filed Aug. 1, 1966, Ser. No. 569,404**
**Int. Cl. B21d** *5/08;* **B21b** *27/10*
**U.S. Cl. 72—181** **4 Claims**



A roll forming apparatus uniquely suited for high temperature use such as in a furnace and having a series of roll formers for shaping a metal strip, each said roll former having first and second shafts wherein each shaft includes a plurality of releasably mounted roll segments. At least one segment on one shaft is provided with a projection to coact with a recess on a roll segment of the other shaft.

### 3,475,938
### APPARATUS FOR BENDING

**Gilbert Clinton Whitney, Jr., Dansville, and Raymond Clair Whitman, Wayland, N.Y., assignors to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York**
**Filed May 2, 1967, Ser. No. 635,545**
**Int. Cl. B21d** *7/024, 7/04*
**U.S. Cl. 72—159** **23 Claims**

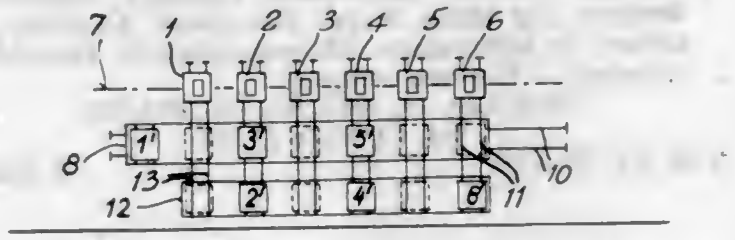


An apparatus having at least one die assembly with an upper die block and a lower die block for clamping a tube and bending it in either direction in a common plane.

### 3,475,939
### RAPID CHANGEOVER ARRANGEMENT FOR A GROUP OF ROLLING MILL STANDS IN CONTINUOUS ROLLING MILL LINES

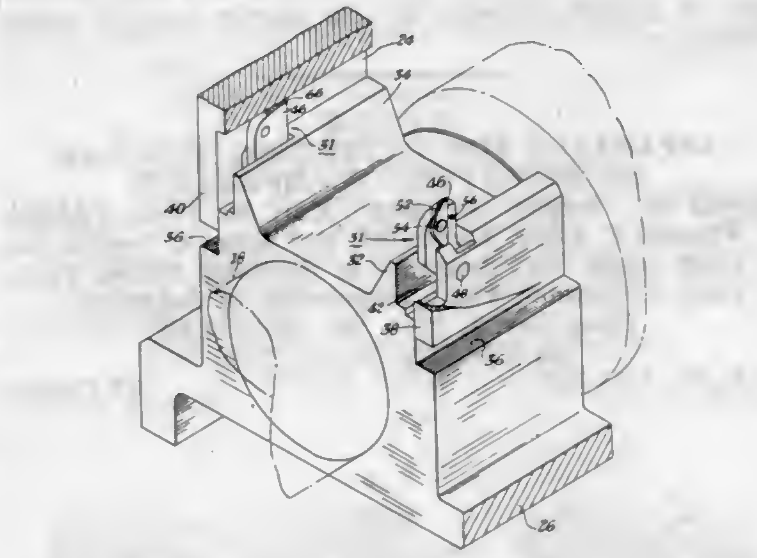
**Albert Bier, St. Ingbert, Saar, Germany, assignor to Moeller & Neuman G.m.b.H., St. Ingbert, Saar, Germany**
**Filed Nov. 17, 1966, Ser. No. 595,172**
**Int. Cl. B21b** *31/08*
**U.S. Cl. 72—239** **1 Claim**

A rapid change-over arrangement for a group of rolling mill stands in a continuous rolling mill which includes an inner movable platform and an outer stationary platform, the platforms having transversely extending rails defining stand areas and arranged in laterally spaced, parallel relationship with the rolling mill pass line.



### 3,475,940
### FALL-AWAY SPACER BLOCK

**Andrew J. Petros, Jr., Allegheny County, Pa., assignor to Mesta Machine Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed July 18, 1967, Ser. No. 654,268**
**Int. Cl. B31b** *31/08*
**U.S. Cl. 72—239** **11 Claims**



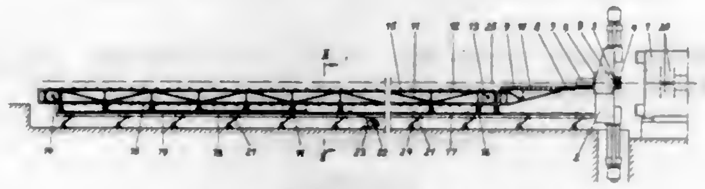
An automatically unlatched and gravity operated spacing mechanism is disclosed having general utility but particularly useful in maintaining the work rolls of a rolling mill stand or the like at a predetermined center-to-center distance. Maintaining such center-to-center distance considerably facilitates inserting or replacing the work rolls and related operations. A pair of pivoted spacing blocks are mounted on each of the bearing chocks for the lower work roll. The blocks are pivoted relative to their centers of gravity so that they will normally drop to an inactive, horizontal position. A gravity operated latch element is mounted on each block for maintaining the block in its vertical or active position. Each latch element has a release tab which projects above the associated block in its upright position. When the upper bearing chocks are lowered to engage the upright spacing blocks the upper bearing chocks first engage the latch element release tabs to unlatch the tabs. Immediately subsequent to such unlatching the upper bearing chocks engage the spacing blocks to prevent their pivoting to their inactive position. Thus, the upper bearing chocks and the upper work roll rotatably supported thereby are spaced by the spacing blocks at a predetermined distance from the lower bearing chocks and the lower work roll respectively. The aforedescribed assembly can then be inserted or withdrawn as a unit relative to the aforementioned rolling mill stand. After the unit is installed, the balance plungers of the mill can be actuated to raise the upper chocks to release the spacing blocks, whereupon the spacing blocks fall to their inactive positions to permit normal operation of the rolling mill stand.

**3,475,941**

### TUBE EXTRUSION PRESSES WITH A RETRACTABLE DIE CARRIER

**Horst Hans Groos, Metzkausen, Friedrich Niggemeier, Buttgen, and Heinz Stapel, Dusseldorf, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a German company**

**Filed Aug. 15, 1966, Ser. No. 572,392**
**Int. Cl. B21c** *23/00*
**U.S. Cl. 72—257** **3 Claims**



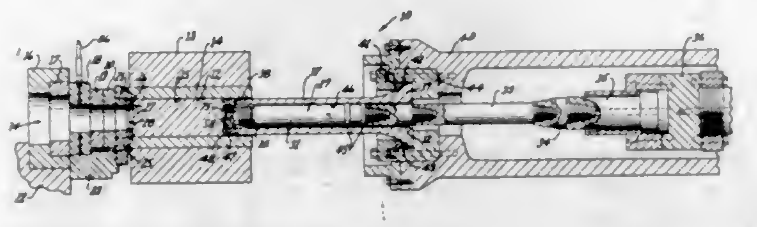
A horizontal extrusion and tube press with a retractable die carrier in which the press outlet system, preferably constituted by an apron conveyor, is coupled to the die carrier, the means driving the outlet conveyor also driving the die holder so that these constitute a single driven unit. A roller conveyor with driven rollers may preferably be located between the die carrier and the apron conveyor.

**3,475,942**

### APPARATUS FOR EXTRUDING TUBULAR MEMBERS FROM SOLID BILLETS

**Alfred M. Murphy, Richmond, Carl M. Filak, Chester, Thomas P. Long, Richmond, and John A. Brown, Jr., Glen Allen, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware**

**Filed Nov. 3, 1966, Ser. No. 591,893**
**Int. Cl. B21c** *23/20, 25/06*
**U.S. Cl. 72—265** **15 Claims**



This disclosure relates to an apparatus for piercing and extruding a solid metallic billet through a female die to form an extruded tubular length with a mandrel that pierces into the solid billet until a tip of the mandrel is telescoped into the female die to a predetermined position relative thereto to define an annular cavity between an extruding surface of the mandrel tip and the female die whereby the billet can be extruded through the annular cavity to form the extruded tubular length, the mandrel having an exchangeable collar defining the extruding surface thereof with the collar having a first substantially cylindrical part and a second substantially cylindrical part spaced from the first part by an inwardly directed stepped part of the collar.

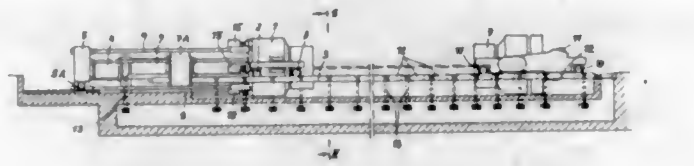
**3,475,943**

### STRETCHING MACHINES

**Paul-Otto Claussen, Schiefbahn, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a company of Germany**

**Filed Sept. 18, 1967, Ser. No. 668,614**
**Claims priority, application Germany, Sept. 29, 1966, Sch 39,598**
**Int. Cl. B21d** *11/07, 11/14*
**U.S. Cl. 72—297** **4 Claims**

A stretching machine for stretching sheet or plate material or for stretching and untwisting bar material, comprising a stretching grip, with stretching drive, and a counter-grip, all mounted upon a foundation or other substructure, designed for withstanding not only the weight of the machine but also the bending moment arising from the stretching operation, one or more eccentrically arranged thrust beams supporting a stretching-cylinder crossbar and the counter-grip, and connecting elements for the transmission of the bending moments.



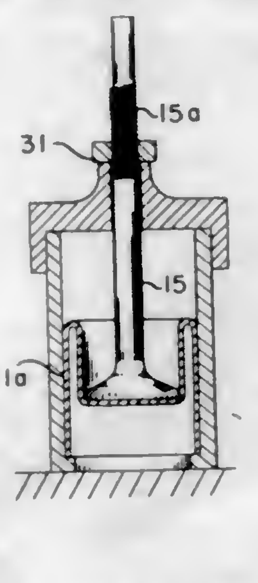
The thrust beams are protected against buckling. Means are also provided for adjustably locking the counter-grip to the thrust beams.

**3,475,944**

### REVERSE FORMING ARRANGEMENT AND METHOD

**Robert L. Marshner, 9103 Simms Ave., Baltimore, Md. 21234**

**Filed Dec. 30, 1966, Ser. No. 606,069**
**Int. Cl. B21d** *22/20*
**U.S. Cl. 72—347** **11 Claims**



A method and apparatus for forming a folded cup from material capable of permanent plastic deformation to a self-holding configuration, in which a mandrel having a thin flared head with an axially non-straight smoothly arcuate rim surface is employed to apply an axial reverse drawing force on a central area of a tubular cup, the thin arcuate rim zone also applying a radial restraining force to the cup during the reverse drawing and enabling ease of withdrawal of the mandrel from the cup after drawing.

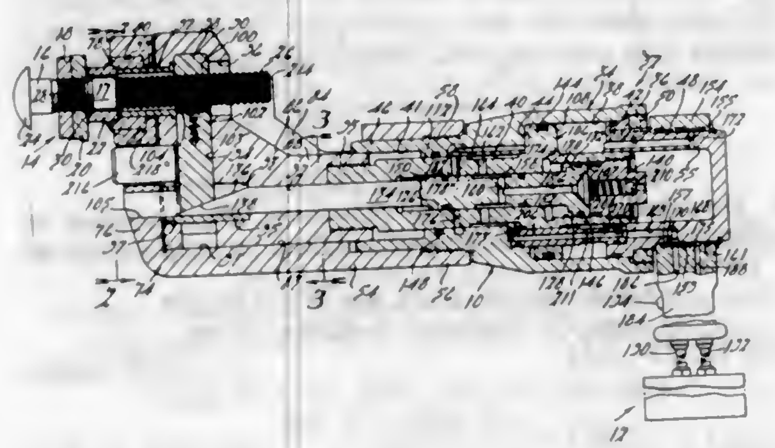
**3,475,945**

### CLEARANCE TOOL ASSEMBLY

**Peter R. Chirco, Utica, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan**

**Filed May 15, 1967, Ser. No. 638,273**
**Int. Cl. B21d** *9/05*
**U.S. Cl. 72—391** **12 Claims**

A fastener driving tool constructed to be operable in small clearance areas. The tool is provided with a collet member laterally spaced from the axis of the pulling means used for setting the fastener. The tool includes support means for guiding the collet member for reacting the moment resulting from the lateral spacing between the collet and the pulling means.

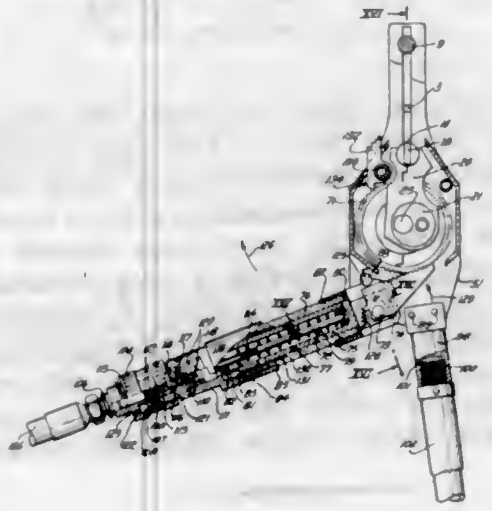


**3,475,946**

### PRESSING TOOL, SPECIFICALLY HAND PRESS

**Friedrich Günther Laux, 301 Konigsweg, 1 Berlin 39, Germany**

**Filed Mar. 22, 1965, Ser. No. 444,098**
**Claims priority, application Germany, June 12, 1964, L 48,025**
**Int. Cl. B21d** *9/08*
**U.S. Cl. 72—409** **7 Claims**



A force multiplying compression tool for articles such as electrical connectors, in which a movable die is advanced toward a fixed die by means of a rotary eccentric linkage which is driven by a linear-motion toothed-rack coupled to a fluid-pressure piston assembly. The piston assembly is pivotally coupled to the main body of the tool so as to permit manual operation of the eccentric linkage in the absence of fluid pressure.

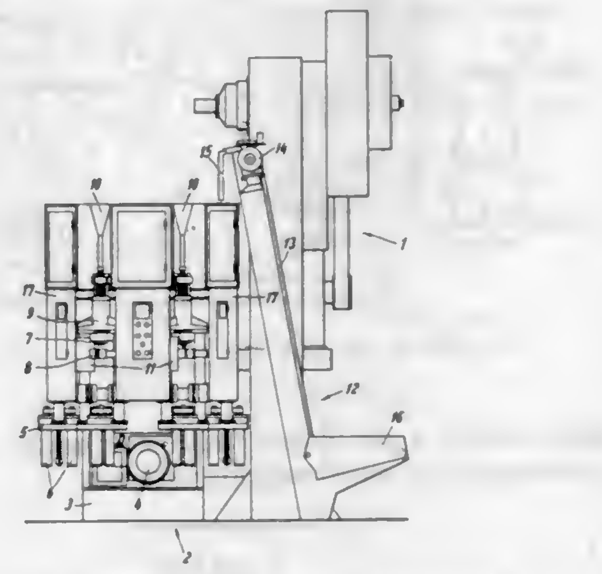
**3,475,947**

### APPARATUS FOR NONCUTTING SHAPING OF METALLIC WORKPIECES

**Horst Bachmann, Haan, Rhineland, Germany, assignor to Maschinenfabrik Hasenclever Aktiengesellschaft, Duesseldorf, Germany, a corporation of Germany**

**Filed Feb. 9, 1967, Ser. No. 614,873**
**Claims priority, application Germany, Feb. 10, 1966, M 68,354**
**Int. Cl. B21d** *43/04*
**U.S. Cl. 72—419** **12 Claims**

The apparatus comprises a plurality of electrical upsetting devices in combination with a press means and a transfer means that grips a workpiece from an upsetting device and conveys it to the press means, said transfer means including gripper jaws and a tamping rod for properly positioning each workpiece and causing it to enter the press means.

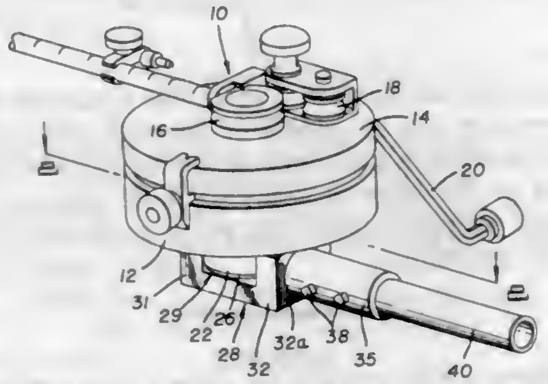


**3,475,948**

### TOOL HOLDING DEVICE

**Fred A. Lennon, Chagrin Falls, Emery J. Zaburanec, Solon, Harry G. Dodge, Painesville, and Zoltan Szohatzky, Mentor Township, Lake County, Ohio, assignors to Crawford Fitting Company, Solon, Ohio, a corporation of Ohio**

**Filed Oct. 20, 1967, Ser. No. 676,946**
**Int. Cl. B21j** *13/08*
**U.S. Cl. 72—462** **4 Claims**



A tool holding device having a tool holding recess formed by a supporting seat and two holding arms, one of the holding arms having fastening means to retain a tool in the recess and the other arm having a sleeve attached thereto. The sleeve is adapted to receive and releasably to secure an extension means which can be held by a supporting or clamping device which is not capable of directly supporting the tool.

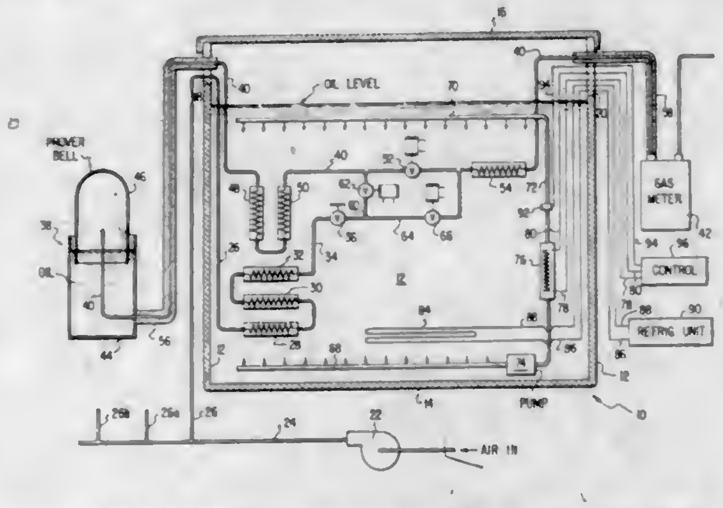
**3,475,949**

### GAS METER CALIBRATION APPARATUS

**Andrew Truhan, R.D. 3, Box 392T, Somerset, N.J. 08873**

**Filed July 20, 1967, Ser. No. 654,813**
**Int. Cl. G01f** *25/00*
**U.S. Cl. 73—3** **8 Claims**

Means are provided for maintaining the temperature of proving gas in a gasmeter calibration system at a predetermined temperature by immersing at least the gas flow conduits in a liquid bath whose temperature is controlled by immersed heating and cooling coils. The system may also include a gas bypass to provide means to purge the system prior to actual meter calibration.



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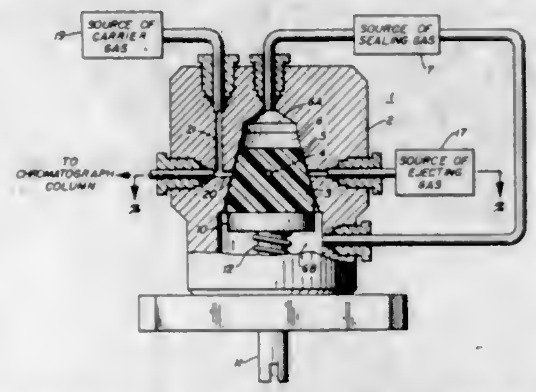
3,475,950

### CHROMATOGRAPH SAMPLE SYSTEM

**Charles R. Ferrin, Tulsa, Okla., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware**

**Filed Feb. 14, 1966, Ser. No. 527,325**
**Int. Cl. G01n** *31/08, 1/00*
**U.S. Cl. 73—23.1 2 Claims**



The movable element of a valve has a passage in which a high pressure liquid sample is inserted and transferred to a chromatographic column. A source of sealing fluid is connected to the valve to apply the high pressure fluid to the sealing surface about the valve passage to prevent leakage of the sample.

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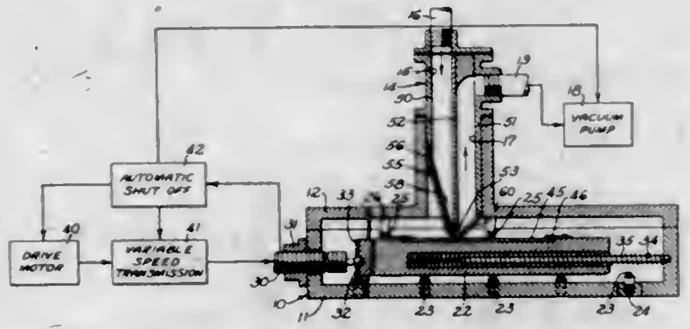
3,475,951

### DEVICE AND PROCESS FOR COLLECTING PARTICULATES FROM GASES

**Alexander Goetz, Altadena, Calif., assignor to California Institute Research Foundation, Pasadena, Calif., a corporation of California**

**Filed May 18, 1965, Ser. No. 456,650**
**Int. Cl. G01n** *31/20*
**U.S. Cl. 73—28 14 Claims**



Method and apparatus for collecting submicron size particles, including an impaction nozzle and collecting plate, the nozzle providing parallel gas flow paths toward and away from the plate, with a 180° turn about a knife edge at the plate, a nozzle inlet passage of continuously decreasing cross section providing continuous and uniform gas acceleration, a double slit nozzle, and a collection plate drive for moving the plate in steps of varying velocity with each step of a substantially constant velocity.

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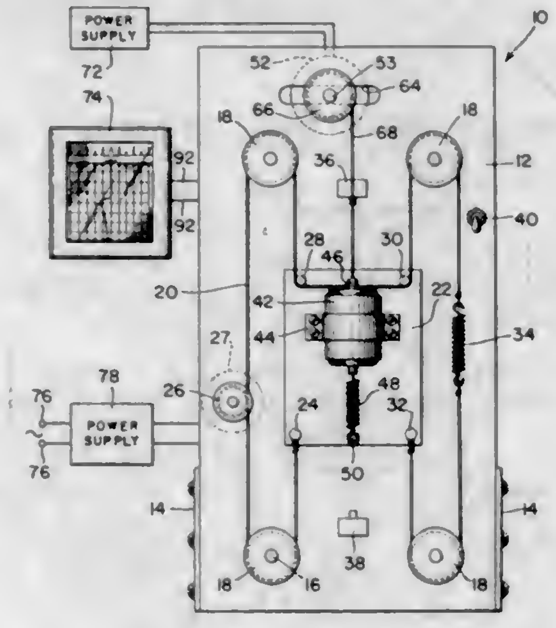
3,475,952

### TORQUE TESTING INSTRUMENT

**T. Dankward Schmalbruch, Newtown, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**

**Filed May 26, 1967, Ser. No. 641,677**
**Int. Cl. G01l** *3/18;* **G01n** *15/00*
**U.S. Cl. 73—134 10 Claims**



A torque variation tester which tests for variations of torque output through 360° of rotational motion of a motor or other torque device having a motor mounting frame to which a movable mounting plate is attached. A linear variable differential transformer mounts on the movable mounting plate having a core attached by a strand to a pulley on the motor shaft. A spring attaches the other end of the core to the movable mounting plate whereby the motion of the plate allows the motor to rotate through 360° while the stall torque thereof is measured by the linear variable differential transformer.

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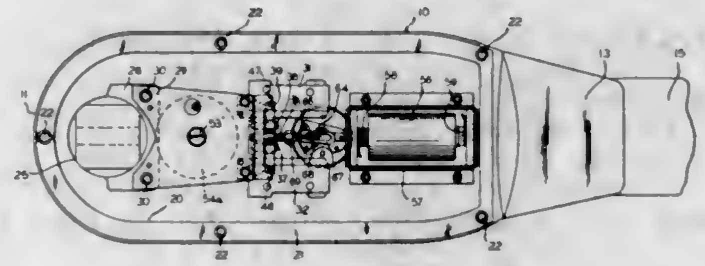
3,475,953

### PRE-SET ADJUSTABLE TORQUE MEASURING DEVICES

**Kenneth R. Larson, Des Plaines, Ill., assignor to Snap-On Tools Corporation, Kenosha, Wis., a corporation of Delaware**

**Continuation of application Ser. No. 381,408, July 9, 1964. This application Mar. 25, 1968, Ser. No. 721,544**
**Int. Cl. G01l** *5/24;* **B25b** *23/14*
**U.S. Cl. 73—139 6 Claims**



The invention involves a torque responsive device adapted to yield commensurate with a load transmitted thereto through a handle member against which an object moves to measure the alignment or degree of misalignment within acceptable limits, and accomplishing this function through combined mechanical-electrical pre-set instrumentalities operatively connected with the torque responsive elements. A handle mounted roller may be provided to minimize the friction between the moving object and the handle member during the impact and alignment measurement.

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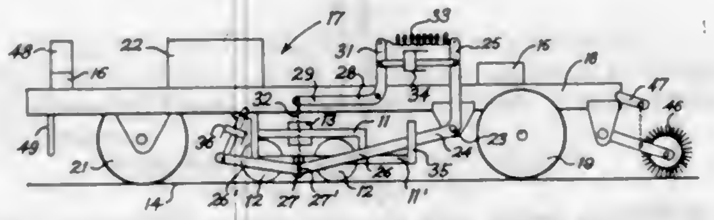
3,475,954

### SYSTEM FOR EVALUATION OF IRREGULARITIES ON LARGE SURFACES

**George W. Cook, McLean, Va., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware**

**Filed Dec. 27, 1966, Ser. No. 605,009**
**Int. Cl. G01l** *5/12*
**U.S. Cl. 73—146 8 Claims**



A system for determining the bumpiness of large surfaces, such as the surfaces of highways or air fields, the system including a wheeled vehicle carrying an angular velocity meter which measures the pitching rate of the vehicle and provides an electrical output representing the rate of change of slope of the surface, the meter having a pair of tubular loops containing hydraulic fluid pumped through the loops at the same speed but in opposite directions, and a differential pressure device interconnecting the loops and sensitive to angular rotation of the loops.

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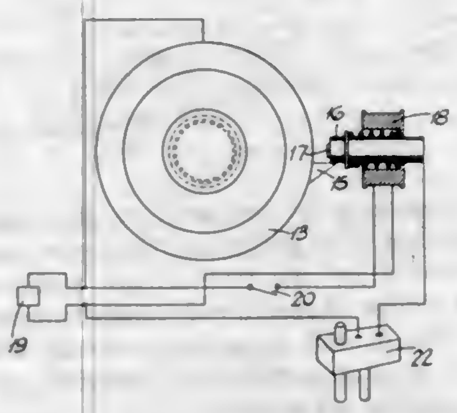
3,475,955

### COUNTING APPARATUS

**Stanley Thomas Long, Rochester, Kent, England, assignor to C.A.V. Limited, London, England, a British company**

**Filed Jan. 13, 1967, Ser. No. 609,097**
**Int. Cl. G01m** *19/00, 15/00*
**U.S. Cl. 73—168 1 Claim**



Counting apparatus for indicating when a drive shaft has partaken of a number of turns and including a step-up drive unit and a disc driven by the drive unit through a friction drive, the disc having a projection thereon by which movement of the disc is prevented when the projection contacts a stop, the projection and stop forming part of an electric circuit which is temporarily broken whilst the stop is moved out of the path of the projection, to permit the disc to rotate, the circuit being completed when the stop makes contact with the projection after one revolution of the disc.

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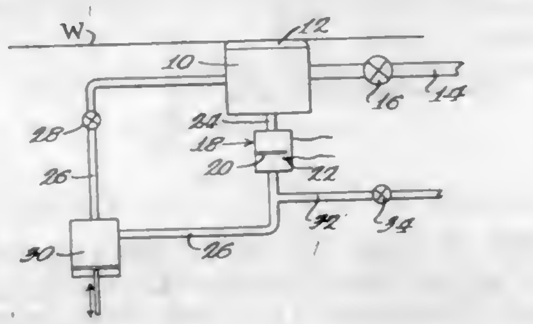
3,475,956

### METHOD AND APPARATUS FOR DETECTING HOLES IN A MOVING WEB

**Arthur C. Langlois and Paul D. Ziegenhagen, Wisconsin Rapids, Wis., assignors to Consolidated Papers, Inc., Wisconsin Rapids, Wis.**

**Filed Dec. 1, 1967, Ser. No. 687,189**
**Int. Cl. G01l** *5/04, 7/08;* **G01b** *13/04*
**U.S. Cl. 73—159 13 Claims**



Method and apparatus for detecting holes in a moving web of paper or the like by providing a vacuum chamber which is in communication with one side of the web and by sensing a pressure change in the vacuum chamber as caused by a hole in the sheet passing over such chamber and thus admitting an increased flow of air thereto, including means for adjusting the sensitivity of the apparatus in order to detect only holes of a predetermined minimum size and also means for adjusting the sensitivity of the apparatus with respect to the rate of pressure change per unit of time so as to render the instrument relatively sensitive to pressure changes produced by holes in the web while at the same time relatively insensitive to pressure changes produced by variations in the porosity of the web material.

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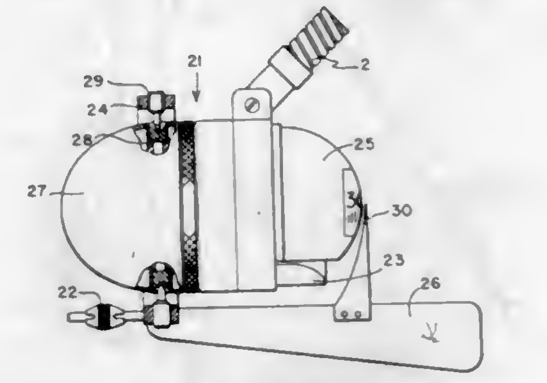
3,475,957

### SUBMARINE NAVIGATION DEVICE FOR A SELF-DEPENDENT DIVER

**Jan Hiszpanski, Gdynia, Poland, assignor to Zaklady Mechaniki Precyzyjnei-Przedsiebiorstwo Panstwowe Gdansk-Oliwa, Poland**

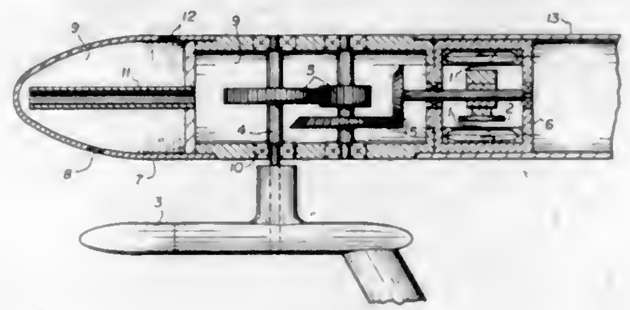
**Filed Feb. 14, 1966, Ser. No. 527,268**
**Int. Cl. G01c** *21/00, 17/08*
**U.S. Cl. 73—180 6 Claims**



A navigation device for divers including a compass pivotally mounted on an outrigger attached to the diver's body, and including a pointer fixed to the outrigger; also, an embodiment in which the compass is fixed to the outrigger and the pointer is pivotally mounted on the compass. Movement of the pivotally mounted member is caused by a fin attached thereto.

### 3,475,958
## ANGLE OF ATTACK INDICATOR

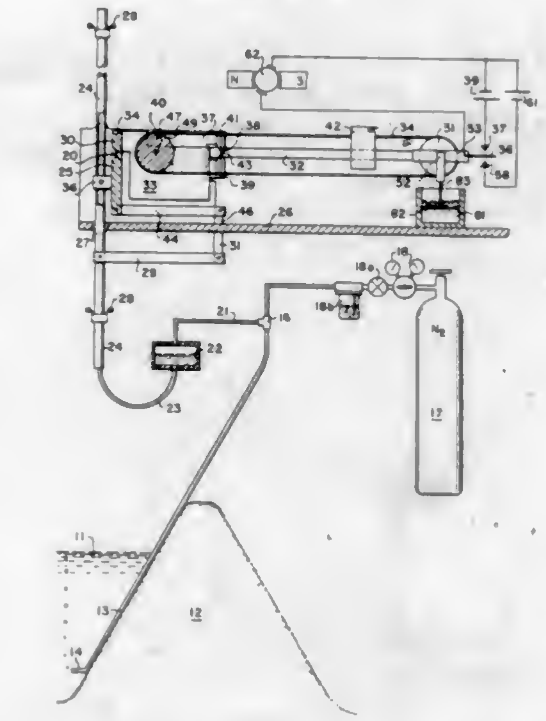
Steve Sabadishin, Box 309, Pluckemein, N.J. 07978, and Michael Argentieri, 25 Tenney Road, West Orange, N.J. 07052
Continuation of application Ser. No. 624,672, Mar. 16, 1967. This application Dec. 9, 1968, Ser. No. 792,881
Int. Cl. G01c *21/20*
U.S. Cl. 73—180 3 Claims



An angle of attack indicator in which the deflection of a planar vane in response to its angle of attack on a fluid medium is transmitted to a magnet which moves to produce a succession of visual signals, the signals being without nulls, but always rendering one readout signal or two readout signals in transition from one signal to another, but never three, by reason of the limited zone of magnetic influence with respect to magnetic electroswitches.

### 3,475,959
## INSTRUMENT FOR GAUGING LIQUID DEPTH

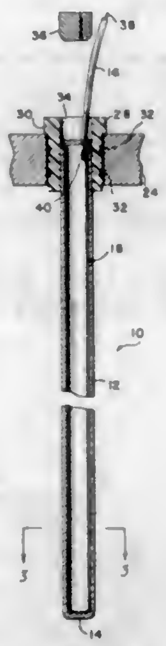
Eugene A. Glassey, Los Altos, Calif. (% Exactel Instrument Company, 89 Alice Ave., Mountain View, Calif. 94040)
Filed Feb. 13, 1967, Ser. No. 615,716
Int. Cl. G01f *23/20, 23/00*
U.S. Cl. 73—296 7 Claims



An instrument to gauge liquid depth and quantity. By purge bubble system or other means the depth is balanced by gas pressure which is applied to a cistern to balance a mercury column. Weight of the column (or cistern) is applied to a beam balance. The poise of the balance is driven along the beam by a reversible motor and perforated tape. The motor is energized in either direction by electrical contacts associated with the beam.

### 3,475,960
## SENSING PROBE WITH METALLIC COATING

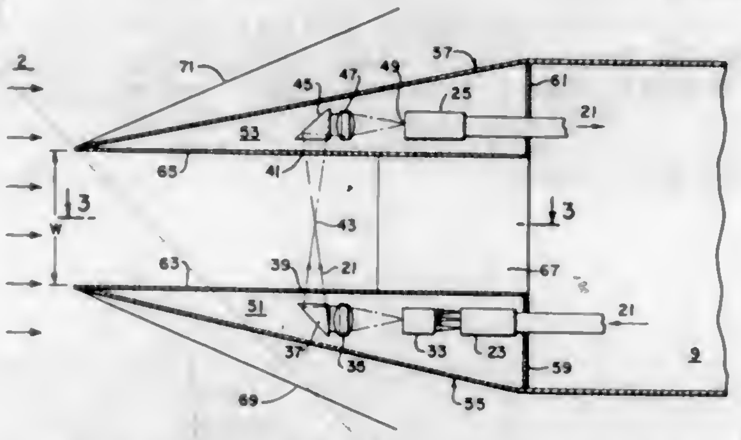
Bernard J. Miller, Andorra Road, Lafayette Hills, Pa. 19444
Filed May 9, 1968, Ser. No. 728,029
Int. Cl. G01f *23/24*
U.S. Cl. 73—304 3 Claims



A sensing probe with metallic coating for detecting the presence of moving liquid having at least some electrical conductivity, the sensing probe consisting of a tube of non-conductive material, such as glass, having deposited on its interior surface a layer of conductive silver.

### 3,475,961
## PROBE FOR TESTING SUPERSONIC GASES

Paul W. Mossey, Cincinnati, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 24, 1967, Ser. No. 677,804
Int. Cl. G01k *1/08, 3/00, 11/00*
U.S. Cl. 73—343 4 Claims

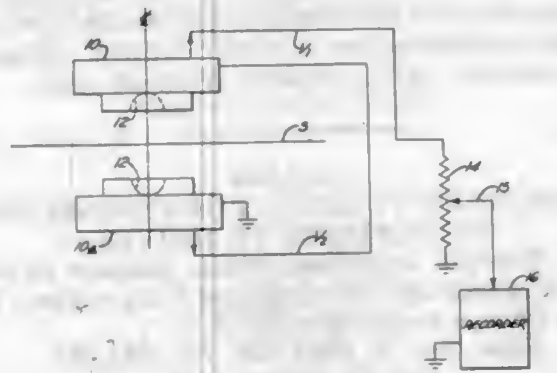


A probe measures the temperature at a point in a high speed gas stream. The design of the probe causes a minimum disturbance on the free stream static temperature by having a wedge shaped head which isolates a segment of the gas stream and generates external oblique shock waves which do not significantly interfere with the free flow of the isolated gas segment.

### 3,475,962
## APPARATUS FOR MEASURING STRIP TEMPERATURE

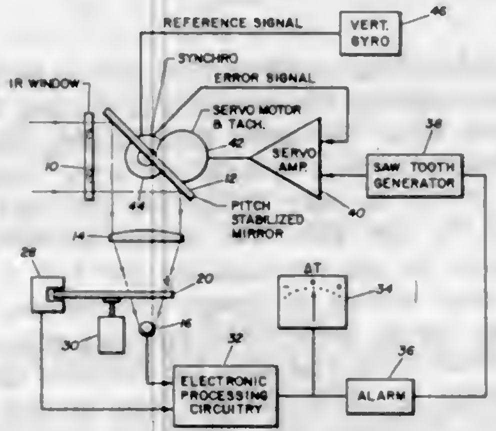
Chester C. Mazur, McKeesport, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Sept. 7, 1967, Ser. No. 666,193
Int. Cl. G01k *11/00*
U.S. Cl. 73—355 1 Claim

When the temperature of a strip traveling through a heating chamber is measured with a particular type of pyrometer, an error results because the distance between the strip and pyrometer varies. Invention compensates by using two identical pyrometers on opposite sides of the strip and averaging their outputs.



### 3,475,963
## CLEAR AIR TURBULENCE RADIOMETER

Robert W. Astheimer, Westport, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware
Filed Feb. 2, 1968, Ser. No. 702,615
Int. Cl. B01k *11/00*
U.S. Cl. 73—355 6 Claims

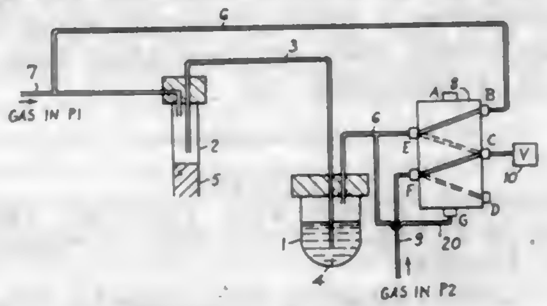


A clear air turbulence indicator having a radiometer positioned in an aircraft which views thermal radiation in two narrow wavelength regions, one of which is centered on the 15-micron carbon dioxide band. The output of the radiometer is a difference signal between the two wavelengths, with the 15-micron band being the temperature relatively close to the aircraft while the other band represents the temperature at a distance. The optical system of the radiometer includes a movable mirror which is pitch stabilized with the aircraft to maintain a horizontal line of sight for the radiometer. The instrument also includes a vertical search mode which can be actuated on the receipt of an alarm to indicate whether an increase or decrease in altitude provides a desirable evasive action.

### 3,475,964
## LIQUID INJECTION DEVICE

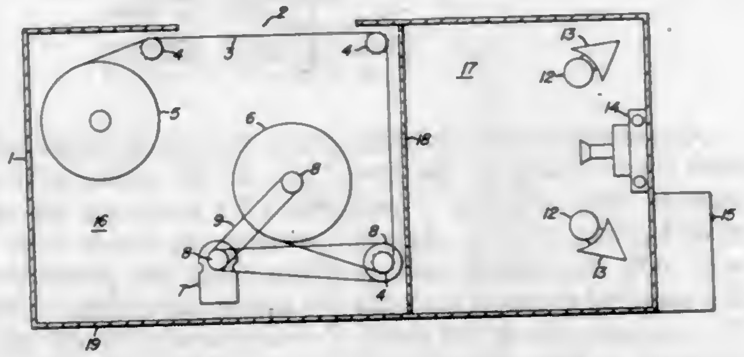
Anthony Jenkins, Cambridge, England, assignor to W. G. Pye & Co. Ltd., Cambridge, England, a British company
Filed Sept. 20, 1967, Ser. No. 669,000
Claims priority, application Great Britain, Sept. 26, 1966, 42,924/66
Int. Cl. G01n *1/00;* B01d *15/08*
U.S. Cl. 73—422 7 Claims

A liquid injection device for injecting an amount of sample liquid into a chromatograph column wherein the liquid is contained within a sample vessel which is connected to the column by a tube which extends at one end into the vessel and at its other end into the column. Means are provided for normally maintaining the pressure in the sample vessel at the pressure acting on the column, as well as a changeover valve which, when operated, applies to the sample vessel a gas from a predetermined volume and at a higher pressure than the pressure acting on the column so as to displace liquid from the sample vessel through the tube into the column.



### 3,475,965
## CONTINUOUS AND AUTOMATIC FALLOUT SAMPLER

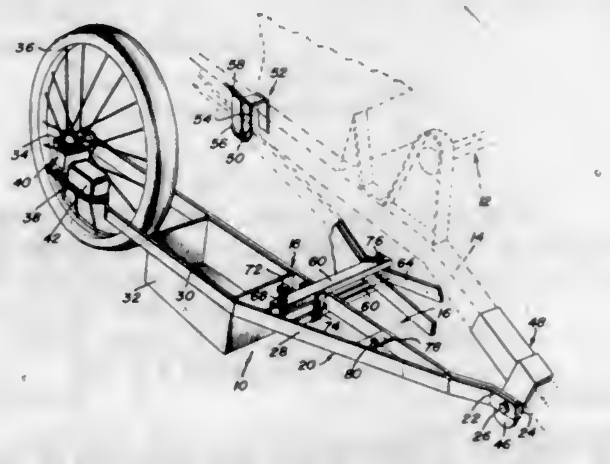
Abraham Koblin, Pikesville, and Alfred L. Woolridge and John Q. Adams, Baltimore, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 1, 1968, Ser. No. 709,777
Int. Cl. G01j *5/04*
U.S. Cl. 73—432 18 Claims



An apparatus and method of operation thereof for monitoring atmosphere contaminated by toxic spray comprising a water-proofed collecting tape, means for activating said collecting tape, photographic means, and electric circuit means to activate said photographic means.

### 3,475,966
## APPARATUS FOR DETERMINING FEEDING RATE OF GRAIN DRILLS OR THE LIKE

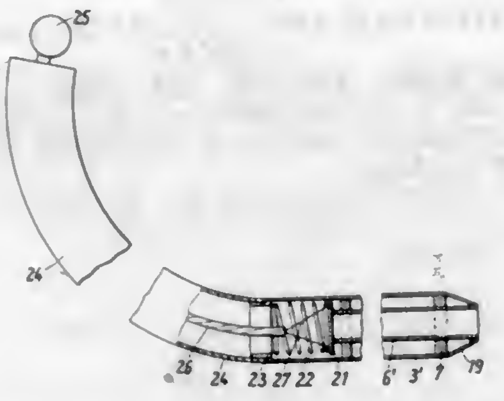
David P. Witteman, P.O. Box 484, Mohall, N. Dak. 58761
Filed Apr. 19, 1968, Ser. No. 722,632
Int. Cl. G01f *11/00, 23/00*
U.S. Cl. 73—432 10 Claims



An attachment for a grain drill pivotally mounted on the side beam of the drill for movement between a lowered ground contacting operative position and a raised inoperative position. The attachment includes calibrated containers which receive the endmost feed tubes for the introduction of the material being fed. The attachment also incorporates a ground measuring wheel and a cooperating counter which sounds an alarm upon the completion of a predetermined run.

### 3,475,967
### MEASURING DEVICE FOR TESTING THE CONTENT OF FLUID CONTAINERS, IN PARTICULAR FUEL TANKS

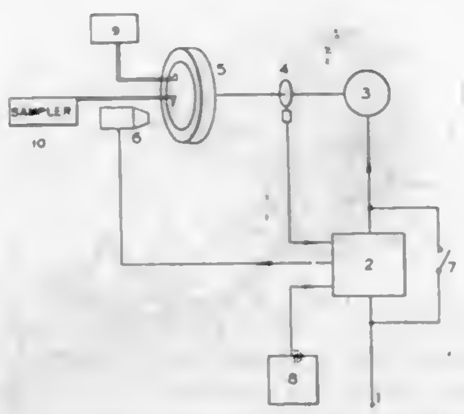
**Gerhard Steinbach, Stockacher Str. 173,**
**Tuttlingen, Germany**
**Filed Oct. 31, 1966, Ser. No. 590,942**
**Claims priority, application Germany, Oct. 29, 1965,**
**St 24,573**
**Int. Cl. G01n** *1/10;* **G01f** *23/04*
**U.S. Cl. 73—425.4** **8 Claims**



A measuring and sampling probe having an inside tube that forms a seal at the lower end of the probe with an outside tube. Testing is performed by inserting the unsealed probe into the material, causing the inside tube to seal with the outside tube and removing the probe with the sampled material between the inside and outside tubes. The outside tube of the probe is constructed of transparent material to allow the different strata of the sampled material to be measured.

### 3,475,968
### METHOD AND APPARATUS FOR IMPROVED CENTRIFUGAL ANALYSIS

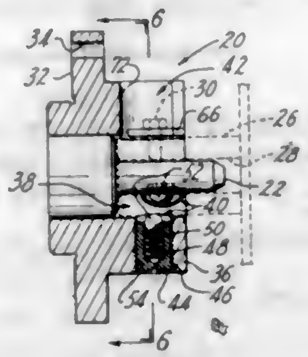
**Malcolm H. Jones, Blaydon, England, assignor to Joyce, Loebl & Company Limited, Gateshead, England, a British company**
**Filed Mar. 13, 1967, Ser. No. 622,624**
**Claims priority, application Great Britain, Mar. 18, 1966,**
**12,032/66**
**Int. Cl. G01f** *15/14;* **G01j** *5/04;* **G01k** *1/08*
**U.S. Cl. 73—432** **6 Claims**



A method of centrifugal determination of the size of particles suspended in a mother liquid, in which a spin fluid is first introduced as a layer in a rotating centrifuge, followed by a thin layer of buffer fluid of a density slightly less than the spin fluid, producing a momentary change of speed of the centrifuge to partially mix the spin and buffer fluids, adding a layer of mother liquid containing particles of a range of sizes, allowing the particles to diffuse outwards for a predetermined time and then by sampling and/or observation to obtain an evaluation of the relative amounts of particles of different sizes.

### 3,475,969
### ARBOR HEAD TOOLING FOR CONNECTING WORKPIECES TO DRIVES

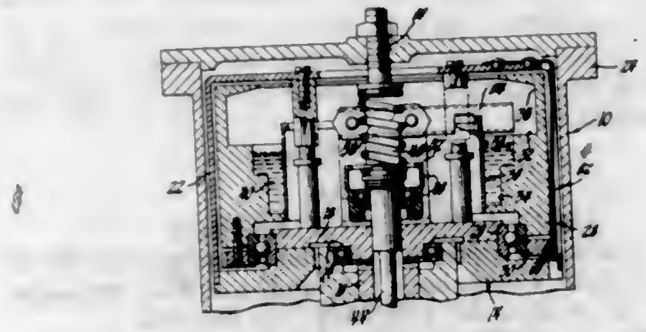
**Harry R. Kincaid, Johnstown, Ohio, assignor to International Research and Development Corporation, Worthington, Ohio, a corporation of Ohio**
**Filed Nov. 9, 1967, Ser. No. 681,695**
**Int. Cl. G01m** *1/38*
**U.S. Cl. 73—487** **9 Claims**



Arbor head tooling to which fans having hubs may be quickly connected and disconnected to achieve rapid balancing of the fans. The arbor head tooling includes an adapter element with a spindle or arbor member receivable in a central bore of the fan hub and a collar surrounding the fan hub. Slot means provided in the collar receives the set screw of the fan hub to connect the arbor head tooling in torque transmitting relation with the fan. Spring loaded ball plungers penetrate into the bore of the collar and urge the fan hub against the spindle thereby to place the fan hub in that position relative to its rotational axis which the fan hub would be expected to assume in its normal operating environment.

### 3,475,970
### SPEED ACCELERATION GOVERNOR WITH FLUID COUPLED INERTIA MEANS

**Roy H. Brandes, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Dec. 21, 1967, Ser. No. 692,495**
**Int. Cl. G01p** *3/04;* **G05d** *13/08, 13/10*
**U.S. Cl. 73—512** **12 Claims**



A speed-acceleration governor having a rotatably mounted inertia member which is coupled to a centrifugally actuated speed sensing control element by fluid coupling means. The arrangement eliminates the wear and speed error of conventional mechanical couplings. Various fluids may be utilized in the coupling means including liquids, such as silicone, or semi-solids, such as grease, with appropriate structural modifications to accommodate them.

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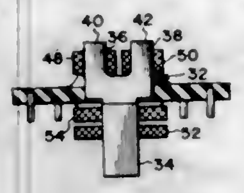
### 3,475,971
### COMBINATION TWO-AXIS ELECTROMAGNETIC TORQUE AND PICKOFF

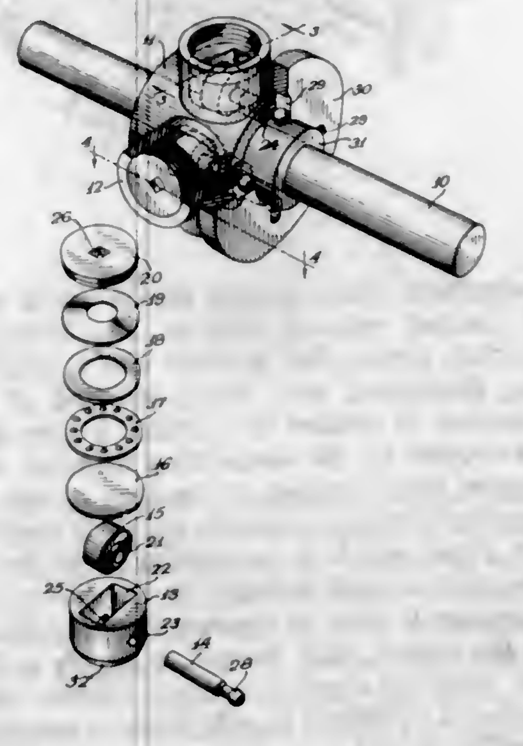
**Herbert Binder, New Monmouth, and Robert V. Delaney, Convent Station, N.J., assignors to Singer-General Precision, Inc., Little Falls, N.J., a corporation of Delaware**
**Filed Apr. 28, 1967, Ser. No. 634,688**
**Int. Cl. G01c** *19/28*
**U.S. Cl. 74—5.6** **6 Claims**



Sensing of the orientation of a gyroscope rotor and torquing of the same to re-establish a predetermined orientation is accomplished by four sensing and torquing devices arranged in two pairs. The devices are equidistantly, axially spaced from a gyroscope rotor in an initial position thereof and are symmetrically spaced about the rotor axis. The devices each comprise a core having a main body bifurcated or forked at one end, with a sensing winding on each of the fork arms and torquing windings on the main core body. The sensing windings are connected in a bridge circuit whereby the condition wherein the rotor becomes spaced closer to one of the devices than to any of the others causes a change in magnetic permanence of the magnetic circuit coupling the core and consequently an electrical unbalance in the bridge circuit, indicating tilt of the rotor from its initial position. For re-establishing the orientation of the rotor, the appropriate pair of opposed torquing windings are energized.

### 3,475,972
### CONTROLLABLE MOTION AND FORCE CONVERTER

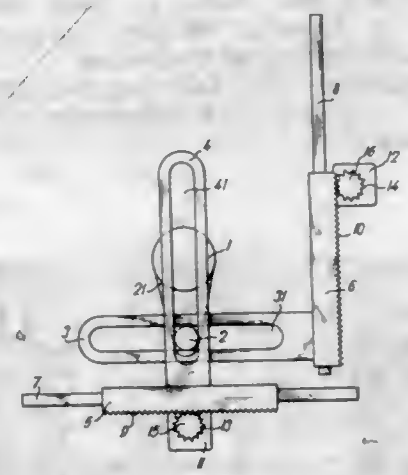
**James P. Steibel, Sturtevant, Wis., assignor to The Dumore Company, Racine, Wis., a corporation of Wisconsin**
**Continuation of application Ser. No. 706,063, Feb. 16, 1968. This application Mar. 7, 1969, Ser. No. 809,462**
**Int. Cl. F16h** *21/16*
**U.S. Cl. 74—25** **23 Claims**



A device for converting a torque force into a linear force directed parallel to the axis of the torque force comprising a rotatable shaft onto which a torque force is applied, a housing surrounding the shaft, the housing including a plurality of bearings each having its outer race peripherally engaging the periphery of the shaft, to be rotatably driven by said shaft about their own axes but being movable axially of the shaft, bearing pivot means for pivoting each bearing about an axis that is perpendicular to both the axis of the bearing and the axis of the shaft, so that a force component is transmitted from the shaft to the bearing which is manifested by development of a force parallel to the axis of the shaft which tends to effect relative movement between the shaft and frame in directions axially of the shaft, and a controller means for selectively effecting substantially identical pivoting of all bearings simultaneously.

### 3,475,973
### APPARATUS FOR ANALYZING ROTARY MOTION

**Otta Blažek, Plzen, Miloň Herynk, Chrast, and Josef Rybář, Lhota, Czechoslovakia, assignors to Skoda, narodni podnik, Plzen, Czechoslovakia**
**Filed Apr. 11, 1968, Ser. No. 720,737**
**Claims priority, application Czechoslovakia,**
**Apr. 11, 1967, 2,622/67**
**Int. Cl. F16h** *19/04*
**U.S. Cl. 74—29** **6 Claims**

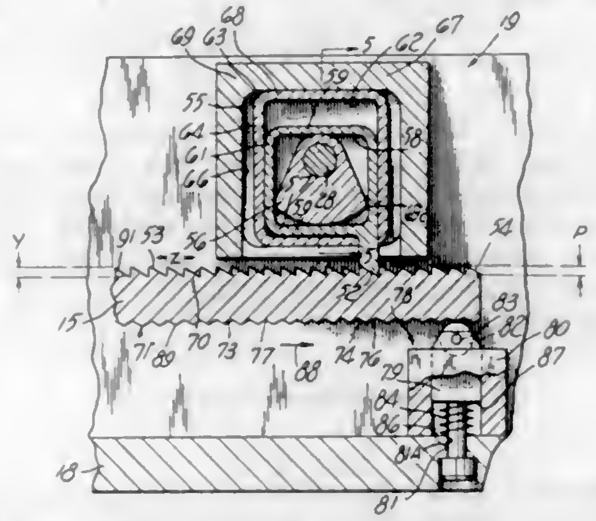


The rotary motion of a body about an axis is analyzed in terms of rectangular Cartesian coordinates by slides guided in paths perpendicular to each other and to the axis of rotation and each fixedly carrying an engaging arm formed with a slot enlongated at right angles to the path of the associated slide. An eccentric coupling pin on the body whose motion is to be analyzed is simultaneously received in both slots. A rack on each slide engages a pinion on the input member of a selsyn so that the output signals of the selsyns are indicative of the position of the pin in Cartesian coordinates.

### 3,475,974
### JAM-FREE INDEXING MECHANISM

**Fritz V. Brosseit, Kansas City, Mo., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed Jan. 4, 1968, Ser. No. 695,637**
**Int. Cl. F16h** *25/08, 25/16*
**U.S. Cl. 74—55** **6 Claims**

A cam operated drive cyclically imparts a rectangular motion to a feed pawl, which advances a movable platform by engaging a first rack thereon. At the end of each advance, a spring-loaded roller arranged to exert a force normal to the platform engages an oblique projection on a second rank affixed to the platform to cam the platform in a forward direction. The resulting overtravel of the platform assures an initial clearance between the pawl and the first rack at the start of the next cycle.



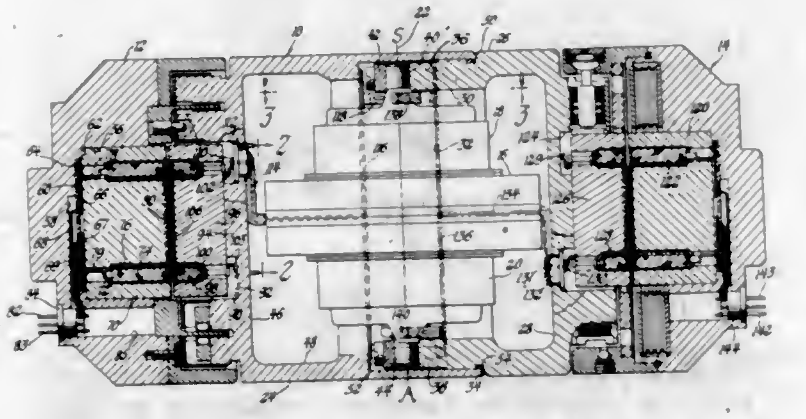
### 3,475,975
### ELECTROMAGNETIC GYROSCOPE FLOAT ASSEMBLY

**Robert W. Sokol and Lonnie G. Neal, Milwaukee, Wis., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Apr. 10, 1967, Ser. No. 629,478**

**Int. Cl. G01c** *19/06*

**U.S. Cl. 74—5.7** **8 Claims**



A single axis gyroscope having an electromagnetic system for supporting a float assembly and for transferring two phase power to motors carried by the float assembly. Power transfer paths at opposite ends of the gyro each include inductively linked primary and secondary windings mounted in respective subassemblies, a conductive strip bonded to the float and extending from the secondary winding to points accessibly adjacent each of the motors, and resilient connectors depending from the motors to contact the strips thereby completing the motor power circuits.

### 3,475,976
### TWO-CYCLE TRANSMISSION WITH ADJUSTABLE VELOCITY PROFILE

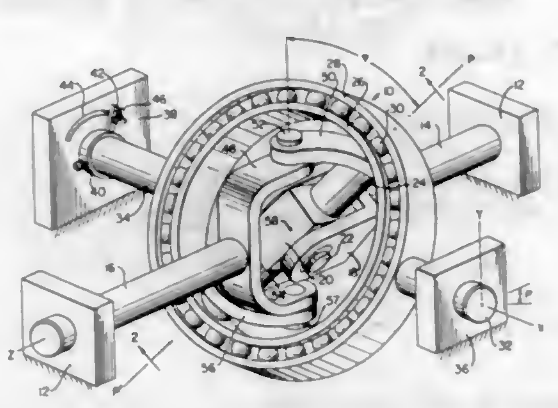
**James M. Steinke, Fairport, N.Y., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**

**Filed Jan. 2, 1968, Ser. No. 694,966**

**Int. Cl. F16h** *21/12*

**U.S. Cl. 74—63** **3 Claims**

A transmission device having aligned input and output shafts with yokes on their adjacent ends. The yoke on the input shaft rotatably supports a block having a pin projecting therefrom with the outer end thereof secured to the inner race of a bearing utilized as a support structure. An arcuate link is pivotally joined to said outer end and to one leg of the yoke on said output member. The outer race of said bearing may be adjustably fixed relative to the frame means of the device to provide for a change in the velocity fluctuation of the output shaft.



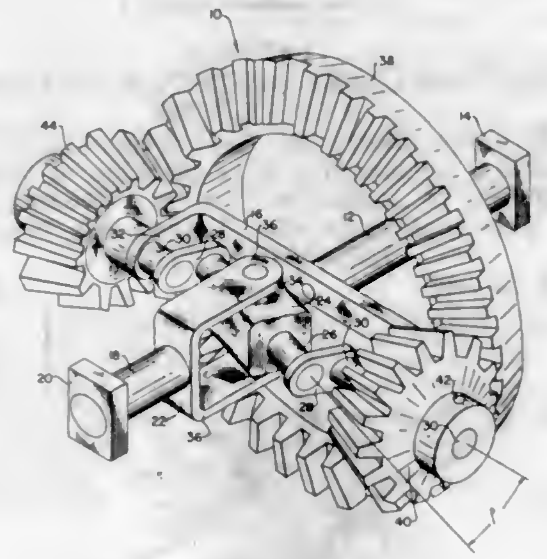
### 3,475,977
### ROTARY STEP MECHANISM

**James M. Steinke, Fairport, N.Y., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**

**Filed Jan. 2, 1968, Ser. No. 695,064**

**Int. Cl. F16h** *21/14, 21/48*

**U.S. Cl. 74—66** **13 Claims**



An intermittent rotary motion device which utilizes an input of constant velocity rotation. The device includes a canted-crank connecting member and a shaft member upstanding therefrom, and, when one end of the connecting member is rotated by a crank, a cone of revolution is developed by the connecting member, with said shaft member being located at the apex of the cone. As the connecting member is rotated, the shaft member oscillates in a plane which is perpendicular to the rotating axis of the output shaft included in the device. The connecting member is used to connect an input shaft of the device to the output shaft thereof to supply a first component of constant angular rotation thereto. When the shaft member is oscillated in said plane, a second component of motion is added to said output shaft to combine with the first componet of constant angular rotation to thereby produce a dwell in said output shaft.

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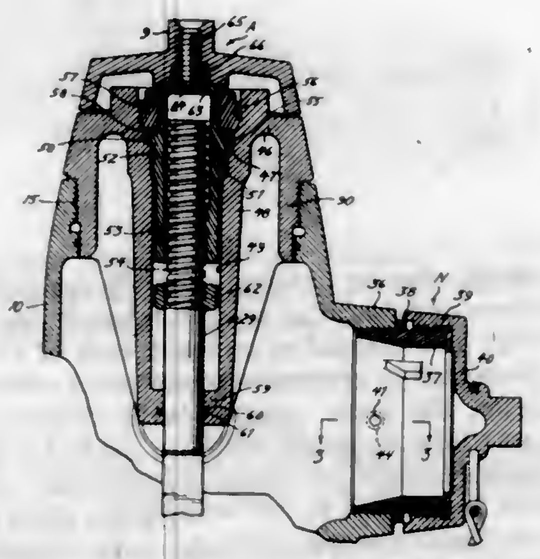
### 3,475,978
### FIRE HYDRANT

**John T. Dunton, Bradford, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware**

**Continuation of application Ser. No. 678,138, Sept. 20, 1967, which is a division of application Ser. No. 421,580, Jan. 18, 1965. This application Nov. 18, 1968, Ser. No. 778,007**

**Int. Cl. F16h** *27/02, 1/18*

**U.S. Cl. 74—89.15** **4 Claims**



A fire hydrant having an improved mechanism for operating the hydrant between open and closed positions. A pressure plate receiving the valve stem is secured to the upper bonnet and provides a bearing shoulder against which the actuator is secured for rotation movement by means of a retaining nut.

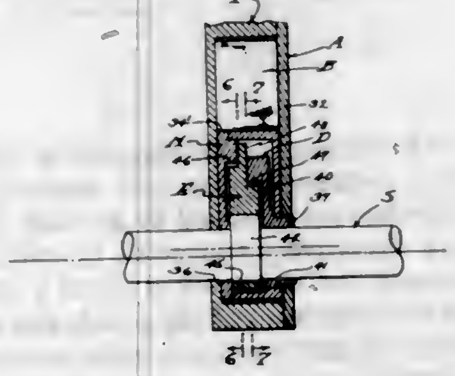
### 3,475,979
### AMPLIFIED MECHANICAL ACTUATOR

**Paul Huska, 739 Moreno, Los Angeles, Calif. 90049**

**Continuation of application Ser. No. 414,796, Nov. 30, 1964. This application May 28, 1968, Ser. No. 732,769**

**Int. Cl. F16h** *27/02;* **F01c** *9/00*

**U.S. Cl. 74—89.16** **12 Claims**



This invention relates to pressure operated mechanical actuators and is specifically concerned with amplifying the motion of pressure responsive means, all within one cooperatively related assembly of parts a unified amplified mechanical actuator. The actuator involves a double acting motor responsive to an independent outside pressure source under suitable control, the motor rotation is necessarily limited, and said rotation is augmented or diminished as circumstances require by means of a transmission integrated with the pressure responsive means.

### 3,475,980
### ROPEWAY WITH VARIABLE SPEED GEAR MECHANISM

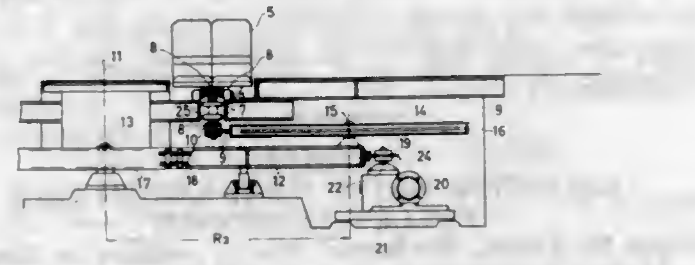
**Akira Kishimoto, Toyonaka-shi, Japan, assignor to Fuji Transport Industry Co., Ltd., Osaka-fu, Japan, a corporation of Japan**

**Filed May 8, 1968, Ser. No. 727,432**

**Claims priority, application Japan, May 22, 1967, 42/32,768**

**Int. Cl. F16h** *27/02, 19/06*

**U.S. Cl. 74—89.22** **2 Claims**



A ropeway with a variable speed gear mechanism in which one of a plurality of ropes is stretched between a pair of a plurality of carriages which ride and move on an endless track through being pulled by the rope and a pair of turn-tables with a plurality of rotating wheels at the peripheral parts of the turn-tables are provided where the direction of moving of the carriages is converted, said ropes being also stretched over the rotating wheels which rotate around their own axes and revolve around the axes of the turn-tables.

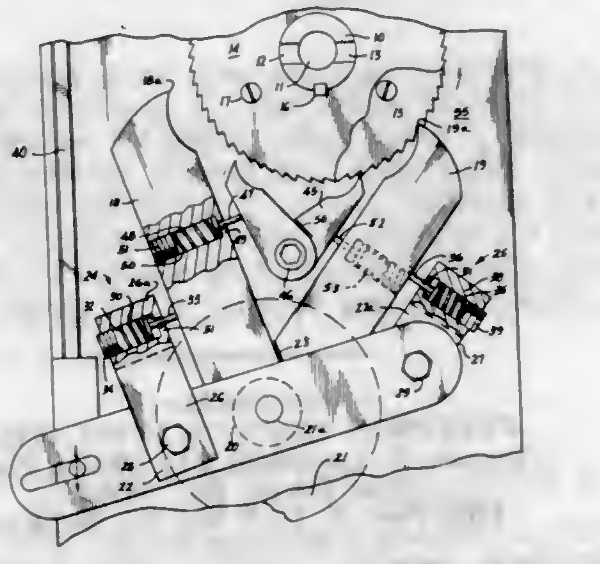
### 3,475,981
### MOTOR OPERATOR FOR LOAD BREAK SWITCH

**Howard L. Gerard, Houston, Tex., assignor to Powell Electric Manufacturing Co., Houston, Tex.**

**Filed Nov. 20, 1967, Ser. No. 684,252**

**Int. Cl. F16h** *27/02*

**U.S. Cl. 74—143** **6 Claims**

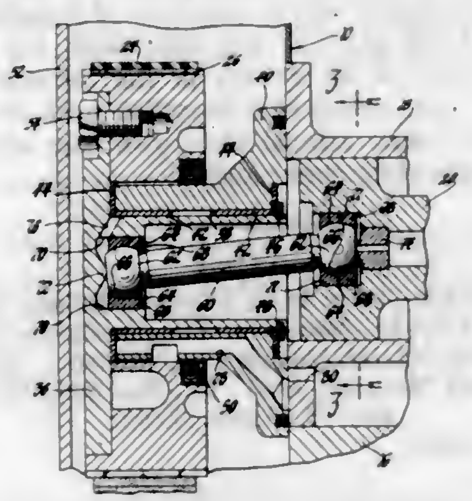


This application discloses a motor operator for a load break switch that is opened and closed by rotation of an operating shaft in opposite directions. The operator includes first and second ratchet wheels, which are mounted on the operating shaft of the switch for rotation with the shaft with their ratchet teeth facing in opposite directions. First and second ratchet members are positioned to engage the first and second ratchet wheels respectively to rotate them in opposite directions. Each ratchet member has one end rotatably mounted on an eccentric to be reciprocated by rotation of the eccentric. The eccentric is driven by a motor. A shifting lever controls which of the two ratchet members are in engagement with its associated ratchet wheel at any given time, which determines the direction the operating shaft is rotated. The shifting lever is movable between a first position with the first ratchet member in engagement with the first ratchet wheel to rotate the wheel and the operating shaft of the switch in one direction, when the ratchet member is reciprocated by the eccentric, and a second position with the second ratchet member in engagement with the second ratchet wheel to rotate the wheel and the operating shaft of the switch in the opposite direction, when the second ratchet member is reciprocated by the eccentric. The shifting lever is moved between the two positions in response to movement of the switch between its open and closed positions so that the ratchet member that is in engagement with its associated ratchet wheel will be rotating the shaft to change the switch from the condition that it is in at that time, regardless of the direction of rotation of the eccentric.

### 3,475,982
### BELT-TYPE DRIVE WITH ADJUSTABLE PULLEY TENSIONER

**Mark H. Frank, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed May 9, 1968, Ser. No. 727,970**
**Int. Cl. F16h** *7/16*
**U.S. Cl. 74—242.15** **7 Claims**

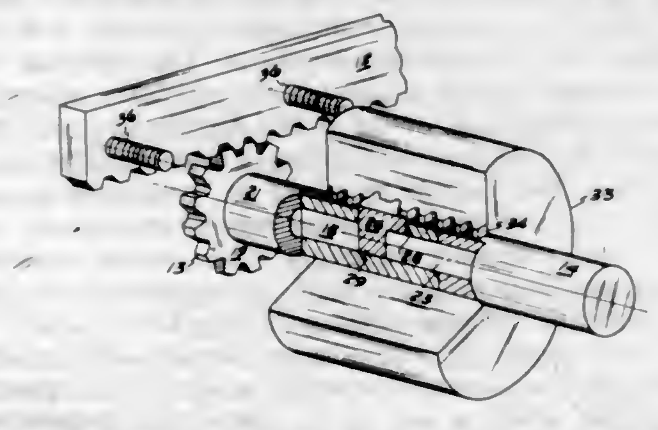


A camshaft drive arrangement for an engine including, in a preferred embodiment, a crankshaft driven belt engaging a driven pulley adjustably mounted on the engine rocker cover and drivably connected with the engine camshaft through a universally mounted drive shaft. The arrangement permits adjustment of the driven pulley without movement of the camshaft for the purpose of properly adjusting tightness of the driving belt.

### 3,475,983
### PRECISION POSITION INDICATOR

**Norman H. Lovendahl, 814 Clinton Place, River Forest, Ill. 60305**

**Filed Nov. 9, 1967, Ser. No. 681,630**
**Int. Cl. F16h** *35/08*
**U.S. Cl. 74—395** **12 Claims**

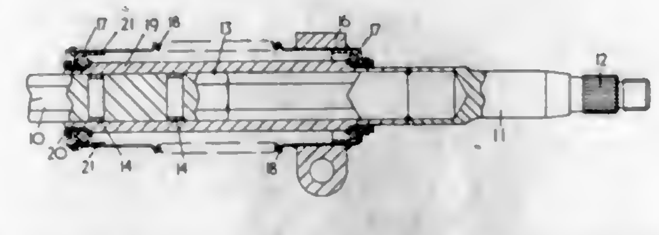


A geared location indicator that is calibrated to correct for accumulated errors. The orientation of a driven gear is automatically varied with respect to an indicator shaft to compensate for the accumulated errors.

### 3,475,984
### STEERING COLUMN ASSEMBLY

**Benjamin Ward, Rubery Rednal, near Birmingham, England, assignor to Burman & Sons Limited, Kings Norton, Birmingham, England**

**Filed Apr. 10, 1968, Ser. No. 720,180**
**Claims priority, application Great Britain, Apr. 11, 1967, 16,541/67**
**Int. Cl. B62d** *1/18*
**U.S. Cl. 74—492** **3 Claims**

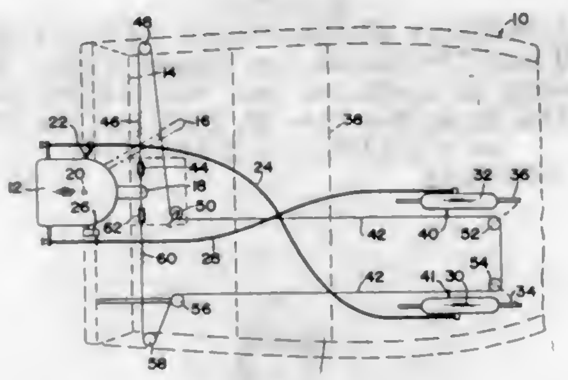


A vehicle steering column assembly comprising an inner column and an outer column telescopable relative to each other and adapted at opposite ends of the assembly to be connected to a steering wheel and a vehicle steering mechanism, the outer column being disposed along at least part of the its length within a sleeve having a series of circumferentially extending corrugations, one end of the sleeve being fixed in use whereas the other end of the sleeve is interconnected with the outer column so that downward axial movement of said outer column will result in expansion of the sleeve and opening out of said corrugations thereof.

### 3,475,985
### OUTBOARD MOTOR CONTROL

**Albert H. Oldham, 3031 Silver Lake Blvd., Cuyahoga Falls, Ohio 44224**

**Filed Apr. 5, 1967, Ser. No. 628,717**
**Int. Cl. G05g** *1/14*
**U.S. Cl. 74—512** **8 Claims**



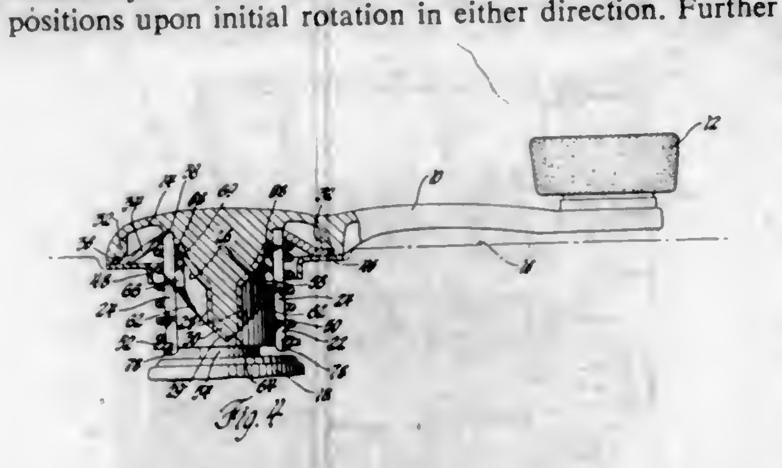
Apparatus for steering, throttling and/or clutching an outboard motor entirely by the feet wherein a pair of foot operated pedals are mounted to the deck of the boat. The pedals are operatively connected by cable means to the motor whereby the motor turns about a steering axis upon fore and aft movement of the pedals and the throttle and/or clutch of the motor are controlled by tilting movement of the pedals about a horizontal axis.

### 3,475,986
### RETRACTABLE WINDOW REGULATOR HANDLE ASSEMBLY

**Clyde H. Schamel, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed June 6, 1968, Ser. No. 734,943**
**Int. Cl. G05g** *1/02*
**U.S. Cl. 74—547** **4 Claims**

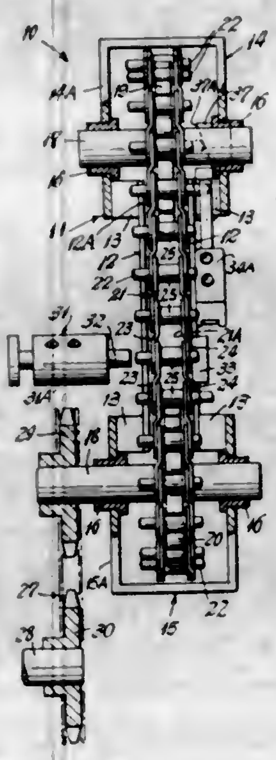
A vehicle body window regulator handle is connected to the window regulator clutch by a cam arrangement including coacting cam surfaces for camming the handle outwardly of the body panel from stored to extended positions upon initial rotation in either direction. Further handle rotation engages driving surfaces to drive the clutch. A spring automatically moves the handle back to stored position when the handle is released.



### 3,475,987
### MEMORY DEVICE FOR CONTROLLING AND/OR TIMING AN OPERATION TO BE PERFORMED ON A WORK PIECE

**Thomas F. Henebry, Hawleyville Road, Bethel, Conn. 06801**

**Filed Apr. 25, 1968, Ser. No. 724,145**
**Int. Cl. F16h** *53/06;* **F16g** *13/02*
**U.S. Cl. 74—568** **10 Claims**

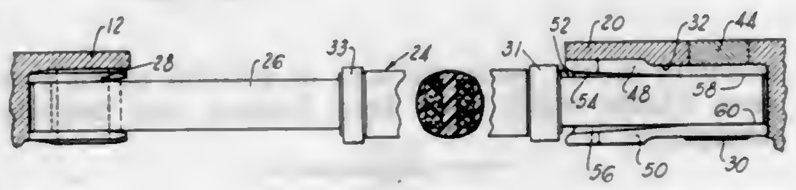


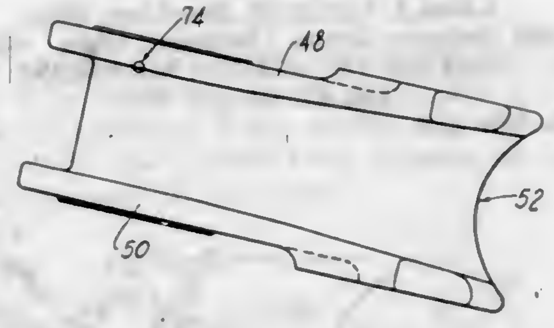
This invention is directed to essentially a mechanical memory device adapted to be utilized in conjunction with a machine having one or more work stations for timing and/or controlling a particular operation intended to be performed on a work piece as the work piece is successively moved from work-station to work-station. The memory device comprises a frame on which spaced sprocket wheels are rotatably journalled and over which an endless chain or the like is threaded. The chain comprises a series of links connected by freely displaceable pins having end portions adapted to extend to either side of the chain. An actuating means is disposed opposite the path of travel of the chain pins for effecting displacement of certain of the pins in a predetermined sequence. Downstream from the actuating means and in the direction of travel of the chain and the pins carried thereby is a sensing means for detecting the displacement of any such pin. The sensing means in turn is connected in circuit with the work station of a given machine to effect and/or control the operation to be performed on the work piece thereat. Spaced from the sensing means is a means to automatically restore the displaced pin to its normal inoperative position.

### 3,475,988
### END FITTING FOR TIE BAR

**Richard J. Ditlinger, South Bend, and James J. Toal, Mishawaka, Ind., assignors to The Bendix Corporation, a corporation of Delaware**

**Filed Feb. 8, 1968, Ser. No. 703,996**
**Int. Cl. G05g** *1/00;* **F16c** *35/00*
**U.S. Cl. 74—579** **9 Claims**





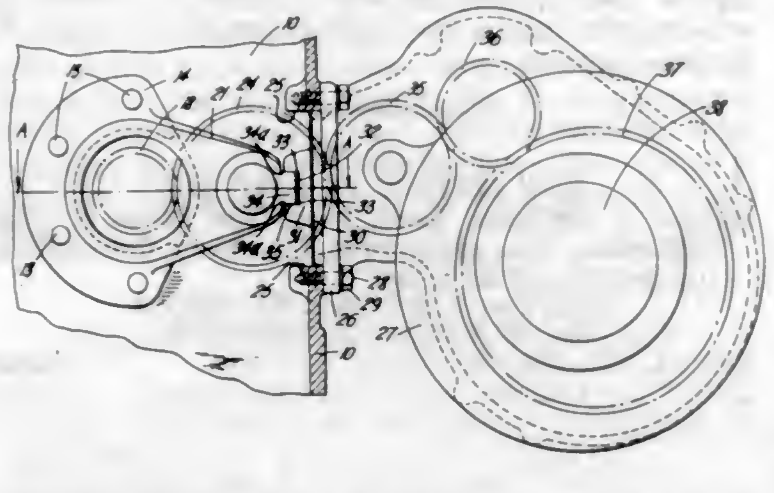
An end fitting for a tie bar coupling such as is used, for example, in a helicopter rotor system for connecting the rotor blades and rotor arm assemblies consisting of endless loops of laminated, adhesively integrated, parallel arranged filaments, which end fitting accommodates the change in direction of the filaments within the flanges thereof which is caused by bending moments created by movement of one structure that is connected to another structure by the coupling.

### 3,475,989
### DRIVING TRANSMISSIONS FOR THE FRONT AND REAR WHEELS OF A VEHICLE

**Joseph Davey, Crookham, England, assignor to County Commercial Cars Limited, Aldershot, England, a British company**

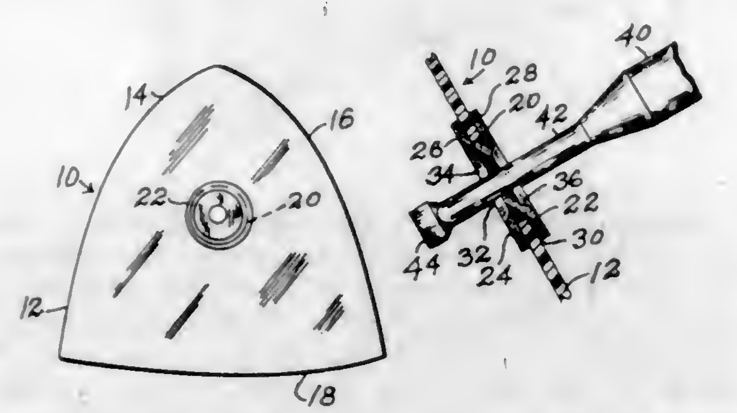
**Filed Mar. 4, 1968, Ser. No. 710,310**
**Claims priority, application Great Britain, Mar. 10, 1967, 11,344/67**
**Int. Cl. F16b** *57/02*
**U.S. Cl. 74—606** **7 Claims**

A driving transmission for the front and rear wheels of a motor vehicle comprises a fore and aft extending shaft which transmits a drive to the land wheels at one end of the vehicle, which shaft is driven by a train of gear wheels between it and a second fore and aft shaft forming part of a transmission between the vehicle's engine and the land wheels of the other end of the vehicle, the gear wheels being disposed to rotate about parallel fore and aft axes. There are provided two separate supporting structures on each of which certain of the gear wheels are mounted and the supporting structures have abutting faces which when brought together and secured by securing means locate two of the gear wheels in the required meshing relationship. There is provided in addition to the securing means two inter-engaging accurately fitting parts on the two supporting structures, which parts are adapted to locate and maintain in one plane the axes of rotation of the two gear wheels which have been brought into meshing engagement.



### 3,475,990
### PROTECTIVE SHIELD DEVICES FOR TOOLS AND THE LIKE

**Adam J. Maximuk, Brooklyn, Ohio**
**(6100 Ardmore Drive, Cleveland, Ohio 44144)**
**Filed Jan. 16, 1968, Ser. No. 698,193**
**Int. Cl. F16p** *1/04*
**U.S. Cl. 74—608** **2 Claims**

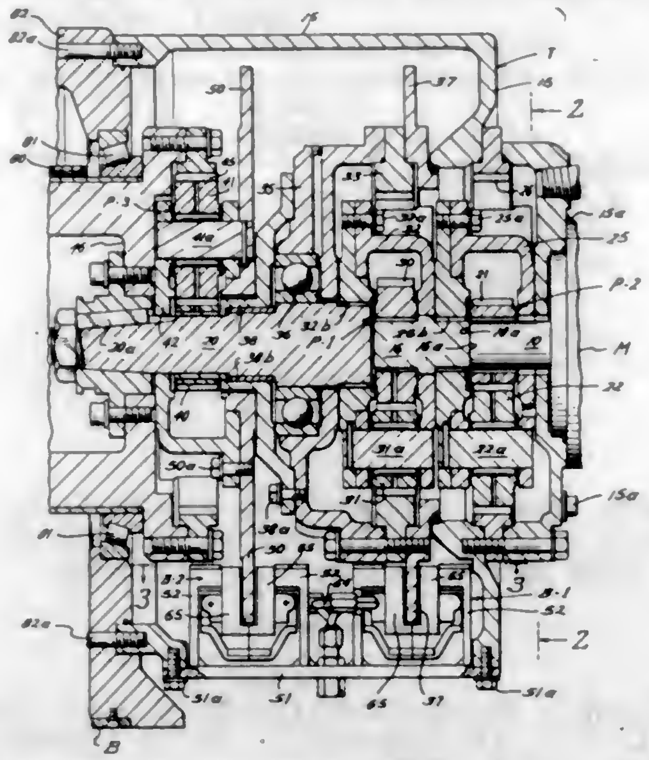


A protective shield device for mounting on tools of various kinds to afford protection to the operator from cuttings, debris, chips and the like resulting from tool operation. It includes a transparent major shield body portion through which the operator can see the tool head in work, and has an opening with a socket bushing seated therein of resilient material, the socket bushing having an opening formed therein with inwardly projecting inner flange through which the shank of the tool is inserted for a tight frictional grip. Thus the tool supports the shield device and there is no interference with the vision of the operator through the transparent shield body portion. Various shapes of shield body portion permit adaptation to blocking differing types or patterns of debris dispersion from the tool, and also to interfit with constricted or odd shaped areas where the tool is to work.

### 3,475,991
### TRANSMISSION ASSEMBLY

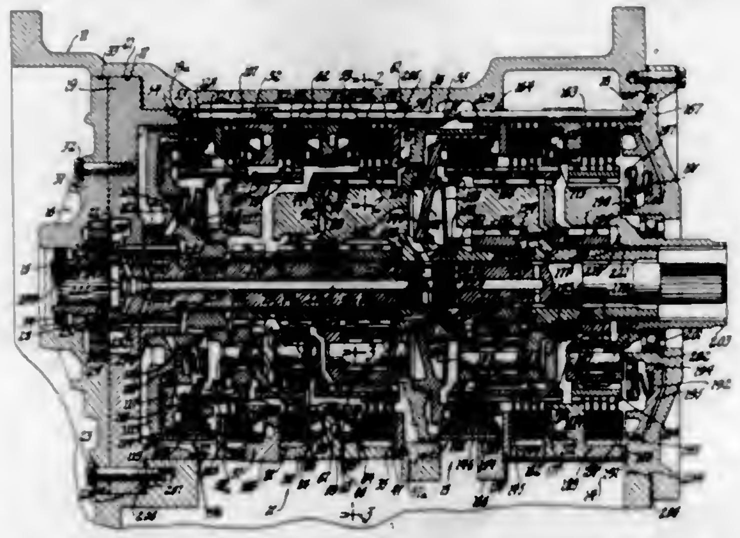
**David W. Pilcher, Pampa, Tex., assignor to Bowen Tools, Inc., a corporation of Texas**
**Filed July 17, 1967, Ser. No. 653,933**
**Int. Cl. F16h** *57/10*
**U.S. Cl. 74—758** **4 Claims**

A transmission assembly which provides for multiple output speeds without shifting gears and which may be freely rotated by a driven object such as a reel at the output end of the assembly and which may be partially or fully braked to control such free rotation or driving action.



### 3,475,992
### POWER TRANSMISSION

**Charles E. West, Jr., Speedway, and Jack W. Schmidt, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Dec. 26, 1967, Ser. No. 693,208**
**Int. Cl. F16h** *57/10, 57/04*
**U.S. Cl. 74—759** **20 Claims**

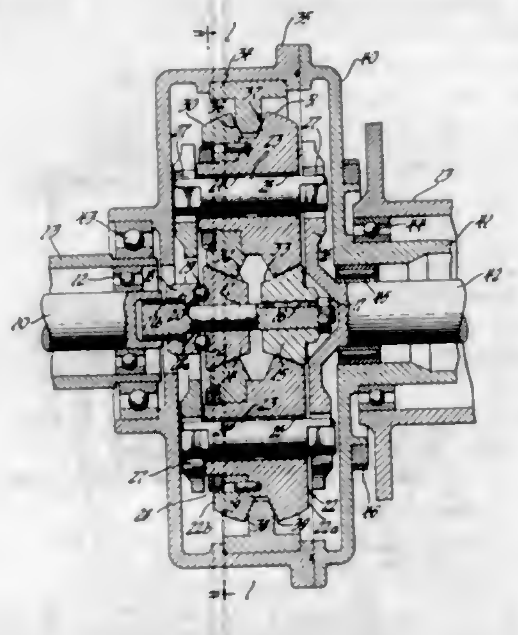


A power transmission having input and output means with a range unit, having a plurality of friction devices with common supporting means, a splitter unit, and a reverse unit to provide a plurality of forward and reverse drive ratios therebetween is disclosed. The input means in combination with an element of the range unit provide lubrication and pressurizing systems for the splitter unit.

### 3,475,993
### FRICTION DRIVE TRANSMISSION

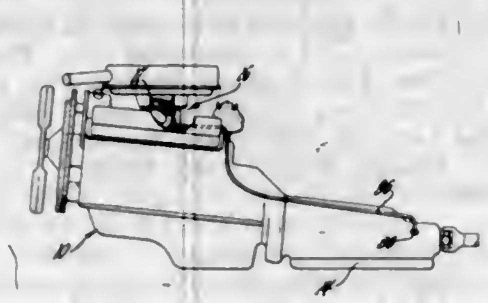
**Lubomyr O. Hewko, Sandusky, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Feb. 14, 1967, Ser. No. 616,097**
**Int. Cl. F16h** *37/06, 13/06*
**U.S. Cl. 74—798** **13 Claims**

A compound planetary friction drive wherein the planet-sun and planet-ring contacts are constructed and arranged such that the torque-transmitting capacity of the planet-ring contact is equal to the torque-transmitting capacity of the planet-sun contact such that the torque load at which the condition of slip of the planet-ring contact occurs is the same as that at which slippage of the planet-sun contact occurs.



### 3,475,994
### VEHICLE SPEED CONTROLLED CARBURETOR ACCELERATOR PUMP

**Nathaniel B. Kell, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Feb. 8, 1968, Ser. No. 704,146**
**Int. Cl. F02m** *7/08, 37/06, 69/02*
**U.S. Cl. 74—857** **4 Claims**

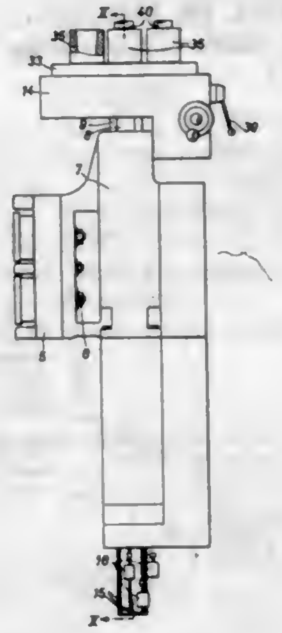


A control linkage for an accelerator pump of a carburetor wherein an extensible link foreshortens the pumping stroke of the accelerator pump proportional to the speed of the vehicle.

### 3,475,995
### TAILSTOCK TURRET

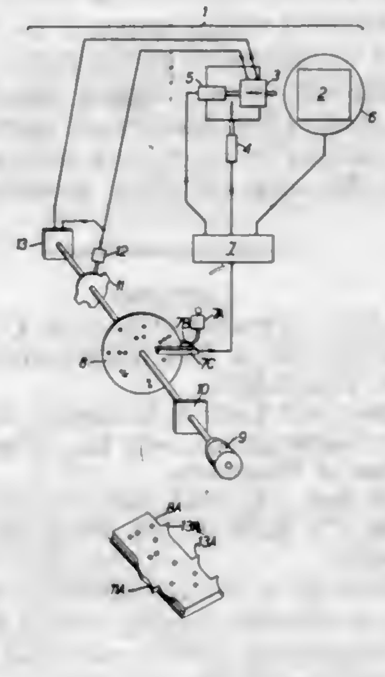
**Hans Peter Spühler, Zurich, Switzerland, assignor to Oerlikon-Buhrle Holding Ltd., Zurich, Switzerland**
**Filed Apr. 11, 1967, Ser. No. 629,968**
**Claims priority, application Switzerland, Apr. 15, 1966, 5,507/66**
**Int. Cl. B23b** *39/20, 47/18, 7/04*
**U.S. Cl. 77—25** **1 Claim**

A tailstock turret on lathes wherein a shaft, parallel with the axis of the lathe and mounted for rotation and axial displacement and having a toolhead with a plurality of toolholders disposed in a ring round the axis of the shaft, is provided in a housing. A piston, which is guided for displacement in the housing and is displaceable along the axis of the lathe, is reciprocable by hydraulic pressure and carries a holder in which the toolhead is mounted for rotation. The holder is provided with a locking member whereby the toolhead, together with the shaft, can be locked with respect to the holder. The shaft carries stops which are displaceable along its axis and one of which can come into contact, during the displacement of the shaft, with a setting member of a control valve accommodated in the housing and can actuate the control valve. The control valve controls the supply of hydraulic pressure to the piston.



### 3,475,996
### MACHINE TOOL PROGRAMMER

**Kenneth J. Wheeler, Burgess Hill, England, assignor to Norcon (Norris) Limited, Burgess Hill, England, a British company**
**Filed May 2, 1967, Ser. No. 635,442**
**Int. Cl. B23b** *39/20*
**U.S. Cl. 77—25** **11 Claims**



A control arrangement for an automatic machine tool employing a code plate having a pattern of perforations that are scanned by a digital fluid logic unit to actuate a digital actuator effecting relative movement between a tool and a workpiece.

### 3,475,997

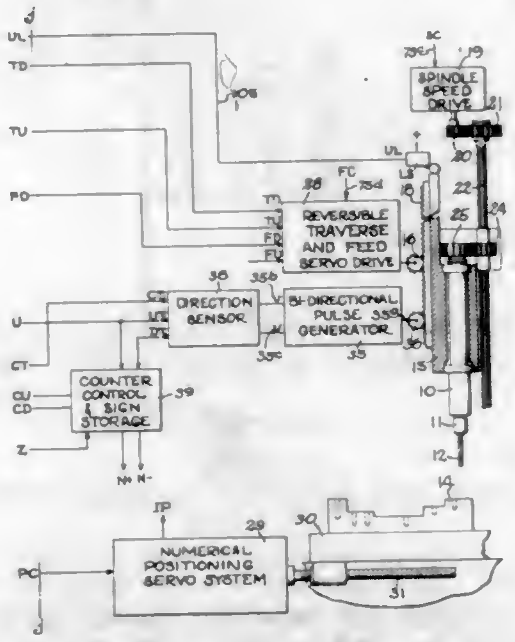
### METHOD AND APPARATUS FOR CONTROLLING MOTIONS OF A DRILLING CUTTER OR THE LIKE

**Jack A. Wohlfeil, Fond du Lac, Wis., assignor to Giddings & Lewis, Inc., Fond du Lac, Wis., a corporation of Wisconsin**

**Filed Mar. 10, 1967, Ser. No. 622,325**

**Int. Cl. B23b** *47/24;* **H02p** *7/52, 7/18*

**U.S. Cl. 77—32.7** **13 Claims**


SPINDLE SPEED DRIVE
REVERSIBLE TRAVERSE AND FEED SERVO DRIVE
DIRECTION SENSOR
BI-DIRECTIONAL PULSE GENERATOR
COUNTER CONTROL & SIGN STORAGE
NUMERICAL POSITIONING SERVO SYSTEM
UL
TD
TU
FD
CT
CU
CD
Z
PC

In the control of a drilling machine or the like, the drilling cutter is traversed toward a workpiece and its motion converted to a slower feed rate at the instant the cutter engages the workpiece. Such engagement is signaled by producing first and second electrical signals whenever the cutter is moving respectively toward or away from the workpiece, and detecting the momentary appearance of the second signal which results when the cutter strikes and rebounds slightly from the workpiece. When such detection occurs, the velocity of the cutter is reduced to feed rate, and measurement of the displacement of the cutter is begun. The measured displacement is compared to a predetermined or desired and commanded penetration distance, and when the former becomes equal to the latter, the cutter is retracted. Advantageously, the displacement of the cutter is measured by a reversible counted which responds to pulses generated as an incident to movement of the cutter; and the above-mentioned first and second signals are those which are employed to control the direction of counting. The method may be practiced by employing widely different forms of apparatus, but one especially advantageous form is disclosed.

### 3,475,998

### METHOD AND APPARATUS FOR CONTROLLING THE MOTION OF A RECIPROCABLE TOOL ELEMENT OR THE LIKE

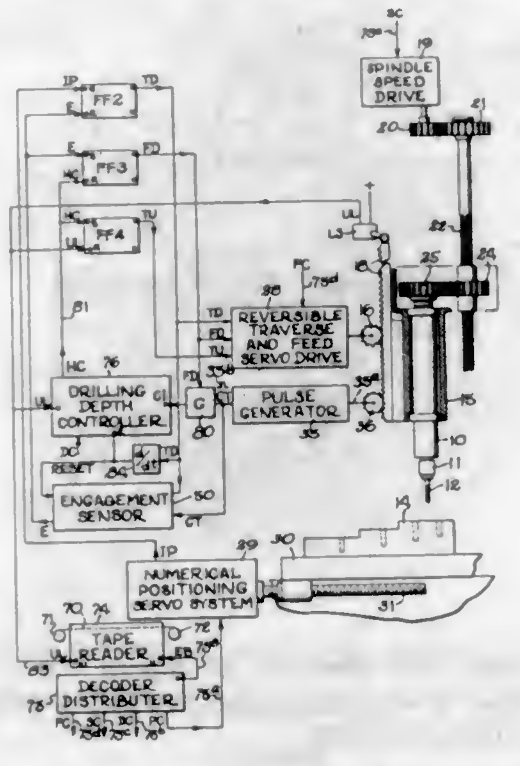
**Daniel J. Steiner and Cyril J. Schneider, Kaukauna, Wis., assignors to Giddings & Lewis, Inc., Fond du Lac, Wis., a corporation of Wisconsin**

**Filed Oct. 16, 1967, Ser. No. 675,497**

**Int. Cl. B23b** *47/24;* **B23q** *35/14*

**U.S. Cl. 77—32.7** **14 Claims**

In the control of a drilling machine or the like, the drilling cutter is traversed rapidly toward a workpiece and its motion is converted to a slower feed rate at the instant the cutter engages the workpiece. Such engagement is sensed by producing a signal in the form of a series of pulses having a frequency proportional to the velocity of the cutter during traverse, and by detecting a decrease in the frequency resulting from a reduction in the velocity of the cutter as the latter strikes the workpiece. When such detection occurs, an engagement signal is produced to reduce the velocity of the cutter to a feed rate, and measurement of the displacement of the cutter is begun. The measured displacement is compared to a predetermined or desired and commanded penetration distance, and when the former becomes equal to the latter, the cutter is retracted. Advantageously, an artificial high velocity signal is impressed upon the frequency detector while the cutter is advancing at a feed rate, while the cutter is being retracted and while the cutter is accelerating from a dead stop to a traverse velocity so that, when the frequency of the pulses is in a low range during these intervals, the detector will not respond to the pulses and will not produce a false engagement signal.


FF2
FF3
FF4
SPINDLE SPEED DRIVE
REVERSIBLE TRAVERSE AND FEED SERVO DRIVE
PULSE GENERATOR
DRILLING DEPTH CONTROLLER
RESET
ENGAGEMENT SENSOR
NUMERICAL POSITIONING SERVO SYSTEM
TAPE READER
DECODER DISTRIBUTER

### 3,475,999

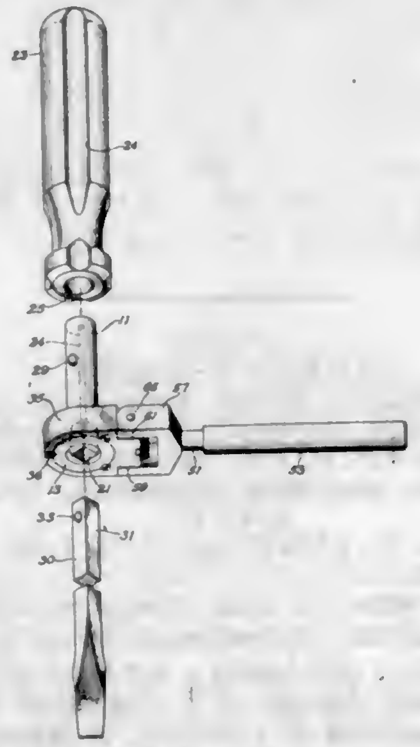
### RACHETING HANDTOOL MECHANISM

**William M. Roberts, 1213 S. Roosevelt Ave., Piqua, Ohio 45356, and Ronald W. Roberts, Dallas, Tex. (Apt. B-4, 126 New Britain Ave., Plainville, Conn. 06062)**

**Filed Dec. 20, 1967, Ser. No. 692,047**

**Int. Cl. B25b** *13/46, 15/04*

**U.S. Cl. 81—63** **4 Claims**



Following is disclosed a racheting handtool mechanism that includes a shank with an enlarged portion on one end having teeth on its periphery with opposed flanks that are substantially parallel. The enlarged portion has a polygon shaped socket on an interior region and a rotatable handle is secured to the shank and receives a removable tool. A housing having a pivotable arm encloses the enlarged portion, and a reciprocable pin carried by the housing is biased inward to engage the teeth. The end of the pin is beveled to permit rotation of the enlarged portion in one direction, but may be manually retracted and rotated to permit reversed rotation. The pivotable arm has a yoke secured to the housing to partially cover and protect the pin. Insulation is provided to enable use around electrical conductors.

### 3,476,000

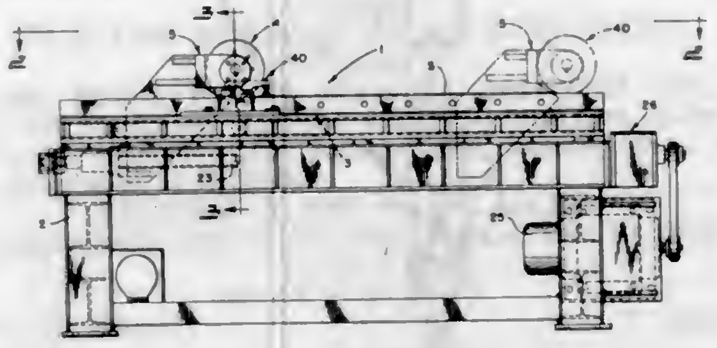
### STRIP SHEARING APPARATUS

**Donald James Wheeler, Kent, Ohio, assignor to Roller Shear Corporation, Cleveland, Ohio, a corporation of Ohio**

**Filed Aug. 18, 1966, Ser. No. 573,374**

**Int. Cl. B26d** *7/02, 1/20*

**U.S. Cl. 83—162** **5 Claims**



A shearing apparatus including a stationary shear assembly and a movable shear assembly disposed above the stationary shear assembly adapted to cooperate to shear material disposed therebetween, said movable shear assembly being supported below the stationary shear assembly in such a manner that the compressive forces acting on the stationary shear assembly during shearing will act through the support for the movable shear assembly to neutralize the opposing forces acting on the movable shear assembly.

### 3,476,001

### APPARATUS FOR CONTROLLING A TOOL CARRIAGE MOVING IN SYNCHRONISM WITH A TRAVELLING BAND MATERIAL

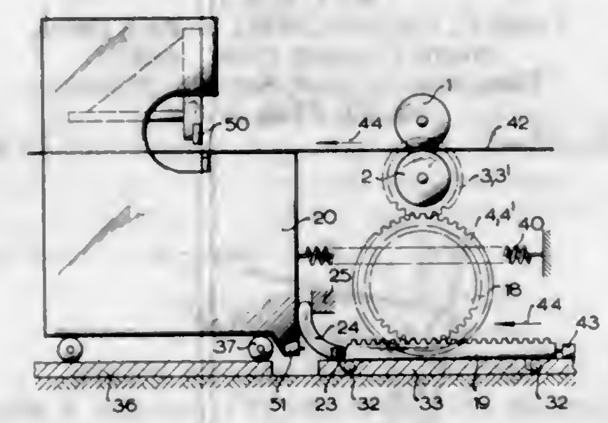
**Walter Schlüter, Geesthacht, Germany, assignor to Wilhelmsburger Maschinenfabrik Hinrichs & Sohn, Geesthacht, Germany, a firm**

**Filed Nov. 7, 1967, Ser. No. 681,159**

**Claims priority, application Germany, July 6, 1967, W 44,319**

**Int. Cl. B26d** *1/56, 5/20*

**U.S. Cl. 83—285** **14 Claims**



An apparatus for controlling a tool carriage moving in synchronism with a continuously travelling band material, wherein the motion of the tool carriage is controlled by reference to the speed of revolution of the feed rollers propelling the band, is provided with a driven element for imparting the required motion to a tool carriage. The driving element is driven by two transmissions which are coupled by a differential arranged in a differential case. Each transmission has an input clutch and the two input clutches are engaged to drive the differential case. This differential case is geared to said driving element, alternately through one of said transmissions.

### 3,476,002

### CUT-OFF FOR CIGARETTE RODS OR THE LIKE

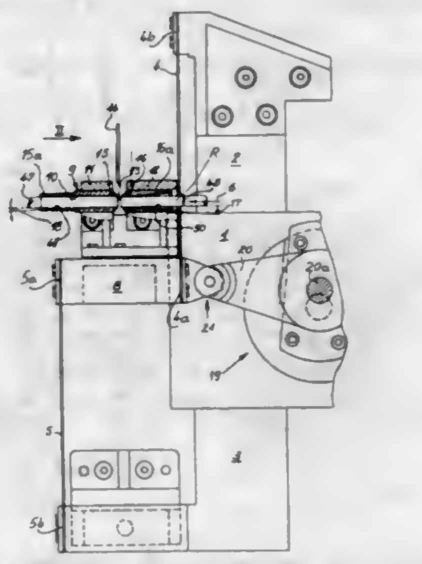
**Dietrich Bardenhagen, Hamburg-Lohbrugge, and Helmut Niemann, Hamburg, Germany, assignors to Hauni Werke Korber & Co. KG, Hamburg, Germany**

**Filed Oct. 30, 1967, Ser. No. 678,856**

**Claims priority, application Germany, Nov. 3, 1966, H 60,916**

**Int. Cl. B26d** *1/56, 5/20*

**U.S. Cl. 83—310** **10 Claims**



The tube which supports and guides the rod in a cut-off for continuous cigarette rod or filter rod machines is connected with two prestressed spring blades which are respectively located in front of and behind the knife, as seen in the direction of rod travel. The projections of blades into a plane which is normal to the direction of rod travel are inclined with reference to each other. The blades are affixed directly to the guide or to a support which carries the guide.

### 3,476,003

### TRIMMING DEVICES

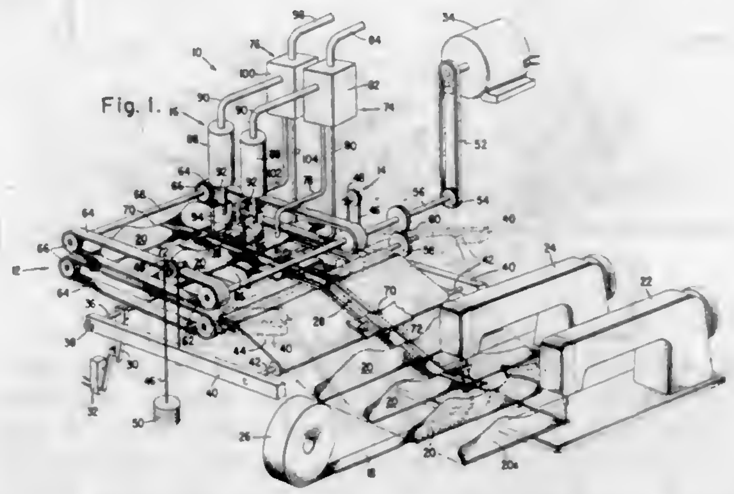
**Kenneth D. Adams, Long Valley, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey**

**Filed June 5, 1967, Ser. No. 643,725**

**Int. Cl. B26d** *5/38*

**U.S. Cl. 83—357** **8 Claims**

Fig. 1.



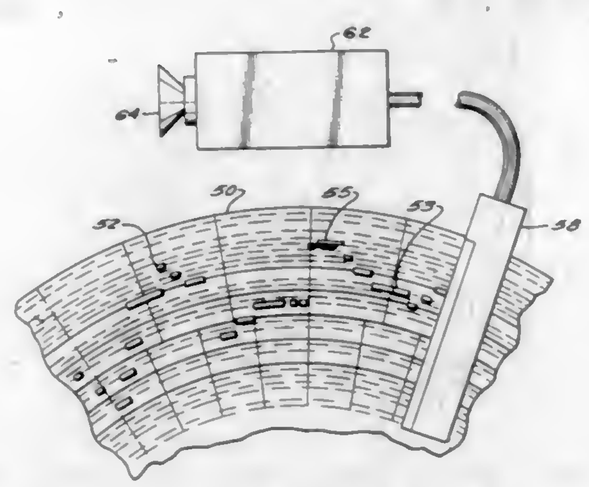
This disclosure relates to a trimming device. More particularly, this disclosure relates to a trimming device for cutting a continuous tape at the leading edge and the trailing edge of pieces individually connected to the tape in spaced relationship to each other.

## ERRATUM

For Class 83—575 see:
Patent No. 3,476,043

### 3,476,004
### MUSIC DEVICE

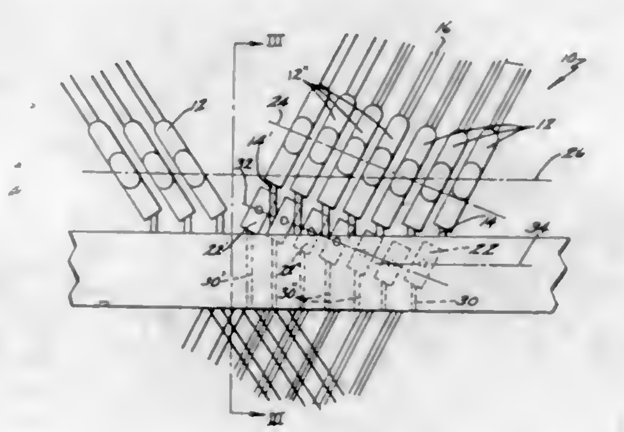
**Leon D. Rosen, 11818 Gateway Blvd.,**
**Los Angeles, Calif. 90064**
**Filed Oct. 22, 1965, Ser. No. 500,704**
**Int. Cl. G10f** *1/06, 1/00*
**U.S. Cl. 84—97 10 Claims**



Apparatus for automatically playing a musical composition comprising a base with music staff lines thereon, the base being adapted to receive note producing members on and between the staff lines. A playing head for producing sounds is located above the base and positioned transverse to the staff lines. The head contains elements, each of which is activated by note producing members at one position on the staff lines to produce a sound of a particular pitch. The pitch of the sound corresponds to the pitch that would be designated by a mark at the same position on the music staff lines of a music manuscript.

### 3,476,005
### PIANO ASSEMBLY

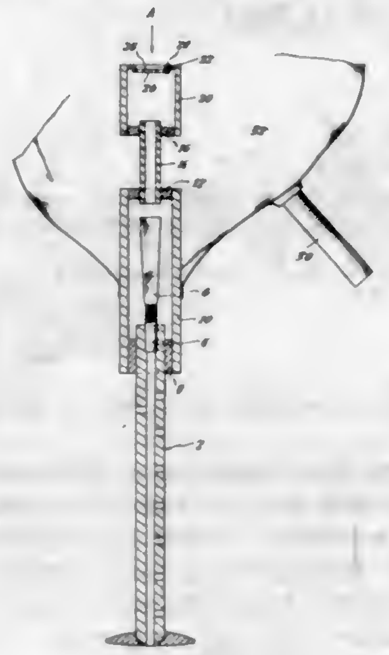
**Lawrence H. Ollman, 412 Curtis NE.,**
**Grand Rapids, Mich. 49505**
**Filed Nov. 27, 1967, Ser. No. 685,829**
**Int. Cl. G10c** *3/00, 1/00*
**U.S. Cl. 84—236 4 Claims**



In a piano assembly of the type having criss-cross diagonal strings, a hammer row arangement that enables elimination of the objectionable ringing and overtones normally occurring in the treble string or strings immediately adjacent the break, such hammer row arrangement having at least the last treble string hammer thereof elevated substantially above the end base string sufficiently to allow a full length damper to be positioned therebetween.

### 3,476,006
### BAGPIPES

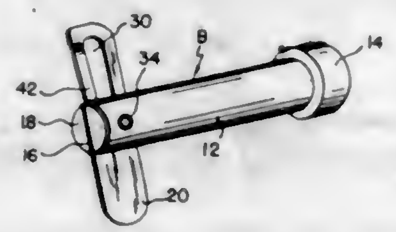
**George Alexander Wright, 47 Gerrard St.,**
**London, W.1, England**
**Filed Apr. 23, 1968, Ser. No. 723,497**
**Claims priority, application Great Britain, May 19, 1967,**
**23,439/67**
**Int. Cl. G10d** *11/00*
**U.S. Cl. 84—375 9 Claims**



A set of bagpipes mainly for practice purposes including a windbag, a chanter and blowstick connected to said windbag, and a drone simulating reed housed in said windbag through which reed air to the chanter has to pass. The drone simulating reed may be mounted in a chamber forming an air conduit leading to said chanter, the reed for which may also be in said chamber or in a second chamber series coupled to a first chamber embodying the drone simulating reed.

### 3,476,007
### KEY BOLT

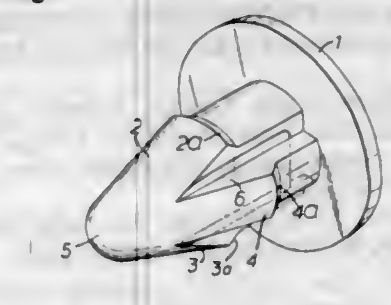
**Frank C. Collister, 28382 N. Park Drive,**
**North Olmsted, Ohio 44070**
**Filed Sept. 9, 1968, Ser. No. 758,368**
**Int. Cl. F16b** *21/00*
**U.S. Cl. 85—3 13 Claims**



A key bolt including a shank having an open transversely disposed bolt slot at one end with an elongated planar key slidably disposed in the bolt slot. The key has end portions and spaced side walls forming a closed elongated key slot disposed intermediate the ends of the key. A pin is transversely disposed in the bolt shank and passes through the bolt slot and through the key slot at substantially right angles thereto to slidably retain the key within the bolt slot. The key is slidable in the bolt slot to an unlocked position wherein the key extends directly outwardly of the shank and forms an extension thereof and is slidable to a locked position wherein the key is substantially perpendicular to the shank. In one form of the invention, at least a portion of one of the side walls of the key is severed or partially severed or slotted intermediate the ends thereof with one severed portion having its free end portion offset from and protruding out of the plane of the key to form a key lock abutting the bolt shank to retain the key in locked position. Such severed portion is yieldable to a position within the plane of the key to enable the key to be moved from locked position to unlocked position.

### 3,476,008
### STUD FOR ASSEMBLY IN AN APERTURED SUPPORT

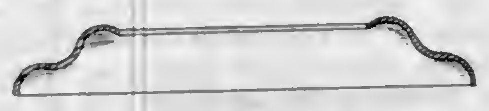
**Arthur Stanley Pearson, Sherwood, and David Julian Ford, Stapleford, England, assignors, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware**
**Filed Sept. 15, 1967, Ser. No. 668,108**
**Claims priority, application Great Britain, Sept. 21, 1966,**
**42,171/66**
**Int. Cl. F16b** *19/00*
**U.S. Cl. 85—5 1 Claim**



Fastener stud provided with two or more shoulders on the outer surface of its shank and spaced at different distances from the head of the stud.

### 3,476,009
### SPRING WASHER

**Roscoe I. Markey, Charlottesville, Va., assignor to Teledyne, Inc., Hawthorne, Calif.**
**Filed Apr. 28, 1967, Ser. No. 634,528**
**Int. Cl. F16b** *31/02, 43/00, 39/22*
**U.S. Cl. 85—62 1 Claim**

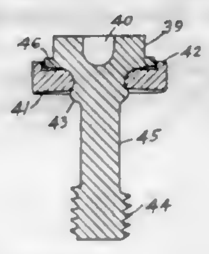


An elastic load supporting washer of generally frustoconical shape having inner and outer surfaces of undulated configuration comprising radiused annular sections, wherein at maximum load the maximum critical stress on the washer is near but less than its limit stress for maximum load/weight ratio.

### 3,476,010
### FIXED SCREW JOINT SYSTEM

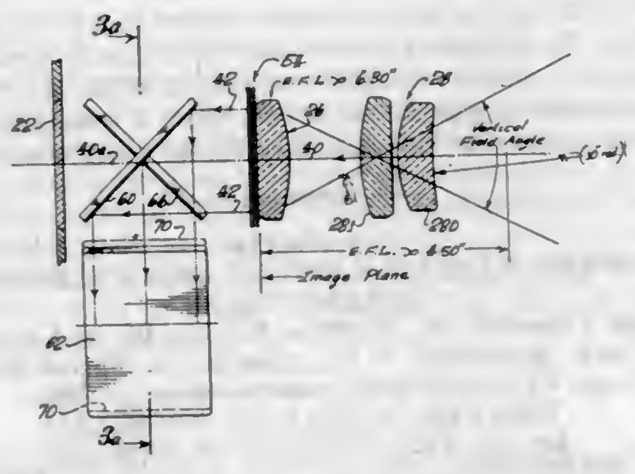
**Roscoe I. Markey, Charlottesville, Va., assignor to Teledyne, Inc., Hawthorne, Calif., a corporation of Delaware**
**Filed Sept. 26, 1967, Ser. No. 675,740**
**Int. Cl. F16b** *31/02*
**U.S. Cl. 85—62 1 Claim**

A fatigue life increasing and load indicating device for threaded fasteners including a fastener having a dished collar captively mounted in a reduced neck portion thereon, wherein the collar and the neck portion are formed with radiused mating surfaces.



### 3,476,011
### VIEWFINDER INCLUDING A PORRO REFLECTING SYSTEM

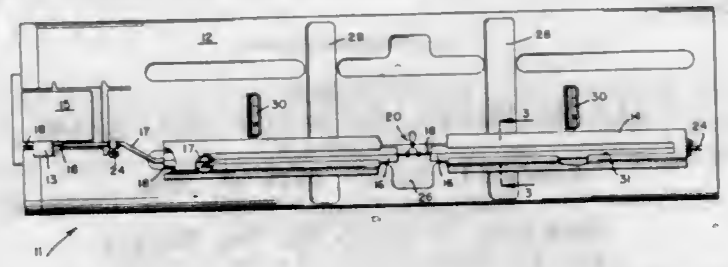
**George A. Mitchell, 687 Prospect Crescent,**
**Pasadena, Calif. 91103**
**Filed Nov. 12, 1965, Ser. No. 507,462**
**Int. Cl. G03b** *13/02*
**U.S. Cl. 88—1.5 5 Claims**



A viewfinder providing a brilliant erect image including an objective, an image erecting system comprising four plane reflectors, a field lens interposed between two of the reflectors, and including frame defining indicia.

### 3,476,012
### ARMING WIRE ASSEMBLY

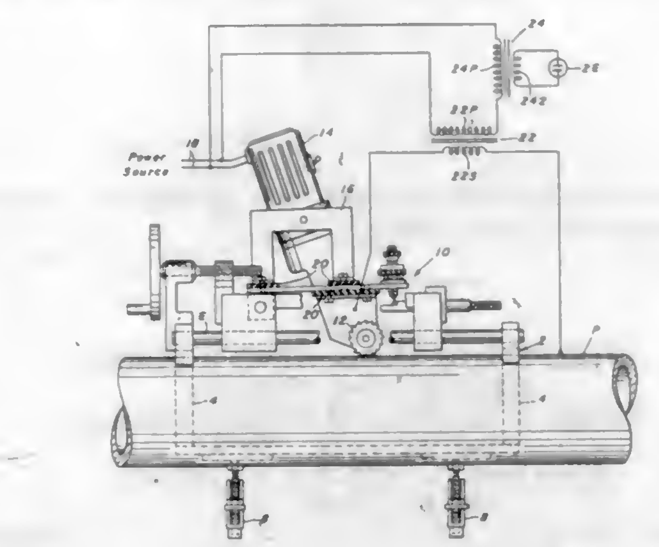
**Lloyd J. Jackson, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Apr. 10, 1968, Ser. No. 720,171**
**Int. Cl. F41f** *5/02*
**U.S. Cl. 89—1.5 3 Claims**



A safety or arming wire arrangement between two separable objects comprises a connecting slider which may be moved along the wire. The wire is protected by a slotted tubular retainer and connection may be made anywhere along the slot. The arrangement is so designed that the arming wire remains with one of the objects while the slider is retained by the other object.

### 3,476,013
### CONTACT SENSING SYSTEM FOR MACHINE TOOL

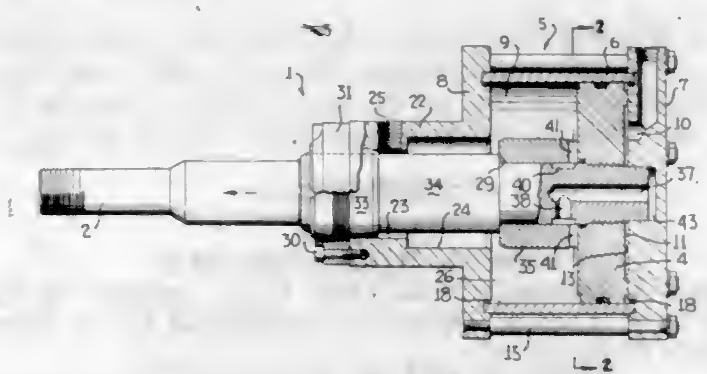
**William ~~L.~~ Zemberry, Swissvale Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware**
**Filed May 23, 1967, Ser. No. 640,746**
**Int. Cl. B23c** *1/20;* **B23b** *39/10, 47/24*
**U.S. Cl. 90—12** **6 Claims**



A contact sensing apparatus utilizes two transformers with their primaries connected in series to a power source. When the secondary of one transformer is short-circuited by a tool and a workpiece making contact, the resulting impedance change in the circuit lights a neon glow lamp connected across the secondary of the other transformer.

### 3,476,014
### SPEED VARIABLE PISTON AND CYLINDER ARRANGEMENTS

**Ralph Churchill, Jr., Hoffman Estates, Ill., and Henry H. Flock, Rochester, N.Y., assignors to Parker-Hannifin Corp., Cleveland, Ohio, a corporation of Ohio**
**Filed Mar. 31, 1967, Ser. No. 627,442**
**Int. Cl. F15b** *15/22, 11/08;* **F16j** *1/00*
**U.S. Cl. 91—394** **16 Claims**

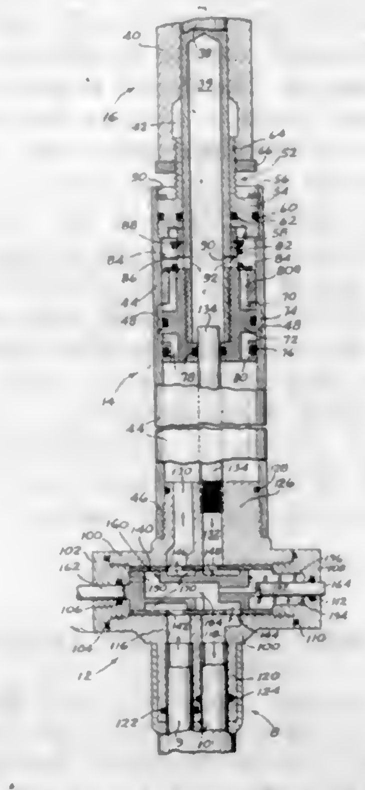


This invention relates to fluid motors of the piston and cylinder type in which a change in piston speed and/or force output is effected at an intermediate position of the piston.

### 3,476,015
### VALVED, FLUID-OPERATED ACTUATOR ASSEMBLY

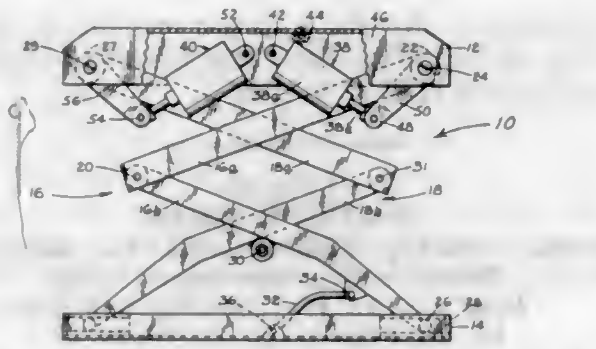
**Edward L. Ackley, 1916 SE. 50th,**
**Portland, Oreg. 97215**
**Filed Feb. 13, 1968, Ser. No. 709,168**
**Int. Cl. F15b** *15/22, 11/08, 13/042*
**U.S. Cl. 91—401** **4 Claims**

A valved, fluid-operated actuator for reciprocating tools comprises a hollow case open at both ends. A reversing valve, preferably a two-way hollow-center valve, is mounted on one end of the case and communicates with a source of fluid under pressure as well as with the interior of the case. A cap seals off the other end of the case. A piston is mounted for sliding movement within the case. A piston rod is connected to the piston and extends through the cap for connection to the tool. Adjustment of the valve between first and second positions causes advancement and retraction of the piston.



### 3,476,016
### APPARATUS FOR PRODUCING COORDINATED, SIMULTANEOUS ACTUATION OF MULTIPLE RAMS

**Thomas E. Dixon, Lake Grove, Donald M. Faust, Estacada, and Max Frey, Portland, Oreg., assignors to Cascade Corporation, Portland, Oreg., a corporation of Oregon**
**Filed Oct. 20, 1967, Ser. No. 676,748**
**Int. Cl. F15b** *11/22, 13/02, 13/06*
**U.S. Cl. 91—411** **1 Claim**



Load pusher apparatus with two rams for actuating a pusher member in the apparatus, the rams being arranged for coordinated, simultaneous actuation. A first conduit is provided connected to the head end of one ram, a transfer conduit interconnects the rod end of the one ram and the head end of the other ram, and a third conduit connects to the rod end of the other ram. With fluid supplied the one ram through the first conduit to actuate the ram, captive fluid in the one ram's rod end transfers to the head end of the other ram causing the other ram to be actuated. The two rams are connected to the pusher member in such a manner that the rams on actuation move opposite pusher sides an equal amount, thus to prevent skewing. The apparatus further includes, in the piston of each ram, a fluid passage opening onto opposite sides of the piston, and a valve inhibiting fluid flow through the passage from the rod end to the head end of the ram while permitting flow in the reverse direction. In this way exhausting or replenishing of the captive fluid is permitted, whereby the volume of the captive fluid remains substantially constant.

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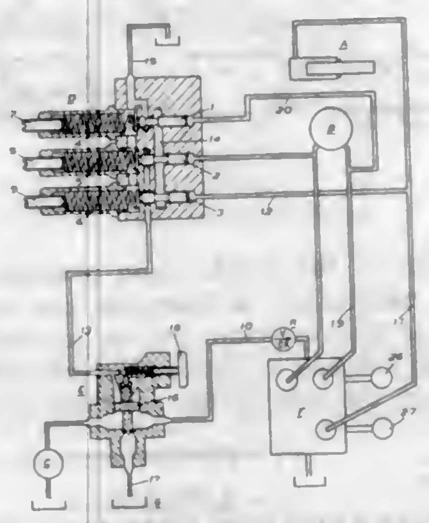
### 3,476,017
### POWER-LIMITING DEVICE FOR A MACHINE PROVIDED WITH TWO OR MORE WORKING COMPONENTS

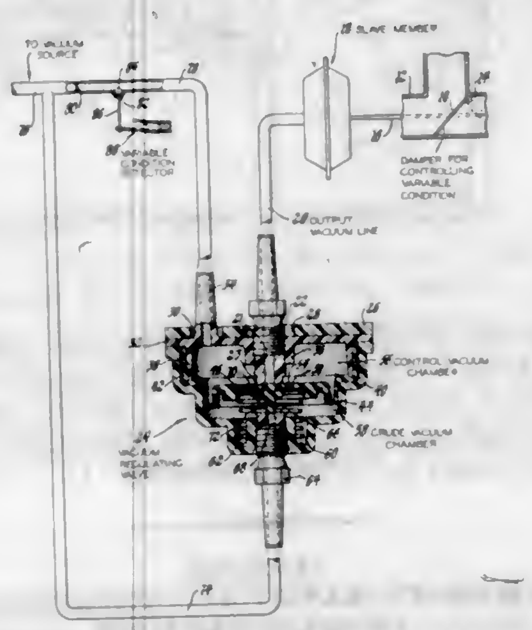
**Knut Olov Frisk and Karl Paul Gustafsson, Bracke, Sweden, assignors to AB Tico, Bracke, Sweden, a corporation of Sweden**
**Filed Apr. 3, 1967, Ser. No. 627,916**
**Claims priority, application Sweden, Apr. 29, 1966, 5,886/66**
**Int. Cl. F15b** *11/08, 13/00;* **F01b** *21/00*
**U.S. Cl. 91—412** **7 Claims**



Pressure sensing means are provided in a hydraulic power circuit that can cut the supply of hydraulic power to all hydraulically operated actuators provided in the circuit in case of overload. The pressure sensing means are capable of preventing overload at any desired pressure while maintaining sufficient hydraulic power to prevent uncontrolled movement of the hydraulically operated actuator.

### 3,476,018
### VACUUM CONTROL SYSTEM

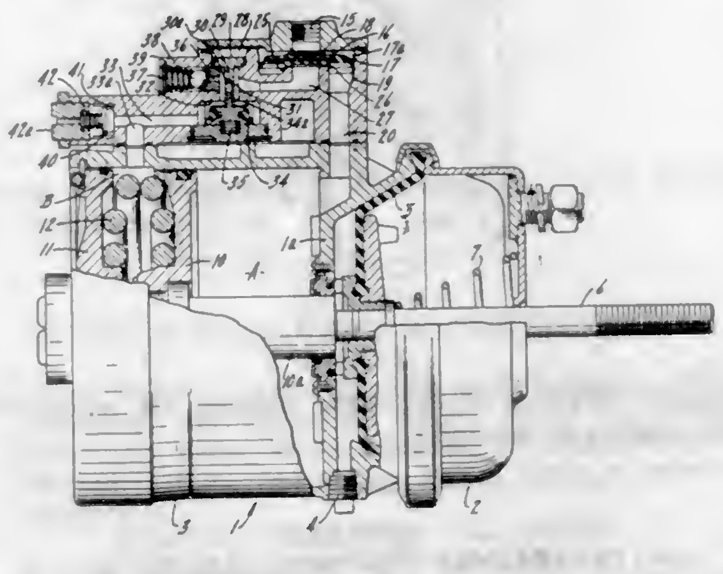
**Paul K. Beatenbough, Medina, and Gary E. Richards, Lockport, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 1, 1967, Ser. No. 679,905**
**Int. Cl. F15b** *11/10, 13/04;* **G05d** *23/12*
**U.S. Cl. 91—419** **2 Claims**



A vacuum system suitable for use in controlling the temperature of an automobile passenger compartment, the vacuum being modulated in accordance with that temperature and a special regulating valve having a bleed aperture in its diaphragm valve member being employed preventing fluctuation in the modulated temperature when the supply of crude vacuum varies at times such as during vehicle acceleration.

### 3,476,019
### AIR-ASSISTED EMERGENCY SPRING BRAKE ASSEMBLY

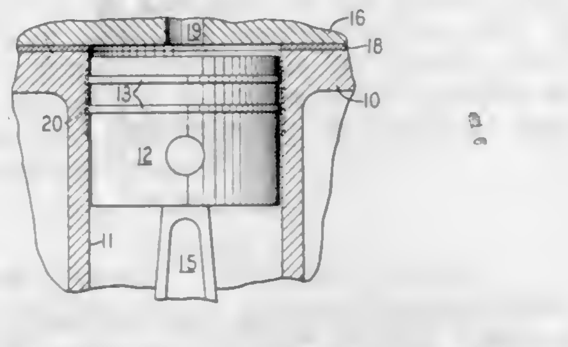
**Arthur A. Berg, Lincolnwood, and Charles Horowitz, Niles, Ill., assignors to Berg Mfg. & Sales Co., Des Plaines, Ill., a corporation of Illinois**
**Filed Sept. 8, 1967, Ser. No. 669,639**
**Int. Cl. F15b** *11/10, 13/042*
**U.S. Cl. 91—420** **26 Claims**



An air-released, spring-operated brake actuator assembly having a first valve automatically responsive to differentials between pressures within and without the actuator to transfer air from one to the other side of an operating piston, a second valve automatically responsive to pressure differentials to trap and maintain a predetermined pressure on said other piston side to assist spring operation and a pair of check valves openable to atmosphere at different pressures.

### 3,476,020
### ENGINE BLOCK WITH CASE HARDENING OF CYLINDER WALLS

**Charles N. Fangman, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Sept. 3, 1968, Ser. No. 756,839**
**Int. Cl. F01b** *31/00;* **F16j** *11/04*
**U.S. Cl. 92—169** **2 Claims**

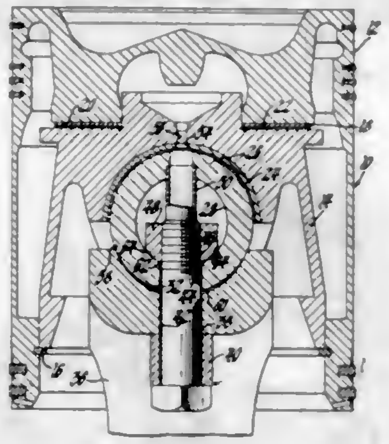


An engine cylinder block in which a very shallow area of a limited part of the cylinder wall is hardened to reduce wear which occurs most critically in the area of piston ring travel.

### 3,476,021
### BEARING ASSEMBLY WITH PRESTRESSING AND RETAINING MEANS

**Lewis E. Williams, Dearborn, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Jan. 15, 1968, Ser. No. 697,876**
**Int. Cl. F16j** *1/14;* **F16c** *5/00*
**U.S. Cl. 92—187** **6 Claims**

A piston-connecting rod assembly includes a piston pin and means for prestressing the pin by deforming it in its unloaded condition such that normal load stresses in the opposite direction of the initial prestress are reduced by the amount of prestress.

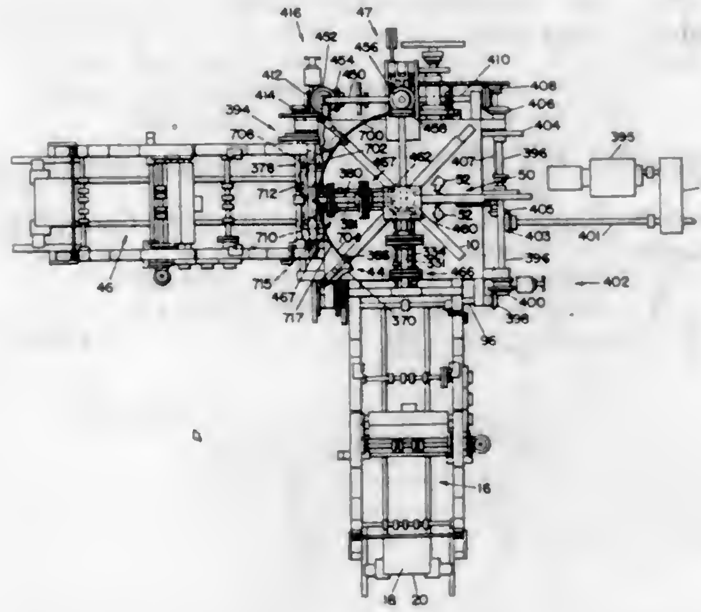


3,476,022

### CONTAINER FORMING MACHINE

**John W. Scully, Raynham, Mass., assignor to Pneumatic Scale Corporation, Quincy, Mass., a corporation of Massachusetts**

**Filed May 31, 1966, Ser. No. 553,879**
**Int. Cl. B31b** *1/28, 49/04, 1/72*
**U.S. Cl. 93—12** **12 Claims**



A container forming machine having provision for forming different sizes of containers in one machine wherein a minimum number of interchangeable parts are required to produce the different size containers.

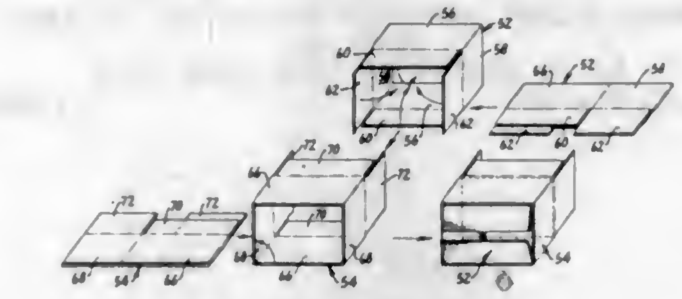
3,476,023

### CARTON HANDLING MACHINE

**Ralph A. Fuller, Exeter, and Earl D. Snodgrass, Lindsay, Calif., assignors to Herrick Waterman, Ralph A. Fuller, and Earl D. Snodgrass, all of Exeter, Calif., a joint venture**

**Continuation of application Ser. No. 558,731, June 20, 1966. This application Oct. 24, 1968, Ser. No. 764,049**
**Int. Cl. B31b** *17/74, 3/74, 1/78*
**U.S. Cl. 93—39.1** **22 Claims**

A machine for automatically unfolding pairs of carton blanks and telescoping them together to form a single composite carton. The machine comprises a pair of magazines adapted, respectively, to contain stacks of unfolded inner and outer carton blanks, a transfer and unfolder mechanism associated with each of the magazines to effect the one-at-a-time removal of carton blanks therefrom and the erection of the blanks upon removal, a plunger-like assembly mechanism to telescope the carton blanks together after their erection, and an extraction and delivery mechanism adapted to remove the erected and telescoped blanks from the area of the assembly mechanism.

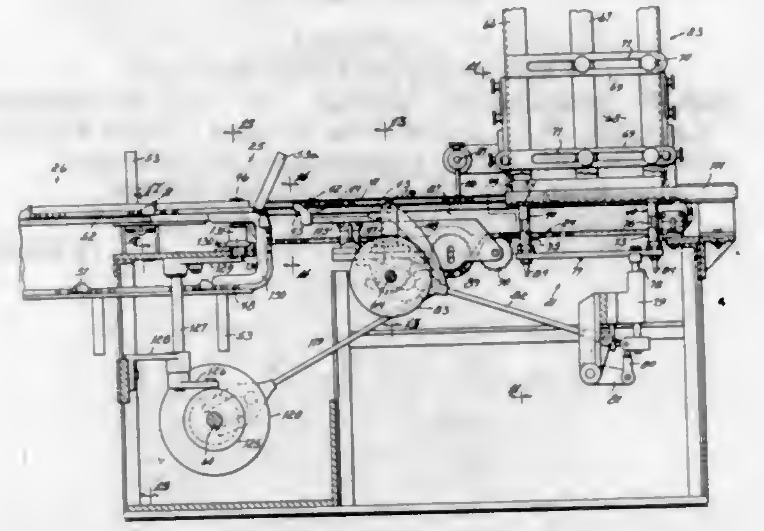


3,476,024

### APPARATUS FOR ERECTING CARTONS

**Edwin Naul Deering, Covington, Ky., and Wickliffe Jones, Cincinnati, Ohio, assignors to R. A. Jones and Company, Incorporated, Covington, Ky., a corporation of Kentucky**

**Filed Aug. 24, 1967, Ser. No. 662,978**
**Int. Cl. B31b** *1/78*
**U.S. Cl. 93—53** **2 Claims**



Apparatus which picks flat folded carton blanks one at a time from a magazine, conveys the blanks to an erecting station, erects the blanks to a tubular form at the erecting station, and conveys them downstream from the erecting station for further processing.

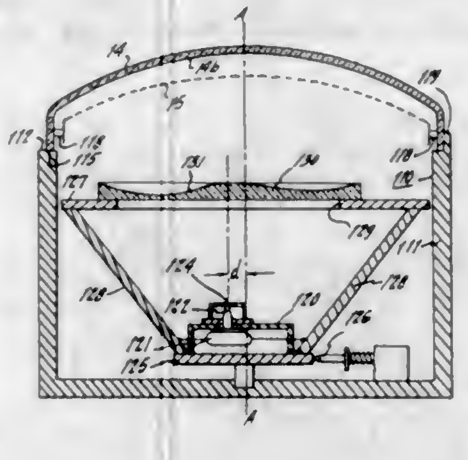
3,476,025

### CATHODE RAY TUBE AND METHOD OF MANUFACTURE

**Fred Herzfeld, Princeton, N.J., and Frans van Hekken, Lancaster, Pa., assignors to RCA Corporation, a corporation of Delaware**

**Filed June 15, 1966, Ser. No. 557,663**
**Int. Cl. G03c** *7/00;* **G03f** *5/00*
**U.S. Cl. 95—1** **16 Claims**

A shadow mask type color picture tube mosaic screen pattern is laid down by means of a lighthouse including a light refracting element or lens having an analytical surface approximating the theoretical lens surface required to provide misregister compensation at each of a multiplicity of points distributed over the entire surface of the screen as determined from misregister measurements at those points on the screen of an uncompensated color tube. The lens may be formed by sagging a plate of glass onto a mold fabricated by numerical control milling techniques. The lens surface has no symmetry.

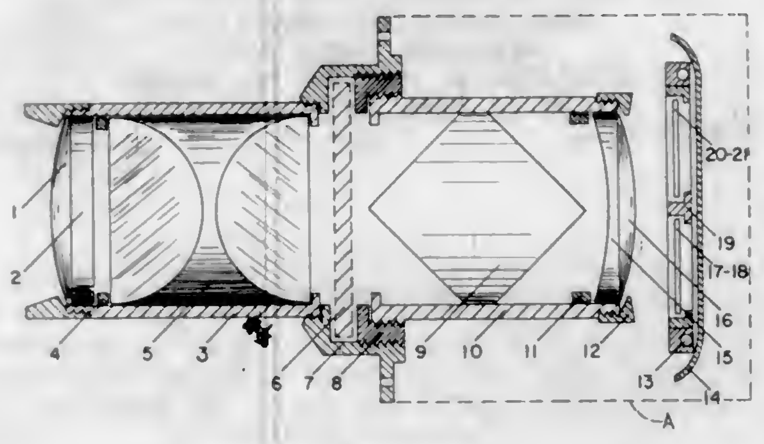


3,476,026

### OPTICAL SYSTEM

**Edward D. Satula, Parker Hill Road, Killingworth, Conn. 06417**

**Filed Aug. 29, 1967, Ser. No. 664,179**
**Int. Cl. G03b** *35/08*
**U.S. Cl. 95—18** **8 Claims**



This invention is directed to optical systems which are useful in cameras in which a plurality of images is recorded on one plane and on one film negative. In particular, the optical system of this invention provides a first quad face prism, a second quad face prism, said first and second quad face prisms positioned in line with each other's longest center axis, and the second prism rotated substantially 90 degrees with respect to the first quad face prism.

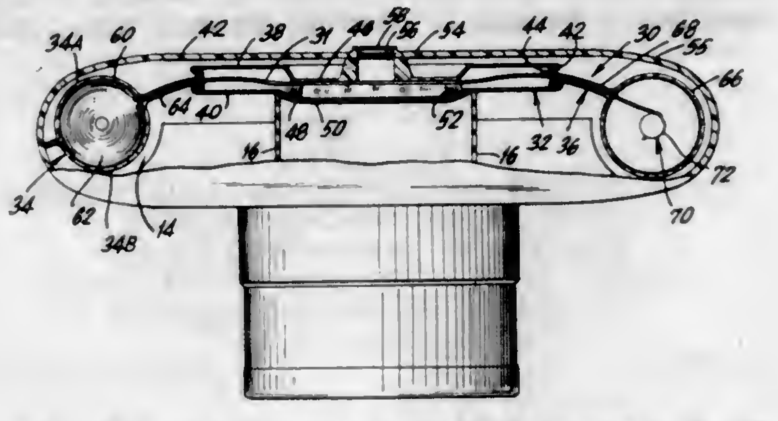
3,476,027

### PHOTOGRAPHIC FILM MAGAZINE

**Edward J. Southern, % Wagner, Box 448, Flushing, N.Y. 11352**

**Filed Mar. 1, 1967, Ser. No. 619,837**
**Int. Cl. G03b** *19/04*
**U.S. Cl. 95—31** **3 Claims**

The photographic film magazine disclosed herein is intended to be utilized with existing rollfilm-type or casette-type cameras and comprises a center part having a frame opening for the film, a film receptacle part and a film take-up part, all of which are arranged for easy insertion in the back of the camera without the threading of any film. The magazine is adjustable in size to fit different sizes of cameras.

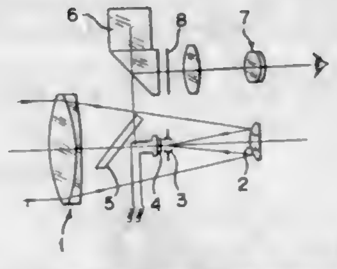


3,476,028

### MONOCULAR NARROW ANGLE EXPOSURE METER

**Yasuhiro Namba, Kazuo Kessoku, and Tadayoshi Fujii, Toyokawa, and Toshinobu Ogura, Sakai, and Ichiro Yoshiyama, Kobe, Japan, assignors to Minolta Camera Kabushiki Kaisha, Minami-ku, Osaka, Japan, a Japanese corporation**

**Filed Nov. 30, 1966, Ser. No. 597,909**
**Claims priority, application Japan, Mar. 8, 1966, 41/14,177, 41/20,963; June 21, 1966, 41/39,781**
**Int. Cl. G03b** *19/12;* **G01j** *1/00, 1/52*
**U.S. Cl. 95—42** **4 Claims**



A monocular narrow angle exposure meter having a device for directing a central portion of incoming light rays from the objective lens to a finder optical system and a remaining peripheral portion to a light measuring optical system which is provided with a photo-electric element. A window restricts the light receiving angle in an image forming plane of the light measuring optical system, immediately ahead of the photo-electric element. A circuit detects the ratio of the resistance of the photo-electric element to that of a variable resistor and this ratio is maintained at a predetermined value by a motor which regulates the value of the resistance of the variable resistor, said variable resistor being mechanically connected with an indicator means.

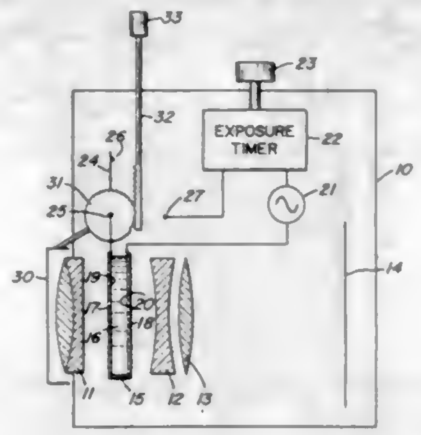
3,476,029

### ELECTROCHROMIC SHUTTER SYSTEM

**Jay G. Schreckengust, Lima, N.Y., assignor to Graflex, Inc., Pittsford, N.Y., a corporation of New York**

**Filed Aug. 16, 1967, Ser. No. 661,100**
**Int. Cl. G03b** *7/08*
**U.S. Cl. 95—53** **18 Claims**

A camera shutter system uses a normally opaque electrochromic cell and a mechanical light blocking device in series across the camera's light path and arranged so that full opening of the light blocking device closes a switch to electrically energize the cell. Such energization opens the cell to light and is maintained for a preselected interval for a photographic exposure. After the energization is stopped, the cell relaxes to its opaque condition, and the mechanical device returns to its light blocking position. The light blocking device can be a variety of movable mechanical structures including a simple mechanical shutter of fixed opening period with the electrochromic cell energized upon full opening of the shutter. The cell and the light blocking device can be arranged in front of the lens, between elements of the lens, behind the lens, or ahead of the focal plane. The



cell can be formed with several pairs of electrodes arranged as desired for photographic effects. Multiple electrode arrangements include concentric electrodes for a variable aperture cell and parallel zone electrodes that are variably energized for a focal plane cell.

### 3,476,030
### PHOTOGRAPHIC CAMERA WITH INTERLENS SHUTTER

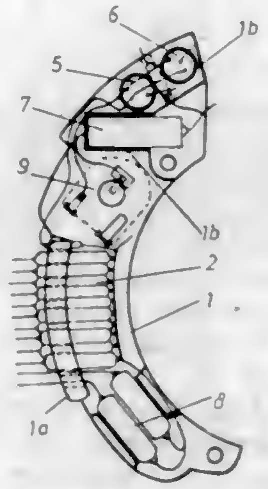
**Waldemar T. Rentschler and Dieter Rittmann, Calmbach, Black Forest, Germany, assignors to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany**

**Filed Mar. 24, 1966, Ser. No. 537,237**

**Claims priority, application Germany, Mar. 31, 1965, P 36,425**

**Int. Cl. G03b** *9/00;* **G01j** *1/00, 1/52*

**U.S. Cl. 95—53** **3 Claims**



A photographic camera is provided that has an interlens shutter and a timing circuit situated in the shutter housing; a supporting plate is provided which contains the electrical elements associated with the timing circuit. The elements are premounted on the plate and the plate is installable in the shutter housing as an independent structural unit.

### 3,476,031
### SELF-WINDING PHOTOGRAPHIC SHUTTER WITH AN ELECTRONIC TIMING DEVICE

**Franz W. R. Starp, Calmbach, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier G.m.b.H., Calmbach, Black Forest, Germany, a corporation of Germany**

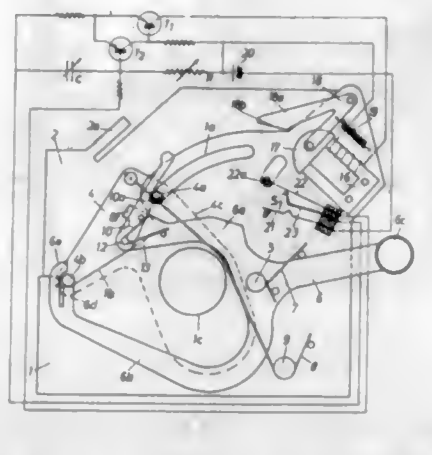
**Filed July 11, 1967, Ser. No. 652,593**

**Claims priority, application Germany, July 11, 1966, P 39,929**

**Int. Cl. G03b** *9/14, 9/00*

**U.S. Cl. 95—63** **8 Claims**

A self-winding photographic camera having an electronically controlled timing device and a shutter blade system operable by a winding and release lever. The shutter blade system is blockable in the open position by blocking lever in order to achieve exposure times longer than the shortest possible times provided by the shutter. The blocking lever cooperates with an armature and an electromagnet of the timing device to arrest the blocking lever for the duration of the time function. The armature is mounted on an armature lever biased by a tension spring causing the armature to make contact with the electromagnet. The blocking lever is a pawl mounted on the winding and release lever and engageable with the shutter blade system for preventing the shutter blade system from closing for the duration of the run-off function of the timing device. The pawl is biased by a spring and positioned to engage the armature lever in the final phase of the winding motion for exerting a turning moment greater than and directionally opposed to that of the tension spring biasing the armature lever.



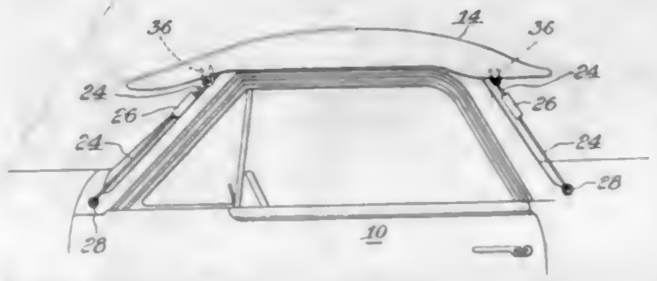
### 3,476,032
### SUN PROTECTION DEVICE FOR VEHICLES

**Chris Mattly, 2505 Alturas Drive, Bakersfield, Calif. 93305**

**Filed Mar. 13, 1967, Ser. No. 622,807**

**Int. Cl. B60h** *1/24;* **B60j** *1/20*

**U.S. Cl. 98—2** **3 Claims**



My dish-shaped device sits on four rods and suction cups which sit on the corners of the cab with 2" space between top and shield letting the air flow freely in any direction when stationary or at high speed; cutting down the sun impact and making it cooler in the vehicle.

### 3,476,033
### ROOM AIR-CONDITIONER IMPROVED MOUNTING ARRANGEMENT

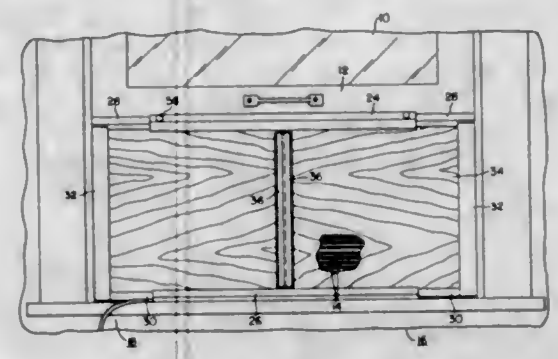
**Wallace H. Appel, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Nov. 24, 1967, Ser. No. 685,698**

**Int. Cl. E06b** *7/02, 9/08;* **F24f** *13/08*

**U.S. Cl. 98—94** **5 Claims**

The titled apparatus in which a flexible sheet or curtain in compact, retracted form, at a front edge of a room air-conditioner casing is extendable into planar form, in one direction, to cover the gap between the casing and the facing building element, and also in the other direction across the front of the casing to provide a decorative cover for the casing front during inoperative periods of the air-conditioner.



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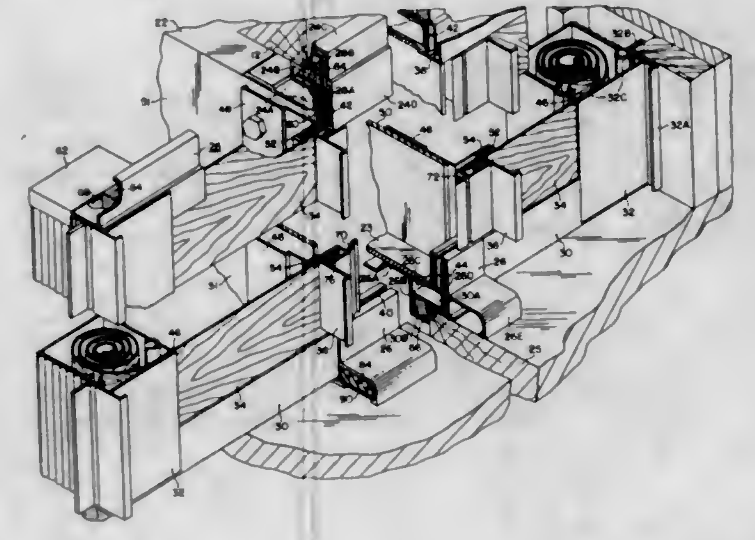
### 3,476,034
### ROOM AIR-CONDITIONER IMPROVED MOUNTING ARRANGEMENT

**Michael D. Ulich, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Nov. 24, 1967, Ser. No. 685,699**

**Int. Cl. F24f** *13/18*

**U.S. Cl. 98—94** **6 Claims**



In titled apparatus of the type having a flexible sheet or curtain extendable to cover a gap at a side of the air-conditioner casing and also across the front of the casing to provide a decorative cover, track and frame structure for supporting the curtain and facilitating its manipulation.

### 3,476,035
### VENTING ELEMENT FOR PROFILE GLAZING

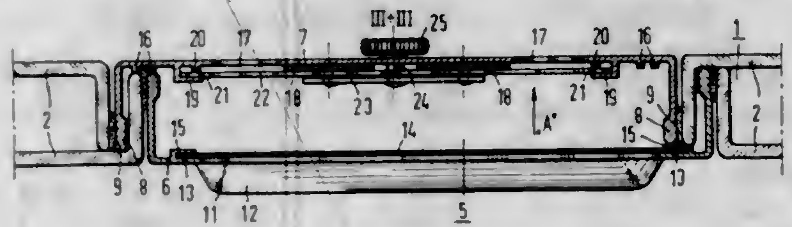
**Eberhard Renner, Neu-Ulm, Germany, assignor to Weka Metallbau Ulm, Walter und Kunzli, Neu-Ulm, Germany**

**Filed Nov. 18, 1966, Ser. No. 595,524**

**Claims priority, application Germany, Dec. 16, 1965, W 40,522**

**Int. Cl. E06b** *7/082*

**U.S. Cl. 98—97** **26 Claims**



A venting element for engagement with profiled glazing panes which comprises outer and inner panel means, each panel means having a plurality of venting apertures and provided with overlapping L-shaped end flanges, said overlapping end flanges defining a channel for engaging the end portions of U-shaped profiled glazing panes and sliding shutter means operatively connected to at least one of said panel means for opening and closing said venting apertures.

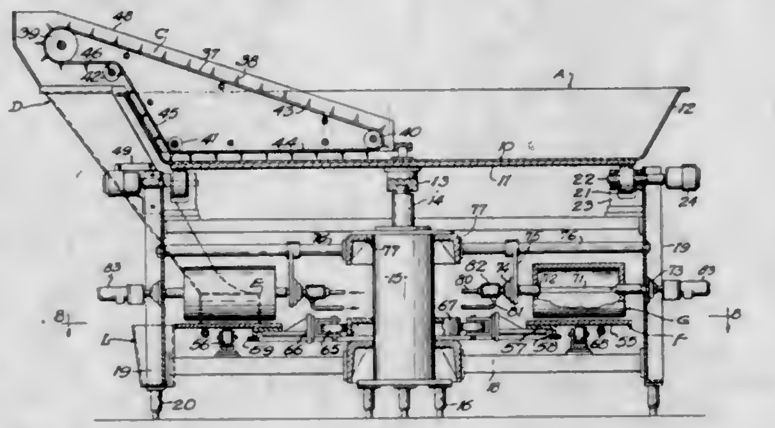
### 3,476,036
### APPARATUS FOR PROCESSING CHEESE CURD INTO HOMOGENEOUS CHEESE

**Nicholas E. Pontecorvo, Tarzana, Calif. (1548 18th St., Santa Monica, Calif. 90404)**

**Filed Mar. 13, 1968, Ser. No. 712,715**

**Int. Cl. A23c** *19/12*

**U.S. Cl. 99—243** **7 Claims**



A cheese processing machine comprising a cured preheating tub disposed above a turntable onto which curd is transferred after being softened in hot water contained in the tub, the turntable carrying a ribbon of curd beneath radially disposed rollers which flatten the ribbon in circumferentially-spaced kneading areas while folding blades fold the ribbon inwardly upon itself in areas between the kneading areas.

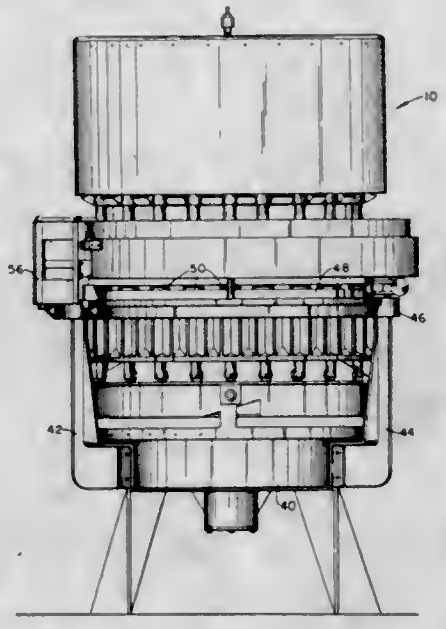
### 3,476,037
### FOOD CANNING MACHINE

**Jack Gorby, 525 N. Bellagio Terrace, Bel Air, Calif. 90049**

**Filed Apr. 5, 1968, Ser. No. 719,007**

**Int. Cl. B30b** *7/04;* **B65b** *1/24, 63/02*

**U.S. Cl. 100—223** **6 Claims**



A machine for canning food products, the machine having a number of rams each movable in an aperture to compress food therein, the machine further having a number of slide members each cooperating with a ram and movable transversely of the direction of movement of the cooperating ram into and from the food, whereby the slide members aid in compressing the food.

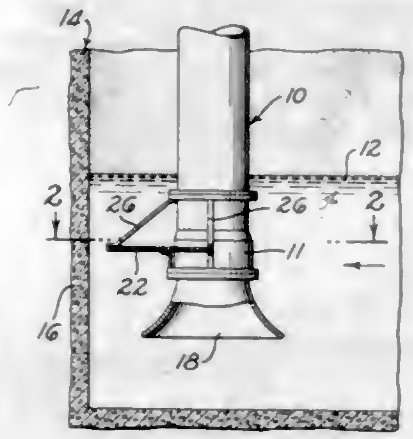
### 3,476,038
### SUCTION PUMP VORTEX CONTROL

**John L. Dicmas, Arcadia, Calif., assignor to Layne & Bowler Pump Company, City of Industry, Calif., a corporation of California**

**Filed Dec. 20, 1967, Ser. No. 692,046**

**Int. Cl. F04b** *21/06;* **B01d** *33/34, 35/02*

**U.S. Cl. 103—220 8 Claims**



A screen or perforated plate member mounted horizontally exteriorly of the pipe column of a liquid suction pump. The screen is mounted above the suction bellmouth of the pipe column and beneath the surface of the liquid and may be attached to the pipe column or to the walls of the structure confining the liquid, or may be supported within the liquid by a float member.

### 3,476,039
### ADHESION DRIVE FOR AUTOMOTIVE CABLE CARS

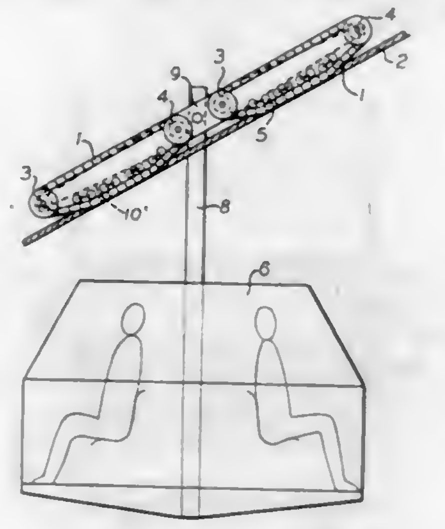
**Giovanni Gunter Czaloun, 22 Via G. Galilei, Merano, Bolzano, Italy**

**Filed Nov. 15, 1967, Ser. No. 683,245**

**Claims priority, application Italy, Nov. 15, 1966, 25,207/66**

**Int. Cl. B61b** *7/06;* **B61c** *11/02*

**U.S. Cl. 104—226 4 Claims**



An adhesion drive for a self-propelled cable car, which comprises a supporting cable and at least one endless belt adapted as a driving element, and including a plurality of carrying rollers. A cable car is suspended from the endless belt. The caterpillar is pressed vertically downwardly by the weight of the cable car onto the supporting cable, in order to roll thereon. The endless belt has an undercut guiding groove which is tapered down upwardly and receives the cable, to obtain a wedge effect between the cable and the belt, in order to receive the necessary safety against sliding.

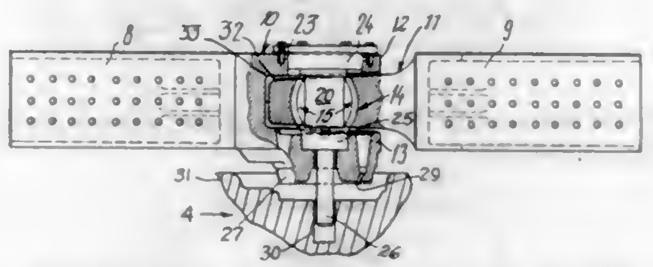
### 3,476,040
### ARTICULATED RAILWAY CAR CONNECTOR AND TRUCK

**Zaven Oganezovich Karakashian, Ulitsa Dobroljubova 18, kv. 46; Vladimir Ivanovich Lariokhin, Malaya Naberezhnaya 15, kv. 8; and Valentin Mikhailovich Kazakov, Stantsia Ozherelie, Zheleznoi Dorogi, ulitsa Klubnaya 3, kv. 8; all of Moscow, U.S.S.R.**

**Filed June 2, 1967, Ser. No. 643,202**

**Int. Cl. B61d** *17/00;* **B61f** *3/12;* **B61g** *5/02*

**U.S. Cl. 105—4 6 Claims**



Adjacent sections of an articulated railroad car having a common support bogie are coupled by means of a joint consisting of a lug with a heel secured to one of the sections and a tongue secured to the other of the sections and inserted between upper and lower legs of the lug. A pivot connects the lug and tongue and includes a central portion with spherical projections each bounded by parallel side planes, the tongue having a spherical recess receiving the projections. In order to insert the pin into the spherical recess in the tongue, the wall of the hole in the tongue is provided with cylindrical grooves which are concentric in relation to the opening at the upper rim of the tongue which receive the projections of the pivot such that when the pivot is subsequently turned, the projections fit into the spherical recess.

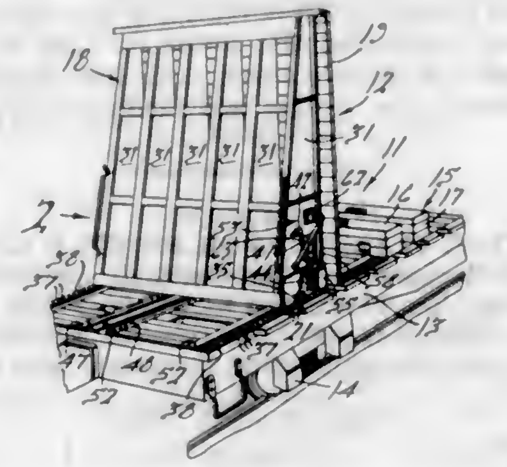
### 3,476,041
### FLAT CAR BULKHEAD

**Tibor Matyas, Plymouth, and John P. Moorhead, Northville, Mich., assignors to Evans Products Company, a corporation of Delaware**

**Filed Nov. 22, 1967, Ser. No. 684,983**

**Int. Cl. B61d** *17/00, 45/00*

**U.S. Cl. 105—376 16 Claims**



A railway flat car embodying movable cantilevered bulkhead assemblies at its ends for engaging and bracing freight disposed upon the floor surface of the car between the bulkhead assemblies. Each bulkhead assembly includes a sprocket assembly for permitting longitudinal movement of the bulkhead, a locking arrangement that coacts with the car for fixing the bulkhead assembly in selected freight bracing positions and a supporting structure that facilitates adjustment of the position of the bulkhead and transmits shock loadings from the bulkhead to the car over a relatively large area.

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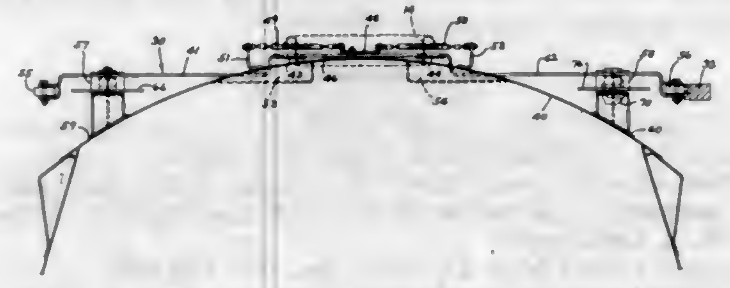
### 3,476,042
### APPARATUS FOR AUTOMATICALLY OPENING AND CLOSING HATCH COVERS

**John L. Carney, Jr., and Richard H. Dugge, St. Louis, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey**

**Filed May 16, 1967, Ser. No. 638,843**

**Int. Cl. B61d** *17/16, 39/00*

**U.S. Cl. 105—377 2 Claims**



A railroad car with one or more roof hatches extending over the length of the car has an air motor connected to each hatch cover for normally holding a hatch cover closed, and a movable bar or lever on the roof extending beyond the sides of the car to engage a trackside rail, whereby the bar moves to operate a valve to cause the motor to open the hatch cover and hold it open only while the bar engages the trackside rail.

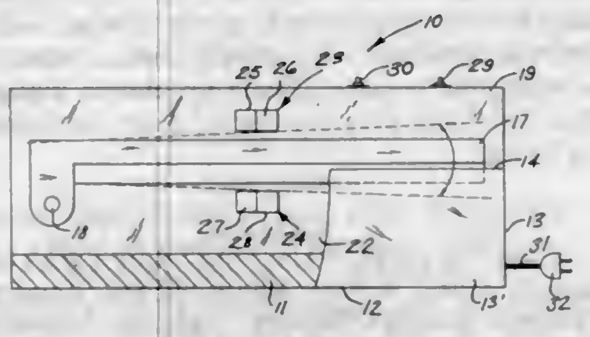
### 3,476,043
### ENVELOPE OPENING DEVICE

**Harold R. Erdley, Road 2, Mifflinburg, Pa. 17844**

**Filed June 7, 1967, Ser. No. 644,238**

**Int. Cl. B26d** *5/08*

**U.S. Cl. 83—575 2 Claims**



An envelope opening apparatus which will cut approximately $\frac{1}{64}$ to $\frac{1}{100}$ of an inch from the edge of the envelope without cutting the material enclosed within the envelope having a pivotable blade which is electrically operated through the use of push-pull electro-magnets, the magnets effecting a shearing action against a shearing edge with respect to the pivotable blade of the apparatus. This apparatus serves to quickly and efficiently open envelopes.

### 3,476,044
### LINEAR TYPE FONT OSCILLATING MEANS FOR HIGH SPEED PRINTERS AND THE LIKE

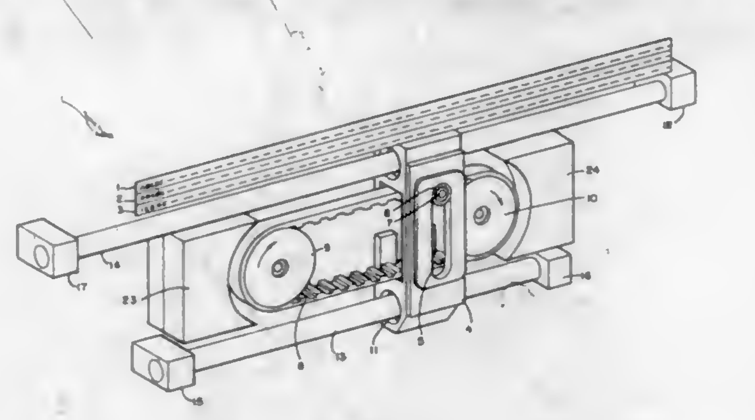
**Carl I. Wassermann, Westbury, N.Y., assignor to Datamark, Inc., Westbury, N.Y., a corporation of New York**

**Filed Jan. 8, 1968, Ser. No. 696,317**

**Int. Cl. B41j** *1/20*

**U.S. Cl. 101—93 3 Claims**

The present invention comprises a method of and means for moving one or more linear type fonts back and forth past a marking point in a lateral excursion equal to one type font. A yoke attached to the font is constrained along a horizontal path by upper and lower guide rods. A drive roller on a ball bearing shaft and free to move vertically in a slot in the yoke serves to move the yoke along the horizontal path. The shaft is attached to a molded drive belt which in turn is moved continuously by a drive pulley over which it passes. Thus, uniform rotation of the drive pulley results in constant velocity of the fonts as the belt moves between drive rollers and in simple harmonic motion as it rounds the drive pulleys. In order to reduce centrifugal forces on the belt as it rounds the drive pulleys, the drive roller is constrained by arcual guide blocks during the curvilinear portion of the travel.



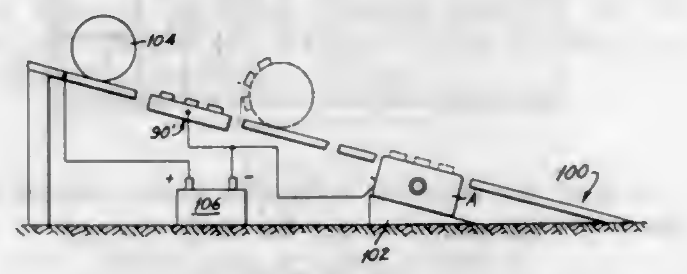
### 3,476,045
### METHOD OF OFFSET PRINTING MULTICOLOR IMAGES ON GLASS ARTICLES

**Kenneth G. Lusher, Perrysburg, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio**

**Continuation-in-part of application Ser. No. 242,299, Dec. 4, 1962. This application Oct. 23, 1965, Ser. No. 503,247**

**Int. Cl. B41c** *3/08;* **G03g** *13/14*

**U.S. Cl. 101—129 2 Claims**



Methods for electrostatic offset printing of multicolor images on hot glass articles. A reversed image in the form of a layer of powder particles is applied to an offset element by brushing the particles of colored powder through individual stencils, each conformed to the area of the particular color and subsequently electrostatically transferring the completed image to a cylindrical article by rolling the article laterally across the powder layer while applying a suitable electric field.

### 3,476,046
### VARIABLE IMPRINT SPACING APPARATUS FOR ROTARY PRINTING MACHINE

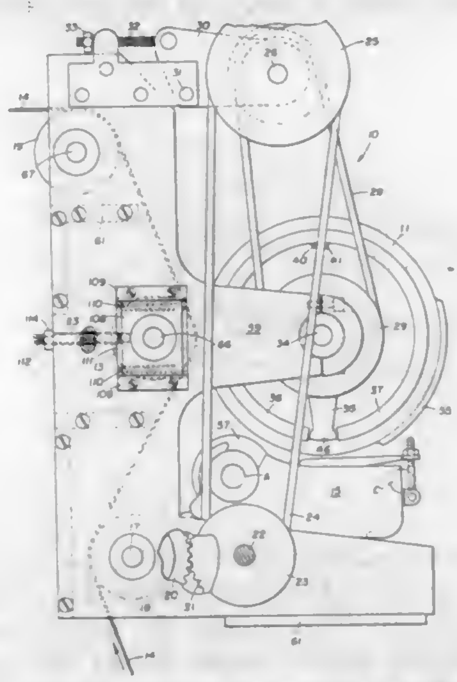
**Edward L. Ryswick, Rochester, N.Y., assignor to Varispace Industries, Inc., Rochester, N.Y., a corporation of New York**

**Filed Jan. 3, 1967, Ser. No. 606,627**

**Int. Cl. B41f** *5/00, 31/00*

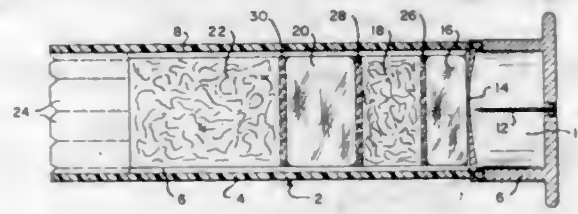
**U.S. Cl. 101—216 18 Claims**

Variable imprint spacing is accomplished by a variable speed drive train for driving a rotary print cylinder faster or slower than the print stock, spring connection of the print cylinder to the drive train to allow the print cylinder to advance or retard and return to an unbiased normal position relative to the drive train, and a friction pad on the print cylinder to engage the impression cylinder during each imprint to synchronize the print cylinder with the print stock. An ink roll and its drive can be positioned



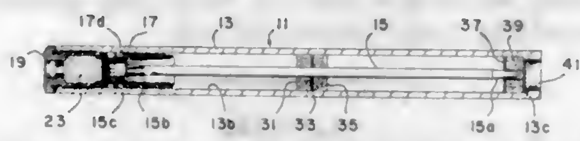
at several stations around the periphery of the print cylinder for inking different numbers of print elements at imprint speed.

### 3,476,047
### SHELL FOR CLEANING A SHOTGUN
**David Maurice Davis, R.D. 6, Box 151A,**
**Greensburg, Pa. 15601**
**Filed Dec. 22, 1967, Ser. No. 692,786**
**Int. Cl. F42b** *7/00*
**U.S. Cl. 102—39** **3 Claims**



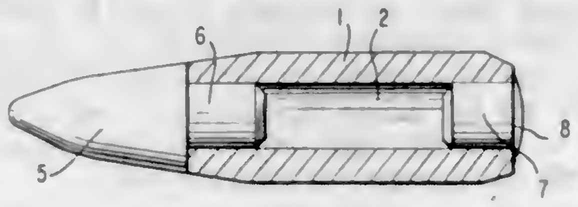
A shell for cleaning a shotgun having solvent and a cleaning wad inserted within the shell.

### 3,476,048
### UNDERWATER AMMUNITION
**Irwin R. Barr, Lutherville, and John L. Critcher, Cockeysville, Md., assignors to AAI Corporation, Cockeysville, Md., a corporation of Maryland**
**Filed June 30, 1967, Ser. No. 650,373**
**Int. Cl. F42b** *15/20*
**U.S. Cl. 102—52** **12 Claims**



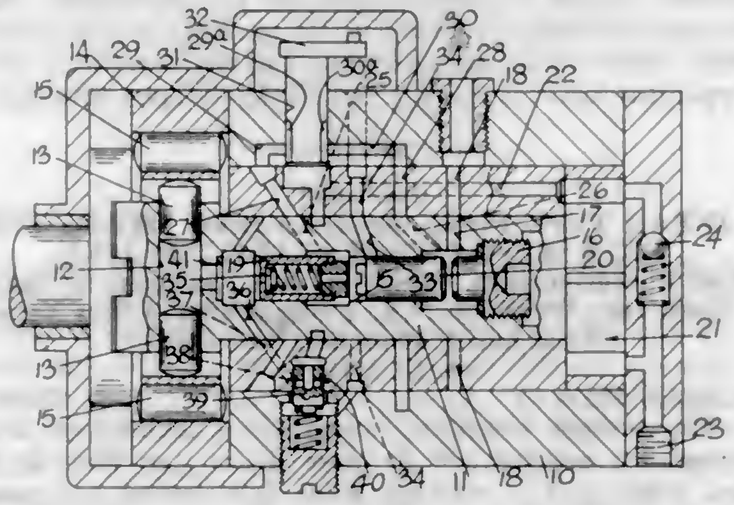
Underwater ammunition is disclosed, in which a flechette projectile is enclosed within the air-filled bore of a watertight sealed disposable barrell adapted to be removably inserted into a carrier cylinder or block for firing. The projectile is suspended by and between a rear-end-cradling pusher sabot, a frangible nose-guiding-and-supporting unit and a frangible mid-section-guiding-and-supporting unit. A propellant charge and percussion primer are disposed rearwardly of the pusher sabot, and the projectile is propelled forward by primer ignition of the propellant to impart forward motion to the pusher sabot, which in turn drives the projectile through a frangible and fully removable sealed front barrel cover. Forward motion of the sabot is stopped by successive incremental energy absorption through the shearing of an external helical shear thread on the forward section of the pusher sabot at the forward end of its travel, the shearing and compaction of which shear thread also seals in the propellant gases within the barrel bore at the end of the sabot forward travel. Pressure dropping annular expansion grooves on the rear section of the pusher sabot are employed to obviate blow-by of propellant gases during forward motion of the sabot.

### 3,476,049
### PRACTICE AMMUNITION
**Heinz Gawlick and Rudolf Stahlmann, Furth, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany**
**Filed May 17, 1967, Ser. No. 639,089**
**Claims priority, application Germany, June 1, 1966,**
**D 50,224**
**Int. Cl. F42b** *11/18, 13/20*
**U.S. Cl. 102—92.7** **5 Claims**



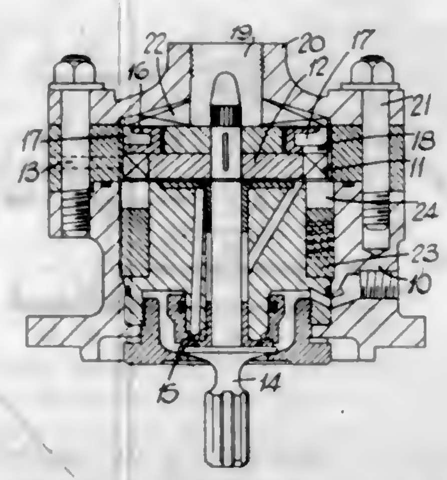
The present disclosure relates to a practice or training projectile that has a reduced cross section so that only a portion of the propellant powder charge energy is utilized as corresponds to the reduced cross section of the projectile and thus a short distance of travel is obtained. The cross section is reduced by providing a tubular projectile body having an axially extending bore throughout its entire length. The opposite ends of the tubular body may be tapered and provided respectively with a front tip insert and a rear plug to more closely simulate a live projectile; the insert and the plug separating from the tubular body during firing.

### 3,476,050
### LIQUID FUEL PUMPING APPARATUS
**Kenneth Albert Walters Kemp, Ealing, London, and Terence Redvers Wheeler, Highgate, London, England, assignors to C.A.V. Limited, London, England, a British company**
**Filed Apr. 11, 1968, Ser. No. 720,521**
**Claims priority, application Great Britain, Apr. 17, 1967,**
**17,483/67**
**Int. Cl. F04b** *13/02, 49/08;* **F04d** *15/00*
**U.S. Cl. 103—2** **4 Claims**



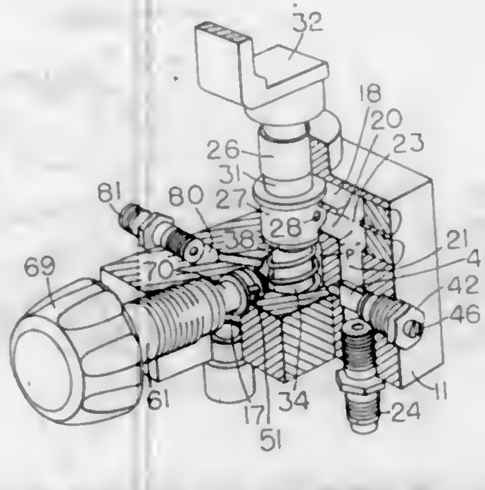
A liquid fuel pumping apparatus for supplying fuel to an internal combustion engine and including a pumping plunger which is moved inwardly in timed relationship with an engine, a pair of shuttle pistons, positioned within the fuel column extending from the pumping plunger to a delivery passage, a stop for limiting movement of the second shuttle piston during inward movement of the plunger and a spill passage uncovered by the second shuttle piston after a predetermined movement towards the stop whereby upon opening of the spill passage the first shuttle piston moves into contact with the second shuttle piston to urge it against the stop.

### 3,476,051
### LIQUID PUMPS
**Robert Thomas John Skinner, Kenilworth, Warwickshire, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England**
**Filed Dec. 19, 1967, Ser. No. 691,850**
**Int. Cl. F04b** *23/04, 13/00;* **F04d** *1/06*
**U.S. Cl. 103—5** **3 Claims**



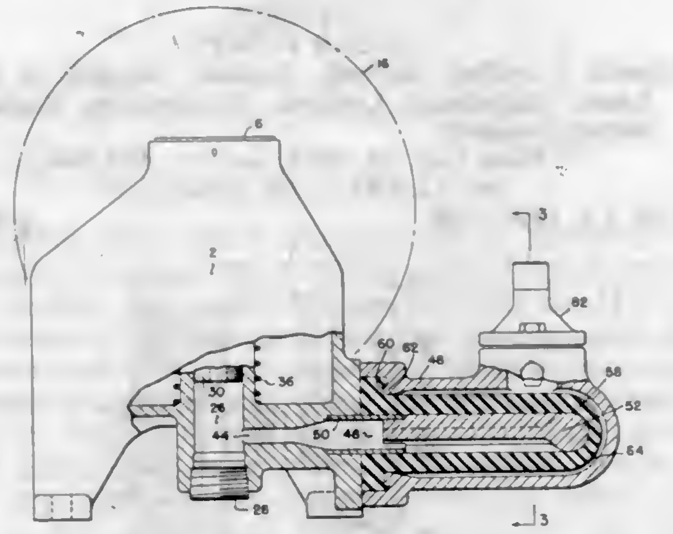
A liquid pump comprises a body having a pumping cavity containing a rotor, the cavity having at least one outlet and, in an inlet plate, at least one inlet port disposed at or near the rotor periphery, the opposite side of the rotor having a channel formed by an annular piston.

### 3,476,052
### HIGH PRESSURE PUMP FOR SPRAYER
**Josef Wagner, 507 Postfach, 799**
**Friedrichshafen 12, Germany**
**Continuation-in-part of application Ser. No. 647,139, June 19, 1967. This application July 9, 1968, Ser. No. 743,437**
**Int. Cl. F04b** *49/00, 19/22;* **F04d** *15/02*
**U.S. Cl. 103—41** **5 Claims**



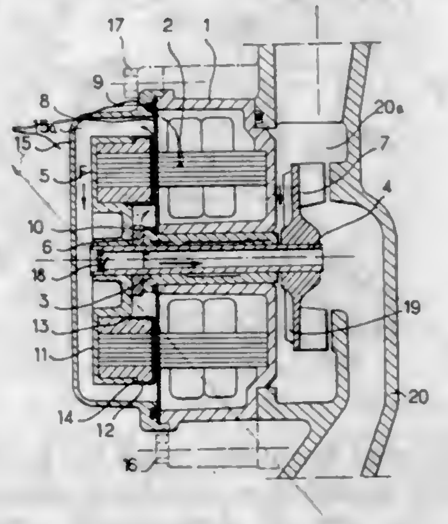
A high pressure pump for a sprayer having a positively driven piston operating a suction valve, said operation forming a pressure chamber, an outlet from said pressure chamber, a regulating valve operatively connected to said pressure chamber, a suction bore inlet, a throttle valve operatively connected to said suction bore inlet, and a leak-off conduit in communication with said suction bore inlet.

### 3,476,053
### PUMP
**Jerzy J. Czarnecki, Princeton, and Peter Arkwright, Pennington, N.J., assignors to De Laval Turbine Inc., Trenton, N.J., a corporation of Delaware**
**Filed Nov. 1, 1967, Ser. No. 679,803**
**Int. Cl. F04b** *9/10, 43/00;* **F01b** *19/04*
**U.S. Cl. 103—44** **1 Claim**



A pump of the pulsator type is provided with a vertical cylinder in which a piston is reciprocated by a crank carrying a needle bearing engaging the top of the piston to move it downwardly against spring action. The cylinder is submerged in a liquid and the piston is provided with ports communicating with the space below the piston and arranged to be cut off as the ports move below the top of the cylinder, thereby to trap a definite quantity of liquid which is driven into a pulsator in the form of an elastic thimble to provide displacement in a chamber for pumped liquid, the last chamber being provided with inlet and outlet valves offering low resistance to flow. A simplified clamping assembly for the pulsator provides sealing. The interior of the pulsator contains a fluted core limiting its collapse.

### 3,476,054
### PUMP
**Jean Gangloff, 29 Rte. de Versailles,**
**Port-Marly, Yvelines, France**
**Filed Feb. 2, 1968, Ser. No. 702,675**
**Claims priority, application France, Apr. 24, 1967,**
**103,990**
**Int. Cl. F04d** *13/06;* **H02k** *11/00*
**U.S. Cl. 103—87** **11 Claims**



An acceleration pump, with a plane-gap motor, for central-heating installations utilizing the circulation of hot water, wherein the rotor of the pump is mounted alongside the stator at one extremity of a hollow shaft, a turbine wheel mounted on the other end of the shaft such that a journal bearing of the shaft is located inside of the stator and is protected against the impurities carried by the circulating water. A portion of the water, after having lubricated the journal bearing, returns through the hollow shaft to the spiral housing of the turbine.

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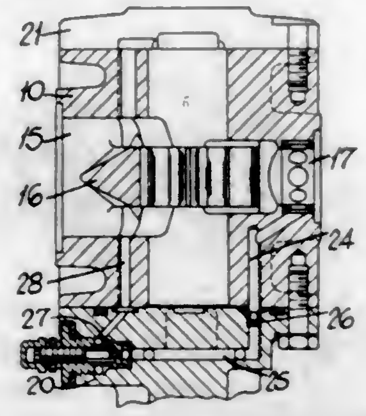
**3,476,055**

## GEAR PUMPS

**Harold Crowther, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company**
**Filed Dec. 19, 1967, Ser. No. 691,744**
**Int. Cl. F04c** *1/08;* **F04b** *21/08*
**U.S. Cl. 103—126** **2 Claims**



A gear pump having bearings movable towards the gear end faces, said bearings defining at least part of the side face of the pumping cavity and a number of members urged by liquid pressure towards the gears, the disposition of the members being chosen to afford a centre of loading therethrough corresponding with the centre of action of an opposing force tending to separate the bearings from the gears as the pump operates.

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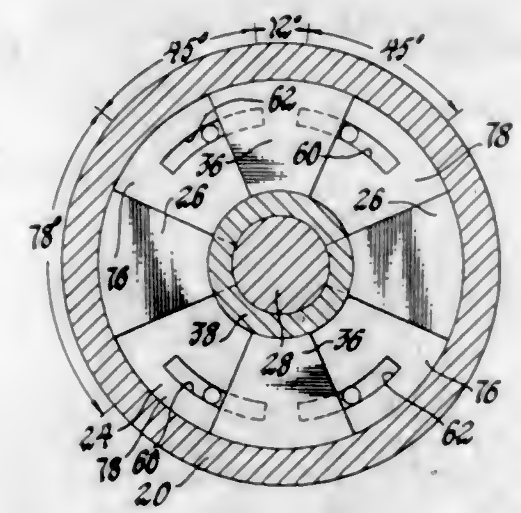
**3,476,056**

## PUMP WITH OSCILLATING VANES

**James A. Bright, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Apr. 1, 1968, Ser. No. 717,528**
**Int. Cl. F04c** *1/02;* **F16h** *21/36, 1/34*
**U.S. Cl. 103—129** **6 Claims**



In the preferred form, this pump has a very flat cylindrical housing enclosing a cylindrical pumping chamber containing two sets of diametrically opposite sector shaped oscillating vanes making sealing engagement with the walls of the housing. Each set is connected to a diametrically extending driving bar. Each end of each driving bar is slotted to receive an eccentric pin extending from one of the four uniformly spaced planet gears each one-half the diameter of the sun gear. The rotation of the sun gear relative to the ring gear in engagement with the planet gears causes the planet gears to revolve about the sun gear to cause the vanes to move toward and away from each other to expel fluid through a pair of outlets and to draw in fluid through a pair of inlets in the flat side walls as they are covered and uncovered by the vanes.

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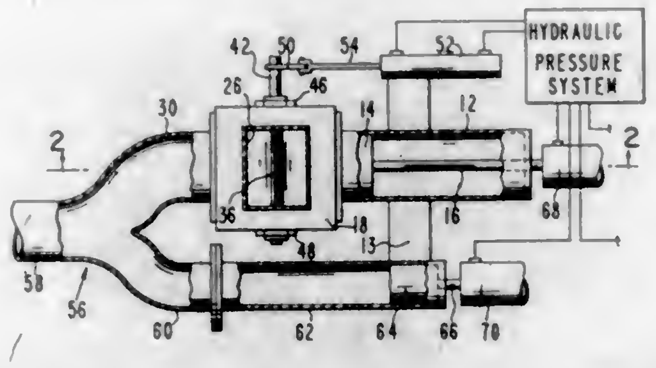
**3,476,057**

## AGGREGATE PUMPING APPARATUS

**Philip W. McElroy, 2300 Dolores Court, Pinole, Calif. 94564**
**Filed Sept. 8, 1967, Ser. No. 666,442**
**Int. Cl. F04b** *19/04, 1/00;* **F15b** *11/20*
**U.S. Cl. 103—167** **4 Claims**



An improved, simplified pump for concrete aggregate. An improved valve for controlling flow of concrete aggregate. An improved hydraulic control system for controlling two actuators simultaneously in proper timed relation.

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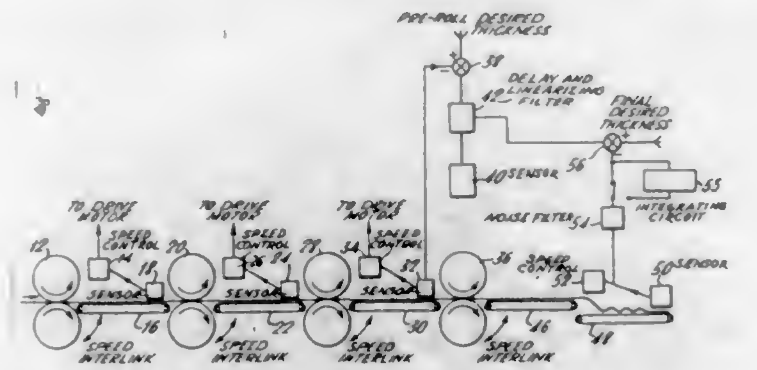
**3,476,058**

## APPARATUS FOR CONTROLLING THE THICKNESS OF SHEET MATERIAL

**David Anthony Watkin and Edwin Henry Noe, Kent, and Peter Wade, Chorleywood, England, assignors to British Scientific Instrument Research, South Hill, Kent, England**
**Filed Oct. 21, 1966, Ser. No. 588,380**
**Claims priority, application Great Britain, Oct. 22, 1965, 44,895/65**
**Int. Cl. A21c** *3/02*
**U.S. Cl. 107—12** **10 Claims**



Apparatus for controlling the thickness of sheet material such as dough includes a pair of pressure rollers movable towards and away from each other and endless conveyors for feeding sheet material between the pressure rollers. A first sensing device is positioned upstream of the rollers for measuring the absolute thickness of the sheet material to control the distance between the pressure rollers and also to control the speed of additional rollers located upstream at the first sensing device in accordance with the thickness sensed. A second sensing device is positioned downstream of the presesure rollers for measuring the absolute thickness of the sheet material after it has passed between the pressure rollers to modify the control of the pressure rollers imposed by the first sensing device.

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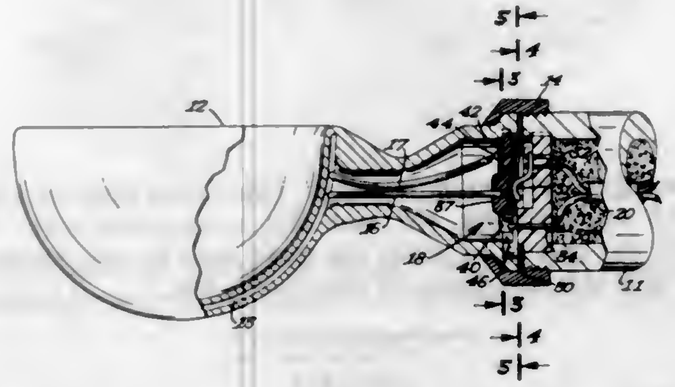
**3,476,059**

## ELECTRICALLY HEATED ICE CREAM SCOOP

**Robert O. Anderson, Rte. 2, Paynesville, Minn. 56362**
**Filed Jan. 2, 1968, Ser. No. 703,823**
**Int. Cl. A47j** *43/28;* **H05b** *3/42;* **H01h** *9/06*
**U.S. Cl. 107—48** **4 Claims**



An ice cream scoop having a gripping handle with a ladle member pivotally secured to one end of the handle, the ladle being adapted to rotate axially relative to the handle, and generally about the axis of the handle. Means are provided for accommodating the axial rotation of the ladle relative to the handle, and heating means are provided in thermally conducting relationship with the ladle for heating the ladle when the ladle is rotated axially from its normal position.

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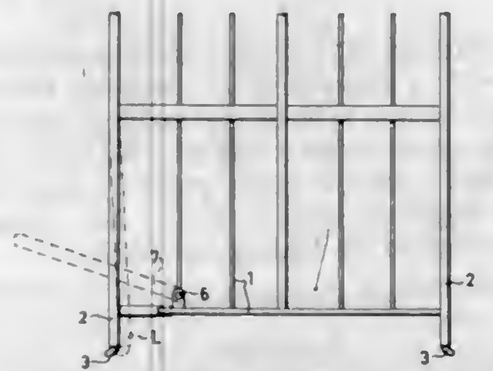
**3,476,060**

## GOODS SUPPORT FOR PALLETS

**Eric Å. Sjöblom, Orebro, Sweden, assignor to AB Grythyttans Stalmobler, Grythyttan, Sweden, a corporation of Sweden**
**Filed May 3, 1968, Ser. No. 726,498**
**Claims priority, application Sweden, May 9, 1967, 6,511/67; Mar. 26, 1968, 4,026/68**
**Int. Cl. B65d** *19/04, 19/44*
**U.S. Cl. 108—55** **8 Claims**



The present invention relates to a device for releasable locking of a goods support to pallets, wheeled pallets and similar structures, said support comprising a wall element, the locking being obtained by moving the wall elements in a direction towards each other and releasing being effected by moving them in a direction away from each other.

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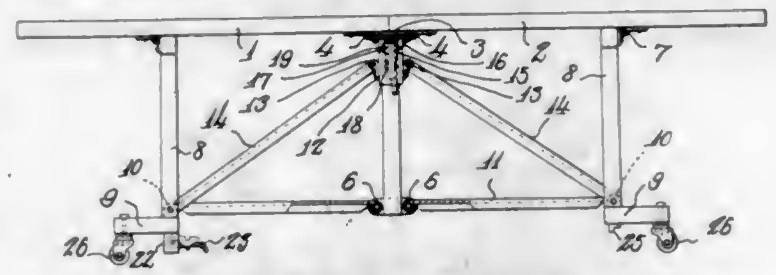
**3,476,061**

## FOLDING TABLE

**Sasuke Takahashi, 34/11 Yasunaka-cho, 6-chome, Yao, Osaka-fu, Japan**
**Filed Dec. 28, 1967, Ser. No. 694,255**
**Int. Cl. A47b** *3/087*
**U.S. Cl. 108—112** **5 Claims**



A folding table which characterized by providing a base plate underneath the contacting edges of two substantially identical, level table top boards, fixing the former to the latter with hinges, providing first hinging points at the lower end of a vertical guide rod which hangs from the center of the base plate, fixing laterally spaced hinged legs to the back of the top boards with other hinges, providing additional hinging points in the middle of oppositely disposed horizontal supporting frames which are fixed to and interconnect the lower ends of opposite pairs of legs, setting reinforcing rods between the first hinging points and the additional hinging points in parallel with the top boards, mounting a sliding sleeve on to the vertical guide rod, setting bias rods between hinging points of the sliding sleeve and said additional hinging points in the middle of the horizontal supporting frames, providing a fixed sleeve at the upper end of the vertical guide rod such a way that a V-shaped protruding part can engage with a corresponding V-shaped notch of the sliding sleeve and simultaneously a locking claw of the sliding sleeve can engage with a hooking part of a swinging pivotal hook which is hinged on to a pivot point on the fixed sleeve.

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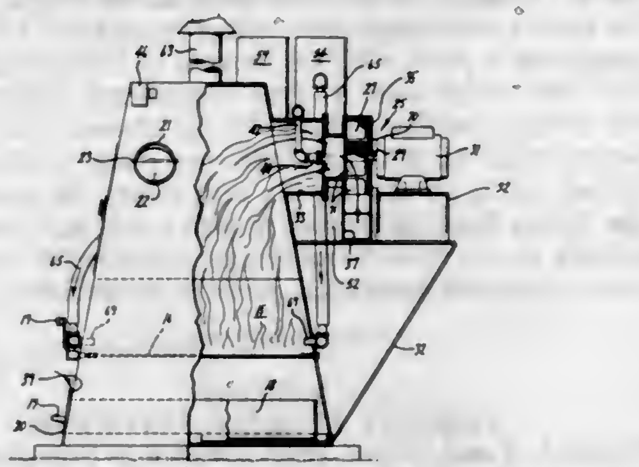
**3,476,062**

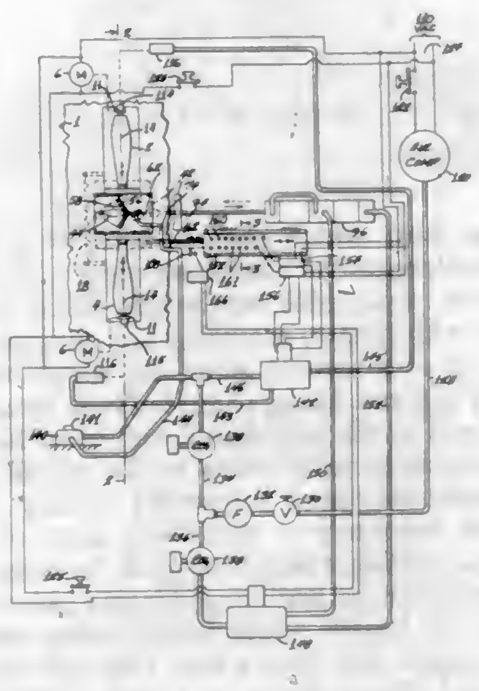
## INCINERATOR FOR BURNING COMBUSTIBLE WASTE AND METHOD

**Walter C. Ramires, 1354 90th Ave., Oakland, Calif. 94603**
**Filed Dec. 13, 1967, Ser. No. 690,179**
**Int. Cl. F23g** *5/00*
**U.S. Cl. 110—8** **10 Claims**



The incinerator comprises a trash-receiving and combustion chamber wherein combustion is accelerated by forced draft, a conjoint water spray washing and centrifuging of the burning product to obtain more complete combustion and comminuting of the solid matter in the products of combustion, recycling of hot gases back into the combustion chamber for further accelerating and completing combustion, and subsequent downstream removal of solids and discharge of essentially smokeless gas and water vapor to the atmosphere.

### 3,476,063
## AUTOMATIC SEWING APPARATUS
**Samuel N. Bulgatz, Minneapolis, Minn., assignor to Jeffrey L. Bulgatz, Minneapolis, Minn.**
**Filed Sept. 21, 1967, Ser. No. 669,420**
**Int. Cl. D05b** *25/00, 21/00*
**U.S. Cl. 112—2** **17 Claims**



Two sewing machines are slidably mounted in head to head, longitudinal alignment for opposed, reciprocating movement by a cam and cam follower arrangement. The cam is slidably mounted for reciprocating movement in a direction substantially perpendicular to the line of movement of said sewing machines. Each of the sewing machines is provided with a cam follower positioned in vertical alignment with its reciprocating needle, the two cam followers tracing identical paths as they follow separate but identical contoured portions of said cam. A controlled source of high pressure air serves to drive the cam and to intermittently engage one-revolution clutches connected to the needle drive shaft of each of the sewing machines. The reciprocating movement of the cam, and the intermittent engagement of the clutches is controlled by a microswitch arrangement which includes a plurality of contact points mounted on a switch plate connected to said cam for sliding movement therewith. The material to be sewed is held on a plate which is secured to the cam and slides back and forth with it. The intermittent engagement of the sewing machine clutches by the aforesaid microswitch arrangement as the cam followers reach predetermined, spaced points on the moving cam causes the actuation of the sewing machine needles in such a way as to jump baste stitches in a symmetrical design conforming to the separate, identical, contoured portions of the cam.

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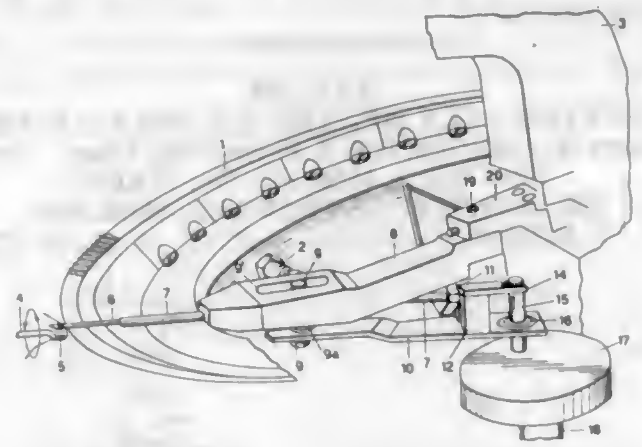
### 3,476,064
## HOSIERY LINKING MACHINE
**Cesare L. Conti, Milan, Italy, assignor to Complett S.p.A., Milan, Italy, a corporation of Italy**
**Filed Jan. 23, 1967, Ser. No. 610,948**
**Claims priority, application Italy, Jan. 29, 1966, 1,994/66**
**Int. Cl. D05b** *7/00*
**U.S. Cl. 112—25** **5 Claims**

This machine has the conventional pin plate having impaling pins for holding the fabric which is to be seamed. The needle is a hooked needle and is secured to a needle bar that is oscillatable and reciprocable in a carrier that is oscillated about the axis of the plate to move the needle from one impaling pin to the next. A crank effects oscillation and reciprocation of a lever, which, through a universal joint connection and a second crank and pin connection, reciprocates and oscillates the needle bar to move the needle toward and away from the pins and to effect its required rocking movement. This same lever is connected by a sliding pin and slot connection with the needle bar carrier to effect the oscillation in synchronization with the movement of the needle bar.



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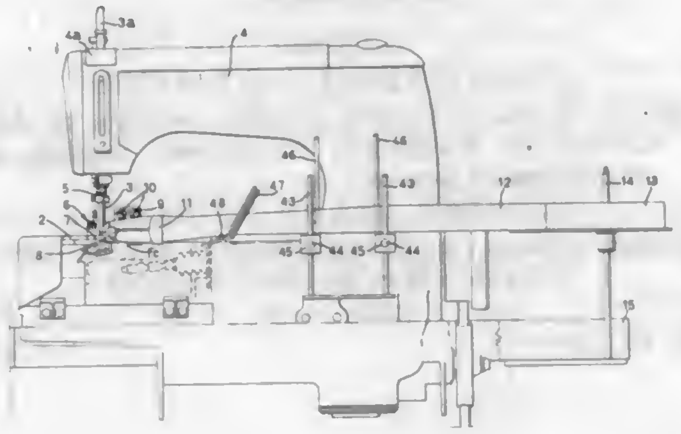
### 3,476,065
## SEWING MACHINE FOR ATTACHING BINDINGS ON THE EDGES OF FABRICS BY MEANS OF CHAINSTITCH SEAMS BLIND ON ONE SIDE OF THE BINDING
**Nerino Marforio, Milan, Italy, assignor to S.p.A. Virginio Rimoldi & C., Milan, Italy**
**Filed Jan. 16, 1967, Ser. No. 609,643**
**Claims priority, application Italy, Feb. 12, 1966, 32,225/66**
**Int. Cl. D05b** *1/06, 85/02;* **A41h** *31/00*
**U.S. Cl. 112—197** **4 Claims**



A sewing machine for sewing a binding along the edge of a fabric with a chainstitch in a manner whereby the stitch is blind on one side of the binding, comprising a sewing needle whose point is radially displaced from the needle axis and a thread guide groove whose plane of symmetry is displaced relative to the line along which stitches are formed in the binding and fabric.

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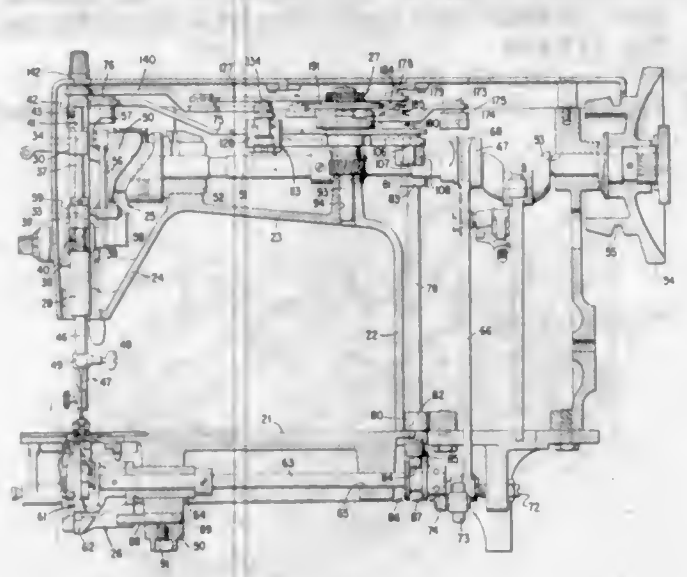
### 3,476,066
## NEEDLE JOGGING MECHANISMS
**Walter D. Szuba, Westfield, N.J., and James H. Hannen, Jr., Brick Town, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey**
**Filed June 16, 1967, Ser. No. 646,584**
**Int. Cl. D05b** *3/02*
**U.S. Cl. 112—158** **7 Claims**

The position of a wedge between two cam followers, one of which contacts a pattern cam, is changed to change the stitch width. The other cam follower is biased against the wedge by a leaver which is shiftably connected to a connecting rod between a needle bar gate and means for imparting lateral oscillation to the needle bar gate.



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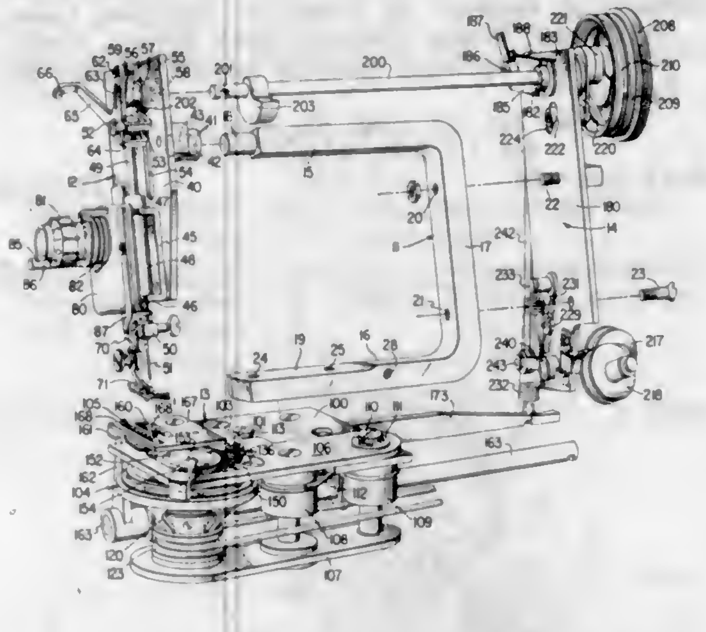
### 3,476,067
## SEWING MACHINES WITH NEEDLE AND LOOP TAKER OPERABLE NOT IN PREDICTABLY TIMED RELATIONSHIP
**Ralph E. Johnson, Boonton, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey**
**Original application Feb. 3, 1966, Ser. No. 524,949, now Patent No. 3,420,200, dated Jan. 7, 1969. Divided and this application Dec. 15, 1967, Ser. No. 690,868**
**Int. Cl. D05b** *57/14, 69/02, 49/00*
**U.S. Cl. 112—182** **4 Claims**



A lockstitch sewing machine is disclosed having a reciprocating needle and a rotating loop taker with a drive providing for a nominal speed ratio of three revolutions of the loop taker during each needle reciprocation. The drive for the loop taker is, however, a smooth belt incapable of maintaining a precise timed relationship between the needle and loop taker. A needle thread take up mechanism is disclosed which provides in a novel and advantageous manner for the wide variations in thread demand which are occasioned by the untimed operation of the loop taker and needle of this sewing machine.

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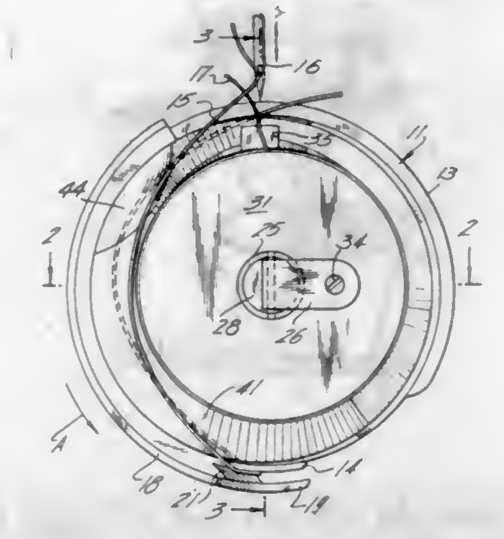
### 3,476,068
## SEWING HOOK AND BOBBIN
**Louis Preston, Brooklyn, N.Y., assignor to Miracle Hook Corp., New York, N.Y., a corporation of New York**
**Filed Aug. 15, 1967, Ser. No. 660,688**
**Int. Cl. D05b** *57/16*
**U.S. Cl. 112—231** **4 Claims**



An improved sewing hook and bobbin which eliminates the bobbin case and rotatably mounts the bobbin in the sewing hook with the sewing hook carrying means for applying friction to the bobbin to place tension on the bobbin thread during sewing, with the tension being independent of the type or thickness of the thread. The sewing hook is also of improved design whereby sewing at a higher speed is permitted without causing a burning of the thread looped over the sewing hook.

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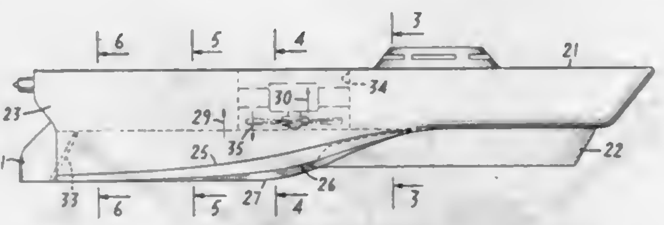
### 3,476,069
## MULTIPLE HULL VEHICLE WITH AIR CUSHION SUPPORT
**Peter J. Mantle, Gales Ferry, and Arnold M. Hall, Noank, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware**
**Filed Jan. 24, 1967, Ser. No. 611,355**
**Int. Cl. B63b** *1/34, 1/38*
**U.S. Cl. 114—67** **21 Claims**

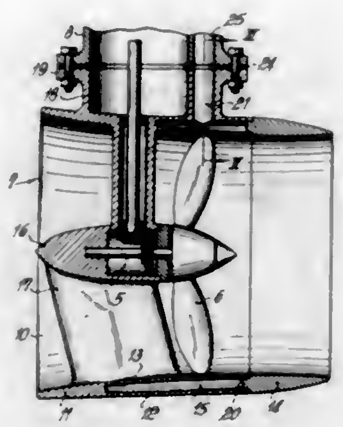


An air cushion vehicle is provided with buoyant and/or planing hulls positioned toward the rear of the craft and with an air cushion containing skirt positioned around the front of the craft forward of the planing hulls. The hulls may be faired back to the rear of the vehicle or may cut off before the rear of the vehicle leaving only thin skegs to seal the cushion at the sides on the rear end. A third buoyant and/or planing hull may be positioned at the bow of the vehicle, either in front of, or in back of, the flexible skirt, or with the flexible skirt attached to it near its center.

**3,476,070**

## HEAT EXCHANGER FOR BOAT PROPULSION UNIT

Jorg Austen, Weinsberg, Wurttemberg, Germany, assignor to Firma Dr. Ing. h.c.F. Porsche KG, Stuttgart-Zuffenhausen, Germany
Filed Sept. 25, 1967, Ser. No. 670,104
Int. Cl. B63b *5/14, 1/28;* B61d *27/00*
U.S. Cl. 115—.5 10 Claims

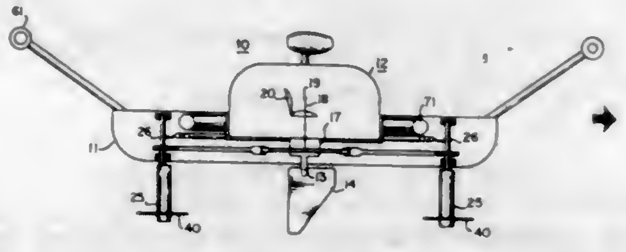


A boat propulsion unit and heat exchanger having a propeller surrounded by an annular jet casing and driven by an internal combustion engine through a drive gear arrangement. At least a portion of the axial length of the casing is provided with a double wall to constitute a heat exchanger fluid receiving chamber for cooling one of the operating fluids of the internal combustion engine, for example the cooling fluid. The forward portion of the casing and the double walls are constructed as a single casting along with supply and discharge pipes leading to the chamber. The double walls of the casing provide an annular rearwardly facing opening that is closed by an annular member forming the discharge end of the casing. The casing is mounted by a rotatable carrier through the interposition of a connecting pipe having an oil chamber for the drive gear, and supply and discharge conduits.

**3,476,071**

## SEA-GOING CRAFT

Joseph E. O'Hare, Forestville, Md.
(3422 Boones Lane, Washington, D.C. 20028)
Filed Feb. 26, 1968, Ser. No. 708,361
Int. Cl. B63h *1/38, 7/00*
U.S. Cl. 115—20 6 Claims

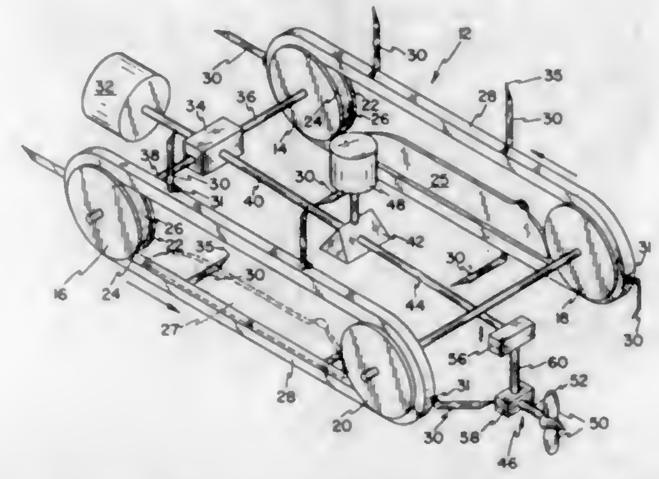


This invention is directed to sea-going craft of the hydrofoil class having in combination a modified cycloidal propulsion, hydrofoil lift, and gyrostabilized platform. These elements being empowered by the rapid rotation of the hull structure with an appended vane-foil assembly under the drive of an attached tangentially thrusting means and under control operative from within a non-rotating, directionally stabilized compartment which is connected coaxially with the hull structure.

**3,476,072**

## WATERCRAFT PROPULSION

Wayne Wilson, 15 East 4th North,
Salt Lake City, Utah 84103
Continuation-in-part of application Ser. No. 518,970, Dec. 30, 1965. This application Mar. 15, 1968, Ser. No. 713,396
Int. Cl. B63b *5/00, 1/34, 1/24*
U.S. Cl. 115—63 7 Claims

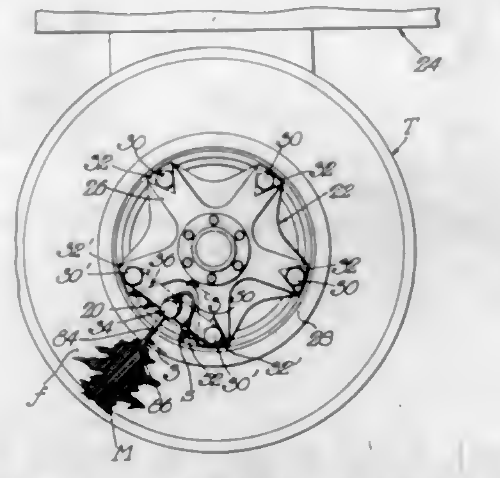


A hydrofoil propelled watercraft which presents drag structure to selectively increase the drag force on the watercraft at the low velocities to (a) develop an upward force acting upon the watercraft and causing the watercraft to be lifted upon hydrofoils at relatively low velocities and (b) provide a system for recovering a portion of the surplus energy expended at low velocities and directing the energy into the drive line to increase the efficiency of the power source or to auxiliary appliances. The hydrofoil blades are adapted to engage the water exclusively below and inside the outer periphery of the watercraft so that the outer limits of the reach of the hydrofoil blades is known.

**3,476,073**

## TIRE UNDERINFLATION TELLTALE DEVICE

Richard M. Jackson, 42 Augur St., Hamden, Conn. 06517, and Walter Spruegel, New Haven, Conn.; said Walter Spruegel assignor to said Richard M. Jackson
Filed Jan. 23, 1968, Ser. No. 699,952
Int. Cl. B60c *23/02, 23/06*
U.S. Cl. 116—34 17 Claims

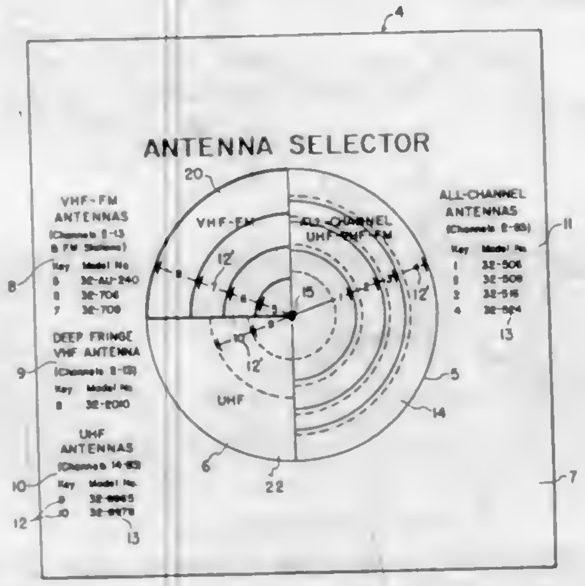


Received in a cylinder on a truck wheel is a plunger dividing the cylinder chamber into opposite end compartments, of which one compartment is in communication with the air in the tire on the wheel, and the other compartment holds a liquid and has an outlet which is normally closed by the plunger, with the plunger being by a spring displaced so as to open the outlet when confronted with air below a safe minimum tire pressure whereupon the liquid will escape through the outlet and spray against the tire to leave thereon a telltale blot.

**3,476,074**

## ANTENNA SELECTOR

Frederic E. Arnold, Jr., Rockford, Ill., assignor to Hydrometals, Inc., Dallas, Tex., a corporation of Illinois
Filed Oct. 30, 1967, Ser. No. 678,850
Int. Cl. G01d *21/02*
U.S. Cl. 116—114 7 Claims

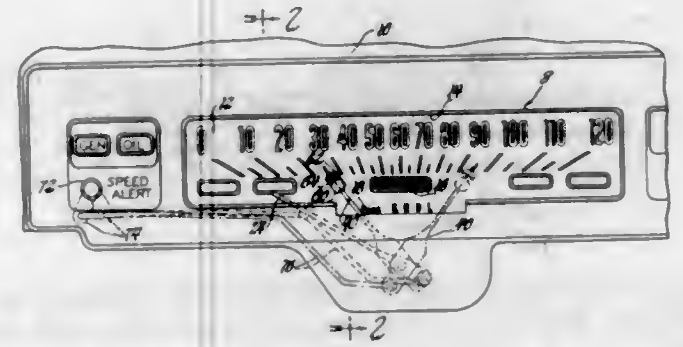


This antenna selector involves a transparent dial that is marked off in arcuate bands from its center on a scale corresponding to the scale of a map in connection with which it is used, on which the locations of UHF, VHF and FM TV stations are marked in relation to the dots marking the locations of towns and cities. The arcuate bands are numbered to correspond with numbers in a table of antenna models, the numbers assigned different models of antennas having ranges equivalent to the distances represented by the bands, so that one can determine by reference to the table after placing the dial on the map with the center on the dot for a given town or city and turning the dial which model antenna will be adequate in range to enable reception from whatever stations are designed by the customer for whom the antenna is being selected.

**3,476,075**

## INSTRUMENT WITH COLORED POINTER SPEED INDICATOR

Dallas J. Raby, Davison, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 1, 1967, Ser. No. 642,888
Int. Cl. G01p *1/06*
U.S. Cl. 116—116 4 Claims

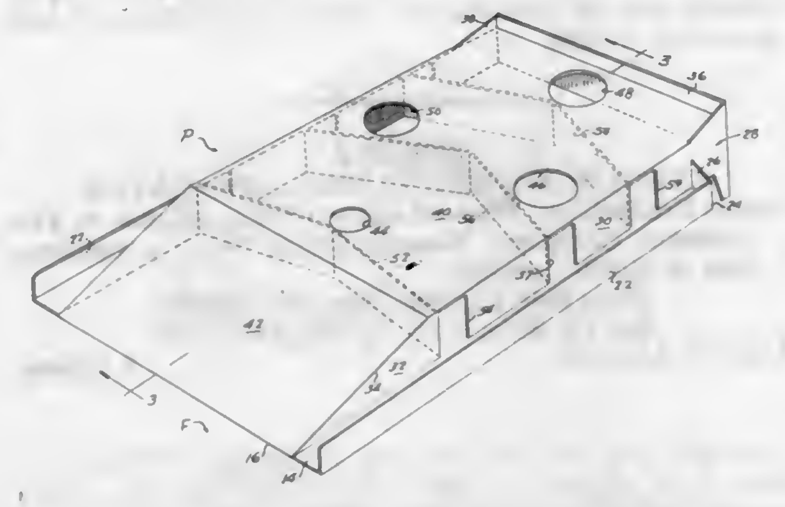


A pointer instrument such as a speedometer with different vivid color areas for being separately exposed to indicate change in speed immediately over and/or under an adjustable setting of the instrument.

**3,476,076**

## GOLF-BASEBALL GAME APPARATUS

Natt McDougall, Jr., 73–640 Juniper St.,
Palm Desert, Calif. 92260
Filed May 3, 1967, Ser. No. 635,886
Int. Cl. A63b *71/06;* A63f *7/06*
U.S. Cl. 116—120 3 Claims

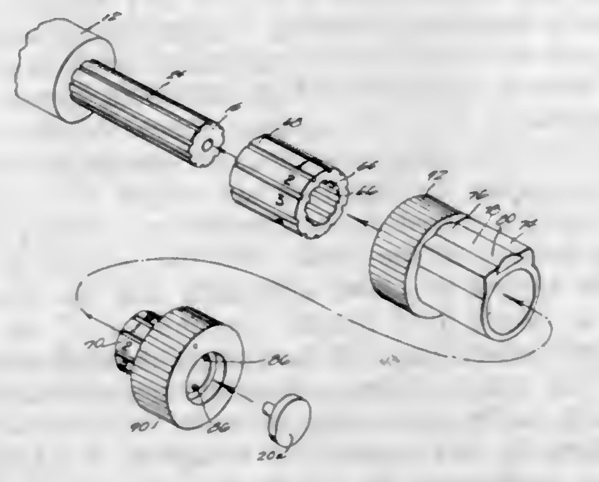


A skill, golf-baseball game apparatus, adapted to be played by opposing teams, each consisting of one or more players, wherein balls are putted onto a slanting board formed with ball-drop holes, the dropping of balls through different holes signifying various baseball happenings, looking toward scoring runs, failure to thus drop balls, accompanied by falling of balls off the sides of the board denoting "outs" and/or "strikes," the apparatus further comprising a scoreboard having stationary and rotary members, the rotary members being adapted to be rotated to positions indicating the situations of the game in progress, as well as the scores of the opposing teams. The apparatus further comprises a movable floor-supported device which serves both to indicate the succeeding innings, and to determine, relative to the game-board, selected putting distances from the board. This device also is usable as a handicapping device.

**3,476,077**

## RAZOR BLADE SHAVE COUNTER

Henry Henkel, 73—26 178th St.,
Flushing, N.Y. 11366
Filed Oct. 5, 1967, Ser. No. 673,192
Int. Cl. G09f *9/00;* B26b *19/38;* G06c *27/00*
U.S. Cl. 116—133 3 Claims

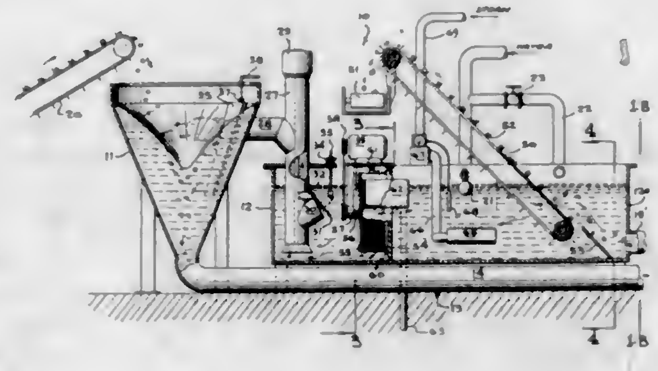


A razor blade shave counter characterized in that the handle of the razor terminates in a generally cylindrical end having a knurled portion and a smaller diameter cylindrical extension thereof, the cylindrical extension having a series of equally spaced longitudinal grooves, a hollow cylindrical counter having a mating series of equally spaced longitudinal projections along an inner surface of said hollow counter, the outer surface of the hollow counter having a series of numerical indicia disposed individually between radical extensions of the inner projections, and a cover mounted from the knurled portion in which a portion of the cover is a transparent magnifying lens to improve the visual observation of said numerical indicia.

**3,476,078**

### VACUUM IMPREGNATING APPARATUS

**James Frank King, Winston-Salem, N.C., assignor to The Bahnson Company, Winston-Salem, N.C., a corporation of North Carolina**
**Filed July 20, 1966, Ser. No. 566,591**
**Int. Cl. B05c** *3/10, 11/00;* **A23l** *1/00*
**U.S. Cl. 118—30** **9 Claims**

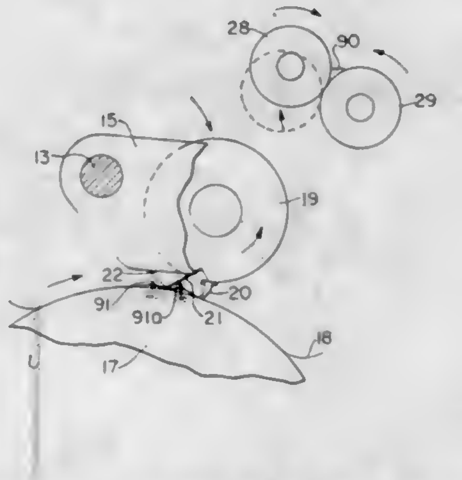


1. Vacuum impregnation apparatus operable on a continuous basis for evacuating gases from the interior of food products and substituting a liquid in place of the evacuated gas, comprising a product input hopper having an outlet opening, a receiving tank, said hopper and tank adapted to contain said liquid to selected liquid levels therein, a tubular conduit system communicating with said hopper and said tank below said liquid levels for fluid current conveyance of the food products from said hopper to said tank, said conduit system including a vertical ascending conduit leg, a vertical descending conduit leg, a transfer chamber interconnecting the uppermost ends of said legs at a substantial height above the levels of said hopper and tank, conduit means connecting lower end portions of said ascending and descending legs to said outlet opening and said tank, respectively, means for applying vacuum conditions to said transfer chamber to draw said liquid from said tank and hopper into said transfer chamber providing a submerged product transfer path of marked sub-atmospheric pressure in said chamber between said vertical legs, said input hopper being of substantially upwardly opening funnel-shaped configuration with said outlet opening at the bottom thereof, means for supplying the liquid to said hopper in a manner establishing a forced vortex therein for lowering the operating surface of the liquid near the vertical center axis of the hopper to a level sufficiently near the outlet opening to insure fluid current entrainment of the product into said conduit system for passage through said vertical legs and into said tank, said input hopper including adjustable baffle means therein to be disposed at selected positions in said hopper for selectively breaking up the vortex established therein to the appropriate extent to locate the core of the liquid surface at the vertical center axis of the hopper a desired distance from said outlet opening, and means for returning the liquid at a selected rate directly from the tank to said hopper.

**3,476,079**

### APPARATUS FOR APPLYING A LATERAL STRIPE OF ADHESIVE TO THE TAIL OF A SEVERED WEB

**John W. Hackett, Greenhills, and Earl E. Gardner, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio**
**Filed Dec. 27, 1967, Ser. No. 693,875**
**Int. Cl. B05c** *1/12*
**U.S. Cl. 118—40** **9 Claims**

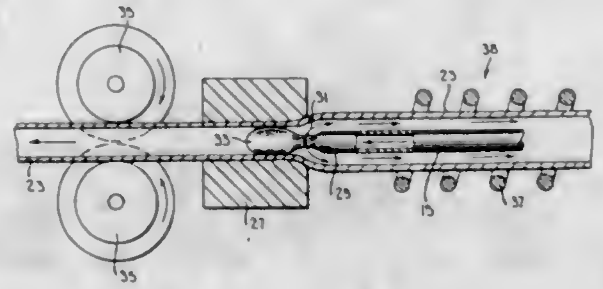


An apparatus for applying a lateral stripe of adhesive just forward of the line of severance of a continuously moving web which includes a pair of glue rolls having a quantity of glue retained in the nip thereof, with one of said rolls being movable into glue transfer position without changing the nip distance between the glue rolls. A continuously driven and separately supported chopper roll is provided having a glue applicator and a cutting blade mounted on its periphery. At the appropriate time in the cycle, the one glue roll is moved into glue transferring position with respect to the applicator on the chopper roll which is thereupon moved downwardly such that the cutting blade severs a continuously moving web supported on a bed roll while the applicator is applying or printing a longitudinal stripe of adhesive across the entire width of the web just forward of the line of severance.

**3,476,080**

### MEANS TO VAPOR DEPOSIT ON A TUBULAR SUBSTRATE

**John F. Clarke, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**
**Original application Oct. 13, 1965, Ser. No. 495,502, now Patent No. 3,417,453, dated Dec. 24, 1968. Divided and this application May 15, 1968, Ser. No. 753,322**
**Int. Cl. B21c** *23/26;* **B21d** *5/10;* **B05c** *7/00*
**U.S. Cl. 118—44** **4 Claims**

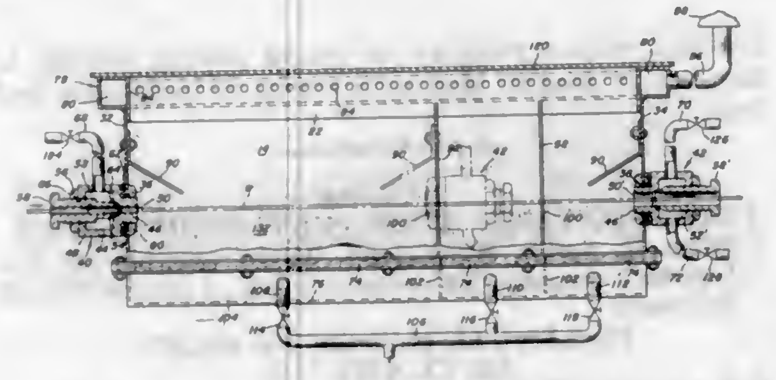


Means to coat a freshly drawn tube wherein a hollow mandrel supports a plug element which cooperates with a die through which the tube is drawn. The hollow mandrel includes an outlet in front of the plug whereby gaseous coating stuff may be delivered into the tube in a direction of movement counter to the tube travel. A heating element is disposed so as to effect thermal decomposition of the delivered coating stuff. Additional means are provided whereby to coat the tube's external surface.

**3,476,081**

### FLUIDIZING CHAMBER

**Walter K. Facer, Parma, and Jane H. M. Rigo, Cleveland, Ohio, assignors to United States Steel Corporation, a corporation of Delaware**
**Filed Mar. 25, 1964, Ser. No. 354,594**
**Int. Cl. B05c** *3/04, 3/132;* **F16j** *15/40*
**U.S. Cl. 118—620** **13 Claims**

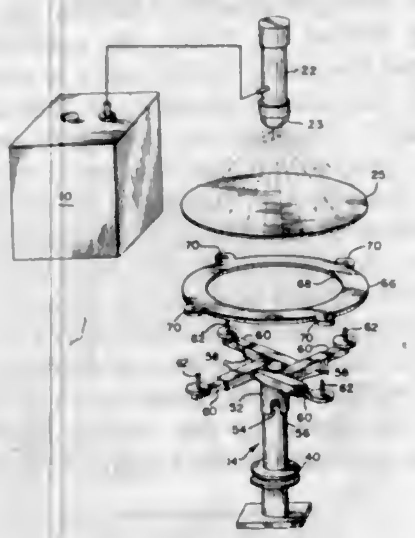


A fluidized bed coating apparatus adapted to treat a substrate of indefinite length passing horizontally therethrough. Vertically arranged compartmentizing walls in the fluidizing chamber. The chamber being sealed by pressurized air-sealing means, through which the substrate passes and which are secured at either the chamber end walls or at a compartmentizing wall whereby to select an effective length of fluidizing chamber. Fluid medium-deflecting plates disposed in said chamber and mounted in close proximity to, but above, the sealed openings of the chamber.

**3,476,082**

### ELECTROSTATIC COATING DEVICE

**Craig H. Cowles, Manitowoc, Wis., assignor to Aluminum Specialty Company, Manitowoc, Wis.**
**Continuation of application Ser. No. 632,314, Apr. 20, 1967. This application Apr. 1, 1968, Ser. No. 717,884**
**Int. Cl. B05b** *5/08*
**U.S. Cl. 118—635** **10 Claims**

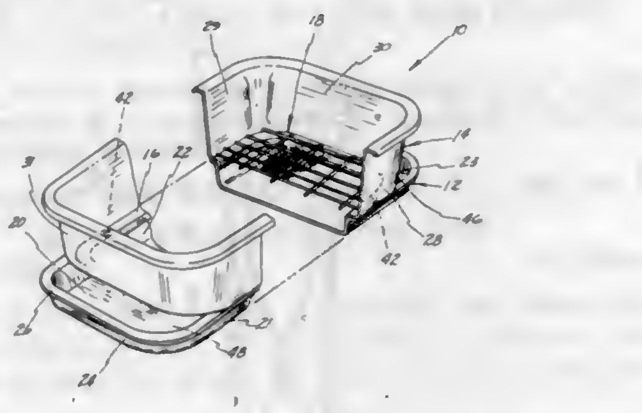


An apparatus for supporting a product blank or shaped form which is to be electrostatically coated with a coating material such that the electrostatic field is maintained constant over the surface of the blank or form. The apparatus includes an adjustable support for carrying different sized mask plates on which the product blanks are placed prior to movement through an electrostatic spray booth.

**3,476,083**

### VENTILATED CAT TOILET

**Edwin Robert Vander Wall, 1235 Peninsula Court, Traverse City, Mich. 49684**
**Filed Nov. 24, 1967, Ser. No. 685,459**
**Int. Cl. A01k** *67/00*
**U.S. Cl. 119—1** **10 Claims**

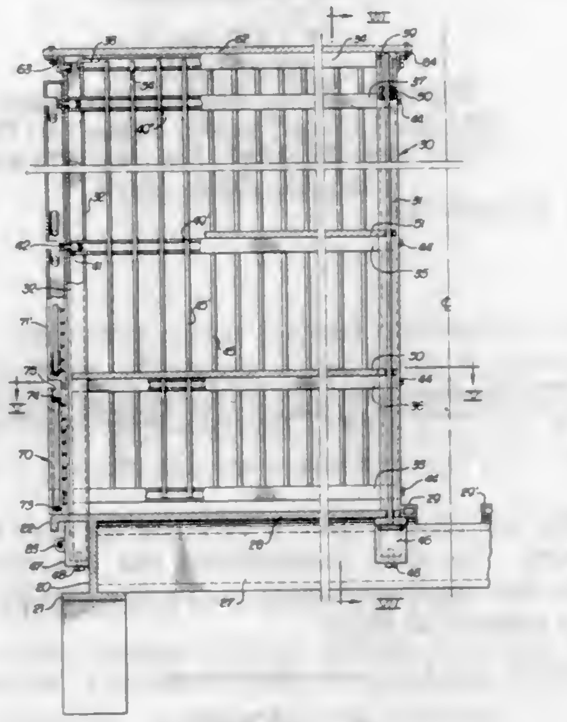


A sanitary receptacle or cat toilet for pets having a lower pan member spaced from an upper open shell member for access for replenishing chemical deodorant material therein. The construction allows for the aeration of the chemical material while permitting the location of a horizontal litter supporting partition adjacent the base of the cat toilet to provide a substantial structure.

**3,476,084**

### LIVE-HAUL POULTRY TRAILER

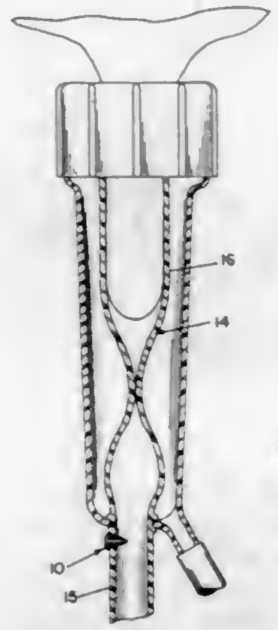
**Abe Nater, 2301 S. Beverly Glen Blvd., Los Angeles, Calif. 90064, and Hugh J. Scarborough, 1401 Carmelita Place, Arcadia, Calif. 91006**
**Filed Jan. 20, 1967, Ser. No. 610,571**
**Int. Cl. B60p** *3/04;* **B62d** *63/06*
**U.S. Cl. 119—12** **10 Claims**



An apparatus for transporting live poultry from poultry ranches to poultry processing plants where resilient wall assemblies on a mobile support confine the poultry with minimum bruising and injury thereto. Vertically extending laterally resilient preferably plastic rods are positioned in a plurality of frame assemblies bolted upright in a plurality of receptacles welded to the mobile support chassis or frame to provide resilient interior walls of a poultry containing rack, the rods being loosely retained in said frame assemblies laterally thereof.

### 3,476,085
### AIR-VENT FOR MILKING INFLATION

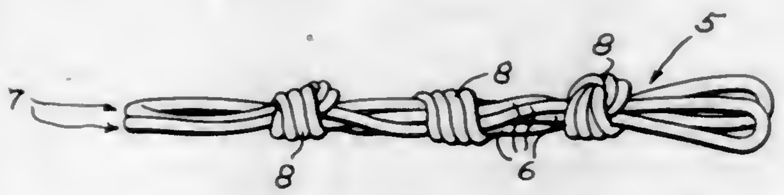
**Daniel O. Noorlander, 5767 N. Bond St.,**
**Fresno, Calif. 93726**
**Filed Dec. 27, 1967, Ser. No. 693,921**
**Int. Cl. A01j** *5/04*
**U.S. Cl. 119—14.36** **4 Claims**



An air-vent comprising a rigid plug having a tapered barrel portion and a transverse flange. The barrel portion is engaged in a hole in the wall of the milk tube portion of an inflation just below the teat receiving cup portion thereof and the flange engages against the outside of the wall. The plug has a port therethrough comprising a number 60–80 standard drill size hole for admitting a metered amount of air into the upper end of the milk tube portion of a milking inflation adjacent the cup portion thereof for pushing milk out of the milk tube portion and preventing excessive pressure from being exerted on the teat orifice.

### 3,476,086
### DOG TOY

**David G. Way, Boxborough, Mass.**
**(R.F.D. 1, West Acton, Mass. 01780)**
**Filed Oct. 25, 1967, Ser. No. 678,020**
**Int. Cl. A01k** *15/00*
**U.S. Cl. 119—29** **8 Claims**

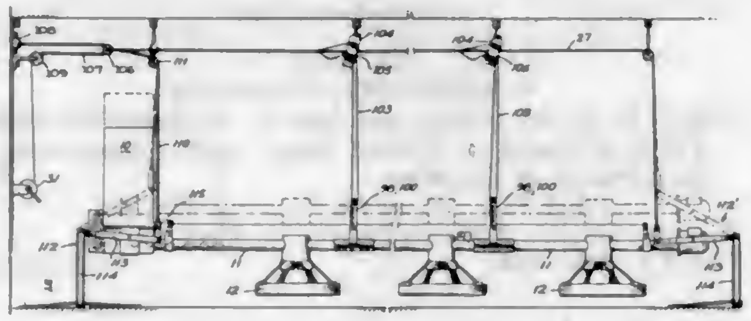


Dog toy formed from a cord-like member resistant to chewing, the cord being coiled and interconnected by knots that are spaced from each other with the coil ends being exposed as loops.

### 3,476,087
### FEEDING DEVICE

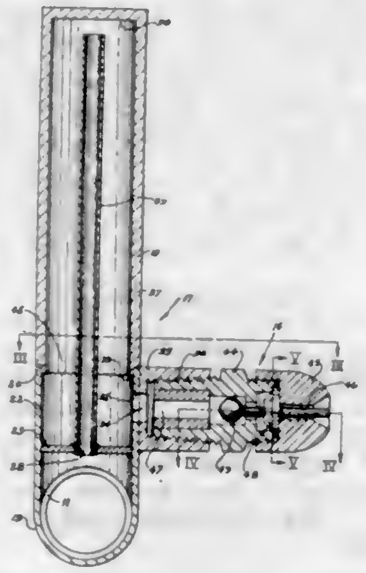
**Robert A. Scott, R.F.D. 5, Richard R. Reese, 535 Baltimore Blvd., and David A. Scott, 257 W. Main St., all of Westminster, Md. 21157**
**Continuation-in-part of application Ser. No. 647,286, May 11, 1967. This application Mar. 5, 1968, Ser. No. 710,503**
**Int. Cl. A01k** *5/00*
**U.S. Cl. 119—52** **3 Claims**

A feeding device having a supply hopper connected to a feed line conveyor of the axially expanding helical auger type. A suspension system including load dividing floor supports for adjustably supporting the device with respect to the ground, and in addition, the feed line is provided with a plurality of spaced feeding stations in the form of feeding pans each having an adjustable feed flow.



### 3,476,088
### CROSS-CONTAMINATION PREVENTION DEVICE

**William R. Smith, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware**
**Filed Sept. 11, 1967, Ser. No. 666,875**
**Int. Cl. A01k** *7/00*
**U.S. Cl. 119—72.5** **8 Claims**

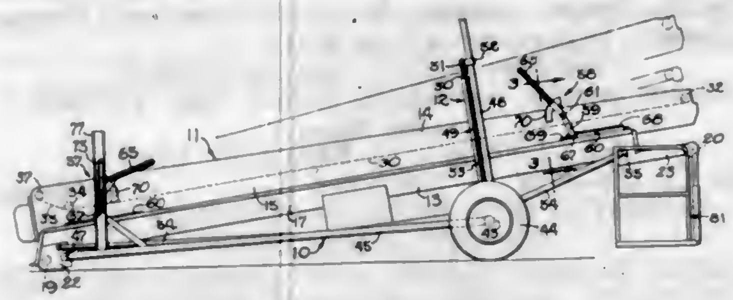


A liquid storage chamber having an outlet near the lower end thereof in which an externally and animal operable and normally closed valve is arranged. A standpipe within the storage chamber is connected to a source of liquid under pressure and the upper end of the storage chamber is filled with a gas. The pressure urging the liquid upwardly through the standpipe is preferably balanced by the pressure of the gas in said chamber when the storage chamber is substantially less than half full and, moreover, when the liquid level in the storage chamber is well below the upper end of the standpipe. Thus, whenever the valve is open, liquid will discharge from the outlet opening and it will be impossible, under normal operating conditions, for the liquid in the storage chamber to return through the standpipe to the supply thereof.

### 3,476,089
### POULTRY LOADING DEVICE

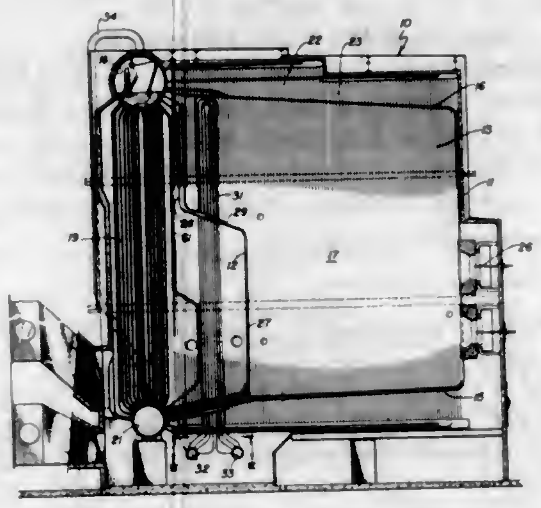
**Wallace H. Jerome, % Jerome Foods, 34 N. 7th St., Barron, Wis. 54812**
**Filed Nov. 17, 1967, Ser. No. 683,836**
**Int. Cl. A01k** *29/00, 45/00;* **B65q** *15/10*
**U.S. Cl. 119—82** **15 Claims**

A poultry loading device having an elongated chute supported in an inclined position on a ground-engaging frame with a pivot at the lower end of the chute and a hoisting mechanism spaced from the pivot to raise and lower the upper end of the chute relative to the frame. The chute is formed by a lower trough of upwardly opening U-shaped cross-section that is pivoted at one end on the frame, and a cover in the form of an inverted U-shaped trough adjustably supported on the lower trough. A conveyor belt on the lower trough carries poultry through the chute while an overhead belt on the upper trough holds the poultry from above, and a central divider maintains two separated rows of poultry in the chute. To vary the height of the passage in the chute, two adjusting devices are spaced apart longitudinally of the chute and include levers pivoted on the sides of the upper trough with follower rollers on the levers engaging upwardly facing tracks on the lower trough to lift or lower the upper trough according to the position of the levers, which are latched releasably in different positions. A pair of vertical guides on opposite sides of the chute engage followers on the upper trough to maintain the ends of the latter in fixed vertical relation with the ends of the lower trough regardless of the spacing of the troughs or the angular position of the chute, and the sidewalls of the troughs terminate short of the upper end to leave side access openings at the upper end of the chute.



### 3,476,090
### STEAM GENERATING UNIT

**Ramsey U. Sheikh, Westboro, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts**
**Continuation of application Ser. No. 663,048, Aug. 24, 1967. This application Dec. 5, 1968, Ser. No. 781,639**
**Int. Cl. F22b** *37/00;* **F22g** *7/14*
**U.S. Cl. 122—478** **6 Claims**



This invention relates to a steam generating unit and, more particularly, to apparatus adapted to produce steam from the hot products of combustion of a fossil fuel, including a combustion chamber having headers which are offset relative to one another and a vertical superheater which is suported against lateral movement by inclined rear wall tubes.

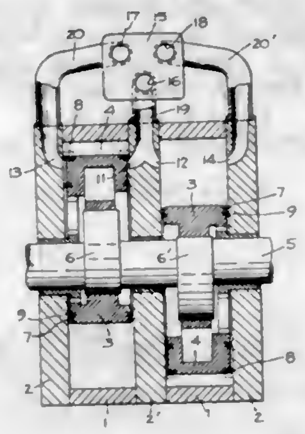
### 3,476,091
### PROCESS FOR CLEANING VALVE IN CRANKCASE VENTILATING SYSTEM AND CLEANING COMPOSITION

**Robert E. Malec, Birmingham, Mich., assignor, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware**
**No Drawing. Filed Sept. 22, 1966, Ser. No. 581,146**
**Int. Cl. F01m** *3/02;* **C10m** *1/20*
**U.S. Cl. 123—1** **4 Claims**

A non-symmetrical ketone is admixed with motor oil whereby, upon use, the ketone volatilizes and then deposits on parts of the motor to dissolve gums and sludges.

### 3,476,092
### MULTI-UNIT ROTARY PISTON INTERNAL COMBUSTION ENGINE

**Kenichi Yamamoto, Hiroshima-shi, Japan, assignor to Toyo Kogyo Company Limited, Hiroshima-ken, Japan**
**Filed Nov. 16, 1967, Ser. No. 683,531**
**Claims priority, application Japan, Nov. 16, 1966, 41/75,683; Nov. 17, 1966, 41/75,879**
**Int. Cl. F02b** *53/04, 55/16*
**U.S. Cl. 123—8** **8 Claims**

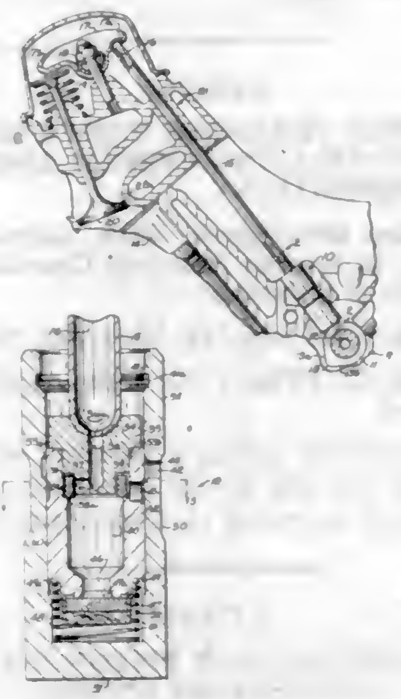


A multi-unit rotary piston internal combustion engine having a multiple carbureting device which is operatively connected to the working chamber of each engine unit through an intake port provided in each end wall of the engine housing to increase the performance of the engine.

### 3,476,093
### HYDRAULIC VALVE LIFTER

**Gerald D. Line, Saginaw, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Oct. 10, 1967, Ser. No. 674,287**
**Int. Cl. F01l** *25/02;* **F16k** *15/00, 17/00*
**U.S. Cl. 123—90** **26 Claims**

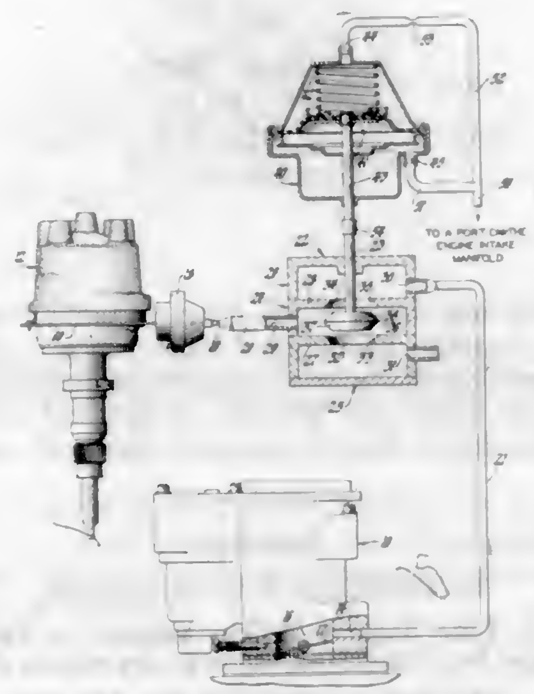
A metering means for a hydraulic valve lifter comprises a metering member operatively associated with the push rod socket member to control the flow of lubricant through a fluid passageway therein from a fluid reservoir within the hydraulic valve lifter. The metering member and the socket member have metering surfaces, which form a metering passageway and which are substantially parallel to the direction of movement of the socket member, and wherein the metering member is moved by changes in fluid pressure acting thereon, in a direction



substantially perpendicular to the direction of reciprocating movement of the lifter.

### 3,476,094
### INTERNAL COMBUSTION ENGINE IGNITION SPARK VACUUM ADVANCE MECHANISM DELAY SYSTEM

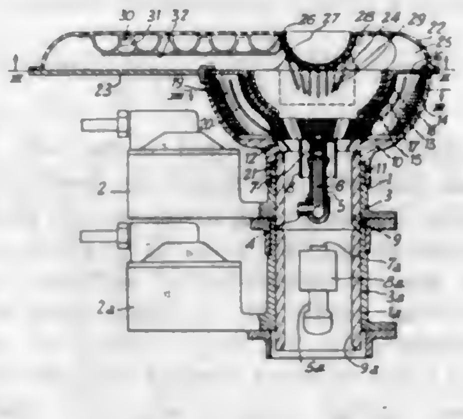
**Erik H. Rucins, Utica, and Robert W. Guernsey, Rochester, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Mar. 13, 1968, Ser. No. 712,649**
**Int. Cl. F02p** *5/10*
**U.S. Cl. 123—117** **3 Claims**



A system for delaying the operation of the ignition spark vacuum advance mechanism of an internal combustion engine in response to a rapid decrease of intake manifold vacuum from any stabilized value. Both sides of the diaphragm of a double acting valve actuator vacuum unit are exposed to the engine intake manifold vacuum through a vacuum line which is divided into two branches, one of which includes an orifice. With conditions of stabilized manifold vacuum, the pressure across the diaphragm is equalized to operate a valve to a first position which provides an open passage therethrough between the spark advance vacuum unit and carburetor spark advance ports. A sudden decrease of manifold vacuum will result in a pressure differential across the diaphragm because of the orifice, consequently, the diaphragm moves in the direction toward the lowest pressure to operate the valve from the first position to a second position which vents the spark advance vacuum unit to atmosphere until the pressure across the diaphragm again equalizes.

### 3,476,095
### METHOD AND MEANS FOR FEEDING INTERNAL COMBUSTION ENGINES

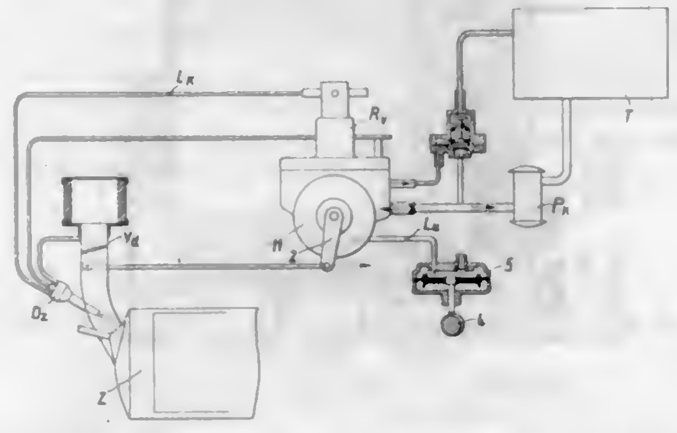
**Leonce Marie Henri Kraffe de Laubarede, Boulogne-sur-Seine, France, assignor to Societe Anonyme Plastus, Geneva, Switzerland, a Swiss firm**
**Filed June 20, 1967, Ser. No. 647,512**
**Claims priority, application France, June 21, 1966, 66,316**
**Int. Cl. F02m** *7/10;* **B03c** *3/30, 3/40*
**U.S. Cl. 123—119** **7 Claims**



A method for improving the yield of an internal combustion engine by applying a dark electrostatic discharge to the fuel-vaporizing stream of air. Said stream is caused to pass at a high speed over glass elements so as to produce by friction thereon static charges adapted to be fed to a system of points extending above the nozzle of a single or double carburetter.

### 3,476,096
### FUEL SUPPLY SYSTEM FOR INTERNAL COMBUSTION ENGINES

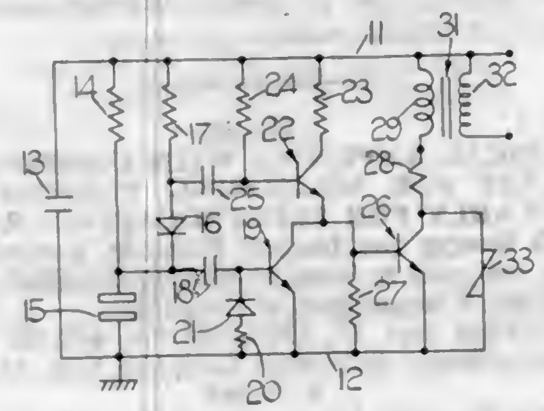
**Gunter Hartel, Braunschweig, Germany, assignor to Professor Dr.-Ing. Kurt Lohner, Braunschweig, Germany**
**Continuation of application Ser. No. 550,511, May 16, 1966. This application Nov. 22, 1968, Ser. No. 781,690**
**Claims priority, application Germany, May 19, 1965, L 50,749**
**Int. Cl. F02d** *1/06;* **F02m** *7/00*
**U.S. Cl. 123—140** **8 Claims**



Fuel supply system for an internal combustion engine includes a control and distribution valve unit having two fuel chambers separated by a membrane and a throttle valve connected between and providing communication between the fuel chambers. A distribution valve is connected to an outlet of one of the chambers and a fuel pump supplies fuel under pressure to the chambers whereby fuel flows out of the outlet and through the distribution valve for distribution to cylinders of the internal combustion engine. Also provided is a space cam operatively engaging the throttle valve for adjusting the opening of the throttle valve, and two actuating mechanisms for adjustably displacing the space cam in direction of a respective dimension thereof, one of the actuating mechanisms being displaced in accordance with an adjusted setting of the inlet air manifold throttle of the internal combustion engine and the other of the actuating mechanisms being a pump operatively connected to the internal combustion engine and driven thereby at a speed depending on the operating conditions thereof.

### 3,476,097
### SPARK IGNITION SYSTEMS FOR INTERNAL COMBUSTION ENGINES

**Nigel John Rushton, Olton, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England**
**Filed Dec. 19, 1967, Ser. No. 691,847**
**Claims priority, application Great Britain, Jan. 23, 1967, 3,329/67**
**Int. Cl. F02n** *3/08*
**U.S. Cl. 123—148** **4 Claims**

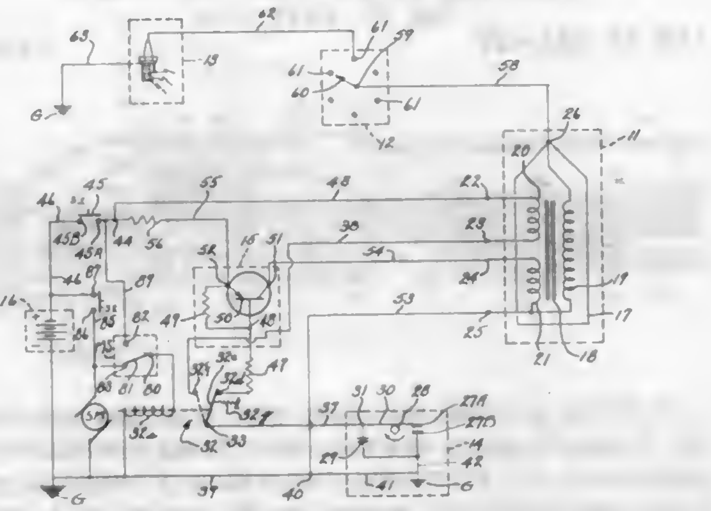


In a spark ignition system for an internal combustion engine, a transistor or other semi-conductor switches connected in series with the primary winding of the ignition coil, abnormally conducts. When the transistor is turned off, a spark is produced in the usual way. The timing is governed by a contact breaker driven by the engine, but instead of producing a spark by turning the transistor off each time the contact breaker either opens or closes, the circuit is so designed that a spark is produced each time the contact breaker opens and each time the contact breaker closes, so that the circuit is very suitable for engines which operate at high rotational speeds.

### 3,476,098
### IGNITION SYSTEM

**Peter Cook, 763 N. Elmwood Ave., Wickliffe, Ohio 44092**
**Continuation-in-part of application Ser. No. 561,993, June 30, 1966. This application May 23, 1968, Ser. No. 731,439**
**Int. Cl. F02m** *17/00;* **F02p** *1/00*
**U.S. Cl. 123—148** **5 Claims**

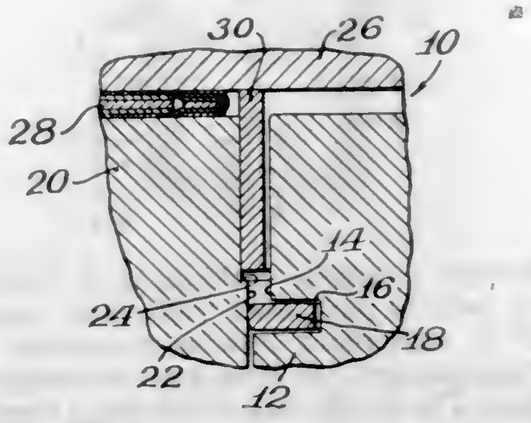
A dual ignition system for providing electrical energy to the fuel igniting means such as a spark plug of an internal combustion engine, and which ignition system comprises a first ignition circuit part which has operating characteristics that are especially applicable to provide energy to the engine while it is being started and a second ignition circuit part which is connected with said first part and which has operating characteristics that are especially



applicable to provide energy to the engine after it is started and during its running interval. Switch means operate to sequentially connect the first circuit part and the second circuit part to the fuel igniting means during the start-up and running intervals respectively for the engine.

### 3,476,099
### HEAD, GASKET, AND PROTECTOR ASSEMBLY AND METHOD

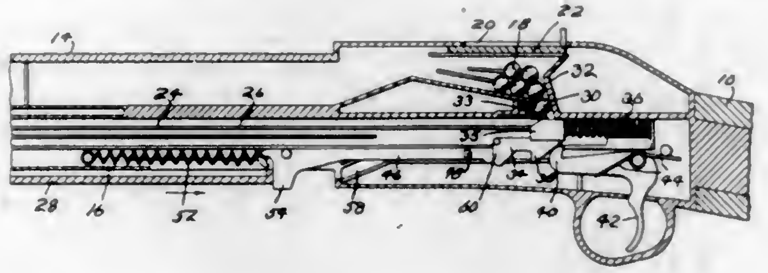
**Norman M. Packard, Des Plaines, and William Lenzi, Western Springs, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware**
**Filed Feb. 26, 1968, Ser. No. 708,394**
**Int. Cl. F02f** *11/00*
**U.S. Cl. 123—193** **18 Claims**



Method of assembly of a head gasket protector with the other related engine parts in their environment of a combustion engine cylinder, and the resulting assembly. The protector is a thin walled metal band forming a fire barrier and, in pre-assembly, the band is press fitted in the mouth of the cylinder bore so as to project endwise beyond the engine cylinder. In final assembly with a cylinder head in place, the latter engages the projecting end of the protector as the head is drawn toward the bore mouth, and the protector is frictionally fixed in the mouth of the bore at a final depth to which the insert is forced by the head, as the head and cylinder are drawn tightly together against an interposed gasket which surrounds the protector and is perforce protected from the flame when combustion takes place in the cylinder.

### 3,476,100
### SPRING ACTUATED PUMP TYPE REPEATING GUN

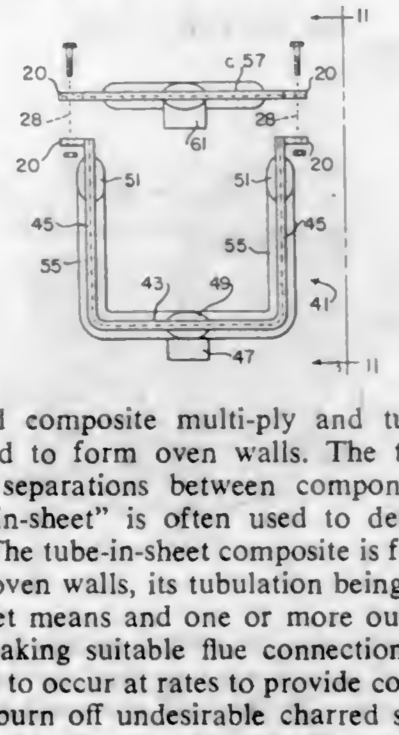
**Rene R. Carbonneau, West Boylston, Mass., assignor to Ray Plastic Inc., Winchendon Springs, Mass., a corporation of Massachusetts**
**Filed Aug. 31, 1966, Ser. No. 576,379**
**Int. Cl. F41b** *7/08*
**U.S. Cl. 124—27** **3 Claims**



A spring actuated toy pump type repeating gun which has a pair of tubes, one tube comprising a magazine for pellets and the other one comprising a barrel through which the pellets are projectible by means of a spring, there being a manually operated slide and a projector element, the spring urging the projector towards impelling position for a pellet, and a chute between the two tubes for the pellets to move down in a single line seriatim by gravity, together with proper trigger means, etc., and means preventing the leading pellet in the magazine from dropping out through the barrel by gravity.

### 3,476,101
### GAS-FIRED OVEN

**John W. Ross, Cumberland, R.I., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**
**Filed Dec. 28, 1967, Ser. No. 694,221**
**Int. Cl. A21b** *1/00;* **F28f** *3/14*
**U.S. Cl. 126—19** **8 Claims**

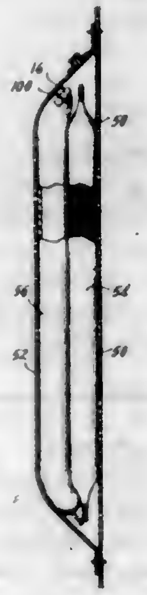


A bonded composite multi-ply and tubulated metal sheet is used to form oven walls. The tubulations are formed by separations between component plies. The term "tube-in-sheet" is often used to designate such a composite. The tube-in-sheet composite is formed to make the desired oven walls, its tubulation being provided with gas-fired inlet means and one or more outlet means, the latter for making suitable flue connections. Combustion is controlled to occur at rates to provide cooking temperatures or to burn off undesirable charred spilled material from the oven walls, so as to make the oven self-cleaning.

### 3,476,102
### THERMAL TRANSFER GARMENT AND THERMAL TRANSFER PACKET THEREFOR

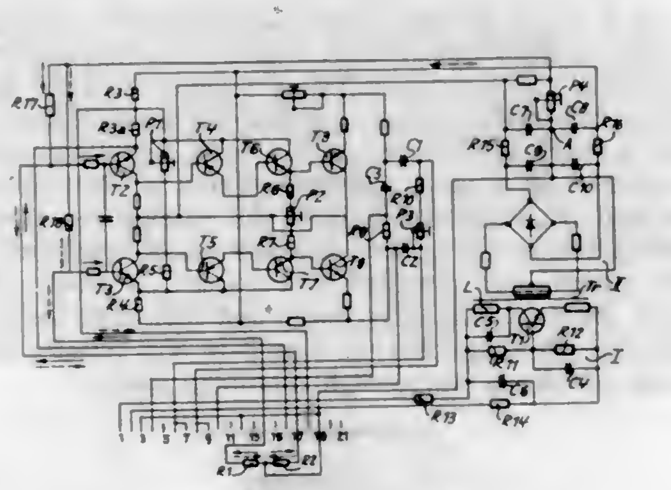
**Stanley J. Sarnoff, 7507 Hampden Lane, Bethesda, Md. 20014**
**Filed Sept. 27, 1967, Ser. No. 670,969**
**Int. Cl. A61f** *7/06*
**U.S. Cl. 126—204** **11 Claims**

A garment with pockets for receiving thermal change creating packets may be provided with a belt or belts at several elevations of the garment to enable good physical contact of the pocket portions of the garment with the body of the wearer. The inner portion of the garment is made of moisture absorbent material and the pockets, or the packets themselves, may be provided with inflatable bladders, so that when the bladders are inflated the packets will be pressed into good thermal transfer contact with the body of the wearer. In lieu of the bladders or in conjunction with them a heat insulative sheet of material may be inserted between an outer wall of the pocket and the packet.



### 3,476,103
### ELECTRICAL AMPLIFIER WITH COMPENSATING CIRCUIT FOR MEASURING PURPOSES, PARTICULARLY FOR ELECTROCARDIOGRAPHS

**Heinrich Stenger and Herbert Wilimzig, Karlsruhe, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany**
**Filed Sept. 15, 1966, Ser. No. 579,755**
**Claims priority, application Germany, Sept. 16, 1965, S 99,465**
**Int. Cl. A61b** *5/04;* **A61n** *1/18;* **H03g** *3/30*
**U.S. Cl. 128—2.06** **5 Claims**



A transistorized electrocardiograph amplifier in which the input is connected in a DC manner with the electrodes and blocking condensers are provided at the amplifier output, the voltage supply of the amplifier including a voltage step-up circuit, being so designed that DC signals greatly exceeding the measuring signal will not overmodulate the amplifier, and the base currents of the transistors of the input stage of the amplifier are compensated by currents derived from the voltage supply by means including a potentiometer.

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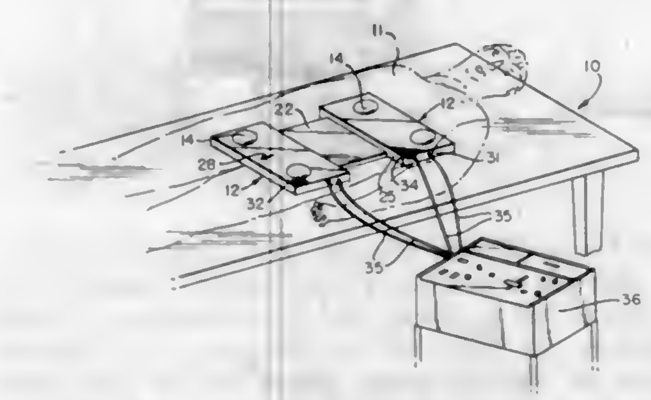
### 3,476,104
### FIXED DORSAL ELECTRODE SYSTEM FOR ELECTROCARDIOGRAPHY

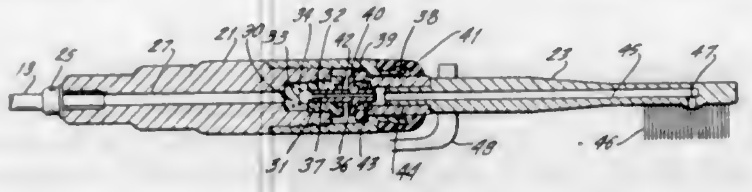
**James B. Davis, 69 Ridgedale Drive, Jackson, Tenn. 38301**
**Filed Aug. 8, 1967, Ser. No. 659,188**
**Int. Cl. A61b** *5/04;* **A61n** *1/04*
**U.S. Cl. 128—2.06** **7 Claims**



The device includes two relatively movable sections, each of which carries a pair of electrodes engageable with opposite sides of the back of a patient lying thereon, the two sections being movable toward and away from each other according to the height of the patient to be properly positioned with respect to the patient, the electrodes being connected to a conventional recording mechanism.

### 3,476,105
### SPRAY GUM MASSAGER

**William L. Abramowitz, 93 Atlantic Ave., Swampscott, Mass. 01907**
**Filed Feb. 23, 1967, Ser. No. 617,933**
**Int. Cl. A61h** *9/00, 13/00;* **A46b** *11/04*
**U.S. Cl. 128—65** **3 Claims**

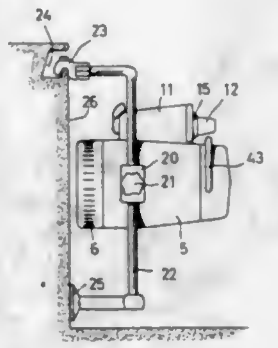


A device for cleaning and massaging teeth and gums having a treating element for directing a controlled flow of pressurized fluid upon the teeth and gums. A refillable container for water or a medicated cleansing fluid is connected to a pump which imparts pressure to the fluid. The pressurized flow of fluid is then directed to a hand-held, toothbrush-like instrument, through the head of which the fluid flows to impinge upon the teeth and/or gums. The fluid flow out of the opening is controlled by an omni-directional valve which opens responsive to pressure of the toothbrush-like instrument against the teeth or gums.

### 3,476,106
### DEVICE FOR PRODUCING WATER STREAMS IN SWIMMING POOLS

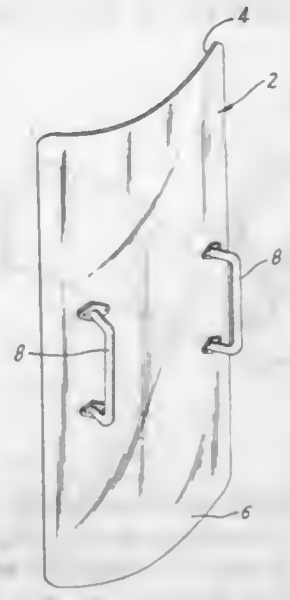
**Ernst Ritz and Rudolf Brazel, Schwab. Gmund, Germany, assignors to Ritz-Motorenbau KG, a firm of Germany**
**Filed Feb. 20, 1968, Ser. No. 706,845**
**Claims priority, application Germany, Feb. 25, 1967, R 45,399**
**Int. Cl. A61h** *9/00*
**U.S. Cl. 128—66** **13 Claims**

A device for producing a water stream in a swimming pool. An underwater electric motors means is operatively connected with a pump means to drive the latter, and this pump means has a suction inlet and a pressure outlet and forms a unitary structure with the motor means. A watertight housing means enclosures this unitary structure and carries at its exterior a suction strainer which covers the suction inlet of the pump means. A connecting means is connected to and communicates with the pressure outlet of the pump means, and a nozzle is connected by this connecting means to the pressure outlet of the pump means, so that when this assembly is situated beneath the surface of the liquid in a swimming pool, a jet will issue from the nozzle providing a predetermined water stream in the pool.



### 3,476,107
### IMMOBILIZATION SHIELD

**Albert R. Matt, Jr., Wethersfield, and Richard M. Steinert, Somers, Conn., assignors to Rowland, Products, Incorporated, Kensington, Conn., a corporation of Connecticut**
**Filed Jan. 6, 1967, Ser. No. 607,800**
**Int. Cl. A61f** *13/00;* **A41d** *13/00*
**U.S. Cl. 128—133** **5 Claims**

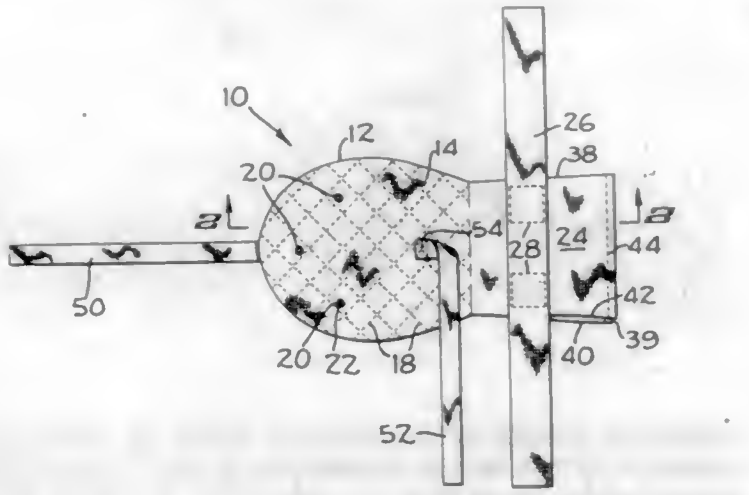


A shield has a transparent member of non-rectilinear transverse cross-section forming a hollow in one surface and holding means on the other surface of the transparent member. The transparent member is made of a relatively high impact-resistant plastic material, and is used for immobilizing individuals by pressing them in the hollow against some cooperating surface while providing body protection for the user.

### 3,476,108
### HAND RESTRAINT

**Antanas G. Matukas, Soquel, Calif.**
**(901 Ocean Ave., 310, Santa Monica, Calif. 90403)**
**Filed Jan. 20, 1967, Ser. No. 610,665**
**Int. Cl. A61f** *13/10, 5/37*
**U.S. Cl. 128—133** **4 Claims**

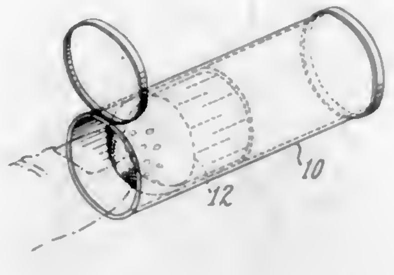
A flexible mitt having a pocket to receive the extended hand of a patient, with a first tape fastened to the mitt in the mid-fingertip area while a second tape is fastened to the area medial to the thenar eminence. The mitt folds with the patient's hand into fist shape and the first and



second tapes are tied together maintaining the hand in position of function. Thus, hand activity is limited without discomfort or developing stiffness in the hand.

### 3,476,109
### FINGERTIP BANDAGES

**William P. Hurney, 167 Oak St., Needham, Mass. 02192**
**Filed July 17, 1967, Ser. No. 653,880**
**Int. Cl. A61f** *13/10, 5/30, 5/10*
**U.S. Cl. 128—157** **6 Claims**

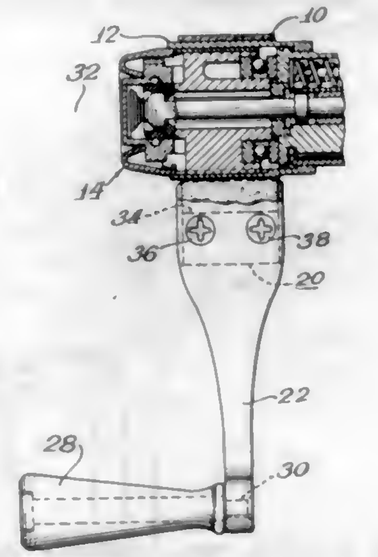


A prepackaged fingertip bandage which is mounted in inside-out condition in a package and is removably secured to the interior of the package by adhesive which, when the bandage is turned right-side-out by the insertion of a finger through the end of the package, holds the bandage on the finger, the tip-engaging portion of the bandage having a layer of gauze thereon. The package may be in the form of a substantially rigid tube or may be collapsed into a substantially flat form.

### 3,476,110
### CRANK FOR LOADING HYPODERMIC JET INJECTOR

**Gilbert I. Yahner, East Detroit, Mich., assignor to R. P. Scherer Corporation, a corporation of Michigan**
**Filed Nov. 13, 1967, Ser. No. 681,988**
**Int. Cl. A61m** *11/06;* **B66c** *1/10*
**U.S. Cl. 128—173** **3 Claims**

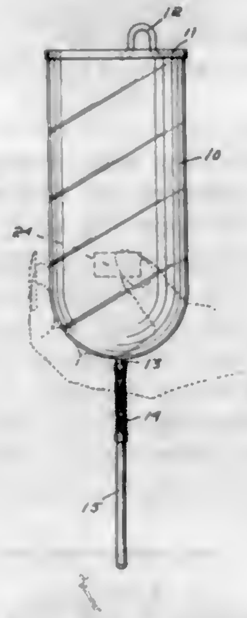
A crank for attachment to a hypodermic jet injector which may be rotated to compress the dosage driving means of the injector. The crank includes a flexible belt which wraps around a rotatable sleeve on the jet injector. The ends of the belt are inserted in a slot at the end of a



rigid arm. A handle at the end of the arm opposite the slot is manually gripped for simultaneous rotation of the crank and the jet injector sleeve.

### 3,476,111
### DISPOSABLE SYRINGE

**James M. Matheson, 10 Pierce Ave., Portland, Maine 04112**
**Filed June 20, 1967, Ser. No. 647,532**
**Int. Cl. A61m** *3/00;* **B67d** *5/06;* **B65d** *85/08*
**U.S. Cl. 128—227** **3 Claims**



A disposable syringe includes a corrugated conduit extensible from two to sixteen inches interconnecting a container and a rigid elongated nozzle. The corrugated conduit and container are made of a plastic or paper which is sufficiently waterproof for a single use. The container when filled is self supporting so that it may be held in the palm of the user's hand with the corrugated conduit extending between two digits of the user's hand. For storage in an envelope, the container may be folded to produce longitudinal side channels and the conduit may be reversely bent so that the nozzle may be positioned in one of the side channels.

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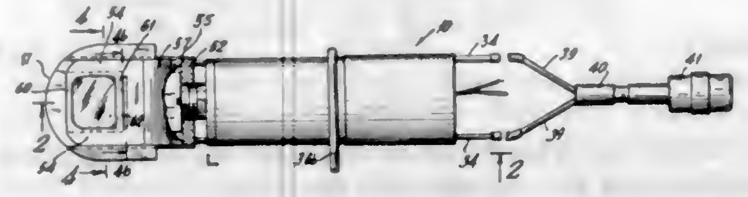
### 3,476,112
### SURGICAL INSTRUMENT FOR REMOVAL OF THIN LAYERS

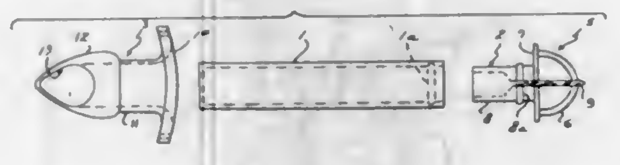
**Jacob K. Elstein, 670 E. Lincoln Ave., Mount Vernon, N.Y. 10552**
**Filed Dec. 5, 1966, Ser. No. 599,310**
**Int. Cl. A61b** *17/32;* **B26b** *7/02*
**U.S. Cl. 128—305** **20 Claims**



This instrument is for shaving thin layers of cornea or other tissues. The instrument comprises a guide, a head slidable longitudinal on the guide, a flat blade with a straight edge, mounted on the head for reciprocation transversely of the guide, means slidable on said guide with said head, to reciprocate the blade, and means on the guide, formed with an opening to receive a portion of the eye to be shaved as the head moves and the blade sweeps across said opening while it is being reciprocated.

### 3,476,113
### POCKET-SIZED CRICO-THYROTOMY SET

**John J. Tarsitano, Rantoul, Ill. (USAF Hospital Chanute, Box 72, Chanute Air Force Base, Ill. 61866)**
**Filed Aug. 24, 1967, Ser. No. 663,176**
**Int. Cl. A61b** *17/32, 19/02, 17/24*
**U.S. Cl. 128—305** **8 Claims**



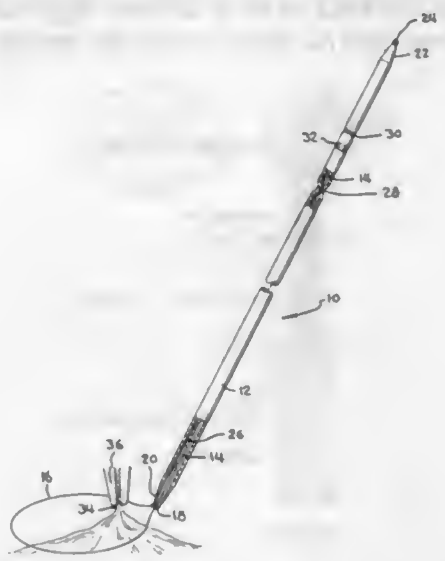
A needle-knife assembly for forming an emergency breathing opening in the crico-thyroid membrane of the neck of a patient is releasably attached to one end of a common, plastic hollow squeeze tube syringe handle containing a supply of anesthesia in solution with a vasoconstrictor. This needle-knife assembly includes a knife blade bisected by a hollow hypodermic needle that communicates with the interior of the syringe handle and is initially used to inject the solution of anethesia and vasoconstrictor contained therein into the tissues of the neck. With the needle portion retained in position, the knife blade is subsequently guided to make a correctly oriented incision at the crico-thyroid membrane to thereby form the emergency breathing opening.

A throat-button having an airway improved to provide increased air flow therethrough and being removably attached to the opposite end of the common syringe handle is inserted in the emergency opening formed by the needle-knife assembly to thereby ensure sustained emergency breathing of the patient.

### 3,476,114
### LIGATING IMPLEMENT

**Suel Grant Shannon and Norwood Claude Graeff, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.**
**Continuation-in-part of application Ser. No. 506,692, Nov. 8, 1965. This application Jan. 10, 1967, Ser. No. 608,421**
**Int. Cl. A61b** *17/12;* **A61f** *13/10*
**U.S. Cl. 128—326** **4 Claims**

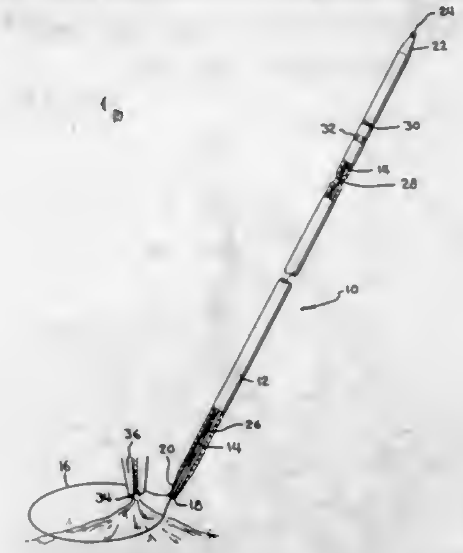
An elongated instrument for use in effecting a tying operation comprising a tubular body member through which an elongated ligature extends. An apertured disc threadably receives the ligature and serves as a one way



knot for a ligature noose which is controlled by means of the tubular member.

### 3,476,115
### LIGATING IMPLEMENT WITH LIGATURE SEVERING MEANS

**Norwood Claude Graeff and Suel Grant Shannon, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.**
**Continuation-in-part of application Ser. No. 608,421, Jan. 10, 1967. This application Apr. 15, 1968, Ser. No. 721,222**
**Int. Cl. A61b** *17/12;* **A61f** *13/10*
**U.S. Cl. 128—326** **2 Claims**

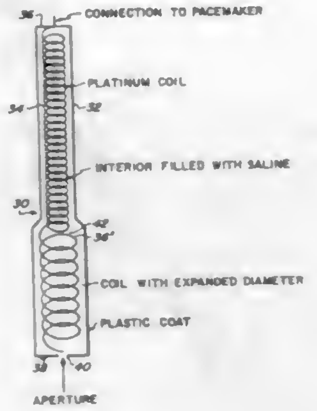


Apparatus for use in tying objects located in relatively inaccessible positions comprising an elongated tubular body member, a length of thread extending through the body member and terminating at one end in a noose, a disc carried by the thread and severing means on the tubular body member to prevent overstressing of the locking disc during tightening of the noose.

### 3,476,116
### NONPOLARIZING ELECTRODE FOR PHYSIOLOGICAL STIMULATION

**Victor Parsonnet, 113 Sagamore Road, Millburn, N.J. 07041; George H. Myers, 190 Wyoming Ave., Maplewood, N.J. 07040; and Gerhard Lewin, 21 Yale Terrace, West Orange, N.J. 07052**
**Filed Nov. 9, 1967, Ser. No. 681,872**
**Int. Cl. A61n** *1/04, 1/36*
**U.S. Cl. 128—417** **14 Claims**

A nonpolarizing electrode for physiological stimulation having a large area electrode, preferably greater than one cm.$^2$ placed in a housing filled with a saline solution and having only a single hole in contact with the heart tissue to be stimulated, which hole is extremely small, approximately .5 mm.$^2$ in area so as to achieve high current densities at the tissue and to thus exceed the threshold voltage



of the tissue to be stimulated while maintaining low polarizing voltages at the electrode and thus prevent heavy energy dissipation at the electrode. The electrode has biphasic excitation so as to minimize the total charge in the system.

### 3,476,117
### CAPACITOR DISCHARGE MEDICAL STIMULATOR

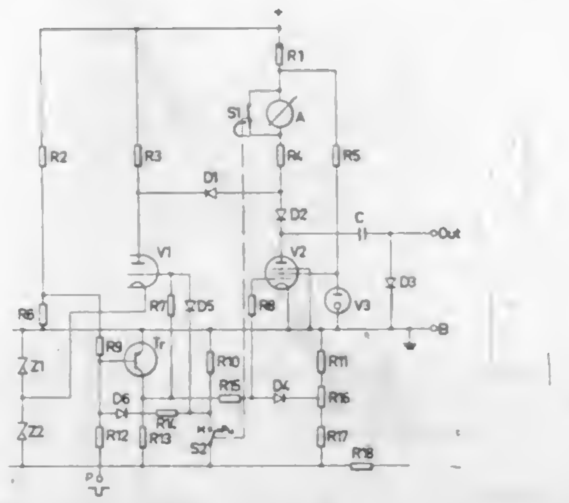
**Sune Otto Gunnar Jonsson, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden**

**Filed Oct. 18, 1965, Ser. No. 497,382**

**Claims priority, application Sweden, Oct. 26, 1964, 12,891/64**

**Int. Cl. A61h** *23/00;* **A61n** *1/32*

**U.S. Cl. 128—421** **11 Claims**



A medical stimulator supplies current pulses from a controllably discharged capacitor to a body member such as a tooth. The capacitor is charged from a voltage source via a resistor and a rectifier. The capacitor is discharged by closing a circuit via a pulse actuated pentode wherein the circuit includes the capacitor and the body member.

### 3,476,118
### METHOD OF INFLUENCING TOBACCO SMOKE AROMA

**Werner Richard Gotthard Luttich, Willersweg 34F, Hamburg-Langenhorn, Germany**

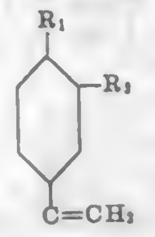
**No Drawing. Filed Feb. 27, 1967, Ser. No. 619,058**

**Claims priority, application Germany, Mar. 5, 1966, R 42,755**

**Int. Cl. A24b** *3/12, 15/00*

**U.S. Cl. 131—143** **6 Claims**

A method of influencing the smoke flavor or aroma of tobacco by adding to the unsmoked tobacco a flavoring compound having the general formula



in which $R_1$ is hydroxy or methoxy, $R_2$ is hydroxy or methoxy, or $R_1$—$R_2$ represent the group

$$—O—CH_2—O—$$

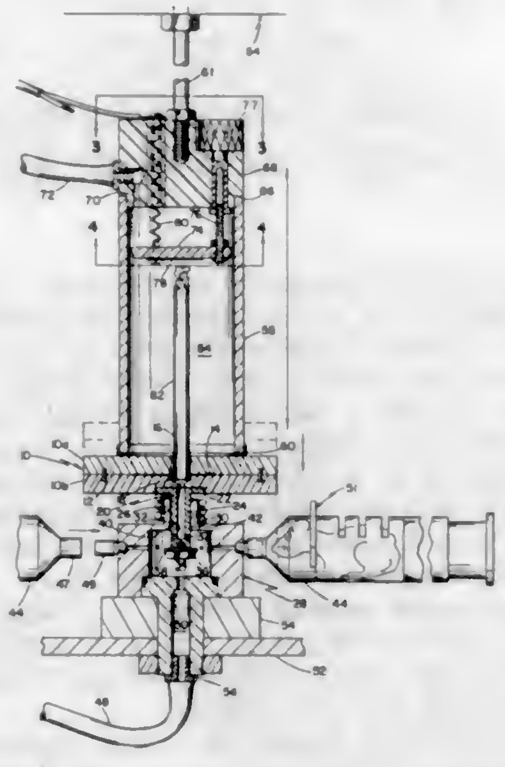
### 3,476,119
### SMOKING MACHINE

**Richard Rhodes Walton, Boston, Mass., assignor to Council for Tobacco Research-U.S.A., New York, N.Y., an unincorporated committee**

**Filed Nov. 2, 1967, Ser. No. 680,236**

**Int. Cl. A24f** *47/00, 13/04, 13/02*

**U.S. Cl. 131—171** **10 Claims**



A laboratory machine for administering fresh mainstream cigarette smoke to the skin, lungs or other organs of animals on a controlled basis and simulating conditions of cigarette smoking in which the cigarette is held in a smoking chamber which is opened and closed by raising and lowering a cover. Air is supplied under pressure to the closed chamber and passes down through the cigarette to a mixing chamber to mix with diluting air supplied in controlled volume. A manifold provides smoke passages from the mixing chamber to one or more animal-holding stations. Smoke to the mixing chamber is controlled by a valve which is actuated by reciprocal movement in unison of the cover and the base on which it rests. A timer opens and closes the smoking chamber, controls the diluting air, and directs purging air into the mixing chamber at the desired intervals.

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### 3,476,120
### CIGARETTE FILTER TOW

**John E. Kiefer and George P. Touey, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Continuation of application Ser. No. 509,463, Oct. 18, 1965, which is a division of application Ser. No. 215,534, Aug. 8, 1962, now Patent No. 3,227,791, dated Jan. 4, 1966. This application Dec. 11, 1968, Ser. No. 785,038**

**Int. Cl. A24d** *1/06;* **A24c** *5/48, 5/50*

**U.S. Cl. 131—267** **1 Claim**

A tobacco smoke filter and a filter tow product therefore which comprises continuous filaments containing dispersed therewithin a polyalkylene glycol. Said filter being especially useful in that channels of unimpinging smoke passing through the filter are substantially eliminated and phenol removal from said smoke is substantially increased. The tow being further characterized in that the polyalkylene glycol is substantially homogeneously incorporated within and on the continuous filter filaments.

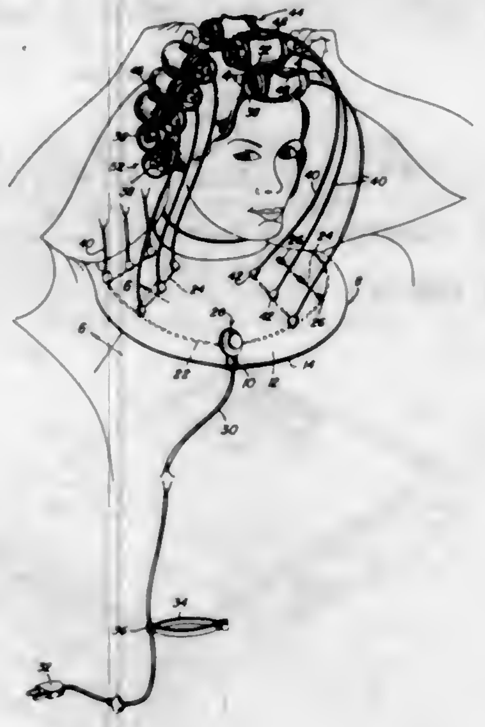
### 3,476,121
### ELECTRIC HAIR DRYER

**Norman G. Foley, Rte. 1, Box 14, Matoaka, W. Va. 24736**

**Filed June 6, 1967, Ser. No. 643,918**

**Int. Cl. A45d** *20/00*

**U.S. Cl. 132—9** **6 Claims**



A hair dryer light in weight, requiring no motor or fan, noiseless and economical. It employs at least one conventional bouffant-type roller normally used for styling one's hairdo. A novel electrical heating element slips into and is detachably clipped on the roller. It has a current delivery wire electrically connected with a main feeding distributing wire embedded in a broad shoulder-supported collar having a master controllable switch. A long extension cord is connected to the switch.

### 3,476,122
### HAIRPIECE

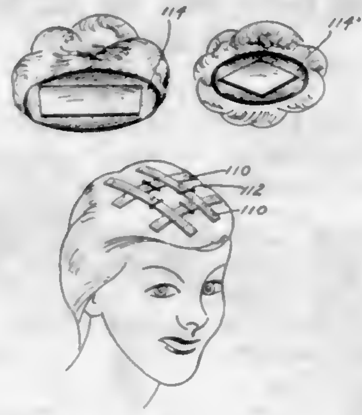
**Attilio Zaupa, 240 E. 55th St., New York, N.Y. 10021**

**Continuation-in-part of application Ser. No. 342,367, Feb. 4, 1964. This application Nov. 29, 1967, Ser. No. 686,510**

**Int. Cl. A41g** *3/00, 5/00*

**U.S. Cl. 132—53** **10 Claims**

Wigs utilizing Velcro stripping. A strip of Velcro is secured to the head of a user and adheres to a mating strip attached to the base of the wigs. The wig may come in different sections which are detachably adhered to



each other by Velcro stripping. The wig may be built of preshaped form covered with contoured Velcro stripping in which hair is intertwined.

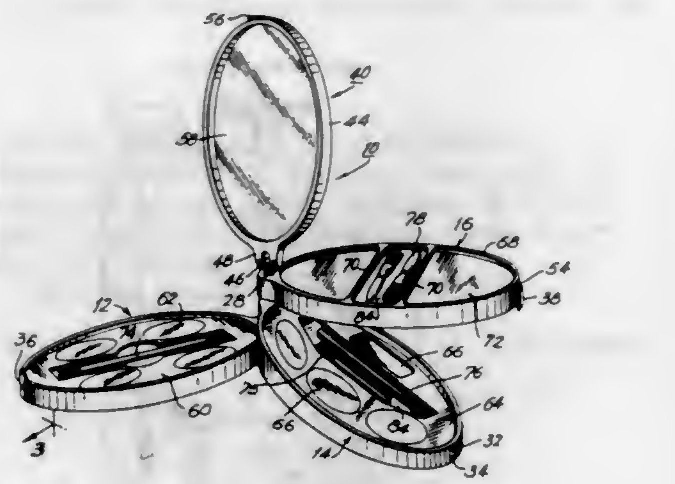
### 3,476,123
### COSMETIC CONTAINER WITH SINGLE POST ROTATABLE MOUNTING FOR PLURAL TRAYS AND BALL SWIVEL MOUNT FOR MIRRORED LID FOR THE TOP TRAY

**Martha A. Flax, Bayside, N.Y., assignor to Clairol Incorporated, New York, N.Y., a corporation of Delaware**

**Filed May 22, 1967, Ser. No. 639,968**

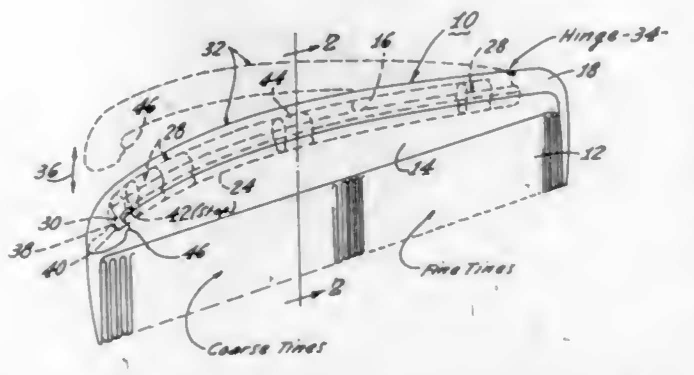
**Int. Cl. A45d** *40/00*

**U.S. Cl. 132—79** **2 Claims**



A cosmetic kit composed of several shallow open-topped trays pivotally secured to one another for relative rotation into and out of mutual stacked positions about a single post adjacent and parallel to the sides of the trays. The top tray is selectively covered by a lid. The lid is swiveledly mounted on a ball which is an upward extension of the single post. The swivel mounting prevents lateral rocking of the lid. A mirror is fixed to the undersurface of the top wall of the lid. Each tray contains solid cosmetics and one or more applicators to aid in placing such cosmetics on a person's face. The applicators are secured to the bottom walls of the trays by "Velcro" fabric couplings.

### 3,476,124
### CARTRIDGE HOLDING HAIR GROOMING DEVICE
**Douglas Gordon Campbell, 4807 Sawtelle Blvd., Culver City, Calif. 90230**
**Filed Jan. 8, 1968, Ser. No. 696,342**
**Int. Cl. A45d** *24/00*
**U.S. Cl. 132—147** **9 Claims**



A hair grooming device, such as a comb, the back of which may be hingedly opened to define a chamber adapted to receive rupturable cartridges containing a hair grooming substance, in combination with such cartridges.

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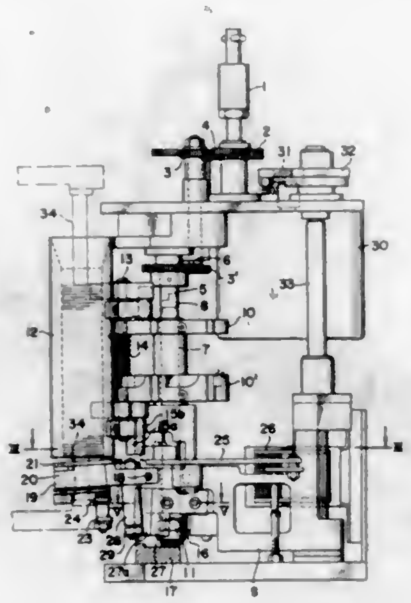
### 3,476,125
### COIN STACKING APPARATUS FOR A COIN WRAPPING MACHINE
**Isamu Uchida, Shigeru Miyayama, and Kenkihi Watanabe, Tokyo, and Kyoichi Osako, Kanagawa-ken, Japan, assignors to Tenshin Mancounting Machine Co. (Tenshin Kabei Keisanki Kabushiki Kaisha), Tokyo, Japan**
**Filed Feb. 16, 1968, Ser. No. 705,992**
**Claims priority, application Japan, Feb. 25, 1967, 42/11,886**
**Int. Cl. G07d** *9/06*
**U.S. Cl. 133—1** **2 Claims**



Coin stacking apparatus which comprises a plurality of coin stacking cylinder assemblies one for each type of coin and each comprising a pair of cylinder halves each of which has an elongate concavity of semicircular cross section arranged in such a manner as to form a cylindrical cavity when the cylinder halves are confronting each other, the cylindrical cavity of each of said coin stacking cylinder assemblies being substantially a true circle in cross section having a diameter slightly larger than that of the corresponding coin and said coin stacking cylinder assemblies being selectively moved into a coin stacking position.

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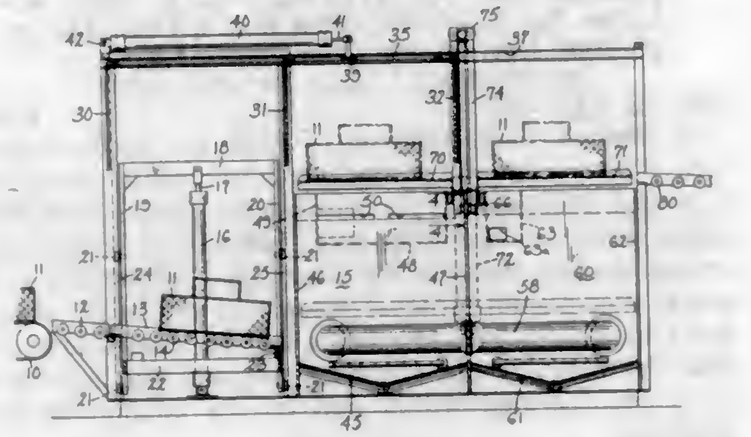
### 3,476,126
### MATERIAL HANDLING APPARATUS
**Newell W. Pinkham, 2 Elm Road, Cromwell, Conn. 06416**
**Filed Jan. 16, 1967, Ser. No. 609,621**
**Int. Cl. B08b** *3/06*
**U.S. Cl. 134—60** **10 Claims**



An apparatus for washing industrial parts, chips, or high-value scrap, or any similar materials. Additionally, the apparatus can be used for coating, plating, or mixing of materials. The apparatus includes a conveyor for supporting a basket, an elevator for raising the basket to position above a washing tank. Indexing mechanism is also provided for transferring the basket onto a second elevator which then lowers the basket into the tank. Thereafter the basket is agitated while in the tank and, after a predetermined time interval, is raised out of the tank.

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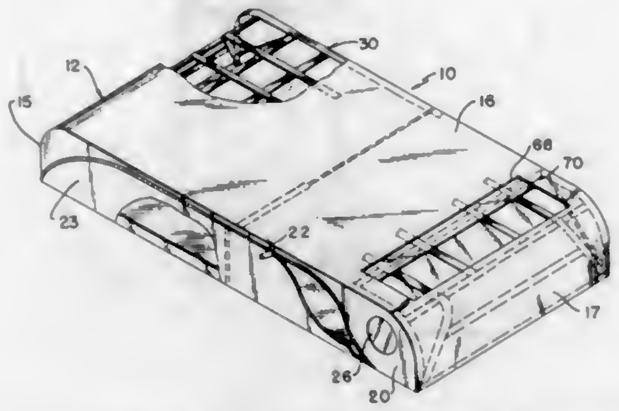
### 3,476,127
### PORTABLE ROLL UP TENT
**Charles W. Holt, 1053 59th St., Oakland, Calif. 94608**
**Filed Dec. 13, 1967, Ser. No. 690,264**
**Int. Cl. A45f** *1/00*
**U.S. Cl. 135—1** **5 Claims**



A portable roll up tent including a fabric envelope and a resilient frame which supports the envelope, during use, in a distended position in which an enclosure is provided which is large enough for a person to sleep, rest or reside with a degree of freedom not permitted by conventional sleeping bags or the like. The envelope, with frame in position, is capable of being rolled into a compact roll for transportation and storage.

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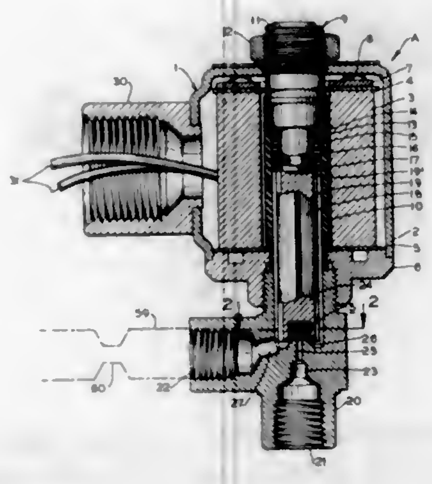
### 3,476,128
### PULSED SOLENOID FORCE BALANCE DEVICE
**George E. Barker, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 412,921, Nov. 23, 1964. This application May 24, 1965, Ser. No. 458,244**
**Int. Cl. F16k** *31/04*
**U.S. Cl. 137—1** **19 Claims**

A force balance device which employs a pulsed-solenoid control valve capable of modulating control action by varying the voltage to the solenoid coil of the valve. By controlling the firing angle of consecutive pulses to the solenoid coil, the amplitude of vibration of the valve plunger is controlled, which in turn controls fluid flow through the valve. The firing angle is adjusted in response to a measured physical variable such as liquid level. A large pressure differential is maintained across the valve seat so that the force urging the valve plunger to a flow position is large in comparison to the other forces acting upon the valve plunger. A fixed discharge located in a downstream position creates an internal feedback across the valve which improves flow stability. This force balance device is capable of being used as a pressure transducer.



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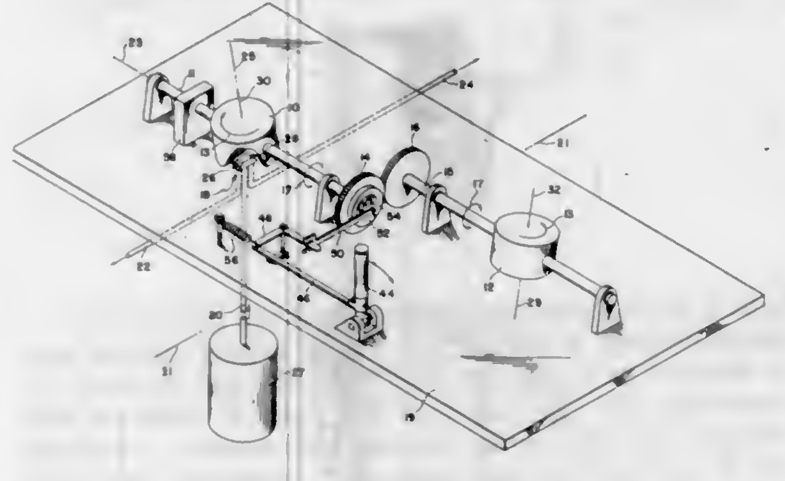
### 3,476,129
### STABILIZATION-ORIENTATION SYSTEM
**Reynold V. Halstenberg, Palos Verdes, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware**
**Filed Sept. 28, 1965, Ser. No. 490,796**
**Int. Cl. G01c** *19/02, 19/06;* **B64c** *17/06*
**U.S. Cl. 137—38** **15 Claims**



This invention relates to a system for both stabilizing and orienting a body in space; and more particularly to a simple lightweight arrangement using gyroscopes and reaction jets, and no electronic circuitry. A pair of gyroscopes are coupled together to form an angular-momentum-exchange system; and those forces tending to rotate the body, instead cause the gyroscopes to approach or separate from each other. Thus, rather than having the body rotate, the gyroscopes move in an angular-momentum-exchange manner. In this way, they stabilize the body on which they are mounted.

Since the gyroscopes can achieve only a finite amount of stabilization, they tend to become "saturated"; but, before this point, they actuate a triggering arrangement that turns on a "torquer," such as a reaction jet. The torquer is oriented to continue the stabilizing operation; and eventually rotates the body in the opposite direction—thus de-saturating the gyroscopes, de-actuating the torquer, and returning the system to a quiescent state.

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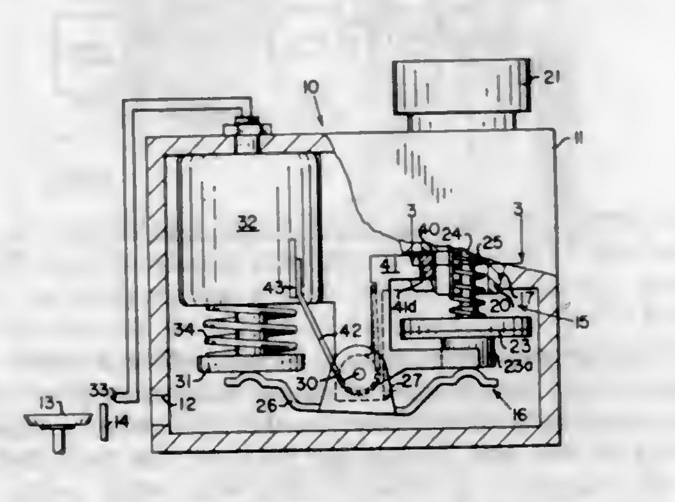
### 3,476,130
### FUEL VALVES WITH SAFETY LATCHING MEANS
**Cornelis S. J. Kingma, Emmen, Netherlands, assignor to Honeywell G.m.b.H., Frankfurt-Main, Germany, a corporation of Germany**
**Filed Jan. 24, 1966, Ser. No. 522,615**
**Claims priority, application Germany, Mar. 27, 1965, H 55,613; May 15, 1965, H 56,042**
**Int. Cl. F23d** *5/16;* **F16k** *51/00;* **F23q** *9/08*
**U.S. Cl. 137—66** **2 Claims**



A fuel valve including a rotatable plug valve and a thermocouple operated safety valve in series flow relationship and having a latch cooperating with the plug valve so that when the plug valve is returned from an "on" position to a position between the "on" and "off" positions but wherein the fuel flow may be insufficient to support combustion at a burner controlled by the valve and thereby cause the flame at such burner to be extinguished, it cannot again be turned toward the "on" position until the safety valve closes and thereby disables the latch.

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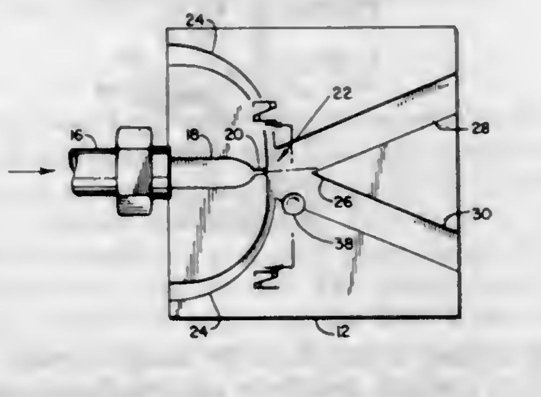
### 3,476,131
### SWIRL INPUT FLUID AMPLIFIER
**Bartholomew J. Davison, Windsor, and Aldo A. Peracchio, Wapping, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Apr. 28, 1966, Ser. No. 545,996**
**Int. Cl. F15c** *1/16*
**U.S. Cl. 137—81.5** **8 Claims**



A fluid control device wherein an angular rate sensor is combined with a fluidic amplifier, the rate sensor providing or generating a rotational fluid stream which is injected substantially tangentially to the power stream in the interaction chamber of the device.

### 3,476,132

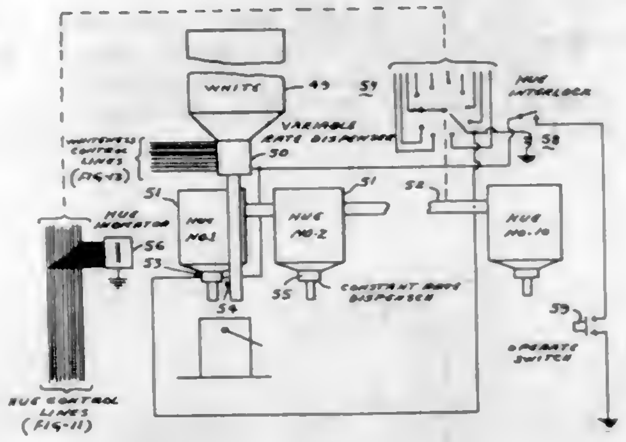
## COLOR MATCHING SYSTEM INCORPORATING COLOR ANALYZER

**Radames K. H. Gebel, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force**

**Original application Mar. 29, 1965, Ser. No. 443,722, now Patent No. 3,330,904. Divided and this application Apr. 21, 1967, Ser. No. 634,054**

**Int. Cl. G01d** *11/00;* **G01j** *3/46*

**U.S. Cl. 137—93** **1 Claim**



A color matching system incorporating a color analyzer which determines the chromaticity of a given color, or the position of the color in the CIE color triangle, in terms of hue and saturation. Paint of the indicated hue is the mixed at a constant rate with white paint at a rate corresponding to the saturation to produce a paint mixture matching the given color.

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### 3,476,133

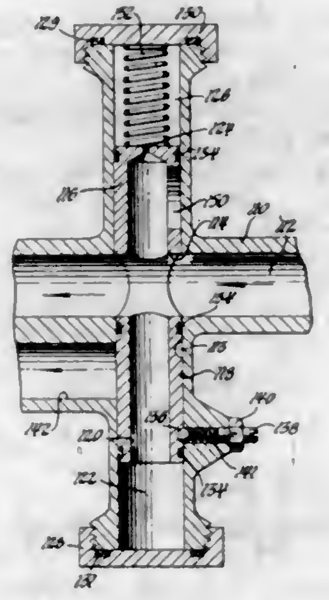
## VALVE OPERATED BY RATE OF FLUID PRESSURE CHANGE

**Rowland L. Stedfeld, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Nov. 25, 1966, Ser. No. 596,928**

**Int. Cl. G05b** *11/60;* **F16k** *17/04, 31/12*

**U.S. Cl. 137—115** **3 Claims**



Valves having a reciprocable valve member disposed between two pressure chambers one supplied from a source of fluid under pressure through a relatively open passage and the other supplied through a restricted passage so that the valve responds to rapid changes in the pressure. The valve may be restrained in one position by a shear member or by an impositive detent, and may be spring biased.

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### 3,476,134

## PRESSURE REGULATING VALVES

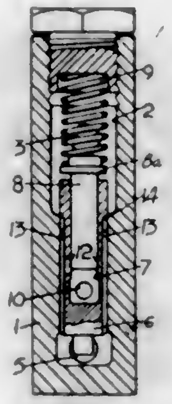
**Kenneth Albert Walters Kemp, Ealing, London, England, assignor to C.A.V. Limited, London, England**

**Filed Dec. 26, 1963, Ser. No. 333,521**

**Claims priority, application Great Britain, Jan. 14, 1963, 1,537/63**

**Int. Cl. F16k** *11/00;* **G05d** *11/03*

**U.S. Cl. 137—115** **3 Claims**



The object of this invention is to provide in a convenient form a pressure regulating valve whereby a fluid pressure can be maintained automatically at a substantially constant predetermined proportion of the pressure of the source from which it is derived.

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### 3,476,135

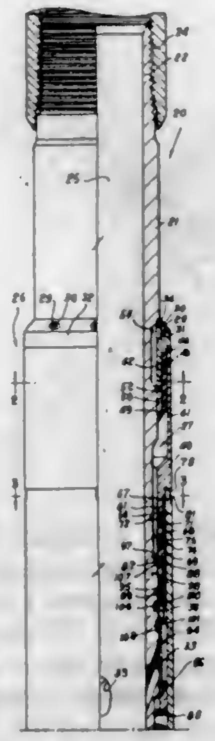
## GAS LIFT VALVE

**Carlos R. Canalizo, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware**

**Continuation-in-part of application Ser. No. 577,389, Sept. 6, 1966. This application May 22, 1967, Ser. No. 640,283**

**Int. Cl. F04f** *1/08*

**U.S. Cl. 137—155** **16 Claims**



A valve which is connectable in a flow conductor, such as a string of well tubing, for controlling injection of gas from the exterior of the valve into the string of tubing to facilitate production of well fluids through the string of tubing.

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### 3,476,136

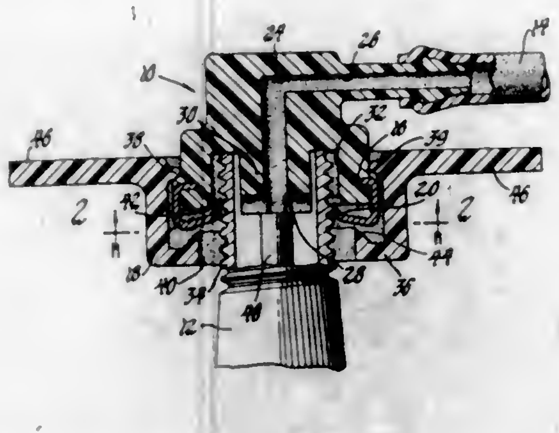
## HOSE AND VALVE STEM CONNECTOR

**Thomas W. Weisgerber, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Jan. 4, 1968, Ser. No. 695,630**

**Int. Cl. F16l** *37/28;* **F16k** *15/20*

**U.S. Cl. 137—231** **7 Claims**



A hose and tire valve stem connector having resilient fingers releasably engaging the threads of the stem as the sole means for holding the connector in its functional position and its parts being relatively movable in the direction of the stem axis for quickly engaging or releasing the connector from those threads and also simultaneously opening or closing the valve in the stem.

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### 3,476,137

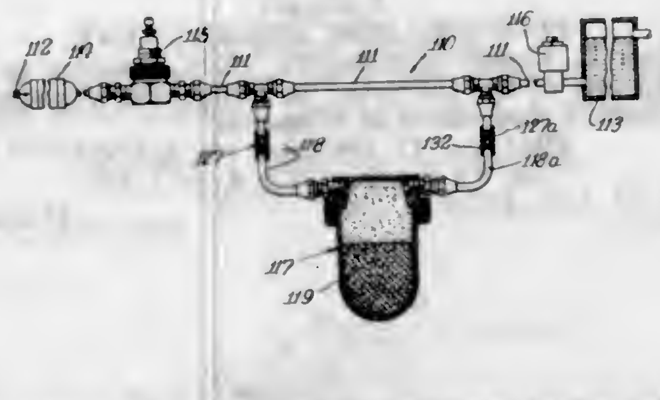
## CONTROLLED CHEMICAL FEEDER WITH ANTIDIFFUSION MEANS

**David C. Eisendrath, Chicago, Ill., assignor to Cory Corporation, a corporation of Delaware**

**Filed Sept. 15, 1967, Ser. No. 668,084**

**Int. Cl. B01f** *1/00;* **A01c** *23/00*

**U.S. Cl. 137—268** **11 Claims**



A controlled chemical feeder apparatus having a fluid flow passage and a device for feeding a small quantity of chemical into the fluid flow passage as an incident of flow of fluid through the flow passage. The apparatus includes a downstream shut-off valve, and structure for preventing diffusion of the chemical into the fluid in the flow passage when the valve is closed.

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### 3,476,138

## VALVE WITH STOP AND WASHOUT

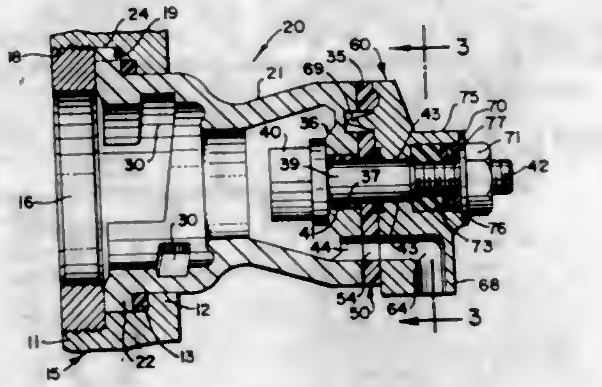
**R. Ellsworth Doremus, Clifton, and Richard E. Doremus, Upper Montclair, N.J., assignors to Golden Gate Manufacturing Company, Clifton, N.J., a corporation of New Jersey**

**Filed Apr. 26, 1966, Ser. No. 545,364**

**Int. Cl. F16k** *43/00, 51/00;* **F16l** *5/00*

**U.S. Cl. 137—323** **11 Claims**

A valve for dispensing liquid contents from a container in which the valve has an outlet port in its body and a rotatable valve member with a flow passage, the valve member being rotatable from a first to a second position by less than 180° to bring its flow passage into alignment with the body outlet port when in said first position and close off the outlet port when in said second position. Cooperating means are also provided on the valve member and the body to limit the rotation of the valve member, the cooperating means also ensuring that the valve member is properly oriented on the body so that the outlet port is opened and closed when the valve is rotated from the first to the second position. In one form of the invention the cooperating means comprise a mating groove and projection. In a preferred embodiment of the invention where an extension is provided on the valve member, the groove provides a washout passage for the extension when the valve is in the second (closed) position.



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### 3,476,139

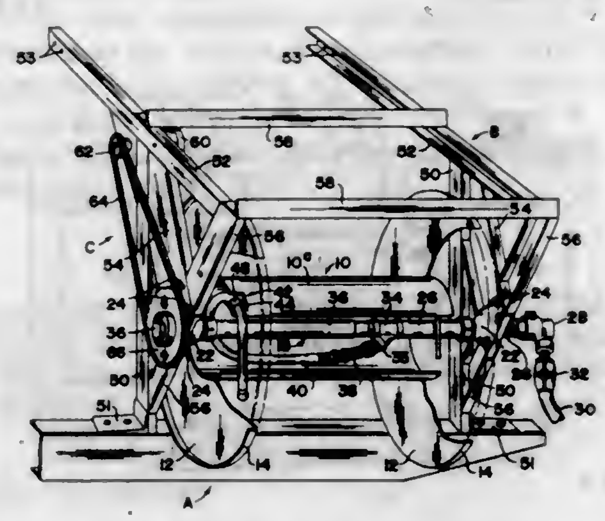
## HOSE WINDING REEL

**Kenneth R. Guthrie, Bedford Heights, Ohio, assignor to AAA Pipe Cleaning Corporation, Cleveland, Ohio, a corporation of Ohio**

**Filed June 30, 1967, Ser. No. 650,433**

**Int. Cl. F16l** *3/16;* **B65h** *75/00*

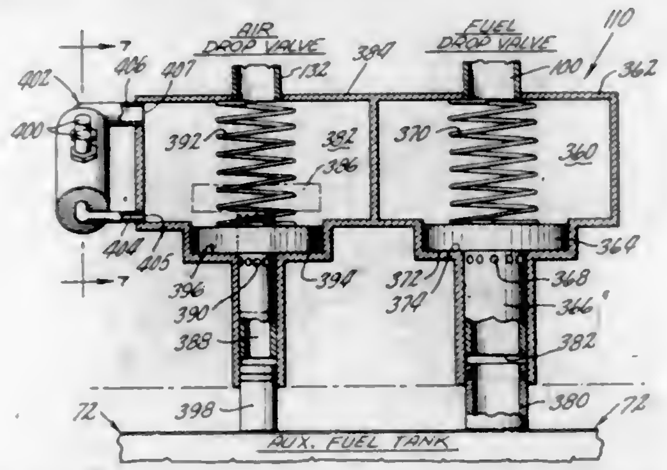
**U.S. Cl. 137—355.16** **8 Claims**



An improved hose winding reel assembly of the type including an elongated cylindrical winding member mounted for rotation about its longitudinal axis on a shaft which defines a channel for supplying fluid from a first point outside the member to a second point inside the member and adjacent one end thereof. The improvement includes improved means for supplying the fluid from the second point to the outer surface of the winding member. These improved means include an outlet opening at the second point facing toward the opposite end of the member, and a flexible hose connected to the outlet and extending in a generally spiral fashion within the member to the opposite end where it exits through an opening in the member.

### 3,476,140
### FLUID TANK SHUT-OFF VALVE AND ACTUATION SYSTEM

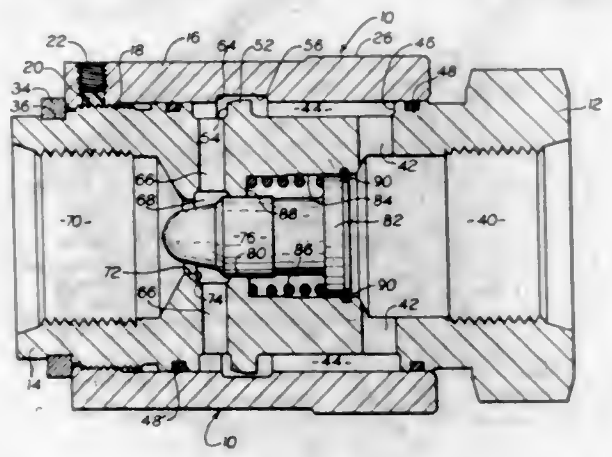
**Stanley J. Jusyk, Southport, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Apr. 3, 1967, Ser. No. 628,013**
**Int. Cl. B67d** *3/00, 5/04, 5/34*
**U.S. Cl. 137—392** **24 Claims**



A conduit or chamber through which tank air is discharged during the fluid tank filling operation and including a bypass sampling line connected to the air discharge conduit or chamber shaped to define a minimum velocity, laminar discharge airflow area therewithin and including temperautre sensitive thermistors located in the low velocity flow region of the bypass sampling line and actuatable to shut off a valve in the fluid intake line to the fluid tank when the tank is filled and the initial overflow fluid contacts the thermistors.

### 3,476,141
### FLUID FLOW FUSE

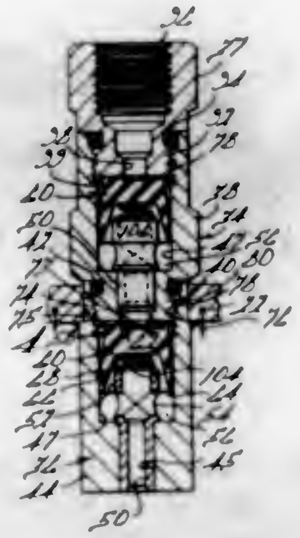
**Alfred Tillman, Mount Tabor, N.J., assignor to Marotta Valve Corporation, Boonton, N.J., a corporation of New Jersey**
**Filed Jan. 13, 1967, Ser. No. 609,147**
**Int. Cl. F16k** *31/36*
**U.S. Cl. 137—498** **12 Claims**



The disclosure relates to an in-line fluid flow fuse which closes a flow passage when the flow through the fuse exceeds a predetermined rate. The fuse has a restricted flow passage upstream from a port that is opened and closed by a valve element, and the valve element is urged toward open position by a spring. A chamber in the housing, upstream from the restricted portion of the flow passage, has a movable wall such as a piston, exposed to the fluid pressure ahead of the restriction and connected with the valve element for closing the valve element when the pressure drop across the restriction exceeds a given value. This pressure drop is a function of the flow rate. A sleeve on the outside of the housing can be rotated to change the cross section of the restriction and thus adjust the fuse to operate at different flow rates.

### 3,476,142
### MULTIPLE CHECK VALVE

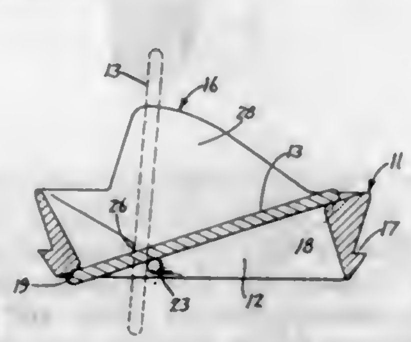
**Wilfred R. Schultz, Troy, Mich., assignor, by mesne assignments, to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Sept. 16, 1966, Ser. No. 579,891**
**Int. Cl. F16k** *15/14, 17/00, 21/04*
**U.S. Cl. 137—512** **1 Claim**



A double check valve unit for a carbonator apparatus which is supplied with water and $CO_2$ gas, said double check valve unit comprising: a first valve body, a first check valve positioned in said first valve body, a second valve body and a second check valve positioned in said second valve body, and structure for removably mounting the first valve body and second valve body in upper and lower relationship relative to each other, that is, one mounted above the other, whereby in applications requiring only a single check valve unit the upper valve body and its accompanying check valve may be removed from the unit.

### 3,476,143
### PIVOTING DISC HEART VALVE

**Robert L. Kaster, Minneapolis, Minn., assignor to The Regents of the University of Minnesota, Minneapolis, Minn., a corporation of Minnesota**
**Filed Apr. 17, 1967, Ser. No. 631,322**
**Int. Cl. A16k** *17/12;* **A61f** *1/22*
**U.S. Cl. 137—527.8** **21 Claims**



A one-way mechanical heart valve comprising a base having a passage allowing liquid to flow through the valve. A disc located within the passage pivots about a chordal axis to an open position and a closed position relative to a seat on the inside of the base. In one form the seat includes an inclined upper arcuate seat and an inclined lower arcuate seat circumventing the passage. In another form, the seat is an annular portion of the internal annular wall which is engaged by the periphery of the disc. Two pairs of circumferentially spaced pivot projections provided for the pivoting of the disc about a cordial axis of the disc. Retaining means in the form of curved side ears or a center strut hold the disc in assembled relation with the base.

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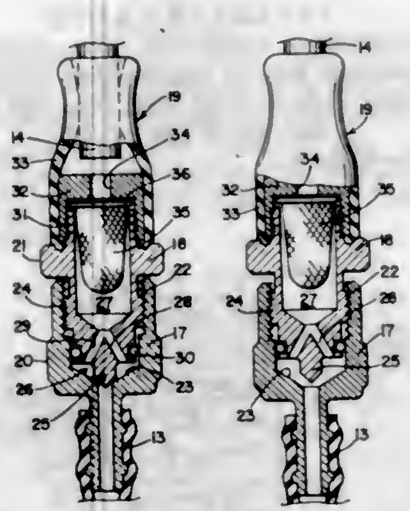
### 3,476,144
### SALIVA EJECTOR SHUT-OFF DEVICE FOR DENTAL UNITS

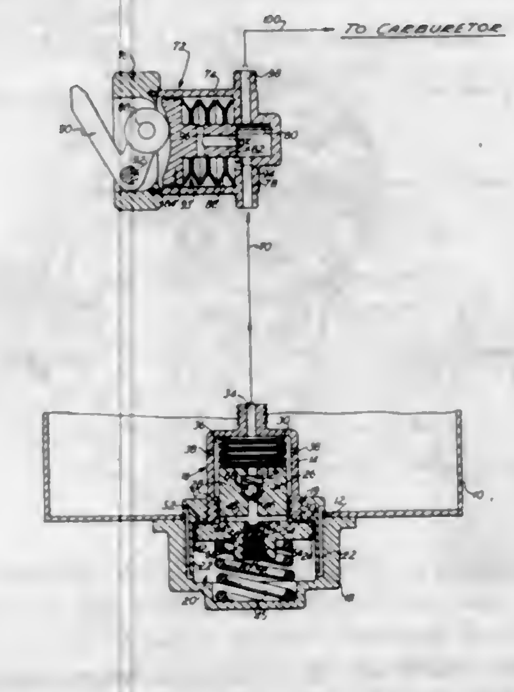
**John D. Krantz, Inglewood, Calif., assignor to Coastal Dynamics Corporation, a corporation of California**
**Filed Feb. 2, 1968, Ser. No. 702,679**
**Int. Cl. F16k** *31/00;* **A61c** *17/04*
**U.S. Cl. 137—544** **1 Claim**



A shut-off device is provided for insertion between a suction hose and the conventional saliva ejector tube positioned in a patient's mouth. The device comprises a valve member having an interior valve seat and a valve body threaded to the valve member and including a valve head for seating on the seat upon threading of the members together. The valve body includes a reduced diameter portion for receiving one end of the suction hose normally receiving the saliva ejector mouthpiece. The valve member in turn includes a nipple portion for receiving the end of the mouthpiece normally receiving the suction hose. Threading or unthreading of the members thus provides a very convenient control of suction for the saliva ejector.

### 3,476,145
### FUEL PUMP SYSTEM

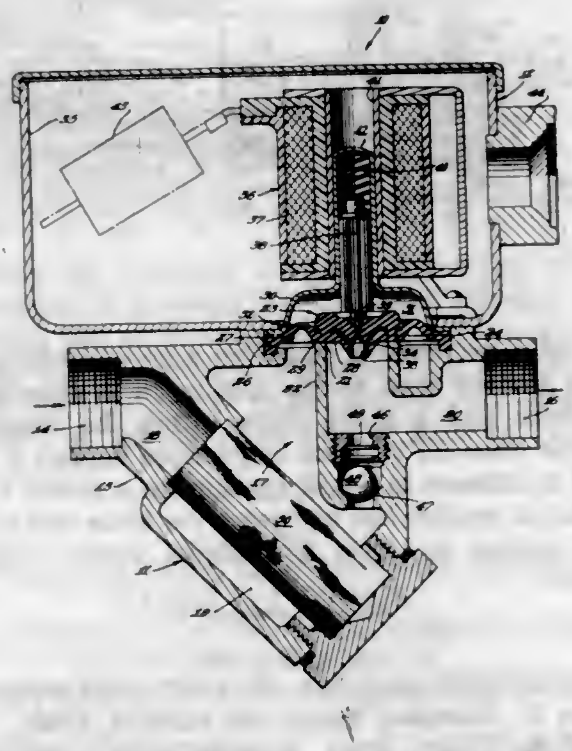
**Tom H. Thompson, Dearborn Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Dec. 4, 1967, Ser. No. 687,516**
**Int. Cl. F04f** *7/00*
**U.S. Cl. 137—565** **1 Claim**



An engine camshaft reciprocated fuel pressure generator intermittently supplies a fuel pressure pulse through a line to a fuel pump piston submerged in the fuel in a motor vehicle fuel tank, the pulse moving the piston to fill a chamber in the piston, the fuel in the chamber subsequently being displaced back into the supply line to not only return the pulse generator to its initial position, but supply fuel to an inlet line; the pump piston containing a number of one-way check valves permitting the above action.

### 3,476,146
### ANTI-KNOCK FLOW VALVE

**Paul A. Dolter, Roselle, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois**
**Filed Feb. 10, 1967, Ser. No. 615,160**
**Int. Cl. F17d** *3/00;* **F16k** *31/08, 17/04*
**U.S. Cl. 137—599** **2 Claims**



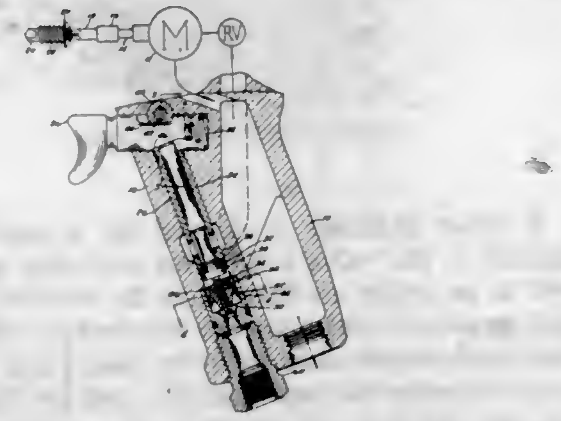
For use with a liquid-carrying conduit, an apparatus for eliminating "water hammer" due to the formation of high intensity pressure shock waves when the flow of the liquid is rapidly stopped.

A relief valve comprising a spring-loaded ball check is connected to the conduit for momentarily relieving the instantaneous high pressure of the liquid which occurs upon rapid flow stoppage.

A fast-acting solenoid operated shut-off valve which includes such a relief valve.

### 3,476,147
### TWO-STAGE CONTROL THROTTLE MECHANISM

**Otis D. Hitt and R Stanford Short, Bryan, Ohio, assignors to The Aro Corporation, Bryan, Ohio, a corporation of Delaware**
**Filed Feb. 21, 1966, Ser. No. 529,126**
**Int. Cl. F16k** *1/54, 1/52*
**U.S. Cl. 137—614.14** **5 Claims**



A two-stage control throttle mechanism for motor-driven screw drivers and the like permits initial maximum flow of power to the motor for overcoming inertia, and upon further depression of a control trigger permits throttling to a lower speed controlled by the position of the trigger, so that the motor can stall at low power, thereby providing a predetermined torque at the final position of the screw.

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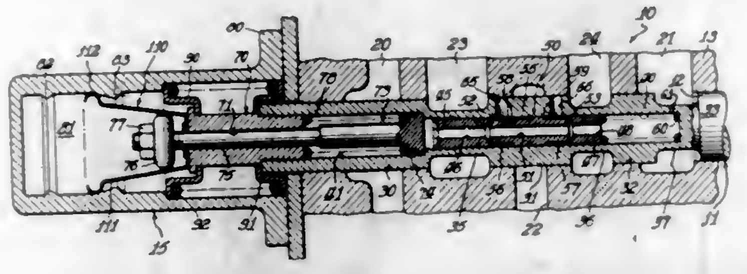
### 3,476,148
### VALVE DETENT MECHANISM

**Kenneth G. McMillen, Wolcottville, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**
**Filed June 5, 1967, Ser. No. 643,544**
**Int. Cl. F16k** *15/18, 31/143*
**U.S. Cl. 137—624.27** **11 Claims**



A valve mechanism including a spool having a detent means thereon with means creating a predetermined detent force and a relief valve within the manual valve movable upon an increase of pressure beyond a predetermined maximum to admit pressure to a piston to actuate said detent mechanism to release the force and allow centering springs to move the manual valve to its neutral position.

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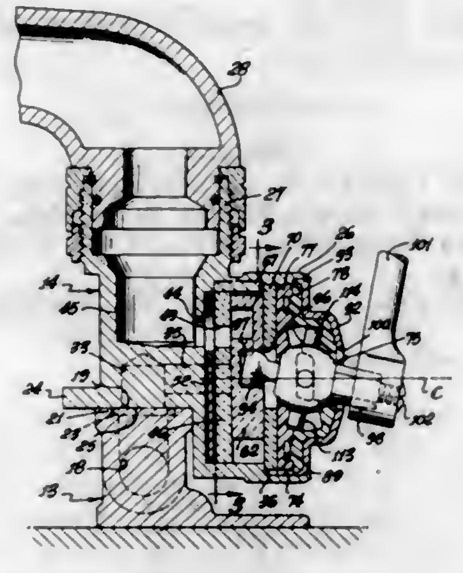
### 3,476,149
### SINGLE-HANDLED VALVE STRUCTURE

**Reinert F. Dornaus, South San Gabriel, Calif., assignor to Price-Pfister Brass Manufacturing Company, Los Angeles, Calif., a corporation of California**
**Original application July 2, 1963, Ser. No. 292,306, now Patent No. 3,324,884, dated June 13, 1967. Divided and this application Apr. 10, 1967, Ser. No. 675,721**
**Int. Cl. F16k** *19/00, 11/14*
**U.S. Cl. 137—625.4** **1 Claim**



A valve chamber is defined by a cup-shaped recess formed in the valve body. Hot and cold water inlets as well as an outlet are formed in the bottom of the cup. A seat member is fitted in the cup and providing ports respectively registerable with the inlets and outlet. Interposed between the seat member and the bottom wall of the cup are O-rings supported by a retainer thinner than the O-rings. The O-rings for the inlets describe areas substantially greater than the areas of the corresponding ports whereby fluid pressure is exerted upon the seat member when the valve is off. This arrangement causes the seat member to follow any movement of the valve plate which moves across the seat member on the opposite side. The effectiveness of the seal is made largely independent of wear.

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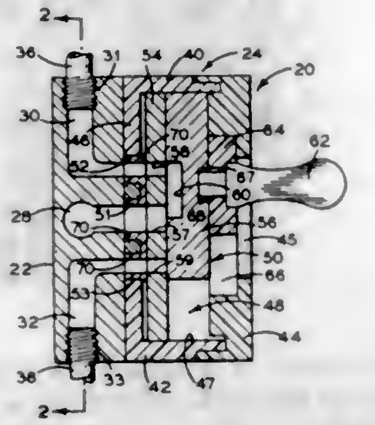
### 3,476,150
### DIVERTER VALVE

**Henry J. Loewenthal, Louisville, Ky., assignor to American Standard Inc., a corporation of Delaware**
**Filed Feb. 4, 1966, Ser. No. 525,161**
**Int. Cl. F16k** *11/06*
**U.S. Cl. 137—625.11** **15 Claims**



A diverter valve for use in a water supply pipe system for diverting water to one of several outlets comprising a manifold member adapted to be installed in the water supply system; the manifold member having a main water supply inlet pasageway and a pair of outlet passageways; a valving means detachably connected to the manifold member for selectively diverting water from the main inlet passageway to either one of the outlet passageways; and means for detachably connecting the valving means to the manifold member whereby the valving means can be readily removed or replaced to enhance the maintenance and repair thereof.

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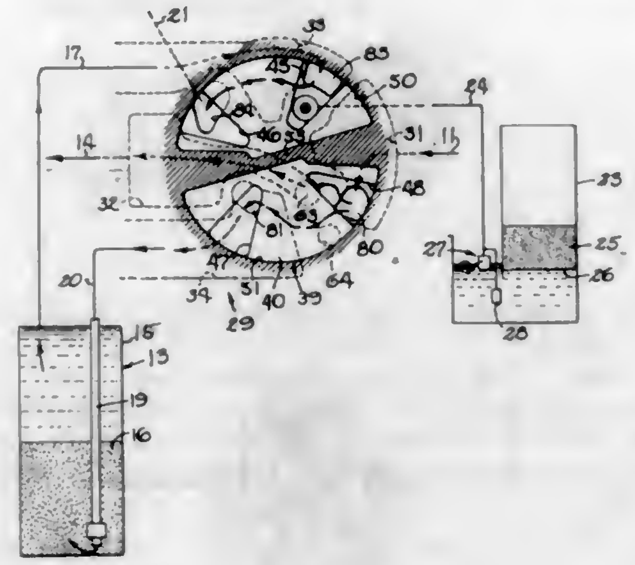
### 3,476,151
### WATER SOFTENER VALVE

**Lester O. Hegstad, Rockford, Ill., assignor to Rockford Brass Works, Rockford, Ill., a corporation of Illinois**
**Filed Mar. 18, 1968, Ser. No. 713,770**
**Int. Cl. B01d** *29/38;* **F16k** *11/02*
**U.S. Cl. 137—625.29** **14 Claims**



A rotary valve for an automatic water softener with a brine tank includes a stationary valve member and a rotor, the latter being turnable to different positions on the valve member to switch the softener from a service condition to a backwash condition and then to a regeneration condition. Various ports, openings and passages formed in the valve member and the rotor are arranged to introduce a charge of soft water into the brine tank when the rotor is in its service position and to keep hard water out of the brine tank at all times in order to increase the service life of the tank.

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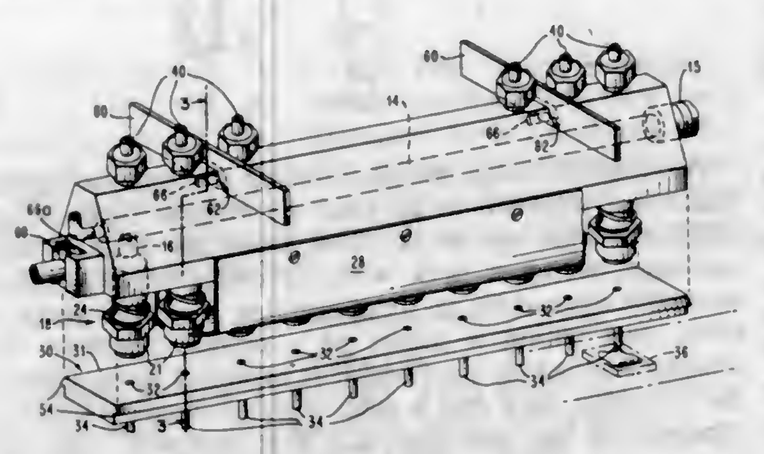
### 3,476,152
### MULTIPLE OUTLET VALVE

**Charles H. Locke, Wappingers Falls, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Oct. 10, 1966, Ser. No. 585,542**
**Int. Cl. F16k** *11/20;* **B67d** *5/30, 5/02*
**U.S. Cl. 137—625.48** **12 Claims**



This invention relates to valves for dispensing fluids, more particularly to a combination of controller and a slide valve having a plurality of outlets adapted to simultaneously and accurately dispense fluids to a plurality of spaced locations. The multiple outlet valve of the invention consists of a gate having a plurality of ports, a manifold having a plurality of openings arranged to correspond with the ports and resilient valve pads each having a passage and an end rigidly secured to one of the openings with the other end engaging the gate surface. The manifold and gate are supported in slidable relationship with the surface of the gate slidably and sealingly engaging the surfaces of the valve pads.

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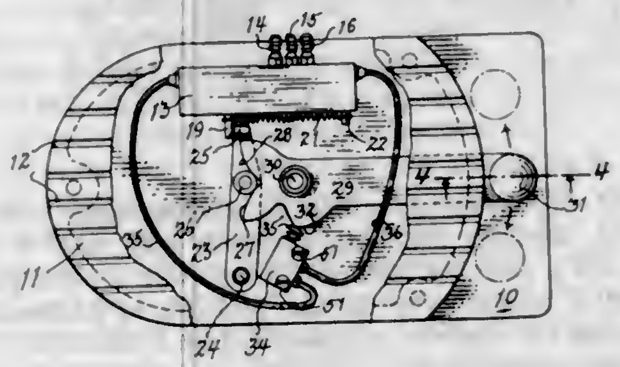
### 3,476,153
### FOOT CONTROL VALVE FOR DENTAL MACHINE

**Max G. Roland, Redwood City, Calif., assignor to Roland Mfg. Co., Burlingame, Calif., a corporation of California**
**Filed Aug. 14, 1967, Ser. No. 660,524**
**Int. Cl. F16k** *11/14*
**U.S. Cl. 137—636.1** **3 Claims**



This invention relates particularly to foot-operated valve means for the control of a dental machine having a plurality of air drills and a syringe operated from sources of air and water under pressure by which the volume of air and the control of other associated devices of the machine are controlled pneumatically in a novel manner solely by the foot of the dentist or operator.

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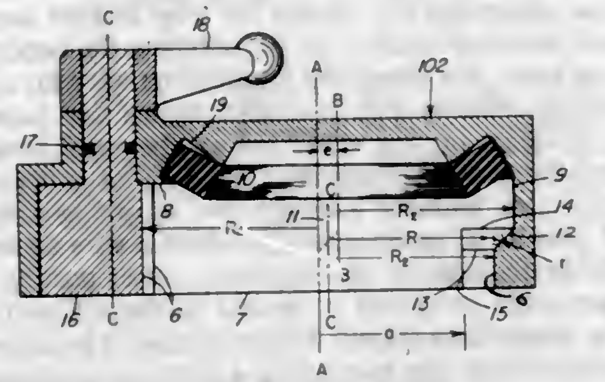
### 3,476,154
### DUST-CAP

**Edwin H. Ludeman, Red Bank, N.J., assignor to Andrews Industries Incorporated, Dayton, N.J., a corporation of New Jersey**
**Continuation of application Ser. No. 585,960, Oct. 11, 1966. This application Dec. 18, 1968, Ser. No. 786,829**
**Int. Cl. F16l** *59/10;* **B65d** *59/06*
**U.S. Cl. 138—89** **8 Claims**



A dust-cap for covering an open pipe fitted with a coupling adaptor is provided with fixed and movable camming surfaces and an actuator member rotatable about a vertical axis to cause relative horizontal and vertical motion of the cap with respect to the adaptor to compress a sealing gasket as the cap is secured in place by rotation of the actuator.

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### 3,476,155
### USE OF TURBULENCE SUPPRESSING AGENTS IN WATER JET LOOMS

**Robert O. Carothers, Coraopolis, Pa., assignor to Calgon Corporation, Pittsburgh, Pa.**
**No Drawing. Filed Aug. 26, 1968, Ser. No. 755,402**
**Int. Cl. D03d** *47/32;* **B65h** *25/06*
**U.S. Cl. 139—127** **6 Claims**

The speed, accuracy and efficiency of water jet looms are enhanced by the use of polymeric turbulence suppressing agents in the water added prior to its passage through the jet.

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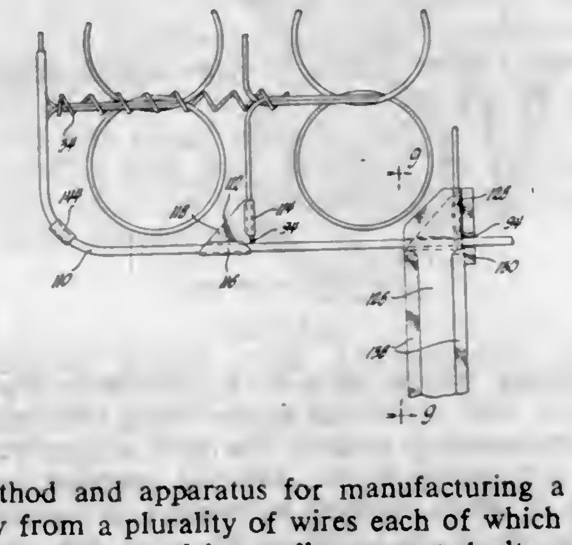
### 3,476,156
### SPRING ASSEMBLY AND MANUFACTURE THEREOF

**John B. Simons, Livonia, Mich., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware**
**Filed May 8, 1967, Ser. No. 636,750**
**Int. Cl. B21f** *27/16*
**U.S. Cl. 140—3** **4 Claims**



A method and apparatus for manufacturing a spring assembly from a plurality of wires each of which defines a plurality of rows of integrally connected alternate left and right hand coils. The method involves disposing a plurality of the rows in parallel side-by-side relationship and cutting each wire of each row at spaced intervals to provide spring units while simultaneously bending each resulting end to form an angularly offset portion. Thereafter, a pair of spaced border frames are disposed about the spring units and a first portion of a clip is disposed in mechanical interlocking engagement with each wire adjacent the angularly offset portion thereof and a second portion of each clip is disposed in mechanical interlocking engagement with one of the border frames. To accomplish this, the invention features a wire handling machine having a plurality of anvil means, each of which defines at least one shear line for cutting the wire and an angularly disposed bending surface for simultaneously bending the resulting ends. An elongated member moves into and out of coacting relation with the anvil means and includes a recess for receiving the shear line of the anvil means for accomplishing the cutting and bending of a wire. The invention also features a device for wrapping a first U-shaped portion of an integral clip about a wire so as to be maintained thereon by the angularly offset portion while simultaneously wrapping a second U-shaped portion of the clip about an adjacent border frame. The device includes a first jaw for supporting a clip and a second jaw for moving into engagement and bending the U-shaped portions of such a clip about a wire element and a border frame respectively, the second jaw having first and second grooves therein for engaging the respective U-shaped portions of the clip for bending the latter. The result is, therefore, a unique spring assembly including a plurality of wires, each of which forms integrally interconnected alternate left and right hand coils. The adjacent coils of each row and adjacent rows are connected together by helical members. The ends of each wire which comprises each row of coils includes an angularly offet portion and a clip is disposed about the end thereof and is prevented from being removed from the end by the angularly offset portion and another portion of the clip is disposed in mechanical interlocking engagement with a border frame.

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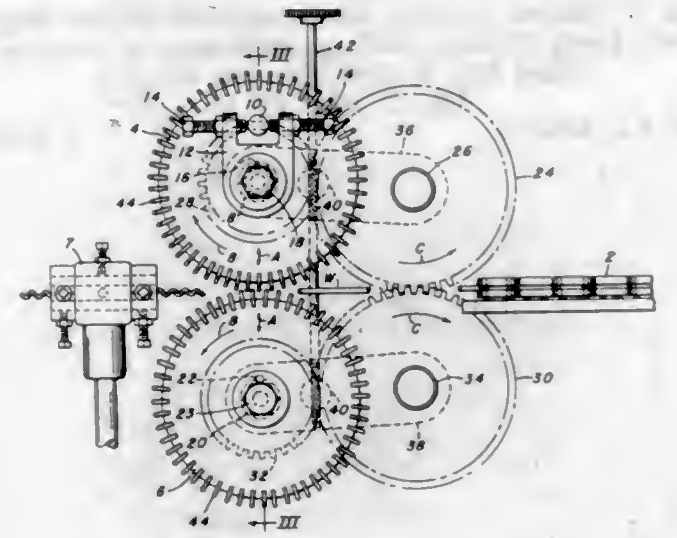
### 3,476,157
### VARIABLE-PITCH WIRE CRIMPING MEANS

**Maurice J. De Wulf, Lake Bluff, Ill., assignor to United States Steel Corporation, a corporation of Delaware**
**Filed Sept. 18, 1967, Ser. No. 668,607**
**Int. Cl. B21f** *1/04;* **B21d** *13/04*
**U.S. Cl. 140—105** **2 Claims**



Crimping wheels of a wire processing machine are provided with peripheral teeth having extremities lying in a frusto-conical surface. The teeth extremities on one wheel lie tapering in the direction opposite that of the surface in which the teeth extremities of the other wheel lie. The wheels are longitudinally adjustable on their respective shafts so as to permit adjustment of the pitch imparted by the teeth of the wheels to a wire passing therebetween.

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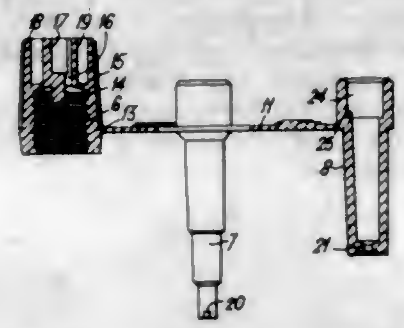
### 3,476,158
### ADAPTORS FOR USE IN REFILLING GAS BURNING CIGARETTE LIGHTERS

**William Retzler, Wickham, England, assignor to Colibri Lighters, London, England, a British company**
**Filed May 11, 1967, Ser. No. 637,802**
**Claims priority, application Great Britain, May 27, 1966, 23,979/66**
**Int. Cl. B65b** *1/04, 3/04*
**U.S. Cl. 141—84** **11 Claims**



An adaptor which enables a range of cigarette lighters which are intended to be filled by various kinds of gas refill cartridges all to be filled from the kind of refill cartridge having a neck with an outlet valve which is normally opened by an axial reaction from the pintle or other part within a socket of a lighter reservoir. The adaptor has a base part which is arranged to be fitted to the cartridge neck and a stem which is flexibly mounted relatively to the base part such that only when the stem is pushed against a lighter inlet is the outlet valve in the cartridge opened to allow gas to flow from the cartridge through the adaptor into the lighter.

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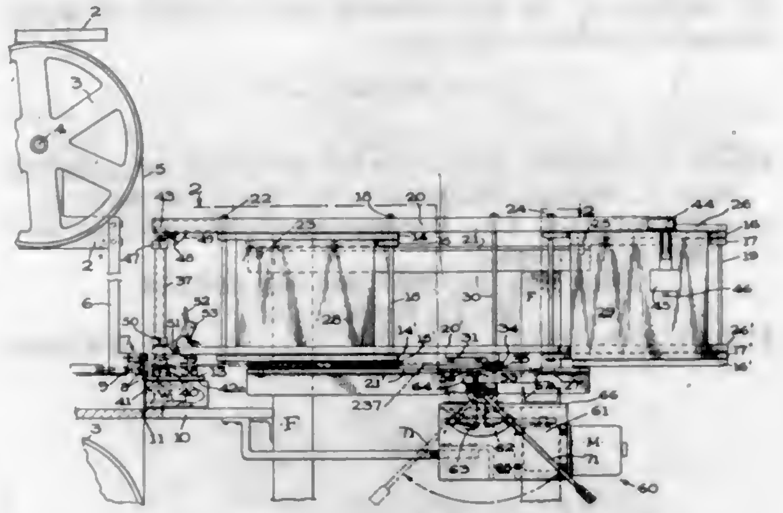
### 3,476,159
### WORK FEED MECHANISM FOR BANDSAW MACHINES

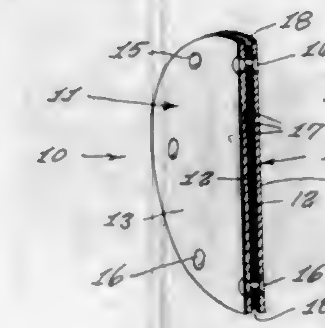
**Havilah S. Hawkins, Sedgwick, Maine 04676**
**Filed Mar. 10, 1967, Ser. No. 622,145**
**Int. Cl. B27b** *25/00, 13/00*
**U.S. Cl. 143—26** **20 Claims**



This disclosure describes an arrangement wherein a pattern member remotely disposed with respect to the saw and a member arranged to support a work piece in operative proximity to the saw and free of frictional contact with the machine are mounted on a movable support and are connected for concurrent and synchronized rotation about axes parallel to the cutting edge of the saw and lateral movement transverse thereto, and a fixed axis drive roller operatively engaging a contoured flange of the pattern member synchronously to rotate and transversely move the pattern member and the work piece support to feed a work piece to the saw in response to the control contours of the pattern.

### 3,476,160
### TWIN BAR CHAIN SAW BAR

**John A. Connelly, New Florence, Mo. 63363**
**Filed May 15, 1967, Ser. No. 638,207**
**Int. Cl. B27b** *17/02*
**U.S. Cl. 143—32** **1 Claim**



A bar assembly, for a chain saw, which is comprised of two bars that are riveted together, the bars being placed in side by side relation and having a proper thickness of shims therebetween to give a correct thickness to the entire assembly so to adjustably control the right clearance for an endless saw chain in a peripheral groove formed between the bars.

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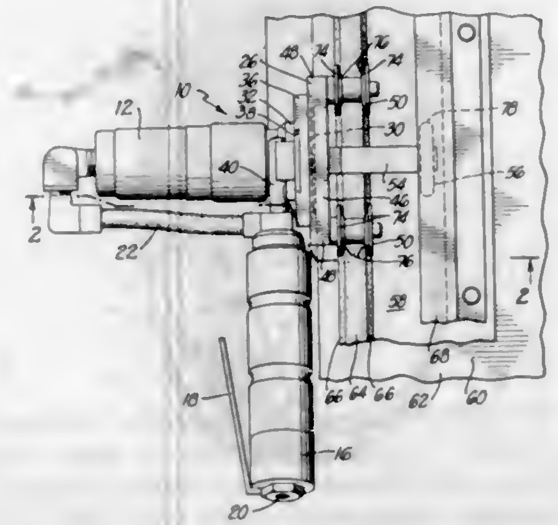
### 3,476,161
### TOOL GUIDE SUPPORT AND SAW GUARD

**Laurel E. Dunlap, 4510 Mary Ellen Ave., Sherman Oaks, Calif. 91403**
**Filed Oct. 21, 1966, Ser. No. 588,547**
**Int. Cl. B27c** *5/02*
**U.S. Cl. 144—144** **14 Claims**



A support plate overlies a workpiece transversely adjacent a longitudinal path of working operation on said workpiece, said support plate mounting a longitudinally extending guide track transversely spaced from said path of working operation. A tool is supported on peripherally grooved guide rollers which rest downwardly on and are at least transversely engaged by the guide track, being free for upward movement away from the guide track. A support roller is transversely spaced from the path of working operation a greater distance than said guide rollers and is at least vertically engaged by the support plate cooperating with the guide rollers to provide longitudinal movement for the tool. The entire assembly may be removed from the support plate by upwardly disengaging the guide rollers from the guide track and then transversely shifting the entire assembly to remove the support roller from its engagement with the support plate. The tool may be a saw with at least the saw blade reciprocally extendable from a normally covering tool guard and the tool guard may include air jet means forcibly exhausting the same.

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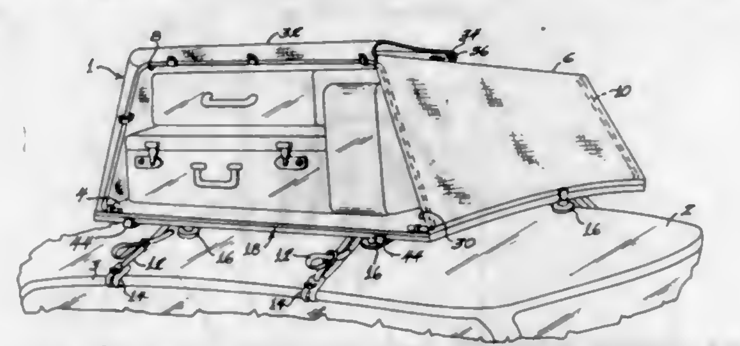
### 3,476,162
### LATCH MECHANISM FOR A CAR TOP CARRIER DOOR

**Urban C. McMiller, Minneapolis, Minn., assignor, by mesne assignments, to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware**
**Filed Feb. 1, 1968, Ser. No. 702,336**
**Int. Cl. B60r** *9/04;* **B65b** *11/00*
**U.S. Cl. 150—52** **9 Claims**



A car top carrier having a flexible cover with a hinged closure flap covering an access opening in one side thereof, incorporates a latch mechanism having a shiftable arm contoured to embrace a bar running along one edge of the closure flap and hold the bar against an elongate channel strip which supportably engages one edge of the base of the carrier. A releasable detent holds the latch arm in its locked position, and is provided with attachment means for a padlock.

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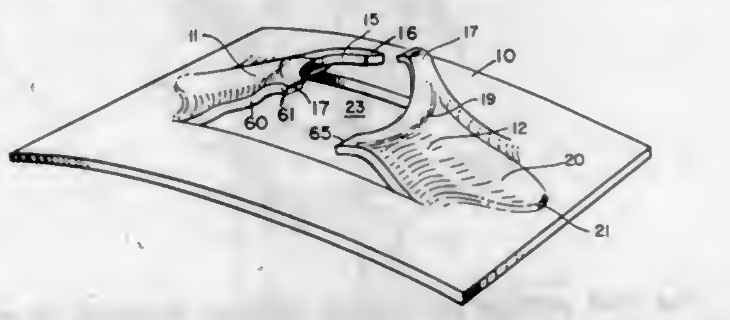
### 3,476,163
### CONSTANT TORQUE SHEET METAL FASTENER

**George A. Tinnerman, 17864 Beach Road, Lakewood, Ohio 44107**
**Original application Sept. 20, 1965, Ser. No. 489,467, now Patent No. 3,382,753, dated May 14, 1968. Divided and this application May 14, 1968, Ser. No. 728,988**
**Int. Cl. F16b** *39/30*
**U.S. Cl. 151—14** **1 Claim**



A sheet metal nut has an aperture bounded by an edge engageable with the helical thread of a threaded stud. At one or more points, the edge is deformed axially to engage frictionally the side of the thread of the threaded fastener so as to provide prevailing or constant torque. In the specific embodiment, the aperture is bounded by the edges of a plurality of tongues struck out of the base of the nut and formed with helical edges to conform to the thread of the threaded stud, with the end of an edge of each tongue deflected axially at one end to be engaged and depressed by the threaded fastener.

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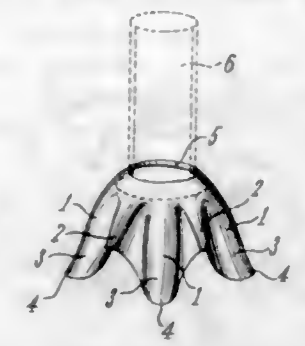
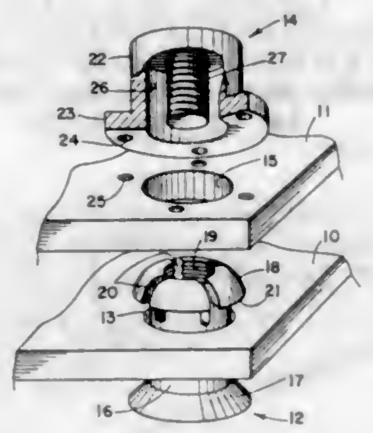
### 3,476,164
### EXPANDING BODY FOR ANCHORING BOLTS, NUTS OR SIMILAR CONNECTING ELEMENTS IN STRUCTURAL MEMBERS

**Hans G. Voullaire, 7751 Dingelsdorf, Seemuhle, Germany**
**Filed Nov. 18, 1966, Ser. No. 595,503**
**Claims priority, application Germany, Nov. 25, 1965, V 29,797**
**Int. Cl. F16b** *39/00, 1/00*
**U.S. Cl. 151—41.74** **3 Claims**

A substantially cone-shaped hollow body for anchoring bolts, nuts, and the like, in a structural member such as wood, plywood, hardwood, chipboard, and the like, the tapered surface of said body being formed in a plurality of outwardly convex corrugated sections whose apices are each in a common plane with the axis of the body. Some of said corrugations terminate in tips which are slightly outwardly bent and other intermediate ones of said corrugations are shorter and less convex. The body is such that it may be pressed or hammered directly into the surface of the structural member without the need for a pre-drilled hole into which the body must be inserted.



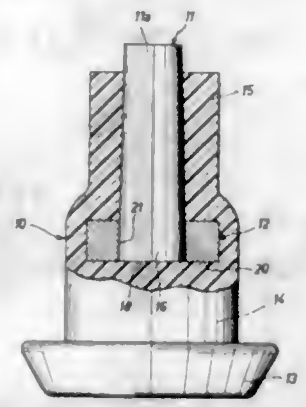
### 3,476,165
### CAPTURED PANEL FASTENER
**Rudolph Marion Vaughn, 2172 Salt Air Drive,**
**Santa Ana, Calif. 92705**
**Filed May 28, 1968, Ser. No. 732,674**
**Int. Cl. F16b** *43/00, 33/04, 13/04*
**U.S. Cl. 151—69 1 Claim**



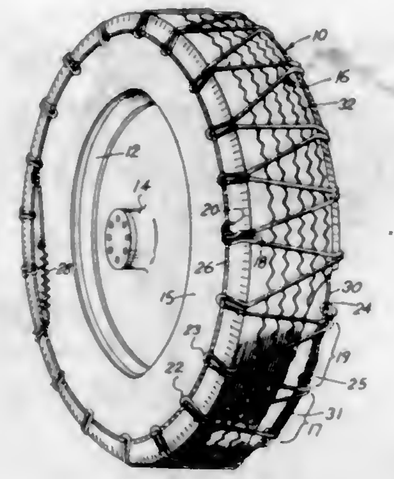
The bolt portion of a panel fastener assembly is provided with a radially extending annular lip about its shank. The shank itself is counterbored and interiorly threaded for threaded engagement with an exteriorly threaded stud on a wall portion against which the panel closes. This counterbore is axially slotted such that the annular lip may circumferentially contract to permit the bolt to be passed through an opening in the panel preparatory to threading the same on the wall stud. After passing through the panel, the annular lip portion will expand and overlie the peripheral edge opening in the panel and thus hold the bolt captured to the panel.

### 3,476,166
### SPIKE FOR VEHICLE TIRES AND METHOD OF PRODUCING THE SAME
**Peter Simon, Schramberg, Germany, assignor to Karl Simon, Schramberg, Germany**
**Filed Nov. 21, 1967, Ser. No. 684,854**
**Claims priority, application Germany, Dec. 5, 1966, S 107,264**
**Int. Cl. B60c** *11/16*
**U.S. Cl. 152—210 17 Claims**

A spike for enhancing the traction of tires on road surfaces comprises a pin of hard metal which tapers in a direction from the one toward the other end, a flat ring-shaped socket which is fixed to and surrounds the one end of the pin, and an envelope of polyamide which surrounds the socket and all but the other end of the pin and can be embedded in the material of a tire. The pin is press-fitted into the socket and is permanently bonded thereto by means of metallic solder or by a layer of heat-hardened synthetic plastic material.



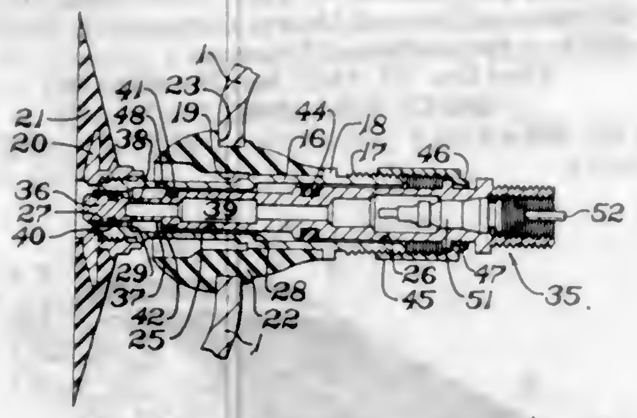
### 3,476,167
### WHEEL TRACTION MEANS
**George Kitsopoulos, 9139 Commercial Ave.,**
**Chicago, Ill. 60617**
**Filed May 19, 1967, Ser. No. 639,697**
**Int. Cl. B60c** *27/12*
**U.S. Cl. 152—225 7 Claims**



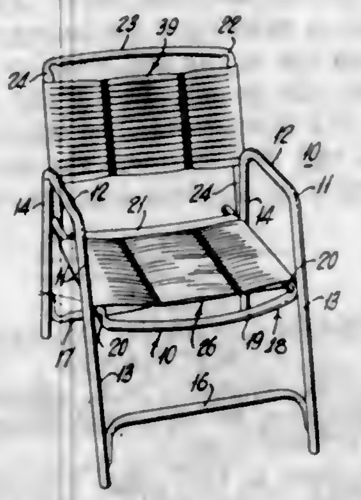
Wheel traction means which attach to tires for prevention of skidding both sideways and frontwards. The traction means comprise a single length of wire rod bent in the form of a series of continuous, coplanar zig-zags. The zig-zag wire is fitted against the tire tread to form a closed circular band. The vertex ends of the zig-zags are bent inwardly toward the wheel axis, and a steel cable is threaded through the vertex ends on both sides of the tire tread. The cable is tightened by a spring to hold the traction means tightly against the tread of the wheel.

### 3,476,168
### DUAL CHAMBERED TIRE VALVE
**Victor R. Huber, Akron, and Armando Cardenas, Cuyahoga Falls, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York**
**Filed May 23, 1967, Ser. No. 640,687**
**Int. Cl. B60c** *29/00*
**U.S. Cl. 152—427 8 Claims**

A tire having an inner tire mounted in an outer tire with a valve that is operative to selectively connect the respective dual chambers defined by the rim that mounts the inner and outer tire to a pressure source.



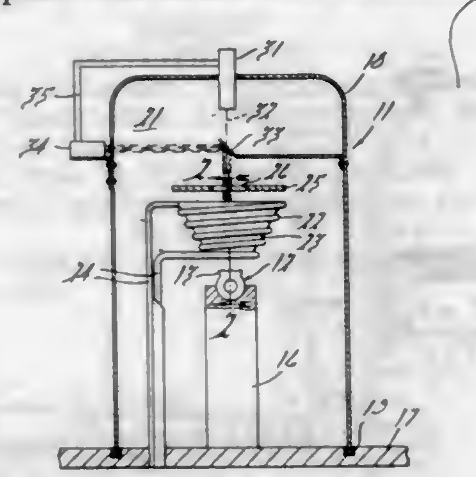
### 3,476,169
### FURNITURE WEB
**Vincent S. Militano, Massapequa, N.Y., assignor to Finkel Outdoor Products, Inc., Garfield, N.J., a corporation of New York**
**Filed Jan. 26, 1968, Ser. No. 700,849**
**Int. Cl. A47c** *7/32, 7/22*
**U.S. Cl. 160—327 5 Claims**



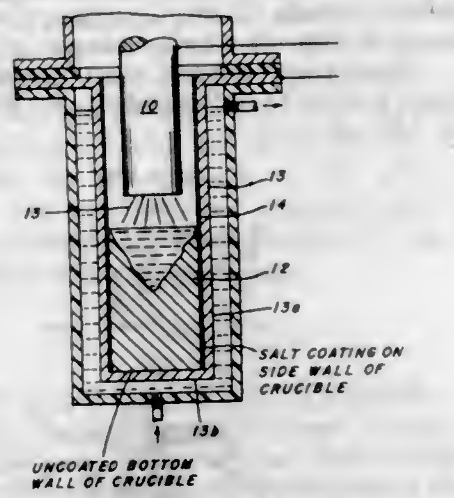
A furniture web, such as a seat, backrest or footrest, includes a pair of transversely-spaced parallel longitudinal support members and a flexible thermoplastic tube wound in a flat spiral about the support members to form longitudinally-spaced successive convolutions having upper and lower segments. A pair of transversely-spaced longitudinal thermoplastic bands are positioned between the upper and lower legs of the convolution and are heat-sealed to the confronting walls thereof and the upper and lower faces of the tube are heat-sealed to each other in areas coinciding with the bands and at spaced points thereby to delineate passages providing communication between sections of the tube on opposite sides of said sealed area.

### 3,476,170
### CASTING METHOD WITH LASER BEAM MELTING OF LEVITATED MASS
**Rodney E. Christian, Bloomfield Hills, and Peter C. Taudvin, Birmingham, Mich., assignors, by mesne assignments, to The Traub Company, Detroit, Mich., a corporation of Michigan**
**Filed May 15, 1967, Ser. No. 638,556**
**Int. Cl. B22d** *27/02, 27/16*
**U.S. Cl. 164—48 3 Claims**

This application discloses an apparatus and method for forming a casting having a high purity wherein the material to be cast is levitated by the forces of a magnetic field generated by the passage of an alternating electric current through an induction coil. The thus levitated mass is then subjected to a laser beam generating sufficient energy to elevate the temperature of the levitated material to its melting point. This molten mass is then transferred to a mold by changing the current flow through the levitating coil. The mold may be formed from the same material as that which is being cast so that the mold itself forms a portion of the finished casting or may be formed from a different material that is removed after the cast material cools.



### 3,476,171
### METHOD FOR MELTING REFRACTORY METAL
**Louis E. Stark, Youngstown, and Octavian Bertea, Warren, Ohio, assignors to Reactive Metals, Inc., a corporation of Delaware**
**Filed Feb. 14, 1967, Ser. No. 615,929**
**Int. Cl. B22c** *3/00;* **B22d** *27/02*
**U.S. Cl. 164—52 6 Claims**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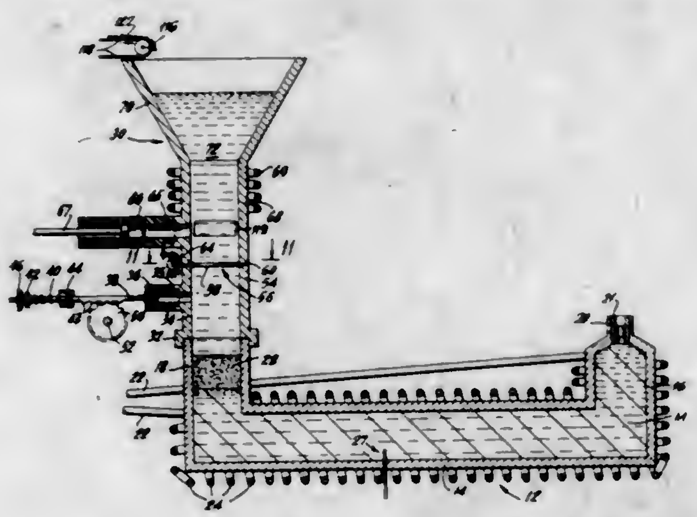
13
14
12
13a
13b
SALT COATING ON SIDE WALL OF CRUCIBLE
UNCOATED BOTTOM WALL OF CRUCIBLE

An improvement in the consumable arc melting of refractory metals such as titanium or zirconium which involves collecting the molten refractory metal in a cooled crucible having a coating at least 0.01-inch thick on the interior thereof of at least one halide from the group consisting of halides of alkali and alkaline earth metals.

### 3,476,172
### METHODS OF DIE CASTING MATERIALS OF RELATIVELY HIGH MELTING TEMPERATURES
**George W. Goetz, Red Hook, N.Y., and Norman W. Weinstein, Philadelphia, Pa., assignors to Impact Casting Co., Inc., New York, N.Y., a corporation of New York**
**Original application Feb. 8, 1966, Ser. No. 525,987, now Patent No. 3,435,880, dated Apr. 1, 1969. Divided and this application July 16, 1968, Ser. No. 745,157**
**Int. Cl. B22d** *35/04*
**U.S. Cl. 164—133 4 Claims**

The disclosed method is for casting materials in a permanent mold and comprises the steps of ejecting a liquid molten mass of the metal into free fall in space and enveloping at rest a large portion of the mass while in free fall, in timed reltaion to ejection of the mass. In accordance with this method the mass is ejected upwardly into free fall and the mass is enveloped and molded by closing die means on said mass while in free fall. The mass is ejected from a chamber containing the liquid metal. The level of the molten metal in said chamber is adjusted to a predetermined level before ejecting the mass. Additional metal is fed to the molten metal in the chamber, and the timing of the steps of feeding metal and adjusting the level is co-related so that the feeding occurs before the level adjustment in a casting cycle.



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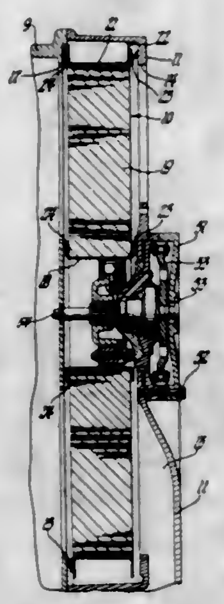
### 3,476,173
### ROTARY REGENERATOR MATRIX MOUNT AND DRIVE

**Joseph W. Bracken, Jr., Redford Township, and William S. Hubble, Livonia, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Aug. 16, 1967, Ser. No. 661,075**
**Int. Cl. F23l** *15/02;* **F28d** *19/04;* **F16d** *3/76*
**U.S. Cl. 165—9** **2 Claims**



In a rotary regenerator of the axial-flow type the matrix disk is located axially by seals which are connected to the regenerator case. It is centered radially by a central drive shaft connected to the matrix by a universal joint and a radial and axial slip connection to allow for dishing and other distortion of the matrix and for relative expansion of the matrix and the driving member. The matrix may be steel or ceramic; in the latter case, the driving force is spread over an extended surface area of the matrix hub to reduce unit loading.

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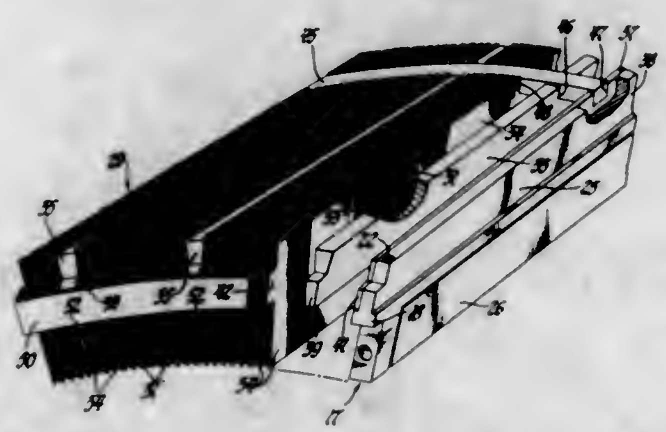
### 3,476,174
### REGENERATOR MATRIX

**Robert W. Guernsey, Rochester, James M. Ricketts, Oxford, and Richard M. Zeek, Farmington, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Dec. 29, 1967, Ser. No. 694,690**
**Int. Cl. F28d** *19/00, 17/00*
**U.S. Cl. 165—9** **5 Claims**



An annular matrix for a radial-flow regenerator has rims at each end of the matrix with stiffeners connecting the rims. A heat transfer segment mounted between each pair of stiffeners embodies permeable heat transfer material (shim packs) and labyrinth seal plates extending from the surface of the shim packs. Thermal deflection of the segment is minimized by beams extending across the matrix from rim to rim and a bridge intermediate the rims connecting the beams. The bridge is brazed to the seal elements and shim packs. The beams have low thermal deflection and thus, through the bridge, control the thermal deflection of the heat transfer material and seal elements.

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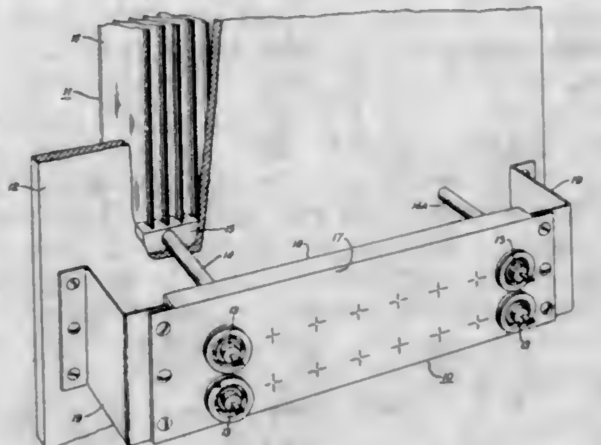
### 3,476,175
### VAPOR-PHASE COOLING OF ELECTRONIC COMPONENTS

**Thomas J. Plevyak, Madison, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**
**Filed Nov. 2, 1967, Ser. No. 680,092**
**Int. Cl. F28d** *15/00;* **H01b** *7/34;* **F25d** *15/00*
**U.S. Cl. 165—105** **4 Claims**

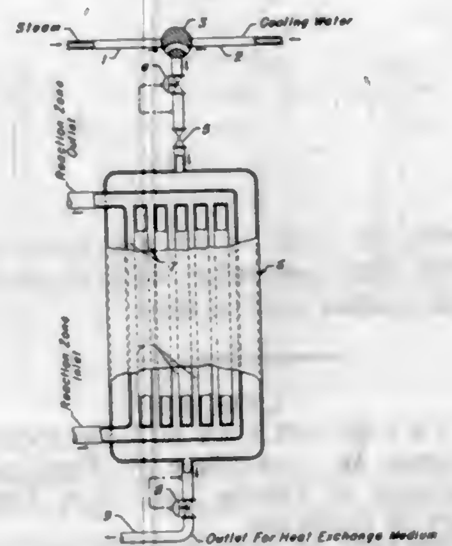


Improved vapor-phase heat exchange apparatus useful in cooling solid state components is disclosed featuring insulated mounting fixtures immersed into the evaporator fluid and a condenser made up of hollow cooling fins.

This invention relates to heat exchange apparatus in general and more particularly to vapor-phase cooling apparatus especially useful with solid state circuit components.

### 3,476,176
### METHOD AND APPARATUS FOR ALTERNATELY HEATING AND COOLING BY INDIRECT HEAT TRANSFER

**Leslie C. Hardison, Norwalk, Conn., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**Filed Feb. 8, 1968, Ser. No. 704,036**
**Int. Cl. F25b** *13/00, 29/00;* **F28f** *19/00*
**U.S. Cl. 165—2** **5 Claims**



An indirect heat exchange system providing the alternate heating and cooling of enclosed reaction zones by the cooling and condensation of steam alternating with the absorption of heat by cooling water, and more particularly there is the introduction of steam and the cooling water from an elevated pressure through an adjustable valve means into a container encompassing said reaction zones, and the maintenance of a lower elevated back pressure in said container by the regulation of the rate of water withdrawal from said container, utilizing a back pressure regulating means.

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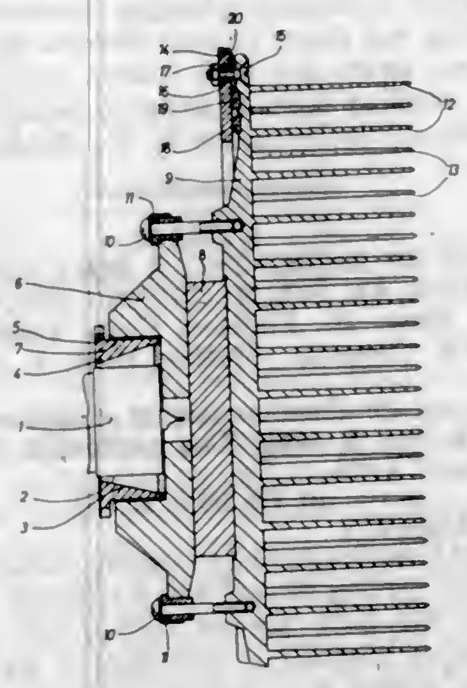
### 3,476,177
### CONTACT COOLING AND MOUNTING DEVICE FOR A DISCHARGE TUBE

**Friedrich Potzl, Hamburg, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware**
**Filed Feb. 5, 1968, Ser. No. 702,980**
**Claims priority, application Germany, Feb. 16, 1967, P 41,425**
**Int. Cl. F28f** *7/00*
**U.S. Cl. 165—80** **5 Claims**



A tube holder and cooling wall are attached as a unit in a housing; the unit can be withdrawn from the housing through an opening in the housing wall. When the unit is in an operative position, the cooling wall serves to seal the opening in the housing wall and at the same time is designed to dissipate heat generated by a tube in the holder.

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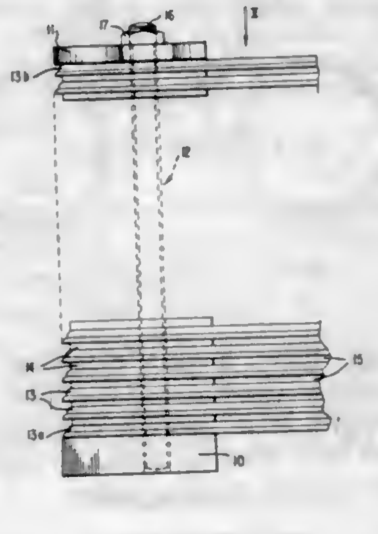
### 3,476,178
### HOLLOW BODY

**Werner Harting, Schmiden, Wurttemberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**
**Filed June 19, 1967, Ser. No. 647,159**
**Claims priority, application Germany, June 24, 1966, D 50,382**
**Int. Cl. F28f** *19/00;* **F24h** *3/00;* **B23p** *15/26*
**U.S. Cl. 165—134** **1 Claim**



A hollow body, especially for use as a heat-exchanger in the lubricant cooling system for engines, in which several hollow structural elements, communicating with each other, are securely and adheringly connected to each other, for example, by soldering, and in which mechanical connecting means, for example, tie rods, are used in such a manner that the securing surfaces of the hollow structural elements are under the effect of the connecting means which are pre-stressed in the sense of the surface pressure; the mechanical connecting means, such as tie rods, are preferably located outside of the interior spaces of the hollow structural elements.

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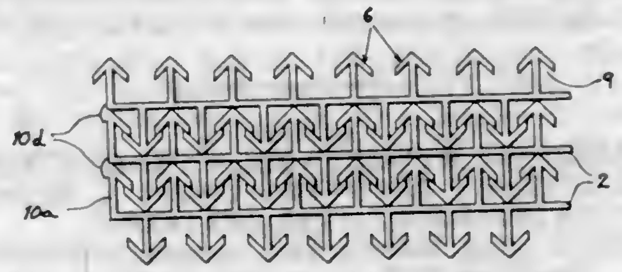
### 3,476,179
### PLATE-TYPE HEAT EXCHANGER

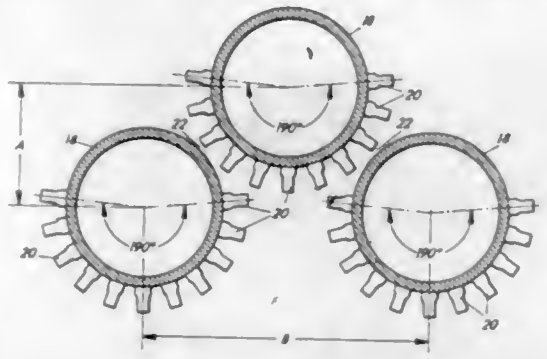
**Gerhard Meister, Tacherting, and Franz Kreissl, Trostberg-Eglsee, Germany, assignors to Linde Aktiengesellschaft, Wiesbaden, Germany, a corporation of Germany**
**Filed Oct. 11, 1967, Ser. No. 674,441**
**Claims priority, application Germany, Oct. 12, 1966, L 54,797**
**Int. Cl. F28f** *3/08*
**U.S. Cl. 165—166** **11 Claims**



A plate-type heat exchanger having a stack of generally parallel transversely spaced unitarily extruded aluminum plates defining between their respective fluid compartments communicating with slot-like manifolds, the pairs of plates defining each compartment having longitudinally extending parallel ribs of T, L or Y section interfitting with the ribs of the other plate of each pair and interengaging with said other ribs for limiting deformation of said plates relatively to one another.

### 3,476,180
### STUDDED HEAT EXCHANGER TUBES

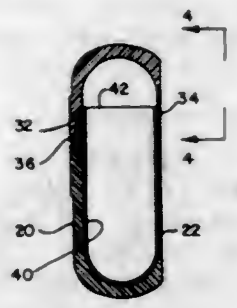
**Harry F. Straight, Jr., Succasunna, and John A. Kivlen, Sparta, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**
**Filed June 30, 1967, Ser. No. 650,474**
**Int. Cl. F28f** *1/20*
U.S. Cl. 165—172 5 Claims



Heat exchange tubes having extended surface studs about approximately one-half of the tube periphery are compactly arranged in a furnace convection section to provide effective heat transfer capacity approaching heat transfer capacity of fully studded tubes.

### 3,476,181
### DENTAL INGREDIENT CAPSULE

**Walter S. Strauss and George A. Shedlarski, Buffalo, N.Y., assignors to Dentek, Inc., Buffalo, N.Y., a corporation of New York**
**Filed Nov. 24, 1967, Ser. No. 685,692**
**Int. Cl. F28f** *13/00;* **A61k** *5/00;* **B01f** *9/00*
U.S. Cl. 165—186 10 Claims

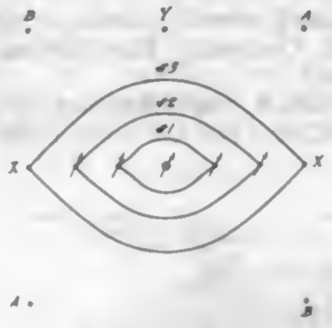


A dental ingredient capsule for use in a mixing machine of the type that sprays a coolant to a surface of the capsule wherein the surface facing the coolant spray nozzle is either flattened to provide a thin-walled section or apertured such that the thermal conductivity thereof is substantially greater than that of the remainder of the capsule.

### 3,476,182
### METHOD OF HYDROCARBON PRODUCTION BY SECONDARY RECOVERY USING A MODIFIED INVERTED 9-SPOT WELL PATTERN

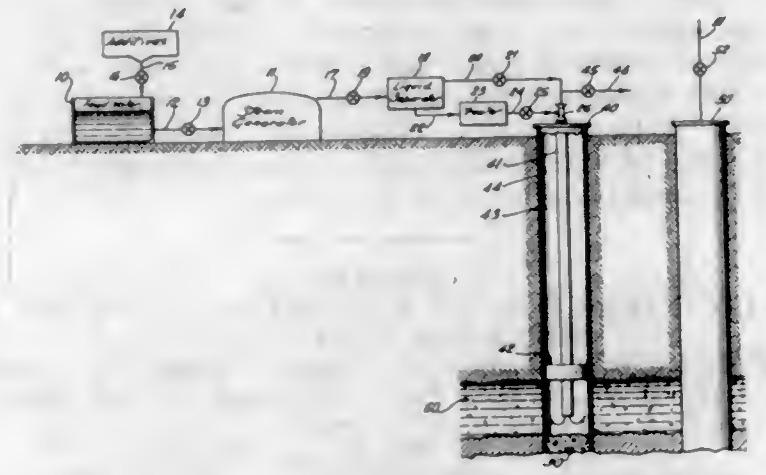
**Joseph C. Allen, Bellaire, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware**
**Filed Aug. 17, 1967, Ser. No. 661,322**
**Int. Cl. E21b** *43/14, 43/24*
U.S. Cl. 166—245 10 Claims

Well arrangement and procedure for performing a line drive in situ combustion operation wherein an inverted 9-spot pattern is modified by the addition of four production wells along either a lateral or diagonal axis within the pattern, the wells on the axis being converted to injection wells from production wells as the in situ combustion front reaches each in turn.



### 3,476,183
### RECOVERY OF OILS BY STEAM INJECTION

**Stewart Haynes, Jr., and Marc F. Fontaine, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware**
**Filed Dec. 14, 1967, Ser. No. 690,580**
**Int. Cl. E21b** *43/22, 43/24*
U.S. Cl. 166—272 6 Claims



A method of recovering hydrocarbon materials from a subterranean hydrocarbon-bearing formation by means of injecting wet steam therein, wherein the liquid phase of the wet steam has been treated separately with an anti-clay swelling agent in order to permit a more even penetration of the formation by the flooding fluid.

### 3,476,184
### METHOD OF DESIGNING A SOLUBLE OIL SLUG FOR AN OIL RECOVERY PROCESS

**John A. Davis, Jr., Littleton, Colo., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio**
**No Drawing. Continuation-in-part of application Ser. No. 671,978, Oct. 2, 1967. This application Nov. 4, 1968, Ser. No. 773,304**
**Int. Cl. E21b** *43/22*
U.S. Cl. 166—273 17 Claims

Micellar solutions having a relatively small hydrophilicy in the front portion thereof and a relatively large hydrophilicy at the back portion thereof are injected into and displaced through a subterranean formation to a production means in a secondary-type recovery process to displace crude petroleum therefrom.

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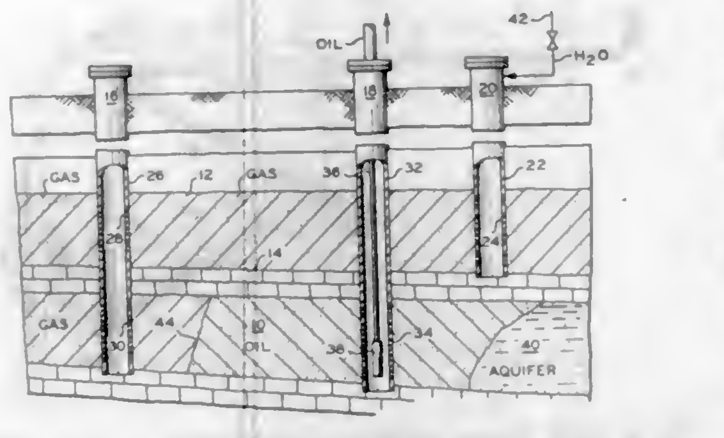
### 3,476,185
### OIL PRODUCTION BY GAS DRIVE FROM ADJACENT STRATA

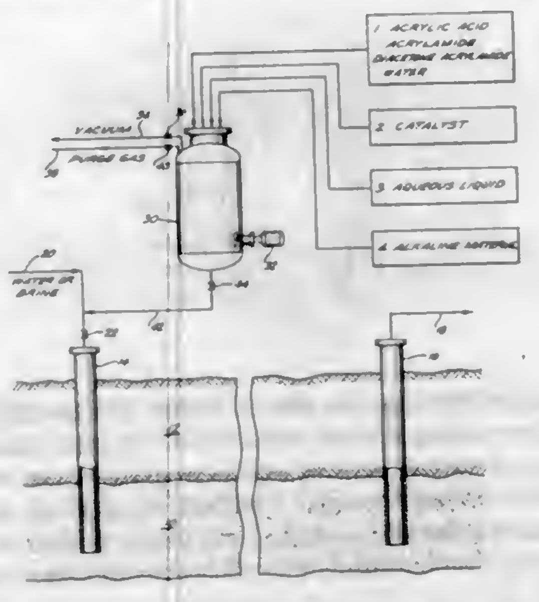
**Archie J. Cornelius, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Nov. 14, 1967, Ser. No. 682,774**
**Int. Cl. E21b** *43/20, 43/12*
U.S. Cl. 166—274 7 Claims



Oil is produced from an oil stratum lying adjacent but separated from a gas formation by an impermeable barrier by injecting an aqueous flood into the gas formation to force gas therefrom into a well communicating with the oil stratum thereby forcing gas into the oil stratum to build up stratum pressure and drive oil into an offset production well.

### 3,476,186
### RECOVERY OF PETROLEUM BY FLOODING WITH VISCOUS AQUEOUS SOLUTIONS OF ACRYLIC ACID-ACRYLAMIDE-DIACETONE ACRYLAMIDE COPOLYMER

**Amir M. Sarem, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California**
**Filed Dec. 21, 1967, Ser. No. 692,383**
**Int. Cl. E21b** *43/20, 43/22*
U.S. Cl. 166—274 15 Claims



A process for recovering petroleum from subterranean oil-bearing formations in which a viscous flooding medium comprising a dilute aqueous solution of a copolymer of acrylic acid, acrylamide and diacetone acrylamide is introduced into the oil-bearing formation through one or more injection wells and forced toward at least one spaced production well. The invention is also directed to a novel water-soluble terpolymer of acrylic acid, acrylamide and diacetone acrylamide useful as a flood water additive and to a method for preparing the polymer in which the monomers are copolymerized in the presence of an organoboron catalyst.

### 3,476,187
### OIL RECOVERY WITH A DRIVE COMPRISING SURFACTANTS AND MINUTE SOLIDS

**Robert R. Harvey, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 483,845, Aug. 30, 1965. This application Mar. 25, 1968, Ser. No. 715,502**
**Int. Cl. E21b** *43/20*
U.S. Cl. 166—274 10 Claims

Oil is produced by fluid drive using a slug in advance of the drive which contains a suspension of minute solids such as carbon black and two polyethylene oxide-type surfactants.

### 3,476,188
### AQUEOUS FLUID DRIVE PROCESS USING MINUTE SOLIDS IN SUSPENSION

**Robert R. Harvey, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 675,017, Oct. 13, 1967. This application Jan. 3, 1969, Ser. No. 788,909**
**Int. Cl. E21b** *43/20*
U.S. Cl. 166—274 7 Claims

Oil is recovered from a stratum by injecting an aqueous slug of minute solids in suspension, a nonionic oil-displacing surfactant in solution and a water soluble lignosulfonate dispersant, which stabilizes the suspension to displace oil from the stratum. An aqueous drive medium, e.g., water or brine, may be injected into the stratum to displace the aqueous slug having solids in suspension through the stratum and drive crude oil to a producing well.

### 3,476,189
### METHOD FOR CONSOLIDATING A PERMEABLE MASS

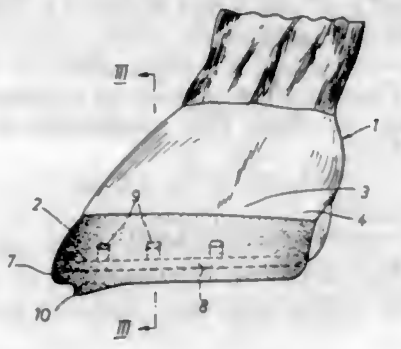
**Cornelis Bezemer, Franciscus H. Meijs, and Marinus Van Zanten, Rijswijk, Netherlands, and Clifford V. Wittenwyler, Union, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 442,515, Mar. 24, 1965. This application Dec. 14, 1967, Ser. No. 690,400**
**Claims priority, application Great Britain, Mar. 26, 1964, 12,985/64, 12,986/64**
**Int. Cl. E21b** *33/13*
U.S. Cl. 166—295 6 Claims

A method of consolidating formations using a resin-forming composition and a silane bonding agent having in the molecule at least one R—COO— radical bonded directly or indirectly to a Si atom and wherein R is an unsaturated aliphatic hydrocarbon.

### 3,476,190
### HOOF-COVERING AND METHOD OF ITS MANUFACTURE

**Jacques Jenny, Green Valley Farm, Unionville, Pa. 19375; John Teti, 3323 Heritage Drive, Wilmington, Del. 19808; and Jack P. Anderson, Street Road, R.F.D. 1, Kennet Square, Pa. 19348**
**Original application Aug. 27, 1965, Ser. No. 483,191, now Patent No. 3,285,346, dated Nov. 15, 1966. Divided and this application Aug. 19, 1966, Ser. No. 573,640**
**Claims priority, application Switzerland, Aug. 27, 1964, 11,239/64**
**Int. Cl. A01l** *15/00, 5/00, 3/00*
U.S. Cl. 168—4 4 Claims

An elastic hoof covering of plastic material having an open annular bottom portion extending in the shape of a horse-shoe along the marginal portion of the bottom of the hoof. A circumferentially extending side portion overlaps the lower part of the hoof side wall. The rear portions of the covering extend over the bars of the hoof and the plastic material penetrates through bores in the hoof extending through the horn material of the hoof



toe and the hoof side wall. Calks are embedded in the bottom portion of the covering.

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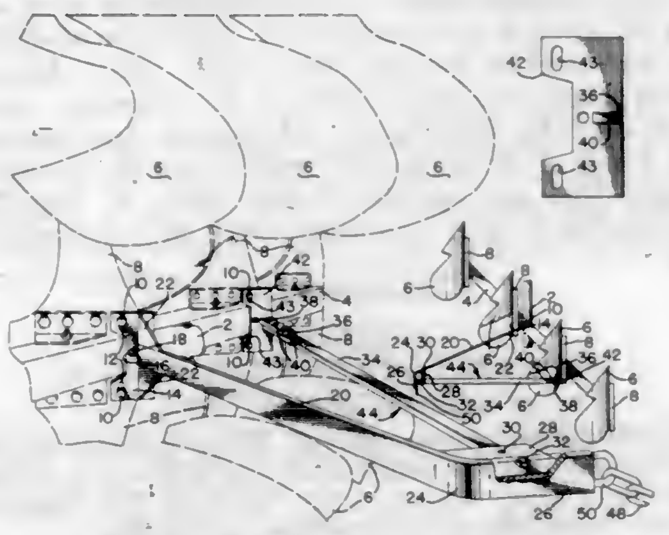
## 3,476,191
## UNIVERSAL HITCH FOR TOWING TILLING IMPLEMENTS

**Charles V. Schlabs, Rte. 2, Hereford, Tex. 79045**
**Filed Aug. 22, 1966, Ser. No. 574,127**
**Int. Cl. A01b** *49/02, 5/06*
**U.S. Cl. 172—162** **10 Claims**



A hitch bar which is adapted to be secured to a plow carrier bar on a two-way gang plow, which hitch bar extends outwardly on a side of a vertical plane passing longitudinally through a tractor for attachment of a second implement to be towed thereby, so upon reversal of the two-way plow, the distal end of the hitch bar is moved to the other side of the vertical plane passing longitudinally through the tractor, so that the implement towed therebehind will occupy the same position with respect to the area being plowed by the two-way gang plow and hitch bar.

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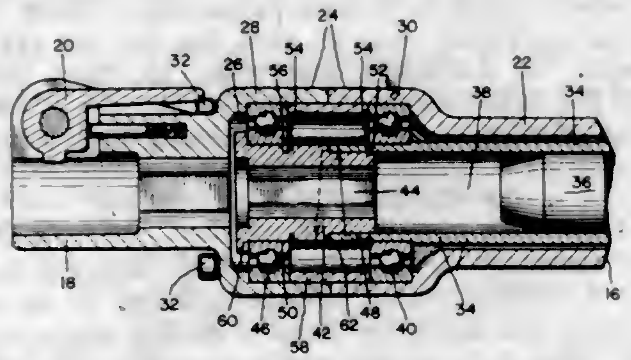
## 3,476,192
## CLUTCH FOR ROTARY HAMMER

**Donald G. Noerr, Jr., South Waverly, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey**
**Filed Oct. 9, 1967, Ser. No. 673,546**
**Int. Cl. E21c** *5/16;* **B23q** *5/46*
**U.S. Cl. 173—12** **7 Claims**



A unidirectional clutch, for a rotary hammer, communicating rotational torque in but one direction.

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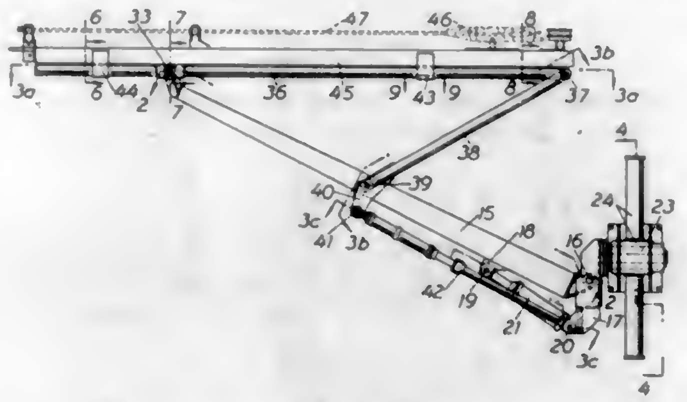
## 3,476,193
## DRILL BOOM WITH PARALLEL MOTION LINKAGE MEANS

**Axel Stromnes, Tunabro, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden**
**Filed June 19, 1968, Ser. No. 738,240**
**Claims priority, application Sweden, June 22, 1967, 8,929/67**
**Int. Cl. E21c** *5/08, 9/00, 11/00*
**U.S. Cl. 173—43** **11 Claims**



In a drill boom pivotally supporting a rock drilling apparatus intermediate its ends, parallel motion linkage means is provided which includes on the one hand a supporting link pivoted on the intermediate portion of the drill boom and extending rearwardly therefrom for pivotally supporting the rear end portion of the drilling apparatus and on the other a pilot link pivoted to the supporting link and to the boom support for providing parallel displacement of the drilling apparatus via the supporting link when the drill boom is pivoted relative to the boom support.

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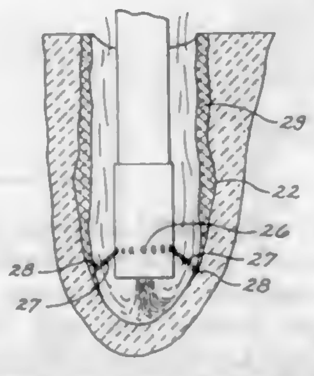
## 3,476,194
## FLAME JET DRILLING

**James A. Browning, Hanover, N.H., assignor to Browning Engineering Corporation, a corporation of New Hampshire**
**Filed Apr. 29, 1968, Ser. No. 733,727**
**Int. Cl. E21b** *7/14, 7/18, 21/04*
**U.S. Cl. 175—14** **6 Claims**



This patent teaches the use of flame jets produced in a rocket burner using air (or other oxidizer) and fuels. The flame jet is directed against rock or other mineral materials to drill holes therein. Coolant is applied in radial streams against the walls of the hole being drilled for effective control, (and variation) of hole size as drill progresses.

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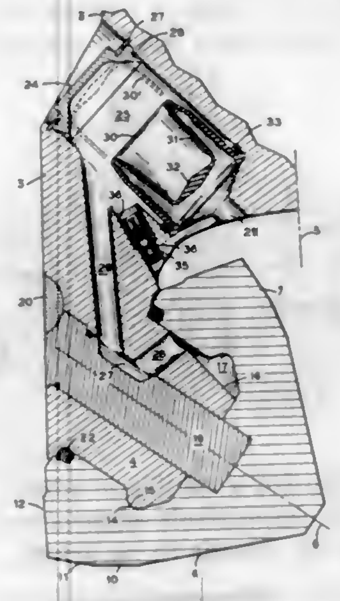
## 3,476,195
## LUBRICANT RELIEF VALVE FOR ROCK BITS

**Edward M. Galle, Houston, Tex., assignor to Hughes Tool Company, Houston, Tex., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 723,645, Mar. 29, 1968. This application Nov. 15, 1968, Ser. No. 790,494**
**Int. Cl. E21b** *9/08, 9/35*
**U.S. Cl. 175—228** **11 Claims**

The invention resulted from the drilling of deep wells with lubricated rock bits equipped with efficient seals and

also provided with flexible pressure compensators and vent holes to equalize the pressure between the lubricant within the bearing and the drilling fluid surrounding the bit. Experience with such bits indicated that some mechanism was causing the pressure within the bit to exceed the drilling fluid pressure. This internal overpressure was causing the compensator to be extruded into the vent hole, sometimes cutting it and causing a loss of lubricant or intrusion of drilling fluid and cuttings.



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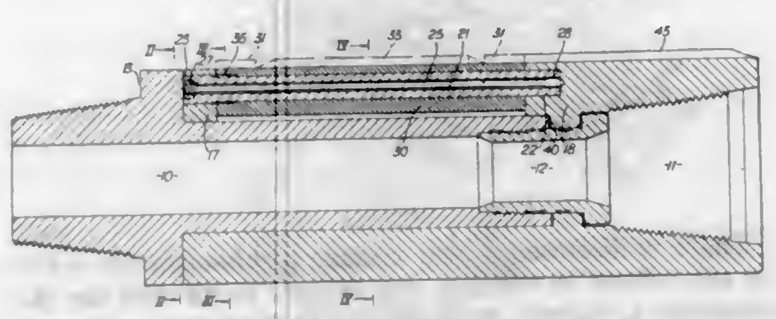
## 3,476,196
## STABILISERS FOR BOREHOLE DRILLING

**Frank Whittle and Derek Thomas, Chagford, England, assignors to Bristol Siddeley Engines Limited, Filton, England, a British company**
**Filed Jan. 18, 1968, Ser. No. 698,791**
**Claims priority, application Great Britain, Jan. 25, 1967, 3,803/67**
**Int. Cl. E21b** *17/10;* **E21c** *9/00*
**U.S. Cl. 175—325** **4 Claims**



A stabiliser for use in a drill string in borehole drilling comprising two members coupled together with rotary lost motion and respectively connectable to the upper and lower parts of a drill string. One of the members having spacer elements pivotally mounted thereon and the other member having cams whereby rotation of the drill string will cam the spacer elements radially outward from a retracted position to an extended position.

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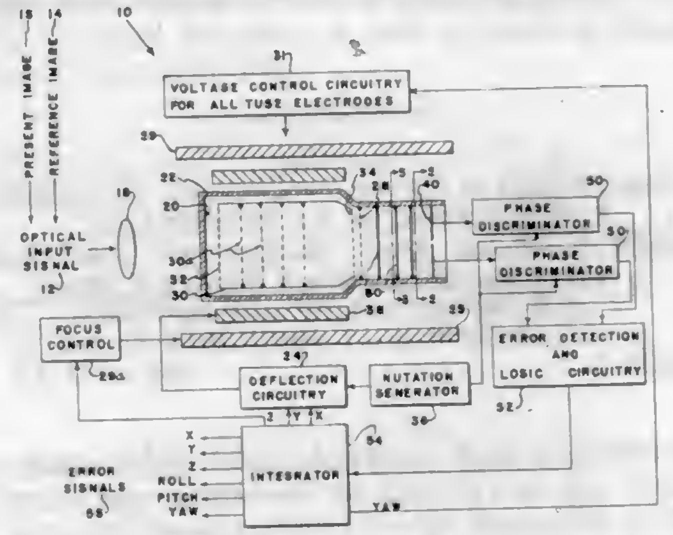
## 3,476,197
## ELECTRON IMAGE CORRELATOR TUBE WITH IMPROVED READ-OUT MEANS

**Ermal E. Penix, Akron, and Harry O. Pfeiffer, North Canton, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware**
**Filed June 23, 1966, Ser. No. 559,921**
**Int. Cl. H04n** *5/74*
**U.S. Cl. 178—6.8** **7 Claims**

This invention relates to an image matching system, and more particularly to a single electronic tube which, upon appropriate energization, stores a reference electronic image pattern, correlates a second present electronic image pattern with the reference electronic image pattern, produces an electrical output signal which is a function of the correlation between the patterns and indicates six degrees of error, and where the read-out very accurately can be used to close the correlation loop to overcome any system errors.



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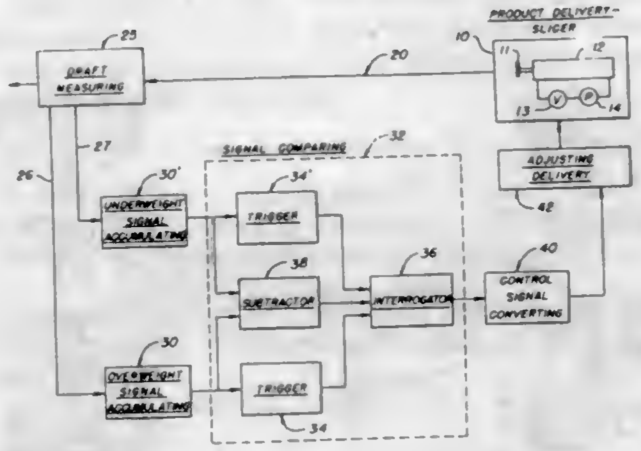
## 3,476,198
## BACON SLICER WEIGHT CONTROL

**Ray D. Francis, Beloit, Wis., assignor to Swift & Company, Chicago, Ill., a corporation of Illinois**
**Filed Oct. 25, 1966, Ser. No. 589,307**
**Int. Cl. G01g** *19/52*
**U.S. Cl. 177—50** **14 Claims**



Items for packages of product are assembled in groups approximating a desired measure, with some overmeasure and undermeasure groups being produced. A desired ratio of overmeasure to undermeasure groups is established and the assembly of groups is adjusted to produce that ratio which will result in sufficient undermeasure groups being produced to take up the excess items assembled in produced overmeasure groups and also excess items obtained from incomplete groups and the like.

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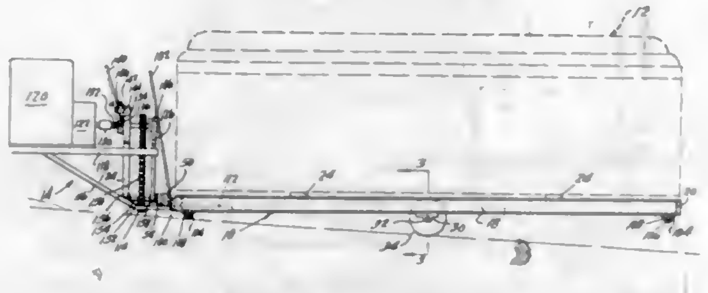
## 3,476,199
## DOLLY FOR BURIAL VAULTS

**Asher D. Kahn, 2700 Virginia Ave. NW., Washington, D.C. 20037**
**Filed Nov. 17, 1967, Ser. No. 683,945**
**Int. Cl. B62d** *57/00;* **B62b** *1/00, 5/00*
**U.S. Cl. 180—20** **12 Claims**

A dolly for transporting a heavy burial vault comprising an open rectangular frame having side and end members, a transverse shaft extending across said frame substantially centrally thereof, a pair of cylindrical traction rollers rotatable upon said transverse shaft and disposed between the side members of the frame, a longitudinal drive shaft extending from said transverse shaft to one end of the frame, gear means connecting said drive shaft to said transverse shaft, pawl and ratchet means within each of said pair of cylinders for connecting said transverse shaft to drive each of said cylinders in one direction but permitting rotation in the opposite direction when a drive clutch is disengaged, means for attaching a power unit to said one end of the frame, and coupling means for connecting said drive shaft to a drive axle of said power unit.



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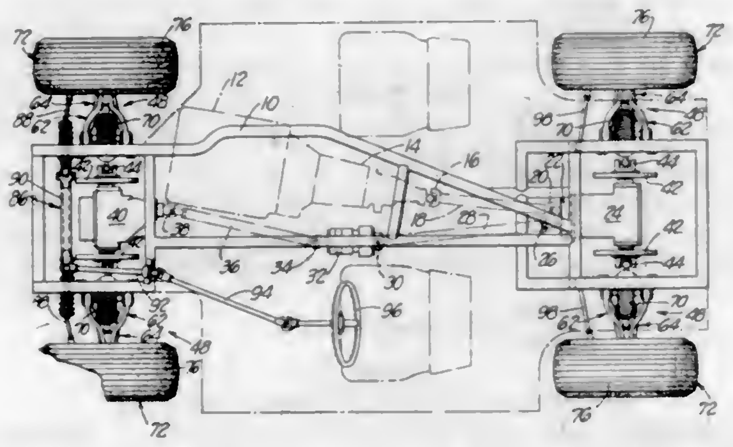
**3,476,200**

### INTERCHANGEABLE WHEEL SUSPENSION SYSTEM IN A FOUR-WHEEL DRIVE VEHICLE

**Adolf Schoepe, 1620 N. Raymond Ave., Fullerton, Calif. 92631, and Harley N. Klentz, Chino, Calif.; said Klentz assignor to said Schoepe**
**Filed Oct. 3, 1967, Ser. No. 672,580**
**Int. Cl. B62d** *7/00;* **B60k** *17/00, 23/00*
**U.S. Cl. 180—44 4 Claims**



Each system has a central spindle bell housing functionally vertically symmetrical and reversible, except for a forward or rearward projecting steering bracket. Vertical reversal of one housing of a wheel set projects both housing steering brackets in one direction adapted for connection to the vehicle steering system where the set is steerable or securement to the vehicle frame where the set is nonsteerable. Each bell housing is axially within a wheel having an outer wheel support rotatably mounting the wheel and upper and lower king pin connections operably connected to the frame through suspension arms. Each bell housing is adapted for receiving a universal drive connection therethrough for driving connection outward to the wheel and inward to a differential connected drive shaft.

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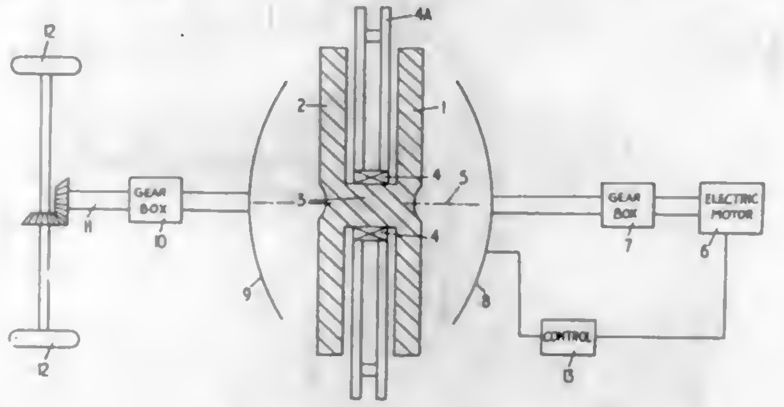
**3,476,201**

### DRIVE SYSTEM FOR A VEHICLE

**Harry Dugdale Swaine, 15 Northborough Road, Norbury, London, SW. 16, England**
**Filed Feb. 21, 1968, Ser. No. 707,130**
**Int. Cl. B60k** *1/00;* **G05g** *1/00;* **H02k** *7/02*
**U.S. Cl. 180—65 4 Claims**



A drive system for a vehicle in which a double flywheel has two flanges respectively alternatively connectable to the motor and the wheels to be driven.

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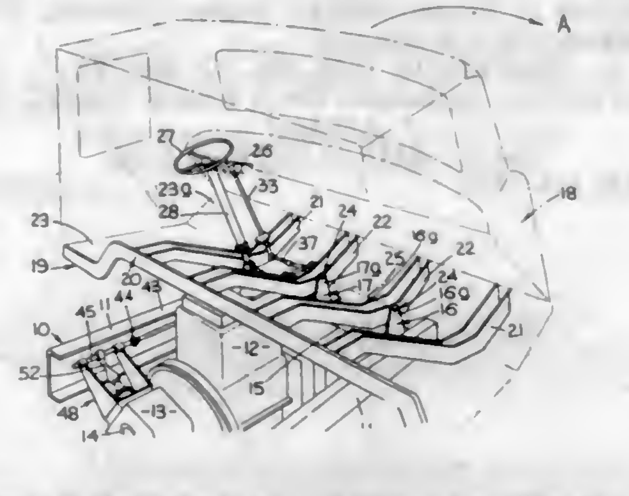
**3,476,202**

### CHANGE SPEED MEANS FOR USE WITH TILTING CABS

**John Trevor Dudley, Brewood, England, assignor to Joseph Sanky & Sons Limited, Bilston, England, a British company**
**Filed Jan. 30, 1968, Ser. No. 701,748**
**Claims priority, application Great Britain, Feb. 3, 1967, 5,224/67**
**Int. Cl. B60k** *27/00, 35/00;* **G05g** *11/00*
**U.S. Cl. 180—77 5 Claims**



There is disclosed a gear change mechanism for a tilting cab vehicle in which a gear control to tilt with the cab comprises a column mounted for locking and reciprocation and connected to a first rockable and reciprocable shaft on the chassis by a universal joint which can be aligned with the tilt axis of the cab, the first shaft being connected by an articulated link to a second rockable and reciprocable shaft on the gear box.

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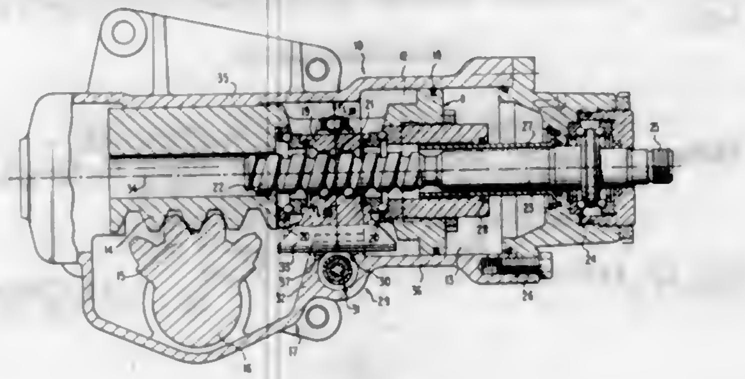
**3,476,203**

### SERVO-STEERING SYSTEM FOR MOTOR VEHICLES

**Hans-Joachim M. Förster, Stuttgart-Riedenberg, and Klaus Katz, Stuttgart, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Untertürkheim, Germany**
**Filed Apr. 6, 1967, Ser. No. 629,015**
**Claims priority, application Germany, Apr. 9, 1966, D 49,836**
**Int. Cl. B62d** *5/00;* **F15b** *21/02*
**U.S. Cl. 180—79.2 14 Claims**

A servo-steering mechanism for motor vehicles which comprises a housing for the steering gear constructed as pressure medium cylinder, a working piston slidingly arranged in the housing and subdividing the housing into working spaces, the pressure medium cylinder having in relation to its diameter a wider cylinder portion for the working spaces and a narrower cylinder portion for the guidance of the working piston, a control valve mounted in the housing of the narrow cylinder portion which controls by the movements of its valve body the pressure medium for the working spaces, the valve body being connected with a member of the steering gear transmitting the steering movements of the steering spindle to the steering shaft, and the steering shaft being also rotatably supported in the narrower cylinder portion of the housing. Preferably the valve body as well as the steering spindle are arranged on the same side of a plane containing the cylinder axis.



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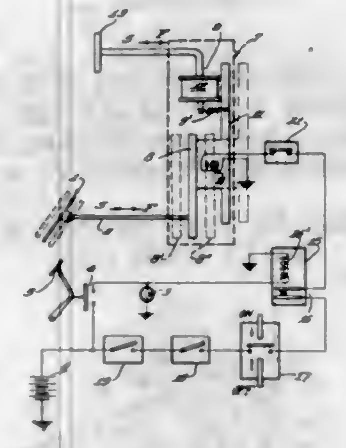
**3,476,204**

### VEHICLE SPEED CONTROL DEVICE

**Lloyd R. Westby, P.O. Box 233, Wayne, Ill. 60184, and Francis H. Bourgeois, P.O. Box 84, Oak Park, Ill. 60303**
**Filed Nov. 17, 1967, Ser. No. 683,995**
**Int. Cl. B60k** *27/00;* **F02d** *11/10;* **F16d** *67/00*
**U.S. Cl. 180—98 20 Claims**



A vehicle speed control system adapted to be operatively connected to the throttle and brake structures of a vehicle having a control actuating mechanism which includes a member operatively connectable to the vehicle engine throttle, a speed adjusting member cooperable with the first member for determining the adjusted position of the latter, and the third member forming the operative connection between said first two members, in which said third member is releasably connectable with the other members, the means operatively connecting said second and intermediate members being operative to release upon the application of over-riding pressure on the manual throttle control means of the vehicle, and the means operatively connecting the first and intermediate members being operatively connected to the vehicle brake system and responsive to actuation thereof to effect release of the first member from the intermediate member. In addition to being manually controllable, the speed adjusting member may be motor actuated and cooperable with means for sensing the vehicle speed whereby said speed adjusting member may be actuated in accordance with variations in the vehicle speed to compensate for such variations, as well as enable a remote control by radio or the like.

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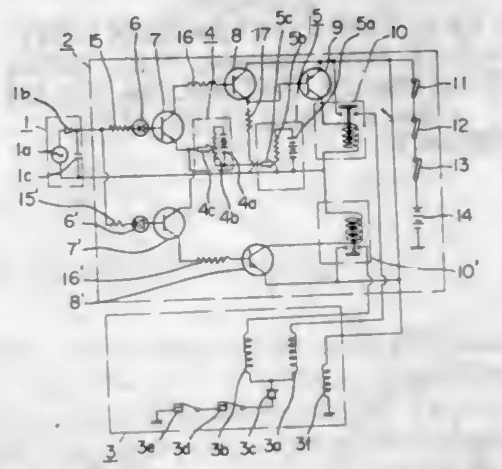
**3,476,205**

### AUTOMATIC CONSTANT SPEED MAINTAINING MEANS FOR AN AUTOMOBILE

**Takaaki Kato, Toyohashi-shi, Japan, assignor to Nippon Denso Kabushiki Kalsha, Kariya-shi, Japan**
**Filed Feb. 20, 1967, Ser. No. 617,203**
**Int. Cl. B60k** *27/00, 33/00;* **F02d** *11/10*
**U.S. Cl. 180—105 2 Claims**



The automatic constant speed maintaining means for an automobile in accordance with this invention is characterized by a negative feed back arrangement from a potentiometer to the input side of a relay circuit whereby the means is kept in operation by the action of itself while tending to keep the running speed of the automobile at a predetermined value. The means may be further characterized by a rotation detecting generator whereby the closure and the opening of the throttle valve occur at the same speed with each other.

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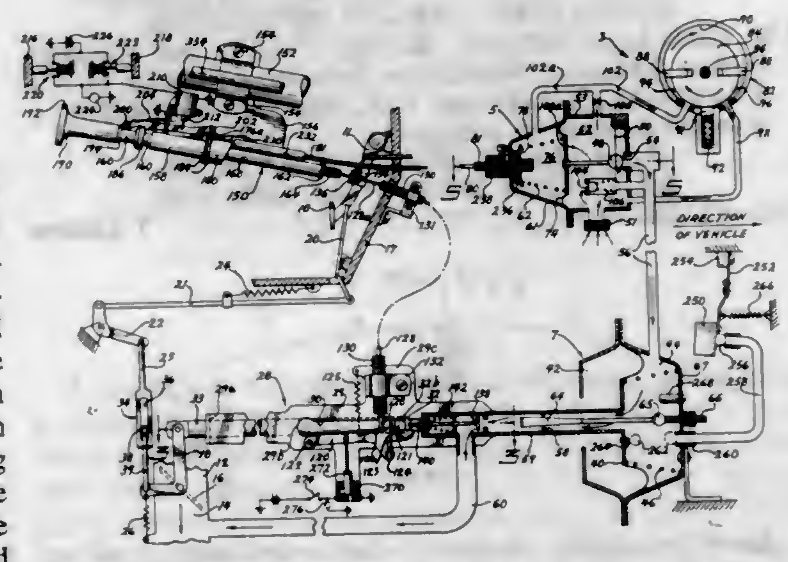
**3,476,206**

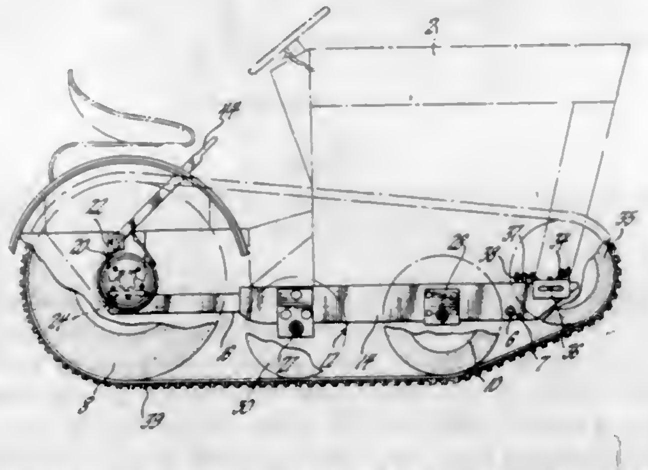
### AUTOMOTIVE SPEED CONTROL APPARATUS

**Robert H. Thorner, 8750–F W. Chicago Blvd., Detroit, Mich. 48204**
**Continuation-in-part of application Ser. No. 266,257, Mar. 19, 1963. This application Dec. 9, 1966, Ser. No. 600,507**
**Int. Cl. B60k** *31/00*
**U.S. Cl. 180—108 48 Claims**



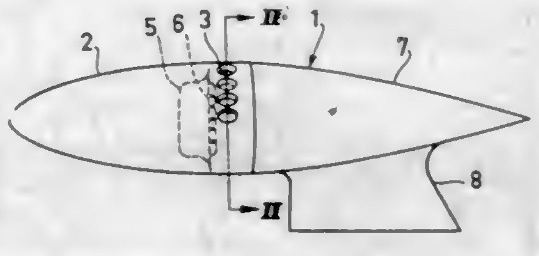
This patent discloses and claims a number of subcombination inventions disclosed in the parent patent. These subcombinations may be included in automatic cruise control for automotive vehicles to provide, either combined or separately, (1) means to cause an automatic reduction of speed when the vehicle traverses a road curve, and automatic return to the preset speed when the road straightens out, both for automatic-throttle operation and also for accelerator resistance operation; (2) accelerator resistance means to provide a very sudden application of the resistance force, and/or in which the resistance force may be pulsating; (3) means automatically to restrict the rate of automatic acceleration temporarily; (4) means to provide automatically an accelerator resistance force whenever the vehicle is accelerated by the vehicle-driver at an excessive or dangerous rate; and (5) means operated by the vehicle starter coil switch to render the regulator device inoperative until deliberately activated again by the vehicle-driver.

### 3,476,207
### TRACTOR CONVERSION UNIT
**John T. Ryan, Saranac, N.Y. 12981**
**Filed May 29, 1967, Ser. No. 642,111**
**Int. Cl. B62d** *11/08, 55/04*
**U.S. Cl. 180—6.7** **6 Claims**



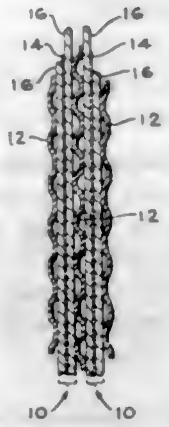
Apparatus for converting a wheeled vehicle to tracked operation. Each side of the vehicle is provided with a frame structure carrying stub axles, one of which is adjustable. The frame is secured at its forward end to the vehicle's front axle, and at the rear, preferably by a hinge, to a shackle assembly which is mounted on the rear axle housing. After conversion, the rear wheel is carried on a hub extension and is independently braked by a brake operated by a lever mounted on the shackle assembly. A continuous track passes around the outer peripheries of the rear wheel and the wheel carried by the forward stub axle.

### 3,476,208
### ARRANGEMENT IN AN ACOUSTICALLY OPERATING TARGET INDICATOR
**Ulf Carl Iwar Sellman, Roslags Nasby, and Gunnar Arthur Ericsson, Stockholm, Sweden, assignors to AB FLYGMAL Air Target Ltd., Stockholm, Sweden, a Swedish joint-stock company**
**Filed May 20, 1968, Ser. No. 730,558**
**Int. Cl. G10k** *11/00, 11/06;* **G01s** *3/80*
**U.S. Cl. 181—.5** **7 Claims**



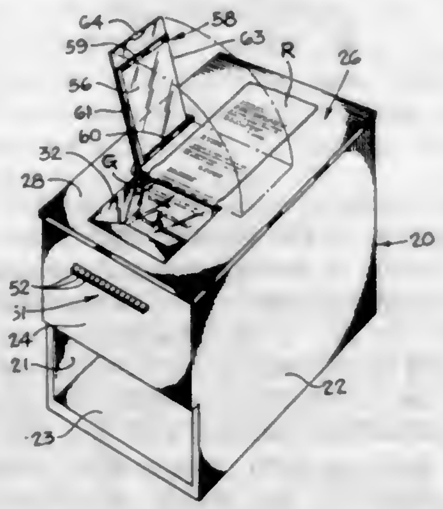
Aerodynamically shaped bodies containing a microphone unit concentrically positioned are used as miss distance indicators when training shooting towards airborne targets, the microphone unit being actuated by the bow wave of the projectile, penetrating a sound inlet encircling the body adjacent the diaphragm of the microphone. In accordance with the invention it has been found that a more uniform response of the microphone unit, irrespective of the incidence direction of the bow wave, is obtained if the sound inlet is restricted to only a portion, preferably 180° of the periphery of the body, as contrasted to the conventional arrangement, where the sound inlet is distributed over all the periphery (360°) of the body.

### 3,476,209
### ACOUSTIC INSULATING MATERIAL
**Milton S. Cohen, Arlington, Mass., assignor to Graphic Sciences, Inc., East Rochester, N.Y.**
**Filed Dec. 13, 1967, Ser. No. 690,342**
**Int. Cl. E04b** *1/99*
**U.S. Cl. 181—33** **11 Claims**



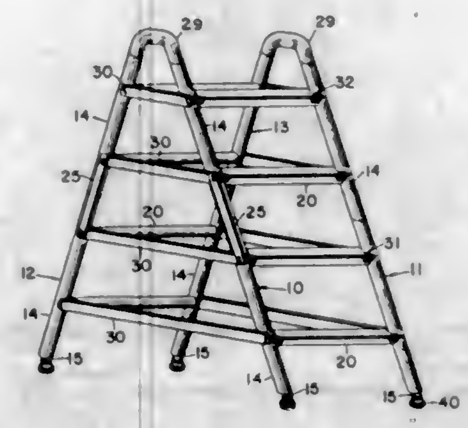
An acoustical insulating member comprises composites of metallic foil bonded to laminae of flexural damping material. The composites are separated by spacer sheets having voids or air cells over large portions of their surfaces. The flexural damping material minimizes acoustical transmission through the composites in the diaphragm mode, and the voids provide impedance mismatches which minimize transmission in the compression mode.

### 3,476,210
### VENTILATED SOUND-REDUCING ENCLOSURE FOR A TELEPRINTER
**Robert O. Carlson, Arlington Heights, Ill., assignor to SCM Corporation, New York, N.Y., a corporation of New York**
**Filed May 22, 1968, Ser. No. 731,102**
**Int. Cl. E04b** *1/99*
**U.S. Cl. 181—33** **21 Claims**



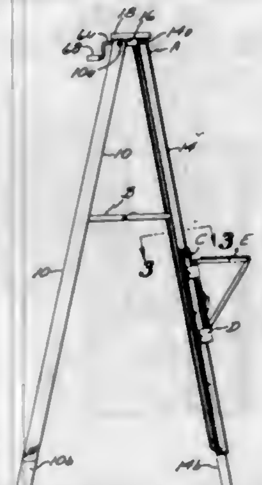
There is disclosed an enclosure for a teleprinter or the like, and a muffler through which the record medium passes; a window in the enclosure and a transparent portion of the muffler enable printing on the record medium within the enclosure and the muffler to be read. The record medium enters the muffler at an exit opening in the enclosure. The window terminates at a severing edge at the exit opening. The exit opening is relatively close to the printing zone so that the distance between the printing zone and the tear-off point is relatively short. The enclosure is divided into two chambers, one housing the teleprinter and the other which communicates with it providing noise reduction. Ventilation air is forced through the chambers to cool the teleprinter.

### 3,476,211
### KIT FOR CONSTRUCTING LADDERS AND THE LIKE
**Louis A. Cormier, 42 Central St.,**
**Southbridge, Mass. 01550**
**Filed Dec. 4, 1967, Ser. No. 687,892**
**Int. Cl. E06c** *1/38, 7/08*
**U.S. Cl. 182—22** **5 Claims**



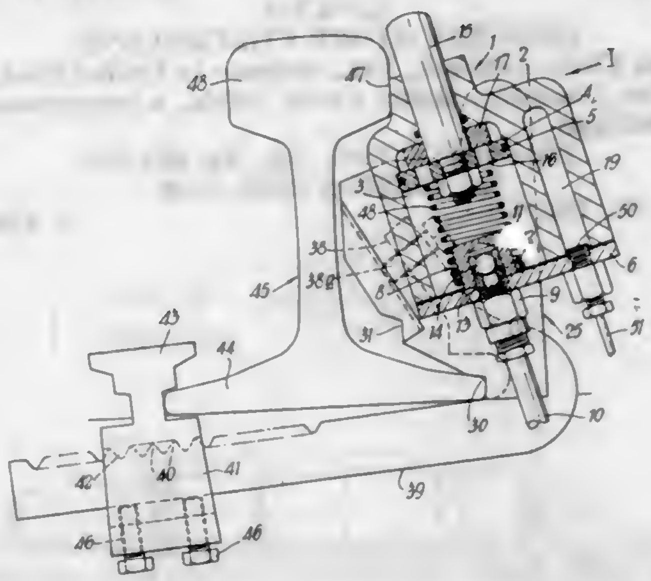
The kit comprehends the provision of a number of standard parts and elements adapted to be fitted together in various ways to provide a ladder or step ladder or saw horse or work bench and the like.

### 3,476,212
### COMBINATION STEPLADDER AND VERTICALLY MOVABLE PLATFORM
**William V. Eakins, 2438 Delta Ave.,**
**Long Beach, Calif. 90810**
**Filed June 24, 1968, Ser. No. 739,381**
**Int. Cl. E06c** *7/16;* **B66b** *9/20*
**U.S. Cl. 182—103** **6 Claims**



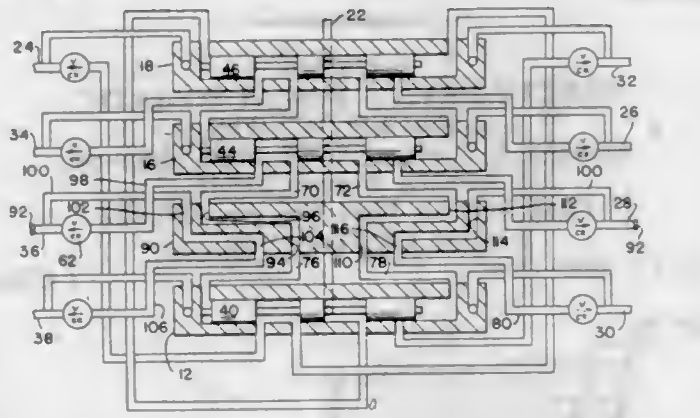
A stepladder incorporating a vertically movable cargo carrying platform so supported thereon that said platform may be raised to a position above the upper extremity of the ladder, as well as lowered below the lower ends thereof when the ladder is supported on extensions.

### 3,476,213
### APPARATUS FOR APPLYING LIQUID TO THE RAILS OF RAILWAY TRACKS
**Walter Alfred Henry Watts, London, England, assignor to The P. & M. Co. (England) Limited, London, England, a British company**
**Filed May 23, 1967, Ser. No. 640,739**
**Claims priority, application Great Britain, May 25, 1966, 23,495/66**
**Int. Cl. B61k** *3/00;* **F04b** *19/22*
**U.S. Cl. 184—3** **8 Claims**



Apparatus for spraying liquid, such as friction-promoting liquid, onto the rails of a railway track, comprises a body clamped to a rail and having a primary chamber fitted with a pump piston operated by passing train wheels for drawing liquid into the primary chamber and forcing liquid therefrom into a secondary chamber. After the secondary chamber has been fully charged, liquid can be delivered from an outlet onto the rail, there being means for draining liquid from the secondary chamber so that there is a delay period between the initial operations of the pump and the delivery of liquid whereby the wheels at least of the locomotive of a train can pass before liquid is delivered from the outlet.

### 3,476,214
### DIVISIONAL LUBRICANT FEEDER WITH BYPASS MEANS
**James J. Callahan, Mentor, Ohio, assignor to McCord Corporation, Detroit, Mich., a corporation of Maine**
**Filed Feb. 1, 1968, Ser. No. 702,392**
**Int. Cl. F16n** *13/22, 25/02*
**U.S. Cl. 184—7** **5 Claims**



A divisional lubricant feeder of the type comprising a series of valve blocks individually mounted on a base which has therein an inlet manifold supplied with lubricant under pressure, the outlets for the valve blocks, and a system of passages interconnecting the valve blocks for automatic sequential operation. A bypass block is interchangeable with any of the valve blocks, as long as there remains at least three working valve blocks, and has passages therein communicating with the passages in the base to reroute certain passages in the system of passages to maintain the normal cyclical order of operation of the remaining working valve blocks. The by-pass block may be used to replace a valve block to eliminate unneeded discharge outlets and conversely a bypass block may be replaced by a working valve block to add additional lubricant outlets to the system.

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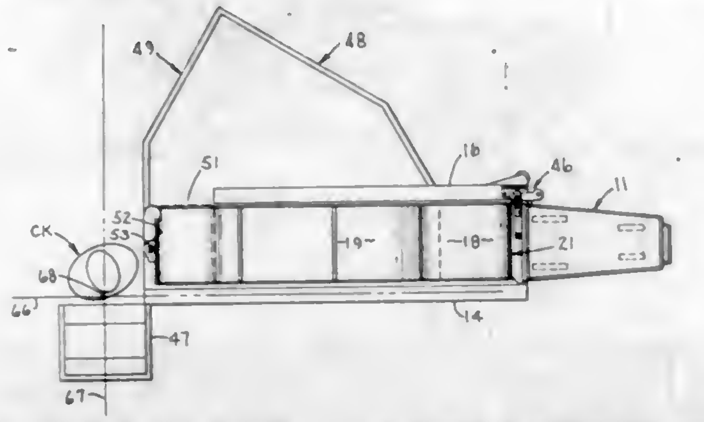
### 3,476,215
### GROCERY STORE CHECKSTAND

**Garth Close, Lubbock, Tex., assignor to United Steel and Wire Company, Battle Creek, Mich., a corporation of Michigan**
**Filed Nov. 8, 1967, Ser. No. 681,521**
**Int. Cl. B62d; B60k; B60l**
U.S. Cl. 186—1 9 Claims



A supermarket checkstand for automatically unloading merchandise from a cart having a counter with a substantially depressed zone open at a first location and having a conveyor disposed within the depressed zone, and extending from said first location to a second location. Means are included for driving said conveyor from said first location toward said second location. A merchandise storage area is positioned at a third location transversely offset from, and generally coextensive with, the conveyor between the first and second locations. A support for a summing device is positioned adjacent one corner of the checkstand and a bagging area is spaced from said support position adjacent the merchandise storage area to define an area for the summing device operator therebetween whereby said operator is in alignment with said conveyor. The checkstand has means for automatically stopping the conveyor after the merchandise has moved thereon from said first position to said second position adjacent said area for said summing device operator.

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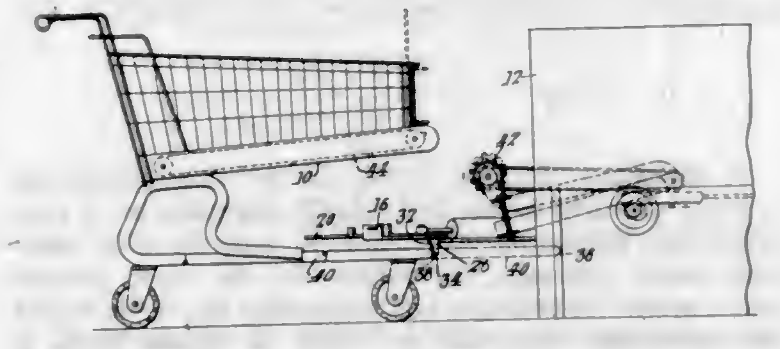
### 3,476,216
### SAFETY DEVICE FOR AUTOMATIC GROCERY CARTS

**Armand A. Lachance, 133 Southbridge St., Auburn, Mass. 01501**
**Filed Dec. 14, 1967, Ser. No. 690,492**
**Int. Cl. E04h** *3/04*
U.S. Cl. 186—1 7 Claims



A safety device in cooperation with an automatic device which moves an unloaded cart out of the unloading station, and positioned with respect to a checkout stand to prevent a subsequent cart being positioned too quickly in unloading position, whereby a customer cannot position his cart in unloading position, until the device for automatically moving the preceding unloaded cart out of the unloading station, and comprising a stop dog movable e.g. by gravity into position to prevent the entry as above of the succeeding grocery cart until the proper moment.

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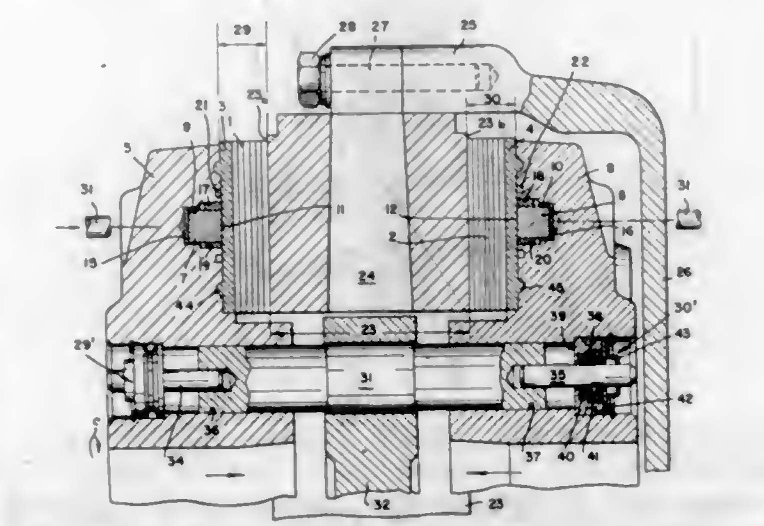
### 3,476,217
### MAGNETIC BRAKE SHOE SECURING MEANS

**Wilhelm Knapp, Bad Homburg vor der Hohe, Germany assignor to Alfred Teves GmbH, Frankfurt am Main, Germany, a corporation of Germany**
**Filed Feb. 28, 1968, Ser. No. 708,954**
**Claims priority, application Germany, Mar. 2, 1967, T 33,329**
**Int. Cl. F16d** *55/02, 63/00, 65/14*
U.S. Cl. 188—73 3 Claims



A disk brake for automotive vehicles in which the anchorage of the brakeshoe in the brake housing is provided through a magnetic attraction effective between the brakeshoe backing plate and the housing.

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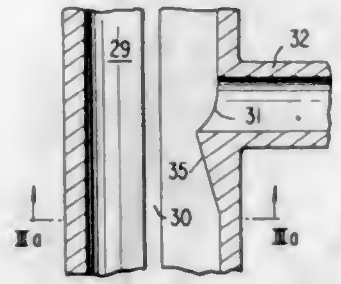
### 3,476,218
### HYDRODYNAMIC BRAKE AND REGULATING MEANS THEREFOR

**Manfred Herold and Adolf Brosig, Friedrichshafen, Germany, assignors to Maybach Mercedes-Benz Motorenbau G.m.b.H., Friedrichshafen, Germany**
**Filed Dec. 15, 1967, Ser. No. 690,867**
**Claims priority, application Germany, Jan. 7, 1967, M 72,331**
**Int. Cl. F16d** *57/04*
U.S. Cl. 188—90 7 Claims



A regulating device for a hydrodynamic brake which includes a rotor and a stator into which brake fluid is supplied continuously, in which the braking torque is controlled by removal of fluid from the fluid circuit by means of an outlet so constructed and arranged that the cooperation of the filling pressure and of the pressure of the fluid depending on the brake rotational speed as well as the mutual interaction results in the intended braking torque characteristic as a function of the rotational speed. The particular outlet may be arranged along an annular channel surrounding the hydrodynamic brake and in communication by way of a gap with the brake chamber.

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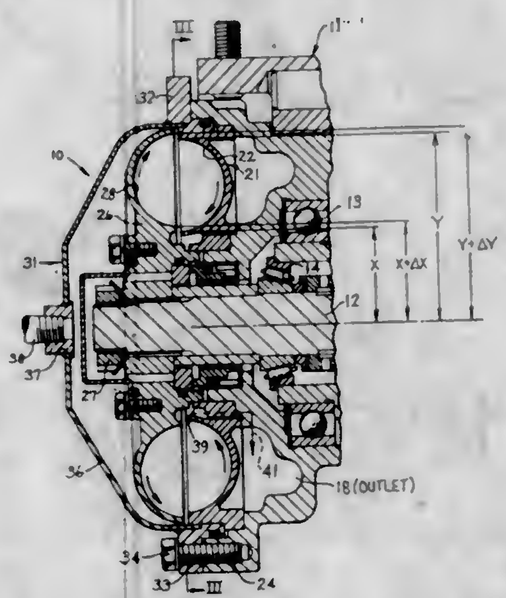
### 3,476,219
### OVERMATCHING ROTOR TO STATOR RETARDER ARRANGEMENT TO COMBAT CAVITATION

**Ernst H. Lauer, Richland, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Mar. 22, 1968, Ser. No. 715,362**
**Int. Cl. F16d** *57/02, 33/20*
U.S. Cl. 188—90 4 Claims



A hydro-kinetic retarder for retarding the rotation of a shaft having a rotor rotatable therewith and a stator axially spaced therefrom. The rotor and stator have internally facing annular concave surfaces defining a torus wherein the inner and outer radii of the concave surface on the rotor is greater than the corresponding inner and outer radii of the concave surface on the stator so that cavitation within said torus is minimized.

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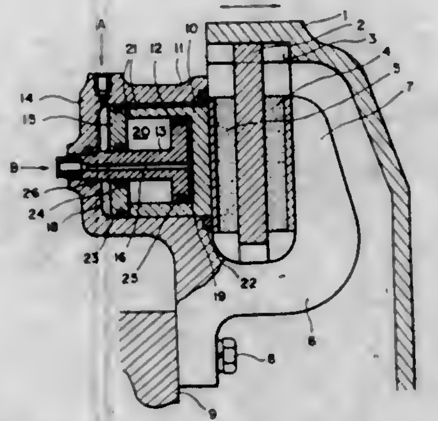
### 3,476,220
### HYDRAULIC DISC BRAKE APPARATUS AND MULTIPLE OPERATORS THEREFOR

**Toyoaki Kobayashi, Kariya, Japan, assignor to Aisin Seiki Kabushiki Kaisha, Kariya, Aichi Prefecture, Japan**
**Filed July 13, 1967, Ser. No. 653,108**
**Int. Cl. F16d** *65/20;* **B60t** *11/10*
U.S. Cl. 188—106 2 Claims



A hydraulic disc brake assembly for a motor vehicle. A brake disc is interposed between two brake linings and axially slidably mounted on a wheel part; a wheel cylinder having a piston is adapted to press the brake linings against the brake disc to effect desired braking when actuated by liquid pressure supplied from two independent liquid pressure circuits.

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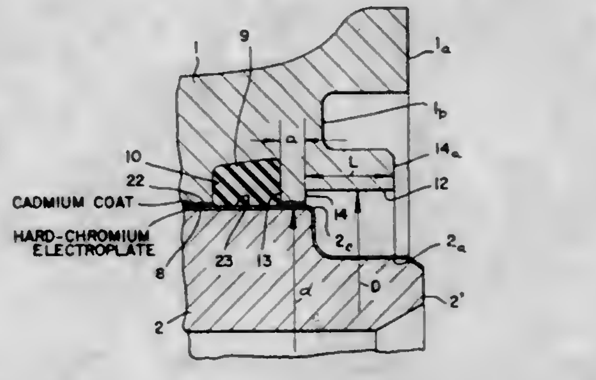
### 3,476,221
### PISTON-CYLINDER ASSEMBLY WITH SEAL MEANS AND CORROSION PREVENTING MEANS THEREFOR

**Hans Schanz, Gifhorn, Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany**
**Filed Feb. 26, 1968, Ser. No. 708,017**
**Claims priority, application Germany, Mar. 7, 1967, T 33,372**
**Int. Cl. B60t** *11/10;* **F16j** *15/00*
U.S. Cl. 188—152 3 Claims



A hydraulic-cylinder arrangement for a disk brake in which the cylinder bore guiding the piston opens in the direction of the brake disk and the bore has an enlarged-diameter portion forming an annular clearance with the periphery of the piston adjacent the mouth of the cylinder to prevent damage to the sliding surfaces of the piston and cylinder because of distortion or deflection of the yoke and piston during the brake operation. The enlarged-diameter portion of the bore reaches back substantially to the region of the seal between the co-operating surfaces in the most advanced position of the piston.

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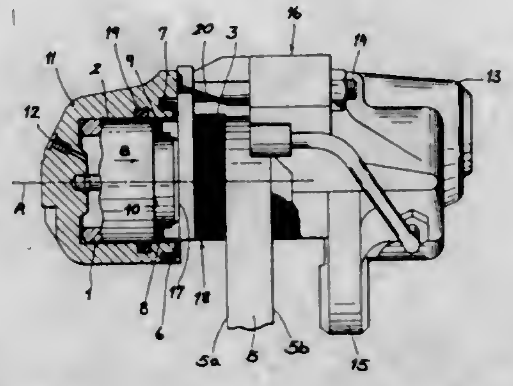
### 3,476,222
### DISK BRAKE WITH GALVANIC CORROSION PROTECTION

**Hans Christof Klein, Hattersheim (Main), Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany**
**Filed Mar. 27, 1968, Ser. No. 716,507**
**Claims priority, application Germany, Apr. 1, 1967, T 33,570**
**Int. Cl. B61b** *17/18;* **F16f** *65/84*
U.S. Cl. 188—152 6 Claims

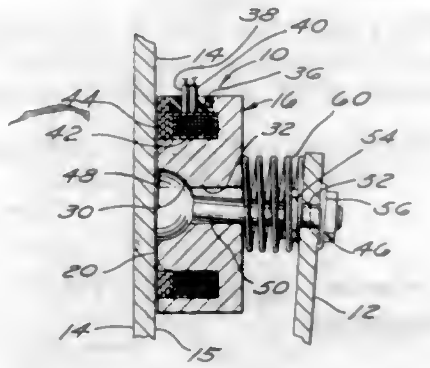


A dust cap for a fluid cylinder (e.g. a wheel-brake cylinder of an automotive brake system) is backed by a sacrificial ring. The latter fits around a boss of the piston and abuts against a shoulder thereof to provide cathodic protection of the piston against corrosion through electrochemical action arising when the tight seal of the dust cap closure is loosened through physical stress in the system or by chemical agents in the environment.

### 3,476,223
### ELECTROMAGNET

**Harold C. Hubbard, Lansing, Mich., assignor to Motor Wheel Corporation, Lansing, Mich., a corporation of Ohio**

**Filed Jan. 17, 1968, Ser. No. 698,506**
**Int. Cl. B60l** *7/00;* **H01f** *7/08, 5/00*
**U.S. Cl. 188—164 6 Claims**

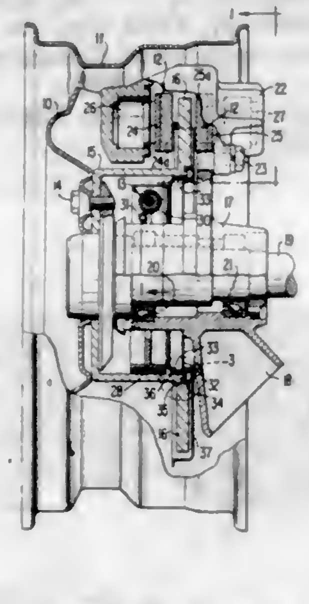


An electromagnet for an electric brake mechanism in which the magnet body swivels on a support pin having a half-ball head received in a mating socket of the body and arranged to provide increased magnetic efficiency and break-away release action from the brake armature plate.

### 3,476,224
### DRUM AND DISK BRAKE AND DUST COVER THEREFOR

**Franz Buching, Korb Kreis Waiblingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**

**Filed Feb. 1, 1968, Ser. No. 702,237**
**Claims priority, application Germany, Feb. 4, 1967, D 52,199**
**Int. Cl. F16d** *65/10, 55/10*
**U.S. Cl. 188—218 4 Claims**

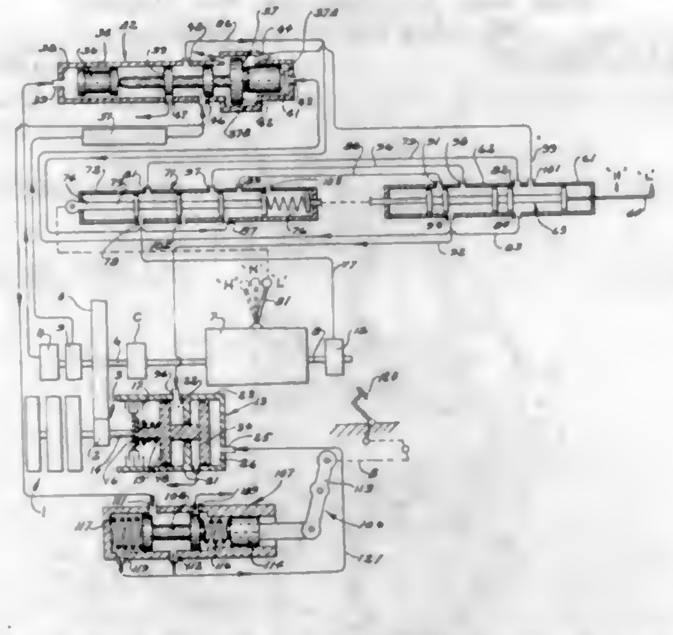


A brake installation for vehicle wheels which is equipped with an outer brake, especially a disk brake and with an inner brake, especially a shoe brake, whereby a drum-shaped part, that may also form the hub of the brake disk, surrounds the innner brake in a housing-like manner and the inner brake is sealed against water seeking to penetrate into the same by a labyrinth seal arranged at the edge of the drum-shaped part. The labyrinth-like seal may be in the form of a cover plate having an axially bent portion engaging in an annular groove provided in the drum-shaped part.

### 3,476,225
### MESH FORCING WITH AN ENGINE CONNECTED BRAKE

**David P. Hass, Detroit, and Ralph P. Horan, Birmingham, Mich., assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio**

**Filed Sept. 20, 1967, Ser. No. 669,046**
**Int. Cl. F16d** *67/00;* **F16h** *3/38, 57/10*
**U.S. Cl. 192—4 12 Claims**

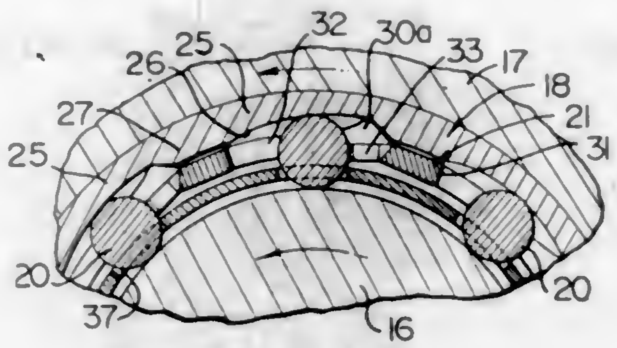


A change-speed gear transmission driven by a prime mover, such as a turbine, having a tendency toward excessive speed when the load is removed and brake means connected to the prime mover for preventing such excessive speed of the prime mover when the transmission is in neutral. The invention further contemplates opposing said tendency toward excessive speed by an adjustable application of said brake means to control the input speed to the transmission for shift synchronizing purposes.

### 3,476,226
### OVERRUNNING CLUTCH WITH CONTROLLED OPERATION

**Roger G. Massey, Litchfield, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine**

**Filed Sept. 12, 1966, Ser. No. 578,633**
**Int. Cl. F16d** *15/00, 11/06, 67/02*
**U.S. Cl. 192—27 27 Claims**

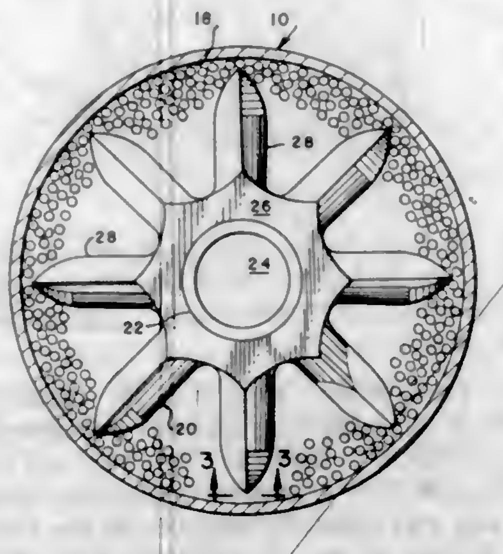


There is disclosed overrunning clutch means with controlled operation including in combination a first cylindrical circumferential member, a second cylindrical circumferential member, clutching rollers disposed between the members, cylindrical retaining means for the rollers and having windows therein each defined by parallel bars to receive one such roller, biasing means carried by and projecting from certain bars for engagement with the rollers, clutching surface means on one of the members, separating means for contacting engagement with the rollers and for forcing the rollers away from the clutching surface means against the force of the biasing means upon a predetermined rotatable displacement of the separating means, and control means for actuating the separating means.

### 3,476,227
### FLEXIBLE COUPLING DEVICE

**Baird E. Resener, Indianapolis, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey**

**Filed Sept. 28, 1967, Ser. No. 671,275**
**Int. Cl. F16d** *43/14, 23/10*
**U.S. Cl. 192—105 9 Claims**

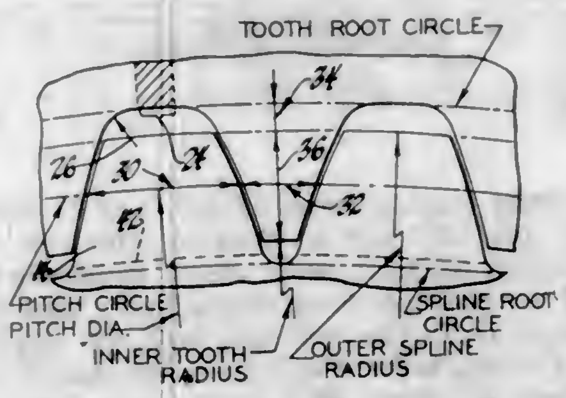


A cylindrical housing is secured to the end of a drive shaft and contains dry shot or a slurry of shot and lubricant. An elastomeric rotor is positioned in the housing and attached to the driven shaft, the rotor being entirely spaced from the corresponding interior surface of the housing. A curved seal is attached around the housing to engage with the rotor, and has a bulbous mass at its free end, causing the seal to withdraw from the rotor or the hub during rotation of the device.

### 3,476,228
### TORQUE TRANSMITTER

**Paul B. Pritchard, Danville, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Continuation of application Ser. No. 540,239, Apr. 5, 1966. This application May 21, 1968, Ser. No. 732,013**
**Int. Cl. F16d** *11/00, 13/60, 13/00*
**U.S. Cl. 192—107 10 Claims**

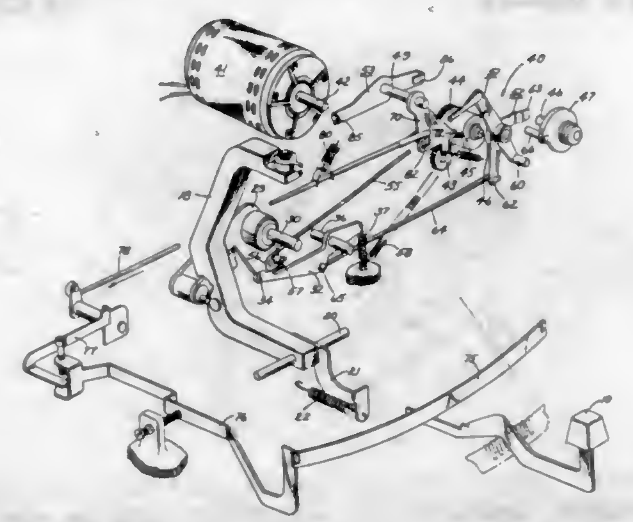


An annular clutch plate having teeth with a circular tooth thickness considerably less than the circular tooth space width and flats at the root diameter of the teeth which are blended with full tooth contact areas by fillets having a radius approximately equal to flat length. The clutch plate is piloted by the teeth on accommodating splines of a rotary member.

### 3,476,229
### HAMMER ACTUATOR MECHANISM

**Helmut Marum, Colonia, N.J., assignor to Varityper Corporation, Newark, N.J., a corporation of Delaware**

**Filed Nov. 8, 1967, Ser. No. 681,337**
**Int. Cl. B41j** *23/04, 1/32*
**U.S. Cl. 197—16 4 Claims**

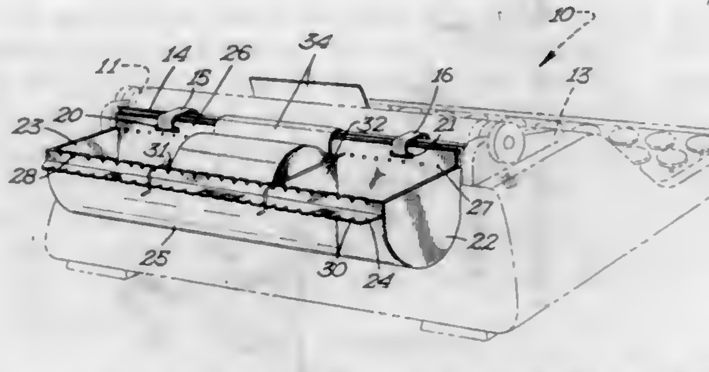


A typewriting machine having a carriage which moves by increments after each impression to space a page relative to an impression station. An impression hammer operating from the back of the paper is used to press the paper against a type font plate. The type font plate moves to select the particular impression character to be positioned opposite the hamer. A cycle of operation of the hammer is accomplished by a drive device which has a repeatable cyclic output function program. The cycle is initiated by pressing a key control. The key operates a lever to pull a clutch release link. The clutch release link is disconnected from the lever and key control immediately after the clutch is released, by mechanical action of the drive device independently of the key and lever action, to prevent initiation of a second cyclic without first release of the manually actuated key.

### 3,476,230
### PAPER ROLL CARRIER FOR USE WITH TYPEWRITER CARRIAGE

**Warren S. Hunter, Batttle Lake, Minn., assignor to Hunter Enterprises, Inc., Battle Lake, Minn., a corporation of Minnesota**

**Filed Apr. 13, 1967, Ser. No. 630,573**
**Int. Cl. B41j** *15/04*
**U.S. Cl. 197—133 1 Claim**

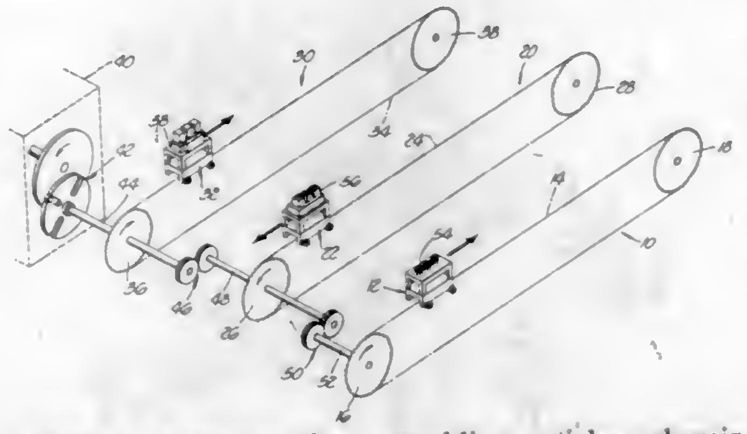


The disclosure of the invention is directed to a paper roll carrier to be attached to the carriage of the typewriter. The carrier has several compartments which hold the various rolls of paper which may comprise labels with perforations separating adjacent labels forming the roll. Separators located between the rolls of labels prevent one roll from causing movement of the adjacent rolls and the separators are movable to allow different size rolls of labels to be carried by the carrier. By the use of the carrier, the rolls of paper may be more easily inserted in the typewriter.

### 3,476,231
### ASSEMBLY CONVEYOR SYSTEM

**Richard R. Bower, Northridge, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware**

**Filed Nov. 21, 1967, Ser. No. 684,863**
**Int. Cl. B23q** *7/00*
**U.S. Cl. 198—19** **10 Claims**



Conveyor apparatus for assembling articles wherein a plurality of endless conveyors are arranged in generally parallel relationship with adjacent conveyors moving in opposite directions. The conveyors are synchronously driven and periodically simultaneously stopped at preselected work and transfer stations. Opposing movement of successive adjacent conveyor units allows relatively long overall conveyor length in compact apparatus and periodically brings respective portions of an article on adjacent conveyors into registry for assembly transfer of one such portion onto the other. Spaced carriages on each conveyor hold the workpieces and are individually indexed for accurate positioning at the work and transfer stations.

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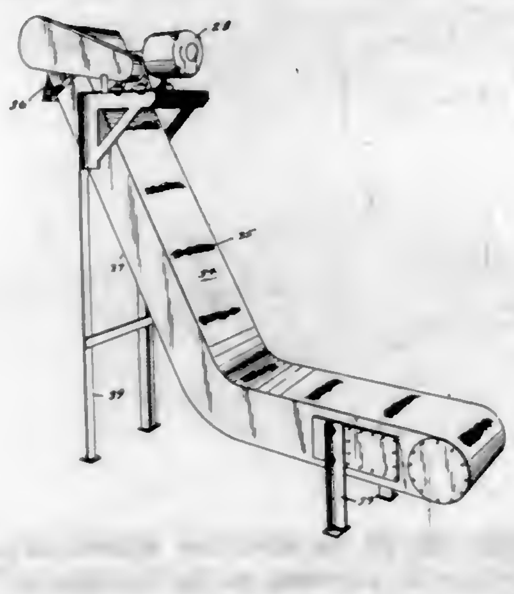
### 3,476,232
### PERMANENT MAGNETIC CONVEYOR AND ELEVATOR

**Robert F. Merwin, Erie, Pa., and Fred W. Weiss, Cedar Grove, N.J., assignors to Eriez Manufacturing Co., Erie, Pa., a corporation of Pennsylvania**

**Filed June 26, 1967, Ser. No. 648,862**
**Int. Cl. B65g** *17/46*
**U.S. Cl. 198—41** **2 Claims**



The magnetic separator disclosed herein is made up of frames, sprockets, shafts, bearings, roller chains, guides, and permanent magnets mounted ladder fashion to the chains. The permanent magnets are specially designed to furnish strong, highly concentrated magnetic fields. They are specially shaped so that they require small sprockets to keep the outer dimensions of the housing to a minimum. Chain take-ups and sealed access panels are provided to make the device easy to maintain.

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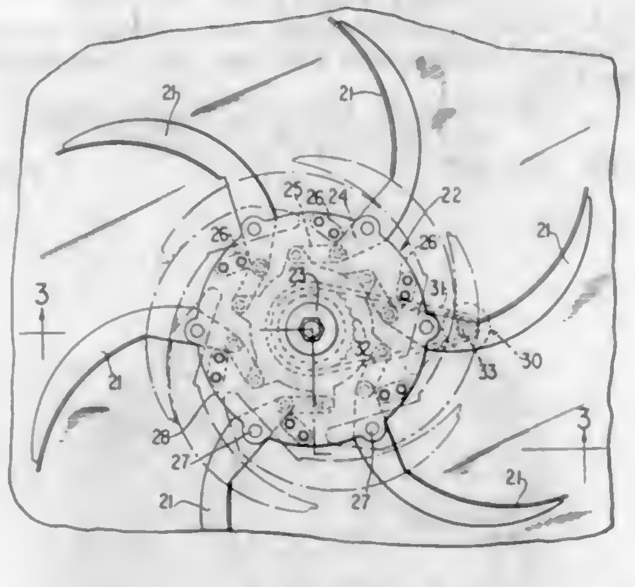
### 3,476,233
### ROTARY PLOW FEEDER APPARATUS

**Imre Adler, Verona, and Fritz F. Streng, Elizabeth, N.J., assignors to Hewitt-Robins Incorporated, Stamford, Conn.**

**Filed Feb. 6, 1968, Ser. No. 703,386**
**Int. Cl. B65g** *47/82*
**U.S. Cl. 198—212** **5 Claims**



A rotary plow feeder apparatus for reclaiming bulk mounted on a rotatable ring member concentrically surrounding a driven hub member. The hub and ring members are connected by a number of links or rods each of which has one end pivotally attached to the hub and the other end to one of the blades carried by the ring assembly. When the hub and ring assembly move relative to each other in one direction all of the blades are simultaneously extended by the links, and relative movement of the hub and ring assembly in the opposite direction causes all of the blades to be simultaneously retracted by the same links.

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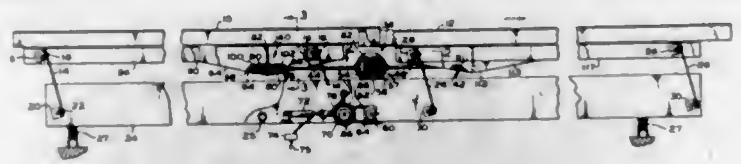
### 3,476,234
### SELF-BALANCING VIBRATING STRUCTURES

**Kenneth M. Allen and Chester H. Harper, Newberg, Oreg., assignors to Allen-Harper, Inc., Newberg, Oreg., a corporation of Oregon**

**Continuation-in-part of application Ser. No. 568,616, July 28, 1966. This application Mar. 18, 1968, Ser. No. 721,539**
**Int. Cl. B65g** *27/00*
**U.S. Cl. 198—220** **19 Claims**

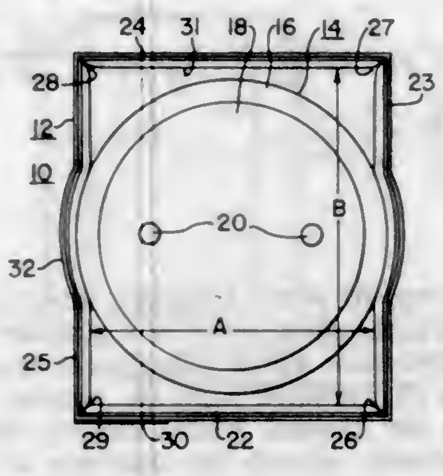


A floating eccentric drive (FIGS. 1 to 3) drives connecting rods 180° out of phase to drive two conveyor beds through resilient coupler means permitting lost motion of the conveyor beds longitudinally relative to the connecting rods. The conveyor beds are supported by resilient struts, and the coupler means permit the conveyor beds to balance each other over a wide range of difference in loading of the two conveyor beds. The drive is operated at from 50 to 90% of resonant speed, and the ratio of the coupler spring constant of each coupler means to the total spring constant of the struts is at least 1:3. In FIG. 4, a single conveyor bed mounted on resilient struts is driven through a resilient coupler by a crank drive mounted on a counterweight carried below the conveyor bed by resilient struts.

### 3,476,235
### PROTECTIVE WRAPPER FOR TUBULAR ARTICLES SUCH AS FLUORESCENT LAMPS AND THE LIKE

**John E. Mills, Orange, and Edward J. Getz, Irvington, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed July 3, 1968, Ser. No. 742,290**
**Int. Cl. B65d** *85/30, 3/04, 5/56*
**U.S. Cl. 206—46** **10 Claims**



A protective wrapper comprising a tubular four-sided open-ended paper sleeve that is of rectangular rather than square cross-section. The width dimensions of the side walls of the wrapper are so correlated relative to the size of the fluorescent lamp (or other article) that the inside major and minor width dimensions of the rectangular cross-sectioned sleeve are less than and greater than, respectively, the outside diameter of the lamp or article. The resulting "loose fit" in one direction and "tight fit" in the other direction effected by the wrapper with the inserted lamp frictionally retains the lamp in place within the wrapper and automatically compensates for variations in thickness of the packaging material, width dimensions of the side walls, etc. which occur during manufacture and caused the prior art square cross-sectioned wrappers either to fit too tightly and split when slipped over the lamp, or to fit too loosely and permit the inserted lamp to fall out of the wrapper when being placed in the shipping container or subsequently handled by the store clerk or perspective customer.

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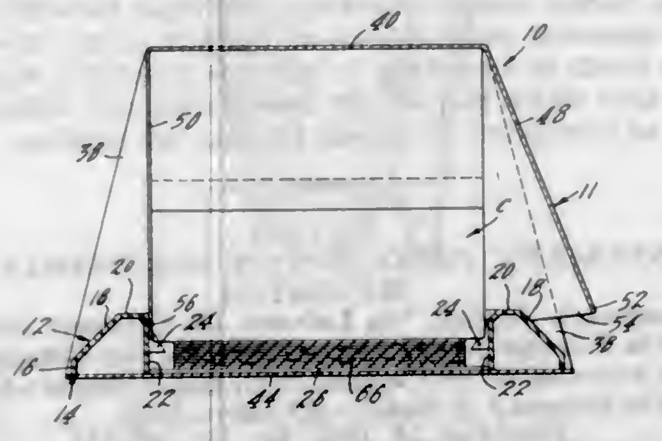
### 3,476,236
### PACKAGE CONSTRUCTION AND BLANK THEREFOR

**George Victor Skowronski, Neenah, Wis., assignor to American Can Company, New York, N.Y.. a corporation of New Jersey**

**Filed June 17, 1968, Ser. No. 737,657**
**Int. Cl. B65d** *79/00, 5/12, 17/00*
**U.S. Cl. 206—47** **8 Claims**



A package construction of a dispenser carton and rigid holder therefor held by an encircling paperboard blank which constitutes an overwrap means. The dispenser carton rests on locking members of the holder. The paperboard overwrap permits a partial view of the contents and is provided with an easy opening means.

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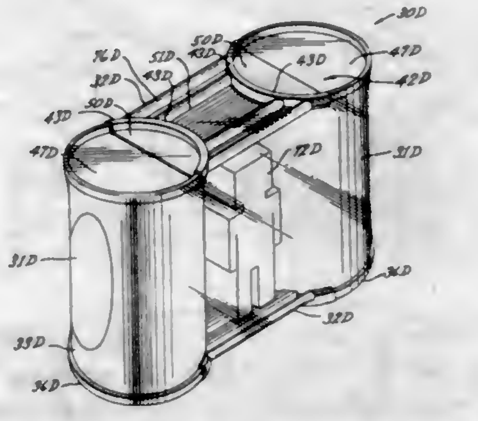
### 3,476,237
### PACKAGE CONSTRUCTION

**Thomas E. Kirby, Jr., Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware**

**Filed Oct. 17, 1967, Ser. No. 675,878**
**Int. Cl. B65d** *79/00, 71/00, 65/16*
**U.S. Cl. 206—47** **15 Claims**



This disclosure relates to an improved package construction wherein a clip is fastened against an end portion of a plurality of containers and a plastic overwrap is wrapped around the containers and clip to firmly lock the clip against such containers and provide a high strength unitary package construction.

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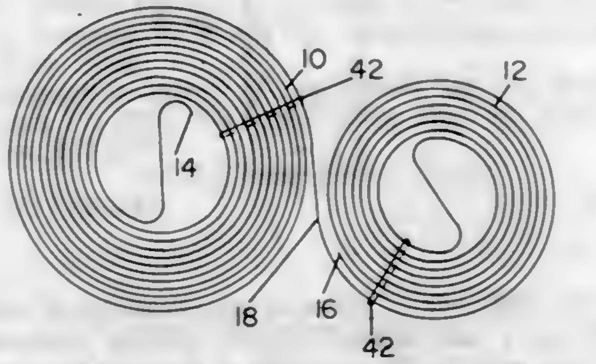
### 3,476,238
### DUAL ROLL PACKAGE AND METHOD OF FORMING THE SAME

**Merrill W. Wright, Auburn, and Walter E. Knapp, Worcester, Mass., assignors to G. F. Wright Steel & Wire Company, Worcester, Mass., a corporation of Massachusetts**

**Filed Feb. 13, 1968, Ser. No. 705,128**
**Int. Cl. B65d** *85/04, 85/66, 85/67*
**U.S. Cl. 206—59** **9 Claims**



A package of strip material in a single-length double roll formation wherein one end of the strip is located in the center of one of the rolls and the other end of the strip is located at the outside of the other roll in a position where it is overlapped so that the cut ends do not protrude, the rolls preferably being of different lengths so that the consumer merely need cut the rolls apart in order to get a relatively short roll or a relatively long roll, or leaving the rolls connected, having a still longer roll.

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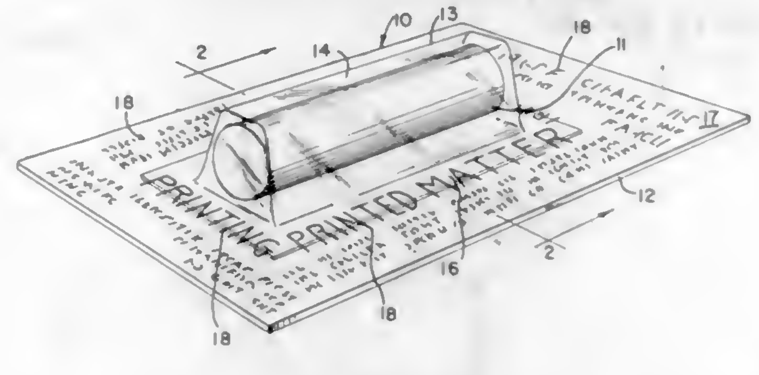
### 3,476,239
### BLISTER PACKAGE AND PRODUCT THEREOF

**Yuash Pete Jacob, Palos Heights, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York**

**Filed Sept. 6, 1967, Ser. No. 668,286**
**Int. Cl. B65d** *75/36;* **B65b** *5/00*
**U.S. Cl. 206—78** **6 Claims**

In a blister package of the type wherein an article is mounted on a paperboard display card and secured thereto by a molded, transparent, thermoplastic film known as a "blister," the blister is adhered to the paperboard card using an ink-receptive, heat-activatable adhesive coating. The paperboard is printed with a printing ink which does not deleteriously effect the bond between the coated paperboard and the blister film, the printing ink having a resinous vehicle comprised of a cyclic ketone-formaldehyde resin.



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### 3,476,240
### CONTAINERS

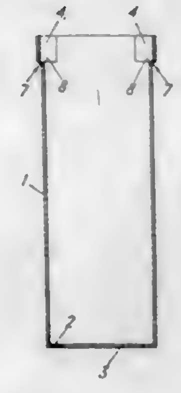
**Bryan Gordon Howell, Ampthill, England, assignor to The Metal Box Company Limited, London, England, a British company**

**Filed Mar. 6, 1968, Ser. No. 711,118**

**Claims priority, application Great Britain, Mar. 8, 1967, 10,926/67**

**Int. Cl. B65d** *85/58, 83/04*

**U.S. Cl. 206—.82** **2 Claims**



A coin container of circular cross-section is injection moulded as a unit from synthetic plastics material and has in open end for the insertion of coins and at least one pair of toggle arms concentric with and offset from the side wall of the container, the toggle arms being hinged one to the other and to the side of the container and movable from the concentric position thereof to an angular position in which the arms extend into the container to present a barrier to the egress of coins which span the interior of the container.

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### 3,476,241
### SYSTEM FOR THE SELECTIVE STACKING OF SHEET MATERIAL

**Fritz Ungerer, deceased, late of Pforzheim, Germany, by Irma Ungerer, sole heir, Friedenstrasse 86, Pforzheim, Germany**

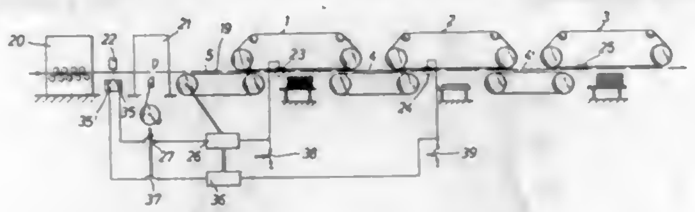
**Filed Nov. 30, 1967, Ser. No. 688,650**

**Claims priority, application Germany, Dec. 1, 1966, U 13,319**

**Int. Cl. B07c** *3/08;* **B65h** *29/58*

**U.S. Cl. 209—73** **9 Claims**

The system disclosed comprises a plurality of stacking devices serially disposed in the direction of advance of individually conveyed sheet material of definite dimensions. Each stacking device conveys the sheets by a perforated stacking belt to which the sheets adhere by vacuum applied by stationary suction heads. The suction heads comprise an upper suction chamber continuously vacuumized and a plurality of lower chambers disposed beneath the upper chamber and communicating therewith through valved ports. The lower chambers are also connected through valved ports to a pressure source. By means of appropriate signals selective or grouped lower chambers are disconnected from the vacuum source and connected to the pressure source causing the sheet-like article immediately beneath the chambers to drop.



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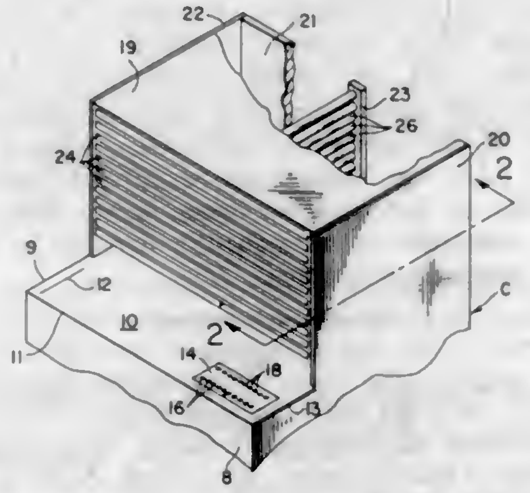
### 3,476,242
### HOSIERY MEASURING AND PAIRING APPARATUS

**Leonard E. Bobbitt, P.O. Box 9122,**
**Greensboro, N.C. 27408**

**Filed Sept. 20, 1967, Ser. No. 669,041**

**Int. Cl. B07c** *7/00;* **A47b** *81/00*

**U.S. Cl. 209—122** **7 Claims**



This invention relates to an apparatus for measuring and pairing women's stockings, and more particularly to an apparatus which enables an operator, after measuring the length of a stocking, to initiate a pre-cycled sequence of steps which includes the presentation and withdrawal of an appropriate receptacle for that size stocking.

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### 3,476,243
### PNEUMATIC CONDUIT TYPE ELECTROSTATIC SEPARATOR

**Gianfranco Ferrara, Via Lofrasso 13, Clemente Del Fá, Via Tuveri 8/b, and Mario Carta, Facolta d'Ingegneria Universita, all of Cagliari, Italy, and Raimondo Ciccu, Via Venezia 5, S. Stefano di Cadore, Italy**

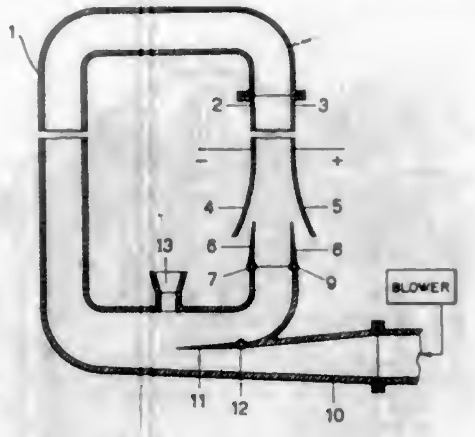
**Filed Oct. 25, 1966, Ser. No. 589,376**

**Claims priority, application Italy, Oct. 25, 1965, 23,699/65**

**Int. Cl. B03c** *3/08, 3/00*

**U.S. Cl. 209—129** **10 Claims**

An electrostatic spearator for granular materials including an annular duct, a section of which has a wall including two substantially parallel planar stationary electrodes adapted to be connected to means for charging the electrodes for establishing an electric field therebetween, the electrodes ending with mutually diverging confronting terminal portions. The duct is apertured immediately after each of the terminal portions and a conduit through which a gaseous fluid is directed into the duct in a substantially tangential direction in the vicinity of the apertured portion of the duct and away from such apertured portion is provided together with means for feeding granular material into the duct.



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### 3,476,244
### SIFTER OF THE CIRCULATING AIR TYPE

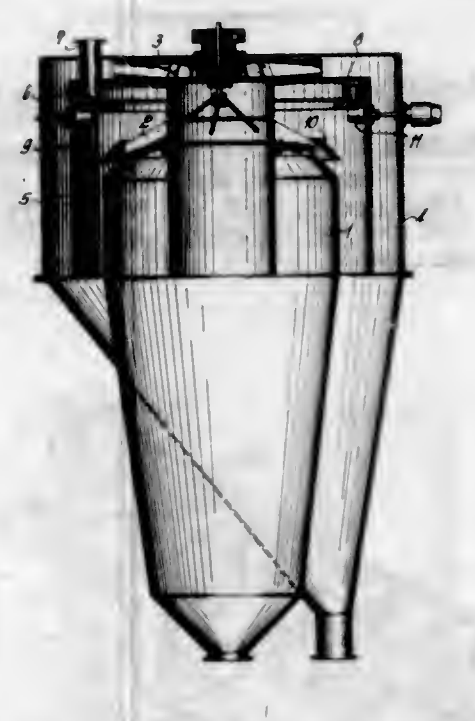
**Siegfried Schauer, Hohenecken, Germany, assignor to Gebr. Pfeiffer Barbarossawerke AG, Kaiserslautern, Pfalz, Germany**

**Filed Dec. 27, 1967, Ser. No. 693,907**

**Claims priority, application Germany, Dec. 29, 1966, P 41,116**

**Int. Cl. B04c** *5/107*

**U.S. Cl. 209—133** **7 Claims**



Sifter having a rotatable dispersing ring below a feed sleeve with a stationary scraper spiral above the ring, which may extend from the outer side of the sleeve inwardly to the free inner edge of the dispersing ring or from proximate the inner side of the sleeve outwardly to the free outer edge of the ring to proximate the opposite side of the sleeve. In the latter embodiment the housing may be of low construction and a discharge ring provided in the lower housing area which is of identical construction as the dispersing ring.

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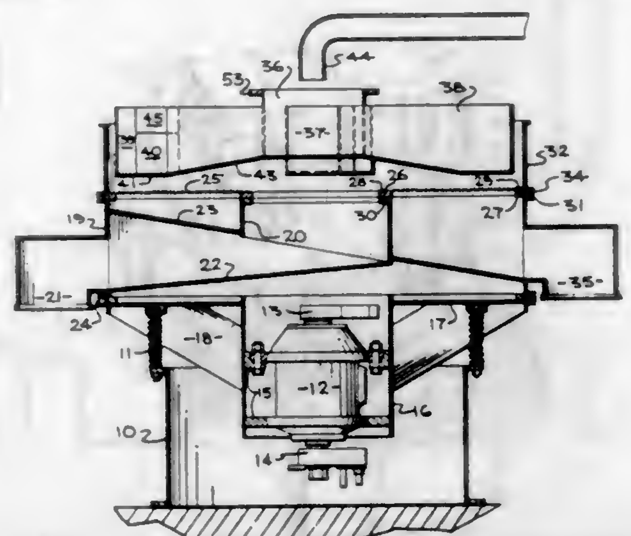
### 3,476,245
### VIBRATORY SEPARATOR

**Douglas M. Swallow, Burlington, Ontario, Canada, assignor to Southwestern Engineering Company, Los Angeles, Calif., a corporation of California**

**Filed Nov. 28, 1966, Ser. No. 597,359**

**Int. Cl. B07b** *1/38*

**U.S. Cl. 209—254** **5 Claims**



A vibratory separator employing an annular screen having a central opening therein for oversize material. A distribution arrangement is provided for feeding material to the periphery of the screen at an angle other than perpendicular to the tangent of the circle formed by the outer edge of the screen.

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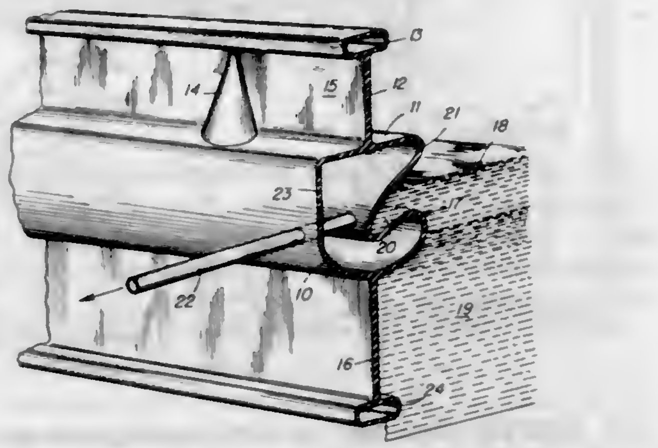
### 3,476,246
### APPARATUS AND PROCESS FOR CONFINING FLOATING LIQUID PRODUCTS

**Paul C. Dahan, Pittstown, Franklin Township, Hunterdon, N.J., assignor to Mobil Oil Corporation, a corporation of New York**

**Continuation-in-part of application Ser. No. 631,528, Apr. 17, 1967. This application Dec. 22, 1967, Ser. No. 692,897**

**Int. Cl. B01d** *21/02, 21/24*

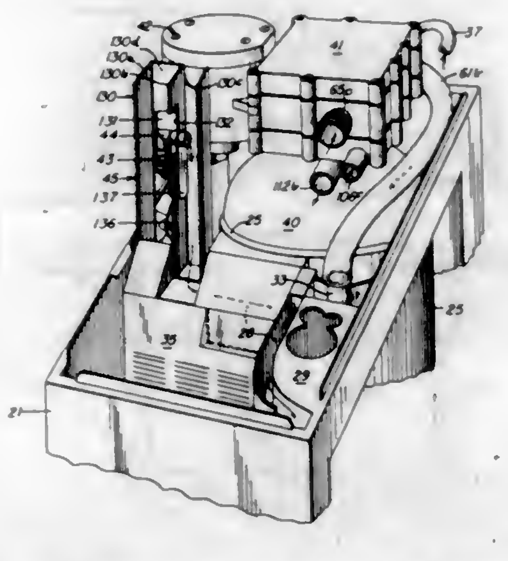
**U.S. Cl. 210—83** **6 Claims**



A floatable collar section comprising a main inflatable tube provided with means for skimming a floating liquid and a ballast means comprising a weighted skirt located below the inflatable tube. The skimming means can be formed with the main inflatable tube or can be attached thereto. A plurality of collar sections can be attached end to end forming a floatable collar to enclose and confine a liquid floating on seawater. The floatable collar is provided with means to recover a floating liquid.

### 3,476,247
## WATER CONDITIONER APPARATUS

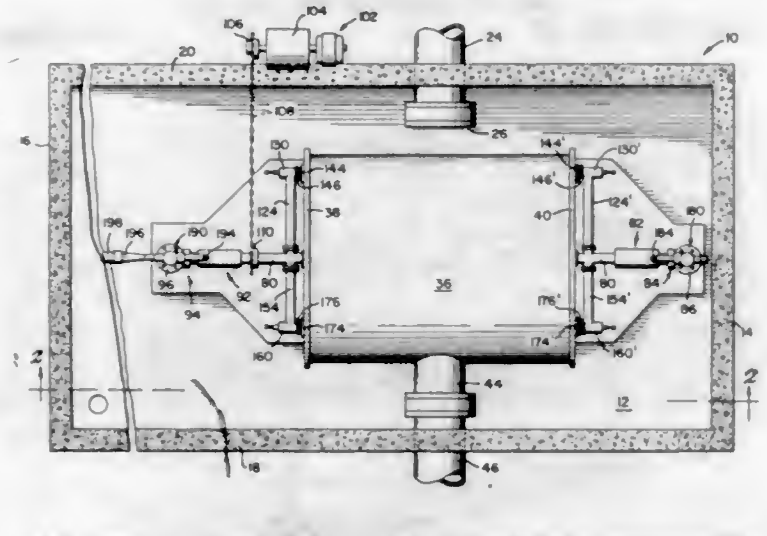
**Donald Rose, Dayton, Ohio (% Water Refining Co. Inc., 500 N. Verity Parkway, Middletown, Ohio 45042)**
**Continuation-in-part of application Ser. No. 314,130, Oct. 7, 1963. This application Mar. 17, 1967, Ser. No. 638,677**
**Int. Cl. B01d** *35/02, 15/06, 15/04*
**U.S. Cl. 210—95** **26 Claims**



A compact water softener apparatus having a multiple valve head assembly therein which provides for water softening and softener regeneration, slow rinsing and fast rinsing, and which has a metering cup attached thereto with a height adjustable outlet which drains through a spillway into a brine reservoir adjacent the softener tank.

### 3,476,248
## SUCTION BACKWASH MEANS FOR A LOW PRESSURE, MULTIPLE ELEMENT, FILTER ASSEMBLY

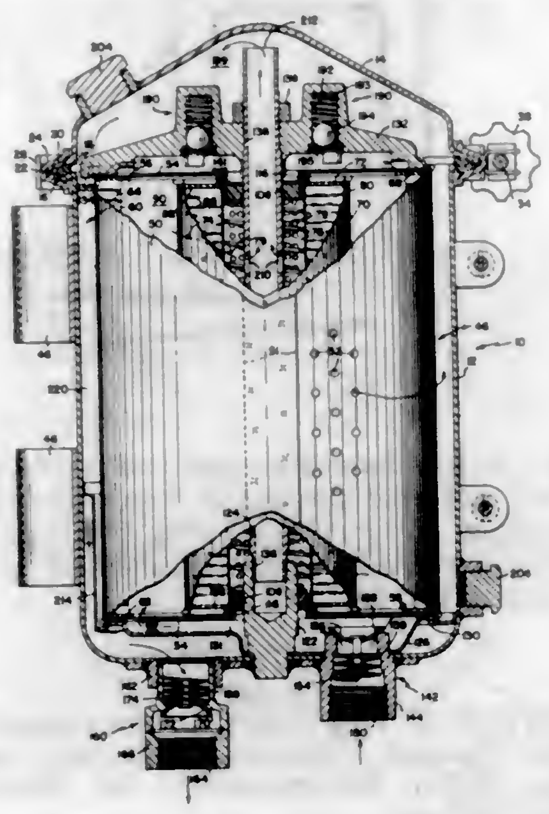
**Renard P. Adams, 87 Nottingham Terrace, Buffalo, N.Y. 14221**
**Filed Mar. 1, 1968, Ser. No. 709,644**
**Int. Cl. B01d** *35/22*
**U.S. Cl. 210—153** **10 Claims**



An open top tank has an inlet conduit in communication therewith. An outlet conduit is in communication with a body means having a plurality of filter tubes therein and open at opposite ends to the tank. Rotatable backwash means is associated with the ends of the filter tubes for sequentially backwashing the tubes as required. Seal plate means is provided around the ends of the backwash sleeve portions to prevent bypassing of liquid and to isolate one tube at a time. Eductor means is connected in the backwash means for inducing a vacuum which draws liquid through the tube being backwashed into the backwash means. The entire outlet portion is immersed in liquid during operation of the apparatus.

### 3,476,249
## DUAL, PLEATED ELEMENT, FILTER CARTRIDGE

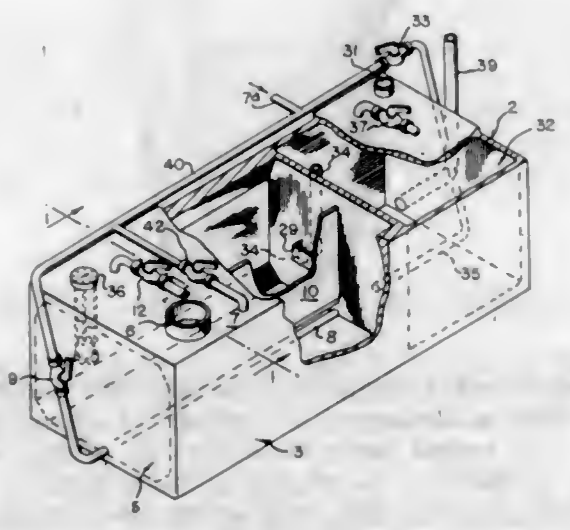
**Donald M. Gray and Hollis M. Burhans, Kingston, and Wendell H. Gray, West Hurley, N.Y., assignors to W.G.B. Oil Clarifier, Inc., Kingston, N.Y., a corporation of New York**
**Filed Oct. 6, 1967, Ser. No. 673,347**
**Int. Cl. B01d** *27/04*
**U.S. Cl. 210—188** **6 Claims**



A full flow oil filter having two full flow elements positioned in concentric relation one within the other with the oil flowing from an inlet into an annular space between the filtering elements and from said annular space through each of the filtering elements to a common outlet.

### 3,476,250
## TRANSPORTABLE SEWAGE TREATING APPARATUS

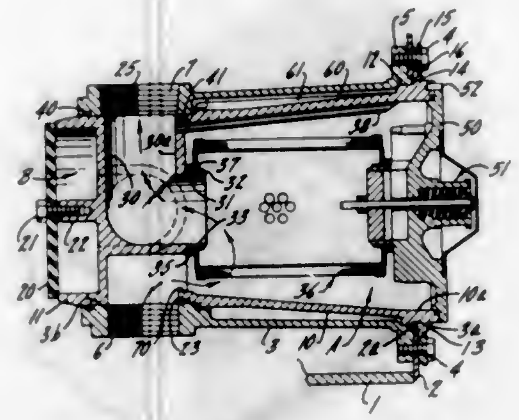
**Rolland L. Fifer, 6211 Glen Hill Road, Louisville, Ky. 40222**
**Filed Dec. 5, 1967, Ser. No. 688,237**
**Int. Cl. C02c** *1/06*
**U.S. Cl. 210—199** **6 Claims**



A single aeration tank so elongated that its length and or width exceed its height and is adapted to function as a sewage treatment plant for installation in boats, buses, aircraft and other low confined spaces.

### 3,476,251
## FILTER AND HOUSING STRUCTURE

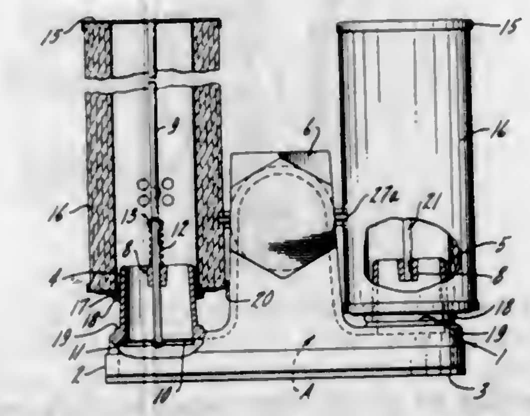
**Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Illinois**
**Filed May 4, 1966, Ser. No. 547,513**
**Int. Cl. B01d** *33/06*
**U.S. Cl. 210—232** **6 Claims**



A filter and housing structure wherein a hollow tubular external housing has an inlet and outlet and a substantially circumferential inner housing is rotatable in said external housing. The internal housing has a filtering chamber and, in one form, a bypass chamber, each of said chambers having its own inlet and outlet, the inlets and outlets of said filtering and bypass chambers being alternatively alignable with the inlet and outlet of said external housing in response to rotation of said internal housing. A filter member is carried in the filtering chamber between its inlet and outlet and a closure plate closes an end of the filtering chamber, the plate being removable for removal and cleaning of the filter member when the inlets and outlets of said bypass chamber are in communication with the inlet and outlet of said external housing or when flow is completely stopped.

### 3,476,252
## RESERVOIR FILTER ASSEMBLY

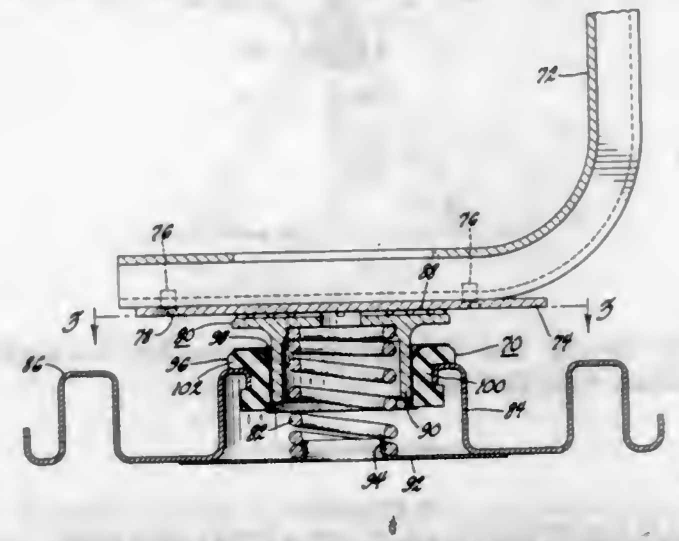
**Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Illinois**
**Filed Apr. 26, 1966, Ser. No. 545,399**
**Int. Cl. B01d** *35/00, 33/00*
**U.S. Cl. 210—323** **1 Claim**



A filtering assembly wherein a plurality of communicating filter element support members carry external filter elements in a tank, an inlet feeds the tanks externally of the elements and an outlet extends from the members to a point externally of the tank for flow of fluid from said inlet through said elements, members and outlet.

### 3,476,253
## WASHING MACHINE SUPPORT ASSEMBLY

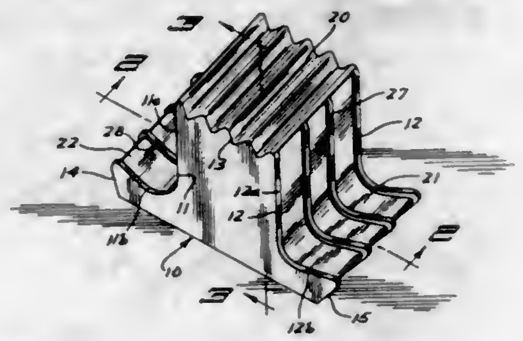
**John R. Fosler and Verlos G. Sharpe, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Feb. 4, 1965, Ser. No. 430,266**
**Int. Cl. B01d** *21/26;* **B04b** *7/00;* **F16f** *15/10*
**U.S. Cl. 210—365** **1 Claim**



A moving mass system including a spin tub rotatable on a spin shaft through a slip clutch drive mechanism below, and wherein the system is supported between the tub and the drive mechanism on a resilient cup shaped support of reduced spring rate and at its lower end on a freely relatively slidable snubber.

### 3,476,254
## SOAP BAR HOLDER

**William J. Gaffney, 7444 Blaisdell Ave. S., Minneapolis, Minn. 55423**
**Filed Jan. 17, 1968, Ser. No. 698,606**
**Int. Cl. A47f** *7/00*
**U.S. Cl. 211—13** **14 Claims**

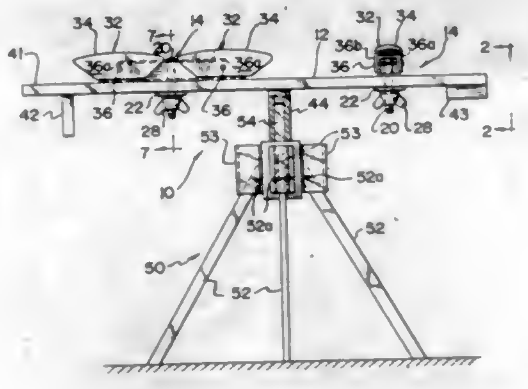


Apparatus for holding three bars of soap having a pair of spaced apart end walls, each end wall having oppositely faced, somewhat J-shaped edge portions and a generally horizontal serrated upper edge between the J-shaped portions. The end walls' upper edge portions are connected by a generally horizontally extending, serrated top member while the respective generally J-shaped edge portions of the end walls that are faced in the same direction are connected together by a generally J-shaped support member. The support members are integrally joined to opposite side edges of top member.

### 3,476,255
## SADDLE SUPPORT

**Peter G. Ciancio, % American Wrought Iron & Bronze, R.R. 4, Box 159, Valparaiso, Ind. 46383**
**Filed Feb. 12, 1968, Ser. No. 704,811**
**Int. Cl. A47f** *7/00, 5/08, 5/10*
**U.S. Cl. 211—13** **17 Claims**

A collapsible portable saddle support including a main support bar, arms pivoted to the bar, and rocker support elements on the free end of the arms. Also, a supporting bracket for use in combination with the support, the



bracket having bar connecting surfaces for releasable connection with portions of the bar.

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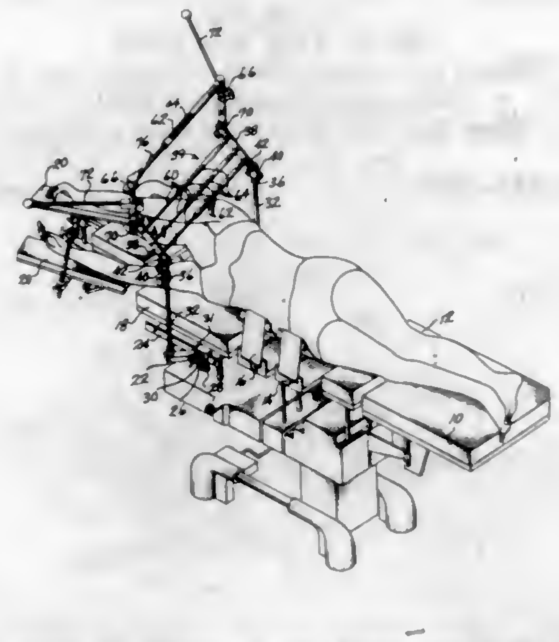
3,476,256

## ANAESTHESIOLOGY DRAPING SCREEN FRAME STRUCTURE

**Roger Anderson, 4221 E. Lee, Seattle, Wash. 98102**
**Filed Aug. 8, 1967, Ser. No. 659,106**
**Int. Cl. A47f** *5/00;* **F16m** *11/38*
**U.S. Cl. 211—86** **6 Claims**



This invention relates to an anaesthesiology draping screen structure. Generally, my invention relates to such supporting frame wherein the frame is secured to a surgical table at the two spaced side portions thereof and with angularly movable horizontally extending frame parts connecting the said frame to such table. The said frame parts provide individual support for spaced vertically extending, relatively rotable, frame means connected therewith. Other outstanding features include cross frame parts which are extensible and retractable in length and which interconnect the frame portions connected with the side portions of the table, the cross frame parts provide an adjustable shelflike portion which is positionable over the head of a patient, and the frame structure is adjustable and positionable to provide a minimum of interference with the activities of the surgeon and will still provide for isolation of the surgeon, his aides and equipment on one side of a draping screen supported by such frame structure and isolation for the head of the patient, the anaesthesiologist, his aides and equipment on the other side of such draping screen.

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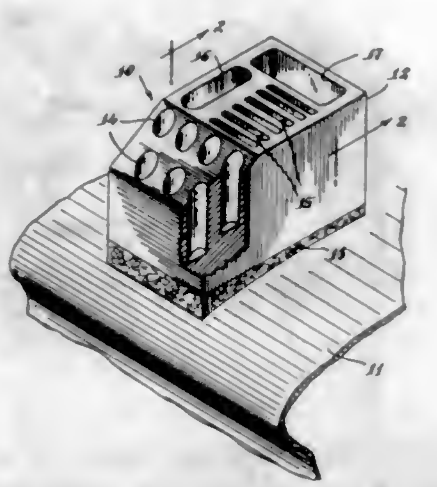
3,476,257

## SURFACE ATTACHABLE RECEPTACLE

**Raymond F. O'Connell, 327 Goodrich St., Hamden, Conn. 06514**
**Filed Aug. 10, 1967, Ser. No. 659,623**
**Int. Cl. A47f** *7/00*
**U.S. Cl. 211—13** **2 Claims**



A receptacle for holding a plurality of articles in respective compartments having a resilient surface engaging position for adapting itself to the contour of the surface to which the receptacle is to be attached and means for securing adhesion to the surface as for example the cowl of an automobile.

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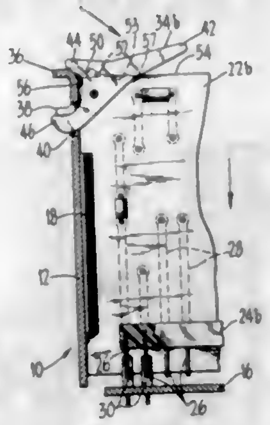
3,476,258

## BOARD INSERTION AND EXTRACTION SYSTEM

**Henry Carl Dorsett, San Ramon, Calif., assignor to Friden, Inc., a corporation of Delaware**
**Filed May 18, 1967, Ser. No. 639,332**
**Int. Cl. A47b** *95/02;* **A47g** *19/08*
**U.S. Cl. 211—41** **5 Claims**

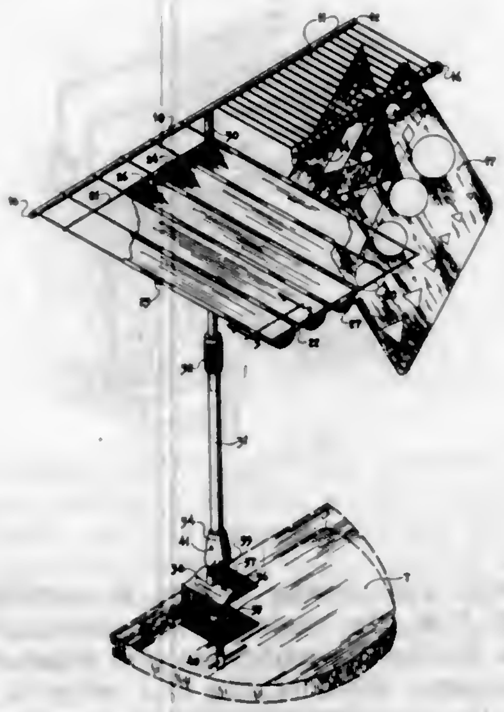


A plurality of circuit component module boards having connector pins attached thereto at one end are positioned in individual guide rails of a base frame. Each circuit board includes a pair of injector-ejector means pivotally attached to the board for coaction with a pair of shoulders on the frame to substantially ease pushing and pulling of the boards while in the guide rails so that the connector pins can easily engage and disengage with mating connectors disposed on the base frame.

3,476,259

## STORAGE ASSEMBLY FOR DRAFTSMAN'S ARTICLES

**Harry Preston Price, Jr., 574 Longview Drive, Lexington, Ky. 40503**
**Filed Jan. 29, 1968, Ser. No. 701,276**
**Int. Cl. A47f** *7/00, 5/00*
**U.S. Cl. 211—69.8** **4 Claims**



A framework for mounting on a draftsman's table and for storing in readily accessible locations the conventional articles, such as pencils, triangles or the like employed in the work of draftsmen. The framework is adjustable with respect to the drafting table on which it is mounted.

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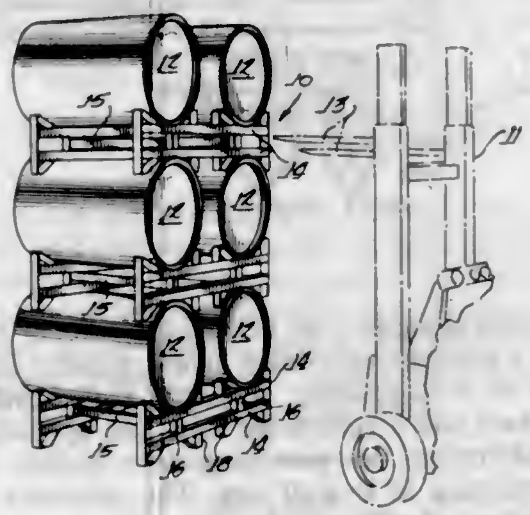
3,476,260

## STORAGE RACK FOR CYLINDRICAL CONTAINERS

**Richard S. Jay, Evanston, Ill., assignor to Jarke Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Dec. 5, 1967, Ser. No. 688,080**
**Int. Cl. A47g** *7/28, 5/00*
**U.S. Cl. 211—71** **5 Claims**



A rack for a plurality of cylindrical containers having pairs of opposed parallel side rails and parallel cross bars, the latter being secured to spacer posts which separate the parallel side rails. Intermediate chocks are provided centrally and secured to the outer faces of the parallel rails in opposed positions, and the ends of the parallel rails are covered by end chock spanners. The units are reversible, and nest in staggered relationship atop each other when no cylindrical containers are stored. Access for a fork lift truck from four directions is provided as well as for the individual removal of the cylindrical containers.

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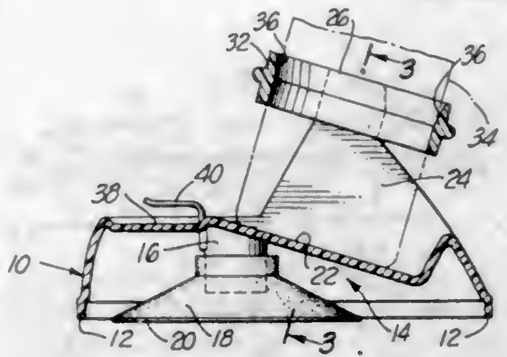
3,476,261

## BABY FOOD JAR HOLDER

**Lila M. Hanson and Bernard B. Hanson, Englewood, Colo., and George H. McCutcheon, Los Angeles, Calif., assignors to Westland Plastics, Inc., Newbury Park, Calif., a corporation of California**
**Filed July 31, 1967, Ser. No. 657,356**
**Int. Cl. A47b** *43/00;* **F16b** *47/00*
**U.S. Cl. 211—74** **10 Claims**



A molded plastic base has a lower peripheral edge surface and a center suction cup for supporting and retaining the base on a flat surface. The base upper surface is formed with a pair of angled jar receiving surfaces separated by an upward pedestal. The pedestal mounts a lateral plastic bar having different size split ring ends spaced above and overlying the receiving surfaces, whereby jars of varying size are resiliently peripherally gripped while resting on said surfaces. A spoon positioning surface is formed rearwardly of and aligned with the base receiving surfaces, having an overlying spring clip for retaining a spoon.

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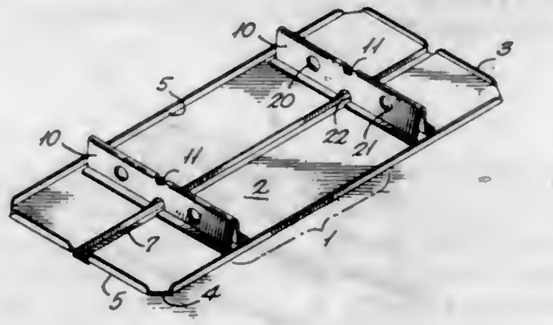
3,476,262

## STACKING ARRANGEMENT FOR PIE TRAYS

**Jacque R. Edwards, Telford, Pa., assignor to Bucks County Enterprises, Inc., Quakertown, Pa., a corporation of Pennsylvania**
**Filed Nov. 15, 1967, Ser. No. 678,577**
**Int. Cl. B65d** *21/02;* **A47f** *1/14*
**U.S. Cl. 211—126** **3 Claims**



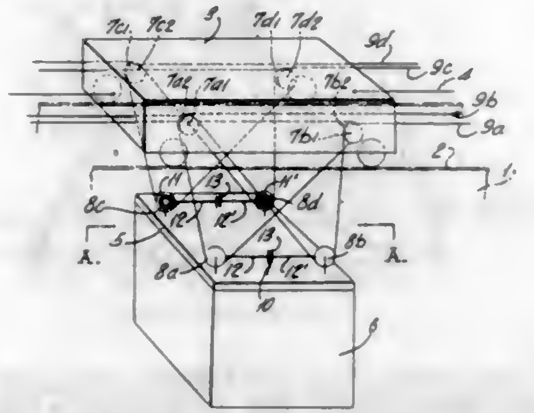
This disclosure sets forth a metallic receptacle having particular applicability to stacking devices. In particular, the receptacle has been designed for handling baked pies in mass pie production, and serves as a stackable, open-type pallet or board that can be made for any size or combination of pie tins and stacked as high as desired.

The novel stacking arrangement, prevents movement of the pallet endwise or sidewise. The pallets can be stacked quickly, without close fitting and fumbling, and yet they positively lock in place.

The center line formed stiffener which is part of the stacking feature also imparts "bridge-girder" strength to the pallet. Cross-wise of the stiffener there are two parallel spaced supporting members which not only serve to stiffen the pallet but serve as spacing members for the stacked pallets or metallic receptacles.

### 3,476,263
### DEVICE FOR PREVENTING THE SWAYING OF THE SUSPENDING MEANS IN A CRANE

**Toshiro Komatsu, Yokohama-shi, and Akira Ujihara, Tokyo-to, Japan, assignors to Ishikawajima-Harima Jukogyo Kabushiki Kaisha, Tokyo-to, Japan, a Japanese company**
**Filed June 2, 1967, Ser. No. 643,135**
**Claims priority, application Japan, Aug. 2, 1966, 41/50,701**
**Int. Cl. B66c** *5/02, 19/00*
**U.S. Cl. 212—14** **1 Claim**



In a crane comprising a trolley supported by and guided in its travel along the crane girder and a suspending means wound up and down by the lifting ropes from said trolley, a device for preventing the swaying of the said suspending means wherein the said ropes are reaved in such manner that in the pairs of the rope sheaves fixed to the front and back sides respectively of the said suspending means, the respective rope sheaves rotate in opposite direction when the suspending means is being wound up or down and in the same direction when swaying and by a restraining mechanism to restrain such rotation in the same direction.

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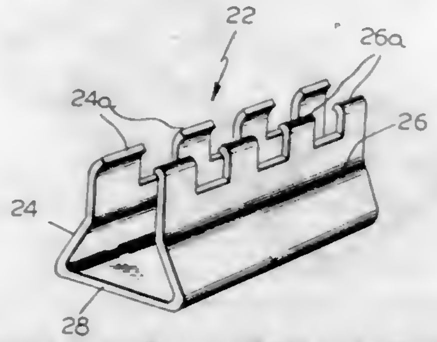
### 3,476,264
### ELECTROMAGNETIC UNCOUPLER FOR MODEL TRAINS

**James W. Nielsen, 44 Plymouth Drive, Berkeley Heights, N.J. 07922**
**Filed May 24, 1967, Ser. No. 641,050**
**Int. Cl. B61g** *7/04;* **A63h** *19/08*
**U.S. Cl. 213—75** **7 Claims**



An electromagnet of general U-shape has tines that extend upwardly between the ties of a model railroad. When energized, the electromagnet attracts outwardly extending uncoupling pins attached to the couplers of two cars to uncouple the cars.

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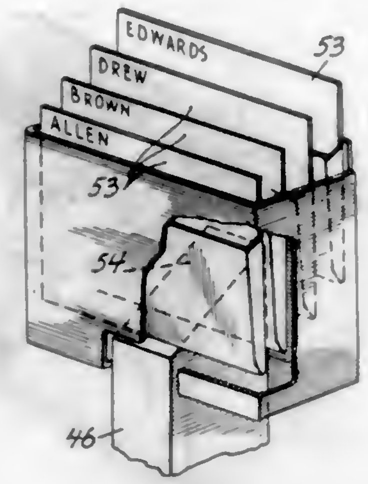
### 3,476,265
### ARTICLE HANDLING APPARATUS

**Joseph A. Powers, Williamsville, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed May 10, 1967, Ser. No. 637,446**
**Int. Cl. B25j** *3/00;* **B65b** *21/02;* **A47b** *97/02*
**U.S. Cl. 214—1** **8 Claims**

Apparatus for handling article carrying containers after they have been manually or automatically retrieved from a storage area and delivered to a work station. The containers, are adapted to accommodate a plurality of articles, such as documents or the like, and further are provided with a cutaway portion exposing the documents. A lifting device disposed at the work station is adapted to register with the cutaway portion to partially lift the documents from the container for convenient viewing thereof to facilitate identification and removal of a selected document. When refiling of a retrieved document is desired the apparatus functions in a reverse manner.



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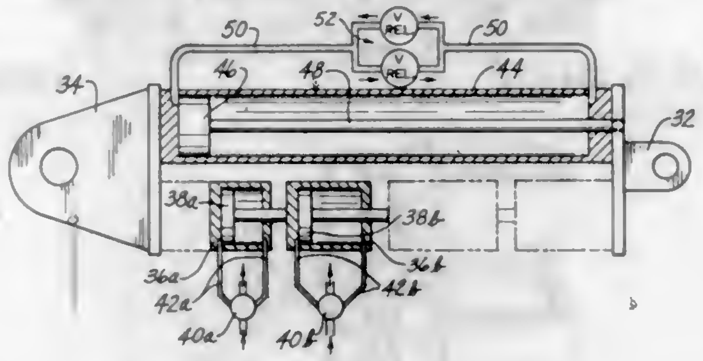
### 3,476,266
### BINARY-CODE CONTROLLED APPARATUS

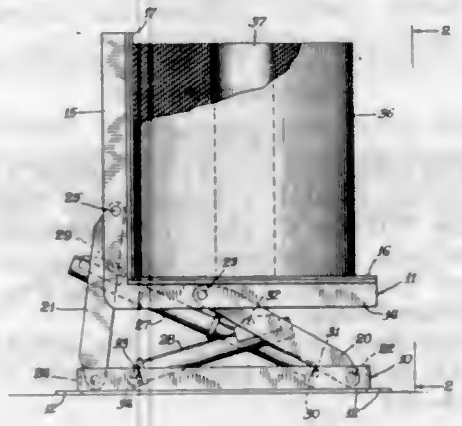
**George C. Devol, 990 Ridgefield Road, Wilton, Conn. 06897**
**Filed Nov. 28, 1967, Ser. No. 686,111**
**Int. Cl. B25j** *9/00;* **F01b** *7/16;* **F15b** *15/22*
**U.S. Cl. 214—1** **22 Claims**



Actuating apparatus for driving the parts of a machine, such as a program-controlled article transfer unit, utilize a series of fluid-pressure actuators each having an extended state and a contracted state and operable in various combinations for providing drive output by collectively changing in overall size. The actuators generally have strokes of different lengths. At the start of each change from one combination to another, there is a transition period during which some actuators tend to contract while others are expanding, often at different rates and times. Erratic operation of the apparatus during such transition periods is avoided by including a brake that prevents changes in the collective size of the group of actuators during the transitions. Where double-acting actuators are used, the brake used is one that responds to the build-up of ample pressure signifying completion of the movements of all actuators going in one direction. Thereafter the other actuators drive the output device without vacillation.

### 3,476,267
### TURNING TABLE FOR METAL COILS AND THE LIKE

**Jesse E. Clarke, Hinsdale, Ill., assignor to Autoquip Corporation, Chicago, Ill., a corporation of Illinois**
**Filed July 17, 1968, Ser. No. 745,519**
**Int. Cl. B25j** *3/00*
**U.S. Cl. 214—1** **5 Claims**



An L-shaped support is pivotally connected by levers to a base for movement between a first position at which one portion of the L is horizontal and the other portion extends upwardly therefrom, and a second position at which the orientation of the parts is reversed. Hydraulic cylinders connected between the base and the levers provide the power for pivoting the support.

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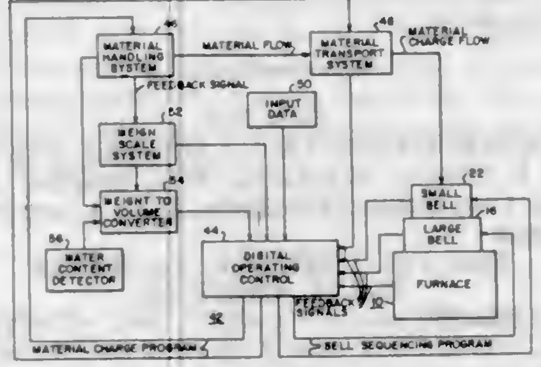
### 3,476,268
### BLAST FURNACE VOLUME CHARGING CONTROL

**William A. Munson, Williamsville, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed July 27, 1967, Ser. No. 656,487**
**Int. Cl. B65g** *69/00;* **G01g** *13/00*
**U.S. Cl. 214—2** **7 Claims**



Blast furnace charge material is transported to the furnace small bell and in turn to the furnace large bell and the furnace body under volume control. The volume control directs predetermined weights and charging patterns of materials to the furnace, and in doing so it effects an optimally low number of bell operations in response to detected volume of charge material inflow.

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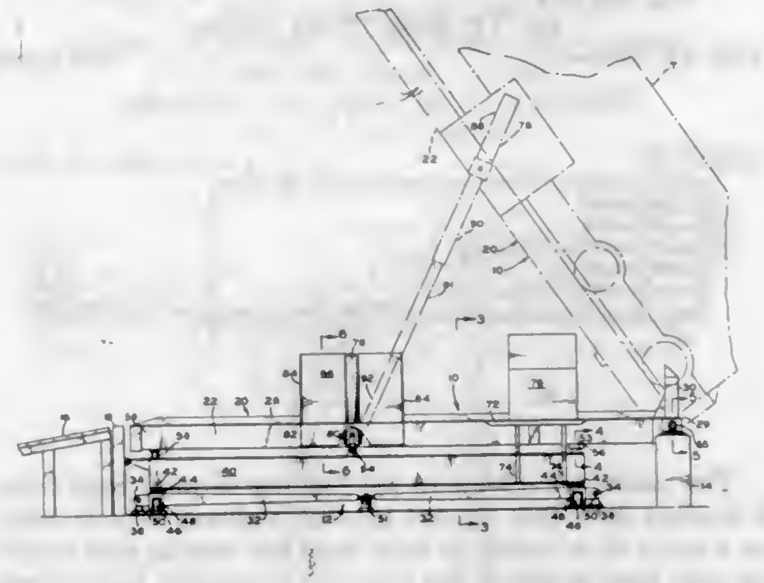
### 3,476,269
### TRAILER DUMPER

**Charles J. Baker, Portland, and Frederick F. Van Raden, Hillsboro, Oreg., assignors to Peerless Trailer and Truck Service, Inc., Tualatin, Oreg., a corporation of Oregon**
**Continuation-in-part of application Ser. No. 612,693, Jan. 30, 1967. This application May 6, 1968, Ser. No. 733,207**
**Int. Cl. B65g** *67/40;* **G01g** *19/02*
**U.S. Cl. 214—2** **8 Claims**

A trailer dumper having a hinged lift comprising two longitudinally extending torsionally resistant box seams spaced apart a distance equal to the transverse distance between the wheels of a truck trailer. The lift is raised by a hydraulic piston and cylinder which transmits the load directly to weigh-bridges beneath the lift, thereby to achieve weighing and dumping on the same apparatus.



Means are provided to permit a slight elevation of one end of the lift without removing the weight thereon from the weighbridges, thereby to permit a trailer to be weighed without the necessity of moving the truck.

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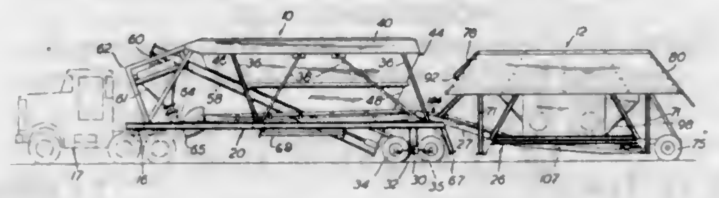
### 3,476,270
### MOBILE CONCRETE BATCHING PLANT

**George W. Cox, Lloyd J. Garcia, and Edward Reyes, San Antonio, Tex., assignors to Aggregate Plant Products Company, San Antonio, Tex., a corporation of Texas**
**Continuation of application Ser. No. 697,831, Jan. 15, 1968. This application Oct. 9, 1968, Ser. No. 770,135**
**Int. Cl. G01g** *19/22;* **B65g** *65/30*
**U.S. Cl. 214—2** **9 Claims**

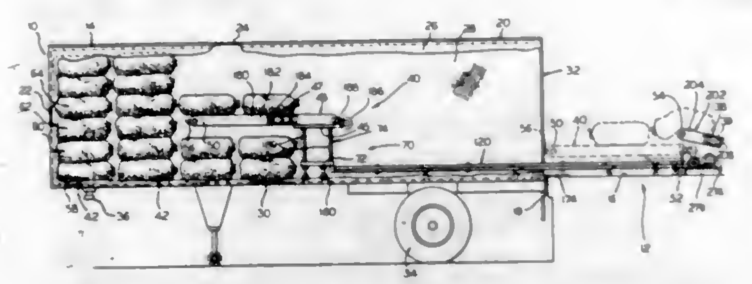


A plural component plant such as a mobile concrete batching plant formed of two semi-trailers connected together in trailing relation and transportable from site to site by connection to a tractor. Components such as a cement silo, a screw conveyor, a weighing apparatus and a common cement and aggregate discharge are mounted on the first semi-trailer. The second semi-trailer has other components such as an aggregate weighing bin or batcher and aggregate discharge mounted in the lower portion, and an aggregate bin having hinged end and side walls mounted in the top portion.

The first semi-trailer is provided with mounting members so that when erected to an inclined position the weight is no longer on the wheels. The second semi-trailer also has mounting members and erecting movement of the first semi-trailer moves the second semi-trailer to a position where the weight is no longer on the wheels. An endless belt conveyor extends from the aggregate discharge to the common cement and aggregate discharge and is releasable to permit the desired relative movement of the trailers in erection and transportation, and the trailers may be towed separately or in tandem as desired.

### 3,476,271
### APPARATUS FOR LOADING BAGGED MAIL FROM A LOADING DOCK INTO A HIGHWAY VEHICLE

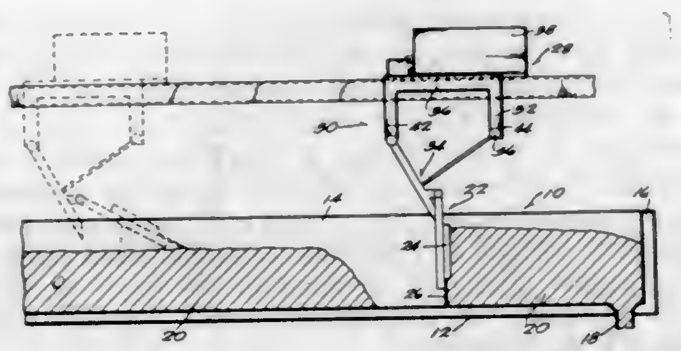
**Joseph E. McWilliams, 1345 Canterbury Lane,**
**Glenview, Ill. 60025**
**Continuation-in-part of application Ser. No. 694,151, Dec. 28, 1967. This application Mar. 5, 1968, Ser. No. 710,514**
**Int. Cl. B65g** *57/00, 67/04*
**U.S. Cl. 214—6** **6 Claims**



The invention relates to the loading of mail bags from a loading dock into an end loading highway vehicle, such as a truck or a trailer, to fully load the vehicle with stacks of mail bags in which the bags are compactly loaded into place in individual stack forming tiers without those performing the bag loading operation having to enter the vehicle. In practicing the invention, the loading dock at the post office or the like is provided with a conveyor on which out-going bags are placed and oriented in closely spaced tier form. Operating between the conveyor and the highway vehicle is a carriage that rides on the loading dock and vehicle floor and carries a vertically movable load support that receives the tier load without disturbing the orientation of the bags and brings the tier load into the vehicle loading area for discharge of the stack forming tier unit, and effects placement of the tier as part of a stack in the vehicle, again without disturbing the orientation of the bags. The carriage then returns to the conveyor for another tier load.

### 3,476,272
### PRODUCT PUSHER ASSEMBLY FOR PROCESSING VAT

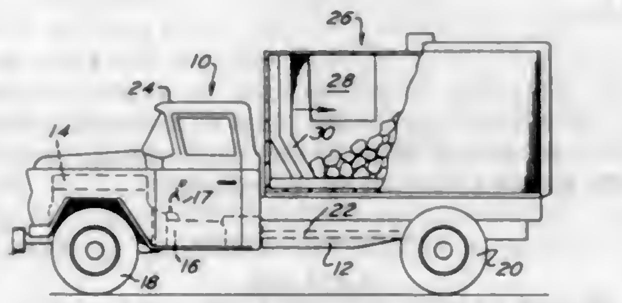
**Ruben W. Puta, Saint Nazianz, Wis., assignor to Stoelting Brothers Company, Kiel, Wis., a corporation of Wisconsin**
**Filed Sept. 27, 1967, Ser. No. 670,953**
**Int. Cl. B65g** *65/30, 25/08*
**U.S. Cl. 214—17** **7 Claims**



This disclosure relates to the arrangement of a pusher blade assembly in a processing vat. The blade is supported by a mounting assembly from a carriage for movement toward and away from the vat outlet. A rigid connection is provided between the pusher blade and the carriage as the blade is moved toward the outlet and the pressure of the accumulation of product medium in the vat between the blade and the outlet is transmitted to the blade mounting assembly and the carriage. This pressure produces deflection of the mounting assembly and the carriage. A safety control is connected in the circuit of the carriage drive and is responsive to the deflection such that the control is actuated and interrupts operation of the carriage drive in response to a predetermined amount of deflection indicative of a preselected amount of accumulation. The safety control is in series with an ON-OFF control switch so that as the accumulation of product medium recedes and the deflection of the mounting assembly and carriage relaxes, the safety control recloses and automatically reestablishes operation of the carriage drive.

### 3,476,273
### REFUSE COLLECTION VEHICLE

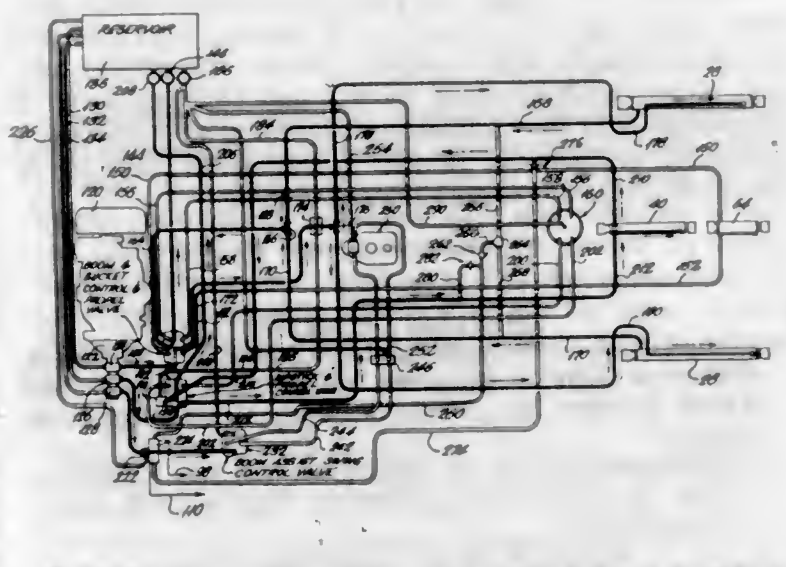
**Charles E. Jones, 1040 S. Trooper Road, Norristown, Pa. 19401, and William C. Henry, Wilmington, Del.; said Jones assignor of twenty-five percent to Thru-Way Equipment Company, Conshohocken, Pa., a corporation of Pennsylvania**
**Filed July 26, 1967, Ser. No. 656,286**
**Int. Cl. B60p** *1/00;* **B65f** *1/14;* **B60k** *25/06*
**U.S. Cl. 214—82** **9 Claims**



A refuse collection vehicle having a packer in its body, and control means responsive to transmission speed selection which enables actuation of the packer when the speed selector of the vehicle transmission is set in neutral or high drive range position. When the packer is operated with the transmission in neutral, the control means causes engine speed-up so that adequate pressure is available to the packer.

### 3,476,274
### BACKHOE HYDRAULIC CONTROL SYSTEM

**Wallace J. Witwer, Waukesha, Wis., assignor to Hein-Werner Corporation, Waukesha, Wis., a corporation of Wisconsin**
**Filed Feb. 2, 1968, Ser. No. 702,755**
**Int. Cl. E02f** *3/62*
**U.S. Cl. 214—138** **18 Claims**

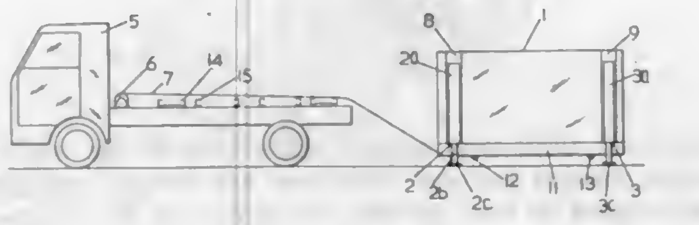


A hydraulic control system is provided for a backhoe having a swingably mounted platform upon which a boom is pivotally mounted and including a dipstick pivotally supported on the boom for curling movement inwardly

and outwardly of the backhoe. The hydraulic control system includes means for increasing the speed of movement of the boom upwardly and also includes means for increasing the speed and power of the dipstick as it curls in. The hydraulic control system also includes means for increasing the power and decreasing the speed of the dipstick as it curls in.

### 3,476,275
### TRANSPORTABLE LOAD-CARRYING APPLIANCES

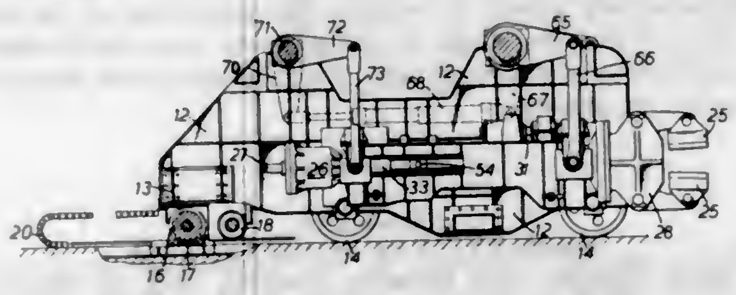
**Frank Cowlishaw, Linby, and Frank Town, Burton Joyce, England, assignors to W. E. & F. Dobson Limited**
**Filed Mar. 27, 1968, Ser. No. 716,465**
**Claims priority, application Great Britain, Apr. 8, 1967, 16,188/67**
**Int. Cl. B60p** *1/64;* **B66f** *7/26*
**U.S. Cl. 214—517** **7 Claims**



A transportable load-carrying appliance having legs enabling loading onto and unloading from a transport vehicle and comprising a body structure having hydraulically extendible and contractable legs, with non-rotatable slide and slideway means such as squared shafts and sockets mounting the legs for slidable displacements between inner and outer side positions, and hydraulic or other power operated actuator means connected between the slides and the body structure for effecting the displacements during which the legs remain upright, with abutments on the slides for sideways location of the appliance on the vehicle and feet on the legs for holding the appliance down on the vehicle, and the body structure being a base frame, platform, chassis, container, or room, and when either a container or room the inward movement of the legs is into recesses.

### 3,476,276
### MANIPULATORS

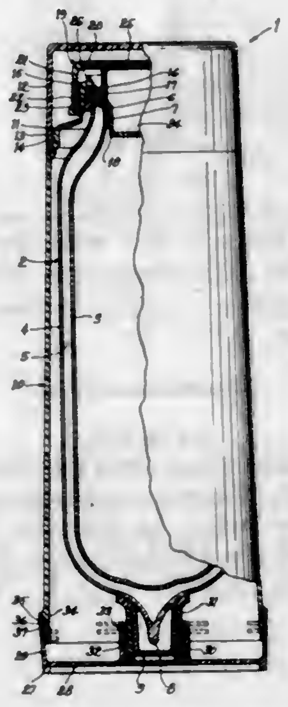
**Dennis Stubbs and William Gordon Wilson, Sheffield, and Bela Istvan Bathory, Wales, near Sheffield, England, assignors to Davy and United Engineering Company Limited, Sheffield, England**
**Filed Jan. 15, 1968, Ser. No. 697,772**
**Claims priority, application Great Britain, Jan. 16, 1967, 2,254/67**
**Int. Cl. B66f** *9/18;* **B66c** *3/06*
**U.S. Cl. 214—652** **6 Claims**



A manipulator for use with a forging press comprises a manipulator carriage comprising a main frame with an intermediate frame connected to the main frame and arranged for horizontal, vertical and tilting movements about a horizontal axis, and a peel supported by the intermediate -frame for transverse movement relative thereto and/or pivotal movement about a vertical axis.

### 3,476,277
### VACUUM BOTTLES HAVING IMPROVED BOTTOM CLOSURES

**Robert M. Rownd, 925 Forrest Acres Court,**
**Nashville, Tenn. 37220**
**Filed Dec. 26, 1967, Ser. No. 693,558**
**Int. Cl. A47j** *41/02*
**U.S. Cl. 215—13** **19 Claims**

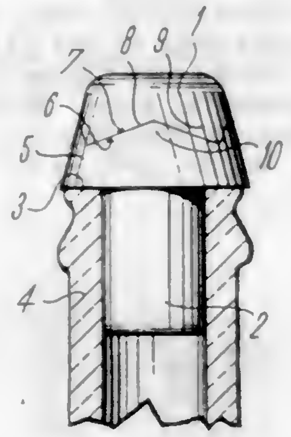


A vacuum bottle having a vacuum insulated receptacle, a generally cylindrical protective jacket preferably made of resinous plastic material and received around said receptacle, and a bottom closure having a disengageable screw connection with the lower end of said jacket, said bottom closure having an annular side wall portion with an outwardly facing frusto-conical end surface, said jacket having an inwardly facing frusto-conical surface engaging said frusto-conical end surface on said bottom closure for holding said annular side wall of said bottom closure inwardly against outward expansion, said frusto-conical annular surfaces being in sealing engagement. The frusto-conical annular surface on said bottom closure is preferably at a smaller angle to the axis of the vacuum bottle than the frusto-conical annular surface on said jacket. In one embodiment, the upper end of the bottom closure is formed with a V-shaped annular point while said jacket is formed with a downwardly facing V-shaped annular groove, mating with said point. The frusto-conical annular surfaces are formed on said point and groove. Preferably, the included angle of said V-shaped annular point is smaller than the included angle of said V-shaped annular groove.

### 3,476,278
### DEVICE FOR UNCORKING CHAMPAGNE OR SUCHLIKE BOTTLES

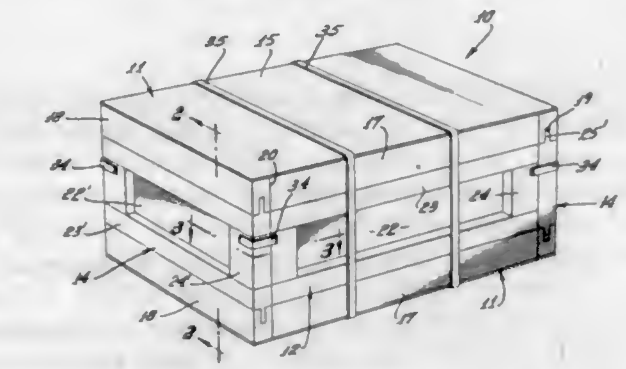
**Paul Lollmann, 8 Schwabstrasse, 72 Tuttlingen, Germany**
**Filed May 25, 1967, Ser. No. 641,208**
**Claims priority, application Germany, May 31, 1966, L 53,739**
**Int. Cl. B65d** *39/16*
**U.S. Cl. 215—55** **8 Claims**

A device for facilitating removal of a closure from a bottle, particularly a bottle containing champagne or other matter sealed, under pressure, with a stopper having a shank portion fitting within the bottleneck and a head portion having a diameter greater than that of the shank portion, including a ring member positioned rotatably with respect to the shank portion of the stopper at the end face of the bottle, one surface of the ring member engaging with an adjacent surface of either the bottle or the stopper to cause retraction of the stopper from the bottle upon relative rotation between the ring member and the stopper.



### 3,476,279
### CONTAINER CONSTRUCTION

**Robert G. Wharton, Alhambra, Calif.**
**(15903 Ashgrove Drive, La Mirada, Calif. 90638)**
**Filed Oct. 26, 1967, Ser. No. 682,715**
**Int. Cl. B65d** *9/12, 9/34*
**U.S. Cl. 217—12** **3 Claims**

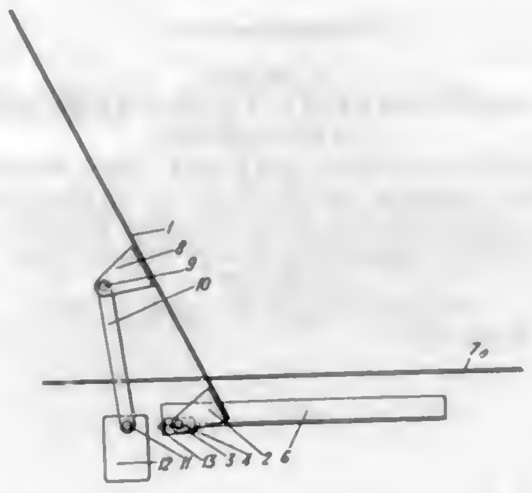


A readily assembled and disassembled container structure made from three pairs of top, side and end wall components, each component of a pair being symmetrical with respect to two axes at right angles to each other, thereby permitting the use of the components in reverse positions and interchangeably, the construction providing a mechanical, frictional grasp between components, eliminating the use of nails or screws, providing a smooth-surfaced interior, and labyrinth-type seals between components.

### 3,476,280
### LIFTABLE COVERS FOR AUTOMOBILE BODY COMPARTMENTS

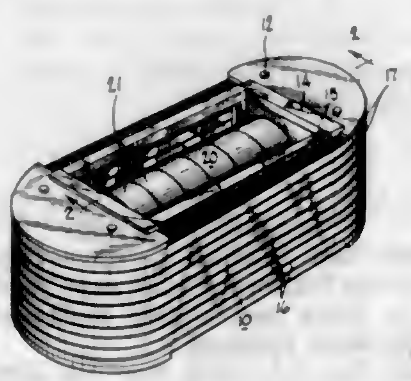
**Vaughan Mansel Phillips, Luton, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Dec. 4, 1967, Ser. No. 687,644**
**Claims priority, application Great Britain, Dec. 15, 1966, 56,191/66**
**Int. Cl. B65d** *43/24*
**U.S. Cl. 217—60** **2 Claims**

A liftable cover for the engine or trunk compartment of an automobile body, in which the front or rear edge of the cover is pivotally connected to nylon blocks slidable on tracks fixed to the bodywork, and hold-open stays are pivotally connected between the bodywork and the cover in such a way that, upon lifting the edge of the cover remote from the nylon blocks, the blocks move along the tracks towards the mounting of the stays on the bodywork until they engage stops fixed to the tracks in which position the hold-open stays are located over-centre with regard to their pivotal mountings on the bodywork so that the cover is held in an open position.



### 3,476,281
### REACTION FRAME FOR RESTRAINING HIGH LOADS

**Rodney H. Cornish, Chicago Heights, and Lawrence A. Finlayson, Park Forest, Ill., assignors to IIT Research Institute, Chicago, Ill., a not-for-profit corporation of Illinois**
**Filed Dec. 4, 1967, Ser. No. 687,891**
**Int. Cl. B65d** *25/20, 7/44*
**U.S. Cl. 220—3** **7 Claims**

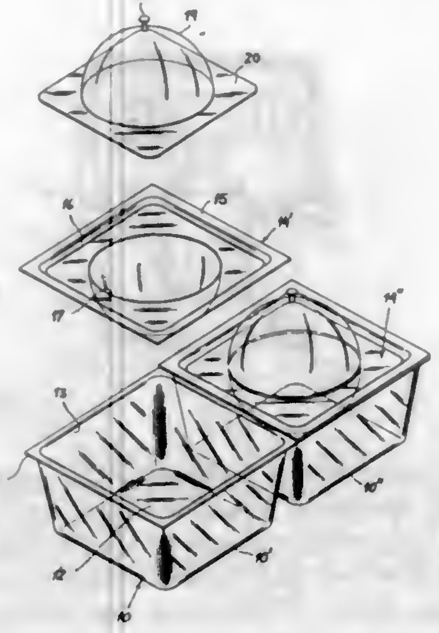


A reaction frame for restraining uniaxial loads. The components of the frame include two opposed stacks of semicircular plates and an outer wrapping of metal strip continuously wound to restrain the movement of the flat edges of the two stacks of plates away from each other. The frame may be employed in conjunction with pressure vessels or presses.

### 3,476,282
### DISPLAY-TYPE FOOD SERVER

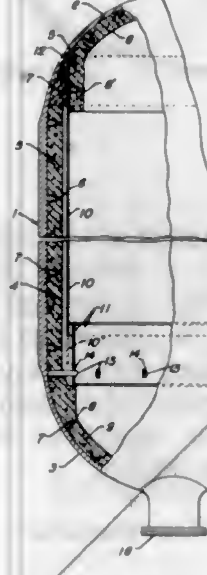
**Foster Monaco and Rosario Monaco, both of 43—10 23rd St., Long Island City, N.Y. 11101**
**Filed Feb. 5, 1968, Ser. No. 702,968**
**Int. Cl. A47j** *27/10;* **B65d** *19/04*
**U.S. Cl. 220—13** **7 Claims**

Food-serving receptacle of the general type described in U.S. Patent No. 3,130,288 wherein a transparent inner vessel is suspended by a flange from a peripheral edge of a transparent outer vessel to form therewith a space for a temperature-controlling fluid enveloping the inner vessel and wherein a dome-shaped transparent cover fits over the two vessels, the flange of the inner vessel being tray-shaped to form a depressed seat for the cover and, alternatively, for the bottom of a second outer vessel to be stacked upon the first one.



### 3,476,283
### INTERNALLY INSULATED AND LINED PRESSURE VESSEL

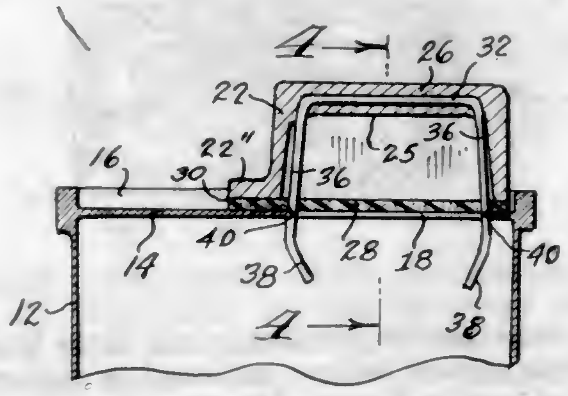
**Walter W. Heinze, Chicago, and Evan A. Jones and Don B. Carson, Mount Prospect, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**Filed July 5, 1968, Ser. No. 742,710**
**Int. Cl. B65d** *25/00, 25/14;* **B01d** *3/00*
**U.S. Cl. 220—15** **3 Claims**



A liner construction for an internally insulated and metal lined pressure vessel which suspends a major section of the metal liner from the upper portion of the vessel permitting a lower free end to expand downwardly, and provides a separate lower liner section to be in the lower portion of the vessel and sized to slidably overlap the lower portion of the suspended liner section, and, in addition, provides a plurality of spaced apart finger-like support members projecting inwardly from the lower wall portion of the vessel to engage and support said separate lower liner section.

### 3,476,284
### SNAP-ON REMOVABLE CAN PLUGS

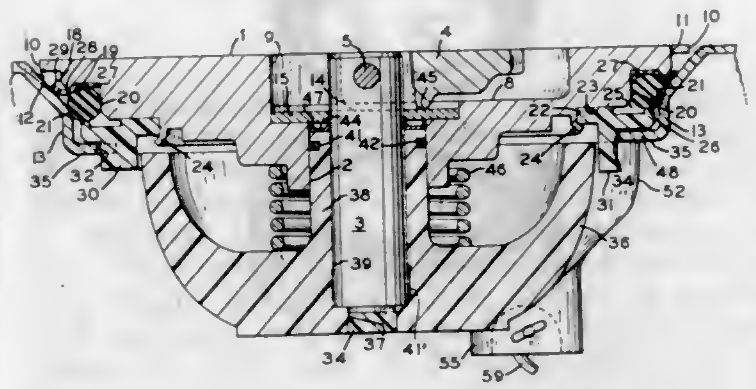
**Louis G. Callegari, 34—06 45th St., Long Island City, N.Y. 11105**
**Filed June 10, 1968, Ser. No. 735,794**
**Int. Cl. B65d** *43/04, 45/02*
**U.S. Cl. 220—24** **1 Claim**



A removable sealing plug for sealing the triangular-shaped openings resulting from the pulling of the pull tab opener of the thin metal present day beverage cans. This plug comprises a bottom plate portion and hollow handle portion extending upwardly therefrom. An inverted U-shaped spring fastener has its bight portion rigidly embedded in the top of the handle portion and its legs extending freely downwardly within the hollow opening of the handle and through a sponge rubber sealing member adhered to the undersurface of the bottom plate portion. The terminal ends of the fastener enter the can opening and are notched adjacent to the rubber member to grip the can edges to biasingly hold the plug therein and rubber in sealing engagement along the edge of the opening.

### 3,476,285
### FILLER CAP ASSEMBLY

**Chester C. De Pew, Farmingdale, N.Y., assignor to Tridair Industries, Redondo Beach, Calif.**
**Continuation of application Ser. No. 698,682, Dec. 28, 1967. This application Nov. 27, 1968, Ser. No. 785,004**
**Int. Cl. B65d** *45/02*
**U.S. Cl. 220—25** **11 Claims**



Safety factor of aircraft fuel tanks by providing edge of filler cap assembly with spaced fingers permitting electrical discharge to the adjoining edge of the adapter which receives the assembly while leaving gaps between the members to permit ionized air under heavy pressures to be discharged harmlessly to the atmosphere.

### 3,476,286

## HOUSING FOR ELECTRIC STORAGE CELLS AND METHOD OF PRODUCING SAME

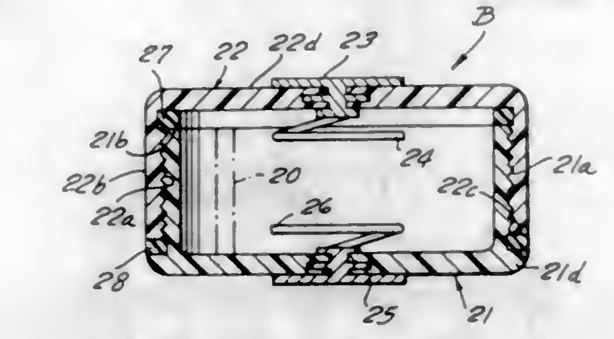
**Karl Steffens, Hagen-Vorhalle, Germany, assignor to Varta Aktiengesellschaft, Frankfurt am Main, Germany**

**Filed Oct. 11, 1967, Ser. No. 674,514**

**Claims priority, application Germany, Oct. 21, 1966, V 32,174**

**Int. Cl. B65d** *41/04;* **H01m** *35/20, 35/00*

**U.S. Cl. 220—39** **3 Claims**



The cover and the container or cup of the housing for an electric storage cell are connected to each other by means of mating threads. The cover may be provided with internal threads and the container may be provided with external threads, or vice versa. The threads can be coated with a solvent or with an adhesive prior to being placed into mesh with each other, and the cover and/or the container can be shrunk by heat treatment or by cooling to provide a fluid-tight seal between the threads. Adhesive and/or solvent can be used on a cover and/or container whose material shrinks in response to the application or withdrawal of heat to provide a more reliable connection which prevents leakage of electrolyte.

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### 3,476,287

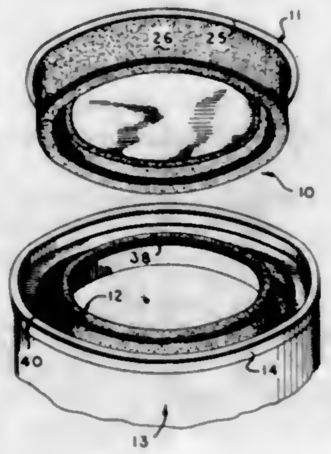
## TRIPLETITE FRICTION CLOSURES

**James W. Kinnavy, Westmont, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York**

**Original application Dec. 9, 1964, Ser. No. 416,986. Divided and this application Jan. 7, 1969, Ser. No. 789,448**

**Int. Cl. B65d** *41/28, 53/02*

**U.S. Cl. 220—42** **7 Claims**



This disclosure relates to tripletite friction closures of the type formed of an annular ring and a circular plug, said ring and plug each being formed of a generally U-shaped cross section defined by opposed friction walls joined by an integral panel, and one or both of the friction walls is provided with a coating of organosol material to form a hermetic seal therebetween.

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### 3,476,288

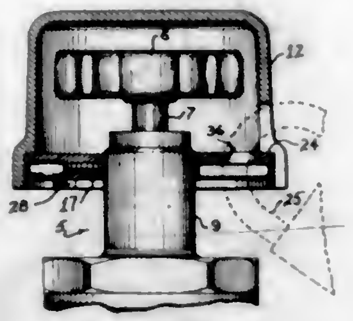
## GUARD COVER FOR VALVE HANDWHEELS

**Dana D. Sherrill, 1011 Sun Drive, Colorado Springs, Colo. 80906**

**Filed Mar. 27, 1968, Ser. No. 716,451**

**Int. Cl. B65d** *25/38*

**U.S. Cl. 220—85** **1 Claim**



A valve cover which includes an annular ring having radial screw means to attach the same to a valve bonnet and having a cup-shaped hood which fits onto the ring and over the handwheel and includes studs inwardly projecting from the inside of the hood and which are disposed below the annular ring to prevent removal of the latter.

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### 3,476,289

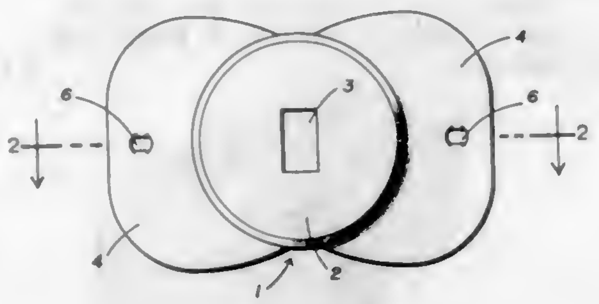
## BAIL-ATTACHMENT EAR FOR METALLIC CONTAINERS

**Thomas A. McCoy, Stockton, Calif., assignor to Carando Machine Works, Stockton, Calif., a partnership**

**Filed June 28, 1968, Ser. No. 740,890**

**Int. Cl. B65d** *25/32*

**U.S. Cl. 220—91** **4 Claims**



A metallic, bail-attachment ear adapted to be electrowelded to the side of a metallic container—such as a pail—having an external coating of relatively dielectric material such as paint or plastic; the ear being preformed with projections arranged to penetrate such coating and establish electrical contact, for such welding, with the metal of the container upon the ear being forcefully pressed against the side thereof.

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### 3,476,290

## ESCAPEMENT MECHANISM

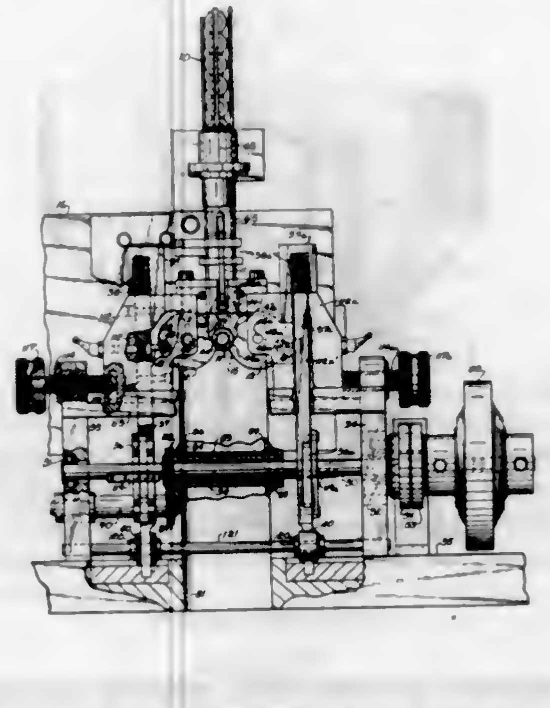
**Henry C. Pajak, Parma, Ohio, assignor to The Lamson & Sessions Co., Cleveland, Ohio, a corporation of Ohio**

**Filed Jan. 19, 1968, Ser. No. 699,218**

**Int. Cl. B65g** *47/88, 59/06*

**U.S. Cl. 221—297** **2 Claims**

This escapement mechanism has a pair of oppositely rotatable gate members defining a gap between them along the path of the articles to be detained. In a first rotational position the gate members pass the article into the gap between them and they engage the article at the outlet side of the gap. When turned simultaneously in opposite rotational directions to a second position, the gate members release the previously-detained article and they prevent the next article from entering the gap between them until they are returned to the first rotational position.



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### 3,476,291

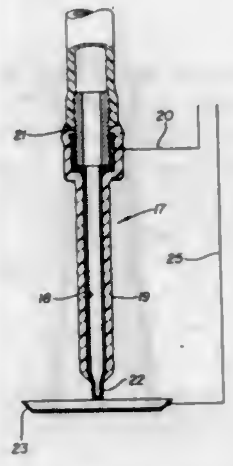
## METHOD AND APPARATUS FOR DISPENSING MEASURED QUANTITIES OF LIQUIDS

**Donald A. Glaser, Berkeley, Calif., assignor to Berkeley Scientific Laboratories, Inc., Berkeley, Calif., a corporation of Texas**

**Continuation-in-part of application Ser. No. 549,301, May 11, 1966. This application June 13, 1968, Ser. No. 736,780**

**Int. Cl. B67d** *5/08;* **E01f** *11/00*

**U.S. Cl. 222—76** **14 Claims**



A liquid dispensing nozzle and method in which a strong electric field pulse is applied to a liquid at an orifice in a conduit causing charge redistribution resulting in removal of a drop from the conduit. Apparatus including a source of voltage pulses and an arrangement of conductive members for securing the electric field are disclosed.

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### 3,476,292

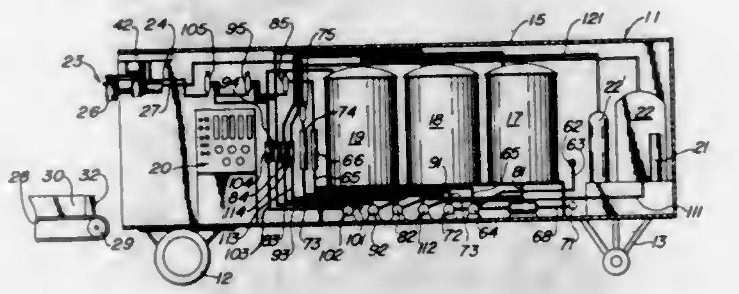
## APPARATUS FOR MAKING POLYURETHANE FOAM

**Guy G. Joseph, Highland Park, and Robert K. Teverbaugh and Angelina A. Maniquis, Chicago, Ill., assignors, by mesne assignments, to Holiday Inns of America, Inc., Memphis, Tenn., a corporation of Tennessee**

**Filed Aug. 4, 1966, Ser. No. 570,189**

**Int. Cl. B67d** *5/52, 5/60, 5/64*

**U.S. Cl. 222—135** **3 Claims**



A readily transportable, mobile polyurethane foam making unit is provided. The unit has means to store, pump, and meter the ingredients to a precursor composition pouring means which is movable transversely on said unit.

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### 3,476,293

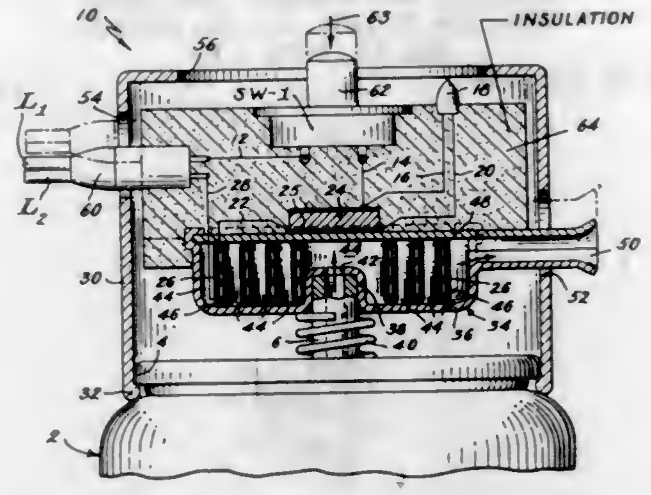
## AEROSOL HEATER WITH IMPROVED CONTROL MEANS

**Leo Marcoux, Pawtucket, R.I., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**

**Filed Aug. 29, 1967, Ser. No. 664,015**

**Int. Cl. B67d** *5/62, 83/14*

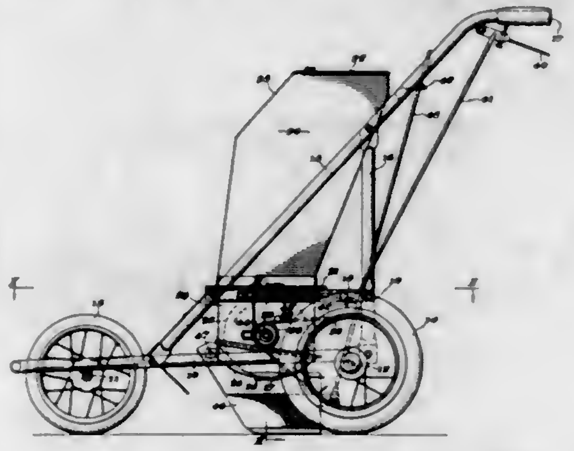
**U.S. Cl. 222—146** **14 Claims**



A heater-dispenser device for heating fluid materials passing therethrough is disclosed. The heater consists of a spirally wound flattened tubular sheath containing an internal resistance heater electrically insulated therefrom. A solid-state element having a temperature-resistivity curve which reflects low resistance values at relatively low temperatures and relatively small changes in resistance with increasing temperature until an anomaly point is reached at which point the resistance rapidly increases with slight increases in temperature. The element generates heat causing an increase in resistance until a thermal equilibrium is attained thereby limiting current flow. A lamp is employed as an indicator to show when the system has generated sufficient heat and is ready for dispensing. One embodiment shows a heater-dispenser which is reciprocably mounted. A second embodiment shows a stationary heater-dispenser unit with reciprocably mounted actuating means.

### 3,476,294
### LINE MARKING MACHINES

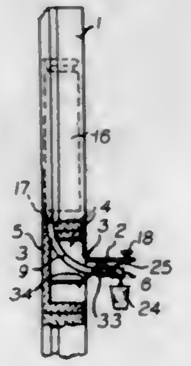
**Peter A. McGuffie, 10a Oxford Road, Link Top, Malvern, Worcestershire, England**
**Filed Jan. 2, 1968, Ser. No. 695,222**
**Claims priority, application Great Britain, Jan. 6, 1967, 871/67**
**Int. Cl. B67d** *5/64*
**U.S. Cl. 222—177** **5 Claims**



A line marking machine, e.g. for playing fields, adapted to use dry powdered line marking material, is in the form of a wheeled trolley and has a rotary brush cooperating with a grid-covered aperture to act as a dispensing element. The brush is driven through a clutch from the trolley wheels. The aperture can be controlled by a slide plate and the width of the line is defined by downwardly and longitudinally extending side pieces mounted on either side of the aperture.

### 3,476,295
### LIQUID DISPENSING APPARATUS HAVING A DISPENSING TOP CLOSURE

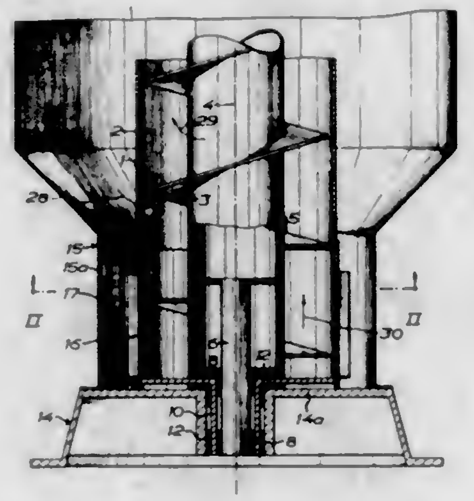
**Henri E. Telfer, 7 Fitz Allen St., Port of Spain, Trinidad and Tobago, West Indies**
**Filed Jan. 3, 1968, Ser. No. 695,376**
**Int. Cl. B67d** *5/64*
**U.S. Cl. 222—183** **3 Claims**



This specification describes a dispenser for liquids, ice cubes and the like in combination with a refrigerator or freezer door which is adapted to be used without the necessity of opening the door. This apparatus comprises a refrigerator or freezer door of the type adapted to contain shelves therein. A container adapted to hold the liquid to be dispensed or the ice cubes, etc. is positioned inside the door, suitably on or in place of a shelf. A small hinged door or panel is provided in the outside front face of the refrigerator door which panel when opened permits communication through the refrigerator door. Where liquid is to be dispensed, a tap is provided inside the hinged panel which communicates with the container. The tap is hingedly or slidably mounted in the door and operatively associated with the small panel so that when the panel is opened the tap moves out of its recess in the door to extend out therefrom and permit operation thereof to drain a part or all of the contents of the container.

### 3,476,296
### CONVEYING APPARATUSES

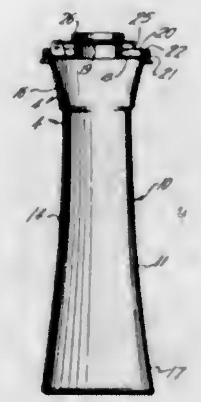
**Olle Lennart Siwersson, Gartnergatan 4, and Karl Gunnar Tell, Malmogatan 3, both of Halsingborg, Sweden**
**Filed July 18, 1967, Ser. No. 654,118**
**Claims priority, application Sweden, July 20, 1966, 9,887/66**
**Int. Cl. B65g** *33/20;* **G01f** *11/20*
**U.S. Cl. 222—381** **3 Claims**



A conveying apparatus with rotatable conveying elements in the form of a screw and a tubular housing for said screw, at least one of said conveying elements rotating at such speed that the conveyed material is deposited, under the action of centrifugal force, as a layer on the inner surface of the housing, and the other conveying element rotates at a speed corresponding to or approximately corresponding to the speed of said first-mentioned conveying element.

### 3,476,297
### CLOSURED CONTAINER AND METHOD OF MAKING SAME

**James B. Swett, Barrington, and Charles L. Nixon, Cumberland, R.I., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware**
**Filed Dec. 20, 1967, Ser. No. 692,239**
**Int. Cl. B67d** *3/00*
**U.S. Cl. 222—480** **3 Claims**



A salt and pepper shaker having a unique internal configuration whereby flow of particulate condiments can be controlled during use. A method of sealing an outwardly flared opening of a hollow plastic body by ultrasonic heat sealing techniques to produce a tight fitted closure even though complete fusion between the closure and the outwardly flared body opening are not obtained.

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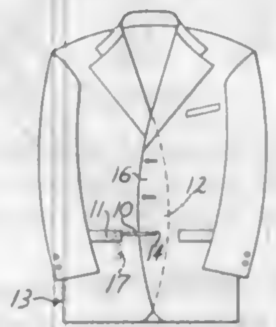
### 3,476,298
### GARMENT FORM RETAINER

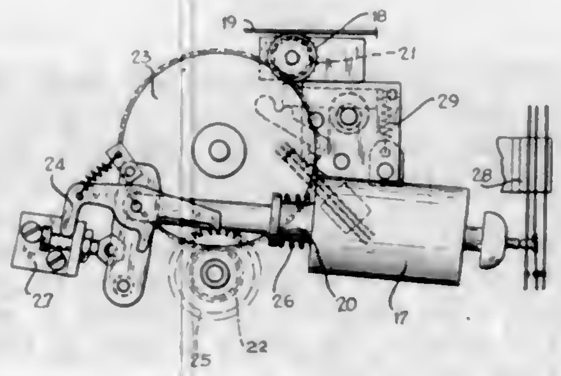
**Oliver R. Brekle, Birmingham, Ala., assignor to M & B Metal Products Company, a corporation of Delaware**
**Filed Jan. 6, 1969, Ser. No. 789,198**
**Int. Cl. A47f** *7/00*
**U.S. Cl. 223—71** **10 Claims**



A form retainer for overlapped portions of a coat garment having pocket in one overlapped portion in substantial alignment with button hole in other overlapped portion. Elongated wire-like member extends from pocket to button hole with depending extension at one end which enters pocket and extension at other end which is coupled to button hole.

### 3,476,299
### ARRANGEMENT FOR MONITORING MOVEMENTS OF TAPE

**Franz Spiroch, Eschborn, and Werner Beckert, Frankfurt am Main, Germany, assignors to Eichner Organisation G.m.b.H., Frankfurt am Main, Germany**
**Filed Oct. 19, 1966, Ser. No. 587,825**
**Claims priority, application Germany, Oct. 23, 1965, E 30,354**
**Int. Cl. B65h** *25/14*
**U.S. Cl. 226—32** **7 Claims**

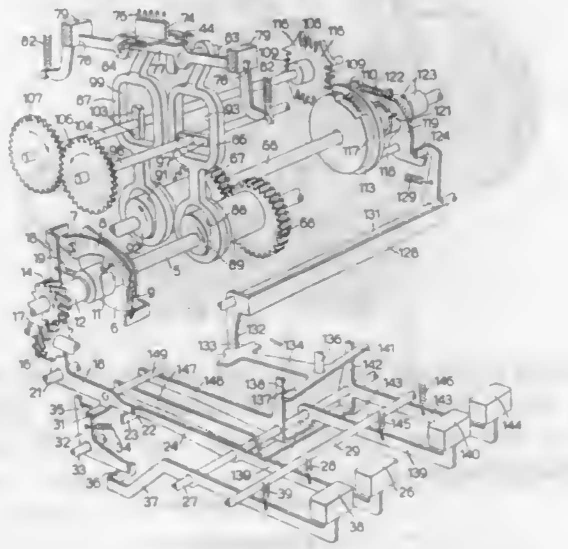


In a tape recording or reproducing apparatus in which the tape is lengthwise advanced by a rotary transporting member which engages the tape and in which the apparatus includes a monitoring arrangement provided with signal generating means directly connected to and rotatable with the rotary transporting member and signal transmitting means operated by the signal generating means.

### 3,476,300
### STEP BY STEP FEEDING DEVICE FOR A PUNCHED SUPPORT OF A PUNCHING OR READING APPARATUS

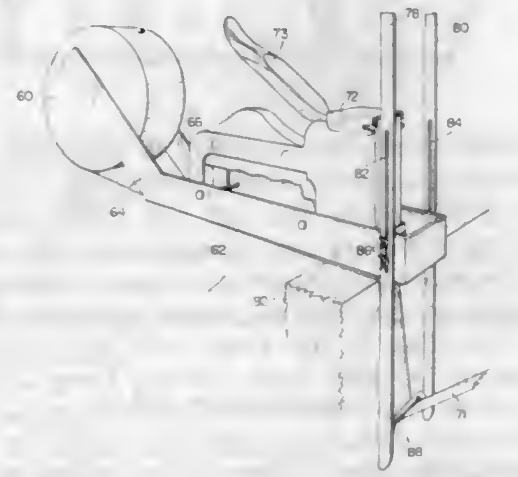
**Giuseppe Ricciardi and Giovanni Cerutti, Ivrea, Turin, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy**
**Filed Sept. 14, 1967, Ser. No. 667,792**
**Claims priority, application Italy, Sept. 20, 1966, 21,860/66, Patent 777,824**
**Int. Cl. B65h** *17/40*
**U.S. Cl. 226—67** **6 Claims**

A step by step feeding device for a punched record support of a punching or reading apparatus having a set of code elements mounted on a frame cyclically movable according to a closed path and for punching or reading said support during the feeding movement thereof, comprising a feeding member secured to said frame and adapted to intermittently engage said support for feeding same. The feeding member is operated by a pair of cyclically rotatable eccentrics, one of said eccentrics being adapted to positively reciprocate said feeding member in the feeding direction, both said eccentrics being adapted to jointly control said feeding member to be reciprocated in a direction perpendicular to said feeding direction.



### 3,476,301
### MATERIAL FASTENING APPARATUS

**Vernon R. Auston, P.O. Box 17042, Dallas, Tex. 75217**
**Filed Sept. 11, 1967, Ser. No. 666,606**
**Int. Cl. B25c** *5/06*
**U.S. Cl. 227—25** **10 Claims**

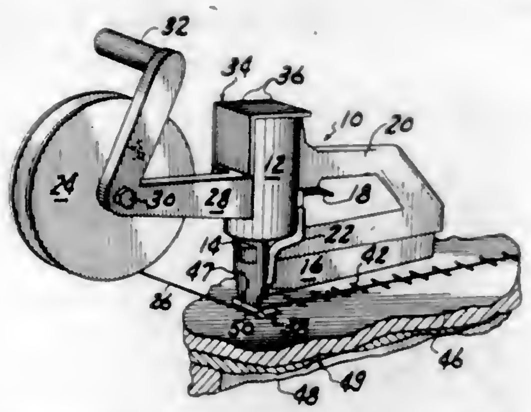


A tool is disclosed for attaching a strip of material to a series of joists for supporting insulation. The tool comprises a frame, a fastening device such as a stapler mounted in the frame, gauge means for providing a predetermined amount of slack in the material between the joists and a holder for dispensing material across the face of the fastening device as it is pulled through the gauge means.

### 3,476,302
### WALLBOARD ATTACHMENT AND APPARATUS THEREFOR

**Jerome N. Hurd, Atlanta, Ga., assignor to United States Gypsum Company, Chicago, Il., a corporation of Illinois**
**Filed May 13, 1966, Ser. No. 550,022**
**Int. Cl. B25c** *5/06, 5/10, 5/16*
**U.S. Cl. 227—120** **1 Claim**

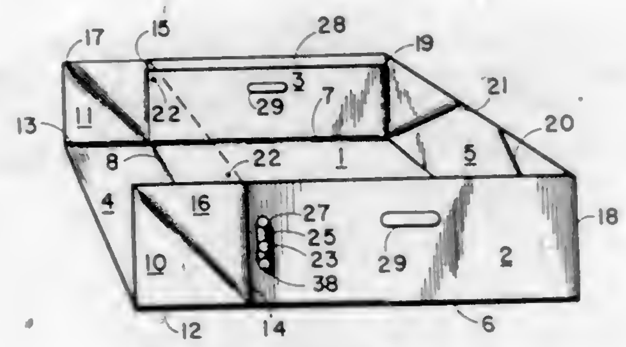
A portable stapler comprising a housing and reciprocally movable driving head, has a reel of wire mounted on said housing in a manner whereby wire is removed from such reel under tension. The taut wire is guided into the path of the reciprocating driving head.



The bight portions of the driven staples engage the underlying wire with a regulated driving force adequate to deform the wire as the staple legs are driven into a penetrable base.

### 3,476,303
### COLLAPSIBLE RECEPTACLE

**Richard Dunham Smith, 2415 S. Court, Palo Alto, Calif. 94301**
**Filed Oct. 13, 1967, Ser. No. 675,082**
**Int. Cl. B65d** *5/24*
**U.S. Cl. 229—31** **8 Claims**

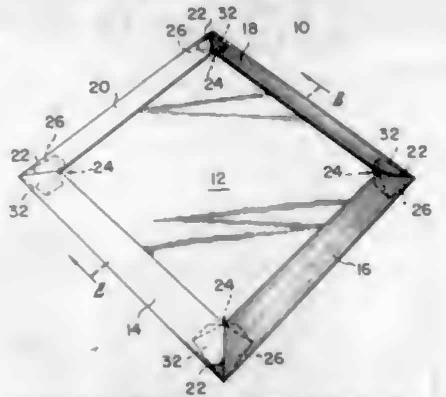


A collapsible receptacle adapted to fit within the cargo compartment of a station wagon comprising a rectangular base having front, rear and two side walls rotatably extending from the base and coextensive with the edges thereof, the walls being movable from a plane substantially parallel to the base to planes substantially normal thereto. The sides of the front wall are joined to the front edges of the side walls and the front wall is foldable to provide for collapsing of the receptacle. Collapsible web means connect to the side edges of the rear wall to rearward edges of the side walls, the web means being extended when the rear wall is in the plane of the base and being folded when the rear wall is in the vertical position. Fastening means are provided for maintaining the rear wall in the vertical position.

### 3,476,304
### FOLDABLE CARTON AND BLANK WITH PLEATED CORNER

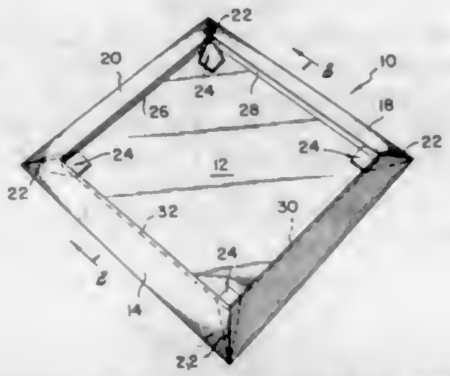
**Norman John Asman, Appleton, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey**
**Filed Feb. 26, 1968, Ser. No. 708,187**
**Int. Cl. B65d** *5/24*
**U.S. Cl. 229—31** **9 Claims**

A carton blank having bottom and side panels and having a reinforced web corner comprising only four essentially triangular panels hingedly connected to one another and to adjacent side panels. A display carton is constructed from the blank by forming two adjacent pleats from the four corner panels, the pleats being shaped to permit line abutment of adjacent side edges of adjacent side panels thereby forming an attractive butt corner joint reinforced by the underlying pleats on both sides.



### 3,476,305
### FOLDABLE CARTON AND BLANK WITH INTEGRAL CORNER STRUCTURAL SUPPORT

**Norman John Asman, Appleton, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey**
**Filed Feb. 26, 1968, Ser. No. 708,282**
**Int. Cl. B65d** *5/24*
**U.S. Cl. 229—31** **15 Claims**

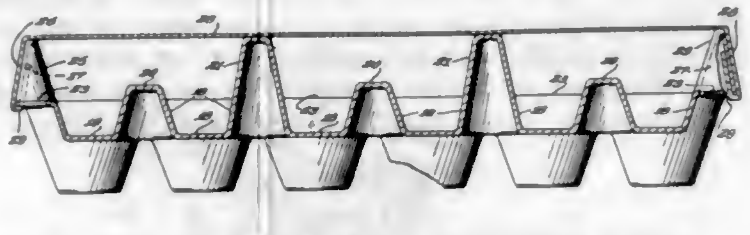


A carton blank having bottom and side panels and having a web corner comprising in one embodiment three and in the other embodiment five essentially triangular panels hingedly connected to one another and to adjacent side panels. A carton is constructed from the blank by folding the corner panels into an integral structural support having one portion designed to rest on the carton's bottom panel while permitting the abutment of adjacent side edges of adjacent side panels to form an attractive reinforced butt corner joint.

### 3,476,306
### PACKAGING AND SHIPPING CONTAINER FOR EGGS AND THE LIKE

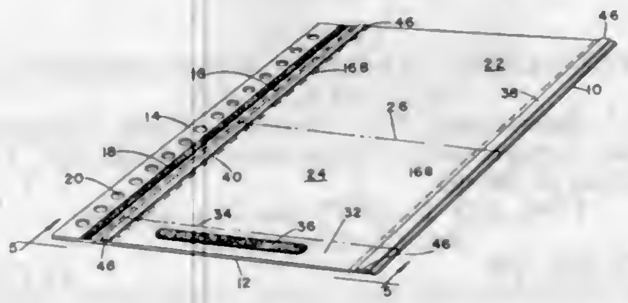
**Alfred Eisenberg, 200 Hibbard Road, Wilmette, Ill. 60091**
**Original application Mar. 2, 1967, Ser. No. 620,127. Divided and this application July 25, 1968, Ser. No. 755,488**
**Int. Cl. B65d** *1/24, 85/32*
**U.S. Cl. 229—40** **5 Claims**

Molded cellular egg tray and closure therefor providing a flat surface for stacking the trays for storage, display or shipment. The egg tray has clusters of egg pockets having hollow molded protective posts extending above the margins of the tray between the egg pockets. Certain of these protective posts extend along the margins of the tray and open to the ground. A closure means is provided for the tray, providing a flat stackable top for the tray, which may be in the form of a flat cover extending along the tops of the protective posts and having opposite depending sides, or which may be in the form of a sleeve having a flat top cover slipped along the tray and having opposite sides. These sides of the cover extend downwardly along opposite sides of the tray and each have at least one locking tab bent to extend inwardly along the inner side of the tray and having locking engagement with the hollow interior portions of the protective posts opening toward the ground to lockingly hold the cover to the tray.



### 3,476,307
### FOLDABLE MAILING PIECE

**Hans G. Faltin, 4135 Wiltshire Drive 17402, and William G. Faltin, 1434 1st Ave. 17403, both of York, Pa.**
**Filed May 6, 1968, Ser. No. 726,779**
**Int. Cl. B65d** *27/10, 27/16*
**U.S. Cl. 229—69** **17 Claims**

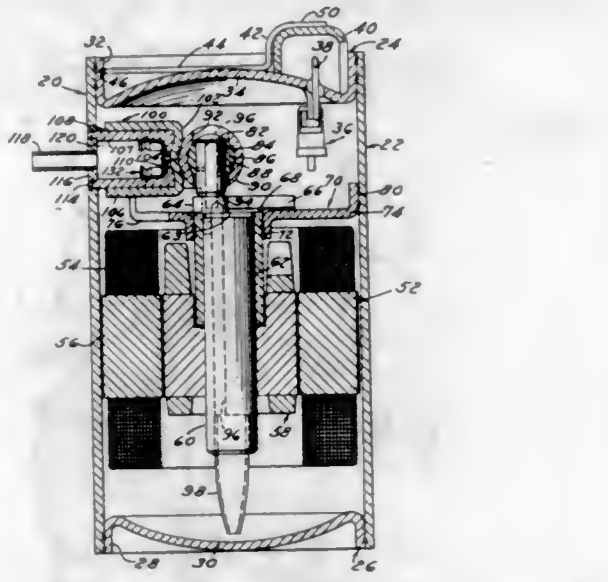


A strip of separably connected similar flat sheets of material suitable for forming a mailing piece when folded to form overlying panels connected adhesively at the free edges thereof, each of said flat sheets having a mounting strip separably connected along one edge and arranged to be attached by a stripe of adhesive to suitable supporting means such as a sheet or web comprising a printed product or the like, each flat sheet when disconnected from its mounting strip being foldable upon itself and preferably having a fold line, such as a crease or other equivalent means, extending between opposite side edges intermediately of the opposite ends thereof to define a pair of panels foldable along said fold line into said overlying relationship, one of said panels also having a closing flap foldably connected to it by another suitable fold line and suitable sealing means such as a stripe of adhesive on said flap to effect final sealing of the mailing piece, narrow covering strips of sheet material which may also be provided so as to lightly adhere to said stripes of adhesive on said panels, especially when of the pressure-sensitive type to protect the same until ready to be folded into an enclosing type mailing piece, and removal tabs being provided on one end of each covering strip, if desired, to facilitate removal of said strips.

### 3,476,308
### COMPRESSOR CONSTRUCTION

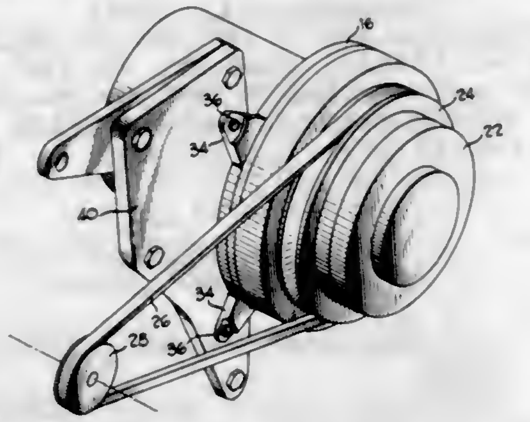
**Theodore W. Rundell and Freddie D. Randall, Tecumseh, Mich., assignors to Tecumseh Products Company, Tecumseh, Mich., a corporation of Michigan**
**Filed Oct. 18, 1967, Ser. No. 676,107**
**Int. Cl. F04b** *35/04, 29/00*
**U.S. Cl. 230—58** **10 Claims**

A hermetic motor-compressor unit constructed primarily of sheet metal components and having a scotch yoke mechanism drivingly connecting the motor with the pump of the unit. The compressor pump comprises a stationary piston and moving cylinder which are both cup-like members arranged with the cylinder guided on the exterior of the piston and reciprocated by the scotch yoke mechanism which also serves as an intake valve to the pump chamber.



### 3,476,309
### MOUNTING ARRANGEMENT FOR ROTARY COMPRESSOR

**Lester E. Harlin, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Apr. 19, 1968, Ser. No. 722,644**
**Int. Cl. F04b** *39/00*
**U.S. Cl. 230—235** **1 Claim**

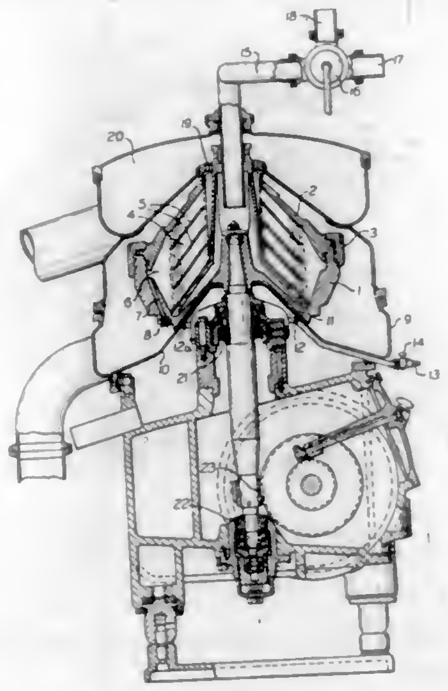


A mounting arrangement for a rotary compressor. The mounting is constructed so that major loads are taken by the front bearing plate and are not transmitted to the compressor casing.

### 3,476,310
### SEALING OF MOUNTING OF CENTRIFUGAL SEPARATOR

**Carl Poppenberg, Muhlenweg, Germany, assignor to Westfalia Separator AG., Oelde, Westphalia, Germany, a corporation of Germany**
**Filed Feb. 7, 1968, Ser. No. 703,634**
**Claims priority, application Germany, Feb. 9, 1967, W 43,326**
**Int. Cl. B04b** *15/02;* **B01d** *21/26, 45/12*
**U.S. Cl. 233—1** **4 Claims**

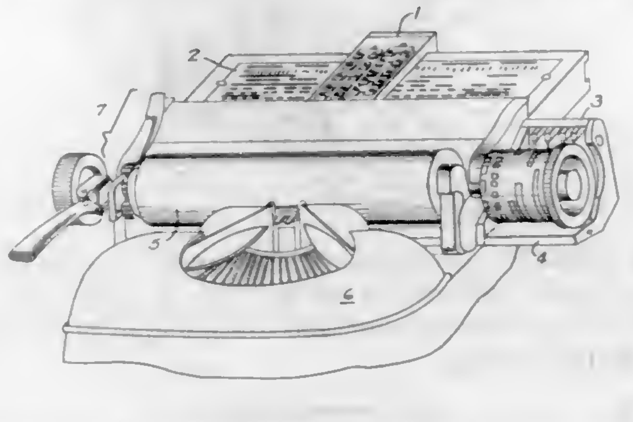
In a centrifugal separator of the nozzle type or self-cleaning type, wherein the bowl is mounted on a driving shaft for rotation therewith, the bowl being surrounded by a catcher for the solids discharged from the bowl, a gap is formed between the bottom of the bowl and the bottom of the catcher, so that vapors and steam may pass through the gap from the catcher into the frame and precipitate in the ball bearings and the driving mechanism when hot water or steam is fed into the bowl for cleaning during rotation and discharged through the openings for solids ejection into the catcher. To prevent such entrance of vapors or steam into the frame a cooling liquid is fed into the gap to condensate the



vapors or steam, the condensate of which is thrown outward into the catcher by the rotating bowl together with the cooling liquid.

### 3,476,311
### TWO-DIMENSIONAL STRUCTURE ENCODING TYPEWRITER

**Alfred P. Feldman, 1440 Locust Road, NW., Washington, D.C. 20012**
**Original application Feb. 26, 1963, Ser. No. 261,238, now Patent No. 3,358,804, dated Dec. 19, 1967. Divided and this application June 9, 1967, Ser. No. 660,849**
**Int. Cl. G06k** *1/10, 1/14;* **B41j** *3/534*
**U.S. Cl. 234—17** **8 Claims**

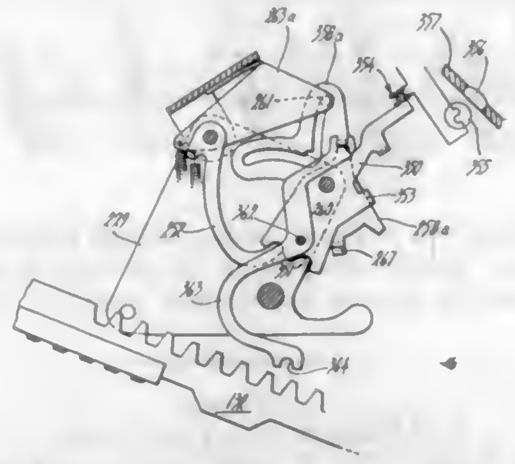


A Cartesian coordinate position encoding typewriter including horizontal and vertical position sensing apparatus responsive to the typing of a symbol for providing output signals indicative of the Cartesian coordinates of each typed symbol to encoding apparatus which converts the signals into a suitable code for recording. Apparatus is also provided for sensing the typed symbol, coding the symbol and recording the code together with the position coordinate codes.

### 3,476,312
### OVERDRAFT SIGNAL CONTROLLING DEVICES

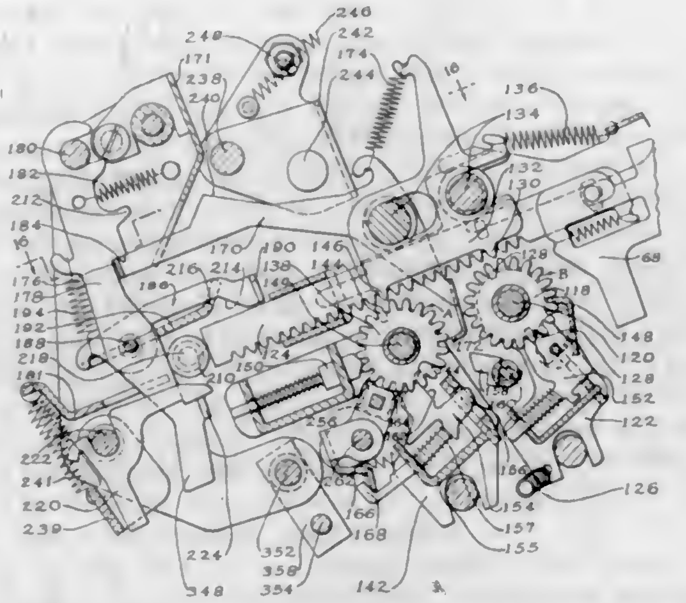
**Reginald R. Gallant, Bristol, and Robert M. Loftus, Farmington, Conn., assignors to Olivetti Underwood Corporation, New York, N.Y., a corporation of Delaware**
**Filed June 19, 1967, Ser. No. 647,100**
**Int. Cl. G06c** *29/00*
**U.S. Cl. 235—60** **6 Claims**

In a simply constructed adding and subtracting machine which is devoid of a fugitive one recovering mechanism, a register wheel of highest order will receive a negative carry operation when the register is overdrawn and such carry operation is utilized to operate an overdraft signal device. Under the control of a total key, the register wheels are subsequently cycle restored in a subtractive sense to zero position and further the signal device is restored responsively to normal condition without involvement of any tens transfer operation.



### 3,476,313
### CALCULATING MACHINE WITH SHORT CUT MULTIPLICATION

**Oscar J. Sundstrand, West Hartford, Conn., assignor to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois**
**Filed July 26, 1967, Ser. No. 656,267**
**Int. Cl. G06c** *29/00*
**U.S. Cl. 235—60** **21 Claims**



A calculating machine having numeral keys, function control keys, a function selector key, an accumulator, a B and an A register to receive the multiplicand and multiplier respectively in a problem of multiplication, a movable actuator for each column, a pivotally mounted lever associated with each actuator and rotated by a pusher engaged by its respective actuator when the latter is moved a distance corresponding to an entered number in the multiplier greater than 5, an advancing pawl for each number column other than the unit column and moved to add 1 to the entered multiplier number in its column when the number entered in the next lower column is greater than 5, a retaining latch engaged for each lever when the lever is pivoted, a subtract selector element movable transversely with the B register, drive means including spring loaded lost motion to rotate the subtract selector element on each operation of the machine during counting out of the A register under the control of the B register, the selector element being engageable with the levers to sense whether they have been pivoted, and a linkage operated by the subtract selector element to shift the accumulator to subtract position to effect multiplication by complementary subtraction in those columns where the multiplier digit is greater than 5. The machine includes linkage to control the subtract selector element during multiplication by a negative multiplier which produces a credit total.

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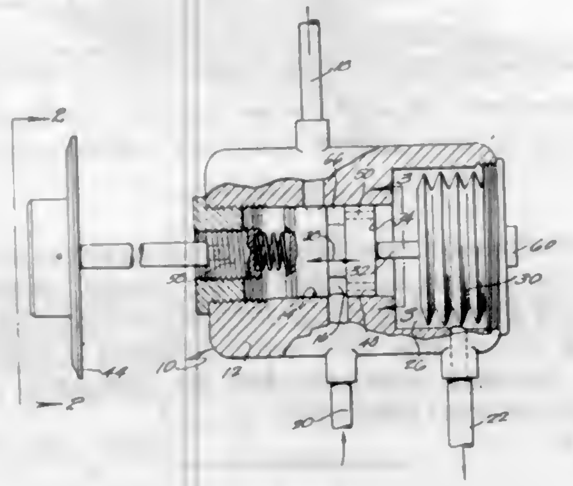
### 3,476,314
### WATER TEMPERATURE CONTROL UNIT

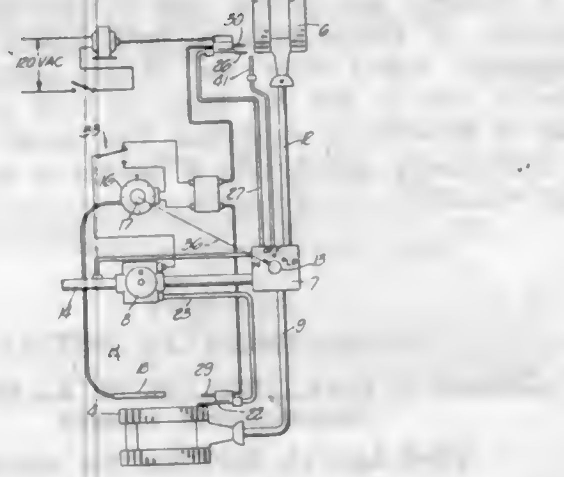
**Oley A. Boyd, Rte. 2, Box 125, Gooding, Idaho 83330**
**Filed Apr. 18, 1968, Ser. No. 722,429**
**Int. Cl. G05d** *23/02;* **F16k** *3/26*
**U.S. Cl. 236—12** **4 Claims**



A water temperature control unit for controlling water flow at a constant temperature set by the position of an indicator or dial, and in which there are bellow means thermally responsive to the water temperature to adjust the piston or water regulator means so that hot and cold water are mixed and the mixture of water flowing out of the unit remains at a constant temperature dependent on the condition and control of the bellows means set by the dial.

### 3,476,315
### CONTROL SYSTEM FOR DOUBLE-BURNER SINGLE-CAVITY OVEN

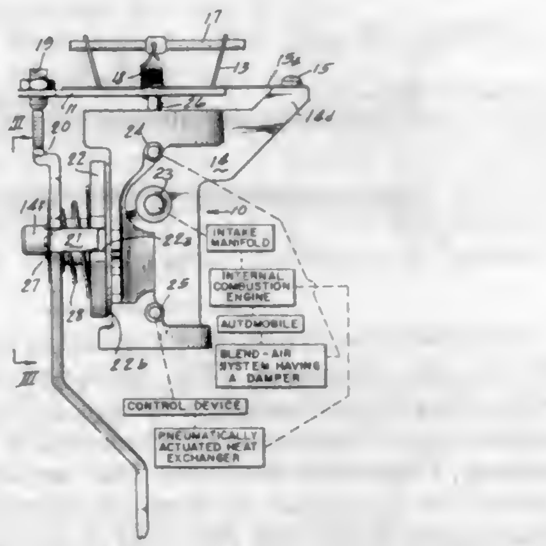
**Laurence C. Biggle, Pasadena, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland**
**Filed Nov. 15, 1967, Ser. No. 683,400**
**Int. Cl. F23n** *1/00;* **G05d** *23/00;* **F24c** *3/00*
**U.S. Cl. 236—15** **5 Claims**



The invention relates to the control of heating units found in ovens, and in particular to a single control system utilizing a single selector assembly for controlling multiple heat generating units in a single-cavity oven.

### 3,476,316
### VACUUM REGULATOR

**Rudolph J. Franz, Arlington Heights, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois**
**Filed Apr. 12, 1967, Ser. No. 630,297**
**Int. Cl. G05d** *23/00;* **F15b** *11/00, 13/00*
**U.S. Cl. 237—2** **14 Claims**


17
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15a
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14d
II
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14f
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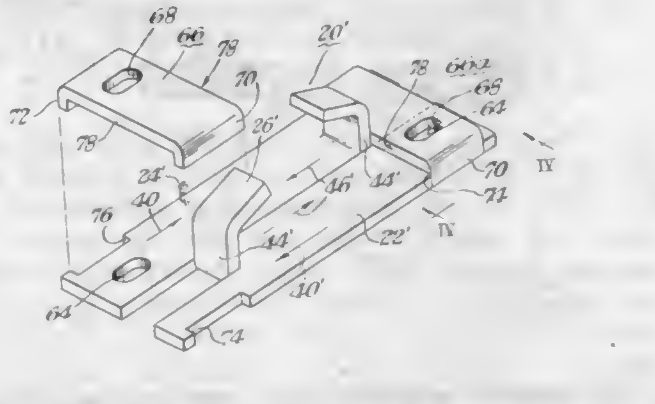
22a
27
28
25
22b
III
INTAKE MANIFOLD
INTERNAL COMBUSTION ENGINE
AUTOMOBILE
BLEND-AIR SYSTEM HAVING A DAMPER
CONTROL DEVICE
PNEUMATICALLY ACTUATED HEAT EXCHANGER

A valve mechanism having a vacuum regulator modulating vacuum in reference to a mechanical force to actuate a vacuum motor for opening and closing doors to a blend-air system and having an on-off output switch regulating flow of heat exchange fluid through a heat exchange core.

### 3,476,317
### RAIL FASTENERS

**Harold Gassner, 502 Martin Bldg., Pittsburgh, Pa. 15212**
**Filed Oct. 30, 1967, Ser. No. 679,106**
**Int. Cl. E01b** *3/48, 9/32*
**U.S. Cl. 238—290** **12 Claims**

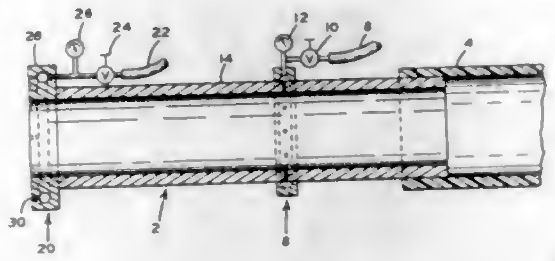


A bipartite rail fastener is disclosed, wherein each of the fastener components is provided with a rail engaging tab or lug. When the components are properly positioned, the tabs are apposed so that the tabs are moved toward one another to clamp properly the rail therebetween when the fastener components are displaced along their longitudinal dimensions. Various forms of retaining plates or members are provided for common securance or integral fabrication thereof with the fastener components, as desired, to prevent displacement of the fastener components and their tabs while in use. The fasteners provide resilient rail mounting, rail isolation, and sound and other energy absorption. The rail fasteners are provided with means for both laterally and vertically adjusting the rails secured thereby to correct gauge irregularities and to provide undistorted rail surfaces. Quiet vehicle operation can thus be attained despite the engagement of steel wheels with steel rails.

### 3,476,318

### METHOD AND APPARATUS FOR SPRAYING INSULATION

**Lewis W. Eckert, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania**
**Filed Aug. 14, 1967, Ser. No. 660,310**
**Int. Cl. B05b** *7/06, 7/14*
**U.S. Cl. 239—10** **2 Claims**

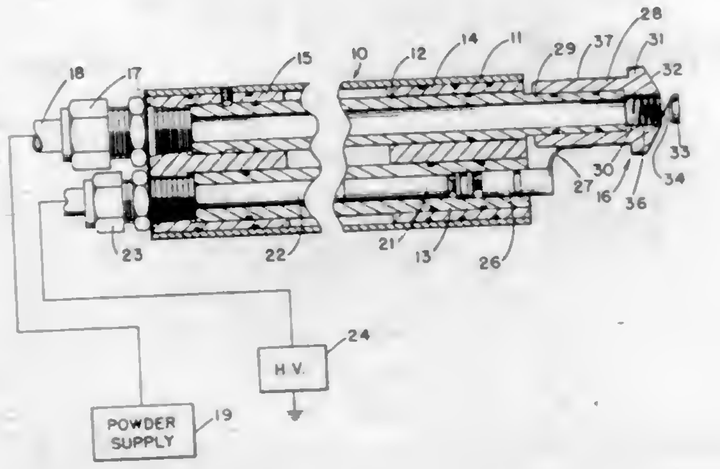


A method and apparatus for spraying insulation wherein the dry spray-type fiber insulation is treated with water in a special nozzle structure to secure the application and adherence of the insulation to its support surface. The nozzle structure uses an internal spray to prewet the insulation to eliminate dust and an external water spray to wet and direct the insulation into position.

### 3,476,319

### ELECTROSTATIC POWDER-COATING APPARATUS

**Charles R. Thatcher, Indianapolis, Ind., assignor to Ransburg Electro-Coating Corp., Indianapolis, Ind., a corporation of Indiana**
**Continuation of application Ser. No. 549,044, May 10, 1966. This application Nov. 25, 1968, Ser. No. 778,868**
**Int. Cl. B05b** *5/08*
**U.S. Cl. 239—15** **6 Claims**



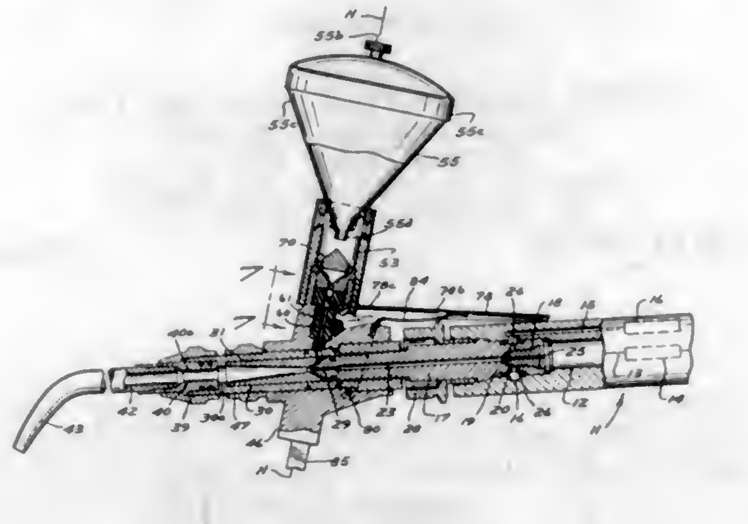
Electrostatic powder-coating apparatus wherein a suspension of powder in a gaseous medium is discharged as a spray from a nozzle of insulating material the front face of which lies rearwardly of the plane of the nozzle orifice. An electrode surrounds the nozzle body, and a spray-spreading deflector is mounted forwardly of the nozzle orifice in non-obstruction relation thereto.

### 3,476,320

### APPARATUS FOR FLAME SPRAYING POWDER

**Joseph F. Fleischhacker, Wayzata, and Frank T. Kawamoto, Minneapolis, Minn., assignors to Tescom Corporation, Minneapolis, Minn., a corporation of Minnesota**
**Filed May 9, 1967, Ser. No. 637,248**
**Int. Cl. B05b** *7/00, 17/04*
**U.S. Cl. 239—85** **41 Claims**

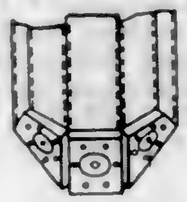
Powder spray torch apparatus having a conventional torch body and a powder spray attachment that includes a powder hopper from which powder flows over a powder baffle, through an axially compressible metering valve, a resilient valving tube having a rigid tubular support therearound, and to a clearance space where the powder is aspirated into a mixed gas stream. Vent apertures are provided between the baffle and hopper outlet, while in one embodiment a transverse resilient sleeve is abuttable against the valving tube; and in the second embodiment an annular thrust member is provided between the metering valve and valving tube, and the tubular support has a keyway slot that cooperates with the plunger to prevent the tubular support rotating.



### 3,476,321

### MULTIFUEL BURNERS

**Jean Marie Levaux, Liege, Belgium, assignor to Cockerill-Ougree-Providence, Seraing, Belgium, a Belgian body corporate**
**Filed July 24, 1967, Ser. No. 655,495**
**Claims priority, application Luxembourg, Aug. 29, 1966, 51,838**
**Int. Cl. F23d** *11/40;* **B05b** *1/14*
**U.S. Cl. 239—422** **4 Claims**



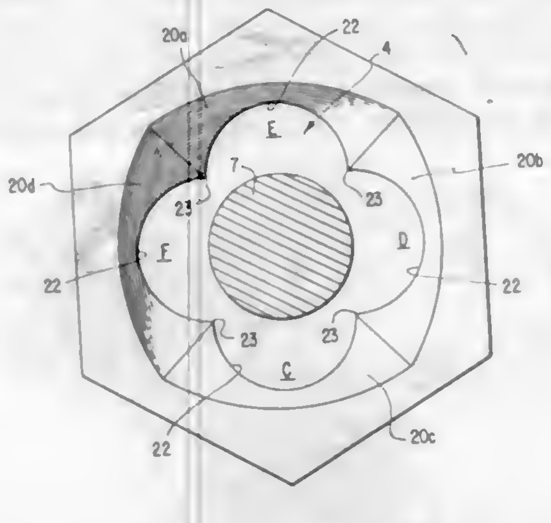
A multiple fuel burner with a head divided into a plurality of partial burners, each having individually controlled supply lines for oxygen, liquid fuel and gaseous fuel so that the flame of each partial burner may be individually controlled. The partial burners may be individually orientatable if desired to achieve a further versatility.

### 3,476,322

### LAWN SPRINKLER NOZZLE

**Gerhard J. Dyck, 1306 13th St. E., Saskatoon, Saskatchewan, Canada**
**Filed Apr. 13, 1967, Ser. No. 630,634**
**Int. Cl. B05b** *1/26*
**U.S. Cl. 239—515** **12 Claims**

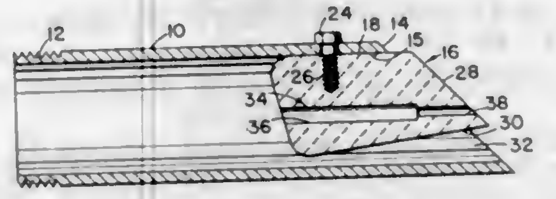
A lawn sprinkler nozzle comprising a casing having a full clover-leaf or a partial clover-leaf shaped orifice and a deflection head integral with a valve stem which is mounted in the casing and extends through the orifice, the deflection head overlies the orifice and cooperates with the orifice to deflect the water coming through the orifice.



### 3,476,323

### NOZZLE

**Peter M. Downie, Niagara Falls, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware**
**Filed Dec. 28, 1967, Ser. No. 694,344**
**Int. Cl. B05b** *1/02*
**U.S. Cl. 239—590.5** **5 Claims**

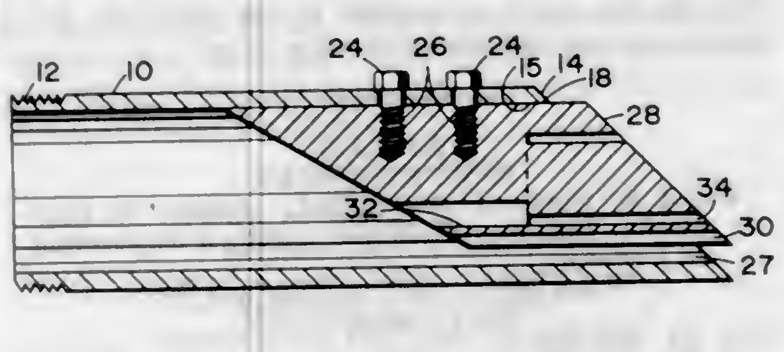


A nozzle for passing a gas stream therethrough having a conduit and an insert plug disposed within and attached to said conduit. The plug is of a lesser cross-sectional area than the inside diameter of the conduit to define an exhaust port. A passageway is drilled through the insert plug to provide a second exhaust port.

### 3,476,324

### NOZZLE

**Kent H. Kohnken, Lewiston, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware**
**Filed Dec. 28, 1967, Ser. No. 694,343**
**Int. Cl. B05b** *1/14, 7/06*
**U.S. Cl. 239—590.5** **5 Claims**



A nozzle for passing a gas stream therethrough having a conduit and an insert plug disposed within and attached to said conduit. The plug is of a lesser cross-sectional area than the inside diameter of the conduit to define an exhaust port. A passageway is drilled through the insert plug and terminates in a circular groove to provide a second exhaust port. A V-shaped groove is cut into the periphery of the plug lengthwise thereof.

### 3,476,325

### METHOD OF GRINDING METAL POWDER

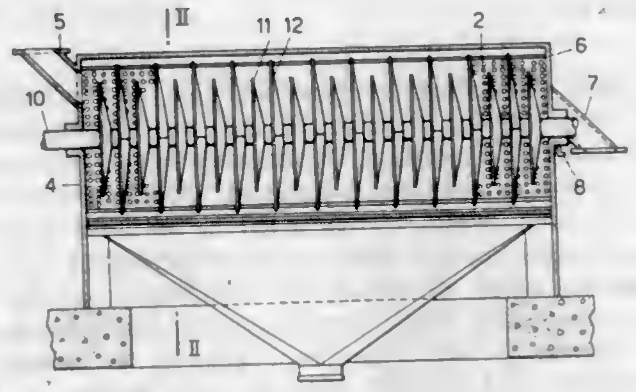
**Aleksander Jerzy Groszek, London, England, assignor to The British Petroleum Company Limited, London, England, a corporation of Great Britain**
**No Drawing. Filed Aug. 1, 1967, Ser. No. 657,518**
**Int. Cl. B02c** *4/00, 1/00*
**U.S. Cl. 241—16** **8 Claims**

Finely divided metal powders, surface area greater than 2 square metres per gram, can be formed by grinding metals in an organic liquid containing a load-carrying additive. The load carrying additives are phosphorous and/or chlorine and/or sulphur containing substances.

### 3,476,326

### APPARATUS FOR DEGERMING MAIZE

**Antonio Rado, Lanzago di Silea, Italy, and Bruno G. Tognazza, Niederuzwill, Switzerland, assignors to Gebruder Buhler AG, Uzwill, Switzerland, a company of Switzerland**
**Filed May 2, 1967, Ser. No. 635,592**
**Claims priority, application Italy, May 6, 1966, 10,468/66**
**Int. Cl. B02c** *7/00, 7/12, 7/06*
**U.S. Cl. 241—73** **9 Claims**



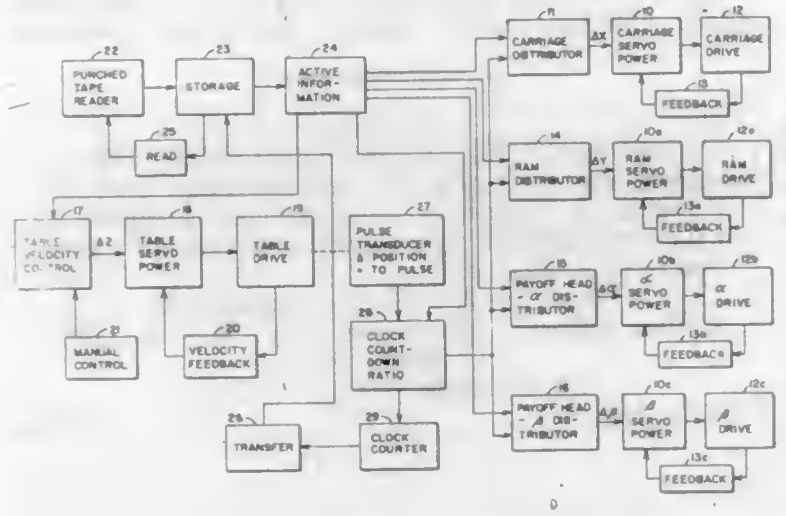
Maize degerming apparatus having a casing with end openings forming an inlet and an adjustable outlet and having decorticating polygonal discs therein which are concave toward the inlet and convex toward the outlet; the convex side having planar areas formed thereon. The casing has a rough inner portion against which the disc peripheries act and an arcuate foraminous portion through which sufficiently ground material, namely, perisperm membrane and small fractions of flour, germ and grouts, are passed while the remaining seed mass is conducted by the rotary disc action to the outlet.

### 3,476,327

### SYSTEM FOR NUMERICALLY CONTROLLING LARGE MASSES

**Verne E. Vawter, National City, Calif., assignor to Rohr Corporation, Chula Vista, Calif., a corporation of California**
**Continuation-in-part of application Ser. No. 196,310, May 21, 1962. This application Nov. 29, 1966, Ser. No. 621,077**
**Int. Cl. B65h** *81/06;* **H02p** *1/54*
**U.S. Cl. 242—18** **9 Claims**

A multi-axis filament winding machine is disclosed having X, Y, Z and $\alpha$ and $\beta$ axis movements. A filament wound object having a large mass of the order of 500,000 pounds is mounted on a mandrel or table for rotation about the Z—Z axis. A relatively low mass carriage is mounted for movement along the X—X axis which is disposed parallel to the Z—Z axis. A low mass ram is mounted on the carriage for movement along the Y—Y axis. A low mass payoff head for directing filaments to the table supported object is mounted on the ram for movements thereon about the α and β axes. The Z axis movement has high inertia and low response and consists of the table and its supported object, a table drive, table servo power, and a table velocity control. The other axis movements each has low inertia and high response and each consists of the carriage, ram or payoff head, as the case may be, a drive, servo power, and a distributor. The axis movements are numerically controlled. The high response, low inertial axis movements are each controlled by position and rate information. The low response, high inertia axis movement, however, is controlled by position information only. The resultant free motion or position response of the massive table and its supported object is measured by a pulse transducer whose pulses replace those of a conventional fixed synchronizing clock in timing the distributors of the other axis movements. Thus, in this system, the low response, high inertia Z axis movement acts as a "master axis movement" and the high response, low inertia, X, Y and α, β axis movements act as "slave axis movements." As a result, no velocity error is introduced into the system by the sluggish "master axis movement" and the low error coefficients and high responses of the other axis movements are retained.



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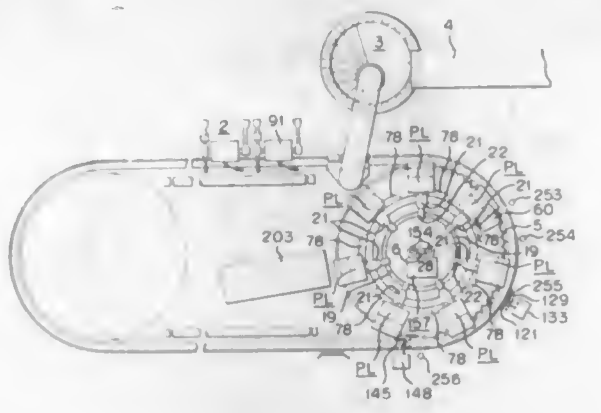
### 3,476,328
### AUTOMATIC DOFFING APPARATUS OF AUTOMATIC WINDER

**Junichiro Shimai, Isamu Matsui, and Syuzo Kawamura, Kyoto-shi, and Syoji Sakai, Kyoto-fu, Japan, assignors to Toyo Boseki Kabushiki Kaisha, Osaka, and Murata Machinery, Ltd., Kyoto, Japan, both companies of Japan**

**Filed Nov. 22, 1966, Ser. No. 596,124**
**Claims priority, application Japan, Apr. 8, 1966, 41/22,331**
**Int. Cl. B65h** ***54/22***
**U.S. Cl. 242—35.5 18 Claims**

An automatic doffing apparatus of the present invention is mounted on an automatic winding machine having a plurality of winding units carried along a closed transport path surrounding the machine. The doffing apparatus is provided with a plurality of doffing units synchronously carried along a closed path disposed inside of the transport path of the winding units and the transferring operation of the packages of full size are transferred from a winding unit to a doffing unit facing the winding unit automatically while conveying the winding unit and the doffing unit. The doffed packages are further carried to out of the winding machine mechanically, bare bobbins are supplied automatically to the winding units from the doffing units while doffing the package from the winding units. The bare bobbins are also supplied to the doffing units automatically from the bare bobbin container while the doffing operation of the winding units is operated.



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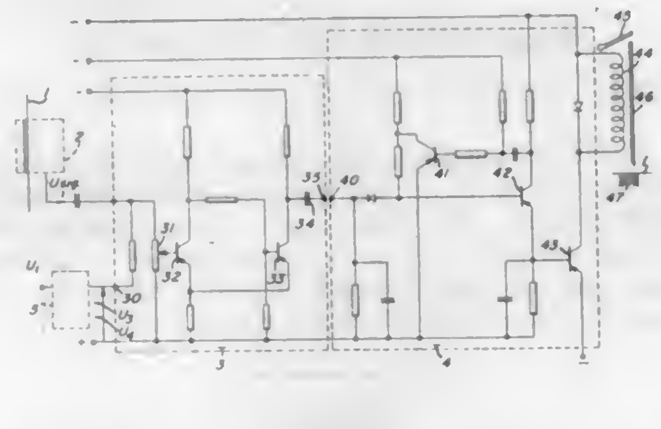
### 3,476,329
### APPARATUS AND METHOD FOR AVOIDING UNNECESSARY CUTS BY ELECTRONIC YARN CLEANERS

**Ernst Felix, Uster, Switzerland, assignor to Zellweger Ltd., Uster, Switzerland, a corporation of Switzerland**

**Filed June 14, 1966, Ser. No. 557,483**
**Claims priority, application Switzerland, July 6, 1965, 9,481/65**
**Int. Cl. B65h** ***63/00;*** **D02j** ***1/14;*** **D01h** ***13/22***
**U.S. Cl. 242—36 10 Claims**



The signal which is produced in proportion to the yarn cross-section traveling through the measuring apparatus is carried to a switch stage which is regulated in sensitivity by the signal from the yarn speed discriminator produced in proportion to the yarn speed. The switch stage then produces an output signal in relation to the cross-section signal as modified by the sensitivity of the switch stage for activating the yarn cutter.

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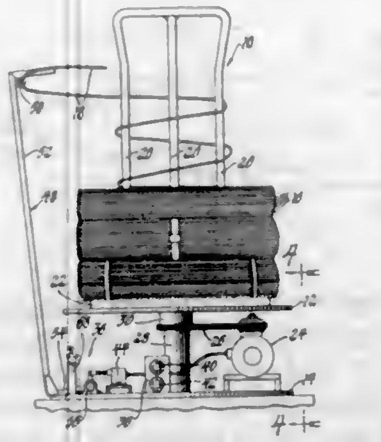
### 3,476,330
### REEL ASSEMBLY

**Floyd E. Curtland, Avilla, Ind., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware**

**Filed Oct. 3, 1967, Ser. No. 672,504**
**Int. Cl. B65h** ***75/02***
**U.S. Cl. 242—45 8 Claims**

A reel assembly of the type for supporting coils of wire with the wire being unwound from the coils to move into a manufacturing process. The assembly includes a base with a platform rotatably supported on the

base and adapted for supporting the coils of wire. A direct current electric motor is disposed on the base and is in driving engagement with the platform for rotating the platform. An arm is pivotally attached to the base and extends upwardly above the platform and is adapted at the upper end for supporting the wire as it extends from the coils so that a predetermined tension on the wire pivots the arm. The lower end of the arm is attached through appropriate linage to a two position electrical switch. The two position electrical switch is in turn connected in parallel to first and second variable resistors. The first and second resistors provide different resistances and current is supplied to the electric motor through one or the other of the resistors depending upon the position of the switch so that the platform will be rotated at different speeds, i.e., the desired speed.



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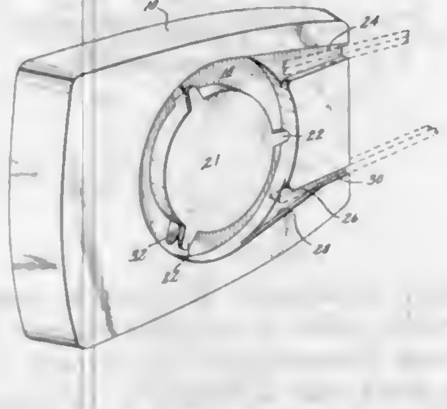
### 3,476,331
### CORD STORAGE MEANS AND ELECTRICAL APPLIANCE

**James Green, Jr., Spencerport, N.Y., and Max C. Hauenstein, Monroe, Conn., assignors to General Electric Company, a corporation of New York**

**Filed Dec. 22, 1967, Ser. No. 692,846**
**Int. Cl. B65h** ***75/34***
**U.S. Cl. 242—85.1 8 Claims**



The disclosure herein shows a cord-operated electrical appliance that has a housing with a supporting base and an internal chamber so formed to provide a cord storage means in and for the appliance.

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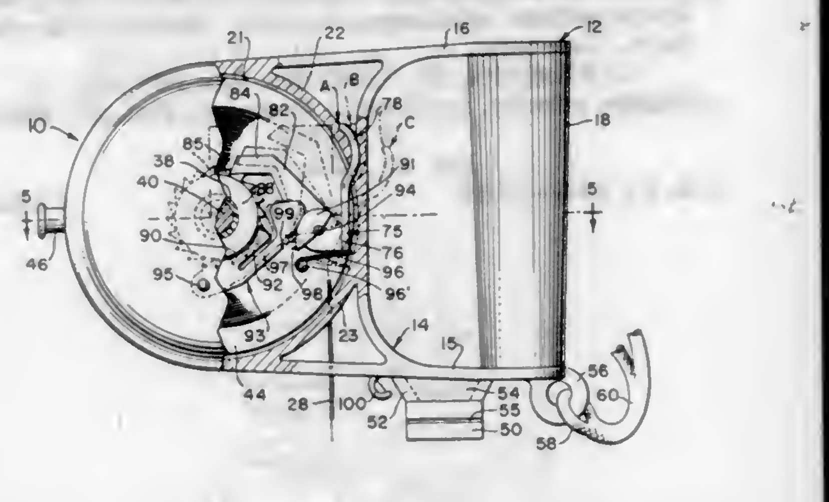
### 3,476,332
### SPORT FISHING REEL

**Richard K. Sutz, 5800 Arlington Ave., Riverdale, N.Y. 10471**

**Filed Dec. 13, 1967, Ser. No. 690,246**
**Int. Cl. B65h** ***17/44***
**U.S. Cl. 242—99 11 Claims**

A sport fishing reel having a hand held frame within which is a rotatable spool held by a pawl and ratchet. The pawl-ratchet assembly is finger controlled to release the spool for playing out a line. The finger control simultaneously actuates a cam operated brake and variable drag on the spool to control and vary the rate of playing out of the line from the spool. Means are also provided to maintain a preset drag on the spool by detent means.



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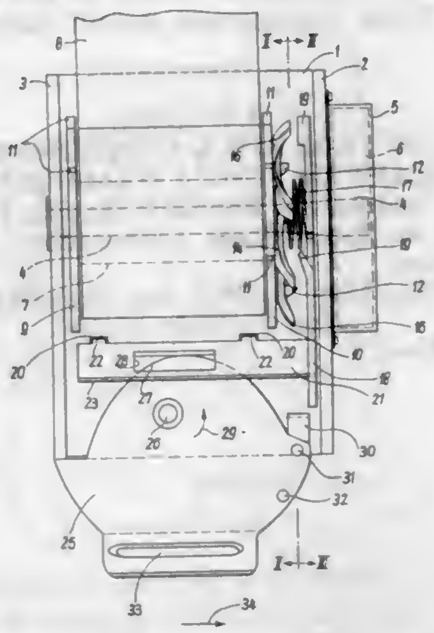
### 3,476,333
### AUTOMATIC BELT WINDER FOR SAFETY BELTS

**Per Olaf Weman, Hamburg-Garstedt, Germany, assignor to Sigmatex AG, Basel, Switzerland, a firm**

**Filed Dec. 1, 1967, Ser. No. 687,328**
**Claims priority, application Germany, Feb. 22, 1967, S 108,435**
**Int. Cl. B65h** ***75/48***
**U.S. Cl. 242—107.4 14 Claims**



This invention provides an automatic belt winder comprising a housing, a belt reel, and axially displaceable locking and engaging members mounted on the shaft of the belt reel, plus an adjustable means for manually locking the belt reel. Any sudden acceleration or deceleration of the vehicle, or a sudden jerk on the belt brings the locking and engagement members into mutual engagement causing them to swing a lock pawl against the belt reel the edges of which are formed as toothed wheels, thus locking this belt reel.

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### ERRATUM

For Class 242—200 see:
Patent No. 3,476,894

### 3,476,334
### TURBO-DRIVE FOR HIGH VELOCITY HELICOPTERS

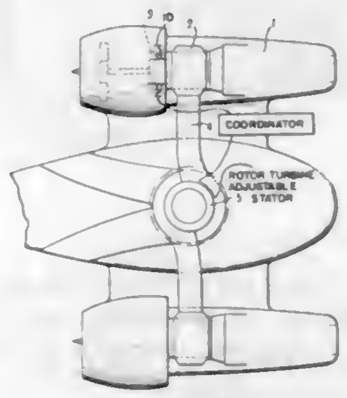
**Hubert J. Grieb, Stuttgart-Botnang, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**

**Filed Oct. 26, 1966, Ser. No. 589,601**

**Claims priority, application Germany, Oct. 27, 1965, D 48,523**

**Int. Cl. B64c** *27/82*

**U.S. Cl. 244—17.19** **4 Claims**



A turbo-drive arrangement of high-speed helicopters having a common drive unit for supplying both lift and thrust forces, including one or more gas generators with associated turbines for providing thrust, lift rotor means and an associated turbine for providing lift, each of the turbines having adjustable guide means for selectively varying the flow cross-section thereof, and a chamber interposed between the gas generators and the turbines for selectively dividing the output of the generators between the thrust turbines and the lift turbine.

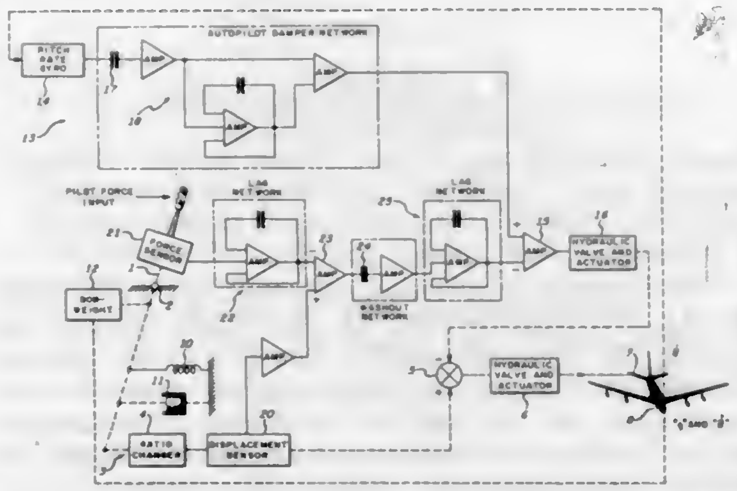
### 3,476,335
### PSEUDO CONTROL STICK STEERING SYSTEM FOR AIRCRAFT HAVING A DAMPER SYSTEM

**Richard E. Andeen and Ronald P. Kotfila, Phoenix, Ariz., assignors to Sperry Rand Corporation, a corporation of Delaware**

**Filed May 19, 1967, Ser. No. 639,807**

**Int. Cl. B64c** *13/50*

**U.S. Cl. 244—77** **3 Claims**



Apparatus for achieving desirable aerodynamic response of an aircraft to a manually commanded input by compensating for the natural sluggishness of an aircraft as well as the additional sluggishness due to a stability augmentation system.

### 3,476,336
### BODY FOR FLIGHT AT HIGH SUBSONIC SPEED

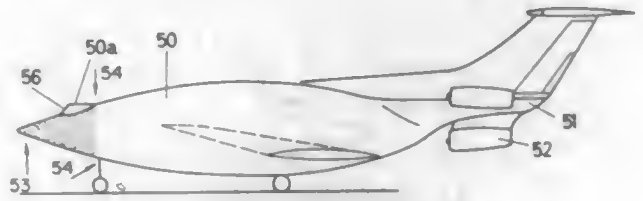
**Heinrich Hertel, 36 Tannenbergaller, 1 Berlin 19, Germany**

**Filed Mar. 21, 1966, Ser. No. 535,991**

**Claims priority, application Germany, Mar. 20, 1965, H 55,522**

**Int. Cl. B64c** *1/38*

**U.S. Cl. 244—130** **16 Claims**



A body flying at a high subsonic speed has a transverse thickness gradually increasing from the nose to an intermediate portion and gradually decreasing therefrom to the tail. In order to reduce drag and to produce a laminar flow, the nose portion is tapered at a smaller angle than the tail portion.

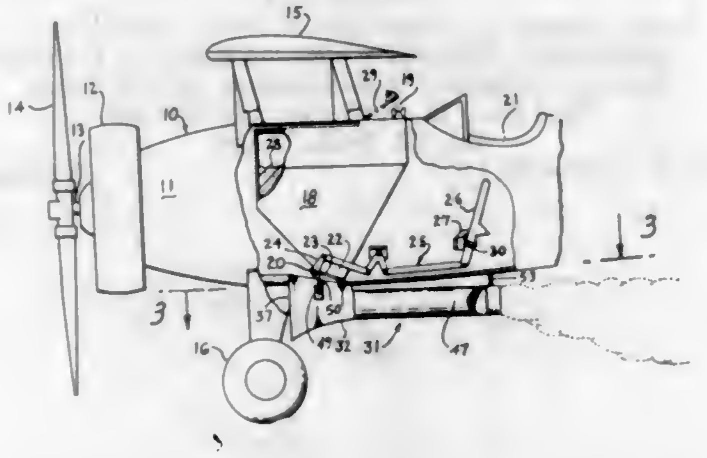
### 3,476,337
### SOLIDS SPREADER FOR AGRICULTURAL AIRCRAFT

**William D. Cornett, Jr., 2212 Larry Drive, Port Lavaca, Tex. 77979**

**Continuation-in-part of application Ser. No. 580,796, Sept. 20, 1966. This application Nov. 27, 1968, Ser. No. 779,582**

**Int. Cl. B64d** *1/18*

**U.S. Cl. 244—136** **15 Claims**



A spreader, fan-shaped in plan, is connected with throat to receive solids from plane hopper to pass rearwardly through channels between vertical vanes, adjustably spaced apart and adjustable in curvature. On each side channels successively outwardly discharge at successively greater angles to plane axis. A louver, on each side of the respective outermost channels, is constructed to receive air therethrough to pass out rearwardly at an angle to the longitudinal axis of the plane that is less than the angle of departure of the air from the outermost channels, and thus the louver air constrains the pattern of solids dispersal by turning the solids discharged from the respective channels to more directly rearwardly extending paths of discharge. The vanes between channels have holes or perforations therein which may be selectively occluded, so that more or less solids pass through respective vanes to the channels successively inwardly, thereby controlling the proportion of total solids discharged from respective channels, thus to control distribution pattern of solids dispersal on the ground.

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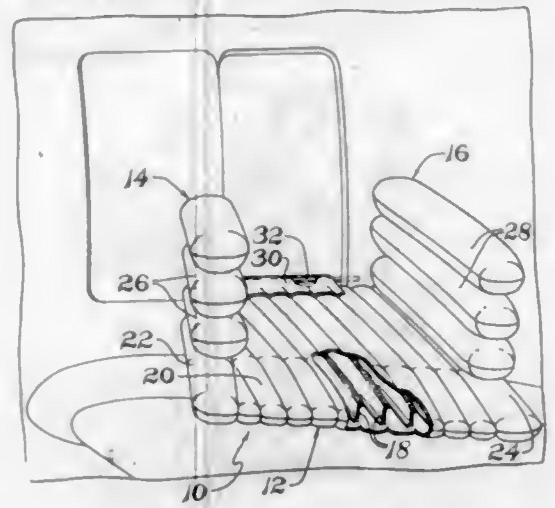
### 3,476,338
### INFLATABLE RAMP

**John M. Fisher, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York**

**Filed Dec. 4, 1967, Ser. No. 687,765**

**Int. Cl. B64d** *25/14*

**U.S. Cl. 244—137** **3 Claims**



An inflatable aircraft walkaway for providing an emergency evacuation ramp from the base of an emergency wing exit to a point on the aircraft wing section featuring a variable overall ramp length to compensate for the sloping contour of the wing section, and further featuring a pair of inflatable margin rails.

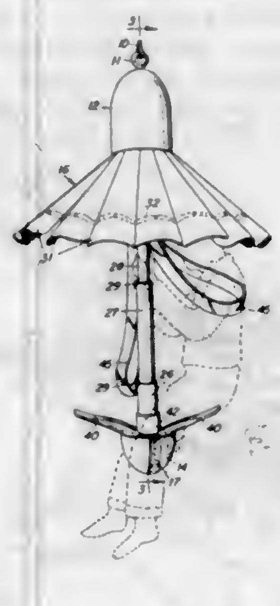
### 3,476,339
### JUNGLE RECOVERY DEVICE

**Billy Gen Pugh, P.O. Box 802, Corpus Christi, Tex. 78403**

**Filed Feb. 21, 1968, Ser. No. 707,068**

**Int. Cl. B64d** *25/02;* **A62b** *1/16, 35/00*

**U.S. Cl. 244—137** **3 Claims**



A device for the recovery of an individual such as military personnel from an area enshrouded in dense growth. The device, in the compact condition, penetrates tangled foliage and moves downward by gravity action through a jungle entanglement. The device may be readily opened by a person to be rescued and as the device moves to an open position a seat member shifts to an operative position and a canopy is disposed over the individual supported on the seat member preventing dislodgement or injury to the individual while the device is lifted through the foliage.

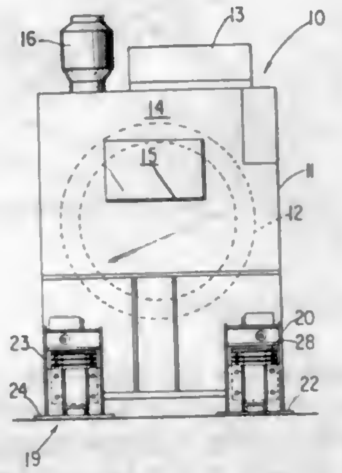
### 3,476,340
### MOUNTING ARRANGEMENT FOR LAUNDRY MACHINES

**Frederick R. Gruner, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware**

**Filed Oct. 6, 1967, Ser. No. 673,354**

**Int. Cl. E02d** *27/44;* **F16m** *1/00;* **F16f** *15/04*

**U.S. Cl. 248—22** **1 Claim**



A vibration isolation mount for a laundry machine with a shear type rubber mounting positioned between the base and the housing of the machine and shear planes of the mount being in a plane which is inclined to the vertical axis of the housing.

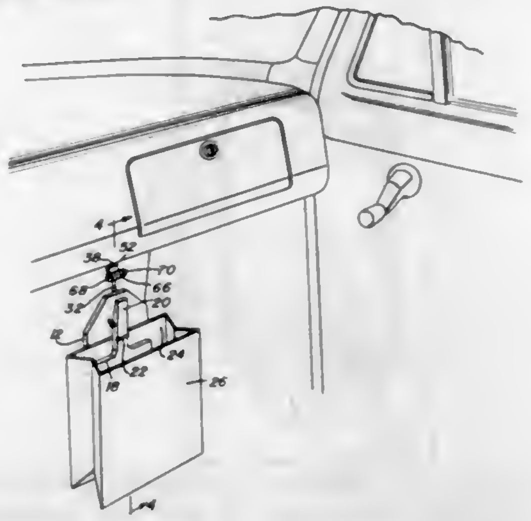
### 3,476,341
### LITTER BAG SUPPORT

**Robert C. Patterson, 2033 Marilyn Lane, Arlington, Tex. 76010**

**Filed Sept. 27, 1967, Ser. No. 670,989**

**Int. Cl. B65b** *67/12;* **A47f** *5/00*

**U.S. Cl. 248—95** **8 Claims**



A device which is designed and adapted to suspend a disposable litter bag in a vehicle, train, airplane or similar conveyance. It is aptly usable on a hospital bed, in one's bathroom, kitchen, office or elsewhere. Inasmuch as it embodies a (1) clipboard, (2) an attaching bracket and (3) a rod linking the clipboard to the bracket, the clip on the board or plate lends itself to use in removably clipping letters, notes, cards, bills and so on. The bracket means can be mounted on horizontal, vertical and in-between inclined surfaces.

### 3,476,342
### CHAIR BRACKET

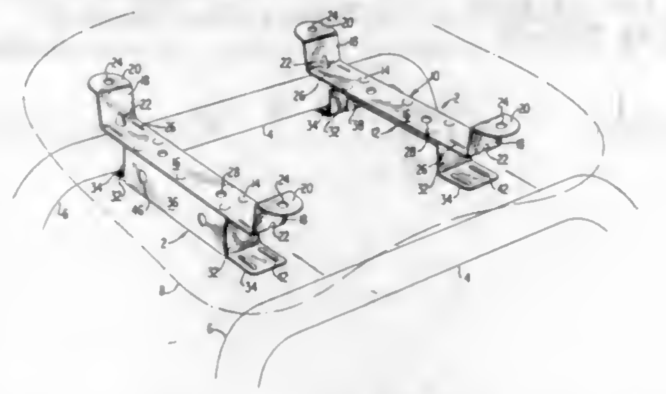
**Anton Motl, Belton, Tex., and James H. Littlepage, Washington, D.C., assignors to Griggs Equipment, Inc., Belton, Tex., a corporation of Delaware**

**Filed Jan. 26, 1968, Ser. No. 700,810**

**Int. Cl. F16m** *11/20;* **A47c** *7/00*

**U.S. Cl. 248—188** **2 Claims**

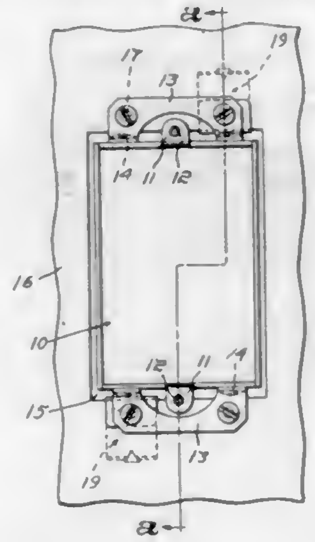
A bracket for securing U-shape chair legs to the bottom of a chair, characterized by extreme strength and rigidity, is formed by two pieces of metal welded together face-to-face. One piece is essentially a flat strip angled upwardly and thence outwardly at its ends. The other piece is also essentially a flat strip with an end wall and a tongue angling downwardly and thence outwardly at each end, the strip having a flange welded at its ends to the end walls to provide a box-like configuration.



### 3,476,343

### CLIPS FOR USE IN ANCHORING OUTLET AND SWITCH BOXES

**Donald V. Burrell, 7 Roberts St.,**
**Falmouth, Maine 04105**
**Filed Mar. 9, 1967, Ser. No. 621,877**
**Int. Cl. H02g** *3/08*
**U.S. Cl. 248—216** **11 Claims**



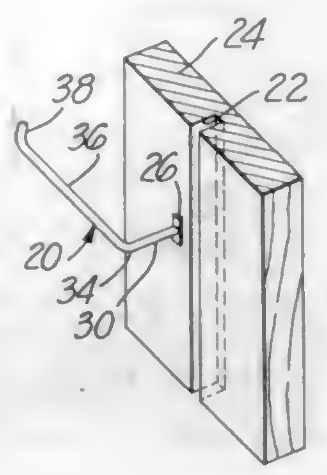
A U-shaped clip of thin yieldable stock dimensioned to straddle a fragile wall layer at the edge of the box-receiving cut-out therein with an anchoring screw extending inwardly through the box flange, wall layer and the clip walls and drawing the inner clip wall into tight clamping engagement with the wall layer of the building, the inner clip wall including a plurality of layers.

### 3,476,344

### GROOVED PANEL AND FIXTURE COMBINATION

**Edward J. Pace, 8912 10th Ave.,**
**Inglewood, Calif. 90305**
**Filed Apr. 24, 1968, Ser. No. 723,725**
**Int. Cl. E04g** *3/00;* **E06b** *7/28*
**U.S. Cl. 248—216** **10 Claims**

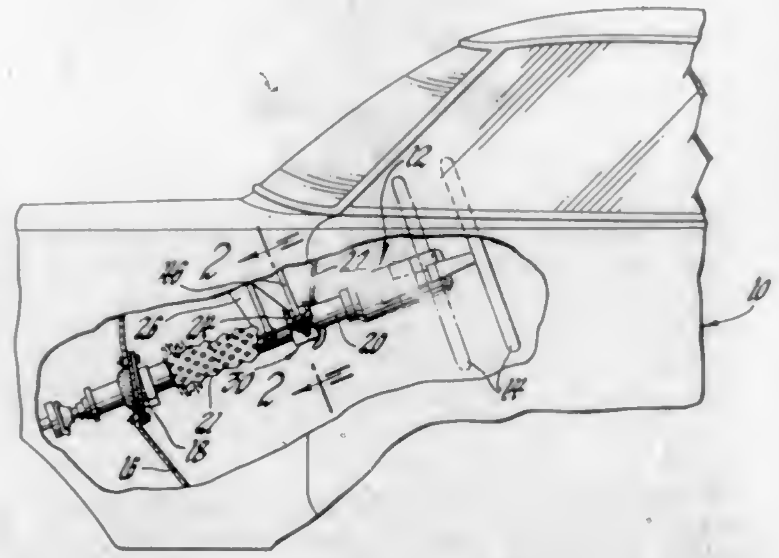
A fixture for attachment to a vertically grooved wall panel, or to a grooved ceiling panel. The fixture includes a generally flat, elongated supporting plate having a width less than the width of the groove and a length greater than the width of the groove, whereby the plate may be inserted into the groove while oriented longitudinally thereof, and whereby the plate may then be rotated about an axis generally perpendicular thereto to cause the ends of the plate to embed themselves in the side walls of the groove. In the ceiling fixture version, this results in so orienting the supporting plate that one side thereof faces generally downwardly to provide a large bearing area. In the wall fixture version, the supporting plate, as a final step in installation, is angularly displaced about an axis extending longitudinally thereof until one side of the plate faces generally downwardly to provide a large bearing area also. In either version, the load to be supported by the plate engages a load carrying member connected to the supporting plate by a shank member projecting from the generally downwardly facing side of the plate.



### 3,476,345

### MOUNTING ARRANGEMENT FOR COLLAPSIBLE STEERING COLUMNS

**Theodore F. Ristau, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Mar. 15, 1968, Ser. No. 713,534**
**Int. Cl. F16m** *13/02;* **B60r** *21/02*
**U.S. Cl. 248—221** **4 Claims**



An upper steering column support bracket assembly includes a bracket member having its mounting flanges disposed at an angle substantially divergent from the steering column axis and mounting capsules are releasably interengaged on the bracket member by guide channels similarly angled to the column axis so that upon attachment of the capsules to the vehicle body instrument panel, the bracket will release from the capsules under bending moments of predetermined force applied to the column as well as under axial force loading thereon.

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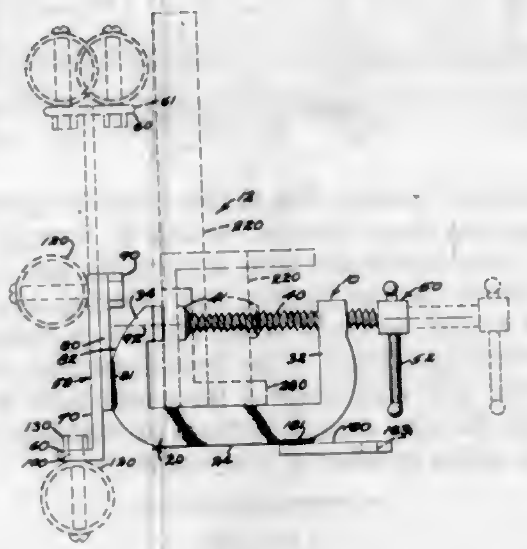
### 3,476,346

### UNIVERSAL CLAMP ASSEMBLY FOR BED HAND RAILS

**Leland F. Oakes, 3321 Avenue B,**
**Council Bluffs, Iowa 51501**
**Filed Dec. 29, 1967, Ser. No. 694,525**
**Int. Cl. A47c** *21/08*
**U.S. Cl. 248—226** **3 Claims**

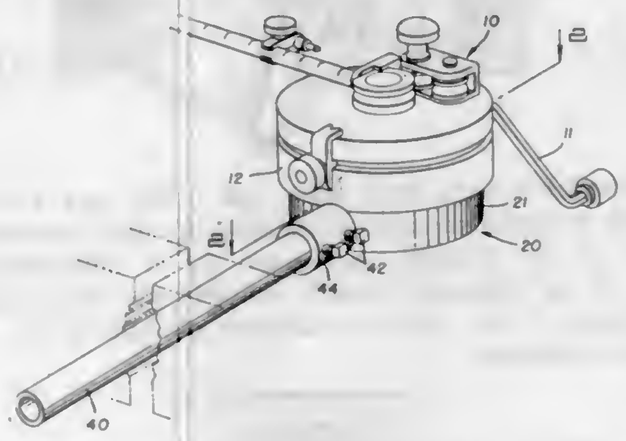


A universal clamp assembly for bed hand rails and for attaching the base of the bottom section of a bed hand rail assembly to the side frame member of the bed by means of a clamp with attached backet assembly designed for the positioning of the lower or base portion of the bed hand rail assembly at any one of various positions of vertical spacing with respect to the clamp and to the bed side frame member.

### 3,476,347

### PIPE VISE ADAPTOR

**Harry G. Dodge, Painesville, Ohio, assignor to Crawford Fitting Company, Solon, Ohio, a corporation of Ohio**
**Filed Sept. 28, 1967, Ser. No. 671,346**
**Int. Cl. A47f** *5/00;* **A47h** *1/10*
**U.S. Cl. 248—316** **7 Claims**

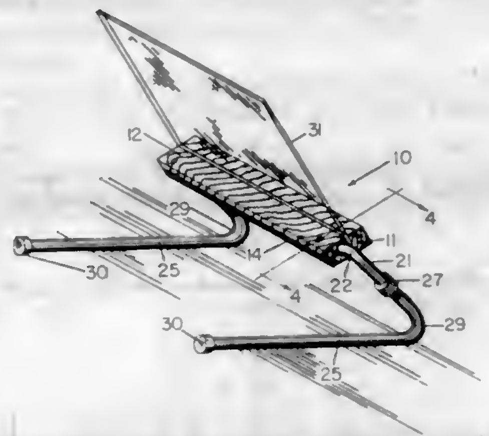


A light weight metallic split ring has a hardenable split ring secured to the inner periphery thereof and is adapted to receive the clamping block on a tube bending tool. A threaded bolt connects the ends of the split ring to vary the diameter of the ring. A pipe extends radially from the outer ring and is adapted to be received in a pipe vise.

### 3,476,348

### BOOK REST

**George H. Rustad, Rte. 1, Box 354,**
**Amarillo, Tex. 79106**
**Filed Sept. 25, 1967, Ser. No. 670,051**
**Int. Cl. A47b** *23/00, 97/04;* **A47g** *1/24*
**U.S. Cl. 248—445** **5 Claims**

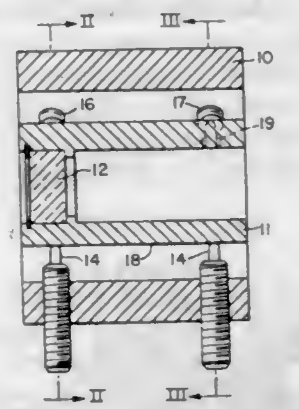


An adjustable book rest for supporting a book for a sitting or reclining individual adjustable to support the book in a position overlying the face of the user when reclining and at the correct reading position when the user is sitting. The book support is transparent so that the pages may be read through the support when overlying the face of the reclining user.

### 3,476,349

### ADJUSTABLE SUPPORT

**Richard G. Smith, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Mar. 29, 1967, Ser. No. 626,868**
**Int. Cl. A47g** *1/24*
**U.S. Cl. 248—476** **1 Claim**



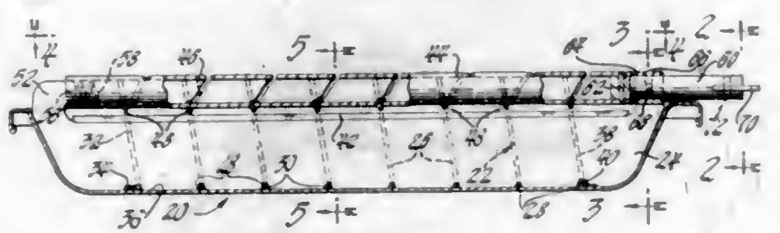
An adjustable support is described in which one end of a supported member is supported relative to a supporting member by a three-point suspension system in which one point is resiliently biased to urge the supported member against the other two points which are adjustable but rigid. The adjustable rigid points are movable radially along the axes on which they are located so that a combination of their relative movements can angularly adjust the axis of the supported member within a blur circle. The axis of the supported member may be adjusted by adjusting the suspension system at each end angularly as well as in non-angular translatory movement.

### 3,476,350

### FREEZING DEVICE WITH HELICAL ACTUATOR

**Rodger E. Geller, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed May 10, 1967, Ser. No. 637,456**
**Int. Cl. F25c** *1/24*
**U.S. Cl. 249—71** **8 Claims**

In the first form, a rolled tube is rotatably mounted upon the ends of the longitudinal wall and provided with a thrust bearing and a torsion spring. A separate helical cam slot is provided for receiving a tongue projecting from each adjacent upright transverse movable wall. Rotation of the handle at one end of the tube progressively moves the transverse walls to eject the frozen cubes from the compartments of the grid and pan. In a second form, a helically twisted flat bar is rotatably mounted in bearings upon the opposite ends of the pan.



Each of the upright transverse movable walls of the grid is provided with a slot through which extends the helically twisted flat bar. When the handle in one end of the bar is rotated, the camming action between the cam surfaces of the bar and the slots of the transverse walls progressively moves the transverse walls forwardly to eject the frozen cubes from the compartments of the grid and pan.

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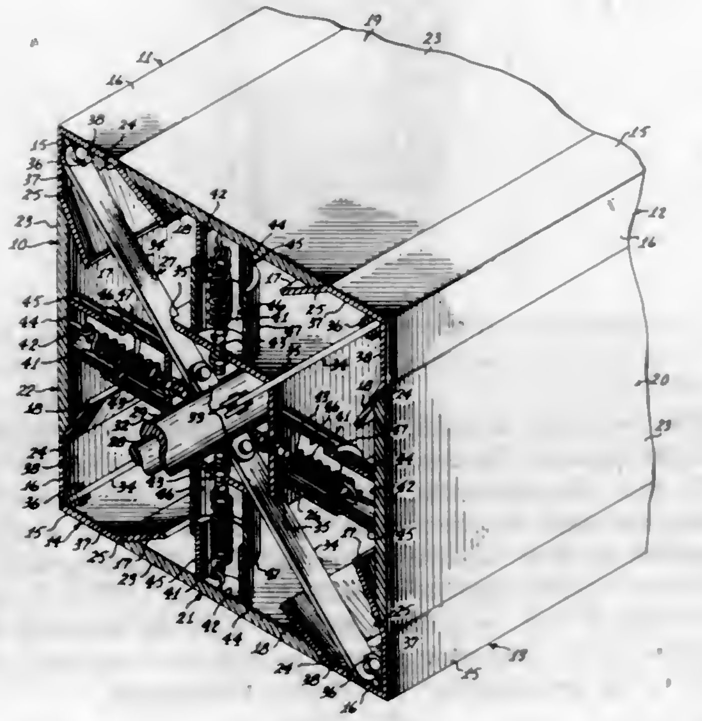
### 3,476,351
## EXPANDABLE FORM FOR HOLLOW-CORE CONCRETE CONSTRUCTION

**Harold D. Burdett, 3802 S. Grandview Drive,**
**Tempe, Ariz. 85281**
**Filed July 3, 1967, Ser. No. 650,758**
**Int. Cl. B28b** *7/30*
**U.S. Cl. 249—82** **6 Claims**



An expandable and collapsible concrete form for forming the inner core of hollow-core concrete structures which automatically compensate for the normal shrinkage of the concrete during the curing process by inward deflection of the form to thereby prevent cracks occurring in the completed concrete structure. After the curing process is complete, the compensating expandable form may be collapsed for ease of removal.

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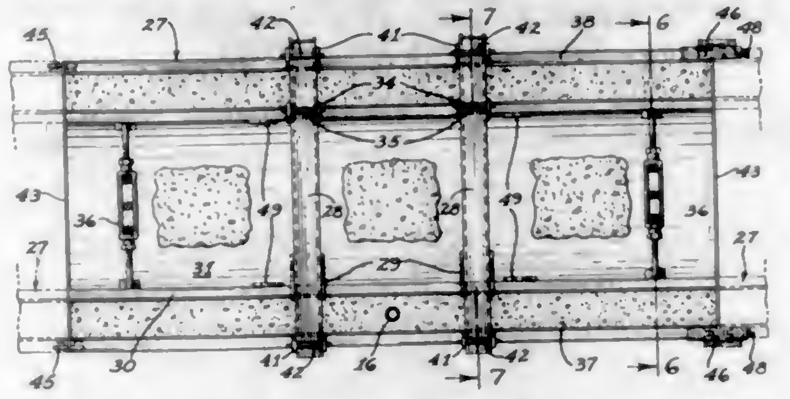
### 3,476,352
## APPARATUS FOR MAKING LIVESTOCK FEEDING TROUGH

**Richard E. Bunger, 5224 E. Washington St.,**
**Phoenix, Ariz. 85034**
**Filed Dec. 8, 1966, Ser. No. 600,131**
**Int. Cl. B28b** *7/30, 7/26*
**U.S. Cl. 249—146** **2 Claims**



A livestock feeding trough that can be precast at a manufacturing plant location or can be formed in situ at the job site constructed with a portable and collapsible form utilized for the casting and pouring operations, a series of trough sections being poured in longitudinally aligned abutting contact at the desired location at the feed lot. A head and neck control fence structure is incorporated with the cast trough sections to maintain the cattle in proper eating position at the trough.

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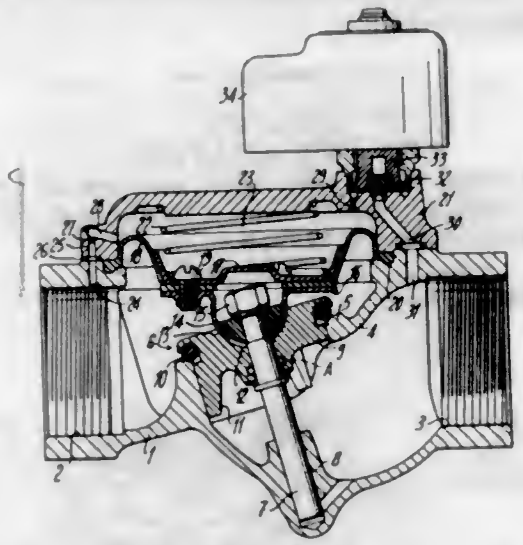
### 3,476,353
## SERVOVALVE

**Harald Stampfli, Petit-Saconnex, Switzerland, assignor to Lucifer S.A., Carouge-Geneva, Switzerland, a company of Switzerland**
**Filed Jan. 15, 1968, Ser. No. 697,988**
**Claims priority, application Switzerland, Feb. 1, 1967, 1,573/67**
**Int. Cl. F16k** *31/145, 7/07*
**U.S. Cl. 251—45** **4 Claims**



Servovalve with fluid inlet and outlet and a spring-biased movable membrane, subject to fluid pressure on both of its surfaces, connected by a ball-and-socket joint to an obturator which includes the valve poppet. The stem of the obturator extends oblique to the plane of the membrane.

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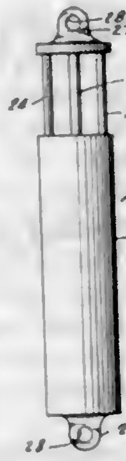
### 3,476,354
## LOAD LEVELING SHOCK ABSORBER

**Robert A. Stubblefield, 219 F St.,**
**Salt Lake City, Utah 84103**
**Original application Oct. 23, 1965, Ser. No. 503,036, now Patent No. 3,381,952, dated May 7, 1968. Divided and this application July 6, 1967, Ser. No. 659,262**
**Int. Cl. F16k** *31/143, 31/383;* **B60g** *11/26*
**U.S. Cl. 251—63** **2 Claims**

A load leveling shock absorber unit including a first piston and cylinder, one of which is connected to a sprung mass and the other of which is connected to an unsprung mass, and a second piston and cylinder, the piston of which is connected to one of the masses through a spring and the cylinder of which is connected directly to the other of the masses. These cylinders are concentrically arranged and are of the hydraulic type. The first piston reciprocates within the first cylinder in accordance with undulations in a road surface or the like. If the first piston is located within a mid-portion of the first cylinder such reciprocatory movement has no effect on the second piston. However if such reciprocation of the first piston occurs at either of the opposite end positions of the first cylinder it has the effect of pumping fluid through a valve element and into or out of the second cylinder below the second piston to raise or lower the second piston in the second cylinder and thus raise or lower the sprung mass relative to the unsprung mass. The valve element includes a valve cylinder having a pair of ports communicating with the first and second cylinders. A valve member is slidably carried in the valve cylinder and is movable between a first position at which said valve member blocks the ports to a second position at which the valve member opens the ports. A spring biases the valve member to the first position thereof and a motive surface is formed on the valve member for receiving a force acting against the spring to move the valve member to the second position thereof.



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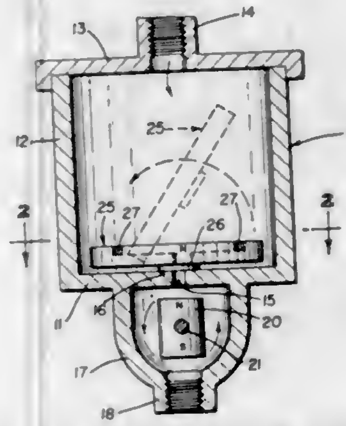
### 3,476,355
## MAGNETIC VALVE

**John F. Sherwood, 130 S. Sandalwood Place,**
**Glendora, Calif. 91740**
**Filed Jan. 15, 1968, Ser. No. 697,897**
**Int. Cl. F16k** *31/08, 1/18*
**U.S. Cl. 251—65** **6 Claims**



A magnetic valve for controlling the flow of air, water or light fluids comprises a valve housing made of insulating material having an inlet and an outlet, and a single moving part in the housing consisting of a freely movable valve closing and opening disc of magnetic material normally supported by the housing over the valve outlet.

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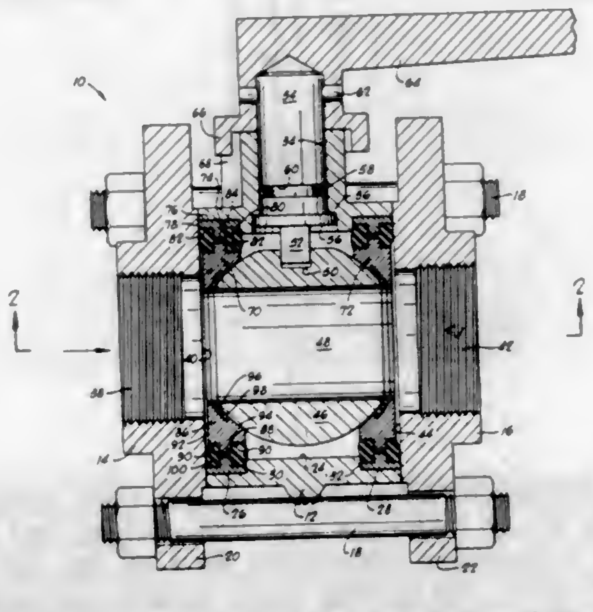
### 3,476,356
## VALVE AND DUAL-RING SEALS THEREFOR

**Domer Scaramucci, Oklahoma City, Okla., assignor to Balon Corporation, Oklahoma City, Okla., a corporation of Oklahoma**
**Continuation-in-part of application Ser. No. 471,264, July 12, 1965. This application Jan. 28, 1966, Ser. No. 532,041**
**Int. Cl. F16k** *51/00, 25/00*
**U.S. Cl. 251—151** **27 Claims**



A valve having a floating valve member and upstream and downstream seats wherein each seat includes an outer rigid ring clamped in place in the respective end of the valve body, a seating ring positioned concentrically inside the outer ring, and an elastomer bonded between and to the rings holding the seating ring against the valve member, yet allowing the seating ring to follow the upstream and downstream movements of the valve member.

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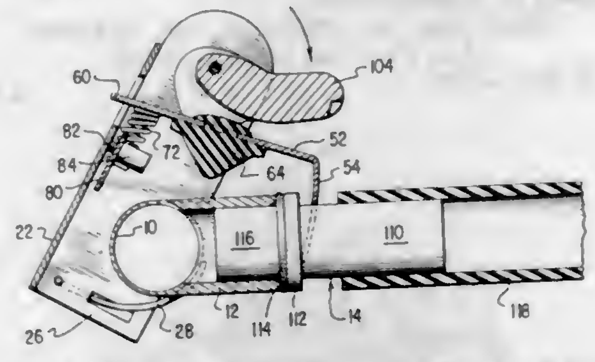
### 3,476,357
## MILK INLET SEALING DEVICE

**Lloyd T. Lee, 818 S. 3rd St.,**
**La Crosse, Wis. 54601**
**Filed Sept. 20, 1967, Ser. No. 669,085**
**Int. Cl. F16k** *51/00*
**U.S. Cl. 251—151** **10 Claims**

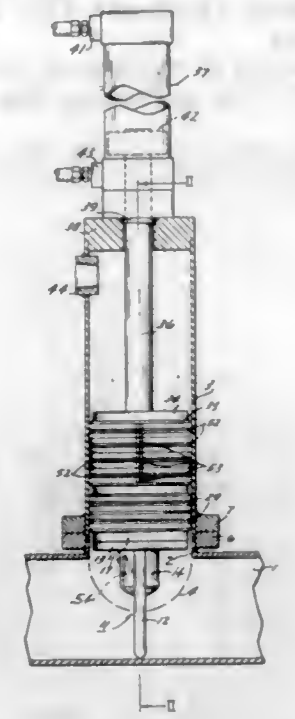


A single device for selectively sealing in of a T-manifold opening and for retaining a nipple in the manifold opening which includes a housing rotatably mounted on the manifold, a plate with a sealing plug therein which is curved so that in one position of the housing the sealing plug closes the manifold opening and in another position of the housing fingers on the plate engage a flange on a nipple to retain the nipple in the manifold opening and a cam operator for moving and locking the plate in position is disclosed.

**3,476,358**

### GATE VALVE

**Herbert A. Westerlund, Port Washington, and Robert E. Westerlund, Mequon, Wis., assignors to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin**
**Filed Sept. 29, 1966, Ser. No. 582,940**
**Int. Cl. F16k** *31/44, 17/18, 3/03*
**U.S. Cl. 251—214** **7 Claims**

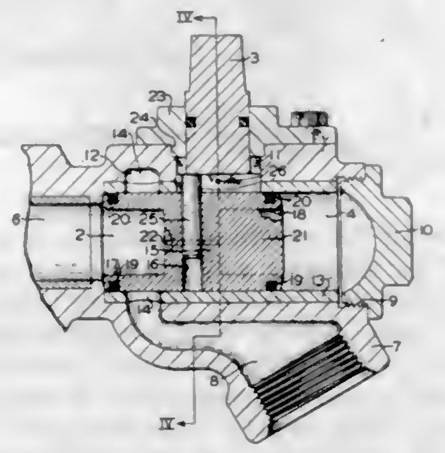


A mechanism for operating a gate valve comprises a double acting hydraulic ram, and opening and closing thrust transmitting connections between the ram piston and the gate. The opening thrust transmitting connection is expandable in valve closing direction, and the closing thrust transmitting connection includes an axially compressible and radially expandable packing between the valve stem and a surrounding housing portion. During the gate closing stroke of the ram the packing remains axially expanded and radially contracted until the gate bottoms in its closed position. Subsequent build-up of closing pressure by the ram and consequent radial expansion of the packing securely locks the gate in its closed position. Release of the closing thrust upon the seated gate causes radial contraction of the packing and consequent unlocking of the gate.

**3,476,359**

### ANGLE COCK

**George K. Newell, Punta Gorda, Fla., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania**
**Filed Mar. 28, 1967, Ser. No. 626,564**
**Int. Cl. F16k** *31/52, 39/06*
**U.S. Cl. 251—260** **2 Claims**

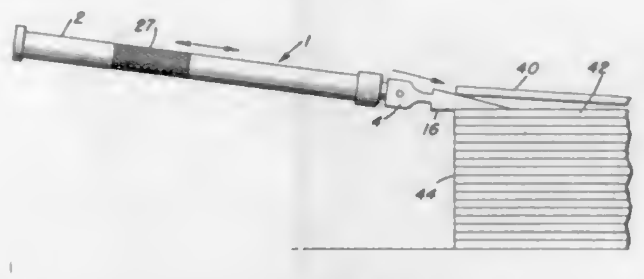


An angle cock having a longitudinal throughbore closed at one end by a removable screw plug. The outlet communicates through ports adjacent the end of the throughbore opposite the screw plug, with the inlet passage to which a pipe may be connected. A cylindrical shuttle valve having O-ring seals at opposite ends is reciprocated in the throughbore by a crank pin on an operating stem, the pin extending into a transverse rectangular slot in the body of the shuttle valve. Movement of the O-ring seal at one end of the shuttle valve to opposite sides of the ports in the throughbore controls the opening and closing of communication between the inlet and outlet passages.

**3,476,360**

### QUICK PRY TOOLS

**Raymond L. Renfroe, Grass Valley, Calif., assignor to J. C. Renfroe & Sons, Inc., Jacksonville, Fla., a corporation of Florida**
**Filed May 26, 1967, Ser. No. 641,584**
**Int. Cl. B66f** *15/00;* **B65g** *59/02*
**U.S. Cl. 254—131** **6 Claims**

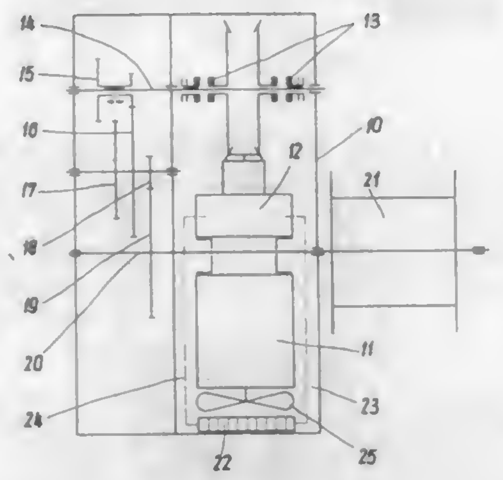


A tool and method for separating one or more articles such as steel plates from a supporting surface by elevating said article to an inclined position on said surface. The tool is comprised of a wedge member having a wedge element and a driving member employed in cooperative relation for effecting the insertion of the wedge element between the article and surface. The wedge and driving members cooperate to provide a lever arm for prying the article away from the surface after insertion of the wedge. The wedge member includes means to support the article in a desired inclined position on the supporting surface while an operation such as attachment of a lifting clamp is performed on the article.

**3,476,361**

### WARPING AND HOLDING WINCH FOR SHIPS

**Hans Herchenröder, Varrelgraben, Germany, assignor to Friedrich Kocks G.m.b.H., Bremen, Germany**
**Filed Nov. 7, 1967, Ser. No. 681,196**
**Int. Cl. B66d** *1/50;* **F16h** *47/00*
**U.S. Cl. 254—172** **6 Claims**



A warping and holding winch for ships having adjustable, substantially constant rope traction during the holding operation comprises an adjustable hydrodynamic torque converter to transmit the rotational movement from a drive motor to the winch drum.

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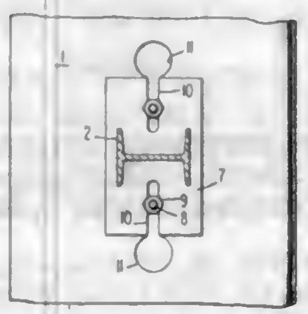
**3,476,362**

### HIGHWAY BARRIER

**Ted E. Thompson, Center Valley, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware**
**Filed Sept. 30, 1968, Ser. No. 763,720**
**Int. Cl. E01f** *15/00*
**U.S. Cl. 256—13.1** **5 Claims**



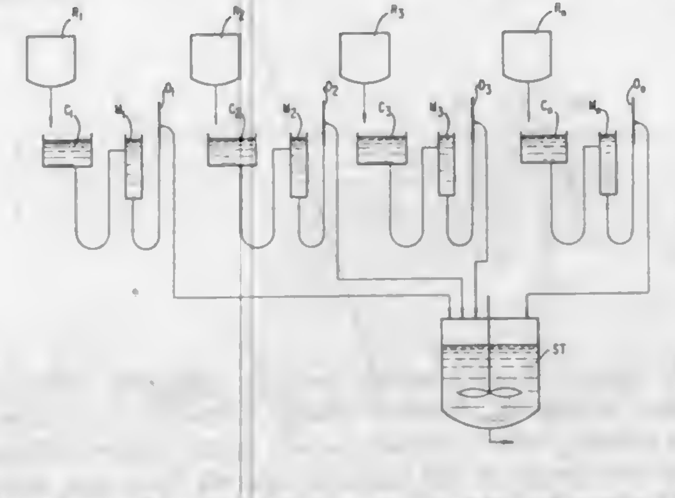
A strong beam-weak post highway barrier comprising an elongated box-shaped guard rail connected to supporting posts with plates which are secured to the tops of the posts and mechanically fastened to the bottom wall of the guard rail. Each plate has a pair of open-ended slots located at its opposite ends and lying parallel to the guard rail. The slots coincide with two elongated apertures spaced along the rail and formed in its bottom wall. The adjacent portions of these apertures are sized smaller than their portions which are farthest apart. A pair of mechanical fasteners, passing through the coinciding slots and elongated apertures, connect each post to the rail. However, the parts of the fasteners which are located within the rail are smaller than the large portions of the apertures. With this arrangement each rail-to-post connection is readily disengageable. Vehicle impact on a post in a direction longitudinally along the barrier causes one of the fasteners to slip downwardly out of the large portion of an elongated aperture, while the other fastener emerges from its open-ended slot.

An easily erected barrier may be obtained by forming the elongated box-shaped rail with upper and lower channel members having overlapping portions at both sides of the rail. The channel members are held together by nuts secured to the inner surfaces of the side walls of the rail, and by bolts which pass through preformed holes in the overlapping portions of the channel members and engage the nuts.

**3,476,363**

### METHOD OF ADDING AND MIXING

**Hiroshi Chikamasa and Kotaro Aso, Kanagawa, Japan, assignors to Fuji Photo Film Co., Ltd., Tokyo, Japan**
**Filed Jan. 29, 1968, Ser. No. 701,463**
**Claims priority, application Japan, Jan. 28, 1967, 42/5,522**
**Int. Cl. B01f** *15/00, 3/00*
**U.S. Cl. 259—8** **1 Claim**

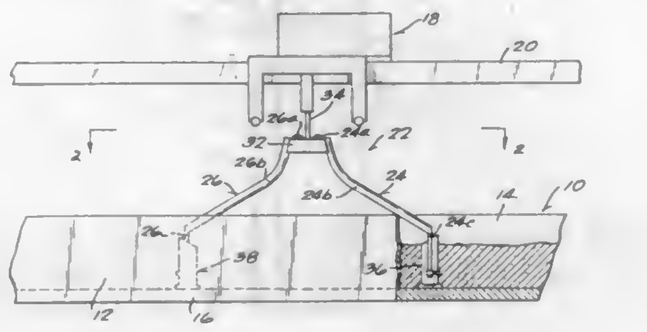


A method of manufacturing a mixture semicontinuously so that the time-change in the quality and physical properties thereof may be within allowable limits, with a control tank, two up and down moving measuring cylinders, an overflow level setting pipe connected thereto comprising: measuring and adding the liquids into the mixing tank according to a predetermined order and interval, and mixing the liquids added into the mixing tank by stirring to forward the mixed mixture continuously to the next process stage.

**3,476,364**

### STIRRING PADDLE ASSEMBLY FOR PROCESS VAT

**Meredith C. Thomson, Oconomowoc, Wis., assignor to Stoelting Brothers Company, Kiel, Wis., a corporation of Wisconsin**
**Filed Feb. 16, 1968, Ser. No. 705,962**
**Int. Cl. B01f** *7/20*
**U.S. Cl. 259—108** **14 Claims**

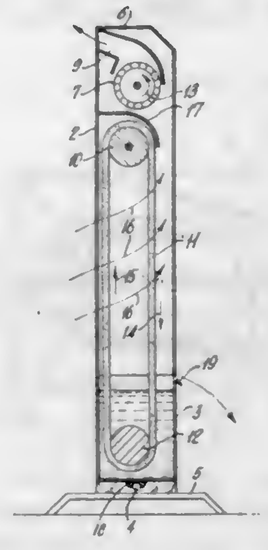


A stirring paddle assembly for a cheese processing vat is provided wherein a single stirring blade is connected to and trails each arm of the paddle assembly. The stirring blade has a substantial extension above the bottom wall of the vat so that it extends over a substantial portion of the vat depth and can extend through the entire depth of cheese product in the vat.

**3,476,365**

### AIR HUMIDIFIER

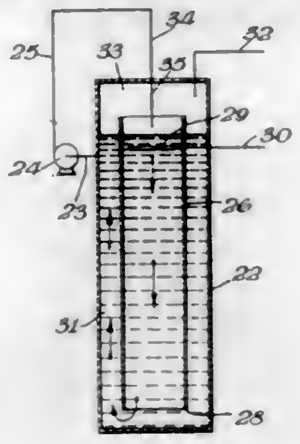
**Harald J. Agerley, Lyngby, Denmark, assignor, by mesne assignments, to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden**
**Filed May 10, 1967, Ser. No. 637,417**
**Claims priority application Denmark, May 11, 1966, 2,414/66**
**Int. Cl. B01d** *1/00*
**U.S. Cl. 261—24** **4 Claims**



An air humidifier is provided having a water container in the lower portion thereof which is pivotally arranged about and removable from an axis at the bottom of the humidifier housing. A ventilator is also provided for producing a continuous stream of air which passes through the housing and through an endless band of porous material which absorbs the water from the water container, the ventilator and endless band being driven by a single motor means.

### 3,476,366
### GAS LIQUID TRANSFER APPARATUS

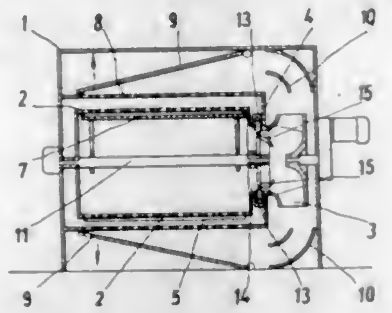
**Owen E. Brooks, Amityville, and Robert C. Nubel, Wantagh, N.Y., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware**
**Filed Dec. 29, 1966, Ser. No. 605,863**
**Int. Cl. B01d** *47/02*
**U.S. Cl. 261—36** **8 Claims**



Apparatus for accomplishing contact between incompletely miscible gaseous and liquid phases. An elongated vessel incompletely filled with liquid. Means continuously recycling a stream of liquid contents from the bottom of the vessel and returning the stream to the top of the vessel. Outlet and reintroduction parts accomplishes the removal and reintroduction of the liquid. Aeration means introduces fresh gas into the liquid recycle stream and vent means removes free gas collected in the upper liquid-free portion of the vessel.

### 3,476,367
### HEAT-TREATMENT APPARATUS

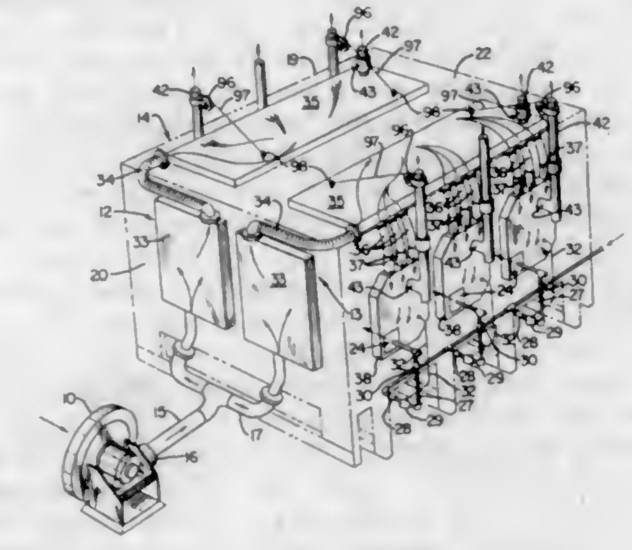
**Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Vepa AG, Basel, Switzerland**
**Filed Oct. 11, 1966, Ser. No. 585,809**
**Claims priority, application Germany, Oct. 13, 1965, A 50,478**
**Int. Cl. F26b** *11/04, 17/00*
**U.S. Cl. 263—3** **22 Claims**



1. A heat-treating apparatus which comprises a closed housing, at least one cylindrical sieve drum rotatably disposed within said housing and defining an annular space surrounding said cylindrical sieve drum, the cylindrical surface of said sieve drum serving as a conveying means, vacuum-creating means communicating with the interior of the cylindrical sieve drum for directing a treatment medium from the inside of said drum to the annular space surrounding said drum, direct heating means provided within the circulation of the treatment medium in the vacuum portion of the apparatus between the material being treated and the vacuum-creating means, inlet means for introducing the material to be heat-treated to said conveying means and outlet means for removing said heat-treated material from said conveying means.

### 3,476,368
### HIGH TEMPERATURE KILN

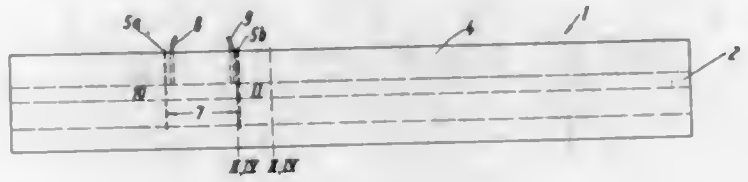
**Hiroshi Saiki, Golden, Colo., assignor to The Denver Fire Clay Company, Denver, Colo., a corporation of Delaware**
**Filed Nov. 28, 1967, Ser. No. 686,129**
**Int. Cl. F23l** *15/04;* **F23c** *5/08*
**U.S. Cl. 263—20** **19 Claims**



A temperature kiln has relatively lightweight, refractory wall and roof sections of reduced thickness which are substantially covered by relatively broad, flat plenums to circulate preheated combustion air into nozzle burner mix sections located in the refractory walls. The plenums are designed to closely control the air pressure and temperature of the combustion air.

### 3,476,369
### TUNNEL FURNACE

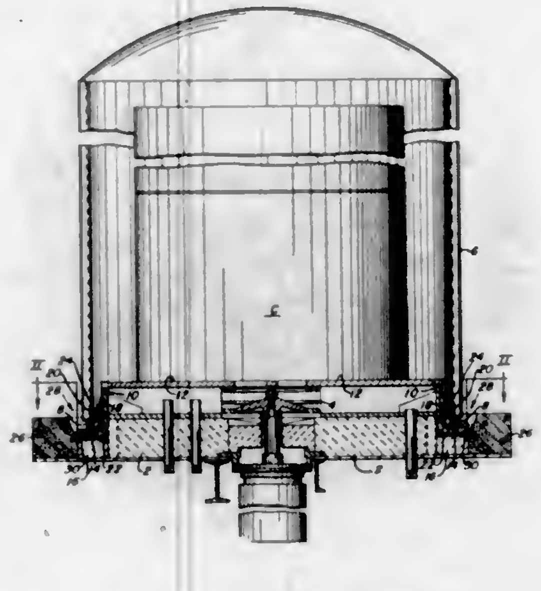
**Rudolf Buchkremer, Nuremberg, Germany, assignor to Ludwig Riedhammer GmbH, Nuremberg, Germany**
**Filed Aug. 14, 1967, Ser. No. 660,276**
**Claims priority, application Germany, Oct. 17, 1966, R 44,365**
**Int. Cl. F27b** *9/00, 13/02, 1/02*
**U.S. Cl. 263—36** **6 Claims**



A tunnel furnace which permits differing gas atmospheres within its furnace space, primarily for sintering soft ferrites, which includes sheet metal plates distributed over the length of the furnace, spaced from one another in the longitudinal direction of the furnace and extending transversely thereto, whereby the sheet metal plates are inserted on all sides into the brickwork of the furnace and are impervious to gas except for the channel aperture provided in the plates for the furnace channel. Additionally, gas supply and discharge lines for establishing a predetermined gas atmosphere within a given section defined between two plates terminate in the furnace channel within a given section.

### 3,476,370
### ANNEALING FURNACE SEAL

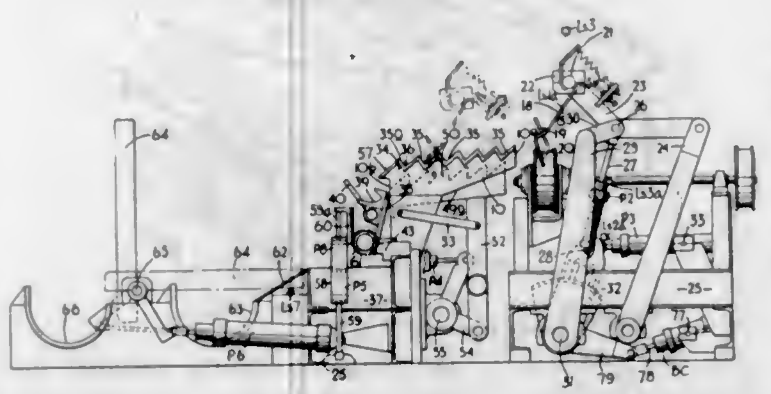
**Donald L. Ashbaugh, Gary, Ind., assignor to United States Steel Corporation, a corporation of Delaware**
**Filed Jan. 19, 1968, Ser. No. 699,152**
**Int. Cl. F27b** *11/08, 11/10*
**U.S. Cl. 263—40** **3 Claims**



A seal for eliminating or reducing air infiltration into an inner cover of a steel annealing furnace including a metal to metal seal between the cylindrical bottom ring of the inner cover and a horizontal plate at the bottom of the seal channel and also between the bottom ring and a frusto-conical ring extending from the plate upwardly and inwardly. Sand is provided in the channel only on the outside of the bottom cover ring.

### 3,476,371
### APPARATUS FOR USE IN EFFECTING CONTROLLED QUENCHING OF METAL IN BAR FORM

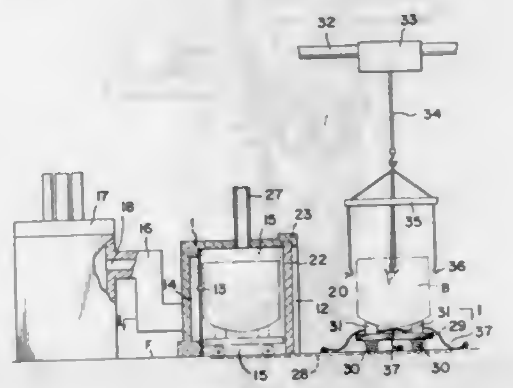
**Alfred Travis and Philip Croft, Stockport, England, assignors to Executors of James Mills Limited, Stockport, England, a British company**
**Filed Jan. 27, 1967, Ser. No. 612,178**
**Int. Cl. C21d** *1/62*
**U.S. Cl. 266—6** **11 Claims**



This invention relates to apparatus for effecting in an automatic manner the controlled quenching of steel and other metal in bar form.

### 3,476,372
### MELTING DEVICE FOR REGENERATING RECOVERED SCRAP IRON

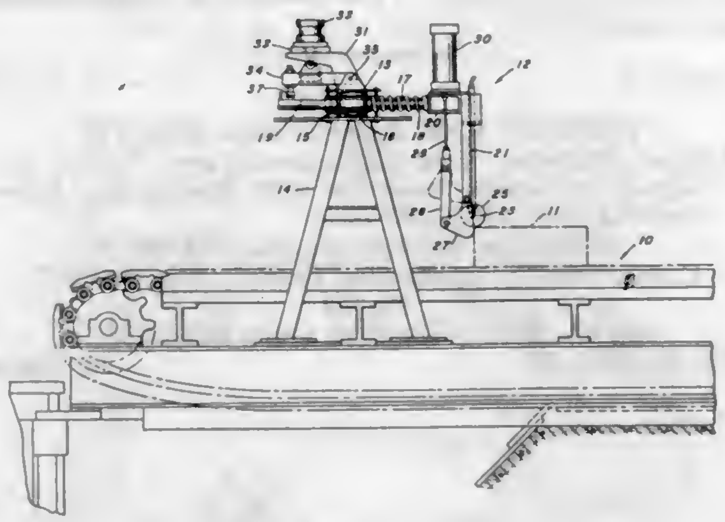
**Kunitoshi Tezuka, 34, 7-chome Minamisuna-machi, Koto-ku, Tokyo, Japan**
**Filed Feb. 24, 1967, Ser. No. 618,444**
**Claims priority, application Japan, June 2, 1966, 41/35,100; July 18, 1966, 41/46,712**
**Int. Cl. C21b** *1/10;* **F27d** *13/00*
**U.S. Cl. 266—13** **8 Claims**



Device for carrying out a preheating process, before the actual melting of scrap iron, for regenerating various kinds of scrap iron.

### 3,476,373
### TORCH-MOUNTING APPARATUS FOR CUTTING PIECES OF IRREGULAR SHAPE

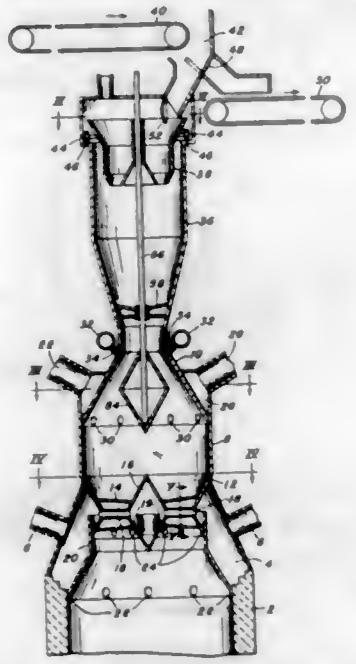
**Charles H. Bode, Jr., Upper St. Clair Township, Allegheny County, and Peter J. Wusseles, Bridgeville Borough, Pa., assignors to United States Steel Corporation, a corporation of Delaware**
**Filed Dec. 22, 1967, Ser. No. 692,737**
**Int. Cl. B23k** *7/10*
**U.S. Cl. 266—23** **10 Claims**



Apparatus for positioning torches properly to preheat and cut slab crops having irregular edges comprises a gantry extending across a crop conveyor. The gantry mounts a plurality of cutting torches each carried on a horizontal supporting tube slidable in the gantry and spring-urged to forwardmost position. For each torch a flag is pivoted to a strut depending from the tube. A linkage prevents pivoting of the flag when engaged by the crop to be cut. The tube is pushed back to an extent depending on the shape of the leading edge of the crop to be cut. When the last tube has been thus retracted and the crop brought to rest, clamps are applied to all tubes to hold them in position. A preheating flame from the torches is initiated and then a cutting flame. A cylinder and piston mounted on each tube lifts the flags out of the way before cutting starts.

### 3,476,374
### APPARATUS FOR CHARGING A BLAST FURNACE CONTINUOUSLY

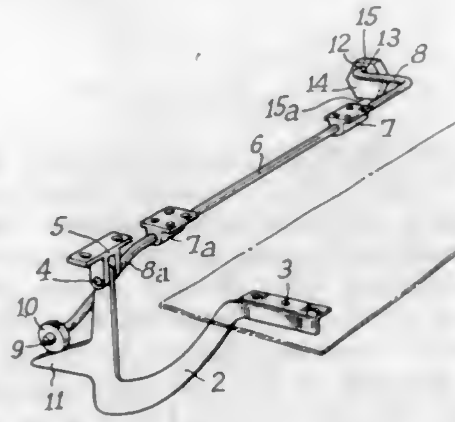
**Hendrik Colijn, Monroeville Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware**
**Filed June 6, 1967, Ser. No. 643,870**
**Int. Cl. C21b** *7/20*
**U.S. Cl. 266—27** **5 Claims**



Apparatus includes a pressure reducing hopper mounted on top of a blast furnace stack and a surge hopper mounted on top of the reducing hopper. The two hoppers replace conventional bell-and-hopper charging equipment. A rotating charging hopper, which is fed from an overhead horizontal endless belt conveyor, is disposed in the upper end of the surge hopper for charging burden material continuously into the surge hopper. Primary and secondary gas exhausts are provided in the pressure reducing hopper.

### 3,476,375
### TORSION BAR ADJUSTING DEVICE

**Jacques Brasseur, Saint-Germain-en-Laye, France, assignor to Société Anonyme dite: Société des Automobiles Simca, Paris, France**
**Filed Jan. 2, 1968, Ser. No. 695,088**
**Claims priority, application France, Jan. 17, 1967, 91,459**
**Int. Cl. E05f** *1/12;* **F16f** *1/16;* **B62d** *25/12*
**U.S. Cl. 267—57** **4 Claims**



A torsion adjusting device for torsion bar controlling the movement of a hinged element including bearing means in which the bar is supported by bearings fixed to the structure and has perpendicular arms formed at each of its ends. One of the arms is arranged to apply the torsion of the bar to at least one hinged element to urge it in a given direction and the other arm has a right angled portion extending into and engaging with an eccentric hole formed in a polygonal adjusting element which has one of its faces bearing against a portion of the structure whereby the torsion of the bar may be adjusted by turning the polygonal element so that a different one of the polygonal faces bears against the structure.

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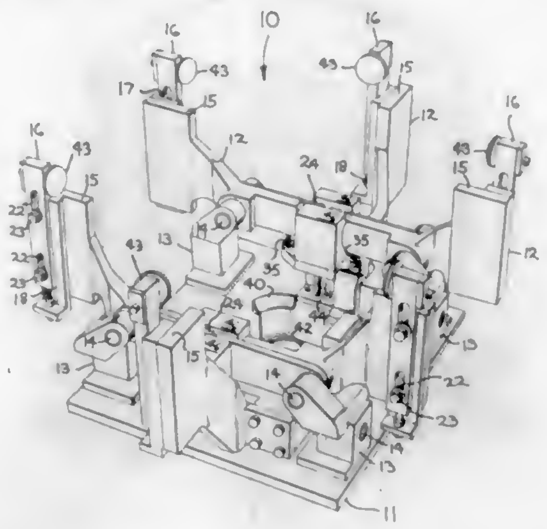
### 3,476,376
### SUPPORT STRUCTURE FOR HOLLOW ARTICLE

**Ben Jacoby, Jr., Dublin, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio**
**Filed Sept. 15, 1967, Ser. No. 668,129**
**Int. Cl. B25b** *1/18;* **B24b** *9/12*
**U.S. Cl. 269—20** **10 Claims**



An apparatus for supporting a hollow glass article such as the funnel portion of a cathode-ray bulb while the edges are being worked upon. An array of arms paired together and acting in unison to move into engagement and disengagement with the exterior surface of a frustoconical shaped article. A brake system for immobilizing the arms while the hollow article is being worked upon.

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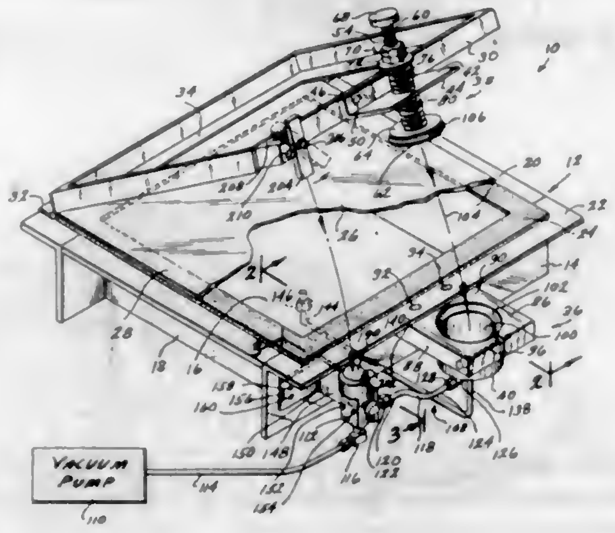
### 3,476,377
### SHEET CLAMPING COUPLE

**Dominic S. Agrista and Anthony S. Anastasia, South Plainfield, N.J., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California**
**Filed Oct. 19, 1967, Ser. No. 676,449**
**Int. Cl. B25b** *11/00*
**U.S. Cl. 269—21** **7 Claims**



A pneumatic sheet-clamping couple includes a piston carried by one clamping frame and a cylinder carried by the other frame. The piston engages the cylinder when the frames are in clamping position and a vacuum pump evacuates the cylinder so that atmospheric pressure on the piston exerts sufficient force to hold the frames in clamping relationship.

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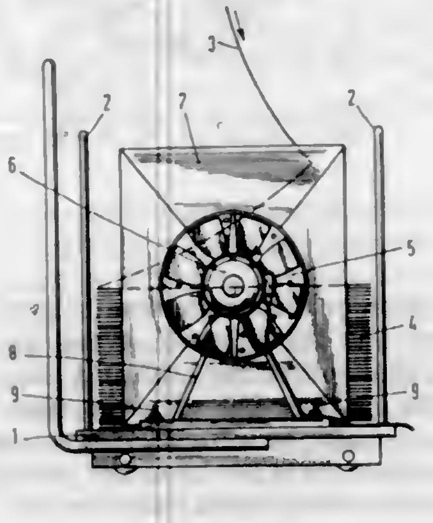
### 3,476,378
### DEVICE FOR DEPOSITING STRIPS

**Josef Löffler, Egon Rampp, and Hans Schall, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany**
**Filed Dec. 13, 1965, Ser. No. 513,267**
**Claims priority, application Germany, Dec. 14, 1964, S 94,616**
**Int. Cl. B65h** *45/00*
**U.S. Cl. 270—61** **3 Claims**



An apparatus for the stack-form deposition of sections of a tape in the form of individual shapes or sections preformed by folding of such tape having a receptacle within which the stack can be formed and a method for withdrawing the air away from the stack parallel to the prefolded edges so as to prevent the formation of an air cushion beneath each newly impacting tape section.

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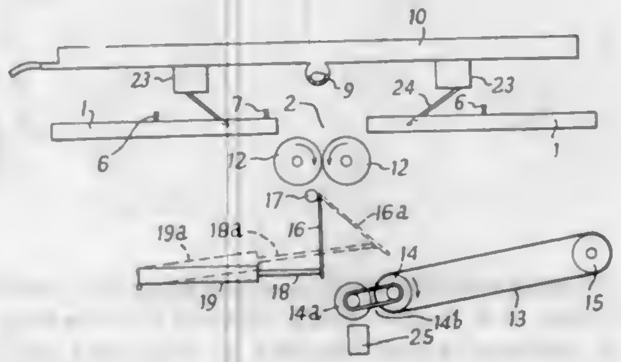
### 3,476,379
### LAUNDRY FOLDING DEVICES

**Henry John Weir, "The Yetts," Sedbury, Chepstow, Monmouthshire, England**
**Filed Jan. 27, 1967, Ser. No. 612,167**
**Claims priority, application Great Britain, Jan. 31, 1966, 4,266/66**
**U.S. Cl. B65h** *45/04*
**U.S. Cl. 270—80** **5 Claims**



A laundry article cross-folder, particularly for prefolded articles, in which the article to be folded is draped in front of a moving conveyor and projected onto the conveyor by means (folding blade, air jet or the like) which act on the sheet along a proposed horizontal fold line.

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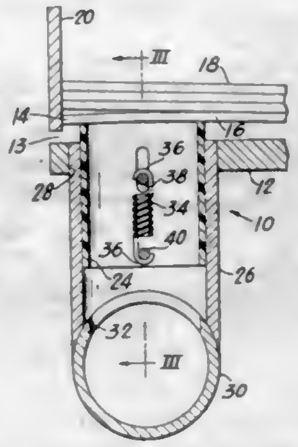
### 3,476,380
### ARTICLE ACTUATED PNEUMATIC SEPARATOR

**Mircea Calistrat, Pikesville, Md., assignor to Koppers Company, Inc., a corporation of Delaware**
**Filed Dec. 15, 1967, Ser. No. 691,014**
**Int. Cl. B65h** *1/06, 3/08*
**U.S. Cl. 271—32** **7 Claims**



A pneumatic separator for separating a single sheet or blank from a supply for transfer to subsequent processing apparatus. The separator comprises a hollow, open-ended piston that slides within a continuously evacuated cylindrical sleeve which has resilient means for urging the piston outwardly against a stop limiting such outward movement. In its outward position, the piston engages the single lower sheet or blank, thereby closing the end of the piston to atmosphere. The evacuation then causes the piston to withdraw within the sleeve to separate the article that is adhering to the piston from the supply and to position the article for transfer by associated transfer apparatus.

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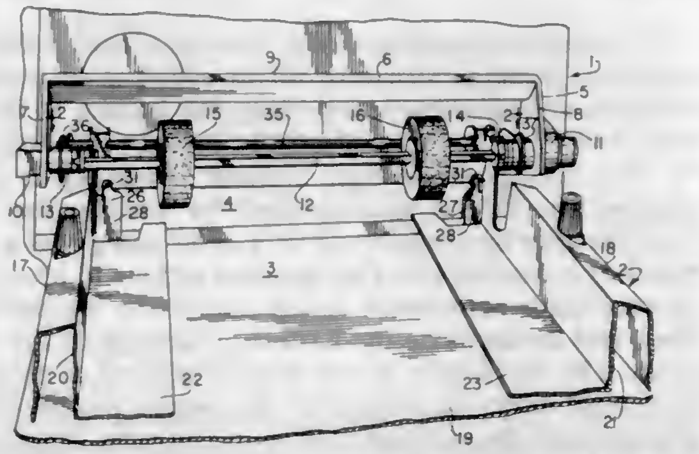
### 3,476,381
### DUPLICATING MACHINES

**John W. Carlson, Fort Lauderdale, Fla., assignor to Speed-O-Print Business Machines Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Sept. 1, 1967, Ser. No. 665,002**
**Int. Cl. B65h** *3/06, 9/04*
**U.S. Cl. 271—36** **7 Claims**



A duplicating machine embodying stop fingers for a stack of sheets to be printed, with the stop fingers embodying sheet-stripping members disposed in overlying relation to the stack.

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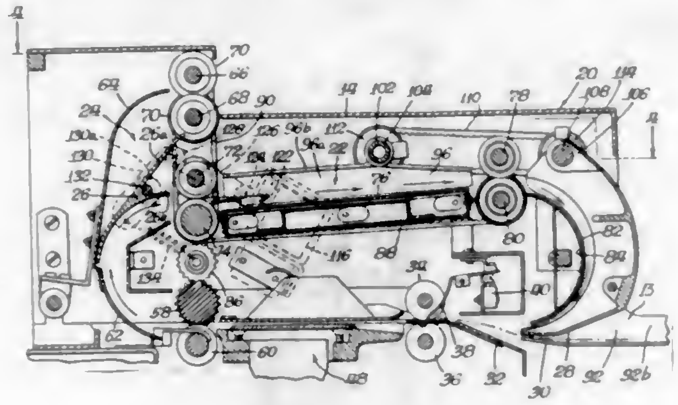
### 3,476,382
### PHOTOELECTROSTATIC COPYING MACHINE

**John L. Tregay, Wilmette, and Edward J. Martin, Jr., Rolling Meadows, Ill., assignors to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware**
**Filed Sept. 9, 1965, Ser. No. 485,992**
**Int. Cl. B65h** *9/16;* **G03b** *27/12*
**U.S. Cl. 271—52** **11 Claims**

A copy making machine including an original illuminating station and a copy exposure station makes single or multiple copies of an original. For multiple copies, a gate is positioned to recycle the original around a closed path. In single or multiple operation, a single switch senses the original and causes a copy sheet to be moved in synchronism to the exposure station. Edge guides engage side edges of the original sheet and include portions extending into the original feed area so that adjustment of the guides is facilitated. A manually operated multiple copy control is locked in position until a final copy is made so that the gate cannot be moved and jamming of an original by the gate is prevented.



**3,476,383**

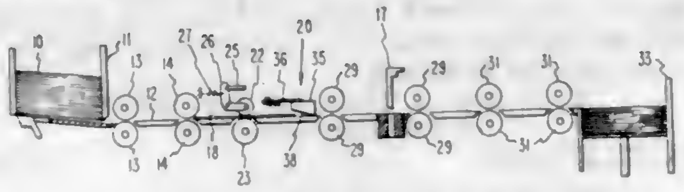
### NON-ACTUATED INERTIAL BRAKE

**William L. Wilcox, Rochester, Minn., and Richard E. Wagner, Mercer Island, Wash., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Aug. 14, 1967, Ser. No. 660,453**

**Int. Cl. B65h** *29/68, 29/20*

**U.S. Cl. 271—53** **8 Claims**



A document handling device such as a card processing machine including structure for arresting a document in the path of document travel using the inertial force of a non-actuated mass and selectively feeding the document to the subsequent station without releasing a brake mechanism. This is accomplished by causing the document to stop by transfer of its kinetic energy to a mass which is contacted along an inclined surface to provide an upward force component acting against the inertia of the mass and to eliminate the hazard of damage to the document. The magnitude of the mass is selected to cause the document either to stop prior to passage of the leading edge beyond the inclined surface of the mass or to permit the card to displace the mass, enter beneath the mass and finally stop as a result of frictional contact before passage beyond the brake. A selectively engageable drive is thereafter actuable to drive the document beyond the brake without activation or deactivation of the brake mechanism.

**3,476,384**

### NEWSPAPER-STREAM REVERSING APPARATUS

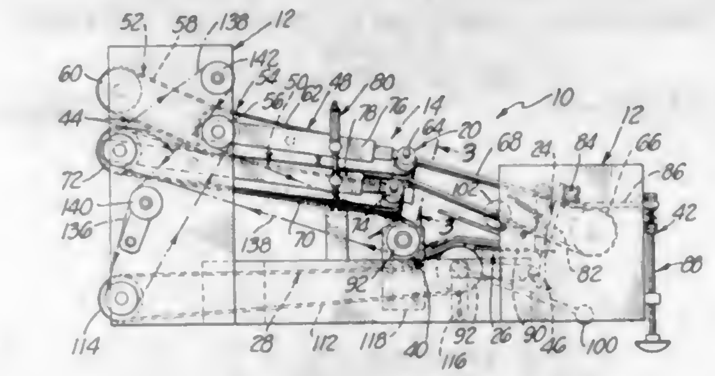
**John F. Thull, Costa Mesa, and Samuel Oderman, Whittier, Calif., assignors to Sta-Hi Corporation, Newport Beach, Calif., a corporation of California**

**Filed July 14, 1967, Ser. No. 653,436**

**Int. Cl. B65h** *5/02, 29/58*

**U.S. Cl. 271—76** **5 Claims**

An apparatus comprising an upper conveyor for conveying a stream of folded newspapers in one direction with their cut edges leading and a lower conveyor for conveying the stream of newspapers in the opposite direction with their folded edges leading, the lower conveyor having a section located below the discharge end of the upper conveyor in a position to receive at least the folded edges of successive newspapers. A stop spaced from the discharge end of the upper conveyor is engageable by the cut edges of successive newspapers to stop them so that their direction of movement may be reversed by the lower conveyor. The discharge end of the upper conveyor includes troughing rollers for stiffening the newspapers against buckling as their cut edges impinge against the stop. A rotary presser between the lower conveyor and the discharge end of the upper conveyor presses the folded edges of successive newspapers halted by the stop downwardly toward the lower conveyor.



**3,476,385**

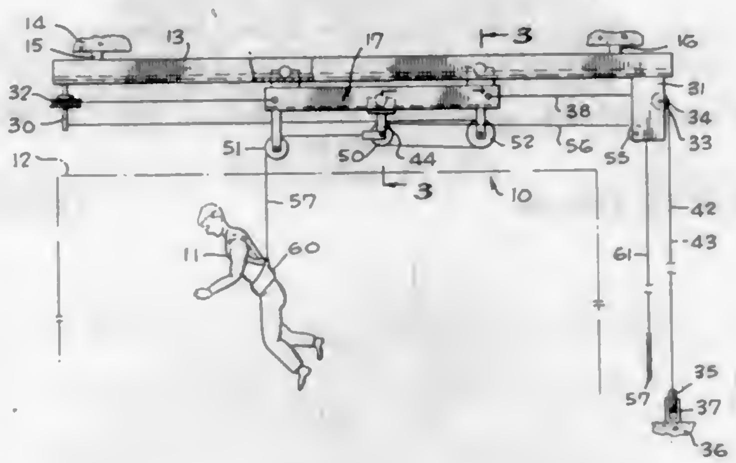
### THEATRICAL TRANSPORTATION APPARATUS

**Peter S. Foy, Los Angeles County, Calif. (3679 Tioga Way, Las Vegas, Nev. 89109)**

**Filed Oct. 23, 1965, Ser. No. 503,853**

**Int. Cl. A63j** *5/00*

**U.S. Cl. 272—24** **7 Claims**



A personnel transportation apparatus for positioning a performer in a vertical plane exposed to a viewing audience is disclosed which includes an elongated stationary support extending in the vertical plane on which carriage means move between the opposite ends thereof. A truck is movably supported from the carriage means and flexible means are connected to the truck which is adapted to be attached to the performer. Means are connected to the carriage and truck for selectively moving the carriage and the truck whereby the performer may be maneuvered vertically and laterally within the vertical viewing plane.

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**3,476,386**

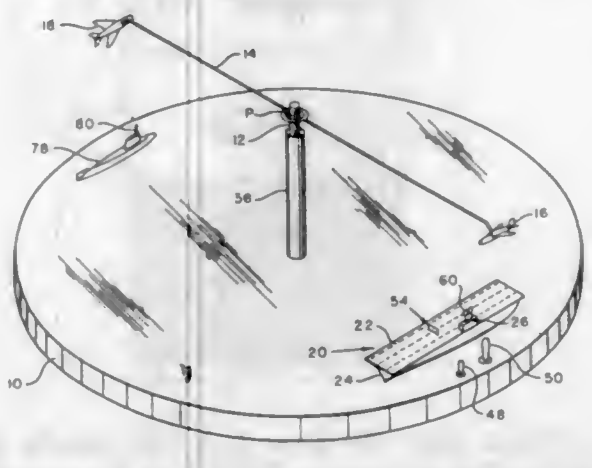
### ROTATING TOY SIMULATED AIRCRAFT

**Philip D. Bart, 27 Keith Drive, Monsey, N.Y. 10952**

**Filed Aug. 29, 1966, Ser. No. 575,748**

**Int. Cl. A63h** *27/00;* **A63g** *1/10*

**U.S. Cl. 272—31** **11 Claims**



A rotating toy with a simulated aircraft having an elevation dependent on the speed of its rotation and a hood mounted beneath it, a landing area and an arresting member periodically urged into and out of the landing area by a camming device. By suitable control of the aircraft speed, the aircraft is manipulated to catch the arresting member during the period when the arresting member is in an engageable position. The engagement of the aircraft is also indicated by means of an electrically generated signal. In a further embodiment, alternative air foil patterns on complementary aircraft provide the required lift factor.

**3,476,387**

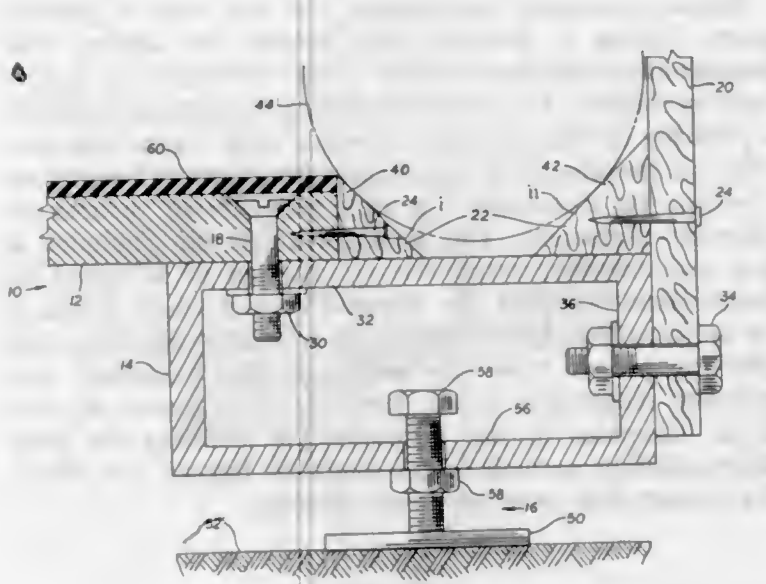
### ASSEMBLY OF ELEMENTS SUPPORTING A BOWLING ALLEY OR THE LIKE

**Dale B. Cepluch, 955 Millville Ave., Hamilton, Ohio 45013**

**Filed May 31, 1966, Ser. No. 553,903**

**Int. Cl. A63d** *1/02*

**U.S. Cl. 273—51** **2 Claims**



An assembly of elements adaptable for use in portable bowling alleys or the like comprising a hollow base supporting member on top of which a bowling alley section and a gutter means associated therewith are securely mounted. A retaining means such as a guard rail is secured to the outer side of such supporting member so that a ball rolling in the gutter means is retained between the alley and the guard rail. Leveling means may be mounted at the bottom of the base supporting member.

**3,476,388**

### BILLIARD CUES

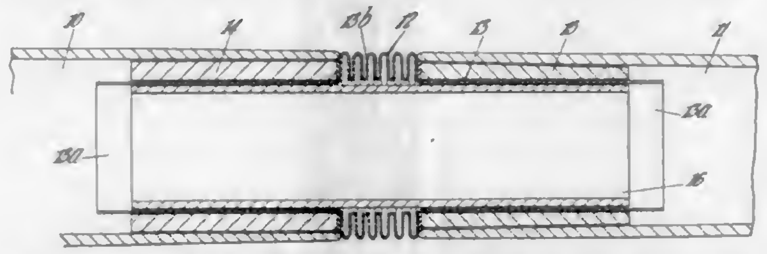
**Leslie Charles Hackett, Clent, England, assignor to Accles & Pollock Limited, Oldbury, Birmingham, England, a British company**

**Filed Feb. 28, 1967, Ser. No. 619,327**

**Claims priority, application Great Britain, Mar. 1, 1966, 8,844/66**

**Int. Cl. A63d** *15/08*

**U.S. Cl. 273—68** **3 Claims**



A tapered metal billiard cue is divided into two sections which are joined together by a resilient joint which includes a metal bellows with convolutions interposed between the ends of the two cue sections. The bellows is secured into place by means of a flexible adhesive which permits movement between the cue sections, such movement being opposed by the bellows.

**3,476,389**

### MECHANICAL LAP COUNTER FOR SLOT GUIDED TOY VEHICLES

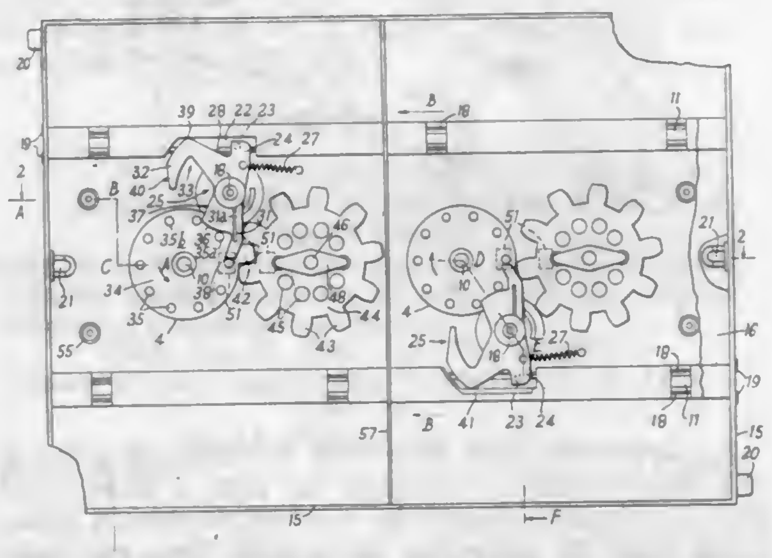
**Ting Hok-Shou, North Point, Hong Kong, assignor to Kader Industrial Company Limited, North Point, Hong Kong, a corporation of Hong Kong**

**Filed June 2, 1965, Ser. No. 460,662**

**Claims priority, application Great Britain, July 6, 1964, 27,824/64**

**Int. Cl. A63f** *9/14*

**U.S. Cl. 273—86** **4 Claims**



A section of track for use in electric slot car racing having counting means and actuating means for the said counting means, which actuating means comprises an actuating member provided at a location in each groove and adapted to be engaged and moved by the projection on a toy vehicle when the latter passes the said location so that the counting means may be operated to give an indication of the number of times a toy vehicle passes the said location.

**3,476,390**

### NON-PIERCING ARCHERY TARGET

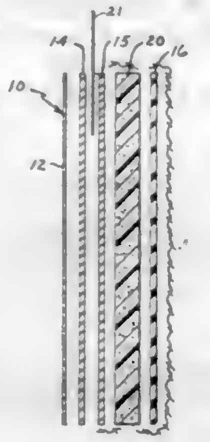
**August F. Roloff and Mina S. Roloff, both of R.D., Reids Hill Road, Morganville, N.J. 07751**

**Filed July 6, 1967, Ser. No. 651,509**

**Int. Cl. A63b** *63/00, 69/00*

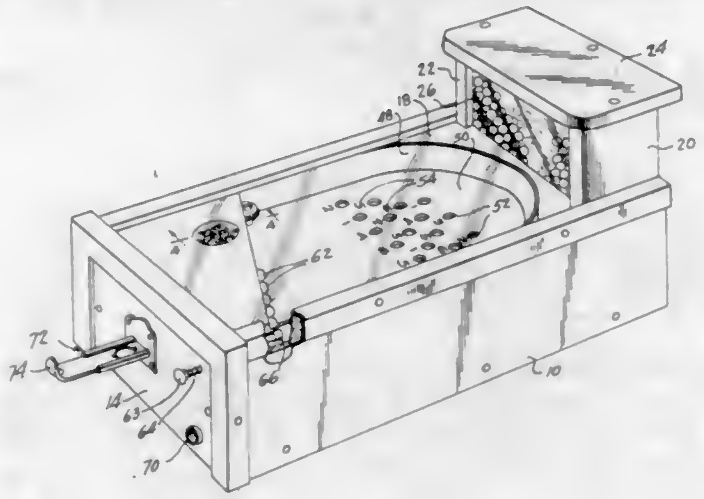
**U.S. Cl. 273—102** **9 Claims**

This disclosure describes an arrow stopping archery target including a first penetrable layer of an elastomeric foam material backed by a deformable sheet of diaphragm rubber. One embodiment includes a third foam layer disposed behind the rubber sheet.



### 3,476,391
### COMBINED BALL GAME, GUM DISPENSER AND DIE

**Andrew Fejko, 107 Butler St., Butler, Pa. 16001**
**Filed Nov. 28, 1967, Ser. No. 686,027**
**Int. Cl. A63f** *7/00*
**U.S. Cl. 273—124** **4 Claims**

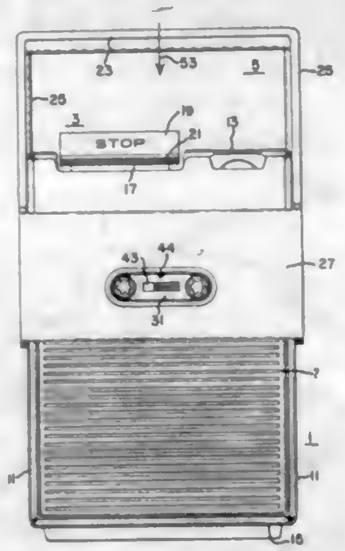


A combination gum dispensing machine and game of skill which includes a container for gum, a game board having a plurality of holes for receiving marbles, a spring biased shaft for propelling the marbles from one point toward the holes, an ejector for knocking the marbles out of the holes to permit them to return by gravity to the propelling shaft, a receptacle with a removable bottom for dice, a striker for the dice, and a gum dispenser for removing a gum ball from the container and delivering it exteriorly of the machine.

### 3,476,392
### HANDLE ASSEMBLY FOR CARTRIDGE TAPE PLAYER

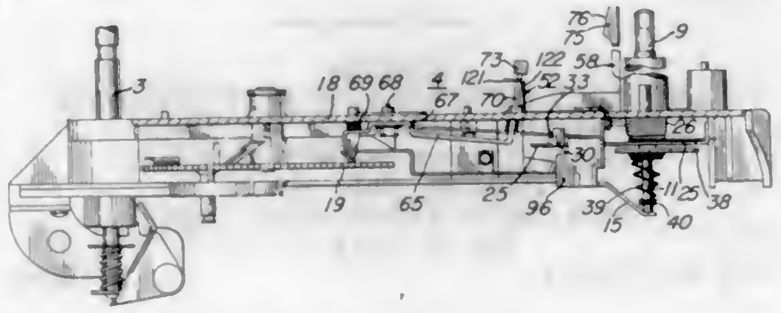
**Richard Culbertson, New Hartford, and Harvey Richard Ostresh, Dewitt, N.Y., assignors to General Electric Company, a corporation of New York**
**Filed Jan. 8, 1968, Ser. No. 696,224**
**Int. Cl. G11b** *5/78*
**U.S. Cl. 274—4** **8 Claims**

A cartridge tape player including a retractable handle assembly which captivates the tape cartridge in other than the retracted position and operatively engages a function switch in the retracted position to disengage the cartridge from the tape deck, the handle assembly thus preventing attempts at removal of the cartridge from the tape player when the cartridge is engaged.



### 3,476,393
### TONE ARM SET-DOWN CONTROL MEANS

**Michael H. Estkowski, St. Joseph, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan**
**Filed Feb. 15, 1966, Ser. No. 527,576**
**Int. Cl. G11b** *15/00, 17/00*
**U.S. Cl. 274—10** **14 Claims**

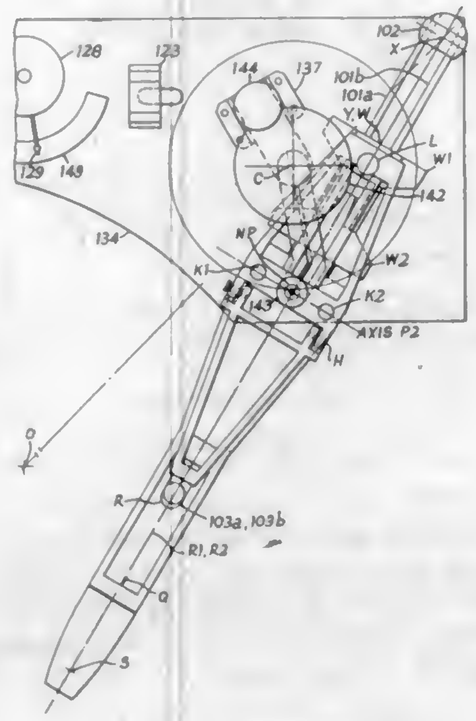


Record changing mechanism for use with a phonograph having a turntable and means for storing and sequentially releasing records to the turntable for reproduction thereof. The record changing mechanism includes a plurality of stop elements movable with a tone arm and effective for selectively positioning the tone arm for proper set-down on a selected one of a plurality of records of different diameters. The mechanism further includes a first arm member responsive to rotation of a record of larger diameter than the selected record when disposed on the turntable for enabling the corresponding stop and effecting proper tone arm set-down, and a second arm member responsive to the lowering of a record of still larger diameter to the turntable for enabling the stop corresponding to such larger diameter record and effecting proper tone arm set-down thereon.

### 3,476,394
### TRAVERSING MECHANISM FOR PICK-UP TRANSDUCER ARM FOR DISC RECORDS

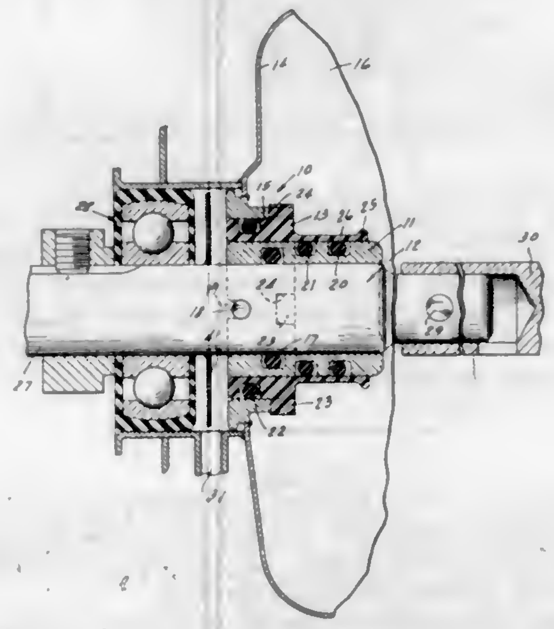
**Richard W. Birch, Strelley Barn, Woodham Mortimer, Maldon, England**
**Filed Aug. 11, 1967, Ser. No. 660,033**
**Claims priority, application Great Britain, Aug. 17, 1966, 36,840/66**
**Int. Cl. G11b** *3/10*
**U.S. Cl. 274—23** **27 Claims**

Traversing mechanism for pick-up transducer arm for disc records comprising a transducer arm on which the transducer is carried, the transducer having a stylus for engaging a spiral trace on a rotatable disc, a rotatable slave arm on which the transducer arm is pivotally supported, sensing means for sensing departures of the line joining the transducer stylus and the rotational axis of the transducer arm from the position in which said line is tangential to the spiral trace at the point of contact with the stylus, and drive means for driving the slave arm in its path of rotational movement as the stylus means traverses in a curved path the spiral trace on a disc.



### 3,476,395
### SHAFT SEAL ASSEMBLY

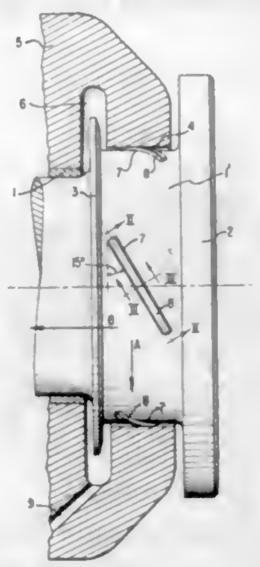
**Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota**
**Filed Nov. 9, 1967, Ser. No. 681,716**
**Int. Cl. F16j** *15/34, 15/54*
**U.S. Cl. 277—35** **16 Claims**



A pair of concentric sleeves have a dynamic seal therebetween, the inner sleeve having a static seal with a shaft with which it is corotatable, and the outer sleeve having a static seal with the housing to which it is locked, each of the sleeves being manually slidable with respect to each other, to the housing, and to the shaft for removal or installation, the sleeves being removable as a seal assembly.

### 3,476,396
### SHAFT SEAL WITH RETURN RIFLING

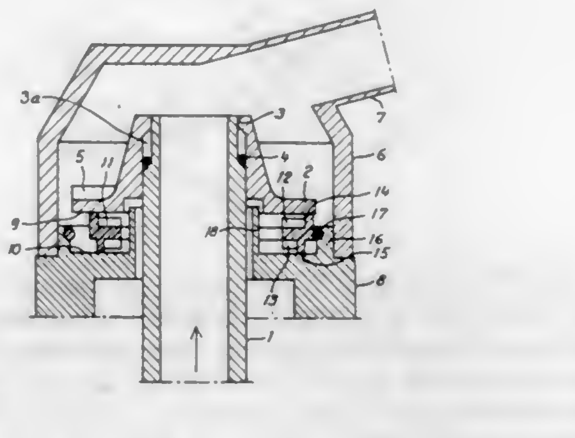
**Wilhelm Buhl, Stuttgart, Wurttemberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**
**Filed Apr. 13, 1965, Ser. No. 447,748**
**Claims priority, application Germany, Apr. 14, 1964, D 44,147**
**Int. Cl. F16j** *15/44, 15/54*
**U.S. Cl. 277—59** **8 Claims**



For producing the rifling at the point of penetration of the shaft in the crankcase wall, flat and blade-like lubricant-scraping webs extending at an angle to the shaft axis are provided within grooves disposed at the shaft circumference and retaining therein the webs. These webs are either exclusively under the influence of the centrifugal force thereof or additionally under the influence of springs, which seek to move or displace the webs out of their grooves against the cylindrical surface of the shaft bore within the housing.

### 3,476,397
### SEAL BETWEEN STATIONARY AND ROTARY PARTS

**Georg M. I. Thoren, Alvsjo, and Lennart V. S. Lundahl, Tumba, Sweden, assignors to Alfa-Laval AB, Tumba, Sweden, a corporation of Sweden**
**Filed Jan. 31, 1967, Ser. No. 612,991**
**Claims priority, application Sweden, Feb. 4, 1966, 1,435/66**
**Int. Cl. F16j** *15/34, 15/54*
**U.S. Cl. 277—83** **7 Claims**

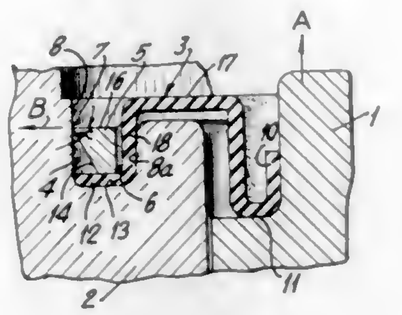


The stationary and rotary parts have respective plane annular sealing surfaces surrounding the axis of rotation and substantially perpendicular to that axis, and the sealing is effected by a ring disposed loosely between the sealing surfaces and movable in directions perpendicular to the rotation axis.

3,476,398

### SEAL ASSEMBLY

**Hans Schanz, Gifhorn, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik KG, Frankfurt am Main, Germany, a corporation of Germany**
**Filed Jan. 24, 1967, Ser. No. 611,291**
**Claims priority, application Germany, Feb. 23, 1966, T 30,516**
**Int. Cl. F16j** *9/00, 15/56*
**U.S. Cl. 277—162** **5 Claims**

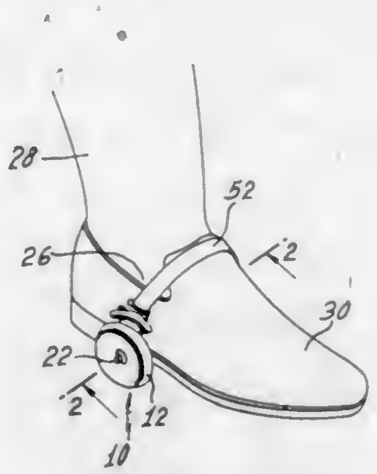


A seal assembly, especially for securing a dust sleeve or other elastic sealing member to a piston or cylinder, wherein either the piston member or the cylinder member is formed with a groove open outwardly and receiving a flange of the membrane, a split clamping ring being received in the groove and having an edge (formed between two surfaces including an acute angle) held against one flank of the groove by a multiplicity of resiliently compressed protuberances formed on the sleeve. The split clamping ring may have an inner or outer frustoconical surface including the aforementioned acute angle between itself and another surface of the ring.

3,476,399

### SKATES

**Lawrence A. Finn, Jacksonville, Fla., assignor to Wheelees, Inc., Jacksonville, Fla., a corporation of Florida**
**Filed Dec. 11, 1967, Ser. No. 689,532**
**Int. Cl. A63c** *17/04, 17/00*
**U.S. Cl. 280—11.25** **12 Claims**

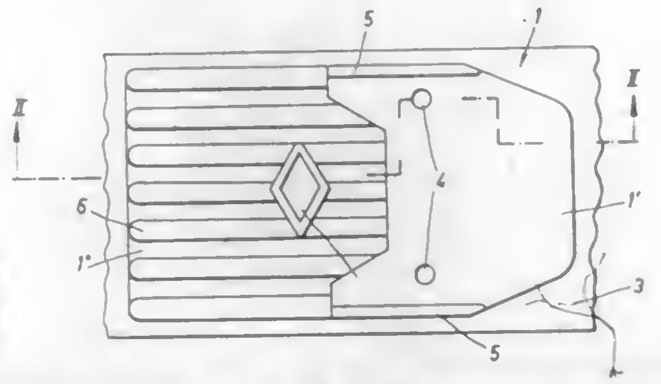


A roller skate including two wheels and an axle mounting same with a support plate for supporting the arch portion of the skater's shoe between the wheels. An elongated fastening member releasably secures the skate to the skater's shoe. The skate may include small wheels with the axle support plate and shoe sole all closely adjacent the ground or large wheels wherein the mid-portion of the axle, support plate and shoe sole are closely adjacent the ground.

3,476,400

### MOUNTING PLATE OR GAUGE FOR SECURING SKI BINDING COMPONENTS TO SKIS

**Paul Unger, 113, Bruckwiesenstrasse, 8501 Altenberg, near Nuremberg, Germany**
**Filed Mar. 20, 1967, Ser. No. 624,513**
**Claims priority, application Germany, Mar. 18, 1966, K 53,968**
**Int. Cl. A63c** *9/00, 9/12*
**U.S. Cl. 280—11.35** **2 Claims**

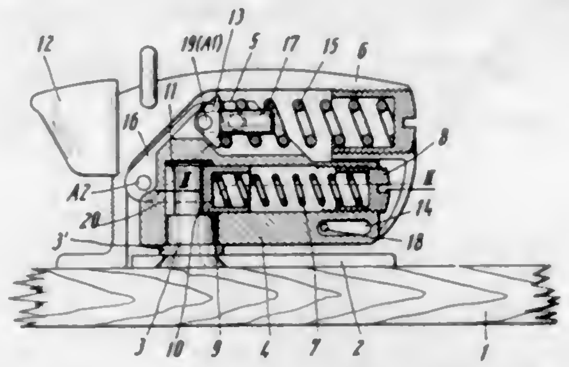


A mounting and gauge plate for securing ski binding components to skis, which has markings, recesses, bore holes and the like for providing the mounting holes or bores in the ski, which plate serves simultaneously as a support plate for a safety catch for the heel of the ski boot.

3,476,401

### SAFETY BINDING FOR SKI

**Paul Unger, 113 Bruckwiesenstrasse, 8501 Altenberg, near Nuremberg, Germany**
**Filed Apr. 19, 1968, Ser. No. 722,674**
**Claims priority, application Germany, Apr. 21, 1967, U 13,811**
**Int. Cl. A63c** *9/12, 9/24*
**U.S. Cl. 280—11.35** **7 Claims**



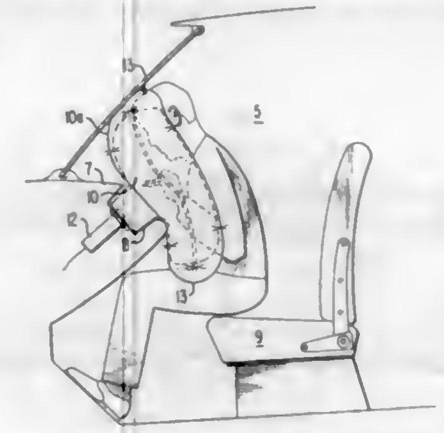
A safety binding for a ski having a housing with a spring biased release means and an intermediate supporting device permitting the housing to tilt upwardly and also to slide longitudinally of the ski, as well as to swing laterally outwardly about a bolt against which the intermediate device is spring biased.

3,476,402

### INFLATABLE CONTAINER FOR THE PROTECTION OF PASSENGERS OF VEHICLES, ESPECIALLY OF MOTOR VEHICLES, AGAINST IMPACT INJURIES IN CASE OF COLLISIONS

**Karl Wilfert, Gerlingen-Waldstadt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**
**Filed Aug. 3, 1967, Ser. No. 658,235**
**Claims priority, application Germany, Aug. 3, 1966, D 50,750**
**Int. Cl. B60r** *21/10, 21/02*
**U.S. Cl. 280—150** **6 Claims**

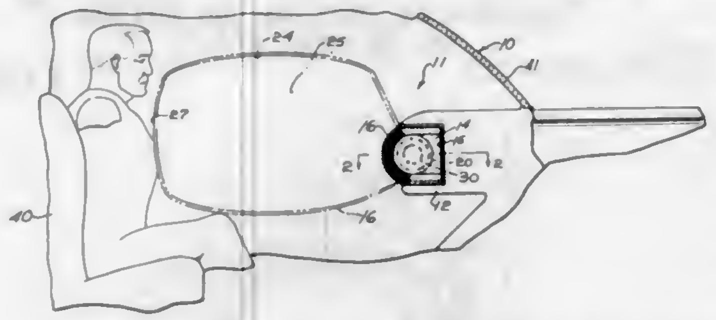
A container which is adapted to be inflated by a gas mixture developed by an explosion, for the protection of the passengers of motor vehicles against impact injuries, in which the main container consists of at least two parts connected with each other by one or several seams and which is provided with at least one equalization chamber enclosing one or several of the connecting seams.



3,476,403

### SAFETY DEVICE

**Robert W. Richardson, Orchard Lake, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Sept. 11, 1967, Ser. No. 666,690**
**Int. Cl. B60r** *21/08, 21/02*
**U.S. Cl. 280—150** **6 Claims**

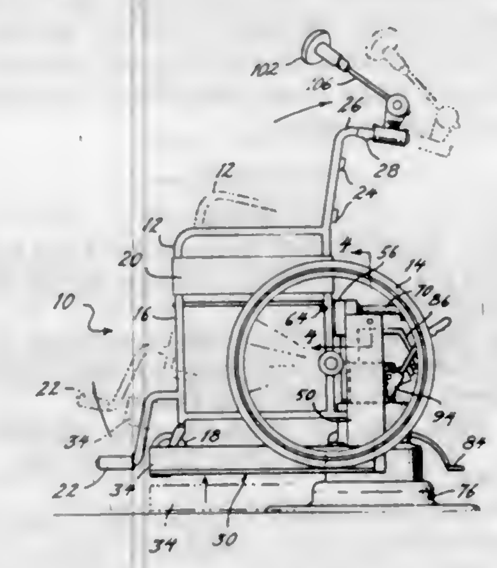


A safety device for protecting an occupant or occupants of a vehicle during a collision includes an inflatable confinement which is normally disposed in a contracted inoperative condition and is inflated to an expanded operative condition by a flow of pressurized fluid thereinto. The flow of fluid into the confinement is controlled to minimize the kinetic energy of the fluid.

3,476,404

### WHEELCHAIR LIFT

**Isadore B. Rachman, Philadelphia, Pa., assignor to Metal Dynamics Corporation, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Nov. 8, 1967, Ser. No. 681,437**
**Int. Cl. B62b** *11/00*
**U.S. Cl. 280—30** **10 Claims**

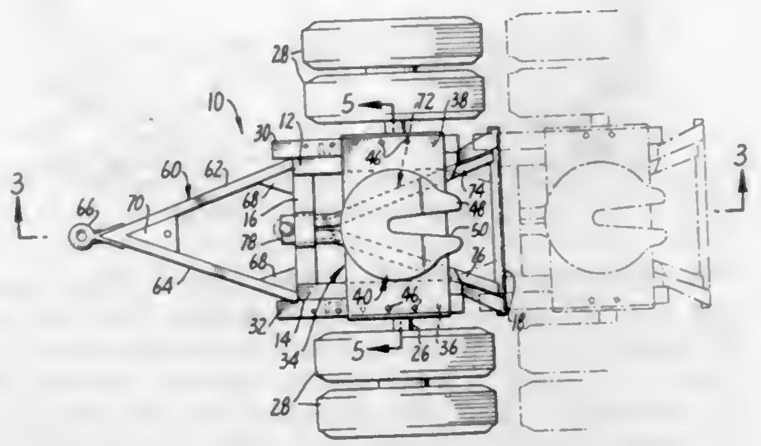


A wheelchair lift including a horizontal platform with adjustable wheel guides, clamping hooks for fixing the chair on the platform, hydraulic lifting and tilting means, and a headrest adaptable for wheelchairs of all sizes.

3,476,405

### DETACHABLE RUNNING GEAR FOR VEHICLES

**Joseph J. Cunha, Castro Valley, Calif., assignor to Cunha Products, Inc., Hayward, Calif., a corporation of California**
**Continuation-in-part of application Ser. No. 627,974, Apr. 3, 1967. This application Dec. 17, 1968, Ser. No. 786,825**
**Int. Cl. B60f** *5/00;* **B62d** *53/04*
**U.S. Cl. 280—415** **14 Claims**

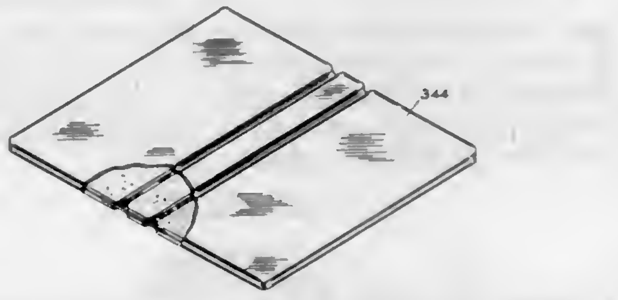


A dolly adapted to be coupled beneath a load carrying body to provide wheeled support therefor. The dolly is nestable in longitudinal alignment with the body or, in certain embodiments, another similar dolly. The latter arrangement provides an assemblage having a load supporting capacity greater than that of a single dolly. This assemblage is also adapted to be coupled beneath a load carrying body to provide wheeled support therefor. The dolly, or the assemblages thereof, are also adapted for use in adding load carrying axles to draft vehicles.

3,476,406

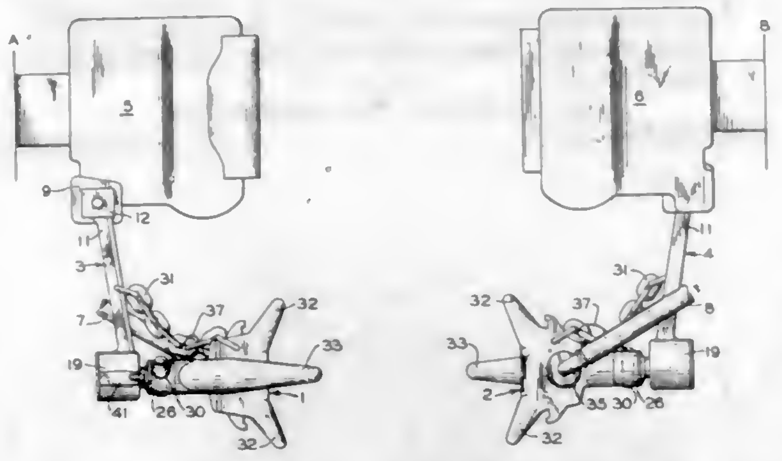
### BOOK COVER BOARD STRUCTURES AND APPARATUS AND METHOD FOR MAKING AND COATING THE SAME

**Edward K. Mullen, Westfield, and Leewood C. Carter, Warren Township, N.J., assignors to Book Covers, Incorporated, Newark, N.J., a corporation of New Jersey**
**Filed Apr. 9, 1965, Ser. No. 446,820**
**Int. Cl. B42d** *3/00*
**U.S. Cl. 281—29** **12 Claims**



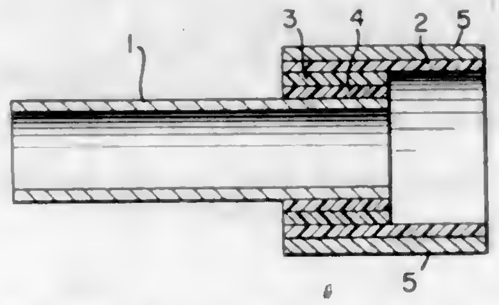
A book cover board construction is provided wherein a multi-layer spine board and a pair of multi-layer leaf boards are hinged together by a strip of material between the respective panels and the entire structure encapsulated by an adherent coating material. The coating material is applied in fluid form so as to cover the panels in a thin coating. The coating can be applied by curtain coating or by spraying.

### 3,476,407
### AUTOMATIC RAILWAY AIR HOSE CONNECTOR
**Fred Temple, Pittsburgh, and William H. Reno, Monroeville, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania**
**Filed July 26, 1967, Ser. No. 656,188**
**Int. Cl. F16l** *55/00, 3/00, 37/00*
**U.S. Cl. 285—12** **9 Claims**



An automatic hose connector for use on railway cars, said hose connector comprising a mating head carrying the connecting end of an air hose and being flexibly supported at one end of a car for automatically mating with a counterpart mating head carried on one end of another car during coupling of the cars, said mating head being removable from its mounting so as to be displaced from a fixed position, in which automatic connection of the mating heads is normally effected, into an accessible position for receiving and being manually connected to a standard manual type air hose.

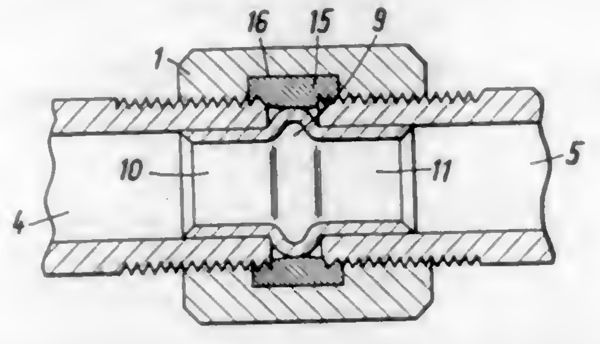
### 3,476,408
### TRANSITION FITTINGS
**Kenneth R. Wolfe, Marietta, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed Oct. 28, 1966, Ser. No. 590,424**
**Int. Cl. F16l** *13/02, 35/00, 47/02, 55/00*
**U.S. Cl. 285—21** **11 Claims**



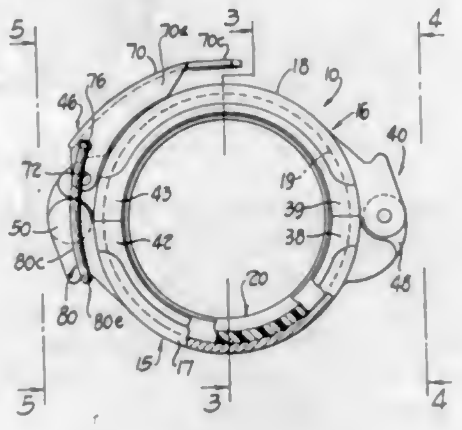
A transition fitting for joining metallic to thermoplastic pipe having concentrically disposed layers of (1) a metallic pipe, (2) an epoxy enamel on the surface of the metallic pipe, (3) a layer of specified adhesive polymer over the epoxy enamel and (4) a thermoplastic pipe fused to the layer of adhesive copolymer.

### 3,476,409
### PIPE UNION
**Erich Benteler, Heepen, and Wilhelm Schmidt and Willi Schmidt, Bielefeld, Germany, assignors to Benteler-Werke Aktiengesellschaft, Bielefeld, Germany**
**Filed June 13, 1968, Ser. No. 736,701**
**Claims priority, application Germany, June 14, 1967, B 71,397; Jan. 8, 1968, B 74,107; Feb. 17, 1968, B 96,712**
**Int. Cl. F16l** *55/00, 35/00*
**U.S. Cl. 285—40** **15 Claims**

A pipe union includes a first and a second tubular member which are arranged in end-to-end relationship, and a tubular coupling member surrounding the adjacent end portions of the tubular members threadedly connected thereto. An annular sealing means of deformable material is received within the tubular coupling member and is adapted for providing a fluid-tight seal between the same and the first and second tubular members, respectively.



### 3,476,410
### PIPE COUPLING
**John V. Pastva, Jr., Parma Heights, Ohio, assignor to The Eastern Company, Cleveland, Ohio, a corporation of Connecticut**
**Filed Dec. 18, 1967, Ser. No. 691,335**
**Int. Cl. F16l** *21/06*
**U.S. Cl. 285—112** **5 Claims**

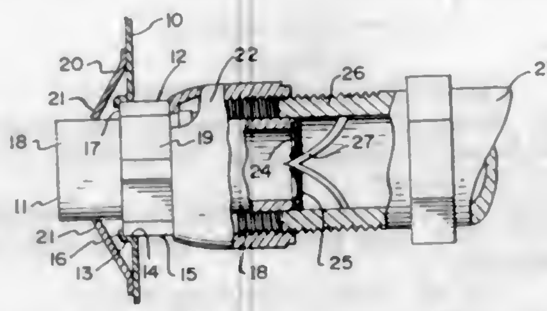


A split ring type pipe coupling having an internal groove housing a packing ring preferably of the so-called self-sealing type and comprising two semicircular sections of identical configuration having differently shaped lugs on opposite ends, with two differently shaped lugs interfitting and pivotally connected together and the opposite lugs also interfitting and detachably connected together by a bale type latch. The coupling can be quickly and easily employed to temporarily connect adjoining ends of aligned pipe members having external annular abutment surfaces facing away from one another on said adjoining ends of said pipe members.

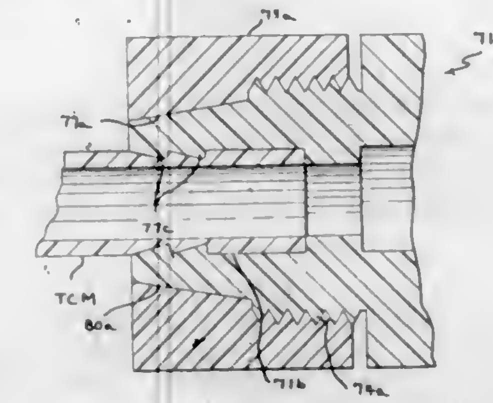
### 3,476,411
### PANEL COUPLING HAVING MEANS FOR PREVENTING AXIAL AND ROTATIONAL MOVEMENT
**Richard M. Herbert, Nashville, and James C. Hinds, Lewisburg, Tenn., assignors to Heil-Quaker Corporation, a corporation of Delaware**
**Filed May 29, 1968, Ser. No. 733,081**
**Int. Cl. F16l** *5/00, 35/00, 37/00*
**U.S. Cl. 285—192** **2 Claims**

An apparatus for mounting a coupling member such as for use in a refrigeration evaporator assembly or a condenser-compressor assembly on a thin panel in which the coupling member is held against rotation in a noncircular opening in the panel surrounded by a flange from

the panel at an angle thereto to provide a noncircular annular surface and with the coupling member having a noncircular surface adapted to bear against this flange surface so that there is a surface-to-surface contact rather than a panel edge to surface contact when the coupling member is in the opening. The panel is also provided with a spring clip for retaining the coupling member in the opening against substantial axial movement.



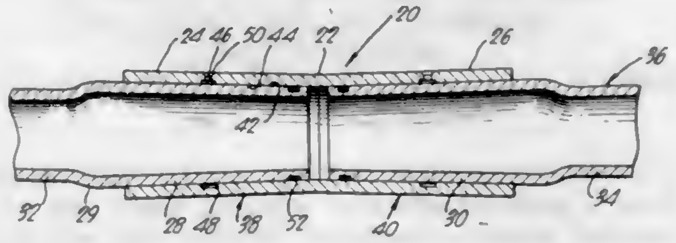
### 3,476,412
### TUBULAR CONNECTION DEVICE
**Henry William Demler, Sr., Lebanon, Pa., assignor to AMP Incorporated, Harrisburg, Pa.**
**Continuation-in-part of application Ser. No. 427,010, Jan. 21, 1965. This application Mar. 5, 1968, Ser. No. 710,457**
**Int. Cl. F16l** *21/06, 35/00, 19/08*
**U.S. Cl. 285—322** **2 Claims**



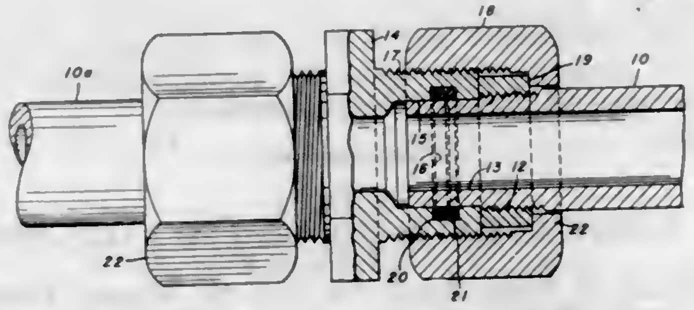
A tubular connection device comprises a body member of yieldable material in which an end of a tubular conduit member is to be disposed, a section of the body member overlying the end of the tubular conduit member having an outer tapered surface provided with serrations therealong, a nut member threadably mounted on the body member and having an inner tapered surface mateable with the outer tapered surface thereby reforming the serrations on the interior surface of the body member whereby the end of the conduit member is deformed in accordance with the configuration of the serrations to increase sealing and tensile characteristics of the connection so formed.

### 3,476,413
### FRICTION-TYPE JOINT WITH UNIFORM WALL THICKNESS
**Clarence J. Coberly, San Marino, and Francis Barton Brown, La Crescenta, Calif., assignors to Kobe, Inc., Huntington Park, Calif., a corporation of California**
**Continuation-in-part of application Ser. No. 325,707, Nov. 22, 1963. This application Feb. 1, 1966, Ser. No. 524,112**
**Int. Cl. F16l** *35/00, 21/02, 19/00*
**U.S. Cl. 285—332.3** **7 Claims**

1. A high-strength, friction-type joint for connecting an elongated element, such as a tubing or rod, to another element, including:
(a) an outer tubular member;
(b) an inner member;
(c) one of said members being an end portion of said elongated element;
(d) an inner, axially tapered surface within said outer member;
(e) said outer member having a substantially constant wall thickness throughout at least a major portion of the length of said inner tapered surface;
(f) a complementary outer, axially tapered surface on said inner member;
(g) said tapered surfaces being pressurally interengaged along an interface therebetween with a high engagement pressure induced by a high hoop tension stress in said outer member and an opposing high compression stress in said inner member; and
(h) the axial length of said tapered surfaces in pressural interengagement with each other being so related to the engagement pressure between said tapered surfaces and the effective coefficient of friction therebetween as to produce a high frictional resistance to relative bodily displacement of said tapered surfaces at least nearly equal to the nominal yield strength of said elongated element.



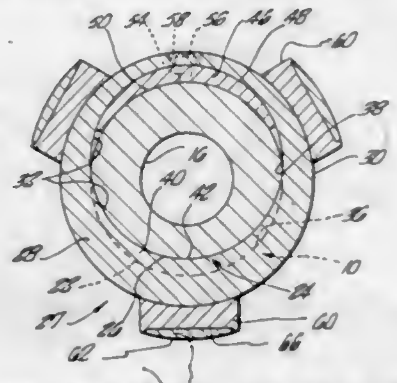
### 3,476,414
### PIPE JOINT
**Robert F. Condrac, Penn Hills Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware**
**Filed Nov. 30, 1966, Ser. No. 598,056**
**Int. Cl. F16l** *19/00, 21/02*
**U.S. Cl. 285—349** **5 Claims**



A joint which provides a high-pressure seal for a pipe connected to a pressure source. Avoids tapered threads or welds. Seal obtained by O-ring surrounding a neck on the pipe and held in place by straight threaded nuts and fittings.

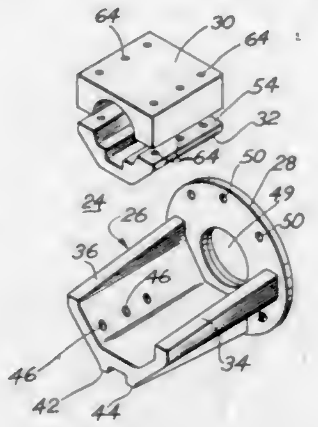
### 3,476,415
### COUPLING
**Charles O. Van Note, Jr., Rolling Hills, and Bruce J. Cordary, Los Alamitos, Calif., assignors to The Servco Company, Long Beach, Calif., a corporation of Nevada**
**Filed Oct. 6, 1967, Ser. No. 673,386**
**Int. Cl. F16l** *21/00;* **F16d** *1/06;* **F16c** *3/10;* **B60b** *27/06*
**U.S. Cl. 285—396** **13 Claims**

A coupling for joining elongated members, as, for example, those forming drill strings for boring holes in the earth. One of the members of the coupling includes an undercut and another member includes a protrusion having a configuration complementary to the configuration of the undercut. Because the protrusion and the undercut are defined by cylindrical surfaces which are eccentric relative to peripheries of the members in which they are provided, engagement of the protrusion and the undercut leave a space. Insertion of wedging means into the space prevents relative movement between the members and completes the coupling of the members.



## 3,476,416
## AXLE MOUNT

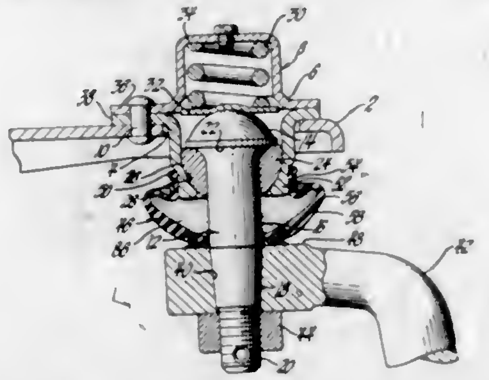
**James Gilmour, Jr., Rte. 2, Aurora, Ill. 60504**
**Filed Jan. 20, 1967, Ser. No. 610,606**
**Int. Cl. B60b** *27/06;* **F16d** *1/06*
**U.S. Cl. 287—52.04** **7 Claims**



A mount for adding an additional wheel to a tractor comprising a U-shaped hub with an integral wheel supporting end plate and a pair of interchangeable insert blocks clamped to the tractor's axle and bolted to the hub. The interchangeable insert blocks enable the hub to be mounted on axles of different diameters.

## 3,476,417
## LUBRICANT PURGING SEALED BALL JOINT ASSEMBLY

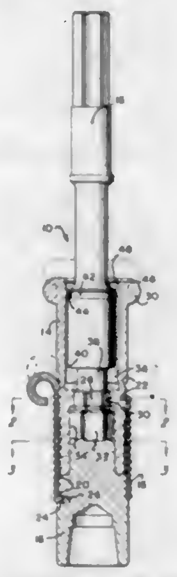
**Gerald C. Born, Reese, and Guy W. Wesson, Frankenmuth, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Oct. 25, 1966, Ser. No. 589,355**
**Int. Cl. F16c** *11/06;* **F16b** *7/00;* **B25g** *3/38*
**U.S. Cl. 287—87** **4 Claims**



A ball joint assembly having a boot seal including a circumferentially segmented bearing ring embracing the stud portion of the joint, with one portion of the boot forming a radially displaceable sphincter seal axially adjacent the bearing ring and another portion of the boot forming a radially displaceable lip seal engageable with a surface normal to the axis of the stud.

## 3,476,418
## COUPLING ARRANGEMENT

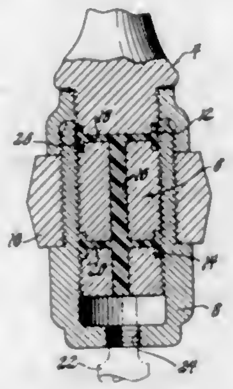
**Donald G. Noerr, Jr., South Waverly, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey**
**Continuation-in-part of application Ser. No. 668,090, Sept. 15, 1967. This application Dec. 20, 1967, Ser. No. 695,823**
**Int. Cl. F16b** *7/00;* **F16d** *1/00*
**U.S. Cl. 287—108** **14 Claims**



A rotary and impacting drive member, and a driven member, drive-coupled through a housing having keying surfaces mating therewith. The housing is slidably displaceable, manually, to interrupt the rotary drive.

## 3,476,419
## IDLER ARM ASSEMBLY

**Donald Peter Marquis, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Aug. 23, 1967, Ser. No. 662,807**
**Int. Cl. F16b** *7/00;* **F16d** *1/00*
**U.S. Cl. 287—117** **1 Claim**

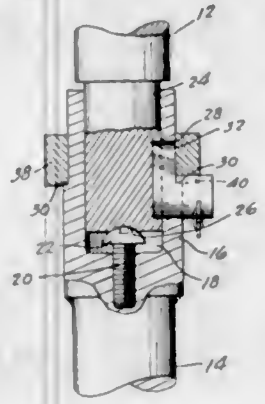


An idler arm assembly having one of a pair of threadably cooperating members provided with axially spaced annular recessed portions in which a synthetic resin is injected to effect optimum precision engagement with the threads of the other member.

## 3,476,420
## RIGID SHAFT COUPLER

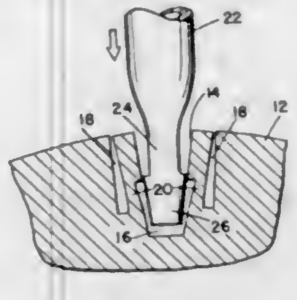
**Leroy J. Conn, 11 S. Marion St., Warren, Pa. 16365**
**Filed Jan. 3, 1969, Ser. No. 788,720**
**Int. Cl. F16b** *7/00;* **F16d** *1/00*
**U.S. Cl. 287—119** **3 Claims**

A rigid shaft coupler for coupling a rod to a sleeve comprising an axially disposed adjusting screw in a first shaft with said sleeve on the end thereof, with the head of the screw seated in a spherical socket in the center of the rod to be coupled to the shaft, permitting the rod to be rotated, with key means disposed in the sleeve and adapted to be received in a key way in the rod.



## 3,476,421
## STRUCTURAL JOINT ASSEMBLY

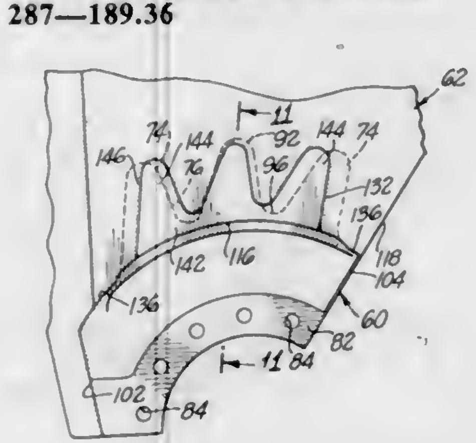
**Noel M. Torres, 2826 Larkin Place, San Diego, Calif. 92123**
**Filed July 18, 1968, Ser. No. 745,824**
**Int. Cl. F16b** *1/00, 9/00, 17/00*
**U.S. Cl. 287—189.36** **9 Claims**



A joint for frame type structures utilizes a joint member having multiple keyway channels disposed at various angles around the body of the member, the frame being composed of key ended struts which snap into the channels of the joint member. Alongside each keyway channel are narrow slots which allow the side wall portions of the channels to spread and admit the struts, the slots also serving to hold locking elements which lock the struts securely in place. The structure is easily dismantled by simple hand held tools.

## 3,476,422
## HONEYCOMB CORE PANEL MOUNTING AND CONNECTING SYSTEM

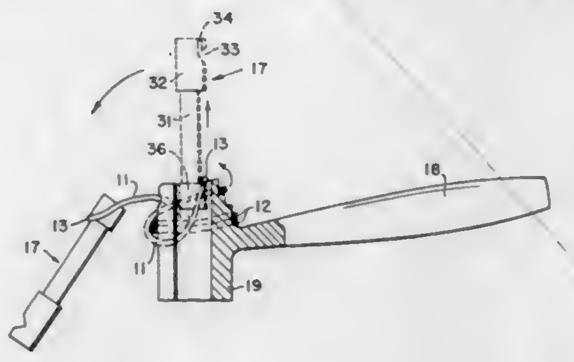
**James R. Campbell, 1504 Carmelita St., Laguna Beach, Calif. 92651**
**Filed Nov. 7, 1966, Ser. No. 592,620**
**Int. Cl. F16b** *1/00, 5/00*
**U.S. Cl. 287—189.36** **5 Claims**



This invention relates to a method of attaching a bracket to a honeycomb core reinforced article and to the attachment system incorporating said article. The practice of the method and the attachment system involve the utilization of a bracket which is positively affixed to the subjacent surfaces of the panel and which is forced against the panel to deform the portion of the panel engaged by the bracket into conformity with the shape of the bracket.

## 3,476,423
## TOOL FOR KNOTTING BANDS

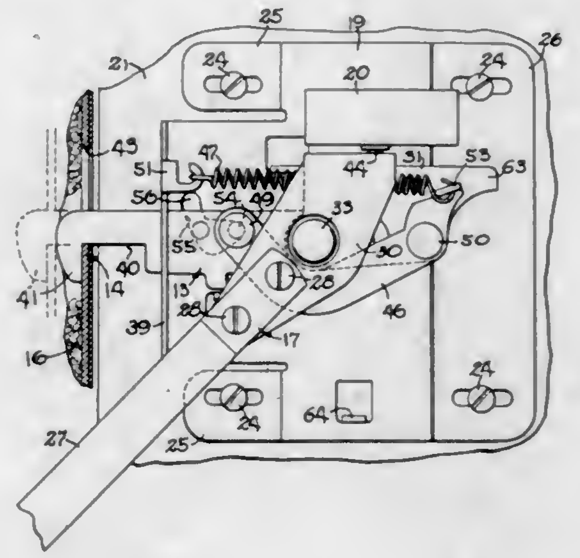
**Lucius H. Kentfield, San Mateo, Calif., assignor to Kendrey Manufacturing Co., Palo Alto, Calif.**
**Filed Jan. 17, 1968, Ser. No. 698,501**
**Int. Cl. D03j** *3/00*
**U.S. Cl. 289—17** **6 Claims**



An implement for knotting several bands together consists of a holder and a pick. The holder is a hollow cylinder open along one side having a handle. The cylinder is shaped at the top to hold one band separated from the other bands, all the bands being stretched around the cylinder. The pick engages one portion or area of the first band, brings it down the outside of the holder, then inside the cylinder and up to the top. Thereupon the portion of the first band which had been retained on the holder is released and the first-mentioned portion drawn tight. Thus, the first band is knotted around all the others.

## 3,476,424
## APPLIANCE LATCH

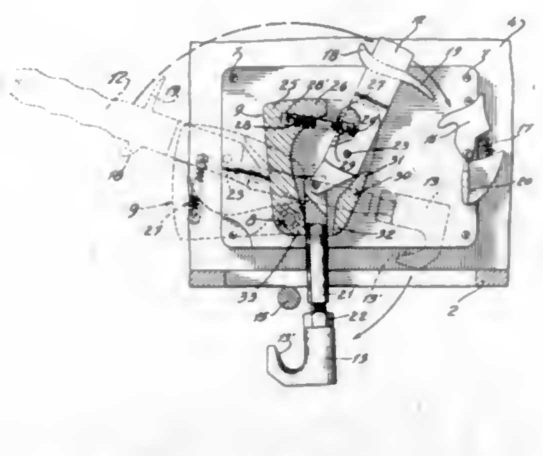
**Karl H. Erickson, Rockford, Ill., assignor to Amerock Corporation, Rockford, Ill., a corporation of Connecticut**
**Filed Mar. 10, 1967, Ser. No. 622,142**
**Int. Cl. E05c** *5/00, 19/12*
**U.S. Cl. 292—66** **8 Claims**



A latch for a self-cleaning oven and comprising a lever operable to move a bolt first along an angular path into engagement with a strike on the oven door and then inwardly along a straight path to a latched position to draw the door in tightly against the oven cabinet. The motion of the lever is transmitted to the bolt by a pivoted driving link which, with the aid of a spring, prevents the bolt from moving inwardly to its latched position unless the door is closed and the bolt actually engages the strike when the bolt is moved along the angular path.

### 3,476,425
### LEVER TYPE LOCK

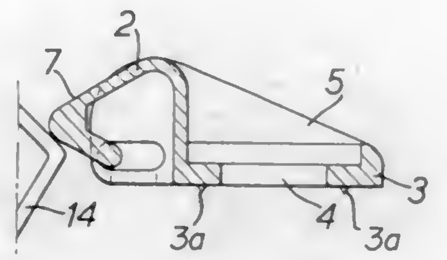
**Fernand Chartrand, Laval, Quebec, Canada, assignor to Ridge Nassau Corporation, Laval (Chomedey), Quebec, Canada**
**Filed Feb. 6, 1968, Ser. No. 703,471**
**Int. Cl. E05c** *19/14*
**U.S. Cl. 292—113** **16 Claims**



A lever lock employing the over-center cam principle and formed as one integral unit which, with or without a lock-support plate, is adapted to be attached to or detached from an up-and downwardly acting door or closure via a pivot projecting from the support plate or alternatively from the door.

### 3,476,426
### SPRING LOCK

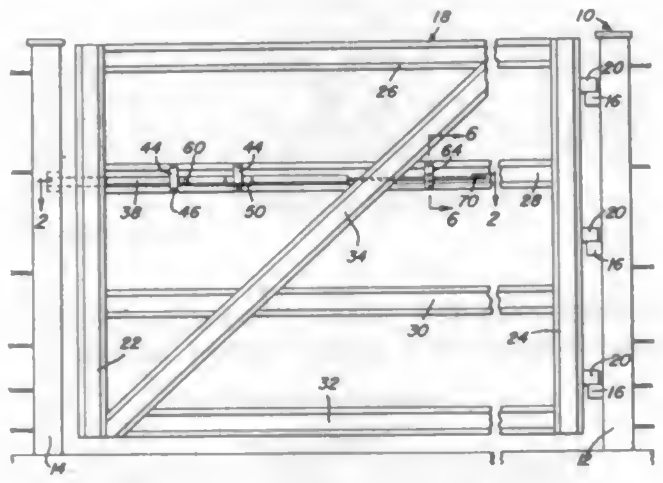
**Gunnar Erik Werner Lewin, Hastangsvagen 12, Viggbyholm, Sweden**
**Filed Mar. 14, 1966, Ser. No. 534,010**
**Claims priority, application Sweden, Mar. 16, 1965, 3,388/65**
**Int. Cl. E05c** *19/02, 19/06*
**U.S. Cl. 292—76** **1 Claim**



A spring lock for use in latching a cupboard door or the like in a closed position comprises a mounting plate fastened to the door, the mounting plate including a base and two laterally spaced upstanding supports between which a spring bolt operates. The spring bolt one end of which is integral with the base includes an upwardly and forwardly extending portion which merges into an acutely curved portion that cooperates with, and is retained by, a lock plate secured to the door frame. The spring bolt terminates in a backwardly extending end portion provided with laterally extending pins which are slidingly engaged in corresponding grooves provided on the inner faces of the upstanding supports.

### 3,476,427
### SPRING LOADED GATE FASTENER

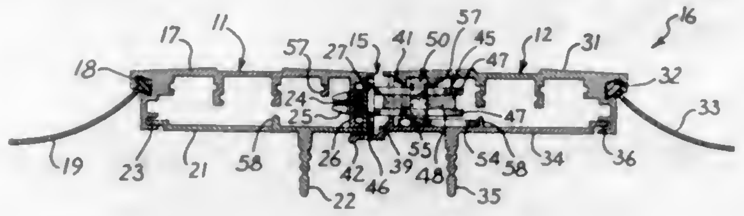
**Ronald L. Kittelson, Thunder Hawk, S. Dak. 57655**
**Filed Apr. 21, 1967, Ser. No. 632,719**
**Int. Cl. E05c** *1/10*
**U.S. Cl. 292—175** **9 Claims**



A spring loaded fastener for a gate construction including an elongated latching pin to be supported for longitudinal reciprocation generally radially of the axis of rotation of an associated gate and for shifting between an extended locking position projecting beyond the free swinging edge of the gate and a retracted inoperative position retracted inwardly from the free swinging edge of the gate, the latching pin being supported from a tubular guide in which the pin is at least partially telescoped and which encloses an expansion spring operatively connected between the pin and the tubular guide for yieldingly urging the latching pin toward an extended operative position.

### 3,476,428
### MAGNETIC LATCH MOUNTING

**Patrick J. Walker, Chicago, Ill., assignor to Kinkead Industries Incorporated**
**Filed Jan. 8, 1968, Ser. No. 696,403**
**Int. Cl. E05c** *19/16*
**U.S. Cl. 292—251.5** **2 Claims**

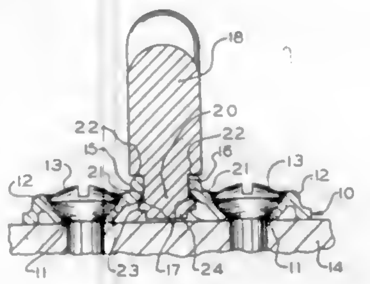


A magnetic latch for holding together door stanchions in which the magnet is formed of a pair of square pole pieces sandwiching a magnetized core, the assembly having alined central holes, and the magnet is held in place by a one-piece plastic retainer having walls sandwiching the pole pieces and a mounting pin, passing through the alined holes, on which the magnet is pivotally and tiltably held.

### 3,476,429
### HASP STAPLE AND PLATE ASSEMBLY

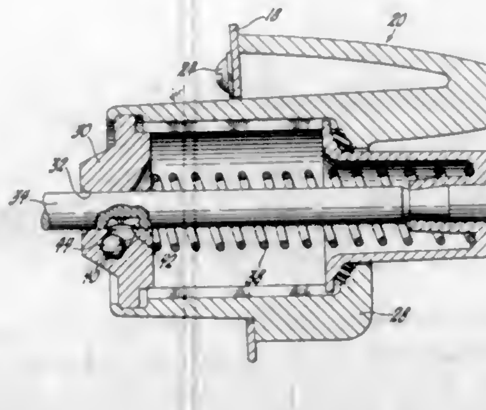
**Daniel J. Foote, Wauwatosa, Wis., assignor to Master Lock Company, Milwaukee, Wis., a corporation of Wisconsin**
**Filed Mar. 21, 1968, Ser. No. 714,894**
**Int. Cl. E05c** *19/08*
**U.S. Cl. 292—281** **6 Claims**

The hasp plate, along its longitudinal median and between the pairs of screw holes therein, is formed with an inverted trough or hollow rib, in the roof of which are formed spaced-apart ovate openings to receive the reduced and shouldered extremities of the shackle eye legs. The latter, adjacent the inner surface of the trough roof, are formed with integral staked enlargements forming laterally projecting flanges which overlap the trough roof stock adjacent the margins of the openings therein with side wall portions of said flanges being downwardly outwardly flared to cooperate with and react against side wall portions of the plate trough which are outwardly downwardly curved on a slight radius. Thus, the staple eye legs are so effectively anchored to the hasp plate that their extremities cannot be withdrawn through the plate openings notwithstanding the application of extreme forces and pull against the stable eye, thereby deterring unauthorized separation of the staple eye from the hasp plate to insure effective locked retention of a padlock inserted through the staple carried by the plate.



### 3,476,430
### VEHICLE DOOR LATCH ACTUATOR

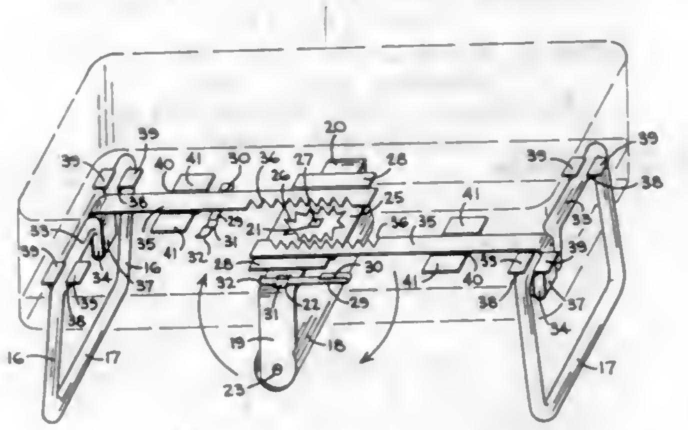
**Paul Widmer, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Mar. 11, 1968, Ser. No. 712,254**
**Int. Cl. E05b** *3/00*
**U.S. Cl. 292—336.3** **6 Claims**



A vehicle door latch actuator in which a steel ball seats in a relatively deep upwardly opening receptacle formed in the retainer plate of the stationary handle. A relatively shallow downwardly facing complementary receptacle is formed in the pushbutton shaft which is axially slidable in said retainer plate to open the door. When the vehicle is in its normal upright position, the ball is contained entirely within the upwardly opening receptable. If the vehicle rolls over, the ball rolls into the relatively shallow receptacle in the shaft and, since this receptacle has a depth less than the diameter of the ball, the ball overlaps the retainer plate and blocks axial movement of the pushbutton shaft. As a modification, the receptacles can be transposed, the relatively deep, upwardly opening receptacle being formed in the pushrod and the relatively shallow, downwardly opening receptacle being formed in the stationary handle member.

### 3,476,431
### FOLDING CARRIER FOR BUILDING MATERIALS

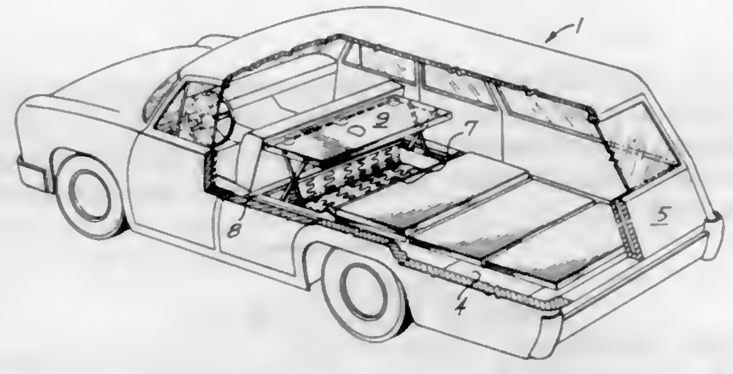
**William H. Chazelle, 1436 Virginia Drive, Ellisville, Mo. 63011**
**Filed Nov. 9, 1967, Ser. No. 681,848**
**Int. Cl. E04g** *21/16*
**U.S. Cl. 294—3.5** **3 Claims**



A portable folding carrier for use in storing therein, a fluid or plastic building material, comprising an open top receptacle of rectangular shape, having an apron disposed thereabout, a hand-hold disposed in depending rotatable relation with the central body portion of the bottom wall thereof, latching means interposing both said hand-hold and said wall for releasably securing said former with said latter, as when said former is disposed in either axial or transverse relation with said latter selectively, support means for holding said carrier in an elevated position in respect to the plane of a resting surface, in a manner whereby said hand-hold may be freely grasped by the user thereof, actuating means interposing said support means and said hand-hold for simultaneously moving the former inwardly said apron as when said latter is disposed in its said axial position thereby, said carrier will further serve as a building material hawk, free of projecting appurtenances.

### 3,476,432
### COMBINATION CUSHION STORAGE ARRANGEMENT AND FOLDING TABLE FOR VEHICLES

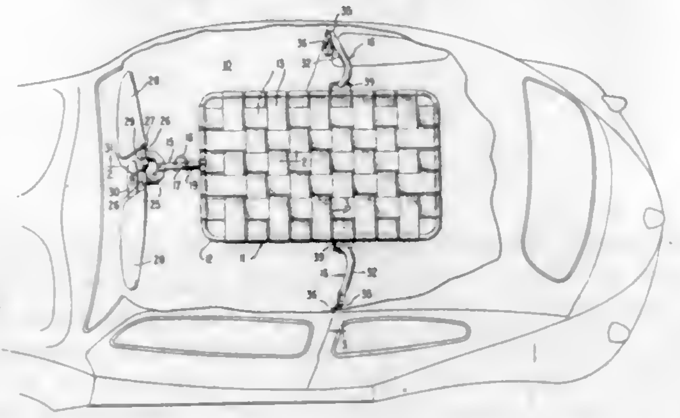
**Lindy Aliment and Randy Jarl Aliment, both of 7030 S. 129th Place, Seattle, Wash. 98178, and Manio Lido Phillips, 613 S. 16th St., Renton, Wash. 98055**
**Filed Nov. 16, 1967, Ser. No. 683,667**
**Int. Cl. B60n** *1/10*
**U.S. Cl. 296—23** **8 Claims**



The hollow folding back of a station wagon rear seat houses a folded chain-section cushion. Such cushion is extendible to cover the wagon's rear deck from one section secured in the seat back hollow. A panel is raisable from a position forming the upper surface of the folded seat back to form a table top having folding legs straddling the stored cushion sections. Such legs may be scissors legs having their opposite ends slidable in tracks and normally biased toward each other. Alternatively the legs may be centrally jointed for folding. The table top panel is locked in stored position by a toggle joint latch.

### 3,476,433
### CLOTHES AND LUGGAGE CARRIER FOR VEHICLES

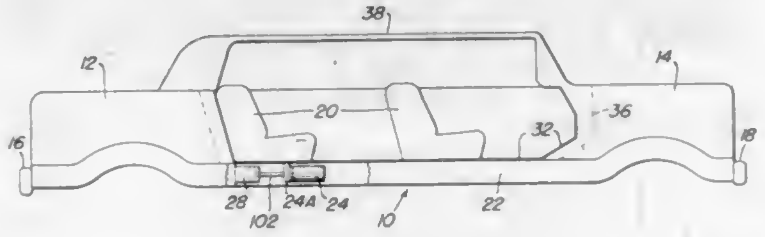
**James H. Windham, Jr., 1908 3rd Ave. N.,**
**Columbus, Miss. 39701**
**Filed June 19, 1967, Ser. No. 647,083**
**Int. Cl. B60r** *7/04*
**U.S. Cl. 296—24** **2 Claims**



A clothes and luggage carrier particularly adaptable to the well-known Volkswagen and utilizing the generous head clearance in the sedan which would be otherwise wasted. The carrier is sturdy and compact and attached readily to existing hardware in the vehicle without any alteration of the vehicle structure.

### 3,476,434
### VEHICLE WITH SHOCK ABSORBING MOUNTING

**Robert D. Coyle, 321 Croft Road,**
**North Wales, Pa. 19454**
**Filed Sept. 12, 1967, Ser. No. 667,209**
**Int. Cl. B62d** *23/00;* **B60n** *1/02*
**U.S. Cl. 296—35** **6 Claims**

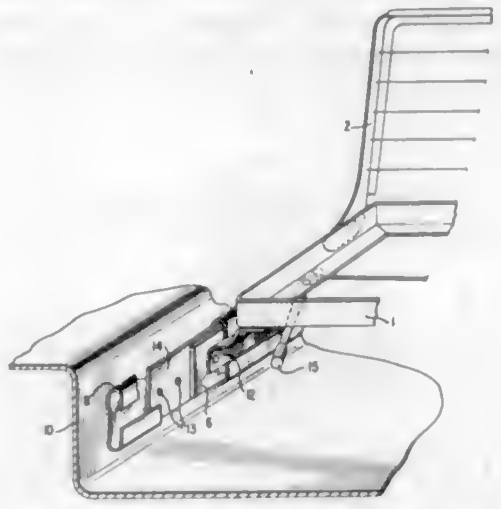


An automotive vehicle having a shock mounted passenger carrying area is provided. The shock mounted compartment or seat is free to move horizontally whereby deceleration forces on the passengers are dissipated more slowly.

### 3,476,435
### MOTOR VEHICLE SEAT

**Erwin Hitzelberger, Stuttgart-Rohr, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**
**Filed May 18, 1967, Ser. No. 639,537**
**Claims priority, application Germany, May 20, 1966, D 50,158**
**Int. Cl. B60n** *1/02*
**U.S. Cl. 296—65** **17 Claims**

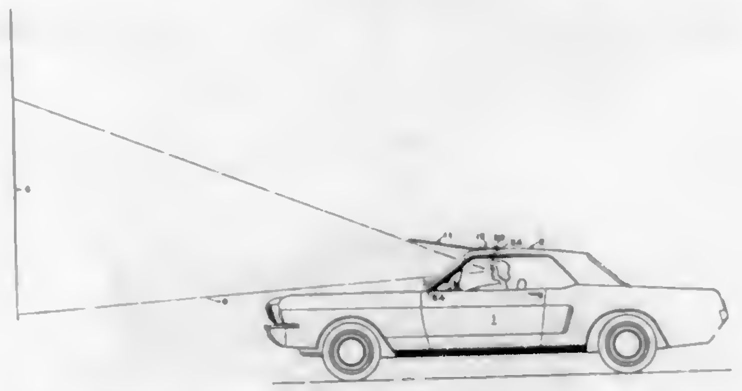
A motor vehicle seat in which generally upright guide rails are secured at the generally upright web portions of the center tunnel and/or longitudinal bearers of the frame; generally upright slide rails connected with the seat frame are slidingly received within the guide rails, the slide rails may be secured with the seat frame by intermediate pieces extending through gaps left between bent-back leg portions of the guide rails. A locking mechanism is provided



for holding the seat in any desired poisition which includes a pivotal lever and linkages connected to the lever on both sides of the pivot point; the linkages, in turn, are provided with engaging bolts adapted to be engaged in or retracted out of apertures provided in the guide rails or appropriate flat-iron bars mounted in the guide rails.

### 3,476,436
### DETACHABLE CLEAR VIEW VISOR FOR MOTOR VEHICLES

**Ronald E. Martin, 1784 40th Place SE.,**
**Salem, Oreg. 97302**
**Filed Feb. 15, 1968, Ser. No. 705,806**
**Int. Cl. B60j** *3/02*
**U.S. Cl. 296—95** **2 Claims**

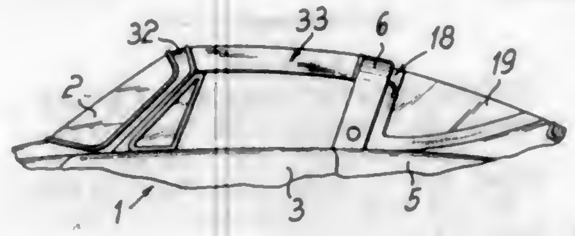


A visor for passenger vehicles adapted for quick and convenient attachment to or removal from the roof of a vehicle and of such forward and lateral dimensions as to overhang the windshield in a forwardly elevated position without interfering with the normal line of vision of a vehicle passenger. The visor includes a frame with a covering of plastic material and is secured to the vehicle by magnets.

### 3,476,437
### TOP FOR MOTOR VEHICLES, ESPECIALLY FOR PASSENGER MOTOR VEHICLES

**Gerhard Albert Richard Schroeder, Ditzingen, Werner Trenkler, Asperg, and Hans Tomala, Stuttgart, Germany, assignors to Firma Dr. Ing. h.c.F. Porsche KG, Stuttgart, Germany**
**Filed July 18, 1966, Ser. No. 565,840**
**Claims priority, application Germany, Aug. 11, 1965, P 37,433**
**Int. Cl. B60j** *7/00;* **B62d** *25/06*
**U.S. Cl. 296—137** **23 Claims**

A top structure for a passenger motor vehicle, consisting of several sections, one of which constitutes a roll bar extending transversely over the passenger space. Releasably attached to the roll bar and extending therefrom forward to the windshield is a passenger space cover preferably constructed of a pliable material with rigid reinforcement. Also attached to the roll bar and extending therefrom rearward to the super structure of the rear body of the motor vehicle is a rear cover, preferably constructed of a reinforced pliable material and incorporating therein a zipper adapting a portion of the rear cover to be lowered into the motor vehicle.



### ERRATA

For Class 297—83 see:
Patent No. 3,476,495

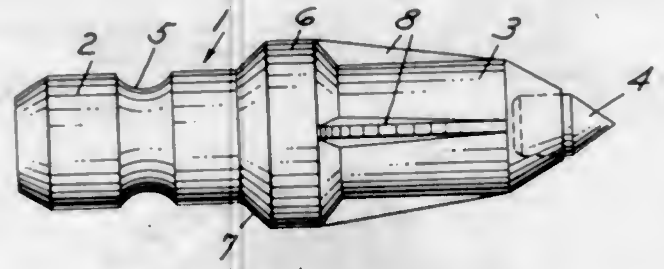
For Class 297—195 see:
Patent No. 3,476,496

For Class 297—232 see:
Patent No. 3,476,497

For Class 299—8 see:
Patent No. 3,476,498

### 3,476,438
### CUTTER BIT

**Arnold B. Bower, Jr., St. Clair Shores, Mich., assignor to General Electric Company, a corporation of New York**
**Filed Dec. 18, 1967, Ser. No. 691,271**
**Int. Cl. E21c** *13/00*
**U.S. Cl. 299—86** **2 Claims**

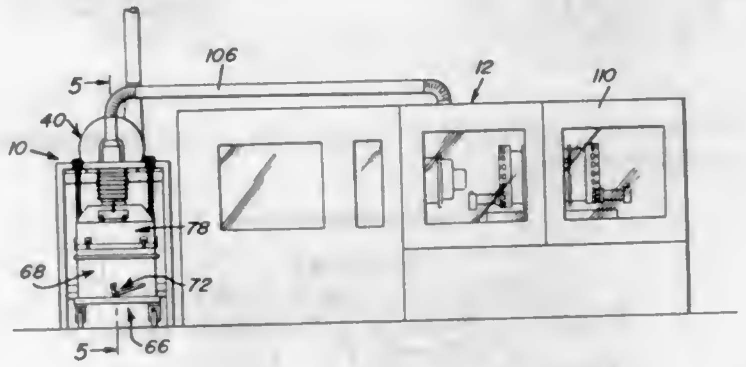


A cutter bit for a mining machine having a head portion at one axial end thereof and a shank portion at the opposite axial end thereof, the head portion having a hard carbide cutting tip mounted at its central axial extremity, the shank portion being cylindrical and adapted for free rotatable attachment to a mining machine cutter block. The head portion contains a plurality of fins projecting radially from the peripheral surface thereof, the fins adapted to form non-cutting frictional contact with the surface to enhance the free rotation of the bit in the block.

### 3,476,439
### CHIP COLLECTOR AND EXHAUSTER

**Virgil A. Homan, St. Henry, Ohio**
**(Box 381, Homan Road, Maria Stein, Ohio 45860)**
**Filed Jan. 12, 1968, Ser. No. 697,346**
**Int. Cl. B65g** *53/04, 53/40*
**U.S. Cl. 302—17** **10 Claims**

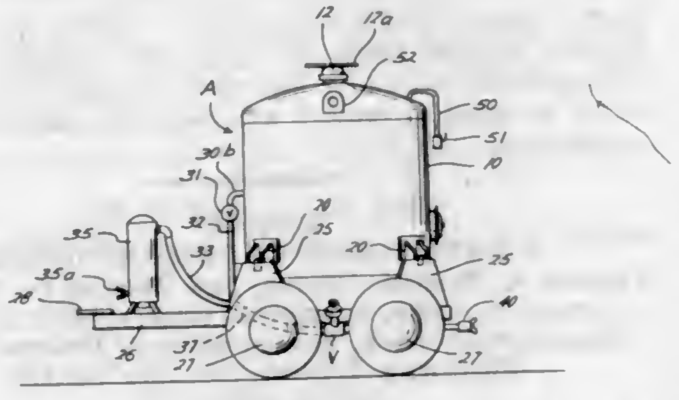
A stand from which a downwardly opening hood is supported for vertical adjustment, the hood having first and second vacuum lines opening into the hood at their inlet and outlet ends, respectively, and an upwardly opening and horizontally shiftable receptacle disposed beneath the hood with the hood being lowerable to a position closing the upper end of the receptacle in reasonably good airtight sealed engagement therewith and the receptacle



being horizontally shiftable outwardly from beneath the hood when the latter is in its raised position. The outlet end of the first vacuum line is adapted for connection with a suitable source of vacuum and the inlet end of the second vacuum line is adapted to be positioned adjacent the cutting member of a cutting tool adapted to perform cutting operations on a workpiece.

### 3,476,440
### PORTABLE ABRASIVE CONTAINER AND DISPENSER UNIT

**Robert H. E. Schmidt and Robert E. Thompson, Houston, Tex., assignors to Bob Schmidt, Inc., a corporation of Texas**
**Filed Feb. 1, 1968, Ser. No. 702,423**
**Int. Cl. B65g** *53/06*
**U.S. Cl. 302—53** **8 Claims**

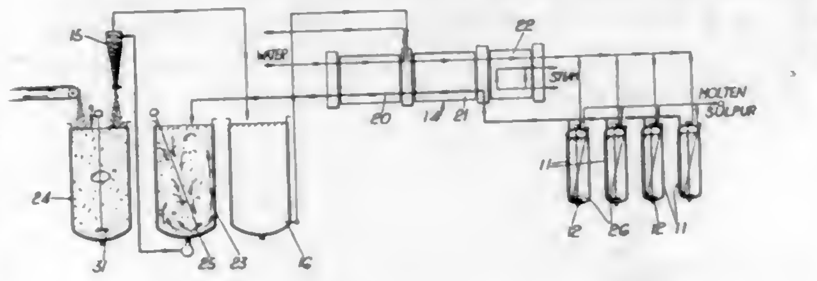


A portable abrasive container and dispenser unit, wherein the unit is adapted to be filled with a large quantity of abrasive at the point of manufacture and/or bulk supply and then transported to the point of use for use as a pressurized dispenser, thereby eliminating the handling of bags of abrasive at any stage.

### 3,476,441
### TRANSPORT OF SULPHUR

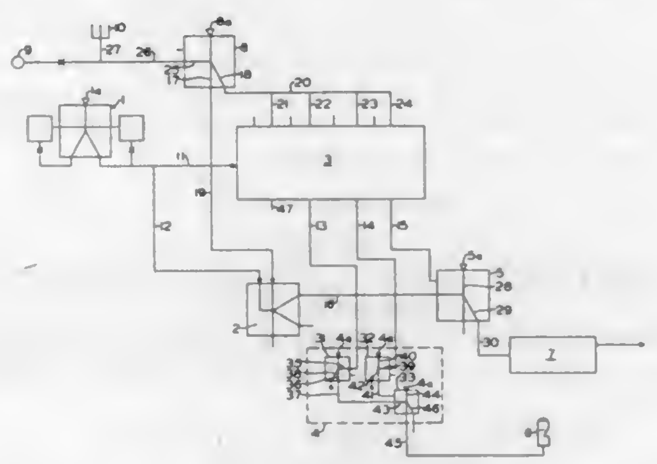
**Herbert James Elliott, Bradford-on-Avon, England, assignor to Elliott Associated Developments, Limited, London, England, a British company**
**Filed Aug. 9, 1967, Ser. No. 659,386**
**Claims priority, application Great Britain, Aug. 11, 1966, 36,083/66**
**Int. Cl. B65g** *53/32*
**U.S. Cl. 302—66** **8 Claims**

Bulk sulphur is efficiently transported by converting molten sulphur to solid sulphur pellets by dispersion of the molten sulphur into a liquid medium, separating the solid sulphur pellets from the dispersion medium and then



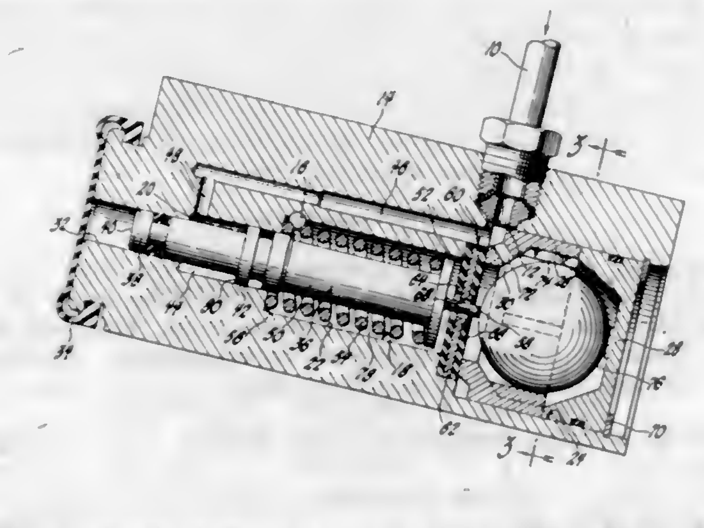
planting the separated particles into a carrier liquid for transport therein.

### 3,476,442
### SAFETY CONTROL SYSTEM
**Ronald A. Sarbach, 158 Gilmore Drive,**
**Pittsburgh, Pa. 15235**
**Filed Jan. 10, 1968, Ser. No. 696,780**
**Int. Cl. B60t** *7/14, 13/66*
**U.S. Cl. 303—19** **14 Claims**



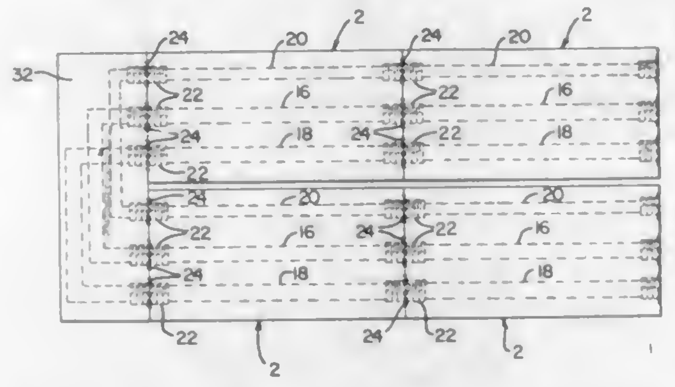
A safety control system for a railway car or train, embodying fluidic circuitry including multiple stage and single stage binary counters cooperatively related to provide a periodic warning signal requiring some momentary physical acknowledgment by the engineman, affecting the circuitry in order to prevent a subsequent automatic brake application.

### 3,476,443
### INERTIA SENSING PROPORTIONER
**Thomas A. Bratten, Dayton, and Thomas D. Naismith, Centerville, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Aug. 2, 1968, Ser. No. 749,636**
**Int. Cl. B60t** *8/18*
**U.S. Cl. 303—24** **3 Claims**



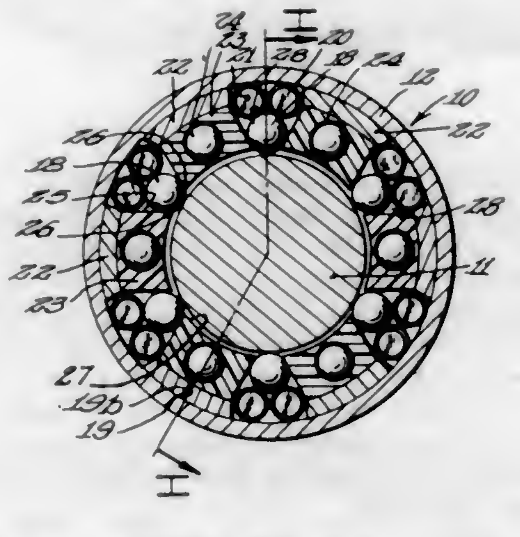
A brake line pressure proportioning device which, after a preselected vehicle deceleration is reached, provides reduced line pressure to one of two sets of brakes, such reduction being according to a preselected reduction ratio, the fluid output of such device being limited only by the fluid input, and the ratio of output pressure to input pressure being selected to approximate the varying front-to-rear brake pressure ratio desired for optimum brake performance.

### 3,476,444
### HYDROSTATIC BEARING UNIT
**James D. Dunfee, 6328 Crafton St.,**
**Philadelphia, Pa. 19140**
**Filed Apr. 4, 1968, Ser. No. 718,857**
**Int. Cl. F16c** *29/00, 29/02, 33/00*
**U.S. Cl. 308—3.5** **4 Claims**



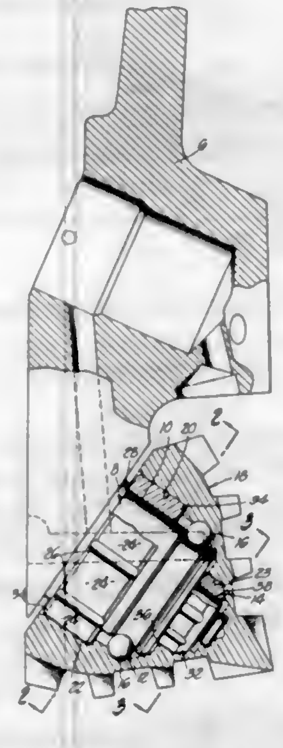
A modular hydrostatic bearing unit is disclosed which is adapted for connection to an externally pressurized fluid supply and a fluid return line. The bearing has internal fluid passages for connection with the supply and return lines together with an air fluid seal to prevent the escape of the fluid. The module units are so constructed that they may be used as a single bearing unit and may also be assembled into a plurality of mated bearing units.

### 3,476,445
### LINEAR BALL BUSHING
**Burnette J. Carlson and John H. Johnson, Jamestown, N.Y., assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Aug. 3, 1967, Ser. No. 658,118**
**Int. Cl. F16c** *17/00, 21/00, 19/00*
**U.S. Cl. 308—6** **11 Claims**



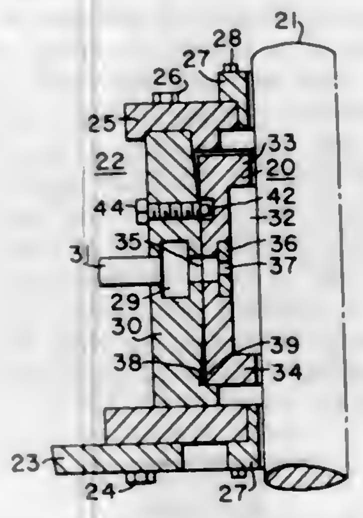
A linear motion bearing for axial movement along a shaft placed through the bearing which has endless ball races between the bearing and the shaft. The balls in a portion of each of the races are pressed into loaded bearing relationship with the surface of the shaft by removable raceway surface members which may comprise rods, contoured strips, tubes or the like which can be removed from the bearing housing for inspection, repair or replacement.

### 3,476,446
### ROCK BIT AND BEARING
**William J. Neilson, Whittier, Calif., assignor to Smith Industries International, Inc., Compton, Calif., a corporation of California**
**Filed June 8, 1967, Ser. No. 644,525**
**Int. Cl. F16c** *19/14;* **E21b** *9/10, 9/35*
**U.S. Cl. 308—8.2** **1 Claim**



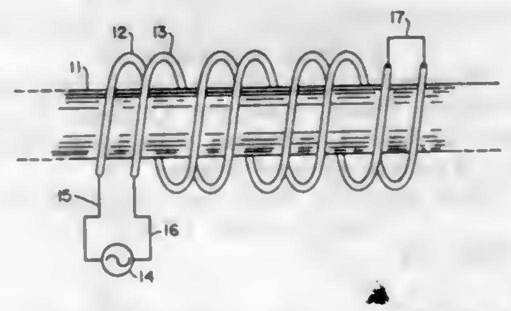
A floating antifriction bearing of one piece with inner and outer concentric bearing surfaces, each divided into sections by surface interruptions with the total area of the outer bearing surfaces less than that of the inner bearing surfaces in such ratio that their frictional drag is substantially the same, and random indexing of the bearing is provided.

### 3,476,447
### SELF-ALIGNING HYDROSTATIC BEARING
**John Boyd, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Mar. 28, 1968, Ser. No. 716,804**
**Int. Cl. F16c** *29/02, 7/04, 23/00*
**U.S. Cl. 308—9** **10 Claims**



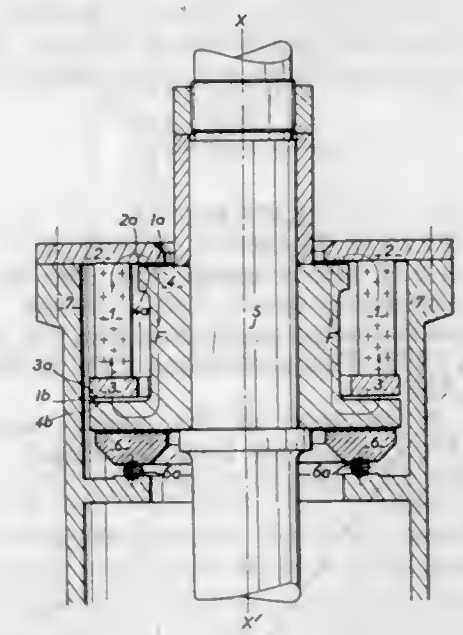
A bearing sleeve which surrounds a shaft has a cylindrical outer surface and is mounted in a relatively stationary housing having an internal bore curved in a manner to permit the bearing sleeve to tilt or roll axially to accept angular shaft misalignment, thereby making the bearing self-aligning. A lubricating fluid is supplied from an external source of pressure to pockets in the inner surface of the bearing sleeve. The fluid enters the pockets through restricted passages in the bearing sleeve or housing which communicate with a recess or manifold in the housing connected to a supply line.

### 3,476,448
### MAGNETIC BEARING
**Tenny D. Lode, Madison, Wis., assignor to Rosemount Engineering Company, Minneapolis, Minn., a corporation of Minnesota**
**Filed Aug. 30, 1965, Ser. No. 483,726**
**Int. Cl. F16c** *39/06*
**U.S. Cl. 308—10** **9 Claims**



A non-contacting support for a mechanical element such as a shaft. Support is provided from zones of magnetic field components along a length of support surface, where adjacent zones are of opposite magnetic polarity, and resulting repulsion forces between the supporting surface and a supported surface. Spacing between zones of opposite magnetic polarity is of same order as spacing from the supported surface to provide relatively high change of force with distance. Alternating electromagnetic fields are used to induce surface currents in a supported member of conducting material in one embodiment and a superconducting supported element is used with a permanently magnetized ferromagnetic support structure in a second embodiment.

### 3,476,449
### AXIAL THRUST DEVICES FOR ROTATING MACHINES
**Jacques Chaboseau, Brevannes, and Christian Mech, Paris, France, Assignors to Société Rateau, Paris, France, a company of France**
**Filed June 14, 1967, Ser. No. 646,069**
**Claims priority, application France, June 27, 1966, 67,037**
**Int. Cl. F16c** *35/00, 39/00*
**U.S. Cl. 308—10** **6 Claims**



An axial thrust device for rotating machines having an axially shiftable rotor mounted with some freedom of axial movement is described. The axial thrust device comprises, in combination, magnetic means adapted to exert an axially directed magnetic force on the rotor variable with the axial position thereof to roughly balance the axial forces, and counterbalancing means comprising a fluid-film thrust bearing to exert a lift force on the rotor when the rotor is operative to engender a balancing force equal to the resultant axial forces and the magnetic force to ensure a stable axial positioning of the rotor. The device has particular application in leak-proof vertical axis compressors or blowers.

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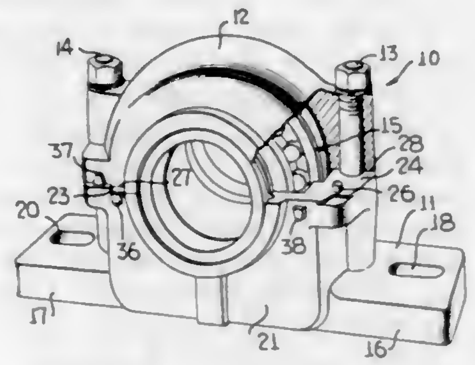
### 3,476,450
### SEPARATING MEANS FOR PILLOW BLOCK BEARINGS

**Arthur Savage Grange, South Bend, Ind., and John McDougall Paton, Bedford, Quebec, Canada, assignors to The Torrington Company, Torrington, Conn., a corporation of Maine**
**Filed Apr. 18, 1967, Ser. No. 631,656**
**Int. Cl. F16c** *17/02*
**U.S. Cl. 308—74** **6 Claims**



This disclosure relates to pillow block bearings, of the type generally having a base and a cap, secured together with butting surfaces on each side of the base and caps in engagement, with bolts generally providing the securing means, and with dowel pins, associated with the base and cap, extending across the butting surfaces of each, for precise alignment of the base and cap, relative to each other. Separating means are provided, either of slot or gap construction, or of spaced lug construction, for inserting a prying tool between opposing ones of the slots or lugs, and thereby separating the caps from the base. The lugs or slots are cast or molded integrally with the base and/or cap, and are spaced as desired, in order to facilitate the insertion of a prying tool therebetween.

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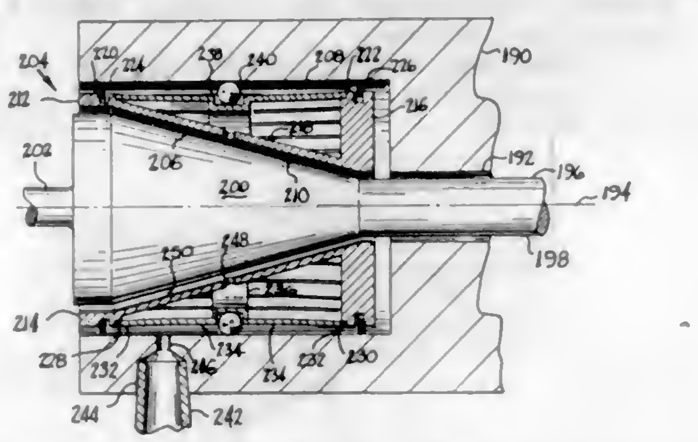
### 3,476,451
### FLUID BEARING SYSTEM

**Everett H. Schwartzman, 457 34th St., Manhatttan Beach, Calif. 90266**
**Continuation-in-part of application Ser. No. 284,791, May 29, 1963. This application Feb. 7, 1966, Ser. No. 525,610**
**The portion of the term of the patent subsequent to May 3, 1983, has been disclaimed**
**Int. Cl. F16c** *17/16, 29/02, 1/24*
**U.S. Cl. 308—122** **11 Claims**

Various forms of a gas bearing structure are disclosed for supporting a shaft in relation to an external frame, to accommodate rotary motion therebetween. The shaft is affixed to a journal (incorporating opposed conical sections) which is matingly received in a bearing member to define a gas space therebetween. A support structure in turn receives the bearing member, again defining a gas space therebetween. Channels are provided to accommodate the flow of gas into the gas spaces and frictional engagement means is provided to dissipate energy from the structure thereby providing stable operation.



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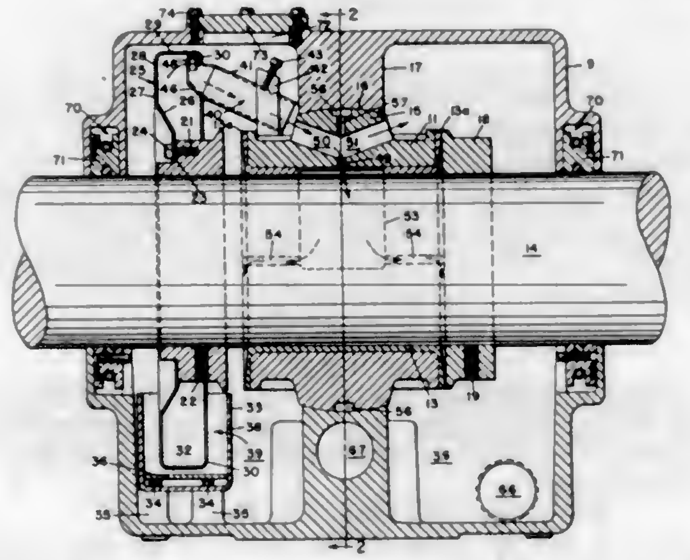
### 3,476,452
### SLEEVE BEARINGS

**Arthur C. Hagg, Pittsburgh, Pa., and Joseph H. Hoffman, Norwood, Mass., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Jan. 15, 1968, Ser. No. 697,810**
**Int. Cl. F16n** *7/20*
**U.S. Cl. 308—127** **14 Claims**



A bearing has thrust collars attached to a shaft adjacent to the ends of a sleeve extending around a shaft with a babbitt layer between the shaft and the sleeve. One of the collars has a drum attached thereto, the drum having an inturned edge forming a trough, the bottom of which rotates within a chamber separated except for an orifice, from the oil sump of the bearing. A scoop above the top of the adjacent end of the sleeve extends into the trough and conveys oil therefrom into passages connecting with an annular distribution chamber extending half-way around the top of the shaft. The distribution chamber is connected by slots in the babbitt layer to the ends of the sleeve.

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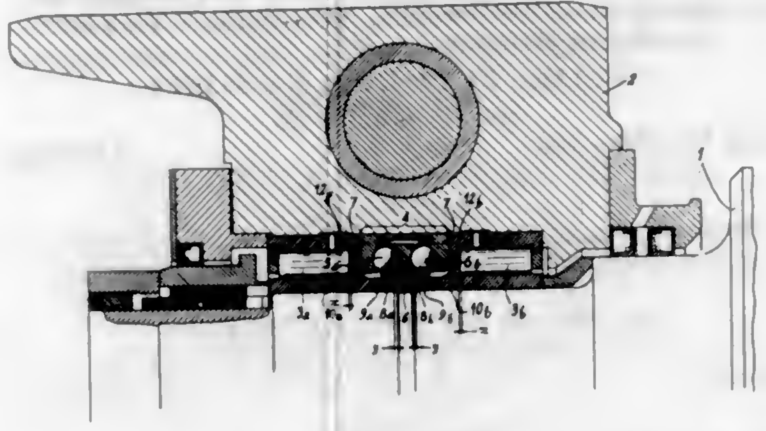
### 3,476,453
### PLUMMER-BLOCKS FOR THE CYLINDERS OF ROLLING MILLS

**René Louis Kastner, Paris, France, assignor to Societe d'Exploitation des Roulements Roultex, Denis, France**
**Filed Aug. 9, 1967, Ser. No. 659,501**
**Claims priority, application France, Dec. 2, 1966, 85,953**
**Int. Cl. F16c** *19/04, 19/10, 19/14*
**U.S. Cl. 308—174** **5 Claims**

A bearing for plummer-blocks of rolling-mill cylinders comprises two parallel rows of rollers supported by two

rows of internal rings and a central double-acting thrust-bearing interposed between said rollers. The thrust-bearing has a central ring which is provided with grooves in which are engaged the corresponding extremities of said internal rings, and the internal rings abut the central ring and the rollers.



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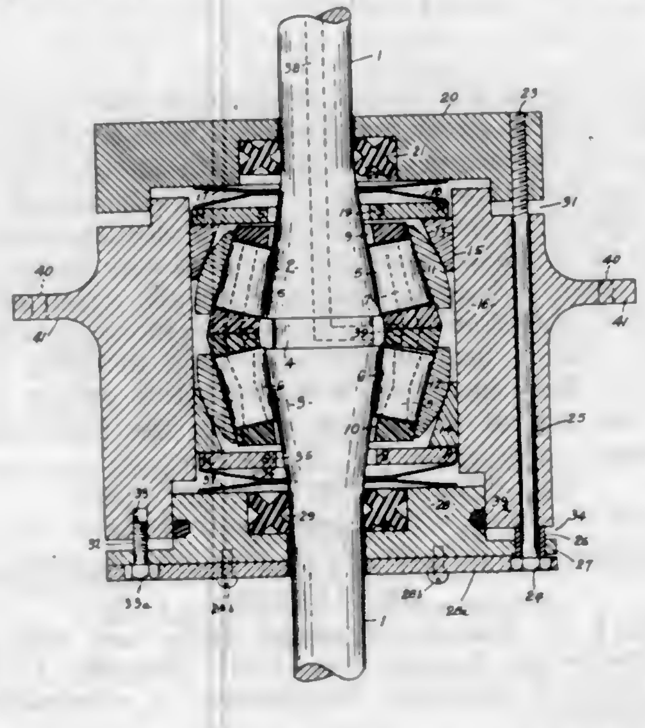
### 3,476,454
### SELF-ADJUSTING BEARING

**Roscoe I. Markey, Charlottesville, Va., assignor to Teledyne, Inc., Hawthorne, Calif., a corporation of Delaware**
**Filed Sept. 6, 1967, Ser. No. 665,764**
**Int. Cl. F16c** *23/08, 25/08*
**U.S. Cl. 308—207** **2 Claims**



The invention is designed for use with high speed shafts in hot places as in engines or in turbine powered helicopter rotor transmissions. Means are provided to cause all rollers or similar elements of a bearing to share the load equally. Means are also provided to distribute heat efficiently and to lubricate the bearing more effectively than in prior bearings. The basic design is arranged to carry the loads under all environmental conditions to keep the stresses at minimum value.

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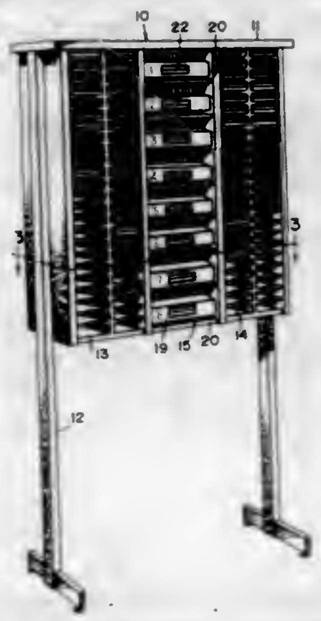
### 3,476,455
### TAPE RECORDER CABINET

**Chester J. Barecki and William S. Lindberg, Grand Rapids, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of Delaware**
**Filed Apr. 29, 1968, Ser. No. 724,792**
**Int. Cl. A47b** *77/08, 81/06;* **G11b** *1/00*
**U.S. Cl. 312—223** **2 Claims**

A cabinet for tape recording or playing instruments provides vertically-aligned shelves flanked with side walls to provide chambers for the instruments which are releasably anchored upon the shelves, and horizontal shelves are provided in the cabinet laterally of the chambers and horizontally aligned with the chambers, the case being open at the front and closed at the rear by a board providing ventilating openings communicating with the chambers.



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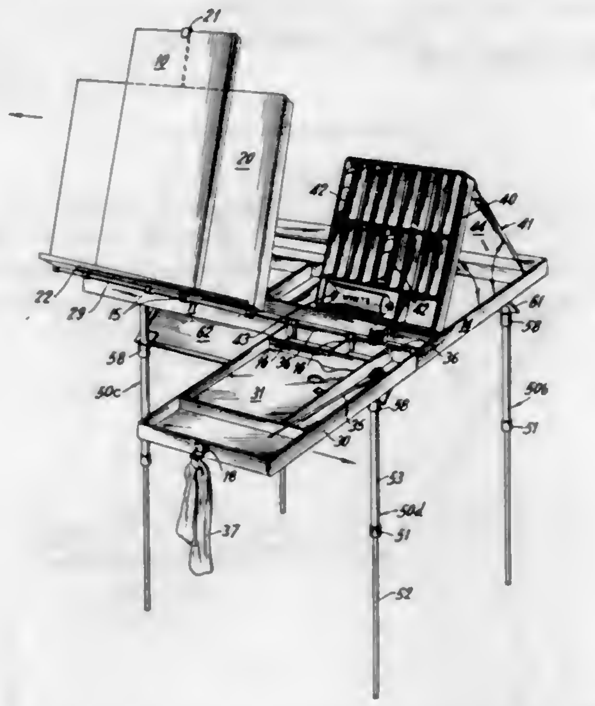
### 3,476,456
### ARTIST'S EASEL AND CARRYING CASE

**Daniel M. Canavan, 2296 Andrews Ave., Bronx, N.Y. 10468**
**Filed Feb. 16, 1968, Ser. No. 706,082**
**Int. Cl. A47b** *97/08*
**U.S. Cl. 312—231** **10 Claims**



A carrying case resembling slim luggage is adapted to contain artist's supplies and materials. A portion of the case lid becomes an adjustable easel and another portion swings to a horizontal position to become a work and tool tray. Adjustable legs issue from the bottom of the case and are braced by portions of the case bottom which conceal the legs when folded. Provision is made for transporting art worksurfaces within the case. A compartmented tray for colors erects beside the adjustable easel.

### 3,476,457

## OPTICAL INSTRUMENT WITH ALIGNED MASK AND NONPHASING COATED SCREEN

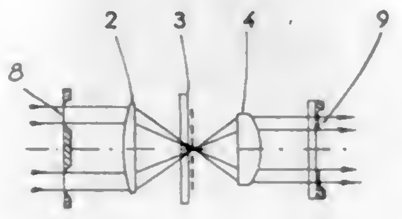
**Georges Nomarski, Bourg la Reine, France, assignor to Etablissement Public Centre National de la Recherche Scientifique, Paris, France, a corporation of France**

**Filed Mar. 27, 1967, Ser. No. 626,078**

**Claims priority, application France, Mar. 28, 1966, 55,153**

**Int. Cl. G02b** *21/12*

**U.S. Cl. 350—17 6 Claims**



The invention relates to an optical apparatus with a condenser and an objective, operating with at least partially coherent illumination; the objective exit pupil is provided with at least one annular screen or coating which is light absorbing and nonphase-changing, and the condenser entrance pupil provided with a plurality of annular apertures whose images thus formed exactly cover the absorbent rings placed at the exit pupil.

### 3,476,458

## STEREOPICTURE REPRODUCTION

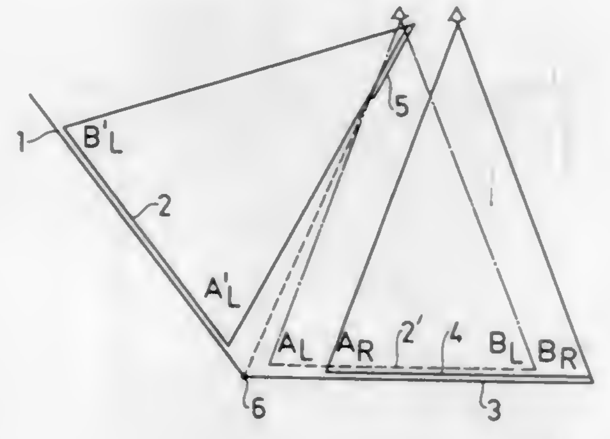
**Lars Olof Richard Landgren, Skyttevagen 18F, Saltsjobaden, Sweden**

**Filed Dec. 11, 1967, Ser. No. 689,511**

**Claims priority, application Sweden, Dec. 22, 1966, 17,598/66**

**Int. Cl. G02b** *27/24*

**U.S. Cl. 350—138 3 Claims**



A stereopicture reproduction in the form of a book or the like includes two pages facing one another and having a fold line therebetween. A non-reversed stereopicture is disposed on one of these pages and a reversed stereopicture is disposed on the other of these pages, the two pictures being made on the same scale. The distance between the image on the non-reversed picture of an infinitely distant point and said fold line exceeds the distance between the image of the same point on the reversed picture and said fold line by a distance corresponding to the normal interpupillary distance of an adult person, or within the range of about 30 to 70 mm.

### 3,476,459

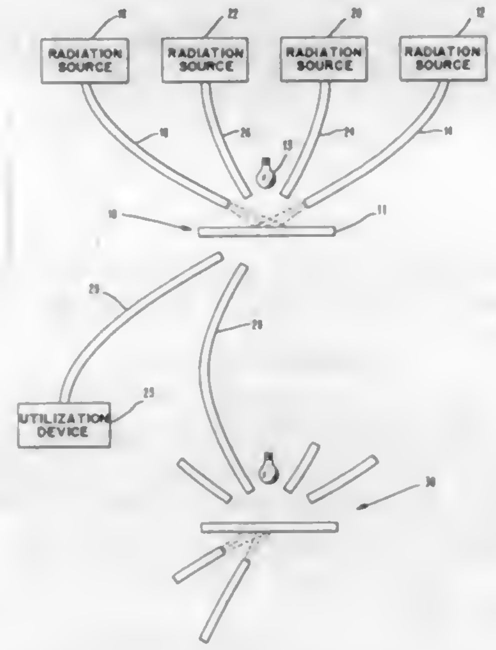
## OPTICAL LOGIC SYSTEM WITH A SCREEN MADE OF PHOTOCHROMIC MATERIAL

**Trevor D. Reader, King of Prussia, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**

**Filed Oct. 23, 1965, Ser. No. 503,969**

**Int. Cl. G02f** *1/36*

**U.S. Cl. 350—160 4 Claims**



An optical logic device is disclosed which includes a photochromic screen on which light from a fixed intensity source is focused in combination with one or more beams of selectively applied light. The selectively applied beams of light represent the input to the device and their presence in combination with the fixed intensity source causes the screen to become opaque. When the screen becomes opaque, light from the fixed intensity source is prevented from passing through the screen and therefore is prevented from energizing a light-sensitive output located on the side of the screen opposite the fixed intensity source.

### 3,476,460

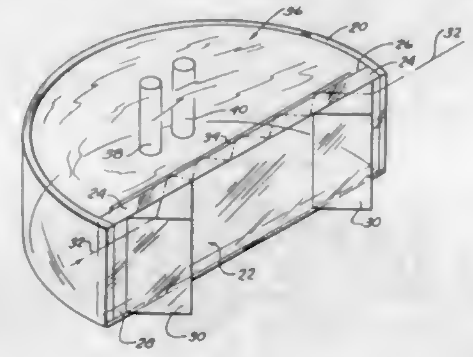
## ELECTROCHEMICALLY CONTROLLED LIGHT REFLECTION

**Wilford N. Hansen, Thousand Oaks, and Robert A. Osteryoung, Canoga Park, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware**

**Filed June 30, 1966, Ser. No. 561,990**

**Int. Cl. G02f** *1/28, 1/36*

**U.S. Cl. 350—160 4 Claims**



This disclosure relates to a method for controlling the reflectivity of a surface utilizing internal reflection techniques. An internal reflection member is used through which a beam of radiation is passed such that a single or a plurality of reflections take place at the electrically conducting interface between the member and a surrounding electrolytic solution. The reflecting properties of the interface are then modified by the application of a potential across the interface, the variations in the potential modulating the light reflected at the interface.

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### 3,476,461

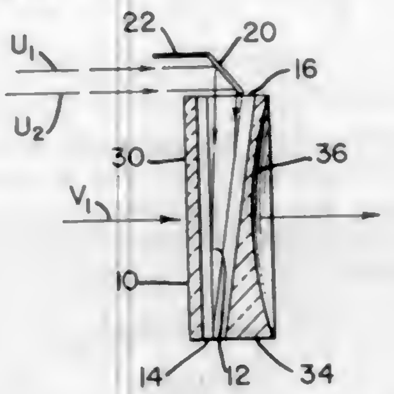
## DIRECTIONAL PHOTOTROPIC OPTICAL SYSTEM

**Eugene C. Letter, Penfield, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York**

**Filed Oct. 17, 1966, Ser. No. 587,143**

**Int. Cl. G02f** *1/28, 1/36;* **G02b** *27/00*

**U.S. Cl. 350—160 5 Claims**



A phototropic optical system is disclosed which is particularly adapted for use in sunglasses. A reflecting element is mounted adjacent to a transparent wedge which is coated on the two major faces with phototropic material. Ultra-violet radiation from the direction in which the system faces is reflected by the element into the wedge to darken the phototropic layers. The outer phototropic layer is covered by a layer of material which passes visible light but reflects or absorbs the ultra-violet light so that the stray light in the environment does not cause the phototropic layers to darken.

### 3,476,462

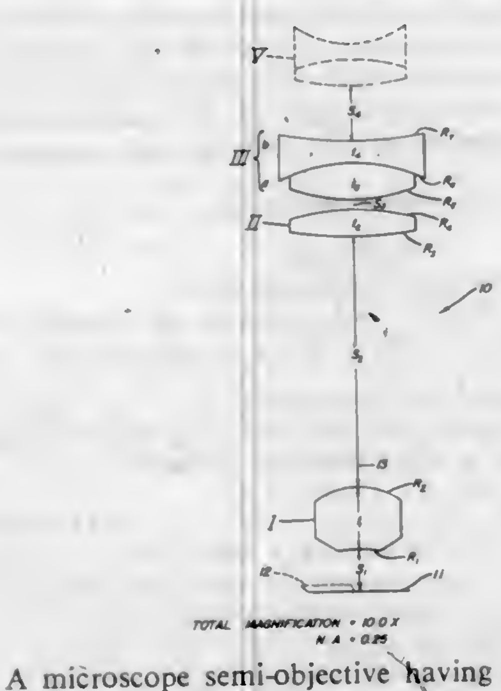
## LOW POWER MICROSCOPE SEMI-OBJECTIVE WITH FIELD FLATTENING LENS

**James R. Benford, Irondequoit, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York**

**Filed Apr. 21, 1967, Ser. No. 632,806**

**Int. Cl. G02b** *9/34*

**U.S. Cl. 350—177 6 Claims**



A microscope semi-objective having 2× magnification per se which is designed for use with an associated negative field flattening lens having substantially 5× magnification to produce cooperatively a total magnification of substantially 10× and a numerical aperture of substantially 0.25, said semi-objective being one of a set of such semi-objectives of different powers which are used interchangeably with the field flattening lens.

### 3,476,463

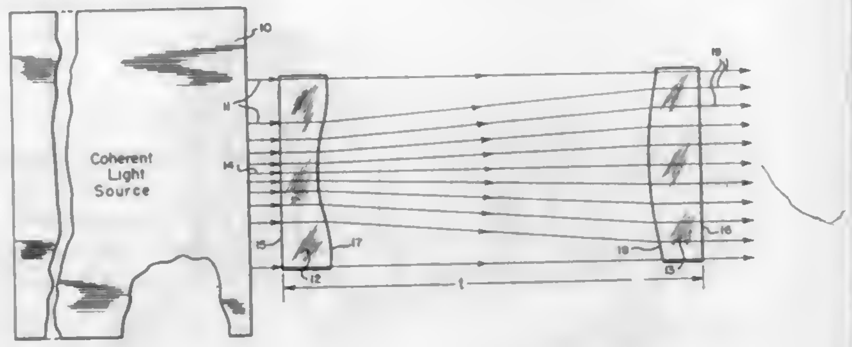
## COHERENT LIGHT OPTICAL SYSTEM YIELDING AN OUTPUT BEAM OF DESIRED INTENSITY DISTRIBUTION AT A DESIRED EQUIPHASE SURFACE

**Justin L. Kreuzer, Stamford, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York**

**Filed May 11, 1965, Ser. No. 454,810**

**Int. Cl. G02b** *3/04, 3/00, 9/04*

**U.S. Cl. 350—189 7 Claims**



Rays of an input beam of coherent light are redistributed to yield an output beam of different predetermined intensity distribution, and the optical path lengths are maintained constant between an equiphase surface of the input beam and a desired equiphase surface of the output beam having said predetermined intensity distribution thereover. At least two active surfaces, usually aspherical, are employed. Design equations are given for a two-element system which converts a collimated input beam of Gaussian distribution into a collimated output beam of uniform distribution.

### 3,476,464

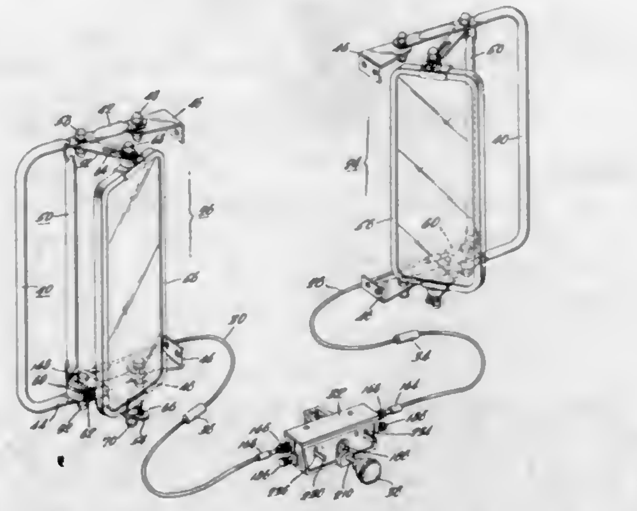
## REMOTE CONTROL MIRROR SYSTEM

**Paul D. Clark, Willow Grove, Pa., assignor to Delbar Products, Incorporated, Perkasie, Pa., a corporation of Pennsylvania**

**Filed Mar. 23, 1967, Ser. No. 625,505**

**Int. Cl. G02b** *7/18*

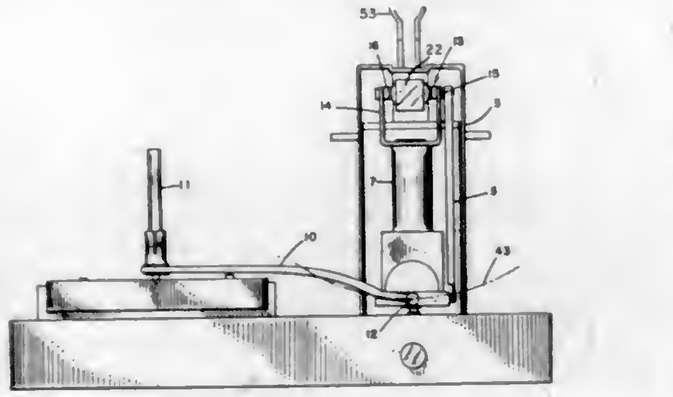
**U.S. Cl. 350—299 7 Claims**



A remote control mirror system for trucks or similar vehicles which permits the remote adjustment of both the right and left hand rear view mirrors by means of a single control. The invention includes a novel control assembly mounted within the vehicle cab and connected by wire cables to the mirrors. The control assembly comprises a dual rack and pinion arrangement actuated by rotating a single control knob in opposite directions, and includes ratchets to permit independent release and spring driven return of each mirror to the normal position.

### 3,476,465
### TANGENT SCREEN FIELD OF VISION TESTING APPARATUS

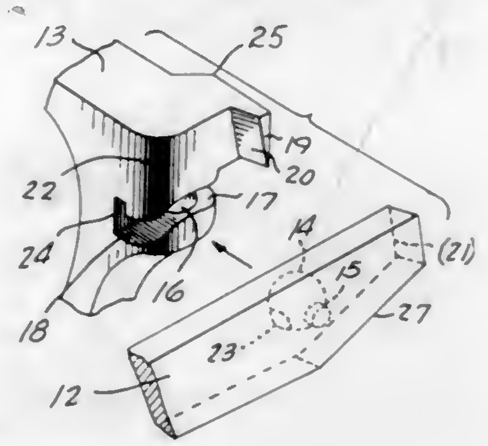
**Earl V. Jackson, Penfield, and Richard C. Mohrman, Irondequoit, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York**
**Filed Jan. 28, 1966, Ser. No. 523,717**
**Int. Cl. A61b** *3/06*
**U.S. Cl. 351—23** **4 Claims**



A tangent screen vision testing apparatus is disclosed including a movable projector for directing a spot on a plane surface. A chart marker is coupled to the projector to locate the spot on the surface while at the same time correlating the image of the light spot on the retina of an eye being tested with the position of the marker on the chart.

### 3,476,466
### FORWARDLY FOLDING EYEGLASS TEMPLES HAVING BALL AND SOCKET HINGES

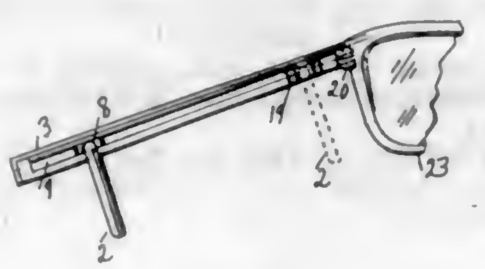
**Roger B. Hopkins, 1411 Jackson Ave., Pascagoula, Miss. 39567**
**Filed July 29, 1966, Ser. No. 568,836**
**Int. Cl. G02c** *5/20*
**U.S. Cl. 351—115** **7 Claims**



Eyeglass hinges include slotted sockets on the frame ends in which a ball on a stem attached to each temple is located. A protuberance on each ball coacts with the walls of the slots to resiliently hold the temples in wearing position or folded across the front of the frame. The frame ends are provided with projecting lugs which abut the hinged ends of the temples when in wearing or folded position.

### 3,476,467
### EYEGLASS TEMPLES HAVING ADJUSTABLE EAR-ENGAGING BARS

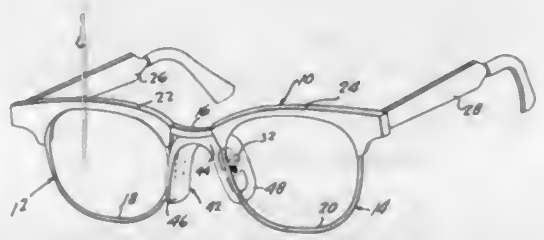
**Jack A. Curry, P.O. Box 833, Riverside Station, Miami, Fla. 33135**
**Filed Mar. 25, 1965, Ser. No. 442,633**
**Int. Cl. G02c** *5/14, 5/20, 5/22*
**U.S. Cl. 351—123** **5 Claims**



Eyeglass temples have an adjustable ear-engaging bar which can be slid along a track way or groove built into the temple piece, and can be pivoted from a position of use normal to the temple piece to a stored position parallel to the temple piece.

### 3,476,468
### NOSEPIECE FOR ROCKING CONNECTION TO OPHTHALMIC MOUNTING

**Jerry A. Fortenberry, P.O. Box 308, Columbia, Miss. 39421**
**Filed Aug. 26, 1966, Ser. No. 575,450**
**Int. Cl. G02c** *5/12*
**U.S. Cl. 351—130** **6 Claims**

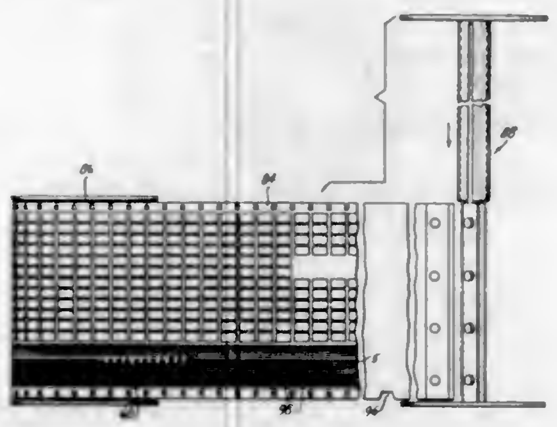


A saddle member having an inverted U-shape with an arched upper portion for engaging the bridge area of the nose of a wearer and spaced depending arms for engaging the sides of the nose is attached to the rocking nose pads of eyeglasses by clamping means on the outer surfaces of each of said saddle depending arms operative to releasably secure said saddle member to the corresponding one of said rocking pads in such manner that the saddle member may rock slightly in all directions about the semisphere portion of the rocking pad connection.

### 3,476,469
### MOTION PICTURE FILM

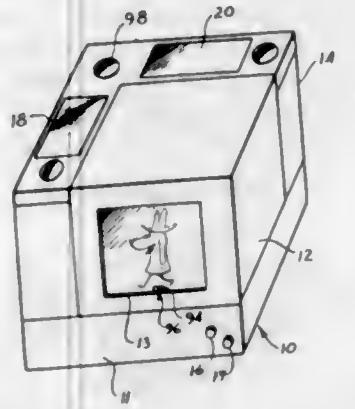
**Leon W. Wells, Closter, N.J., assignor to Panopix Research Inc., New York, N.Y., a corporation of New York**
**Continuation-in-part of applications Ser. No. 541,196, Apr. 8, 1966, and Ser. No. 495,370, Aug. 23, 1965. This application Feb. 6, 1967, Ser. No. 619,499**
**Int. Cl. G03b** *31/02*
**U.S. Cl. 352—37** **11 Claims**

A motion picture film having a multiplicity of longitudinal rows of picture frames for successive projection of the rows upon reversal of film travel, and a corresponding multiplicity of sound tracks. Each row of pictures and its corresponding sound track starting at a position along the film corresponding to the terminal end of the preceding row and track, irrespective of the lengths of other adjacent rows and tracks. The film having recorded signal means in fixed relation to the end of the sound tracks to effect reversal of a projection machine and further projector-controlling signal means on the film.



### 3,476,470
### VIEWER FOR ANIMATED STRIPS

**Jean Veran Dejoux, Paris, France, assignor to Nicolas Reisini, New York, N.Y.**
**Filed Jan. 20, 1967, Ser. No. 610,537**
**Int. Cl. G03b** *41/00, 21/36, 21/10*
**U.S. Cl. 352—68** **9 Claims**

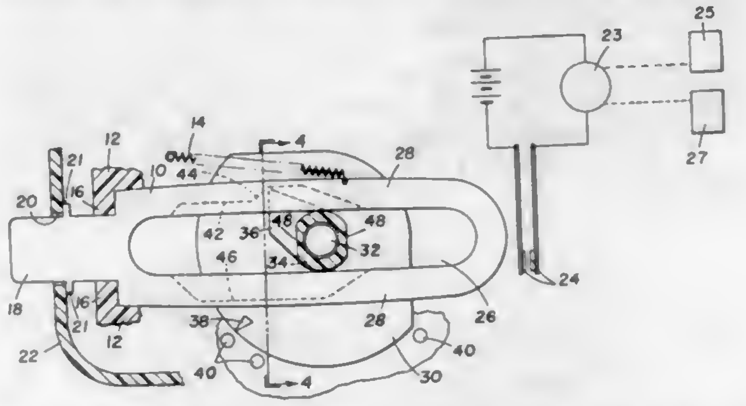


In a viewer, alternate frames of a motion picture are respectively on two strips. Drive means is operable to move the strips intermittently and sequentially across respectively on two strips. Drive means is operable to viewing screen in superposed relation. Means (a combination of fixed and rotating polarized screens or variable density shutters) for controlling the intensity of the images projected on the screen from the frames of the respective strips are synchronized to increase the intensity of the image from one strip from zero to full intensity and to simultaneously decrease the intensity of the image from the other strip from full to zero intensity. And the drive means is synchronized to move the strip that has a frame image at zero intensity so as to move the next frame on that strip into position relative to its light source while said frame image is at zero intensity.

### 3,476,471
### TRIGGER MECHANISM FOR A MOVIE CAMERA OR THE LIKE

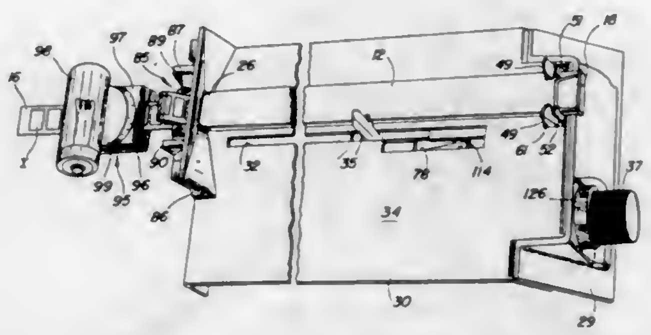
**Edgar S. Marvin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**Filed Jan. 23, 1967, Ser. No. 611,113**
**Int. Cl. G03b** *1/00*
**U.S. Cl. 352—178** **3 Claims**

A trigger mechanism providing three different operating conditions for a movie camera comprises a movable trigger member having a longitudinal slot and a rotatable cam in the slot. The cam is positionable so that: in a first position of the cam, the trigger member is free to move between an operative position and an inoperative position; in a second position of the cam, the trigger member is locked in its inoperative position; and in a third position of the cam, the trigger member is retained in its operative position.



### 3,476,472
### STRIP RETRIEVAL DEVICE

**Donald R. Schneeberger and Leonard J. Seaberg, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**Continuation of application Ser. No. 486,725, Sept. 13, 1965. This application Feb. 26, 1968, Ser. No. 708,419**
**Int. Cl. G03b** *23/12*
**U.S. Cl. 353—26** **30 Claims**

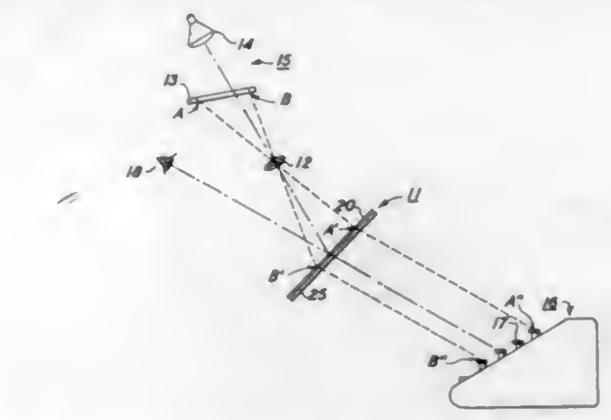


A strip retrieval device having a mechanism for advancing a shingled array of strips to a strip selecting position. The advancing mechanism is movable from the strip selecting position to a strip separating position for separating the selected strip from the array of strips. Further movement of the advancing mechanism from the strip separating position advances the selected strip along one path and the remaining strips along different paths.

### 3,476,473
### FONT INDICATOR

**Frederick A. Fend, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**
**Filed Mar. 13, 1967, Ser. No. 622,637**
**Int. Cl. G03b** *21/26*
**U.S. Cl. 353—28** **5 Claims**

An apparatus which indicates to the operator of a multi-font machine the particular array of characters or symbols available in the font in which the machine is operating at any particular time. A semi-transparent, semi-reflecting plate is positioned between the operator's eyes and the unmarked keyboard through which the operator is able to observe the individual keys on the keyboard. An image generator placed on the same side of the plate as the operator's eyes casts a matrix of images upon the plate which are reflected therefrom to the operator's eyes. The operator sees the reflected image being superimposed on the unmarked keys which creates the illusion that each reflected image is physically located on a key. When the font is changed in the machine, the matrix of images cast onto the plate and reflected is altered accordingly so that the apparent markings on



the keys always represents the font being used at any particular time.

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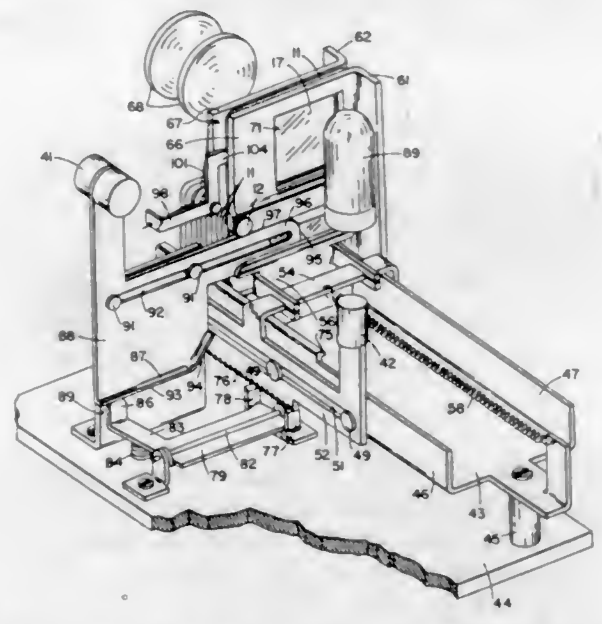
### 3,476,474
### SLIDE PROJECTOR FOR CORNER PIVOT SLIDE MOUNTS

**Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**Filed Sept. 12, 1967, Ser. No. 667,158**

**Int. Cl. G03b** *23/10*

**U.S. Cl. 353—108** **9 Claims**



A slide projector for individually displaying a plurality of generally square slide mounts assembled in stacked relation to form a slide pack which is held together by a pivot rod extending through the mounts at one corner of the pack so that each mount can be pivoted about the rod independently of the others. Means are provided in the projector for incrementally moving the entire pack, and successively rotating the slide mounts about the pivot rod to locate each slide, in turn, at a predetermined projection position aligned with the optical system of projector.

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### 3,476,475
### FILM STRIP ADAPTER

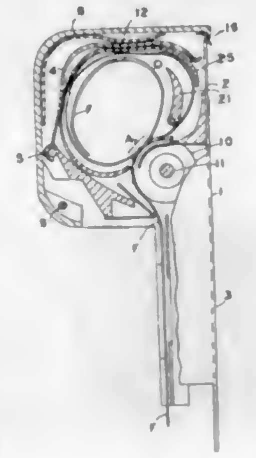
**Karl Rudzitis, Babylon, John Castellano, Commack, and Rudolph G. Wolz, Lake Ronkonkama, N.Y., assignors to Viewlex, Inc., Holbrook, N.Y.**

**Continuation-in-part of application Ser. No. 489,644, Sept. 23, 1965. This application Aug. 14, 1967, Ser. No. 660,412**

**Int. Cl. G03b** *1/00*

**U.S. Cl. 353—120** **2 Claims**

An automatic threading strip film adapter and film cartridge comprising a body member having a film viewing portion and a hollow film feeding portion. A sprocket is rotatably mounted in said body member and a film holding means is pivotally mounted in said film feeding portion of said body member to hold a film roll in contact



with said sprocket. The film holding means is spring loaded to press said film roll against said sprocket.

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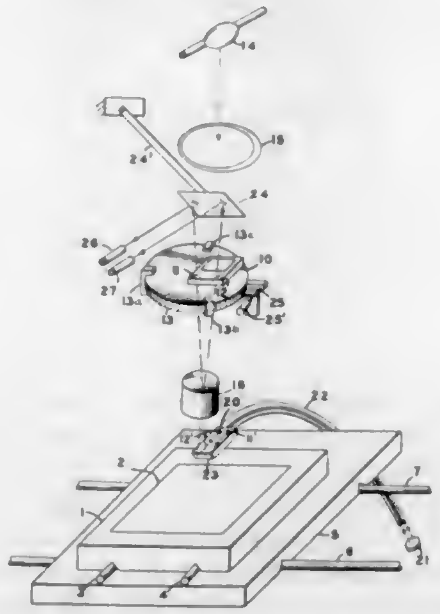
### 3,476,476
### ALIGNMENT MEANS FOR PHOTO REPEAT MACHINE

**Anwar K. Chitayat, Plainview, N.Y., assignor to OPTOmechanisms, Inc., Plainview, N.Y.**

**Filed Mar. 28, 1967, Ser. No. 626,532**

**Int. Cl. G03b** *27/00, 27/32, 27/42*

**U.S. Cl. 355—1** **1 Claim**



Alignment means for a projector of the type projecting art work from a glass plate onto a photo sensitive plate. The glass plate is adjustably mounted. Index marks on the photo plate are projected in superimposed relation with corresponding index marks on the glass plate. The glass plate is manually aligned by superimposing the two sets of index marks.

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### 3,476,477
### PROGRAM TAPE DISCRIMINATOR

**Andrew Balint, Park Ridge, and Hans Christoph Wohlrab, Deerfield, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois**

**Filed Aug. 17, 1966, Ser. No. 573,004**

**Int. Cl. G03b** *27/76, 27/78*

**U.S. Cl. 355—35** **15 Claims**

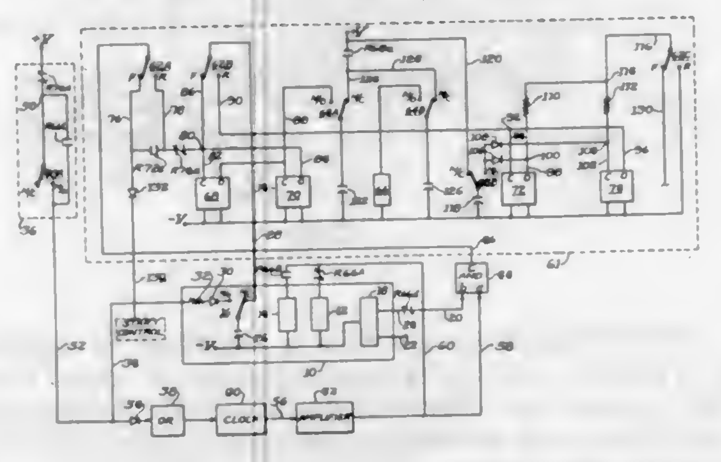
1. A program tape for use in a tape reader of the type having a plurality of channel sensors, and additional sensing means for sensing indicia identifying the type of tape in said tape reader, said program tape comprising:

an elongated strip of material having a leader portion and a program portion,

said program portion including a plurality of program characters manifested by indicia carried by said tape,

said indicia being positioned in a plurality of channels which extend along the length of said tape with the indicia manifesting a particular program character being arranged in a row extending transverse to the length of said tape,

the first of said program characters being a program start character,



said leader portion including indicia identifying the type of tape, said identifying indicia being positioned to be sensed by said additional sensing means before said program start character is sensed by said channel sensors as said tape moves through said tape reader.

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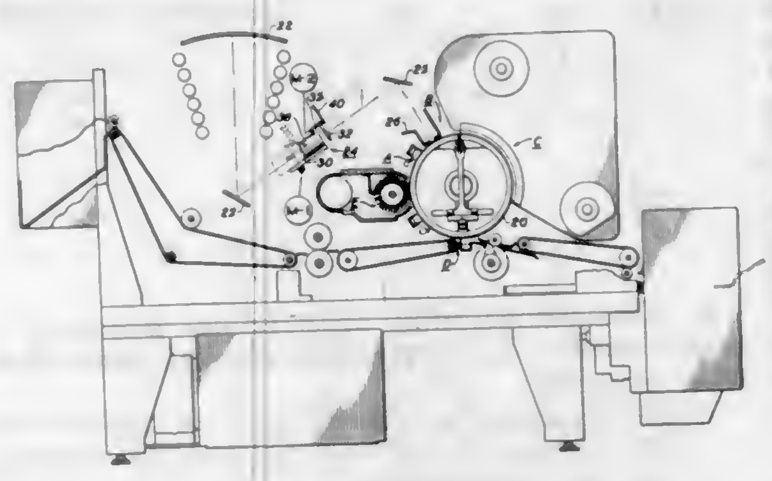
### 3,476,478
### APPARATUS FOR CHANGING THE MAGNIFICATION OF A PHOTOCOPIER WITHOUT CHANGING THE CONJUGATE LENGTH OF THE OPTICAL SYSTEM

**James D. Rees, Jr., Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**

**Filed Jan. 3, 1967, Ser. No. 607,049**

**Int. Cl. G03b** *27/70*

**U.S. Cl. 355—55** **10 Claims**



A photographic copying apparatus having an arrangement for changing the magnification of the optical system without affecting the total conjugate length of the system. A main lens is moved along the optical path and a thin, singlet, corrective lens is positioned into the optical path when the magnification is changed from the primary magnification to another magnification permitting an adjustment in the focal length of the lens system without changing any other parameters of the optical system.

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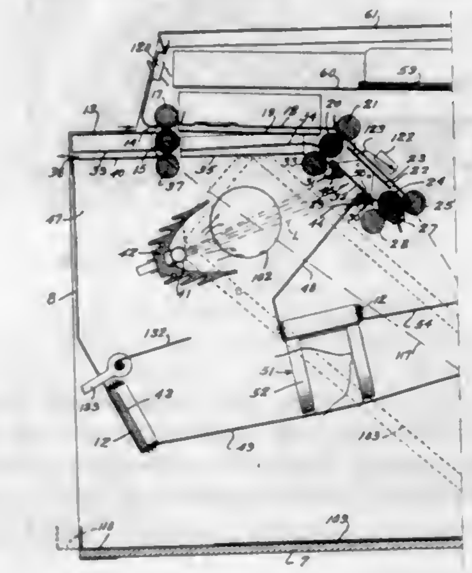
### 3,476,479
### ELECTROPHOTOGRAPHIC COPYING MACHINE

**Emil Tiger, Highland Park, Erskine G. Corman, Forest Park, and Kenneth R. Reick, Downers Grove, Ill., assignors to Sunbeam Business Equipment Co., Addison, Ill., a corporation of Illinois**

**Original application Nov. 12, 1964, Ser. No. 410,549, now Patent No. 3,345,926, dated Oct. 10, 1967. Divided and this application Sept. 5, 1967, Ser. No. 665,447**

**Int. Cl. G03b** *27/32, 27/52*

**U.S. Cl. 355—64** **10 Claims**



A copy making machine which has document transport and scanning means, a copy sheet magazine, copy sheet transport and exposure means spaced from the magazine, means for transferring a document image from the scanning means to the exposure means and means for guiding copy sheets from the magazine to the copy sheet transport means, has means including a drive motor for feeding copy sheets from the magazine and a motor-operating electrical circuit with a control switch actuated by the leading edge of each copy sheet to stop the motor and thus feeding of the sheet just short of the transport means. The circuit includes a shunt around the switch to the motor, and a normally open switch in the circuit is closed to close the shunt and activate the motor for concurrent driving of the copy sheet through the exposure means with travel of the document through the scanning means. There is also control switch means operated by the copy sheet for controlling illumination of the exposure aperture. In the aperture structure, combination bracket and frame pieces have slots therein for mounting light-shielding panels. Such frame pieces may have reflecting surfaces thereon to reflect into the aperture light from the illuminating means which would otherwise spread beyond the aperture. The bracket frame pieces may comprise extruded bars.

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### 3,476,480
### APPARATUS COMPRISING ONE OR MORE PROCESSING UNITS FOR REPRODUCTION MATERIAL

**Franciscus Hendrikus Marcelissen, Venlo, Limburg, Netherlands, assignor to Van der Grinten N.V., Venlo, Netherlands, a Dutch corporation**

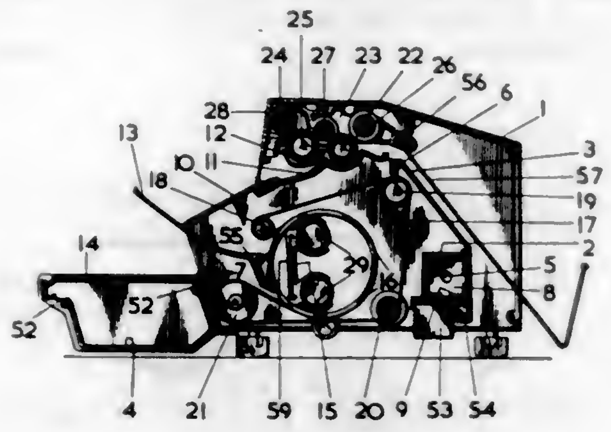
**Filed Apr. 13, 1966, Ser. No. 542,309**

**Claims priority, application Netherlands, Apr. 23, 1965, 6505208**

**Int. Cl. G03b** *27/22, 27/30*

**U.S. Cl. 355—104** **10 Claims**

Apparatus for processing photocopying material is made up principally of extrusions or profiles assembled to upright frame plates which have protrusions thereon for positioning the ends of such profiles. The plates are clamped to opposite ends of some of the profiles by tie rods to form a rigid framework. Others of the profiles serve as panels to cover, or to guide material to and from, driven conveyor mechanism and processing elements for exposing, developing and/or drying said material in the space between said plates. Further extrusions or like profiles secured by tie rods to the outer sides of the frame plates form end housings for accessories and have channel-forming ribs thereon to support accessory mounting devices.



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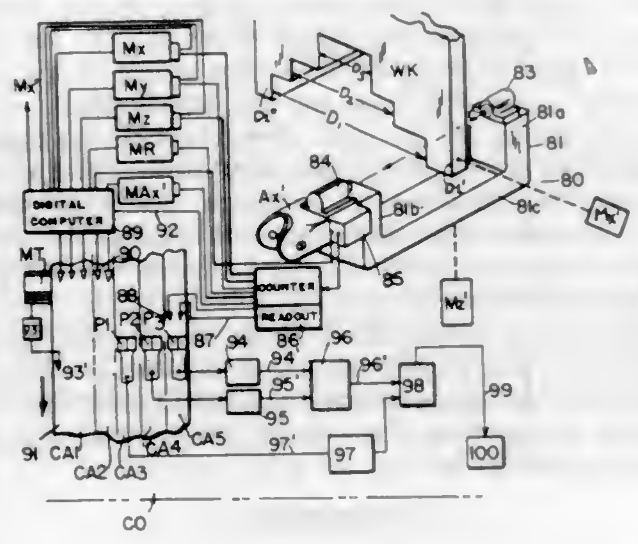
### 3,476,481
## AUTOMATIC MEASUREMENT SYSTEM
**Jerome H. Lemelson, 85 Rector St.,**
**Metuchen, N.J. 08840**
**Continuation-in-part of application Ser. No. 250,942, Jan. 11, 1963. This application Jan. 4, 1966, Ser. No. 518,616**
**Int. Cl. G01b** *11/00, 5/00*
**U.S. Cl. 356—167** **7 Claims**



An automatic measurement apparatus is provided for electrically indicating dimensions of a work piece. A sensing head containing surface-sensing means is prepositioned with respect to work to be measured and is moved in a predetermined path such that it detects a plurality of surfaces of the work. A computing means measures the distance traveled by the sensing head between the detection of surfaces and computes the dimensions of the work between said surfaces. The computing means includes a comparator means which is operative to indicate if the dimension being measured is out of tolerance.

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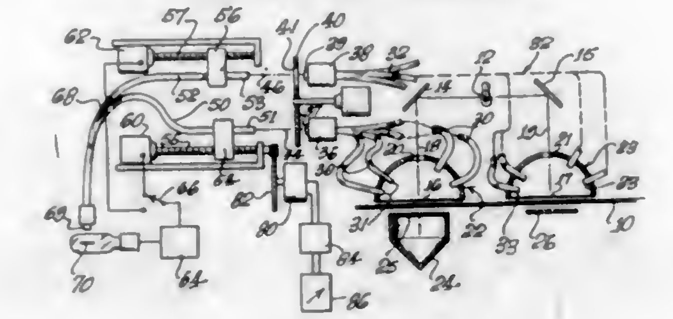
### 3,476,482
## OPACIMETER FOR COMPARING LIGHT FROM DIFFERENT AREAS OF SAMPLE SHEET
**Robert C. Howard, Monrovia, and Dale C. Baker, Pasadena, Calif., assignors to Conrac Corporation, New York, N.Y., a corporation of New York**
**Filed Sept. 27, 1967, Ser. No. 671,031**
**Int. Cl. G01n** *21/30*
**U.S. Cl. 356—199** **5 Claims**



Diffuse light from a surface is integrated by sampling it at selected angles in respective bundles of optical fibers. The samples are effectively integrated by intermingling the delivery ends of the fibers essentially randomly to form a unitary fiber bundle.

Two beams to be compared are received in respective fiber bundles that are movable by servo drive along the respective beam axes to attenuate the received light. Fibers of the bundles are intermingled at their delivery ends for illuminating a sensor.

An opacimeter is calibrated by shifting a backing surface between "white" and "black" conditions and nulling the system by attenuation of one beam, the other beam being attenuated for readout.

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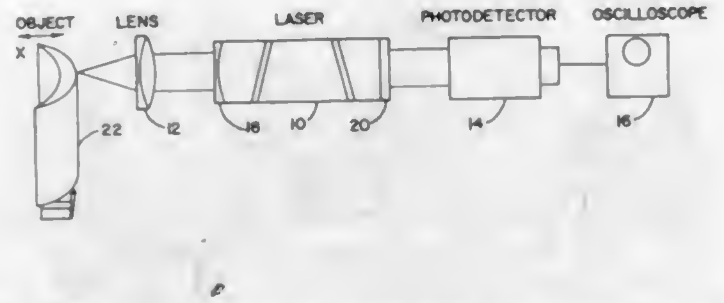
### 3,476,483
## MOTION MEASURING APPARATUS
**Richard F. Weeks, Bristol, Conn., assignor to Carson Laboratories, Inc., Bristol, Conn., a corporation of Connecticut**
**Filed Aug. 16, 1966, Ser. No. 572,769**
**Int. Cl. G02b** *27/32;* **G01b** *11/00*
**U.S. Cl. 356—256** **12 Claims**



1. Vibration measuring apparatus for measuring vibratory motion of a body without physical contact therewith comprising:
means for generating coherent light, the output of said light varying means being variable in accordance with light inputs thereto;
means for directing light from said generating means to said vibrating body;
means for returning light scattered from said vibrating body to said generating means, said returned light amplitude modulating the intensity of said coherent light in accordance with the displacement of said vibrating body and at the frequency of vibration of said body for total displacements of said body less than one half a wavelength of said coherent light; and

sensing means, positioned to receive light from said generating means, for sensing the amplitude modulation of said coherent light and producing a signal commensurate with said modulation, the frequency of said signal being commensurate with the frequency of vibration of said body.

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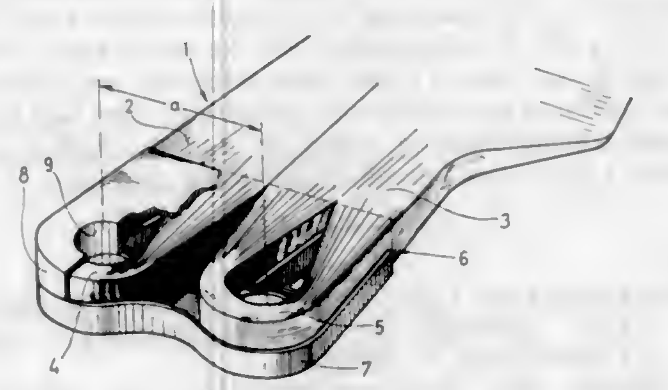
### 3,476,484
## ROTOR BLADE CONSTRUCTION
**Klaus Brunsch, Weidach, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Postabhalfach, Ottobrunn, near Munich, Germany**
**Filed July 23, 1968, Ser. No. 746,810**
**Claims priority, application Germany, Sept. 12, 1967, B 94,418**
**Int. Cl. B63h** *1/06, 5/12, 5/14*
**U.S. Cl. 416—230** **6 Claims**



A rotor blade for a helicopter rotor comprises a blade body formed of a fiber reinforced plastic having fiber strands which extend in the longitudinal direction of the blade and form loops in the region of the root of the blade. The construction is characterized by the formation of at least two flanges formed of the fiber strands which are shaped into loops. The loops provide through openings for receiving bolts for mounting the blade on a rotor head.

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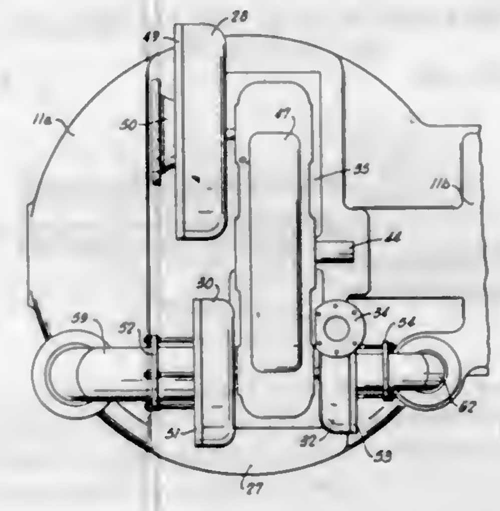
### 3,476,485
## MULTISTAGE CENTRIFUGAL COMPRESSOR
**Fred K. Kunderman, Olean, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware**
**Filed Sept. 18, 1967, Ser. No. 668,491**
**Int. Cl. F04d** *17/12, 29/58*
**U.S. Cl. 415—66** **12 claims**



A three stage centrifugal compressor includes a base having two intercooler chambers and two separator chambers defining interstage flow paths, the intercooler chambers communicating with separate openings in a top wall of the base. A cover plate for closing these openings has formed integrally therewith the compressor gearcase volutes for the three stages, the volute diffusers for the first two stages, extending vertically downward and opening to the underside of the cover plate. Two intercoolers, which define vertical flues, are secured to the underside of the cover plate communicating respectively with the volute diffusers for the first two stages. The intercoolers are received in the respective intercooler chambers. Each of the intercooler chambers communicates with a respective separator chamber which includes a large area moisture separator accommodating upward air flow; and conduits communicate the upper portion of each separator chamber with the inlet for the succeeding stage. The first stage impeller is mounted on one shaft, the second and third stage impellers are mounted on a common shaft parallel with the first shaft, both shafts carrying pinions engaged by a drive gear mounted on a third parallel shaft adapted to be coupled to a driving motor.

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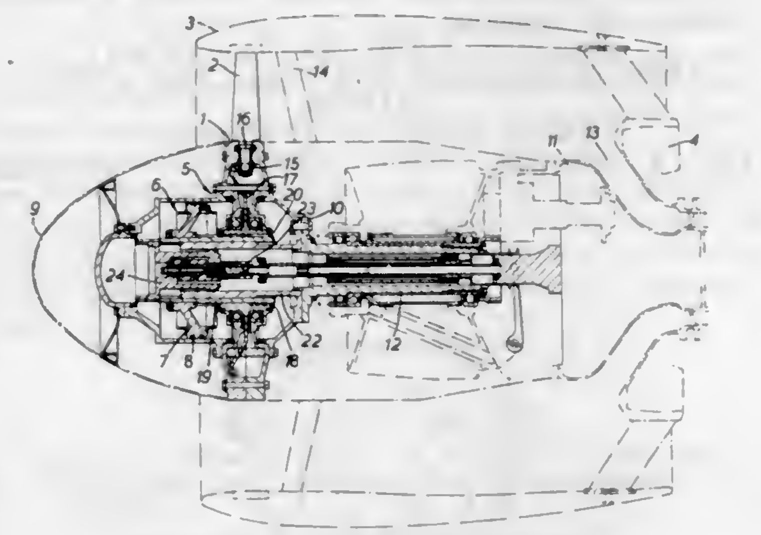
### 3,476,486
## GAS TURBINE ENGINES
**Stuart Duncan Davies and John Alfred Chilman, Painswick, England, assignors to Dowty Rotol Limited, Gloucester, England**
**Filed Apr. 12, 1967, Ser. No. 630,255**
**Claims priority, application Great Britain, Apr. 12, 1966, 16,008/66; May 25, 1966, 23,428/66, 23,429/66; Sept. 16, 1966, 41,454/66**
**Int. Cl. F04d** *27/00;* **F02k** *3/02*
**U.S. Cl. 415—68** **17 Claims**



An aircraft propulsion system comprises a gas turbine engine in combination with means such as a fan of variable and reversible pitch, for providing a flow of pressure air along a duct ahead of the engine compressor and for reversing the direction of air flow along the duct at will. Means, for example flap valves, may be provided for ensuring a flow of air to the inlet of the compressor when the direction of air flow in the duct is reversed.

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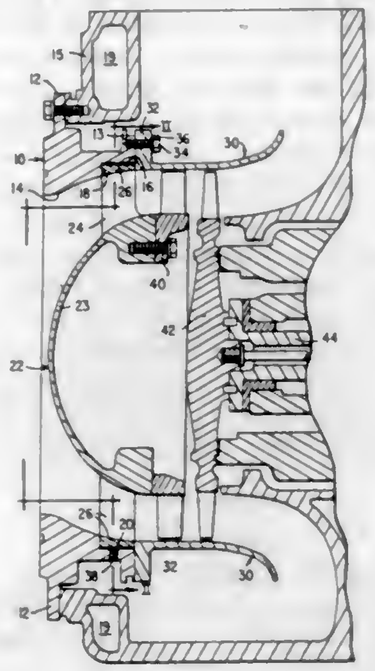
### 3,476,487
## INLET CASING ASSEMBLY FOR TURBOMACHINE
**John M. Campbell, Jeannette, and Arthur J. Miller, Irwin, Pa., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware**
**Filed Feb. 21, 1968, Ser. No. 707—224**
**Int. Cl. F01d** *1/04, 9/00*
**U.S. Cl. 415—134** **1 Claim**

An inlet casing for a turbomachine including a support ring encircling a nose cone having a radially spaced rim portion arranged within the support ring and engaging with the ring through set screws to define elastic sections for accommodating distortion due to thermal gradients across the assembly.



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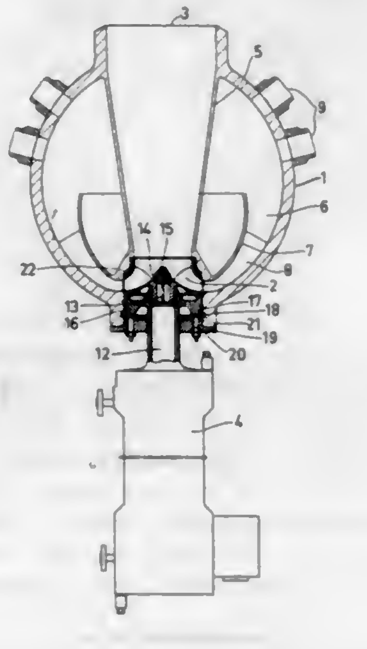
### 3,476,488
### PUMP WITH SPHERICAL PUMP HOUSING

**Lars Axel Chambert, Kallhall, Sweden, assignor to AB Svenska Maskinverken, Kallhall, Sweden, a Swedish joint-stock company**
**Filed Nov. 1, 1967, Ser. No. 679,713**
**Claims priority, application Sweden, Nov. 4, 1966, 15,130/66**
**Int. Cl. F04d** *1/00, 29/00, 29/40*
**U.S. Cl. 415—182 10 Claims**



A unitary, spherical pump housing having a tubular inner wall defining an inlet into the housing. The tubular wall flares at its inner end and terminates in spaced relation with the housing to define therewith a pump chamber and diffuser thereabout, and a collecting chamber. An impeller located in the pump chamber moves fluid through the inlet, the pump chamber, the diffuser and the collecting chamber to be discharged through openings in the spherical housing.

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### 3,476,489
### METHOD OF MAKING A SHAMPOO

**Arthur Allan Mees, Fort Lee, and Frank Wesley Olson, Jr., Pompton Plains, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Nov. 27, 1964, Ser. No. 414,442**
**Int. Cl. A61k** *7/06;* **C11d** *3/24*
**U.S. Cl. 424—164 3 Claims**

A method for preparing a shampoo comprising 13.5 to 23 percent by weight of water-soluble anionic sulfonated or sulfated detergent, 1 to 6 percent by weight of an alkylolamide, 6 to 10 percent by weight of soap, .5 to 2 percent by weight of hexachlorophene, and 0.5 to 6 percent by weight of finely divided sulfur is described which comprises forming a soap in situ in a first vessel under reaction conditions wherein a temperature above about 120° F. and a pH below about 6.0 are employed; transferring the resulting mixture to a second vessel where it is admixed with the remaining components of the shampoo under conditions which exclude temperatures above about 135° F. and a pH of below about 6.0, the sulfur being present solely in said second vessel, completing the preparation of said shampoo and removing said product from said second vessel leaving thereing a heel of product which may become a part of a subsequent batching operation.

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### 3,476,490
### METHODS OF USING PARTICULAR CARBAMIC ACID ESTERS FOR INSECTICIDAL AND ACARICIDAL PURPOSES

**Christa Fest, Wuppertal-Elberfeld, and Ingeborg Hammann, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed Mar. 2, 1966, Ser. No. 531,078**
**Claims priority, application Germany, Mar. 4, 1965, F 45,417**
**Int. Cl. A01n** *9/20;* **C07c** *125/06*
**U.S. Cl. 424—300 12 Claims**

Method of killing insects and/or acarids by applying to the corresponding insects, acarids and/or habitat thereof a correspondingly effective amount of an N-(unsubstituted, alkyl, and alkoxy- and/or halo-substituted alkyl)-N'-(alkyl, phenyl, and alkoxy-, halo-, nitro- and/or cyano-alkyl and -phenyl)-1-(1-fluoroacetamide-2,2,2-trichloro)-ethyl carbamate.

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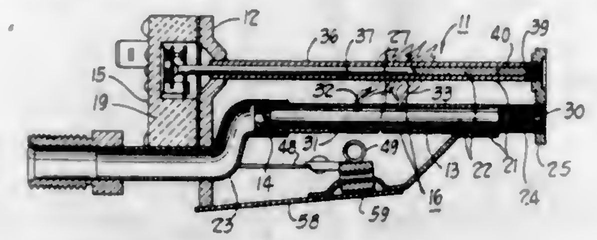
### 3,476,491
### BURNER ASSEMBLY

**Dennis A. Pipes, Mansfield, and LaVerne Smith, Lexington, Ohio, assignors, by mesne assignments, to Essex International, Inc., Fort Wayne, Ind., a corporation of Michigan**
**Filed July 26, 1967, Ser. No. 656,102**
**Int. Cl. F23q** *9/08*
**U.S. Cl. 431—46 16 Claims**



The disclosure relates to a burner assembly which may be used as a thermal probe and a pilot burner with a 100% fuel shut-off. A housing supports a switch and a pilot valve and a temperature responsive actuator is provided for both the switch and the pilot valve. The housing also supports a tubular burner with the pilot valve supplying gaseous fuel thereto. An ignition coil is energized to heat the temperature responsive actuator and cause the pilot valve to be opened. This permits gas to escape and a pilot flame is ignited by the ignition coil. The pilot flame thereupon continues the heating of the temperature responsive actuator to maintain the pilot valve actuated and also to actuate the switch which de-energizes the ignition coil and at the same time electrically energizes the actuation of a main burner valve to cause gas from a main burner to be ignited by the pilot flame. Upon accidental flame failure, the pilot valve is rapidly closed by the temperature responsive actuator and also the switch is moved to the opposite condition to close the main burner valve for a 100% fuel shut-off.

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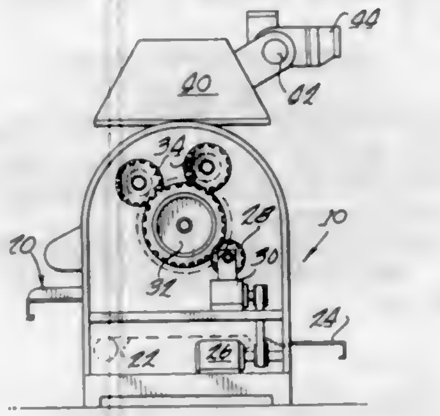
### 3,476,492
### ELECTRICAL IGNITION SYSTEM

**Harold G. Roberts, Medinah, Ill., assignor to Chicago Dryer Company, Chicago, Ill., a corporation of Illinois**
**Filed Nov. 13, 1967, Ser. No. 682,116**
**Int. Cl. F23n** *5/20*
**U.S. Cl. 431—71 2 Claims**



A spark is discharged adjacent the first burner tip of a gas burner tube disposed in the main ironing cylinder of a gas-heated ironer or the like. Simultaneously, a combustible gas-air mixture is passed into the tube and the mixture is ignited at one end of the tube having a plurality of spaced burner tips disposed along the length thereof. A time delay relay is also energized simultaneously. A flame rod disposed over the terminal burner tip completes a circuit as flame surges from such tip, thereby stopping the sparking and placing the system in automatic operation. If flame does not reach the flame rod within the time set by the relay, the fuel input into the burner is terminated by the relay, and a safety switch terminates the sparking action shortly thereafter.

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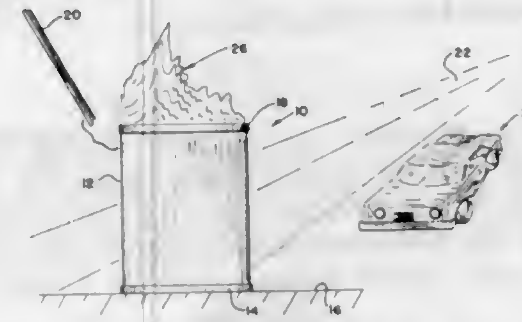
### 3,476,493
### FLOATING FISH CALLER

**R. D. Moore, P.O. Box 1272, Jacksonville, Tex. 75766**
**Filed Sept. 5, 1967, Ser. No. 665,543**
**Int. Cl. F23b** *5/00;* **A01k** *97/00*
**U.S. Cl. 431—126 3 Claims**



A floating fish caller comprised of a flambeau made of a gelatinous hydrocarbon mixture which burns in air to provide illumination from a controlled combustion. The floating flambeau includes a petroleum hydrocarbon solvent which is mixed together with a fatty acid soap to provide a gelled fuel which is relatively insoluble in water, and has a density less than water. During manufacture, the ingredients of the gelled fuel are allowed to congeal within a container to thereby provide a large mass of gelled fuel. A small mass of the fuel may be carefully removed from the container and placed upon the surface of water, whereupon the smaller mass of congealed fuel will float while at the same time remaining together in a ball-like mass to thereby provide a floating flambeau for attracting or calling fish. The gelled fuel, while within the container also provides an emergency light since the surface thereof can be ignited by merely removing the lid therefrom.

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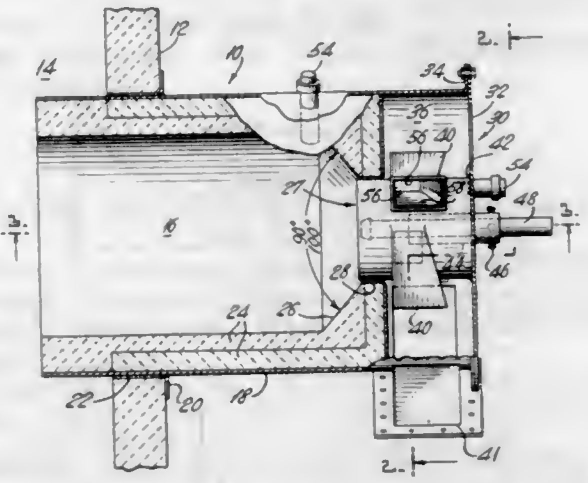
### 3,476,494
### VORTEX BURNER

**William L. Buchanan, Sparta, and Harry F. Straight, Jr., Succasunna, N.J., asssignors to Esso Research and Engineering Company, a corporation of Delaware**
**Filed Aug. 29, 1967, Ser. No. 664,170**
**Int. Cl. F23d** *13/40;* **F23m** *9/00*
**U.S. Cl. 431—353 8 Claims**



A vortex burner having a relatively small and constant diameter inlet air swirl chamber corresponding in diameter to the diameter of the inlet orifice connecting the swirl chamber to the combustion chamber. Fluid fuel is introduced into the combustion chamber at a point where it can burn immediately. The inner end of the combustion chamber is provided with an annular fillet having an included angle corresponding to the angle of divergence of the fuel spray to produce a stable flame of low noise level.

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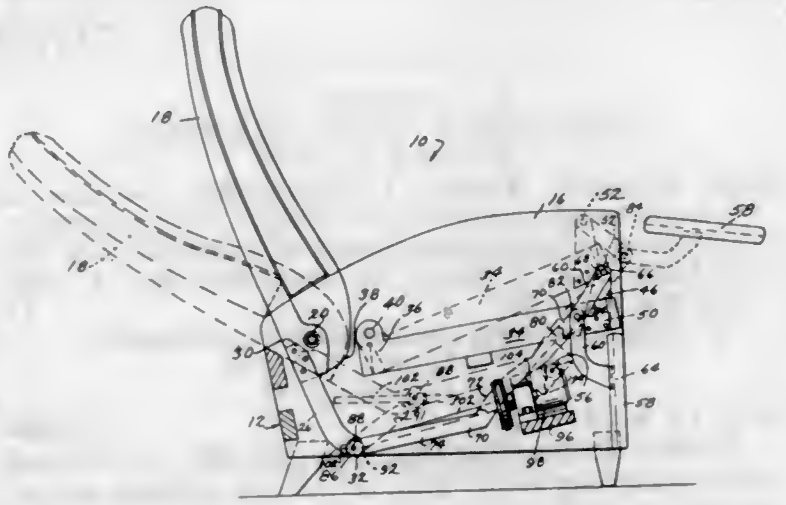
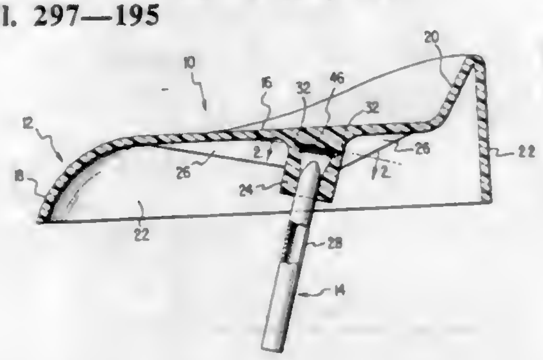
### 3,476,495
### RECLINING CHAIR

**Warren C. Church, Hurt, Va., assignor to The Lane Company Inc., Altavista, Va., a corporation of Virginia**
**Filed May 17, 1967, Ser. No. 639,074**
**Int. Cl. A47c** *1/035*
**U.S. Cl. 297—83 7 Claims**



The reclining chair back is pivotally connected near its lower end to the chair frame sides as is the chair seat near its rear. An actuator element extends from a pivotal connection to downward extensions of the chair back to pivotal connection to a lifting and lowering element for the foot rest intermediate the ends of the latter. The lifting and lowering element is pivotally connected to the seat near its front. Intermediate its ends, the actuator element has a cam surface which rides on a pulley connected to the chair sides. A motor driven jack screw arrangement oscillates the actuator element forwardly and rearwardly to operate the chair.

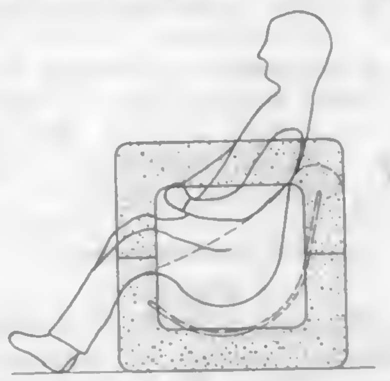
3,476,496
### PLASTIC SADDLE AND METAL MOUNTING ROD AND METHOD OF MAKING SAME
**Harry Golden, New York, N.Y., assignor to Ideas for Auto and Bike Specialties, Inc., a corporation of New York**
**Continuation-in-part of application Ser. No. 658,219, Aug. 3, 1967. This application Aug. 1, 1968, Ser. No. 749,515**
**Int. Cl. B62j** *1/00*
**U.S. Cl. 297—195** **7 Claims**



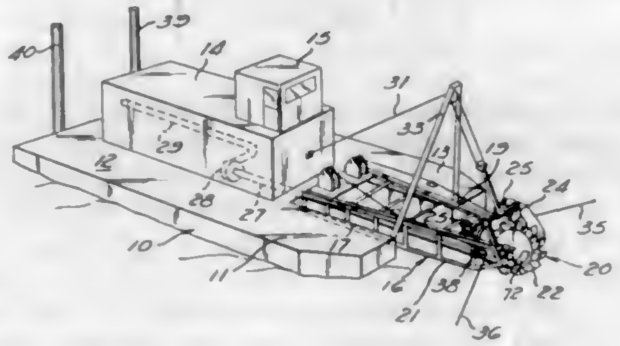
A combined plastic saddle and metal mounting rod wherein the saddle includes a depending collar portion in surrounding engagement with the uppermost end of the rod. The uppermost end is configured in a non-circular shape to prevent relative rotation between the rod and the saddle and to prevent relative movement between the rod and the saddle axially of the rod.

3,476,497
### FURNITURE
**Terry F. Cashen and Marc S. Hermelin, St. Louis, Mo. (both % Sidney B. Ring, P.O. Box 6825, Brentwood, Mo. 63144)**
**Filed Aug. 4, 1967, Ser. No. 658,527**
**Int. Cl. A47c** *15/00, 7/24*
**U.S. Cl. 297—232** **6 Claims**

An article of manufacture useful as furniture having an original predeformation shape, which is characterized by an outer and an inner layer(s) of material(s) as exemplified by plastic foams and/or void(s), said outer layer being resilient and capable of being compressed into the inner layer(s) and/or void(s) when occupied to conform to the shape of the occupant so as to yield a post-deformation shape without directly relying for support on a frame or superstructure in a manner which makes it useful as furniture; and which returns to its original shape when unoccupied.



3,476,498
### BUCKET-WHEEL CUTTER FOR DREDGES
**Edgar J. von Bolhar, Severna Park, Md., assignor to Ellicott Machine Corporation, Baltimore, Md., a corporation of Maryland**
**Filed Dec. 14, 1966, Ser. No. 601,694**
**Int. Cl. E02f** *3/24, 3/92, 7/00*
**U.S. Cl. 299—8** **9 Claims**



A suction dredge including a rotating digging wheel having a plurality of buckets for digging on both the port and the starboard swings of the digging wheel and which deposit the loosened material into a suction mouth within the hub of the digging wheel from which it is sucked by a centrifugal dredge pump. The digging wheel may also include a scraper apparatus having an outwardly biased blade for removing packed materials from the digging buckets as the wheel rotates and a collection chamber with one perforated wall arranged relative to the flow of material through the suction mouth so as to receive and retain the denser objects loosened by the digging wheel.

## CHEMICAL

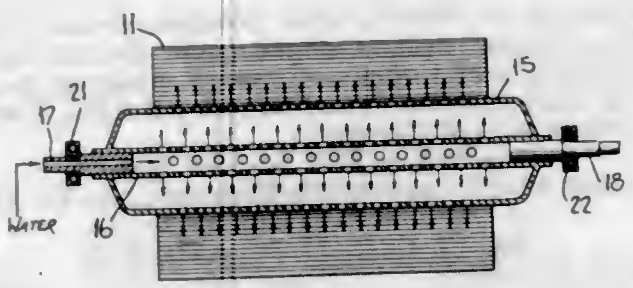
3,476,499
### SELECTIVELY LIGHT ABSORBING CONTACT LENS
**Otto Wichterle, Prague, Czechoslovakia, assignor to Ceskoslovenská Akademie Věd, Prague, Czechoslovakia**
**No Drawing. Continuation-in-part of application Ser. No. 393,763, Sept. 1, 1964. This application Jan. 4, 1965, Ser. No. 423,325**
**Claims priority, application Czechoslovakia, Sept. 11, 1963, 5,042/63**
**Int. Cl. D06p** *3/52*
**U.S. Cl. 8—4** **2 Claims**

Contact lenses consisting of sparingly cross-linked acrylic polymers in the form of a shape-retaining gel are colored or made opaque by diffusing a solution of an impregnating agent and a solution of a precipitating agent into the gel from different surfaces, the precipitating agent being adapted to form an insoluble colored or opaque precipitate with the impregnating agent. The insoluble precipitate formed remote from the lens surface does not affect the physiological acceptability of the lens.

3,476,500
### CONCENTRATED COLORANTS
**Alvin C. Litke, West Seneca, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York**
**No Drawing. Filed Aug. 9, 1965, Ser. No. 478,465**
**Int. Cl. C09b** *67/00;* **D06p** *1/68*
**U.S. Cl. 8—93** **12 Claims**

Production of novel liquid colorant compositions which are stable mobile liquids, useful for coloring petroleum products, by mixing a dye of the solvent type with a liquid alkyl hydroxyaryl compound having at least one alkyl group of at least 8 carbon atoms as a nuclear substituent, and heating the mixture to a temperature above the melting point but below the decomposition temperature of said dye for a sufficient period of time to form said stable homogeneous composition.

3,476,501
### FABRIC TREATMENT
**Fritz Lorenz and Ernst Weiss, Wattwil, Switzerland, assignors to Heberlein Patent Corporation, New York, N.Y., a corporation of New York**
**Filed Mar. 17, 1966, Ser. No. 535,087**
**Claims priority, application Switzerland, Apr. 26, 1965, 5,749/65**
**Int. Cl. D06m** *1/10*
**U.S. Cl. 8—125** **6 Claims**



Disclosed is a process for preparing linen-like fabric comprising contacting a cellulosic fabric with a sodium hydroxide solution at 10° to 20° Bé. and below 0° C. and winding the fabric onto a drum and removing the sodium hydroxide solution by passing water radially from the interior of the drum through the fabric.

3,476,502
### PROCESS OF SHRINK-PROOFING GOODS CONTAINING KERATINOUS FIBERS
**Walter E. Bill, Pittsburgh, Pa., and George L. Payet, Barberton, Ohio, assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania**
**No Drawing. Filed May 6, 1965, Ser. No. 453,822**
**Int. Cl. D06m** *3/02, 3/06, 3/08*
**U.S. Cl. 8—127.6** **13 Claims**

This invention provides a process for the shrink-proofing of goods containing keratinous fibers. The process comprises treating the goods in a bath comprising an aqueous solution of hydrogen peroxide or hydrogen peroxide and an ammonium base, then adding a carboxylic acid or carboxylic acid anhydride to the aqueous solution. The goods are further treated with an aqueous solution of a bisulphite.

3,476,503
### TREATMENT OF WOOL
**Arno Rudolph Friedl, Hordle, Lymington, and Roger Gavin Dingley, Southampton, England, assignors to The International Synthetic Company Limited, Southampton, England, a corporation of the United Kingdom**
**No Drawing. Filed Feb. 28, 1966, Ser. No. 530,372**
**Claims priority, application Great Britain, Mar. 5, 1965, 9,480/65**
**Int. Cl. D06m** *15/28*
**U.S. Cl. 8—128** **8 Claims**

A method of treating wool to improve shrinking and felting characteristics comprising contacting the wool with a modified rubbery polymer in a liquid carrier therefor under conditions which said polymer is deposited on the wool in proportion of at least 0.5% by weight of the wool, said polymer being a rubbery conjugated diene polymer having a minor proportion of its double bonds modified by the addition of anhydride groupings.

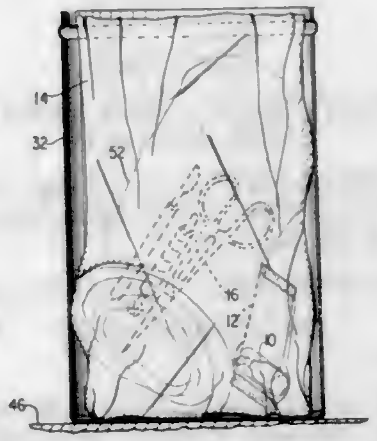
3,476,504
### TREATMENT OF TEXTILES
**John William Case, Norman Frederic Crowder, and Wilfred Arthur Stephen White, Weston Point, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain**
**No Drawing. Filed May 12, 1966, Ser. No. 549,498**
**Int. Cl. D06l** *1/04;* **D06p** *5/02*
**U.S. Cl. 8—138** **6 Claims**

There is provided a process for the production of a woven textile material. To the textile material is applied a textile assistant which is soluble in halogenated hydrocarbon solvents. The textile assistant is applied either during or prior to the weaving of the textile material. After weaving, the textile material is immersed in a halogenated hydrocarbon solvent which dissolves and removes the textile assistant from the woven textile. Thereafter, any halogenated hydrocarbon solvent adhering to the woven textile is removed by contacting the textile with hot water or steam. As a preferred feature, the solvent is removed by immersion of the textile in a hot water bath which also contains a dyestuff for the textile material.

3,476,505
### BLEACHING FIBROUS MATERIAL OF NATURAL CELLULOSE
**Uwe Kirner, Ludwigshafen (Rhine), and Bjarne Hartmark, Hambach, Weinstrasse, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**
**No Drawing. Filed Dec. 6, 1965, Ser. No. 511,988**
**Claims priority, application Germany, Dec. 10, 1964, B 79,687; May 7, 1965, B 81,807**
**Int. Cl. D06l** *3/16*
**U.S. Cl. 8—139** **6 Claims**

Process of bleaching fibrous material of natural cellulose in the absence of oxidizing agents by treating the fibrous material with a liquid medium consisting essentially of an aqueous solution of certain amounts of (i) alkali metal hydroxide, (ii) alkali metal polyphosphates and/or alkali metal salts of aminopolycarboxylic acids and (iii) anion-active and/or non-ionic wetting agents, the treatment being carried out under certain correlated temperature and time conditions between 90° C. and 150° C. and between 30 seconds and 5 hours.

3,476,506
### STERILIZATION APPARATUS
**Harold Willids Andersen, Oyster Bay, Harold W. Andersen, Laurel Hollow, and Charles H. Harrison, Oyster Bay Cove, N.Y., assignors to H. W. Andersen Products, Inc., Oyster Bay, N.Y., a corporation of New York**
**Filed Apr. 14, 1965, Ser. No. 448,090**
**Int. Cl. A61l** *3/00*
**U.S. Cl. 21—91** **8 Claims**



Apparatus for sterilizing articles such as surgical and medical instruments and devices in which a gaseous sterilant under pressure in a sealed ampule is enclosed within a gas permeable enclosure which is inserted, after breaking the ampule, in a second gas permeable enclosure with the articles to be sterilized, the permeability of the enclosures being predetermined so that gas is released through the first enclosure at a rate sufficient to establish sterilization conditions in the second enclosure and gas is released from the second enclosure to ambient atmosphere at a rate which maintains sterilization conditions therewithin while diffusing the sterilant to ambient air at a non-toxic, non-flammable concentration.

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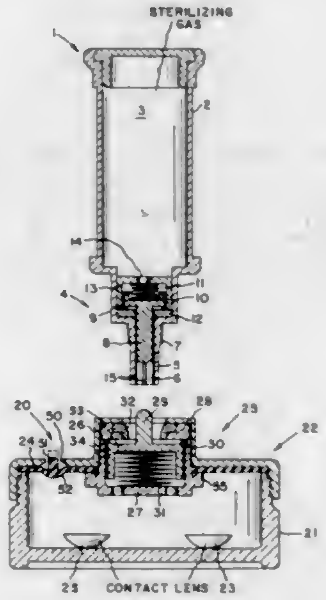
### 3,476,507
### MEDICAL STERILIZATION APPARATUS

**Harry R. Leeds, 250 Ashley Drive,**
**Rochester, N.Y. 14620**

**Filed July 10, 1967, Ser. No. 652,222**

**Int. Cl. A61l** *3/00, 5/00*

**U.S. Cl. 21—91** **7 Claims**



Medical sterilization apparatus comprising a sealable container for receiving the element, such as contact lens, to be sterilized. The container is provided with a force-responsive value which can be opened to allow a sterilizing gas to pass into the container. The gas is provided in a pressurized canister having a force-responsive valve which can be opened to allow the gas to leave the canister. The container and canister valves are so constructed that when engaged, the canister valve first causes opening of the container valve, which then causes opening of the canister valve allowing the gas to flow directly from the canister into the container. The container is provided with means for indicating the presence of gas within it.

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### 3,476,508
### CATALYTIC PURIFICATION TREATMENT OF EXHAUST GAS

**Kenneth K. Kearby and Robert J. Lang, Watchung, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**

**No Drawing. Filed Oct. 27, 1965, Ser. No. 505,413**

**Int. Cl. B01d** *47/00*

**U.S. Cl. 23—2** **5 Claims**

Exhaust gases are contacted with a zeolite catalyst, e.g., zinc-exchanged faujasite, to decompose the unburned hydrocarbons contained therein. The exhaust gases are further contacted with a shift catalyst to reduce the nitrogen oxide and carbon monoxide components of the gas.

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### 3,476,509
### PRODUCTION OF WATER SOLUBLE BASIC ALUMINUM HALIDE COMPOUND

**John L. Jones, North Plainfield, N.J., assignor to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed Mar. 8, 1967, Ser. No. 621,476**
**Int. Cl. C01f** *7/48*
**U.S. Cl. 23—50** **10 Claims**

Water soluble basic aluminum halides are prepared by reacting an aluminum halide with water and metallic aluminum in the presence of a water soluble thallium compound at a pH between 2.5 and 4.4, and at a temperature in the range of 70° C. to 105° C.

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### 3,476,510
### PROCESS FOR THE MANUFACTURE OF MAGNESIUM - AMMONIUM PHOSPHATE-HEXAHYDRATE

**Winfried Kern, Hurth, near Cologne, Joseph Cremer, Hermulheim, near Cologne, and Heinz Harnisch, Lovenich, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack bei Köln, Germany, a corporation of Germany**
**Filed Jan. 3, 1967, Ser. No. 606,722**
**Claims priority, application Germany, Jan. 19, 1966, K 58,176**
**Int. Cl. C01b** *25/34;* **A61k** *7/16*
**U.S. Cl. 23—105** **4 Claims**

Production of magnesium-ammonium phosphate-hexahydrate having a definite particle size from phosphoric acid, a magnesium salt solution, an aqueous solution of ammonia or gaseous ammonia and, if desired, an alkali liquor at temperatures lower than 60° C. The reactants are introduced jointly at a temperature between 10 and 60° C., with agitation, into a reactor while maintaining a pH-value of 4 to 8. Coarse-grained and fine-grained matter can be obtained by varying temperature and pH-value.

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### 3,476,511
### CALCINATION PROCESS FOR KAOLIN-CONTAINING CLAY

**Robert E. Sullivan, Anaconda, Mont., assignor to The Anaconda Company, a corporation of Montana**
**Filed Nov. 18, 1965, Ser. No. 508,506**
**Int. Cl. C01b** *33/26;* **C01f** *7/00*
**U.S. Cl. 23—110** **8 Claims**

Kaolin-containing clay is prepared for digestion with a mineral acid by first compacting the clay to form a sheet of compacted clay from ¼" to ⅝" in thickness, breaking the sheet of compacted clay into flakes at least ½" in length, heating the flakes of compacted clay at a temperature of from 300° to 800° F. to form dry, partially dehydrated flakes of clay having sufficient mechanical strength to withstand the tumbling action of a rotary kiln, and calcining the dry, preheated flakes of clay at a temperature of from 1100° to 1450° F. to drive off substantially all of the remaining water content of the clay.

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### 3,476,512
### PRESSURE CONTROL IN A CARBON BLACK REACTOR

**Roscoe R. Alford, Fritch, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed May 2, 1966, Ser. No. 546,715**
**Int. Cl. C09c** *1/50*
**U.S. Cl. 23—209.4** **2 Claims**

A method of controlling the pressure in a reactor containing particulate matter by forming a quiescent zone open to reactor pressure but substantially free of the presence of particulate matter and adjusting the position of a valve in the product outlet line responsive to the sensed pressure to maintain the reactor pressure substantially constant. The apparatus for establishing the quiescent zone and controlling the pressure is also disclosed.

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### 3,476,513
### PROCESS AND APPARATUS FOR THE CONVERSION OF $SO_2$ IN FLUE GAS TO SULFUR

**Albert B. Welty, Jr., Westfield, and Russell R. Johnson, Mountainside, N.J., and Glenn A. Atwood, Akron, Ohio, assignors to Esso Research and Engineering Company, a corporation of Delaware**
**Filed Aug. 25, 1966, Ser. No. 575,091**
**Int. Cl. C01b** *17/04;* **B01j** *9/04*
**U.S. Cl. 23—225** **6 Claims**

The present disclosure relates to an improved process for the conversion of $SO_2$ in flue gas to elemental sulfur wherein the $SO_2$ containing flue gas is split into a major and minor stream and then a hydrocarbon is combusted under controlled conditions to yield a reducing gas containing CO and $H_2$. The major portion of $SO_2$ in the flue gas is reacted catalytically with the reducing gas to yield $H_2S$. Finally, the minor portion of $SO_2$ containing flue gas is reacted with the $H_2S$ stream to yield elemental sulfur.

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### 3,476,514
### CANCER CYTOSCREENING

**Daniel Roth, 8 Glenwood Lane,**
**Roslyn Heights, N.Y. 11577**
**No Drawing. Filed Sept. 9, 1966, Ser. No. 578,162**
**Int. Cl. G01n** *31/22, 33/16, 21/52*
**U.S. Cl. 23—230** **6 Claims**

A method of detecting cancerous body cells by observing the change in fluorescence of a buffered quantity of a diluted standard acriflavine hydrochloride solution after the buffered solution has been allowed to stain a fixed number of cells obtained by known techniques of self-irrigation or swabbing. The solution is separated from the cells and its fluorescence instrumentally determined and compared to the fluorescence of an identical quantity of a control buffer solution. The difference in fluorescence is correlated to the presence or absence of malignant cells.

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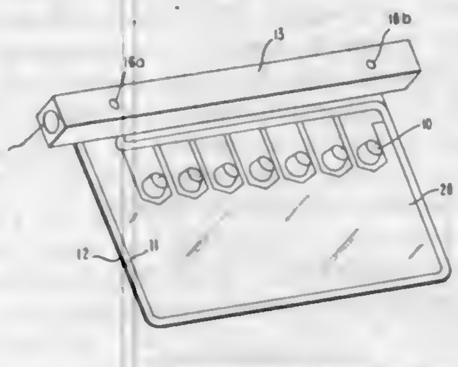
### 3,476,515
### ANALYTICAL TEST PACK AND PROCESS FOR ANALYSIS

**Donald R. Johnson, Wilmington, and Richard G. Nadeau and Gerrit Nieuweboer, Claymont, and William L. Truett, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed Apr. 26, 1966, Ser. No. 545,494**
**Int. Cl. G01n** *33/00;* **B65d** *79/00*
**U.S. Cl. 23—230** **14 Claims**



Performing analytical tests more easily, quickly and accurately by using a specially designed pouch-like container of pliable material. The container has within it a plurality of compartments, each compartment being capable of containing a different reagent and each compartment also being capable of releasing its contained reagent, independently of any other reagents present in the other compartments, into the area of the container not occupied by compartments. This latter area of the container is also adapted to receive the test sample for reaction with any single reagent or any combination of reagents released from the compartments.

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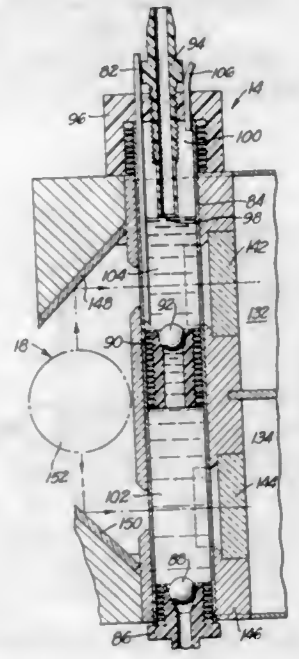
### 3,476,516
### GAS ANALYZER

**Charles E. Curry, 1358 Toledo Way,**
**Upland, Calif. 91786**
**Filed Sept. 12, 1966, Ser. No. 578,781**
**Int. Cl. G01n** *21/26, 31/22*
**U.S. Cl. 23—254** **22 Claims**



A gas analyzer which is suited for accurately measuring, with the application of suitable safeguards, the amount of alcohol vapor in the alveolar air of a human being, and recording the result of the test. The analyzer includes two transparent chambers containing liquid reagents whose transparency changes on contact with alcohol vapors, the vapors being conducted to one only of these chambers. A photocell views transmitted light from each chamber, the chambers being illuminated by a single, movable light source, whose position is calibrated to read alcohol content for null position of photocell circuit output.

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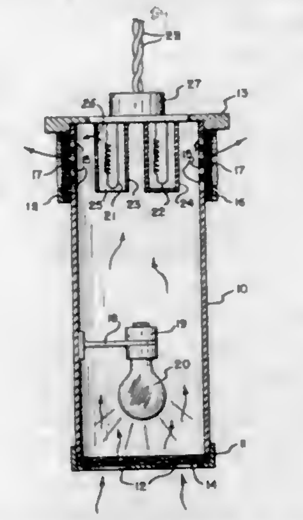
### 3,476,517
### COMBUSTIBLE GAS DETECTING DEVICE

**Albert H. Smith, Ossining, N.Y., assignor, by mesne assignments, to Automation Industries, Inc., El Segundo, Calif., a corporation of California**
**Filed Nov. 22, 1965, Ser. No. 509,079**
**Int. Cl. G01n** *33/22*
**U.S. Cl. 23—255** **8 Claims**



A gas detector which includes a platinum filament for producing a catalytic reaction wherein any combustible constituents in a potentially explosive mixture are oxidized and the temperature of the filament is increased by a corresponding amount. In addition, heating means, such as an incandescent lamp, are provided for producing a thermal siphon wherein the mixture is preheated to a stabilized level prior to detection and the heating current through the filaments is regulated.

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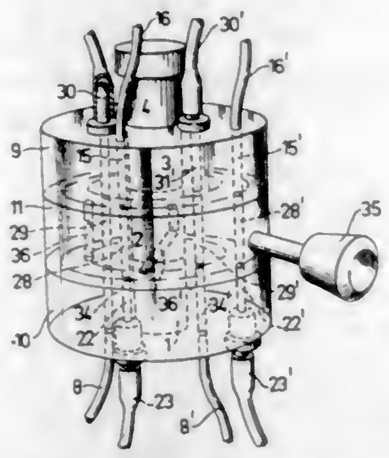
### 3,476,518
### AUTOMATIC PIPETTING DEVICE

**Olof Gunnar Hugo Jungner, Hovas, Sweden, assignor to AB Medicinsk-Kemiska Laboratoriet Calab, Vallingby, Sweden**
**Filed July 29, 1966, Ser. No. 568,795**
**Claims priority, application Sweden, Sept. 2, 1965, 11,479/65**
**Int. Cl. B01l** *3/02*
**U.S. Cl. 23—259** **2 Claims**



An automatic pipetting device used to mix a plurality of fluids of varying volumes including a number of volumetric systems connected to a common valving arrangement which connects the fluid volumes to measuring and storing vessels. The valving arrangement includes an intermediate sequentially indexible disc sandwiched between two outer discs, wherein the two outer discs have an equal number of fluid-carrying channels arranged concentrically about a central common axis and the intermediate disc having a plurality of channels for interconnecting the correspondingly located channels and adjacently located channels in the outer discs.

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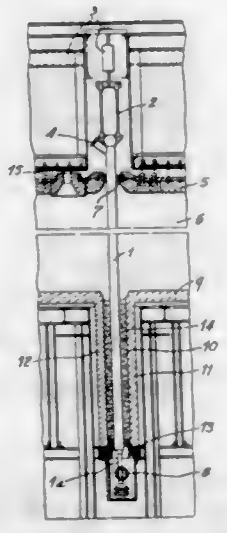
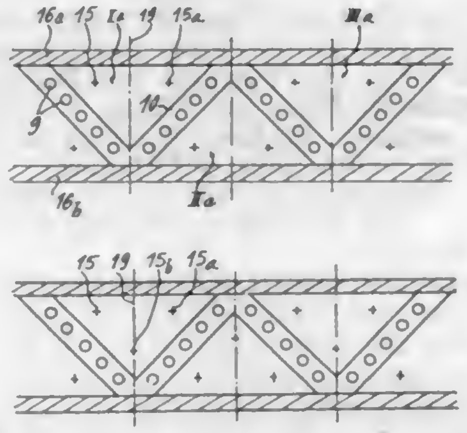
### 3,476,519
### REFORMING OVEN FOR A SYNTHETIC GAS PRODUCTION PLANT

**Jacques E. Decaux, Paris, France, assignor to Societe de Construction d'Appareils pour Gaz a l'Bau & Gaz Industriels, Montrouge, Hauts-de-Seine, France, a French company**
**Filed Oct. 11, 1966, Ser. No. 585,802**
**Claims priority, application France, Oct. 19, 1965, 35,406**
**Int. Cl. B01t** *1/14*
**U.S. Cl. 23—277** **2 Claims**



In a reforming oven for producing synthetic gas, wherein vertically disposed pipes are arranged in rows defining successive triangles two sides of each of which triangles are formed by the pipes and the third side of each triangle is constituted by a portion of a refractory heat-resisting side wall of the oven, the improved construction in which the rows of pipes are disposed in zigzag relationship between two walls. With such an arrangement any pipe (of the array of pipes) is exposed both to direct radiant heat and also to reflected heat and hence its heating is desirably homogeneous.



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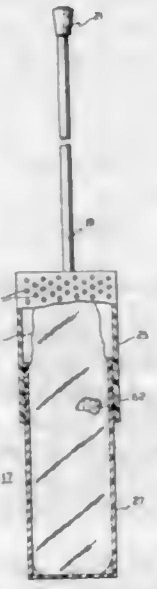
### 3,476,520
### CHEMICAL ADDITION OF GAS TO LIQUID SOLVENT APPARATUS

**Daniel T. Hovey, Hillcrest, Niagara Falls, N.Y. 14303**
**Filed Sept. 19, 1966, Ser. No. 580,456**
**Int. Cl. B01j** *7/02*
**U.S. Cl. 23—282** **8 Claims**



Apparatus capable of carbonizing water. A pair of members each preferably cylindrical and each closed at one end are threaded together to comprise a housing which is apertured over a minor portion of its surface. The housing is supported within a vessel containing a solvent, such as water, by means of a rod and stopper for the vessel. A filter bag, containing the chemicals for reaction, is disposed within the housing and the filter bag is previous to the gas and solvent but impervious to solid reactants and by-products from the chemical reaction, such that pure carbonization is obtained.

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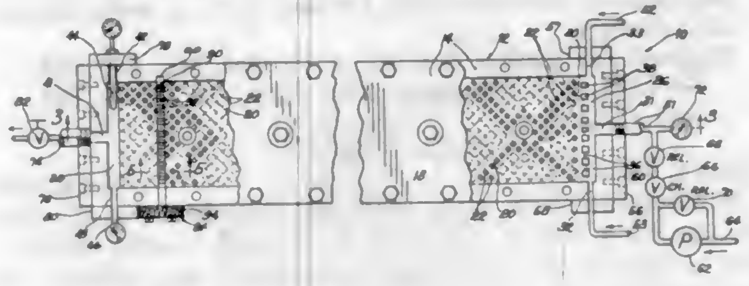
### 3,476,521
### POLYMERIZING APPARATUS

**Joseph T. Wise, 1737 W. 35th St., Chicago, Ill. 60609**
**Filed Jan. 20, 1967, Ser. No. 610,616**
**Int. Cl. B01j** *3/00;* **F28f** *3/14*
**U.S. Cl. 23—285** **20 Claims**

Polymerizing apparatus, particularly for continuously polymerizing liquid and gaseous hydrocarbon monomers, said apparatus including flat members secured together in opposed relation and formed with intersecting diagonal grooves with generally rectangular pillars therebetween; the pillars of the opposed membeis being offset so that the pillars of each member are opposite the grooves of the other member to maximize heat transfer; angularly related entrances for introducing the liquid and gaseous monomers between the opposed members; and a valve spindle rotatably mounted between the members and having passages movable into and out of registration with the grooves for regulating the flow of the hydrocarbons therealong.



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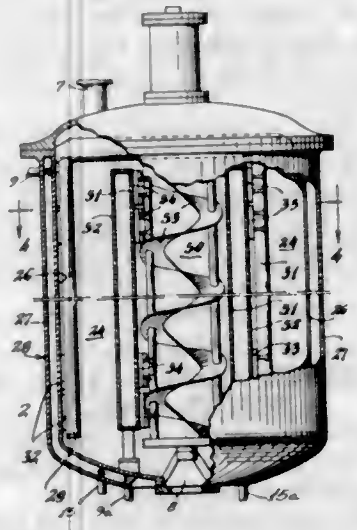
### 3,476,522
### HIGH VISCOSITY REACTORS

**William B. Stovall, Wilton, Conn., assignor to Crawford & Russell Incorporated, Stamford, Conn.**
**Filed Nov. 16, 1966, Ser. No. 594,863**
**Int. Cl. F28f** *7/10*
**U.S. Cl. 23—285** **9 Claims**



A high viscosity reactor comprising a central draft tube and at least one annular recirculation zone incorporating a plurality of wiper columns each carrying one or more pivoted scraper blades all coacting with a single heat transfer surface bounding the recirculation zone, and substantially spaced from the opposing boundary heat transfer surface, to permit free unobstructed circulation of the reaction mass between each wiper column and the opposite boundary surface.

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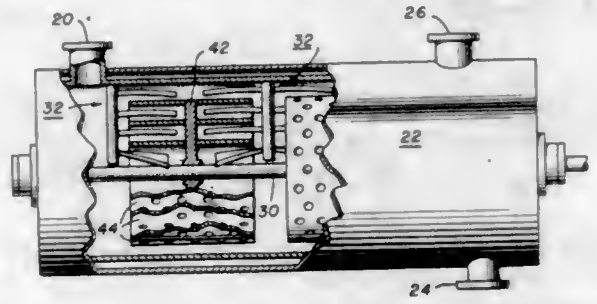
### 3,476,523
### POLYMERIZER APPARATUS

**Allen E. Leybourne III, Decatur, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**Filed Dec. 8, 1966, Ser. No. 600,259**
**Int. Cl. B01j** *3/00*
**U.S. Cl. 23—285** **7 Claims**

Rotor fingers radially-spaced from a generally parallel horizontal axis about which they rotate lift polymer in films and streams above the liquid level. Stator members are mounted above the liquid level and within the cylindrical surface generated by the rotor fingers. The polymer films and streams fall from the rotor fingers to the stator members, and are thereafter stretched as the rotor fingers continue to rotate. This generates added polymer surface and aids in removing volatile components. The stator members are skewed so as to advance the polymer. In another embodiment the rotor fingers are replaced by perforated rotating cylinders.



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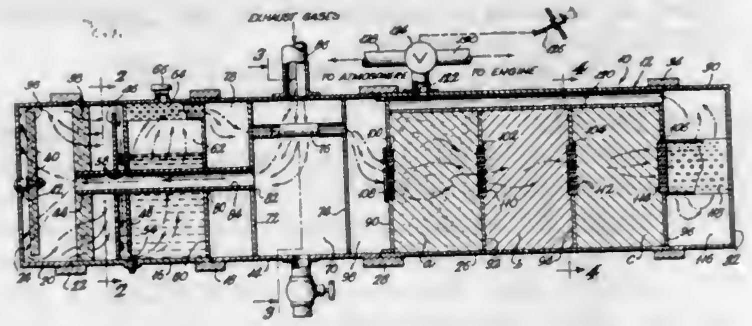
### 3,476,524
### APPARATUS AND METHOD FOR TREATING GASEOUS PRODUCTS OF COMBUSTION

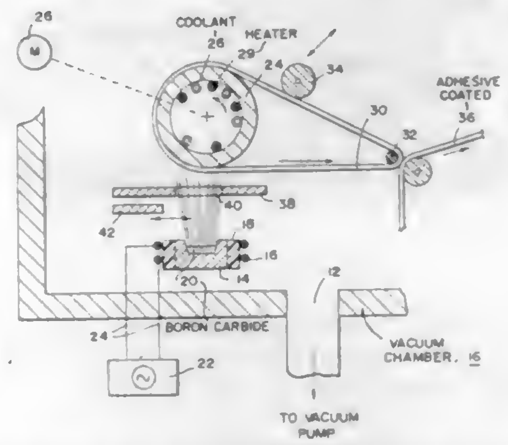
**James F. Burke, 148 E. 19th St.,**
**New York, N.Y. 10003**
**Filed Feb. 21, 1966, Ser. No. 529,069**
**Int. Cl. B01d** *47/02;* **B01j** *9/00*
**U.S. Cl. 23—288** **8 Claims**



1. Apparatus for treating gaseous products of combustion for removal of undesirable constituents thereof, said apparatus embodying a sequential arrangement of units comprising, a means forming a chamber adapted to have the gaseous products of combustion introduced thereinto directly from the combustion source, means forming a wash liquid containing chamber, means for passing said gaseous products into and through wash liquid in said liquid containing chamber, filter means interposed between said first chamber and said wash liquid containing chamber for filtering said gases in the passage thereof into the wash liquid chamber, means providing a passage for flow of the filtered and washed gases out of said liquid containing chamber, means forming a group of at least three treatment chambers, constituting (a) a sorption material containing chamber (b) an oxidant containing chamber, and (c) a catalyst containing chamber, means for directing the filtered and washed gases into said sorption material containing chamber for chemical treatment therein, means for conducting the chemically treated gases from the sorption material containing chamber into the oxidant containing chamber for further treatment therein, means for passing the further treated gases from the oxidant containing chamber into the catalyst containing chamber for chemical treatment therein, the filtered and washed gases passing into and through said treatment chambers in the order recited, and means for discharging the treated gases from the catalyst chamber.

### 3,476,525
## PRODUCTION OF BORON CARBIDE FLAKES

**Lloyd R. Allen, Belmont, Mass., assignor to National Research Corporation, Newton, Mass., a corporation of Massachusetts**
**Filed Sept. 26, 1966, Ser. No. 581,791**
**Int. Cl. B01j** *17/30;* **C01b** *31/30*
**U.S. Cl. 23—294** **3 Claims**



Boron carbide flake for use in composite reinforcement is made by vacuum depositing first and second layers of boron carbide on a flexible substrate and flexing the coated product causing the second layer to fall off the product in flake form.

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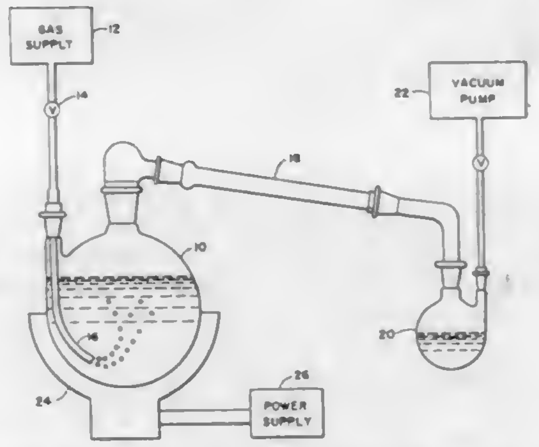
### 3,476,526
## PROCESS FOR RECOVERING FILLER FROM ELASTOMER

**Lawrence W. Hartzel, Dayton, Ohio, assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed May 12, 1967, Ser. No. 639,597**
**Int. Cl. B01f** *9/22, 9/00*
**U.S. Cl. 23—312** **9 Claims**



A process for recovering filler material from an elastomer matrix by decomposing the elastomer matrix at a high temperature in a high boiling organic liquid plasticizer having a stable low vapor pressure and low viscosity at the operating temperature and separating and cleaning the residue from the reaction mixture.

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### 3,476,527
## BORON HYDRIDE CARBONYL COMPOUNDS AND PROCESS OF PRODUCING THEM

**John C. Sauer, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed June 28, 1962, Ser. No. 206,554**
**Int. Cl. C01b** *6/08*
**U.S. Cl. 23—361** **3 Claims**

1. A compound of the formula

$$(H_3O^+)_m[B_{12}H_{10+m}(CO)_n]^{m-}\cdot mpH_2O$$

wherein $m$ is a whole number of from 0 to 1, inclusive; $n$ is a whole number of from 1 to 2, inclusive, the sum of said $m$ and $n$ being 2; and $p$ is a cardinal number of at least 2.

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### 3,476,528
## HIGH-TEMPERATURE BRAZE SHIM STOCK

**Bruce J. Bliss, North Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**
**Original application Oct. 13, 1965, Ser. No. 495,505. Divided and this application Mar. 10, 1968, Ser. No. 737,262**
**Int. Cl. B22f** *7/04*
**U.S. Cl. 29—182.3** **4 Claims**

High-temperature braze shim stock in the form of thin foil having a nickel base strip faced with evenly distributed materials in particulate form which are bonded to one another and some of them to the nickel base strip. The resulting foil is in an unalloyed condition of the constituent materials and is therefore malleable so that it will flex without cracking. The selection and quantities of the materials of the base layer and the particles are such that when the malleable stock is appropriately sintered a high-temperature alloy stock will result, which while brittle has uses as a high-temperature braze material between certain surfaces. The stock in the malleable form or in the brittle form is useful as a braze material, depending upon the circumstances of use.

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### 3,476,529
## REINFORCED IRON BASE ALLOYS CONTAINING BORON FIBERS

**Dennis S. Dubin, Merion, and Solomon Frost, Morton, Pa., assignors to U.S. Composites Corporation, Philadelphia, Pa., a corporation of Pennsylvania**
**No Drawing. Filed Jan. 11, 1967, Ser. No. 608,501**
**Int. Cl. B22f** *7/02;* **C22c** *39/50*
**U.S. Cl. 29—183.5** **7 Claims**

Fibers containing a tungsten or titanium core, an intermediate coating of boron, and an outside coating of titanium or aluminum oxide, reinforced iron base alloys containing such fibers, and a method for making such fibers and such reinforced iron base alloys.

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### 3,476,530
## IRON BASED CONDUCTIVE FILLER FOR PLASTICS

**John E. Ehrreich, Arlington, and Donald H. Avery, Boston, Mass., assignors to Chomerics, Inc., Cambridge, Mass., a corporation of Delaware**
**Continuation of application Ser. No. 227,755, Oct. 2, 1962, which is a continuation-in-part of application Ser. No. 153,078, Nov. 17, 1961. This application June 10, 1966, Ser. No. 556,777**
**Int. Cl. B23p** *3/20;* **C23b** *5/00*
**U.S. Cl. 29—192** **3 Claims**

A process for preparing conductive metal powders comprising replacement plating an iron powder by immersion in a copper sulfate solution to deposit an adherent, thin, continuous film of copper, and thereafter immersing the copper coated powder in an aqueous solution of silver cyanide to deposit an adherent thin continuous film of silver.

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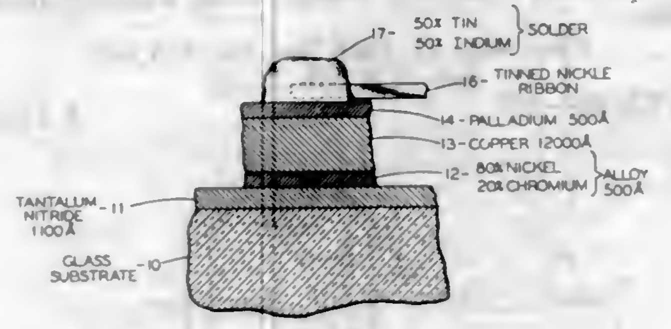
### 3,476,531
## PALLADIUM COPPER CONTACT FOR SOLDERING

**Robert F. Brewer and Benjamin Piechocki, Bethlehem, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Original application Sept. 7, 1966, Ser. No. 577,743, now Patent No. 3,413,711, dated Dec. 3, 1968. Divided and this application June 17, 1968, Ser. No. 753,302**
**Int. Cl. B23k** *35/30, 35/14;* **B32b** *15/20*
**U.S. Cl. 29—195** **2 Claims**

A circuit contact has especial utility in wave soldering of metallic leads to thin film resistors. The circuit contact is composed of a copper layer upon which palladium is deposited so that oxidation of the copper is precluded, while only enough palladium is available so that all of the palladium goes into solid solution upon the subsequent application of solder to attach a wire lead to the contact. The contact comprises a base layer of an 80% nickel–20% chromium alloy, a layer of copper on the base layer, having a thickness of at least 12,000 A., and a layer of palladium on the copper layer, having a thickness of 500–750 A.


17- 50% TIN 50% INDIUM SOLDER
16- TINNED NICKLE RIBBON
14 - PALLADIUM 500Å
13 - COPPER 12000Å
12- 80% NICKEL 20% CHROMIUM ALLOY 500Å
TANTALUM NITRIDE 1100Å - 11
GLASS SUBSTRATE - 10

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### 3,476,532
## METAL-CONTAINING COMPLEXES OF OXIDIZED POLYETHYLENE

**Paul F. Hartman, Wayne, N.J., assignor, by mesne assignments, to Allied Chemical Corporation, New York, N.Y., a corporation of New York**
**No Drawing. Filed Nov. 25, 1964, Ser. No. 414,019**
**Int. Cl. C10l** *7/02;* **C08f** *47/08*
**U.S. Cl. 44—7** **19 Claims**

The present invention more particularly relates to novel and especially useful polyethylene complexes formed on heating of a mixture of a metal salt or metal complex with an oxidized polyethylene oxidized to the extent of containing between 0.2 to 7.5 weight percent chemically combined oxygen in the form of functional oxygen groups including by way of example, carbonyl, carboxyl, hydroxy, etc. The resulting complexed oxidized polyethylene is useful in a variety of applications including the production of inflammable elastic gels and grease-like compositions, waterproofing of textile fibers, and production of polyethylene foam and film.

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### 3,476,533
## JET FUEL COMPOSITION

**George W. Eckert, Wappingers Falls, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware**
**No Drawing. Filed July 15, 1965, Ser. No. 472,354**
**Int. Cl. C10l** *1/26*
**U.S. Cl. 44—58** **9 Claims**

A jet fuel composition boiling in the gasoline and/or kerosene ranges containing trimer acid and a monoamine salt of a hydrocarbon substituted hydrogen phosphate, in an amount effective to provide a fuel having antiwear properties.

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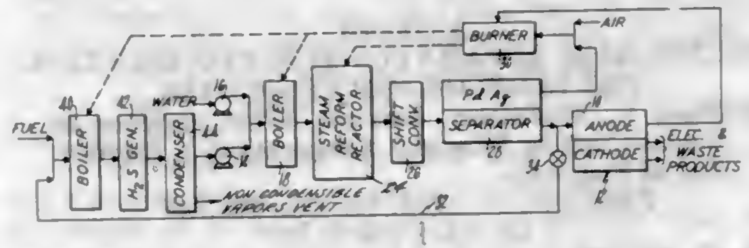
### 3,476,534
## HYDROGEN GENERATOR INCLUDING DESULFURIZATION WITH LOW PRESSURE HYDROGEN FEEDBACK

**Richard F. Buswell, Glastonbury, Herbert J. Setzer, Ellington, and Richard A. Sederquist, Newington, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Sept. 26, 1967, Ser. No. 670,641**
**Int. Cl. C10g** *23/00*
**U.S. Cl. 48—94** **6 Claims**

A hydrogen generator wherein hydrocarbon fuel fed to said generator is mixed with feedback hydrogen at low pressure; the mix is vaporized in a boiler, passed through an organic-sulfur converter (a hydrogen-sulfide generator) and is then condensed. The output of the condenser is then pumped to high pressure and mixed with high pressure water to form feedstock for the steam-reforming reactor. The feedback hydrogen may be taken from the output of a palladium-silver separator, from the effluent of a hydrogen utilization device, from a shift converter, or from the steam-reforming reactor.



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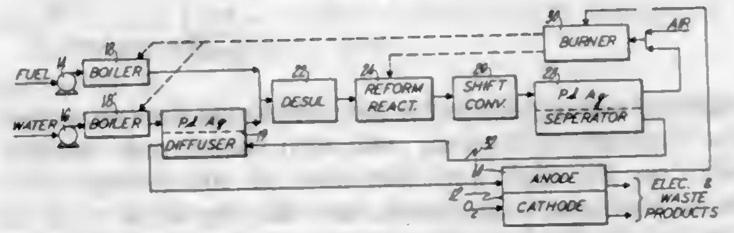
### 3,476,535
## HYDROGEN GENERATOR INCLUDING DESULFURIZATION WITH DIFFUSED HYDROGEN FEEDBACK

**Richard F. Buswell, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Sept. 26, 1967, Ser. No. 670,642**
**Int. Cl. C10g** *23/00*
**U.S. Cl. 48—94** **5 Claims**



A hydrogen generator utilizing steam and hydrocarbon fuel as the reactants and including a desulfurization device and a hydrogen feedback system. Hydrogen is recycled and fed to the steam stream by means of a diffusion device. The hydrogen is fed back serially or in parallel from any point downstream of a steam reforming reactor.

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### 3,476,536
## HYDROGEN PRODUCTION

**Joseph F. McMahon, Clinton, N.J., and Thomas H. Milliken, New York, N.Y., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed Feb. 2, 1965, Ser. No. 429,919**
**Int. Cl. B01j** *11/26;* **C10j** *1/20;* **C10g** *35/06*
**U.S. Cl. 48—214** **12 Claims**

Catalytic composition containing elemental nickel, nickel oxide or mixtures thereof and a zirconia carrier in which the content of nickel, expressed as elemental nickel and based on the total weight of the catalyst is from about 0.01 to about 0.7 weight percent, and method for the steam reforming of hydrocarbons in the presence of said catalyst to produce gaseous product containing hydrogen without substantial, permanent deposition of carbon on the catalyst.

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### 3,476,537
## ABRASIVE COMPOSITION WITH LIMESTONE AS THE POROSITY-INDUCING AGENT

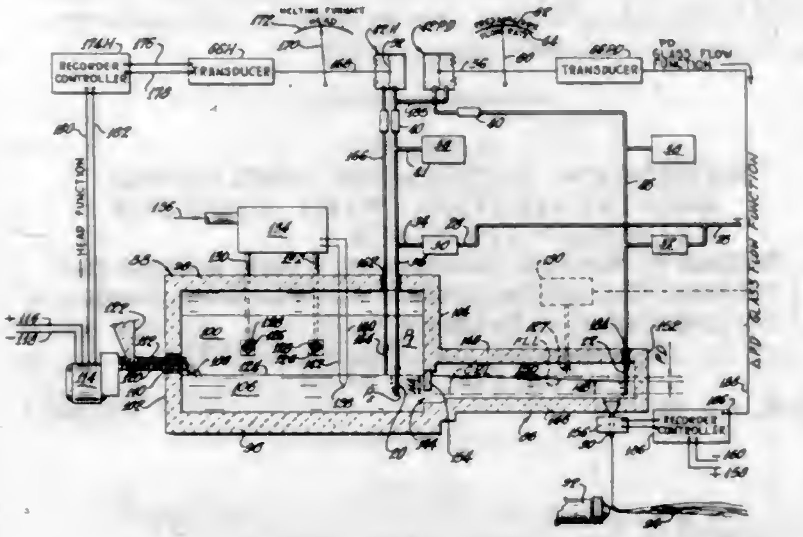
**Robert J. Markotan, Allen Park, Mich., assignor to Acme Abrasive Co., Warren, Mich., a corporation of Michigan**
**No Drawing. Filed May 23, 1966, Ser. No. 551,879**
**Int. Cl. B24d** *3/04, 3/28*
**U.S. Cl. 51—296** **4 Claims**

The abrasive composition contains granular abrasive material, granular limestone, a granular filler and a binder.

The abrasive and limestone grains are of the same order in size, while the filler grains are much smaller size. The ratio by volume of abrasive and limestone in the composition approximates less than 50%:10%.

### 3,476,538
### PROCESS AND APPARATUS FOR CONTROLLING THE FLOW OF MOLTEN GLASS

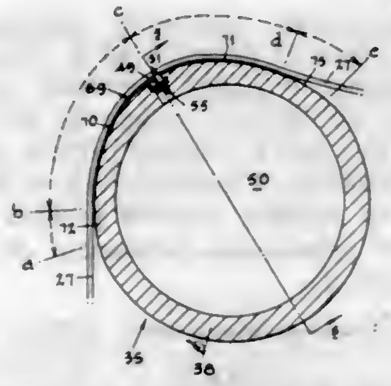
**William C. Trethewey, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware**
**Filed Oct. 24, 1965, Ser. No. 504,847**
**Int. Cl. C03b** *5/26*
**U.S. Cl. 65—29** **7 Claims**



Method and apparatus for controlling the flow of molten glass through a furnace wherein submerged bubbler probes on the high and low sides of the furnace provide a pressure drop signal, and the signal is used to maintain the level in the melter constant, and the outflow from the forehearth constant; composition and viscosity are also controlled within the scope of the invention.

### 3,476,539
### PRODUCING SHEET GLASS

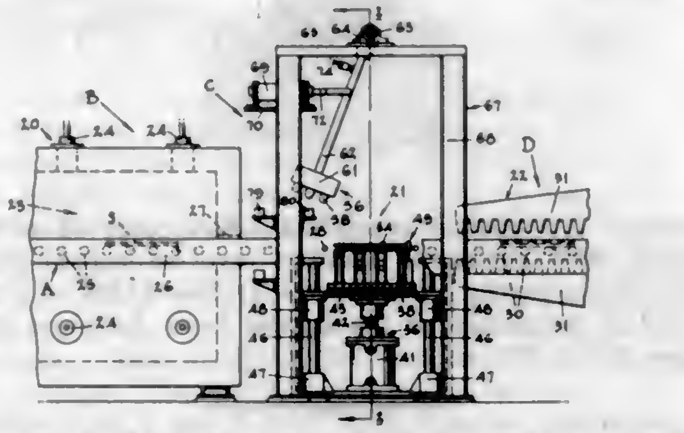
**William E. McCown and Norman K. Gladieux, Toledo, Ohio, and Donald W. Dunipace, Boulder, Colo., assignors to Libbey-Owens-Ford Company, Toledo, Ohio, a corporation of Ohio**
**Continuation-in-part of application Ser. No. 519,087, Jan. 6, 1966. This application Apr. 28, 1967, Ser. No. 634,575**
**Int. Cl. C03b** *15/04*
**U.S. Cl. 65—25** **18 Claims**



Supporting a continuous sheet of glass for movement along a predetermined path while in a highly heated plastic condition. The sheet is moved over a stationary curvilinear surface having an ever changing radius of curvature decreasing from the points of tangency with the sheet toward a common line intermediate thereof, and a fluid film is interposed between the stationary curvilinear surface and the sheet to float the sheet upon the film and out of contact with the curvilinear surface as it passes thereover.

### 3,476,540
### METHOD OF BENDING GLASS SHEETS

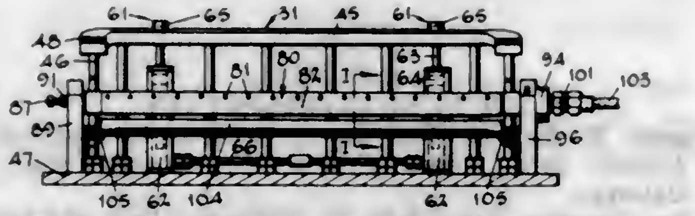
**George F. Ritter, Jr., and Frank J. Carson, Toledo, and Frank J. Hymore, Oregon, Ohio, assignors to Libbey-Owens-Ford Company, Toledo, Ohio, a corporation of Ohio**
**Filed Aug. 22, 1966, Ser. No. 573,969**
**Int. Cl. C03b** *23/02*
**U.S. Cl. 65—107** **8 Claims**



A method of bending glass sheets by utilizing inertial and gravitational forces. A flat sheet of glass, heated to bending temperature, is supported horizontally above a mold having a shaping surface corresponding in curvature to the sheet when bent. The mold is accelerated upward to lift the sheet bodily, whereupon the sheet settles into contact with the shaping surface of the mold under the influence of forces resulting from the inertia of the sheet and from gravity.

### 3,476,541
### APPARATUS FOR SPRAY COOLING GLASS SHEETS

**George F. Ritter, Jr., Toledo, Ohio, assignor to Libbey-Owens-Ford Company, Toledo, Ohio, a corporation of Ohio**
**Filed Apr. 18, 1966, Ser. No. 543,096**
**Int. Cl. C03b** *23/06, 27/00*
**U.S. Cl. 65—268** **3 Claims**

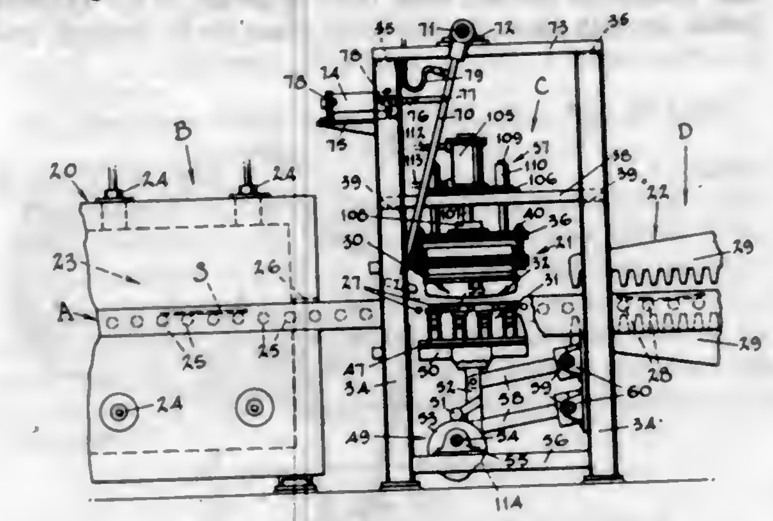


Apparatus for setting glass sheets to curvature after they are press bent and while they are still in contact with one of the shaping surfaces of the bending mold. Cooling air is directed against the sheet by means of a tube which is journaled to rotate about its longitudinal axis and has orifices formed in it which are located such that the air emitting from the orifices causes the tubes to rotate, moving the air across the sheet surface.

### 3,476,542
### APPARATUS FOR SPRAY COOLING GLASS SHEETS

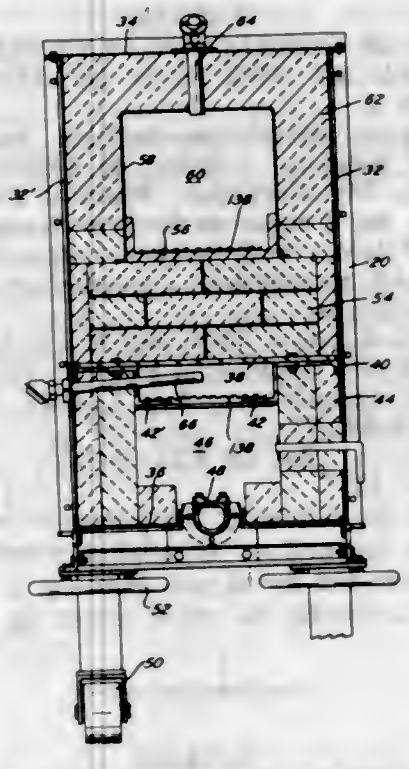
**George F. Ritter, Jr., Toledo, Ohio, assignor to Libbey-Owens-Ford Company, Toledo, Ohio, a corporation of Ohio**
**Filed Apr. 18, 1966, Ser. No. 543,117**
**Int. Cl. C03b** *23/06, 27/00*
**U.S. Cl. 65—268** **3 Claims**

Apparatus for setting a glass sheet in the desired curvature after being press bent and while the sheet is still in contact with one of the shaping surfaces of the bending mold. The sheet is cooled by streams of pressurized gas with apparatus provided to diffuse the streams before they strike the glass, thus permitting a high volume flow of gas to be directed against the sheets without danger of surface damage.



### 3,476,543
### LEHR FOR HEAT TREATING GLASS

**Francis E. Dorsey, Millville, N.J., assignor to Maul Bros. Inc., Millville, N.J., a corporation of New Jersey**
**Filed May 16, 1966, Ser. No. 550,470**
**Int. Cl. C03b** *27/00*
**U.S. Cl. 65—349** **10 Claims**



A lehr for heat treating glass bottles is disclosed. Heat for annealing glass bottles is introduced only into the lower run of a conveyor endless belt. In a cooling section of the lehr, adjustable manifolds are provided for discharging air downwardly toward the bottles and fans are disposed below the bottles for blowing air upwardly toward the manifold.

### 3,476,544
### FERTILIZER PRILL CONSISTING OF AMMONIUM NITRATE AND LANGBEINITE AND THE METHOD OF PREPARING SAID PRILL

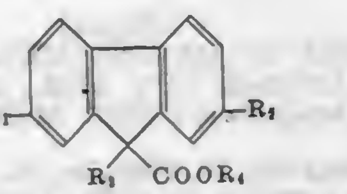
**Srini Vasan, Glencoe, Ill., assignor to International Minerals and Chemical Corporation, Skokie, Ill.**
**Filed Apr. 12, 1967, Ser. No. 630,401**
**Int. Cl. C05c** *1/00, 1/02*
**U.S. Cl. 71—59** **4 Claims**

This invention is a coprilling process for making a product comprising a minor amount of langbeinite and a major amount of ammonium nitrate.

### 3,476,545
### COMPOSITION FOR RETARDING PLANT GROWTH

**Günther Mohr and Dietrich Erdmann, Darmstadt, Konrad Niethammer, Traisa, and Siegmund Lust, Gerhart Schneider, and Ernst Jacobi, Darmstadt, Germany, assignors to E. Merck A.G., Darmstadt, Germany**
**No Drawing. Filed Nov. 19, 1965, Ser. No. 508,835**
**Claims priority, application Germany, Nov. 27, 1964, M 63,287; Mar. 13, 1965, M 64,518**
**Int. Cl. A01n** *9/20, 9/24;* **C07c** *69/76*
**U.S. Cl. 71—76** **13 Claims**

1. A composition for retarding plant growth comprising a carrier and as active ingredient not more than 95% by weight of at least one compound selected from the group consisting of compounds of the formula



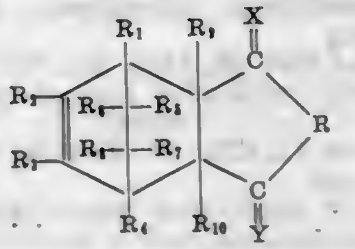
wherein:

$R_1$ and $R_2$ each represents H, Cl, Br or I;
$R_3$ represents H, OH or Cl;
$R_4$ represents allyl, propargyl, butenyl, and butynyl; butenyl and butynyl substituted by OH or chlorine;
alkyl radical of 2–4 carbon atoms substituted by one member of the group consisting of hydroxy, chlorine, phenoxy, and R;
alkyl radical of 2–4 carbon atoms having interposed in the chain one oxygen atom,
phenyl or R;
R represents phenyl or phenoxy each substituted by at least one member of the group consisting of 1–3 halogen atoms and 1–3 hydroxy groups; or
alkyl ammonium cation wherein alkyl designates a member from the group consisting of aliphatic alkyl radicals of up to 22 carbon atoms; aliphatic alkyl radicals of up to 22 carbon atoms having interposed in the chain 1–4 non-adjacent members selected from the group consisting of O, NH and mixtures thereof; and aliphatic alkyl radicals of up to 22 carbon atoms substituted by OH or $NH_2$; and aliphatic alkyl radicals of up to 22 carbon atoms having interposed in the chain 1–4 non-adjacent members selected from the group consisting of O, NH, and mixtures thereof and substituted by 1–4 members selected from the group consisting of OH and $NH_2$.

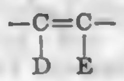
### 3,476,546
### BICYCLO(2,2,2)OCT-5-ENE-2,3-DICARBOXYLIC ANHYDRIDES AS HERBICIDES

**Gwyneth M. Roberts, Doncaster, Victoria, Faye E. Butt, North Balwyn, Victoria, Asbjorn Baklien, Kingsbury, Victoria, Jocelyn M. Gregory, Croydon, Victoria, and Jan Kuiper, Wagga Wagga, New South Wales, Australia, assignors to Imperial Chemical Industries of Australia and New Zealand Limited, Melbourne, Victoria, Australia**
**No Drawing. Filed Dec. 2, 1965, Ser. No. 511,251**
**Claims priority, application Australia, Dec. 17, 1964, 53,063/64**
**Int. Cl. A01n** *17/00, 9/24;* **C07d** *5/32*
**U.S. Cl. 71—88** **3 Claims**

Selective herbicidal compositions of matter containing as active ingredient a compound of the formula:

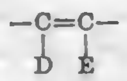


wherein X and Y are oxygen; R is oxygen or



$$-\underset{D}{\overset{|}{C}}=\underset{E}{\overset{|}{C}}-$$

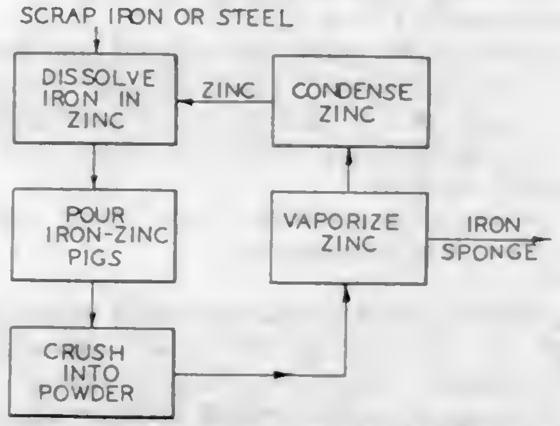
D, E and $R_1$ to $R_{10}$ inclusive, which may all be the same or different, are hydrogen, halogen or alkyl containing up to 3 carbon atoms and D and E may be linked to form a 6-membered ring whenever they stand for alkyl provided, however, that $R_9$ and $R_{10}$ stand for hydrogen whenever R is



$$-\underset{D}{\overset{|}{C}}=\underset{E}{\overset{|}{C}}-$$

### 3,476,547
### METHOD OF MAKING METAL POWDER

**Ernest T. Martyniuk, Troy, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Oct. 20, 1966, Ser. No. 588,150**
**Int. Cl. B22f** *9/00;* **C21b** *13/00;* **C22f** *1/08*
**U.S. Cl. 75—.5 8 Claims**



The invention provides a method of reducing certain soft scrap metals such as iron and copper to a useful powder form. The metallic scrap is dissolved in molten zinc and solidified to form a friable ingot which is comminuted to a fine powder. The zinc is separated from the powder by sublimation to leave a residual metal sponge which is readily comminuted to a powder of suitable size.

### 3,476,548
### METHOD FOR REMOVING OXIDES FROM ALLOY POWDER

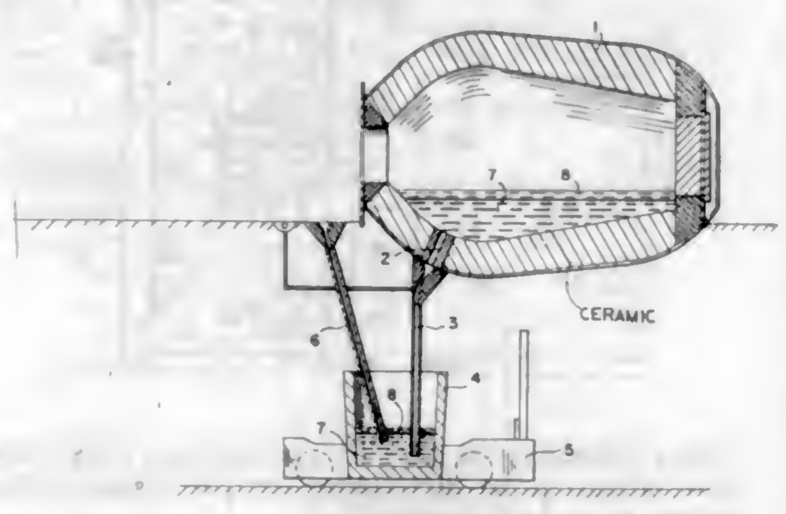
**Thomas S. Cloran, East Liverpool, Ohio, assignor to Crucible Inc., a corporation of Delaware**
**No Drawing. Filed Dec. 9, 1966, Ser. No. 600,379**
**Int. Cl. B22f** *1/00;* **C23g** *1/02*
**U.S. Cl. 75—.5 6 Claims**

The invention relates to the preparation of powdered metals for compacting by treating with molten caustic, water rinsing, pickling, water rinsing, removing water by use of drying agent, which has substantially zero solubility for water and high vapor pressure, and removing said drying agent by vaporization thereof. The powdered metal so treated is dry, of low oxygen content and free of complex oxides.

### 3,476,549
### PROCESS FOR CASTING OF METAL FROM A REFINING FURNACE INTO A LADLE

**Ernest Glaesener, Dudelange, Luxembourg, assignor to ARBED, Acieries Reunies de Burbach-Eich-Dudelange, S.A., Luxembourg, Luxembourg, a corporation of Luxembourg**
**Filed Nov. 28, 1966, Ser. No. 597,462**
**Claims priority, application Luxembourg, Dec. 7, 1965, 50,017**
**Int. Cl. C22c** *33/00;* **B22d** *11/10*
**U.S. Cl. 75—46 1 Claim**

A method of casting steel from a refining furnace into a ladle for the transportation of the steel in which a tube is connected to the refining furnace at air-tight junction and leads the molten steel from a point in the furnace below its slag layer to the ladle close to its bottom and beneath the slag layer therein. Deoxidation and alloying materials are introduced into the steel through another tube leading below the slag layer in the ladle.



### 3,476,550
### METHOD FOR CORRECTING THE TEMPERATURE OF STEEL AT THE END OF THE REFINING PROCESS

**Jacques Ledune, Marchienne-au-Pont, and Gaul Nilles, Embourg, Belgium, assignors to Centre Nationale de Recherches Metallurgiques, Brussels, Belgium, Societe Anonyme des Forges de la Providence, Marchienne-au-Pont, Belgium, both Belgian companies and Mannesmann, Aktiengesellschaft, Dusseldorf, Germany, a German company**
**Filed July 6, 1966, Ser. No. 563,287**
**Claims priority, application Belgium, Nov. 17, 1965, 672,472; Luxembourg, July 7, 1965, 49,012; Dec. 15, 1965, 50,072**
**Int. Cl. C21c** *5/28*
**U.S. Cl. 75—52 2 Claims**

A method for adjusting the temperature of steel in a converter at the end of a refining process consists of adding lime to the metal and blasting in oxygen while causing the converter to rotate about its axis.

### 3,476,551
### PROCESS FOR TREATING METALS

**Frederick A. Lowenheim, Plainfield, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Apr. 21, 1966, Ser. No. 544,117**
**Int. Cl. C22b** *25/06*
**U.S. Cl. 75—98 6 Claims**

A process is provided for separating the aluminum content of objects containing both tin and aluminum by contacting the objects with an aqueous solution of an alkali metal hydroxide under reducing conditions to precipitate aluminum hydroxide, and with substantially no loss of the alkali. Further, the process includes removal of the precipitated aluminum hydroxide from the reacting environment by removing a portion of the aqueous solution with the precipitate therein, separating the two and returning the separated solution to the reacting environment. The process applies specifically to tin-bearing aluminum-ended cans and includes contacting the cans with the aqueous solution for a period of time sufficient to separate the aluminum ends from the can bodies.

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### 3,476,552
### MERCURY PROCESS

**George A. Parks, Stanford, and Robert E. Baker, San Francisco, Calif., assignors to Mountain Copper Company of California, Martinez, Calif., a corporation of California**
**No Drawing. Filed Sept. 7, 1966, Ser. No. 577,604**
**Int. Cl. C22b** *3/00*
**U.S. Cl. 75—101 7 Claims**

Mercury is recovered from mercury containing material by contacting the material with a hypochlorite solution maintained at a pH of 4.5 to 9.5 to dissolve the mercury in the hypochlorite solution. The mercury may be recovered from the solution by various means such as by adsorbing the mercury on activated carbon and heating the carbon to volatilize the mercury and regenerate the carbon.

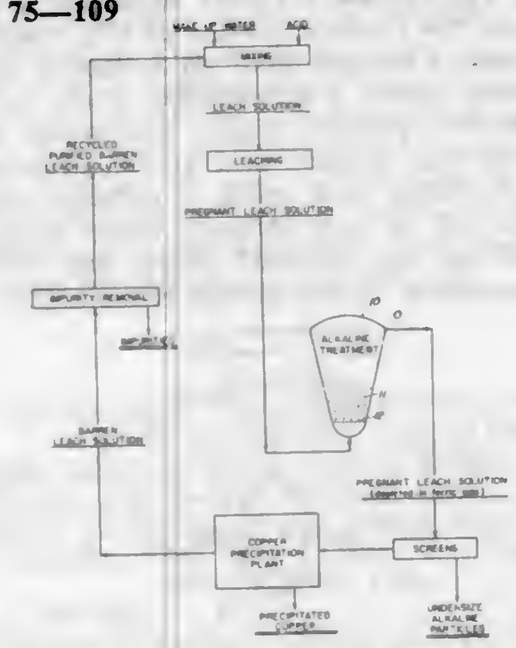
### 3,476,553
### PRECIPITATE FLOTATION PROCESS

**Felix Sebba, University of Witwatersrand, Milner Park, Johannesburg, Republic of South Africa, and Charles W. Jonaitis, Chicago, Charles L. Ray, Wheaton, and Robert E. Baarson, La Grange, Ill.; said Jonaitis, said Ray and said Baarson assignors to Armour and Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 818,501, June 3, 1959. This application Feb. 10, 1965, Ser. No. 431,693**
**Int. Cl. C22b** *3/00;* **B03d** *3/06*
**U.S. Cl. 75—108 7 Claims**

Metals in solution are recovered by introducing hydroxyl ions to precipitate the metals as insoluble hydroxides and introducing a collector reagent which attaches to the hydroxides. Finely-divided gas is introduced to form bubbles and to buoy the hydroxides to the surface while maintaining the surface quiescent so that the bubbles remain intact forming a scum. The scum is removed and the metals recovered by reducing the hydroxides.

### 3,476,554
### PROCESS FOR RECOVERING COPPER FROM LEACH SOLUTIONS

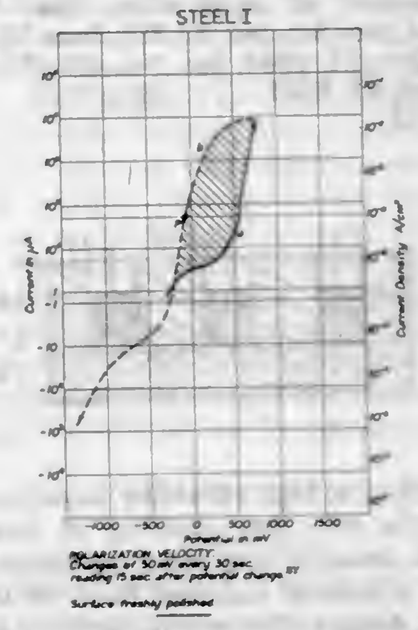
**Henry Rush Spedden and Emil E. Malouf, Salt Lake City, Utah, assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York**
**Filed Feb. 21, 1968, Ser. No. 707,198**
**Int. Cl. C22b** *15/12;* **C01g** *49/04*
**U.S. Cl. 75—109 11 Claims**



Leach solutions, pregnant with copper and containing ferric iron, are treated for the removal of ferric ions by bringing such solutions into intimate contact with discrete particles of a substantially insoluble alkaline solid. The copper content of the resulting solution is then recovered by conventional techniques. When the copper is recovered from solution by precipitation on metallic iron, iron consumption is significantly reduced. When the copper is recovered electrolytically, a considerable saving of electrical power is realized.

### 3,476,555
### CORROSION-RESISTANT METALLIC ARTICLES AND COMPOSITION THEREFOR

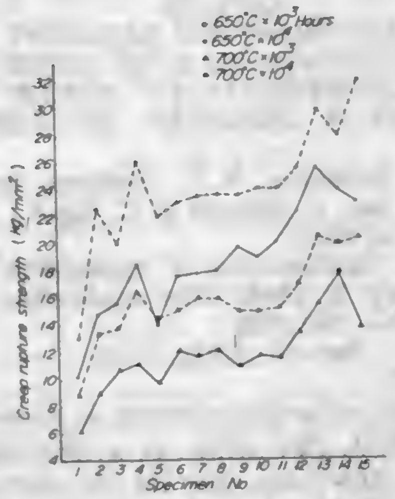
**Heinz Kohl and Herbert Souresny, Ternitz, Austria, assignors to Firma Schoeller-Bleckmann Stahlwerke Aktiengesellschaft, Vienna I, Austria, a corporation of Austria**
**Filed Mar. 8, 1966, Ser. No. 532,623**
**Claims priority, application Austria, Mar. 9, 1965, A 2,072/65**
**Int. Cl. C22c** *39/54, 39/50, 39/46*
**U.S. Cl. 75—128 7 Claims**



An austenitic, readily weldable nonmagnetic steel alloy resistant to stress corrosion cracking and pitting. The alloy consists of up to 0.06% carbon (preferably 0.02 to 0.03%), 0.80 to 3.00% silicon (preferably 0.8 to 1.2%), 2.0 to 20.0% manganese (preferably 5.5 to 9.0%), 22 to 26% chromium, 10 to 20% nickel (preferably 12 to 15%), 1.2 to 3.0% molybdenum, 0.2 to 1.5% nitrogen (preferably 0.3 to 0.5%), the balance iron with a maximum of 6% tungsten, niobium, tantalum, vanadium, copper or boron.

### 3,476,556
### AUSTENITIC HEAT-RESISTING STEEL CONTAINING NIOBIUM AND VANADIUM

**Ryoichi Sasaki and Humio Hataya, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan**
**Filed Mar. 23, 1966, Ser. No. 536,862**
**Int. Cl. C22c** *39/26, 39/20*
**U.S. Cl. 75—128 17 Claims**



An austenitic steel having excellent high temperature mechanical strength, workability and weldability, and consisting essentially of 0.07 to 0.2% by weight carbon, 0.2 to 1.5% by weight silicon, 0.5 to 3% by weight manganese, 14 to 20% by weight chromium, 8.5 to 13% by weight nickel, 0.7 to 2% by weight molybdenum, 0.1 to 0.5% by weight niobium, 0.1 to 0.5% by weight vanadium, and the balance being iron and small amount of accompanying impurities, said steel being particularly useful for fabricating heating equipment, such as boiler tubes, which is normally subjected to temperatures in excess of about 600° C.

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### 3,476,557

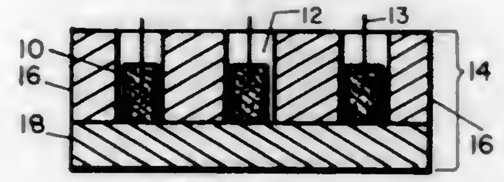
### ELECTRICAL DEVICE

**Christopher J. B. Fincham, Boston, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts**

**Continuation-in-part of applications Ser. No. 3,896, Jan. 21, 1960, and Ser. No. 38,818, June 27, 1960. This application Dec. 31, 1964, Ser. No. 425,376**

**Int. Cl. B22f** *3/10;* **H01g** *9/05*

**U.S. Cl. 75—222** **3 Claims**



A high capacitance, high reliability tantalum capacitor is formed by the two step sintering of fine tantalum powder, the first sintering step being conducted in a mold which confines a loosely disposed mass of the powder with a low bulk density. The second sintering step is conducted outside of the mold in a vacuum furnace to give a higher capacitance and lower leakage than can be obtained by normal sintering techniques.

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### 3,476,558

### LIGHT-SENSITIVE ELEMENT CONTAINING METHINE DYES

**Henri Depoorter and Marcel Jan Libeer, Mortsel-Antwerp, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company**

**No Drawing. Filed Nov. 24, 1965, Ser. No. 509,609**

**Claims priority, application Great Britain, Nov. 27, 1964, 48,269/64**

**Int. Cl. G03c** *1/12, 1/22;* **C09b** *23/10*

**U.S. Cl. 96—1.7** **9 Claims**

Light-sensitive photographic elements are described which include a merocyanine dye which contains a benzimidazothiazinone nucleus. These elements have extended spectral sensitivity.

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### 3,476,559

### ELECTROSTATIC PRINTING ELEMENT COMPRISING A DYE SENSITIZED ZINC OXIDE COATING ON A HIGH RESISTIVITY PAPER BACKING SHEET AND A PROCESS OF USING SAID ELEMENT

**Irving Panken, Brooklyn, N.Y., assignor, by mesne assignments, to Ing. C. Olivetti & C. S.p.A., Ivrea, Italy, a corporation of Italy**

**No Drawing. Continuation of application Ser. No. 379,724, July 1, 1964. This application Jan. 29, 1968, Ser. No. 701,468**

**Int. Cl. G03g** *5/08*

**U.S. Cl. 96—1.7** **7 Claims**

An electrostatic recording element is provided having a paper base sheet, zinc oxide as a photoconductor, a combination of sensitizing dyes for the photoconductor, and a binder for the dye and photoconductor for binding the two on the sheet. The recording element comprising the above combination of elements is panchromatically sensitive and possesses a resistivity, attributable to the base sheet only, from $10^{10}$ ohm-cm. to $5\times10^{11}$ ohm-cm. Moreover, this resistivity is displayed at low humidity conditions of 15% relative humidity at 70° F. while at high humidity conditions, e.g., 90% at 70° F., the recording element is still successfully utilized. Of the dyes used, Thioflavin is preferred in an amount of 35% of the other dyes used, such as Auramine O, Bromophenol Blue, and Rose Bengal.

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### 3,476,560

### INHIBITING FOGGING ACTION DURING COLOR DEVELOPMENT

**Yukio Yasuda, Kanagawa-ken, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha, Kanagawa-ken, Japan, a corporation of Japan**

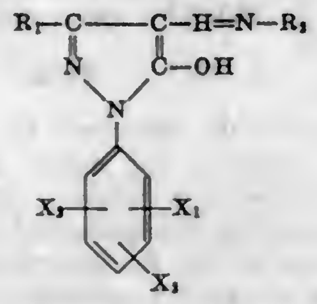
**No Drawing. Filed July 22, 1965, Ser. No. 474,172**

**Claims priority, application Japan, July 28, 1964, 39/42,578**

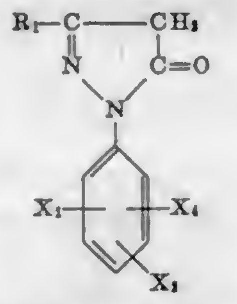
**Int. Cl. G03c** *7/16, 1/34*

**U.S. Cl. 96—22** **6 Claims**

A silver halide photographic emulsion layer adapted to be color developed with a p-phenylenediamine derivative, comprising a colored coupler represented by the general formula (I)



wherein $R_1$ represents a member selected from the group consisting of an alkyl group, an acylamino group, an N-arylamino group and a sulfonamido group; $R_2$ represents a member selected from the group consisting of a phenyl group, an alkyl-substituted phenyl group, an acylamino-substituted phenyl group, an alkoxy-substituted phenyl group, a sulfo-substituted phenyl group, a naphthyl group, an alkyl-substituted naphthyl group, an acylamino-substituted naphthyl group, an alkoxy-substituted naphthyl group, a sulfo-substituted naphthyl group and a pyrazolyl group; and $X_1$, $X_2$ and $X_3$ each represents a member selected from the group consisting of a hydrogen atom, an alkyl group, a halogen atom, an acylamino group, an alkylcarbamoyl group, a sulfonamido group, an alkoxy group, an aryloxy group, a sulfonic acid group, an alkali metal salt of said sulfonic acid group, an ammonium salt of said sulfonic acid group, a carboxyl group, an alkali metal salt of said carboxyl group and an ammonium salt of said carboxyl group, and a colorless coupler represented by the general formula (II)



wherein $R_1$, $X_1$ and $X_2$ have the same significance as in the above mentioned formula (I) and $X_4$ represents a member selected from the group consisting of a sulfonic acid group, an alkali metal salt of said sulfonic acid group, an ammonium salt of said sulfonic acid group, a carboxyl group, an alkali metal salt of said carboxyl group and an ammonium salt of said carboxyl group.

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### 3,476,561

### PHOTOETCH METHOD

**Bruce I. Bertelsen, Poughkeepsie, and Arnold E. Reimer, Carmel, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Aug. 30, 1965, Ser. No. 483,698**

**Int. Cl. G03c** *5/00;* **C23f** *1/02*

**U.S. Cl. 96—36** **1 Claim**

This invention is a process of eliminating hole and island defects occurring in photoresists by a dual exposure and development of two substrates coated with two layers of positive photoresist to form intermediate patterns with reduced hole defects followed by a dual exposure and development of the etching subject which is coated wtih two layers of negative photoresist by each of said intermediate patterns to reduce island defects followed by an etching step.

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### 3,476,562

### LIGHT SENSITIVE COMPOSITION COMPRISING AN ORGANIC AMINE AND AN ORGANIC HALOGEN COMPOUND IN A HYDROPHILIC BINDER

**Yoshikazu Yamada, Sierra Madre, and Thomas H. Garland, El Monte, Calif., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois**

**Continuation-in-part of applications Ser. No. 278,050, May 6, 1963, and Ser. No. 352,625, Mar. 17, 1964. This application Aug. 23, 1965, Ser. No. 481,759**

**Int. Cl. G03c** *1/72*

**U.S. Cl. 96—88** **10 Claims**

A photosensitive composition and method for preparation thereof, in which an aryl amine or N-vinyl compound and organic halogen compound are dispersed in a normally hydrophilic continuous phase. Positive and negative mode photosensitivity is obtained.

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### 3,476,563

### PHOTOGRAPHIC SILVER HALIDE ELEMENTS CONTAINING TWO EQUIVALENT CYAN COUPLERS

**Anthony Loria, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed Aug. 30, 1965, Ser. No. 483,807**

**Int. Cl. G03c** *1/40, 7/34*

**U.S. Cl. 96—100** **9 Claims**

Couplers containing at least one 4-hydroxy-3-carbamyl-1-naphthyl group wherein the hydrogen atom of the one position of said naphthyl group has been replaced with an aryloxy group are used advantageously in color photography to form cyan dye images. The immediate couplers that are diffusible are used to advantage in cyan color developer solutions while the immediate couplers that are nondiffusible are advantageously incorporated in cyan dye-forming photographic emulsion layers.

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### 3,476,564

### SILVER HALIDE EMULSION CONTAINING AN AZO-PYRAZOLONE COUPLER

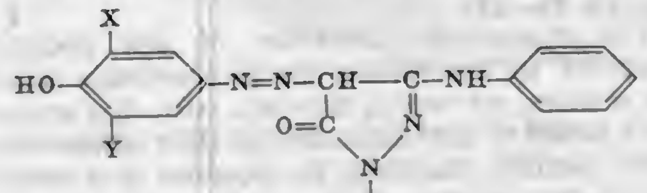
**Brunello Mariani, Milan, Alberto Guizzi, Ferrania, Savona, and Eugenio Tisselli, Milan, Italy, assignors to Ferrania, S.p.A., Milan, Italy**

**No Drawing. Filed May 3, 1966, Ser. No. 547,189**

**Int. Cl. G03c** *1/04*

**U.S. Cl. 96—100** **6 Claims**

A photosensitive silver halide emulsion is shown which contains at least one colored azo coupler of the formula



wherein Y is hydrogen, halogen or carboxyl, X is halogen or carboxyl, and R is an aryl radical having at least one water-solubilizing group and at least one group imparting non-diffusivity to the coupler.

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### 3,476,565

### NUTRIENT BLOCKS CONTAINING GUM ARABIC

**Philip Carlton Anderson and Janet Lorraine Cooper Rapp, Crete, Nebr., assignors to Feed Service Corporation, Crete, Nebr., a corporation of Nebraska**

**No Drawing. Filed Oct. 8, 1965, Ser. No. 494,252**

**Int. Cl. A23k** *1/00*

**U.S. Cl. 99—2** **10 Claims**

Gum arabic has the unique value of improving the physical characteristics and palatability of animal feed supplements in block form. The blocks contain an edible waxy solid, and a single nutritive-substance. Where the nutritive is cationic metallic, it is present in the form of a saliva-soluble chelate of citric acid or a saliva-soluble mixture of the nutritive element, in the form of an oxide, hydroxide or carbonate, and a water-soluble citric acid compound. Where the nutritive substance is nonmetallic, there is also present an edible, aliphatic, hydroxy acid having 4 to 6 carbon atoms, such as citric acid.

This invention relates to animal nutrition and particularly to compositions for supplying animals with nutritive elements and to methods for the preparation of such compositions.

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### 3,476,566

### FLAVOR IMPROVEMENT PROCESS FOR COFFEE

**William V. White, Spring Valley, N.Y., and James P. Mahlmann, Wayne, and Robert P. Stolz, Dumont, N.J., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware**

**No Drawing. Filed Aug. 10, 1966, Ser. No. 571,382**

**Int. Cl. A23f** *1/04*

**U.S. Cl. 99—65** **5 Claims**

It has been discovered that undesirable aroma components and gases can be removed from roasted coffee by adding moisture to the roasted coffee and allowing the coffee to equilibrate to a moisture content of from about 4% to 40% and then heating the coffee to vaporize at least some of the equilibrated moisture. It is important to allow the moisture to equilibrate in the coffee in order to avoid additional roasting. The process of this invention is found to improve coffee flavor as well as further processing of the coffee.

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### 3,476,567

### PROCESS FOR PREPARING EXPANDED CORNMEAL EXTRUSIONS

**David Hugh Wood, Jr., Vernon, N.Y., Grant Omer Gibney, Kitchener, Ontario, Canada, and Richard Smith, Oneida, N.Y., assignors to Helme Products, Inc., New York, N.Y., a corporation of New Jersey**

**Filed Mar. 21, 1966, Ser. No. 535,974**

**Int. Cl. A23l** *1/18*

**U.S. Cl. 99—82** **6 Claims**

In the representative embodiment of the invention described herein, a puffed corn product similar in appearance to popcorn is prepared by forcing cornmeal at a high velocity through orifices in an extrusion plate with an extrusion screw. The cornmeal is cooked as a result of the heat generated during working of the meal by the extrusion screw. During the high velocity extrusion, the meal expands nonuniformly, producing random lateral projections in the manner of popcorn and a cutting blade severs the material as it is extruded to provide popcorn-size pieces.

3,476,568

### STORAGE OF SEEDS TO PRODUCE A CEREAL PRODUCT FREE OF FRAG COUNT AND TOXIC RESIDUE

**August Louis de Lisle, Scottsdale, Ariz., assignor, by mesne assignments, to Phoenix Gems, Inc., Phoenix, Ariz., a corporation of Arizona**
**No Drawing. Continuation of application Ser. No. 323,890, Nov. 15, 1963, which is a continuation-in-part of application Ser. No. 803,824, Apr. 3, 1959. This application Apr. 27, 1966, Ser. No. 551,829**
**Int. Cl. A21d** *2/02, 6/00*
**U.S. Cl. 99—93** **8 Claims**

The method of freeing seeds from insects and insect eggs during storage, which includes the step of coating substantially the entire outer surfaces of the seeds with diatomaceous earth having a diatomite fraction in an amount sufficient to kill adult insects present on the seeds and to kill newly hatched larvae. Also, the further step of storing the seeds at a temperature above that required to hatch the insect eggs on the seeds, for a period of time to hatch all of said insect eggs.

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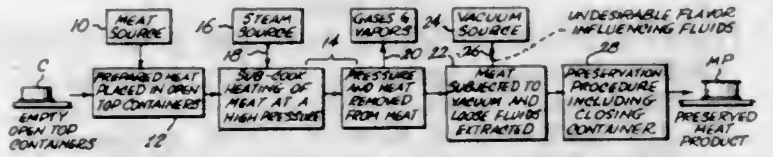
3,476,569

### METHOD OF REMOVING UNDESIRABLE FLAVOR AND SPOILAGE INFLUENCING SUBSTANCES FROM UNCOOKED MEAT

**Robert McCarthy, 1314–1 E. Pike,**
**Seattle, Wash. 98122**
**Filed Oct. 22, 1965, Ser. No. 500,522**
**Int. Cl. A22c** *25/00;* **A23b** *1/00, 3/00*
**U.S. Cl. 99—107** **14 Claims**


10
MEAT SOURCE
16
STEAM SOURCE
GASES & VAPORS
24
VACUUM SOURCE
UNDESIRABLE FLAVOR INFLUENCING FLUIDS
C
18
14
20
22
26
28
MP
EMPTY OPEN TOP CONTAINERS
PREPARED MEAT PLACED IN OPEN TOP CONTAINERS
12
SUB-COOK HEATING OF MEAT AT A HIGH PRESSURE
PRESSURE AND HEAT REMOVED FROM MEAT
MEAT SUBJECTED TO VACUUM AND LOOSE FLUIDS EXTRACTED
PRESERVATION PROCEDURE INCLUDING CLOSING CONTAINER
PRESERVED MEAT PRODUCT

Pieces of raw meat are placed into containers, are subjected to sub-cook heating and/or pressure, and are then promptly subjected to vacuum extraction, causing removal of melted fats and various enzymic liquescent constituents from the uncooked meat. Next the meat is seasoned and/or preserved in such containers. Steam injection is used to provide both heat and pressure. Microwave heating may be used alone. Ultrasonic energy may be used in place of the heat and/or pressure.

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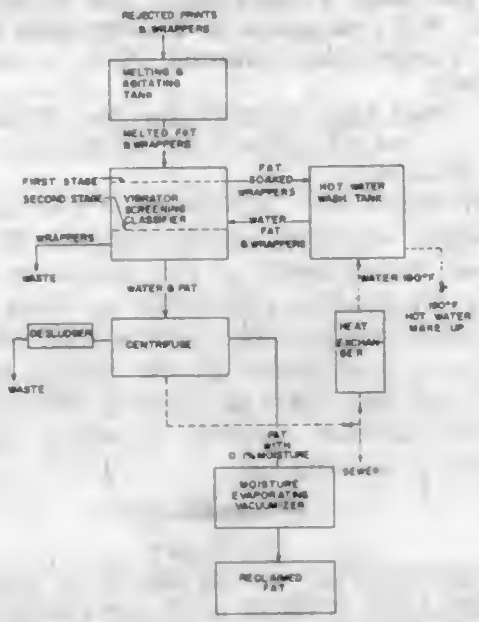
3,476,570

### OLEAGINOUS MATERIAL RECLAMATION PROCESS

**Ahmad Moustafa, 5226 Vine St.,**
**Cincinnati, Ohio 45217**
**Continuation-in-part of application Ser. No. 369,844, May 25, 1964. This application Jan. 22, 1968, Ser. No. 707,346**
**Int. Cl. A23d** *3/00, 5/00*
**U.S. Cl. 99—118** **10 Claims**

This is a process for reclaiming edible oleaginous material from damaged parchment wrappers, cartons and related plastic containers (packaging materials), commonly used in the consumer packaging of margarine and related oleaginous products. Since these packaging materials are often imperfectly prepared, it is highly desirable to reclaim the adhering and/or absorbed oleaginous materials therefrom. This reclaiming process comprises the following five basic steps:

(I) A melting of the oleaginous fat from the packaging materials;
(II) A screening thereof. In the case of plastic containers, screening is preceded by a shredding of plastic containers;
(III) A washing of the packaging materials and further screening;
(IV) A centrifuging of the resultant emulsion of Step III aforesaid;



(V) A vacuumizing of the reclaimed oleaginous materials resulting in recovery of a pure oil.

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3,476,571

### ARTIFICIALLY SWEETENED FRUIT-FLAVORED PRODUCT

**Harry W. Block, East Orange, and Joan M. Adams, Fairview, N.J., and Thomas P. Finucane, Hartsdale, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 303,945, Aug. 22, 1963. This application May 19, 1966, Ser. No. 551,244**
**Int. Cl. A23j** *1/06, 1/00, 1/26*
**U.S. Cl. 99—130** **6 Claims**

A fruit-flavored, dry, powderous, free-flowing edible composition comprising fruit flavor, an organic food acid, and an artificial sweetener which consists of cyclamate, saccharin, mannitol and a bland hydrophilic colloid. The composition is characterized by its desirable tartness, bulk density, and lack of undesirable aftertaste.

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3,476,572

### BUTTER-FLAVORED SALT

**Barbara Dros, Lyons, and Eric Engel, Winnetka, Ill., assignors, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York**
**No Drawing. Filed Nov. 30, 1966, Ser. No. 597,857**
**Int. Cl. A23l** *1/22*
**U.S. Cl. 99—143** **3 Claims**

A butter-flavored salt composition comprising an intimate mixture of principally salt, a small amount of butter flavor and .5 to 20% of an intimately dispersed "sharp melting" edible non-butterfat having a Wiley melting point range of about 95° F. to 120° F.

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3,476,573

### PROCESS FOR PRESERVING THE ORGANOLEPTIC PROPERTIES OF YOUNG POTATOES

**Ralph Lester and Tegwyn Pierce Williams, Bedford, England, assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine**
**Filed Apr. 12, 1966, Ser. No. 542,084**
**Claims priority, application Great Britain, Apr. 15, 1965, 16,258/65**
**Int. Cl. A23b** *7/00*
**U.S. Cl. 99—193** **1 Claim**

The organoleptic properties of new potatoes are preserved by determining the pectinesterase activity of the potatoes, pre-heating them at a controlled temperature for a period of time dependent on their pectinesterase activity, partially blanching the potatoes to a center temperature not exceeding 65° C., and freezing the potatoes.

3,476,574

### CANNING

**Warren R. Schack, Western Springs, Ill., and Jack M. Miller, Shawnee Mission, Kans., assignors to Swift & Company, Chicago, Ill., a corporation of Illinois**
**Filed Nov. 19, 1965, Ser. No. 508,649**
**Int. Cl. A23l** *3/02*
**U.S. Cl. 99—214** **5 Claims**

In nonaseptic high temperature-short time sterilization and canning techniques where a food product is filled at sterilizing temperature level into a container and thereafter closed, cleaned, and passed into a temperature holding zone, the drop in temperature below the sterilization level which may result in in sufficient heat treatment being obtained in the holding zone is restored by rapidly heating the container to at least 5° F. above the filling temperature prior to entering the holding zone.

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3,476,575

### WHITE TACKY SPRAY BOOTH COATING

**Roger F. Arnold, Cincinnati, Ohio, assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut**
**No Drawing. Filed June 16, 1966, Ser. No. 557,897**
**Int. Cl. C09d** *5/20;* **C08b** *27/14*
**U.S. Cl. 106—2** **7 Claims**

The invention disclosed is directed to an aqueous emulsion composition formed of polymerized terpene hydrocarbons, lube oil, wax, cotton seed fatty acid and potassium or sodium hydroxide. The composition is particularly useful for forming a temporary coating on the dry inside surface of paint spray booths.

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3,476,576

### PROCESS FOR OBTAINING A SIZE REDUCTION OF NON-LAMELLAR MATERIALS

**Paul S. Sennett, Macon, Kenneth Lamar Turner, Gordon, and Horton Harold Morris, Macon, Ga., assignors to Freeport Sulphur Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Jan. 26, 1967, Ser. No. 611,836**
**The portion of the term of the patent subsequent to Mar. 2, 1982, has been disclaimed**
**Int. Cl. C09c** *1/02;* **C09d** *7/08;* **C08h** *17/04*
**U.S. Cl. 106—309** **9 Claims**

A process for reducing the particle size of a nonlamellar mineral. An aqueous slurry of the mineral is agitated with particles of a nonabrasive resilient grinding media. The grinding media has a specific gravity less than two and a particle size smaller than one quarter inch but larger than 200 mesh in diameter.

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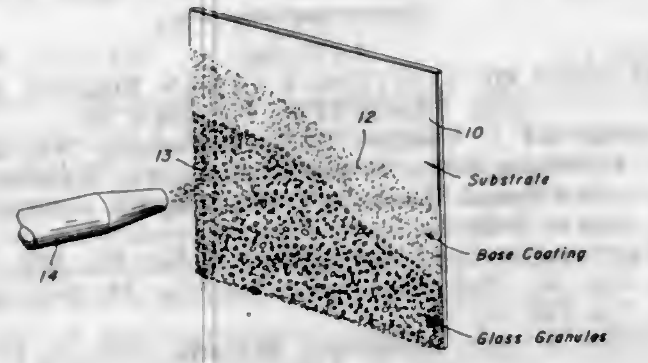
3,476,577

### ANTIFOULANT COMPOSITION AND METHOD

**William R. Davie, Hopewell Township, Beaver County, Pa., assignor to United States Steel Corporation, a corporation of Delaware**
**Filed Mar. 22, 1967, Ser. No. 625,261**
**Int. Cl. C09d** *5/16;* **B44d** *1/34*
**U.S. Cl. 117—33** **8 Claims**



An antifoulant consisting of granules of a borate glass containing cupric oxide. The granules are applied over a soft and sticky base coating which later hardens and is durable underwater.

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3,476,578

### THERMOGRAPHIC METHOD FOR PRODUCING THERMOSTABLE PRINTS

**Eric Maria Brinckman, Mortsel-Antwerp, Belgium, assignor to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company**
**Filed June 22, 1966, Ser. No. 559,487**
**Claims priority, application Great Britain, June 22, 1965, 26,468/65**
**Int. Cl. B41m** *5/18;* **B44d** *1/22;* **C08d** *13/24*
**U.S. Cl. 117—36.2** **10 Claims**

A thermographic reproduction method in which a heat-labile reactant of a two-reactant color-forming system carried in a heat-sensitive layer of a heat-sensitive recording material is rendered non-reactive by exposure to a heat image of the information to be reproduced and unaffected reactant remaining in the unexposed areas of the layer are transferred to a copy material brought in contact therewith for reaction with the second reactant of the color-forming system provided on the copy material, producing on the copy material a colored image corresponding to the unexposed areas of the recording material. The heat-sensitive material preferably includes heat-absorptive material uniformly distributed in heat-conductive relation to the heat-sensitive layer, most preferably within the same layer, and the heat-absorptive material preferably converts electromagnetic radiation, especially infra-red radiation, to heat.

A recording material useful in the method is also disclosed which includes a heat-sensitive layer uniformly containing a heat-labile reactant of a color-forming system as well as a finely divided material adapted to absorb infra-red radiation and convert the same to heat.

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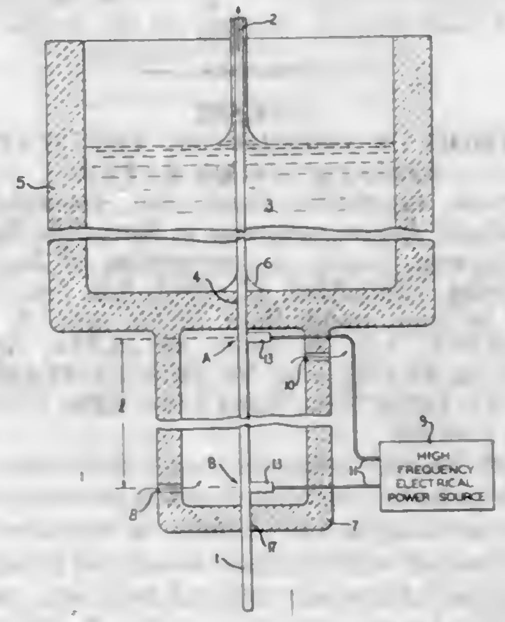
3,476,579

### METHOD AND APPARATUS FOR COATING METALLIC CORE WITH A METALLIC COATING

**John F. Clarke, Atttleboro, and Clyde M. Adams, Jr., Lexington, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**
**Filed Dec. 19, 1966, Ser. No. 602,717**
**Int. Cl. B05c** *5/00;* **B44d** *1/34*
**U.S. Cl. 117—51** **7 Claims**



A length of metallic core material is continuously moved first through a heating retort and then upwardly through a melt of metallic coating material capable of freezing on the core as the core leaves the melt. While passing through the retort, the core is surrounded by a protective atmosphere and has applied to it at two spaced points high-frequency alternating current which skin heats at a comparatively high surface temperature thereby efficiently cleaning its surface and providing for better surface wetting by the melt, but engendering only a small amount of heat energy. By heat conduction toward the center of the core this small amount of heat energy results in a comparatively low temperature of the core as a whole when passing through the melt. Thus substantial amounts of metal are strongly and evenly frozen on the clean core without danger of remelt as the melt heats the core.

### 3,476,580
### PROCESS FOR DISTRIBUTING A RESIN IN A FABRIC

**Allen J. Jinnette, Greensboro, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware**
**No Drawing. Filed Oct. 24, 1966, Ser. No. 588,697**
**Int. Cl. B44d** *1/44;* **C03c** *13/00*
**U.S. Cl. 117—62 13 Claims**

In the dyeing of textile fabrics, particularly glass fiber textiles, uniformity and penetration of the coloring material throughout the fabric or yarn is achieved by providing a uniform distribution of resinous material throughout the fabric or yarn by the process comprising mixing a neutralized polyamide with said resinous material, applying the mixture so obtained to said fabric or yarn, and subsequently heating the fabric or yarn which contains the resinous material thereon to cause said polyamide to revert to an unneutralized state, whereby said resinous material is coagulated.

### 3,476,581
### TREATMENT OF TEXTILES WITH CROSS-LINKABLE ACRYLIC POLYMERS AND THE RESULTING PRODUCTS

**Edward W. Weitzel and Charles H. Hamby, Greenville, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware**
**No Drawing. Filed Oct. 18, 1965, Ser. No. 497,519**
**Int. Cl. B44d** *1/44, 1/22*
**U.S. Cl. 117—62 7 Claims**

A process for treating sheer knit or woven textile articles to improve their resistance to pulling, snagging and picking comprising applying an equeous acrylic polymeric emulsion containing ester groups to a textile article, drying the treated textile article to partially cross-link the polymer, and curing the acrylic polymer under textile resin curing conditions so as to cross-link the polymer and to obtain a soft, resilient coating on the textile article.

### 3,476,582
### METHOD OF IMPROVING THE WATER RESISTANCE OF PAPER

**Saburo Imoto, Kyoichiro Ikari, and Tatsuaki Hattori, Kurashiki-shi, Japan, assignors to Kurashiki Rayon Co., Ltd., Okayama, Japan, a corporation of Japan**
**No Drawing. Filed Mar. 31, 1966, Ser. No. 538,959**
**Claims priority, application Japan, Apr. 5, 1965, 40/19,905; Apr. 6, 1965, 40/20,214; Apr. 8, 1965, 40/20,736; May 29, 1965, 40/31,850**
**Int. Cl. D21h** *5/00;* **B44d** *1/44;* **C08c** *17/16*
**U.S. Cl. 117—62.2 4 Claims**

A method for improving the water resistance of paper coated with polyvinyl alcohol and a pigment which comprises incorporating in the surface of the coated paper borax and a water-soluble alkali metal salt of an amphoteric compound of a metal selected from the group consisting of aluminum, zinc, tin, lead and titanium or a water-soluble alkali metal silicate. The coating composition desirably contains an amount of a hydroxide, oxide or carbonate of a metal from Groups II, III or IV of the Periodic Table, in an amount sufficient to provide a pH of at least 7 on the surface of the coated paper.

### 3,476,583
### METHOD FOR RENDERING FIBROUS MATERIAL OIL AND WATER REPELLENT

**Vincent Theodore Elkind, Metuchen, Joseph Aloyus Yurko, Bayonne, and Robert Tweedy Hunter, Piscataway, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Oct. 30, 1967, Ser. No. 679,196**
**Int. Cl. B44d** *1/44*
**U.S. Cl. 117—63 10 Claims**

This invention relates to a method and means for achieving a degree of oil and/or water repellency in fibrous materials by treating such materials as textiles and the like with a fluorocarbon polymer and achieving the desired oil and/or water repellency by activation with a curing solvent, such as unsymmetrical trichlorotrifluoroethane, and wherein the solvent has incorporated therein an adjuvant for the solvent to thereby increase the curing activity thereof.

### 3,476,584
### METHOD OF PORCELAIN ENAMELING METAL FOILS

**Ronald M. Randklev, White Bear Lake, and Clarence Raymond Humphries, Stillwater, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**
**No Drawing. Filed Mar. 21, 1966, Ser. No. 535,711**
**Int. Cl. B44d** *1/34, 1/46*
**U.S. Cl. 117—66 4 Claims**

Thin metal foil is coated over one surface with an aqueous slip of porcelain frit and free silica, dried and partially sintered, wound into coils for economical further firing to provide an acid-resistant coating and then uncoiled.

### 3,476,585
### PROCESS OF FORMING COATED WOOD PRODUCTS

**Richard S. Fraser and Paul Y. Jone, Seattle, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington**
**No Drawing. Filed Oct. 17, 1966, Ser. No. 586,935**
**Int. Cl. B44d** *1/14, 1/28, 1/26*
**U.S. Cl. 117—71 9 Claims**

Metal or metallic oxide coatings are more effectively bonded to wood substrates such as plywood, lumber, particleboard, etc. by applying a resin mixture of phenol-formaldehyde and the reaction product of a polyamide prepolymer reacted with epichlorohydrin to the surface of the wood substrate, drying and/or curing the resin coating, and depositing a metal or metallic oxide on the resin coated substrate by the spray metal technique. Ceramic materials or cermets may be applied over the surface of the spray metal particles.

### 3,476,586
### METHOD OF COATING CARBON BODIES AND THE RESULTING PRODUCTS

**Alexander J. Valtchev and Temenushka Nikolova Valtcheva, Sofia, Bulgaria, assignors to Metalurgitschen Zavod "Lenin," Pernik, Bulgaria, a corporation of Bulgaria**
**Continuation-in-part of application Ser. No. 255,126, Jan. 30, 1963. This application Mar. 29, 1966, Ser. No. 538,413**
**Claims priority, application Bulgaria, Mar. 29, 1965, I-362**
**Int. Cl. B44d** *1/14;* **H01m** *13/04*
**U.S. Cl. 117—71 7 Claims**

A method of coating carbon articles wherein a disperse layer of molten aluminum is sprayed upon a surface of the body. Thereafter, a layer of copper, silver, gold, iron, cobalt, nickel, tin, lead, titanium zirconium is applied is applied as both layers are bonded to the carbon body by treating the latter with an electric arc. The electric-arc treatment blends the separate layers into a homogeneous layer. A layer of an electron-emissive material may be applied over the second metal layer prior to electric-arc treatment. Layers of metal and low-melting oxides may be applied over the first composite layer.

### 3,476,587
### PLURAL COATED WATERPROOF SUPPORT

**Pierre Demol, Brussels, and Pierre Mathis, Schaerbeek, Belgium, assignors to Solvay & Cie, Brussels, Belgium**
**No Drawing. Filed May 6, 1966, Ser. No. 548,066**
**Claims priority, application Belgium, May 19, 1965, 664,139**
**Int. Cl. B44d** *1/14, 5/00*
**U.S. Cl. 117—76 10 Claims**

Resistance to folding and rubbing, as well as water impermeability, are imparted to a substrate by coating same with two vinylidene chloride copolymers, one of said copolymers being hard and brittle and the other being supple.

### 3,476,588
### PROCESS FOR COATING TABLETS

**Guy Pitel, Courbevoie, France, assignor to Societe d'Etudes Scientifiques et Industrielles de l'Ile-de-France, Longjumeau, Essonne, France, a corporation of France**
**No Drawing. Filed Aug. 23, 1965, Ser. No. 481,946**
**Claims priority, application France, Oct. 20, 1964, 992,079**
**Int. Cl. C09d** *3/12;* **A61j** *3/06*
**U.S. Cl. 117—100 3 Claims**

A film coats tablets to form a membrane which is semi-permeable to water thereby permitting the tablet to disintegrate in two or three minutes after administration. Yet, the coating on the tablet gives excellent protection against external media. The dual characteristics are achieved by the combination in a coating composition of a film-forming water insoluble solid, a water soluble polyglycol of high molecular weight and a plurality of solvents which solubilize both the solid and the polyglycol.

### 3,476,589
### GLASS FIBERS SIZED WITH POLYPHENYLENE OXIDE DERIVATIVES

**Thomas Raphael, Winchester, Mass., and William C. Johnson, Palo Alto, Calif., assignors, by mesne assignments. to General Electric Company, Schenectady, N.Y., a corporation of New York**
**No Drawing. Filed Oct. 22, 1965, Ser. No. 502,554**
**Int. Cl. C03c** *25/02*
**U.S. Cl. 117—126 9 Claims**

Fibrous glass sized with a quaternary ammonium halide derivative of a polyphenylene oxide, an impregnated fibrous glass material formed therefrom and a method for its formation. The quaternary ammonium halide derivative of the polyphenylene oxide provides lubricity between glass strands and increases bond strength between the fibrous glass and a plastic impregnant. The process for the formation of the impreganted fibrous glass material involves coating fibrous glass with the quaternary ammonium halide derivatives of the polyphenylene oxide by immersing them in a solution thereof, immersing the fibrous glass in hot water, and impregnating the fibrous glass with a plastic binder.

### 3,476,590
### PROCESS FOR PREPARING POLYIMIDAZOLE RESINS AND USE THEREOF IN FORMING LAMINATES

**Guy Rabilloud, Bernard Sillion, and Gabriel de Gaudemaris, Grenoble, France, assignors to Institut Francais du Petrole, des Carburants et Lubrifiants, Malmaison, Hauts-de-Seine, France**
**No Drawing. Filed May 2, 1967, Ser. No. 635,353**
**Claims priority, application France, May 5, 1966, 60,487**
**Int. Cl. C03c** *25/02;* **C09d** *3/48*
**U.S. Cl. 117—126 12 Claims**

Polyimidazole resins produced by reacting an aromatic tetraamine with an aromatic polyanhydride. The reaction is carried out with heating either in the fused state or in an organic solvent. Organic solvent solutions of the resins can be used to impregnate materials such as glass fibers.

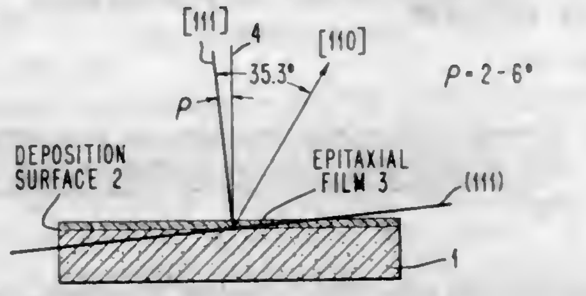
### 3,476,591
### WOOD SUBSTRATE COATED WITH A BLEND OF POLYACETAL AND AMINE-ALDEHYDE RESIN

**Charles M. Winchester, Butler, and Joseph A. Faccone, Elizabeth, N.J., and Stephen F. Webb, Cincinnati, Ohio, assignors to Interchemical Corporation, New York, N.Y., a corporation of Ohio**
**No Drawing. Filed Nov. 15, 1966, Ser. No. 594,354**
**Int. Cl. B44d** *1/28*
**U.S. Cl. 117—148 4 Claims**

Wood substrates coated with a blend of a polyacetal resin prepared by reacting formaldehyde with a polyhydric alcohol having at least three hydroxyl groups in the presence of an acid catalyst and an amine-aldehyde resin. The wood substrates are resistant to solvents and exhibit superior abrasion resistance.

### 3,476,592
### METHOD FOR PRODUCING IMPROVED EPITAXIAL FILMS

**Melvin Berkenblit and Arnold Reisman, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Jan. 14, 1966, Ser. No. 520,625**
**Int. Cl. B44d** *1/18, 1/40*
**U.S. Cl. 117—201 9 Claims**



A process for enhancing the surface morphology of epitaxially grown semiconductive layers is disclosed. Smooth growth of epitaxial layers is insured by misorienting the crystallographic plane of a substrate relative to a major crystallographic plane. Specific orientations of semiconductor substrate which provide smooth epitaxially grown surfaces include 2–6° off the orientations [111]→[110], [100]→[110], [100]→[111], 8–25° off the [100]→[110] and 10–22° off [100]→[111]. The angle specified indicate the number of degrees of misorientation from a major crystallographic axis and the unique misorientation is further established by specifying the relationship of the misorientation to the nearest specified different major crystallographic axis. The process involved includes the steps of depositing a semiconductive material on a semiconductor substrate, the latter having one of the orientations specified above.

### 3,476,593

## METHOD OF FORMING GALLIUM ARSENIDE FILMS BY VACUUM DEPOSITION TECHNIQUES

**William I. Lehrer, Los Altos, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware**

**No Drawing. Filed Jan. 24, 1967, Ser. No. 611,245**

**Int. Cl. B44d** *1/02, 1/18;* **C23c** *13/02*

**U.S. Cl. 117—201** **10 Claims**

Gallium arsenide films are formed on a crystalline substrate by simultaneously evaporating gallium oxide and arsenic under vacuum conditions on to substrates maintained at temperatures between 500 and 650° C., and preferably between 550 and 600° C. When the substrate material is monocrystalline and has a crystal structure and lattice spacing similar to that of gallium arsenide, a monocrystalline gallium arsenide film will be epitaxially formed.

### 3,476,594

## APPLYING HEAT-REFLECTING AND ELECTRICALLY CONDUCTIVE COATINGS ON GLASS

**Leif Erik Roland Söderberg, Lidingo, Sweden, assignor to Aga Aktiebolag, Lidingo, Sweden, a corporation of Sweden**

**No Drawing. Filed Apr. 4, 1966, Ser. No. 539,658**

**Int. Cl. H05k** *3/00;* **H01b** *1/02;* **C03c** *17/06*

**U.S. Cl. 117—211** **3 Claims**

A heat reflective and electrically conductive coating is applied to glass by sequentially depositing a nickel layer and a gold layer and heating the coated glass at a temperature of from 150 to 200° C. to provide a desired value of surface resistance. By providing a coated glass in this manner, the good heat reflective properties of gold are obtained without suffering the color distortion heretofore associated with gold layers. The heat transmittance and surface resistivity are markedly reduced by the heat treatment with a slight increase in light transmittance.

### 3,476,595

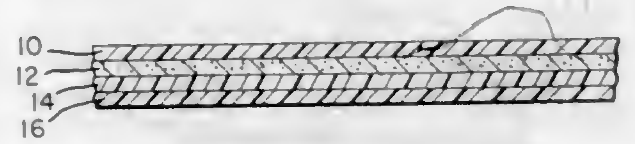
## SILICA-COATED MAGNETIC TAPE

**George Raymond Nacci, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**Filed July 8, 1966, Ser. No. 563,909**

**Int. Cl. H01b** *1/02;* **B44d** *1/18*

**U.S. Cl. 117—239** **10 Claims**



A coating for magnetic recording members, especially tapes, is made from a thin layer of a cured complex of silica and a preformed organic polymer containing a plurality of alcoholic hydroxyl groups, e.g., a complex of silica and a polyvinyl acetal or a hydrolyzed vinyl ester/tetrafluoroethylene copolymer.

### 3,476,596

## MAGNETIC TAPE

**John F. Carroll, Jr., Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed Dec. 28, 1966, Ser. No. 605,222**

**Int. Cl. G03g** *19/00*

**U.S. Cl. 117—239** **3 Claims**

A magnetic recording tape comprising a carrier with a coating of magnetizable powder and a thin, lubricant coating of mixed molybdenum disulfide and graphite particles on top of the magnetizable powder.

### 3,476,597

## METHOD AND MEANS FOR PURIFYING, DISCOLORING AND CLARIFYING THROUGH A CONTINUOUS AND CATALYTIC TREATMENT AT ROOM TEMPERATURE RAW SUGAR JUICES OBTAINED FROM SUGAR CONTAINING PLANTS AND FRUIT AND ALSO RAW SUGAR SOLUTIONS

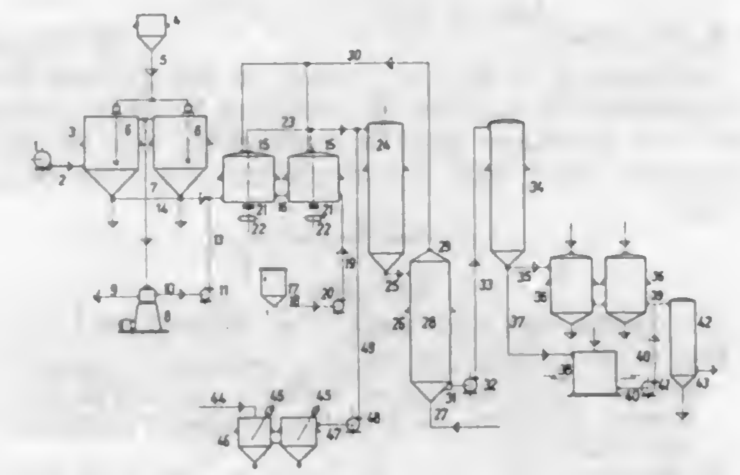
**Friedrich Georg Lippe, Cologne-Deutz, Germany (4 Niddastrasse, 6236 Eschborn, Taunus, Germany) and Fritz Suppan, Cologne, Germany (Breslauerstrasse 12, Lulsdorf uber Troisdorf, Germany)**

**Filed Feb. 10, 1966, Ser. No. 526,539**

**Claims priority, application Germany, Feb. 17, 1965, R 39,925**

**Int. Cl. C13d** *3/00;* **B01d** *13/00*

**U.S. Cl. 127—48** **7 Claims**



A method for purifying raw sugar juices at room temperature comprising incorporating in the raw sugar juices at substantially room temperature at a pH approximating 7 a solution comprising 1% of the extract of a plant of the umbellifer family.

### 3,476,598

## SUCROSE BASED SURFACTANTS AS AIDS IN SUGAR REFINING AND SUGAR CRYSTALLIZATION PROCESSES

**Herbert L. Sanders, Skokie, Ill., assignor to Varney Chemical Corporation, Janesville, Wis., a corporation of Wisconsin**

**No Drawing. Filed May 10, 1966, Ser. No. 549,776**

**Int. Cl. C13f** *1/02*

**U.S. Cl. 127—58** **8 Claims**

The method of improving sugar recovery and sugar crystal quality consisting of incorporating in sugar crystallization systems uniquely compatible sucrose-derived surface active agents including sucrose esters, sucrose ethers, sucrose ether-esters, and mixtures thereof.

### 3,476,599

## METAL CLEANING COMPOSITION AND METHOD

**Horace N. Grover, Hudson, and John G. Sommer, Cuyahoga Falls, Ohio, assignors to The General Tire & Rubber Company, a corporation of Ohio**

**No Drawing. Filed Sept. 12, 1966, Ser. No. 578,482**

**Int. Cl. B08b** *7/00*

**U.S. Cl. 134—4** **10 Claims**

A method and composition for removing stains and other contaminants from processing equipment used in the milling, blending, forming, molding, etc., of polymeric materials, particularly elastomers. The composition, comprising a blend of a polymer and a cleaning agent typically composed of hydrocarbon molecules having amino and/or hydroxy groups, is processed through the equipment to accomplish cleaning of the same.

### 3,476,600

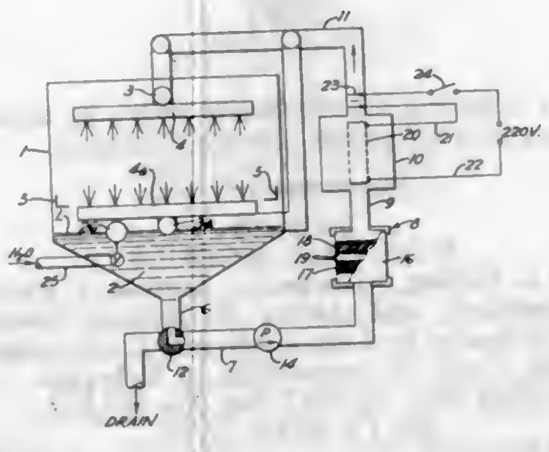
## RINSING MACHINE-WASHED DISHES

**Alonzo W. Morgan, Jr., Pittsburgh, and Joseph G. Selmeczi, Bridgeville, Pa., assignors, by mesne assignments, to Ionics Incorporated, Watertown, Mass., a corporation of Massachusetts**

**Filed Mar. 8, 1966, Ser. No. 532,662**

**Int. Cl. B08b** *3/10*

**U.S. Cl. 134—10** **10 Claims**



1. In a method of washing culinary utensils, the steps comprising machine washing a batch of said utensils, final rinsing them with hot freshly deionized water, collecting the used rinse water and continuously recirculating at least a portion of the same in a heated condition through a deionizer for final rinsing a further batch of washed utensils with said freshly deionized water.

### 3,476,601

## BATTERY INCLUDING INORGANIC FIBROUS MATERIAL

**Carl Berger, Corona del Mar, and Frank C. Arrance, Costa Mesa, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland**

**Filed June 29, 1964, Ser. No. 378,859**

**Int. Cl. H01m** *13/06*

**U.S. Cl. 136—6** **9 Claims**

2. A battery including electrode structure comprising a metal electrode matrix having substantially uniformly distributed therein potassium titanate fibers in an amount of about 2% to about 50% by weight of the electrode composition.

### 3,476,602

## BATTERY CELL

**William E. Brown, Robert G. Heitz, and Charles A. Levine, Concord, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Michigan**

**Filed July 25, 1966, Ser. No. 567,587**

**Int. Cl. H01m** *35/10, 3/02*

**U.S. Cl. 136—6** **4 Claims**

1. In a battery cell comprising a first oxidizable liquid metal electrode, a second fluid reducible electrode and a substantially fluid tight electrolyte (separator) separating said first and second electrodes, said electrolyte (separator) being further characterized as passing ions formed from the metal comprising the first electrode, the improvement which comprises providing said electrolyte (separator) in the form of fine hollow fibers, said fibers having an outside diameter/wall thickness ratio of at least 3, ranging in outside diameter from about 20 to 5000 microns and having a wall thickness of from about 5 to about 1000 microns.

### 3,476,603

## NITRILE COMPOSITE ELECTRODES

**Robert R. Rafos, Lyndhurst, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio**

**Filed Feb. 7, 1966, Ser. No. 525,558**

**Int. Cl. H01m** *43/00*

**U.S. Cl. 136—22** **7 Claims**

An electrical energy storage device operable above the melting point of the electrolyte. The device employs a fused salt electrolyte and has at least one solid, porous electrode which is electrochemically preconditioned compacted and baked char of a polyvinyl nitrile resin which is a copolymer of a vinyl nitrile monomer and a polyalkenyl monomer.

### 3,476,604

## METHOD OF MAKING AN ELECTRODE GRID

**Peter Faber, Kahl am Main, Germany, assignor to Rheinisch-Westfalisches Elektrizitatswerk Aktiengesellschaft, Essen, Germany, a corporation of Germany**

**Filed Sept. 15, 1967, Ser. No. 668,006**

**Claims priority, application Germany, Sept. 29, 1966, R 44,227**

**Int. Cl. H01m** *35/04*

**U.S. Cl. 136—36** **6 Claims**

A grid for the electrodes of primary or secondary batteries, fuel cells and the like is produced by carbonizing a web of cellulose fibers which is thereafter heated to high temperatures, on the order of 2000° C., for at least superficial graphitization and is then metalized, preferably with a coating of nickel and boron, preparatorily to having an active electrode material deposited thereon. The metalized graphite threads may be bonded together by sintering, preferably by the passage of a heating current therethrough.

### 3,476,605

## SOLID STATE ELECTRIC CELL UTILIZING AS AN ELECTRON ACCEPTOR MATERIAL AN ORGANIC AMMONIUM POLYIODIDE

**Boone B. Owens, Calabasas, Calif., assignor to North American Rockwell Corporation**

**Filed July 6, 1967, Ser. No. 651,498**

**Int. Cl. H01m** *11/00*

**U.S. Cl. 136—83** **12 Claims**

An organic ammonium polyiodide cathode component for a solid state electric cell containing a silver anode and an ionically conductive silver-containing solid electrolyte. The polyiodide compositions utilizable as electron-acceptor cathode component are defined as $QI_n$ where Q is an organic ammonium cation, preferably a quaternary ammonium cation, and $n$ has a value ranging from 2 to 11, inclusive. Specifically preferred polyiodide compositions are tetramethylammonium heptaiodide $N(CH_3)_4I_7$ and the tetraethylammonium triiodide $N(C_2H_5)_4I_3$ and heptaiodide $N(C_2H_5)_4I_7$.

### 3,476,606

## SOLID STATE ELECTROCHEMICAL DEVICE

**Boone B. Owens, Calabasas, Calif., assignor to North American Rockwell Corporation**

**Filed July 6, 1967, Ser. No. 651,499**

**Int. Cl. H01m** *27/10*

**U.S. Cl. 136—83** **5 Claims**

Ionically conductive solid compositions of matter and solid state electrochemical devices utilizing these compositions as solid electrolyte element therein. These compositions have an ionic conductivity greater than that of silver iodide and contain between 75 and 97.5 cationic mole percent silver cations wherein the conductivity-imparting component is an organic ammonium silver iodide salt whose preferred composition range is from

$$QAg_4I_5(QI\cdot 4AgI)$$

to $QAg_9I_{10}(QI\cdot 9AgI)$ where Q is an organic ammonium cation, preferably a quaternary ammonium cation.

Specifically preferred conductive compositions of matter are tetramethylammonium octasilver nonaiodide

$$N(CH_3)_4Ag_8I_9$$

tetraethylammonium octasilver nonaiodide

$$N(C_2H_5)_4Ag_8I_9$$

and pyridinium octasilver nonaiodide $HNC_5H_5Ag_8I_9$.

These solid ionic conductors are of particular utility as the electrolyte in a solid state electric cell.

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3,476,607

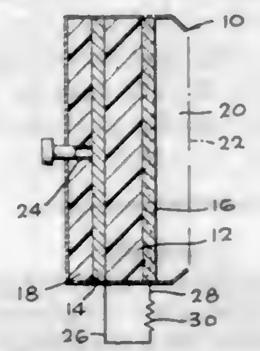
## DEFERRED ACTION SELF-TIMING FUEL CELL

**Carl Berger, Santa Ana, Calif., assignor to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland**

**Filed Mar. 25, 1965, Ser. No. 442,715**

**Int. Cl. H01m** *27/04*

**U.S. Cl. 136—86** **5 Claims**



Self-timing fuel cell designed to operate and to generate an electric current for a predetermined short time interval, comprising an ion conducting material, a hydrogen catalyst electrode having one side in contact with the ion conducting material, the catalyst electrode being capable of absorbing hydrogen, e.g., a palladium catalyst electrode, mechanical means hermetically sealing the opposite side of the hydrogen electrode, a predetermined amount of hydrogen absorbed in the hydrogen electrode, a reducing catalyst electrode such as an oxygen catalyst electrode positioned on the other side of the ion conducting material, a zone adjacent the reducing catalyst electrode and means for supplying to such zone an oxidizer such as oxygen gas, capable of being reduced at the reducing electrode into an ion which reacts with the hydrogen ion.

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3,476,608

## FUEL CELL AND METHOD FOR PRODUCING PULSATING DIRECT ELECTRICAL CURRENT

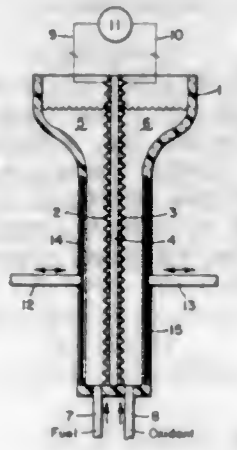
**Lindsay I. Griffin, Jr., Summit, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware**

**Filed June 21, 1965, Ser. No. 465,296**

**Int. Cl. H01m** *27/04*

**U.S. Cl. 136—86** **8 Claims**

A fuel cell containing a slurry of electrolyte and particulate catalyst may be operated to produce a current which may be easily transformed from low to high frequency by pulsating the electrolyte slurry by means of a device operating in simple harmonic motion.



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3,476,609

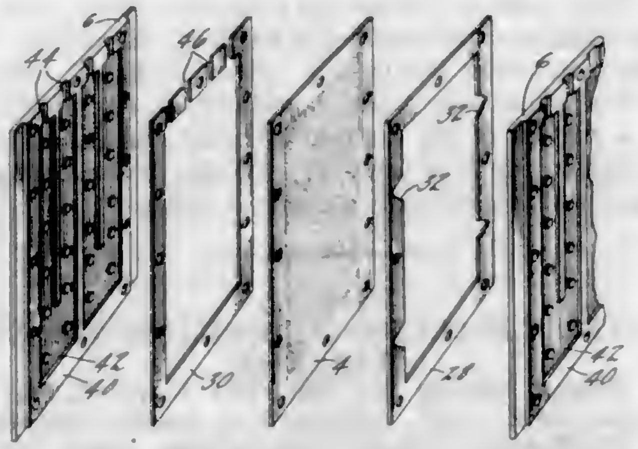
## FUEL CELL MODULE

**Raymond L. Gelting, Manchester, Anthony J. Fiorentino, East Hartford, and Arthur C. Rogers, Bloomfield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**

**Filed Mar. 30, 1967, Ser. No. 627,128**

**Int. Cl. H01m** *27/02*

**U.S. Cl. 136—86** **11 Claims**



A fuel cell module in which unitary fuel cell assemblies consisting of electrodes on opposite sides of an electrolyte matrix are arranged in a stack with spacer plates therebetween that provide the fuel and oxygen chambers and with connections to external fuel and oxidant supplies.

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3,476,610

## BATTERY HAVING TWO POSITIVE ACTIVE MATERIALS

**Luis Soto Krebs, Santiago, Chile, and Robert J. Dawson, Madison, Wis., assignors, by mesne assignments, to ESB Incorporated, Philadelphia, Pa., a corporation of Delaware**

**Filed July 20, 1966, Ser. No. 566,621**

**Int. Cl. H01m** *21/00*

**U.S. Cl. 136—86** **13 Claims**

A battery having positive and negative electrodes, a separator and an electrolyte, in which the positive electrode comprises a principal active material and a secondary active material having a lower potential than the principal active material and a discharge product oxidizable by the principal active material. The secondary active material is present as an electrolyte impermeable masking layer which in the undischarged state isolates the principal active material from contact with the electrolyte and thereby providing improved stand and shelf life. The secondary active material is also present as a layer interposed between the principal active material and electrical contact means whereby the battery is characterized by a single potential discharge at the potential characteristic of the secondary active material discharged against the negative electrode.

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3,476,611

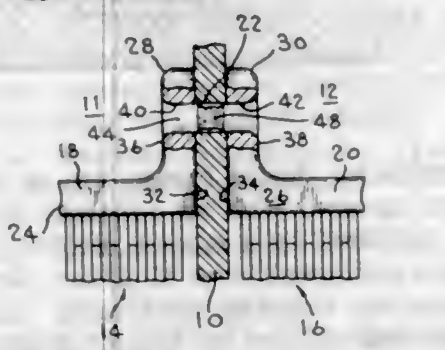
## INTERCELL CONNECTION AND METHOD OF MAKING SAME

**Anthony Sabatino, Minneapolis, Minn., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware**

**Filed Dec. 8, 1964, Ser. No. 416,854**

**Int. Cl. H01m** *13/10, 35/32*

**U.S. Cl. 136—134** **15 Claims**



A battery with improved intercell connections of the type which extend through an opening in the battery partition. In one embodiment a connection is formed with a pin which extends through the partition between two adjacent compartments and the pin has dimensions such that when it is fluidized during processing, the volume of the pin material does not exceed the volume defined by the walls of the opening.

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3,476,612

## STORAGE BATTERY PLATE INSULATION

**John R. Tench, Mount Lebanon, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Dec. 21, 1966, Ser. No. 603,617**

**Int. Cl. H01m** *3/02*

**U.S. Cl. 136—147** **5 Claims**

A lead-acid battery plate having a coating of active material on opposite surfaces, a layer of electrically insulating padding on the coatings, and an electrically insulating shroud shrunk into a tight fit to enclose the layer of padding, the shroud being composed of highly porous and resilient material and being heat shrinkable, whereby the layer of padding is compressed and held tautly in place against the active material.

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3,476,613

## PROCESS FOR PRODUCING α-ALUMINA WHISKERS

**Arno Gatti, Norristown, Pa., assignor to General Electric Company, a corporation of New York**

**No Drawing. Filed Sept. 13, 1966, Ser. No. 578,984**

**Int. Cl. B01j** *17/20*

**U.S. Cl. 148—1.6** **4 Claims**

In an otherwise conventional α-alumina whisker growing process, iron is used as a catalyst to improve the quality and quantity of the whisker product.

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3,476,614

## DUCTILITY OF DISPERSED PHASE ALLOYS, PARTICULARLY $Al\text{-}Al_2O_3$

**Pierre Simon Jehenson, Varese, and Jean Bauwens, Ranco, Varese, Italy, assignors to European Atomic Energy Community (Euratom), Brussels, Belgium**

**No Drawing. Filed June 29, 1966, Ser. No. 561,376**

**Claims priority, application Great Britain, June 29, 1965, 27,568/65**

**Int. Cl. C21d** *7/14*

**U.S. Cl. 148—11.5** **12 Claims**

The ductility of dispersed phase alloys, more particularly $Al\text{-}Al_2O_3$, is improved by a process wherein an ingot is produced by spraying the dispersed phase alloy powder or wire onto a base (basis) body at a temperature of at least 800° C. and wherein the thus obtained billet is submitted to degassing and oxide stabilization at a temperature of about 550–625° C. in a vacuum furnace ($10^{-2}$ to $10^{-5}$ mm. Hg) for from 10 to 30 hours. The billet is then ready for fabrication into finished products. Normally the billet is removed from the base body before it is submitted to mechanical working, but in some cases the mechanical working is effected without removing the billet from the base body.

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3,476,615

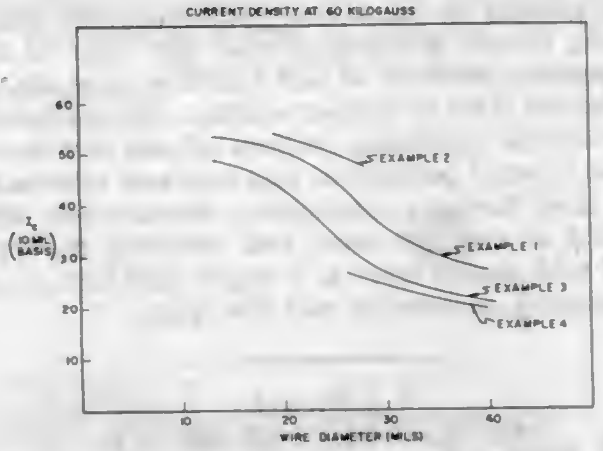
## NIOBIUM-TITANIUM SUPERCONDUCTOR

**Daniel F. Fairbanks, Winchester, Warren L. Larson, Lexington, and Robert N. Randall and James Wong, Wayland, Mass., assignors to National Research Corporation, Newton Highlands, Mass., a corporation of Massachusetts**

**Filed Sept. 6, 1966, Ser. No. 577,407**

**Int. Cl. C22f** *1/18*

**U.S. Cl. 148—11.5** **4 Claims**



Niobium-titanium superconductor wire is fabricated from ingot to wire through a series of cold working reductions with two intermediate anneals, the total cold working being less than 1500 times and less than 90 times before the second anneal, resulting in substantially increased critical current density.

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3,476,616

## STAINLESS STEEL BARS AND RODS OF IMPROVED CROSS-SECTIONAL HARDNESS UNIFORMITY

**Edward J. Dulis, Mount Lebanon Township, Allegheny County, Pa., assignor, by mesne assignments, to Crucible Inc., a corporation of Delaware**

**No Drawing. Filed Sept. 1, 1966, Ser. No. 576,529**

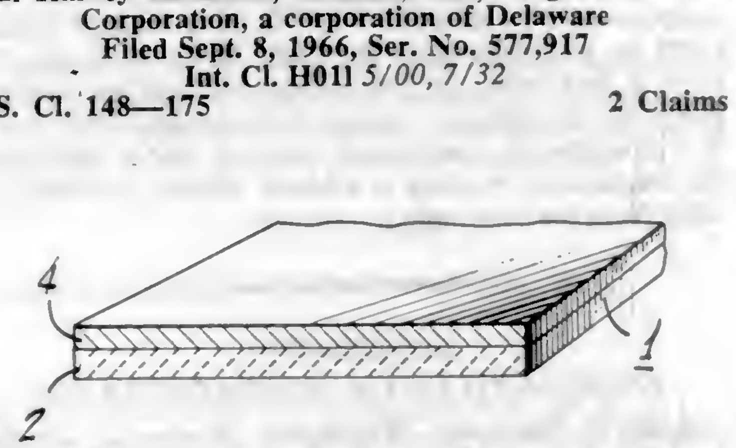
**Int. Cl. C21d** *7/14*

**U.S. Cl. 148—12** **2 Claims**

This invention relates to bars or rods of metal having a face-centered-cubic crystal structure, such as austenitic stainless steel, and in particular, to bars or rods of such metal for use in automatic screw-making machinery or in other applications wherein the machinability of the metal is important. Still more particularly, the invention concerns bars or rods of the kind above-indicated that exhibit a relatively uniform hardness across the cross-sectional area thereof, and to a novel method of making such bars or rods.

### 3,476,617
### ASSEMBLY HAVING ADJACENT REGIONS OF DIFFERENT SEMICONDUCTOR MATERIAL ON AN INSULATOR SUBSTRATE AND METHOD OF MANUFACTURE

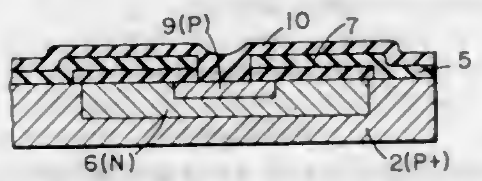
**Paul Harvey Robinson, Trenton, N.J., assignor to RCA Corporation, a corporation of Delaware**
**Filed Sept. 8, 1966, Ser. No. 577,917**
**Int. Cl. H01l** *5/00, 7/32*
**U.S. Cl. 148—175** **2 Claims**



A method of providing contiguous adjacent regions of monocrystalline semiconductor material of different conductivity characteristics on a monocrystalline insulator substrate, comprising growing a first epitaxial layer of semiconductor material onto said insulator substrate, said first layer having a given conductivity characteristic, and said semiconductor material having substantially the same atomic spacing in its crystal lattice as said substrate, removing certain portions of said first layer to expose corresponding portions of said insulator substrate, growing a second layer of monocrystalline semiconductor material onto the remaining portions of said first layer and onto the exposed portions of said insulator substrate, said second layer having a conductivity characteristic different from that of said first layer, and removing the top portion of said second layer to a depth sufficient to expose the remaining portions of said first layer.

### 3,476,618
### SEMICONDUCTOR DEVICE

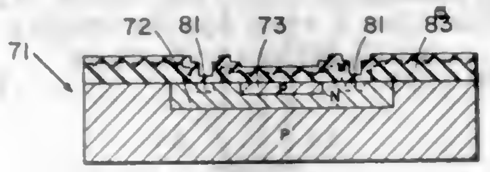
**Alvin B. Phillips, Scottsdale, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois**
**Original application Jan. 18, 1963, Ser. No. 252,341, now Patent No. 3,275,910, dated Sept. 27, 1966. Divided and this application Aug. 30, 1966, Ser. No. 590,451**
**Int. Cl. H01l** *7/36*
**U.S. Cl. 148—175** **3 Claims**



A planar, passivated, epitaxial base transistor is made by the combined use of epitaxial methods and selective diffusion. A heavily doped semiconductor substrate forms the collector region of the device. A portion of the collector-base junction is formed by growing an epitaxial layer of the opposite conductivity-type on the substrate to form the base region of the transistor. A collector-base junction which surrounds the remaining undiffused base region is then completed and brought to the surface of the epitaxial layer by diffusing through the base and into the substrate an impurity of the same type as found in the substrate, thereby forming a region of the same conductivity-type as the substrate. A diffused emitter region is then formed within the epitaxial base thereby completing the junctions and the geometry of the device.

### 3,476,619
### SEMICONDUCTOR DEVICE STABILIZATION

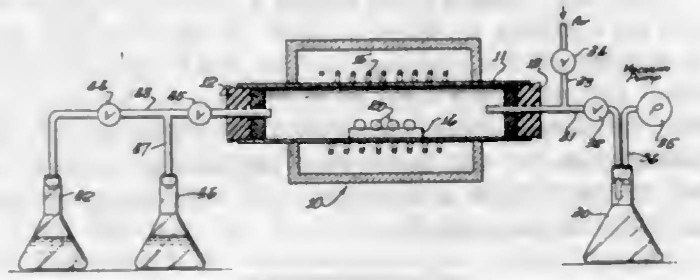
**Donald L. Tolliver, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois**
**Filed Sept. 13, 1966, Ser. No. 579,153**
**Int. Cl. H01l** *7/44*
**U.S. Cl. 148—187** **7 Claims**



A semiconductor device having one or more shallow PN junctions covered with an adherent layer of silicon dioxide, is stabilized by a process involving the steps of depositing an additional layer of silicon dioxide containing a preselected impurity, preferably phosphorus, on the adherent initial layer of silicon dioxide. The composite structure is then heated for the purpose of increasing the density of the silicon dioxide and to redistribute a portion of the impurity into the initial adherent layer of silicon dioxide.

### 3,476,620
### FABRICATION OF DIFFUSED JUNCTION SEMICONDUCTOR DEVICES

**Joan M. Crishal, Torrance, and James P. Sandstrom, Los Angeles, Calif., assignors to TRW Semiconductors Inc., Lawndale, Calif., a corporation of Delaware**
**Continuation of application Ser. No. 244,326, Dec. 13, 1962. This application Oct. 10, 1968, Ser. No. 769,471**
**Int. Cl. H01l** *7/34, 1/10*
**U.S. Cl. 148—187** **3 Claims**



A boron diffusion process having highly controllable characteristics and utilizing vapors of n-propyl borate and ethyl silicate whereby a borosilicate glass coating is formed on a semiconductor body and boron atoms are diffused from the glass coating into the semiconductor body. An oxide layer is deposited over the borosilicate glass layer before the diffusion to protect the device and aid in controlling the boron diffusion.

### 3,476,621
### IMPURITY DIFFUSION SOURCE AND METHOD

**Frank L. Gittler, Allentown, Pa., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed Mar. 13, 1967, Ser. No. 622,693**
**Int. Cl. H01l** *7/44*
**U.S. Cl. 148—189** **6 Claims**

A source for a donor impurity diffusant for vapor-solid diffusion in the fabrication of semiconductor devices comprises a liquid, antimony III ethoxide.

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### 3,476,622
### CARBOXY-TERMINATED COMPOSITE ROCKET PROPELLANT AND PROCESS FOR PRODUCING USING AN AMIDE ADDITIVE

**Tadamasa Harada, Urawa-shi, and Isao Omura, Iruma-gun, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Dojima-Hamadori, Kita-ku, Osaka, Japan**
**Filed Dec. 20, 1967, Ser. No. 692,147**
**Claims priority, application Japan, Dec. 20, 1966, 41/83,124**
**Int. Cl. C06b** *11/00, 21/00*
**U.S. Cl. 149—19** **7 Claims**

A composite propellant consisting of a fuel binder mainly comprising liquid organic compounds containing carboxyl group, an epoxy group-containing compound and/or a cyclic imine group-containing compound, and anoxidizing agent characterized by having present in the propellant composition an amide compound.

There is also disclosed a process for producing the above-mentioned composite propellant.

### 3,476,623
### METAL AZIDE ELECTRICALLY CONDUCTIVE PRIMING COMPOSITION AND MANUFACTURE THEREOF

**Helmut Menke, Troisdorf, and Peter Roh, Oberlar, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany**
**No Drawing. Filed Apr. 9, 1968, Ser. No. 719,838**
**Claims priority, application Germany, Apr. 13, 1967, D 52,792**
**Int. Cl. C06c** *1/02;* **C06b** *5/00*
**U.S. Cl. 149—35** **11 Claims**

Process of manufacturing electrically conductive priming compositions for rapid acting gap detonators comprising the steps of (1) forming a homogeneous mixture of an electrically conductive material and a secondary explosive and (2) admixing the mixture thereby obtained with an initiating explosive. The resulting compositions can be ignited within a very few microseconds by very low energies.

### 3,476,624
### PROCESS OF ETCHING COPPER CIRCUITS

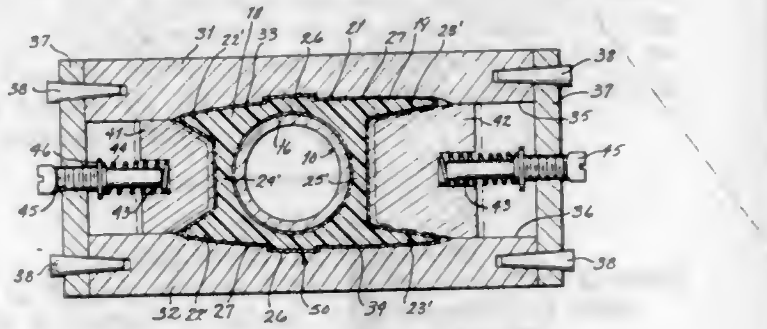
**Bernard J. Hogya, Sayreville, N.J., and William J. Tillis, King of Prussia, Pa., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Feb. 8, 1966, Ser. No. 525,840**
**Int. Cl. C23f** *1/02;* **C09k** *3/00*
**U.S. Cl. 156—13** **10 Claims**

Copper bearing a tin-lead solder resist is etched with an aqueous peroxydisulfate solution without undue harmful attack on the solder resist. A tin-lead solder resist is provided as a pattern on the copper object and the resulting workpiece is etched with an aqueous solution containing from 5% by weight to its solubility limit of a peroxydisulfate and 0.5% to 15% by weight of phosphoric acid at a temperature of 50° to 150° F. The phosphoric acid overcomes the problem of attack of persulfate on solder.

### 3,476,625
### METHOD OF FORMING A COMPOSITE SPAR ABOUT A METAL TUBE

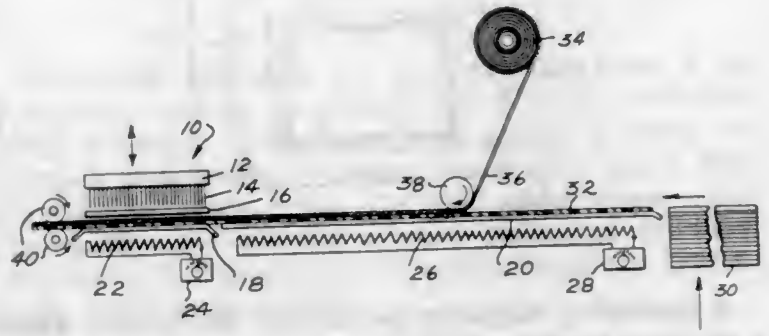
**Cornell J. Slivinsky and Stanley Steed, Traverse City, Mich., assignors to Parsons Corporation, Traverse City, Mich., a corporation of Michigan**
**Filed May 3, 1966, Ser. No. 547,221**
**Int. Cl. B29c** *27/28;* **B32b** *1/10*
**U.S. Cl. 156—86** **4 Claims**

A method of forming helicopter rotor blade spars by molding about a metal spar tube, fiber and plastic resin filler material with glass cloth wrappings. Shrinkage of the plastic filler material attendant to curing is compensated by pressing the outer wrapping sideward and inward, to form indentations which leave skin support flanges above and below. By continuing the pressure as curing progresses, the indentations deepen, holding the outer wrapping tight and maintaining its original peripheral length.



### 3,476,626
### METHOD OF MAKING A NEEDLED COMPOSITE SHEET

**Richard E. Charlton, Jr., and Rupert A. McDaniel, Fairfax, Ala., assignors to West Point-Pepperell, Inc., a corporation of Georgia**
**Continuation of application Ser. No. 165,829, Jan. 12, 1962. This application May 29, 1968, Ser. No. 733,747**
**Int. Cl. B32b** *31/20*
**U.S. Cl. 156—148** **2 Claims**

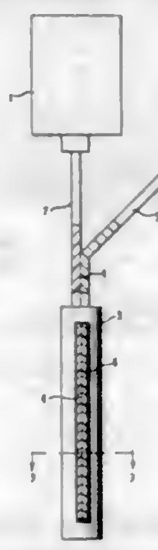


A method of forming composite products such as auto headliners is disclosed, which comprises the steps of contacting a rigid thermoplastic sheet with a non-woven fibrous web, heating and softening the sheet, and needle punching the web into said softened sheet, said heating and softening being continued until the needle punching is completed. The composite product is readily moldable with heat and pressure, and suitable for formation into auto headliners, side panels and the like.

### 3,476,627
### PROCESS FOR COEXTRUDING MULTIPLE-LAYERED THERMOPLASTIC SHEETING

**Paul Herman Squires, Parkersburg, W. Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed Apr. 12, 1966, Ser. No. 542,066**
**Int. Cl. B29d** *7/04;* **B32b** *27/08*
**U.S. Cl. 156—244** **4 Claims**

Process of extruding multi-layered sheeting of a thermoplastic resin, particularly multiple-layers of plasticized polyvinyl butyral wherein a plurality of streams of thermoplastic resin are fed to a tube which feeds a sheeting die wherein the juncture plane between the resins within the manifold of the die is parallel to the direction of flow of the resin within the manifold as it takes on the form of sheeting and extruding a multi-layered sheeting having

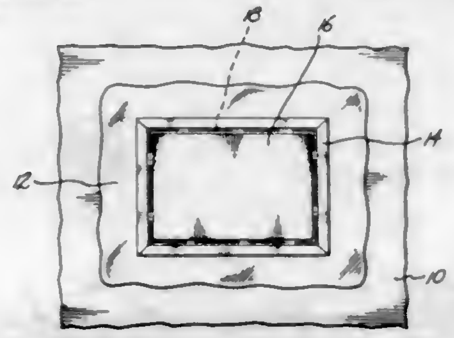


the layers of substantially the same thickness across substantially all of the width of the sheeting.

### 3,476,628

### METHOD OF PREPARING SURFACED PANELS

**Johannes Meinhardt and Paul Schubert, Munich, Germany, assignors to Frederick W. Cronin, Portland, Oreg.**
**Filed July 15, 1966, Ser. No. 565,599**
**Int. Cl. B32b** *31/12, 15/20*
**U.S. Cl. 156—246** **3 Claims**

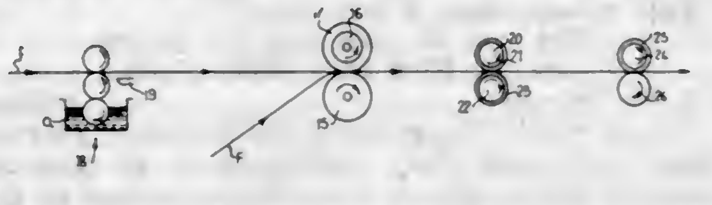


A method of surfacing panels and like articles where a gel layer is prepared on a supporting surface, an open mold frame is placed on the gel layer, and a preformed structurally integrated web bearing a decorative pattern is then arranged within the mold frame with such web against the gel layer. The panel to be surfaced is positioned over the web, the mold frame is filled with additional resin and with advancement of the resin to a hardened state, an integrated panel unit is prepared.

### 3,476,629

### PROCESS FOR METALLIZING FABRICS

**Geoffrey James Parish, Manchester, England, assignor to Cotton Silk & Man-Made Fibres Research Association, Manchester, England**
**Filed Feb. 8, 1966, Ser. No. 525,954**
**Claims priority, application Great Britain, Feb. 23, 1965, 7,696/65**
**Int. Cl. B32b** *15/14, 31/10*
**U.S. Cl. 156—251** **13 Claims**



A process for making porous metallised fabric consists of a porous basic fabric having adhered to a surface thereof a thin metal sheet ruptured at some of the interstices of the basic fabric and also broken up into small substantially discreet fragments. Breaking up of metal sheet is accomplished by embossing the fabric-metal laminate.

### 3,476,630

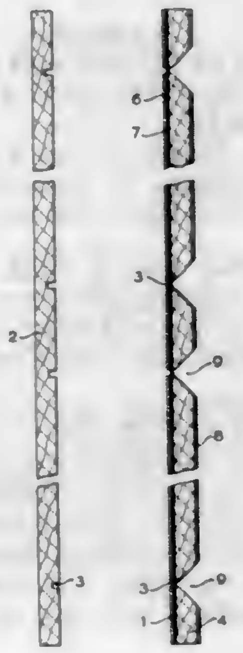
### METHOD OF MAKING FOLDABLE WOODEN LAMELLAE FOR FOLDING DOORS AND THE LIKE

**Gunter Viol, 276 Bloherfelder Strasse, 29 Oldenburg, and Werner Kohfeld, 104 Breite Strasse, Brake-Unterweser, Germany**

**Filed Aug. 2, 1967, Ser. No. 657,970**

**Claims priority, application Germany, Aug. 4, 1966, L 54,250; Jan 17, 1967, L 55,509**

**Int. Cl. B32b** *31/10*
**U.S. Cl. 156—268** **6 Claims**



The disclosure relates to a method of making a cover forming wooden lamellae for accordion doors and the like in sections corresponding to the length and height of the cover desired, in which a cover veneer of the desired length and height has its outer surface temporarily adhered to a plywood carrier of the same length and height, after which grooves that are too extend vertically of the cover veneer are formed in the cover veneer and the side of the panel carrier in spaced relation to define said cover veneer into alternating wide and narrow strips. A similar panel from which the cover in question is formed and having the same height and length with such grooves already formed in the front side of same has glued to its front face spaced textile strips that respectively overlie the pairs of closely spaced grooves that said grooves define, with further veneer strips being secured to such panel to fill in the space between the textile strips. The cover veneer is then glued to the cover forming panel across the said strips, with the grooves of each in alignment, and a blind veneer applied to the back side of the panel in question, after which the carrier panel is removed from the front side of the cover veneer to provide a panel from which a subsequent cover forming panel can be made. The back side of the cover forming panel in question is then formed with wedge shaped notches respectively aligned with and opening to the grooves formed on the front side of the panel to divide the panel in question into wide and narrow articulated sections. Covers so made are then applied to the opposite sides of a lazy tong type support to form an accordion door.

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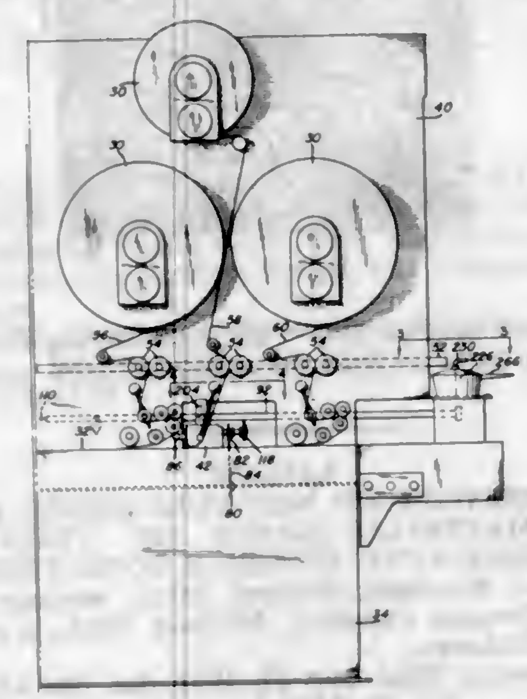
### 3,476,631

### METHOD OF AND MEANS FOR DISTRIBUTING GLUE TO A MOVING WEB

**Harold W. Huffman, Hamilton, Ohio, assignor to The Hamilton Tool Company, Hamilton, Ohio, a corporation of Ohio**
**Filed Nov. 18, 1963, Ser. No. 324,419**
**Int. Cl. B32b** *7/12, 31/04*
**U.S. Cl. 156—291** **30 Claims**



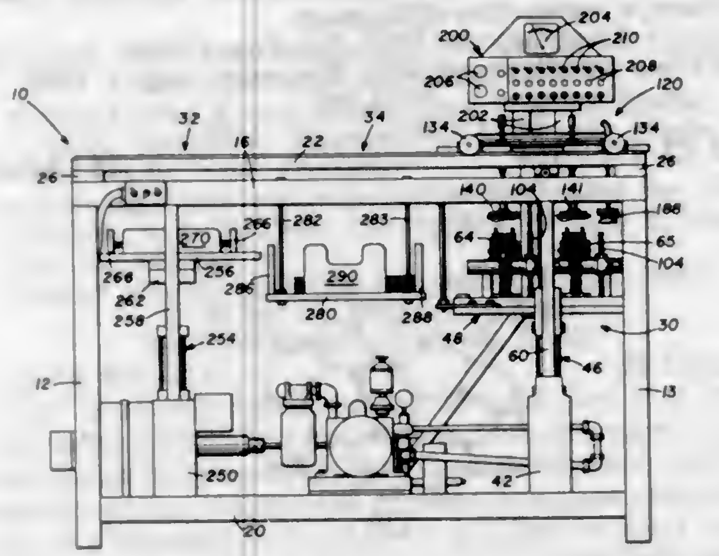
1. The method of providing heat-liquefiable glue in a liquid state to a plurality of applicator nozzles located at different stations remote from a common glue melt-pot, which comprises the steps of:

(a) liquefying glue in a sealed and pressurized melt-pot by the application of heat thereto,
(b) conducting under pressure heat liquefied glue from said melt-pot through heated conduits to said applicator nozzles, and
(c) metering at will the heat liquefied glue from said conduits to said discharge nozzles at predetermined, but variable rates of flow.

### 3,476,632

### MULTI-SEAL PRESS

**Victor W. Cornelius, Eastland, Tex. 76448**
**Filed July 12, 1965, Ser. No. 471,000**
**Int. Cl. B32b** *31/20;* **B65c** *9/06*
**U.S. Cl. 156—366** **7 Claims**

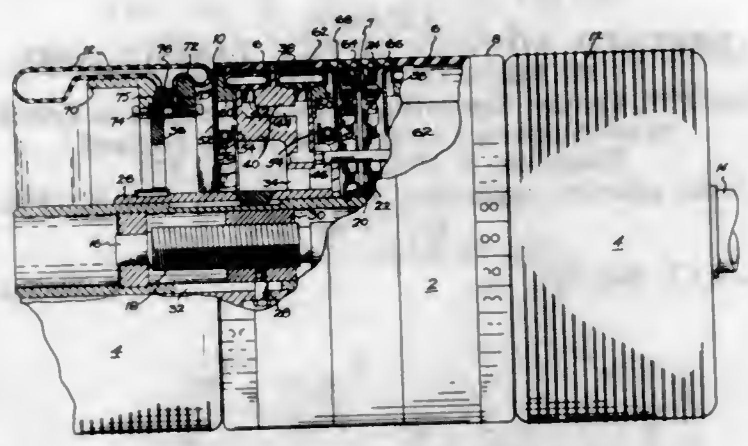


A method and machine for producing menus having thermosetting adhesive backed cutouts depicting food dishes at pre-selected positions on a printed menu. The machine includes a carriage movable along a pair of rails and carrying a heated vacuum pick-up head for each cutout. The carriage is movable from a cutout delivery station where a set of support stools are raised against the vacuum pick-up heads, to a menu support station, the top menu of a stack is pressed upwardly against the cutouts carried by the pick-up heads to affix the cutouts to the top menu. The top menu is then transported to the final receiving station by the carriage as the carriage returns to the delivery station.

### 3,476,633

### TIRE BUILDING DRUM

**Virgil E. Henley, Akron, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio**
**Filed Apr. 8, 1966, Ser. No. 541,387**
**Int. Cl. B29h** *17/16*
**U.S. Cl. 156—415** **4 Claims**



An axially adjustable flat band building drum is improved by covering the surface thereof with a relatively thick, sectioned rubber sleeve, the edges of which are clamped to segments of special construction which form the shoulders of the drum. The width of the sleeve can be changed by interchanging a center portion of the sleeve with one of a different size to accommodate for changes in the width of the drum.

### 3,476,634

### HEAT AND SOUND INSULATION

**Nicholas Fleischmann, 7 Downage, Henden, London NW. 4, England**
**Filed Nov. 17, 1964, Ser. No. 411,897**
**Claims priority, application Great Britain, Nov. 19, 1963, 45,633/63**
**Int. Cl. B32b** *3/16*
**U.S. Cl. 161—38** **9 Claims**

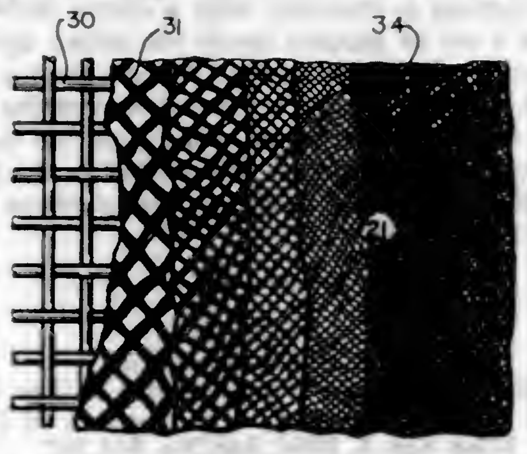
Heat and sound insulating sheet building materials useful as floor, wall and other surface coverings are described, which are composed of facing units of wood or other materials asembled into a sheet held together by a flexible, resilient foamed plastic backing layer having a skin surface. Metal fastening means for joining sheets of the new materials together at their edges, and the method of manufacturing the new insulating sheets by heating in a mold are also described.

### 3,476,635

### GRADUATED DENSITY FILAMENTOUS MAT

**George J. Heh, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware**
**Filed July 11, 1966, Ser. No. 564,370**
**Int. Cl. D04h** *3/12;* **B31c** *13/00*
**U.S. Cl. 161—60** **5 Claims**

A surfacing mat to be used with a reinforcing mat for a molded plastic laminate where the surfacing mat has fibers of selectively graduated diameter through the depth of the mat to provide a smooth surface for the molded plastic laminate in which the combination is used.



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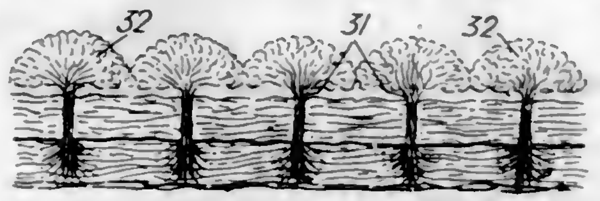
3,476,636

### NEEDLED NONWOVEN PILE FABRICS AND METHOD OF MAKING SAME

**David W. Crosby, Southville, England, assignor to British Nylon Spinners Limited, Pontypool, England**
**Filed June 9, 1965, Ser. No. 462,535**
**Claims priority, application Great Britain, June 9, 1964, 23,779/64**
**Int. Cl. B32b** *5/06, 3/12*
**U.S. Cl. 161—67** **7 Claims**



Nonwoven pile fabric is made by needle-punching a laminate of first and second layers of fibres so that the fibres of one of the layers are carried through the other layer and project from the surface of the latter as fibre tufts. The tufts are subsequently locked in position by physical or chemical treatment, depending on the nature of the fibres employed, which causes some of the fibres to crimp or become adhesive. Composite synthetic fibres which contain at least one component which is potentially adhesive are particularly suitable for locking in the tufts.

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3,476,637

### POLYPHENYLENE OXIDE RESIN BONDED GLASS FIBROUS SHEET AND PROCESS THEREFOR

**Anthony V. Nasca and John F. Bacon, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York**
**No Drawing. Filed July 13, 1965, Ser. No. 471,748**
**Int. Cl. B32b** *17/02*
**U.S. Cl. 161—93** **18 Claims**

Fibrous glass sheet impregnated with high molecular weight polyphenylene oxide reinforcing binder. The impregnated glass sheet is characterized by a capability for post-forming at temperatures in excess of 1400° F.

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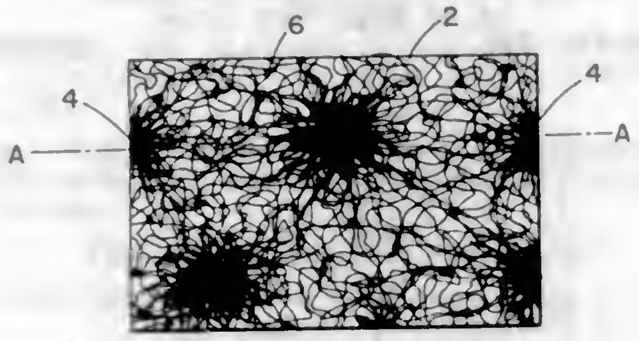
3,476,638

### IMPREGNATED NONWOVEN NEEDLED FABRIC CONSISTING OF A BLEND OF SYNTHETIC FIBERS

**Konrad W. Paulig and Arthur R. Olson, Walpole, Mass., assignors to The Kendall Company, Boston, Mass., a corporation of Massachusetts**
**Filed Nov. 16, 1966, Ser. No. 594,898**
**Int. Cl. D04h** *5/02*
**U.S. Cl. 161—148** **6 Claims**

An impregnated nonwoven fabric is disclosed, said fabric comprised of a needled batt which consists of a blend of stress-bearing synthetic fibers and nonstress-bearing hydrophilic fibers, the binder being more heavily concentrated at discrete points corresponding to the ligations in the needled batt. The stress-bearing fibers consist of 25–70% crimped fibers and 45–20% uncrimped fibers.



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3,476,639

### GLASS REINFORCED NON-VULCANIZED FLASHING MATERIALS BASED ON VINYLIDENE CHLORIDE-ACRYLONITRILE COPOLYMERS

**William H. Wineland, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**No Drawing. Filed Dec. 17, 1964, Ser. No. 419,202**
**Int. Cl. B32b** *5/28, 17/10*
**U.S. Cl. 161—151** **1 Claim**

This invention is directed to a protective sheeting for use as flashing in various construction assemblies. More particularly it pertains to a composite structure formed from (1) a thermoplastic sheet comprising a homogeneous mixtures of a normally crystalline vinylidene chloride-acrylonitrile copolymer, modifying amounts of a rubber-like copolymer of a conjugated diolefin and acrylonitrile, a non-volatile plasticizer and a soft reinforcing carbon and (2) a non-woven reinforcing glass mat having a thickness of less than 0.01 of an inch in essentially co-extensive lamination with at least one major surface of the thermoplastic sheet. This structure provides unexpectedly good flexibility and dimensional stability when exposed for extended periods of time to unduly varying climatic conditions.

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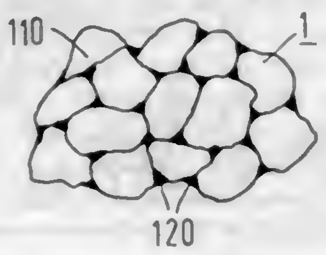
3,476,640

### SMOOTH SURFACED POLYCRYSTALS

**Erhard Sirtl and Hartmut Seiter, Munich, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany**
**Filed July 29, 1965, Ser. No. 475,663**
**Claims priority, application Germany, Aug. 4, 1964, S 92,455**
**Int. Cl. B32b** *5/16, 1/00*
**U.S. Cl. 161—164** **15 Claims**



The present invention relates to a method of producing smooth polycrystalline silicon in the form of thin, shiny layers. This silicon is so characterized that there are fine particles of silicon carbide and/or carbon between arbitrarily oriented silicon crystallites, so that the physical properties of the produced layers are independent upon direction. The method is characterized by the fact that a reaction mixture, which contains either a compound comprised of silicon and carbon or a mixture of a carbon and silicon containing compound, is pyrolitically dissociated and that silicon carbide or carbon particles are precipitated in small amounts, together with the silicon. The reaction temperature is kept at a value at which the formation of silicon carbide begins.

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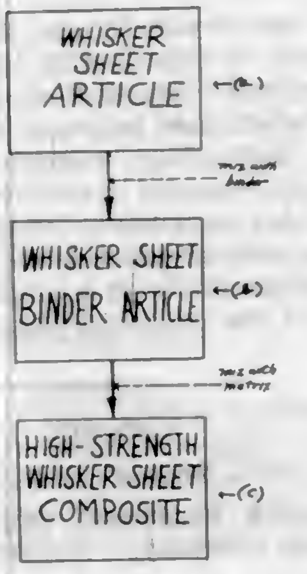
3,476,641

### HIGH-STRENGTH SINGLE CRYSTAL WHISKER PAPER COMPOSITES AND LAMINATES

**John V. Milewski, Saddle Brook, N.J., assignor to General Technologies Corporation, Reston, Va., a corporation of Delaware**
**Filed June 1, 1965, Ser. No. 460,419**
**Int. Cl. D21h** *1/10;* **B32b** *5/16*
**U.S. Cl. 161—170** **2 Claims**


WHISKER SHEET ARTICLE
WHISKER SHEET BINDER ARTICLE
HIGH-STRENGTH WHISKER SHEET COMPOSITE
(c)

A high-strength whisker paper composite article and laminate is described. The article includes a plurality of discontinuous and interconnected single crystal whisker of defined dimension in the form of a firm, compact, porous paper, a binder and a matrix material. Several papers are laminated together to form the laminate shaped article.

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3,476,642

### RUBBER TIRE REINFORCEMENT COMPOSITIONS, STRUCTURES AND METHODS

**Gerhard Berg, Harald Blumel, and Manfred Glathe, Marl, Germany, assignors to Chemische-Werke Huls A.G., Marl, Germany**
**No Drawing. Continuation-in-part of application Ser. No. 452,341, Apr. 30, 1965. This application May 6, 1966, Ser. No. 548,042**
**Claims priority, application Germany, May 7, 1965, C 35,784, C 35,785, C 35,786**
**Int. Cl. B32b** *27/32, 27/04, 32/08*
**U.S. Cl. 161—227** **20 Claims**

For increasing bond strength between tire cord and polyolefin rubbers, the tire cord is impregnated with an aqueous emulsion comprising: (a) an elastomeric, olefinic terpolymer, e.g. unsaturated ethylene-propylene copolymers; (b) homopolymers of vinyl pyridine or alkyl substituted vinyl pyridine; and (c) a heat convertible polyhydric phenol aldehyde resol, it being preferred that (a) has an unsaturation of 2.5–20 carbon to carbon double bonds per thousand carbon atoms and a Mooney viscosity ML–4 at 100° of about 40–150.

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3,476,643

### ACRYLONITRILE POLYMER-WOOD LAMINATED ARTICLES

**Ralph E. Isley, Northfield, and Richard C. Adams, Chardon, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio**
**No Drawing. Filed May 25, 1966, Ser. No. 552,725**
**Int. Cl. B32b** *27/30*
**U.S. Cl. 161—251** **6 Claims**

A laminated structure consisting of a wood base and a biaxially oriented acrylonitrile film, said film adhered to the wood base by means of an intercalated layer of an acrylonitrile-acrylate ester copolymer adhesive, is disclosed.

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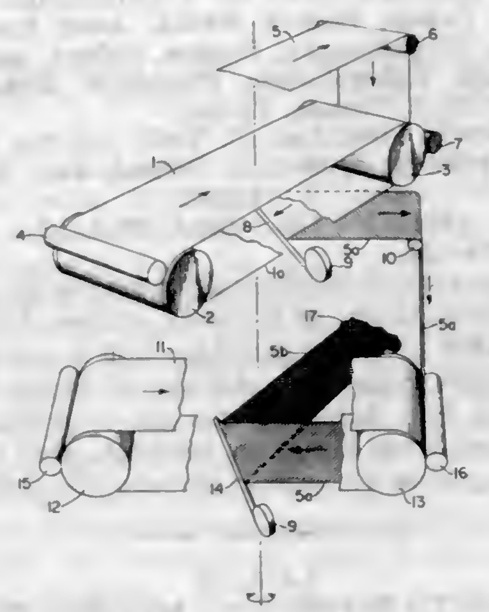
3,476,644

### METHOD AND MACHINE FOR PRODUCING DOUBLE CREPED PAPER

**Lewis W. Krehnbrink, Cincinnati, Ohio, assignor to Cincinnati Industries, Inc., Cincinnati, Ohio, a corporation of Ohio**
**Filed Jan. 21, 1966, Ser. No. 522,138**
**Int. Cl. B31f** *1/14;* **D21h** *5/24*
**U.S. Cl. 162—111** **18 Claims**



A method and means for producing double diagonally creped webs wherein two creping assemblies are provided, each creping assembly comprising a moving creping surface and a creping knife. Means are provided for supporting the creping assemblies one above the other, and means are provided for adjusting the position of the second creping assembly about a vertical axis to locate the second creping surface in a desired path of travel for the web as a control of the stretch characteristics thereof.

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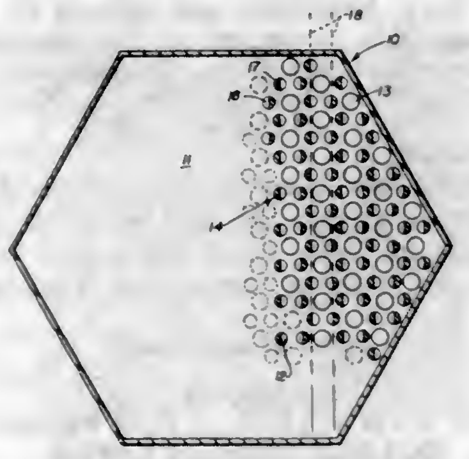
3,476,645

### FUEL SEGREGATION LOADING ARRANGEMENT IN NUCLEAR FUEL ELEMENTS

**Richard F. Turner, San Diego, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Oct. 22, 1968, Ser. No. 769,661**
**Int. Cl. G21c** *3/04*
**U.S. Cl. 176—71** **2 Claims**

Fuel rods for a thorium-uranium fuel cycle reactor made up as two approximately half-circular cylindrical cross-section segments, one containing fissile material and the other fertile material. The two segments together form a complete cylindrical fuel rod, and a plurality of the rods are mounted in the fuel block of a fuel element in rows, the rods in each row being aligned and oriented such that the planes of separation between the segments of the respective rods are in a common plane. The arrangement facilitates simplified separation of the fissile and fertile fuels for reprocessing by slicing of the block along the common planes of segment separation of the respective rows of rods. Relatively great homogeneity of fuel and improved heat transfer are also provided.



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### 3,476,646
### METHOD FOR THE MICROBIOLOGICAL PRODUCTION OF CAROTENES

**Zdzislaw Pazola, Henryk Switek, Jozef Janicki, and Wanda Michnikowska, Poznan, Poland, assignors to Centralne Laboratorium Przemyslu Koncentratow Spozywczych, Poznan, Poland**
**No Drawing. Filed Jan. 25, 1967, Ser. No. 611,566**
**Claims priority, application Poland, Jan. 26, 1966, P 112,642**
**Int. Cl. C12b** *1/00;* **C12k** *1/10*
**U.S. Cl. 195—28** **9 Claims**

Carotenes are microbiologically produced by cultivating opposite mated strains of *Blakeslea trispora* NRRL 2895 (+) and 2896 (—) in a liquid medium in which there is used as a lipid source, an autoclave oil having an iodine value above 100. Autoclave oils are by-products which are recovered from bleaching materials used in the refining of vegetable oils such as soybean and linseed oil.

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### 3,476,647
### GROWTH PROMOTING METHOD FOR MICROORGANISMS

**Tsunezo Ushioda, 2—448 Horinouchi, Suginami-ku, Tokyo, Japan, and Katsuhiko Nonaka, 21 Otsutomocho, Minoru Yasuhara, 44 Otsutomocho, and Katsuya Sato, 303 Teramaecho, all of Kanazawa-ku, Yokohama-shi, Kanagawa-ken, Japan, and Takeshi Inoi and Hiroaki Ishibashi, both of 44 Otsutomocho, Kanazawa-ku, Yokohama-shi, Kanagawa-ken, Japan**
**No Drawing. Filed Dec. 20, 1966, Ser. No. 603,165**
**Int. Cl. C12k** *1/00*
**U.S. Cl. 195—80** **7 Claims**

A method for promoting the growth of microorganisms by adding to the culture medium, a small amount of 2 - oxo - 4 - methyl - 6 - preido-hexahydropyrimidine (which is a condensation product of urea and acetaldehyde or crotonaldehyde) or/and 2-oxo-4-methyl - 6-hydroxy-hexahydropyrimidine (which is a hydrolyzate of the former) to accelerate the growth of micoorganisms.

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### 3,476,648
### PROCESS FOR PYRROLNITRIN PRODUCTION

**Marvin Gorman, Michael E. Haney, Jr., David H. Lively, and James D. Davenport, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana**
**No Drawing. Filed Mar. 14, 1966, Ser. No. 533,787**
**Int. Cl. C12b** *1/00;* **C12k** *3/00*
**U.S. Cl. 195—96** **5 Claims**

In production of pyrrolnitrin by fermentation, improved yields are obtained by adding dl- or d-tryptophane to the fermentation medium.

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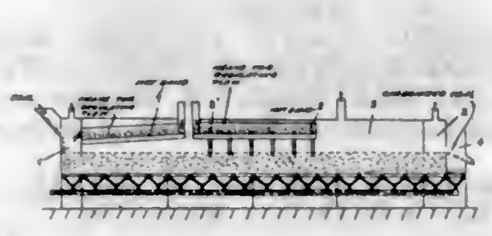
### 3,476,649
### CARBONISATION OF SOLID FUELS

**Pierre Leon Victor Ledent, Tilff, Belgium, assignor to Institut National de L'Industrie Charbonniere, Liege, Belgium**
**Filed Apr. 9, 1965, Ser. No. 446,879**
**Claims priority, application Belgium, Apr. 17, 1964, 40,126, Patent 646,741**
**Int. Cl. C10b** *57/12, 53/08, 49/16*
**U.S. Cl. 201—12** **2 Claims**



A method and device for the carbonisation of briquettes or pieces of solid fuel by treatment in a bed of granulated material used as thermofor, fluidised intermittently and which flows by gravity in a fluidised channel that is at a slight slope, comprising distributing the material used as thermofor in two fractions, one of which is introduced as the entry of the treatment channel simultaneously with the products to be treated, the other being added progressively at a plurality of stations into the mid-part of the treatment channel so as to reheat the mixture.

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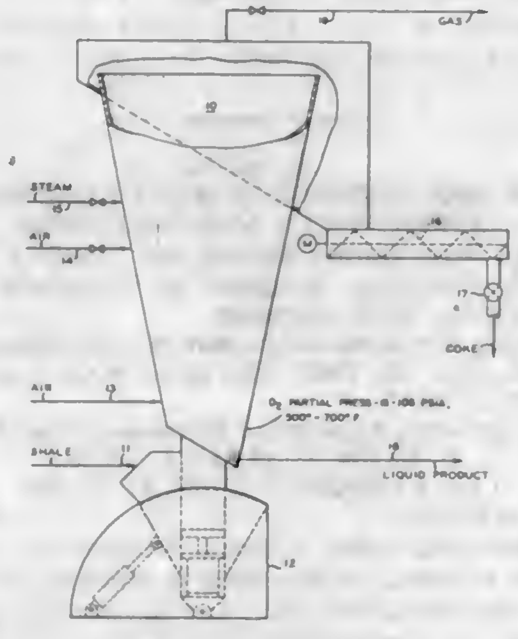
### 3,476,650
### OIL SHALE PROCESS

**Dixon W. Peacock, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Sept. 26, 1966, Ser. No. 581,960**
**Int. Cl. C10g** *1/02;* **C10b** *39/04*
**U.S. Cl. 201—32** **5 Claims**



Oil shale is combusted under a partial pressure of oxygen of 15 to 105 p.s.i.a. at 500 to 700° F. thereby producing a valuable metallurgical coke suitable for smelting iron, a heavy hydrocarbon fraction and a gaseous fraction.

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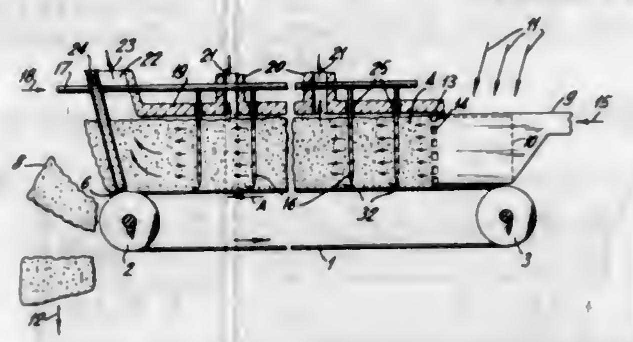
### 3,476,651
### CONVEYING COKING APPARATUS WITH A DOWNWARDLY EXTENDING TUBULAR HEATING MEANS

**Hermann Schenck, Intzestrasse 1, and Werner Wenzel, Prinz Heinrich Strasse 29, both of Aachen, Germany**
**Filed Sept. 6, 1966, Ser. No. 577,368**
**Int. Cl. C10b** *7/06, 47/20*
**U.S. Cl. 202—117** **15 Claims**



A coking plant is formed of a horizontally arranged support member moving longitudinally between an inlet station and a discharge station. A plurality of coal bodies are positioned on the support member in spaced relationship to provide longitudinally extending open spaces between adjacent coal bodies. A hollow member is provided at the inlet station of the coking plant for supplying gas and combustion air into the open spaces for initiating the coking of the coal bodies. Tubular members extend downwardly into the open spaces for supplying combustion air and a gas collecting ceiling is arranged to remove gas from the plant.

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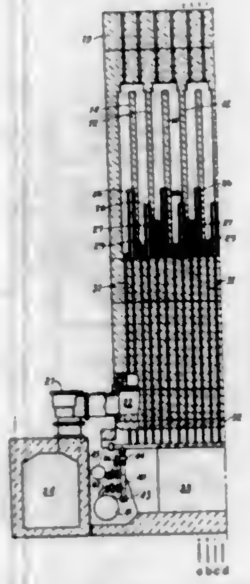
### 3,476,652
### HORIZONTAL COKE OVEN BATTERIES

**Walter Grumm, Niederelfringhausen 15, uber Hattingen (Ruhr), Germany**
**Filed June 20, 1967, Ser. No. 647,442**
**Int. Cl. C10b** *21/22, 21/06, 3/00*
**U.S. Cl. 202—142** **5 Claims**



A vertical coke oven battery wherein rich fuel gas and lean gas can be used for heating. Each flue has two burners of different heights, and each pair of flues has burners which again differ in height. The conduits and riser pipes are so connected to each other that lean gas can be supplied into the higher burners in order to introduce more heat, at uniform temperatures, into the upper parts of the flues.

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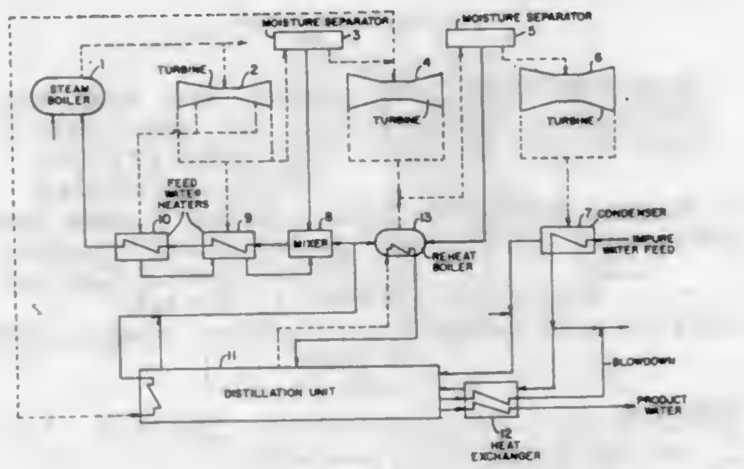
### 3,476,653
### MULTISTAGE DISTILLATION UNIT FOR WATER AND POWER PLANT SYSTEM

**George D. Doland, 1602 Redway, Houston, Tex. 77058**
**Filed Feb. 1, 1967, Ser. No. 613,142**
**Int. Cl. C02b** *1/06;* **F01k** *17/02;* **B01d** *3/00*
**U.S. Cl. 202—173** **3 Claims**



The invention herein relates to a water and power plant system capable of purifying sea water or other impure water while generating electrical power. The improvements which are the essential features of the invention are first, the system does not use so called "waste heat" from the power plant to operate the water plant. Thermal energy is transferred from the power plant to the water plant by condensing power plant steam from an intermediate portion of the power plant steam cycle. Energy is returned to the power plant by a reheat boiler which condenses product vapor while producing steam from the power plant feedwater. The second improvement results from heating power plant feedwater while the product vapor in the water plant is condensed. The third improvement results from substitution of unprocessed impure water for partially processed sea water to obtain a lower boiling point elevation.

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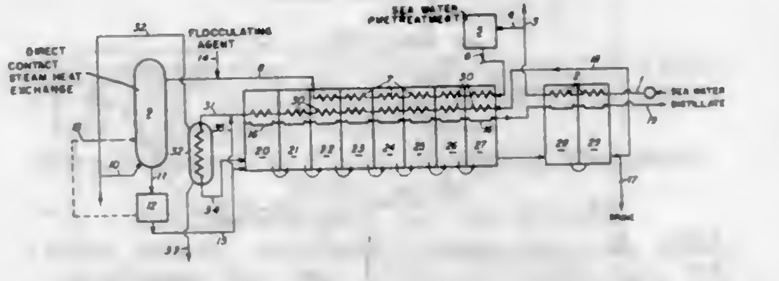
### 3,476,654
### MULTISTAGE FLASH DISTILLATION WITH SCALE REMOVAL

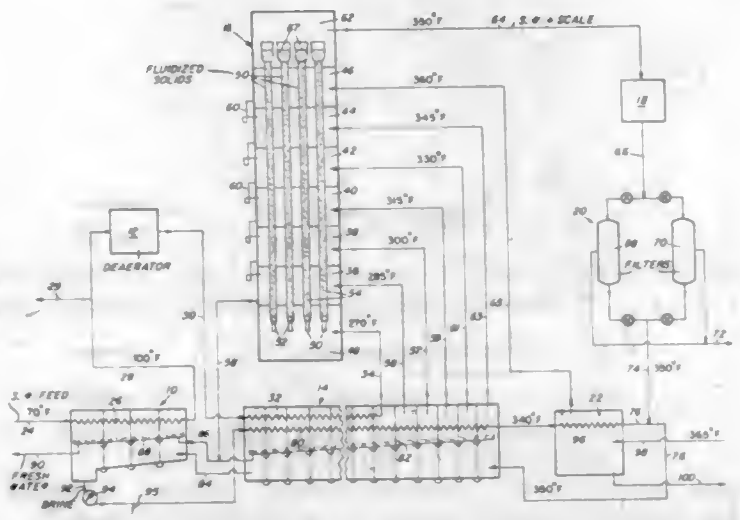
**Everett N. Sieder, McLean, Va., assignor to the United States of America as represented by the Secretary of the Interior**
**Filed Sept. 29, 1967, Ser. No. 671,895**
**Int. Cl. B01d** *3/06;* **C02b** *1/06*
**U.S. Cl. 203—7** **9 Claims**



In a multistage flash, evaporation process for distilling saline water, scale formation is prevented by heating the saline water feed by indirect heat exchange with flashing vapors to a temperature slightly less than that which produces scaling, then further heating the feedwater by direct contact with steam to precipitate scale formers and thereafter separating the precipitated scale from the saline water feed.

### 3,476,655
### DESCALING OF SALINE WATER AND DISTILLATION

**Everett N. Sieder, McLean, Va., assignor to the United States of America as represented by the Secretary of the Interior**
**Filed Nov. 1, 1967, Ser. No. 679,755**
**Int. Cl. B01d** *3/34, 3/06;* **C02b** *1/06*
**U.S. Cl. 203—7 12 Claims**



A scale removing system which may be used in distillation processes comprising a shell and tube fluidized bed preheater assembly in which sea water containing scale is indirectly heated by steam while serving as the fluidizing medium for a plurality of solid bodies such that small particles of scale are formed and are driven out of the preheater with descaled sea water. This mixture is then separated by conventional means.

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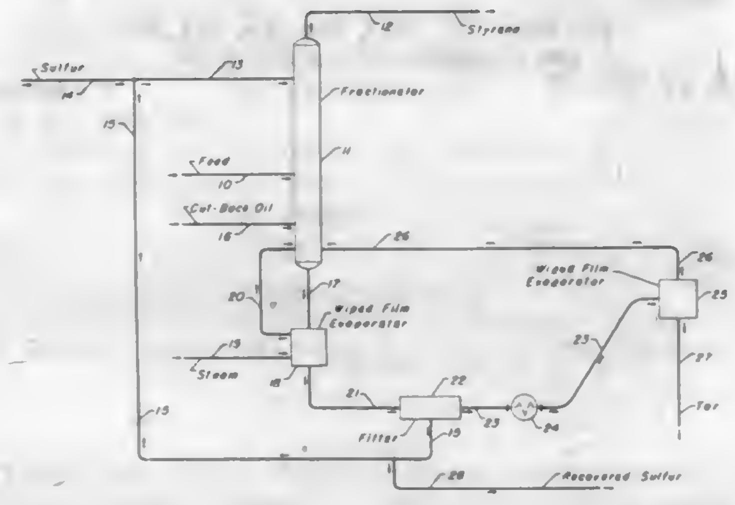
### 3,476,656
### FRACTIONAL DISTILLATION AND RECOVERY OF STYRENE CONTAINING SULFUR WITH SUBSEQUENT BOTTOMS SEPARATION

**Harry M. Van Tassell and Wayne N. Root, Des Plaines, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**Filed June 7, 1968, Ser. No. 735,425**
**Int. Cl. B01d** *3/34;* **C07c** *7/04*
**U.S. Cl. 203—9 9 Claims**



Method for purifying sulfur-inhibited styrene via a distillation scheme having associated therewith sulfur recovery facilities. The crude styrene is distilled in the presence of a cut-back oil, a high purity styrene is recovered as overhead, the bottoms product is treated in a separation zone to recover residual styrene as a gaseous stream and a separate liquid is further treated to separate a solid sulfur stream therefrom. A portion of the sulfur is recycled to the distillation zone.

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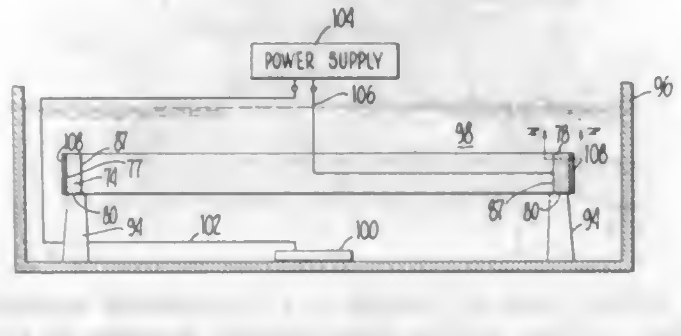
### 3,476,657
### METHOD OF FORMING A FONT BELT

**Ingemar H. Lundquist, Oakland, Calif., assignor to Friden, Inc., a corporation of Delaware**
**Filed Mar. 28, 1967, Ser. No. 626,622**
**Int. Cl. C23b** *7/04, 5/58;* **B51c** *3/08*
**U.S. Cl. 204—6 10 Claims**



A seamless, endless, flexible, metallic font belt having a plurality of printing types formed integral therewith by engraving a set of characters on a flat strip of engraver's metal, flexing the strip into a circular-shaped female mold, upon which is cast an expendable seamless male mold on which a seamless female mold is electroplated, and then electroplating the seamless female mold to obtain the final font belt which is stripped from its mold. A series of slots between printing types may be punched in the belt and the surface of the types may be hardened by chemical treatment.

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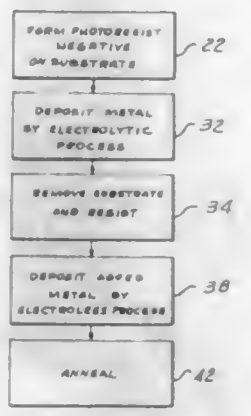
### 3,476,658
### METHOD OF MAKING MICROCIRCUIT PATTERN MASKS

**Frank R. Corwin, Milford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Nov. 16, 1965, Ser. No. 508,088**
**Int. Cl. C23b** *7/08;* **C23f** *17/00*
**U.S. Cl. 204—11 5 Claims**


FORM PHOTORESIST NEGATIVE ON SUBSTRATE
22
DEPOSIT METAL BY ELECTROLYTIC PROCESS
32
REMOVE SUBSTRATE AND RESIST
34
DEPOSIT ADDED METAL BY ELECTROLESS PROCESS
38
ANNEAL
42

A method of making a microcircuit pattern mask in which a thin film of nickel in the pattern of the mask is electrolytically deposited on a copper substrate through a negative of the mask formed by a photoresist technique. Following formation of the thin film, the substrate is removed therefrom together with the resist by use of a selective etchant. The thin film then is immersed in a suitable bath to provide an electroless deposition of metal on the electrolytically formed film until a mask of the desired thickness has been produced. In this manner there is provided a mask having high resolution and yet which is sufficiently strong and rigid to permit repeated usage of the mask without deformation.

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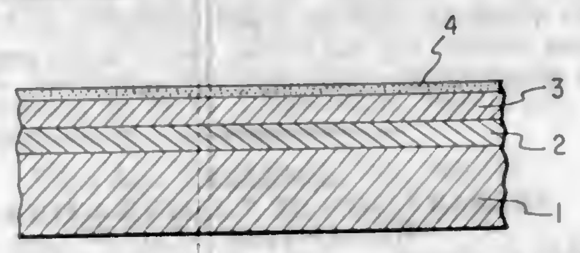
### 3,476,659
### ELECTROPHOTOGRAPHIC IMAGING AND COPYING PROCESS

**Masamichi Sato, Satoru Honjo, and Masaaki Takimoto, Saitama, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan**
**Filed July 21, 1966. Ser. No. 566,845**
**Claims priority, application Japan, July 21, 1965, 40/43,837**
**Int. Cl. B44c** *1/04*
**U.S. Cl. 204—18 10 Claims**



A recording method involving electrolytic deposition of material on a photoconductive element including providing a low adhesion layer on the surface of a photoconductive element, electrolytically depositing the material on the low adhesion layer of the photoconductive element, after exposure, and then transferring the deposited material from the low adhesion surface to the surface of a record receiving element.

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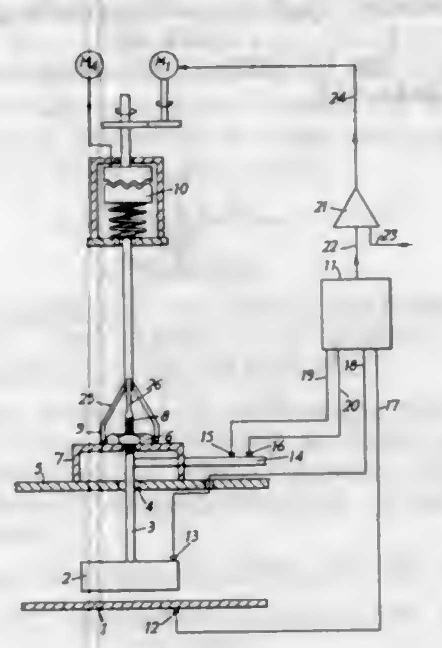
### 3,476,660
### METHOD OF SEQUENTIALLY ADJUSTING THE ANODES IN A MERCURY-CATHODE CELL

**Tadeusz Ryszard Selwa, Runcorn, England, assignor to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain**
**Filed Mar. 6, 1967, Ser. No. 620,889**
**Claims priority, application Great Britain, Mar. 23, 1966, 12,854/66**
**Int. Cl. B01k** *3/02*
**U.S. Cl. 204—128 12 Claims**



A method of adjusting sequentially each anode-cathode gap of a working mercury-cathode electrolytic cell by carrying out automatically in appropriate sequence (1) selection of an anode-cathode gap for adjustment, (2) positioning a servo-operated anode-adjusting tool over the appropriate anode, (3) bringing the tool into and out of engagement with an adjusting means on the anode support, (4) measuring the electrical conductance of the anode-cathode gap, (5) adjusting the anode setting to a predetermined value of gap-conductance, and repeating the sequence on each anode, all operations being under control of a sequential controller programmed to adjust automatically all the anode-cathode gaps in the cell, and arrangement of apparatus therefor.

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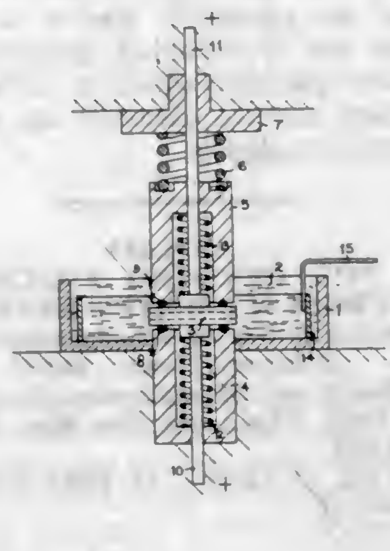
### 3,476,661
### PROCESS FOR INCREASING THE REVERSE VOLTAGE OF THERMALLY OXIDIZED SILICON MEMBERS WITH AT LEAST ONE BARRIER LAYER

**Dieter Jahn, Neuenhof, Aargau, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company**
**Filed Apr. 11, 1966, Ser. No. 541,676**
**Claims priority, application Switzerland, Apr. 27, 1965, 5,865/65**
**Int. Cl. B01k** *3/00*
**U.S. Cl. 204—140 6 Claims**



A process for recovering maximum reverse breakdown voltage at the exposed edge of a p-n junction area within a silicon disc semiconductor element which has been protected by covering the edge with a thermally produced oxide layer which comprises the step of subjecting the oxide layer coated edge to an electrolytic treatment. The silicon disc is immersed in an electrolytic bath and held in place between two support members and two sealing rings which limit the electrolytic treatment to the edge portion of the disc. When direct current is employed, a counter electrode is placed in the bath. When alternating current is utilized, the counter electrode is omitted.

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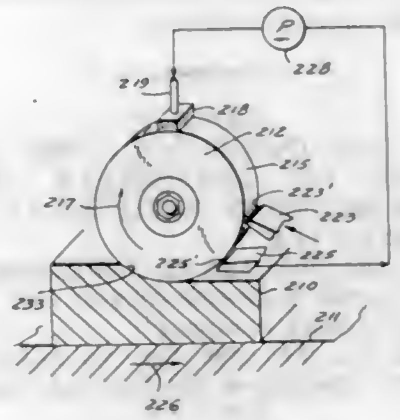
### 3,476,662
### METHOD OF AND APPARATUS FOR INCREASING THE ACCURACY OF ELECTROCHEMICAL GRINDING PROCESS

**Kiyoshi Inoue, 100 Sakato, Kawasaki, Kanagawa, Tokyo, Japan**
**Filed Dec. 5, 1966, Ser. No. 599,051**
**Claims priority, application Japan, Dec. 16, 1965, 40/77,467; Jan. 10, 1966, 41/1,413; Jan. 29, 1966, 41/5,331; Mar. 1, 1966, 41/12,735; Mar. 2, 1966, 41/12,687; Apr. 12, 1966, 41/23,102, 41/23,103; May 7, 1966, 41/28,730; Sept. 16, 1966, 41/61,294; Sept. 24, 1966, 41/63,165**
**Int. Cl. B23p** *1/04, 1/10*
**U.S. Cl. 204—143 2 Claims**

Improved electrochemical-grinding apparatus and method whereby the accuracy of reproduction of the electrode contour in the workpiece is sharply increased by limiting the thickness of the electrolyte film carried by the grinding wheel to a minimum. The film thickness is reduced by a scraper or wiper held against the wheel, by directing a stream of high-velocity air thereagainst to dissolve the excess electrolyte, by suction removal of the excess, and/or by electrochemically reforming the electrolyte.



The wiper may serve as an electrode for the reformation of the electrolyte film or as the nozzle for the jet of air and is contoured complementarily to the wheel by electrochemical action or casting thereagainst. Both the wheel and the electrode are preferably composed of graphitic materials.

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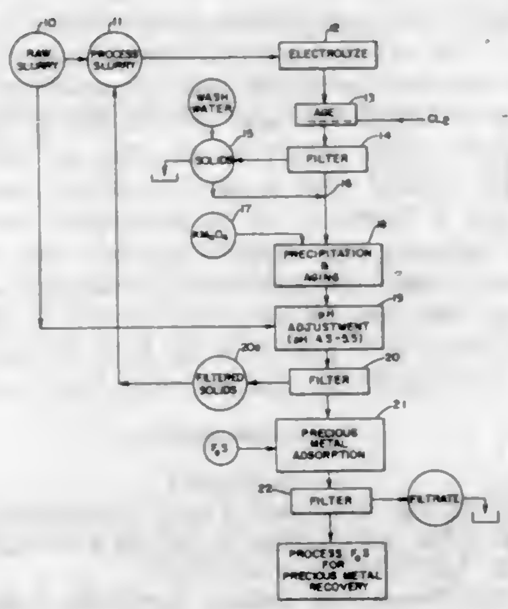
### 3,476,663

## PROCESS FOR DERIVING PRECIOUS METAL VALUES FROM SEA WATER ENVIRONMENTS

**Edward O. Norris, 9 Ledgemoor Lane,**
**Westport, Conn. 06880**
**Continuation-in-part of application Ser. No. 644,515, June 8, 1967. This application Mar. 27, 1968, Ser. No. 716,407**
**Int. Cl. C02b** *1/34;* **B01k** *3/00*
**U.S. Cl. 204—151** **16 Claims**



The invention is directed to the recovery of precious metals, such as gold, silver and platinum, from sea water environments, particularly by extraction of precious metal compounds from sea bottom sediments and/or sea water near or associated with such sediments. The process of the invention is directed particularly to improvements in extraction procedures, providing for improved efficiency and reliability in the separation of precious metals in their elemental forms from various related "interfering" substances.

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### 3,476,664

## PREPARATION OF 7-CHLORO-4-THIA-OENANTHIC ACID

**Jozef A. Thoma, Vaals, and Johannes W. Gielkens and Werner Reichrath, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands**
**No Drawing. Filed June 8, 1966, Ser. No. 555,987**
**Claims priority, application Netherlands, June 9, 1965, 6507299**
**Int. Cl. B01j** *1/10*
**U.S. Cl. 204—158** **4 Claims**

It has been found that 7-chloro-4-thia-oenanthic acid may be prepared by reaction of beta-mercaptopropionic acid with allyl chloride in the presence of a solvent and under the influence of ultra-violet light. Instead of the acid, nitrile or ester or salt thereof may be used. This process produces 7-chloro-4-thia-oenanthic acid and derivatives thereof, e.g. the nitrile, useful in the preparation of the corresponding 7-amino compounds.

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### 3,476,665

## PREPARATION OF 7-AMINO-4-THIA-OENANTHIC ACID

**Johannes H. Ottenheym, Sittard, Jozef A. Thoma, Vaals, and Johannes H. C. M. A. Gregoire, Beek, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands**
**No Drawing. Filed June 8, 1966, Ser. No. 555,952**
**Claims priority, application Netherlands, June 9, 1965, 6507297**
**Int. Cl. B01j** *1/10*
**U.S. Cl. 204—158** **6 Claims**

There is provided a process for the preparation of 7-amino-4-thia-oenanthic acid in which, under the influence of ultraviolet irradiation, beta-mercaptopropionic acid is reacted with an allyl amine in the presence of a solvent. In place of the acid, the nitrile or an ester or salt may be used. Compounds such as 7-amino-4-thia-oenanthic acid and nitrile are produced, the amino acid being useful as an antioxidant and the nitrile being useful as a surface active agent.

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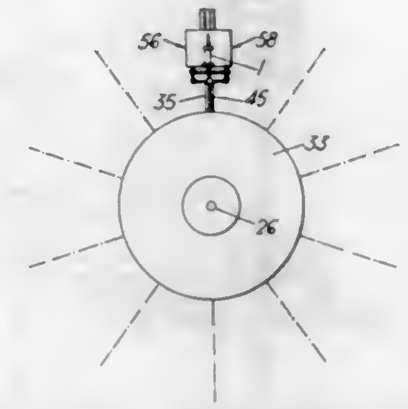
### 3,476,666

## CENTRIFUGALLY OPERATING ELECTRODEPOSITION APPARATUS AND METHOD OF USE

**George Bell, Radlett, and Anthony James O'Connell, South Harrow, England, assignors to The Metal Box Company Limited, London, England, a British company**
**Filed Feb. 8, 1966, Ser. No. 535,637**
**Claims priority, application Great Britain, Feb. 9, 1965, 5,634/65**
**Int. Cl. C23b** *13/00;* **B01k** *5/02*
**U.S. Cl. 204—181** **27 Claims**



Methods and apparatus for coating, by electro-deposition, exposed interior surfaces of can bodies by positioning a plurality of can bodies in surrounding relation to a plurality of electrodes, rotating the plurality of can bodies and electrodes about an axis to centrifugally retain electrolyte between each can body-electrode pair and

applying a potential between the electrodes and can bodies to effect electro-deposition of coating material upon the exposed interior surfaces. Preferably, a plurality of arms are employed extending outwardly from the axis of rotation, each of which supports a turret movable toward and away from the axis of rotation and rotatable about the associated arm for moving a plurality of can bodies supported thereby to and from a plurality of stations on each of the arms, one of the stations including the electrode employed in electro-deposition and further ones of the stations being employed in rinsing of the coated can bodies.

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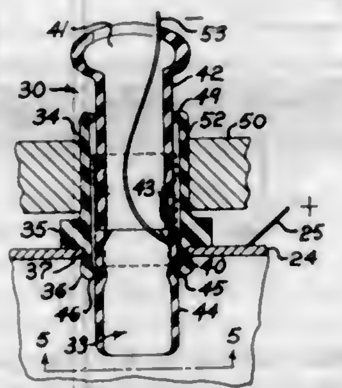
### 3,476,667

## ELECTRODE ASSEMBLY USED IN ELECTRO-COATING HOLLOW ARTICLES

**Allan E. Gilchrist, Westlake, Ohio, assignor, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York**
**Filed Apr. 25, 1966, Ser. No. 545,047**
**Int. Cl. C23b** *13/00;* **B01k** *5/02*
**U.S. Cl. 204—181** **13 Claims**



Apparatus and method for electrodepositing paint on the inside of a hollow article having openings leading into its interior. At each opening an electrode assembly is mounted in releasable gripping engagement with the article, providing a small auxiliary cathode extending into the interior of the article and spaced and electrically insulated from the article. Each electrode assembly provides a vent passage for the interior of the article to be coated. D.C. voltage is applied between the article and all of the electrode assemblies to cause electrodeposition of paint onto the inside of the article.

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### 3,476,668

## ELECTROPHORETIC COATING PROCESS IN A MEDIUM CONTAINING A RESIN, PLUS POWDERED PLASTIC MATERIAL

**Werner Scheiber, Frankfurt am Main, Peter Walter, Wiesbaden, Rolf Lehmann, Offenbach am Main, and Klaus Kowarik, Frankfurt am Main, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany**
**No Drawing. Filed Sept. 26, 1966, Ser. No. 581,716**
**Claims priority, application Germany, Oct. 8, 1965, M 66,881**
**Int. Cl. C23b** *13/00;* **B01k** *5/02*
**U.S. Cl. 204—181** **7 Claims**

Carrying out electrophoretic coating by the use of an electrolyte liquid phase which is aqueous and has contained therein a liquid resinous coating composition either dissolved or dispersed in water and a suspended powdered plastic material having a particle size of about 0.1 to 100 microns, preferably 0.5 to 20 microns.

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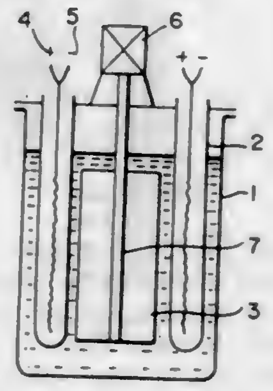
### 3,476,669

## APPARATUS FOR PHOTOCHEMICAL REACTIONS

**Wilhelm Beckmann, Limburgerhof, Pfalz, and Werner Ludwig Kengelbach, Horst Metzger, and Martin Pape, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**
**Filed Apr. 6, 1966, Ser. No. 540,741**
**Claims priority, application Germany, Apr. 9, 1965, B 81,367**
**Int. Cl. B01k** *1/00;* **C07c** *3/24*
**U.S. Cl. 204—193** **8 Claims**



Apparatus for carrying out liquid phase photochemical reactions including a vessel, vertically arranged rotatable stirring means, and a plurality of tubular, vertical lamps therein with the lamps located to provide clearances between contiguous lamps of 0.3 times to twice the diameter of the lamps, clearances between respective lamps and the wall of the vessel of at least 0.5 times the diameter of the lamps, and clearances between lamps and stirring members of 0.05 to 0.5 times the diameter of the lamp.

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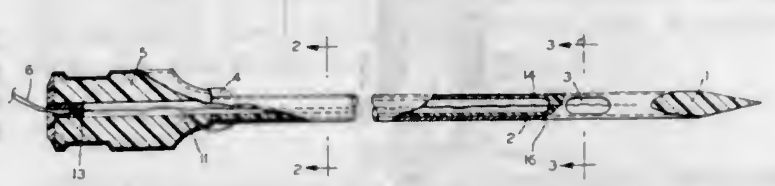
### 3,476,670

## POLAROGRAPHIC ELECTRODE STRUCTURE

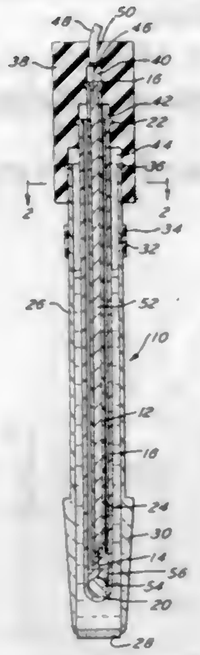
**Bernard A. Weiner, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture**
**Original application Aug. 10, 1964, Ser. No. 388,731. Divided and this application Apr. 10, 1967, Ser. No. 643,773**
**Int. Cl. B01k** *3/02, 3/10*
**U.S. Cl. 204—195** **1 Claim**



A polarographic cathode structure comprising a hypodermic needle having a shaft and an apertured bevel, a longitudinal slit in the wall of the shaft just beyond the bevel, a platinum wire cathode disposed in the shaft, an oxygen-permeable collodion membrane covering the segment of the wire underlying the slit, and a resin seal sealing the aperture at the bevel, whereby only the slit provides access of sample to the cathode.

### 3,476,671
### ELECTRODE ASSEMBLY INCLUDING AN ELASTOMERIC CAP

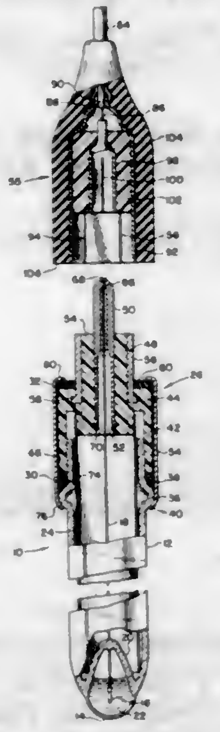
**Richard Petty, Vineland, N.J., assignor to Kontes Glass Company, Vineland, N.J., a corporation of New Jersey**
**Filed May 16, 1966, Ser. No. 550,533**
**Int. Cl. B01k** *3/04*
**U.S. Cl. 204—195** **7 Claims**



A resilient electrode cap having stepped cylindrically shaped bores therein capable of holding and adjustably positioning a plurality of electrode assemblies therein.

### 3,476,672
### ELECTRODE ASSEMBLY

**Robert B. Snyder, West Covina, and Arne J. Petersen, Balboa, Calif., assignors to Beckman Instruments, Inc., a corporation of California**
**Filed July 1, 1966, Ser. No. 562,298**
**Int. Cl. B01k** *3/04*
**U.S. Cl. 204—195** **13 Claims**



A cap connector assembly for an electrochemical electrode which is adapted to be connected to a mating plug at the end of an electrical cable. The connector assembly comprises a body having a wall for surrounding a portion of the electrode tube and having an integral cylindrical portion for supporting a conductive connector, and a sleeve which engages the body and the electrode tube by having one end bear against an annular shoulder about the tube and the other end bear against the body for providing a hermetic seal therebetween.

### 3,476,673
### HUMIDIFIER WITH ELECTROLYTIC PROTECTION

**Walter R. Stiles, Milford, Mich., assignor to Skuttle Manufacturing Company, Milford, Mich., a corporation of Michigan**
**Filed Aug. 30, 1966, Ser. No. 576,075**
**Int. Cl. C23f** *14/00*
**U.S. Cl. 204—196** **10 Claims**

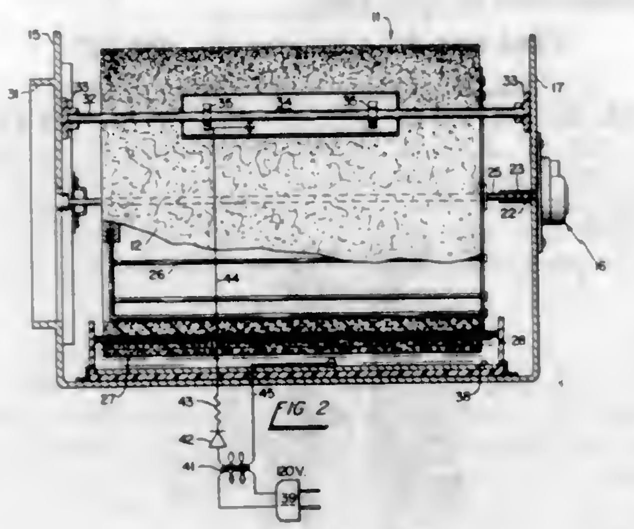
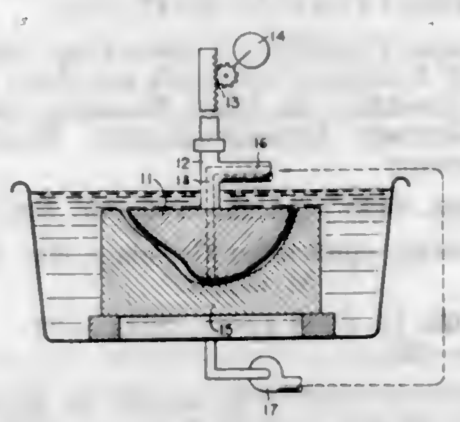


FIG 2

In a humidifier having a flexible porous evaporator pad having a lower portion immersed in a body of water, means for preventing the accumulation of solid deposits in the pores of the pad comprising means for applying a relatively small direct current electrical potential across a conductive element contacting a non-immersed region of the pad surface and a conductive element immersed in the body of water, said first named conductive element being positive.

### 3,476,674
### ELECTROLYTIC SHAPING APPARATUS WITH CdS SURFACED ELECTRODE

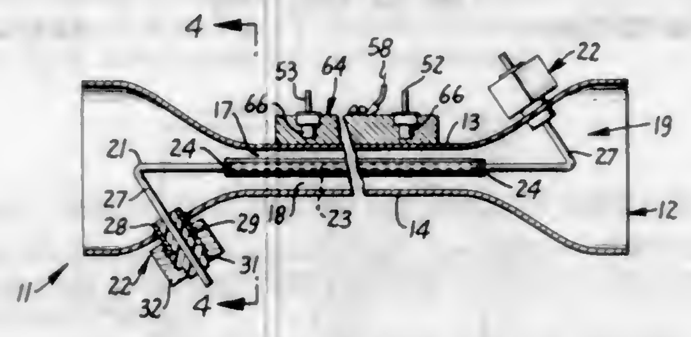
**Tomoyoshi Mikoshiba and Yasuo Suzuki, Kawasaki-shi, and Shingo Ishizawa, Kodaira-shi, Japan, assignors to Hitachi, Ltd., Tokyo-to, Japan**
**Filed Sept. 7, 1966, Ser. No. 577,758**
**Claims priority, application Japan, Sept. 10, 1965, 40/55,147**
**Int. Cl. B23p** *1/02;* **B01k** *3/04*
**U.S. Cl. 204—224** **13 Claims**



An electrolytic shaping apparatus is provided with a working electrode having a CdS semiconductive layer thereon in order to improve the working precision from about plus or minus 0.1 mm. to plus or minus 0.01 mm.

### 3,476,675
### AN ELECTROLYTIC CELL FOR CHLORINE PRODUCTION

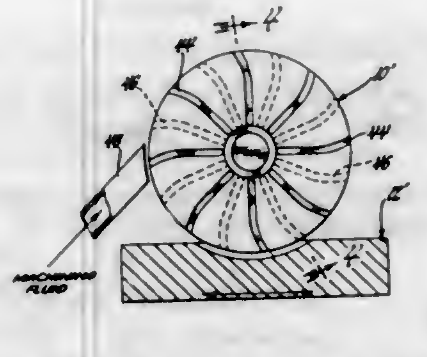
**Donald Colvin, San Francisco, and Vernon A. Schultz, El Sobrante, Calif., assignors to Simplex Manufacturing Co., Richmond, Calif., a corporation of California**
**Filed Mar. 22, 1966, Ser. No. 536,439**
**Int. Cl. B01k** *3/04;* **C22d** *1/02*
**U.S. Cl. 204—242** **9 Claims**



An electrolytic cell for making chlorine suitable for the chlorination of swimming pools, comprising a metallic tube having a section thereof flattened on two sides to form two parallel walls, said tube being the cathode and preferably of non-corrosive metal such as stainless steel, an anode structure containing a tantalum frame mounted within and insulated from said tube, a rectangular corrugated platinum sheet electrically connected to and carried on the tantalum frame midway between the flat walls of the tube, and a pair of foraminous polyethylene covers overlaying the platinum sheet on each side thereof; said cell being supplied through an electric circuit formed to short circuit the anode and cathode during the off time.

### 3,476,676
### ELECTRICAL STOCK REMOVAL CUTTING TOOL ELECTRODE

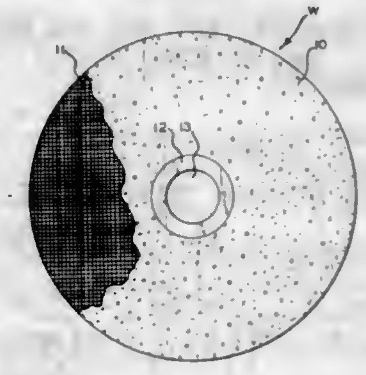
**Roger W. Johnson, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Original application Dec. 11, 1963, Ser. No. 329,699, now Patent No. 3,338,808, dated Aug. 29, 1967. Divided and this application Mar. 17, 1967, Ser. No. 623,918**
**Int. Cl. C23b** *5/74*
**U.S. Cl. 204—284** **4 Claims**



A cutting tool electrode that is constructed as a wheel with fluid passages arranged along the opposite sides thereof. Fluid under pressure is supplied to the passages and the alignment of the passages deflects the fluid flow so that rotational forces are imposed upon the electrode. The passages are also constructed and arranged to deliver fluid to a machining area defined by the periphery and sides of the electrode so that with power supplied to a gap maintained between the electrode and a conductive workpiece, stock is electrically removed from the workpiece.

### 3,476,677
### ELECTROLYTIC GRINDING TOOLS

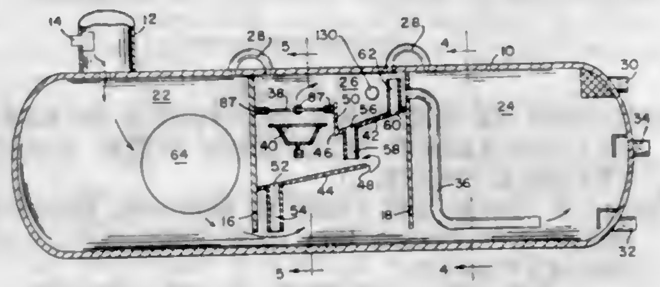
**William G. Corley, Bay City, and George T. Sermon, Essexville, Mich., assignors to Carbond Corporation, Bay City, Mich., a corporation of Michigan**
**Original application Feb. 15, 1965, Ser. No. 432,801, now Patent No. 3,377,150, dated Apr. 9, 1968. Divided and this application Nov. 2, 1967, Ser. No. 705,245**
**Int. Cl. B01k** *3/04;* **B23p** *1/02*
**U.S. Cl. 204—294** **13 Claims**



An electrolytic grinding wheel having a carbonaceous, electrically conductive matrix with hard abrasive grains uniformly dispersed therein. Means are provided on the wheel to receive electrical current. Electrically conductive, perforate, flexible lamina are bonded within the matrix and extend from the current receiving means to the working surface.

### 3,476,678
### HORIZONTAL ELECTRIC EMULSION TREATER

**Forrest L. Murdock, Sr., 2420 E. 24th, Tulsa, Okla. 74114**
**Filed June 6, 1966, Ser. No. 555,343**
**Int. Cl. C10g** *33/02;* **B01d** *13/02;* **B03c** *5/02*
**U.S. Cl. 204—308** **12 Claims**



This invention provides an emulsion treater for crude oil including a horizontal vessel with two spaced partitions dividing the vessel into three zones, the first and the last zones being quiescent settling zones with an intermediate treating zone in which is positioned spaced grids having an electric potential therebetween so that the emulsion flows through an electric field in passing from the first to the second quiescent zone.

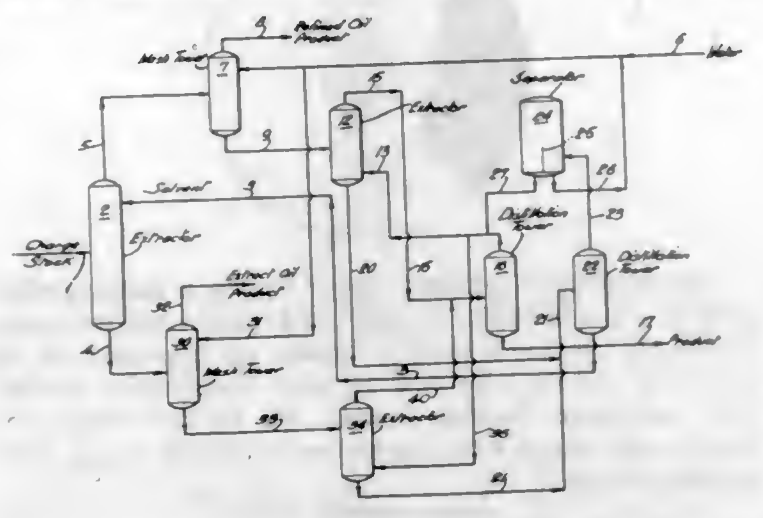
### 3,476,679
### ASPHALT BLENDS OF HYDROCARBON PRECIPITATED ASPHALTS WITH HYDROCARBON AROMATIC EXTRACTS

**Eugene M. Fauber, Hammond, Ind., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Aug. 19, 1966, Ser. No. 573,495**
**Int. Cl. C10c** *3/08;* **C10g** *21/02*
**U.S. Cl. 208—45** **8 Claims**

Asphalts of about 200–350 penetration at 77° F. having improved specific gravity and ductility properties and a method for producing such asphalts are disclosed. The asphalts contain about 70 to 85 weight percent of a hydrocarbon precipitated asphalt having a penetration at 77° F. of about 30–65, and about 15 to 30 weight percent of a hydrocarbon aromatic extract having a gravity of about 18 to 20° API. These components are derived from Mid-Continent crude bottoms having a viscosity of about 800 to 1500 SSU at 210° F.

### 3,476,680
### SOLVENT REFINING OF HYDROCARBON MIXTURES WITH N-METHYL-2-PYRROLIDONE

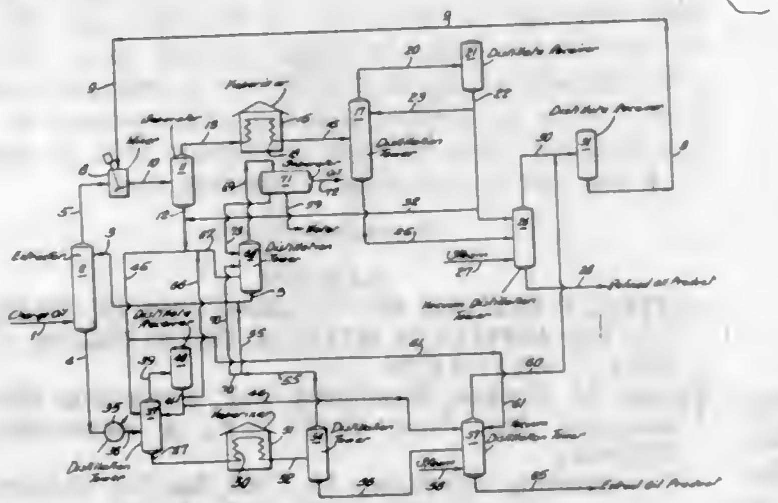
**Richard L. Coleman, Port Arthur, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware**
**Filed Nov. 28, 1967, Ser. No. 686,207**
**Int. Cl. C10g** *21/20*
**U.S. Cl. 208—326** **12 Claims**



A solvent extraction process for the separation of hydrocarbon mixtures boiling above 396° F. into raffinate product of decreased aromaticity and extract product of increased aromaticity by contact with a solvent comprising N-methyl-2-pyrrolidone involving separation of raffinate phases into oil and solvent fractions and treatment of the resulting solvent fraction with a low boiling liquid hydrocarbon to separate dissolved oil therefrom.

### 3,476,681
### METHOD OF SOLVENT RECOVERY IN REFINING HYDROCARBON MIXTURES WITH N-METHYL-2-PYRROLIDONE

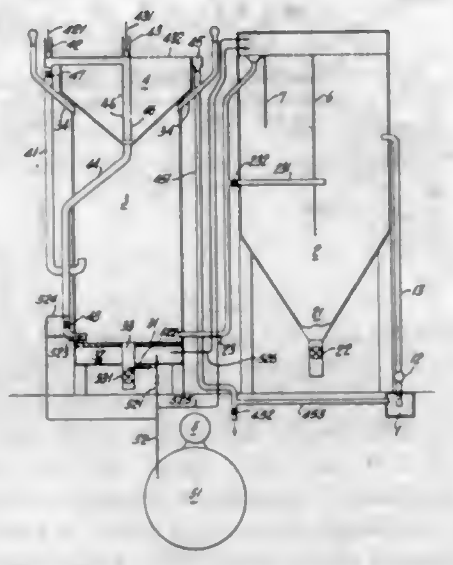
**James A. Davies and Philip B. Sherman, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware**
**Filed Dec. 22, 1967, Ser. No. 692,859**
**Int. Cl. C10g** *21/28, 21/14*
**U.S. Cl. 208—326** **10 Claims**



A solvent extraction process for refining a hydrocarbon oil with N-methyl-2-pyrrolidone wherein the separation of N-methyl-2-pyrrolidone from the raffinate phase is facilitated by admixing therewith a condensate of water and N-methyl-2-pyrrolidone separated in final stripping of refined oil product and extract oil product.

### 3,476,682
### METHOD AND APPARATUS FOR THE PURIFICATION OF SEWAGE

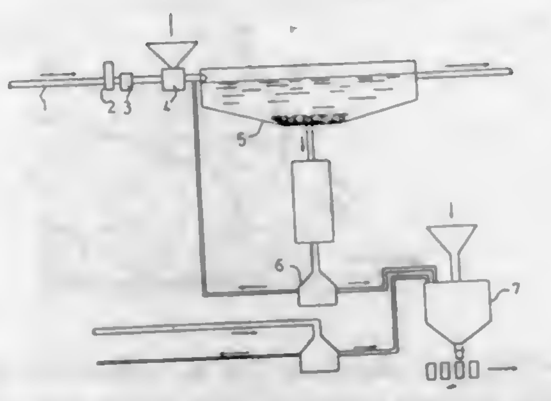
**Walter Albersmeyer, Gummersbach, Germany, assignor to Wibau Westdeutsche Industrie- und Strassenbau-Maschinen-Gesellschaft m.b.H., Gelnhausen, Hesse, Germany**
**Filed May 8, 1967, Ser. No. 636,711**
**Claims priority, application Germany, May 9, 1966, W 41,529**
**Int. Cl. C02c** *1/06*
**U.S. Cl. 210—7** **13 Claims**



Method and apparatus for the purification of sewage by a combined mechanical biological process operated with hydrostatic pressure flows and with partial recycling during the biological purification.

### 3,476,683
### METHODS OF SEPARATING INORGANIC IMPURITIES FROM SEWAGE AND OF MAKING A SOIL IMPROVING COMPOSITION FROM THE IMPURITIES SEPARATED

**Johan Ragnar Liljegren, 4 Ulasgatan, 794 00 Orsa, Sweden**
**Filed May 20, 1968, Ser. No. 730,565**
**Claims priority, application Sweden, May 23, 1967, 7,168/67; Jan. 11, 1968, 335/68**
**Int. Cl. C02c** *1/18, 1/00*
**U.S. Cl. 210—8** **4 Claims**



A method of separating inorganic impurities from sewage and of making a soil improving composition from the impurities separated, comprises adding to the sewage, on the basis of the measured quantity of the sewage and the degree of pollution thereof, a precipitating agent in the form of lime, hydrate of lime, slaked lime, leading the water thus admixed with lime into pools in which the heavy precipitates sink to the bottom as sludge and the light-weight precipitates assisted by the gas formation resulting from the reaction in the water rise to the surface, and removing the sludge and floating precipitates from the water and dewatering the sludge and the precipitates. For the preparation of the soil improving composition the dewatered sludge is mixed with sludge obtained from a purification plant operating biologically with active sludge, treated in the same way and preferably dewatered together with the first mentioned sludge, and during mixing a suitable quantity of unslaked lime, calcium oxide, is added to the dewatered sludge mixture to effect both sterilization and drying thereof.

### 3,476,684
### HIGH DROPPING POINT ALUMINUM GREASE

**John W. Hampton, Berkeley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware**
**No Drawing. Filed Aug. 18, 1967, Ser. No. 661,556**
**Int. Cl. C10m** *5/28*
**U.S. Cl. 252—33.6** **5 Claims**

Aluminum complex greases comprising as the thickener a mixed aluminum salt of a fatty carboxylic acid of from about 16 to 18 carbon atoms and a mono- or dichloroacetic acid.

### 3,476,685
### SYNTHETIC LUBRICATING COMPOSITION

**Frederick G. Oberender, Wappingers Falls, and Arthur W. Godfrey and Morris A. Wiley, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware**
**No Drawing. Filed May 8, 1967, Ser. No. 636,620**
**Int. Cl. C10m** *3/20, 3/38*
**U.S. Cl. 252—46.7** **13 Claims**

A synthetic lubricating oil composition is disclosed comprising a major portion of an ester-base having lubricating properties formed by the reaction of a pentaerythritol or trimethylolpropane and an organic acid having from about 2 to 12 carbon atoms per molecule containing in combination a hydrocarbyl-substituted phosphoramidate, an alkylated arylamine and an alkylated phenothiazine.

### 3,476,686
### ASHLESS LUBRICATING OIL DETERGENTS

**Joseph A. Verdol, Dolton, Ill., and Donald J. Carrow, Louisville, Ky., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 487,624, Sept. 15, 1965. This application June 4, 1968, Ser. No. 734,210**
**Int. Cl. C10m** *1/32, 7/30*
**U.S. Cl. 252—51.5** **4 Claims**

Ashless lubricating oil detergents are provided by the reaction product of

(A) a carboxylic acid or acid anhydride containing addition copolymer having at least two acid or anhydride groups, optionally composed in part of monomeric carboxylic acid or anhydride,
(B) an amine, and
(C) an aminophenol.

### 3,476,687
### HIGH TEMPERATURE GREASE

**Thomas W. Martinek, Danville, Ill., Robert M. Haines, Placentia, Calif., Roger L. Welchman, Orono, Maine, and Wilbur J. Trainor, Woodstock, Ill., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California**
**No Drawing. Filed Sept. 26, 1966, Ser. No. 581,690**
**Int. Cl. C10m** *5/10*
**U.S. Cl. 252—59** **4 Claims**

A grease composition comprising a major proportion of a mineral oil and an amount of p-polyphenyl sufficient to thicken the oil to a grease consistency.

### 3,476,688
### FERROMAGNETIC MANGANESE - MAGNESIUM-ZINC FERRITE-BODY WITH RECTANGULARLY SHAPED HYSTERESIS LOOP AND PROCESS FOR ITS MANUFACTURE

**Klaus Friess, Munich, Richard Ulrich, Bad Aibling, and Athanasios Kritikos, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany**
**Filed Sept. 29, 1966, Ser. No. 583,009**
**Claims priority, application Germany, Sept. 30, 1965, S 99,812**
**Int. Cl. H01f** *1/34;* **C04b** *35/38*
**U.S. Cl. 252—62.61** **11 Claims**

A ferromagnetic under-stoichiometric manganese-magnesium-zinc ferrite having a rectangularly shaped hysteresis loop for storage and switching elements over a large operating temperature range of about 10° C. to 60° C. and extremely limited magnetostrictive oscillations. The ferrite is composed of 32.5 to 50 mol percent $Fe_2O_3$, 22 to 32 mol percent of MgO, 22 to 25 mol percent of MnO, 2 to 4 mol percent of ZnO and 0.5 to 5 mol percent of a material selected from the group consisting essentially of $Li_2O$, CaO and mixtures thereof. The process of manufacturing such ferrite is also disclosed.

### 3,476,689
### COMPOSITION FOR USE IN STABILIZING CALCIUM CARBONATE IN COOLING WATER

**Theodore R. Newman, Oak Lawn, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed Jan. 3, 1967, Ser. No. 606,526**
**Int. Cl. C02b** *5/04, 1/18*
**U.S. Cl. 252—175** **5 Claims**

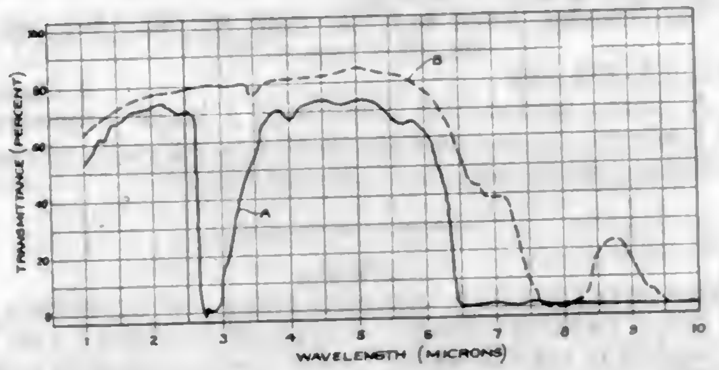
A polyphosphate containing composition of improved solubility which is particularly suited for use in stabilizing calcium carbonate in cooling water and a method of treating cooling water to prevent calcium carbonate deposits. A typical composition of the invention is as follows:

| Components— | Weight percent |
|---|---|
| Sodium hexametaphosphate | 16.5 |
| Sodium tripolyphosphate | 58.5 |
| Sodium chloride | 25.0 |

### 3,476,690
### OPTICALLY USEFUL ELEMENTS OF HOT PRESSED LITHIUM FLUORIDE DOPED MAGNESIUM OXIDE AND METHOD OF FORMING SAME

**Edward Carnall, Jr., Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**Continuation-in-part of application Ser. No. 245,713, Dec. 19, 1962. This application Nov. 9, 1966, Ser. No. 617,727**
**Int. Cl. F21v** *9/04;* **C04b** *35/36*
**U.S. Cl. 252—300** **7 Claims**

In hot pressing magnesium oxide powder, a small amount of lithium fluoride is added to make possible successful pressing at pressures as low as 9500 p.s.i. and temperatures as low as 700° C. under inert conditions. Desirably the lithium fluoride is added in an amount between 0.5 and 10%. The resulting product contains only a trace of lithium fluoride, is transparent to both visible and infrared energy, and is characterized by good transmission of 2.8 micron wavelength energy, whereas previous hot pressed magnesium oxide articles absorbed energy of that wavelength.



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**3,476,691**

### PROCESS FOR PREPARING AN YTTRIA AQUASOL

**Jean G. Smith and Frederick T. Fitch, Baltimore, Md.; may be granted to United States Atomic Energy Commission under provisions of 42 U.S.C. 2182**

**No Drawing. Filed Sept. 23, 1964, Ser. No. 398,734**

**Int. Cl. B01j** *13/00*

**U.S. Cl. 252—313** **5 Claims**

A process for preparing amorphous and crystalline yttrium oxide sols by mixing a substantially electrolyte-free hydrous yttria precipitate with water in a quantity of a strong mineral acid sufficient to adjust the pH to 6.5 to 7.5 followed by heating to form the amorphous yttria sol. The crystalline sol is formed by an additional heating step.

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**3,476,692**

### SILICOMAGNESIUM-ALUMINATE-HYDRATE GEL AND METHOD OF PREPARING THE SAME

**Klaus Hoffmann, Dresden, Germany, assignor to VEB Arzneimittelwerk, Dresden, Germany**

**No Drawing. Filed Feb. 4, 1966, Ser. No. 525,144**

**Int. Cl. B01j** *13/00;* **A61k** *27/06;* **C01b** *33/20*

**U.S. Cl. 252—317** **10 Claims**

Silicomagnesium-aluminate-hydrate gel prepared by the reaction between an alkali hydroxide solution containing water glass and an aqueous solution of an aluminum salt to form a suspension of alkali metal-aluminum-silicate-hydrate gel in alkali metal-hydroxy-aluminate solution and reaction thereof with an aqueous solution of a magnesium salt, in which the mol ratio of $Al_2O_3:M_2O$ in the first reaction step, wherein M is a physiologically compatible alkali metal, is between about 1:8 and 1:20.

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**3,476,693**

### NOVEL EPOXIDES AND CURED POLYMER COMPOSITIONS OBTAINED THEREFROM

**Frank D. Mango, Oakland, and Herbert A. Newey, Lafayette, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Jan. 24, 1968, Ser. No. 700,041**

**Int. Cl. C08g** *45/00*

**U.S. Cl. 260—2** **14 Claims**

Cured polymer compositions having improved physical properties are obtained by heating a bis(1,2-epoxyalkyl)-cycloaliphatic compound having at least 5 carbon atoms in the carbocyclic ring thereof with a curing agent. The bis(1,2-epoxy)cycloaliphatic compounds are prepared by epoxidizing the corresponding divinyl cycloalkanes or divinyl cycloalkenes.

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**3,476,694**

### LACQUER COMPOSITIONS CONTAINING NITROCELLULOSE, AN ETHYLENE/VINYL ACETATE COPOLYMER, AND SUCROSE ACETATE ISOBUTYRATE

**Warren Bowman, Wilmington, Del., Dennis M. Roberts, Cincinnati, Ohio, and Paul G. Sellger, Pittsburgh, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Nov. 1, 1966, Ser. No. 591,107**

**Int. Cl. C08b** *21/14, 37/16*

**U.S. Cl. 260—17** **4 Claims**

This invention relates to nitrocellulose lacquers. More particularly, the invention relates to lacquers containing nitrocellulose, a particular ethylene/vinyl acetate copolymer and sucrose acetate isobutyrate.

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**3,476,695**

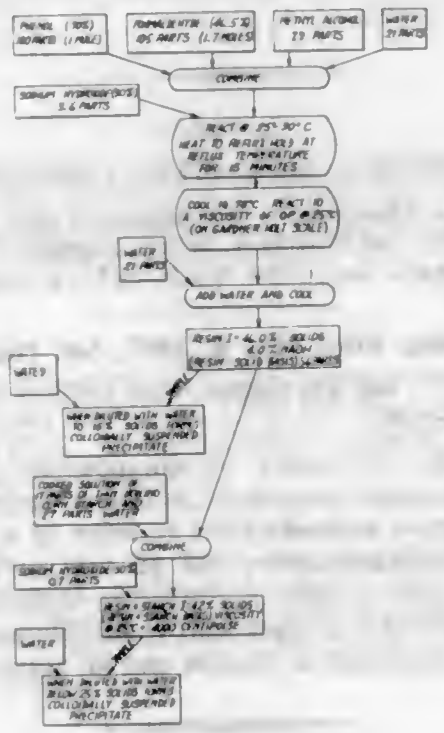
### PRECIPITATED RESIN-STARCH PAPERBOARD TREATMENT

**Lewis S. Miller, Bellevue, Wash., and Frederick Horowitz, Newark, Ohio, assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington**

**Filed Aug. 5, 1965, Ser. No. 477,381**

**Int. Cl. C08g** *37/18;* **C09d** *3/54*

**U.S. Cl. 260—17.2** **12 Claims**



A method of increasing the rigidity or stiffness under high humidity conditions of linerboard or corrugating medium used in making corrugated shipping containers by applying to the surface of the linerboard and/or corrugating medium a phenol-formaldehyde starch resin made by adding a phenol-formaldehyde resin to an aqueous cooked starch solution in a ratio of resin solids to starch solids of 1:2 to 10:1, the phenol-formaldehyde resin having a molar ratio of formaldehyde to phenol within the range of 1:1 to 3:1, a free alkali content, expressed as sodium hydroxide, of less than 5% of the resin solids, and a water dilutability such that the solution forms a cloudy precipitate when diluted to less than 30% solids at 25° C. This resin mixture, when cured by heat, gives a linerboard or corrugating medium having a significant increase in stiffness under high humidity conditions over linerboard or corrugating medium not treated.

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**3,476,696**

### POLYURETHANE COATINGS

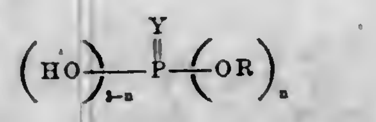
**Edward J. Quinn, Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York**

**No Drawing. Filed Mar. 28, 1966, Ser. No. 537,713**

**Int. Cl. C09d** *3/72;* **C08g** *41/00, 5/18*

**U.S. Cl. 260—19** **23 Claims**

There is disclosed an improved polyurethane composition produced by reacting an equivalent excess of an organic polyisocyanate with one equivalent of a polyhydroxy composition wherein the polyhydroxy composition comprises a polyol formed by adjusting the acidity of a hydroxyalkylated novolac resin of phenol and a carbonyl compound selected from the group consisting of an aldehyde and a ketone, with an acid phosphorus compound of the formula:



$$\left(\mathrm{HO}\right)_{3-n}\!-\!\overset{\overset{\displaystyle \mathrm{Y}}{\|}}{\mathrm{P}}\!-\!\left(\mathrm{OR}\right)_{n}$$

wherein *n* is an integer from 1 to 2, R is a hydrocarbyl radical and Y is selected from the group consisting of oxygen and sulfur, to an acid number in the range of about 0.2 to about 10, and heating the resulting product to a temperature of at least 160 degrees centigrade. The polyurethane composition is useful in polyurethane coating compositions which can be applied to various substrates such as metal, wood, ceramics, glass, and to polymer compositions.

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**3,476,697**

### LINEAR POLYMERS WITH POLYFUNCTIONAL TELOMERS AND DERIVATIVES THEREOF

**David H. Clements, Willow Grove, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware**

**No Drawing. Filed May 28, 1965, Ser. No. 459,918**

**Int. Cl. C08g** *30/14;* **C07d** *93/20*

**U.S. Cl. 260—22** **25 Claims**

Products produced by reacting a linear polymer having a molecular weight of at least 200 and terminated at each end with OH, SH or $NH_2$ with a compound having from 3 to 6 carboxylic acid or phenolic hydroxyl radicals, at least one of the radicals being a carboxylic acid radical. These products, in turn, may be modified by reaction with ethyleneimine, an alkylene oxide or an episulfide or may be chain-extended by reaction with a difunctional reagent. Products are conventionally mixed with a cross-linker such as an epoxy resin, an aminoplast, an alkyd, a phenol-formaldehyde resin, a drying oil fatty acid, a diisocyanate, etc., and used as a coating composition. The products may also be used themselves in coating compositions, as adhesives, etc.

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**3,476,698**

### STABILIZED COMPOSITIONS OF POLYOLEFINS CONTAINING SURFACE ACTIVE AGENTS AND PHENOLS

**Michel Osterrieth, Brussels, and Georges Voituron, Neder-over-Hembeek, Belgium, assignors to Solvay & Cie, Société en commandite, a simple of the Kingdom of Belgium**

**No Drawing. Filed Mar. 24, 1966, Ser. No. 442,484**

**Claims priority, application France, Apr. 10, 1964, 970,555**

**Int. Cl. C08f** *45/58, 45/62, 3/04*

**U.S. Cl. 260—23** **9 Claims**

A composition which is stable to thermal degradation and discoloration which comprises a polyolefin, a phenolic antioxidant, and an anionic surface active agent. If desired, other stabilizers such as calcium stearate can also be utilized.

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**3,476,699**

### POLYVINYL CHLORIDE AND OLEFIN POLYMER COMPOSITIONS HAVING IMPROVED RESISTANCE TO DETERIORATION COMPRISING AN ORGANIC PHOSPHITE ESTER HAVING AT LEAST ONE AROMATIC POLYCARBOCYCLIC GROUP

**Otto S. Kauder, Jamaica, William E. Leistner, Brooklyn, and Arthur C. Hecker, Forest Hills, N.Y., assignors to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of Delaware**

**No Drawing. Continuation-in-part of applications Ser. No. 160,237, Dec. 18, 1961, and Ser. No. 240,754, Nov. 28, 1962. This application Aug. 1, 1966, Ser. No. 569,115**

**Int. Cl. C08f** *45/58;* **C07f** *9/22*

**U.S. Cl. 260—23** **11 Claims**

Polyvinyl chloride and olefin polymer resin compositions are provided having improved resistance to deterioration, comprising an organic phosphite ester having only radicals directly attached to phosphorus through oxygen selected from the group consisting of hydrogen, aliphatic, cycloaliphatic and aromatic radicals and heterocyclic radicals having in addition to carbon an atom selected from the group consisting of oxygen, nitrogen and sulfur, and having attached to each phosphite group in the molecule at least one aromatic polycarbocyclic group having the formula $(Ar)_p$—Y—Ar, wherein Ar is a carbocyclic aromatic group, either containing a free phenolic hydroxyl group or connected through an oxygen atom to the phosphorus of a phosphite group, p is a number from one to four, and Y is a polyvalent linking group.

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**3,476,700**

### WAX COMPOSITIONS PRODUCING HIGH GLOSS, SMOOTH COATINGS

**Hallard C. Moyer, Homewood, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Oct. 21, 1965, Ser. No. 500,309**

**Int. Cl. C08h** *9/10*

**U.S. Cl. 260—28.5** **7 Claims**

Petroleum wax compositions suitable for producing high gloss, smooth coatings on paper products are obtained by combining a selected type of paraffinic wax, characterized by properties including a melting point of 148–158° F. and a viscosity SSU at 210° F. of 44–52, with a very small amount, from 0.005 to 0.1 percent based on the weight of the wax, of solid polyethylene, preferably having a softening point of at least about 215° F. and an average molecular weight of at least about 12,000. Such coatings can be achieved by slow cooling at essentially ambient temperatures. A high gloss, smooth wax coating is thus obtained without the necessity of shock-chilling.

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**3,476,701**

### ADHESIVE COMPOSITIONS COMPRISING THE REACTION PRODUCT OF A SUBSTITUTED PHENOL AND A TRIOXOHEXAHYDRO-s-TRIAZINE

**Derek Harry Aldred and Robert Alexander Edington, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain**

**No Drawing. Filed Nov. 8, 1965, Ser. No. 506,864**

**Int. Cl. C08g** *33/02;* **C09j** *3/16*

**U.S. Cl. 260—29.3** **3 Claims**

There is provided an adhesive composition for bonding synthetic fibrous material to natural or synthetic rubber in which the adhesive composition comprises the products of interaction of a 1:3:5-trisubstituted-2:4:6-trioxohexahydro-s-triazine with a substituted phenol. There is also provided a process for treating synthetic fibrous materials wherein the fibrous materials are dipped into an aqueous composition of the above-described adhesive composition.

### 3,476,702

### CURABLE EPOXY RESIN COMPOSITION

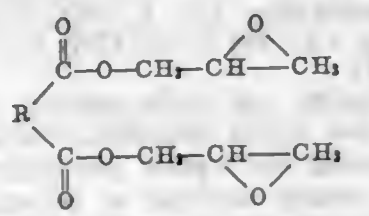
**Yoshihiro Yamamoto, Mitsuo Yoshihara, Takeru Ikeguchi, and Sanenobu Sonoda, Ibaraki, Japan, assignors to Nitto Electric Industrial Co., Ltd., a corporation of Japan**

**No Drawing. Filed Apr. 19, 1967, Ser. No. 631,889**

**Int. Cl. C08g** *23/12, 23/08*

**U.S. Cl. 260—37** **7 Claims**

A curable epoxy resin composition which comprises as essential components (1) at least one epoxy compound of the general formula:



wherein R is a divalent cycloparaffinic or cycloolefinic group, and (2) at least one curing agent selected from the group consisting of (a) aliphatic and alicyclic carboxylic acids and their anhydrides having at least two functional groups and (b) aliphatic and alicyclic amines having at least two functional groups.

### 3,476,703

### TREATMENT OF CARBON FIBRES AND COMPOSITE MATERIALS INCLUDING SUCH FIBRES

**Nicolas John Wadsworth and William Watt, Farnborough, England, assignors to National Research Development Corporation, London, England**

**No Drawing. Filed Feb. 16, 1968, Ser. No. 705,897**

**Claims priority, application Great Britain, Feb. 21, 1967, 8,201/67**

**Int. Cl. C08g** *51/10;* **C08k** *1/16*

**U.S. Cl. 260—37** **6 Claims**

The invention comprises a process of treating the surface of carbon fibres by heating the fibre in an oxidising atmosphere at not more than 1000° C. for sufficient time to produce a weight loss of between 0.05 and preferably not more than 6.0 percent from the fibres, the process enabling a pitted fibre surface to be obtained enabling a good bond to be obtained between such treated fibres and a supporting matrix in a composite material.

### 3,476,704

### STABILIZED POLYVINYLCHLORIDE

**Arnold Schroeder, Deventer, and Paulus G. J. Nieuwenhuis, Apeldoorn, Netherlands, assignors to Koninklijke Industrieele Maatschappij Noury & Van Der Lande N.V., Deventer, Netherlands, a corporation of the Netherlands**

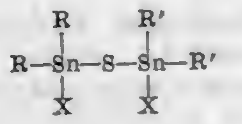
**No Drawing. Filed Apr. 6, 1967, Ser. No. 628,848**

**Claims priority, application Netherlands, Apr. 12, 1966, 6604827**

**Int. Cl. C08f** *45/62*

**U.S. Cl. 260—45.75** **3 Claims**

Polychloro compounds such as polyvinyl chloride are stabilized by the addition thereto of organotin compounds of the formula



$$R-\underset{X}{\overset{R}{Sn}}-S-\underset{X}{\overset{R'}{Sn}}-R'$$

wherein R and R′ are each the same or different alkyl groups of 1–12 carbon atoms, and X and X′ are the same or different radicals derived from an aliphatic monocarboxylic acid or an aliphatic dicarboxylic acid monoester.

### 3,476,705

### POLYAMIDE-ACID POLYMERS AND POLYIMIDES PREPARED FROM AZOBENZENE TETRACARBOXYLIC DIANHYDRIDES

**Robert L. Hansen, Roseville, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware**

**No Drawing. Filed Aug. 23, 1966, Ser. No. 574,562**

**Int. Cl. C08g** *20/02*

**U.S. Cl. 260—47** **20 Claims**

Polyamide-acid polymers and polyimides are made by condensing azobenzene tetracarboxylic dianhydride with a diamine containing at least two carbon atoms. The polyamide acids can be isolated as an intermediate stage polymer, which upon dehydration or by heating or other suitable means is converted to a polyimide which is strong and tough.

### 3,476,706

### CURING RESORCINOL-ALDEHYDE RESOL RESINS EMPLOYING ANILINE OR ANILINE SALTS

**Leopold F. Bornstein, Wilmington, Mass., assignor to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia**

**No Drawing. Continuation-in-part of application Ser. No. 275,228, Apr. 24, 1963. This application Apr. 22, 1968, Ser. No. 723,299**

**Int. Cl. C08g** *5/10, 51/74*

**U.S. Cl. 260—54** **9 Claims**

The curing rate of resorcinol-aldehyde resol resins may be increased and/or the curing temperature of such resins may be decreased by effecting the cure of such novolaks with a suitable aldehyde cross-linking material in the presence of aniline and/or aniline salts such as aniline hydrochloride and/or the various homologues and analogues thereof.

### 3,476,707

### PRODUCTION OF HIGH-ORTHO NOVOLAK RESINS

**Harry M. Culbertson, Wilbraham, Mass., and Alan David Buchanan, Rosanna, Victoria, Australia, assignors to Monsanto Chemicals (Australia) Limited, West Footscray, Victoria, a company of Australia**

**No Drawing. Filed Dec. 15, 1967, Ser. No. 690,786**

**Claims priority, application Australia, Dec. 19, 1966, 15,436/66**

**Int. Cl. C08g** *5/08*

**U.S. Cl. 260—57** **16 Claims**

Process for the production of so-called high ortho phenol-aldehyde novolac resins involving heating a phenol with aldehyde in the presence of a divalent electro-positive oxide or hydroxide or salt and a divalent electropositive metal halide or halogen acid.

### 3,476,708

### HYDRAZINE-MODIFIED POLYESTER RESINS USEFUL IN INSULATING LACQUERS FOR WIRES

**Gerhard Schade, Witten-Bommern, and Franz Blaschke, Witten (Ruhr), Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany**

**No Drawing. Filed Oct. 18, 1967, Ser. No. 676,023**

**Claims priority, application Germany, Oct. 18, 1966, D 51,334**

**Int. Cl. C08g** *20/30;* **C09d** *3/64*

**U.S. Cl. 260—75** **13 Claims**

A modified polyester resin of terephthalic acid, isophthalic acid, or mixtures thereof, with a glycol and an alcohol containing more than two hydroxyl groups, said resin having hydrazine incorporated therein by condensation. The resin, together with other additives such as a curing agent, is dissolved in an organic solvent to provide a lacquer to be used as an insulation coating for wires.

### 3,476,709

### SULFOLANE (TETRAHYDROTHIOPHENE-1,1-DIOXIDE) AS SOLVENT FOR POLYMERIZATION OF DIAMINES AND UREAS

**Faber B. Jones, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed Aug. 30, 1966, Ser. No. 575,976**

**Int. Cl. C08g** *22/02*

**U.S. Cl. 260—77.5** **4 Claims**

Sulfolanes are used as solvents in the solution polymerization of diamines and ureas resulting in improved reaction rates and clean, easily purified products.

### 3,476,710

### PROCESS FOR PRODUCING A HIGH MOLECULAR WEIGHT LINEAR URETHANE POLYMER

**Siegfried Altscher, Union, N.J., and Charles A. Fetscher, Olean, N.Y., assignors to Diamond Shamrock Corporation, a corporation of Delaware**

**No Drawing. Filed Dec. 6, 1966, Ser. No. 599,397**

**Int. Cl. C08g** *22/06*

**U.S. Cl. 260—77.5** **10 Claims**

A high molecular weight solvent soluble urethane polymer is produced by reacting a polyol having two reactive hydroxyl groups with an organic diisocyanate under anhydrous conditions at a ratio of 1.0 OH equivalent of said polyol to about 1.01 to about 1.10 NCO equivalent of said diisocyanate to obtain an isocyanate terminated urethane polymer and polymerizing said isocyanate terminated polymer in the presence of an isocyanate-isocyanate inducing catalyst under anhydrous conditions.

### 3,476,711

### PROCESS FOR THE PREPARATION OF POLYAMIDE POWDERS PROCESSING HIGHER VISCOSITIES

**Karl Adolf Muller, Frederico Engel, and Armin Gude, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany**

**No Drawing. Filed Aug. 29, 1966, Ser. No. 575,566**

**Claims priority, application Germany, Oct. 12, 1965, C 37,128**

**Int. Cl. C08g** *20/02, 53/00*

**U.S. Cl. 260—78** **4 Claims**

Relatively low-molecular weight polyamides—not fully condensed and normally undesirably brittle—are convertable into products of high viscosity and homogeneous quality by subdividing the brittle material at a temperature of from −50° to 150° C. and then heating the resulting powder at a temperature of at least 140° C. and approaching but definitely lower than the melting point of the polyamide. Preferably, the heating of the powder is effected in an inert atmosphere. The resulting higher molecular weight, higher viscosity, material is in the form of round uniform particles eminently suitable for use in flame-spraying and vortex-sintering processes.

### 3,476,712

### PROCESS FOR PRODUCING NOVEL POLYESTER AMIDES

**Kenichi Fukui and Tsutomu Kagiya, Kyoto, Shizuo Narisawa, Taneo Maeda, and Mikio Kobata, Ibaraki-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Higashi-ku, Osaka, Japan, a corporation of Japan**

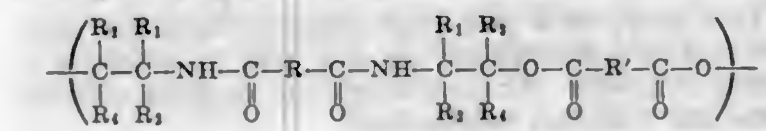
**Filed Sept. 26, 1966, Ser. No. 581,929**

**Claims priority, application Japan, Sept. 30, 1965, 40/60,088**

**Int. Cl. C08g** *17/017, 20/30*

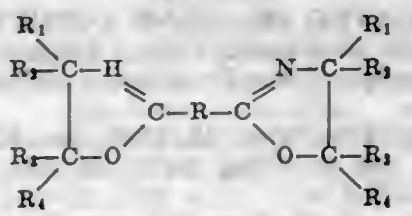
**U.S. Cl. 260—78** **4 Claims**

A novel polyesteramide having the unit structure recurring units represented by the formula:



$$-\left(\underset{R_4}{\overset{R_1}{C}}-\underset{R_3}{\overset{R_1}{C}}-NH-\underset{O}{\overset{}{\underset{\|}{C}}}-R-\underset{O}{\overset{}{\underset{\|}{C}}}-NH-\underset{R_2}{\overset{R_1}{C}}-\underset{R_4}{\overset{R_3}{C}}-O-\underset{O}{\overset{}{\underset{\|}{C}}}-R'-\underset{O}{\overset{}{\underset{\|}{C}}}-O\right)-$$

wherein $R_1$, $R_2$, $R_3$ and $R_4$ each are hydrogen atoms or hydrocarbon groups, R is a divalent hydrocarbon group, and R′ is a divalent hydrocarbon group which may be the same or different from R, and is prepared by reacting a bis-2-oxazoline compound having the formula:



wherein R, $R_1$, $R_2$, $R_3$ and $R_4$ are the same as defined above, with a dicarboxylic acid represented by the formula: HOOC—R′—COOH in which R′ in the same as defined above, in equimolar amounts at a temperature of 50° to 250° C. Said polyesteramide can be used as the starting material for synthetic fibers, plastics and the like.

### 3,476,713

### COLORIMETRIC INDICATOR CONTROL OF POLYAMIDE SALT STOICHIOMETRY

**James C. Dorsey, Chattanooga, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Mar. 13, 1967, Ser. No. 622,393**

**Int. Cl. C08g** *20/20*

**U.S. Cl. 260—78** **4 Claims**

Imbalance of the components of a diammonium salt of a dicarboxylic acid and a diamine (useful for polymerizing to form a polyamine) is cured by adding an acid-base indicator to a solution of a sample of the salt, observing the absorbence values of each of the acid and base forms of the said indicator spectrophotometrically to determine the "indicator value" of the sample solution, referring the said indicator value to the predetermined relationship of indicator value and salt imbalance to determine the extent of imbalance of the original salt solution, and thereafter adding additional dicarboxylic acid or diamine whenever appropriate to correct the said imbalance, and finally polymerizing the said salt to a fiber-forming stage.

### 3,476,714

### BIAXIALLY ORIENTED POLYPIVALOLACTONE FILM

**Erhard F. Hoegger, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Apr. 20, 1964, Ser. No. 361,234**

**Int. Cl. C08g** *17/02*

**U.S. Cl. 260—78.3** **1 Claim**

Melt fabricated films of polypivalolactone can be rendered tough, clear, transparent and drawable by rolling biaxially to produce biaxial orientation.

### 3,476,715

### PROCESS FOR POLYMERIZING PROPIOLACTONES USING TERTIARY PHOSPHINE CATALYSTS

**Philip Lyle Wagner, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed June 1, 1966, Ser. No. 554,318**

**Int. Cl. C08g** *17/017, 17/02*

**U.S. Cl. 260—78.3** **9 Claims**

A process for homo- or copolymerizing 2,2-disubstituted 3-propiolactone is disclosed using a tertiary phosphine of the formula

$$RR'R''P$$

wherein R, R′ and R″ are hydrocarbyl radicals of from 1 to 12 carbon atoms and the hydrocarbyloxy, dihydrocarbylamino and dihydrocarbylphosphino derivatives thereof. The catalyst is mixed with the monomer and the resulting mixture is heated to a temperature in the range of about 50° to 300° C. until the desired degree of polymerization, e.g., film- or fiber-forming polymer, is obtained.

### 3,476,716

### CONJUGATED $SO_2$-DIENE COPOLYMERS

**Louis de Vries, Richmond, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware**

**No Drawing. Filed Mar. 23, 1967, Ser. No. 625,291**

**Int. Cl. C08g** *25/00, 33/00*

**U.S. Cl. 260—79.3** **4 Claims**

Conjugated cycloalkadiene-$SO_2$ copolymers useful as conductors and in the formation of articles of manufacture.

### 3,476,717

### PROCESS FOR THE PRODUCTION OF POLYMERS

**Hanswilli von Brachel, Offenbach am Main, and Fritz Engelhardt, Frankfurt am Main-Fechenheim, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main-Fechenheim, Germany, a corporation of Germany**

**No Drawing. Filed July 18, 1967, Ser. No. 654,077**

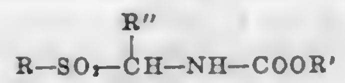
**Claims priority, application Germany, July 21, 1966**

**C 39,671**

**Int. Cl. C08f** *1/62*

**U.S. Cl. 260—78.5** **6 Claims**

N-substituted carbamates of the formula



$$R-SO_2-\overset{\overset{R''}{|}}{C}H-NH-COOR'$$

wherein R, R′ and R″ stand for alkyl, cycloalkyl, aryl, nitroaryl, haloaryl and aralkyl radicals and R″ furthermore for hydrogen, are used as reducing component of a redox catalyst system in the polymerization of olefinically unsaturated monomers.

### 3,476,718

### POLYMERS OF EPOXY CYCLIC SULFONES

**Edwin James Vandenberg, Foulk Woods, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed July 17, 1967, Ser. No. 653,638**

**Int. Cl. C08f** *13/00;* **C07d** *63/12*

**U.S. Cl. 260—79.3** **10 Claims**

Homopolymers of an epoxy cyclic sulfone which is 3,4 - epoxy sulfolane, 7-oxa-3-thiabicyclo[4.1.0]heptane 3,3-dioxide or 8-oxa-4-thiabicyclo[5.1.0]octane 4,4-dioxide, and copolymers thereof with an oxirane or oxetane are described. The polymers are more hydrophilic than unmodified polyethers and are useful for yarns, fabrics, coatings, etc. The polymers are prepared by polymerizing the epoxy cyclic sulfone, or comonomer mixture thereof, in the presence of a modified organoaluminum or organomagnesium compound as catalyst.

### 3,476,719

### 1,3,4-THIADIAZOLE-1,3,4-OXADIAZOLE POLYMERS

**August Henry Frazer and Wesley Memeger, Jr., Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Feb. 28, 1967, Ser. No. 619,163**

**Int. Cl. C08g** *23/00, 33/04*

**U.S. Cl. 260—78.4** **1 Claim**

Thermal resistant 1,3,4-thiadiazole-hydrazide polymers prepared from the polymerization of hydrazine or a dihydrazide of an aliphatic or aromatic dicarboxylic acid and an aromatic diacid halide or ester containing a 1,3,4-thiadiazole ring; and 1,3,4-thiadiazole-1,3,4-oxadiazole polymers prepared by thermal cyclodehydration of the thiadiazole-hydrazide polymers. Films, high temperatures fibers and the like are among the end uses of these polymers.

### 3,476,720

### VULCANIZABLE COPOLYMERS OF AT LEAST ONE OF MONOALKENYL CYCLOPENTENES, MONOALKENYL CYCLOALKENYLOCTENES AND THEIR ALKYL DERIVATIVES

**Giulio Natta, Giorgio Mazzanti, and Alberto Valvassori, Milan, Italy, and Guido Sartori, Roselle, N.J., assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy**

**No Drawing. Continuation-in-part of application Ser. No. 261,523, Feb. 27, 1963. This application Apr. 24, 1967, Ser. No. 632,887**

**Int. Cl. C08f** *19/00*

**U.S. Cl. 260—79.5** **22 Claims**

Sulfur-vulcanizable, substantially linear, substantially amorphous, high molecular weight copolymers of:

(a) Ethylene,

(b) At least one higher alpha-olefin having the formula $CH_2{=}CHR$ in which R is an alkyl group containing 1 to 6 carbon atoms; and

(c) At least one monomer selected from the group consisting of mono-alkenyl cyclopentenes, and alkyl-mono-alkenyl cyclopentenes, mono-alkenyl cyclooctenes and alkyl-mono-alkenyl cyclooctenes consisting of macromolecules made up of copolymerized units of each of the starting monomers which are produced by copolymerizing mixtures of the monomers in contact with catalysts prepared from vanadium compounds and organometallic compounds of aluminum or beryllium.

### 3,476,721

### POLYBUTADIENE MODIFIED TO REDUCE LOW TEMPERATURE CRYSTALLIZATION

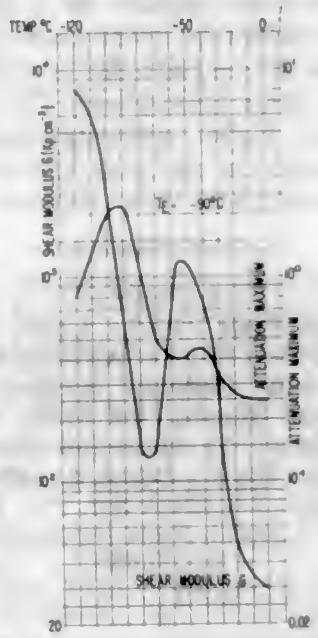
**Gerhard Binder, Marl, and Karl-Heinz Nordsiek, Hamm-Bossendorf, Germany, assignors to Chemische Werke Huels A.G., Marl, Germany**

**Filed Aug. 10, 1967, Ser. No. 659,682**

**Claims priority, application Germany, Aug. 19, 1966, C 39,908**

**Int. Cl. C08d** *3/04*

**U.S. Cl. 260—82.1** **10 Claims**



Low temperature properties of highly linear low pressure 1,4-cis polybutadiene are improved by admixing a minor proportion of certain mono- and diolefins with the butadiene monomer polymerized.

### 3,476,722

### PROCESS FOR POLYMERIZING ACRYLIC ACID ESTERS

**Robert K. Schlatzer, Chagrin Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York**

**No Drawing. Filed Aug. 15, 1966, Ser. No. 572,186**

**Int. Cl. C08f** *15/16, 1/28*

**U.S. Cl. 260—86.1** **7 Claims**

Sulfur-curable rubbery homopolymers and copolymers of acrylic esters are obtained by polymerization of the acrylate monomers with a tertiary amine-modified organoaluminum catalyst. Copolymers of alkenyl esters of acrylic acid such as allyl acrylate or crotyl acrylate are obtained by the present process.

### 3,476,723

### PROCESS FOR THE PEROXIDIC CURING OF A MONOMER-POLYMER SYRUPY SOLUTION CONTAINING A POLYMER OF METHYLMETHACRYLATE OR A COPOLYMER THEREOF WITH UP TO ABOUT 20% OF ANOTHER LOWER ALKYLMETHACRYLATE

**Dieter Stahl, Emmerich (Rhine), Germany, and Otto Karel Strolenberg, 's Heerenberg, and Leonardus W. J. Damen, Deventer, Netherlands, assignors to Koninklijke Industrieele Maatschappij Noury & van der Lande N.V.**

**No Drawing. Filed July 18, 1966, Ser. No. 565,675**

**Claims priority, application Great Britain, July 23, 1965, 31,554/65**

**Int. Cl. C08f** *1/66, 1/72, 29/46*

**U.S. Cl. 260—86.1** **9 Claims**

A process is disclosed herein for the peroxidic curing, at a temperature in the range of 0° to 60° C., of a monomer-polymer syrupy solution containing a polymer of methylmethacrylate or a copolymer of methylmethacrylate with another lower alkylmethacrylate, using a curing system comprising

(a) a free radical-generating organic peroxide;

(b) a vanadium accelerator; and

(c) an aliphatic aldehyde containing 1–18 carbon atoms in the molecule;

all components of the curing system being soluble in the monomeric lower alkylmethacrylate, the free-radical generating organic peroxide being present in an amount sufficient to effect curing, the vanadium accelerator and aliphatic aldehyde being present in an amount in the range of, respectively, 0.0001–0.01% by weight calculated on metal and 1–4% by weight calculated on the total resin solution.

### 3,476,724

### POLYMERIZATION PROCESS AND CATALYST

**John P. Hogan and Alonzo G. Kitchen, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 425,929, Jan. 15, 1965. This application July 13, 1967, Ser. No. 653,022**

**Int. Cl. C08f** *1/38, 1/34;* **B01j** *11/84*

**U.S. Cl. 260—88.2** **11 Claims**

Olefins are polymerized to solid polymers in the presence of a catalyst comprising chromium oxide and at least one member of the group consisting of silica, alumina, zirconia and thoria, at least part of the chromium in the catalyst being hexavalent at the initial contacting with hydrocarbon, to which catalyst is added two compounds, one having the formula $ZnR_2$ and the second being a borane of 2 to 10 boron atoms or a compound having the formula $BR_3$.

### 3,476,725

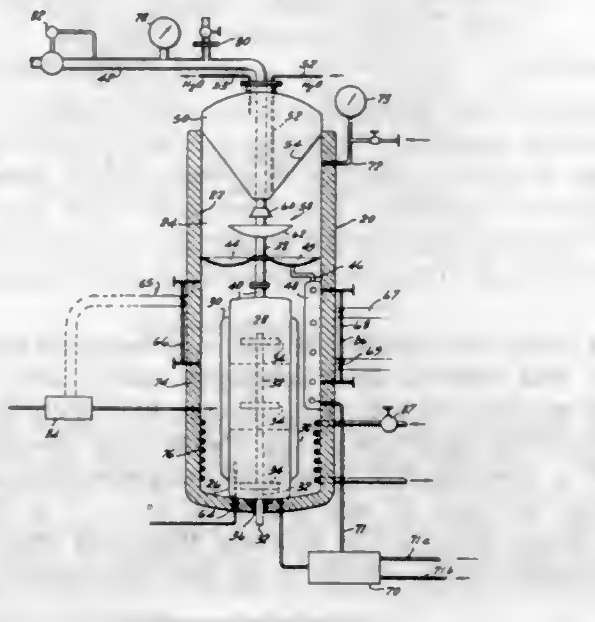
### INDIRECT PROPORTION REFLUX

**Frank E. Jirik, Apartado 4178, San Jose, Costa Rica**

**Continuation of application Ser. No. 446,193, Apr. 7, 1965. This application July 25, 1967, Ser. No. 655,960**

**Int. Cl. C08f** *1/00, 1/98, 1/82*

**U.S. Cl. 260—89.1** **8 Claims**



A process has been provided for supplying a reactant to a reaction zone, whereby the reactant is first evaporated in a zone surrounding the reaction zone, condensed and the condensate collected in a proportional relationship to a demand in the reaction zone and then introduced in the reaction zone. The proportional relationship may be in reference to the demand in the reaction zone which demand is responsive to a final product criterion, e.g. purity.

### 3,476,726

### HOMOPOLYMERS AND COPOLYMERS OF UNSATURATED TERTIARY AMINES, AND PROCESS FOR PRODUCING THE SAME

**Umberto Giannini and Germana Bruckner, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy**

**No Drawing. Filed Nov. 28, 1966, Ser. No. 597,215**

**Claims priority, application Italy, Nov. 29, 1965, 26,453/65**

**Int. Cl. C08f** *3/86, 1/28*

**U.S. Cl. 260—89.7** **5 Claims**

1\. Poly-(5) N,N-diisopropylamino-(1)-pentene characterized in having a powder spectrum (Cu-K-alpha) which shows the most intense reflections for angle $2\theta$ of 6.2°, 8.5° and 16.3°.

### 3,476,727

### PROCESS FOR THE LOW-TEMPERATURE HOMOPOLYMERIZATION AND COPOLYMERIZATION OF VINYL CHLORIDE

**Sergio Lo Monaco and Paolo Melacini, Mestre, Giancarlo Borsini, Luigi Cligot Magagnin, and Francesco Visani, Milan, Italy, assignors, by mesne assignments, to Chatillon Societa Anonima Italiana per le Fibre Tessili Artificiali S.p.A., Milan, Italy, a corporation of Italy**

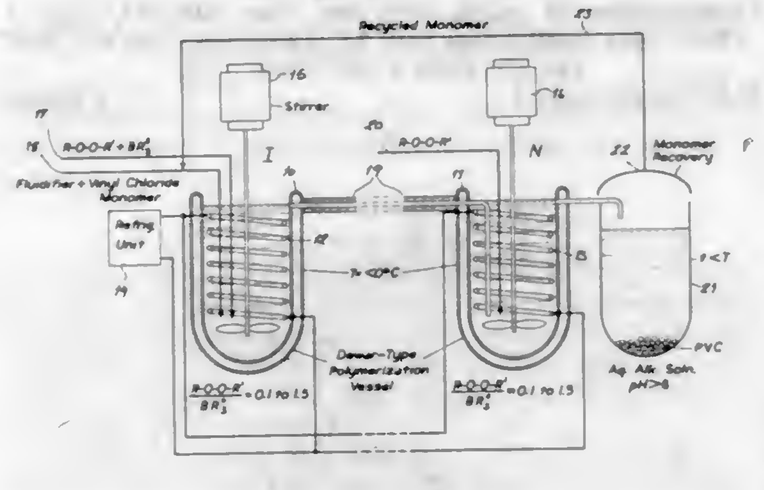
**Filed Dec. 19, 1966, Ser. No. 602,902**

**Claims priority, application Italy, Dec. 17, 1965, 28,027/65**

**Int. Cl. C08f** *3/30, 1/62*

**U.S. Cl. 260—92.8** **10 Claims**

Process for the production of homopolymers of vinyl chloride and copolymers of vinyl chloride with vinyl monomers copolymerizable therewith (e.g. vinyl acetate), where the monomeric compound is passed continuously through a plurality of polymerization stages maintained at a polymerization temperature below 0° C. (preferably from −15° to −69°) with an organoboron catalyst and an organic peroxide activator of the general formula R—O—O—R′ wherein R and R′ are the same or different from one another, at least one being an organic radical, and selected from hydrogen, alkyl, aryl, cycloalkyl and aralkyl radicals (e.g. cumene hydroperoxide or tert-butyl hydroperoxide). The molar ratio R—O—O—R′/BR″$_3$, wherein BR″$_3$ represent organoboron compound, being less than 1.5 and preferably 0.1 to 1 in the reactors or stages prior to the terminal stage and being 1.5 to 5. preferably from 2 to 3, in the terminal reactor.



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## 3,476,728

## PROCESS FOR THE POLYMERIZATION OF CYCLOPENTENE TO UNSATURATED HIGH POLYMERS

**Giulio Natta, Gino Dall'Asta, and Giorgio Mazzanti, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy**

**No Drawing. Filed Oct. 19, 1966, Ser. No. 587,652**

**Claims priority, application Italy, Oct. 20, 1965, 10,293/65**

**Int. Cl. C08f** *1/28, 5/00*

**U.S. Cl. 260—93.1** **9 Claims**

Cyclopentene is polymerized to linear unsaturated, high molecular weight polypentanamers in contact with a catalyst obtained by mixing tungsten dichloride and aluminum chloride with a halogenated organometallic aluminum compound. Depending on the molar ratio of the halogenated organometallic aluminum compound to tungsten dichloride, essentially all of the units of cyclopentene in the polymer have trans double bonds, or essentially all of said units have cis double bonds.

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## 3,476,729

## POLYMERIZATION PROCESS CONTROL AND APPARATUS THEREFOR

**Dexter E. Smith, Robert M. Keeler, and Emmerich Guenther, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**Filed Feb. 17, 1964, Ser. No. 345,267**

**Int. Cl. C08f** *1/56, 1/98, 3/10*

**U.S. Cl. 260—93.7** **7 Claims**

The amount of modifier added to a polymerizable monomer stream is controlled by sampling the concentration of the modifier in the monomer stream, generating a signal representative of this concentration, and regulating the flow of the added monomer in response to this signal so as to maintain the concentration of the modifier in the monomer stream at a predetermined level. The regulation of the modifier flow is maintained independent of any pressure fluctuations in the polymerization system.

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## 3,476,730

## PROCESS FOR LOW-PRESSURE POLYMERIZATION OF α-OLEFINES

**Roland Streck and Wolfgang Seeliger, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany**

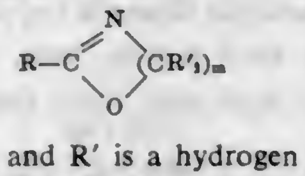
**No Drawing. Filed May 1, 1967, Ser. No. 634,821**

**Claims priority, application Germany, July 22, 1966, C 39,678**

**Int. Cl. C08f** *1/56*

**U.S. Cl. 260—93.1** **2 Claims**

Process for the polymerization and co-polymerization of olefines having the formula $CH_2{=}CH{-}R$, wherein R is an aliphatic hydrocarbon radical with up to 8 carbon atoms or a cyclic or an aromatic hydrocarbon radical, employing the low-pressure method, in the presence of mixed catalysts formed of methyl- or ethylaluminum-sesqui- or dichloride on one hand and a compound of a heavy metal of the IV to VI sub-group of the periodic system on the other hand and the further presence, as activator of a cyclic imidoester of the formula



wherein each of R and R′ is a hydrogen atom, an alkyl radical with up to 20 carbon atoms, a cycloalkyl radical with up to 8 carbon atoms, or an aryl radical, and *m* equals 2 or 3.

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## 3,476,731

## STEREOSPECIFIC POLYMERIZATION OF 2-METHYL-1,3-PENTADIENE

**Daniel Cuzin, Rueil-Malmaison, Yves Chauvin, Orsay, and Gilles Lefebvre, Rueil-Malmaison, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, France**

**Filed Mar. 6, 1967, Ser. No. 620,920**

**Int. Cl. C08d** *3/04, 1/16*

**U.S. Cl. 260—94.2** **10 Claims**

The homopolymers of 2-methyl-1,3-pentadiene comprise at least 90% 1,4-trans units and more than 90% unsaturation; they are amorphous, elastomeric and exhibit intrinsic viscosities of at least 0.2 dl./g. in benzene at 30° C. They are manufactured from organohaloaluminum compounds.

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## 3,476,732

## CATALYST COMPRISING (1) REACTION PRODUCT OF A VANADIUM OXIDE AND ORGANIC PHOSPHORUS COMPOUND, (2) A HYDROCARBYL SILANE AND A HALO-ALUMINUM COMPOUND, AND POLYMERIZATION

**John W. Bayer, Donald W. Gagnon, William C. Grinonneau, and Edgardo Santiago, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio**

**No Drawing. Filed June 8, 1967, Ser. No. 644,470**

**Int. Cl. C08f** *1/42, 1/44;* **B01j** *11/84*

**U.S. Cl. 260—94.3** **30 Claims**

A catalyst system and method for polymerizing unsaturated monomers wherein the catalyst comprises certain compounds containing vanadium-oxygen-phosphorus in combination with certain aluminum compounds and silicon compounds.

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## 3,476,733

## PROCESS FOR THE PREPARATION OF HIGH MOLECULAR WEIGHT POLYMERS OF CONJUGATED DIENES

**Cornelis E. P. V. Van Den Berg, Geleen, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands**

**No Drawing. Filed July 6, 1966, Ser. No. 563,069**

**Claims priority, application Netherlands, July 9,1965, 6508841**

**Int. Cl. C08f** *29/08, 1/64*

**U.S. Cl. 260—94.3** **24 Claims**

A process is described for preparing sulfur-vulcanizable butadiene polymers in the present of a catalyst produced from a metal carbonyl compound where the metal is selected from nickel and cobalt, together with a metal halide, by releasing the carbon monoxide from the carbonyl compound in the presence of a compound which is an aliphatic or cycloaliphatic compound with at least one olefinically unsaturated group, or a compound with at least one alkynically unsaturated group.

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## 3,476,734

## POLYMERIZATION OF ISOPRENE WITH CATALYST OF TRANSITION METAL AND POLYIMINOALANE

**Walter Marconi, San Donato Milanese, Milan, Italy, assignor to SNAM S.p.A., Milan, Italy, a company of Italy**

**No Drawing. Continuation of application Ser. No. 494,873, Oct. 11, 1965. This application Nov. 8, 1968, Ser. No. 774,548**

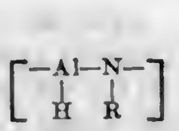
**Claims priority, application Italy, Feb. 3, 1965, 889**

**The portion of the term of the patent subsequent to Sept. 16, 1986, has been disclaimed**

**Int. Cl. C08d** *3/12, 1/14*

**U.S. Cl. 260—94.3** **1 Claim**

Stereospecific polymers, and more particularly 1,4 cis polyisoprene, are obtained from conjugated dienes containing at least four carbon atoms in their molecule by using a catalytic system containing, in addition to a compound of a transition metal of the IV to VIII group of the periodic system, an aluminum polymeric compound of polyiminic nature having in its molecule repeating units of the type:



$$\left[-\underset{\displaystyle \mathrm{H}}{\underset{|}{\mathrm{Al}}}-\underset{\displaystyle \mathrm{R}}{\underset{|}{\mathrm{N}}}-\right]$$

where R is an alkyl, aryl or cycloalkyl hydrocarbon radical. The polymerization is effected in an aliphatic hydrocarbon solvent at a temperature between −30° C. and 100° C. and at a pressure between one and fifty atmospheres.

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## 3,476,735

## PREPARATION OF POLYMERS OF CONJUGATED DIENES

**Nikolaus Schon, Leverkusen, Josef Witte, Cologne-Stammheim, and Gottfried Pampus, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

**No Drawing. Continuation of application Ser. No. 352,975, Mar. 18, 1964. This application May 15, 1968, Ser. No. 731,674**

**Int. Cl. C08d** *1/00, 1/14*

**U.S. Cl. 260—94.7** **9 Claims**

Recovering polybutadiene polymer from a mixture prepared by polymerizing 1,3-butadiene in the presence of a titanium-containing catalyst in a hydrocarbon diluent containing a phenolic stabilizer for the polymer by steam distilling off hydrocarbon diluent-water vapor mixture and the improvement thereof by forming a water-in-oil emulsion in the presence of specified emulsifiers followed by steam distillation of the water-in-oil emulsion.

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## 3,476,736

## SOLVENT REMOVAL FROM POLYOLEFIN IN VENTED EXTRUDER WITH WATER ADDITION

**Le Roy C. Kahre, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**

**Filed Apr. 14, 1966, Ser. No. 542,560**

**Int. Cl. C08f** *1/88*

**U.S. Cl. 260—93.7** **5 Claims**

Residual solvent contained in a normally solid polymer is removed by treating the polymer containing residual solvent therein with water in an amount to form a nonideal solution with the solvent and thereafter extruding the resulting mixture of water, solvent and polymer at a temperature above the softening point of the polymer.

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## 3,476,737

## METHOD FOR SEPARATING SUBSTANCES OF DIFFERENT MOLECULAR SIZES FROM A VISCOUS SOLUTION OF SAID SUBSTANCES

**Nils Ingvar Arne Emneus, Erik B. Gelotte, Nils G. Rehn, and Bjorn G. F. Soderqvist, Uppsala, Sweden, assignors to Pharmacia Fine Chemicals AB, Uppsala, Sweden, a company of Sweden**

**No Drawing. Filed Apr. 14, 1967, Ser. No. 630,849**

**Claims priority, application Sweden, Apr. 14, 1966, 5,071/66**

**Int. Cl. B01d** *15/08;* **C07g** *7/00;* **C08b** *19/08*

**U.S. Cl. 260—112** **8 Claims**

A invention is concerned with a method for separating substances of different molecular sizes from a viscous solution of these substances. The term "viscous" in the disclosure and claims is used to describe a solution having a viscosity of 5 centipoise or more. Thus, more specifically the invention pertains to a method for separating substances of different molecular sizes from a solution which has a viscosity of 5 centipoise or more; the solution being introduced into a stationary bed of mutually immobile gel grains, swollen in the solvent and of such structure that none of the substances of relatively large molecular sizes present in the solution are able to penetrate into the interior of the gel grains, and a solution depleted or released on the substances of relatively small molecular sizes being removed from the bed.

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## 3,476,738

## PENTAKIS[N-(SULFOMETHYL)]CIRCULIN AND SALTS THEREOF

**Alexander D. Argoudelis, Portage, Joseph E. Grady, Kalamazoo, and Gordon C. Sayer, Portage, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 427,957, Jan. 25, 1965. This application Dec. 4, 1967, Ser. No. 687,488**

**Int. Cl. C07c** *103/52;* **A61k** *21/00*

**U.S. Cl. 260—112.5** **2 Claims**

Pentakis[N-(sulfomethyl)]circulin and its pharmacologically acceptable metal, ammonium and amine salts. These compounds can be used to inhibit the growth of Gram-negative bacteria.

### 3,476,739

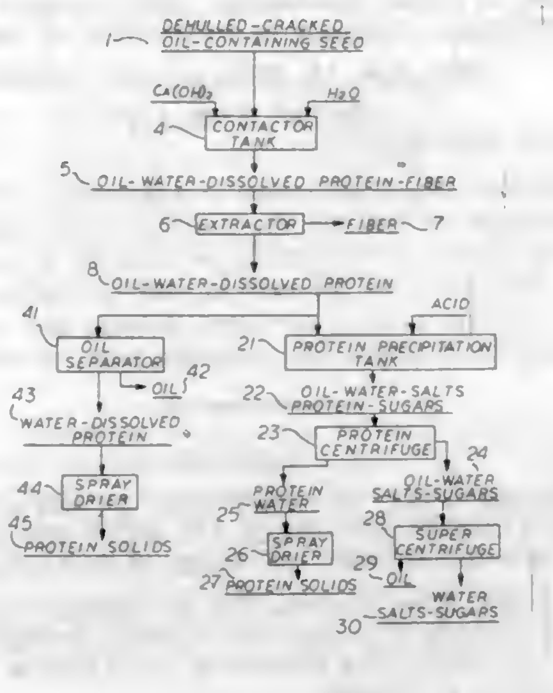
### RECOVERY OF PROTEIN AND OIL FROM OIL-CONTAINING SEEDS BY TREATMENT WITH A SATURATED SOLUTION OF CALCIUM HYDROXIDE

**James J. Liggett, Libertyville, Ill., assignor of one-half to Erving S. Sternberg, Park Ridge, Ill.**

**Filed Mar. 4, 1968, Ser. No. 710,183**

**Int. Cl. A23j** *1/14*

**U.S. Cl. 260—123.5** **8 Claims**



Oil-containing seeds, especially sesame, are treated in an aqueous system containing saturated calcium hydroxide to recover both protein and oil.

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### 3,476,740

### PROCESS FOR TREATING SULFONATED LIGNIN-CONTAINING MATERIAL AND PRODUCT THEREOF

**Aaron E. Markham and Kenneth A. E. Blackmore, Bellingham, Wash., assignors to Georgia-Pacific Corporation, Portland, Oreg., a corporation of Georgia**

**No Drawing. Filed Nov. 14, 1966, Ser. No. 593,653**

**Int. Cl. C07g** *1/00;* **C04b** *11/14*

**U.S. Cl. 260—124** **20 Claims**

A water-soluble sulfonated lignin-containing material of enhanced dispersing properties prepared by oxidizing sulfonated lignin-containing material and heating the product in a dry form to a temperature of at least 200° C.

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### 3,476,741

### METHOD FOR TREATING POLYSACCHARIDES IN THE PRESENCE OF AN OXYGEN ACCEPTING AGENT

**John J. Jonas, Winnetka, Ill., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware**

**Filed Jan. 20, 1967, Ser. No. 610,542**

**Int. Cl. C08b** *19/00*

**U.S. Cl. 260—209** **5 Claims**

A method for treating polysaccharides obtained from the Gigartinaceae family of the Rhodophyceae class of seaweeds wherein the polysaccharide is heated in an aqueous alkaline medium in the presence of an oxygen accepting agent.

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### 3,476,742

### CYCLIC ETHERS OF CARDENOLIDE DIGITOXOSIDE

**Wolfgang Voigtlander, Viernheim, Hesse, Fritz Kaiser, Lampertheim, Hesse, and Wolfgang Schaumann and Kurt Stach, Mannheim-Waldhof, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., Mannheim-Waldhof, Germany, a corporation of Germany**

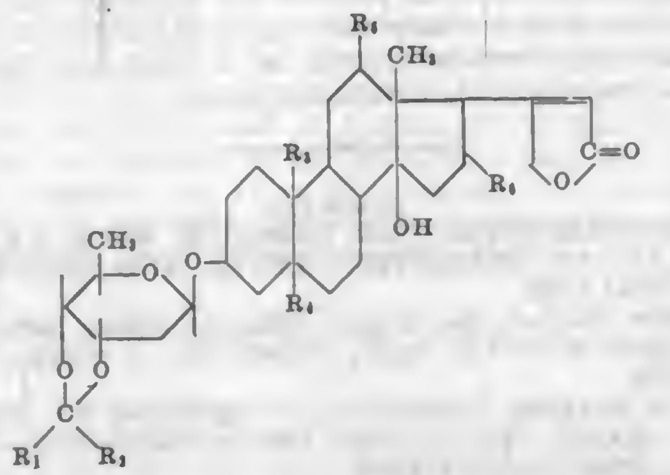
**No Drawing. Filed Nov. 29, 1967, Ser. No. 686,691**

**Claims priority, application Germany, Dec. 15, 1966, B 90,312**

**Int. Cl. C07c** *173/00;* **A61k** *27/00*

**U.S. Cl. 260—210.5** **7 Claims**

There is disclosed a novel class of compounds constituting therapeutic agents of use in the treatment of cardiac disorders and in particular in the treatment of cardiac insufficiency. The novel compounds are cyclic ethers of cardenolide digitoxoside and correspond to the following formula:



wherein $R_1$ is hydrogen or lower alkyl, $R_2$ is lower alkyl, alkenyl or alkynyl, $R_3$ is methyl, aldehyde, methylol or acylated methylol, $R_4$ is hydrogen or hydroxyl, and $R_5$ and $R_6$ are each hydrogen, hydroxyl or lower acyloxy.

There are also disclosed novel compositions containing the cyclic ethers of cardenolide digitoxoside as active ingredient as well as methods of making and using the novel cyclic ethers.

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### 3,476,743

### 6-ISOTHIAZOLYLACETAMIDO PENICILLANIC ACIDS

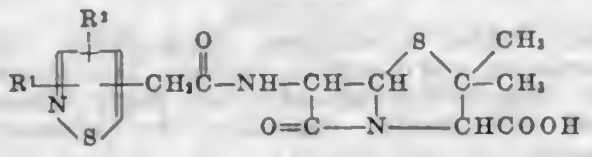
**Rintje Raap, Raymond Urgel Lemieux, and Ronald George Micetich, Edmonton, Alberta, Canada, assignors to R & L Molecular Research Ltd., Edmonton, Alberta, Canada, a body corporate of Alberta**

**No Drawing. Filed June 28, 1965, Ser. No. 467,721**

**Int. Cl. C07d** *99/22;* **A61k** *21/00*

**U.S. Cl. 260—239.1** **12 Claims**

1. A member selected from the group consisting of compounds of the formula



wherein R¹ and R² each represent a member selected from the group consisting of hydrogen, chloro, bromo, iodo and methyl; and the pharmaceutically acceptable nontoxic salts thereof.

### 3,476,744

### PROCESS FOR THE PURIFICATION OF LACTAMS

**Clau Berther, Chur, and Richard Sailer, Domat-Ems, Switzerland, assignors to Inventa A.G. für Forschung und Patentverwertung, Zurich, Switzerland**

**Filed June 7, 1966, Ser. No. 555,739**

**Claims priority, application Switzerland, June 15, 1965, 8,300/65**

**Int. Cl. C07d** *41/00, 41/06*

**U.S. Cl. 260—239.3** **3 Claims**

A process for refining lactams comprises the steps of melting a part of the lactam to be refined, adding the remainder of the lactam to be refined to the adiabatically maintained melt, then after equilibrium is reached, separating the resultant crystal sludge from the melt.

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### 3,476,745

### 6,6-ETHYLENE CORTICOIDS

**Vlasios Georgian, Belmont, Mass., and James F. Kerwin, Broomall, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed June 4, 1965, Ser. No. 461,544**

**Int. Cl. C07c** *169/34, 173/00;* **A61k** *27/00*

**U.S. Cl. 260—239.55** **6 Claims**

6,6-ethylenepregn-4-ene-3,20-diones, oxygenated at the 11, 17, and 21-positions and optionally substituted at the 1, 2, 4, 9, and 16-positions, are prepared by the basic reaction of a suitable 6-methylene compound and dimethyl sulfoxonium methylide. The products are antiinflammatory agents.

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### 3,476,746

### 11-OXYGENATED-10α-STEROIDS

**Andor Fürst, Basel, and Marcel Müller, Frenkendorf, Switzerland, and Gabriel Saucy, Essex Fells, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey**

**No Drawing. Filed Jan. 30, 1967, Ser. No. 612,359**

**Claims priority, application Switzerland, Feb. 11, 1966, 1,981/66**

**Int. Cl. C07c** *169/66, 167/16*

**U.S. Cl. 260—239.55** **12 Claims**

8β,9β,10α,14α-11-oxo-steroids are selectively isomerized to 8β,9α,10α,14α-11-oxo-steroids which are useful as endocrinological agents and as intermediates for the preparation of other steroids.

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### 3,476,747

### MANUFACTURE OF 1,2-BIS(ARYL)ETHYLENES

**Charles W. Hargis and Howard S. Young, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed Oct. 20, 1965, Ser. No. 499,062**

**Int. Cl. C07d** *85/48;* **C07c** *121/70;* **D06l** *3/12*

**U.S. Cl. 260—240** **8 Claims**

Diarylethylenes are manufactured by contacting an arylmethane with an inorganic oxidant such as arsenic pentoxide, antimony pentoxide, bismuth trioxide, manganese arsenate, or antimony tetroxide at an elevated temperature. Diarylethylenes have known utility as optical brightening agents or as active components in radiation measuring devices.

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### 3,476,748

### SUBSTITUTED 6,7-DIHYDRO-5-H-PYRIMIDINO THIAZINES

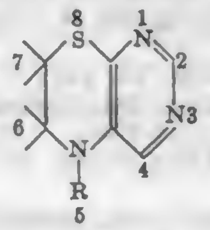
**Leo Ralph Swett and James Daniel Ratajczyk, Waukegan, and Eugene Tatsuru Kimura, Morton Grove, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois**

**No Drawing. Filed Jan. 4, 1967, Ser. No. 607,169**

**Int. Cl. C07d** *93/12, 99/10;* **A61k** *27/00*

**U.S. Cl. 260—243** **3 Claims**

The compounds are of the class of substituted 6,7-dihydro-5-H-pyrimidino-[3,5-b][1,4]-thiazines of the formula



useful as anti-inflammatory, anti-pyretic and analgesic agents. This series is generally prepared by sequentially reducing 6,7 - dihydro - 5 - H - pyrimidino-[4,5-b][1,4]-thiazine-6-one, and subjecting this compound to the appropriate substitution or alkylation reaction with a halide of the formula R-halogen to add various moieties to the 5-position nitrogen atom of the thiazine ring.

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### 3,476,749

### BENZOTHIAZIN-4-ONE-1,1-DIOXIDE DERIVATIVES

**Chris Royce Rasmussen, Ambler, Pa., assignor to McNeil Laboratories, Inc., a corporation of Pennsylvania**

**No Drawing. Filed Nov. 30, 1967, Ser. No. 686,795**

**Int. Cl. C07d** *93/02;* **F21v** *9/06*

**U.S. Cl. 260—243** **8 Claims**

The compounds herein are 3-(amino-ethylidene)-2,3-dihydro - 4H-1,2-benzothiazin-4-one-1,1-dioxides, useful for their ultra-violet absorbing properties and pharmacological activities.

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### 3,476,750

### THIAZOLO AND THIAZINO POLYCYCLIC ISOQUINOLINES

**Leslie G. Humber, Dollard des Ormeaux, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed July 18, 1967, Ser. No. 654,061**

**Int. Cl. C07d** *93/08, 91/42;* **A61k** *27/00*

**U.S. Cl. 260—243** **6 Claims**

There are disclosed herein 1-oxo-1,2,7,8,12b,13-hexahydro - 3aH - benzo[1,2]cyclohepta[3,4,5-d,c]thiazolo-[2,3-a]isoquinoline and 1-oxo-2,3,8,9,13b,14 - hexahydro-1H,4aH-benzo[1,2]cyclohepta[3,4,5-d,e] - 1,3 - thiazino-[2,3-a]isoquinoline, and their corresponding S-oxides and S,S-dioxides. The compounds are useful as antibacterial and trichomonacidal agents and methods for their preparation and use are also given.

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### 3,476,751

### PREPARATION OF 3,3' - ETHYLENEBIS (TETRAHYDRO-4,6 - DIMETHYL-2H-1,3,5-THIADIAZINE-2-THIONE

**William C. Miller, Baytown, and William R. Trutna, Pasadena, Tex., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Dec. 11, 1967, Ser. No. 689,344**

**Int. Cl. C07d** *93/26;* **A01n** *9/22*

**U.S. Cl. 260—243** **13 Claims**

The fungicidal compound 3,3'-ethylenebis(tetrahydro-4,6-dimethyl-2H-1-3,5-thiadiazine - 2 - thione) is prepared by reacting acetaldehyde, an ammonium salt such as ammonium sulfate, and a salt of ethylenebisdithiocarbamic acid such as the disodium salt, at a temperature between 30 and 55° C. and in the presence of a non-reactant salt such as sodium chloride, the total concentration of ammonium salt and non-reactant salt being between 7 and 20 percent by weight, based on the total weight of reaction components.

### 3,476,752
### 4-SUBSTITUTED-2,3-BENZOXAZINES

**Giorgio Pifferi, Milan, Italy, and Emilio Testa, Vacallo, Tessin, Switzerland, assignors to Lepetit S.p.A., Milan, Italy**
**No Drawing. Filed Mar. 15, 1967, Ser. No. 623,226**
**Claims priority, application Great Britain, Mar. 17, 1966, 11,794**
**Int. Cl. C07d** *87/04, 87/12*
**U.S. Cl. 260—244 4 Claims**

A new class of compounds having pharmacological properties is described. More particularly, the compounds are 4-substituted-2,3-benzoxazines which have proved to be useful as hypotensive, myorelaxant and anti-inflammatory agents. A method for preparing them from the corresponding 4-halo-2,3-benzoxazines is also described.

### 3,476,753
### TERTIARYAMINO PERFLUORO ALKYLENE SULFONIC ACID FLUORIDES

**Robert L. Hansen, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**
**No Drawing. Filed May 3, 1965, Ser. No. 452,859**
**Int. Cl. C07d** *87/30, 51/72;* **C07c** *143/14*
**U.S. Cl. 260—247.1 6 Claims**

Tertiary amino sulfonic acid halides are provided which are subjected to electrofluorination to provide tertiary amino perfluoroalkylene sulfonic acid fluorides.

### 3,476,754
### PYRAZINO[2,3-b]PYRAZINES

**Cornelius K. Cain, Flourtown, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania**
**No Drawing. Continuation-in-part of applications Ser. No. 541,945, Apr. 12, 1966, and Ser. No. 622,474, Mar. 13, 1967. This application Feb. 20, 1968, Ser. No. 706,804**
**Int. Cl. C07d** *51/82;* **A61l** *23/00;* **C08k** *1/52*
**U.S. Cl. 260—250 11 Claims**

The compounds are of the class of aryl and heteroaryl pyrazino[2,3-b]pyrazines, having valuable properties as ultraviolet light absorbers.

### 3,476,755
### 8,13-DIAZASTEROIDS

**Edward C. Taylor and Katherine Lenard, Princeton, N.J. (both of 1500 Spring Gardens St., Philadelphia, Pa. 19101)**
**No Drawing. Filed Jan. 17, 1967, Ser. No. 609,784**
**Int. Cl. C07d** *101/00;* **A61k** *27/00*
**U.S. Cl. 260—251 4 Claims**

1,2,3-trimethoxy and 2,3-dimethoxy-8,13-diazaestra-1,3,5(10)-trien-17-ones, prepared by condensation of 3-succinimidopropionic acid with a phenethylamine, cyclization of the resulting amide with phosphorus oxychloride in benzene to give a dihydroisoquinoline, and reductive cyclization with hydrogen over platinum oxide to give a product, which has analgesic activity.

### 3,476,756
### 2 - SUBSTITUTED - 1 - HYDROXYQUINAZOLINE 3-OXIDES AND QUINAZOLINE 1,3-DIOXIDES

**Edward C. Taylor and Juan Bartulin, Princeton, N.J. (both of 1500 Spring Gardens St., Philadelphia, Pa. 19101)**
**No Drawing. Filed Feb. 7, 1967, Ser. No. 614,394**
**Int. Cl. C07d** *51/48;* **A61k** *27/00*
**U.S. Cl. 260—256.4 13 Claims**

2-mono or disubstituted 1-hydroxy-1,2-dihydroquinazoline 3-oxides, prepared by reaction of an aldehyde or ketone with o-hydroxylaminobenzaldoxime. Quinazoline 1,3-dioxides are prepared by oxidation of a 1-hydroxy-1,2-dihydroquinazoline 3-oxide, which is mono or unsubstituted at the 2-position, with chloranil, benzoquinone, or mercuric oxide. The compounds possess diuretic, anti-inflammatory, anthelmintic, muscle relaxant, and analgesic activities.

### 3,476,757
### TETRAHYDROPYRANYL AND TETRAHYDROFURANYL ETHERS OF BENZOMORPHANS AND MORPHANANS

**Alexander D. Cross, Mexico City, Mexico, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama**
**No Drawing. Filed Apr. 18, 1966, Ser. No. 543,028**
**Int. Cl. C07d** *43/32, 99/04;* **A61k** *27/00*
**U.S. Cl. 260—268 13 Claims**

The 2′-(tetrahydropyran - 2 - yl) and 2′-(tetrahydrofuran-2-yl) ethers of 6,7-benzomorphan, morphine and their derivatives have analgesic and antitussive properties and are useful in treating pain and cough. The 2′-hydroxy compound can be added to the respective dihydropyran or dihydrofuran using an acid catalyst to form the ether.

### 3,476,758
### 11-(4-PIPERIDYL)DIBENZO[a,d] CYCLOHEPTADIENES

**Jean Clement Louis Fouché, Bourg-la-Reine, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate**
**No Drawing. Filed Aug. 24, 1966, Ser. No. 574,544**
**Claims priority, application France, Aug. 31, 1965, 29,968; Feb. 4, 1966, 48,524; July 21 1966, 70,349**
**Int. Cl. C07d** *29/36, 29/10, 29/12*
**U.S. Cl. 260—293 8 Claims**

The invention provides new substituted 11-(4-piperidyl) dibenzo[a,d]cycloheptadiene derivatives and their salts which are useful, e.g. as tranquilizers, neuroleptics, sedatives, antihistaminics, antiserotoninics, antiallergics, antimigraines, antiemetics and analgesics.

### 3,476,759
### 2- AND 3-(4-PIPERIDYL) INDANES AND INDANOLS

**Vasken Paragamian, Dresher, Pa., assignor to McNeil Laboratories, Incorporated, a corporation of Pennsylvania**
**No Drawing. Continuation-in-part of application Ser. No. 422,412, Dec. 30, 1964. This application May 2, 1967, Ser. No. 635,368**
**Int. Cl. C07d** *29/10;* **C07c** *15/22*
**U.S. Cl. 260—293 18 Claims**

The compounds are of the class of substituted indanes and indanols, useful for their pharmacological properties as hypotensive agents.

### 3,476,760
### SUBSTITUTED PIPERIDINOALKYLTHIANAPHTHENES AND BENZOFURANS

**Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**
**No Drawing. Continuation-in-part of application Ser. No. 620,628, Mar. 6, 1967. This application Sept. 22, 1967, Ser. No. 669,707**
**Int. Cl. C07d** *63/18, 29/34;* **A61k** *27/00*
**U.S. Cl. 260—293.4 18 Claims**

1-(thianaphthenylalkyl or benzofuranylalkyl)-4-phenyl-4-piperidinols, prepared by various methods starting with a halomethylthianaphthene or benzofuran, or a thianaphthene- or benzofuranalkanoic acid. 4-phenyl-4-piperidinols are condensed with acid halides, ester anhydrides, or diazoketones to give amides, which are reduced to the products with lithium aluminum hydride. Esters are prepared by acylation of the piperidinols. Tetrahydropyridines are prepared by dehydration of the piperidinols. The piperidinol and tetrahydropyridine compounds have tranquilizing activity, while the esters have analgesic activity.

### 3,476,761
### 10- AND 11-(4-PIPERIDYL)DIBENZO [a,d]CYCLOHEPTATRIENES

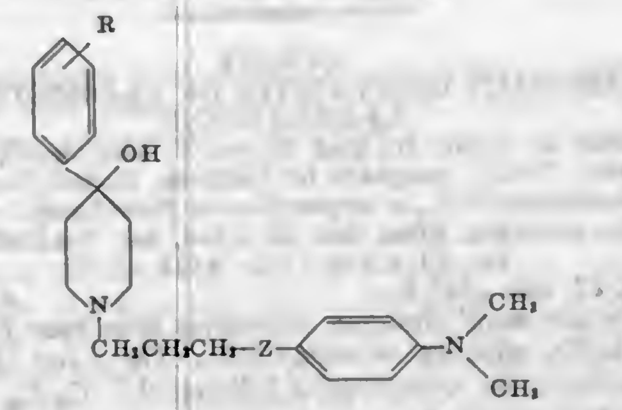
**Jean Clement Louis Fouché, Bourg-la-Reine, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate**
**No Drawing. Filed May 19, 1966, Ser. No. 551,207**
**Claims priority, application France, May 25, 1965, 18,349; Mar. 2, 1966, 51,697; Apr. 14, 1966, 57,649**
**Int. Cl. C07d** *29/36, 29/10, 29/12*
**U.S. Cl. 260—293.4 9 Claims**

The invention provides novel unsubstituted or nuclearly substituted 10- and 11-(4-piperidyl)dibenzo[a,d]cycloheptatrienes and their salts which are active as neuroleptics, sedatives, tranquillisers, antidepressants, antihistamics, antiserotonines, analgesics, spasmolytics and antiemetics.

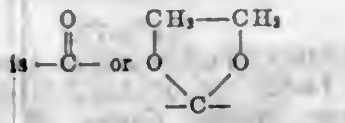
### 3,476,762
### 4′ - DIMETHYLAMINO - 4 - [4 - HYDROXY-4-PHENYL PIPERIDINO]BUTYROPHENONES AND 4 - [4-PHENYL-4-HYDROXY - PIPERIDINO]-1,1-ETHYLENEDIOXY - 1 - (4 - DIMETHYLAMINOPHENYL) BUTANES

**John H. Biel, Milwaukee, Wis., assignor to Aldrich Chemical Company, Inc., Milwaukee, Wis., a corporation of Wisconsin**
**No Drawing. Filed Dec. 27, 1966, Ser. No. 604,580**
**Int. Cl. C07d** *29/16;* **A61k** *27/00*
**U.S. Cl. 260—294.7 14 Claims**

Substituted piperidines of the formula



in which R is chloro, bromo, iodo, fluoro or trifluoromethyl, and



$$Z \text{ is } -\overset{\overset{\displaystyle O}{\|}}{C}- \text{ or } \begin{matrix} CH_2-CH_2 \\ O\quad\ \ O \\ -C- \end{matrix}$$

which possess tranquilizing activity and are useful as tranquilizing agents in mammals and processes for the preparation thereof.

### 3,476,763
### AROMATIC HYDRAZINE COMPOUNDS CONTAINING A LONG ALIPHATIC CHAIN

**Marcel Jacob Monbaliu and Arthur Henri De Cat, Mortsel-Antwerp, and Raphael Karel van Poucke, Mechelen, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a company of Belgium**
**No Drawing. Continuation-in-part of application Ser. No. 314,594, Oct. 8, 1963. This application Apr. 6, 1965, Ser. No. 446,108**
**Int. Cl. C07d** *31/48;* **C07c** *143/82, 143/00*
**U.S. Cl. 260—294.8 7 Claims**

Aromatic hydrazines and their salts having the general formula:

$$X-(Y)_{n-1}-Z-NH-NH_2$$

wherein:

X is an aliphatic chain with 12 to 24 carbon atoms,
Y is selected from oxygen, sulfur, sulfonyl, —CONH—, —SO$_2$UH—, a —SO$_2$U(alkyl— group, and a —N(alkyl)— group,
Z is a bivalent nucleus with aromatic nature such as a bivalent nucleus of the benzene series, the naphthalene series or the pyridine series, which nuclei may be substituted with one or more substituents, e.g., with halogen and trifluoromethyl, and
*n* is 1 or 2,

and methods for preparing same are disclosed. The hydrazines are particularly useful in the preparation of non-migratory color couplers for use in color photography.

### 3,476,764
### 1,2,3,4-TETRAHYDRO - 2 - NITROSO - 9H-PYRIDO [3,4-b]-INDOLE-3-CARBOXYLIC ACID

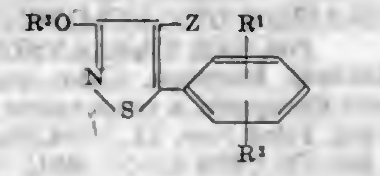
**Hans A. Wagner, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 681,897, Nov. 9, 1967. This application Dec. 4, 1967, Ser. No. 687,480**
**Int. Cl. C07d** *57/04, 85/50;* **A01n** *9/22*
**U.S. Cl. 260—295 3 Claims**

Preparation of 1,2,3,4-tetrahydro-2-nitroso-9H-pyrido-[3,4-b]indole-3-carboxylic acid and meso-ionic didehydro 3a,4,9,10 - tetrahydro - 1H,3H - [1,2,3]oxadiazolo - [3′,-4′:1,6]pyrido[3,4-b]indol - 3 - one intermediates to pepsin-inhibiting and anti-ulcerogenic 9,10-dihydro-4H-pyrazolo[1′,5′:1,6]pyrido[3,4 - b]indole - 2,3 - dicarboxylic acids and esters are disclosed.

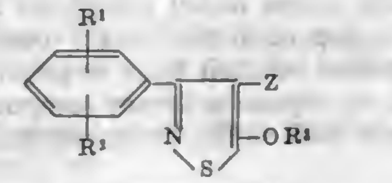
### 3,476,765
### CERTAIN SUBSTITUTED ISOXAZOLES

**Raymond U. Lemieux, Edmonton, and Ronald G. Micetich, Sherwood Park, Alberta, Canada, assignors to R & L Molecular Research Ltd., Edmonton, Alberta, Canada, a body corporate**
**No Drawing. Continuation-in-part of application Ser. No. 515,216, Dec. 20, 1965. This application Sept. 27, 1966, Ser. No. 582,270**
**Int. Cl. C07d** *99/14, 91/30*
**U.S. Cl. 260—302 10 Claims**

1. The compounds of the formulae



and



wherein Z represents —CN, —CONH$_2$ or —COOH, and R$^3$ represents (lower)alkyl and R$^1$ and R$^2$ each represent hydrogen, chloro or trifluoromethyl.

### 3,476,766
### CERTAIN 2,4 - DIARYLTHIAZOLE-5-ALKANOIC ACIDS AND DERIVATIVES THEREOF

**Kevan Brown, Woodley, England, assignor, by mesne assignments, to John Wyeth & Brother Limited, Taplow, Maidenhead, England, a British company**
**No Drawing. Filed Nov. 2, 1967, Ser. No. 679,999**
**Claims priority, application Great Britain, Nov. 18, 1966, 51,823/66; May 31, 1967, 25,076/67**
**Int. Cl. C07d** *91/34, 91/32*
**U.S. Cl. 260—302 36 Claims**

2,4-diarylthiazoles substituted at position 5 by a polycarbon carboxylic acid group are useful as anti-inflammatory agents. The aryl groups may be phenyl, tolyl, anisyl, halophenyl, naphthyl, thienyl or furyl, and the acid group may be an acetic, propionic, or higher acid group The products appear to be less ulcerogenic than anti-inflammatory agents now in general use.

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### 3,476,767

### 1,2-DIARYL - 6 - TERTIARY AMINO LOWER-ALKOXY-3,4-DIHYDRO NAPHTHALENES

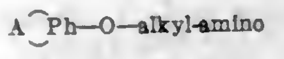
**William Laszlo Bencze, New Providence, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 494,933, Oct. 11, 1965. This application June 13, 1966, Ser. No. 556,881**

**Int. Cl. C07d** *55/00, 31/00, 27/00*

**U.S. Cl. 260—326.3** **3 Claims**

Basically etherified bicyclic phenols having the formula



A = lower aliphatic or araliphatic hydrocarbon radical forming with Ph a 6 to 7 membered ring

Ph = a 1,2-phenylene

N-oxides quarternaries and salts thereof are hypochloesterolemic agents.

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### 3,476,768

### THIENYLALANINE

**James W. McFarland, Lyme, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 456,559, May 17, 1965. This application Dec. 13, 1965, Ser. No. 513,575**

**Int. Cl. C07d** *63/12;* **A61k** *27/00*

**U.S. Cl. 260—332.3** **6 Claims**

N,N-disubstituted(thienyl)propionamidines, N,N - disubstituted(thienyl)acrylamidines and their non-toxic acid addition salts, useful in the veterinary control of helminthiasis, are described.

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### 3,476,769

### PREPARATION OF CYCLOPENTADIENYL NICKEL CATALYSTS

**Perry L. Maxfield, Durango, Colo., assignor to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed Nov. 21, 1966, Ser. No. 595,591**

**Int. Cl. C07d** *63/00;* **B01j** *11/78*

**U.S. Cl. 260—332.5** **6 Claims**

Catalytically active nickel complexes are prepared by reacting dicyclopentadienyl nickel compounds with a ligand compound selected from organo phosphorus, organo arsenic, or organo antimony compounds and a halogenating agent such as the lower aliphatic bromides and chlorides.

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### 3,476,770

### 2-METHYL-7-PHENYLINDOLE-3-ACETIC ACID COMPOUNDS

**Robert A. Scherrer, White Bear Lake, Minn., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan**

**No Drawing. Filed Apr. 14, 1967, Ser. No. 630,802**

**Int. Cl. C07d** *27/56;* **A61k** *27/00*

**U.S. Cl. 260—326.13** **2 Claims**

2-methyl-7-phenylindole-3-acetic acids, esters, and salts thereof, optionally methylated in the 1-position, useful as pharmacological agents having anti-inflammatory activity and their production by (a) intramolecular condensation of a levulinic acid 2-biphenylylhydrazone in the presence of an acid; (b) methylation of a metallated 2-methyl-7-phenylindole-3-acetic acid compound; (c) hydrolysis of a 2-methyl-7-phenylindole-3-acetic acid ester; and (d) esterification of a 2-methyl-7-phenylindole-3-acetic acid.

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### 3,476,771

### PERHALO CONTAINING AIR-DRYING MONOMERS

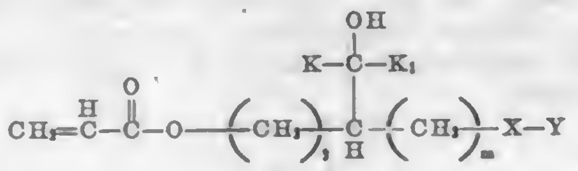
**Robert A. Braun, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Original application July 25, 1963. Ser. No. 297,667, now Patent No. 3,340,275, dated Sept. 5, 1967. Divided and this application July 10, 1967, Ser. No. 652,002**

**Int. Cl. C07d** *15/04*

**U.S. Cl. 260—340.7** **2 Claims**

Compounds of the formula



$$CH_2{=}\overset{H}{C}{-}\overset{\overset{O}{\|}}{C}{-}O{-}\left(CH_2\right)_n{-}\underset{H}{\overset{K-\overset{OH}{\overset{|}{C}}-K_1}{\overset{|}{C}}}{-}\left(CH_2\right)_m{-}X{-}Y$$

where

X is an alkyl, substituted alkyl, substituted phenyl, alkenyl or substituted alkenyl radical,

Y is a dioxolanyl or a substituted dioxolanyl radical and

K and $K_1$ are perchloroalkyl, perfluoroalkyl or perchloro-fluoroalkyl radicals.

The compounds of the above formula are useful as film-formers in coating compositions.

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### 3,476,772

### CHROMAN DERIVATIVES OF 2,5-DIMETHYL-2,4-HEXADIENE

**Vinton A. Hoyle, Jr., and Wayne V. McConnell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed Oct. 20, 1966, Ser. No. 587,976**

**Int. Cl. C07d** *7/32;* **A61k** *15/02*

**U.S. Cl. 260—345.5** **4 Claims**

Certain novel chroman derivatives have been found to be highly effective as antioxidants. The novel chroman derivatives are 4-isopropyl-2,2-dimethyl-7-($C_1$–$C_8$ alkyl)-6-hydroxychromans.

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### 3,476,773

### 3,14β,17 - TRISOXYGENATED 13β - ALKYL-11,14α-EPOXY-8, 14-SECOGONA-1,3,5(10),8-TETRAENES

**John S. Baran, Morton Grove, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware**

**No Drawing. Filed Aug. 28, 1967, Ser. No. 663,527**

**Int. Cl. C07d** *101/00;* **A61k** *17/00*

**U.S. Cl. 260—346.2** **9 Claims**

3,14β,17-trisoxygenated 13β-alkyl - 11,14α - epoxy-8,14-secogona-1,3,5(10),8-tetraenes useful as hypocholesterolemic and anti-inflammatory agents and preparable by peroxidation of the corresponding 3-alkoxy-13β-alkyl-8,14-secogona - 1,3,5(10),9(11)-tetraene-14,17-diones followed by etherification of the 14β-hydroxy group, reduction to the 17-hydroxy substances and acylation to afford the corresponding 17-esters.

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### 3,476,774

### HINDERED PHENOL STABILIZED MALEIC ANHYDRIDE AND ITS USE IN MAKING ALKENYL SUCCINIC ANHYDRIDES

**Edward F. Zaweski, Royal Oak, Mich., and Allen H. Filbey, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia**

**No Drawing. Filed Oct. 7, 1965, Ser. No. 493,904**

**Int. Cl. C07d** *5/08*

**U.S. Cl. 260—346.8** **5 Claims**

Maleic anhydride is thermally stabilized by hindered phenolic stabilizers such as 4,4′ - methylenebis(2,6 - ditert - butylphenol). Use of the stabilized maleic anhydride in the preparation of alkenyl succinic anhydrides by reaction of maleic anhydrides with olefins gives increased yields.

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### 3,476,775

### RECOVERY OF MALEIC ANHYDRIDE BY PLURAL STAGE THIN LAYER VACUUM EVAPORATION AND PLURAL STAGE CONDENSATION

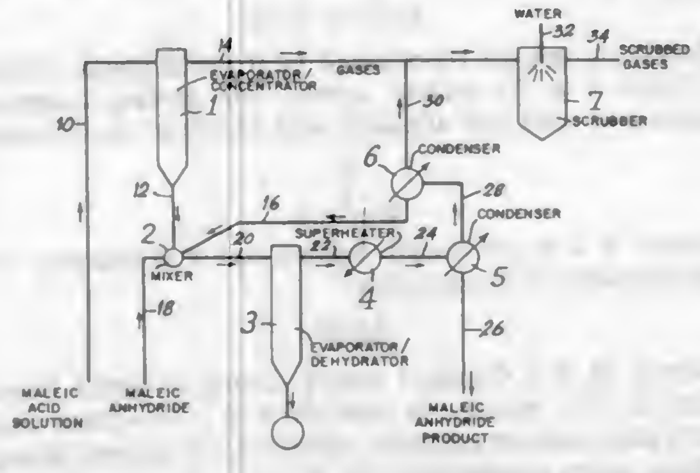
**René Sueur, Bully-Montigny, France, assignor to Societe Chimique des Charbonnages, Paris, France, a French society**

**Filed Mar. 27, 1968, Ser. No. 716,421**

**Claims priority, application France, Mar. 30, 1967, 100,799**

**Int. Cl. C07c** *51/56, 57/14*

**U.S. Cl. 260—346.8** **4 Claims**



A continuous process for the dehydration of maleic acid to form maleic anhydride, which comprises, in a first stage, evaporating a saturated aqueous solution of maleic acid at a temperature of up to 125° C. for a period of less than a minute to remove the water from the solution and to give a molten acid substantially free from water and fumaric acid and, in a second stage, heating a mixture of maleic acid and maleic anhydride in which the ratio (acid)/(anhydride+acid) is from 20 to 40%, to a temperature of up to 160° C. for a period of less than a minute and condensing the maleic anhydride vapor obtained to recover the anhydride.

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### 3,476,776

### PROCESS FOR THE MANUFACTURE OF ALKANE EPOXIDES

**Kurt Sennewald, Knapsack, near Cologne, Heinz Erpenbach, Surth, near Cologne, Heinrich Rehberg, Hermulheim, near Cologne, and Günter Viertel, Bruhl, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany**

**Filed Oct. 12, 1965, Ser. No. 495,184**

**Claims priority, application Germany, Oct. 22, 1964, K 54,318**

**Int. Cl. C07d** *1/08*

**U.S. Cl. 260—348.5** **6 Claims**

A process for the continuous manufacture of expoxides from olefins, which are gaseous at ambient temperature and under atmospheric pressure, by oxidation with peracetic acid in the liquid phase comprises reacting in two reaction stages an about 10–40% by weight solution of peracetic acid, which is free from water and mineral acid but may be stabilized, in an inert organic solvent with an appropriate olefin in the molar ratio of 1:4 to 5, at a temperature of about 20 to about 100° C. and under a pressure of about 3 to about 100 atmospheres absolute, by allowing the peracetic acid, in the first reaction stage, to act upon the olefin at a temperature below about 60° C. for a period of time sufficient to transform about 55–80% by weight of the peracetic acid. Thereafter completing the reaction, in the second reaction stage, at a temperature above 60° C. and within a period of about 5 to 20 minutes so as to obtain a maximum peracetic acid conversion rate, then expanding the reaction mixture and expelling olefin in excess by evaporation, recycling the expelled olefin and reacting it again with peracetic acid, and isolating the epoxy compound from the residue by subjecting it to fractional distillation.

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### 3,476,777

### NOVEL 6-CHROMANOL DERIVATIVES AND THEIR PREPARATION

**Masuo Murakami, Kozo Takahashi, Jun Matsumoto, and Kiyoshi Murase, Tokyo, and Kazuharu Tamazawa and Shigeo Kawamura, Urawa, Saitama, and Junichi Terao, Tokyo, Japan, assignors to Yamanouchi Pharmaceutical Co., Ltd., Tokyo, Japan, a corporation of Japan**

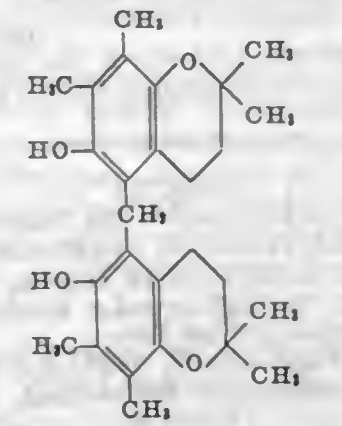
**No Drawing. Filed Sept. 27, 1966, Ser. No. 582,266**

**Claims priority, application Japan, Oct. 27, 1965, 40/65,439; Nov. 17, 1965, 40/71,016; Nov. 29, 1965, 40/72,830; May 24, 1966, 41/32,680, May 26, 1966, 41/33,176**

**Int. Cl. C07d** *7/32*

**U.S. Cl. 260—345.5** **16 Claims**

The present invention relates to 5-substituted 6-chromanol derivatives such as for example:



These compounds have high antioxidant activity.

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### 3,476,778

### GAMMA-PYRONE SYNTHESIS

**Alfred A. Schleppnik, St. Louis, and Marvin L. Oftedahl, Crestwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**

**No Drawing. Filed May 16, 1966, Ser. No. 550,159**

**Int. Cl. C07d** *7/10;* **C07b** *25/00, 3/00*

**U.S. Cl. 260—345.8** **12 Claims**

Preparation of maltol, 2-methyl-3-hydroxy-4 - pyrone, and related compounds by

(1) epoxidation of an alkenone;
(2) cyclization of epoxide product with dicarboxylic ester;
(3) dehydrogenation of cyclized product;
(4) decarboxylation.

Maltol and the related compounds are useful as flavor enhancers for food products.

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### 3,476,779

### NOVEL STEROID COMPOUNDS OF THE CHOLESTANE SERIES

**Claude Vezina, Oka, Quebec, and Romano Deghenghi, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Original application May 13, 1965, Ser. No. 455,578. Divided and this application Oct. 17, 1967, Ser. No. 675,791**

**Int. Cl. C07c** *169/50, 167/18, 169/08*

**U.S. Cl. 260—397.2** **7 Claims**

The new steroid compounds cholesta-3,7-diene-3β,19-diol diacetate, 19-hydroxycholesta-4,7-dien-3-one, 3,19-diacetoxycholesta-3,5,7 - triene, 10 - acetoxycholesta-4,7-dien-3-one, 19-hydroxycholesta-5,7-dien-3-one, 17β-[2′-(6′-methylheptyl)]-estra-5(10),7-dien - 3 - one, 19-nor-cholesta-4,7-dien-3-one and procedures for their preparation as well as their conversion into the valuable steroid compound equilin are herein disclosed.

### 3,476,780

### PRODUCTION OF EQUILENIN AND RELATED COMPOUNDS AND INTERMEDIATES THEREFOR

**Gerald Arthur Smith and Gordon Hanley Phillipps, Greenford, England, assignors to Glaxo Laboratories Limited, Greenford, Middlesex, England, a British company**

**No Drawing. Filed June 21, 1966, Ser. No. 559,091**
**Claims priority, application Great Britain, June 22, 1965, 26,387/65**
**Int. Cl. C07c** *167/14, 169/18, 169/08*
**U.S. Cl. 260—397.3** **18 Claims**

Equilenin and related steroid compounds aromatic in rings A and B are prepared from 3-keto-$\Delta^{1,4}$-9$\alpha$-halo-10-methyl-11$\beta$-hydroxy-, 3-keto-$\Delta^{1,4,8(9)}$-10-methyl-11$\beta$-hydroxy- or 3-keto-$\Delta^{1,4,7(8),9(11)}$-10-methyl-steroids by reaction with a Lewis base having a tertiary nitrogen atom and a dielectric constant above 15 together with a substance yielding chloride or bromide ions. Such aromatic steroids can be formed from the 3-keto-$\Delta^{1,4,8(9)}$-10-methyl-11$\beta$-hydroxy- or 3-keto-$\Delta^{1,4,7(8),9(11)}$-10-methyl-steroids by reaction with a strong acid and if the reaction is carried out in the presence of an alkanol 3-ether is produced.

### 3,476,781

### 3-KETO-$\Delta^{1,4}$-, 3-KETO-$\Delta^{4,6}$- OR 3-KETO-$\Delta^{1,4,6}$-19-ALKYLIDENE STEROIDS

**Andor Fürst and Ernst Gerhard Herzog, Basel, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey**

**No Drawing. Filed Apr. 7, 1967, Ser. No. 629,098**
**Claims priority, application Switzerland, Apr. 20, 1966, 5,739/66**
**Int. Cl. C07c** *169/22, 167/14;* **A61k** *27/00*
**U.S. Cl. 260—397.3** **15 Claims**

3-keto-$\Delta^{1,4}$-keto-$\Delta^{4,6}$- or 3 - keto-$\Delta^{1,4,6}$-19-alkylidene-steroids are prepared via dehydrogenation of 3-keto-$\Delta^{4}$-19-alkylidene-steroids. The products are useful gonadotrophin inhibitors.

### 3,476,782

### 6,17-DIMETHYL-9$\beta$,10$\alpha$-ANDROSTANES

**Engbert Harmen Reerink, Pieter Westerhof, and Hendrik Frederik Louis Scholer, all of Van Houtenlaan, Weesp, Netherlands**

**No Drawing. Continuation-in-part of application Ser. No. 565,671, July 15, 1966, which is a continuation-in-part of application Ser. No. 561,292, June 28, 1966. This application Feb. 6, 1968, Ser. No. 703,244**
**Int. Cl. C07c** *169/66, 169/22;* **A61k** *27/00*
**U.S. Cl. 260—397.4** **3 Claims**

6,17-dimethyl - 17$\beta$ - hydroxy-9$\beta$,10$\alpha$-androsta-1,4-diene and 1,4,6-triene-3-one having useful anabolic androgenic and progestational activities.

### 3,476,783

### 6,6-ETHYLENE-9$\alpha$-FLUORO STEROIDS

**James F. Kerwin, Broomall, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Oct. 8, 1965, Ser. No. 494,239**
**Int. Cl. C07c** *169/22, 169/10;* **A61k** *27/00*
**U.S. Cl. 260—397.45** **4 Claims**

The invention relates to 6,6-ethylene-androst-4-ene-3-ones and estr-4-enes-3-ones oxygenated at the 11- and 17-position and fluorinated at the 9-position. The compounds are prepared by (1) formulation of a 3,5-diene; (2) reducing the resultant formyl group to a hydroxy methyl substituent; (3) dehydration the latter to form a 6-methylene compound and (4) reacting same with dimethyl sulfoxonium methylide to obtain the 6,6-ethylene derivatives. The final products are compounds which have anabolic activity.

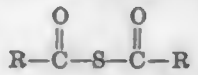
### 3,476,784

### PROCESS FOR PREPARING CARBOXYLIC ACID THIOANHYDRIDES

**Carl C. Greco, Bronx, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware**

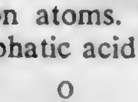
**No Drawing. Filed Jan. 19, 1968, Ser. No. 699,045**
**Int. Cl. C07c** *153/00, 149/00*
**U.S. Cl. 260—399** **11 Claims**

A process for preparing aliphatic carboxylic acid thioanhydrides of the formula:



$$R-\overset{\overset{O}{\|}}{C}-S-\overset{\overset{O}{\|}}{C}-R$$

wherein the groups represented by R are aliphatic radicals of from 4 to 23 carbon atoms. The process comprises reacting at least one aliphatic acid halide of the formula:



$$R-\overset{\overset{O}{\|}}{C}-X$$

wherein R is as previously defined and X is halogen, with a hydrosulfide of the formula:

$$MSH$$

wherein M is a Group I metal, Group II metal or ammonium. The reaction is conducted in a two-phase aqueous organic solvent medium, which organic solvent phase is at least partly immiscible with the aqueous phase but substantially miscible with the aliphatic acid halide reactant.

### 3,476,785

### PROCESS FOR THE PREPARATION OF CARBOXYLIC ACID ARYL ESTERS

**Hans-Leo Huelsmann, Witten-Rudinghausen, and Gustav Renckhoff, Witten, Ruhr, Germany, assignors to Chemische Werke Witten G.m.b.H., Witten, Ruhr, Germany**

**No Drawing. Filed Dec. 4, 1963, Ser. No. 328,101**
**Claims priority, application Germany, Dec. 7, 1962, C 28,605**
**The portion of the term of the patent subsequent to Dec. 5, 1984, has been disclaimed**
**Int. Cl. C07c** *69/00;* **C09f** *5/08*
**U.S. Cl. 260—410.5** **15 Claims**

Process for the preparation of a carboxylic acid aryl ester which comprises reacting a methyl ester of an aliphatic or alicyclic mono- or polycarboxylic acid with a hydroxyaryl compound at a temperature of at least 160° C. in the presence of an ester radical interchange catalyst, while continuously removing methyl alcohol formed during the reaction from the reaction system. Exemplary hydroxyaryl compounds which may be employed include phenol, cresol, $\beta$-naphthol and benzylphenol. Mixed methyl-aryl esters also may be produced by the process.

### 3,476,786

### METHOD FOR PRODUCING FINELY DIVIDED WATER INSOLUBLE METALLIC SALTS OF HIGHER FATTY ACIDS

**Robert E. Lally, Verona, and Joseph Cunder, East Orange, N.J., assignors to Diamond Shamrock Corporation, a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 380,061, July 2, 1964. This application Aug. 8, 1967, Ser. No. 659,028**
**Int. Cl. C11c** *1/00*
**U.S. Cl. 260—413** **4 Claims**

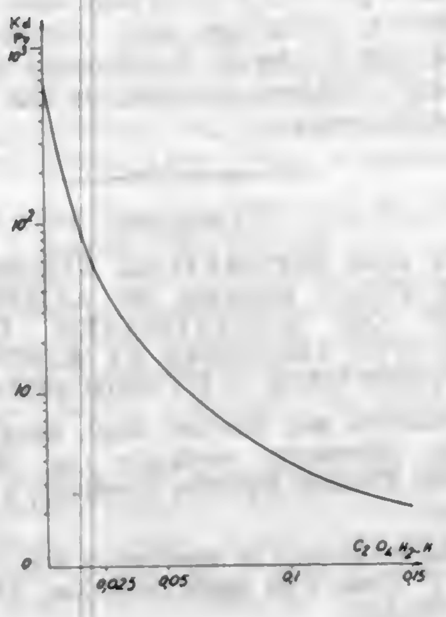
Finely divided water insoluble metallic salts of higher fatty acids are produced by grinding solid fatty acids with particular solid metals, metal oxides, metal hydroxides, metal carbonates or mixtures thereof in the presence of a catalyst and in the absence of water. A typical example employs solid calcium hydroxide and solid stearic acid in the presence of ammonium carbonate as the catalyst.

### 3,476,787

### TRILAURYLAMINE EXTRACTION OF PLUTONIUM WITH PRECIPITATION IN OXALIC ACID

**André Bathellier, Sceaux, France, assignor to Commissariat a l'Energie Atomique, Paris, France**

**Filed Aug. 18, 1965, Ser. No. 480,732**
**Claims priority, application France, Aug. 25, 1964, 986,093**
**Int. Cl. C07f** *15/00;* **C22b** *61/04;* **B01d** *11/00*
**U.S. Cl. 260—429.1** **2 Claims**



Plutonium is extracted in an organic phase consisting of trilaurylamine diluted in a solvent and reextracted by a sulphuric acid solution. The plutonium is then precipitated in the presence of oxalic acid, the mother liquor of which is recycled directly at the level of plutonium purification by trilaurylamine extraction without previous evaporation.

### 3,476,788

### DERIVATIVES OF THE GROWTH REACTION OF ETHYLENE WITH TRIHYDRODICYCLOPENTADIENYL ALUMINUM

**Guenter Bruno, Somerville, N.J., assignor to Mobil Oil Corporation, a corporation of New York**

**No Drawing. Filed Sept. 19, 1966, Ser. No. 580,170**
**Int. Cl. C07f** *5/06*
**U.S. Cl. 260—448** **5 Claims**

Growth compounds are presented, which are prepared by reacting ethylene with tri-hydrocyclopentadienyl aluminum compounds at elevated temperature and pressure. The products can be converted to triethyl (or higher n-alkyl) aluminum cocatalysts for polymerization.

### 3,476,789

### METHOD FOR PREPARING TRI-HYDRODICYCLOPENTADIENYL ALUMINUM AND SUBSTITUTED DERIVATIVES THEREOF

**Guenter Bruno, Somerville, N.J., assignor to Mobil Oil Corporation, a corporation of New York**

**No Drawing. Filed Sept. 19, 1966, Ser. No. 580,202**
**Int. Cl. C07f** *5/06*
**U.S. Cl. 260—448** **2 Claims**

Tri-hydrodicyclopentadienyl aluminum and its derivatives are produced by a non-catalytic displacement reaction of a dicyclopentadiene with a branched-chain aluminum alkyl at 90–110° C.

### 3,476,790

### 2,4,5-NITRODIHALOBENZYL THIOCYANATES

**John J. Barch, Crestwood, N.Y., assignor to Tenneco Chemicals, Inc., a corporation of Delaware**

**No Drawing. Filed Sept. 28, 1966, Ser. No. 582,489**
**Int. Cl. C07c** *161/02;* **A01n** *9/18*
**U.S. Cl. 260—454** **3 Claims**

Fungicidal compositions that are suitable for use on living plant materials intended for human or animal consumption contain a 2,4,5-nitrodihalobenzyl cyanide or thiocyanate as their fungicidally-active ingredient. Illustrative of these fungicidal compounds are 2,4-dichloro-5-nitrobenzyl thiocyanate and 2-nitro-4,5-dichlorobenzyl thiocyanate.

### 3,476,791

### o-THIOCARBAMOYL BENZOIC ACID ESTERS

**Melvin S. Newman, Columbus, Ohio, and Harold A. Karnes, Portage, Mich., assignors to The Board of Trustees of Ohio State University, Columbus, Ohio, an institution of higher learning of Ohio**

**No Drawing. Filed May 4, 1966, Ser. No. 547,433**
**Int. Cl. C07c** *154/00*
**U.S. Cl. 260—455** **4 Claims**

A process for producing aromatic N,N-disubstituted thioncarbamates by heating the corresponding thiolcarbamates. The esters of the O-carboxyphenyl N,N-disubstituted thiolcarbamates produced by that process are useful as intermediates in the production of saccharin.

### 3,476,792

### PRODUCTION OF HEXACHLOROCYCLOPENTADIENE

**Siegfried E. Penner and Alvis L. Malone III, Wichita, Kans., assignors to Frontier Chemical Company, Division of Vulcan Materials Company, Wichita, Kans., a corporation of New Jersey**

**No Drawing. Continuation of application Ser. No. 496,715, Oct. 15, 1965. This application Jan. 5, 1968, Ser. No. 696,086**
**Int. Cl. C07c** *23/08, 23/00, 17/10*
**U.S. Cl. 260—648** **17 Claims**

A process for making hexachlorocyclopentadiene by chlorination of a $C_5$ hydrocarbon at a temperature between about 315° and 450° C. in an essentially adiabatic reaction chamber which is packed with a particulate surface active material, the temperature of reaction being maintained within the desired range by feeding an appropriate amount of an inert diluent such as carbon tetrachloride into the reaction zone in liquid form such that the heat of reaction is absorbed by the vaporization and heating up of the diluent in the process.

### 3,476,793

### PRODUCTION OF ADIPONITRILE

**Karl Adam, Alfred Schulz, Erich Haarer, and Siegfried Winderl, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**

**No Drawing. Filed Sept. 15, 1966, Ser. No. 579,485**
**Claims priority, application Germany, Sept. 22, 1965, B 83,838**
**Int. Cl. C07c** *121/20, 121/02, 121/28*
**U.S. Cl. 260—465.8** **6 Claims**

Production of adiponitrile by liquid phase hydrogenation of 1,4-dicyanobutene at 50 to 200° C. and 50 to 200 atmospheres using a palladium-silver catalyst which may also contain cobalt, nickel, manganese and/or vanadium oxide and/or promoters.

### 3,476,794

### 13,17-SECO-17-NITRILE-$\Delta^{13(18)}$ STEROIDS OF THE ANDROSTANE AND ESTRANE SERIES AND THE PROCESS FOR THE PREPARATION THEREOF

**John G. Moffatt, Los Altos, and Allan H. Fenselau, Berkeley, Calif., assignors to Syntex Corporation, Panama, Panama, a corporation of Panama**

**No Drawing. Filed Oct. 5, 1966. Ser. No. 584,342**

**Int. Cl. C07c** *121/66*

**U.S. Cl. 260—465** **11 Claims**

13,17-seco-17-nitrile-$\Delta^{13(18)}$ steroids of the androstane or estrane series are useful as anti-estrogenic agents and possess anti-gonadotrophic and cholesterol lowing activity. The 13,17-seco-17-nitrile-$\Delta^{13(18)}$ steroids are prepared by reacting, under acidic and substantially anhydrous conditions in a solvent comprising a di(lower)-alkyl sulfoxide or alkylene sulfoxide, a 17-oximido steroid of the androstane or estrane series and a N,N′-di-(hydrocarbon substituted) carbodiimide.

### 3,476,795

### HYDROXYESTERS OF BARK PHENOLIC ACIDS

**George Graham Allan, Seattle, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington**

**No Drawing. Continuation-in-part of application Ser. No. 399,881, Sept. 28, 1964. This application Oct. 22, 1965, Ser. No. 502,589**

**Int. Cl. C07c** *69/76;* **C08g** *33/10*

**U.S. Cl. 260—473.5** **2 Claims**

Disclosed herein are reaction products of the sodium salts of bark phenolic acids and an alkylene oxide such as ethylene oxide, propylene oxide, butylene oxide or mixtures thereof. The reaction products are useful as intermediates in the preparation of polyurethanes by further reaction with di- or polyisocyanates.

### 3,476,796

### PHTHALIC ACID DIESTER PREPARATION

**Shiro Kudo, Sakai-shi, Yoshihisa Mihara and Taiichi Adachi, Yokkaichi-shi, Shinichi Tsurugi, Sakai-shi, Tomoatsu Usuku, Yokkaichi-shi, and Isamu Wada, Sakai-shi, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan**

**Filed May 3, 1965, Ser. No. 452,491**

**Claims priority, application Japan, May 2, 1964, 39/24,827**

**Int. Cl. C07c** *67/02, 69/80*

**U.S. Cl. 260—475** **10 Claims**

A continuous process for the production of diesters of phthalic acid and saturated alcohols containing from 4 to 10 carbon atoms which comprises continuously feeding a monoester of phthalic acid and a saturated alcohol containing from 4 to 10 carbon atoms, a carrier capable of forming an azeotropic mixture with water, and an esterification catalyst to the first of a plurality of reactors, while maintaining esterification reaction conditions within said first reactor, distilling said carrier and the water formed during the esterification from the reaction system, returning said carrier to said first reactor, introducing the reaction solution from said first reactor to the second reactor within said plurality of reactors, supplying said carrier to said second reactor, maintaining esterification reaction conditions within said second reactor in order to effect reaction in a similar manner as that carried out in said first reactor, and effecting a reaction within each successive reactor within said plurality of reactors in the same manner as in said second reactor to obtain the desired reaction product.

### 3,476,797

### PROCESS FOR PRODUCING ESTERS

**Joseph B. Mettalia, Jr., Southampton, and Edward H. Specht, Huntingdon Valley, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware**

**No Drawing. Filed Aug. 22, 1966, Ser. No. 573,799**

**Int. Cl. C07c** *69/66, 69/52*

**U.S. Cl. 260—484** **7 Claims**

This invention relates to a method for the preparation of alkyl 7-hydroxy-2,5-heptadienoates and dialkyl 2,5,8-decatriene-1,10-dioates by the reaction of 2-butene-1,4-diol, acetylene, nickel carbonyl, carbon monoxide, an alkanol of one to eight carbon atoms, an acid, and a halide, where the acid is an organic acid of one to eight carbon atoms, phosphoric acid, phosphorous acid, or boric acid, and the halide is a bromide or iodide of the alkali metals, lithium chloride, or the iodide of the alkaline earth metals.

### 3,476,798

### PROCESS FOR SEPARATING AZEOTROPIC MIXTURES FROM ESTERS OF ALIPHATIC SATURATED OR UNSATURATED CARBOXYLIC ACIDS AND ALCOHOLS BY AZEOTROPIC DISTILLATION WITH A HYDROCARBON HALIDE

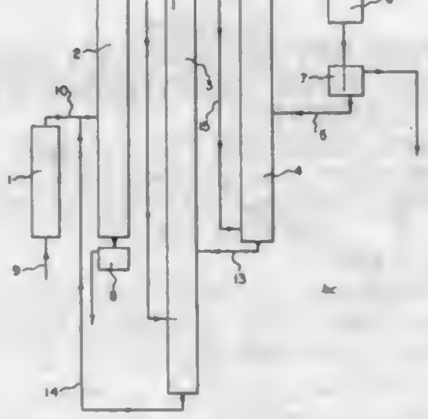
**Gerhard Kunstle and Herbert Siegl, Burghausen, Upper Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Bavaria, Germany, a corporation of Germany**

**Continuation-in-part of application Ser. No. 364,901, May 5, 1964. This application Jan. 25, 1968, Ser. No. 700,366**

**Claims priority, application Germany, May 9, 1963, W 34,453**

**Int. Cl. C07c** *69/52, 69/34, 29/28*

**U.S. Cl. 260—486** **9 Claims**



This invention provides a novel and improved process for separating azeotropic mixtures from esters of aliphatic saturated or unsaturated carboxylic acids and alcohols. It accomplishes this by subjecting the ester-alcohol mixture, especially an azeotropic mixture with a high alcohol content, to treatment with a hydrocarbon halide which forms with said alcohol an azeotropic mixture whose boiling point is well below the boiling point of said azeotropic ester-alcohol mixture, so that the newly formed azeotropic mixture may be readily separated from the ester by distillation, and, after separation, may be readily divided by water extraction into its component parts.

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### 3,476,799

### PROCESS FOR THE MANUFACTURE OF NITRILO-TRIS-METHYLENE PHOSPHONIC ACID

**Wilhelm Vogt and Hermann Glaser, Knapsack, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany**

**No Drawing. Filed Nov. 30, 1966, Ser. No. 597,882**

**Claims priority, application Germany, Dec. 16, 1965, K 57,930**

**Int. Cl. C07f** *9/38*

**U.S. Cl. 260—502.5** **9 Claims**

Process for making nitrilo-tris-methylene phosphonic acid from ammonia, formaldehyde and a compound of trivalent phosphorus.

### 3,476,800

### OIL-SOLUBLE SULFONIC ACIDS AND PROCESS FOR MANUFACTURE THEREOF

**Vincent J. Cease, Chester, Pa., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware**

**No Drawing. Filed Mar. 15, 1965, Ser. No. 440,001**

**Int. Cl. C07c** *143/38*

**U.S. Cl. 260—505** **7 Claims**

Oil-soluble sulfonic acid composition containing at least 82 percent, and preferably at least 90 percent, oil-soluble sulfonic acid, said composition being fluid at ambient temperatures, and having a sulfuric acid content of less than 0.8 percent.

Process for preparing the above-described composition wherein an important aspect of the process is removal of sulfuric acid from a volatile hydrocarbon solution containing oil-soluble sulfonic acids prior to distillation of the volatile hydrocarbon solution to obtain the desired composition.

### 3,476,801

### PROCESS FOR THE PREPARATION OF METHANYLIC ACID

**Gianfranco Ferrari, Mantova, and Angelo Garberi, Pavia, Italy, assignors to Montecatini Edison S.p.A., a corporation of Italy**

**No Drawing. Filed June 24, 1968, Ser. No. 739,144**

**Claims priority, application Italy, June 28, 1967, 17,762/67**

**Int. Cl. C07c** *143/58*

**U.S. Cl. 260—508** **6 Claims**

Methanylic acid (3-amino-benzenesulphonic acid) is prepared by hydrogenation of the corresponding nitro-acid, 3-nitro-benzenesulphonic acid. An aqueous solution of the sodium or calcium salt of m-nitrobenzenesulphonic acid, obtained by sulphonation of nitrobenzene with oleum and subsequent neutralization, may be used as starting material.

### 3,476,802

### N-ALKYL DERIVATIVES OF 3,5-DIACETAMIDO-2,4,6-TRIIODOBENZOIC ACID AND SALTS THEREOF AND PROCESS FOR PREPARING THE SAME

**Hugo Holtermann, Hovik, Baerum, Leif Gunnar Haugen, Grefsen, Oslo, and Nils Thorsdalen and Knut Tjonneland, Oslo, and Knut Wille, Roa, Oslo, Norway, and Jean Koutroulos, Lausanne, Switzerland, assignors to Nyegaard & Co. A/S, Oslo, Norway, a Norwegian body corporate**

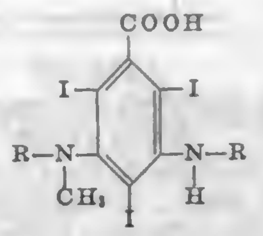
**No Drawing. Filed Dec. 8, 1960, Ser. No. 74,485**

**Claims priority, application Norway, Dec. 8, 1959, 134,075/59**

**Int. Cl. C07c** *103/30, 103/12;* **A61k** *27/08*

**U.S. Cl. 260—518** **9 Claims**

1. A compound selected from the group consisting of an acid of the formula



wherein R is lower alkanoyl and water-soluble non-toxic salts of said acid.

### 3,476,803

### DECARBOXYLATION

**Lloyd Albert Pine, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware**

**No Drawing. Filed Mar. 16, 1966, Ser. No. 534,670**

**Int. Cl. C07c** *51/38;* **C07b** *25/00*

**U.S. Cl. 260—526** **9 Claims**

Carboxylic acids are decarboxylated and converted to organic compounds having one less carbon atom than the starting material by contacting a feed stream containing a carboxylic acid with an active form of a crystalline zeolite having the structure of faujasite. Any carboxylic acid may be decarboxylated with the process herein disclosed; however, polycarboxylic acids are the preferred feed stocks. In accordance with the disclosure, the conversion will be accomplished at temperatures ranging between 300 and 800° F. In a preferred embodiment, the faujasite catalyst of the present invention will contain one or more cations selected from the group consisting of hydrogen and the metals of Groups I–A, I–B, II–A, II–B and VIII of the Periodic Table. Silver, copper, sodium and zinc are the preferred metals. In a particularly preferred embodiment maleic acid is converted to acrylic acid by the process of this invention. The activity of the catalyst of this invention is compared, in the examples, with a catalyst prepared from a crystalline alumino-silicate zeolite having a structure similar to mordenite and other prior art catalyst.

### 3,476,804

### METHOD FOR THE PRODUCTION OF ADIPIC ACID AND RECOVERY OF NITRIC ACID COMPONENTS

**Friedrich Bende, Bergen-Enkheim, and Heinz Vollinger and Kurt Pohl, Offenbach (Main), Germany, assignors to Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen, a corporation of Germany**

**Filed June 14, 1966, Ser. No. 557,539**

**Int. Cl. C07c** *55/14, 51/28*

**U.S. Cl. 260—531** **3 Claims**

A process for recovery of adipic acid and removal of nitric acid components from the product stream of the oxidation mixture resulting from the oxidation of cylohexanol and cyclohexanone with concentrated nitric acid, wherein the product stream contains 12 to 18 weight percent adipic acid and about 70–90 weight percent of the concentrated nitric acid oxidant, the steps which include diluting the product stream to a nitric acid concentration of about 38% by weight of the addition of recycled aqueous adipic acid solution and a bottoms fraction recovered from a later concentration, crystallizing coarse crystals of adipic acid from the 38% by weight nitric acid stream under vacuum at a temperature of about 35° C., centrifuging the resulting crystal slurry at about 35° C. to give a crystal cake and a dilute nitric acid-containing mother liquor, separating the crystal cake from the dilute nitric acid-containing mother liquor, concentrating the nitric acid-containing mother liquor by removing water and chilling to produce further adipic acid crystals.

### 3,476,805
### ADIPIC ACID RECOVERY FROM NITRIC ACID OXIDATION

**Heinz Vollinger, Dortelweil, Kurt Pohl, Offenbach (Main), and Friedrich Bende, Bergen-Enkheim, Germany, assignors to Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen, a corporation of Germany**

**Filed June 14, 1966, Ser. No. 557,407**

**Int. Cl. C07c** *51/42, 55/04, 55/14*

**U.S. Cl. 260—531** **3 Claims**

Method of recovery of adipic acid from a product stream of a reaction mixture wherein a mixture of cyclohexanol and cyclohexanone is oxidized with a concentrated nitric acid solution, the product stream containing about 12–18 weight percent adipic acid and from 70–90 percent of the concentrated nitric acid oxidant, the steps including diluting the product stream to a nitric acid concentration of about 38% by weight, crystallizing in a first crystallizer to obtain coarse crystals of adipic acid under a vacuum at a temperature of about 35° C., centrifuging the coarse crystals to provide a crystal cake and a nitric acid mother liquor, separating the crystal cake and mother liquor, concentrating the mother liquor by evaporation of volatiles, passing the concentrated mother liquor to a crystallizer, cooling and then filtering to produce additional adipic acid crystals, redissolving the additional adipic acid crystals in water, recycling the redissolved adipic acid to the product stream and distilling the filtrate from the crystallizer to produce a nitric acid aqueous mixture.

### 3,476,806
### CONTINUOUS METHYLENEDIANILINE PROCESS

**Herbert Otto Wolf, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 351,195, Mar. 11, 1964. This application Apr. 24, 1967, Ser. No. 632,951**

**Int. Cl. C07c** *87/50*

**U.S. Cl. 260—570** **2 Claims**

A continuous process for preparing methylenedianiline of high 4,4′-isomer content by feeding into a reaction zone maintained at 35 to 52° C., aniline hydrochloride and formaldehyde at a mol ratio of 2.8:1 to 4.0:1 and subsequently passing the reaction mass into three rearrangement stages, the first stage having a temperature between 38 to 52° C., the second 60 to 70° C., and the third 88 to 110° C. The product of the rearrangement stages is neutralized and the methylenedianiline is recovered.

### 3,476,807
### ALUMINUM ALKOXIDE PROCESS FOR PREPARING TERTIARY AMINES

**James D. Johnston and Leslie L. Sims, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia**

**No Drawing. Filed Dec. 1, 1965, Ser. No. 510,976**

**Int. Cl. C07c** *87/06, 31/02;* **C07f** *5/06*

**U.S. Cl. 260—583** **12 Claims**

Aluminum alkoxides react with secondary amines to form tertiary amines. A typical product is lauryl dimethyl amine.

### 3,476,808
### CATALYTIC OXIDATIVE DEHYDROGENATION OF KETONES

**Robert W. Etherington, Jr., Pennington; and Koei-Liang Liauw, Clark, N.J., assignors to Mobil Oil Corporation, a corporation of New York**

**No Drawing. Continuation-in-part of application Ser. No. 639,029, May 17, 1967. This application Mar. 11, 1968, Ser. No. 711,864**

**Int. Cl. C07c** *47/20*

**U.S. Cl. 260—586** **8 Claims**

Ketones having at least one pair of hydrogen atoms on the alpha and beta carbon atoms are oxidatively dehydrogenated to the corresponding ethylenically unsaturated ketone by contacting the ketone and molecular oxygen-containing gas with a catalyst containing a metal of Group I–B (Cu, Ag, Au) in the vapor phase (400–750° C.). The catalyst can be a Group I–B metal, alloy, or oxysalt and may be on a support. Gold is especially preferred. The unsaturated ketone products can be polymerized and copolymerized to thermoplastic polymers useful for making extruded or molded shapes.

### 3,476,809
### OLEFIN OXIDATION CATALYST

**Frederick W. Steffgen, Laguna Beach, Calif., assignor to Atlantic Richfield Company, a corporation of Pennsylvania**

**No Drawing. Filed Sept. 29, 1965, Ser. No. 491,431**

**Int. Cl. C07c** *45/04, 45/02*

**U.S. Cl. 260—604** **13 Claims**

1. A method for preparing an $\alpha$-$\beta$ unsaturated carbonyl compound from an olefin having at least 3 carbon atoms which comprises: heating a mixture of said olefin and oxygen at an elevated temperature in the presence of a catalyst comprising a macroporous support material having pores of at least 300 A. in diameter and having deposited thereon a catalytically effective amount of cupric phosphate.

### 3,476,810
### CATALYTIC OXIDATION OF OLEFINS TO ALDEHYDES

**Enrico Cavaterra, Saronno, Varese, and Natale Ferlazzo, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy**

**No Drawing. Filed May 29, 1967, Ser. No. 642,213**

**Claims priority, application Italy, June 3, 1966, 18,652**

**Int. Cl. C07c** *45/02;* **B01j** *11/74*

**U.S. Cl. 260—604** **10 Claims**

A process for the preparation of an $\alpha$, $\beta$-unsaturated aldehyde, by reacting at elevated temperatures an olefin and a member selected from the group consisting of oxygen and an oxygen-containing gas in the presence of a catalyst comprising an oxygenated tellurium compound and an oxygenated cerium compound.

### 3,476,811
### FLUORINATED DIALKYL SULFIDES

**Ross C. Terrell, Birmingham, England, assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York**

**No Drawing. Filed Dec. 12, 1966, Ser. No. 600,759**

**Int. Cl. C07c** *149/10;* **B01f** *1/00*

**U.S. Cl. 260—609** **4 Claims**

A group of 2,2,2-trifluoroethyl alkyl sulfides having the following formula:

$$R{-}S{-}CH_2CF_3$$

wherein R is a methyl, ethyl or hydroxy substituted methyl or ethyl. The compounds are prepared through the reaction of 2,2,2-trifluoroethyl-p-toluene sulfonate with an alkali metal substituted mercaptan wherein the alkyl portion of the mercaptan (R) is as previously defined. The compounds are useful in making solutions and dispersions of fluorinated materials.

### 3,476,812
### FLUORINE CONTAINING HALOGENATED DIALKYL SULFIDES

**Ross C. Terrell, Birmingham, England, assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York**

**No Drawing. Filed Dec. 12, 1966, Ser. No. 600,760**

**Int. Cl. C07c** *149/14, 149/10*

**U.S. Cl. 260—609** **9 Claims**

A group of methyl pentahalogenated ethyl sulfides having the following formula:

$$CH_3SCX_2CX_3$$

wherein X is at least one fluorine with the remainder one or more of fluorine, chlorine and bromine. The compounds are prepared through the reaction of methyl mercaptan with a fluorinated olefin or by the reaction of 2,2,2-trifluoroethyl-p-toluene sulfonate with an alkali metal substituted mercaptan, with either procedure being followed by further halogenation if desired. The compounds are useful in making solutions and dispersions of fluorinated materials.

### 3,476,813
### ANHYDRIDES OF DIPEROXY DICARBOXYLIC ACIDS

**James E. Guillet, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Continuation of application Ser. No. 509,234, Oct. 6, 1965, which is a division of application Ser. No. 244,592, Dec. 14, 1962. This application Mar. 8, 1967, Ser. No. 621,704**

**Int. Cl. C07c** *73/00, 73/04*

**U.S. Cl. 260—610** **6 Claims**

Anhydrides of diperoxy dicarboxylic acids and their use as polymerization catalysts.

### 3,476,814
### PHENYL ALKYL ETHER ANTIOXIDANTS

**Bernard R. Meltsner, Royal Oak, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia**

**No Drawing. Filed July 9, 1965, Ser. No. 470,891**

**Int. Cl. C07c** *43/20, 39/12;* **C08f** *45/58*

**U.S. Cl. 260—613** **4 Claims**

Mono- and di-(3,5-dihydrocarbyl-4-hydroxybenzyl)-phenyl alkyl ethers are useful either alone or in synergistic combination with a dialkyl thiodialkonate as antioxidants for a broad range of organic material.

### 3,476,815
### NONLINEAR POLYPHENYL ETHER SYNTHETIC LUBRICANTS

**Albert L. Williams, Hopewell Township, Mercer County, and Robert E. Kinnney, Lawrence Township, Mercer County, N.J., assignors to Mobil Oil Corporation, a corporation of New York**

**No Drawing. Continuation-in-part of application Ser. No. 517,812, Dec. 30, 1965. This application Nov. 13, 1967, Ser. No. 682,520**

**Int. Cl. C07c** *43/22*

**U.S. Cl. 260—613** **1 Claim**

A new class of nonlinear polyphenyl ether synthetic lubricants are prepared by reacting 2,4-diphenoxyphenyl bromide with phenolic compounds, by the Ullmann ether synthesis. These polyphenyl ethers have a branched configuration in which at least one internal phenyl group has more than two phenoxy group substituents. The nonlinear polyphenyl ethers display lubricant and stability characteristics comparable to those of the linear polyphenyl ethers.

### 3,476,816
### VINYLCYCLOHEXENOLS

**William J. Farrissey, Jr., Northford, Conn., assignor to Esso Research and Engineering Company**

**No Drawing. Continuation-in-part of application Ser. No. 186,858, Apr. 12, 1962. This application Sept. 23, 1966, Ser. No. 581,439**

**Int. Cl. C07c** *35/18*

**U.S. Cl. 260—617** **1 Claim**

In the oxidation of 4-vinylcyclohexene, a mixture of 4-hydroperoxides are formed which upon decomposition yield the novel alcohols 4-vinylcyclohexen-3-ol, 4-vinylcyclohexen-6-ol, and 3-vinylcyclohexen-6-ol. The secondarily unsaturated cyclic alcohols may be oxidized to the corresponding ketones which may be dehydrogenated to the corresponding vinyl or ethyl phenols.

### 3,476,817
### PROCESS FOR THE PREPARATION OF FLUORINATED ORGANIC COMPOUNDS VIA FLUORINATION IN VAPOR PHASE OF ALIPHATIC HYDROCARBONS

**Martino Vecchio, Luciano Lodi, Vittorio Fattore, and Italo Cammarata, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy**

**Filed Aug. 9, 1966, Ser. No. 571,218**

**Claims priority, application Italy, Sept. 14, 1965, 20,481/65**

**Int. Cl. C07c** *17/10, 19/08, 19/04*

**U.S. Cl. 260—653.7** **7 Claims**

A process for the production of chlorofluorinated aliphatic hydrocarbons, comprising passing a stream of an aliphatic hydrocarbon containing up to two carbon atoms, chlorine, hydrogen fluoride, oxygen, and at least one halogenated hydrocarbon recycled from the initial products of reaction, the said oxygen being present in molar quantities ranging from between 0.05 percent and 10 percent with respect to the moles of reactant aliphatic hydrocarbon, through a reaction zone over a chlorofluorination catalyst at a temperature of from 250° C. to 700° C., a pressure of from 1 to 15 atmospheres and for a contact time of from .1 to 30 seconds.

### ERRATUM

For Class 260—656 see:
Patent No. 3,476,955

### 3,476,818
### METHOD OF PREPARING CYCLOHEXANE FROM TOLUENE

**Dorrance P. Bunn, Jr., Edward F. Janes, and Dale Williams, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware**

**Filed July 17, 1967, Ser. No. 653,952**

**Int. Cl. C07c** *5/10*

**U.S. Cl. 260—667** **6 Claims**

This invention and this disclosure are directed to a method of producing cyclohexane from toluene. More specifically, this invention and this disclosure are directed to a method of preparing cyclohexane from a toluene rich feed by first preparing benzene by a dealkylation procedure and thence hydrogenating the dealkylation effluent employing a suitable hydrogenation catalyst. A particular feature of the invention revolves about utilizing a common hydrogen supply or loop for the dealkylation and hydrogenation sections.

### 3,476,819

### 1,5-DICHLORO-2,2,3,3,4,4-HEXAFLUOROPENTANE

**Floyd D. Trischler, San Diego, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California**

**No Drawing. Filed June 3, 1966, Ser. No. 554,957**

**Int. Cl. C07c** *19/08, 17/16*

**U.S. Cl. 260—653** **1 Claim**

This patent described the novel compounds of the formula:

$$Cl-CH_2-\left(CF_2\right)_x-CH_2-Cl$$

wherein $x$ is an integer of from 1 to about 10. The patent also describes the preparation of the above compounds by reacting the corresponding diol with thionyl chloride, particularly in the presence of pyridine.

### 3,476,820

### PROCESS FOR PRODUCING CYCLODODECATRIENE-(1,5,9)

**Junji Furukawa, Kyoto, Hiroyuki Morikawa, Tatsuki-shi, Osaka, and Ryuzo Yamamoto, Toyonaka-shi, Osaka, Japan, assignors to Mitsubishi Petrochemical Co., Ltd., Chiyoda-ku, Tokyo, Japan**

**No Drawing. Filed Oct. 2, 1967, Ser. No. 672,013**

**Claims priority, application Japan, Oct. 14, 1966, 41/67,208**

**Int. Cl. C07c** *13/02, 3/06*

**U.S. Cl. 260—666** **2 Claims**

Process for producing cyclododecatriene-(1,5,9) by reacting butadiene in the presence of a catalyst consisting of polyalkyltitanate and dialkylaluminium monochloride.

### 3,476,821

### DISPROPORTIONATION OF ALKYL AROMATICS WITH DECATIONIZED MORDENITE CONTAINING A SULFIDED METAL

**John T. Brandenburg, Hopewell Junction, John M. Crone, Jr., Fishkill, and Robert M. Suggitt, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Feb. 29, 1968, Ser. No. 709,189**

**Int. Cl. C07c** *3/58*

**U.S. Cl. 260—672** **18 Claims**

Alkylaromatics are disproportionated in the presence of a decationized mordenite having a silica to alumina mole ratio of between about 10:1 and about 100:1 preferably between about 20:1 and about 60:1 and containing a sulfided Group VIII metal.

### 3,476,822

### SEPARATION PROCESS

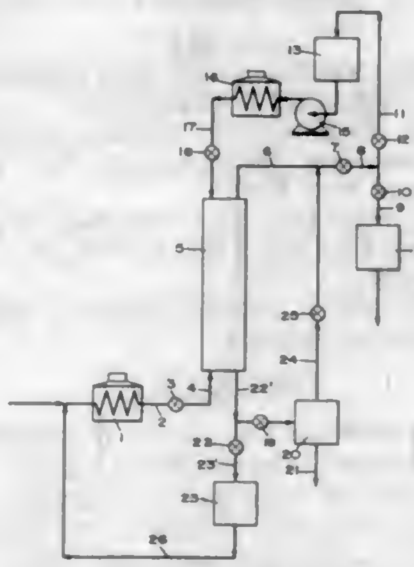
**Jerry L. Robertson, Millburn, and William R. Epperly, New Providence, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**

**Filed July 28, 1964, Ser. No. 385,731**

**Int. Cl. C07c** *7/12*

**U.S. Cl. 260—674** **16 Claims**

An adsorption process comprising two adsorption and two desorption steps. In the first adsorption step, high purity product is obtained. In the second adsorption step, product of a lower purity is obtained. The product from the second step is preferably used to displace the displacing agent. In the first desorption step, a displacing agent is used to displace the adsorbed material. In the second desorption step, solvent or the product from the second adsorption step is used to displace the displacing agent from the adsorption bed. Maximum displacing agent efficiency is obtained by using one "bed load" of displacing agent in the first desorption step.



### 3,476,823

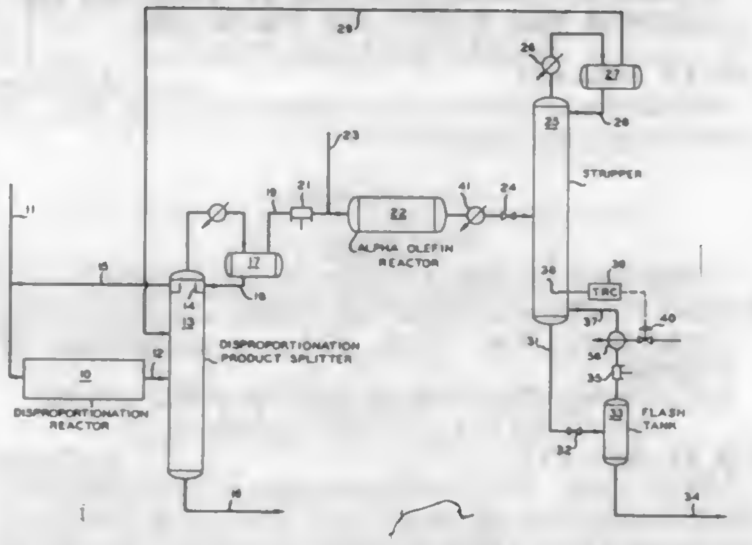
### SEPARATION OF PRODUCTS OF ETHYLENE POLYMERIZATION

**Lowell T. Price, Bartlesville, Okla., John J. Moon, Antwerp, Belgium, and Charles M. Stewart, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**Filed Feb. 3, 1966, Ser. No. 524,709**

**Int. Cl. B01d** *3/06;* **C07c** *3/10*

**US. Cl. 260—683.15** **5 Claims**


29
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ALPHA OLEFIN REACTOR
STRIPPER
DISPROPORTIONATION PRODUCT SPLITTER
DISPROPORTIONATION REACTOR
FLASH TANK
11
12
10
32
34

A stream containing ethylene, butylenes, higher olefins and aluminum alkyls is separated by low temperature distillation with the bottoms liquid from the distillation zone being flashed and the flashed vapor compressed and returned to the distillation zone as stripping vapor. The process is applicable to the separation of an ethylene polymerization effluent.

### 3,476,824

### PREPARATION OF ETHYLENICALLY UNSATURATED HYDROCARBONS WITH LOW ACETYLENIC CONTENT

**Marvin Z. Woskow, Houston, Tex., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware**

**No Drawing. Filed Sept. 20, 1966, Ser. No. 580,578**

**Int. Cl. C07c** *5/18;* **C07b** *3/00*

**U.S. Cl. 260—680** **9 Claims**

Method for dehydrogenation of hydrocarbon compounds to form ethylenically unsaturated hydrocarbons of low acetylenic content characterized by contacting the hydrocarbon in a first zone with oxygen and specified iron containing catalysts at a temperature of at least 600° F., and then feeding the reaction product from this first zone at a temperature of at least 800° F. into a second zone containing an alkalized iron oxide catalyst to produce the ethylenically unsaturated hydrocarbon product of low acetylenic content.

### 3,476,825

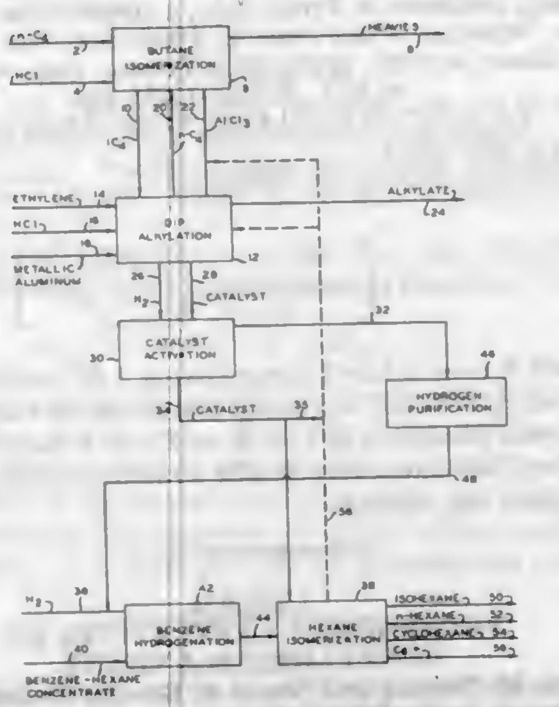
### FORMATION AND REGENERATION OF CATALYST IN AN ALKYLATION AND ISOMERIZATION PROCESS

**Thomas Hutson, Jr., and Cecil O. Carter, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**Filed Mar. 3, 1967, Ser. No. 620,508**

**Int. Cl. C07c** *3/54, 9/12*

**U.S. Cl. 260—683.53** **7 Claims**



An alkylation process wherein $AlCl_3$ catalyst is formed in situ, excess catalyst is used in a hydrocarbon isomerization process, the isomerized hydrocarbon is used in the alkylation process, and spent catalyst from the process is regenerated with the use of hydrogen formed in situ in the alkylation process.

### 3,476,826

### ORGANO-SILANE MODIFIED POLYSULFIDE POLYMERS AS ADHESIVE ADDITIVES OR PRIMERS FOR HIGH RANK POLYSULFIDE BASED ADHESIVE COMPOSITIONS

**Edward G. Millen, Princeton, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware**

**No Drawing. Filed May 23, 1966, Ser. No. 551,960**

**Int. Cl. C08g** *43/02, 47/10*

**U.S. Cl. 260—824** **18 Claims**

Polysulfide polymers having pendant organo-silane radicals containing hydrolyzable groups are effective as adhesion additives or primers for high rank polysulfide polymer compositions used as sealants or bonding agents on various substrates such as glass and aluminum.

### 3,476,827

### COATING COMPOSITIONS COMPRISING POLYSILICIC ACID, SELECTED ORGANIC POLYMERS, AND SELECTED SILICONES

**Eugene Herman Engelhardt, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed June 15, 1965, Ser. No. 464,184**

**Int. Cl. C08g** *17/10*

**U.S. Cl. 260—825** **9 Claims**

Described and claimed are scratch-resistant coating compositions for plastics comprising, in a polar solvent system, about 2–25% by weight of polysilicic acid calculated as $SiO_2$, at least one hydroxyl-containing polymer or polyamide, and about 0.05–5% by weight of polysilicic acid and polymer, of at least one block copolymer of lower alkylene oxides and a lower dialkylsiloxane.

### 3,476,828

### PREPARATION OF A MODIFIED AMINOTRIAZINIC RESIN AND ITS MIXTURES

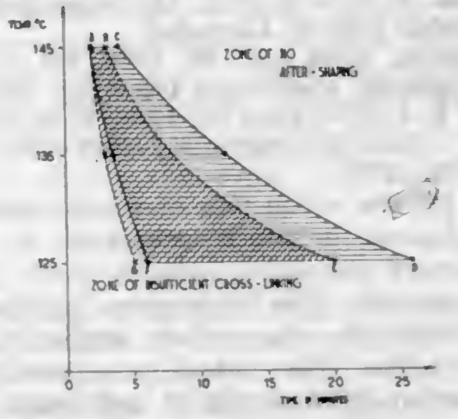
**Giovanni Rebaudo, Castellanza, Varese, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy**

**Filed June 23, 1966, Ser. No. 559,814**

**Claims priority, application Italy, June 24, 1965, 14,073/65**

**Int. Cl. C08g** *9/30, 37/32*

**U.S. Cl. 260—849** **4 Claims**



Described is a process for preparing an amino-triazinic resin modified with trialkanolamines. The process comprises precondensing the trialkanolamine with paraformaldehyde in a substantially anhydrous medium and reacting this precondensate with an amino-triazine. The modified amino-triazinic resin is suitable for production of laminates.

### 3,476,829

### HIGH IMPACT POLYSTYRENE COMPRISING A CROSS-LINKED BLEND OF POLYSTYRENE, A DIENE RUBBER AND A SOLUTION POLYMERIZED BLOCK COPOLYMER

**Jerry T. Gruver and Clifford W. Childers, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed Jan. 5, 1966, Ser. No. 518,783**

**Int. Cl. C08f** *33/02*

**U.S. Cl. 260—876** **7 Claims**

A high impact polystyrene composition is provided comprising polystyrene, a rubbery conjugated diene homopolymer and/or copolymer, from 0.5 to 25 weight percent of a solution polymerized block copolymer, said block copolymer having from 50 to 98 weight percent monovinyl substituted aromatic compound, and a peroxy-containing material. The separately-prepared components are blended and then cross-linked by heating to decompose the peroxy-containing material.

### 3,476,830

### PRODUCTION OF STEREO BLOCK BUTADIENE POLYMER

**Herbert Naarmann, Ludwigshafen (Rhine), and Ernst-Guenther Kastning, Assenheim, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**

**No Drawing. Filed May 3, 1966, Ser. No. 547,158**

**Claims priority. application Germany, May 15, 1965, B 81,948**

**Int. Cl. C08d** *3/08, 1/14*

**U.S. Cl. 260—879** **4 Claims**

A process for the production of stereo block butadiene polymers in which a solution of unbranched and sterically unitary 1,4-trans-polybutadiene having a K-value of 20 to 80 is reacted with a solution of 1,4-cis-polybutadiene having a K-value of 20 to 80, both solutions containing active catalyst until the K-value of the polymer is 90 to 120. The process produces elastomeric polybutadienes having superior properties to polybutadiene prepared by conventional methods. The strength of the new polybutadienes in the unloaded condition after vulcanization is greater than conventional polybutadienes. Moreover, the new polybutadienes have an excellent capacity for absorbing oil, good rolling behavior, and good miscibility with other rubbers and/or fillers.

### 3,476,831
### PRODUCTION OF UNSATURATED ISOBUTYLENE GRAFT COPOLYMERS

**Guenther Daumiller, Ziegelhausen, Ernst-Guenther Kastning, Assenheim, and Herbert Naarmann, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**
**No Drawing. Filed Apr. 28, 1966, Ser. No. 545,886**
**Claims priority, application Germany, May 8, 1965, B 81,827; June 26, 1965, B 82,572**
**Int. Cl. C08d** *1/30;* **C08f** *1/72*
**U.S. Cl. 260—879** **5 Claims**

Process for the production of unsaturated isobutylene graft copolymers, in which isobutylene is grafted onto diene polymers containing halogen atoms, using Lewis acids as catalysts. The copolymers can be vulcanized without difficulty because of their relatively high content of double bonds. The vulcanizates have high tensile strengths and require the use of only minor amounts of stabilizer.

### 3,476,832
### BLENDS COMPRISING OXYMETHYLENE POLYMERS AND RUBBERY POLYMERS

**Ruth Pritchard, Summit, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Aug. 31, 1966, Ser. No. 576,229**
**Int. Cl. C08g** *37/04*
**U.S. Cl. 260—887** **12 Claims**

Oxymethylene polymer compositions with improved impact resistance and superior flex resistance are prepared by incorporating into the polymers a rubbery polymeric material. The rubbery polymeric material is one in which the repeating units have nitrile or carboxylic ester groups depending from the main polymer chain. Particular utility for these products is found in injection molded articles.

### 3,476,833
### S-(2-AMINOETHYL)DITHIOPHOSPHATES AND PROCESS FOR THE PREPARATION THEREOF

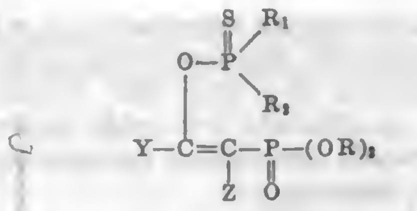
**Stanley J. Brois, Matawan, N.J., assignor to Esso Research and Engineering Company**
**No Drawing. Filed May 2, 1966, Ser. No. 546,543**
**Int. Cl. C07f** *9/08, 9/16*
**U.S. Cl. 260—925** **6 Claims**

S-(2-aminoethyl)dithiophosphates are prepared in a suitable solvent at low temperatures by reacting an aziridine with a dithiophosphoric acid, e.g., a dialkyl dithiophosphoric acid. The resulting products have utility as pesticides, particularly as insecticides and nematocides.

### 3,476,834
### β-PHOSPHONYLVINYL PHOSPHATES

**Bernard Miller, Princeton, and Howard Margulies, Princeton Junction, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine**
**No Drawing. Filed Feb. 2, 1966, Ser. No. 524,457**
**Int. Cl. C07f** *9/40, 9/24, 9/16*
**U.S. Cl. 260—931** **6 Claims**

There is provided an insecticidal compound of the formula:

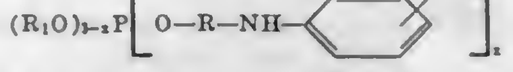


wherein R is (lower)alkyl or allyl; $R_1$ and $R_2$ are each a (lower)alkoxy or a -N(di(lower)alkyl) substituent; Y is methyl or phenyl; and Z represents hydrogen or (lower)alkyl, said compound being prepared by reacting a phosphorochloridothioate and β-ketopropylphosphonate.

### 3,476,835
### MONO-, DI- OR TRI-PHOSPHITES OF CHLOROPHENYL AMINO ALCOHOLS

**Ghislain Schwachhofer, Ecully, and Jacques Fritz, Lyon, France, assignors to Progil S.A., a corporation of France**
**No Drawing. Filed June 3, 1966, Ser. No. 554,960**
**Claims priority, application France, June 4, 1965, 46,077, Patent 1,455,144**
**Int. Cl. C07f** *9/12;* **C07c** *91/06;* **C08k** *1/60*
**U.S. Cl. 260—944** **5 Claims**

Phosphites having the formula:



wherein R is an alkenyl group having 2 to 7 carbon atoms; $R_1$ is selected from the group consisting of alkyl, chloroalkyl, and phenyl; *n* is 1 to 5; and *x* is a number greater than zero not exceeding 3. The compounds are fireproofing agents for plastics.

### 3,476,836
### PHOSPHORUS DERIVATIVES OF BENZYLIDENE ANILINE

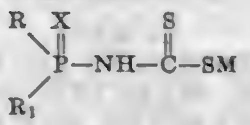
**Thomas M. Melton and David A. Brown, Richmond, Va., assignors to Mobil Oil Corporation, New York, N.Y., a corporation of New York**
**No Drawing. Filed June 8, 1966, Ser. No. 555,962**
**Int. Cl. C07f** *9/40;* **A01n** *9/36*
**U.S. Cl. 260—944** **7 Claims**

The disclosure is concerned with anilsubstituted aryl phosphorus esters inclusive of N-[4-methylpropylthiophosphinothioyloxy-3-methoxy benzylidene] aniline, and their use as insecticides.

### 3,476,837
### ALKALI METAL SALTS OF PHOSPHORUS DITHIOCARBAMATES

**Roger Williams Addor, Pennington, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine**
**No Drawing. Filed Mar. 1, 1967, Ser. No. 619,606**
**Int. Cl. C07f** *9/24, 9/36;* **A01n** *9/36*
**U.S. Cl. 260—959** **8 Claims**

This invention relate to novel phosphinyl- and phosphinothioyldithiocarbamates and to methods for their preparation. More particularly, it relates to novel compounds of the formula:



$$\mathrm{R(R_1)P(=X)-NH-C(=S)-SM}$$

wherein R and $R_1$ are each (lower)alkyl, (lower)alkoxy or phenyl; X is an oxygen or sulfur atom; and M is an alkali metal, such as sodium, potassium or lithium, said compounds having utility as intermediates in the synthesis of phosphorus compounds exhibiting insecticidal activity.

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### 3,476,838
### DI(2,6-DIISOPROPYLPHENYL) MONO HALO PHOSPHITE OR (THIO) PHOSPHATE

**George G. Ecke, Akron, Ohio, and Alfred J. Kolka, O'Hara Township, Pittsburgh, Pa., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia**
**No Drawing. Continuation of application Ser. No. 778,063, Dec. 4, 1958, now Patent No. 3,271,314, dated Sept. 6, 1966. This application Dec. 13, 1965, Ser. No. 513,572**
**Int. Cl. C07f** *9/20, 9/14;* **A01n** *9/36*
**U.S. Cl. 260—960** **3 Claims**

Reaction of phenol with propylene in the presence of an aluminum phenoxide yields 2,6-diisopropylphenol. It is a useful antioxidant. It reacts with phosphorus trihalides or phosphorus oxy or thio halides to give the corresponding di(2,6-diisopropylphenyl) monohalo phosphite or phosphate. These compounds are useful as pesticides and as intermediates for the preparation of mixed phosphorus esters.

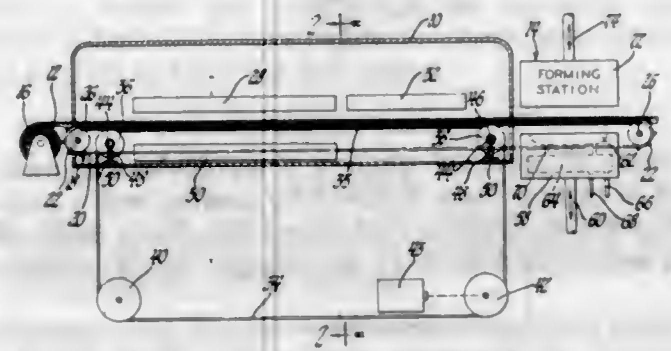
### 3,476,839
### PROCESS OF PRODUCING MONO- OR DIALKYL PHOSPHITES OR MIXTURES THEREOF

**Herbert Jenkner, Cologne-Deutz, Germany, assignor to Chemische Fabrik Kalk G.m.b.H., Cologne-Kalk, Germany**
**No Drawing. Filed Dec. 2, 1966, Ser. No. 598,623**
**Claims priority, application Germany, Dec. 11, 1965, C 37,648**
**Int. Cl. C07f** *9/38, 9/08, 9/02*
**U.S. Cl. 260—979** **4 Claims**

Mono- or dialkyl phosphites are produced by reacting alkyl halides, particularly, alkyl bromides and iodides, with phosphorous acid in contact with a quantity of an amine which is equimolar with respect to the hydrogen halide produced. The quantity of alkyl halide employed ranges from 1 to 2 mols per mol of phosphorous acid.

### 3,476,840
### METHOD AND APPARATUS FOR MOLDING ARTICLES FROM THERMOPLASTIC SHEET MATERIALS

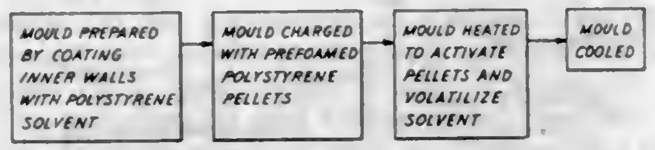
**Edmund J. Glassford, Livonia, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Aug. 4, 1967, Ser. No. 658,542**
**Int. Cl. B29c** *3/04*
**U.S. Cl. 264—25** **6 Claims**



Synthetic resin shapes are molded from a continuous sheet of thermoplastic synthetic resin material by feeding a continuous sheet of the resin into a furnace in which the sheet is heat softened into a pliable, moldable state and is incidentally caused to sag, and supporting the sagging portion of the sheet by means of a narrow metal band traveling beneath the sheet in the same direction and at the same rate as the sheet. The metal band is maintained at a predetermined temperature whereby the physical contact between the softened sheet and the supporting band does not mar or discolor the surface of the sheet. The softened sheet is fed directly into a molding or forming means and cooled to form molded articles.

### 3,476,841
### PROCESS FOR PRODUCING A FOAMED POLYSTYRENE PRODUCT HAVING A HARD SKIN

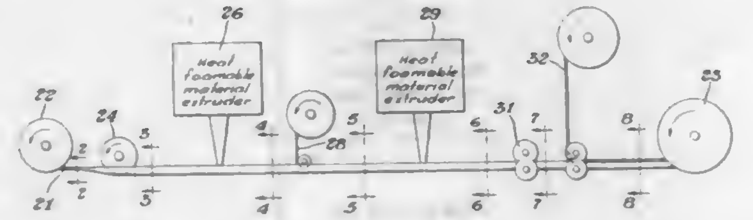
**Herbert F. Bienert, 7 Balmoral St., Bramalea, Ontario, Canada**
**Filed Sept. 6, 1966, Ser. No. 577,182**
**Claims priority, application Great Britain, Sept. 9, 1965, 38,641/65**
**Int. Cl. B29c** *5/00*
**U.S. Cl. 264—45** **13 Claims**


MOULD PREPARED BY COATING INNER WALLS WITH POLYSTYRENE SOLVENT
MOULD CHARGED WITH PREFOAMED POLYSTYRENE PELLETS
MOULD HEATED TO ACTIVATE PELLETS AND VOLATILIZE SOLVENT
MOULD COOLED

A method of producing a foamed polystyrene product having a hard skin, using prefoamed polystyrene pellets, in which a solvent of polystyrene, which is volatile at the activating temperature of the polystyrene pellets, is introduced onto the inner surface of a mould. The mould, filled with the pellets, is then heated to activate the pellets and melt those adjacent the mould walls, after which the mould is cooled.

### 3,476,842
### COMPOSITION FOR SEALING JOINTS AND METHOD OF MAKING SAME

**William C. Renwick, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan**
**Filed Aug. 10, 1966, Ser. No. 571,487**
**Int. Cl. B29c** *27/00;* **B29d** *27/00*
**U.S. Cl. 264—47** **1 Claim**


26
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Heat foamable material extruder
Heat foamable material extruder
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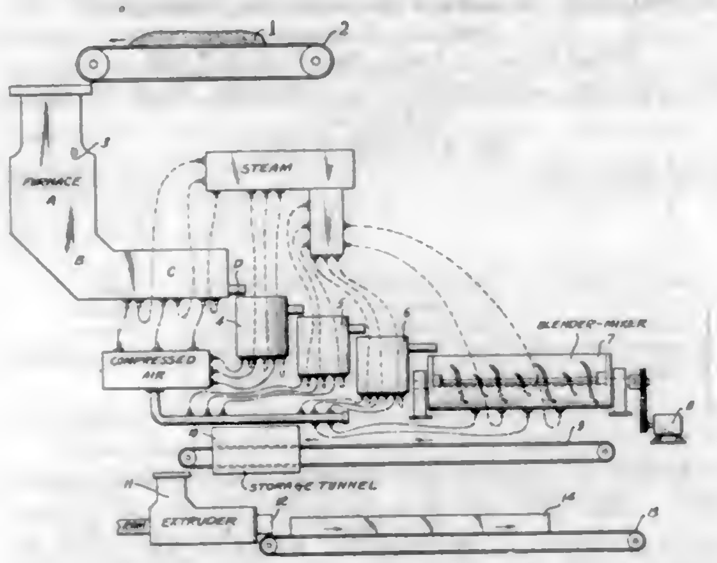
There is disclosed a composite for sealing joints, particularly building joints, and a method of making such composite. A flat tape is formed into a U-shape, and an uncured elastomer with a blowing agent is extruded into the tape. The tape is placed into the joint to be sealed, and heat is applied to activate the blowing agent causing expansion of the elastomer to fill the joint. An electrical resistance element can be included in the elastomer for applying heat thereto.

### 3,476,843
### PREPARATION OF LIGHTWEIGHT ROCK PRODUCTS

**Lee J. Duvall, 1855 Trevilian Way, Louisville, Ky. 40205**
**Filed Mar. 23, 1967, Ser. No. 625,338**
**Int. Cl. B29b** *3/02, 5/04*
**U.S. Cl. 264—43** **13 Claims**

Process for conversion of natural rock aggregate without the use of binders into shaped monolithic rock products suitable for construction purposes or the like, comprising heating the natural rock material to a temperature well above its melting point, subjecting the molten rock to controlled temperature and flow conditions until it has reached a predetermined plastic consistency and then forming the mass into a desired monolithic shape. Gases may be introduced into the molten rock while it is being subjected to said controlled temperature and flow conditions to provide a cellular product and/or additives such as coloring agents, streaking agents, unfused particles and



the like may be added and mixed into the molten mass to form cellular or non-cellular monolithic products of enhanced value.

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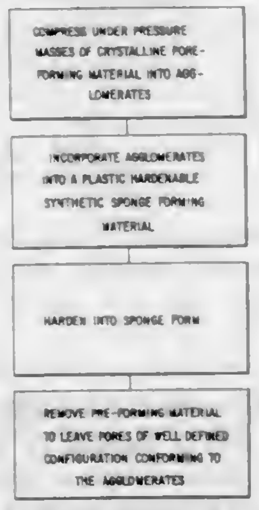
### 3,476,844
## PROCESS FOR PRODUCING ARTIFICIAL SPONGES

**Pierre Villain, Beauvais, France, assignor to Novacel S.A., Paris, France, a corporation of France**
**Filed Dec. 20, 1965, Ser. No. 515,175**
**Int. Cl. B29d** *27/06*
**U.S. Cl. 264—49** **8 Claims**


COMPRESS UNDER PRESSURE MASSES OF CRYSTALLINE PORE-FORMING MATERIAL INTO AGGLOMERATES
INCORPORATE AGGLOMERATES INTO A PLASTIC HARDENABLE SYNTHETIC SPONGE FORMING MATERIAL
HARDEN INTO SPONGE FORM
REMOVE PRE-FORMING MATERIAL TO LEAVE PORES OF WELL DEFINED CONFIGURATION CONFORMING TO THE AGGLOMERATES

A method of producing an artificial sponge containing pores of approximately the same dimensions as the pores of natural sponge, said artificial sponge having improved wiping qualities, which process comprises compressing masses of soluble crystalline pore-forming material to agglomerate the same and incorporating such agglomerates in a plastic hardenable synthetic sponge forming material, e.g., regenerated cellulose, with subsequent removal of the agglomerate by fusion or washing to leave pores of well-defined configuration.

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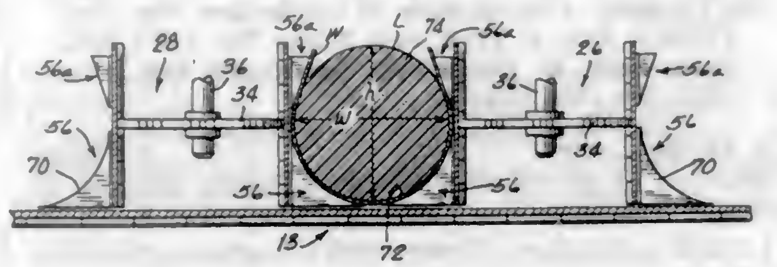
### 3,476,845
## MANUFACTURE OF EXPANDED CELLULAR PRODUCTS

**Fred Buff, 59 Wyoming Road, Paramus, N.J. 07652; Marcus French, 160 S. Church St., Hazelton, Pa. 18201; and Warren Pollock, Orchard Lane, Conyngham, Pa. 18219**
**Original application Oct. 2, 1964, Ser. No. 401,190, now Patent No. 3,281,894, dated Nov. 1, 1966. Divided and this application Nov. 15, 1965, Ser. No. 525,782**
**Int. Cl. B29d** *27/04;* **B29h** *7/20*
**U.S. Cl. 264—54** **9 Claims**

A process is described for the continuous preparation of cylindrical elements of flexible polyurethane foam in which the liquid reaction mixture is deposited on a casting surface which is moving longitudinally away



from the deposit station and is maintained in a cylindrical open top configuration during the foam rise period while the foam assumes the desired shape.

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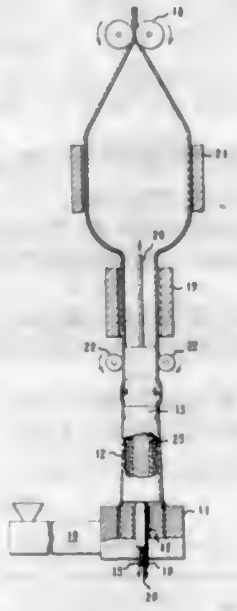
### 3,476,846
## PROCESS AND APPARATUS FOR EXTRUDING POLYOLEFINS

**Donald Thomas Bottorf and Edward Joseph Moore, Tonawanda, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed July 17, 1967, Ser. No. 653,701**
**Int. Cl. B29d** *23/01;* **B29c** *17/07*
**U.S. Cl. 264—95** **6 Claims**



A process is provided wherein polypropylene is melt-extruded in tubular form followed by cooling with a cooling device having a surface of plated aluminum oxide of between about 2 and about 12 microinches (RMS) surface finish.

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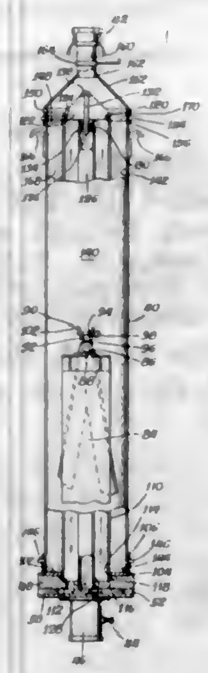
### 3,476,847
## METHOD FOR MAKING CERAMIC ARTICLES

**James Ross Drever, Philip D. Zimmerman, and Allan B. Brink, Crystal Lake, Ill., assignors to AMSTED Industries Incorporated, Chicago, Ill., a corporation of New Jersey**
**Continuation of application Ser. No. 584,561, Oct. 5, 1966. This application May 29, 1967, Ser. No. 646,143**
**Int. Cl. B28b** *21/06*
**U.S. Cl. 264—102** **3 Claims**

This invention relates to a method for making ceramic articles such as pouring tubes. Fine particles are mixed in a liquid to form a slurry. This slurry is subjected to a vacuum. The slurry is then pumped into a mold for the ceramic article. Heat is applied internally of the mold to set the slurry. The interior of the mold is then chilled until it contracts from the article. The article and external portion of the mold is lifted from around the internal por-



tion of the mold and is then heated to permit extraction of the formed article from the mold exterior portion.

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### 3,476,848
## PROCESS FOR FORMING BOARD STRUCTURES

**Herbert F. Schroeder, South Plainfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware**
**No Drawing. Filed May 22, 1967, Ser. No. 640,402**
**Int. Cl. B29c** *3/00*
**U.S. Cl. 264—120** **13 Claims**

A process for forming structural boards from lignocellulose fibers coated with a thermosetting resin binder initially formed into a felted mat. A first stage short duration hot compaction of the mat achieves resin curing at the surfaces only. Compacting pressure is then reduced and the mat allowed to expand to a greater thickness. Under a second hot compaction, the expanded mat is held to a desired thickness while curing the resin within the mat interior to form the final board.

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### 3,476,849
## PROCESS FOR THE PHASE SEPARATION SPINNING OF YARNS FROM FIBER-FORMING POLYPARAPHENYLENE OXIDES

**Johannes Aart Duiser, Leiden, and Johannes Cornelis Rieke, Delft, Netherlands, assignors to Algemene Kunstzijde Unie N.V., Arnhem, Netherlands, a corporation of the Netherlands**
**No Drawing. Filed Feb. 27, 1967, Ser. No. 619,028**
**Claims priority, application Netherlands, Mar. 3, 1966, 6602743**
**Int. Cl. D01f** *7/00;* **C08f** *45/22*
**U.S. Cl. 264—203** **3 Claims**

The present invention relates to a process for the spinning of yarns from polyphenylene ethers, and more particularly poly - 2,6 - dimethylparaphenylene ether, by extruding a liquid consisting of a mixture of the polymer and an auxiliary material through a spinning orifice into a medium in which the liquid is formed into a thread.

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### 3,476,850
## LOW ELONGATION SET SPANDEX FILAMENTS AND PROCESS FOR THE PREPARATION THEREOF

**Kanji Matsubayashi and Hiroyuji Segawa, Kurashiki-shi, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki-shi, Okayama-ken, Japan, a corporation of Japan**
**No Drawing. Filed Apr. 3, 1967, Ser. No. 627,667**
**Claims priority, application Japan, Apr. 5, 1966, 41/21,656**
**Int. Cl. D01f** *7/00;* **D02j** *1/22*
**U.S. Cl. 264—205** **4 Claims**

Process for the preparation of spandex filaments of temporarily lowered elongation characterized in that spun filaments of a polyurethane elastic polymer by dry spinning are subjected to a heat treatment to reduce the solvent content remaining therein to no more than 0.5% by weight, the obtained filaments being further subjected to drawing, heat setting, cooling and shrinking operations.

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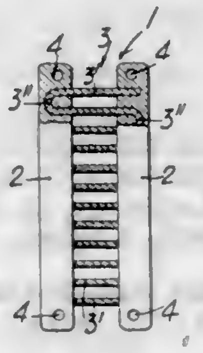
### 3,476,851
## METHOD FOR MAKING VIBRATION DAMPENING AND SHOCK ABSORBING SUPPORT

**Carlo Camossi, % Avv. Camillo Ravagli-Via Corridoni, 6, Milan, Italy**
**Filed Dec. 13, 1965, Ser. No. 513,406**
**Claims priority, application Italy, Dec. 21, 1964, 54,656; Jan. 14, 1965, 272; July 13, 1965, 6,832**
**Int. Cl. B32b** *15/06;* **B29f** *1/10*
**U.S. Cl. 264—229** **2 Claims**



A method for making vibration dampening and shock absorbing supports in which a fixture is provided for holding a wire cable taut in a zig-zag form so a clamp can be put on the cable whereupon the clamped cable can be removed from the fixture and blocks of synthetic resin molded on the exposed portions of the clamped cable.

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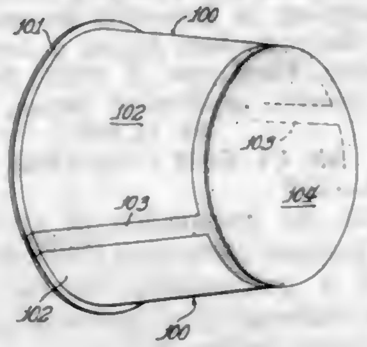
### 3,476,852
## METHOD OF MOLDING THERMOPLASTIC ARTICLES

**Robert Shattuck, Chicago, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**
**Continuation-in-part of application Ser. No. 272,372, Apr. 11, 1963. This application July 14, 1967, Ser. No. 660,547**
**Int. Cl. B29f** *1/10*
**U.S. Cl. 264—261** **14 Claims**

An injection molding method and apparatus wherein preformed plastics shapes are integrally welded together to form a finished article by means of injection molding. The preformed plastics shapes are placed within the mold cavity with small spaces existing between the edges of the preformed shapes. Molten plastic material is then injected into the spaces whereby the molten material causes the edges of the preform shapes to melt and thus form an integral weld or bond between the preforms. A variation of the above process exists whereby the preformed shapes are positioned with a mold core such that only a small portion extends therefrom. Similar plastic material is then injected into the mold cavity, which molten material causes a melting of the extending edges so as to cause an



integral weld or bond therebetween upon cooling of the molten material within the mold cavity.

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### 3,476,853
### SPRAYED OPAQUE BANDAGE COMPOSITION

**Bernard Jatul, North Caldwell, and Christopher Costello, Summit, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Apr. 13, 1965, Ser. No. 447,870**
**Int. Cl. A61f** *15/00;* **A61k** *27/00*
**U.S. Cl. 424—45** **1 Claim**

A sprayable composition for use as a dressing including a film-forming material, an opacifying material, at least one medicament, a solvent and a gaseous propellent.

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### 3,476,854
### ANTIFUNGAL RESINOUS DENTAL COMPOSITIONS AND ARTICLES

**Eugene J. Molnar, La Grange, Ill., assignor to Coe Laboratories, Incorporated, Chicago, Ill., a corporation of Illinois**
**No Drawing. Filed Aug. 8, 1966, Ser. No. 570,726**
**Int. Cl. A61k** *9/00;* **A01n** *9/00;* **C08f** *45/54*
**U.S. Cl. 424—78** **7 Claims**

1. In a plastic composition having resins selected from the class consisting of lower alkyl methacrylates, silicone resins, vinyl copolymers, and polyamide to form liners or tissue conditioners for dentures, the improvement wherein

an antifungal agent is dispersed in said resin, said antifungal agent being of the class of heavy metal salts of monocarboxylic fatty acids, up to medium chain length fatty acids, benzoic acid, benzyl benzoate, salicylic acid, and benzyl salicylate,

said antifungal agent being present in said resin in an amount effective to retard fungal growth on said composition, and,

said amount being at least about 1% by weight of the plastic composition.

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### 3,476,855
### STERILIZING AND ENHANCING ACTIVITY OF A FINELY DIVIDED CARTILAGE POWDER

**Leslie L. Balassa, Blooming Grove, N.Y. 10914**
**No Drawing. Original application Feb. 26, 1965, Ser. No. 435,693, now Patent No. 3,400,199, dated Sept. 3, 1968. Divided and this application Jan. 17, 1968, Ser. No. 698,426**
**Int. Cl. A61k** *17/00, 27/00*
**U.S. Cl. 424—95** **3 Claims**

This invention relates to methods for enhancing the wound-healing activity of a cartilage powder or restoring the same to a deactivated cartilage powder which comprises heating the said powder to a temperature between about 125° C. and 132° C. for a prolonged time. A heating period of from 3 to 10 hours has been found useful at the temperature conditions set forth above. The heating is conducted in the substantial absence of oxygen to achieve the desired result. Alternatively, alcohol sterilization may be employed with or without heating to enhance wound-healing activity.

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### 3,476,856
### PROCESS FOR PRODUCING THE SODIUM SALT OF NYSTATIN AND LEVORIN

**Valter Osvaldovich Kulbakh and Marija Pavlovna Karpenko, Leningrad, U.S.S.R., assignors to Leningradsky Nauchno-Issledoratelsky Institute Antibiotikov, Leningrad, U.S.S.R.**
**No Drawing. Filed May 5, 1964, Ser. No. 365,181**
**Int. Cl. C07g** *11/00;* **A61k** *21/00*
**U.S. Cl. 424—123** **8 Claims**

A process for producing the sodium salt of nystatin and levorin comprising potentiometrically titrating a solution of said antibiotics in an anhydrous alcoholic medium with an alcoholic solution of a sodium alcoholate to a pH of at most 10.2, filtering, then concentrating the filtrate and precipitating the sodium salt of the antibiotic by treatment with an anhydrous solvent. The precipitate is then washed and dried under reduced pressure.

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### 3,476,857
### ANTIBIOTICS RANCOMYCIN I, RANCOMYCIN II, THEIR 2,4-DINITROPHENYLHYDRAZONES, AND MICROBIOLOGICAL AND CHEMICAL PROCESSES FOR PREPARING THE SAME

**Alexander D. Argoudelis, Kalamazoo, and Thomas R. Pyke, Prairie Ronde Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware**
**Filed Dec. 7, 1966, Ser. No. 599,751**
**Int. Cl. A61k** *21/00;* **C12d** *9/22*
**U.S. Cl. 424—118** **13 Claims**

New antibiotic compounds rancomycin I and rancomycin II, their 2,4-dinitrophenylhydrazones, and microbiological and chemical processes for the production thereof. Compounds can be used to inhibit the growth of various gram-positive and gram-negative bacteria, for example, *S. aureus, B. subtilis, E. coli,* and *P. vulgaris.*

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### ERRATUM

For Class 424—164 see:
Patent No. 3,476,489

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### 3,476,858
### DIURETIC COMBINATIONS OF HYDROCHLOROTHIAZIDE AND ETHACRYNIC ACID

**Carl E. Nelson, Doylestown, John E. Baer, Ambler, and Elwood L. Foltz, Villanova, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**
**No Drawing. Continuation-in-part of application Ser. No. 342,218, Feb. 3, 1964. This application Dec. 7, 1966, Ser. No. 599,733**
**Int. Cl. A61k** *27/00*
**U.S. Cl. 424—246** **1 Claim**

Hydrochlorothiazide and ethacrynic acid are combined for coadministration to obtain a diuresis in excess of what can be accounted for by the activity of either one alone. For the hydrochlorothiazide may be substituted other similar benzothiadiazines. For the ethacrynic acid may be substituted other similar phenoxyacetic acids.

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### ERRATUM

For Class 424—300 see:
Patent No. 3,476,490

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### 3,476,859
### PEST CONTROL COMPOSITIONS AND METHOD

**Ralph I. Dorfman, Los Altos Hills, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama**
**No Drawing. Filed Oct. 27, 1966, Ser. No. 589,856**
**Int. Cl. A01n** *9/00*
**U.S. Cl. 424—317** **6 Claims**

The control of rodents and birds by administering an edible composition containing a pest management chemical selected from 1,2,3,4-tetrahydrophenanthrene-, 1,2,3,-4,9,10 - hexahydrophenanthrene- and 1,2,3,4,9,10,11,12-octahydrophenanthrene acids, alcohols and aldehydes and derivatives thereof to minimize or terminate the reproductive capabilities of said rodents or birds.

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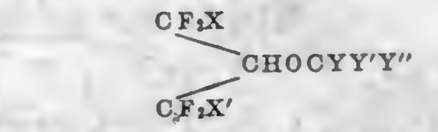
### 3,476,860
### HALOMETHYL FLUOROISOPROPYL ETHERS AS ANESTHETIC AGENTS

**Louise S. Croix, Summit, and Alex J. Szur, North Plainfield, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York**
**No Drawing. Filed Dec. 8, 1966, Ser. No. 600,014**
**Int. Cl. A61k** *13/00;* **C07c** *43/12*
**U.S. Cl. 424—342** **4 Claims**

This invention relates to certain novel halogenated derivatives of fluorinated isopropyl methyl ethers represented by the following formula:



$$(CF_2X)(CF_2X')CHOCYY'Y''$$

where X and X′ can be Cl or F, Y is seletced from the group consisting of F and Cl and Y′ and Y″ are selected from the group consisting of H, Cl and F. The compounds can be prepared by chlorinating and fluorinating the corresponding haloisopropyl methyl ethers. The compounds are useful as solvents and dispersants for fluorinated materials and the compounds $CF_3(CF_2Cl)CHOCH_2Cl$ and $(CF_3)_2CHOCH_2Cl$ exhibit anesthetic properties in mammals.

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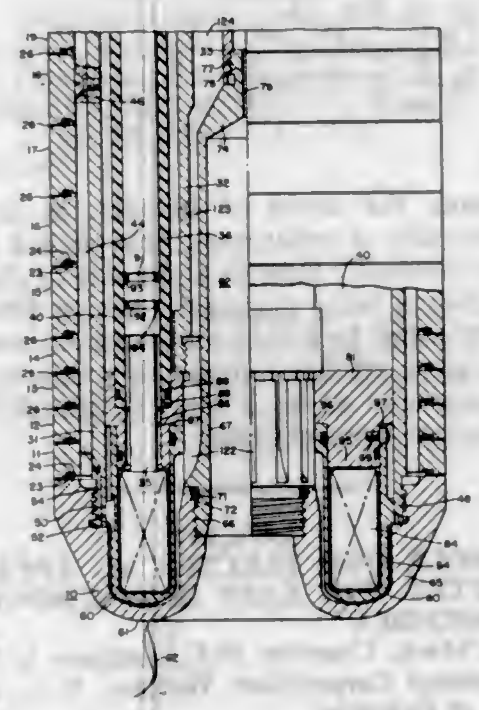
# ELECTRICAL

### 3,476,861
### INSULATING NONCONSUMABLE ARC ELECTRODE

**Charles B. Wolf, Irwin, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Dec. 17, 1968, Ser. No. 784,327**
**Int. Cl. H05b** *7/08*
**U.S. Cl. 13—18** **15 Claims**



An electrode in which fluid is brought through a supporting column to cool the electrode tip by passing the fluid through a passageway in the tip near the arcing surface, the fluid in route to the tip is caused to flow through an annular passageway existing between a tube of the supporting column and a segmented heat shield including a plurality of annular metal rings of similar diameter, electrically insulated from each other by rings of insulating material therebetween and electrically insulated from the supporting column, each of the rings having an annular groove therein and an O-ring disposed in the groove to provide a fluid tight seal between each ring and the adjoining rings on each side thereof, all of the rings being removable by unthreading the electrode tip from the supporting column and sliding the rings from the bottom end of the electrode. There are peripherally spaced bolts passing through a flange adjacent the upper most ring of the heat shield and secured to the tube of the supporting column and secured against axial movement thereon, the bolts exerting pressure on the rings of the heat shield maintaining the O-rings in fluid tight sealing engagement.

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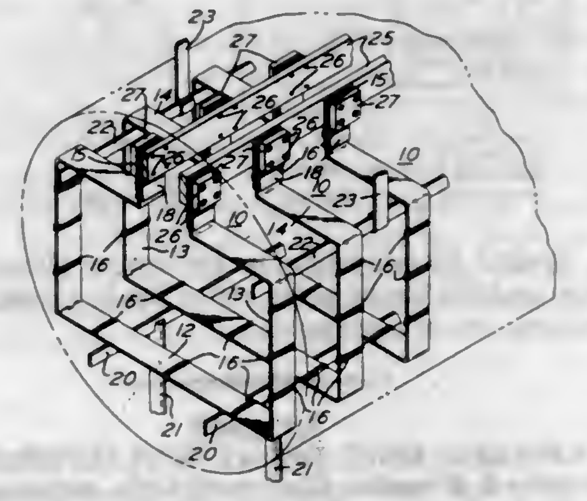
### 3,476,862
### ELECTRIC RESISTANCE HEATING ELEMENTS

**Edward N. Cyrway, Jr., Levittown, and William J. Metalsky, Elkins Park, Pa., assignors to Abar Corporation, Feasterville, Pa., a corporation of Pennsylvania**
**Filed May 16, 1968, Ser. No. 729,736**
**Int. Cl. H05b** *3/66, 3/10*
**U.S. Cl. 13—25** **10 Claims**



Resistance heating elements particularly suited for use in high temperature vacuum and other furnaces which comprise, for each element, a plurality of thin strips of tungsten metal in laminar arrangement, secured together with tantalum wire and having reinforced electrical contact points.

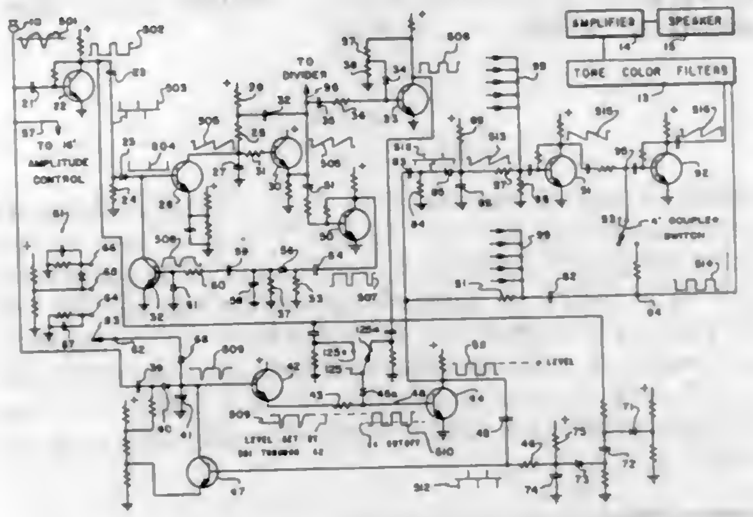
### 3,476,863
### CONVERSION OF TONAL CHARACTER OF AURAL SIGNALS

**Donald J. Campbell, Cincinnati, Ohio, assignor to Chicago Musical Instrument Co., Lincolnwood, Ill., a corporation of Delaware**

**Filed Oct. 7, 1965, Ser. No. 493,773**

**Int. Cl. G10h** *1/00;* **H03k** *5/01*

**U.S. Cl. 84—1.01** **30 Claims**



A system for converting an aural input signal of one tonal character to an aural output signal of a different tonal character, including a circuit for determining the fundamental frequency of the input signal, a symmetrical waveform signal generator responsive to the fundamental frequency, and an amplitude control circuit for adjusting each cycle of the symmetrical waveform signal in accordance with the peak value of the corresponding cycle of the aural input signal.

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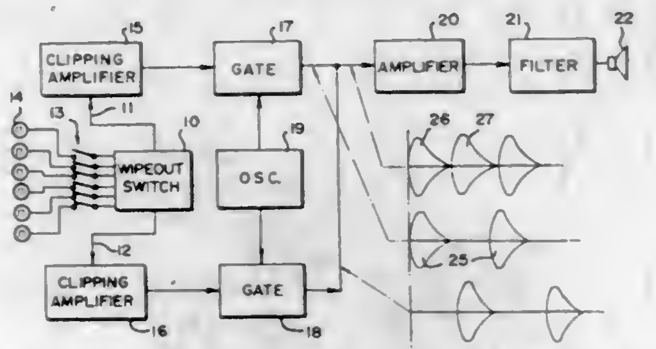
### 3,476,864
### ELECTRONIC ORGAN REITERATION SYSTEM UTILIZING A ZERO-CROSSING PREFERENCE CIRCUIT

**Walter Munch, Jr., Covington, Ky., and Dale M. Uetrecht, Cincinnati, Ohio, assignors to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio**

**Filed Mar. 9, 1966, Ser. No. 533,013**

**Int. Cl. G10f** *1/00;* **G10h** *1/02*

**U.S. Cl. 84—1.03** **13 Claims**



A system for sounding in reiterative alternation the highest and the lowest notes called for in playing a chord containing two or more notes.

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### 3,476,865
### VARIABLE TIME DELAY MULTIVIBRATORS

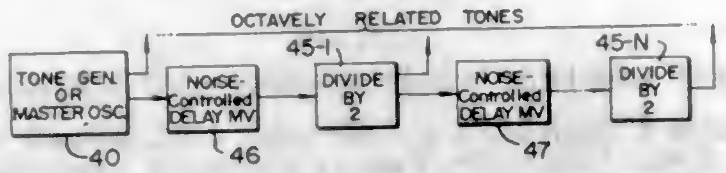
**Alexander B. Bereskin, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio**

**Filed Dec. 14, 1966, Ser. No. 601,790**

**Int. Cl. G10h** *3/00*

**U.S. Cl. 84—1.04** **4 Claims**

A pulse generator having a stable state and a quasi-stable state, undergoing a time delay between triggering to the quasi-stable state and return to the stable state which depends on the time constant established by selected circuit elements and on the variation in bias voltage on an active element of the generator. Random variation of the bias voltage produces random pulse durations equivalent to frequency perturbation, but maintains the average frequency of the output pulses the same as the frequency of incoming trigger pulses.



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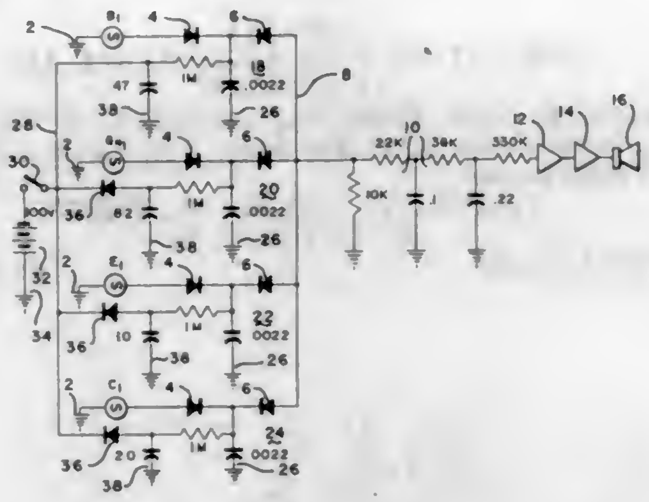
### 3,476,866
### LOW-PITCHED VOICES IN ELECTRONIC ORGANS

**Thomas W. Cunningham, Union Township, Clermont County, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio**

**Filed Aug. 11, 1965, Ser. No. 478,817**

**Int. Cl. G10h** *1/02, 5/06*

**U.S. Cl. 84—1.26** **20 Claims**



To produce the sound of thunder, in an electronic organ, a plurality of unharmonic, low pitched tone signals are gated individually through a plurality of direct-current actuable, gradual decay diode gates having different decay rates and activated by a common switch. In some applications the signals are heterodyned to create sum and difference frequencies of the original frequencies, thus adding complex low frequency beats.

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### 3,476,867
### HANDHOLE FOR ELECTRICAL APPARATUS ADAPTED FOR EASY KNOCKDOWN AND REASSEMBLY

**Jules A. Mack, Conover, N.C., assignor to Superior Continental Corporation, Hickory, N.C., a corporation of Delaware**

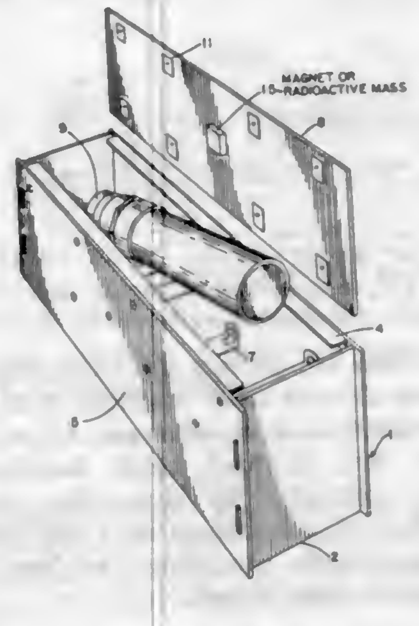
**Filed Apr. 22, 1968, Ser. No. 722,895**

**Int. Cl. H02g** *9/10*

**U.S. Cl. 174—37** **4 Claims**

Disclosed herein is a handhole, which is essentially a box adapted for containing electrical apparatus while both box and the apparatus are buried in the ground during service. The instant handhole is a weather resisting container adapted for ready assembly and disassembly by a sole workman, this knockdown feature being advantageous in that it facilitates shipment from place to place with a minimum of occupied volume. Making up the five-sided handhole are two end walls possessing tab-like protrusions adapted to be engagingly received by elongated apertures

in the longer leg of two L-shaped side walls and a top having an engaging means adapted to lock underneath the shorter leg of the L-shaped side wall. To give rigidity and structural strength to the entire combination, U-shaped spacer bars with an aperture therein are engaged underneath a head portion and on to a shank part of a stub, an integral part of the stub being fixedly attached to the longer legs of the side walls and in mirror-like juxtaposition in opposing side walls. In service, a weatherproof splice case having at least two insulated electrical conductors that are in electrical and mechanical connection therein, is placed on the spacer bars with the insulated electrical conductors being lead out an open bottom of the handhole.



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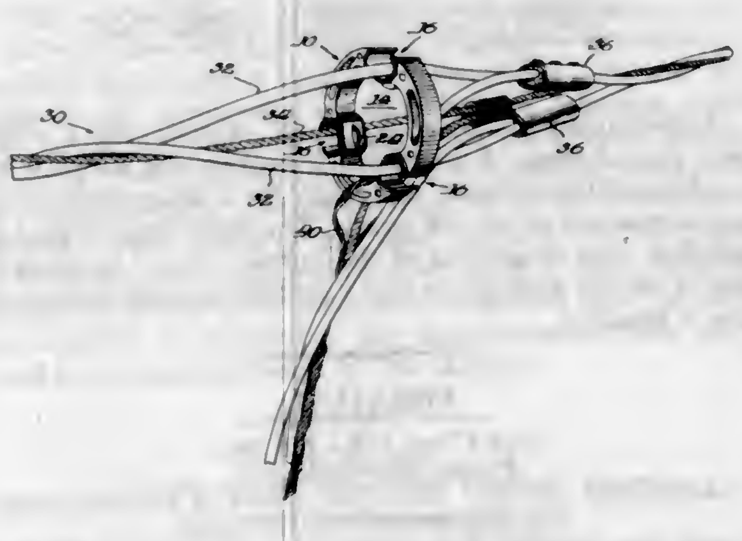
### 3,476,868
### CABLE SPREADER

**Harrison L. Williams, Euclid, and Robert A. Eucker, Brooklyn, Ohio, assignors to Preformed Line Products Company, Cleveland, Ohio, a corporation of Ohio**

**Filed Mar. 13, 1968, Ser. No. 712,807**

**Int. Cl. H02g** *7/12, 7/20*

**U.S. Cl. 174—43** **9 Claims**



A multiplex cable spreader is formed of a unitary, generally annular insulator body having a plurality of equidistant, peripheral C-shaped cable receptacles having openings directed radially outwardly. The openings are each adapted to receive one strand of cable. The receptacles each have opposite, concave side walls and preferably have a convex hump opposite the opening to urge the cable toward the side wall. The cable spreader is preferably symmetrical in design, and can be utilized without lashing the cable strands into the receptacles.

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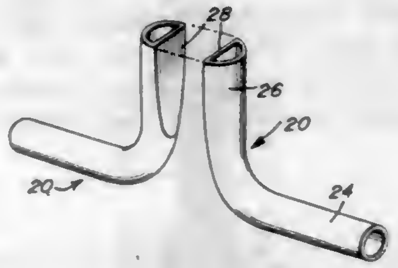
### 3,476,869
### CONDUIT SYSTEM

**Benjamin K. Hawkins, 315 Woodlawn Drive, Greenville, Miss. 38701**

**Filed Nov. 21, 1967, Ser. No. 684,732**

**Int. Cl. H02g** *3/04*

**U.S. Cl. 174—68** **6 Claims**



Conduit components cooperatively shaped so as to enable a juxtaposed positioning of portions thereof to achieve a common cylindrical shape corresponding in size to a conventional conduit tube for engagement of both conduit portions by a single conventional connector or coupling. The components will normally be in the nature of elbows whereby two divergent conventional conduits can be brought together and secured by a single conventional coupling or connector.

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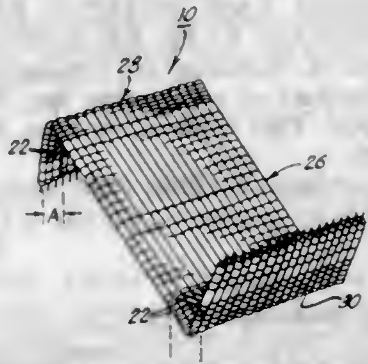
### 3,476,870
### RESILIENT FOLDABLE WOVEN ELECTRICAL CABLE AND METHOD

**Edgar A. Ross, Greenville, S.C., assignor to Southern Weaving Company, Greenville, S.C.**

**Filed Jan. 29, 1968, Ser. No. 701,337**

**Int. Cl. H01b** *7/06*

**U.S. Cl. 174—69** **11 Claims**



A woven cable comprising wires interwoven with threads and having several longitudinally spaced zones in which selected longitudinal threads are floated free of the cable and are shorter than the other longitudinal threads in the zone. The floated threads are made of materials with a higher rate of heat shrinkage than the remaining threads of the cable and are heated to shrink them and cause the cable to fold at each of the zones. The folds alternate in direction so that the cable is foldable in the general manner of an accordion. Each fold has the property of resisting undue flexing and fatigue breakage, and is capable of restoring itself to a folded condition so as to refold the cable after it has been unfolded.

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### 3,476,871
### LAMINATED ELECTRICAL BUS BAR

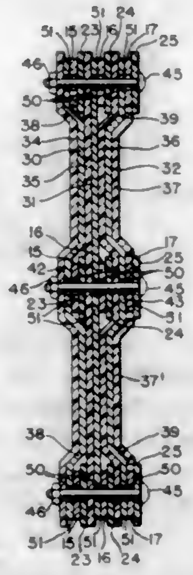
**Jack A. Erdle, 221 Georgian Court Road, Brighton, N.Y. 14610**

**Filed May 29, 1967, Ser. No. 641,868**

**Int. Cl. H02g** *15/08*

**U.S. Cl. 174—88** **4 Claims**

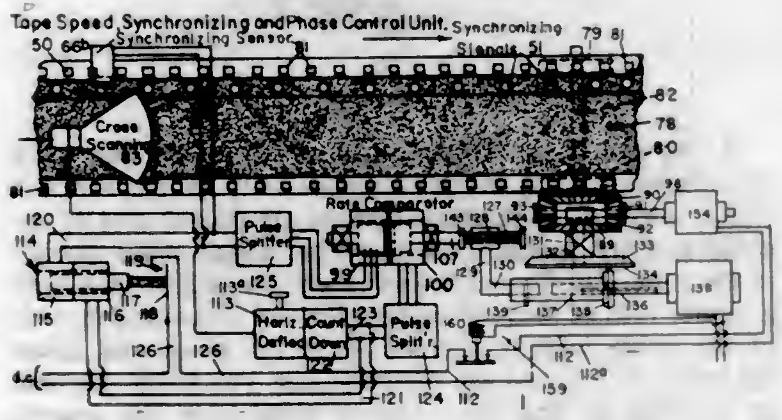
The superposed conductors in each of a plurality of laminated bus bars are offset from one another along the length of the bar, to provide a flared portion, which intermeshes with a like portion of another bar, and which is secured to the other bar by a stud which passes through registering openings in the meshed portions without engaging the conductors. One side only of each of the meshed ends of the conductors is free of insulation to form thereon a contact surface which is in electrical contact with a like surface on one of the adjacent conductors. The conducting portions of each bar are interleaved with conducting portions on another bar with insulation separating the conducting portions of one bar from the conducting portions of the other bar.



3,476,872

### SYNCHRONIZING AND PHASING BROADBAND CROSS-SCAN TAPE RECORDINGS

**Thomas A. Banning, Jr., Chicago, Ill.**
**Continuation-in-part of application Ser. No. 491,749, Sept. 30, 1965. This application Mar. 3, 1966, Ser. No. 540,440**
**Int. Cl. H04n** *5/76*
**U.S. Cl. 178—6.6** **23 Claims**

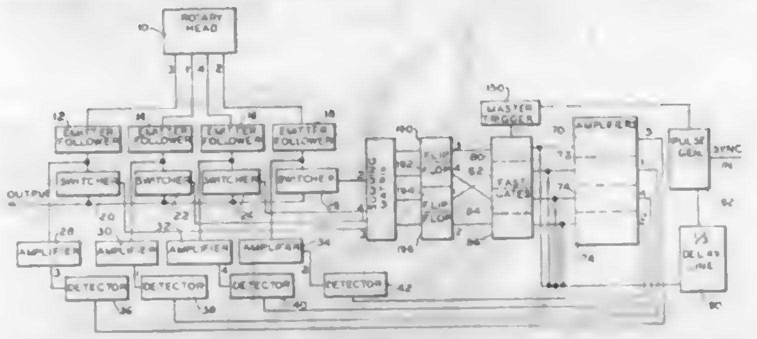


This case provides means to test and compare the rate of arrival of recorded cross-scans on the tape, with the rate of production of signals for producing horizontal deflections of the kinescope beam of the receiver. Also, for sensing the rate of arrival of recorded synchronizing signals on the tape, with the rate of production of the bursts which produce the resettings of the kinescope beam, and for comparing the instants of arrival of both such synchronizing records, with the instants of production of the resetting bursts. Provision is made for corrections of the rates of arrival of the cross-scans with the rate of production of the horizontal deflections; and for corrections of the nonsimultaneous arrival of the recorded synchronizing signals, and the production of the bursts.

3,476,873

### METHOD OF AND APPARATUS FOR REPRODUCING SIGNALS RECORDED ON MAGNETIC TAPE WITH HEAD SWITCHING MEANS

**Clarence L. Boice, San Jose, and Joseph Stevens Allen, Atherton, Calif., assignors to Allen Electronics, Inc., Palo Alto, Calif., a corporation of California**
**Filed Dec. 22, 1965, Ser. No. 515,650**
**Int. Cl. H04n** *5/78*
**U.S. Cl. 178—6.6** **8 Claims**

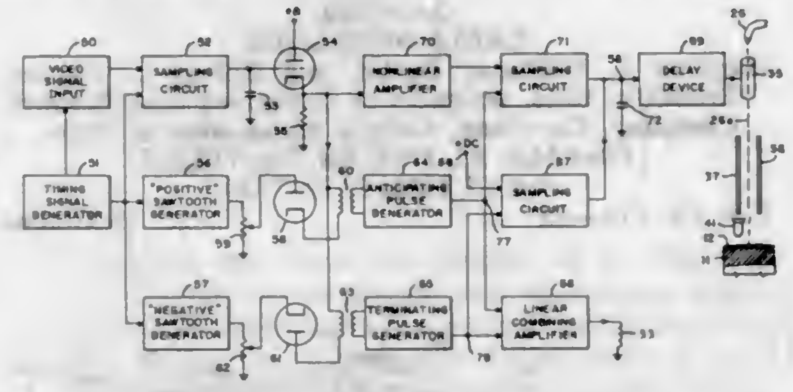


Disclosed herein are circuits for increasing the quality of video signals derived from magnetic tape by masking switching transients due to changes among the transducers of the tape playback head. Switching between transducers is controlled by generating timing pulses which assure that one transducer is in established contact with the tape before the preceding transducer is switched out of the reproduction circuit.

3,476,874

### CONTROLLED INK-JET COPY-REPRODUCING APPARATUS

**Arthur V. Loughren, 22 Broadlawn Ave., Great Neck, N.Y. 11024**
**Filed Nov. 8, 1966, Ser. No. 592,909**
**Int. Cl. H04n** *5/76*
**U.S. Cl. 178—6.6** **17 Claims**


VIDEO SIGNAL INPUT
SAMPLING CIRCUIT
NONLINEAR AMPLIFIER
SAMPLING CIRCUIT
DELAY DEVICE
TIMING SIGNAL GENERATOR
"POSITIVE" SAWTOOTH GENERATOR
ANTICIPATING PULSE GENERATOR
SAMPLING CIRCUIT
"NEGATIVE" SAWTOOTH GENERATOR
TERMINATING PULSE GENERATOR
LINEAR COMBINING AMPLIFIER
+DC

A controlled ink-jet recorder for reproducing a copy on a record sheet. A jet of ink is broken into droplets at a substantially constant frequency by a magnetostrictive arm connected to the ink nozzle. The video input signal is sampled. The magnitude of the sample is used to control size of the ink droplets so that a continuous tone reproduction is possible.

### ERRATUM

For Class 178—6.8 see:
Patent No. 3,476,197

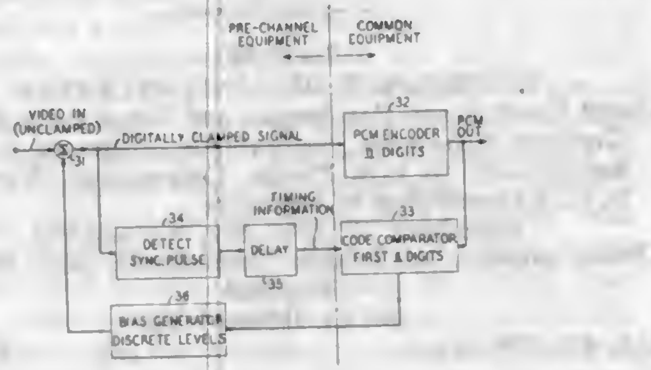
3,476,875

### DIGITAL CLAMPING OF PULSE CODE MODULATED TELEVISION SIGNALS

**John H. Davis, Old Bridge, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed Mar. 3, 1967, Ser. No. 620,390**
**Int. Cl. H04n** *3/16*
**U.S. Cl. 178—7.1** **7 Claims**

A slow drift of the baseline of a television signal about its nominal amplitude typically tends to cause distortion

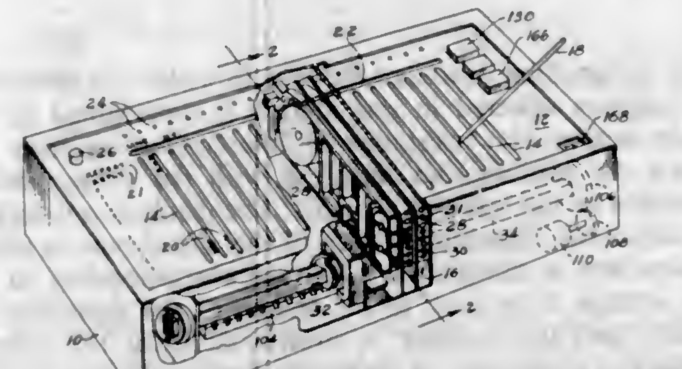
of the signal and affect the signal-to-noise ratio. The present apparatus uses at least part of the digital information available at the output of the PCM encoder to reinsert by means of a digital feedback loop the appropriate amount of direct current signal to substantially compensate for the aforementioned drift. The scheme permits time-sharing of the digital feedback clamping equipment if several television signals are being multiplexed processed by a common encoder.



3,476,876

### INFORMATION ENCODING AND TRANSMITTING APPARATUS

**Joseph C. Myrick, Gaithersburg, Md., assignor to Rixon Electronics, Inc., Silver Spring, Md., a corporation of Maryland**
**Filed Apr. 8, 1966, Ser. No. 541,381**
**Int. Cl. H04l** *15/18, 15/12, 15/24*
**U.S. Cl. 178—17** **8 Claims**



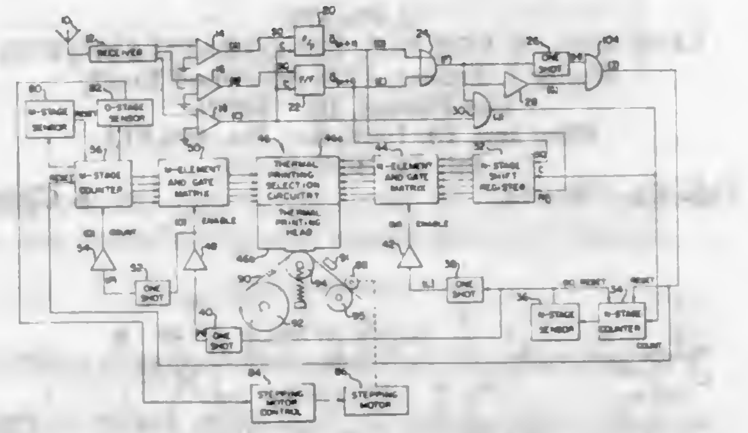
Data encoding and transmission apparatus comprising a console containing a plurality of narrow settable-tape modules for encoding multi-bit messages by sliding of the tapes to set positions, each tape bearing reflective spots and perforations in a sequence which provides a unique multi-bit code pattern for each tape position, scannable by a transversely moving carriage to sense at precisely defined travel positions the spot patterns of the tapes in sequence, and each module containing a light-trapping formation inwardly of the tape to cooperate with the tape perforations in improving the signal-to-noise ratio supplied to the sensing means on the carriage.

3,476,877

### SPACECRAFT TELEPRINTER USING THERMAL PRINTING TECHNIQUES

**Paul E. Perkins, Dayton, Warren E. Perkins and David E. Thomas, Centerville, and James W. Taylor, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**
**Filed Nov. 15, 1967, Ser. No. 683,319**
**Int. Cl. H04l** *15/34, 17/16*
**U.S. Cl. 178—23** **4 Claims**

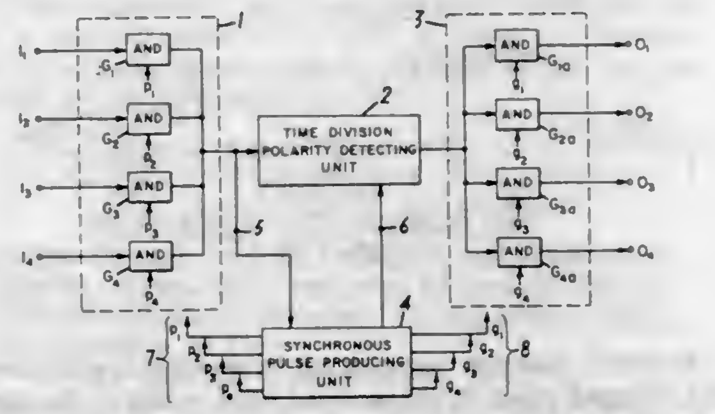
A remote thermal printer for printing on a thermally sensitive record material under the control of a data processor which supplies both clock and information signals to the remote thermal printer is disclosed. Each of N silicon controlled-rectifiers is connected to $P/N$ semiconductor diodes which are in turn each connected to $P/N$ electrically resistive thermal printing elements. Each of M grounding transistors is coupled to $P/M$ thermal printing elements, where M multiplied by N equals P. Simultaneous energization of both a silicon controlled-rectifier and a grounding transistor results in electrical current flow through one of the P thermal printing elements. An N-stage shift register sequentially stores groups of N data bits as they are transmitted from the data processor. An N-stage binary counter counts the incoming data bits and resets itself upon the completion of each N count. When N data bits have been received from the data processor, all of the stored data bits in the N-stage shift register are simultaneously supplied to the gate terminals of the silicon controlled-rectifiers. A second binary counter, having M stages, is coupled to the N-stage binary counter, and it counts once for each group of N counts of the N-stage binary counter. A control signal, derived from the M-stage binary counter, is individually and consecutively supplied to the base electrode of the M grounding transistors in accordance with the count in the M-stage binary counter.



3,476,878

### TIME-DIVISION SYNCHRONOUS SYSTEM FOR A PLURALITY OF SYNCHRONOUS TELEGRAPH CIRCUITS

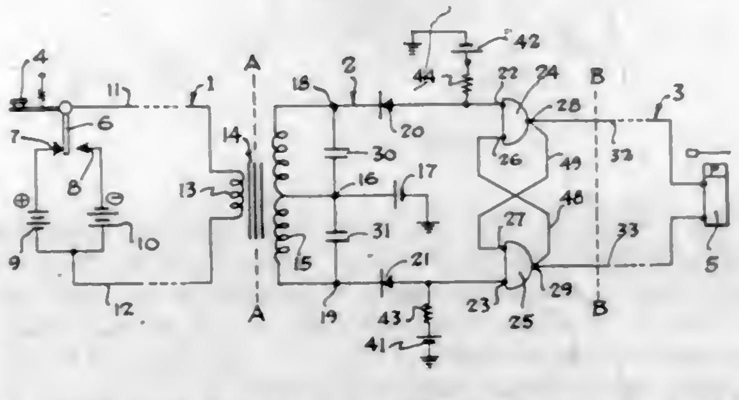
**Shintaro Oshima, Yukio Nakagome, and Yasuo Fukata, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan**
**Continuation-in-part of application Ser. No. 231,906, Oct. 22, 1962. This application Mar. 7, 1967, Ser. No. 621,308**
**Claims priority, application Japan, Oct. 23, 1961, 36/37,983; Apr. 2, 1962, 37/12,585**
**Int. Cl. H04l** *5/22*
**U.S. Cl. 178—50** **7 Claims**



A time division synchronous system for a plurality of individual synchronous telegraph circuits, in which a time-division multiplex pulse signal obtained by sampling a plurality of input synchronous telegraph signals is applied to a gate circuit to which a gating pulse signal is applied to detect time-divisionally polarities of the synchronous telegraph signals of respective synchronous telegraph circuits aggregated in the time-division multiple pulse signal. The gating pulse signal is inclusive of a plurality of pulse trains each of which has a period equal to the duration of the code element of the corresponding synchronous telegraph signal and displaced, by one half the duration of code element of the corresponding synchronous telegraph signal, with respect to regularized telegraph instants memorized time-divisionally in memory means in hte states of binary numbers.

### 3,476,879
### LINE RELAY FOR D.C. TELEGRAPH SYSTEMS

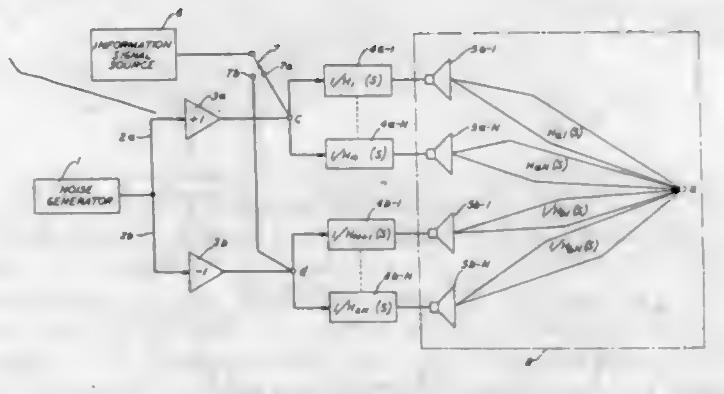
**Walter J. Zenner, 1776 Sherwood Road,**
**Des Plaines, Ill. 60016**
**Filed Jan. 10, 1968, Ser. No. 696,912**
**Int. Cl. H04l** *25/24*
**U.S. Cl. 178—70** **5 Claims**



A line relay for a D.C. telegraph system in which coupling from the transmitter side of the system to the receiver side is effected through a conventional A.C. transformer, the original D.C. telegraph signal impulses being reproduced in the receiving circuit by means of a flip-flop circuit afforded by two cross-connected NAND circuits each having an input connected to one terminal of the transformer secondary.

### 3,476,880
### TRANSMITTING SYSTEM

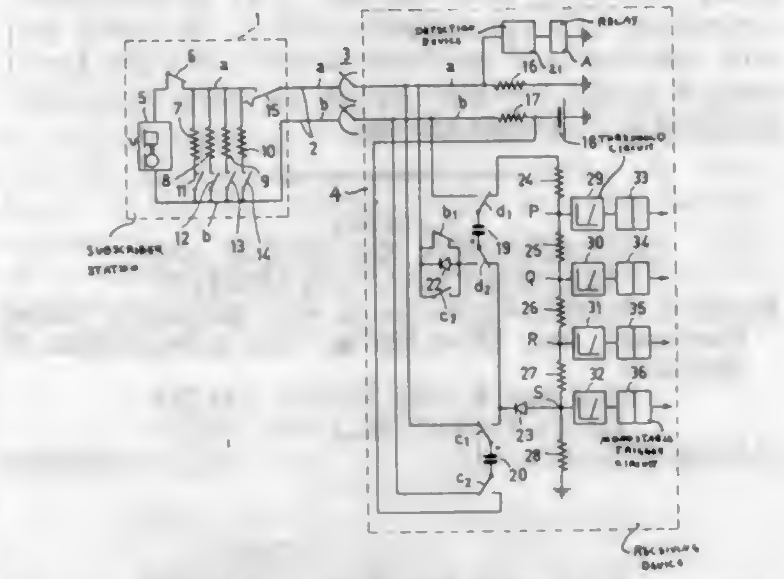
**James L. Flanagan, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York**
**Filed Sept. 30, 1966, Ser. No. 583,161**
**Int. Cl. H04m** *1/70, 3/16*
**U.S. Cl. 179—1.5** **11 Claims**



Acoustic message signals are transmitted exclusively to a selected point in an enclosed area, while at the same time producing masking noise at all other points in the area, by preconditioning a noise signal and delivering it in two different forms, for example, by way of two arrays of loud speakers or the like, to the selected point. With suitable processing, both normal and phase inverted replicas of the noise signal are produced at the selected point. These signals cancel at the point to produce a region of silence; at all other points in the area, however, there is no cancellation and noise is evident.

### 3,476,881
### RESISTANCE DIALING RECEIVER

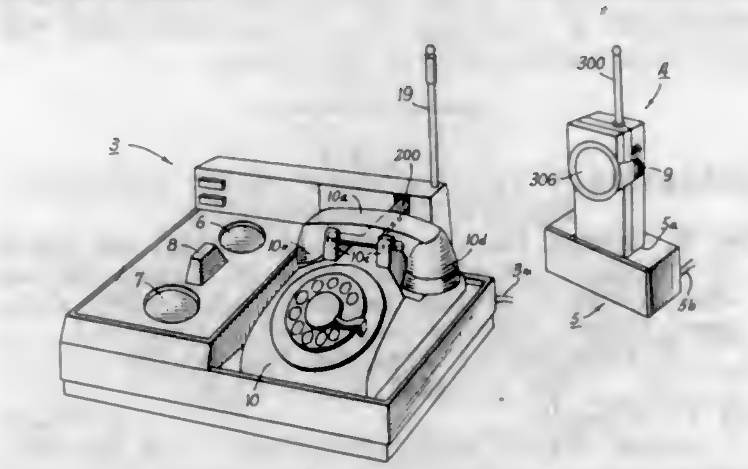
**Gerrit Hendrik van Hensbergen and Henri Peter Johannes Grubben Hilversum, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware**
**Filed Mar. 27, 1967, Ser. No. 626,045**
**Claims priority, application Netherlands, Mar. 26, 1966, 6604015**
**Int. Cl. H04m** *3/18*
**U.S. Cl. 179—16** **5 Claims**



In a signalling device of the type in which the resistance of resistors selected in one station is determined at another station, the resistance of interconnecting lines between the stations can interfere with the proper determination of the selected resistors. The disclosure describes an automatic signalling system of the above type in which a capacitor is charged to a voltage corresponding to the line voltage drop prior to the testing of the signalling resistors, and this voltage is subtracted from the voltage applied to a plurality of threshold devices during the testing of the signalling resistors.

### 3,476,882
### REMOTE TELEPHONE EXTENSION SYSTEM

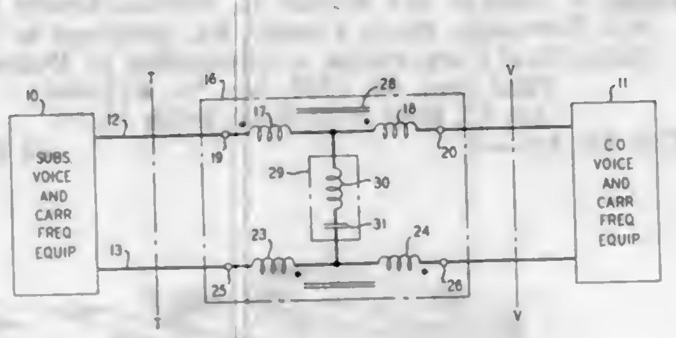
**Joseph Herbert Vogelman, Roslyn, N.Y., Kenrick Stephenson, Montclair, N.J., and Bernard Feinerman, Suffern, N.Y., assignors to Chromalloy American Corporation, a corporation of New York**
**Filed Oct. 23, 1965, Ser. No. 503,285**
**Int. Cl. H04m** *5/02, 5/14*
**U.S. Cl. 179—41** **11 Claims**



The system allows one to answer his telephone and talk to the caller by means of a remote transceiver which is carried by the person when he is away from his telephone. A base station unit develops and transmits to the transceiver a ringing signal to alert the person that his telephone is ringing. The transceiver is operated to transmit an answering signal which has both a frequency-coded component and a speech-modulated component to answer the telephone. Amplitude comparison and timing circuits are used, together with a frequency analyzer to prevent unwanted answering of the telephone. Means are provided for terminating the call in response to either hanging up the calling telephone, receipt of a dial tone, or receipt of a warning signal on the telephone after hang-up. Also, means are provided for automatic hang-up after a period of time in which no coded signal from the remote transceiver or voice signals from the caller are received. Remote dialing means are provided in which the answering circuitry is used in the initiation of calls from the remote transceiver, as well as in the answering of incoming calls.

### 3,476,883
### TELEPHONE SIGNALING SYSTEM INCLUDING CARRIER FREQUENCY TRANSMISSION ON VOICE FREQUENCY LOADED PAIRS

**Michael J. Birck, Clarendon Hills, Ill., assignor, by mesne assignments, to Superior Continental Corporation, a corporation of Delaware**
**Filed Aug. 16, 1966, Ser. No. 572,765**
**Int. Cl. H04b** *3/02*
**U.S. Cl. 179—78** **7 Claims**

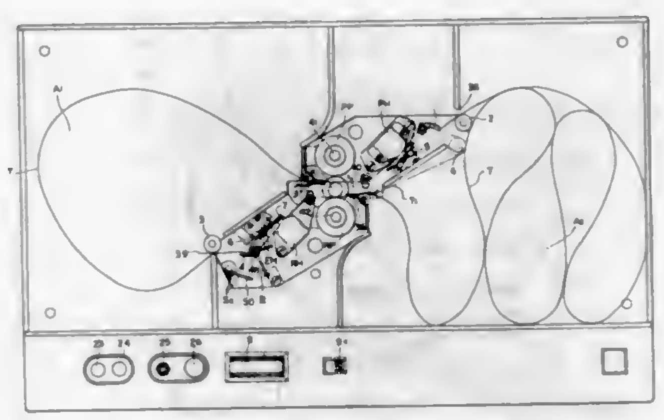


A telephone subscriber conductor pair for simultaneously transmitting voice and carrier frequency signaling current in opposite directions between subscriber and central office terminals, including the subscriber pair transmitting a preselected range of carrier current frequencies and divided into two sections, and a loading coil serially interconnecting adjacent ends of the two sections and comprising a plurality of electric windings wound on a magnetic core, and an inductance-capacitance network connected in parallel with associated pairs of windings and resonant to a predetermined frequency in the preselected carrier current frequency range for improving transmission of both voice and carrier current on the subscriber conductor pair.

### 3,476,884
### AUTOMATIZED MAGNETIC RECORDING AND REPRODUCING APPARATUS

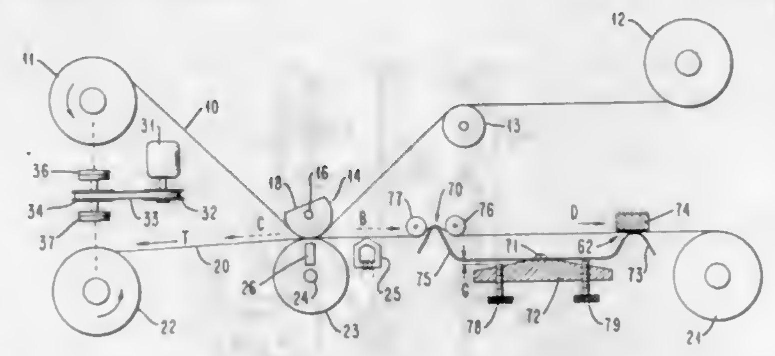
**Masahiko Kajitani, Osaka, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan**
**Continuation-in-part of application Ser. No. 245,102, Dec. 17, 1962. This application May 15, 1967, Ser. No. 638,301**
**Claims priority, application Japan, Dec. 19, 1961, 36/62,802, 36/62,803; June 9, 1962, 37/24,063**
**Int. Cl. G11b** *5/78*
**U.S. Cl. 179—100.2** **6 Claims**

This specification discloses an automatized magnetic recording and reproducing apparatus for recording a series of signals on an endless tape, accumulating the tape having signals recorded thereon in a tape reservoir case during recording and after the termination of recording, pulling out the tape accumulated in the tape reservoir case and reproducing said signals recorded thereon.



### 3,476,885
### INFORMATION COMPRESSION TRANSFERENCE MEANS

**Evelyn F. Shiber and Jerome A. Shiber, Ridgefield Park, N.J., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed June 8, 1967, Ser. No. 644,552**
**Int. Cl. G11b** *5/00;* **B65h** *17/22*
**U.S. Cl. 179—100.2** **10 Claims**

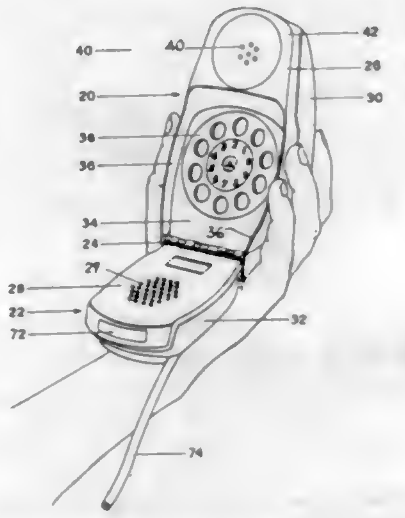


An apparatus for recurrently engaging and disengaging a speech recorded master magnetic tape with a slave magnetic tape. The master tape can be moved either continuously or discontinuously. The slave tape moves with the master tape when they are engaged. When not engaged, the master tape may continue to be moved without the slave tape being moved. A recording transference is caused from the master tape to the slave tape during engagement. The engagement and disengagement cycle can involve a predetermined duty cycle of time or distance. After disengagement, a small backspacing action may be provided to the slave tape.

### 3,476,886
### FOLDABLE TELEPHONE SET

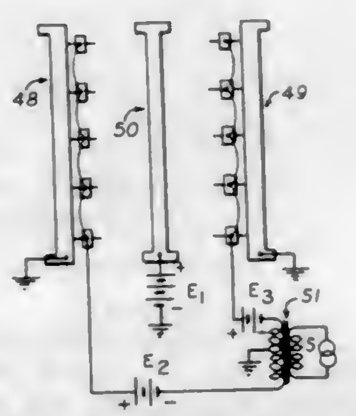
**Agostino Ferrari, Luciano Callegari, and Gianfranco Rivetta, Milan, Italy, assignors to Società Italiana Telecomunicazioni Siemens, S.p.A., Milan, Italy, a corporation of Italy**
**Filed Oct. 31, 1966, Ser. No. 590,865**
**Claims priority, application Italy, Jan. 29, 1966, 1,997/66**
**Int. Cl. H04m** *1/02*
**U.S. Cl. 179—103** **12 Claims**

A foldable telephone in which the hand set contains a dial. The telephone set has two parts connected by a hinge, each part having an electrical-acoustical transducer at its end forming the transmitter and receiver of the handset. One part is longer than the other and, between its transducer and the hinge, is formed with the telephone dial.



### 3,476,887
### IONIC ELECTRO-ACOUSTIC TRANSDUCER

**Arnold L. Seligson, 133—17 227th St., Laurelton, N.Y. 11413, and Robert S. Lanier, 240 W. 98th St., New York, N.Y. 10025**
**Filed Apr. 26, 1966, Ser. No. 545,346**
**Int. Cl. H04r** *23/00*
**U.S. Cl. 179—113** **6 Claims**

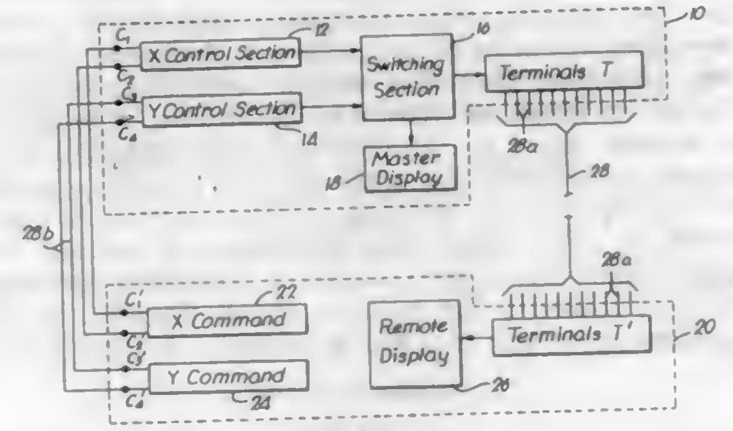


An ionic electro-acoustic transducer having a set of emitter electrodes spaced from a set of collector electrodes between which sets of electrodes a flow of electrons is produced by applying a voltage differential between the two sets of electrodes. Modulating means are arranged to control the flow of ions between the two sets of electrodes.

### 3,476,888
### APPARATUS FOR SORTING THE CONDUCTORS OF A MULTICONDUCTOR CABLE

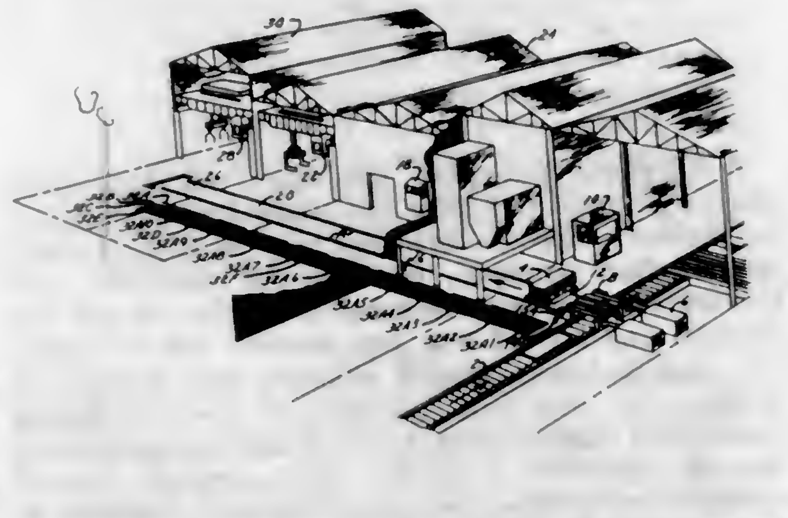
**Albert W. Rollins, 911 Valley Lane 64150, and Ronald A. Rollins, Rte. 24 64152, both of Parkville, Mo.**
**Filed May 25, 1966, Ser. No. 553,602**
**Int. Cl. H04m** *3/22*
**U.S. Cl. 179—175.25** **10 Claims**

Cable sorting apparatus having a master unit for connection to one end of the cable to be sorted, and a remote unit for connection to the cable at a location remote from the master unit. The master unit comprises *x* and *y* control sections, a switching section, a sorting monitor display, and sorting terminals. The remote unit comprises *x* and *y* command circuits, an *x–y* identification display, and sorting terminals. The cable is connected between the sorting terminals of the two units and control terminals associated with the *x* and *y* command and control functions. The *x–y* address information is initiated by a technician at the remote unit site through the use of the *x* and *y* command circuits, and the master unit responds by energizing the conductor having the address of interest. The *x–y* identification display in the remote unit responds to the energized conductor to indicate its remote unit address, which is then changed if required by reconnecting the conductor to the remote unit sorting terminal of like address.



### 3,476,889
### CONTROL SYSTEM FOR AUTOMOTIVE CAR

**Lorne J. Belcher and Robert G. Rinkus, Lower Makefield Township, Bucks County, Pa., assignors to United States Steel Corporation, a corporation of Delaware**
**Filed Sept. 28, 1967, Ser. No. 671,444**
**Int. Cl. B60l** *1/00, 9/00;* **B61b** *13/00*
**U.S. Cl. 191—6** **12 Claims**

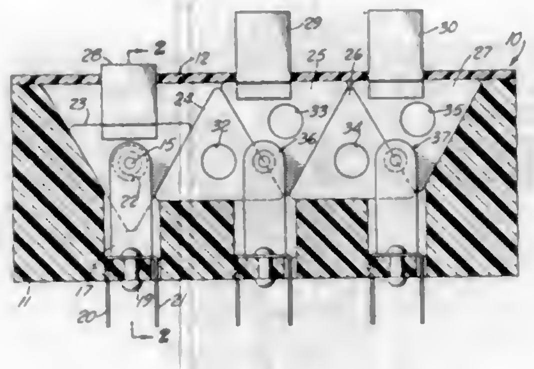


An electric motor operated transfer car is powered and remotely controlled through collector rails and shoes. Car movement is accomplished by an electric controller system connected to a segmented collector rail. Current sensitive control relays are connected to the rail segments in series with the motor shunt field providing position intelligence and a fail-safe control system over the braking, acceleration, deceleration and movement of the car.

### 3,476,890
### SWITCH

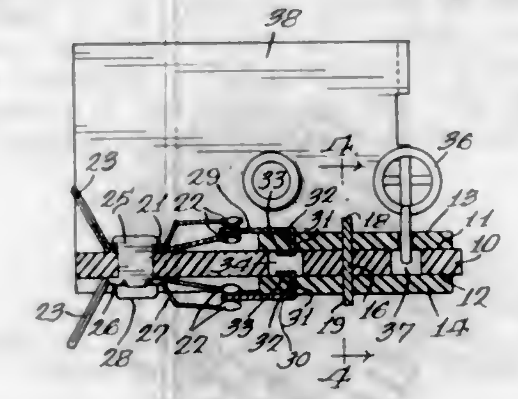
**Ronald Cecil Powell, Los Angeles, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware**
**Filed Aug. 5, 1968, Ser. No. 750,092**
**Int. Cl. H01h** *9/26*
**U.S. Cl. 200—5** **7 Claims**

The invention relates to a push button switch of an economical construction. Insulating plates having the shape of equilateral triangles are positioned alternately in opposite directions. Depressing one of a plurality of push buttons causes the plates to shift in a housing slot. The plates have holes through which corresponding parts of contacts can make. Only one pair of contacts is permitted to make at one time due to the shifting of the plates between contacts.



### 3,476,891
### SLIDE TYPE ELECTRIC SWITCH

**Theodore M. Lis, Aurora, Ill., assignor to Kollsman Instrument Corporation, Elmhurst, N.Y., a corporation of New York**
**Filed Aug. 20, 1968, Ser. No. 753,916**
**Int. Cl. H01h** *15/02*
**U.S. Cl. 200—16** **5 Claims**

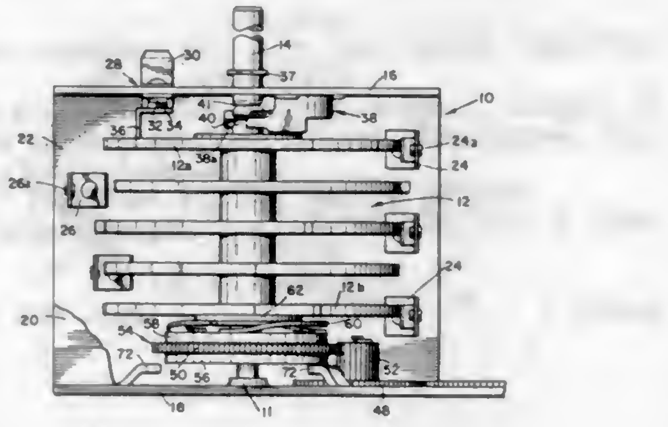


A slide switch wherein a pair of insulating panels are interconnected for sliding movements in unison along a fixed line of travel against opposite faces of a stator sandwiched between said panels by means of fasteners having opposed parallel faces and slots in said stator having opposed longitudinal edges with which said faces of said fasteners having riding engagement, and contacts on said panels having circuit enclosing engagement in turn with contact clips on said stator in response to movement of said panels relative to said stator.

### 3,476,892
### SHAFT LOCKING DEVICE

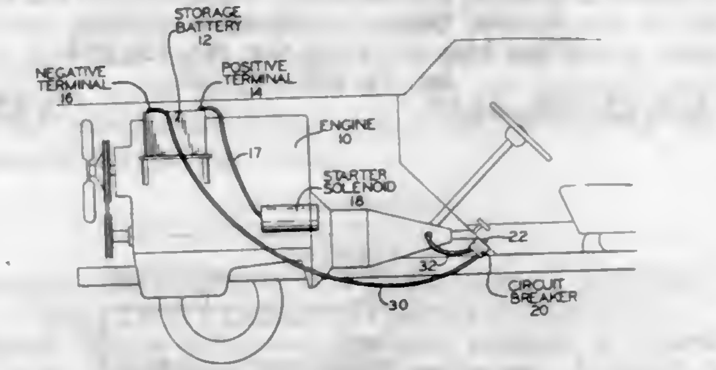
**Harold T. Simmons and Richard E. Pervorse, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware**
**Filed Dec. 14, 1967, Ser. No. 690,677**
**Int. Cl. H01h** *7/08, 43/10*
**U.S. Cl. 200—38** **12 Claims**

Shaft locking means carried by a cam carrying shaft prevents the manual rotation of a constant speed timing mechanism during the time interval the unit is in operation. Indexing the cam carrying shaft in one direction starts the timer and initiates cooperation between the shaft and the shaft locking means so as to lock the shaft thereby preventing rotation except by the timer motor. Indexing of the cam carrying shaft in another direction terminates cooperation between the shaft locking means and the shaft thereby releasing the shaft for manual rotation in a predetermined direction.



### 3,476,893
### SAFETY ELECTRICAL CIRCUIT FOR AN AUTOMOBILE

**Richard L. Adams, 3713 Nevada Ave., Fort Wayne, Ind. 46805**
**Continuation-in-part of application Ser. No. 614,154, Feb. 6, 1967. This application Aug. 23, 1968, Ser. No. 754,833**
**Int. Cl. H01h** *35/00*
**U.S. Cl. 200—52** **1 Claim**

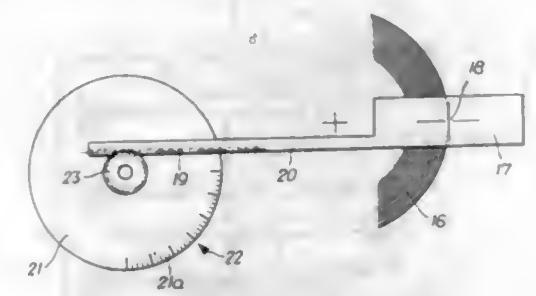


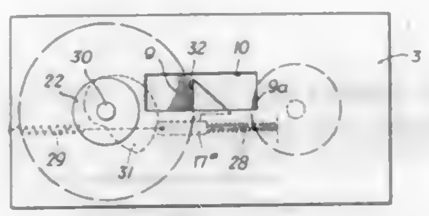
The negative terminal of the storage battery for an automobile is connected through a circuit breaker to the ground system of the automobile. The battery is rendered operative or inoperative by a manual button on the circuit breaker, and is automatically rendered inoperative in response to a current flow that exceeds a selected magnitude.

### 3,476,894
### DEVICE FOR INDICATING A PREDETERMINED PORTION OF A TAPE COIL AND TAPE-WINDING APPARATUS INCORPORATING SUCH DEVICE

**Ernst Pless, Maxingstrasse 30, Vienna, Austria**
**Filed Oct. 11, 1967, Ser. No. 674,492**
**Claims priority, application Austria, Oct. 18, 1966, A 9,716/66; Jan. 27, 1967, A 799/67**
**Int. Cl. G11b** *15/32;* **G01f** *3/10*
**U.S. Cl. 242—200** **19 Claims**

A device for indicating a predetermined portion of a tape coil, wound on a reel, disk, or the like, includes a pointer guide arranged to extend across the periphery of a wound tape coil in a plane which is substantially normal to the axis of the tape coil. A manually operable reading pointer is mounted on the guide for movement along the same free of contact with the tape coil. This pointer has a reading mark movable by the pointer into registry, with the periphery of the tape coil, parallel to the axis thereof. An indicating device is provided for indicating the position of the pointer, and connected by suitable transmission means to the pointer.





There is also disclosed tape-winding apparatus incorporating the indicating device.

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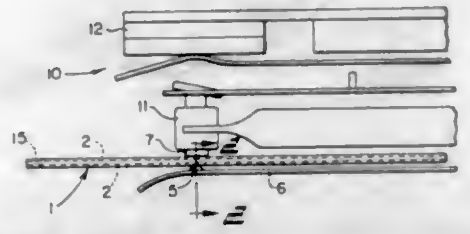
### 3,476,895
### DISCONNECT PICK

**Peter E. Traxler, Lorain, Ohio, assignor to Pe Tel, Inc., Lorain, Ohio, a corporation of Ohio**
**Filed May 31, 1968, Ser. No. 733,580**
**Int. Cl. H01h** *27/04*
**U.S. Cl. 200—61.19** **9 Claims**



A disconnect pick in the form of an elongated member of insulating material having a longitudinal groove in one or both sides for engagement by a projection on a spring contact or the like.

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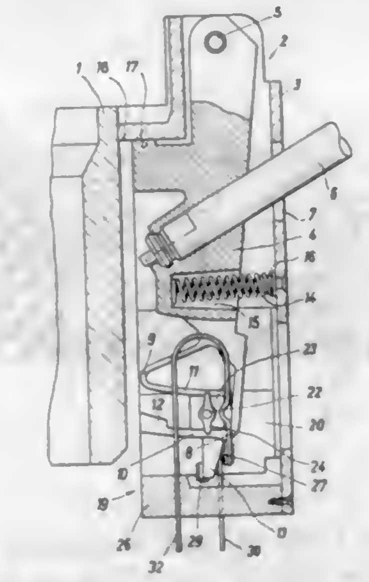
### 3,476,896
### SWITCH, ESPECIALLY FOR STEERING COLUMN SWITCHES IN MOTOR VEHICLES

**Franz Schreiber, Kirchheim (Neckar), Germany, assignor to SWF-Spezialfabrik fur Autozubehor Gustav Rau GmbH, Bietigheim, Wurttemberg, Germany**
**Filed May 16, 1966, Ser. No. 550,363**
**Claims priority, application Germany, May 24, 1965, S 97,255; June 26, 1965, S 97,856**
**Int. Cl. H01h** *9/54*
**U.S. Cl. 200—61.54** **33 Claims**

A switch of the type having a rotatable cam for actuating one or more switch contacts between their open and closed position with the cam being actuated by a movable member, wherein the movable member at the same time is integrally provided with an elastic art for resiliently holding the cam in any of its actuated positions and provided with a nose portion for directly operating additional contacts. Preferably, the movable member is constructed homogeneously of a synthetic plastic.



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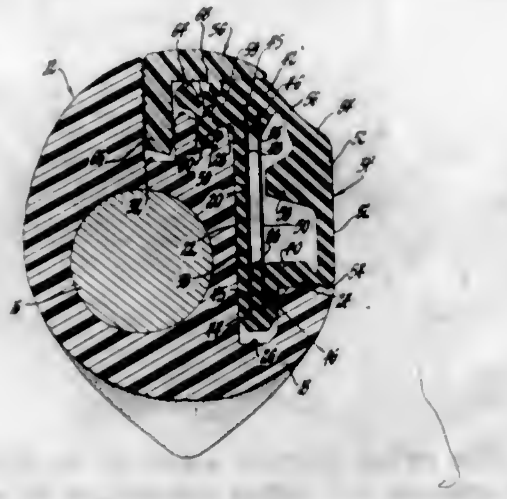
### 3,476,897
### STEERING WHEEL

**Patsy De Vincent, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Feb. 12, 1968, Ser. No. 704,797**
**Int. Cl. H01h** *9/20, 9/54*
**U.S. Cl. 200—67.57** **8 Claims**



A steering wheel includes a rim portion having a continuous recess opening to both the inner and the upper side of the rim. An elongated extruded housing of resilient plastic material fits within the recess and is interlocked with the walls of the recess by various ribs and grooves. A semi-rigid locking strip overlies one of the side walls of the housing and is also interlocked with the recess. A pair of thin flat spaced contact strips have their side edge portions slidably supported in slots provided in the side walls of the housing, with one of the strips being backed up by the base wall of the housing and the other strip being thinner than the one strip. The integral actuating portion of the housing is hinged to the side walls and includes an elongated rib, with the actuating portion and the rib being located in spaced relationship to the thinner contact strip. The actuating portion is engageable by minimum finger pressure from either the upper or the inner side of the rim to swing the actuating portion about its hinge portions and move the rib thereof into engagement with the thinner contact strip intermediate the side edge portions of this strip to bow this intermediate portion into engagement with the other strip and complete a current path between the strips. One end of each strip is

bent laterally and projects outwardly of one end wall of the extruded housing, with this end wall being plugged to seal the interior of the housing against dust and dirt. The bent ends of the strip are connected across the source of power.

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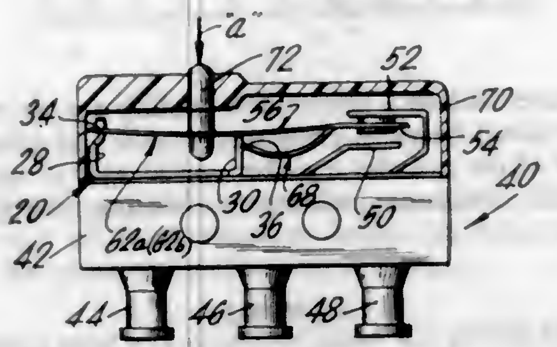
### 3,476,898
### PIVOT FOR SNAP-ACTING SWITCH

**Alfred L. Ehrenfels, Cheshire, and Paul C. Kahl, Westfield, Conn., assignors to Maxson Electronics Corp., New York, N.Y., a corporation of New York**
**Filed Aug. 18, 1967, Ser. No. 661,622**
**Int. Cl. H01h** *21/40*
**U.S. Cl. 200—67** **3 Claims**



A U-shaped member provides colinear support for the compression and tension portions of a snap-acting spring used in a miniature switch. The spring is mounted in cantilevered-fashion on a U-shaped support member and is arranged to be externally actuated so that the free end moves between two stationary contacts. A stop means for the externally operated actuator is provided in the bight portion of the support member. The spring has a cutout opening with a struck-out compression member.

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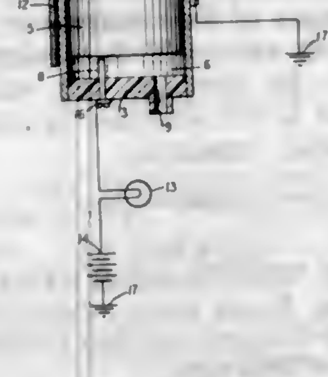
### 3,476,899
### PRESSURE SENSING DEVICE

**Forrest F. Freeman, Potter Valley, Calif. (7205 NE. 43rd Ave., Vancouver, Wash. 98661)**
**Filed Oct. 20, 1965, Ser. No. 498,454**
**Int. Cl. H01h** *35/18*
**U.S. Cl. 200—84** **6 Claims**



A fluid pressure operated switch responsive to differential pressures. Operation of the switch is dependent on applying fluid pressure on opposed faces of a carbon piston through the end walls of an electrically conductive housing. The piston is guided for movement, due to variations in pressure, by the inner wall surface of said housing and closes a circuit when the piston engages a pointed contact extending into said housing through one of its end walls.

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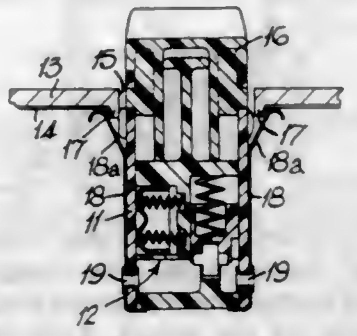
### 3,476,900
### SWITCH ASSEMBLIES FOR USE WITH PRINTED CIRCUITS

**Richard Colin Sharples, Burnley, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company**
**Filed Nov. 27, 1967, Ser. No. 685,800**
**Claims priority, application Great Britain, Dec. 9, 1966, 55,171/66**
**Int. Cl. H01h** *9/54*
**U.S. Cl. 200—166** **2 Claims**



A switch assembly for use with a flexible printed circuit includes a base, having a ramp surface thereon over which an exposed conductor of a flexible printed circuit extends in use. A switch body is secured to the base and houses a switch mechanism and a resilient conductive strip-like contact is mounted on the exterior of the switch body and is electrically connected to a switch contact within the switch mechanism. The free end of the resilient strip-like contact is inclined with respect to the base and rides on said ramp surface as the switch body is secured to the base so as to make an electrical connection between said switch contact and the exposed conductor of the printed circuit.

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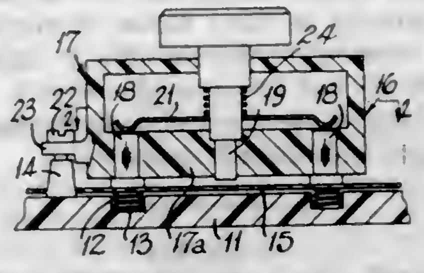
### 3,476,901
### MEANS FOR MAKING AN ELECTRICAL CONNECTION TO A FLEXIBLE PRINTED CIRCUIT

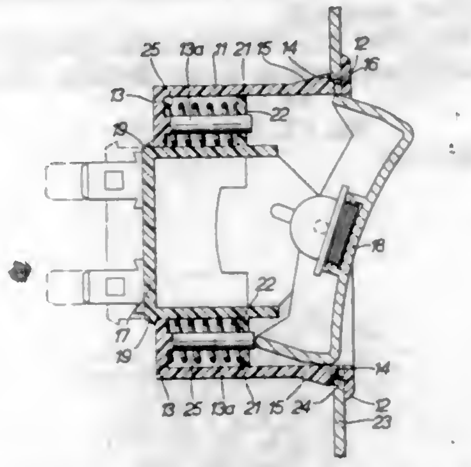
**Konrad Werda, Clitheroe, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company**
**Filed Nov. 27, 1967, Ser. No. 685,801**
**Claims priority, application Great Britain, Dec. 9, 1966, 55,173/66**
**Int. Cl. H01h** *9/02*
**U.S. Cl. 200—166** **3 Claims**



Means for making an electrical connection to a flexible printed circuit includes a base over which the flexible printed circuit extends and an electrical contact fixed with respect to the base. Resilient means are provided acting between the base and the flexible printed circuit to urge an exposed conductive area of the printed circuit into engagement with the contact.

### 3,476,902
### ELECTRICAL SWITCHES

**John Granville Baldwin, Burnley, and William David Holt, Colne, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England**
**Filed Mar. 19, 1968, Ser. No. 714,203**
**Claims priority, application Great Britain, Mar. 31, 1967, 14,732/67**
**Int. Cl. H01h** *9/02*
**U.S. Cl. 200—168** **1 Claim**



In an electrical switch for a road vehicle, a sleeve is secured to the facia panel, and within the sleeve is mounted a body containing the switch mechanism and the operating member of the switch. Resilient means is provided between the body and the sleeve so that the body can move axially in the event of a crash.

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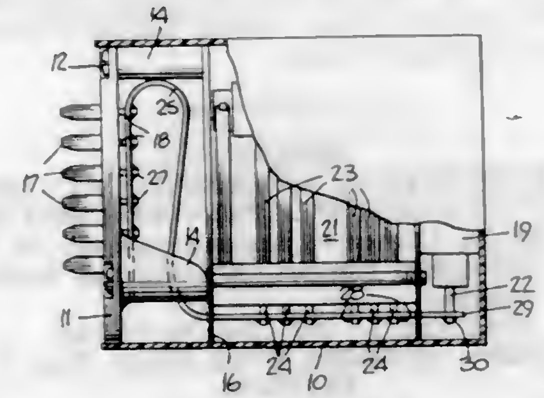
### 3,476,903
### CONNECTOR FOR CAM-ACTUATED SWITCH

**Warren A. Lofstrand, Wethersfield, Conn., assignor to The Sessions Clock Co., Forestville, Conn., a corporation of Connecticut**
**Filed June 24, 1968, Ser. No. 739,455**
**Int. Cl. H01h** *9/02*
**U.S. Cl. 200—168** **2 Claims**



A connector for a motor-driven, cam-actuated switch enclosed in a housing with contact terminals on the front plate connected to motor-driven switching means by a flexible printed circuit which has an extension for solder connection directly to fixed motor terminals. The front plate of the housing for the switch is a single piece of insulating material and has spaced, integral, internal projections for locating the front plate in predetermined relation in the open end of the housing.

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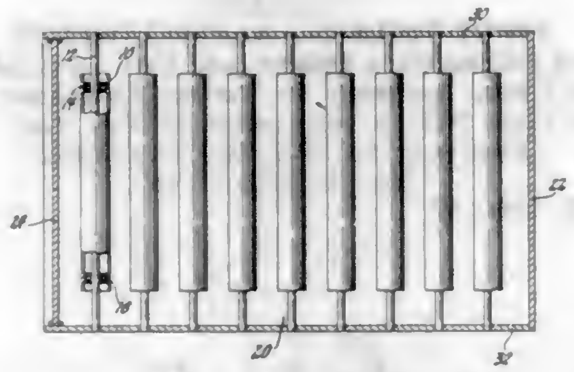
### 3,476,904
### CONVEYOR ROLLER MEMBER ASSEMBLY

**Royal E. Schroeder, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Feb. 8, 1968, Ser. No. 703,963**
**Int. Cl. H05b** *9/06*
**U.S. Cl. 219—10.55** **3 Claims**

A conveyor roller member assembly which may be installed within a microwave heating energy environment wherein a metal cylinder roller member, selected to have a cut-off wave length of a value shorter than the wave length of the dominant mode of energy of the microwave heating energy, is revolvably supported upon a support rod member within a microwave heating energy environment by metal bearings positioned within and adjacent to each end of the cylinder member and located at respective points of minimum microwave heating energy field strength.



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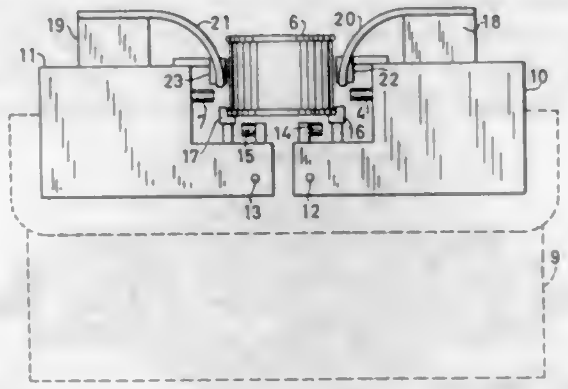
### 3,476,905
### WELDING OF MOUNTINGS ON HOLLOW SHEET-METAL BODIES

**Bent Werdelin Larsen, 8 Ordrupgardsvej, Charlottenlund, Denmark**
**Filed June 16, 1966, Ser. No. 557,984**
**Int. Cl. B23k** *11/10, 11/14*
**U.S. Cl. 219—93** **6 Claims**



A welding machine and method for projection welding a pair of sheet metal bail ears to the side walls of a sheet metal container which may have a protective coated outer surface. The ears are formed with a narrow flange having a plurality of sharp projections adapted to penetrate this exterior protective coating. A pair of welding electrodes are series connected with each electrode disposed to receive the ear and to support the flange and the sharp projections as the electrodes are advanced toward the container. The advance of the electrodes is stopped when the projections of the ear establish an electrical conductive condition with the container side wall, whereupon the ears are welded to the container by using a fraction of a cycle of welding current.

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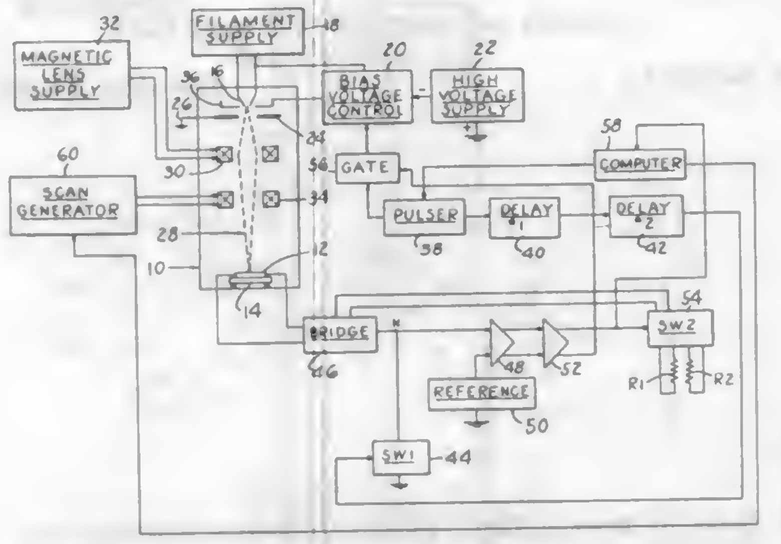
### 3,476,906
### RESISTANCE MONITORING APPARATUS

**Joseph W. Rovan, Broad Brook, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Nov. 21, 1966, Ser. No. 595,974**
**Int. Cl. B23k** *9/00;* **H01c** *17/00*
**U.S. Cl. 219—121** **7 Claims**

Apparatus for monitoring the value of a thin film resistor, which is being trimmed to value in step-wise fashion by an electron beam subtractive process, wherein the resistor being trimmed is connected in a bridge circuit and the measuring point of the bridge circuit is periodically grounded in order to rapidly dissipate charges built up on the thin film to thereby enable accurate measurement of the value of the component being fabricated and to increase the speed of the trimming operation.



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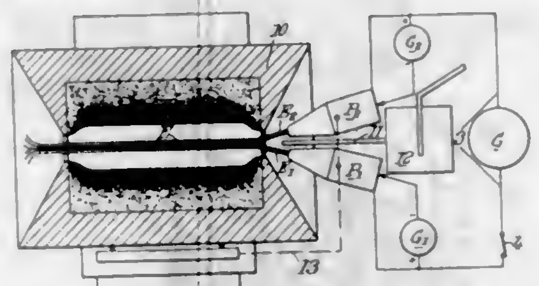
### 3,476,907
### PROCESS FOR OBTAINING A PERMANENT FLOW OF PLASMA

**Marc Foex, Paris, and Robert Delmas, Mont-Louis, France, assignors to Centre National de la Recherche Scientifique, Paris, France**
**Filed Jan. 3, 1967, Ser. No. 606,964**
**Claims priority, application France, Jan. 7, 1966, 45,218; Nov. 7, 1966, 82,765**
**Int. Cl. B23k** *31/00*
**U.S. Cl. 219—121** **12 Claims**



The disclosure relates to a process and means for producing an easily controllable permanent flow of plasma of high energy. This permanent flow consists of the principal and distinct flow of plasma obtained by the conjunction of the converging elementary plasma flows produced by at least two blow-pipes. The energy dissipated in said principal flow as well as the form thereof is monitored by creating a heating current within a path consisting of at least parts of the elementary flows and including their point of convergence and by controlling the length of the path within said elementary flows.

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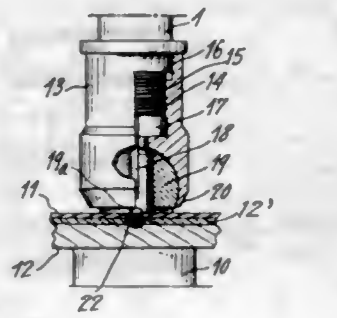
### 3,476,908
### ARC SPOT-WELDING

**Louis Jean-Marie Frindel, Meudon, France, assignor to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, Seine, France, a joint-stock company of France**
**Filed May 16, 1966, Ser. No. 550,258**
**Claims priority, application France, May 25, 1965, 18,422**
**Int. Cl. B23k** *9/00, 9/28, 11/10*
**U.S. Cl. 219—127** **2 Claims**

A welding machine for arc spot-welding having a hollow clamping nozzle, the lower portion of which is swivelly joined to the upper portion to equalize pressure against a workpiece. The lower portion is made of beryllium oxide and has lower marginal outflow ports for escape of shielding gas. A workpiece backup lever is operated by a pneumatic cylinder.



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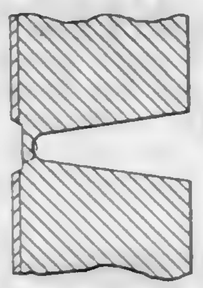
### 3,476,909
### METHOD OF DEPOSIT WELDING CHROMIUM STEELS

**Isamu Kameda and Yoshimitsu Uto, Hiroshima, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan**
**Continuation-in-part of application Ser. No. 211,835, July 23, 1962. This application June 17, 1965, Ser. No. 464,816**
**Int. Cl. B23k** *9/00, 35/00, 35/22*
**U.S. Cl. 219—137** **8 Claims**



Chromium steels other than nickel-chromium steels of austenitic structure are welded by depositing on a base metal a chromium-steel type metal containing titanium and niobium in such proportion that the weld metal resulting therefrom has a content of titanium and niobium corresponding to the expression, $2Ti+Nb=6C$ to $14C$ wherein Ti, Nb and C are the proportion of titanium, niobium and carbon respectively in the weld metals. The proportion of titanium and niobium in the metal deposited is determined by estimating the total quantity of carbon in the weld metal, the quantities of carbon and titanium and niobium lost by oxidation during welding and the variations in the quantities of titanium and niobium in the weld metal resulting from the welding process conditions.

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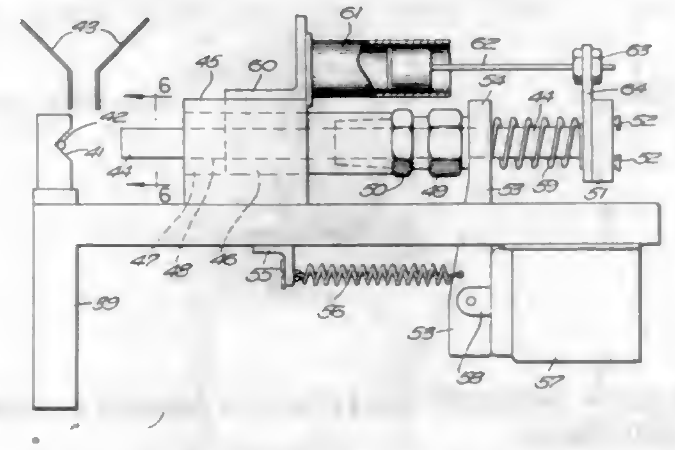
### 3,476,910
### WIRE HEATER TEMPERATURE RECORDING AND CONTROL DEVICE

**Colin W. Leath, Centredale, Myron R. Waldman, Providence, and Thomas E. Vallante, East Providence, R.I., assignors to Walco Electric Company, Providence, R.I., a corporation of Rhode Island**
**Continuation-in-part of application Ser. No. 556,944, June 13, 1966. This application Feb. 19, 1968, Ser. No. 706,320**
**Int. Cl. H05b** *1/00, 3/00;* **C21d** *9/62*
**U.S. Cl. 219—155** **9 Claims**

The device is provided with spaced guides for a moving heated wire or similar element. A thermocouple element with an abradable face is pressed against the heated wire or element with a constant pressure provided by a negator spring. The temperature is recorded on a millivolt meter



and the impulse can be used in a control circuit to control the temperature.

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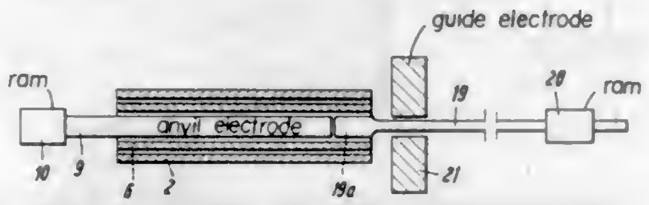
### 3,476,911
### PROCESS FOR ELECTRICALLY UPSETTING ROD-SHAPED METAL BLANKS, AND DIE FOR CARRYING OUT THE PROCESS

**Horst Bachmann, Haan, Rhineland, Germany, assignor to Maschinenfabrik Hasenclever Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany**
**Filed Feb. 9, 1967, Ser. No. 614,887**
**Claims priority, application Germany, Feb. 23, 1966, M 68,485**
**Int. Cl. H05b** *1/00;* **B21d** *37/16;* **G01k** *1/14*
**U.S. Cl. 219—151** **14 Claims**



Electrically upsetting generally rod-shaped metal blanks in a die is done by a ram exerting the upsetting force, and a block carrying an anvil electrode and movable in the die in the direction of the upsetting force, to produce the counter-thrust required for upsetting. The die is movable in an outer sleeve. Initially, the die is held stationary within the sleeve while performing a predetermined partial stroke of the block in the direction of upset. Then the outer sleeve is moved co-directionally with the continuing movement of the block, as by mechanically locking the die to the block, after the latter has completed its predetermined partial stroke. The mechanical connection may include an abutment on the block and a counterstop aligned with the abutment for releasing the locking means.

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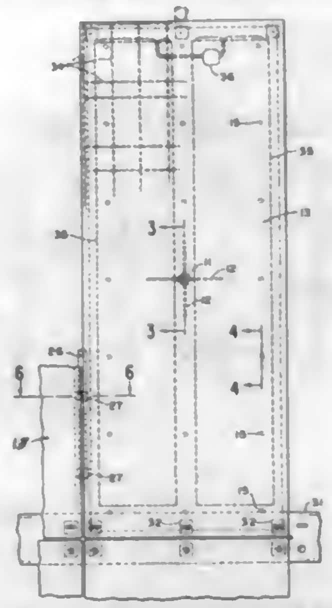
### 3,476,912
### PANEL FOR COMPOSITE WALL STRUCTURE

**Langdon I. Garrison, Henniker, N.H., assignor to The John Swenson Granite Co., Inc., Concord, N.H., a corporation of New Hampshire**
**Filed Mar. 13, 1968, Ser. No. 712,720**
**Int. Cl. H05b** *1/00, 5/00;* **E04h** *14/00*
**U.S. Cl. 219—213** **9 Claims**

For use in a composite wall structure, a panel having a solid concrete section precast with a projecting metal sleeve, in combination with a facing section of granite or other stone having a circular groove at its center of gravity in which the sleeve is fitted so that the facing section is suspended for free expansion. A slip anchor is also provided for preventing angular displacement of the two sections and limiting separation thereof.



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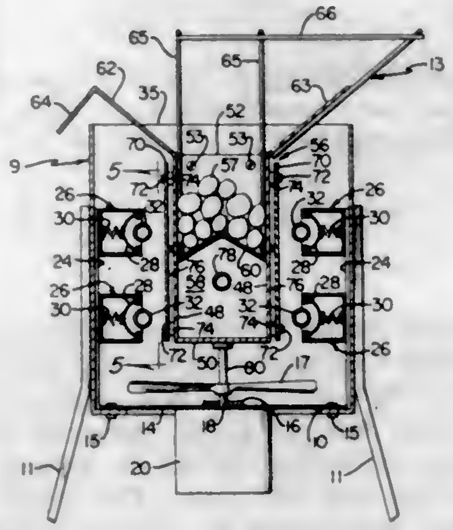
### 3,476,913
### ELECTRIC SAUNA BATH HEATER

**Orven M. Berve, Denver, and Elwin F. Rich, Wheatridge, Colo., assignors to O. M. Berve Company, Denver, Colo., a corporation of Colorado**
**Filed Mar. 25, 1966, Ser. No. 537,530**
**Int. Cl. H05b** *1/00, 3/02, 11/00*
**U.S. Cl. 219—365** **3 Claims**



A sauna bath heater including outer and inner compartments, said inner compartment having an upper rock receiving chamber and a lower heating chamber. A housing circumscribes at least a portion of the outer compartment. A heat shield having inner and outer surfaces is mounted in the outer compartment and disposed in spaced apart relation with respect to the inner compartment and the housing. A first radiant heating means is located within the outer compartment intermediate the heat shield and said housing. Heat reflector means for reflecting the heat away from said housing toward said heat shield is located betwen said first radiant heating means and said housing and spaced apart from said housing. Second radiant heating means is located within said lower chamber. The sauna bath heater also includes means for forcing air upwardly through said outer compartment along the surfaces of said heat shield and intermediate the heat reflector means and said housing.

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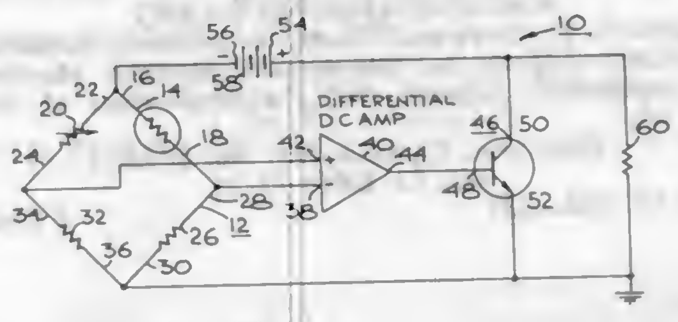
### 3,476,914
### TEMPERATURE CONTROL ARRANGEMENT

**Arthur J. Cussen, Santa Barbara County, Calif., assignor to Electro-Optical Industries, Inc., a corporation of California**
**Filed May 15, 1967, Ser. No. 646,439**
**Int. Cl. H05b** *1/02*
**U.S. Cl. 219—499** **25 Claims**



An improved temperature control arrangement in which an electrical resistance heater is utilized in a balanced bridge circuit and serves the function of both a heater and a thermometer. Controls are provided for controlling the electrical energy flow to the electrical resistance heater in response to its measured resistance value thereby to control the temperature of a body to which the resistance heater is in heat transfer relationship. Another branch of the balanced bridge circuit is utilized to provide a variable resistance and thereby allow a predetermined temperature to be achieved by the resistance heater when the bridge comes into balance.

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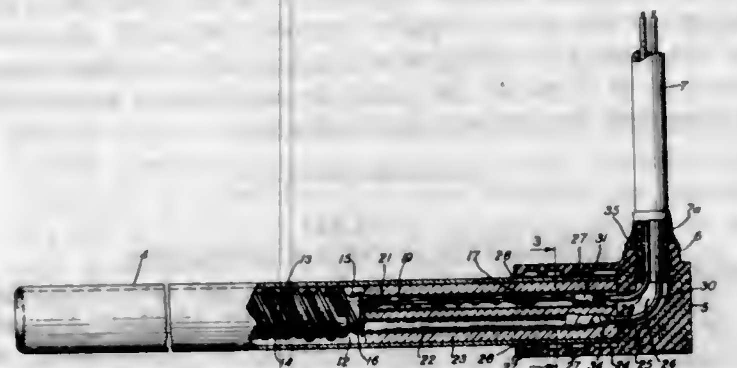
### 3,476,915
### IMMERSION HEATERS

**Michael J. Rapsis, 25 New Lawn Ave., Kearny, N.J. 07032**
**Filed Mar. 17, 1966, Ser. No. 535,080**
**Int. Cl. H05b** *3/06, 3/08, 3/02*
**U.S. Cl. 219—523** **8 Claims**



An elastomer one-piece head-seal for a high resistance immersion heater. This takes the form of an elbow, one end of which is hollowed out to form a cap which fits over the open end of the frangible heater tube which comprises fused quartz or the like. The cap makes gripping contact with the tube by means of one or more internal annular ridges. A plug formed integrally with the interior of the cap is forced flush against the end of the tube, closing it except for a small channel just sufficient to accommodate the power leads to the heater. The channel executes a 90 degree turn and terminates in a nipple which protrudes from the upper end of the head-seal, and fits tightly around the outside of the external power conduit. The internal junction between the cap and the frangible tubes, and the external junction between the nipple and the conduit are both completely sealed by a thin coating of adhesive dissolved in a volatile coating for application and comprising the same elastomer base as the body of the head-seal.

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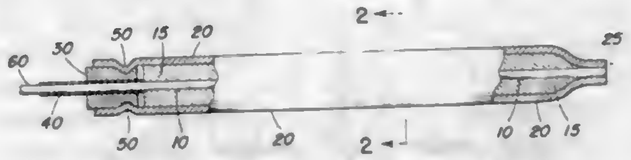
### 3,476,916
### ELECTRICAL HEATER

**John F. La Van, Oak Park, Ill., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware**
**Filed Dec. 11, 1967, Ser. No. 689,618**
**Int. Cl. H05b** *3/10, 3/44, 3/50*
**U.S. Cl. 219—552** **12 Claims**



This invention relates to an electrical heater which employs: a linear resistive conductor; a linear outer sheath of metal; a swaged physical and electrical connection between the central conductor and the sheath at one end; a metallic plug between the central conductor and the sheath at the other end, with insulation between the plug and the central conductor or between the sheath and the plug; and powdered insulation within the sheath and around the central conductor. The sheath may be crimped or dented with sufficiently high pressure so as to crimp or dent the plug in order to retain the plug in place as well as to prevent its movement end-wise and, further, to seal the device against exposure to the weather, e.g., rain or snow.

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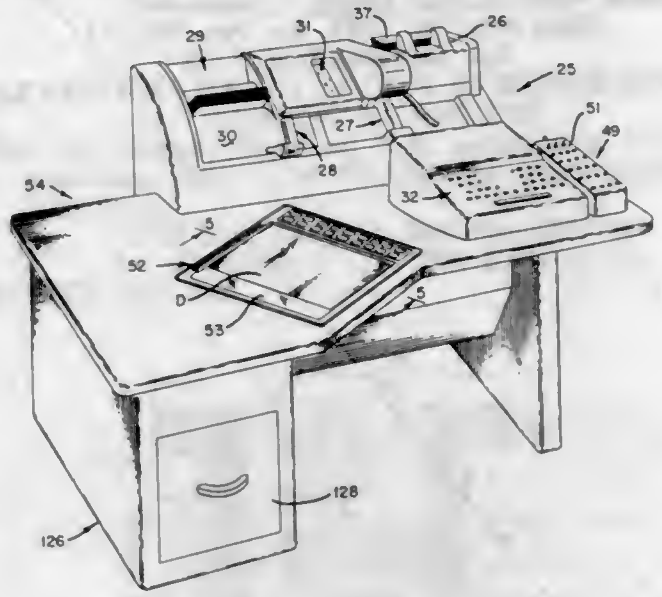
### 3,476,917
### APPARATUS FOR DATA SCANNING AND PROGRAMMING

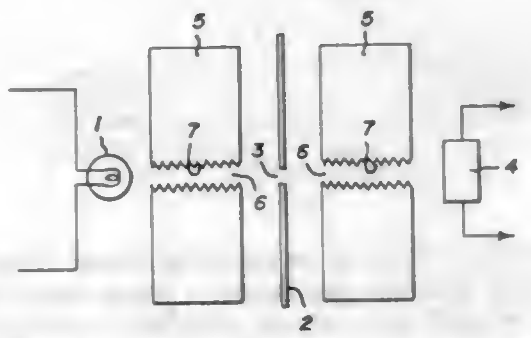
**Thomas Samuel Trebotich, 41826 Paseo Padre Parkway, Fremont, Calif. 94538, and Harry Edward Le Claire, 7502 DeFoe Drive, San Jose, Calif. 95129**
**Filed June 24, 1966, Ser. No. 560,214**
**Int. Cl. G06k** *9/00, 7/00*
**U.S. Cl. 235—61.7** **3 Claims**



Data indicating apparatus including a transparent table adapted to hold a document in predetermined position, a movable plurality of light bars beneath same with individual lights thereof separately energizable to illuminate selected data on the document. A perforated insulating program belt engages a rotatable electrically segmented drum for movement thereover by drum rotation and electrical contacts on a read head riding on the belt of the drum complete circuits for rotating the drum, for moving the light bars and energizing individual lights thereof in sequence programmed by location of belt perforations.

### 3,476,918
### CARD AND TAPE READER

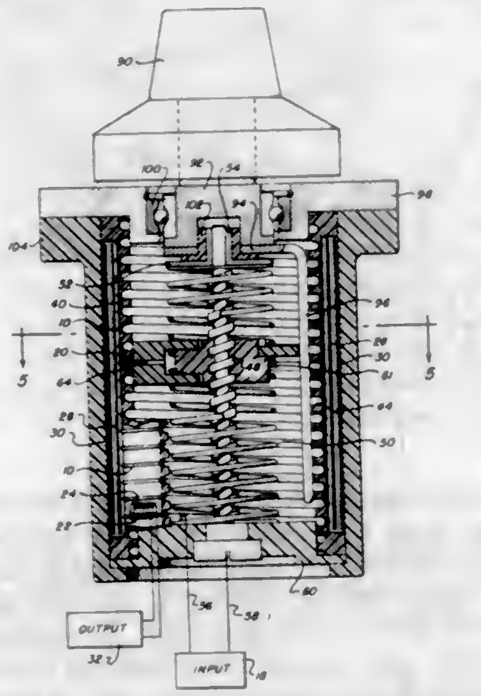
**Edward K. Howell, Skaneateles, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed June 21, 1963, Ser. No. 289,696**
**Int. Cl. G06k** *7/00*
**U.S. Cl. 235—61.11** **2 Claims**



In record card or tape reading apparatus wherein a transparent record bearing area in a record is read by passing the light through the record to a pnpn switch which acts as a sensor, the signal to noise ratio is reduced by positioning an opaque obstacle with an elongated aperture through it on at least one side of the record so that the source and aperture in the obstacle and the sensing device are rectilinearly aligned and further, providing that the opaque obstacle is of a finite thickness and the aperture therethrough has walls which absorb incident light so that only the radiation directly from the source falls upon the sensor and light which diffuses through the record is eliminated.

### 3,476,919
### MAGNETICALLY SETTABLE COUNTER

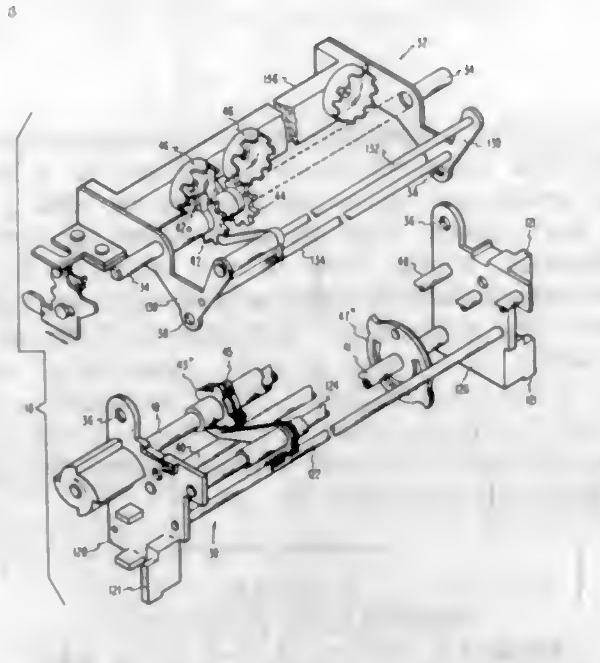
**Gordon R. Bachand, Albuquerque, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Nov. 16, 1965, Ser. No. 508,171**
**Int. Cl. G06f** *7/38, 7/00*
**U.S. Cl. 235—92** **5 Claims**



A magnetic counting device including a magnetizable medium, input means disposed adjacent the medium for establishing magnetic domains in the medium, means for positioning the input means in magnetic proximity separately to a plurality of selective locations along the medium, means for propagating domains along the medium and output means for detecting the passing of any domains.

### 3,476,920
### TENS TRANSFER MECHANISM WITH PROVISION FOR END-AROUND CARRY

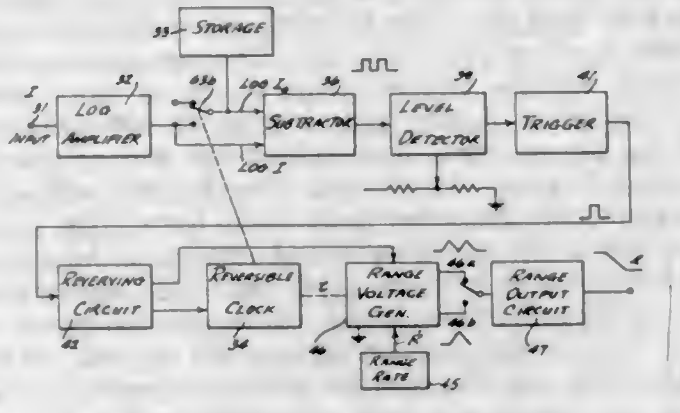
**Charles G. De Serre and Thomas L. Johnson, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Dec. 23, 1966, Ser. No. 604,274**
**Int. Cl. G06c** *15/26*
**U.S. Cl. 235—137** **1 Claim**



End-around carries are handled in a plus-minus accumulator by a common shaft which supports the intermediate order carry detection and transfer members, the members being pivotable about the shaft. The highest order carry detection member is pinned to the shaft as is the lowest order carry transfer member whereby actuation of the former by rotation of the highest order digit wheel from 9 to 0 pivots the latter to condition it to transfer a carry into the lowest order digit wheel.

### 3,476,921
### INFRARED RANGE COMPUTER

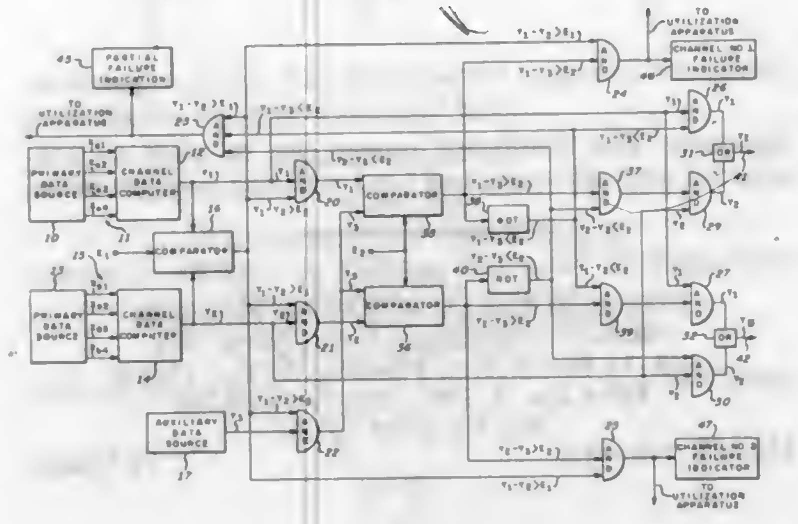
**Sheldon Jones, Palos Verdes Estates, and Otto Schleifer, Redwood City, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**
**Filed Aug. 10, 1964, Ser. No. 388,984**
**Int. Cl. G01s** *9/64;* **G06g** *7/78*
**U.S. Cl. 235—151.32** **11 Claims**



A range computer which processes changes in level of detected infrared radiation and estimated range rate signal to generate a range signal and which periodically corrects for cumulative errors in the range signal each time detected radiation indicates the distance to target has been halved.

### 3,476,922
### FAILURE MONITOR FOR REDUNDANT CHANNEL SYSTEMS

**Peter G. Yiotis, Astoria, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware**
**Filed Aug. 5, 1966, Ser. No. 570,645**
**Int. Cl. G06f** *11/08*
**U.S. Cl. 235—153** **6 Claims**

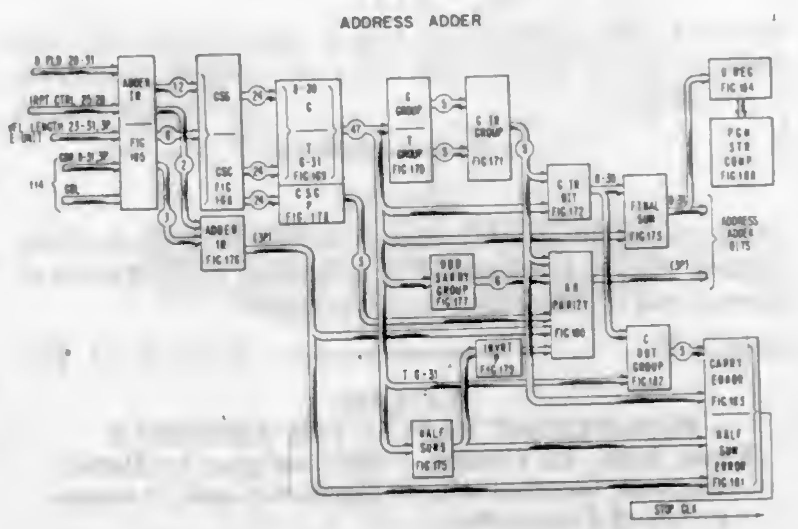


A failure monitor for data systems having first and second identical primary data sources each providing a plurality of identical primary data signals to respective first and second data channels for producing first and second composite signals respectively which are identical in normal operation. An auxiliary data source provides a third composite signal substantially identical to each of the first and second composite signals in normal operation. A first comparison circuit responsive to the first and second composite signals provides a first comparison signal when the difference between the first and second composite signals exceeds a first predetermined threshold. Transmission gates are included for transmitting the first, second and third composite signals to provide first, second and third gated composite signals respectively in response to the first comparison signal. A second comparison circuit responsive to the first, second and third gated composite signals provides a second comparison signal when the difference between the first and third gated composite signals exceeds a second predetermined threshold and provides a third comparison signal when the difference between the second and third gated composite signals exceeds a third predetermined threshold. Gating circuits responsive to the comparison signals provide a discrete measure representative of a malfunctioning data channel.

### 3,476,923
### HIGH SPEED MULTI-INPUT ADDER

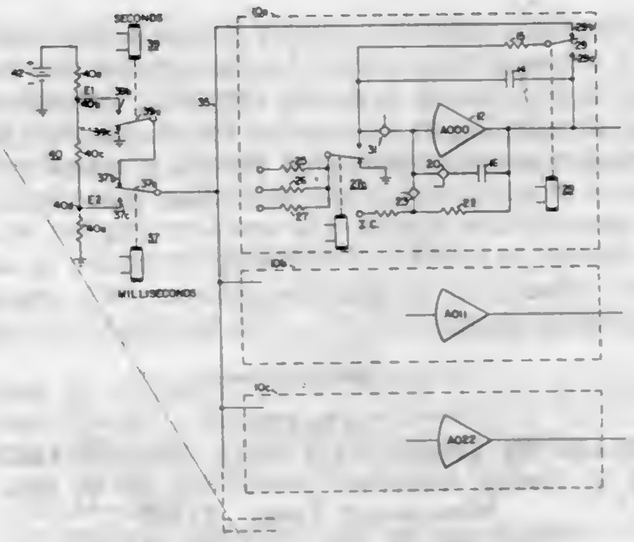
**Alan R. Geller, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Continuation-in-part of application Ser. No. 445,321, Apr. 5, 1965. This application Jan. 13, 1967, Ser. No. 609,245**
**Int. Cl. G06f** *5/02, 7/385, 7/42*
**U.S. Cl. 235—175** **10 Claims**

The specification discloses an illustrative embodiment for the invention comprising a large scale data processing system of the type which is composed of a plurality of quasi-independent units. The environmental data processing system includes a central processing unit or portion, which is herein referred to as a CPU, a plurality of storage units, a plurality of input/output control devices referred to herein as channels, as well as control and maintenance facilities which are found in a power distribution unit, herein referred to as a PDU. The CPU of the environmental system includes a control or instruction unit hereinafter referred to as an I unit, and an arithmetic and logic or execution unit, hereinafter referred to as an E unit. The I unit includes controls for instruction fetching, branching, interruption handling, communication with the input/output channels, and other related functions. The E unit of the environmental system can perform algebraic and logical operations, moving, shifting, and other functions. Sums are provided at high speed by a carry propagate adder which takes its inputs from the outputs of a carry save adder. Elements of both adders are utilized in predicting and checking the parity of the sum.

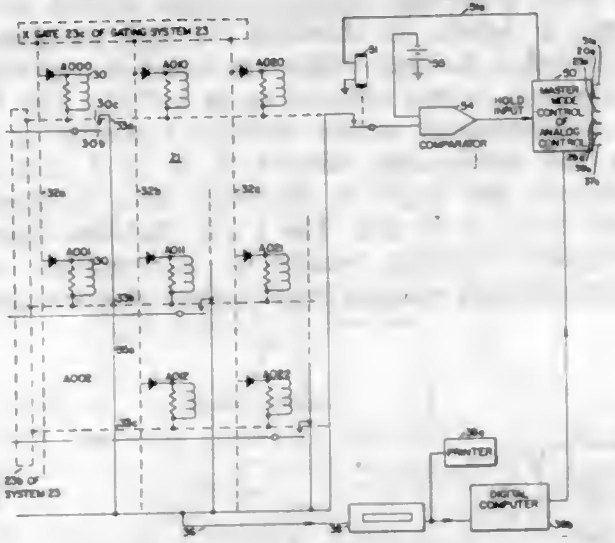


### 3,476,924
### INTEGRATOR RATE TEST SYSTEM FOR AN ANALOG COMPUTER

**Ben D. Conger, Neptune, N.J., assignor to Electronic Associates Inc., Long Branch, N.J., a corporation of New Jersey**
**Filed June 20, 1966, Ser. No. 558,740**
**Int. Cl. G06g** *7/18, 7/48;* **G06f** *11/00*
**U.S. Cl. 235—183** **8 Claims**



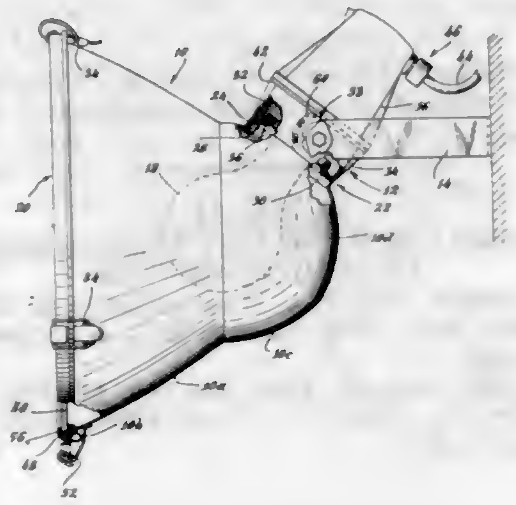
A rate test system for a plurality of integrators in an analog computer is disclosed wherein the same voltage is applied to each integrator and all integrators operate for a period of time determined by equality between the output of the integrator having the highest rate of integration


X GATE 23c OF GATING SYSTEM 23
A000
A010
A020
A001
A011
A021
A002
A012
A022
COMPARATOR
HOLD INPUT
MASTER MODE CONTROL OF ANALOG CONTROL
PRINTER
DIGITAL COMPUTER
Y GATE 23b OF GATING SYSTEM 23

and a predetermined reference potential. Magnitude of the applied voltage is selectable as a function of the fastest or slowest rate of integration in the computer.

### 3,476,925
### FLOODLIGHT REFLECTOR ASSEMBLY

**Tarek Adra, La Canada, Calif., assignor to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut**
**Filed July 27, 1967, Ser. No. 656,417**
**Int. Cl. F21p** *5/00;* **F21s** *1/10, 3/10*
**U.S. Cl. 240—3** **4 Claims**

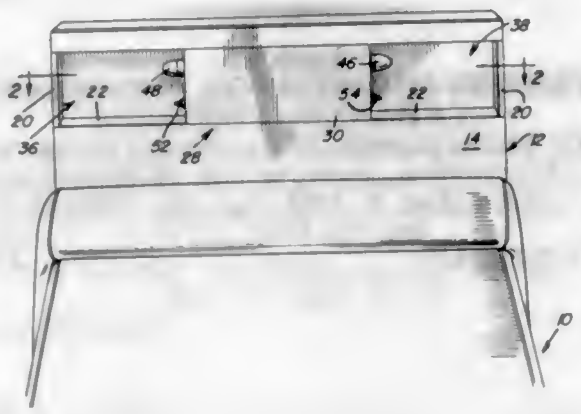


A floodlight reflector assembly having a support means and a trunnion ring carried by the support means. The trunnion ring has an inwardly extending circumferential flange terminating in an annular lip. A reflector, having complementary circumferential flanges, is mated with the trunnion ring and an axially extending collar is formed over the trunnion ring lip. The trunnion ring has an aperture formed in it and a cooperating formation is carried by the reflector to position the reflector with respect to the trunnion ring.

### 3,476,926
### READING LIGHT FOR BED HEADBOARDS

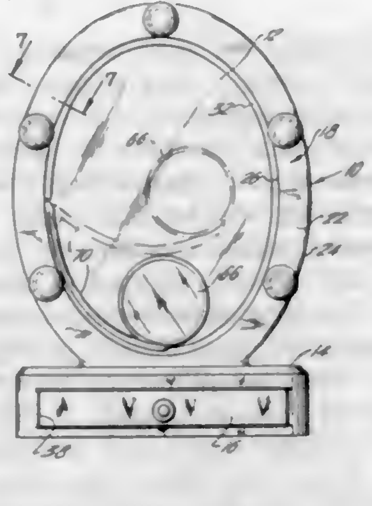
**Alf T. Young, Lakeview Drive, Box 85–D, Rte. 2, Manchester, Tenn. 37355**
**Filed Aug. 25, 1967, Ser. No. 663,347**
**Int. Cl. F21v** *33/00*
**U.S. Cl. 240—4** **9 Claims**

A headboard for a double bed having a built-in artificial source of light localized to focus the light rays. Individual switch-equipped lamps are isolated and spaced apart to allow the lamps to be used either individually or simultaneously. The headboard proper can be plain or constructed with self-contained book shelving compartments.



### 3,476,927
### PORTABLE ILLUMINATED MIRROR

**Matthew J. Rothman, Great Neck, N.Y.**
**(140–35 Beech Ave., Flushing, N.Y. 11355)**
**Filed Jan. 9, 1967, Ser. No. 613,381**
**Int. Cl. F21v** *33/00*
**U.S. Cl. 240—4.2** **12 Claims**

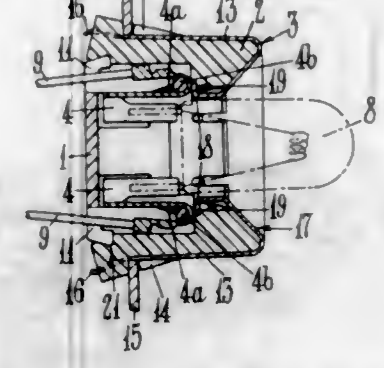


A portable illuminated mirror including a hollow frame composed of two annular sections each provided with a complementary base section, one of said sections channel-shaped, one of said sections provided with openings for electric light bulbs; a planar reflector member and electric light sockets clamped in place between said frame sections; and a magnifying reflector at the end of an arm is held against the reflecting side of said reflector; the other end of the arm is pivoted within the frame for movement between an upper and a lower position, with resilient means engaging the pivoted arm end for maintaining the magnifying reflector in upper position.

### 3,476,928
### VEHICULAR LAMP HOLDER

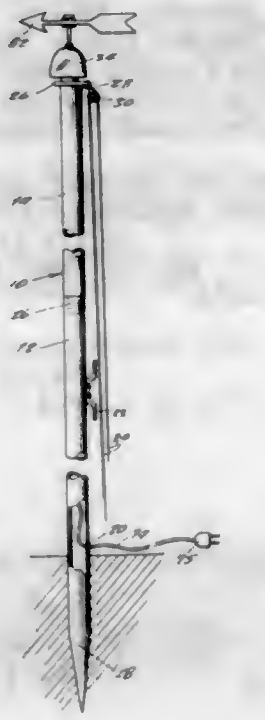
**Eric Arthur Greasley, Stapleford, England, assignor to Pressac Limited, Long Eaton, England**
**Filed Sept. 13, 1967, Ser. No. 667,506**
**Claims priority, application Great Britain, Apr. 21, 1967, 18,573/67**
**Int. Cl. B60q** *1/30*
**U.S. Cl. 240—8.3** **8 Claims**

A lamp holder having a bulb-receiving portion and an outer casing made of thermoplastic synthetic material for capless bulbs. A shield member secures the holder in an opening in a panel. The shield serves to protect the plastic parts against the heat of the light bulb.



### 3,476,929
### ILLUMINATED CAMP MAST

**Calvin E. Klinger, % William Bown, 69 D. Edgewater Park, Bronx, N.Y. 10465**
**Filed Nov. 2, 1967, Ser. No. 680,185**
**Int. Cl. F21v** *33/00*
**U.S. Cl. 240—11.2** **10 Claims**

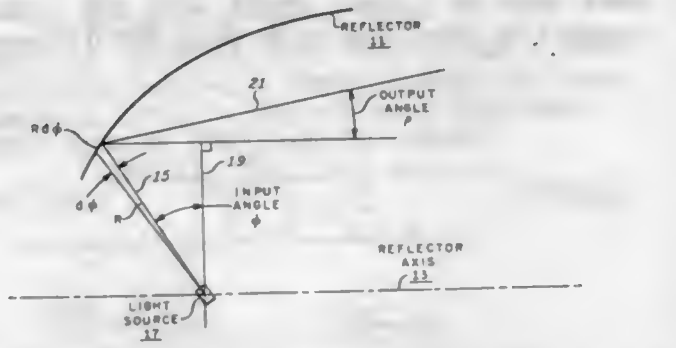


A mast for use by a camper at his camp site to fly one or more pennants which will identify the camper as well as signal an activity. The mast is a hollow tube having a ground penetrating point at its lower end and carrying at its top end a reflector cone including lenses and containing a light source for illuminating a pennant flying at the top of the mast. A halyard mounted on a pulley located just beneath the reflector cone at the top of the mast serves to raise or lower the pennant.

### 3,476,930
### OPTICAL REFLECTORS

**Stephen Herman, Kew Gardens, and Edward W. Stark, Garden City, N.Y., assignors to Sperry Rand Corporation, a corporation of Delaware**
**Filed Mar. 22, 1967, Ser. No. 625,178**
**Int. Cl. F21v** *7/04*
**U.S. Cl. 240—41.35** **2 Claims**

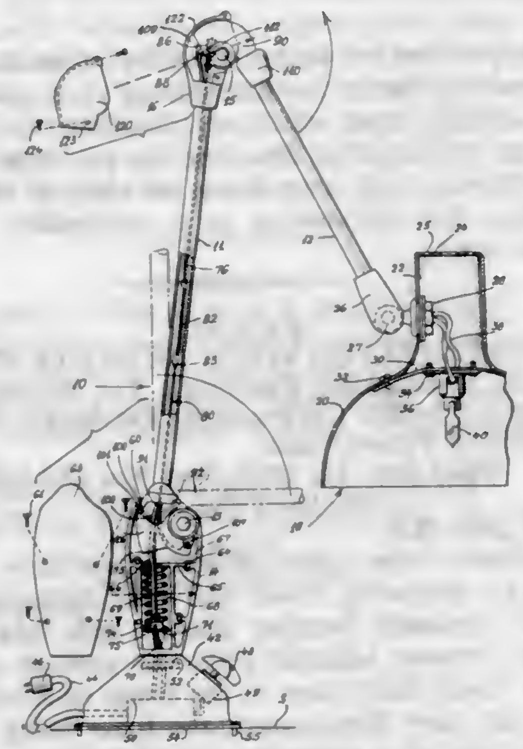
A concave reflector that is symmetrical about a central axis for providing a light beam of uniform intensity. A light source is positioned on the axis and has a luminous intensity that is invariant with rotation about the reflector axis but has a cosine distribution in a plane containing the



axis. The light source is also positioned so that a ray of maximum intensity from the light source lies in a plane normal to the axis.

### 3,476,931
### ADJUSTABLE LAMP STRUCTURE

**Milton Fletcher, Congers, N.Y. 10920**
**Filed July 17, 1967, Ser. No. 653,964**
**Int. Cl. F21s** *1/12*
**U.S. Cl. 240—81** **10 Claims**

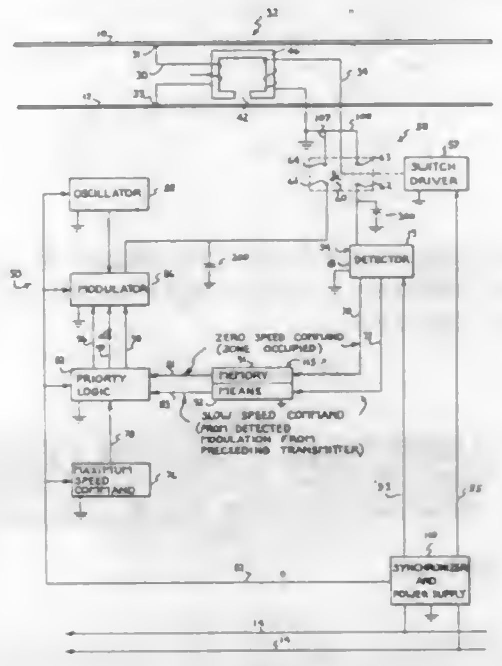


A desk or table lamp has an articulated bracket structure having two pivotable arms with an internal two-part link connected by spring means so that one arm can be adjustably set independently of the other arm. The lamp also includes a miniature lamp bulb connected in circuit with a solid state transistorized dimmer circuit.

### 3,476,932
### RAIL VEHICLE LOCATION AND CONTROL SYSTEM

**Norman C. Gittinger, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Mar. 14, 1967, Ser. No. 623,031**
**Int. Cl. B61l** *3/00, 21/00, 1/08*
**U.S. Cl. 246—187** **21 Claims**

A system for controlling the spacing between rail vehicles moving on a trackway. A series of variably operable electrical units are spaced along and operably connected to the trackway, each of the units operating to function successively as a transmitter, detector, and short circuit at different portions of a repetitive time cycle. The timing of performance of the aforesaid functions by the units along the right of way is such that in each portion of a time cycle one of the units operates as a transmitter, the next unit as a detector, and the next one or more units as a short circuit, with this pattern being repeated by other such units along the trackway. In the ensuing portions of each cycle, the aforesaid functions shift one unit down the line during each portion. As a result, shifting zone occupancy detection and indication zones are provided for detecting the presence or absence of a vehicle in each zone along the right of way and for indicating this information to a succeeding train in a previous zone.


OSCILLATOR
SWITCH DRIVER
MODULATOR
DETECTOR
PRIORITY LOGIC
MEMORY MEANS
ZERO SPEED COMMAND (ZONE OCCUPIED)
SLOW SPEED COMMAND (FROM DETECTED MODULATION FROM PRECEDING TRANSMITTER)
MAXIMUM SPEED COMMAND
SYNCHRONIZER AND POWER SUPPLY

## 3,476,933
## LARGE-CELLED POLYURETHANE FOAM

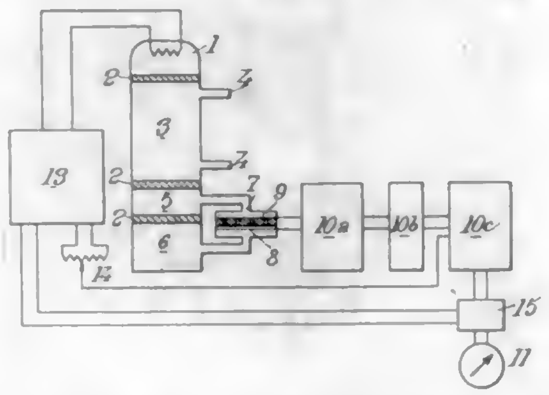
**Morris A. Mendelsohn, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Oct. 21, 1966, Ser. No. 588,529**
**Int. Cl. C08g** *22/44*
**U.S. Cl. 260—2.5** **11 Claims**

A uniform large celled polyether urethane foam and process for preparing same, the foam comprising a network of ligaments forming discrete cells having planar openings between adjacent cells, the average number of cells per linear inch being in the range of from less than five to not more than twenty, the foam being a product of a reaction of a polyether polyol having a molecular weight ranging from 800 to 3000 and a polyol having a molecular weight of less than 195 with a mixture of a polymethylene polyphenyl isocyanate and a tolylene diisocyanate with at least one of an amine type catalyst and a metallic salt catalyst together with an organic fatty acid, a silicone surfactant, and a blowing agent.

## 3,476,934
## INFRA-RED GAS ANALYZER FOR MEASURING THE CONCENTRATION OF A PARTICULAR GAS

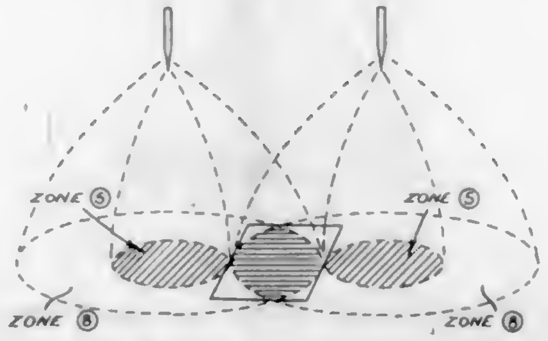
**Karl Luft, Essen, Germany, assignor to Office National d'Etudes et de Recherches Aerospatiales, Chatillon-sous-Bagneux, France**
**Filed July 27, 1967, Ser. No. 656,515**
**Claims priority, application France, July 27, 1966, 71,102**
**Int. Cl. G01n** *21/26*
**U.S. Cl. 250—43.5** **6 Claims**

A gas analysing apparatus for measuring the concentration of a particular gas in a mixture of gases, in which infra-red radiation is passed successively through a sample cell containing the mixture to be analysed and through two detector chambers arranged one after the other. One of the detector chambers communicates with one side of a variable plate of a variable capacitor, and the other detector chamber communicates with the other side of this same plate. The signal at zero concentration of the particular gas is compensated by an auxiliary signal produced independently of the signal at zero.



## 3,476,935
## CONTROL OF XEROGRAPHIC IMAGES BY CHARGING THE PHOTOCONDUCTOR WITH ONLY AN OUTER BAND OF A CORONA DISCHARGE

**Kenneth A. Metcalfe, Fulham Park, South Australia, Frank C. Gillespie, Findon West, South Australia, and Ian E. Smith, Lockleys, South Australia, Australia, assignors to The Commonwealth of Australia, care of the Secretary, Department of Supply, Melbourne, Victoria, Australia**
**Filed Aug. 30, 1966, Ser. No. 576,091**
**Claims priority, application Australia, Aug. 30, 1965, 63,375/65**
**Int. Cl. H01j** *37/26*
**U.S. Cl. 250—49.5** **4 Claims**



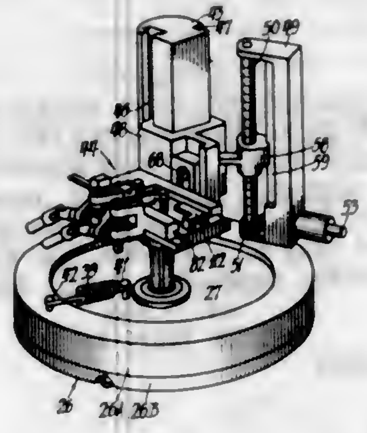
Provision is made to utilize the outer band of a corona discharge while avoiding the central zone thereof to obtain improved charging for electrostatic processes.

## 3,476,936
## APPARATUS FOR POSITIONING SPECIMENS IN ELECTRON MICROSCOPES OR ELECTRON DIFFRACTION CAMERAS

**John Cunningham Mills, Springvale, Victoria, Australia, assignor to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a corporation**
**Filed Nov. 1, 1967, Ser. No. 679,841**
**Claims priority, application Australia, Nov. 7, 1966, 13,542/66**
**Int. Cl. H01j** *37/26*
**U.S. Cl. 250—49.5** **10 Claims**

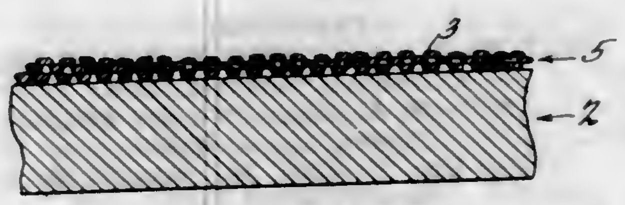
Apparatus for translating specimen in three mutually perpendicular directions and tilting specimen about two mutually perpendicular axes. A double tilt specimen holding cartridge slides into a seat in a translational

member which is movable to provide the translational movements. The tilt controls of the cartridge then register with rocker arms which are pivotally mounted on the translational member and are permanently connected to control means external to the instrument thereby to render an operative connection between the external control means and the tilt controls of the cartridge. Movement of the tilt cartridge moves its tilt controls out of register with the rocker arms so that the tilt cartridge can be readily withdrawn from the instrument.



## 3,476,937
## THERMOGRAPHIC RECORDING METHOD EMPLOYING A RECORDING MATERIAL COMPRISING A UNIFORM LAYER OF DISCRETE HYDROPHOBIC THERMOPLASTIC POLYMER PARTICLES

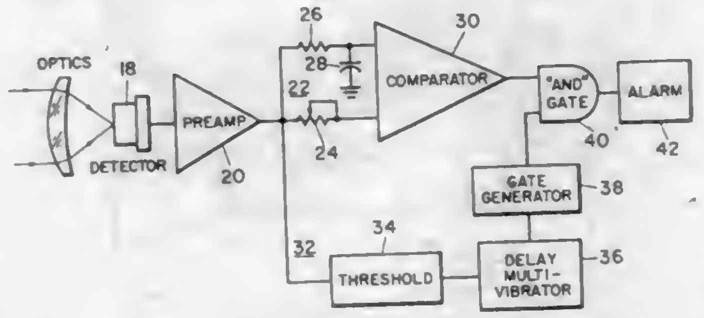
**Marcel Nicolas Vrancken, Hove, Belgium, assignor to Gevaert-Agfa N.V., Mortsel-Antwerp, Belgium, a Belgian company**
**Continuation-in-part of application Ser. No. 337,664, Jan. 14, 1964. This application Dec. 29, 1964, Ser. No. 421,861**
**Claims priority, application France, Dec. 4, 1964, 997,423**
**Int. Cl. G01n** *21/34;* **H05g** *1/60;* **B41c** *1/14*
**U.S. Cl. 250—65** **82 Claims**



Information is reproduced by the steps of (a) applying a pattern corresponding to the information of heat alone or heat and pressure together to a generally uniform layer on a recording material, such layer either being composed of finely divided particles of a hydrophobic thermoplastic polymer arranged in discrete contiguous relationship or consisting essentially of a dispersed phase of such polymer particles distributed generally homogeneously through a continuous phase of a hydrophilic binding agent applied from an aqueous medium, the amount of the heat or heat and pressure being sufficient to at least partially coalesce the polymer particles in the affected areas of the layer and significantly reduce the fluid permeability of the layer in such areas, and (b) treating the layer to develop or reproduce the information. Preferably the particles are of a synthetic polymer such as polyethylene. The layer or the material otherwise may contain various other materials, such as colorants or color developable agents, and the heat pattern may be created in a variety of ways. A preferred development procedure is to remove with a solvent the unaffected areas of the layer but numerous other modes of development are possible.

## 3,476,938
## GUN-FLASH DETECTOR

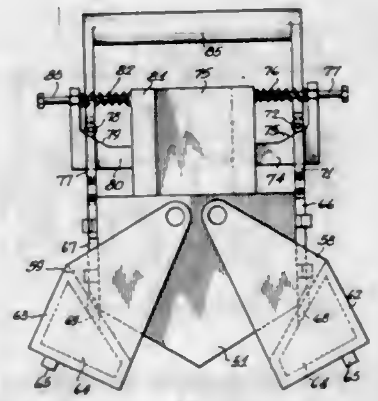
**Gerald Jankowitz, Hillsdale, N.J., and Gerald Falbel, Stamford, Conn., assignors to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware**
**Filed Sept. 20, 1967, Ser. No. 669,049**
**Int. Cl. G01t** *1/16*
**U.S. Cl. 250—83.3** **5 Claims**



The aperture of a small lens is imaged on an IR detector which generates signals from a field of view which may include gun flashes. The gun flash is discriminated from background radiation by comparing the pulse width of a gunfire flash with the output of a fixed multivibrator. A self-adjusting threshold circuit whose pulse width is determined by the integral of the gun flash pulse accomplishes the pulse-width measurement, which is independent of the range of the gun flash.

## 3,476,939
## RADIOACTIVE-SOURCE ENCLOSURE

**Ronald H. Goodman and Arsene H. Bettens, Ottawa, Ontario, and Clifford A. Josling, Deschenes, Quebec, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada**
**Filed Feb. 9, 1966, Ser. No. 526,103**
**Claims priority, application Canada, Feb. 11, 1965, 923,090**
**Int. Cl. G21h** *5/00*
**U.S. Cl. 250—106** **1 Claim**



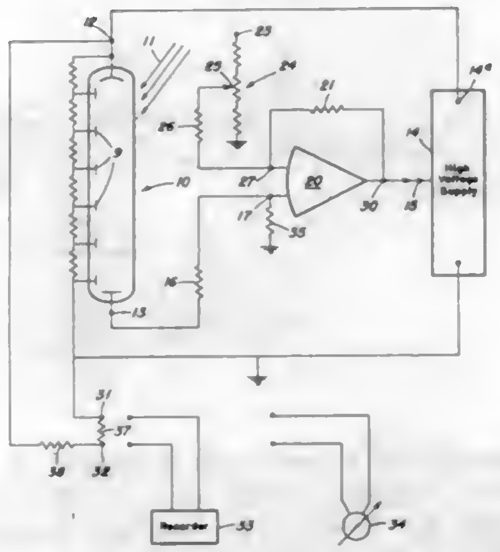
A radioactive-source enclosure having movable shielding gates which, when free to move under their own weight, assume a position sealing off the radioactive source preventing any escape of radiation from the enclosure. In normal operation these gates are held open by a locking mechanism which, on failure of the power supply to the sorting apparatus, allows the gates to close and locks them shut in the closed position.

### 3,476,940

### PHOTOMULTIPLIER SYSTEM WHEREBY DYNODE VOLTAGE SUPPLY IS VARIED IN ACCORDANCE WITH MODULATION OF INCIDENT LIGHT, HOLDING OUTPUT CURRENT CONSTANT AND USING MEASURE OF DYNODE VOLTAGE AS MEASURE OF MODULATION OF LIGHT

**Robert W. Houser, Vestal, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware**

**Filed Dec. 12, 1967, Ser. No. 689,960**
**Int. Cl. H01j** *39/12*
**U.S. Cl. 250—207** **4 Claims**



This invention is concerned with extending the linear range of a densitometer by using the energizing voltage of a photo-multiplier tube as a measure of density. In operation the output current from the anode of the photomultiplier tube is compared with a reference current by an operational amplifier. The amplifier output is used to control a variable voltage source which energizes the photo-multiplier tube, such that the output current from the tube is maintained equal to the reference current.

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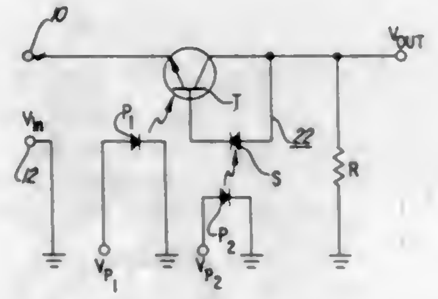
### 3,476,941

### PHOTOTRANSISTOR HAVING LIGHT SENSITIVE DIODE CONNECTED ACROSS COLLECTOR-BASE JUNCTION TO INCREASE TURNOFF TIME

**Edward L. Bonin, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**

**Filed Sept. 27, 1967, Ser. No. 670,967**
**Int. Cl. H01j** *39/12*
**U.S. Cl. 250—211** **22 Claims**



This specification discloses a method of rapidly turning off a conducting transistor characterized by intermittently supplying power to a photon emitter-to-excite and turn on a semiconductor device that, in turn, effects flow of electrons through a properly coupled circuit and through the base of the transistor in a direction opposite to normal flow when the transistor is on. Any means may be employed to turn on the transistor. For example, a second photon emitter may be employed to turn on the transistor, either directly or through excitation of a second semiconductor device connected to effect a flow of electrons through the base of the transistor in the same direction as normal flow when the transistor is on. In this way a single circuit can be employed with couplet photon emitters to excite, respectively, the transistor and the semiconductor device; or, alternatively, appropriately connected semiconductor devices; rapidly turning on and off the transistor in response to a simple control and power signal, such as a square wave alternating current.

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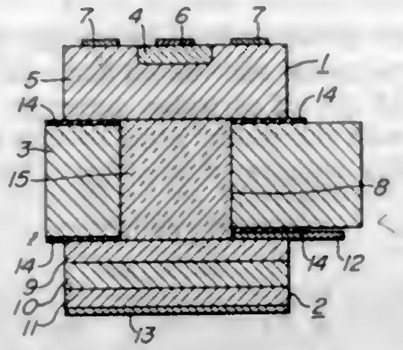
### 3,476,942

### OPTOELECTRONIC DEVICE HAVING AN INTERPOSED-ELECTROMAGNETIC SHIELD

**Hisayoshi Yanai, Tokyo, Hiroshi Kodera, Hino-shi, and Masatoshi Migitaka, Kodaira-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan**

**Filed May 9, 1967, Ser. No. 637,218**
**Claims priority, application Japan, May 18, 1966, 41/31,168**
**Int. Cl. H01j** *31/50*
**U.S. Cl. 250—213** **16 Claims**



An electroluminescent diode which operatingly emits light in response to an input signal is tightly mechanically and electrically insulatedly connected to a photo diode which operatingly converts the emitted light into an electric signal by an electric conductive material provided therein a light path through which the emitted light from the electroluminescent diode passes to the photo diode, the cutoff wavelength of the light path being designed to be shorter than the wavelength of the input signal but to be longer than the wavelength of the emitted light.

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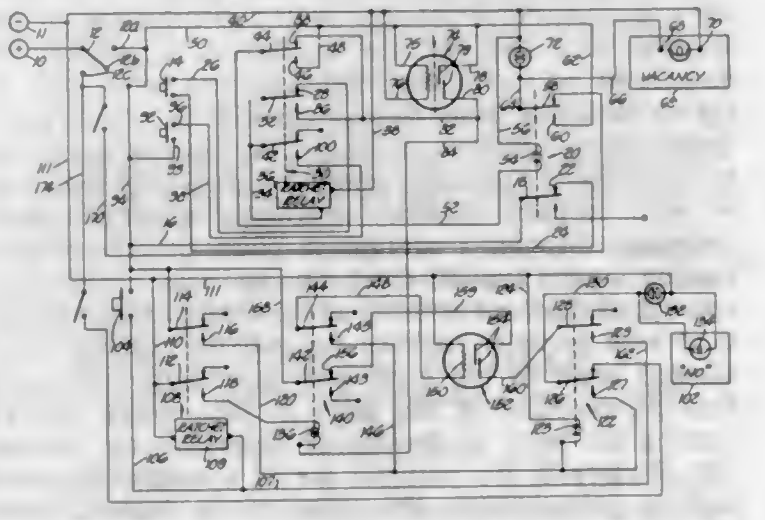
### 3,476,943

### PHOTOELECTRIC AMBIENT LIGHT SIGN CONTROL APPARATUS

**Sylvester E. Bruce, P.O. Box 847, Riggins, Idaho 83549**

**Filed Dec. 29, 1967, Ser. No. 694,461**
**Int. Cl. H01j** *39/12*
**U.S. Cl. 250—214** **5 Claims**



A circuit for automatically controlling the operation of an electric sign having two or more portions, the circuit including a light responsive cell exposed to ambient sunlight to turn the sign on or off and further including circuit means for turning off one portion of the sign but requiring said portion to be turned on manually.

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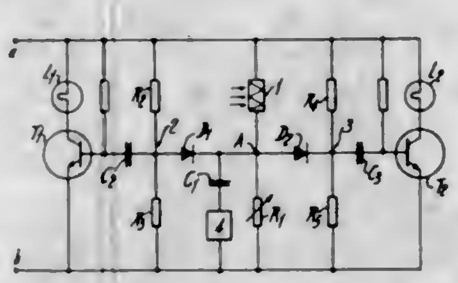
### 3,476,944

### ELECTRONIC PHOTOMETER WITH PHOTOELECTRIC ELEMENT CONTROLLED DIODE CIRCUITS

**Giovanni Odone, Lausanne, Vaud, Switzerland, assignor to Paillard S.A., Sainte-Croix, Vaud, Switzerland, a company of Switzerland**

**Filed Feb. 7, 1968, Ser. No. 703,657**
**Claims priority, application Switzerland, Mar. 16, 1967, 3,814/67**
**Int. Cl. H01j** *39/12*
**U.S. Cl. 250—214** **5 Claims**



The photometer includes a photo-cell inserted in series with a resistance in a D.C. circuit, the value of said resistance being preferably equal to about the resistance of the photo-cell under normal conditions of illumination. A source of A.C. feeds the point connecting the photocell with the resistance and biased diodes of opposite polarities, so as to normally cause signals to pass through said diodes selectively for opposite alternations or else to be prevented from passing through said diodes. A modification in the illumination of the photo-cell disturbs the arrangement and allows the passage of current only through one diode. Said signals can be transmitted by transistors to lamps, or the like, illuminating or controlling means.

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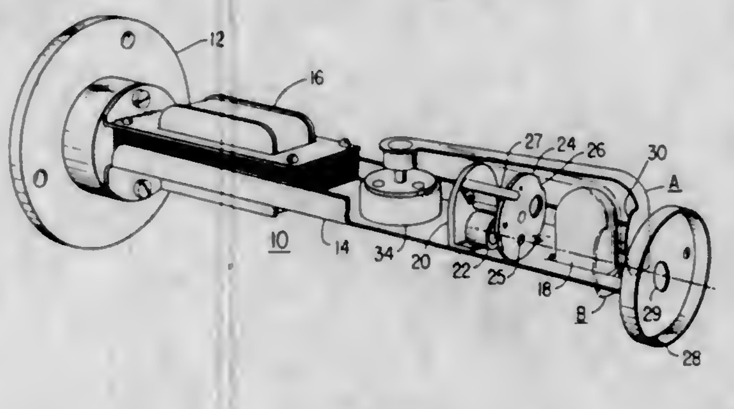
### 3,476,945

### FLAME DETECTOR FOR A MULTIPLE FUEL-FIRED FURNACE

**Raymond Golden, Willowick, and Robert A. Murzyn, Lyndhurst, Ohio, and William E. Wilson, Lynchburg, Va., assignors to Bailey Meter Company, a corporation of Delaware**

**Filed Feb. 23, 1968, Ser. No. 707,860**
**Int. Cl. H01j** *39/12*
**U.S. Cl. 250—217** **10 Claims**



A single flame detector housing incorporating two characteristically different sensor elements each of which responds to a specific fuel flame by generating an output signal indicative of the presence or absence of said flame.

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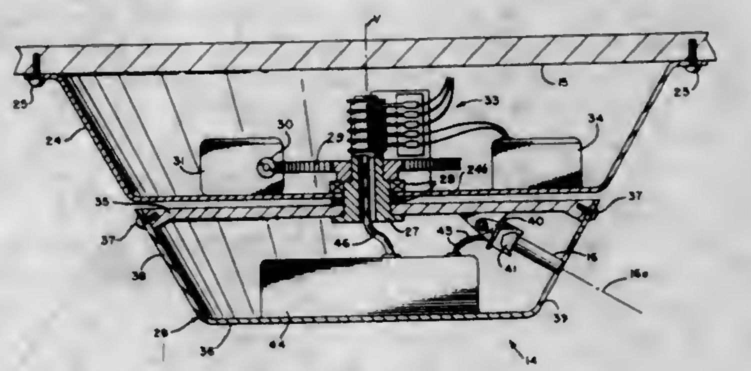
### 3,476,946

### OPTICAL INTRUSION DETECTION SYSTEM USING DUAL BEAM PERIPHERAL SCANNING AND LIGHT DIRECTING TUBES

**Theodore S. Kepner, Sunnyvale, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware**

**Filed Feb. 19, 1968, Ser. No. 706,276**
**Int. Cl. G01n** *21/32*
**U.S. Cl. 250—224** **7 Claims**



Light from two relatively fixed points of a surface bounding the protected area of a room are received through rapidly rotating light directing tubes and photocells located remote from the surface. The rotating photocells successively receive light from all points on a circular band which defines the perimeter of the protected area. The output of the leading photocell is delayed appropriately and is compared with the output of the trailing photocell so that any change in the output of one photocell relative to the other causes an alarm signal to be generated. The length of the time delay is determined by the physical spacing of the two viewed spots on the circular band and the angular velocity of the rotating cells.

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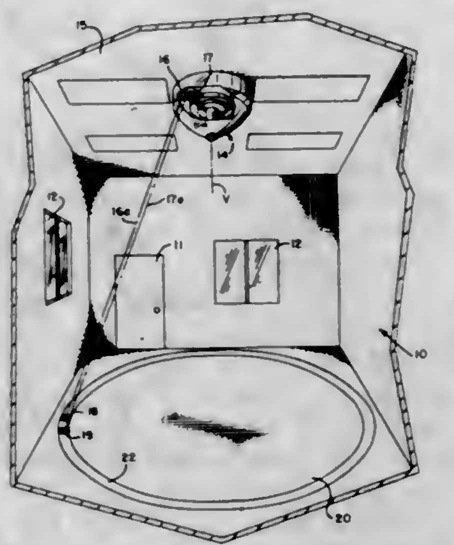
### 3,476,947

### OPTICAL INTRUSION DETECTION SYSTEM USING DUAL BEAM PERIPHERAL SCANNING

**Charles F. Burney, Milpitas, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware**

**Filed Feb. 19, 1968, Ser. No. 706,277**
**Int. Cl. G01n** *21/32*
**U.S. Cl. 250—224** **9 Claims**



A band on the perimeter of an illuminated surface bounding a protected area is scanned by two rapidly rotating tubes which direct light from the band on photocells. The tubes are mounted on the ceiling to point at two spaced spots or areas on the floor and when rotated about a vertical axis simultaneously scan the circular band on the floor and describe a cone of protection within the room. The intensity of light received by each tube is sensed by the associated photocell. The output of the cell receiving light from the leading tube is delayed and is compared with the output of the photocell aligned with the trailing tube and any change in the output of one cell relative to the other triggers an alarm. The delay period is determined by the physical spacing of the two spots on the floor and the angular velocity of the tubes.

A second embodiment of the invention utilizes two vidicons oriented to face the protected area. The electron beams of the vidicons scan the perimeters of the protected area images on the screens and are synchronized to trace the boundary at the same speed and with one beam trailing the other by a predetermined fixed spacing. The outputs of the vidicons are compared with each other after the signal from the leading beam is delayed for a period equal to the time spacing between the beams and an alarm is sounded if the output of one vidicon changes relative to the other.

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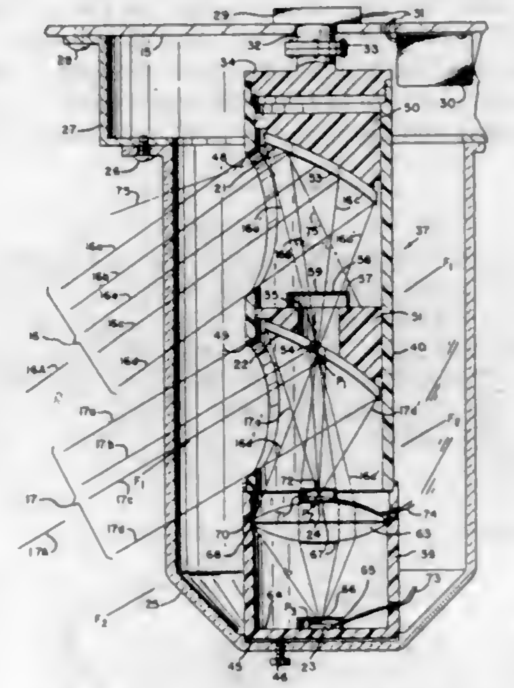
### 3,476,948

### OPTICAL INTRUSION DETECTION SYSTEM USING REFLECTED DUAL BEAM PERIPHERAL SCANNING

**Paul E. Mengers, Redwood City, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware**

**Filed Feb. 19, 1968, Ser. No. 706,278**
**Int. Cl. H01j** *39/12*
**U.S. Cl. 250—224 11 Claims**



Light from two relatively fixed spots on a surface bounding the protected area of a room is focused by two remotely mounted rapidly rotating mirrors onto associated stationary photocells. The mirrors and photocells are mounted on the ceiling in vertically stacked relation. Axes between the mirrors and the spots form acute angles with the axis of rotation and with each other and each describes a cone of protection having an apex at the mirror and a base on the floor of the room. The rotating mirrors sequentially receive light from all spots on a circular band defining the perimeter of the protected area on the floor. The output of the photocell receiving light from the leading mirror is delayed appropriately and is compared with the output of the other photocell so that a difference in the outputs of the two photocells triggers an alarm. The delay is determined by the physical spacing of the two spots on the floor on which the mirrors are focused and the angular velocity of the mirrors.

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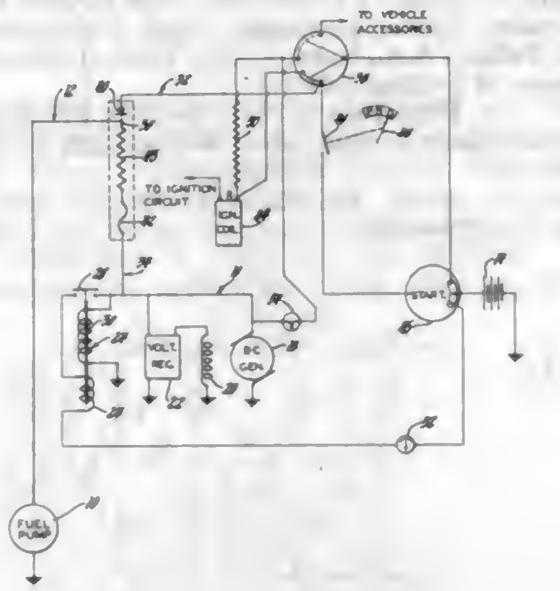
### 3,476,949

### ELECTRIC FUEL PUMP CONTROLS

**Richard P. Ballou, Howell, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Dec. 22, 1967, Ser. No. 692,734**
**Int. Cl. H02p** *9/04;* **F02n** *11/00*
**U.S. Cl. 290—36 5 Claims**



A vehicle electric fuel pump control employing the vehicle's DC generator circuitry for connecting the fuel pump either to the battery when the engine is being started or to the DC generator's output when the engine is operating. The vehicle's transmission selector operated neutral switch is also employed to permit selective operation of the fuel pump without the engine operating or being cranked.

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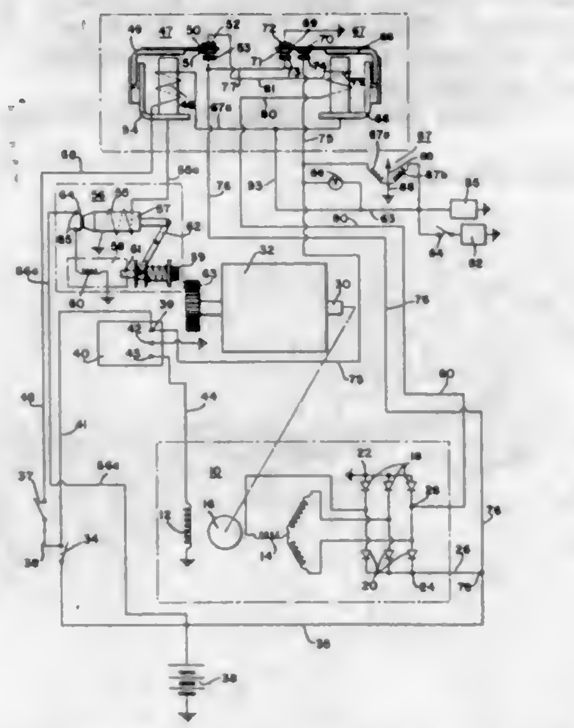
### 3,476,950

### ALTERNATOR-RECTIFIER CONTROL CIRCUIT

**Richard A. Carlson, Clarkston, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Original application Dec. 11, 1957, Ser. No. 702,000, now Patent No. 3,037,124, dated May 29, 1962. Divided and this application June 12, 1961, Ser. No. 116,349**
**Int. Cl. F02n** *11/08, 11/10*
**U.S. Cl. 290—38 7 Claims**



A field energizing system for a motor vehicle power supply system including an alternating current generator which supplies direct current to a battery through a bridge rectifier. The battery is directly connected across the output terminals of the bridge rectifier and a circuit, including a manually operable switch, is utilized to initially energize the field of the generator from the battery through a voltage regulator. This initial energizing circuit is bypassed by a circuit including the contacts of a relay which has an actuating coil. The relay actuating coil is connected between two rectifiers of the bridge rectifier and one of the direct current output terminals of the bridge rectifier so that the relay cannot be energized by the battery but is energized whenever the output winding of the alternating current generator develops a predetermined voltage.

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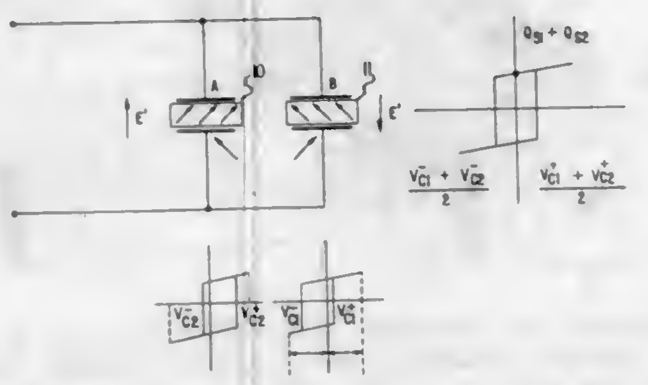
### 3,476,951

### FERRIELECTRIC DEVICES

**Charles F. Pulvari, 2014 Taylor St. NE., Washington, D.C. 20018**

**Filed Nov. 21, 1962, Ser. No. 239,180**
**Int. Cl. H03k** *3/49*
**U.S. Cl. 307—88 29 Claims**



Ferrielectric devices and circuits employing stable ferrielectric materials exhibiting a threshold switching field as distinguished from ordinary ferroelectric materials which do not have a threshold switching field. Stable devices and circuits utilizing same incorporating polarization switchable dielectric materials having layered-type structure of the mixed bismuth oxide type modified by selected impurity additions. Earlier application Ser. No. 14,585, disclosed first class of such polarization switchable materials and devices having a threshold switching field. The present application relates to a class of materials identified as "mixed bismuth oxides with layer-type structure." Units having internal bias of one type are coupled to units having opposite or complementary internal bias characteristics. Consult specification for details and other features of the invention.

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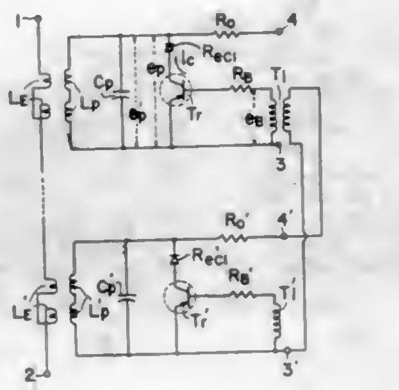
### 3,476,952

### APPARATUS FOR CONTROLLING THE ELECTRO-PARAMETRIC OSCILLATION PHASE

**Tameo Tanaka, Kitakyushu-shi, Japan, assignor to Kabushiki Kaisha Yaskawa Denki Seisakusho, Kitakyushu-shi, Japan, a joint-stock company of Japan**

**Filed Dec. 11, 1963, Ser. No. 331,641**
**Claims priority, application Japan, Dec. 14, 1962, 37/55,212; Feb. 8, 1963, 38/6,631; Feb. 9, 1963, 38/6,765, 38/6,766, 38/6,767; May 4, 1963, 38/23,250; May 7, 1963, 38/24,479, 38/24,498; June 14, 1963, 38/31,808; July 3, 1963, 38/35,762; Sept. 21, 1963, 38/50,354**
**Int. Cl. H01f** *27/42, 31/06*
**U.S. Cl. 307—88 23 Claims**

An apparatus for the control of the oscillation phase of a first parametric oscillator being continuously excited without pulsive excitation, in which an electronic valve having a control transistor is connected in parallel to the tuning capacitor of said first parametric oscillator, said electronic valve being brought into the on or off state by a control signal having the same frequency as that of the parametric oscillation and having the same or reverse phase as that of the said parametric oscillation.



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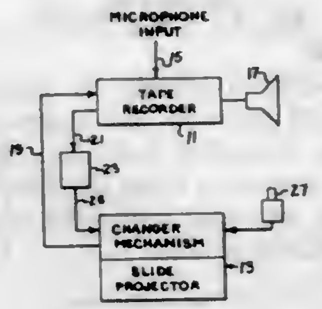
### 3,476,953

### AUTOMATIC SWITCHING CONTROL CIRCUIT

**Peter Lewis Crellin, Clearwater, Fla., assignor to Sylvania Electric Products Inc., a corporation of Delaware**

**Filed Apr. 22, 1968, Ser. No. 722,993**
**Int. Cl. H01h** *9/54*
**U.S. Cl. 307—125 6 Claims**



An automatic switching control circuit including a delay inducing capacitor operative in response to a recorded control signal to energize a relay to initiate activation of a slide changer mechanism. The trigger circuit includes a class B amplifier having its output coupled in series with the relay coil. The delay inducing capacitor shunts the relay coil, thereby preventing energizing of the relay and activation of the slider changer mechanism upon the occurrence of transient signals.

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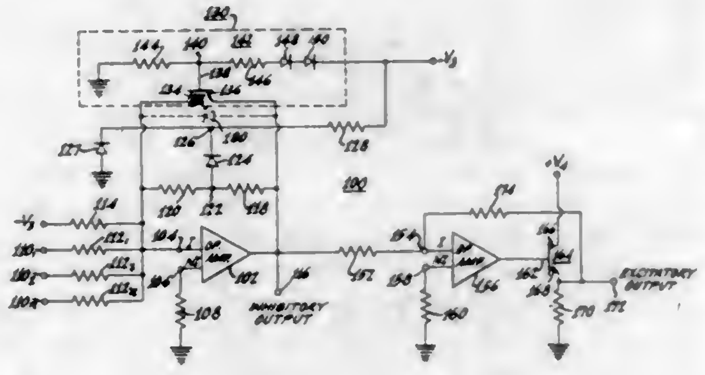
### 3,476,954

### ELECTRICAL NEURON CIRCUIT THAT INCLUDES AN OPERATIONAL AMPLIFIER

**Lawrence Paul Wennik, Philadelphia, Pa., and Phillips Brooks Scott, Haddonfield, N.J., assignors to RCA Corporation, a corporation of Delaware**

**Filed Aug. 23, 1966, Ser. No. 574,446**
**Int. Cl. H03k** *19/08, 19/12;* **G06g** *7/12*
**U.S. Cl. 307—201 5 Claims**

An electrical neuron circuit includes an operational amplifier and simulates the transfer characteristic of a biological neuron. The operational amplifier is biased to establish a predetermined threshold point for input signals below which no output signals are produced. The operational amplifier exhibits a high gain that produces a digital step in the output signal upon conduction at the threshold point. A feedback network is coupled to degeneratively feedback the output signals of the operational amplifier to the input thereof to reduce the gain of the amplifier. The operational amplifier thereupon exhibits an analog increase in output signals for increasing values



of input signals up to saturation after which the output remains substantially constant.

### 3,476,955
## PROCESS FOR THE MANUFACTURE OF VINYL CHLORIDE FROM CONTAMINATED 1,2-DICHLOROETHANE

**Hans Krekeler, Wiesbaden, Armin Jacobowsky, Knapsack, near Cologne, Klaus Born, Hermulheim, near Cologne, Heinz Schmitz, Frankfurt am Main, and Peter Wirtz, Cologne-Lindenthal, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany**

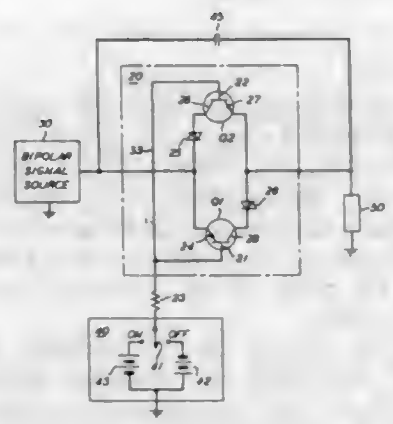
**Filed Aug. 5, 1966, Ser. No. 570,585**
**Claims priority, application Germany, Sept. 11, 1965, K 57,106**
**Int. Cl. C07c** *21/06*
**U.S. Cl. 260—656** **1 Claim**

Subjecting 1,2-dichloroethane to incomplete thermal cracking at elevated pressure and temperature in the absense of catalysts, removing hydrogen chloride in a first distillation stage, removing vinyl chloride in a second distillation stage and recycling unreacted dichloroethane after redistillation, to the process.

### 3,476,956
## BILATERAL TRANSISTOR GATE CIRCUIT

**Paul N. Burgess, Columbus, Ohio, and Robert E. Cardwell, Jamesburg, and Frank R. Remski, Oceanport, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**

**Filed Feb. 11, 1966, Ser. No. 526,856**
**Int. Cl. H03k** *17/60*
**U.S. Cl. 307—254** **6 Claims**

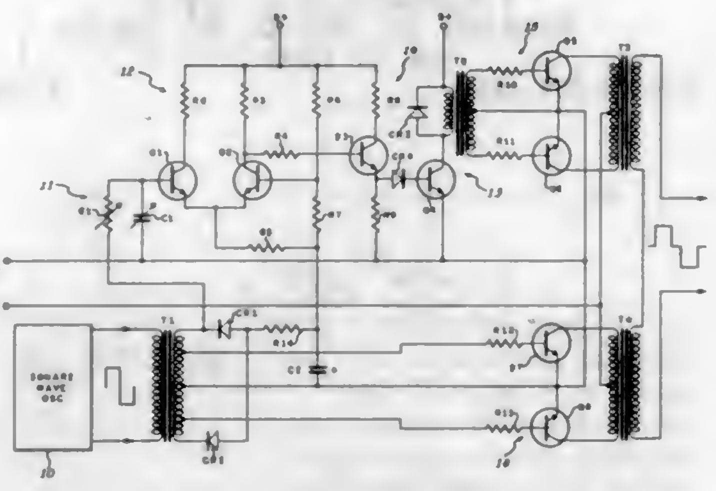


A switching circuit has two standard junction transistors coupled collector to emitter. A source of bipolar input signals is connected to one emitter, and a load is connected to the other emitter. Gating signals are applied through a multiple connection to both base electrodes for biasing both transistors into conduction at once. Input signals of either polarity are conducted through the collector-emitter paths of both transistors between the source and the load. Varistors are interposed in the collector circuit of each transistor to improve composite current gain.

### 3,476,957
## QUASI-SQUARE WAVE GENERATING APPARATUS

**Byron R. Duckworth, Phoenix, Ariz., assignor to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware**

**Filed Mar. 17, 1966, Ser. No. 535,144**
**Int. Cl. H03k** *5/00;* **H03b** *1/04;* **H06g** *7/12*
**U.S. Cl. 307—261** **11 Claims**

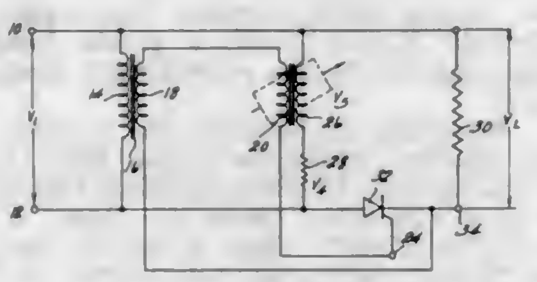


A quasi-square wave generator comprising a signal source providing an input signal having an alternating characteristic. Two transistors responsive to the input signal are alternately energized with respect to each other as a function of the alternating characteristics of the input signal. An adjustable biasing circuit regulates the energization of the transistors thereby selecting the dwell angle of the quasi-square wave. The secondary winding of an output transformer with primary windings coupled to the two transistors provides the quasi-square wave signal.

### 3,476,958
## ELECTRIC CIRCUIT EMPLOYING PHASE CONTROL

**Harry B. Farensbach, 420 Riverside Drive, New York, N.Y. 10025**

**Filed Oct. 12, 1965, Ser. No. 495,287**
**Int. Cl. H03k** *3/26, 19/08, 23/22*
**U.S. Cl. 307—305** **7 Claims**



An electric circuit for controlling the amount of electric power to a load in accordance with a self-generated control voltage. The circuit is provided with controllable means to shift the phase of the control voltage with respect to that of an applied voltage which has a constant amplitude and frequency whereby the amount of power derived from the applied voltage and delivered to the load varies in accordance with the actual phase shift.

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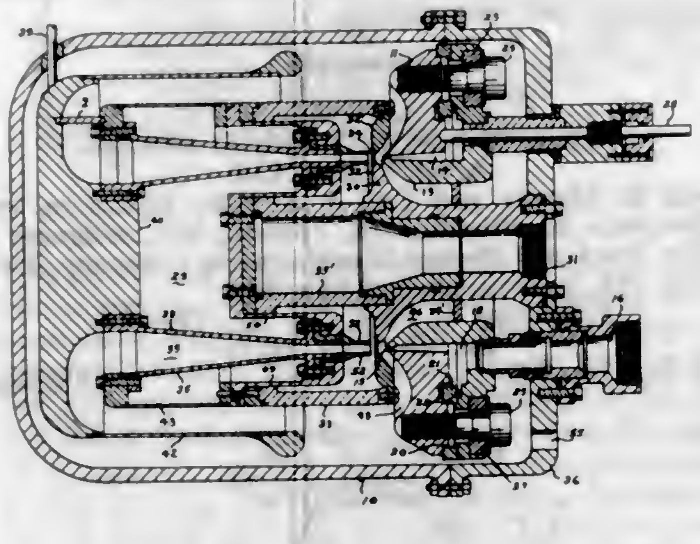
### 3,476,959
## ELECTROFLUID-DYNAMIC GENERATOR

**Maurice O. Lawson, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force**

**Filed July 6, 1967, Ser. No. 651,628**
**Int. Cl. H02n** *4/00*
**U.S. Cl. 310—10** **8 Claims**



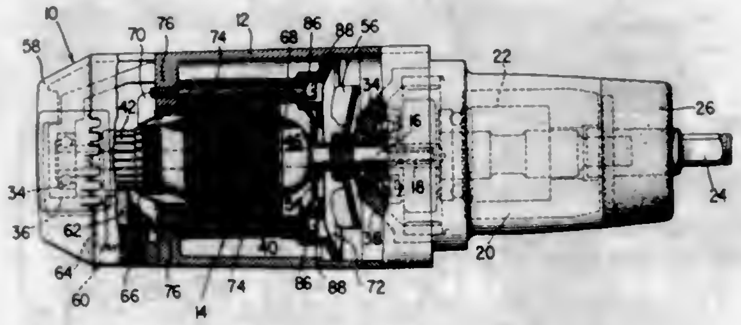
In an electrofluid-dynamic generator an elongated corona discharge electrode is positioned adjacent an elongated attractor electrode with a channel provided between. The ends of the corona discharge electrode and the attractor electrode are shaped to form an expansion nozzle adjacent the edge of the corona discharge electrode. A collector electrode is spaced from the corona discharge and attractor electrodes in line with the nozzle. A shield electrode is provided between the nozzle and the collector electrode. A high pressure, high temperature gas is directed through the nozzle toward the collector electrode. An electric field is established between the corona discharge electrode and attractor electrode. The gas after passing the collector electrode is recirculated past the corona discharge and attractor electrodes to provide a low pressure region adjacent a portion of the corona discharge electrode shielded from the high pressure gases within the nozzle to aid in the establishment of a corona discharge from the corona discharge electrode. The recirculated gas also aids in keeping the charge particles in the main stream from reaching insulators provided between the shield electrode and the collector electrode and also permits the use of an increased width in the conversion section which in turn allows an increased length in the conversion section and therefore a corresponding higher voltage.

### 3,476,960
## DOUBLE INSULATED POWER TOOLS

**Spencer C. Rees, Aurora, Ill., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey**

**Filed July 1, 1968, Ser. No. 741,633**
**Int. Cl. H02k** *7/14, 5/00, 1/06*
**U.S. Cl. 310—50** **4 Claims**

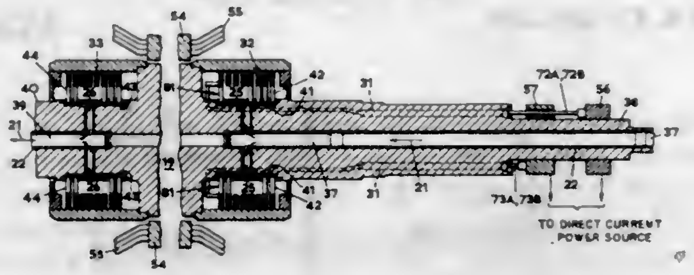
Double insulated power tools in which the motor thereof has a metallic housing in which the functionally insulated motor components are operationally mounted therein and provided with protecting insulation which provides a second barrier. An integrally insulated field is clamped to the housing between a pair of insulating shrouds by metal screws which in turn have insulated shanks which form a dielectric barrier along the portion of the screws passing through the field and shrouds. This assembly is used in combination with the motor having an insulating tube between the shaft and the armature core, and an insulated end cover supporting insulated brush holders to form a power tool which does not require a ground connection to prevent electrical shock to the operator.



### 3,476,961
## DYNAMOELECTRIC MACHINES

**Jeffery Gerald Heard and Roy Brian Bennett, Stafford, England, assignors to The English Electric Company Limited, London, England**

**Continuation-in-part of application Ser. No. 446,209, Apr. 7, 1965. This application Aug. 21, 1967, Ser. No. 662,091**
**Claims priority, application Great Britain, Apr. 9, 1964, 14,742/64**
**Int. Cl. H02k** *9/19*
**U.S. Cl. 310—54** **3 Claims**



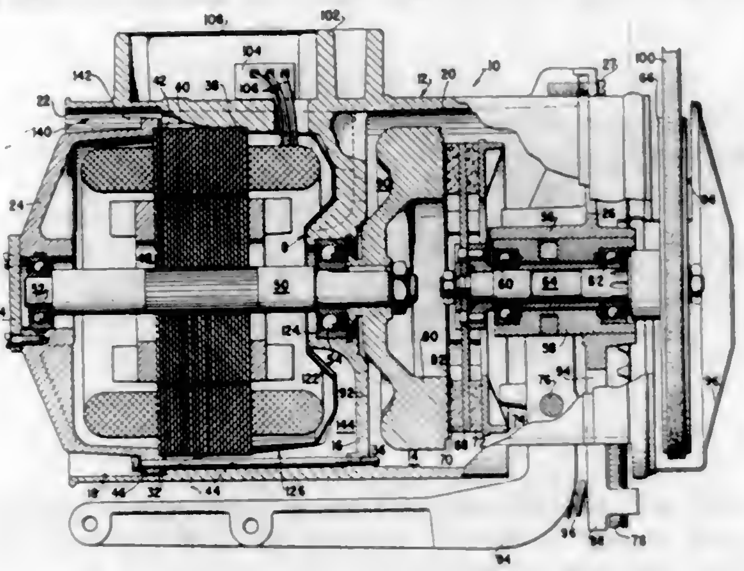
This invention relates to dynamoelectric machines particularly to large alternating current generators having liquid cooled hollow rotor windings and liquid cooled hollow rotor winding leads. The invention provides a double lead arrangement in which each lead of one polarity comprises a pair of hollow conductor members which are electrically connected in parallel but which for the flow of cooling liquid are connected in series so that liquid enters one conductor member adjacent the rotor windings and flows through the conductor member back along the rotor shaft to the slip ring, or other source of direct current power and thence into and through the other conductor member back along the rotor shaft in the opposite direction and then into the hollow rotor windings.

### 3,476,962
## MOTOR WITH CLUTCH-BRAKE ARRANGEMENTS

**John M. Fauth, Bearsden, and Donald S. Scott, Dumbarton, Scotland, assignors to The Singer Company, New York, N.Y., a corporation of New Jersey**

**Filed Oct. 19, 1967, Ser. No. 676,516**
**Int. Cl. H02k** *7/10, 5/00*
**U.S. Cl. 310—76** **6 Claims**

This disclosure relates to an electric transmitter having a simplified housing. More particularly the disclosure relates to a motor shield disposed in the housing to seal one end of the motor. Furthermore, the invention relates to a housing using a motor shield in which stator cores of various stack lengths may be mounted therein.



### 3,476,963
### MULTIPART CASING FOR AN ELECTRICAL MACHINE

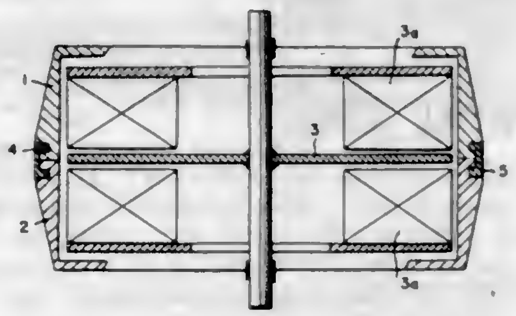
**Heinrich Feldhoff, Bad Duerkheim, Klaus Becker, Ludwigshafen (Rhine), and Georg Schlereth, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Rheinland-Pfalz, Germany**

**Filed Jan. 31, 1967, Ser. No. 612,953**

**Claims priority, application Germany, Feb. 3, 1966, B 85,643**

**Int. Cl. H02k** *5/04*

**U.S. Cl. 310—89** **9 Claims**



A new multipart flangeless casing for electrical machines in which two adjacent parts of the casing are urged together by magnetic forces generated by active components of the machine. The parts of the casing are provided in the region of their contacting surfaces with intermittent projections and peripheral grooves in these projections. Two adjacent casing parts are locked together by means of an appropriately shaped ring which is inserted into the grooves. In explosion-proof embodiments there is provided in the interior of the casing an additional detachable ring whose width establishes the gap width at the joint of the parts.

### 3,476,964
### MULTIPLE CIRCUIT ARMATURE WINDING FOR POLYPHASE DYNAMOELECTRIC MACHINE

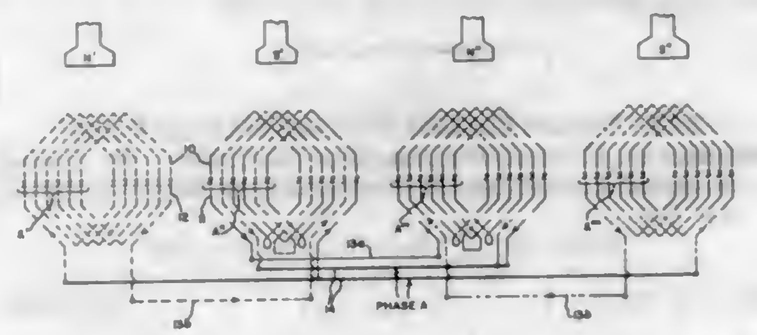
**David M. Willyoung, Scotia, N.Y., assignor to General Electric Company, a corporation of New York**

**Filed July 15, 1968, Ser. No. 745,030**

**Int. Cl. H02k** *3/04*

**U.S. Cl. 310—198** **5 Claims**

A generator armature winding for a three-phase four-pole generator with three parallel-connected circuits per phase, wherein for each phase two of the four phase belts have coil sides of only one circuit each, and the other two phase belts have only two circuits each, thereby simplifying end connections.



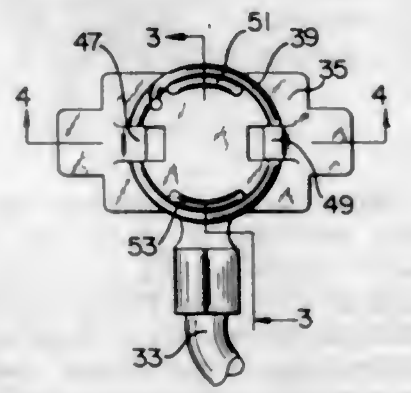
### 3,476,965
### INTERCONNECTED BRUSH SPRING AND TERMINAL

**David E. Harvey and Carl J. Amrein, Baltimore, and Salvatore R. Abbratozzato, Towson, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland**

**Filed May 1, 1968, Ser. No. 725,654**

**Int. Cl. H01r** *39/36*

**U.S. Cl. 310—249** **18 Claims**



The device disclosed herein is a brush assembly for use in an electric motor or motor device and includes a brush holder fixed on a motor housing and adapted to have a carbon brush slidably disposed therein. An electrical lead has a terminal disposed within the brush holder behind the brush and is biased thereagainst by a compression spring also within the holder and behind the terminal. The lead and spring are novelly interlocked so as to facilitate easy removal of the terminal from the holder pursuant to brush inspection and/or replacement.

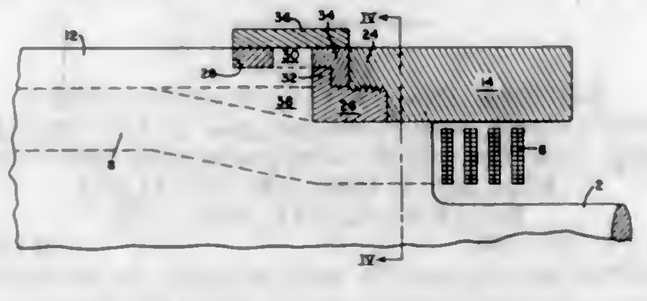
### 3,476,966
### RETAINING RING LOCKING STRUCTURE

**David M. Willyoung, Scotia, N.Y., assignor to General Electric Company, a corporation of New York**

**Filed Nov. 14, 1967, Ser. No. 682,926**

**Int. Cl. H02k** *3/46*

**U.S. Cl. 310—270** **5 Claims**



A dynamoelectric machine rotor retaining ring has a circumferential keyway which provides a locking means in conjunction with a keyseat in the rotor teeth and locking members. A locking ring surrounds the locking members to complete the retaining ring locking structure.

### 3,476,967
### ELECTRON DISCHARGE DEVICE WITH A GETTERING AND COLLECTING ELECTRODE

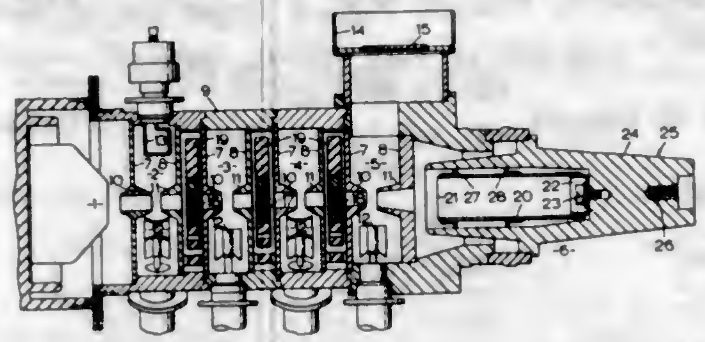
**Karl Heinz Robert Christian Kreuchen, Heston, England, assignor to Electric & Musical Industries Limited, Hayes, Middlesex, England, a company of Great Britain**

**Filed Oct. 24, 1966, Ser. No. 588,809**

**Claims priority, application Great Britain, Nov. 3, 1965, 46,595/65**

**Int. Cl. H01j** *1/02, 7/28, 61/52*

**U.S. Cl. 313—30** **5 Claims**



A klystron or other high power electron discharge device is provided with an electrode for collecting the electrons emitted by the cathode and which also performs a gettering function. The electrode is in the form of a hollow tube of zirconium which is co-axial with the device and which is closed at the end remote from the cathode by a tantalum cap. The other end of the zirconium tube is open to allow the entrance of electrons. The zirconium tube is located in a cylindrical cavity formed in a copper block which serves to conduct heat away from the zirconium tube. In operation of the device a temperature gradient is established along the zirconium tube so that the gettering action is effective for a variety of substances which require different gettering temperatures. The highest temperatures are attained at the end of the zirconium tube which is attached by a tubular cap to the copper block. Tantalum is selected for the metal of the cap since it does not form with either copper or zirconium an alloy which melts at any temperature likely to be attained by the tantalum in operation of the device. Direct contact of the zirconium and the copper is avoided at the high temperature end of the zirconium tube to avoid the formation of zirconium copper alloys which could melt at operating temperatures and ruin the electrode.

### 3,476,968
### MICROWAVE ION SOURCE

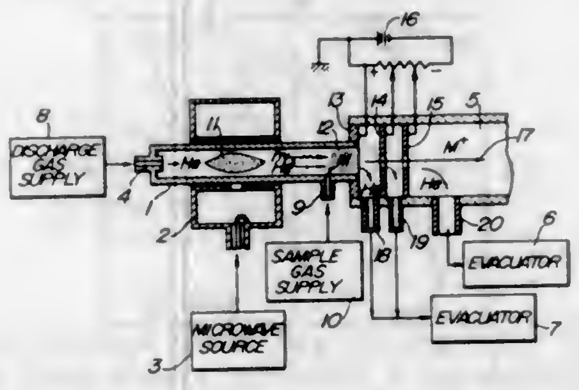
**Itiro Omura, Kodaira-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan**

**Filed Dec. 12, 1967, Ser. No. 689,979**

**Claims priority, application Japan, Dec. 19, 1966, 41/82,758**

**Int. Cl. H01j** *3/20, 3/32, 23/10*

**U.S. Cl. 313—63** **3 Claims**



A microwave ion source in which high frequency electrodeless discharge is caused in a discharge vessel including a discharge gas by providing a microwave power in the discharge vessel to generate a discharge plasma, and the atoms or molecules of a sample gas introduced into the discharge vessel are ionized by both the photoionization effect caused by irradiating the sample gas with the resonance radiation emitted by the plasma and the charge transfer effect arising when the atoms of the discharge gas excited to a high energy in the plasma collide with the atoms or molecules of the sample gas.

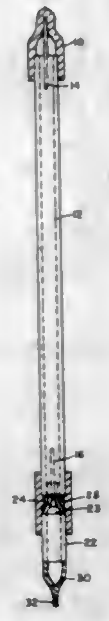
### 3,476,969
### CAPILLARY CERAMIC DISCHARGE LAMP WITH CLOSURE MEANS THEREFOR

**Dietrich F. Ennulat, Elmira Heights, N.Y., and Robert J. Zollweg, Pitcairn, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Feb. 16, 1967, Ser. No. 616,606**

**Int. Cl. H01j** *17/20, 61/12*

**U.S. Cl. 313—184** **4 Claims**



The discharge lamp includes a capillary type polycrystalline alumina body having an internal diameter of not more than $\frac{1}{16}$ of an inch. One end of the polycrystalline alumina arc tube is sealed by a niobium cap carrying a tungsten wire electrode. The sealed closure at the other end of said lamp includes a niobium sleeve which receives at its one end the other end of the arc tube and at its other end tantalum tubulation carrying a second tungsten wire electrode.

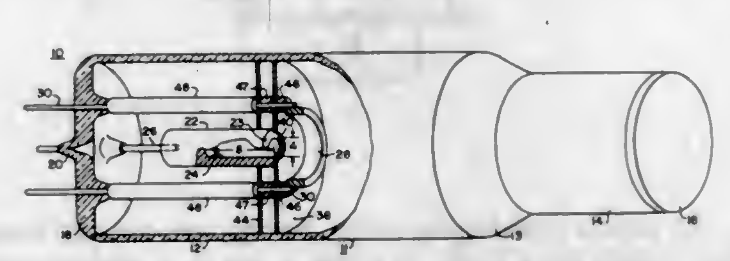
### 3,476,970
### HOLLOW CATHODE ELECTRON DISCHARGE DEVICE FOR GENERATING SPECTRAL RADIATION

**Wallace Gillies, George K. Yamasaki, and J. C. Burger, Horseheads, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Sept. 12, 1966, Ser. No. 578,827**

**Int. Cl. H01j** *17/04, 61/04*

**U.S. Cl. 313—209** **1 Claim**



A spectral light source of the hollow cathode variety capable of emission of spectral radiation characteristic of the material within the hollow cathode to enhance emission of the ground state lines of the radiation with respect to emission of ion lines of said radiation.

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3,476,971

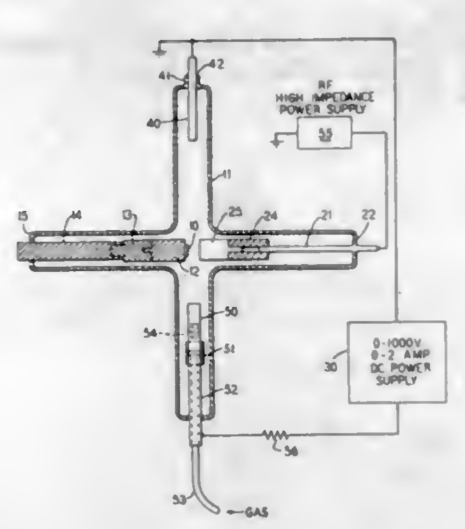
### APPARATUS FOR PLASMA PROCESSING

**Joseph R. Ligenza, Califon, N.J., and Edward I. Povilonis, Hartford, Conn., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**

**Filed Dec. 18, 1967, Ser. No. 691,259**

**Int. Cl. H01j** *17/26, 61/28*

**U.S. Cl. 313—231** **4 Claims**


RF HIGH IMPEDANCE POWER SUPPLY
0-1000V 0-2 AMP DC POWER SUPPLY
GAS

The specification describes a hollow tantalum cathode designed especially for creating high discharge plasmas in connection with processes for depositing thin films. The hollow cathode contains an auxiliary element which decreases the operating power and enhances the reproducibility of the discharge.

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3,476,972

### DEVICE FOR EXCHANGING ELECTRON SOURCES IN ELECTRICAL DISCHARGE DEVICES

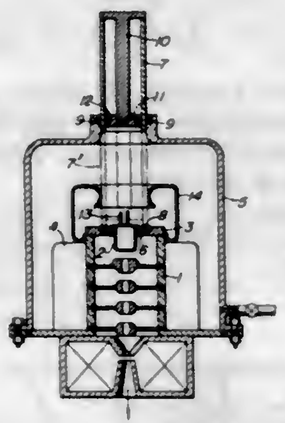
**Shinjiro Katagiri and Yoshihisa Minamikawa, Katsuta-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan**

**Filed Apr. 5, 1968, Ser. No. 719,023**

**Claims priority, application Japan, Apr. 12, 1967, 42/22,898**

**Int. Cl. H01j** *1/02, 9/02*

**U.S. Cl. 313—237** **3 Claims**



An article exchanging device having two annular members which have a slit to cause a gas in a high-pressure vessel to leak therefrom and are disposed at a gap between an opening in the wall of the vessel and a cylindrical member for exchanging an article in the vessel therethrough. A gasket is disposed on a flange of the cylindrical member so as to keep a gas-tight relationship in the abutting area between the flange and the lower face of said opening in the wall of the vessel.

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3,476,973

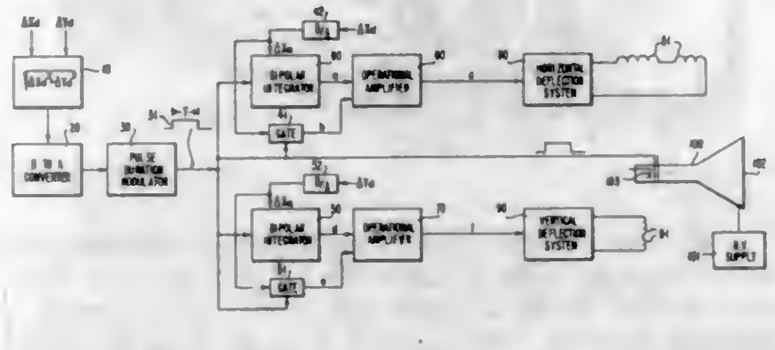
### DISPLAY SYSTEM

**Donald J. Chesarek and Zack D. Reynolds, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Jan. 15, 1968, Ser. No. 697,733**

**Int. Cl. H01j** *29/70*

**U.S. Cl. 315—18** **3 Claims**



An electron beam deflection system for a cathode ray tube which has its beam gated on by a rectangular pulse. Two sets of transversely disposed deflection coils are employed to horizontally and vertically deflect the electron beam. Both the vertical and the horizontal deflecting circuits for these coils include means for generating a linear beam deflecting portion or waveform. This deflection portion is added to a rectangular pulse and the resulting waveform is applied to the corresponding horizontal and vertical deflection coils. The resultant wave from this addition is a waveform having a center linear beam deflecting portion with a sharp leading edge preceding this deflecting portion and a sharp trailing edge immediately after said beam deflecting portion. As a result of the sharp leading and trailing edges, the inductive characteristics of the deflection circuits and coils are substantially overcome so as to result in the beam velocity at the beginning and end of a trace to be substantially equal to the beam velocity throughout the trace.

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3,476,974

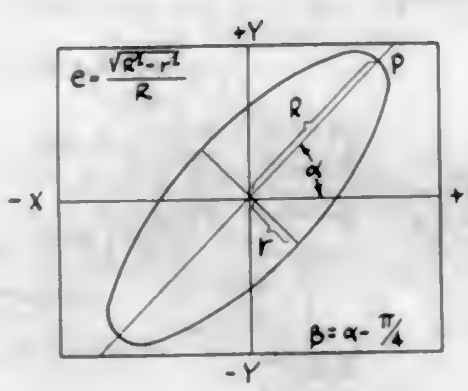
### DIGITAL CONTROLLED ELLIPTICAL DISPLAY

**Rodger Elmo Turnage, Jr., Jerald T. Stebbins, and Lawrence R. Crump, San Diego, Calif., assignors to Stromberg Datagraphix, Inc., a corporation of Delaware**

**Filed Jan. 22, 1968, Ser. No. 699,499**

**Int. Cl. H01j** *29/70*

**U.S. Cl. 315—23** **22 Claims**



An electronic apparatus is provided for producing an ellipse upon a cathode ray tube screen or other display device in response to the command of digital signals from a computer or other program source. The apparatus includes means for generating quadrature phase, sinusoidal wave forms and means for modifying such wave forms in phase or amplitude in response to digital signals, to thereby obtain wave forms which define an ellipse whose size, eccentricity and and rotation are defined by the digital signals.

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3,476,975

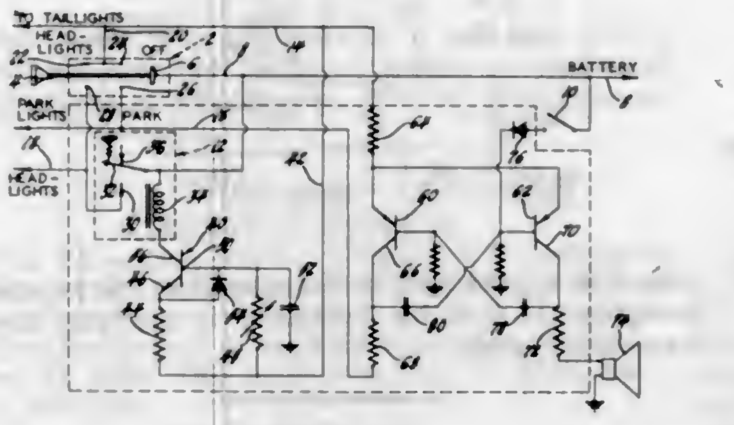
### HEAD LAMP LIGHTING CIRCUIT WITH A TIME DELAY SHUT OFF AND A SWITCH POSITION WARNING INDICATOR

**Eugene W. Brock, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed May 16, 1967, Ser. No. 638,807**

**Int. Cl. G60q** *1/04*

**U.S. Cl. 315—83** **4 Claims**



Time delay means are provided for headlight systems on automotive vehicles to maintain the lights energized for a short period after the ignition has been turned off to permit the driver to leave the area while lighted with further means to indicate to the operator if he has neglected to move the headlight switch to "off" position so that the lights will be extinguished at the end of that period.

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3,476,976

### STARTING DEVICE FOR DISCHARGE LAMP

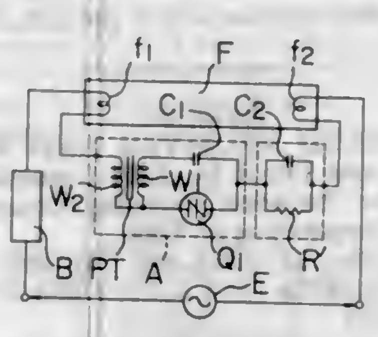
**Hiroshi Morita, Motoyosi Fuse, Sadaya Iwasaki, Hisato Yamagishi, Syojiro Kawaguchi, and Koichiro Tanigawa, Kadoma-shi, Osaka, Japan, assignors to Matsushita Denko Kabushiki Kaisha, Osaka, Japan, a corporation of Japan**

**Filed Apr. 7, 1967, Ser. No. 629,127**

**Claims priority, application Japan, Apr. 9, 1966, 41/22,556; Apr. 22, 1966, 41/25,746, 41/25,748; Dec. 29, 1966, 42/622**

**Int. Cl. H05b** *39/02, 41/14*

**U.S. Cl. 315—101** **7 Claims**



This invention relates to a starting device for a discharge lamp wherein is provided a two-terminal starting pulse generating circuit provided with a closed circuit formed of such symmetrical switching element as a five-layer diode, a condenser and a primary winding of a pulse transformer and with a secondary winding electromagnetically coupled with the primary winding of said pulse transformer so that the generation of starting pulses and the feed of a filament preheating current take place at a frequency of a half cycle corresponding to a source voltage.

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3,476,977

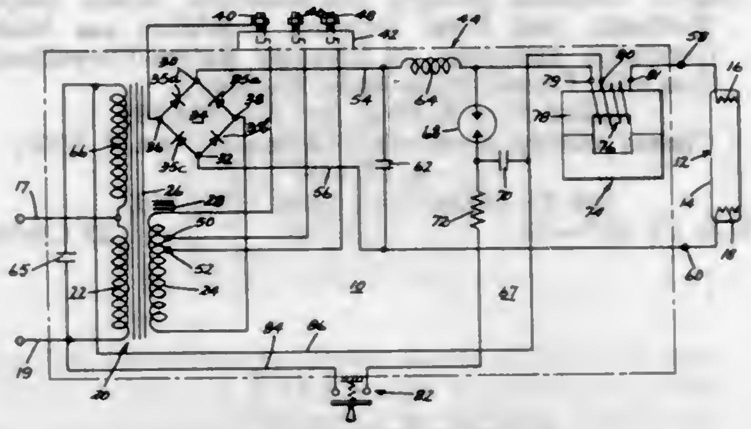
### IMPULSE STARTING AND OPERATING CIRCUIT FOR GAS DISCHARGE LAMPS

**Alexander R. Hallay, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York**

**Filed May 31, 1967, Ser. No. 642,464**

**Int. Cl. H05b** *37/02, 39/02, 41/04*

**U.S. Cl. 315—183** **6 Claims**



An apparatus for operating one or more high pressure electric discharge lamps requiring a hot starting voltage at least 1.5 turns higher than the cold starting voltage. The apparatus utilizes a pulse generating source for starting the lamp while in a hot or recently extinguished condition. The pulse generating source includes a pulse transformer with its secondary connected in the lamp operating circuit, a switch element and a capacitor connected in circuit with its primary. A high leakage reactance transformer is used to provide cold starting and operating voltage in the lamp operating circuit. In a specific aspect, the pulse generating source operates only when the lamp is out as the capacitor is connected to the operating circuit for charging in response to an open circuit condition in the operating circuit.

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3,476,978

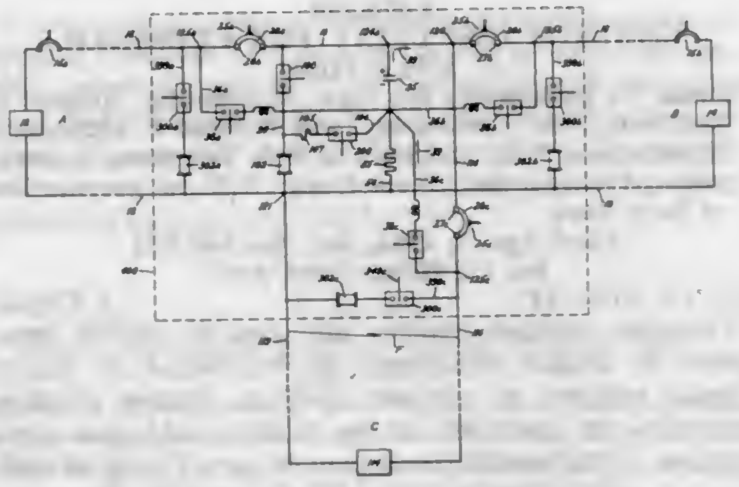
### CIRCUIT INTERRUPTING MEANS FOR A HIGH VOLTAGE D-C SYSTEM

**Allan N. Greenwood, Media, Pa., assignor to General Electric Company, a corporation of New York**

**Filed Dec. 6, 1967, Ser. No. 688,557**

**Int. Cl. H02h** *7/22*

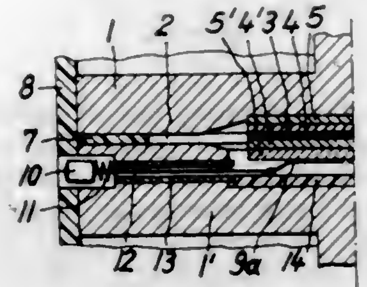
**U.S. Cl. 317—11** **10 Claims**



Circuit interrupting means for a high voltage D-C system of the type comprising a main circuit and a branch circuit tapping the main circuit intermediate its ends. Comprises three sets of separable contacts connected in the system adjacent to the tap point on opposite sides thereof. A single commutating capacitor common to all three sets is used for extinguishing the arc formed when any one set is opened. For limiting the recovery voltage appearing across the opened set of contacts, a single source-side surge suppressor is provided across the main conductors at the tap point.

### 3,476,979
### ELECTRICAL PROTECTION DEVICE FOR ESTABLISHING A SHORT CIRCUIT IN RESPONSE TO THE APPEARANCE OF A LOW LEVEL OVERVOLTAGE

**August Christian Stumpe, Kleinostheim, Anton Seelig, Weilbach, and Hans Dönges, Frankfurt am Main, Germany, assignors to Licentia Patent-Verwaltungs G.m.b.H., Frankfurt am Main, Germany**
**Filed Nov. 9, 1966, Ser. No. 593,189**
**Claims priority, application Germany, Nov. 9, 1965, L 52,105**
**Int. Cl. H02h** *3/28, 5/04;* **H01l** *3/02*
**U.S. Cl. 317—31** **23 Claims**

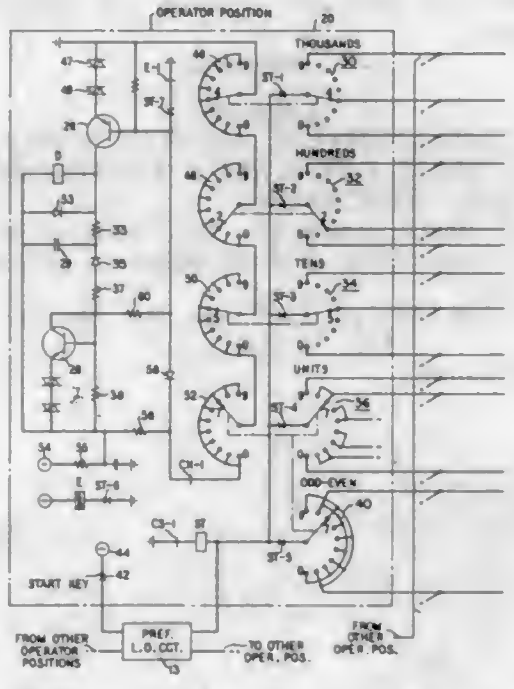


The present invention relates to breakdown devices for protecting against relatively low level overvoltages, particularly in the range below 300 volts, by providing one or more semiconductor arrangements between two main electrodes, which are separated by one or more relatively large air gaps, so as to prevent the protector from tripping when subjected to extraneous static voltages and to trip only when subjected to a D.C. or A.C. voltage having a sufficiently high value to cause the reverse breakdown of one or more barrier layers formed in the semiconductor arrangement and having a sufficiently high current level to melt and/or vaporize one or more layers of the semiconductor arrangement, which melting and/or vaporization causes conductive material to flow into the one or more air gaps and there to become welded between the electrodes so as to provide a permanent, highly conductive connection.

### 3,476,980
### CONTROL CIRCUITRY FOR CROSSBAR SWITCHES

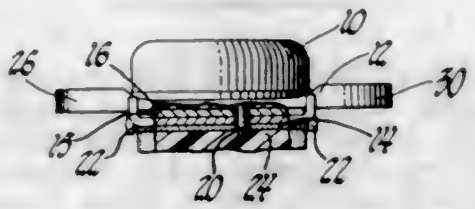
**Thomas F. Dougherty, Jr., New Monmouth, William J. MacNutt, New Shrewsbury, and William J. McKelvey, Middletown, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Apr. 7, 1966, Ser. No. 540,931**
**Int. Cl. H04m** *3/16, 3/60*
**U.S. Cl. 317—157** **6 Claims**

Crossbar switches connect any one of 10,000 input signals to display equipment as determined by rotary selector switches at operator positions. Rotary switches determine the operation of the desired hold and select magnets of the crossbar switches. A second bank of contacts on each rotary selector switch is series connected in a ground path to a transistor timer and detector circuit. The release of priorly selected crosspoints is effected by opening this ground path. The timer distinguishes between true and false release signals on this path. The ground path is also opened to release selected crosspoints if a double connection is attempted through the crossbar switch.



### 3,476,981
### MINIATURE POWER CIRCUIT ASSEMBLY

**Robert M. Burton and Glen E. Harland, Kokomo, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Oct. 10, 1967, Ser. No. 674,167**
**Int. Cl. H02b** *1/00, 1/04*
**U.S. Cl. 317—100** **13 Claims**

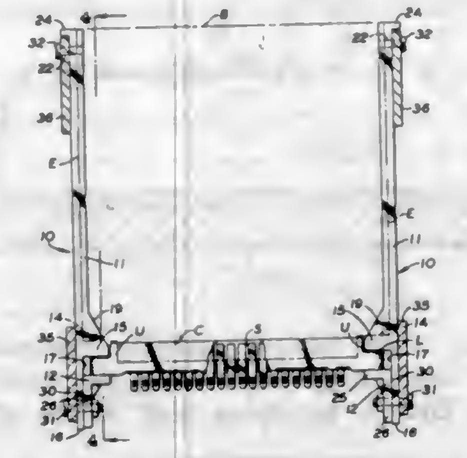


A small composite power circuit assembly in which a miniature circuit is mounted in back-to-back relationship with a power transistor with heat generated by the two being removed laterally from the interface therebetween. In one embodiment the heat is removed through the base member of the power transistor capsule. In another embodiment heat is removed via an element interposed between the power transistor and the circuit.

### 3,476,982
### CIRCUIT BOARD RECEIVER AND RETAINER

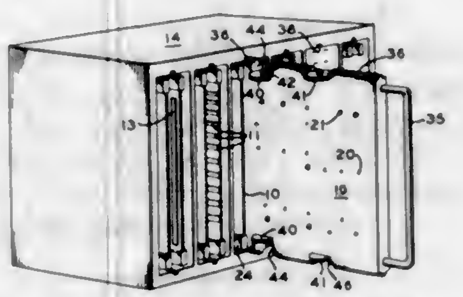
**David M. Bell and Floyd W. Bell, Columbus, Ohio, assignors to The Buckeye Stamping Company, Columbus, Ohio, a corporation of Ohio**
**Filed Dec. 11, 1967, Ser. No. 689,401**
**Int. Cl. H02b** *1/04, 9/00;* **H05k** *1/00*
**U.S. Cl. 317—101** **8 Claims**

A circuit board receiver and retainer arrangement for receiving and retaining in a preselected pattern one or more circuit boards or cards, such as printed circuit boards, in associtaion with electrical connectors, the arrangement being such that it properly receives standard boards and associated standard connectors. It is made up of at least one pair of opposed sections which provide a pair of guide channels or sockets for receiving the opposite edges of a circuit board and means for mounting the usual electrical connector in alignment with the pair of opposed guide channels for receiving the lower edge of the circuit board. The arrangement is such that greater flexibility and easier packaging of printed circuit boards or cards results as compared to prior art arrangements.



### 3,476,983
### CIRCUITRY SYSTEM

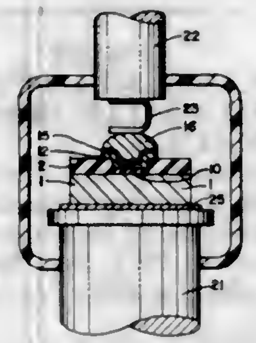
**Joseph De Robertis, Yorktown Heights, N.Y., assignor to Sealectro Corporation, Mamaroneck, N.Y., a corporation of New York**
**Continuation-in-part of application Ser. No. 544,564, Apr. 22, 1966. This application Dec. 20, 1967, Ser. No. 692,148**
**Int. Cl. H02b** *1/04*
**U.S. Cl. 317—101** **7 Claims**



A circuit selector including a pair of spaced printed circuit cards having spaced horizontal and vertical contact strips and mounted for movement towards each other, and a programming board with contact pins to be slid between the cards and contact two of said strips at their ends, upper and lower rollers journalled on vertical axes at the leading and at the trailing edges of said board to effect separation of the cards during entry of the board.

### 3,476,984
### SCHOTTKY BARRIER SEMICONDUCTOR DEVICE

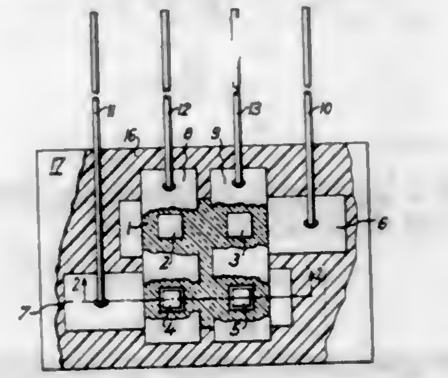
**George J. Tibol, Fairview, N.J., assignor to Solitron Devices, Inc., Tappan, N.Y., a corporation of New York**
**Filed Nov. 10, 1966, Ser. No. 593,541**
**Int. Cl. H01l** *5/00;* **B44d** *1/18*
**U.S. Cl. 317—234** **10 Claims**



A semiconductor device having a clean Schottky barrier junction includes a passivation layer overlying and sealing the metal barrier layer to protect the metal barrier layer from contamination.

### 3,476,985
### SEMICONDUCTOR RECTIFIER UNIT

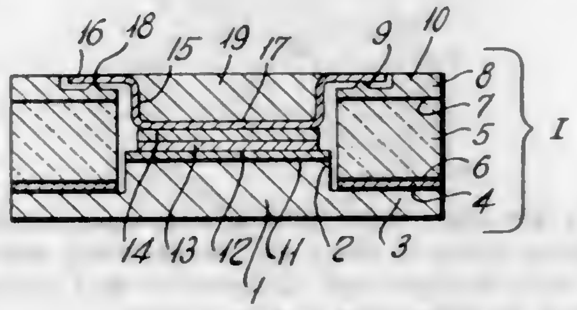
**Richard Magner, Belecke, and Albrecht Geppert, Warstein, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany**
**Filed Dec. 14, 1966, Ser. No. 601,737**
**Claims priority, application Germany, Dec. 15, 1965, L 52,400**
**Int. Cl. H01l** *11/00, 13/00*
**U.S. Cl. 317—234** **21 Claims**



Semiconductor rectifier device having at least one semiconductor rectifier wafer disposed in an opening in a mica sheet and electrically connected to two thin copper conducting strips each disposed on an opposite side of the mica sheet, thereby giving the device a substantially planar configuration and a good heat dissipating capability.

### 3,476,986
### PRESSURE CONTACT SEMICONDUCTOR DEVICES

**Shigeru Tsuji, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan**
**Filed Sept. 18, 1967, Ser. No. 668,536**
**Claims priority, application Japan, Sept. 17, 1966, 41/61,823**
**Int. Cl. H01l** *3/00, 5/00;* **B23k** *31/02*
**U.S. Cl. 317—234** **6 Claims**

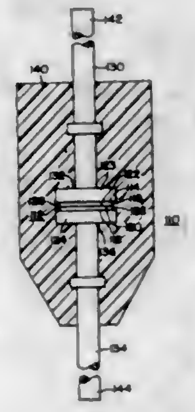


A generally disc-shaped semiconductor device enclosure including a bottom disc, an annular ring of insulating material, a centrally apertured metallic shield and a metallic cap of resilient metal, wherein the semiconductor element is held between said bottom disc and said cap by permanent pressure developed by deformation of said cap upon welding the same to said shield.

### 3,476,987
### RESIN ENCAPSULATED SEMICONDUCTOR DEVICE

**Joseph E. Zido, Donora, and Thomas A. Whalen, Irwin, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Sept. 27, 1967, Ser. No. 671,017**
**Int. Cl. H01l** *3/00, 5/00*
**U.S. Cl. 317—234** **4 Claims**

This disclosure sets forth a resin encapsulated semiconductor device in which the wafer of semiconductor material has been etched in such a manner as to preclude



the need of a cushioning material being disposed between the wafer and the encapsulating resin.

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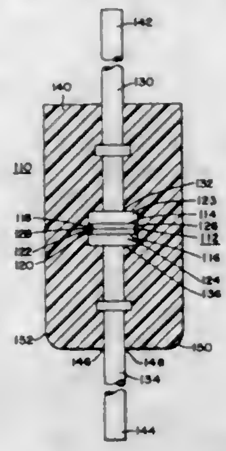
### 3,476,988
### RESIN ENCAPSULATED SEMICONDUCTOR DEVICE

**Joseph E. Zido, Donora, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Jan. 31, 1968, Ser. No. 701,985**

**Int. Cl. H01l** *3/00, 5/00*

**U.S. Cl. 317—234** **4 Claims**



This disclosure sets forth a resin encapsulated semiconductor device in which the encapsulating resin housing has a wall thickness and configuration that prevents fracturing of the resin along lead boundaries.

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### 3,476,989
### CONTROLLED RECTIFIER SEMICONDUCTOR DEVICE

**Clifford V. Miles and John M. Garrett, London, England, assignors to Westinghouse Brake and Signal Company Limited, London, England, a corporation of Great Britain**

**Filed Mar. 29, 1967, Ser. No. 626,869**

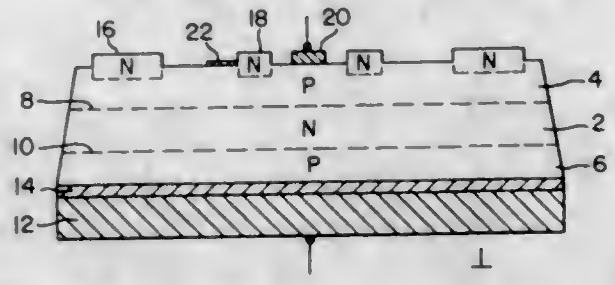
**Claims priority, application Great Britain, Apr. 15, 1966, 16,573/66**

**Int. Cl. H01l** *11/00;* **H03k** *19/08*

**U.S. Cl. 317—235** **1 Claim**

The speed with which a controlled rectifier or thyristor changes from the "off" to the "on" state is dependent on the magnitude of the gating pulse.

In this invention a feedback loop is added within the device which effectively amplifies the gate driving pulse



seen by the main current carrying electrode. Hence, using quite small triggering pulses, the device may be switched in circuits supplying high values of $(dI/dT)$.

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### 3,476,990
### HOUSING AND LEAD STRUCTURE FOR HIGH FREQUENCY SEMICONDUCTOR DEVICE OPERATION

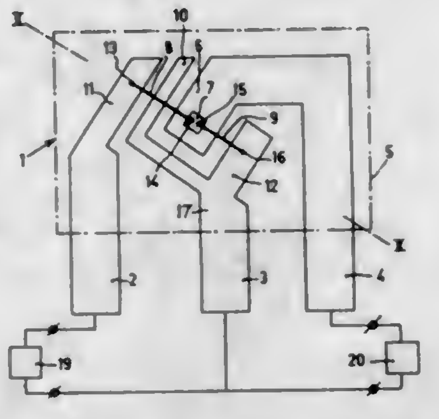
**Jacobus Eigeman and Anton Dirk Tuinhof, Mollenhutseweg, Nijmegen, Netherlands,, assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware**

**Filed Apr. 12, 1967, Ser. No. 630,409**

**Claims priority, application Netherlands, Apr. 14, 1966, 6604964, 6604965; Mar. 18, 1967, 6704097**

**Int. Cl. H01l** *11/02, 15/06*

**U.S. Cl. 317—235** **16 Claims**



A lead or connection pin structure for a semiconductor device wherein an interior end portion of one of the leads has two parts, one of which receives a wire connection from the semiconductor, and the other of which extends between the semiconductor and the other lead. When that one lead is connected so as to be common to the other two leads representing the input and output of the device, an electrical screening action results which reduces substantially the feedback capacitance increasing the high frequency performance. The lead end geometry can be arranged so that all the connections extend in the same plane and in a straight line simplifying assembly.

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### 3,476,991
### INVERSION LAYER FIELD EFFECT DEVICE WITH AZIMUTHALLY DEPENDENT CARRIER MOBILITY

**Jack P. Mize, Richardson, and Derek Colman, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**

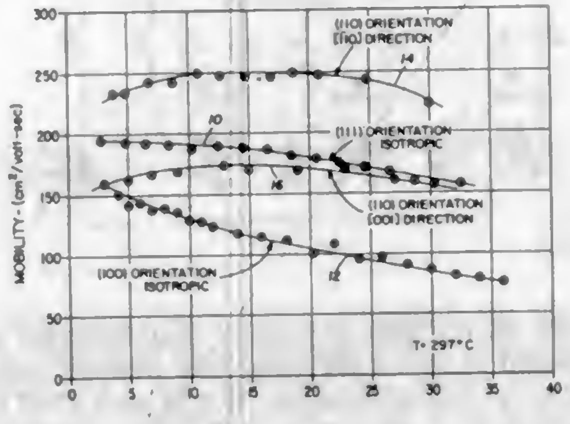
**Filed Nov. 8, 1967, Ser. No. 681,413**

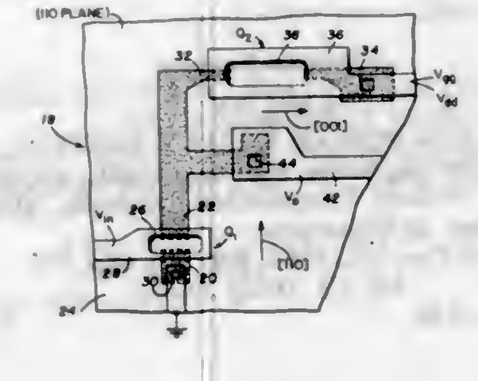
**Int. Cl. H01l** *11/14*

**U.S. Cl. 317—235** **13 Claims**

An integrated circuit in which metal-oxide-semiconductor field effect transistors are formed on a surface disposed parallel to the (110) crystallographic plane of a silicon

crystal. The carrier mobility in a thin inversion layer parallel to the (110) plane is azimuthally dependent, and is a maximum in either direction perpendicular to the $(\bar{1}10)$ plane and is a minimum in the direction perpendicular to the (001) plane. The integrated circuit includes





a driver transistor which is oriented such that current flows normal to the $(\bar{1}10)$ plane for maximum carrier mobility, and a load transistor which is oriented such that current flows normal to the (001) plane for minimum carrier mobility. The resulting circuit occupies a minimum area of the surface of the crystal.

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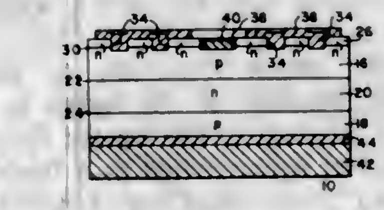
### 3,476,992
### GEOMETRY OF SHORTED-CATHODE-EMITTER FOR LOW AND HIGH POWER THYRISTOR

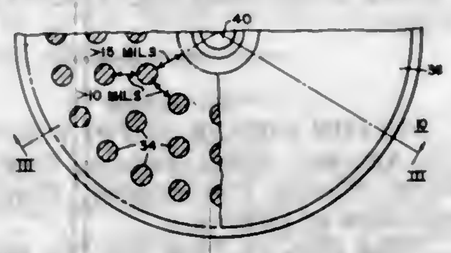
**Chang K. Chu, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Dec. 26, 1967, Ser. No. 693,454**

**Int. Cl. H01l** *11/00, 3/00, 5/00*

**U.S. Cl. 317—235** **5 Claims**





A design of a shorted-cathode-emitter for low and high power thyristors has a total shunt area of less than 20 pecent of the cathode area. No shunt is located less than 15 mils from the inner periphery of the cathode, and each shunt is at least 10 mils apart from each other.

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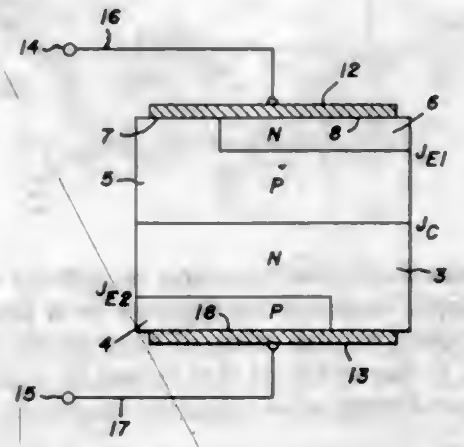
### 3,476,993
### FIVE LAYER AND JUNCTION BRIDGING TERMINAL SWITCHING DEVICE

**Richard W. Aldrich, Liverpool, and Nick Holonyak, Jr., Syracuse, N.Y., assignors to General Electric Company, a corporation of New York**

**Filed Sept. 8, 1959, Ser. No. 838,504**

**Int. Cl. H01l** *11/00, 5/00*

**U.S. Cl. 317—235** **20 Claims**



Semiconductor devices having improved switching capabilities are disclosed. Five layer devices formed of successive layers of P and N type conductivity are disclosed. Multilayer switching devices with and without control leads are shown provided with a terminal bridging the junction of adjacent layers of opposite conductivity type. One or both main current carrying terminals of the devices may be so constructed.

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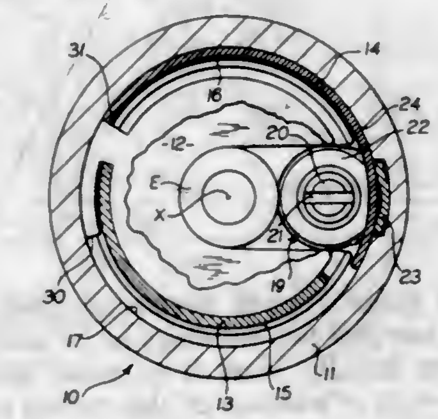
### 3,476,994
### VARIABLE CAPACITOR

**Martin J. Blickstein, West Caldwell, and Martin A. Mittler, Parsippany, N.J., assignors to Voltronics Corporation, Hanover, N.J., a corporation of New Jersey**

**Filed June 5, 1967, Ser. No. 643,547**

**Int. Cl. H01g** *5/01*

**U.S. Cl. 317—253** **9 Claims**



A variable capacitor in which the stator and rotor plate elements are cylindrical segment sheets concentrically arranged and wherein the rotor is driven by an eccentric shaft means for rotation reative to the stator to vary the electrical capacitance established therebetween.

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### 3,476,995
### MULTIPLE MODE MOTOR CONTROL WITH A CONSTANT TENSION MODE AND A CONSTANT HORSEPOWER MODE

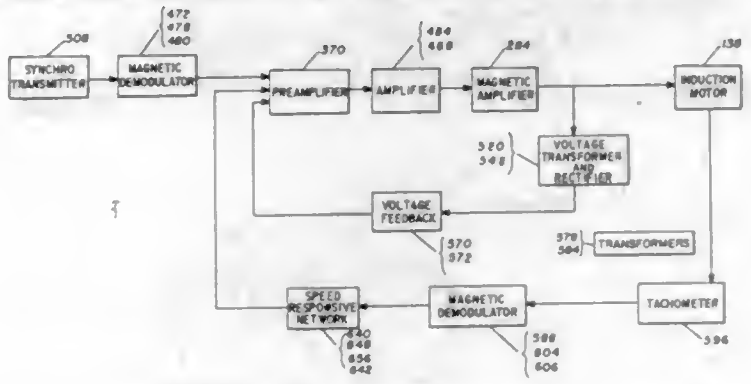
**Werner J. Mueller, St. Louis County, and Norman Wolff, Olivette, Mo., assignors to Sperry Rand Corporation, a corporation of Delaware**

**Filed Feb. 26, 1963, Ser. No. 261,162**

**Int. Cl. H02k** *7/00, 17/30*

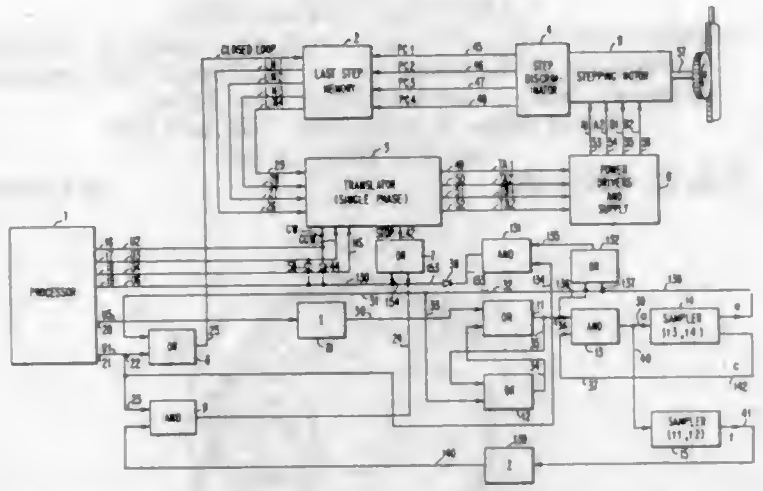
**U.S. Cl. 318—6** **25 Claims**

A control system for a wound rotor, induction motor selectively enables that motor to apply constant tension to a load by connecting an inductance in parallel with the resistance of the rotor of that motor and by supplying values of negative voltage feed-back which are large enough to keep the voltage supplied to the stator of that motor substantially constant, and selectively enables that motor to apply constant horsepower to a load by multiplying the speed of the rotor of that motor by the voltage applied to the stator of that motor to provide voltage-modified speed-responsive negative feedback.



## 3,476,996
## HYBRID CLOSED LOOP STEPPING MOTOR CONTROL SYSTEM INCLUDING ACCELERATION AND DECELERATION CONTROL

**Thorbjoern R. Fredriksen, Los Gatos, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Dec. 30, 1966, Ser. No. 606,174**
**Int. Cl. H02p** *1/04, 5/04*
**U.S. Cl. 318—138** **9 Claims**

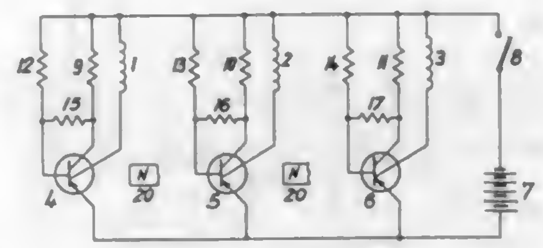


A stepping motor control system operable during acceleration to energize two windings of its associated stepping motor to initially cause it to move toward a new position 1½ steps in advance of the current position and then operable to cause energization of two windings corresponding to a new position 2½ steps in advance of the current position. During deceleration, said control system is operable to energize one winding of the stepping motor leading the current rotor position by 1 step and then operable to energize the winding corresponding to the rotor position.

## 3,476,997
## BRUSHLESS D.C. MOTOR CONTROL

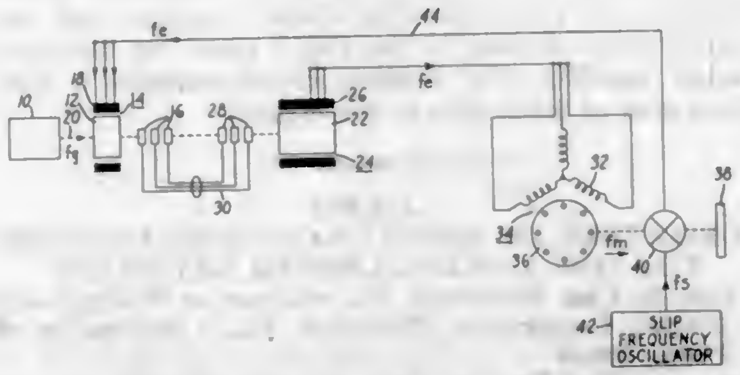
**Willi Otzipka and Joachim Mally, Berlin, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany**
**Filed Feb. 27, 1967, Ser. No. 618,849**
**Claims priority, application Germany, Mar. 4, 1966, L 53,005**
**Int. Cl. H02k** *29/02;* **H02p** *5/06*
**U.S. Cl. 318—138** **7 Claims**

A brushless D.C. motor control including one magnetic field sensitive transistor for each stator winding, each transistor having a base, emitter, primary collector and secondary collector, having its primary collector-emitter circuit connected in series between its associated stator winding and a current source, and having its secondary collector coupled to its base and to one side of the current source via resistors, the motor shaft carrying a magnet positioned to pass a magnetic field through each transistor during a predetermined portion of each shaft revolution, conduction of current to each stator winding being prevented when its transistor is under the influence of the magnetic field.



## 3,476,998
## MOTOR POWER SUPPLY SYSTEM

**Paul D. Agarwal, Santa Barbara, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Dec. 30, 1966, Ser. No. 606,396**
**Int. Cl. H02p** *5/20*
**U.S. Cl. 318—146** **7 Claims**



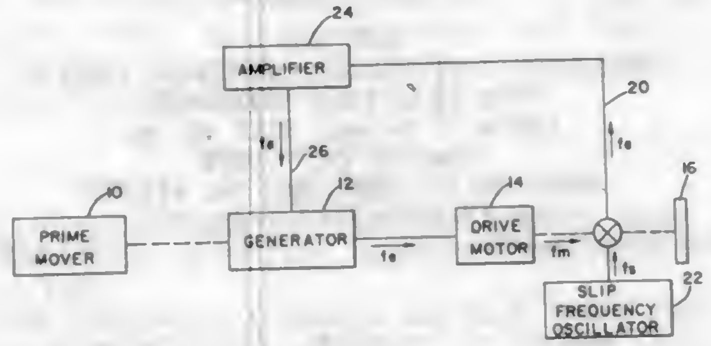
A power supply system for an induction motor including two wound rotor induction motors operating as generators. The output winding of one of the generators feeds electrical power to the induction motor and has its input winding connected with the output winding of the other generator. The two generators are electrically connected such that the output frequency of the two generator system is independent of the speed of rotation of the rotors of the generators. The output frequency of the two generator system is controlled as a function of actual induction motor rotor speed and a desired slip frequency for the motor.

## 3,476,999
## MOTOR POWER SUPPLY SYSTEM

**Paul D. Agarwal, Santa Barbara, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Dec. 30, 1966, Ser. No. 606,395**
**Int. Cl. H02p** *5/20, 5/22*
**U.S. Cl. 318—146** **9 Claims**

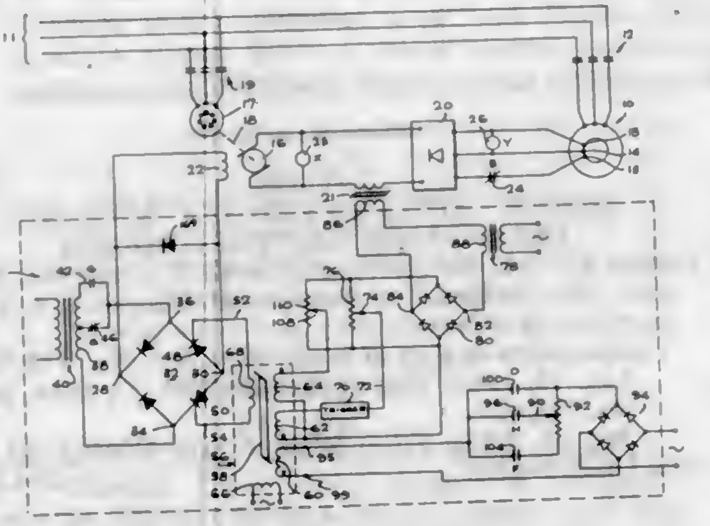
A power supply system for an induction motor where the motor is directly connected with a generator driven by a variable speed prime mover. The generator is of a type which has an output voltage the frequency of which

is independent of prime mover speed. The field of the generator is excited by an electrical system which provides a signal current to the field which has a frequency that is a summation of actual motor speed and a desired slip frequency. With this arrangement the slip frequency of the induction motor is controlled and due to the direct connection of the generator and motor the voltage applied to the induction motor is the same as the frequency of the output voltage of the generator.



## 3,477,000
## SPEED CONTROL SYSTEM INCORPORATING REGENERATIVE DRIVE

**John H. Wallace, West Haven, Conn., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri**
**Filed Nov. 3, 1966, Ser. No. 591,879**
**Int. Cl. H02k** *1/26, 3/18, 17/24*
**U.S. Cl. 318—197** **25 Claims**

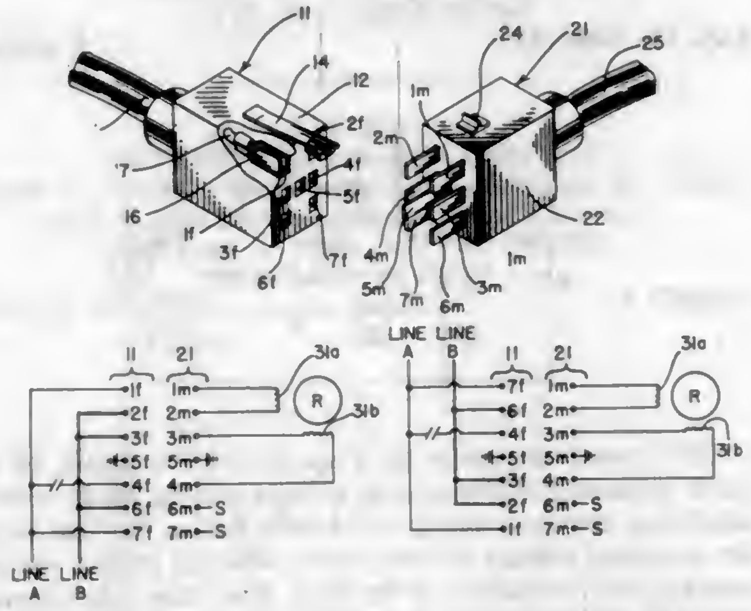


An induction motor is provided with a wound rotor and slip rings providing electrical access to the wound rotor. A regenerative unit has a D.C. component with its armature coupled to the wound rotor by suitable rectifiers. The induction motor has a starting mode and a running mode. In the starting mode the maximum voltage applied to the D.C. component is reduced to what it would normally be at about half speed. When the motor reaches about half speed, the system is shifted to its running mode. The power rating of the D.C. component is accordingly kept small.

## 3,477,001
## REVERSING PLUG FOR ELECTRIC MOTOR

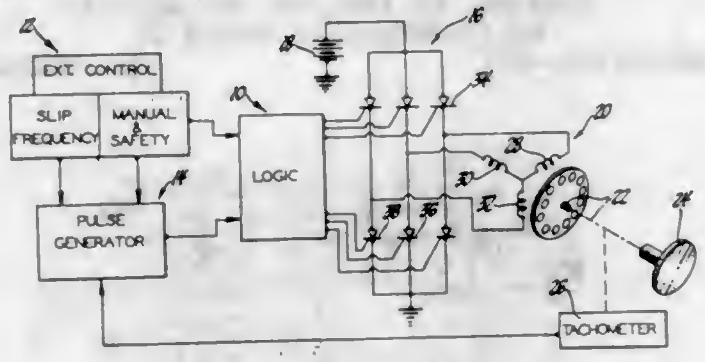
**Malcom Spinrad, Reading, Kenneth C. Haas, Mohnton, and Bryce E. Hoverter, Reinholds, Pa., assignors to American Safety Table, a Teledyne Company, a corporation of Pennsylvania**
**Filed May 23, 1967, Ser. No. 640,708**
**Int. Cl. H02p** *3/20, 1/40, 7/36*
**U.S. Cl. 318—207** **8 Claims**

The direction of rotation of either a single or three phase electrical motor is controlled by interposing a plug and socket between the windings of the motor and a source of electrical power. The plug and socket are wired to permit reversal of the direction of rotation of the motor by disconnecting the plug and socket and reconnecting them in an inverted position with respect to each other. In the preferred embodiment, the plug and socket are designed with three pairs of connectors, each spaced in concentric relationship to a central connector.



## 3,477,002
## ELECTRIC DRIVE MOTOR LOGIC CONTROL SYSTEM

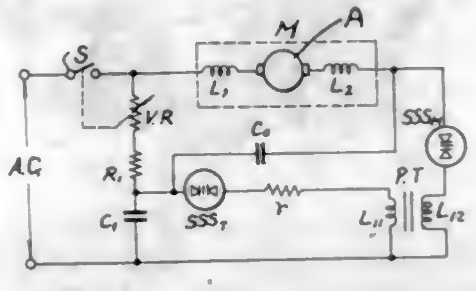
**Duncan B. Campbell, Santa Barbara, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Oct. 27, 1966, Ser. No. 589,927**
**Int. Cl. H02p** *1/42, 3/18;* **H02k** *17/02*
**U.S. Cl. 318—227** **13 Claims**



A motor power supply includes a logic control system for controlling the torque and speed of a motor of the type used in vehicle propulsion systems. The logic control system includes analog and digital circuits for developing motor power pulses having a controlled duty cycle and frequency. A timing pulse generator synchronizes the operation of the logic circuits and controls the frequency at which power pulses are applied to the motor. A duty cycle control circuit controls the duration of the power pulses in response to the desired motor power output. An internal clock circuit controls the repetition rate of power pulses which are developed between timing pulses. The logic system also incorporates a pulse delay feature so that a predetermined dead time is developed between shutoff of one power pulse and turn-on of the next power pulse.

### 3,477,003
### PRECISION SPEED CONTROL CIRCUIT FOR ALTERNATING CURRENT MOTOR

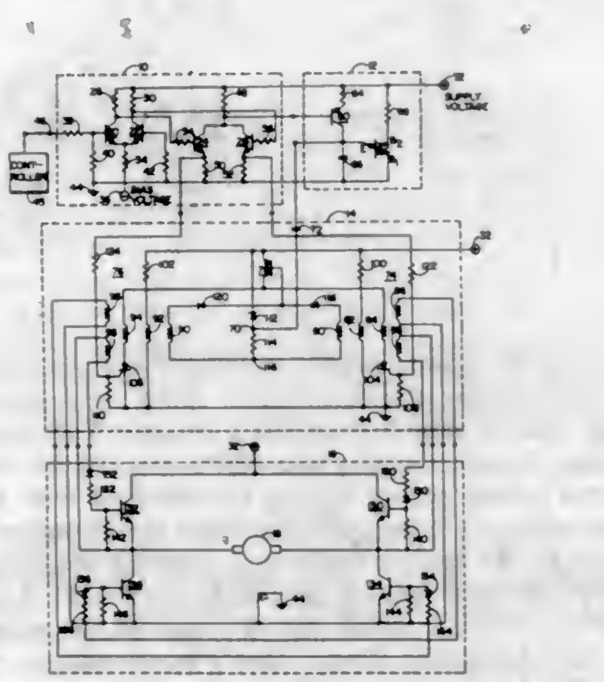
**Kenzi Kato, Tokyo, Japan, assignor to Janome Sewing Machine Co., Ltd., Tokyo, Japan**
**Filed Feb. 17, 1967, Ser. No. 616,901**
**Claims priority, application Japan, Feb. 18, 1966, 41/9,343; Oct. 11, 1966, 41/94,227**
**Int. Cl. H02p** *5/40, 7/62*
**U.S. Cl. 318—227** **1 Claim**



This invention relates to a speed control circuit of a phase adjusting motor system using a double diode semiconductor element, and is to usefully utilize the fact that the terminal voltage of the phase adjusted motor varies owing to the fluctuation of the load. The phase adjustment circuit is provided from the motor to the power source to charge said phase adjustment circuit. This invention is to stabilize the phase at placing in circuit the double diode semiconductor element connected to the main circuit, and is to increase or decrease the terminal voltage of the motor according to variations of phase at discontinuity to adapt to those of the load. In order to stabilize at every time the rotations of the motor such a circuit is constituted which can eliminate pulse vibrations created in the wave form of terminal voltage of the motor, and besides this invention is suitable for little control to satisfy the specific speed extent.

### 3,477,004
### CONTROL APPARATUS

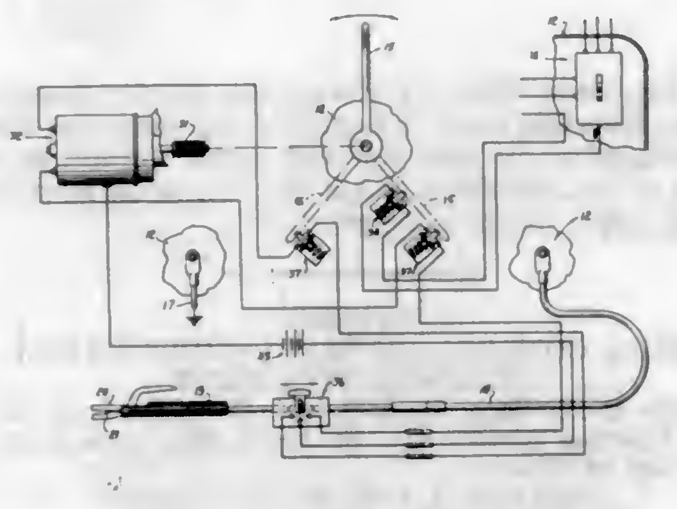
**Lowell V. Westbrook, Excelsior, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**
**Filed Jan. 11, 1968, Ser. No. 697,225**
**Int. Cl. H02p** *1/22, 1/40, 3/20*
**U.S. Cl. 318—257** **4 Claims**



A solid-state electronic circuit for controlling the direction and speed of rotation of a motor in accordance with an input voltage. The circuit provides pulses of fixed width on either one of two output lines, depending on the polarity of the input voltage, which control a bridge circuit supplying power to the motor. The circuit also controls the speed of motor rotation by varying the frequency of the pulses in accordance with the amplitude of the input voltage.

### 3,477,005
### REMOTE AMPERAGE CONTROL DRIVE FOR ELECTRIC WELDERS

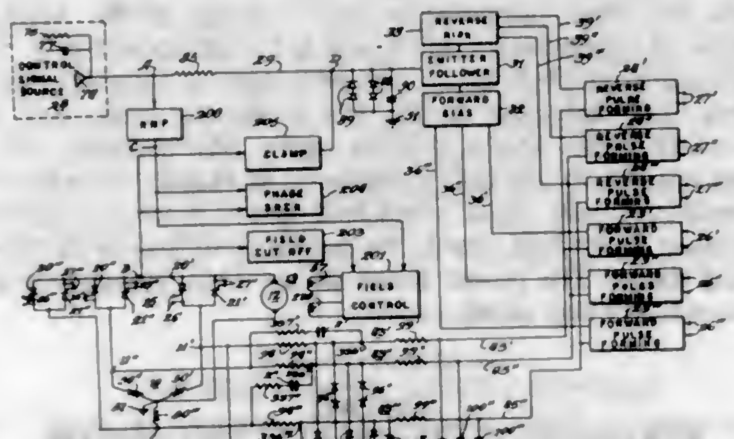
**Calvin T. Weems, 5728 4th St., Marrero, La. 70072**
**Filed Jan. 26, 1967, Ser. No. 611,923**
**Int. Cl. H02p** *1/22, 1/40, 3/20*
**U.S. Cl. 318—266** **4 Claims**



A device for attachment to an electric arc welding machine, having a manual amperage control knob thereon, whereby to enable the operator of the machine to rotate the control knob by a reversible motor connected into electrical circuits having a switch therein accessible near the welding operation and remote from the machine.

### 3,477,006
### MOTOR CONTROL CIRCUIT WITH DECELERATION CONTROL MEANS

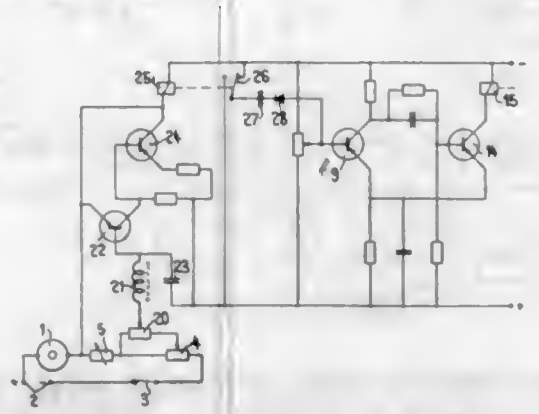
**Donald G. Fair, Belvidere, and Bertil T. Anderson, Rockford, Ill., assignors to Sundstrand Corporation, a corporation of Illinois**
**Continuation-in-part of application Ser. No. 478,701, Aug. 10, 1965. This application Oct. 13, 1966, Ser. No. 586,426**
**Int. Cl. H02p** *5/00;* **H02k** *27/20;* **G05b** *5/00*
**U.S. Cl. 318—331** **25 Claims**



A control circuit for energizing the armature and field of a DC motor from a three-phase AC source. Each phase of AC is coupled to a pair of reverse poled SCR's which pass up to 120° of the AC waveform, in either polarity, to the motor armature. For high motor speeds, the armature voltage is held constant while a field control circuit varies the magnitude of DC current to the motor field winding. A phase back safety circuit determines when the motor is to decelerate, and retards the firing point of the SCR's. A clamp safety circuit prevents the SCR's from being fired to brake the motor when back EMF exceeds a predetermined level. A field cutoff safety circuit dissipates excessively back EMF by shunting the motor field, without affecting the speed of rotation of the armature.

### 3,477,007
### ELECTRIC CURRENT LIMITER CIRCUIT FOR LIMITING ELECTRIC MOTOR TORQUE IN A TOOL

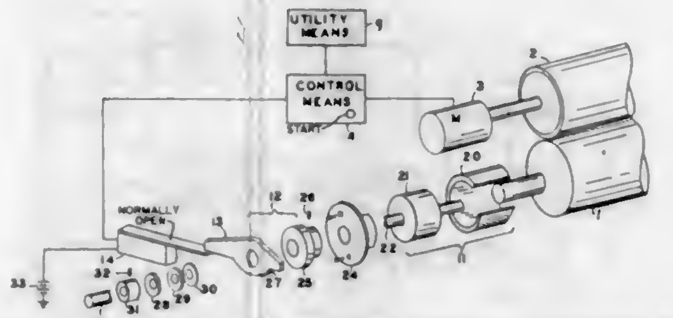
**Georges Ducommun, Grenchen, and Karl Adler, Feldbrunnen, Switzerland, assignors to Biviator S.A., Geneva, Switzerland**
**Filed Mar. 6, 1967, Ser. No. 620,915**
**Claims priority, application Switzerland, Mar. 18, 1966, 3,987/66; July 15, 1966, 10,324/66**
**Int. Cl. H02p** *7/00;* **G05b** *5/01*
**U.S. Cl. 318—434** **10 Claims**



An electric current limiter circuit for limiting electric motor torque in a tool needing increasing torque during each operating cycle, the motor circuit being automatically opened and the motor stopped when the motor current and torque reach an upper limit value at the end of the operating cycle, and said motor circuit being automatically closed after a delay time for starting up the motor for the next operating cycle of the tool.

### 3,477,008
### STALL DETECTOR FOR ROTATABLE SHAFT

**Marvin I. Mindell, Great Neck, Andrew E. Heikkila, Hauppauge, Henry Harrison, Locus Valley, and Rudolph G. Wolz, Lake Ronkonama, N.Y., assignors to Viewlex, Inc., Holbrook, N.Y.**
**Filed May 12, 1966, Ser. No. 549,600**
**Int. Cl. H02h** *7/08;* **G05b** *5/05*
**U.S. Cl. 318—461** **1 Claim**



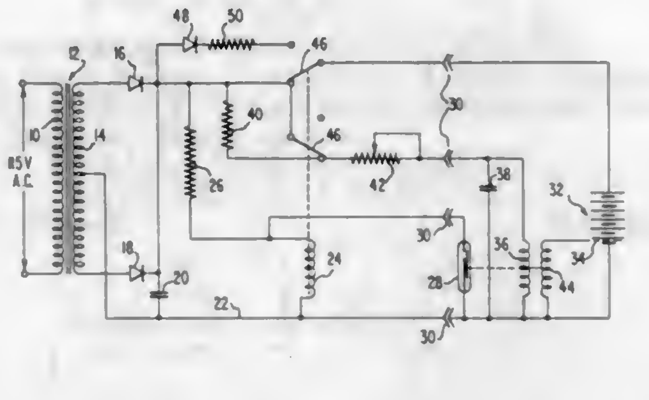
A stall detector for a rotatably driven shaft comprising a fluid coupling connected to the rotating shaft, an adjustable friction clutch connected to the fluid coupling, the output of the friction clutch being adapted to operate control or utilization means. The fluid coupling and the friction clutch cooperate to provide means to operate or control a spring loaded switch which will not overload the input device and which will not overload the spring loaded switch.

### ERRATUM

For Class 320—15 see:
Patent No. 3,477,026

### 3,477,009
### BATTERY CHARGING CIRCUIT

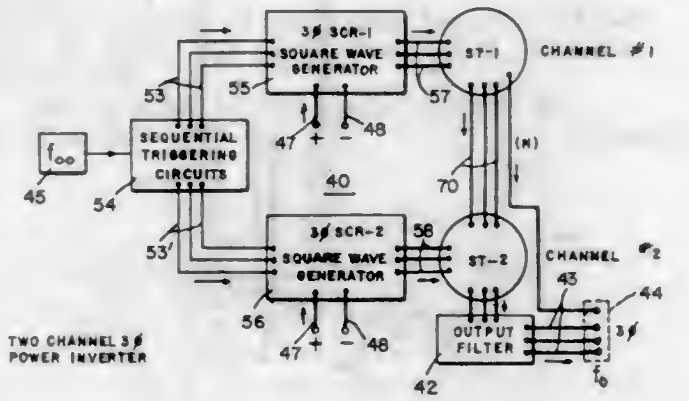
**Duane C. Nichols, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware**
**Filed Dec. 2, 1966, Ser. No. 598,704**
**Int. Cl. H01m** *45/04*
**U.S. Cl. 320—23** **5 Claims**



A circuit for controlling the charging rate of a three-terminal battery responsive to a signal produced by the third terminal upon approaching the battery's fully charged condition to switch the charging rate from a high rate to a lower rate or to terminate the charging of the battery.

### 3,477,010
### SYNTHETIC WAVE THREE PHASE ALTERNATING CURRENT POWER SUPPLY SYSTEM

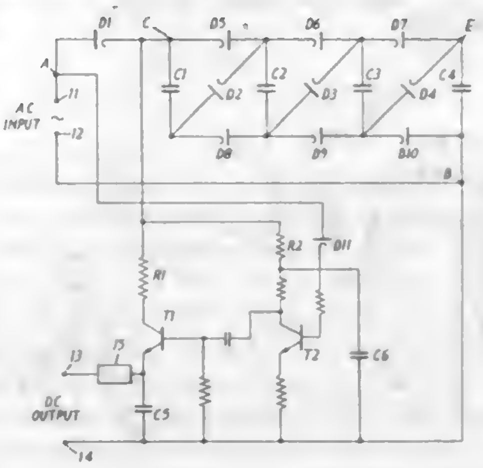
**Dan L. Ve Nard, Wyoming, Mich., assignor to Lear Jet Industries, Inc., Wichita, Kans., a corporation of Delaware**
**Filed Apr. 11, 1967, Ser. No. 630,061**
**Int. Cl. H02m** *7/02*
**U.S. Cl. 321—5** **11 Claims**


3∅ SCR-1 SQUARE WAVE GENERATOR
ST-1
CHANNEL #1
SEQUENTIAL TRIGGERING CIRCUITS
f∞
40
3∅ SCR-2 SQUARE WAVE GENERATOR
ST-2
CHANNEL #2
OUTPUT FILTER
3∅
f0
TWO CHANNEL 3∅ POWER INVERTER

A polyphase static power inverter system that converts direct current to polyphase alternating current, at a predetermined frequency. A plurality of polyphase inverters each with silicon controlled rectifiers provide square waveform trains as polyphase sets to associated polyphase transformers. The polyphase signal sets are respectively displaced in predetermined time-phase relation. The secondary windings of the transformers are interconnected in series-add relation as output-phase groups, in polyphase array. Further, space-phasing of the secondary windings with respect to their associated primary windings reduces the harmonic content of the system output. High power conversion efficiency with low filtering requirement, provides effective 400 cycle three-phase power for large aircraft.

### 3,477,011
### AC TO DC VOLTAGE CONVERSION CIRCUIT

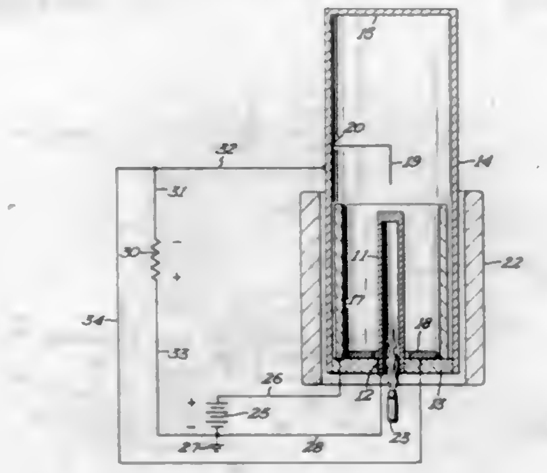
**David John Sidney Westwood, London, England, assignor to Ferguson Radio Corporation Limited, London, England**
**Filed May 10, 1968, Ser. No. 728,375**
**Claims priority, application Great Britain, July 20, 1967, 33,466/67**
**Int. Cl. H02m** *7/02*
**U.S. Cl. 321—15** **6 Claims**



A transformerless power supply derives a direct output voltage from an input voltage by connecting capacitors alternately in series and parallel synchronously with connecting them alternately to the input and the output of the power supply.

### 3,477,012
### THERMIONIC CONVERTER

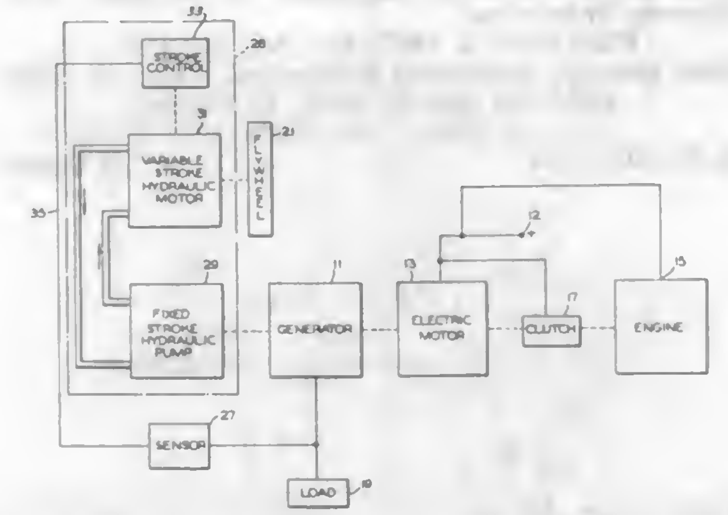
**Robert L. Laing, 3527 Aquila Ave. S., St. Louis Park, Minn. 55426**
**Filed Aug. 9, 1967, Ser. No. 659,484**
**Int. Cl. H02n** *3/00, 7/00*
**U.S. Cl. 322—2** **21 Claims**



A thermionic converter in which a source of heat is used to apply heat to a cylindrical cathode which is surrounded by a cylindrical anode for accelerating the passage of the electrons from the cathode to at least one collector disposed adjacent an end of the anode and in which there is magnetic means surrounding the anode and producing a magnetic shield generally parallel to the axis of the anode for confining the electrons emitted by the cathode and minimizing the tendency of said electrons to engage said anode in passing from the cathode to the collector, there being a utilization circuit connected between the collector and the cathode to draw the energy from the collector, this utilization circuit being free of any external electrical source of power of the same order of magnitude of energy as that of the source of heat for heating the cathode.

### 3,477,013
### HYDROSTATIC TRANSMISSION COUPLED STANDBY POWER SUPPLY

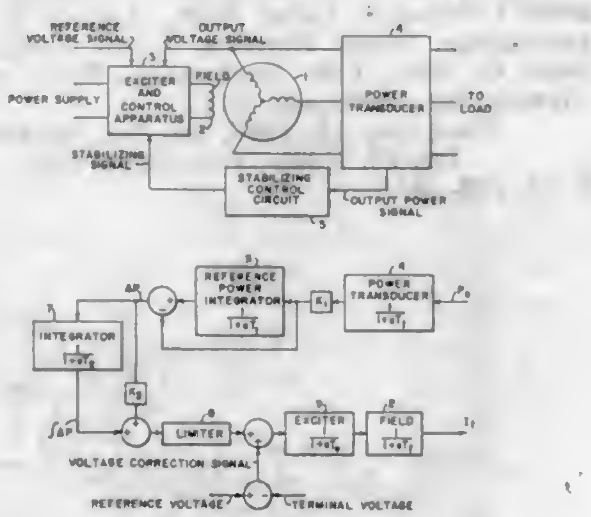
**Peter B. Smith, Monroe, Conn., assignor to Dynamics Corporation of America, New York, N.Y., a corporation of New York**
**Filed June 5, 1967, Ser. No. 643,713**
**Int. Cl. H02k** *7/02*
**U.S. Cl. 322—4** **8 Claims**



A standby generator having a flywheel storage system coupled to the generator by means of a hydrostatic transmission system.

### 3,477,014
### ELECTRICAL CONTROL SYSTEMS WITH STABILIZING CONTROL MEANS

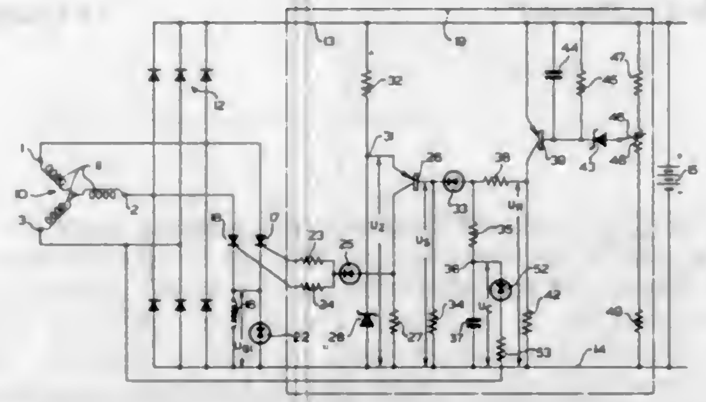
**Allan L. Blythe, Burlington, Ontario, Canada, assignor to Canadian Westinghouse Company, Limited, Hamilton, Ontario, Canada**
**Filed Apr. 6, 1967, Ser. No. 629,026**
**Claims priority, application Canada, Aug. 9, 1966, 967,439**
**Int. Cl. H02h** *7/06*
**U.S. Cl. 322—19** **4 Claims**



An electrical control system for stabilizing dynamoelectric machines when they are operating under abnormal conditions. The electrical control system provides a stabilizing signal responsive to the integral of the deviation of the instantaneous real power output from the steady-state real power output of the dynamoelectric machine, and adds this stabilizing signal to the signal from the voltage regulator. During normal operating conditions, the voltage regulator controls the excitation of the dynamoelectric machine, as the stabilizing signal is negligible. During system disturbances, the stabilizing signal increases to override the action of the voltage regulator and dampen oscillations of the rotor of the dynamoelectric machine.

### 3,477,015
### VOLTAGE REGULATOR FOR MULTI-PHASE VARIABLE SPEED, VARIABLE FREQUENCY GENERATOR, PARTICULARLY FOR AUTOMOTIVE USE

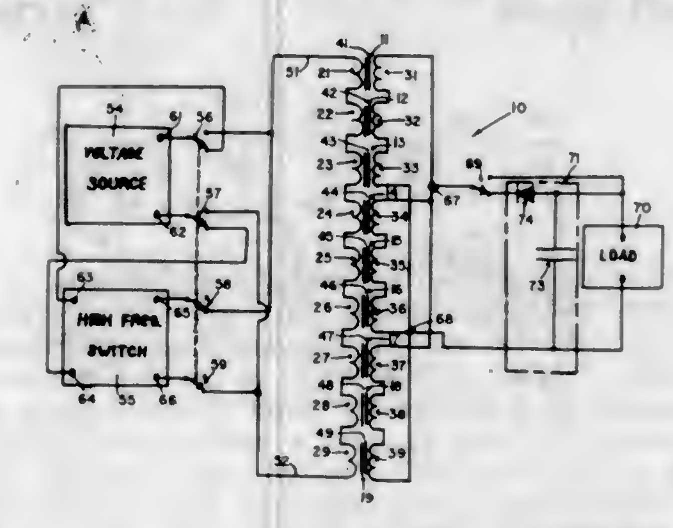
**Edgar Kuhn, Gerlingen, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany, a limited-liability company of Germany**
**Filed Jan. 23, 1967, Ser. No. 611,033**
**Claims priority, application Germany, Feb. 25, 1966, B 85,965**
**Int. Cl. H02h** *7/06*
**U.S. Cl. 322—24** **8 Claims**



Field current for a three phase automotive type generator is controlled, to maintain the voltage at the nominal level, by supplying the field coil through a paid of SCR's from two of the three phases; the third phase is used to derive a signal varying in amplitude with time, during any one cycle in synchronism with the frequency of the generator; the amplitude of this time-varying signal is compared with a reference and the firing point of the SCR's within any one cycle is controlled by coincidence of the reference with the varying amplitude of the time-varying signal obtained from the third phase.

### 3,477,016
### TRANSFORMER SYSTEM INCLUDING A LARGE NUMBER OF MAGNETICALLY INDEPENDENT TRANSFORMER ELEMENTS

**George Ioannon Papaleonidas, 2 Patriarchou Grigoriou, Aegeleo-Athens, Attica, Greece**
**Filed Aug. 15, 1966, Ser. No. 572,355**
**Int. Cl. H02m** *5/12*
**U.S. Cl. 323—48** **9 Claims**



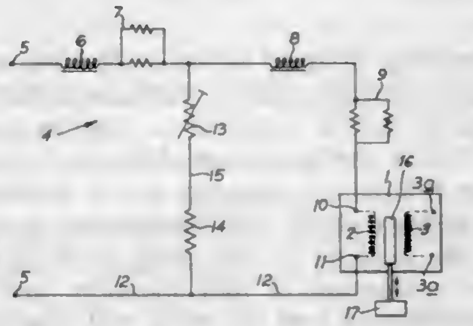
Transformer system including a large number, on the order of nine or more, of magnetically independent transformer elements which are preferably mounted on a common base structure. Primary windings of the elements are interconnected with each other and with a voltage source, preferably being connected in series with each, being formed by a small number of turns of a conductor of relatively large cross-sectional area. The secondary windings are interconnected with each other and to a load, either in series or in parallel or with a combination of both. A magnetic core of each element is of short length and low reluctance. The voltage source may include switch means for producing oscillations at a high frequency, preferably on the order of 100,000 Hz.

### ERRATUM

For Class 323—51 see:
Patent No. 3,477,027

### 3,477,017
### TRANSDUCER EXCITATION CIRCUITS

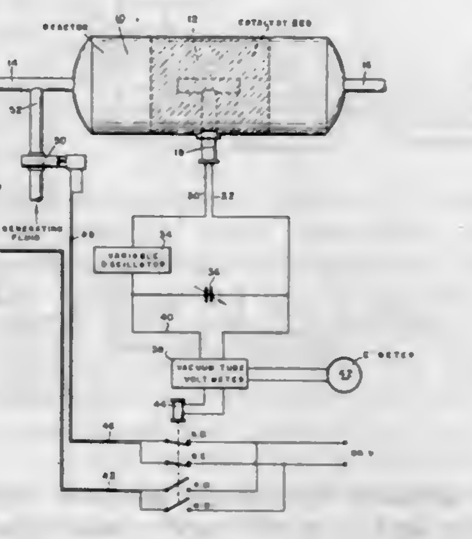
**Douglas Frank Knight, Birmingham, Warwick, England, assignor to W. & T. Avery Limited, Birmingham, Warwick, England, a British company**
**Filed Jan. 9, 1967, Ser. No. 608,177**
**Int. Cl. H02p** *13/10;* **H02m** *5/12*
**U.S. Cl. 323—51** **4 Claims**



An excitation circuit for a variable reluctance transducer and supplying the transducer excitation coil with current approximately in quadrature with a reference supply voltage.

### 3,477,018
### METHOD TO MEASURE AND CONTROL THE CATALYTIC ACTIVITY OF METALLIC CATALYST SYSTEMS

**James T. Richardson and Stanford S. Toups, Baytown, Tex., assignors to Esso Research and Engineering Company**
**Continuation-in-part of application Ser. No. 312,640, Sept. 30, 1963. This application Dec. 2, 1966, Ser. No. 607,340**
**Int. Cl. G01r** *33/00;* **G01n** *3/00, 31/00*
**U.S. Cl. 324—34** **4 Claims**



Catalytic activity is measured in situ by enclosing a portion of the catalyst in an inductor insulated from outside electromagnetic influences and the current quality of a C-L electrical system is determined as a parameter of catalytic activity.

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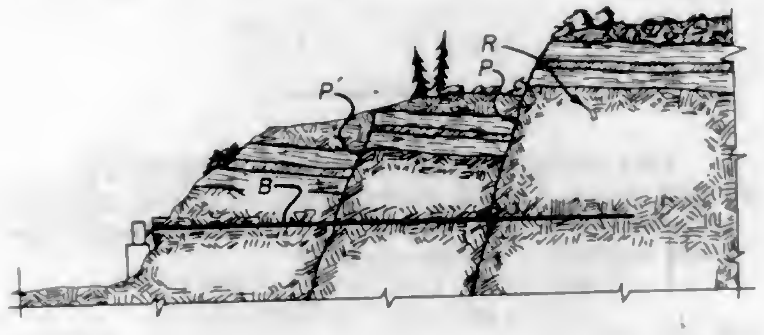
### 3,477,019
### RUPTURE STRIP FOR INDICATING EARTH MOVEMENT

**Bert E. Hartmann, Golden, Colo., assignor to Teledyne Industries Inc., Los Angeles, Calif., a corporation of California**

**Filed July 21, 1967, Ser. No. 660,858**
**Int. Cl. G01r** *31/08*
**U.S. Cl. 324—52** **12 Claims**



A rupture strip adapted to be embedded, as by grout, in a borehole extending into a rock formation. The strip is of frangible, brittle material to rupture responsive to movement within the formation. Electrical conductors, in parallel, are printed on this strip and a uniformly spaced array of resistors shunt the conductors in parallel. In operation, the rupture of the strip at a given location breaks the conductors at that location, and ohmmeter readings at either end of the strip will thus indicate the location of the rupture.

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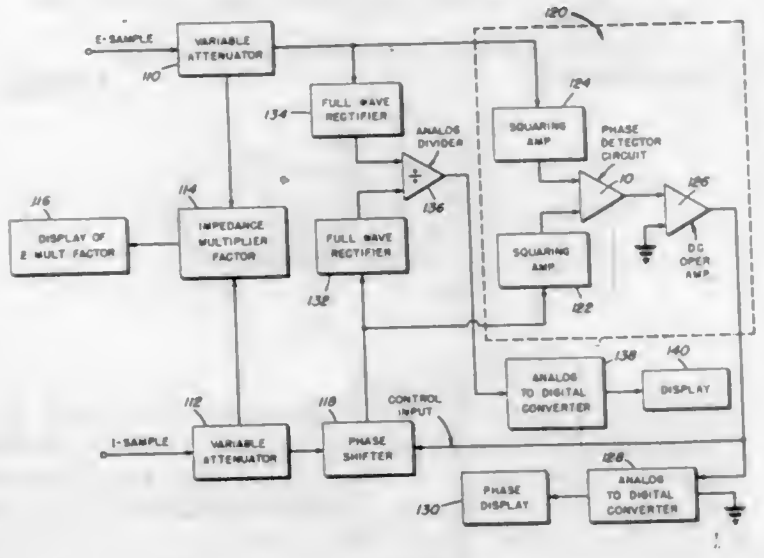
### 3,477,020
### DYNAMIC IMPEDANCE ANALYZER INCLUDING SYNCHRONOUS PHASE DETECTOR

**John F. Walton, McLean, Va., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware**

**Filed Sept. 15, 1967, Ser. No. 668,146**
**Int. Cl. G01r** *27/00, 25/00;* **H03d** *13/00*
**U.S. Cl. 324—57** **5 Claims**



A dynamic impedance analyzer including an analog divider and a synchronous phase detector. The analog divider receives sampled voltage and current signals shifted to be in phase when arriving at the divider. An indicator connected to the output of the divider indicates the absolute value of the test impedance. The synchronous phase detector also receives the sampled signals after an amplifier stage has amplified and clipped the signals. These signals are delivered with opposite sign across a voltage divider to a storage capacitor controlling a meter indication. The meter indicates the sign and magnitude of the phase deviation between the sampled signals.

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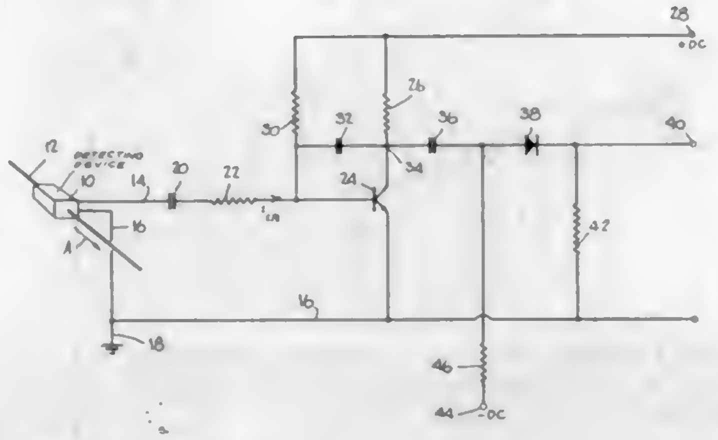
### 3,477,021
### VOLUME MEASUREMENT OF THREAD DEFECTS BY DIRECTLY INTEGRATING SIGNALS REPRESENTING VARIATIONS IN THREAD THICKNESS

**Peter Dosch, Jona im Rank, and Reinhard H. Heck, Wattwil, Switzerland, assignors to Heberlein & Co. AG, Gall, Switzerland, a corporation of Switzerland**

**Filed July 18, 1966, Ser. No. 566,008**
**Claims priority, application Germany, July 23, 1965, H 56,669**
**Int. Cl. G01r** *27/26*
**U.S. Cl. 324—61** **13 Claims**



Method and apparatus for determining thread defects along the length of a thread by separately determining the volume of each thread defect; means are provided for electrically signaling the defects and for integrating the signals for each defect and for separately comparing each thus integrated signal with a bias signal.

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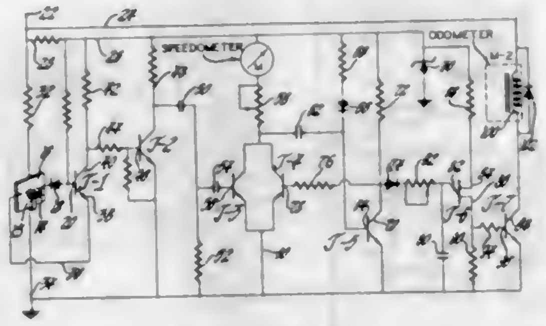
### 3,477,022
### ELECTRONIC SPEEDOMETER AND ODOMETER CONTROL CIRCUIT

**Paul D. Le Masters, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed May 16, 1967, Ser. No. 638,870**
**Int. Cl. G01r** *11/46*
**U.S. Cl. 324—70** **2 Claims**



An electronic speedometer and odometer operated by pulses produced by rotation of the drive shaft which system counts said pulses and provides an analog output for indicating speed and totals the number to indicate distance.

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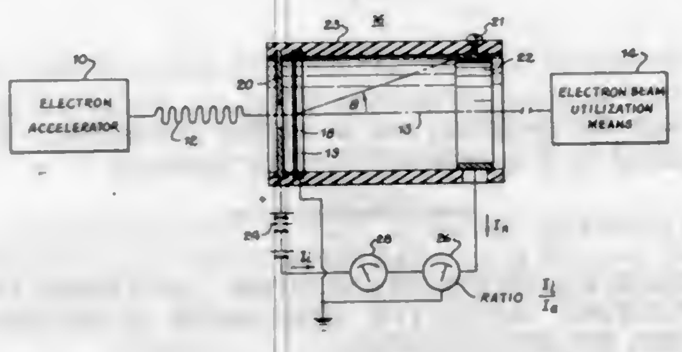
### 3,477,023
### APPARATUS FOR MEASURING THE ENERGY AND CURRENT OF AN ACCELERATOR ELECTRON BEAM INCLUDING APERTURED INCIDENT AND EXIT ELECTRODES

**Joseph W. Motz, Rockville, Md., assignor to the United States of America as represented by the Secretary of Commerce**

**Filed Jan. 16, 1968, Ser. No. 698,230**

**Int. Cl. G01n** *27/02*
**U.S. Cl. 324—71** **4 Claims**



A metal foil and two apertured electrodes disposed on opposite sides of the foil are centered on the axis of an accelerator electron beam. The thickness of the foil, and the geometry and electric potentials of the electrodes, are arranged so that the electrodes selectively collect the secondary electrons emitted from the incident surface of the foil, and the elastically scattered electrons from the exit surface of the foil. The energy of the electron beam is then given by the ratio of the current due to the secondary electrons to the current due to the elastically scattered electrons; and the current of the electron beam is given by the current due to the secondary electrons.

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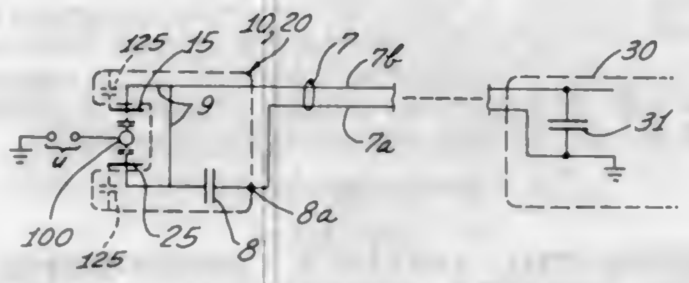
### 3,477,024
### CAPACITIVE PROBE

**Edmond R. Pelta, Pacific Palisades, Calif., assignor to Autoscan, Inc., Culver City, Calif., a corporation of California**

**Filed Aug. 8, 1966, Ser. No. 570,891**

**Int. Cl. G01r** *31/02*
**U.S. Cl. 324—126** **8 Claims**



A capacitor probe is disclosed for deriving a measuring voltage from a conductor. The probe has two pivotable handles serving as support for two capacitor plates or electrodes covered as to the surface facing a conductor by a high dielectric layer. The handles have windows for placing and retaining a cable in particular position to the capacitor plates and for position the plates in particular distance from each other and in plane parallel position to each other. The electrodes are electrically interconnected and a capacitor connects them to the handles. The measuring voltage is taken from between the handles and the interconnected electrodes.

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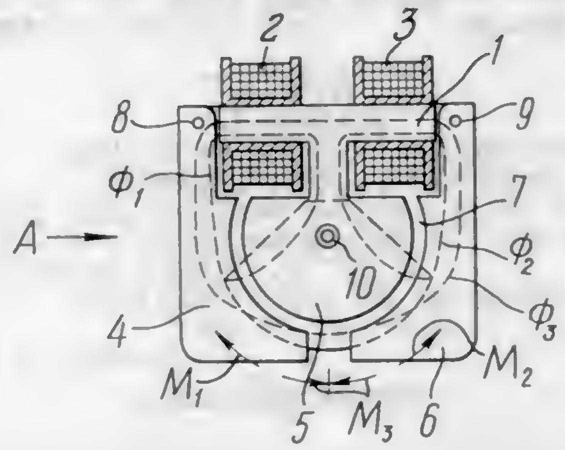
### 3,477,025
### MOVING IRON RATIOMETER

**Viktor Ivanovich Efimenko, Ulitsa Vystavochnaya 3, kv. 17, Krasnodar, U.S.S.R.**

**Filed Apr. 12, 1967, Ser. No. 630,441**
**Int. Cl. G01r** *7/00, 1/20;* **H01f** *5/00*
**U.S. Cl. 324—140** **3 Claims**



A moving-iron ratiometer comprises a stationary magnetized piece on which are disposed two measuring coils for producing three magnetic fluxes therein, there being three split pole tips connected to said magnetized piece, and a ferromagnetic core in the form of a plate disposed in slits of said pole tips and capable of turning around its axis under the action of the torques created by the magnetic fluxes.

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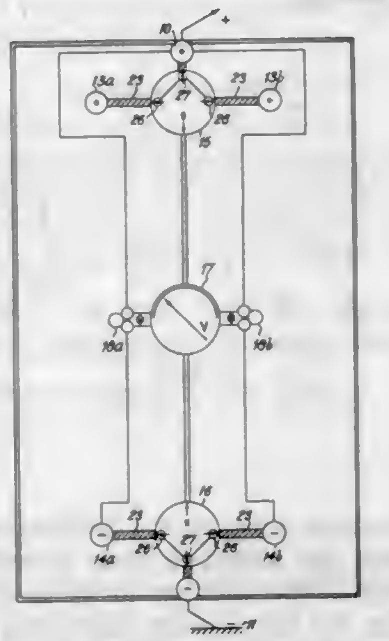
### 3,477,026
### MOTOR ACCUMULATOR CIRCUIT

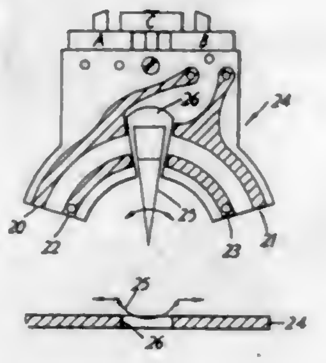
**Leonard Frank Plugge, 15 Lowndes Square, London SW. 1, England**
**Filed Aug. 17, 1966, Ser. No. 573,000**
**Int. Cl. H01m** *45/04*
**U.S. Cl. 320—15** **2 Claims**



An electric circuit for a motor vehicle in which for supplying power to sparking plugs, automobile radios, lights and the like there are provided two electric storage accumulators. The accumulators are associated with switches which enable the user to supply energy from either one or both accumulators. At least one multiple position switch with four stator terminals and four positions of an armature is used for coupling the accumulators to the supply circuit. In the four positions of the armature one, the other, each and neither accumulator respectively is coupled to either the supply line in the motor vehicle or its earth return. Two such switches can be provided in an arrangement which has antitheft properties.

### 3,477,027
## VARIABLE RELUCTANCE PICKOFF AND SWITCH TO SHORT CIRCUIT AN OUTPUT WINDING

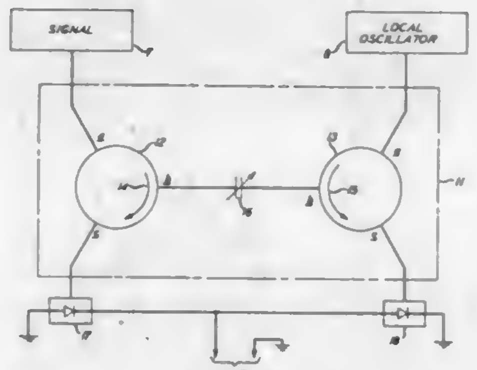
**Jan Jablonski, London, England, assignor to Elliott Brothers (London) Limited, London, England**
**Filed June 12, 1967, Ser. No. 645,448**
**Claims priority, application Great Britain, June 18, 1966, 27,332/66**
**Int. Cl. H02p** *13/10*
**U.S. Cl. 323—51** **7 Claims**



A variable reluctance pick-off having one member movable in either direction from a central datum position to cause corresponding differential induced currents in two windings on another member, the members being effective to operate a switch to short circuit or shunt each winding when the one member moves sufficiently far in the opposite direction.

### 3,477,028
## BALANCED SIGNAL MIXERS AND POWER DIVIDING CIRCUITS

**Erik W. Aslaksen, Allentown, Pa., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed Dec. 28, 1966, Ser. No. 605,337**
**Int. Cl. H04b** *1/26*
**U.S. Cl. 325—446** **13 Claims**

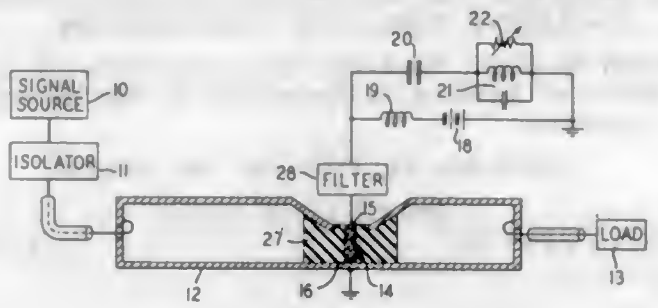


In a microwave network for dividing signal energy, circulator means are joined to form a common arm, a reactance being included either in shunt or in series in the common arm. By varying the magnitude of the reactance and its phase location between the circulators, power division in arbitrary phase and amplitude are obtained.

### 3,477,029
## CIRCUITS USING AN LSA OSCILLATOR AS AN AMPLIFIER

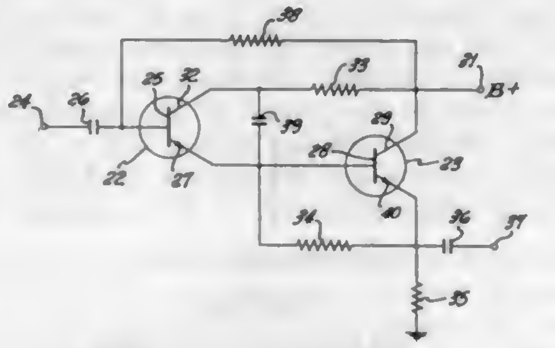
**John A. Copeland III, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed May 21, 1968, Ser. No. 730,726**
**Int. Cl. H03f** *3/04*
**U.S. Cl. 330—5** **7 Claims**

The semiconductor specimen of an LSA diode extends transversely across a waveguide, with the LSA oscillator circuitry being external to the waveguide. In one embodiment, signal wave energy is amplified as it propagates through the specimen, and in another embodiment, it is amplified as it is reflected from the specimen.



### 3,477,030
## DIRECT COUPLED TRANSISTOR AMPLIFIER EMPLOYING RESISTIVE FEEDBACK AND COMMON BIASING MEANS

**William R. Hawkins, Van Nuys, Calif., assignor to Newcomb Electronics Corp., Los Angeles, Calif., a corporation of California**
**Filed Oct. 19, 1965, Ser. No. 497,697**
**Int. Cl. H03f** *3/42*
**U.S. Cl. 330—19** **6 Claims**

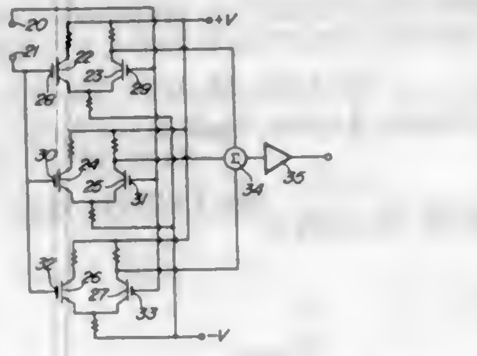


A direct-coupled amplifier comprising two transistors of the same type, the emitter of the first transistor being directly connected to the base of the second transistor and connected via a resistor to the emitter of the second transistor. A second resistor connects the emitter of the second transistor to the ground terminal of a source of operating potential. A resistor directly connected between the collector of the second transistor and the base of the first transistor provides degenerative feedback and, in conjunction with the two emitter resistors, functions to provide both DC and AC gain stabilization for the amplifier.

### 3,477,031
## DIFFERENTIAL AMPLIFIER CIRCUIT EMPLOYING MULTIPLE DIFFERENTIAL AMPLIFIER STAGES

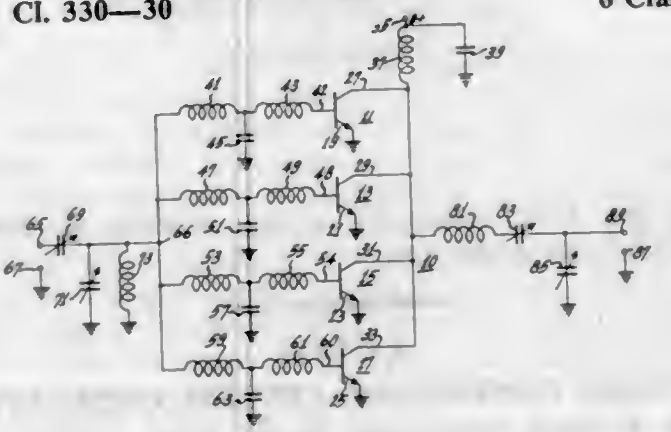
**Minoru Nagata, Kodaira-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan**
**Filed Sept. 8, 1967, Ser. No. 666,394**
**Claims priority, application Japan, Sept. 9, 1966, 41/59,176**
**Int. Cl. H03f** *3/68*
**U.S. Cl. 330—30** **9 Claims**

This invention relates to an electric circuit (à differential amplifier circuit) connecting $n$ differential amplifiers having the same function or the same characteristic in parallel or series form according to the input signal given in the form of voltage or current and introducing the output signals of each circuit to an adder circuit thereby to make the output $n$ times as large as the input and to reduce the relative error for output signal arising from the induced noise, and from the drift of the electric signal due to the change of ambient temperature to $1/\sqrt{n}$.



### 3,477,032
## PARALLELING ACTIVE CIRCUIT ELEMENTS

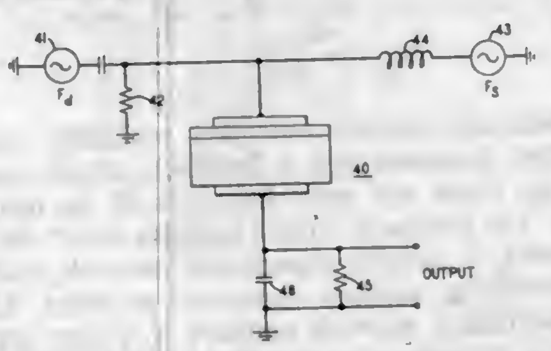
**Robert Linton Bailey, Leola, and Claude Edward Doner, Lancaster, Pa., assignors to RCA Corporation, a corporation of Delaware**
**Filed May 1, 1968, Ser. No. 725,709**
**Int. Cl. H03f** *3/68*
**U.S. Cl. 330—30** **6 Claims**



The efficient paralleling of power transistors at RF frequencies is achieved by placing a compensating network between the input of each transistor and the paralleling point which minimizes the effect of transistor-to-transistor input variations. The compensating network is a T-section network including series connected inductances in each of the series arms and a capacitor in a shunt arm coupled to the junction of the inductors.

### 3,477,033
## AMPLIFIER USING CURRENT CONDUCTION THROUGH WIDE GAP LAYER

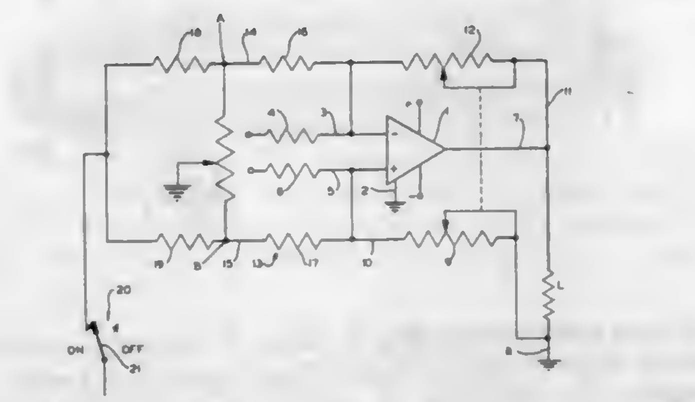
**Adolf Goetzberger, Berkeley Heights, and Edward H. Nicollian, Murray Hill, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed June 17, 1968, Ser. No. 737,432**
**Int. Cl. H03f** *3/68*
**U.S. Cl. 330—30** **3 Claims**



A signal amplifier comprises an MOS element having a high frequency large signal bias source for achieving appreciable current conduction through the insulating film thereof by injection of hot carriers from the avalanche plasma in the semiconductor layer. A separate much lower frequency signal is amplified by applying it across the MOS element and detecting it across a pair of output terminals in parallel with an RC network whose time constant is long with respect to the period of the high frequency bias signal, and short with respect to the period of the amplified signal.

### 3,477,034
## ZERO SUPPRESSION CIRCUIT FOR DIFFERENTIAL AMPLIFIERS

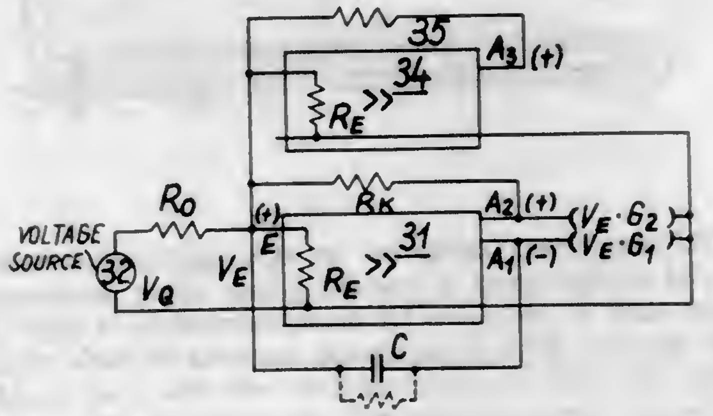
**Steve C. Gioia and Louis H. Fricke, Jr., St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**Filed Dec. 14, 1966, Ser. No. 601,609**
**Int. Cl. H03f** *1/34*
**U.S. Cl. 330—69** **9 Claims**



A zero suppression circuit including an operational amplifier and having positive and negative input signal lines. A feedback line connected across each of the input signal lines and additional compensating input signals are added to the feedback lines wherein the compensating signals are of equal magnitude and opposite signs to the signals in the two input signal lines.

### 3,477,035
## CIRCUIT ARRANGEMENT TO INTEGRATE VOLTAGES OR CURRENTS

**Piers Kaspar Erdmann, Essen, Germany, assignor to Beteiligungs- und Patentverwaltungs G.m.b.H., Essen, Germany**
**Filed Nov. 28, 1967, Ser. No. 686,222**
**Claims priority, application Germany, Dec. 3, 1966, B 90,133**
**Int. Cl. H03f** *1/36, 3/68*
**U.S. Cl. 330—104** **3 Claims**



A circuit including a high-gain amplifier having capacitively coupled feedback, the amplifier including two outputs of opposite polarity one of which is fed back capacitively and the other of which is fed back resistively in order to compensate for leakage from the capacitor.

### 3,477,036
### GAS LASER

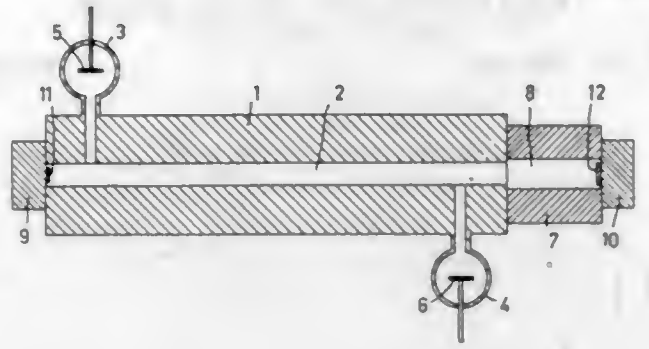
**Jan Haisma, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware**

**Filed Sept. 10, 1965, Ser. No. 486,384**

**Claims priority, application Netherlands, Sept. 24, 1964, 6411121**

**Int. Cl. H01s** *3/22*

**U.S. Cl. 331—94.5** **7 Claims**



A gas laser comprising a block of insulating material having a gas discharge channel and energizing means for initiating the discharge in said channel, first and second reflector plates, each of the said reflector plates optically enclosing a respective end of the channel, an electrostrictive element connecting one of the reflector plates to said block and having dimensions alterable in accordance with an electrical signal applied to the element.

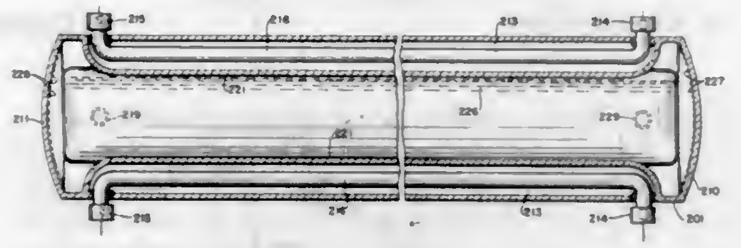
### 3,477,037
### LASER DEVICE EMPLOYING FLUID MATERIAL FOR PRODUCING HIGH EFFICIENCY LASER BEAM

**Russell Seitz, Elberon, N.J., assignor, by mesne assignments, of one-third to Elton Industries, Inc., Oyster Bay Cove, N.Y., a corporation of New York**

**Continuation-in-part of application Ser. No. 468,275, June 30, 1965. This application Sept. 24, 1965, Ser. No. 494,297**

**Int. Cl. H01s** *3/20*

**U.S. Cl. 331—94.5** **4 Claims**



The laser device comprises an elongated hollow body of oval configuration containing a laser effect producing liquid, such as europium III benzoylacetonate. A pair of high intensity flash tubes extend opposite to each other within the body in optical contact with the laser liquid. The vertex areas within the body are provided with curved partitions creating elongated channels for cooling liquid. The inner surfaces of the oval body and of the curved partitions are covered with a reflective coating to focus light energy from the flash tubes into the optical axis of the laser liquid.

### 3,477,038
### FREON-RARE GAS LASER

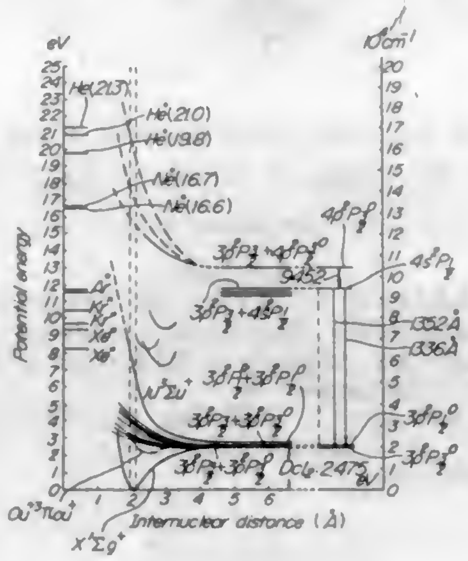
**Mitsuyoshi Shimazu, Mitaka-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan**

**Filed Jan. 18, 1966, Ser. No. 521,259**

**Claims priority, application Japan, Jan. 22, 1965, 40/3,022**

**Int. Cl. H01s** *3/22*

**U.S. Cl. 331—94.5** **4 Claims**



A gas laser employing a gas mixture of Freon $(CCl_2F_2)$ and a rare gas.

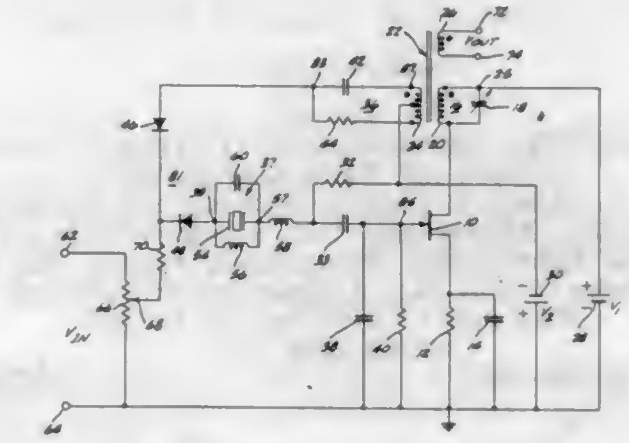
### 3,477,039
### VOLTAGE CONTROLLED CRYSTAL OSCILLATOR

**Yum T. Chan, Huntington Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**

**Filed Mar. 14, 1968, Ser. No. 712,982**

**Int. Cl. H03b** *5/36*

**U.S. Cl. 331—116** **3 Claims**



The disclosed voltage controlled oscillator comprises a field effect transistor and a feedback circuit connected between the drain and gate electrodes of the field effect transistor. The feedback circuit includes a 90° RC phase shift network, a variable capacitance network, and a frequency stabilizing network connected in series. The frequency stabilizing network employs a quartz crystal, a temperature compensating capacitor and an inductor, all connected in parallel. By varying a control voltage applied to the variable capacitance network, the oscillation frequency may be varied.

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### 3,477,040
### CIRCUIT ARRANGEMENT FOR THE LINEAL CONTROL OF THE FREQUENCY OR PERIOD OF A SINE OSCILLATOR BY MEANS OF AN ELECTRIC QUALITY

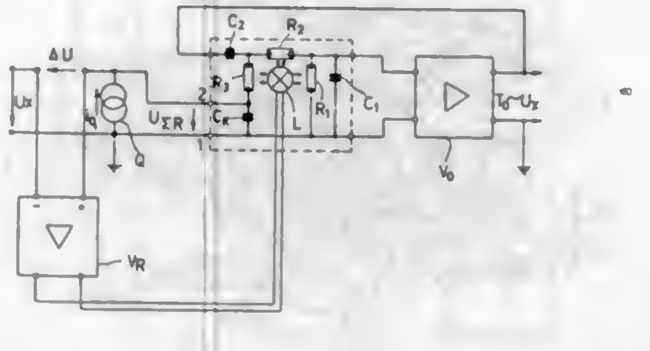
**Dietrich Meyer, Hamburg, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware**

**Filed Sept. 11, 1967, Ser. No. 666,608**

**Claims priority, application Germany, Sept. 10, 1966, P 40,365**

**Int. Cl. H03b** *5/26*

**U.S. Cl. 331—141** **13 Claims**



A circuit for linearly varying the frequency of an oscillator in accordance with an input voltage. The oscillator includes an amplifier and a frequency determining feedback network composed of three identical photoresistors connected in a $\pi$ configuration. A first capacitor is connected in series with the input of the $\pi$ network and a second capacitor is connected across the output thereof. A control voltage is derived that is proportional to the sum of the resistances of the three photoresistors and is applied to one input of a difference amplifier. The input voltage is applied to a second input of the difference amplifier. The output of the difference amplifier controls a light source optically coupled to the photoresistors whereby the resistance thereof is varied to produce a null signal at the input of the difference amplifier. Thus, the resistance of the photoresistors is varied to produce a frequency variation of the oscillator that is a linear function of the input voltage.

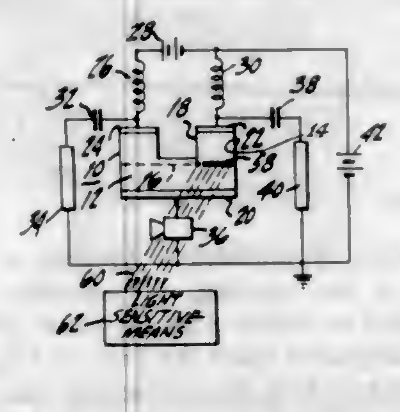
### 3,477,041
### PRODUCTION OF AMPLITUDE MODULATED LIGHT BY A SOLID STATE OSCILLATOR

**Martin C. Steele and Francesco Paolo Califano, Princeton, N.J., assignors to RCA Corporation, a corporation of Delaware**

**Filed June 5, 1968, Ser. No. 734,726**

**Int. Cl. H01s** *3/18*

**U.S. Cl. 332—7.51** **8 Claims**



A three terminal GaAs microwave oscillator is biased to generate amplitude-modulated light. Whenever the amplitude of the radio frequency oscillations biases a portion of the p-n junction sufficiently forwardly, a coherent light pulse is emitted from the junction.

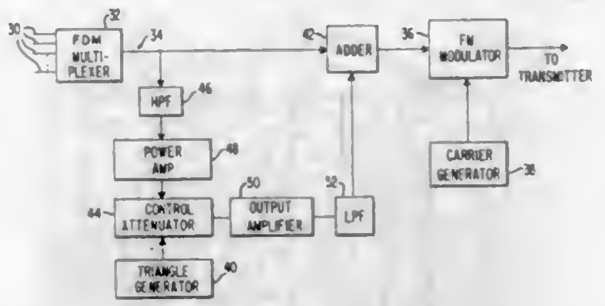
### 3,477,042
### CONSTANT LEVEL LOADING OF F.M. MODULATOR

**Marvin R. Wachs, Bowie, Md., assignor to Communications Satellite Corporation, a corporation of Washington, D.C.**

**Filed June 21, 1967, Ser. No. 647,857**

**Int. Cl. H03c** *3/00*

**U.S. Cl. 332—16** **8 Claims**



A system for use in F.M. communication systems which maintains substantially constant carrier dispersion despite variation of the message load. An F.M. carrier has an assigned bandwidth in accordance with the maximum number of channels allocated for modulating the carrier. Since the carrier power is set in the transmitter, the power spectral density and the carrier dispersion or occupied bandwith depends upon the number of channels in use at any time. A locally generated waveform, having a frequency outside of the multiplex baseband, is varied in amplitude in accordance with the average of composite message and added to the composite message prior to modulating the F.M. carrier. As a consequence, the carrier dispersion and the peak power spectral density of the transmitter output remains substantially constant independent of the message loading.

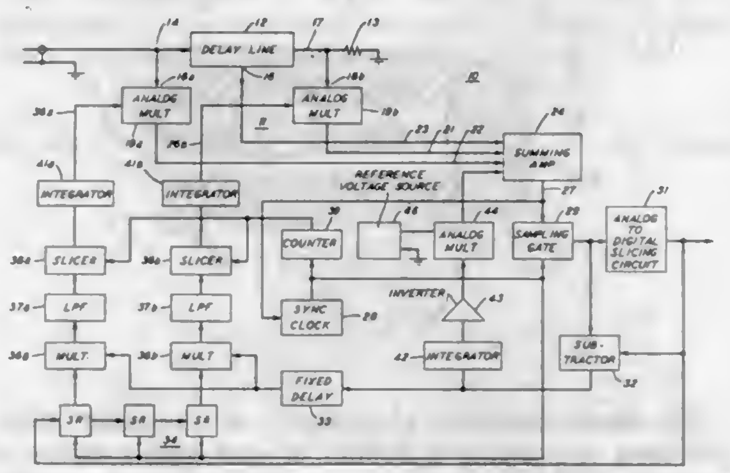
### 3,477,043
### AUTOMATIC D.C. OFFSET COMPENSATION CIRCUIT FOR AUTOMATIC EQUALIZER

**Cecil W. Farrow, Monmouth Hills, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**

**Filed Jan. 24, 1968, Ser. No. 700,240**

**Int. Cl. H04b** *3/04*

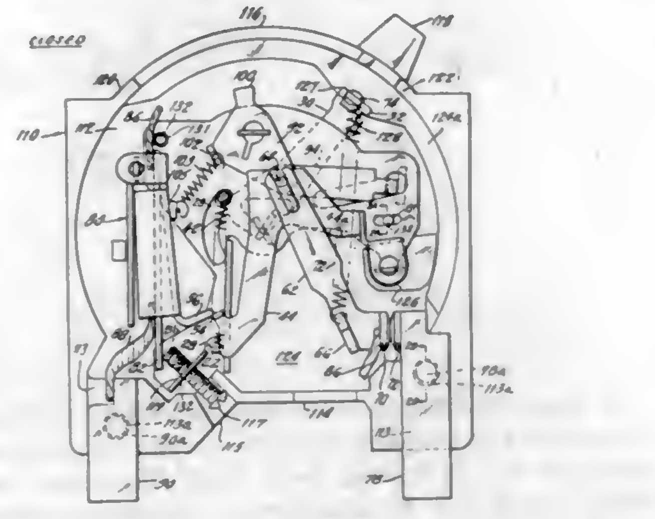
**U.S. Cl. 333—18** **8 Claims**



An adaptive transversal filter equalizer which includes a tapped delay line, a pair of analog multipliers and a summing amplifier in which a steady state D.C. component of a difference signal employed to derive adaptive adjusting signals is adaptively removed.

### 3,477,044
## CIRCUIT BREAKER MECHANISM MOUNTING PLATE ASSEMBLY

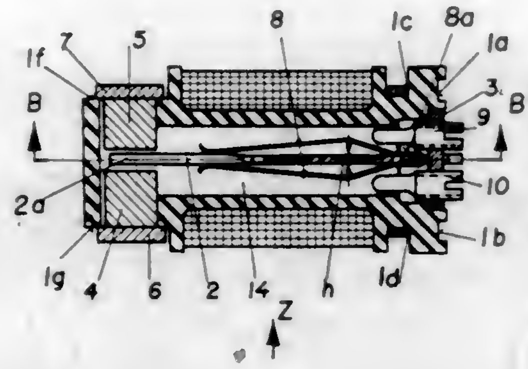
**Carl E. Gryctko, Haddon Heights, N.J., assignor, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware**
**Filed Apr. 19, 1967, Ser. No. 632,045**
**Int. Cl. H01h** *9/00, 13/02*
**U.S. Cl. 335—23** **5 Claims**



A separate mounting plate having apertures and upraised tabs for receiving and mounting the movable components of the mechanism of a circuit breaker; the mounting plate being positionable in a preformed circuit breaker casing, whereby all of the movable components of the circuit breaker may be mounted either directly or indirectly on the mounting plate instead of being mounted on receiving elements molded into the circuit breaker casing.

### 3,477,045
## ELECTROMAGNETIC REVERSING RELAY

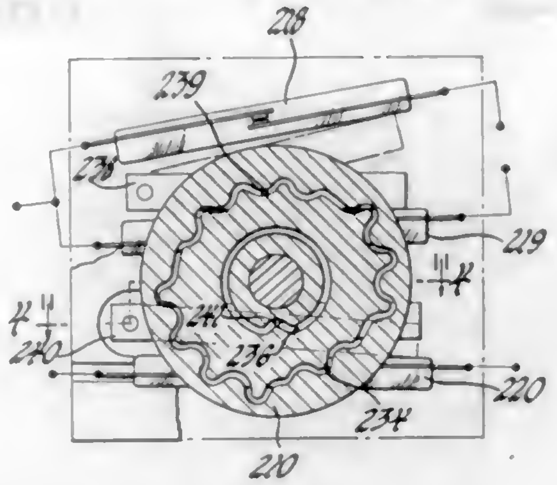
**Hans Sauer, Munich, Germany, assignor to Matsushita Electric Works Ltd., Osaka, Japan**
**Filed Apr. 5, 1967, Ser. No. 628,684**
**Claims priority, application Germany, Apr. 12, 1966, S 103,130**
**Int. Cl. H01h** *51/27, 1/66*
**U.S. Cl. 335—151** **10 Claims**



An electromagnetic changeover or reversing relay is provided comprising a bobbin or coil which serves as a protective tube for the contacts against adverse environmental influences. Interiorly and in longitudinal relationship to the bobbin or coil there is a contact blade made of ferromagnetic material and which acts not only as the contact member, but as the armature of the magnetic circuit. The fixed contacts cooperating with the contact blade are directly mounted on one end of the bobbin or coil.

### 3,477,046
## MANUAL CODE PULSING MAGNETIC REED SWITCH

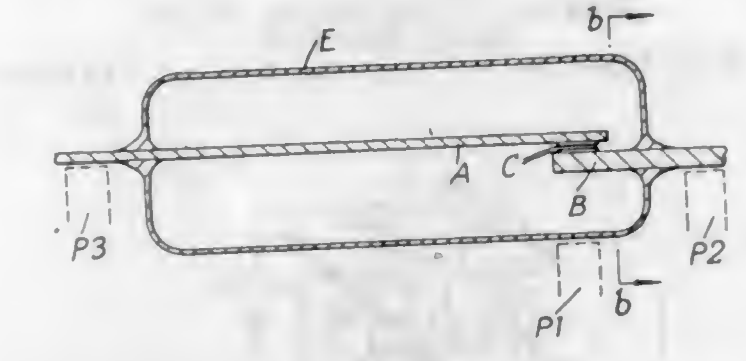
**Dale W. Pigeon, Royal Oak, and Walter C. Root, Ann Arbor, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 4, 1966, Ser. No. 592,220**
**Int. Cl. H01h** *3/02, 1/66*
**U.S. Cl. 335—190** **3 Claims**



A switch apparatus for simultaneously or sequentially actuating a plurality of magnetic reed switches. The apparatus includes a manually manipulatable control element having a plurality of cam surfaces thereon for moving an actuator connected to a magnet to actuate and deactuate the magnetic reed switches in response to rotation of the control element.

### 3,477,047
## ROTARY SWITCHES

**Glynn Bennett Jeffery, Woodbury 2, Warren Road, Shenfield, England**
**Filed May 22, 1967, Ser. No. 640,092**
**Claims priority, application Great Britain, Sept. 22, 1966, 42,416/66; Sept. 26, 1966, 42,938/66**
**Int. Cl. H01h** *9/00*
**U.S. Cl. 335—206** **13 Claims**



A rotary switch comprising a housing, a shaft rotatably mounted in the housing, a projection of magnetic material mounted to rotate with the shaft about the axis thereof, being displaced from the axis, and having a summit with respect to which the projection rises and recedes abruptly so that sharp steps are presented thereby in the direction of rotation, a magnetic reed switch mounted in the housing and having a fixed part of one magnetic member extending closely adjacent the path of said summit, and means for magnetising the projection.

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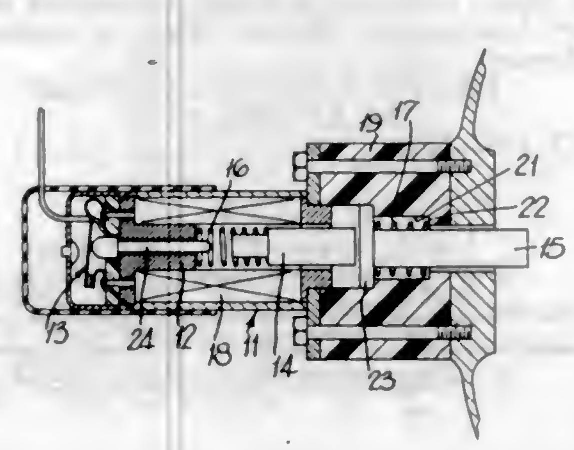
### 3,477,048
## SOLENOIDS

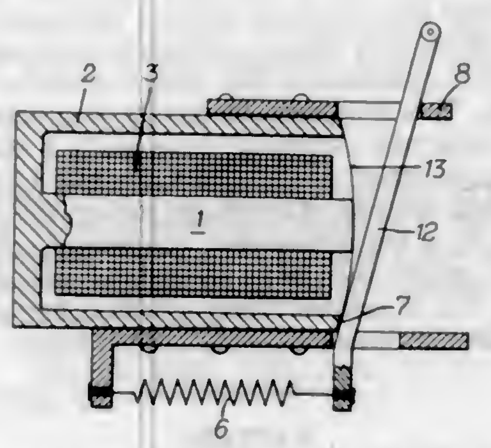
**John Anthony Knowles, Nelson, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company**
**Filed Mar. 28, 1968, Ser. No. 716,934**
**Claims priority, application Great Britain, Apr. 14, 1967, 17,188/67**
**Int. Cl. H01f** *7/08, 3/00*
**U.S. Cl. 335—259** **3 Claims**



In a solenoid of the kind comprising a casing, an armature axially movable within the casing, and pull in and hold in windings within the casing, the armature is in two parts. The first inner part of the armature is urged outwardly of the casing by a first spring, and the second outer part of the armature is co-axial with the first part, and is urged inwardly of the casing by a second spring. The first spring is stronger than the second spring, and the arrangement is such that when the windings are not energised the first part engages the second part under the action of the first spring. and the second part is thereby moved outwardly against the action of the second spring.

### 3,477,049
## ELECTROMAGNETIC ACTUATING APPARATUS WITH THE ARMATURE AND POLE PIECES HAVING CORRESPONDING SURFACES IN CONTINUOUS ROLLING CONTACT

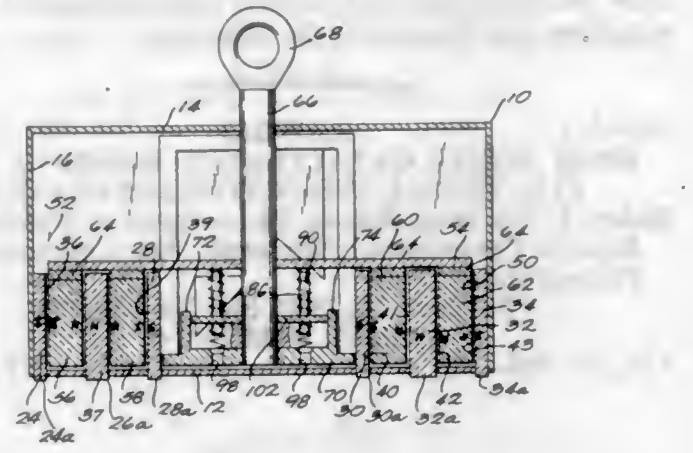
**Alfred Kreidler, Zurich, Switzerland, assignor to Metall-Invent S.A., Zug, Switzerland**
**Filed June 15, 1967, Ser. No. 646,287**
**Claims priority, application Switzerland, June 17, 1966, 8,840/66**
**Int. Cl. H01f** *7/08*
**U.S. Cl. 335—276** **8 Claims**



An electromagnetic actuating apparatus in which an armature is attracted by an electromagnet when current is switched on. This kind of apparatus is employed for actuating electric switches, such as clockwork winders or the like. The armature rolls upon the pole piece in continuous rolling contact so as to reduce noise of operation.

### 3,477,050
## LATCH ASSEMBLY FOR MATERIAL HANDLING MAGNET

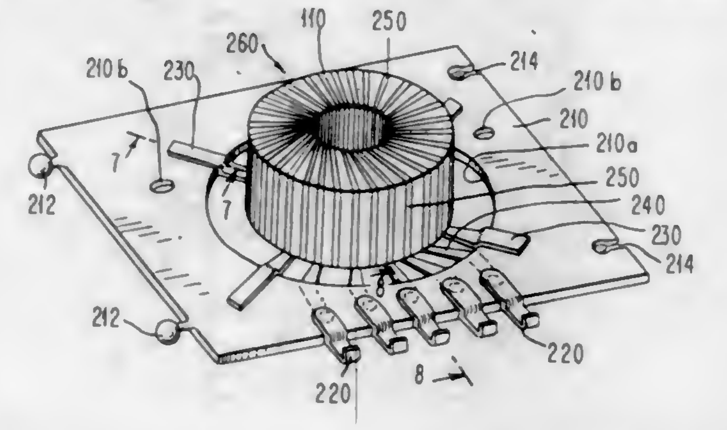
**William R. Hinger, Big Bend, Wis., assignor to Wehr Corporation, Milwaukee, Wis., a corporation of Wisconsin**
**Filed Feb. 13, 1968, Ser. No. 705,101**
**Int. Cl. H01f** *7/20, 7/04*
**U.S. Cl. 335—285** **12 Claims**



A material handling magnet is provided wherein a permanent magnet in the form of a rectangular block is magnetized through its thickness dimension to present opposite magnetic polarities at oppositely facing surfaces thereof. The magnet is moved into and out of a position between a pair of pole pieces which are oppositely magnetized when the permanent magnet is positioned between the pole pieces and lose their magnetization as the magnet is withdrawn. The relative movement between the permanent magnet and the pole pieces is perpendicular to the magnet axis of the magnet. A latching arrangement is coordinated with the application of the lifting force to the material handling magnet and is effective to connect the magnet and the pole pieces for joint movement while the magnet is between the pole pieces and generating a working field to hold a load in engagement with the material handling magnet. That connection between the magnet and the pole pieces is adapted to be interrupted, again in coordination with the application of lifting force, to thereby permit positioning the magnet remote from the pole pieces to interrupt the working field and release the load.

### 3,477,051
## DIE CASTING OF CORE WINDINGS

**Kendall Clark, Poughkeepsie, Karl E. Herrmann, Hyde Park, and William A. Klein, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Jan. 15, 1968, Ser. No. 698,031**
**Int. Cl. H01f** *15/02, 15/10, 27/30*
**U.S. Cl. 336—65** **19 Claims**

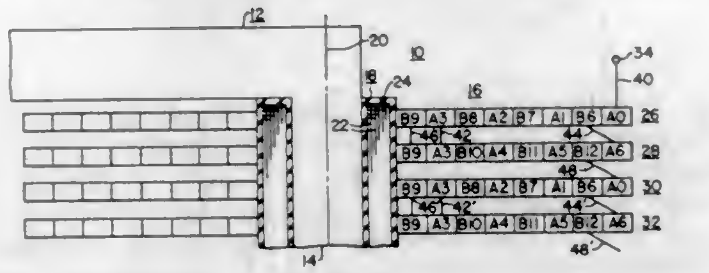


The windings, connecting leads and terminals for a magnetic component, such as pulse transformer or inductance, comprising an annular core, are produced by die casting metal into grooves formed in a molded plastic encapsulant which surrounds the core.

The technique of surrounding the core with a plastic encapsulant including forming the receiving grooves or channels in the encapsulant reduces the handling required in the manufacture of pulse transformers and the like and avoids the need for forming grooves in the ferrite or ceramic material of which the core is composed. Furthermore, it permits compensation of the dimensional variations between cores and enables simplification of the die structures for fabricating the windings.

### 3,477,052
### HIGH SERIES CAPACITANCE WINDING FOR ELECTRICAL INDUCTIVE APPARATUS

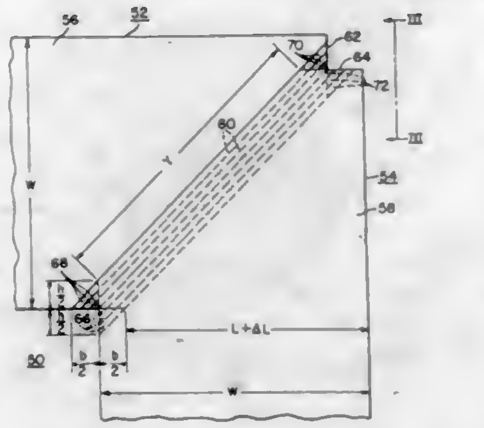
**Robert I. Van Nice, Sharon, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Nov. 30, 1967, Ser. No. 686,912**
**Int. Cl. H01f** *15/14*
**U.S. Cl. 336—70** **8 Claims**



A winding for electrical inductive apparatus which includes a plurality of pancake type coils arranged in a stack. Each pancake coil has first and second sections, the turns of which are radially interleaved. The sections of the pancake coils are interconnected to provide a plurality of pairs of adjacent first and second pancake coils, wherein a single series circuit successively traverses like sections of the first and second coils of each pair, and then returns to the first coil of the pair and successively traverses the like remaining sections of the first and second coils of the pair. The plurality of pairs are interconnected to provide a high series capacitance winding having a single series circuit between the ends of the winding.

### 3,477,053
### MAGNETIC CORE STRUCTURES

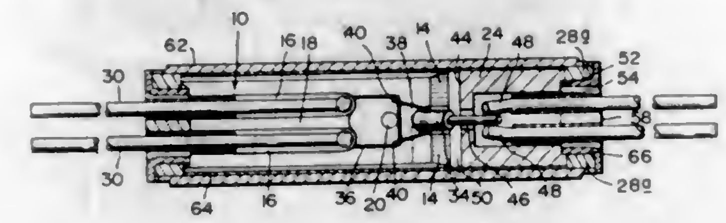
**Charles E. Burkhardt, Sharon, and Belvin B. Ellis, Pulaski, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Nov. 24, 1967, Ser. No. 685,558**
**Int. Cl. H01f** *27/24*
**U.S. Cl. 336—212** **11 Claims**



A magnetic core of the stacked type for electrical inductive apparatus which has stepped-lap joints between the leg and yoke portions of the core. The voids produced by the stepped laminations at the intersections of the leg and yoke portions are distributed between certain of the inner and outer corners of the core, and the voids at the inner corners are distributed between the yoke and leg portions of the core.

### 3,477,054
### FUSE ACTUATOR SWITCH

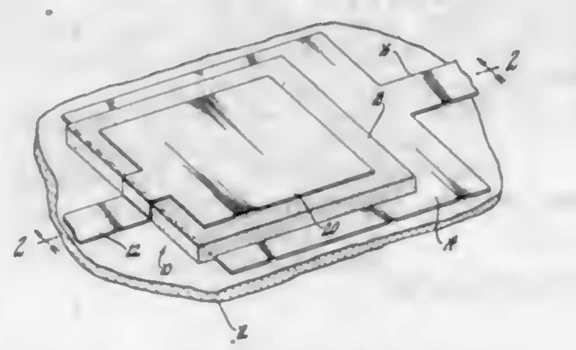
**Otis H. Bramhall, Lexington, and Thurman S. Jess, Holliston, Mass., assignors, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware**
**Filed Oct. 2, 1967, Ser. No. 672,207**
**Int. Cl. H01h** *85/02*
**U.S. Cl. 337—202** **5 Claims**



A thermally actuated switch having both a fixed contact and a movable contact, the movable contact being held under tension by a fusible means. The fusible means separate at a predetermined current level releasing the movable contact relative to the fixed contact to either make or break a circuit.

### 3,477,055
### THERMISTOR CONSTRUCTION

**Darwyn L. Herbst, Smithtown, N.Y., and Keith E. Ewing, Sharpsville, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Dec. 22, 1967, Ser. No. 692,863**
**Int. Cl. H01c** *7/04*
**U.S. Cl. 338—22** **2 Claims**

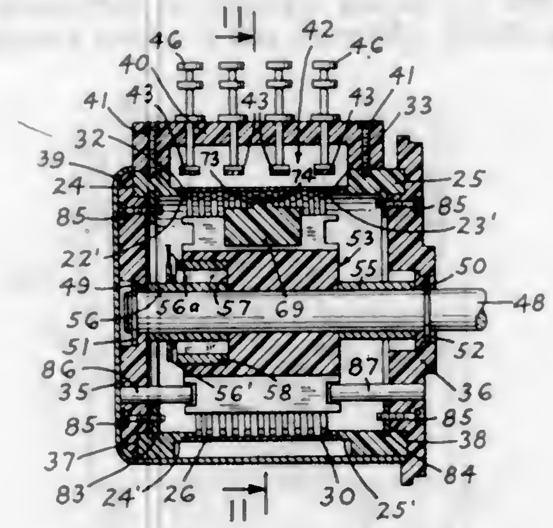


A relatively low resistance printed thermistor assembly having a thermistor film sandwiched between a lower and an upper conductive film which serve as terminals is disclosed. This thermistor assembly is supported by an insulative substrate. A specific example is a sheet of alumina substrate which has a conductive film of palladium-silver printed thereon. Printed on top of the palladium-silver film is a thermistor film containing cobalt oxide, manganese oxide and glass. A second palladium-silver conductive film is printed on top of the cobalt oxide-manganese oxide thermistor film.

### 3,477,056
### HIGH PRECISION POTENTIOMETER AND METHOD MAKING THE SAME

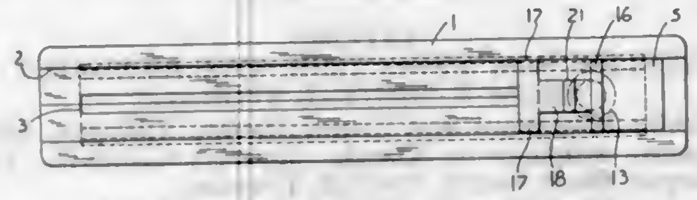
**Alexander A. Pedu, 1 Treeview Drive, Melville, N.Y. 11746**
**Filed Dec. 28, 1967, Ser. No. 694,218**
**Int. Cl. H01c** *5/00, 1/12*
**U.S. Cl. 338—135** **8 Claims**

A high precision potentiometer without a core and having the winding turns embedded in plastic. The potentiometer is provided with adjustable phasing rings to permit accurate adjustment of the slider and stops and with a wiper assembly including a guide block and follower constructed so as to avoid lost motion when the direction of rotation of the potentiometer assembly is changed. In making the winding, the wire is wound on a mandrel with the turns separated by a Teflon wire or wires. An epoxy cement is spread on the winding and is cured and hardened. The mandrel is then removed and the Teflon wire or wires are then pulled out into the hollow central space.



### 3,477,057
### POTENTIOMETER WITH FRICTIONAL SLIDE

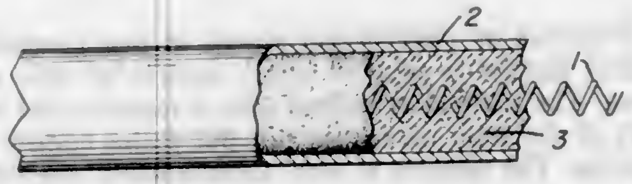
**Mogens W. Bang, Ridgway, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania**
**Filed Oct. 12, 1967, Ser. No. 674,849**
**Int. Cl. H01c** *5/02*
**U.S. Cl. 338—182** **11 Claims**



The elongated case of a linear motion potentiometer is provided in one of its side walls with a longitudinal slot through it. A slide in the slot is movable lengthwise of it manually for sliding a bridging contact along a collector and resistance element in the case. The slide is provided with a friction portion resiliently pressing against the case to resist movement of the slide along the slot.

### 3,477,058
### MAGNESIA INSULATED HEATING ELEMENTS AND METHODS OF PRODUCTION

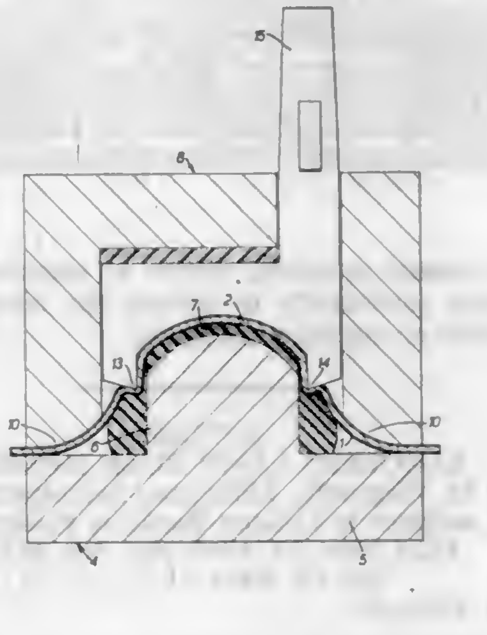
**Willem Vedder, Latham, N.Y., and John Schultz, Jr., Louisville, Ky., assignors to General Electric Company, a corporation of New York**
**Filed Feb. 1, 1968, Ser. No. 702,474**
**Int. Cl. H01c** *1/02, 7/00, 17/00*
**U.S. Cl. 338—238** **8 Claims**



Compacted, granular, fused magnesia used as thermally-conducting electrical insulation in tubular, electrical resistance elements is substantially improved both in compaction density and electrical resistivity through the addition of 0.1 to 5.0 percent of any of a variety of substances of layer-structure crystal form such as pyrophyllites.

### 3,477,059
### CONNECTORS FOR LAMINAR ELECTRIC CABLES

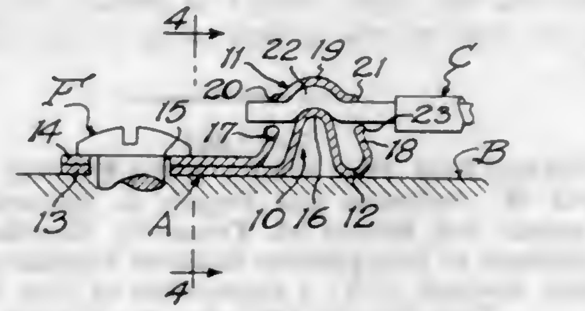
**James Edward George Cole, Fareham, England, assignor to The McMurdo Instrument Company Limited**
**Filed Dec. 14, 1967, Ser. No. 690,630**
**Claims priority, application Great Britain, Jan. 24, 1967, 3,546/67**
**Int. Cl. H01r** *11/20;* **H05k** *1/08*
**U.S. Cl. 339—99** **9 Claims**



A device for making connection to a conductor of a laminar cable comprises: a body member having spaced abutment portions and having mounted thereon a contact member with spaced tooth portions protruding beyond a body surface to engage the cable; a base member having support portions positioned to urge the cable against the body abutment portions; and cable bending means situated between the abutment and support portions and producing double flexure of the cable which is thereby drawn inwardly of the device over the tooth portions of the contact member.

### 3,477,060
### ELECTRICAL CONNECTOR OF INTEGRAL SHEET METAL CONSTRUCTION

**Robert E. Lawlor, Fullerton, Calif., assignor to Electro-Clamp Corporation, Beverly Hills, Calif., a corporation of California**
**Filed Feb. 1, 1968, Ser. No. 702,411**
**Int. Cl. H01r** *7/20, 9/10*
**U.S. Cl. 339—266** **9 Claims**



Wire clamping electrical connector embodying opposed parts integrally connected by a resilient web functioning as a hinge and having wire-clamping jaws with respective integral tails functioning (1) as lever arms to bring the jaws together in clamping engagement with a wire, and (2) as anchor tabs to be secured to a support and thereby to hold the jaws in the wire-clamping positions.

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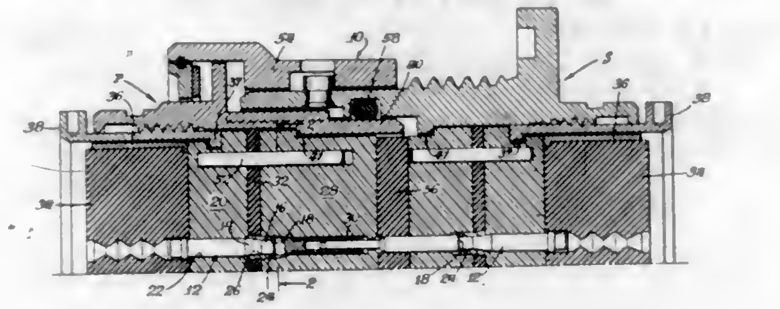
### 3,477,061
### CONTACT RETENTION DEVICE

**Constantine Dean Stephenson, Arlington Heights, Ill., assignor to The Bunker-Ramo Corporation, a corporation of Delaware**
**Filed June 20, 1966, Ser. No. 558,958**
**Int. Cl. H01r** *11/10, 23/26, 23/52*
**U.S. Cl. 339—59** **8 Claims**



The present invention relates to electrical connectors and more particularly to devices for retention of contacts within an electrical connector.

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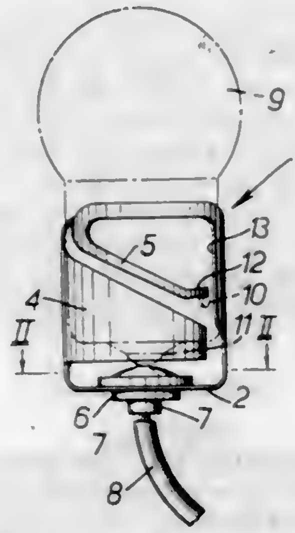
### 3,477,062
### ELECTRIC LAMP BULB HOLDERS

**Aubrey H. Wagstaffe, Lillington, Leamington Spa, England, assignor to London Bankside Products Limited**
**Filed Nov. 27, 1967, Ser. No. 685,757**
**Int. Cl. H01r** *13/32, 13/54*
**U.S. Cl. 339—88** **4 Claims**



In a contact making holder for a bayonet capped electric lamp bulb, the frame which carries the supply contact or contacts and serves to locate the cap of the lamp, is itself made to act as a spring urging the cap into engagement with the supply contact or contacts, thus eliminating the usual separate springs acting on each supply contact.

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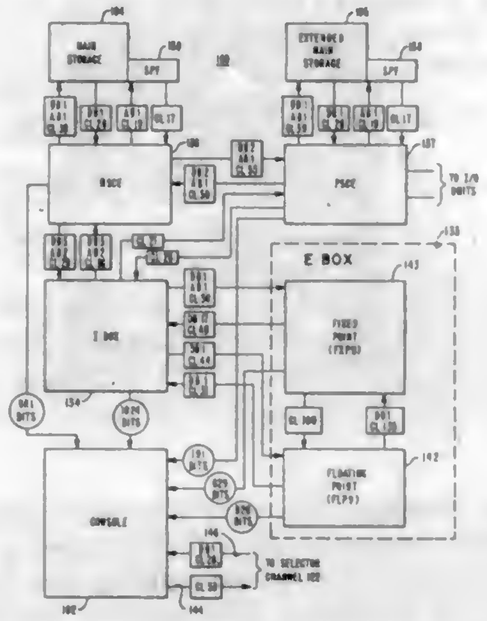
### 3,477,063
### CONTROLLER FOR DATA PROCESSING SYSTEM

**David W. Anderson and Francis J. Sparacio, Poughkeepsie, and Robert M. Tomasulo, Staatsburg, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Oct. 26, 1967, Ser. No. 678,430**
**Int. Cl. G11b** *13/00;* **G06f** *1/00, 7/00*
**U.S. Cl. 340—172.5** **20 Claims**

A data processing system including an I-Box which decodes all instructions, executes certain instructions, partially executes other instructions by generating operand addresses and initiating storage access for such instructions, and issues instructions to other units of the system; an E-Box or execution device which receives its instructions from the I-Box and performs, among other things, fixed point arithmetic operations; a group of general purpose registers used in common by the I-Box and the E-Box for storing operands or components for generating storage addresses; and a control arrangement including counters and interlocks (1) which permits partial execution by the I-Box of certain instructions, (2) which is operated by the I-Box to prevent subsequently issued instructions which are dependently related to earlier instructions from being partially executed by the I-Box out of order, and (3) which is operated by the E-Box, upon completion of execution of such instructions, to remove the inhibition imposed on the I-Box.



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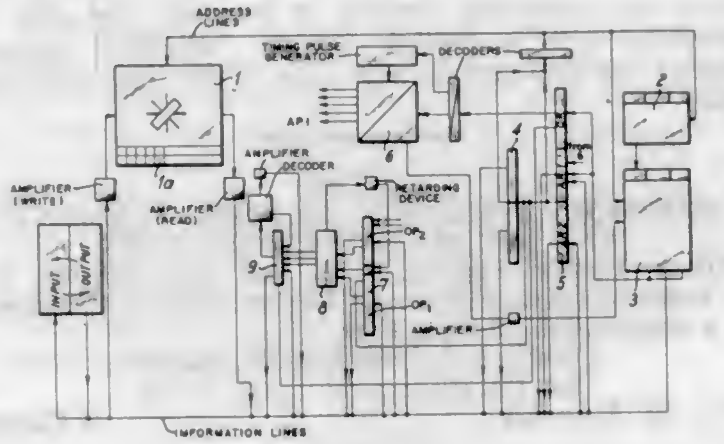
### 3,477,064
### SYSTEM FOR EFFECTING THE READ-OUT FROM A DIGITAL STORAGE

**Joachim Hilgendorf and Froese Hasko, Villingen, Germany, assignors to Kienzle Apparate G.m.b.H., Villingen, Black Forest, Postfach, Germany**
**Filed Mar. 28, 1968, Ser. No. 720,754**
**Claims priority, application Germany, Mar. 31, 1967, K 61,868**
**Int. Cl. G06f** *1/00, 7/00, 15/00*
**U.S. Cl. 340—172.5** **4 Claims**



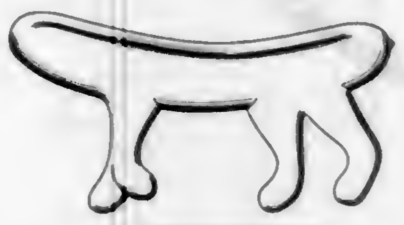
Read-out of information stored in two locations in a digital storage is effected under control of only one address. The address is shifted into a register, and the first part of the information is read out under control of this address. The address is then automatically modified, and the second part of the information, stored in the second location, is then read-out.

# DESIGNS

NOVEMBER 4, 1969

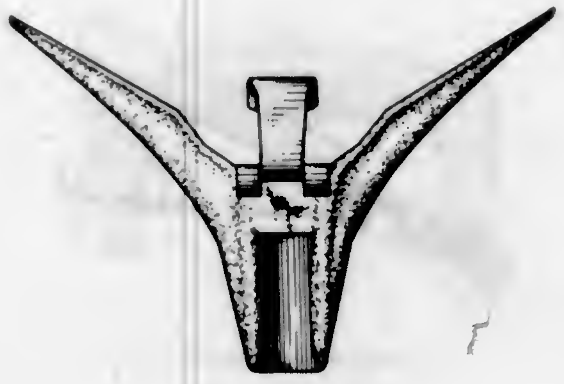
### 215,800
### FRANKFURTER OR THE LIKE

**Edward J. Kiwala, 6338 N. Melvina Ave., Chicago, Ill. 60646**
**Original design application Dec. 21, 1967, Ser. No. 9,878. Divided and this application Sept. 26, 1968, Ser. No. 15,891**
**Term of patent 14 years**
**Int. Cl. D1—*04***
**U.S. Cl. D1—26**



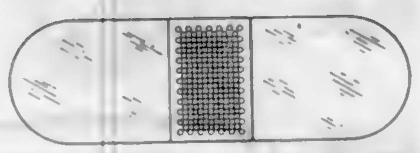
### 215,801
### NECKTIE KNOT SUPPORT

**Harry Kanter, 535 E. 86th St., New York, N.Y. 10028, and Robert Kallman, 612 Forest Hills Drive, Wilmington, N.C. 28401**
**Filed Sept. 6, 1968, Ser. No. 13,418**
**Term of patent 14 years**
**Int. Cl. D2—*06***
**U.S. Cl. D2—359**



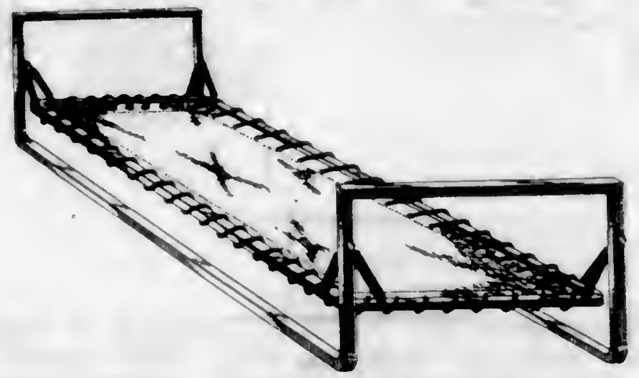
### 215,802
### TOOTH CLEANING DEVICE

**Carroll C. Conklin, Jr., 722 S. Prospect St., Marion, Ohio 43302**
**Filed Sept. 12, 1968, Ser. No. 13,515**
**Term of patent 14 years**
**Int. Cl. D4—*02*; D24—*03***
**U.S. Cl. D4—24**



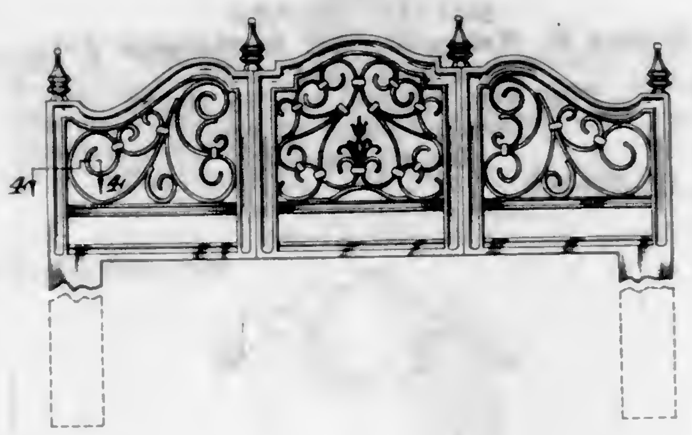
### 215,803
### COLLAPSIBLE BED

**Donold E. Green, 7322 Baker Ave. NE., Minneapolis, Minn. 55432**
**Filed Aug. 1, 1968, Ser. No. 12,993**
**Term of patent 7 years**
**Int. Cl. D6—*01***
**U.S. Cl. D5—4**



### 215,804
### BED HEADBOARD OR THE LIKE

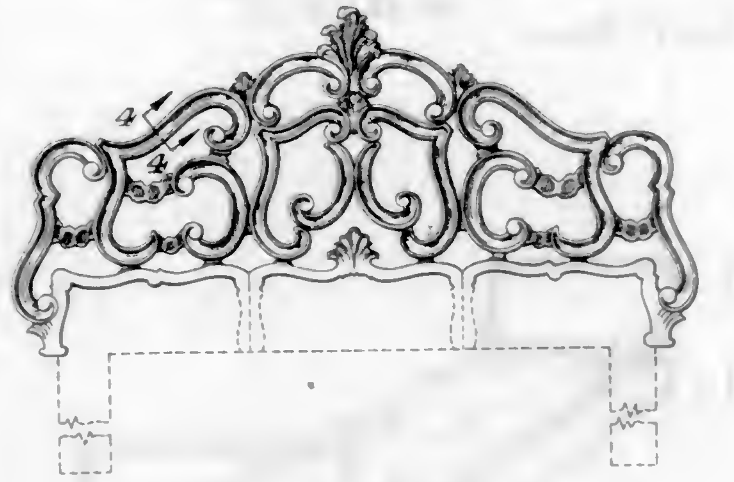
**Richard M. Chapin, Charlotte, N.C., assignor to C. B. Atkin Company, Knoxville, Tenn., a corporation of Tennessee**
**Filed Oct. 14, 1968, Ser. No. 13,975**
**Term of patent 3½ years**
**Int. Cl. D6—*01***
**U.S. Cl. D5—4**



### 215,805
### BED HEADBOARD OR THE LIKE

Richard M. Chapin, Charlotte, N.C., assignor to C. B. Atkin Company, Knoxville, Tenn., a corporation of Tennessee
Filed Oct. 14, 1968, Ser. No. 13,983
Term of patent 3½ years
Int. Cl. D6—*01*

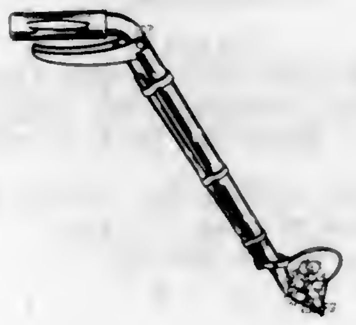
U.S. Cl. D5—4



### 215,806
### WEED DIGGER

Virgil R. Clark, Fullerton, Nebr. 68638
Filed June 6, 1968, Ser. No. 12,237
Term of patent 14 years
Int. Cl. D8—*01*

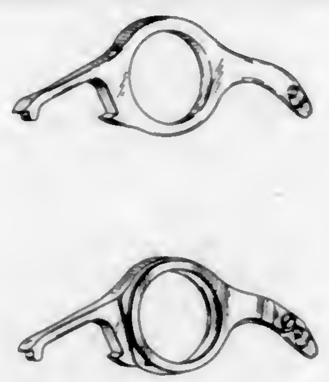
U.S. Cl. D8—4



### 215,807
### BOTTLE OPENER

Wilfred W. Weingardt, 5247 Southeastern Ave., Indianapolis, Ind. 46203
Filed Mar. 7, 1969, Ser. No. 16,114
Term of patent 14 years
Int. Cl. D8—*02*

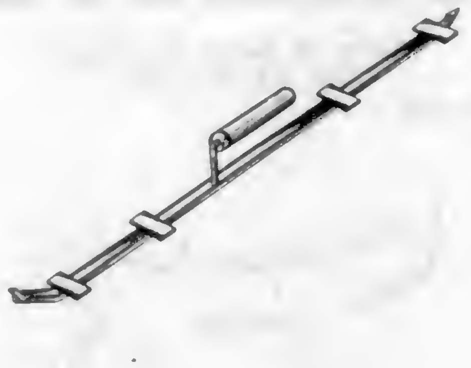
U.S. Cl. D8—40



### 215,808
### JOINT FINISHER

Christopher C. Hardy, P.O. Box 5371, Heiand Park Station, Panama City, Fla. 32401
Filed Dec. 28, 1967, Ser. No. 9,969
Term of patent 14 years
Int. Cl. D8—*02*

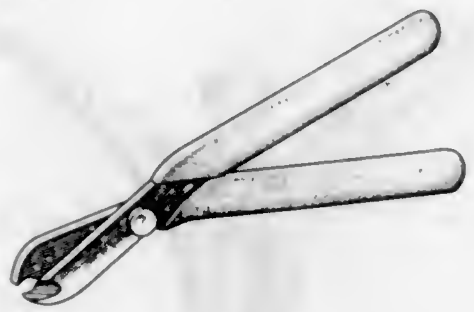
U.S. Cl. D8—45



### 215,809
### CUTTER

Theadore Baun, 231 Bellamy Road, Scarborough, Ontario, Canada
Filed Feb. 5, 1968, Ser. No. 10,433
Claims priority, application Canada Jan. 4, 1968
Term of patent 14 years
Int. Cl. D8—*02*

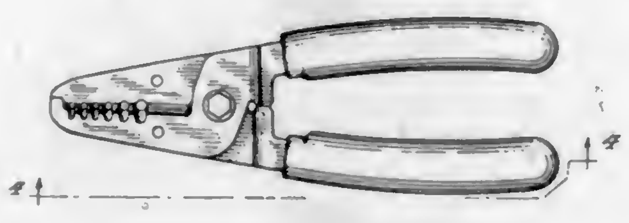
U.S. Cl. D8—52



### 215,810
### ELECTRICIAN'S TOOL

Eugene D. Hindenburg, Sycamore, Ill., assignor to Holub Industries, Inc., a corporation of Illinois
Filed Feb. 10, 1969, Ser. No. 15,732
Term of patent 14 years
Int. Cl. D8—*02*

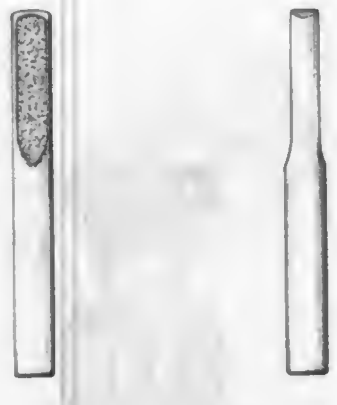
U.S. Cl. D8—58



### 215,811
### AUTOMOBILE DOOR LOCK KNOB

Alex Kraus, Los Angeles, Calif.
(1650 W. Rosecrans Ave., Gardena, Calif. 90249)
Filed May 31, 1968, Ser. No. 12,161
Term of patent 7 years
Int. Cl. D8—*03*

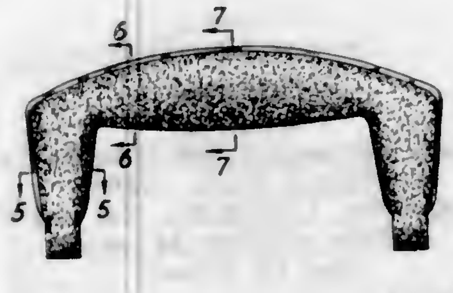
U.S. Cl. D8—113



### 215,812
### LUGGAGE HANDLE OR SIMILAR ARTICLE

Leon Lautin, 43 White Drive N., Cedarhurst, N.Y. 11516
Filed Nov. 19, 1968, Ser. No. 14,531
Term of patent 14 years
Int. Cl. D8—*03*

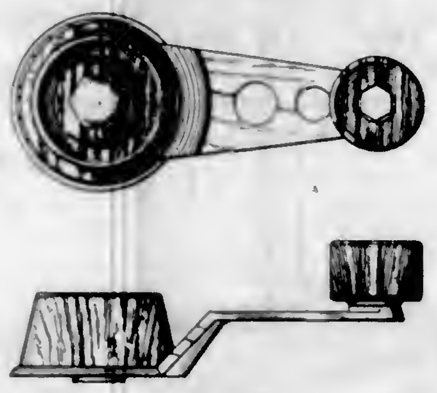
U.S. Cl. D8—154



### 215,813
### AUTOMOBILE WINDOW CRANK

Alex Kraus, Los Angeles, Calif.
(1650 W. Rosecrans Ave., Gardena, Calif. 90249)
Filed Apr. 7, 1969, Ser. No. 16,598
Term of patent 14 years
Int. Cl. D8—*03*

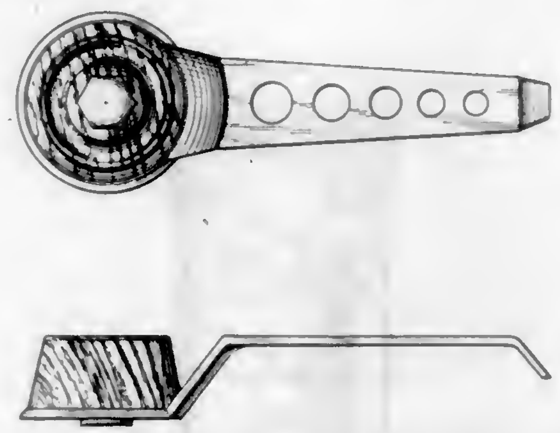
U.S. Cl. D8—161



### 215,814
### AUTOMOBILE DOOR HANDLE

Alex Kraus, Los Angeles, Calif.
(1650 W. Rosecrans Ave., Gardena, Calif. 90249)
Filed Apr. 7, 1969, Ser. No. 16,608
Term of patent 14 years
Int. Cl. D8—*03*

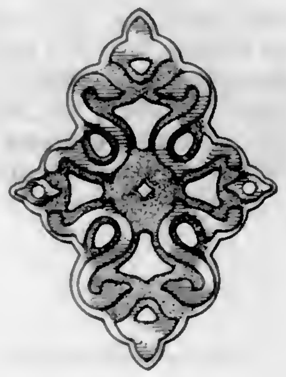
U.S. Cl. D8—161



### 215,815
### BACKPLATE

Frank A. Holmes, La Habra, and Lawrence McCain, Beverly Hills, Calif., assignors to Ajax Hardware Manufacturing Corp., City of Industry, Calif., a corporation of California
Filed June 18, 1968, Ser. No. 12,420
Term of patent 14 years
Int. Cl. D8—*03*

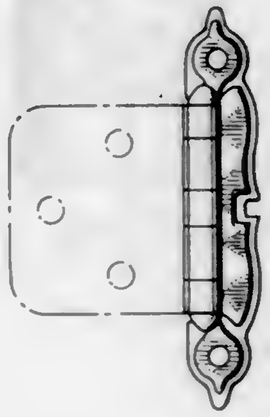
U.S. Cl. D8—179



### 215,816
### HINGE

Frank A. Holmes, La Habra, and Lawrence McCain, Beverly Hills, Calif., assignors to Ajax Hardware Manufacturing Corp., City of Industry, Calif., a corporation of California
Filed June 18, 1968, Ser. No. 12,417
Term of patent 14 years
Int. Cl. D8—*03*

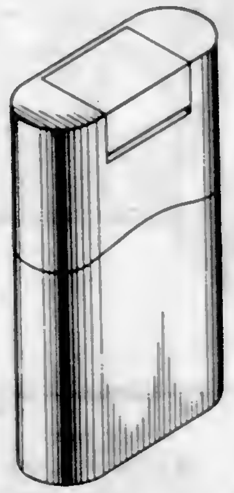
U.S. Cl. D8—198



### 215,817
### LIQUID SPRAY DISPENSER

John F. Gorman, North Hollywood, Calif. (3207 Fryman Road, Studio City, Los Angeles, Calif. 91604)
Filed Aug. 14, 1968, Ser. No. 13,140
Term of patent 14 years
Int. Cl. D9—*99*

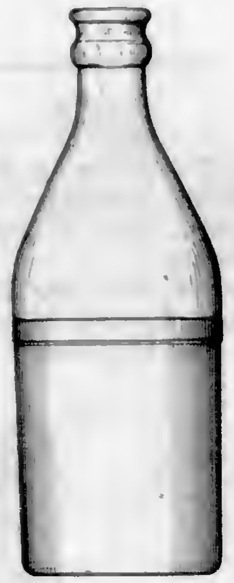
U.S. Cl. D9—8



### 215,818
### COMBINED BOTTLE AND TUMBLER

José Joaquim Pessoa Proenca Ryder da Costa, Hermosillo 100, Madrid, Spain
Filed Nov. 24, 1967, Ser. No. 9,544
Claims priority, application Spain May 27, 1967
Term of patent 14 years
Int. Cl. D9—*01*

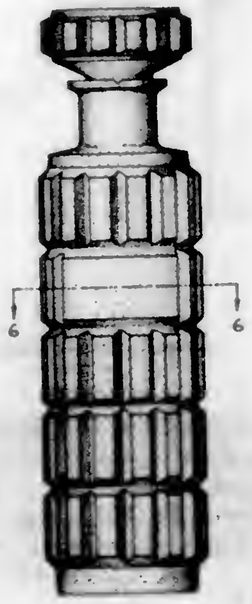
U.S. Cl. D9—10



### 215,819
### COMBINED DECANTER AND CLOSURE THEREFOR

Walter T. Heintze, New Canaan, Conn., assignor to Schenley Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 16, 1968, Ser. No. 13,546
Term of patent 14 years
Int. Cl. D9—*01*

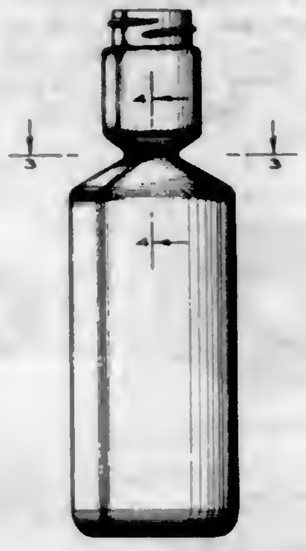
U.S. Cl. D9—83



### 215,820
### BOTTLE

Robert J. Donoghue, 900 Windsor Ave., Windsor, Conn. 06095
Filed Nov. 1, 1968, Ser. No. 14,276
Term of patent 14 years
Int. Cl. D9—*01*

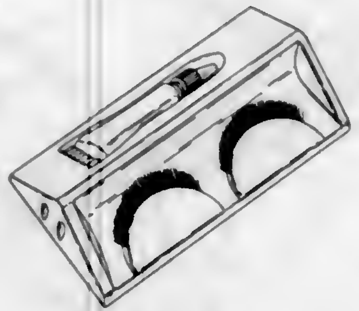
U.S. Cl. D9—119



### 215,821
### DISPLAY PACKAGE OF FALSE EYELASHES AND ADHESIVE MATERIAL

D. Howard Aylott, 58–60 Bridge Road E., Welwyn Garden City, England
Filed July 2, 1968, Ser. No. 12,601
Term of patent 14 years
Int. Cl. D9—*04*

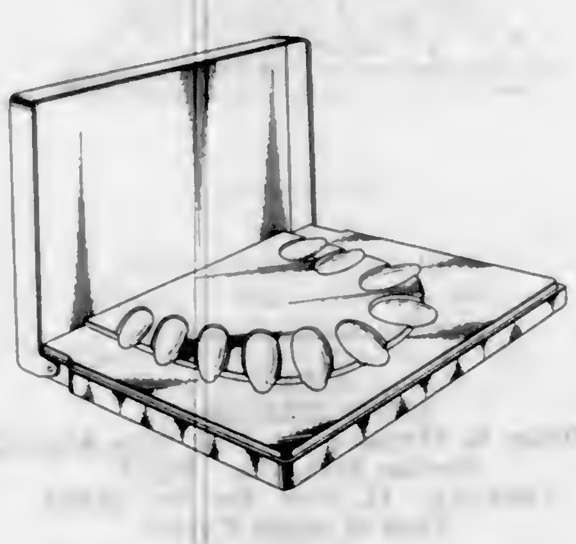
U.S. Cl. D9—185



### 215,822
### COMBINED CONTAINER AND ARTIFICIAL FINGERNAILS

Eric Victor Aylott, Welwyn Garden City, England, assignor to Eylure Limited, Welwyn Garden City, Hertfordshire, England, a British company
Original design applications Ser. No. 9,451, and Ser. No. 9,453, Nov. 17, 1967. Divided and this application Aug. 22, 1968, Ser. No. 14,858
Claims priority, application Great Britain July 24, 1967
Term of patent 14 years
Int. Cl. D9—*04*

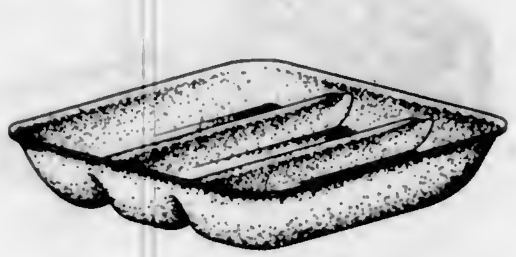
U.S. Cl. D9—187



### 215,823
### BREAD DOUGH TRAY

Hugh H. Bridgford, 6600 Blvd. E., West New York, N.J. 07093
Filed Nov. 12, 1968, Ser. No. 14,415
Term of patent 14 years
Int. Cl. D9—*99*

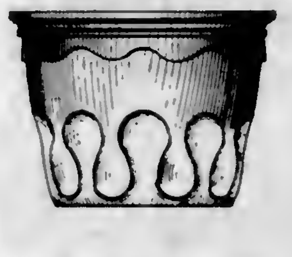
U.S. Cl. D9—189



### 215,824
### PACKAGING CUP

Harold J. Vanderhyde, North Merrick, N.Y., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of design application Ser. No. 9,399, Nov. 14, 1967. This application Oct. 22, 1968, Ser. No. 14,285
Term of patent 14 years
Int. Cl. D9—*04*

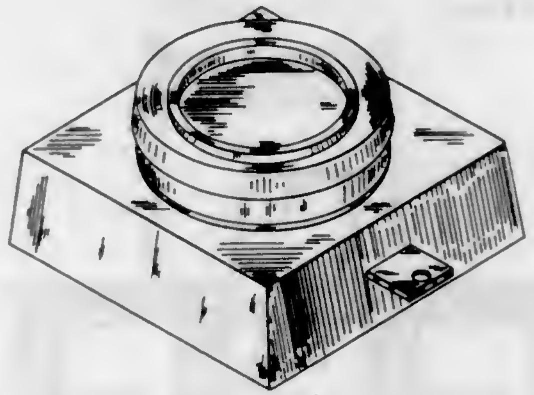
U.S. Cl. D9—220



### 215,825
### FOOD DISPLAY PACKAGE

Jack V. Cline, San Diego, Calif., assignor to Tee-Pak, Inc.
Continuation-in-part of design application Ser. No. 9,869, Dec. 20, 1967. This application Oct. 4, 1968, Ser. No. 13,849
Term of patent 14 years
Int. Cl. D9—*04*

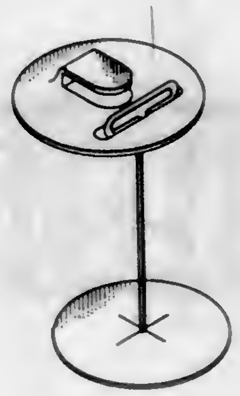
U.S. Cl. D9—239



### 215,826
### FASTENER FOR SECURING TOGETHER LAYERS OF PAPERBOARD, ASBESTOS CLOTH AND SIMILAR MATERIALS

William J. Wheatley, Jr., Dresher, Pa., assignor to Philadelphia Asbestos Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 19, 1968, Ser. No. 13,179
Term of patent 14 years
Int. Cl. D8—*03*

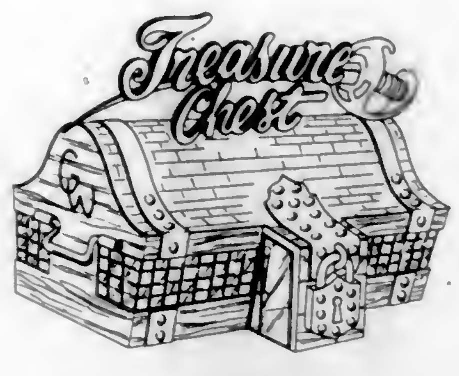
U.S. Cl. D9—252



### 215,827
### COMMERCIAL BUILDING

George M. Wright, Jr., 4149 Druid Lane,
Dallas, Tex. 75205
Filed May 22, 1968, Ser. No. 12,044
Term of patent 14 years
Int. Cl. D25—*04*

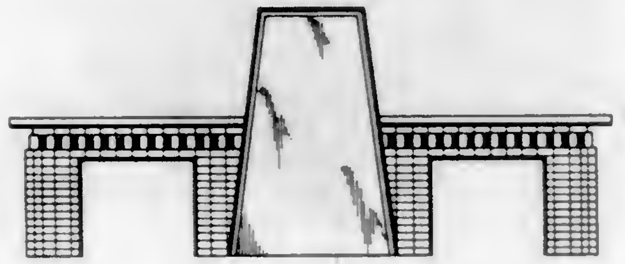
U.S. Cl. D13—1



### 215,828
### BUILDING

Thomas H. Boulay, 6600 Blackfoot Pass,
Edina, Minn. 55435
Filed Sept. 13, 1968, Ser. No. 13,534
Term of patent 14 years
Int. Cl. D25—*04*

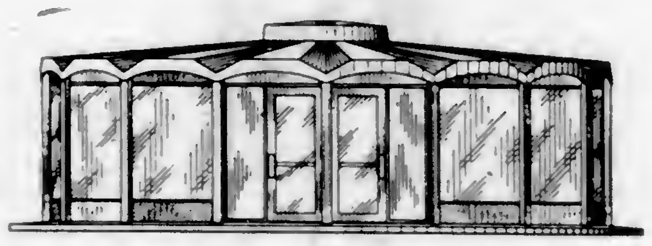
U.S. Cl. D13—1



### 215,829
### BUILDING

Jack W. Beck, Blue Springs, Mo., assignor to Plasto Incorporated, Mission, Kans., a corporation of Kansas
Filed Nov. 25, 1968, Ser. No. 14,620
Term of patent 14 years
Int. Cl. D25—*04*

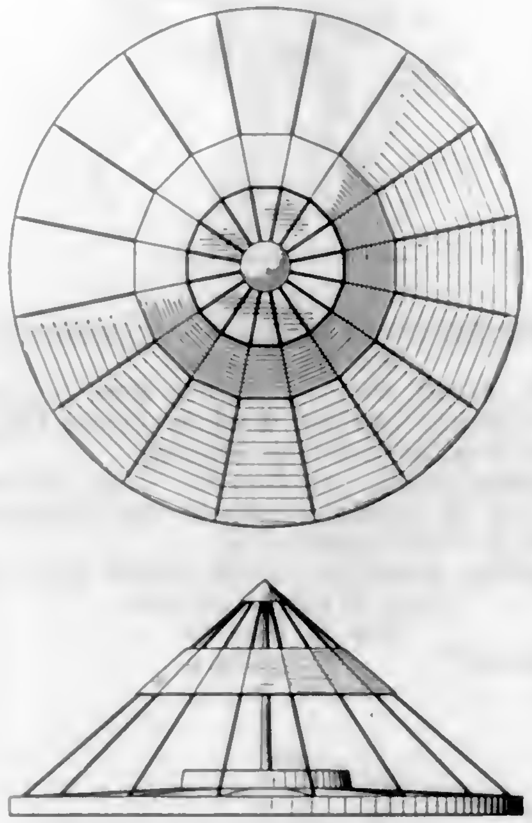
U.S. Cl. D13—1



### 215,830
### BUILDING ROOF

Jack W. Beck, Kansas City, Mo., assignor to Plasto Incorporated, Mission, Kans., a corporation of Kansas
Filed Dec. 11, 1968, Ser. No. 14,931
Term of patent 14 years
Int. Cl. D25—*02*

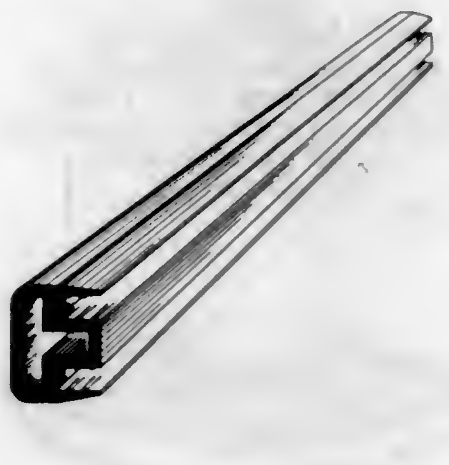
U.S. Cl. D13—1



### 215,831
### EXTRUDED SEAL

William R. Maynard, Jr., 6790 78th Ave. N.,
Pinellas Park, Fla. 33565
Filed Aug. 12, 1968, Ser. No. 13,082
Term of patent 7 years
Int. Cl. D25—*01*

U.S. Cl. D13—6



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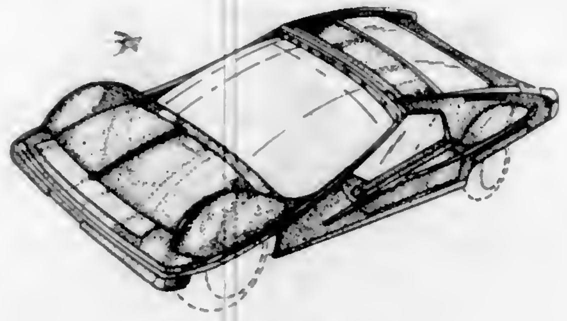
### 215,832
### VEHICLE

John T. Le Rose, Box 14032, Benjamin Franklin Station,
Washington, D.C. 20044
Filed June 6, 1968, Ser. No. 12,347
Term of patent 14 years
Int. Cl. D12—*08*

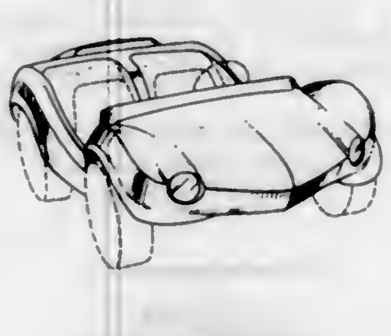
U.S. Cl. D14—3



### 215,833
### BODY FOR MOTOR VEHICLES OR THE LIKE

Eugene T. Daniel, Walnut, Calif., assignor to Safari Enterprises, Inc., a corporation of California
Filed Oct. 14, 1968, Ser. No. 13,992
Term of patent 14 years
Int. Cl. D12—*08*

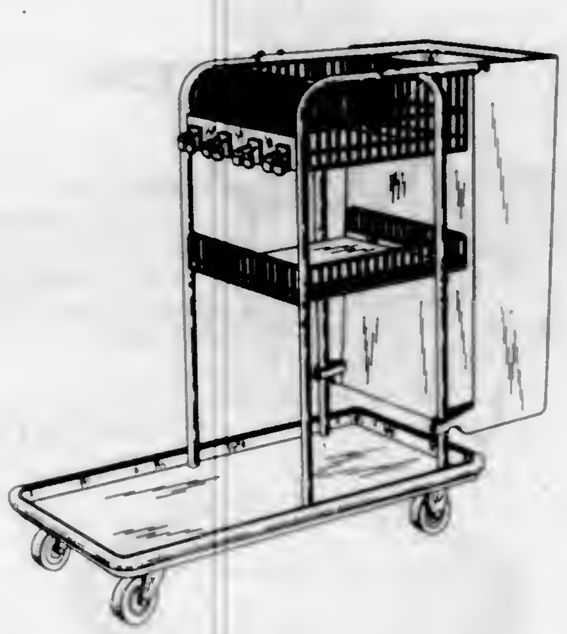
U.S. Cl. D14—3



### 215,834
### HOUSEKEEPING CART

Elmer H. Bard, P.O. Box 658,
Muskegon, Mich. 49443
Filed Jan. 6, 1969, Ser. No. 15,344
Term of patent 14 years
Int. Cl. D12—*02*

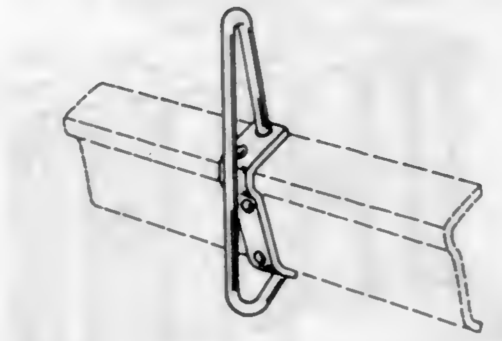
U.S. Cl. D14—3



### 215,835
### GRILLE AND BUMPER GUARD

Jack K. Vassar, P.O. Box 460,
Perkins, Okla. 74059
Filed Jan. 31, 1969, Ser. No. 15,577
Term of patent 14 years
Int. Cl. D12—*14*

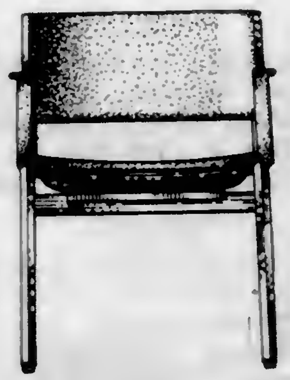
U.S. Cl. D14—6



### 215,836
### CHAIR

Mace Bell, Jr., Rowayton, and Edgar J. Westcott, Westport, Conn., assignors to The General Fireproofing Company, Youngstown, Ohio, a corporation of Ohio
Filed Apr. 18, 1968, Ser. No. 11,493
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—1



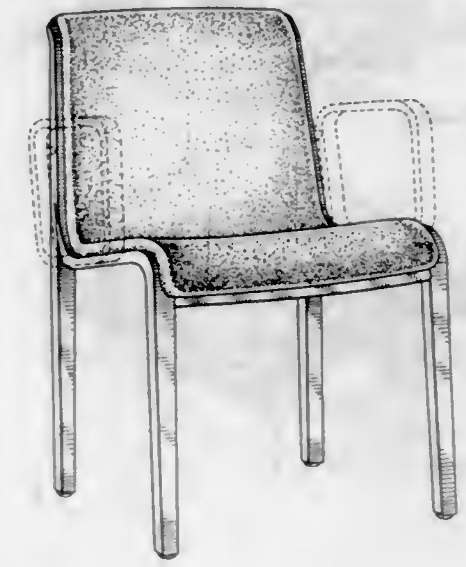
### 215,837
### CHAIR OR SIMILAR ARTICLE

William Isiah Stephens, Telford, Pa., assignor to Art Metal-Knoll Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of design application Ser. No. 7,101, May 8, 1967. This application Sept. 23, 1968, Ser. No. 13,681

Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—1

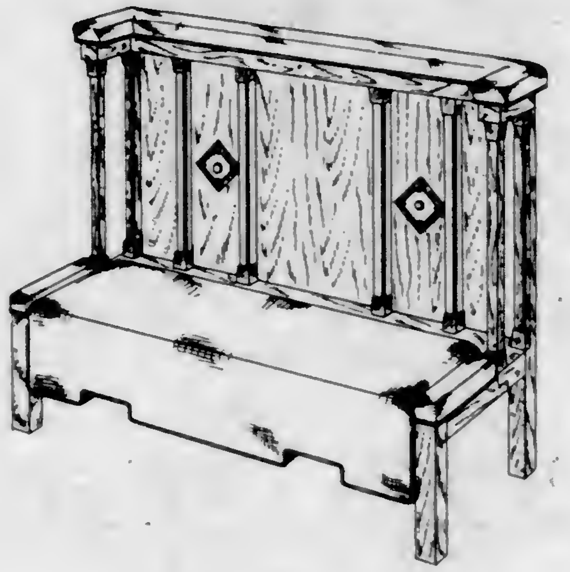


### 215,838
### PRAYER RAIL

Morris Lange, Shaker Heights, Ohio, assignor to Superior Funeral Supply Corporation, Cleveland, Ohio, a corporation of Ohio

Filed June 26, 1968, Ser. No. 12,504
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—8



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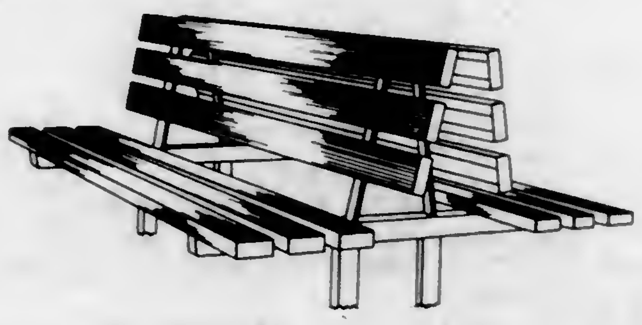
### 215,839
### DOUBLE PARK BENCH

Robert S. Wormser, Hillsdale, Mich., assignor to Game-Time, Inc., Litchfield, Mich., a corporation of Michigan

Filed Mar. 4, 1968, Ser. No. 10,832
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—11



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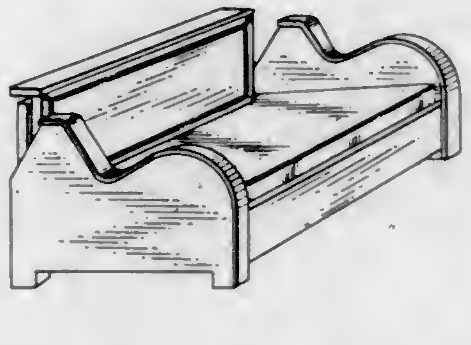
### 215,840
### BED-SOFA

Tomasina Kukura, 8009 Hollywood Blvd., Hollywood, Calif. 90046

Filed May 6, 1968, Ser. No. 11,801
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—11



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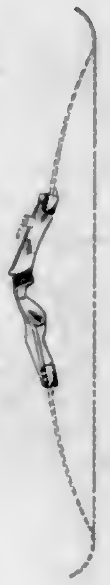
### 215,841
### HANDLE SECTION OF A KNOCKDOWN ARCHERY BOW

Charles A. Diehr, R.R. 1, Box 99B, Noblesville, Ind. 46060

Filed Nov. 8, 1968, Ser. No. 14,360
Term of patent 14 years
Int. Cl. D22—*02*

U.S. Cl. D22—5



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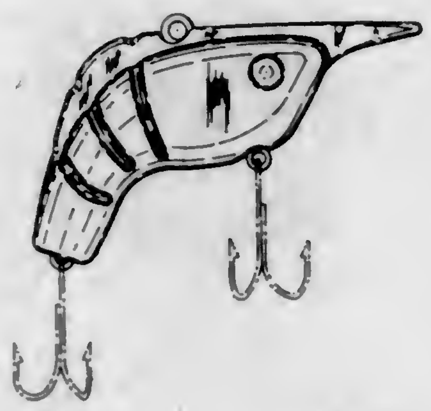
### 215,842
### FISHING LURE

Jack E. Davis, Jacksonville, Fla., assignor to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois

Filed July 5, 1968, Ser. No. 12,635
Term of patent 14 years
Int. Cl. D22—*07*

U.S. Cl. D22—27

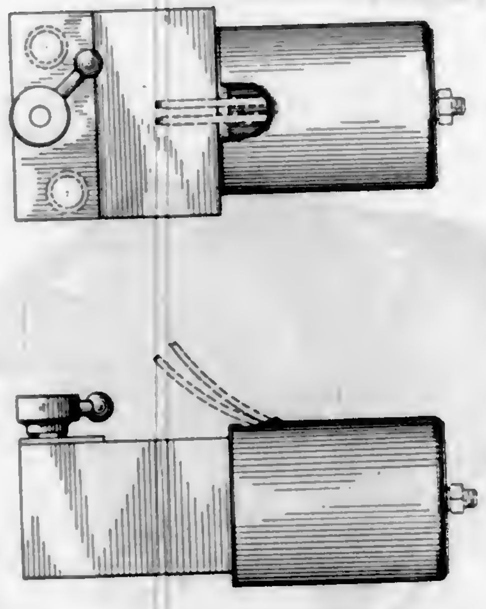


### 215,843
### SOLENOID VALVE UNIT

Ernest J. Svenson, 2330 23rd Ave., Rockford, Ill. 61101

Filed Aug. 2, 1968, Ser. No. 13,018
Term of patent 14 years
Int. Cl. D23—*01*

U.S. Cl. D23—19



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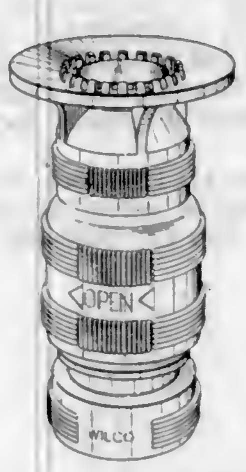
### 215,844
### FIRE HOSE NOZZLE

Duncan Horatio Campbell, Borough of Etobicoke, Ontario, Canada, assignor to Wilson & Cousins Co. Limited, Toronto, Ontario, Canada, a company of Canada

Filed Oct. 2, 1968, Ser. No. 13,823
Term of patent 14 years
Int. Cl. D23—*01*

U.S. Cl. D23—34



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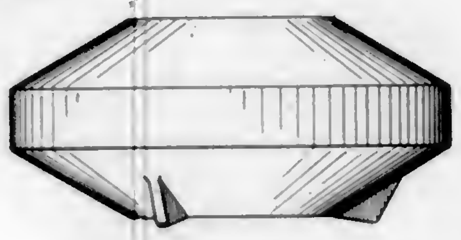
### 215,845
### VAPORIZER BOWL OR THE LIKE

Lawrence Katzman, New York, Edward Briggin, New York County, and Monte L. Levin, Kings County, N.Y., assignors to Kaz Manufacturing Co., Inc., New York, N.Y., a corporation of New York

Filed Jan. 21, 1969, Ser. No. 15,423
Term of patent 14 years
Int. Cl. D23—*04*

U.S. Cl. D23—148

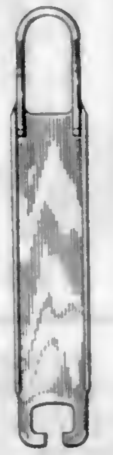


### 215,846
### WICK HOLDER FOR EVAPORATIVE DEODORIZERS OR THE LIKE

Kenneth M. Curtin, Frank E. Kern, Robert J. White, and William G. Baechle, Evansville, Ind., assignors to Evansville Association for the Blind, Inc., Evansville, Ind., a corporation of Indiana

Filed June 5, 1968, Ser. No. 12,222
Term of patent 14 years
Int. Cl. D23—*04*

U.S. Cl. D23—150



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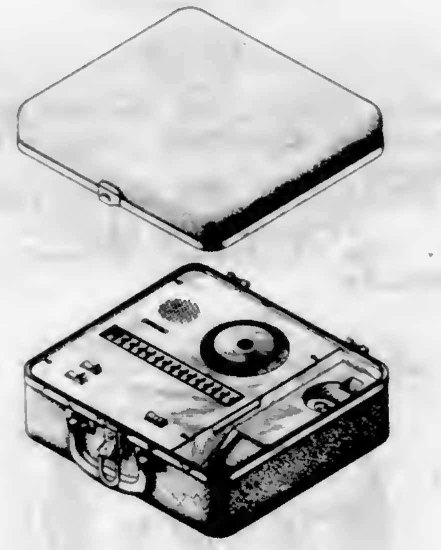
### 215,847
### DATA TERMINAL FOR USE WITH COMPUTER SYSTEMS AND OFF-LINE EQUIPMENT

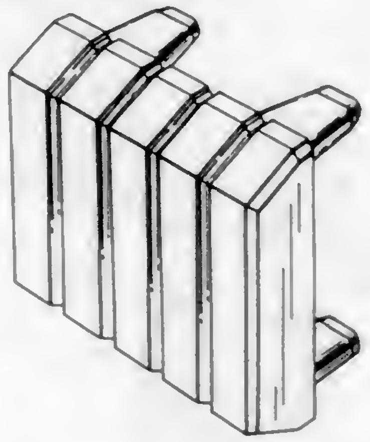
William T. Glover, Atlanta, and Eugene W. Kelly, Monticello, Ga., assignors, by mesne assignments, to Squires-Sanders, Inc., a corporation of New Jersey

Filed May 3, 1968, Ser. No. 11,769
Term of patent 14 years
Int. Cl. D14—*02*

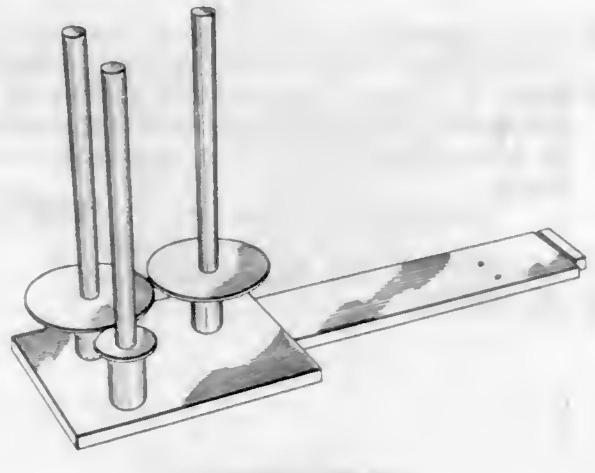
U.S. Cl. D26—5



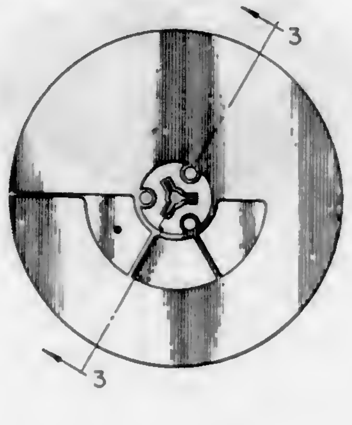
**215,848**
**DUMMY MODULE USED TO FILL UNUSED SPACE IN BANK OF SIGNAL AND CONTROL MODULES**
**John Stallebrass, 15 Adam and Eve Mews, London W. 8, England**
**Filed Dec. 22, 1967, Ser. No. 9,900**
**Term of patent 14 years**
**Claims priority, application Great Britain July 18, 1967**
**Int. Cl. D13—***03*
**U.S. Cl. D26—13**



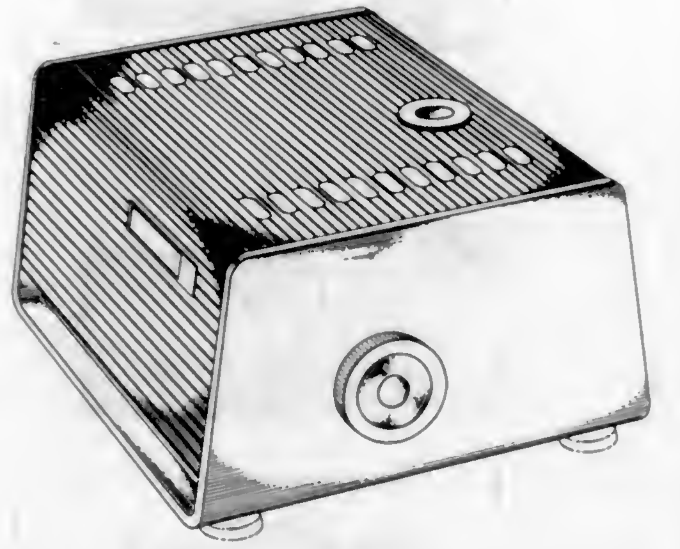
**215,849**
**ROLL-FEED APPARATUS FOR A FACSIMILE TRANSCEIVER**
**Robert E. Kalvitis, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**
**Filed May 9, 1968, Ser. No. 11,860**
**Term of patent 14 years**
**Int. Cl. D14—***01*
**U.S. Cl. D26—14**



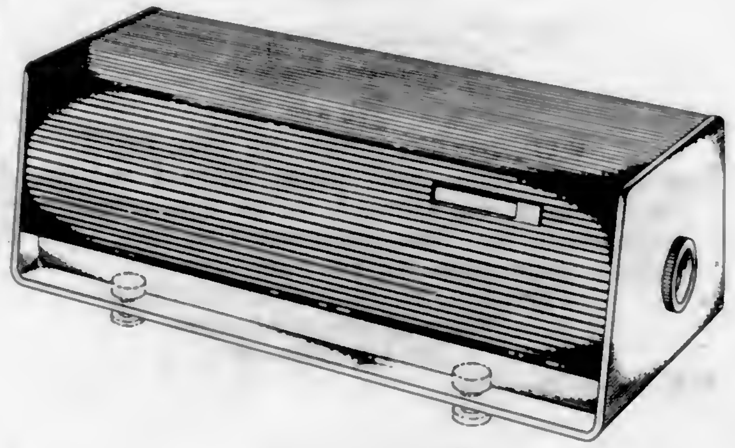
**215,850**
**REEL**
**Alan B. Lowry, Canton, Mass., assignor to Data Packaging Corporation, Cambridge, Mass., a corporation of Massachusetts**
**Filed Oct. 17, 1968, Ser. No. 14,035**
**Term of patent 14 years**
**Int. Cl. D14—***01;* **D16—***07*
**U.S. Cl. D26—14**



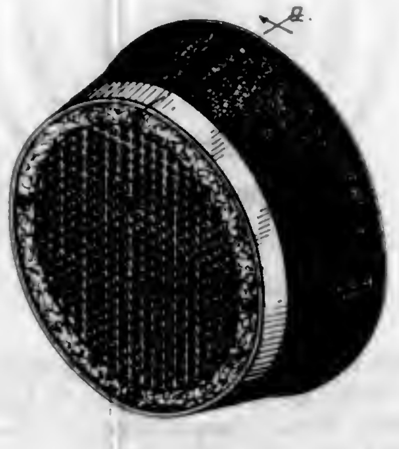
**215,851**
**HOUSING FOR A PHOTOMULTIPLIER OR SIMILAR DEVICE**
**Oskar Heininger, Framingham Center, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware**
**Filed Oct. 15, 1968, Ser. No. 14,102**
**Term of patent 14 years**
**Int. Cl. D16—***05*
**U.S. Cl. D26—14**



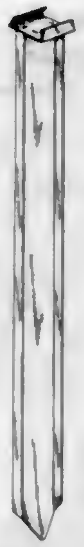
**215,852**
**LASER OR SIMILAR ARTICLE**
**Oskar Heininger, Framingham Center, Mass., assignor to Sylvania Electric Products Inc, a corporation of Delaware**
**Filed Oct. 15, 1968, Ser. No. 14,103**
**Term of patent 14 years**
**Int. Cl. D14—***04*
**U.S. Cl. D26—14**



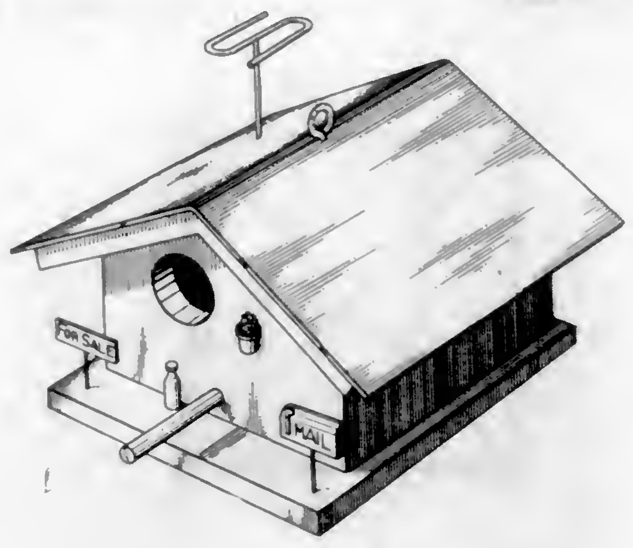
**215,853**
**SPEAKER HOUSING**
**Ralph M. La Zar, Skokie, and John P. Vanderhoef, Evanston, Ill., assignors to Car Tapes, Inc., a corporation of Illinois**
**Filed Apr. 24, 1969, Ser. No. 16,886**
**Term of patent 14 years**
**Int. Cl. D14—***01*
**U.S. Cl. D26—14**



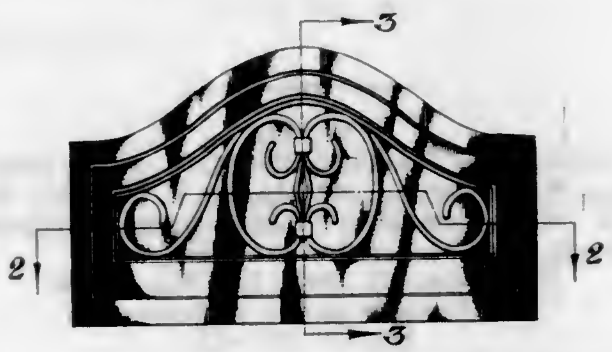
**215,854**
**SUPPORT POST**
**Walter L. Tilley, 4024 East Seneca, Des Moines, Iowa 50317**
**Filed Mar. 27, 1968, Ser. No. 11,157**
**Term of patent 3½ years**
**Int. Cl. D25—***01*
**U.S. Cl. D28—1**



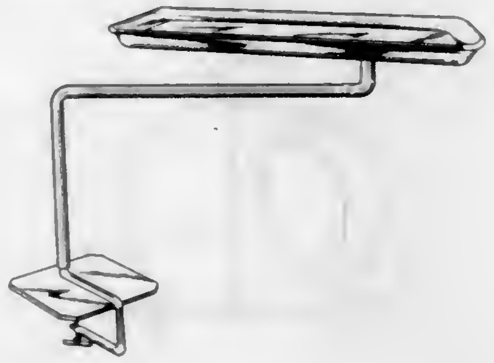
**215,855**
**BIRD HOUSE**
**William J. Henreid, 8744 N. Oketo Ave., Niles, Ill. 60648**
**Filed Jan. 23, 1969, Ser. No. 15,463**
**Term of patent 14 years**
**Int. Cl. D30—***01*
**U.S. Cl. D30—3**



**215,856**
**FURNITURE DOOR PEDIMENT OR THE LIKE**
**Richard M. Chapin, Charlotte, N.C., assignor to C. B. Atkin Company, Knoxville, Tenn., a corporation of Tennessee**
**Filed Oct. 14, 1968, Ser. No. 13,960**
**Term of patent 3½ years**
**Int. Cl. D6—***01*
**U.S. Cl. D33—1**

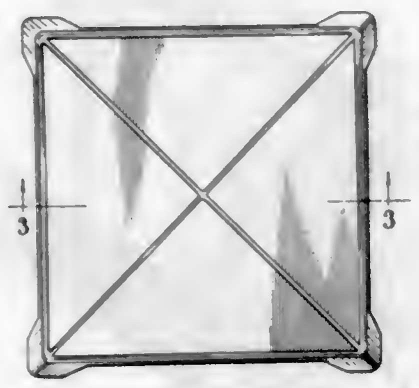


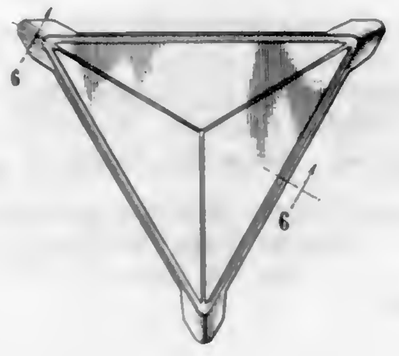
**215,857**
**COMBINED ROTATABLE STYLING TRAY AND SUPPORT STAND THEREFOR**
**Leslie W. Olson, 1645 S. Ivanhoe, Denver, Colo. 80222**
**Filed Mar. 20, 1968, Ser. No. 11,061**
**Term of patent 14 years**
**Int. Cl. D6—***01*
**U.S. Cl. D33—3**



**215,858**
**TABLE**
**John J. Hamilton, Cincinnati, Ohio, and Charles E. Schroer, Columbus, Ind., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana**
**Filed July 18, 1968, Ser. No. 12,818**
**Term of patent 14 years**
**Int. Cl. D6—*01***

**U.S. Cl. D33—14**





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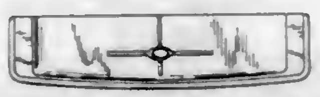
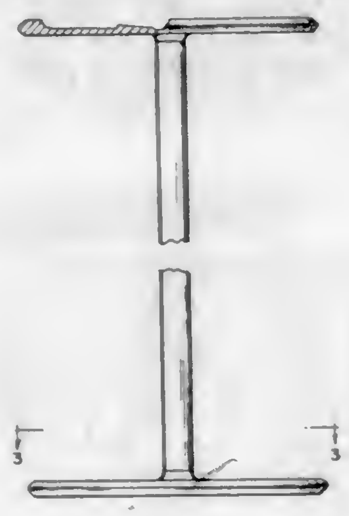
**215,859**
**COMBINED HAND GRIP AND SOAP DISH**
**William H. Armstrong and Norbert T. Kuypers, Bloomfield, Mich., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Nov. 21, 1968, Ser. No. 14,568**
**Term of patent 14 years**
**Int. Cl. D6—*01***

**U.S. Cl. D33—24**





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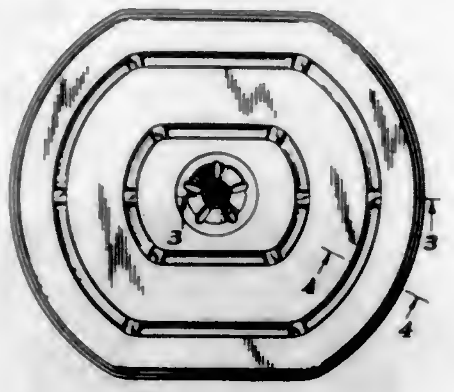
**215,860**
**SWING SEAT OR SIMILAR ARTICLE**
**Irwin Cohn, 746 West St., Leominster, Mass. 01453**
**Filed Sept. 17, 1968, Ser. No. 13,573**
**Term of patent 3½ years**
**Int. Cl. D21—*03***

**U.S. Cl. D34—5**



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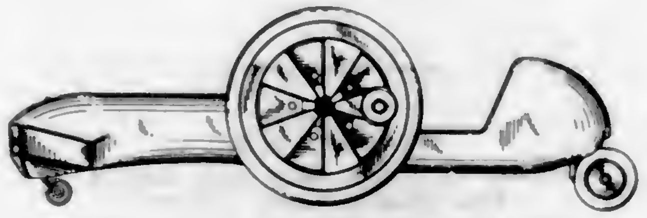
**215,861**
**HAND DRIVEN WHEELED VEHICLE**
**Calvin C. Cook, Erie, Pa., assignor to Louis Marx & Company Inc., a corporation of New York**
**Filed Jan. 29, 1969, Ser. No. 15,559**
**Term of patent 14 years**
**Int. Cl. D21—*02***

**U.S. Cl. D34—15**



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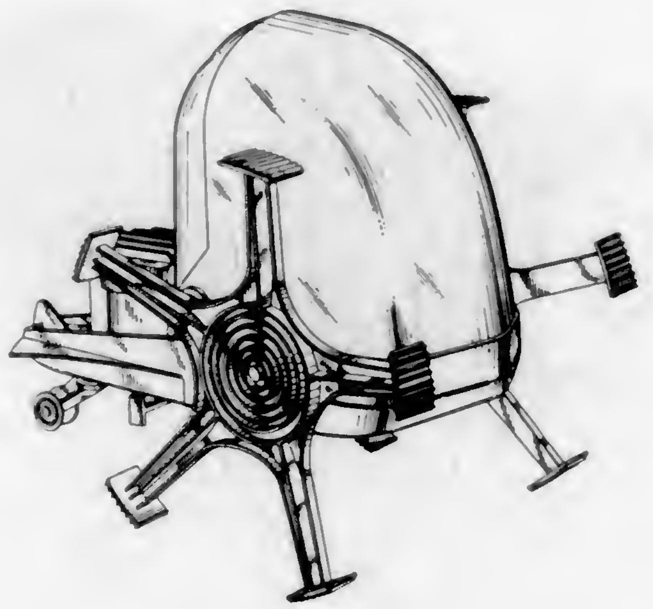
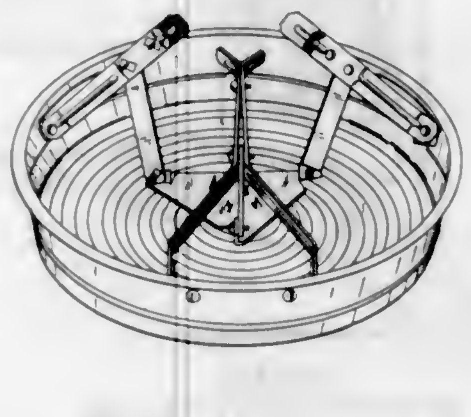
**215,862**
**TOY VEHICLE**
**Laurie J. Campbell, Erie, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York**
**Filed Mar. 10, 1969, Ser. No. 16,171**
**Term of patent 14 years**
**Int. Cl. D21—*02***

**U.S. Cl. D34—15**



**215,863**
**STAND FOR TREES**
**James E. Fisher, Jack L. Mitchell, and Gerald F. Wisdom, Sterling, Colo., assignors to Tiger Products, Inc., Sterling, Colo., a corporation of Colorado**
**Filed Jan. 8, 1969, Ser. No. 15,257**
**Term of patent 14 years**
**Int. Cl. D11—*02***

**U.S. Cl. D35—3**



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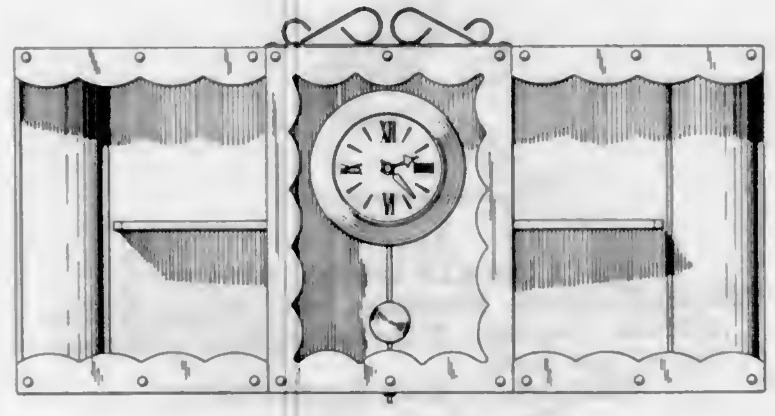
**215,864**
**COMBINED CLOCK AND WHAT-NOT SHELVES**
**Benjamin G. Edelman, Brooklyn, N.Y., assignor to United Metal Goods Manufacturing Co., Inc., Brooklyn, N.Y., a corporation of New York**
**Filed Nov. 1, 1968, Ser. No. 14,272**
**Term of patent 7 years**
**Int. Cl. D10—*01***

**U.S. Cl. D42—7**



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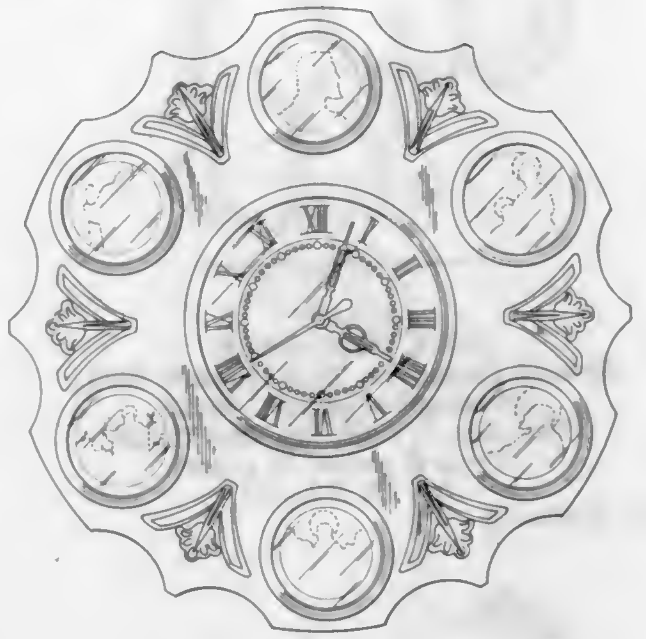
**215,865**
**COMBINED CLOCK AND MULTIPLE PICTURE FRAME**
**Benjamin G. Edelman, Brooklyn, N.Y., assignor to United Metal Goods Manufacturing Co., Inc., Brooklyn, N.Y., a corporation of New York**
**Filed Nov. 1, 1968, Ser. No. 14,284**
**Term of patent 3½ years**
**Int. Cl. D10—*01***

**U.S. Cl. D42—7**



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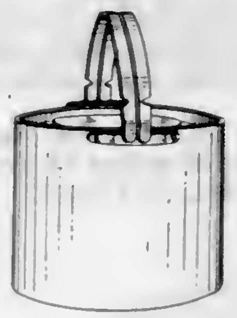
**215,866**
**ICE BUCKET**
**Arne Jacobsen, 403 Lyngbyve, Gentofte, Denmark**
**Filed Sept. 30, 1968, Ser. No. 13,792**
**Term of patent 14 years**
**Int. Cl. D7—*99***

**U.S. Cl. D44—1**



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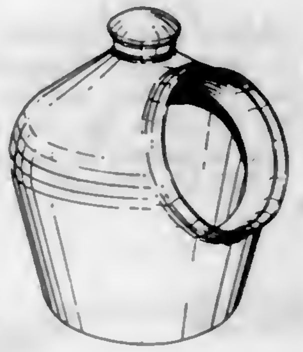
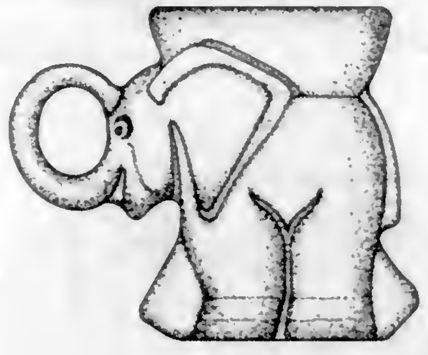
**215,867**
**CANISTER FOR SALT OR THE LIKE**
**Mary Wignall, Mashy Hall, Little Yeldham, near Halsted, Essex, England**
**Filed Oct. 2, 1968, Ser. No. 13,817**
**Term of patent 3½ years**
**Int. Cl. D7—*01***

**U.S. Cl. D44—6**



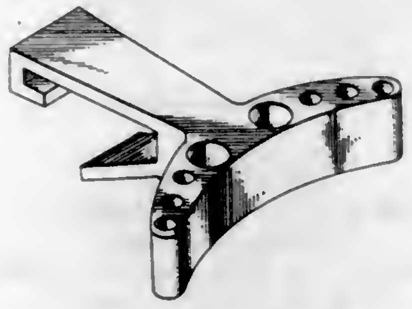
### 215,868
### MUG

John Frank, Box 789, Sapulpa, Okla. 74066
Filed Mar. 13, 1969, Ser. No. 16,223
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—9



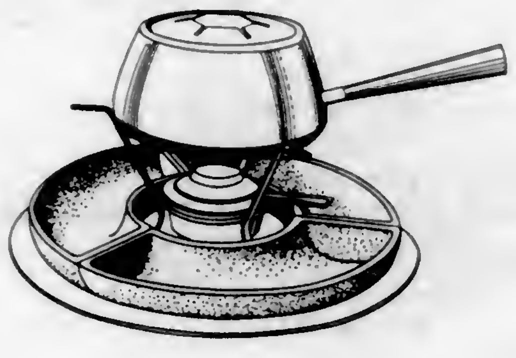
### 215,869
### NUT TOOL RACK

Howard Thompson, 7520 Wayzata Blvd., Minneapolis, Minn. 55426
Filed Apr. 5, 1968, Ser. No. 11,326
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D44—10



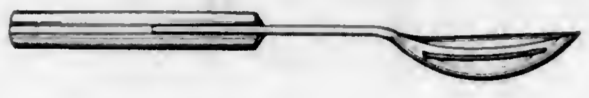
### 215,870
### COMBINED COOKING AND SERVING UNIT

Hans S. Singer, Spartanburg, S.C., assignor to HSS Corporation, Spartanburg, S.C., a corporation of South Carolina
Filed July 16, 1968, Ser. No. 12,785
Term of patent 14 years
Int. Cl. D7—*02*
U.S. Cl. D44—15



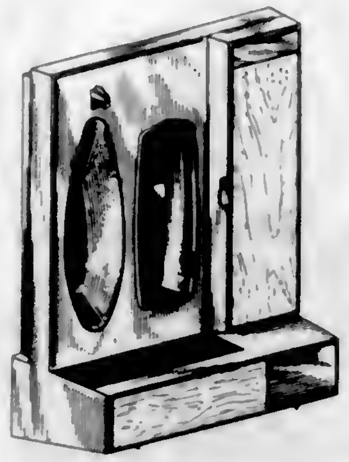
### 215,871
### SAMPLING SPOON

Richard B. Cronheim, 7 Upper Barnes, St. Louis, Mo. 63124
Filed Oct. 17, 1968, Ser. No. 14,025
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D44—29



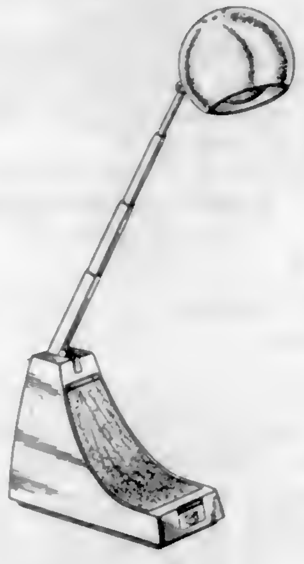
### 215,872
### COMBINED STORAGE AND DISPLAY RACK FOR AN ELECTRIC KNIFE AND AN ELECTRIC FOOD MIXER

Charles B. Price, Stamford, Conn., and Samuel Braun, Rye, N.Y., assignors to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Jan. 30, 1969, Ser. No. 15,564
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D44—29



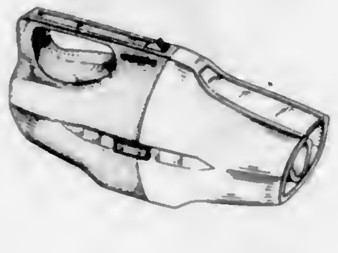
### 215,873
### HIGH INTENSITY LAMP

Dan M. Andre, 8843 Kostner Terrace, Skokie, Ill. 60076
Filed Nov. 18, 1966, Ser. No. 4,739
Term of patent 14 years
Int. Cl. D26—*02*
U.S. Cl. D48—20



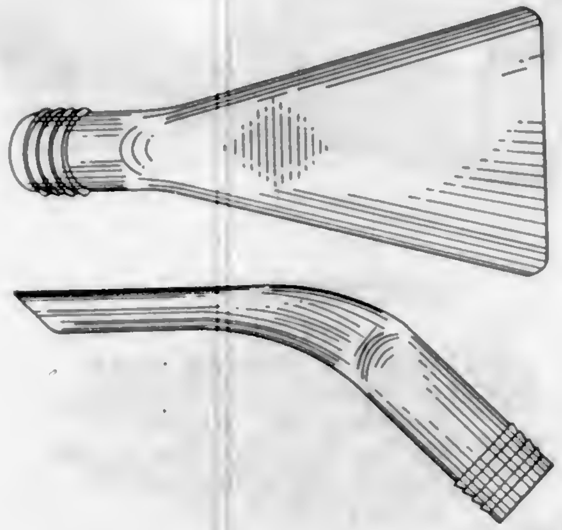
### 215,874
### VACUUM CLEANING DEVICE

Marnie C. Averitt, Timonium, Md., assignor to The Craftool Company, Woodbridge, N.J., a corporation of New York
Filed Oct. 18, 1968, Ser. No. 14,071
Term of patent 14 years
Int. Cl. D15—*07*
U.S. Cl. D49—13



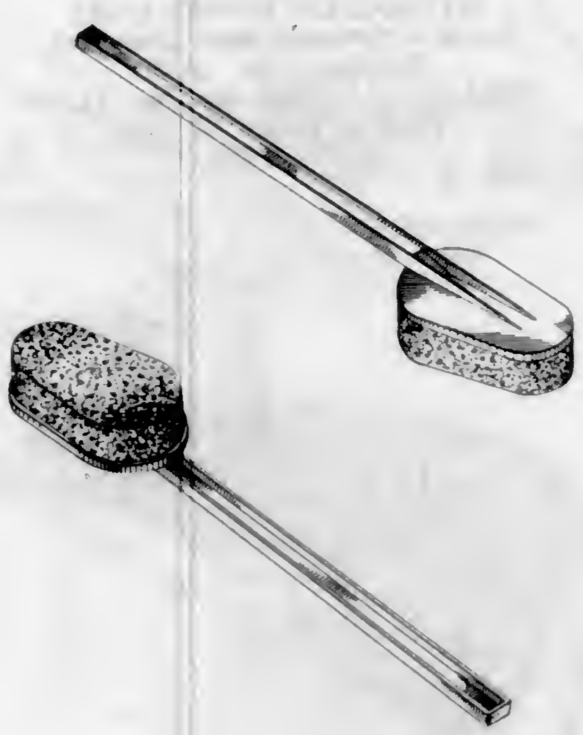
### 215,875
### VACUUM NOZZLE FOR CLEANING BUCKET SEATS AND CARS

William M. Hoadley, Box 5, Otis Orchards, Wash. 99027
Filed Sept. 19, 1968, Ser. No. 13,618
Term of patent 14 years
Int. Cl. D15—*07*
U.S. Cl. D49—18



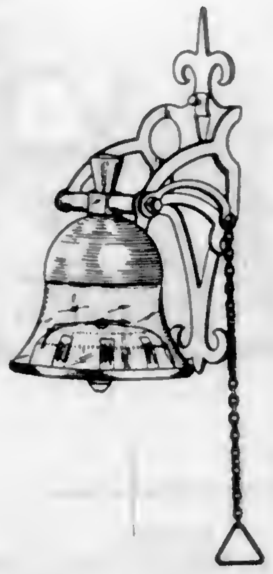
### 215,876
### SCRUBBER

Henry Linke, Sawyer, N. Dak. 58781
Filed Sept. 13, 1968, Ser. No. 13,535
Term of patent 14 years
Int. Cl. D7—*06*
U.S. Cl. D49—22



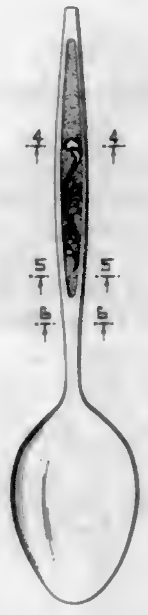
### 215,877
### THERMOMETER

Lucien Kremer, 188, Rue de la Roquette, Paris, France
Filed Jan. 28, 1969, Ser. No. 15,539
Term of patent 7 years
Claims priority, application France Oct. 28, 1968
Int. Cl. D10—*07*
U.S. Cl. D52—7



### 215,878
### SPOON OR SIMILAR ARTICLE

Kiyosaku Wada, Tsubame, Japan, assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Mar. 7, 1969, Ser. No. 16,104
Term of patent 14 years
Claims priority, application Japan Nov. 1, 1968
Int. Cl. D7—*03*
U.S. Cl. D54—12

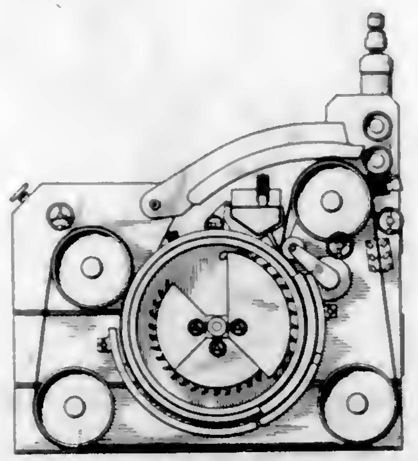


**215,879**

### CONTINUOUS CASTING MACHINE

Daniel B. Cofer, Carrollton, Ga., and Thomas L. Bray, Birmingham, Ala., assignors to Southwire Company, Carrollton, Ga., a corporation of Georgia
Filed Nov. 21, 1968, Ser. No. 14,560
Term of patent 14 years
Int. Cl. D15—*05*

U.S. Cl. D55—1

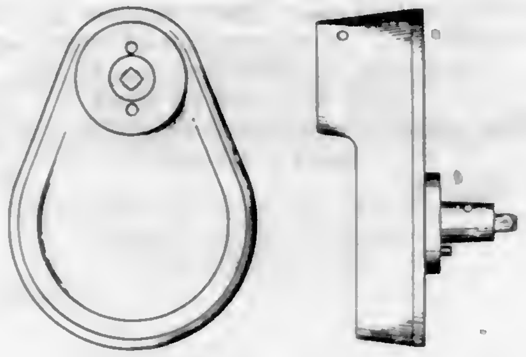


**215,880**

### HIGH SPEED ATTACHMENT FOR FOOD CUTTER

Melvin E. Bricker, 2723 Saddleback Drive, Cincinnati, Ohio 45244
Filed Apr. 24, 1968, Ser. No. 11,602
Term of patent 14 years
Int. Cl. D15—*12*

U.S. Cl. D55—1

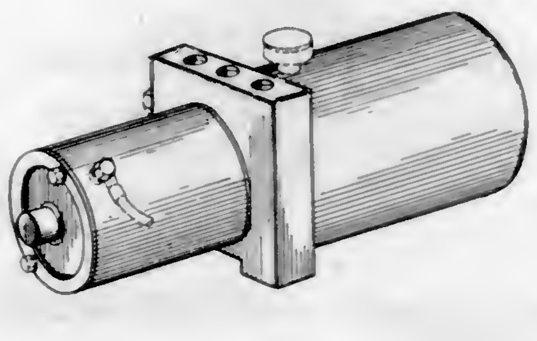


**215,881**

### HYDRAULIC POWER UNIT

Ernest J. Svenson, 2330 23rd Ave., Rockford, Ill. 61108
Filed June 14, 1968, Ser. No. 12,355
Term of patent 14 years
Int. Cl. D15—*99*

U.S. Cl. D55—1

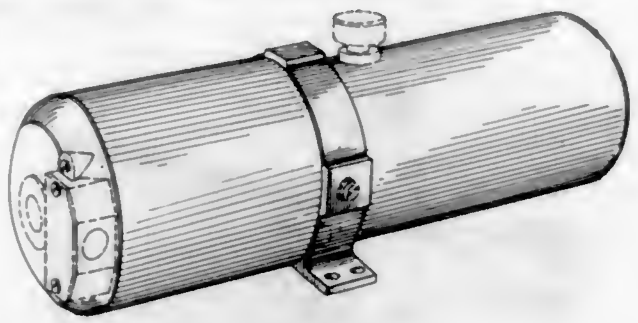


**215,882**

### HYDRAULIC POWER UNIT

Ernest J. Svenson, 2330 23rd Ave., Rockford, Ill. 61108
Filed June 14, 1968, Ser. No. 12,356
Term of patent 14 years
Int. Cl. D15—*99*

U.S. Cl. D55—1

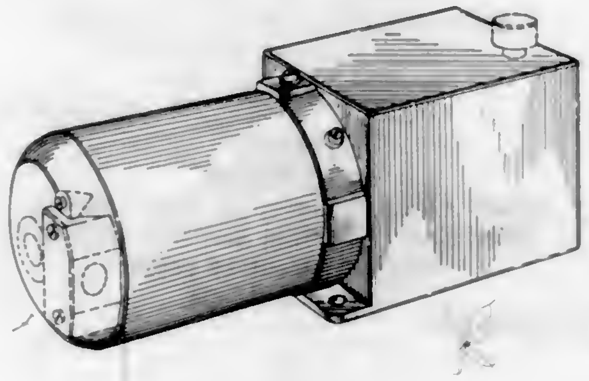


**215,883**

### HYDRAULIC POWER UNIT

Ernest J. Svenson, 2330 23rd Ave., Rockford, Ill. 61108
Filed June 14, 1968, Ser. No. 12,357
Term of patent 14 years
Int. Cl. D15—*99*

U.S. Cl. D55—1

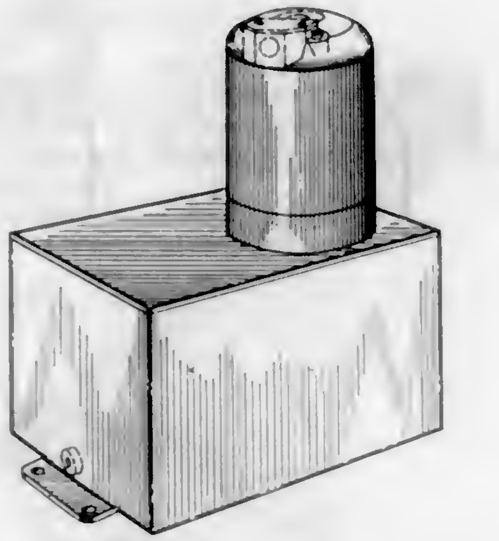


**215,884**

### HYDRAULIC POWER UNIT

Ernest J. Svenson, 2330 23rd Ave., Rockford, Ill. 61101
Filed June 14, 1968, Ser. No. 12,359
Term of patent 14 years
Int. Cl. D15—*99*

U.S. Cl. D55—1



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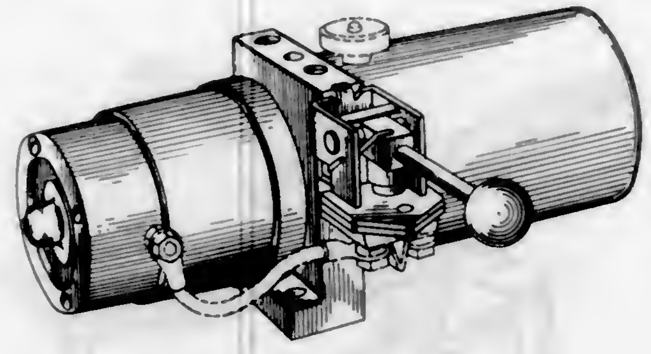
**215,885**

### HYDRAULIC POWER UNIT

Ernest J. Svenson, 2330 23rd Ave., Rockford, Ill. 61101
Filed July 15, 1968, Ser. No. 12,760
Term of patent 14 years
Int. Cl. D15—*99*

U.S. Cl. D55—1

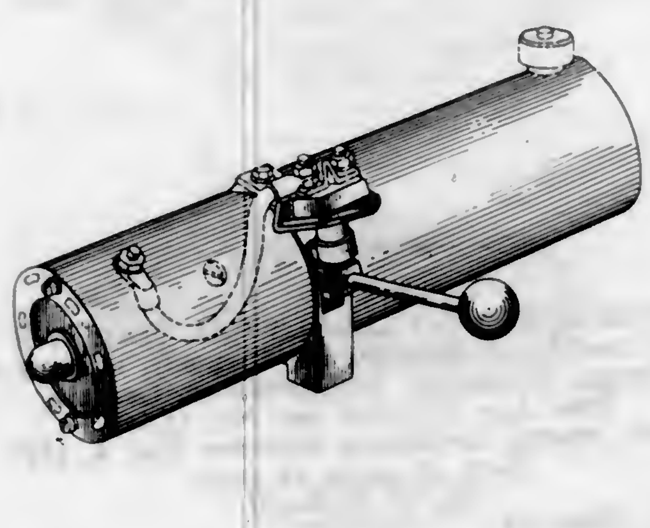


**215,886**

### HYDRAULIC POWER UNIT

Ernest J. Svenson, 2330 23rd Ave., Rockford, Ill. 61101
Filed July 15, 1968, Ser. No. 12,761
Term of patent 14 years
Int. Cl. D15—*99*

U.S. Cl. D55—1

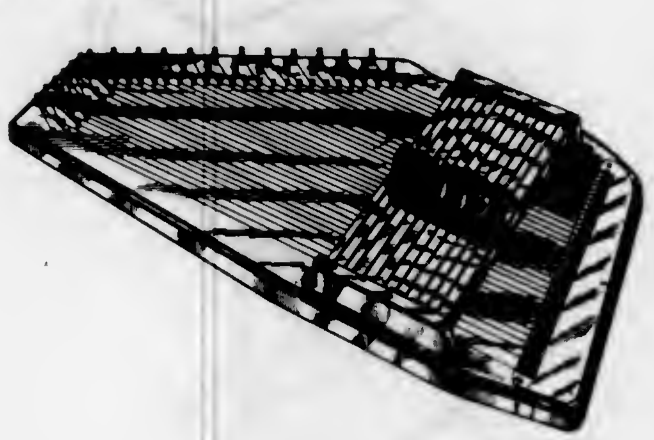


**215,887**

### ZITHER OR SIMILAR ARTICLE

Glen R. Peterson, Jr., Summit, N.J., and Robert C. McKay, Bronx, N.Y., assignors to Oscar Schmidt-International, Inc., Union, N.J.
Filed July 3, 1968, Ser. No. 12,605
Term of patent 14 years
Int. Cl. D17—*03*

U.S. Cl. D56—1

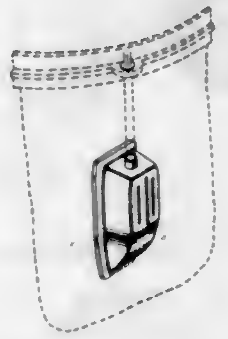


**215,888**

### DRUMHEAD TENSIONING LUG FOR MUSICAL DRUMS

Josephus B. Thompson, deceased, late of Covington, Ohio, by K. E. Stade, administrator, Covington, Ohio, assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Filed Oct. 9, 1968, Ser. No. 13,914
Term of patent 14 years
Int. Cl. D17—*04*

U.S. Cl. D56—1

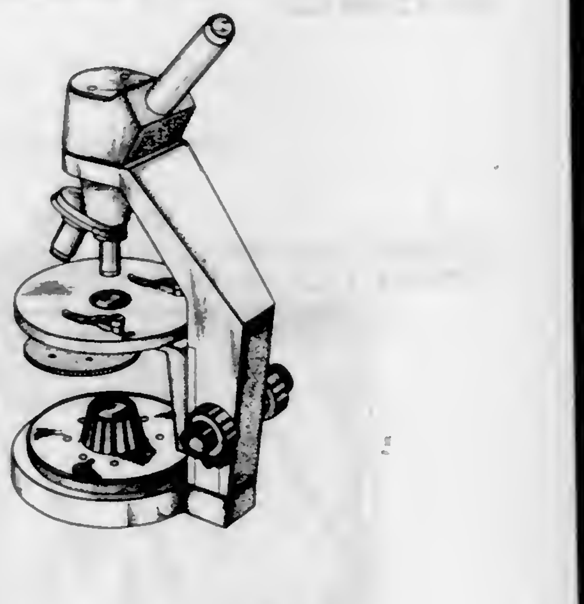


**215,889**

### MICROSCOPE

Taiichi Suzuki, Tokyo, Japan, assignor to Swift Instruments, Inc., Boston, Mass., a corporation of Massachusetts
Filed Oct. 25, 1968, Ser. No. 14,183
Term of patent 14 years
Int. Cl. D16—*08*

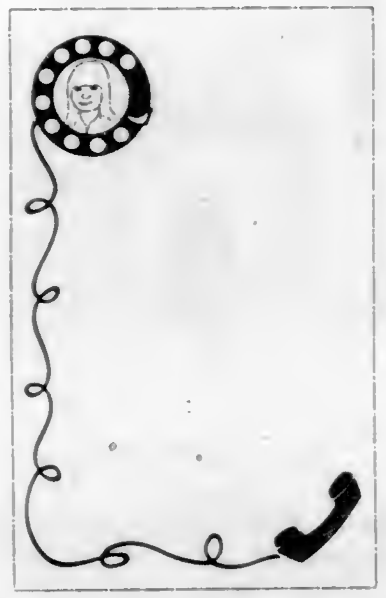
U.S. Cl. D57—1



### 215,890
### SHEET OF NOTE PAPER

Roy P. Galloway, 2708 Wasson Road,
Cincinnati, Ohio 45209
Filed Aug. 19, 1968, Ser. No. 13,192
Term of patent 14 years
Int. Cl. D19—*01*

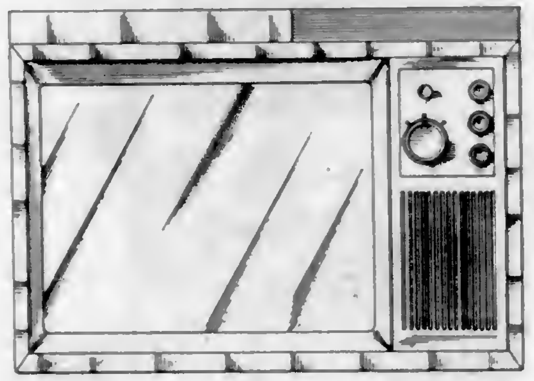
U.S. Cl. D59—14



### 215,891
### CARTRIDGE LOADING MOTION PICTURE PROJECTOR

Martin S. Ackerman, East Hills, and George Hardy, Huntingdon, N.Y., assignors to Perfect Film & Chemical Corporation, Manhasset, N.Y., a corporation of New York
Filed Aug. 27, 1968, Ser. No. 13,288
Term of patent 14 years
Int. Cl. D16—*04*

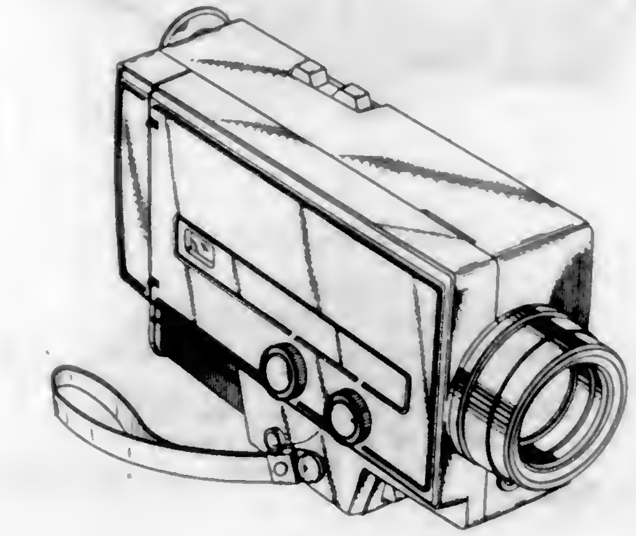
U.S. Cl. D61—1



### 215,892
### MOVIE CAMERA OR SIMILAR ARTICLE

Richard J. Olson, 400 Plymouth Ave.,
Pittsford, N.Y. 14650
Filed June 13, 1968, Ser. No. 12,338
Term of patent 14 years
Int. Cl. D16—*02*

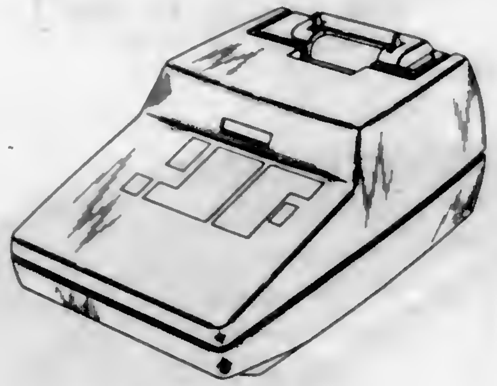
U.S. Cl. D61—1



### 215,893
### HOUSING FOR A CALCULATING MACHINE

Alfons Boothby, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany
Filed Apr. 29, 1968, Ser. No. 11,668
Claims priority, application Germany Dec. 4, 1967
Term of patent 14 years
Int. Cl. D18—*01*

U.S. Cl. D64—11



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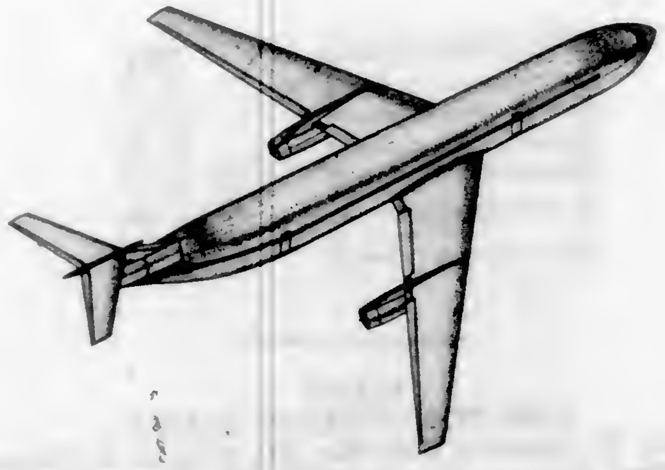
### 215,894
### AIRCRAFT

Lawrence Bernard Rellis, 10460 SW. 163 St.,
Miami, Fla. 33157
Filed Nov. 4, 1968, Ser. No. 14,297
Term of patent 14 years
Int. Cl. D12—*07*

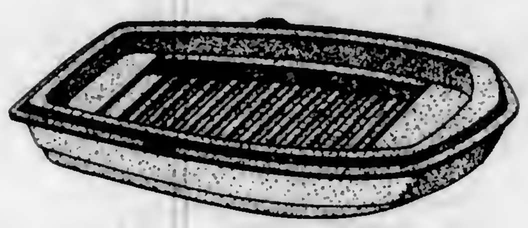
U.S. Cl. D71—1



### 215,895
### BOAT HULL

Lawrence P. Feer, Cazenovia, and Thomas L. Faul, Skaneateles, N.Y., assignors to Woodall Industries Inc., Detroit, Mich., a corporation of Delaware
Filed Feb. 3, 1969, Ser. No. 15,599
Term of patent 14 years
Int. Cl. D12—*06*

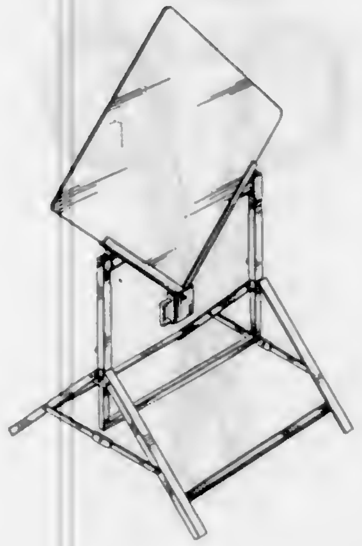
U.S. Cl. D71—1



### 215,896
### COMBINED SIGN AND HOLDER THEREFOR

William E. Moore, 1093 Colonial Ave.,
Andalusia, Pa. 19020
Filed Jan. 30, 1969, Ser. No. 15,568
Term of patent 14 years
Int. Cl. D29—*99*

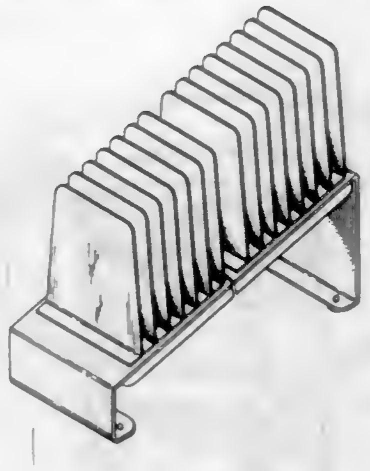
U.S. Cl. D72—1



### 215,897
### DESK FILE

Virgil E. Aydelotte, Fresno, Calif., assignor to Lit-Ning Products Company, a corporation of California
Filed Sept. 23, 1968, Ser. No. 13,654
Term of patent 14 years
Int. Cl. D19—*99*

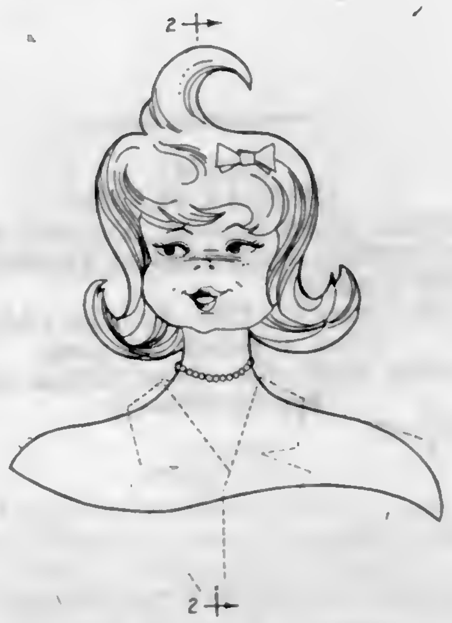
U.S. Cl. D74—2



### 215,898
### HANGER

Borislav D. Jovanovich, 6122 N. Kenmore,
Chicago, Ill. 60626
Filed Nov. 29, 1968, Ser. No. 14,711
Term of patent 14 years
Int. Cl. D6—*07*

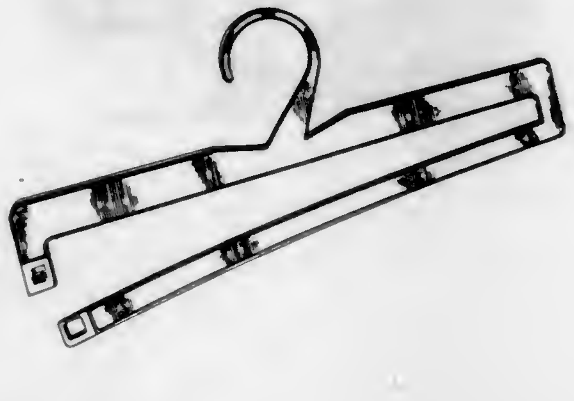
U.S. Cl. D80—8



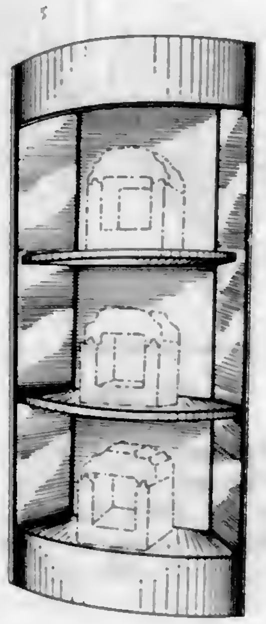
### 215,899
### HANGER

Eric W. Soderberg, Milford, Conn., assignor to Newburgh Molded Products, Inc., Newburgh, N.Y., a corporation of New York
Filed Jan. 21, 1969, Ser. No. 15,431
Term of patent 14 years
Int. Cl. D6—*07*

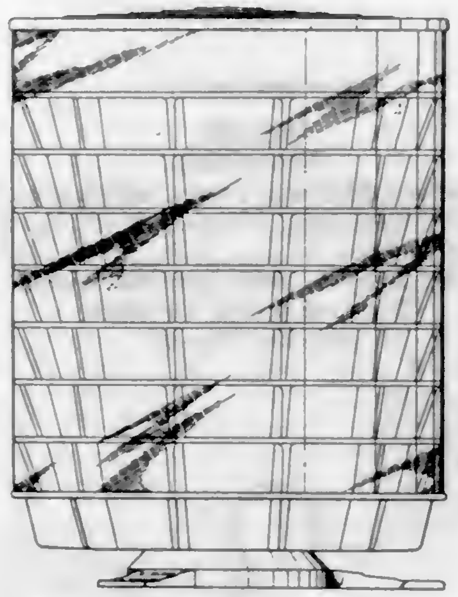
U.S. Cl. D80—8



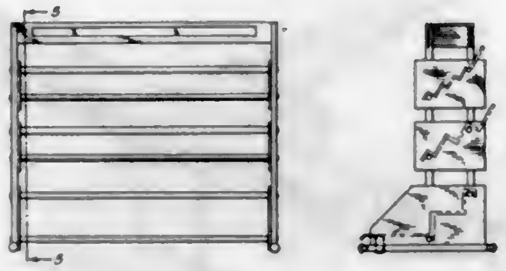
**215,900**
**DISPLAY STAND**
**John M. Combs, Montville, N.J., assignor to Mead-Suydam Company, Wayne, N.J., a corporation of New Jersey**
**Filed Apr. 12, 1968, Ser. No. 11,444**
**Term of patent 14 years**
**Int. Cl. D6—*01***
**U.S. Cl. D80—9**



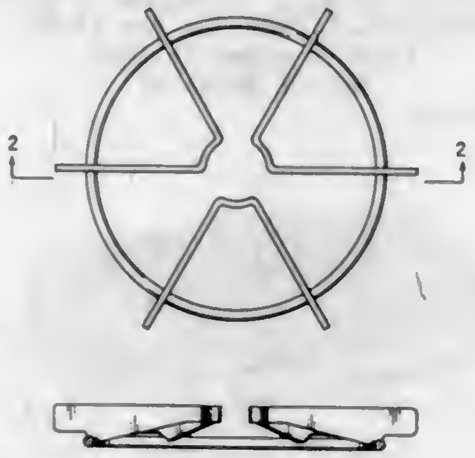
**215,901**
**DISPLAY STAND**
**Leslie Charles Smith, London, England, assignor to Lesney Products & Co. Limited, London, England, a British company**
**Filed June 12, 1968, Ser. No. 12,312**
**Term of patent 3½ years**
**Claims priority, application Great Britain Jan. 23, 1968**
**Int. Cl. D6—*01***
**U.S. Cl. D80—9**



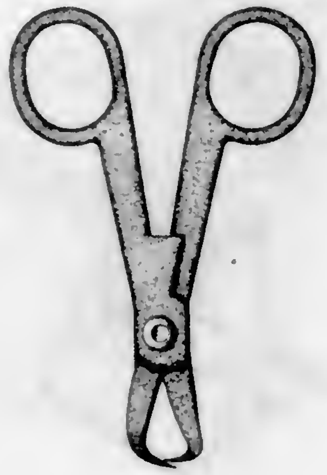
**215,902**
**DISPLAY RACK FOR BOOKS, MAGAZINES OR THE LIKE**
**Melvin Cohen, 150 Dayton Ave., Passaic, N.J. 07054**
**Filed Aug. 9, 1968, Ser. No. 13,077**
**Term of patent 14 years**
**Int. Cl. D6—*01***
**U.S. Cl. D80—9**



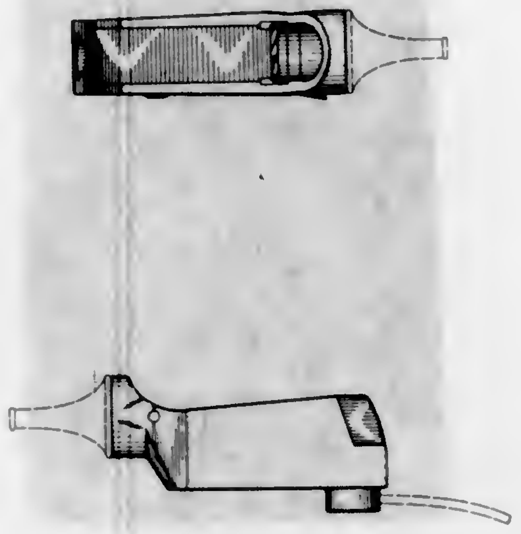
**215,903**
**GRID FOR COOKING RANGE**
**Clifford E. Hammel, Belleville, Ill., assignor to Peerless Enamel Products Co., Belleville, Ill., a corporation of Illinois**
**Filed Oct. 18, 1968, Ser. No. 14,064**
**Term of patent 14 years**
**Int. Cl. D7—*04***
**U.S. Cl. D81—25**



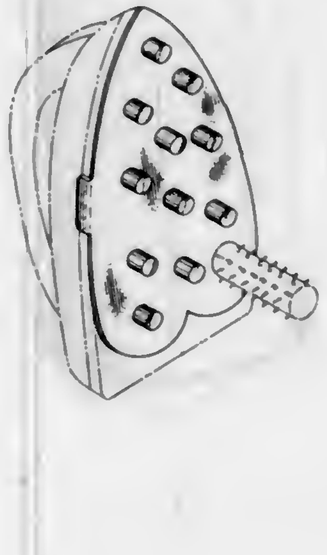
**215,904**
**SURGICAL FABRIC CLASP OR SIMILAR ARTICLE**
**Georg Foerster, 4 Stresemannstrasse, 68 Mannheim, Germany**
**Filed June 27, 1968, Ser. No. 12,517**
**Term of patent 14 years**
**Claims priority, application Germany Dec. 27, 1967**
**Int. Cl. D24—*03;* D8—*02***
**U.S. Cl. D83—12**



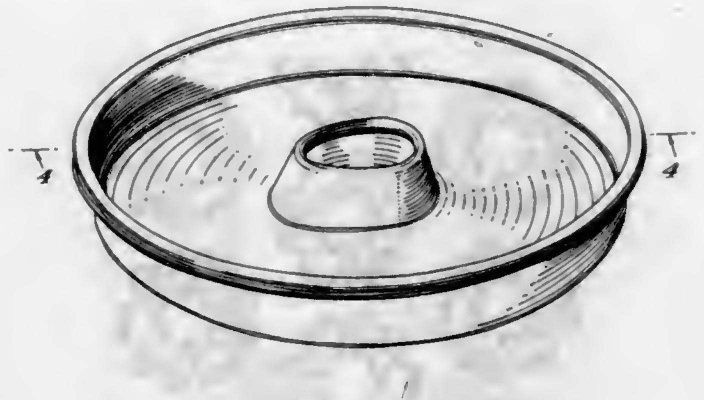
**215,905**
**ENDOSCOPE**
**John E. Hotchkiss, Corte Madera, Calif., assignor to Hotchkiss Instruments, Inc., a corporation of California**
**Filed Aug. 27, 1968, Ser. No. 13,292**
**Term of patent 14 years**
**Int. Cl. D24—*02***
**U.S. Cl. D83—12**



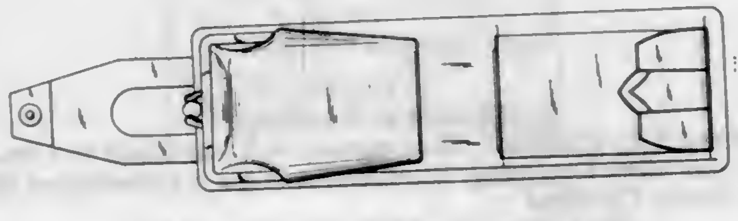
**215,906**
**HAIR CURLER ATTACHMENT**
**Carole A. Lennon, Sylmar, Calif., assignor to Tarnreed Limited, London, England**
**Filed May 6, 1968, Ser. No. 11,783**
**Term of patent 14 years**
**Int. Cl. D28—*03***
**U.S. Cl. D86—10**



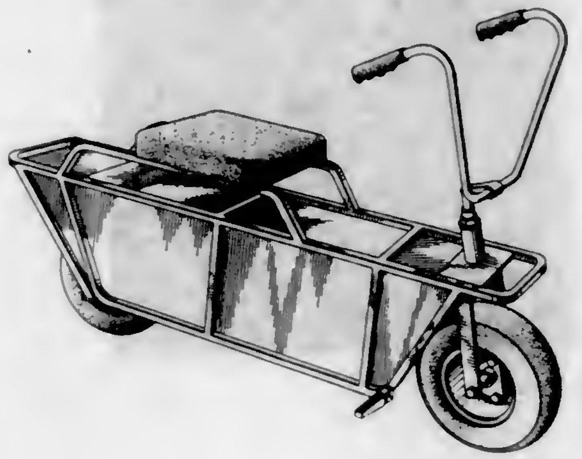
**215,907**
**WIG STYLING TRAY**
**James B. Little, 2809 W. Camille, Santa Ana, Calif. 92704**
**Filed Sept. 11, 1968, Ser. No. 13,501**
**Term of patent 14 years**
**Int. Cl. D28—*03***
**U.S. Cl. D86—10**



**215,908**
**COMBINED BILLFOLD AND PURSE**
**Murray Wolf, 849 Niles Road, Union, N.J. 07083**
**Filed Jan. 21, 1969, Ser. No. 15,418**
**Term of patent 14 years**
**Int. Cl. D3—*02***
**U.S. Cl. D87—3**



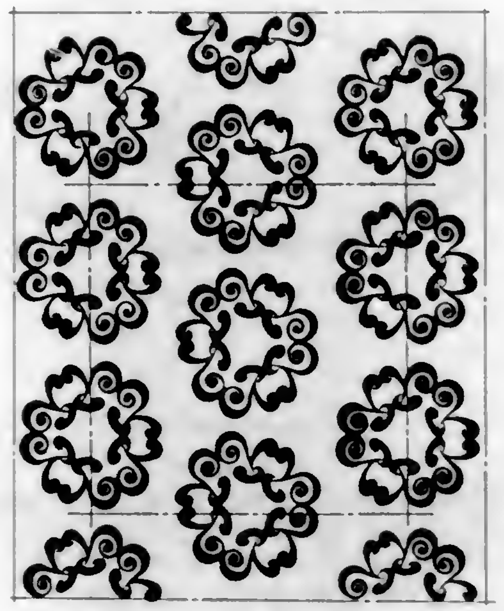
**215,909**
**VEHICLE**
**Jack M. Thompson, Ardmore, Okla., and Michael J. Thompson, Memphis, Tenn., assignors to Revolt, Inc., Ardmore, Okla., a corporation of Delaware**
**Filed July 18, 1968, Ser. No. 12,826**
**Term of patent 14 years**
**Int. Cl. D12—*11***
**U.S. Cl. D90—8**



### 215,910
### TEXTILE FABRIC

Donald Scaglione, New York, N.Y., assignor to Dayco Corporation, Dayton, Ohio, a corporation of Delaware
Filed Oct. 1, 1968, Ser. No. 13,806
Term of patent 14 years
Int. Cl. D5—*02*

U.S. Cl. D92—1



### 215,911
### TEXTILE FABRIC

Leonard C. Clementi, Huntington, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Nov. 25, 1968, Ser. No. 14,623
Term of patent 14 years
Int. Cl. D5—*02*

U.S. Cl. D92—1

### 215,912
### CARPET OR SIMILAR ARTICLE

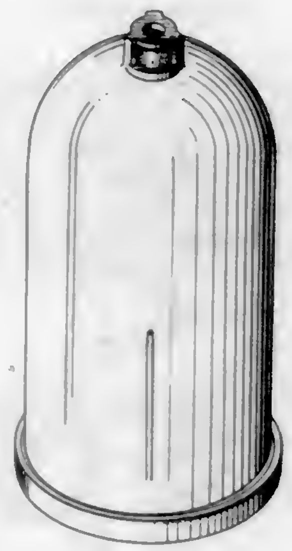
John Beresford Fowler, 39 Brook St., London W. 1, England
Filed July 18, 1968, Ser. No. 12,813
Term of patent 14 years
Int. Cl. D6—*04*

U.S. Cl. D92—4

### 215,913
### THREAD CANISTER

Philippe Hardy-Thé McLain, Columbia, S.C., assignor to Soo Valley Company, Inc., Columbia, S.C., a corporation of South Carolina
Filed Oct. 4, 1968, Ser. No. 13,835
Term of patent 14 years
Int. Cl. D15—*08*

U.S. Cl. D92—15



### 215,914
### TOWEL OR SIMILAR ARTICLE

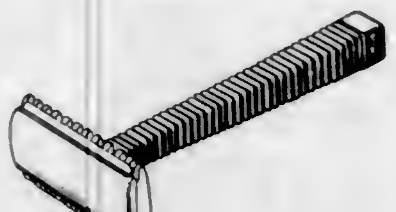
Leonard C. Clementi, Huntington, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Nov. 25, 1968, Ser. No. 14,622
Term of patent 14 years
Int. Cl. D6—*09*

U.S. Cl. D92—26

### 215,915
### DISPOSABLE RAZOR

Wayne M. Biklen, Groton, Conn., assignor to Edward Weck & Company, Inc., Long Island City, N.Y., a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 9,614
Term of patent 14 years
Int. Cl. D28—*03*

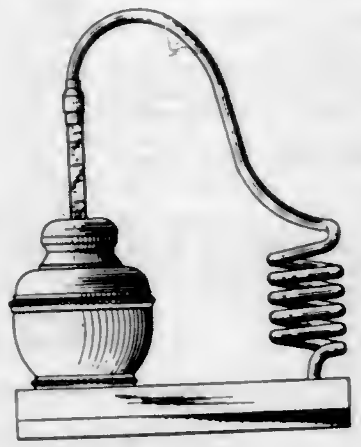
U.S. Cl. D95—3

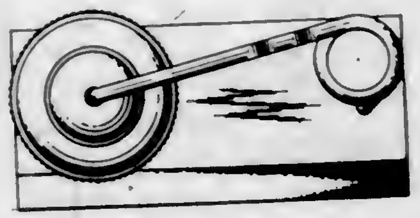


### 215,916
### DISPLAY STAND FOR ALCOHOLIC BEVERAGES OR THE LIKE

Louis Forman, Jenkintown, Pa. (2218 Girard Trust Building, Broad and South Penn Square, Philadelphia, Pa. 19102)
Filed June 27, 1968, Ser. No. 12,522
Term of patent 3½ years
Int. Cl. D20—*99*

U.S. Cl. D96—12





# LIST OF REISSUE PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 4TH DAY OF NOVEMBER, 1969

NOTE —Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Barnes, Charles E. Wall form system and clamp. Re. 26,710, 11–4–69. Cl. 249—40.

Cutler-Hammer, Inc.: *See—*
  Spink, Robert W. Re. 26,708.

Cutler, Leonard S., and D. L. Hammond, to Hewlett-Packard Co. Crystal resonators. Re. 26,707, 11–4–69, Cl. 310—9.1.

Du Pont de Nemours, E. I., and Co.: *See—*
  Hermann, Edward C., and Snyder. Re. 26,705.

Fram Corp.: *See—*
  Thornton, Donald T. Re. 26,706.

Hammond, Donald L.: *See—*
  Cutler, Leonard S., and Hammond. Re. 26,707.

Hermann, Edward C., and J. A. Snyder, to E. I. du Pont de Nemours and Co. α-Substituted-1-adamantylmethyl penicillins. Re. 26,705, 11–4–69, Cl. 260—239.1.

Hewlett-Packard Co.: *See—*
  Cutler, Leonard S., and Hammond. Re. 26,707.

Johns-Manville Corp.: *See—*
  Vander Linden, Carl R., and Riede. Re. 26,709.

McCarthy, John J., to Norco Inc. Releasable mechanical coupling. Re. 26,703, 11–4–69, Cl. 24—230.

Norco Inc.: *See—*
  McCarthy, John J. Re. 26,703.

Norton, Roy, to The Wear-Flex Corp. Fabric load lifting sling. Re. 26,704, 11–4–69, Cl. 294—74.

Richards, Norman D., to U.S. Philips Corp. Superconductive storage circuits. Re. 26,702, 11–4–69, Cl. 340—173.1.

Riede, Raymond G.: *See—*
  Vander Linden, Carl R., and Riede. Re. 26,709.

Snyder, Jack A.: *See—*
  Hermann, Edward C., and Snyder. Re. 26,705.

Spink, Robert W., to Cutler-Hammer, Inc. Plural-phase controlled rectifier systems insensitive to line phase rotation. Re. 26,708, 11–4–69, Cl. 321—5.

Thornton, Donald T., to Fram Corp. Radiator water filter. Re. 26,706, 11–4–69, Cl. 210—198.

U.S. Philips Corp.: *See—*
  Richards, Norman D. Re. 26,702.

Vander Linden, Carl R., and R. G. Riede, by Johns-Manville Corp. High flow rate perlite filter aids. Re. 26,709, 11–4–69. Cl. 210—500.

Wear-Flex Corp., The: *See—*
  Norton, Roy. Re. 26,704.

# LIST OF DESIGN PATENTEES

Ackerman, Martin S., and G. Hardy, to Perfect Film & Chemical Corp. Cartridge loading motion picture projector. 215,891, 11–4–69, Cl. D61—1.

Ajax Hardware Mfg. Corp.: *See—*
  Holmes, Frank H., and McCain. 215,815.
  Holmes, Frank A., and McCain. 215,816.

Andre, Dan M. High intensity lamp. 215,873, 11–4–69, Cl. D48—20.

Armstrong, William H., and N. T. Kuypers, to Borg-Warner Corp. Combined hand grip and soap dish. 215,859, 11–4–69, Cl. D33—24.

Art Metal Knoll Corp.: *See—*
  Stephens, William I. 215,837.

Atkin, C. B., Co.: *See—*
  Chapin, Richard M. 215,804.
  Chapin, Richard M. 215,805.
  Chapin, Richard M. 215,856.

Averitt, Marnie C., to The Craftool Co. Vacuum cleaning device. 215,874, 11–4–69, Cl. D49—13.

Aydelotte, Virgil E., to Lit-Ning Products Co. Desk file. 215,897, 11–4–69, Cl. D74—2.

Aylott, D. Howard. Display package of false eyelashes and adhesive material. 215,821, 11–4–69, Cl. D9—185.

Aylott, Eric V., to Eylure Ltd. Combined container and artificial fingernails. 215,822, 11–4–69, Cl. D9—187.

Baechle, William G.: *See—*
  Curtin, Kenneth M., Kern, White, and Baechle. 215,846.

Bard, Elmer H. Housekeeping cart. 215,834, 11–4–69, Cl. D14—3.

Baun, Theadore. Cutter. 215,809, 11–4–69, Cl. D8—52.

Beck, Jack W., to Plasto Inc. Building. 215,829, 11–4–69, Cl. D13—1.

Beck, Jack W., to Plasto Inc. Building roof. 215,830, 11–4–69, Cl. D13—1.

Bell, Mace, Jr., and E. J. Westcott, to The General Fireproofing Co. Chair. 215,836, 11–4–69, Cl. D15—1.

Biklen, Wayne M., to Edward Weck & Co., Inc. Disposable razor. 215,915, 11–4–69, Cl. D95—3.

Boothby, Alfons, to Olympia Werke AG. Housing for a calculating machine. 215,893, 11–4–69, Cl. D64—11.

Borg-Warner Corp.: *See—*
  Armstrong, William H., and Kuypers. 215,859.

Boulay, Thomas H. Building. 215,828, 11–4–69, Cl. D13—1.

Braun, Samuel: *See—*
  Price, Charles B., and Braun. 215,872.

Bray, Thomas L.: *See—*
  Cofer, Daniel B., and Bray. 215,879.

Bricker, Melvin E. High speed attachment for food cutter. 215,880, 11–4–69, Cl. D55—1.

Bridgford, Hugh H. Bread dough tray. 215,823, 11–4–69, Cl. D9—189.

Briggin, Edward: *See—*
  Katzman, Lawrance, Briggin, and Levin. 215,845.

Campbell, Duncan H., to Wilson & Cousins Co., Ltd. Fire hoze nozzle. 215,844, 11–4–69, Cl. D23—34.

Campbell, Laurie J., to Louis Marx & Co. Inc. Toy vehicle. 215,862, 11–4–69, Cl. D34—15.

Cannon Mills Co.: *See—*
  Clementi, Leonard C. 215,911.
  Clementi, Leonard C. 215,914.

Car Tapes, Inc.: *See—*
  La Zar, Ralph M., and Vanderhoef. 215,853.

Chapin, Richard M., to C. B. Atkin Co. Bed head board or the like. 215,804, 11–4–69, Cl. D5—4.

Chapin, Richard M., to C. B. Atkin Co. Bed head board or the like. 215,805, 11–4–69, Cl. D5—4.

Chapin, Richard M., to C. B. Atkin Co. Furniture door pediment or the like. 215,856, 11–4–69, Cl. D33—1.

Clark, Virgil R. Weed digger. 215,806, 11–4–69, Cl. D8—4.

Clementi, Leonard C., to Cannon Mills Co. Textile fabric. 215,911, 11–4–69, Cl. D92—1.

Clementi, Leonard C., to Cannon Mills Co. Towel or similar article. 215,914, 11–4–69, Cl. D92—26.

Cline, Jack V., to Tee-Pak, Inc. Food display package. 215,825, 11–4–69, Cl. D9—239.

Cofer, Daniel B., and T. L. Bray, to Southwire Co. Continuous casting machine. 215,879, 11–4–69, Cl. D55—1.

Cohen, Melvin. Display rack for books, magazines or the like. 215,902, 11–4–69, Cl. D80—9.

Cohn, Irwin. Swing seat or similar article. 215,860, 11–4–69, Cl. D34—5.

Columbia Broadcasting System, Inc.: *See—*
  Thompson, Josephus B. 215,888.

Combs, John M., to Mead-Suydam Co. Display stand. 215,900, 11–4–69, Cl. D80—9.

Conklin, Carroll C., Jr. Tooth cleaning device. 215,802, 11–4–69, Cl. D4—24.

Cook, Calvin C., to Louis Marx & Co. Inc. Hand driven wheeled vehicle. 215,861, 11–4–69, Cl. D34—15.

Craftool Co., The: *See—*
  Averitt, Marnie C. 215,874.

Cronheim, Richard B. Sampling spoon. 215,871, 11–4–69, Cl. D44—29.

Curtin, Kenneth M., F. E. Kern, R. J. White, and W. G. Baechle, to Evansville Association for the Blind, Inc. Wick holder for evaporative deodorizers or the like. 215,846, 11–4–69, Cl. D23—150.

Daniel, Eugene T., to Safari Enterprises, Inc. Body for motor vehicles or the like. 215,833, 11–4–69, Cl. D14—3.

Data Packaging Corp.: *See—*
  Lowry, Alan B. 215,850.

Davis, Jack E., to Victor Comptometer Corp. Fishing lure. 215,842, 11–4–69, Cl. D22—27.

Dayco Corp.: *See—*
  Scaglione, Donald. 215,910.

Diehr, Charles A. Handle section of a knockdown archery bow. 215,841, 11–4–69, Cl. D22—5.

Donoghue, Robert J. Bottle. 215,820, 11–4–69, Cl. D9—119.

Edelman, Benjamin G., to United Metal Goods Mfg. Co., Inc. Combined clock and what-not shelves. 215,864, 11–4–69, Cl. D42—7.

Edelman, Benjamin G., to United Metal Goods Mfg. Co., Inc. Combined clock and multiple picture frame. 215,865, 11–4–69, Cl. D42—7.

Evansville Association for the Blind, Inc.: *See—*
  Curtin, Kenneth M., Kern, White, and Baechle. 215,846.

Eylure Ltd.: *See—*
  Aylott, Eric V. 215,822.

Faul, Thomas L.: *See—*
  Feer, Lawrence P., and Faul. 215,895.

Feer, Lawrence P., and T. L. Faul, to Woodall Industries Inc. 215,895, 11–4–69, Cl. D71—1.

Fisher, James E., J. L. Mitchell, and G. F. Wisdom, to Tiger Products, Inc. Stand for trees. 215,863, 11–4–69, Cl. D35—3.

Foerster, Georg. Surgical fabric clasp or similar article. 215,904, 11–4–69, Cl. D83—12.

- Forman, Louis. Display stand for alcoholic beverages or the like. 215,916, 11–4–69, Cl. D96—12.
- Fowler, John B. Carpet or similar article. 215,912, 11–4–69, Cl. D92—4.
- Frank, John. Mug. 215,868, 11–4–69, Cl. D44—9.
- Galloway, Roy P. Sheet of note paper. 215,890, 11–4–69, Cl. D59—14.
- Game-Time, Inc.: *See*—
  - Wormser, Robert S. 215,839.
- General Fireproofing Co., The: *See*—
  - Bell, Mace, Jr., and Westcott. 215,836.
- Glover, William T., and E. W. Kelly, to Squires-Sanders, Inc. Data terminal for use with computer systems and off line equipment. 215,847, 11–4–69, Cl. D26—5.
- Gorman, John F. Liquid spray dispenser. 215,817, 11–4–69, Cl. D9—8.
- Green, Donald E. Collapsible bed. 215,803, 11–4–69, Cl. D5—4.
- HSS Corp.: *See*—
  - Singer, Hans S. 215,870.
- Hamilton Cosco, Inc.: *See*—
  - Hamilton, John J., and Schroer. 215,858.
- Hamilton, John J., and C. E. Schroer, to Hamilton Cosco, Inc. Table. 215,858, 11–4–69, Cl. D33—14.
- Hammel, Clifford E., to Peerless Enamel Products Co. Grid for cooking range. 215,903, 11–4–69, Cl. D81—25.
- Hardy, Christopher C. Joint finisher. 215,808, 11–4–69, Cl. D8—45.
- Hardy, George: *See*—
  - Ackerman, Martin S., and Hardy. 215,891.
- Henreid, William J. Bird house. 215,855, 11–4–69, Cl. D30—3.
- Heininger, Oskar, to Sylvania Electric Products, Inc. Housing for a photomultiplier or similar device. 215,851, 11–4–69, Cl. D26—14.
- Heininger, Oskar, to Sylvania Electric Products Inc. Laser or similar article. 215,852, 11–4–69, Cl. D26—14.
- Heintze, Walter T., to Schenley Industries, Inc. Combined decanter and closure therefor. 215,819, 11–4–69, Cl. D9—83.
- Hindenburg, Eugene D., to Holub Industries, Inc. Electrician's tool. 215,810, 11–4–69, Cl. D8—58.
- Hoadley, William M. Vacuum nozzle for cleaning bucket seats and cars. 215,875, 11–4–69, Cl. D49—18.
- Holmes, Frank A., and L. McCain, to Ajax Hardware Mfg. Corp. Backplate. 215,815, 11–4–69, Cl. D8—179.
- Holmes, Frank A., and L. McCain, to Ajax Hardware Mfg. Corp. Hinge. 215,816, 11–4–69, Cl. D8—198.
- Holub Industries, Inc.: *See*—
  - Hindenburg, Eugene D. 215,810.
- Hotchkiss Instruments, Inc.: *See*—
  - Hotchkiss, John E. 215,905.
- Hotchkiss, John E., to Hotchkiss Instruments, Inc. Endoscope. 215,905, 11–4–69, Cl. D83—12.
- Jacobsen, Arne. Ice bucket. 215,866, 11–4–69, Cl. D44—1.
- Javanovich, Borislav D. Hanger. 215,898, 11–4–69, Cl. D80—8.
- Kallman, Robert: *See*—
  - Kanter, Harry, and Kallman. 215,801.
- Kalvitis, Robert E., to Xerox Corp. Roll-feed apparatus for a facsimile transceiver. 215,849, 11–4–69, Cl. D26—14.
- Kanter, Harry, and R. Kallman. Necktie knot support. 215,801, 11–4–69, Cl. D2—359.
- Katzman, Lawrance, E. Briggin, and M. L. Levin, to Kaz Mfg. Co., Inc. Vaporizer bowl or the like. 215,845, 11–4–69, Cl. D23—148.
- Kaz Mfg. Co., Inc.: *See*—
  - Katzman, Lawrance, Briggin, and Levin. 215,845.
- Kelly, Eugene W.: *See*—
  - Glover, William T., and Kelly. 215,847.
- Kern, Frank E.: *See*—
  - Curtin, Kenneth M., Kern, White, and Baechle. 215,846.
- Kiwala, Edward J. Frankfurter or the like. 215,800, 11–4–69, Cl. D1—26.
- Kraus, Alex. Automobile door lock knob. 215,811, 11–4–69, Cl. D8—113.
- Kraus, Alex. Automobile window crank. 215,813, 11–4–69, Cl. D8—161.
- Kraus, Alex. Automobile door handle. 215,814, 11–4–69, Cl. D8—161.
- Kremer, Lucien. Thermometer. 215,877, 11–4–69, Cl. D52—7.
- Kukura, Tomasina. Bed-sofa. 215,840, 11–4–69, Cl. D15—11.
- Kuypers, Norbert T.: *See*—
  - Armstrong, William H., and Kuypers. 215,859.
- Lange, Morris, to Superior Funeral Supply Corp. Prayer rail. 215,838, 11–4–69, Cl. D15—8.
- Lautin, Leon. Luggage handle or similar article. 215,812, 11–4–69, Cl. D8—154.
- La Zar, Ralph M., and J. P. Vanderhoef, to Car Tapes, Inc. Speaker housing. 215,853, 11–4–69, Cl. D26—14.
- Lennon, Carole A., to Tarnreed Ltd. Hair curler attachment. 215,906, 11–4–69, Cl. D86—10.
- Le Rose, John T. Vehicle. 215,832, 11–4–69, Cl. D14—3.
- Lesney Products & Co., Ltd.: *See*—
  - Smith, Leslie C. 215,901.
- Levin, Monte L.: *See*—
  - Katzman, Lawrance, Briggin, and Levin. 215,845.
- Linke, Henry. Scrubber. 215,876, 11–4–69, Cl. D49—22.
- Lit-Ning Products Co.: *See*—
  - Aydelotte, Virgil E. 215,897.
- Little, James B. Wig styling tray. 215,907, 11–4–69, Cl. D86—10.
- Lowry, Alan B., to Data Packaging Corp. Reel. 215,850, 11–4–69, Cl. D26—14.
- Marx, Louis, & Co. Inc.: *See*—
  - Campbell, Laurie J. 215,862.
  - Cook, Calvin C. 215,861.
- Maynard, William R., Jr. Extruded seal. 215,831, 11–4–69, Cl. D13—6.
- McCain, Lawrence: *See*—
  - Holmes, Frank A., and McCain. 215,815.
  - Holmes, Frank A., and McCain. 215,816.
- McKay, Robert C.: *See*—
  - Peterson, Glen R., Jr., and McWay. 215,887.
- McLain, Philippe H., to Soo Valley Co., Inc. Thread canister. 215,913, 11–4–69, Cl. D92—15.
- Mead-Suydam Co.: *See*—
  - Combs, John M. 215,900.
- Mitchell, Jack L.: *See*—
  - Fisher, James E., Mitchell, and Wisdom. 215,863.
- Moore, William E. Combined sign and holder therefor. 215,896, 11–4–69, Cl. D72—1.
- National Dairy Products Corp.: *See*—
  - Vanderhyde, Harold J. 215,824.
- Newburgh Molded Products, Inc.: *See*—
  - Soderberg, Eric W. 215,899.
- Olson, Leslie W. Combined rotatable styling tray and support stand therefor. 215,857, 11–4–69, Cl. D33—3.
- Olson, Richard J. Movie camera or similar article. 215,892, 11–4–69, Cl. D61—1.
- Olympia Werke AG: *See*—
  - Boothby, Alfons. 215,893.
- Oneida Ltd.: *See*—
  - Wada, Kiyosaku. 215,878.
- Peerless Enamel Products Co.: *See*—
  - Hammel, Clifford E. 215,903.
- Perfect Film & Chemical Corp.: *See*—
  - Ackerman, Martin S., and Hardy. 215,891.
- Peterson, Glen R., Jr., and R. C. McKay, to Oscar Schmidt-International, Inc. Zither or similar article. 215,887, 11–4–69, Cl. D56—1.
- Philadelphia Asbestos Corp.: *See*—
  - Wheatley, William J., Jr. 215,826.
- Plasto Inc.: *See*—
  - Beck, Jack W. 215,829.
  - Beck, Jack W. 215,830.
- Price, Charles B., and S. Braun, to Scovill Mfg. Co. Combined storage and display rack for an electric knife and an electric food mixer. 215,872, 11–4–69, Cl. D44—29.
- Rellis, Lawrence B. Aircraft. 215,894, 11–4–69, Cl. D71—1.
- Revolt, Inc.: *See*—
  - Thompson, Jack M. and M. J. 215,909.
- Ryder da Costa, Jose J. P. P. Combined bottle and tumbler. 215,818, 11–4–69, Cl. D9—10.
- Safari Enterprises, Inc.: *See*—
  - Daniel, Eugene T. 215,833.
- Scaglione, Donald, to Dayco Corp. Textile fabric. 215,910, 11–4–69, Cl. D92—1.
- Schenley Industries, Inc.: *See*—
  - Heintze, Walter T. 215,819.
- Schmidt, Oscar, -International, Inc.: *See*—
  - Peterson, Glen R., Jr., and McKay. 215,887.
- Schroer, Charles E.: *See*—
  - Hamilton, John J., and Schroer. 215,858.
- Scovill Mfg. Co.: *See*—
  - Price, Charles B., and Braun. 215,872.
- Singer, Hans S., to HSS Corp. Combined cooking and serving unit. 215,870, 11–4–69, Cl. D44—15.
- Smith, Leslie C., to Lesney Products & Co., Ltd. Display stand. 215,901, 11–4–69, Cl. D80—9.
- Soderberg, Eric W., to Newburgh Molded Products, Inc. Hanger. 215,899, 11–4–69, Cl. D80—8.
- Soo Valley Co., Inc.: *See*—
  - McLain, Philippe H. 215,913.
- Southwire Co.: *See*—
  - Cofer, Daniel B., and Bray. 215,879.
- Squires-Sanders, Inc.: *See*—
  - Glover, William T., and Kelly. 215,847.
- Stade, K. Em: *See*—
  - Thompson, Josephus B. 215,888.
- Stallebrass, John. Dummy module used to fill unused space in bank of signal and control modules. 215,848, 11–4–69, Cl. D26—13.
- Stephens, William I., to Art Metal Knoll Corp. Chair or similar article. 215,837, 11–4–69, Cl. D15—1.
- Superior Funeral Supply Corp.: *See*—
  - Lange, Morris. 215,838.
- Suzuki, Taiichi, to Swift Instruments, Inc. Microscope. 215,889, 11–4–69, Cl. D57—1.
- Svenson, Ernest J. Solenoid valve unit. 215,843, 11–4–69, Cl. D23—19.
- Svenson, Ernest J. Hydraulic power unit. 215,881, 11–4–69, Cl. D55—1.
- Svenson, Ernest J. Hydraulic power unit. 215,882, 11–4–69, Cl. D55—1.
- Svenson, Ernest J. Hydraulic power unit. 215,883, 11–4–69, Cl. D55—1.
- Svenson, Ernest J. Hydraulic power unit. 215,884, 11–4–69, Cl. D55—1.
- Svenson, Ernest J. Hydraulic power unit. 215,885, 11–4–69, Cl. D55—1.
- Svenson, Ernest J. Hydraulic power unit. 215,886, 11–4–69, Cl. D55—1.
- Swift Instruments, Inc.: *See*—
  - Suzuki, Taiichi. 215,889.
- Sylvania Electric Products, Inc.: *See*—
  - Heininger, Oskar. 215,851.
  - Heininger, Oskar. 215,852.
- Tarnreed Ltd.: *See*—
  - Lennon, Carole A. 215,906.
- Tee-Pak, Inc.: *See*—
  - Cline, Jack V. 215,825.
- Thompson, Howard. Nut tool rack. 215,869, 11–4–69, Cl. D44—10.
- Thompson, Jack M. and M. J., to Revolt, Inc. Vehicle. 215,909, 11–4–69, Cl. D90—8.

- Thompson, Josephus B., deceased, by K. E. Stade, administrator, to Columbia Broadcasting System, Inc. Drumhead tensioning lug for musical drums. 215,888, 11–4–69, Cl. D56—1.
- Thompson, Michael J.: *See*—
  - Thompson, Jack M. and M. J. 215,909.
- Tiger Products, Inc.: *See*—
  - Fisher, James E., Mitchell, and Wisdom. 215,863.
- Tilley, Walter L. Support post. 215,854, 11–4–69, Cl. D28—1.
- United Metal Goods Mfg. Co., Inc.: *See*—
  - Edelman, Benjamin G. 215,864.
  - Edelman, Benjamin G. 215,865.
- Vanderhoef, John P.: *See*—
  - La Zar, Ralph M., and Vanderhoef. 215,853.
- Vanderhyde, Harold J., to National Dairy Products Corp. Packaging cup. 215,824, 11–4–69, Cl. D9—220.
- Vassar, Jack K. Grille and bumper guard. 215,835, 11–4–69, Cl. D14—6.
- Victor Comptometer Corp.: *See*—
  - Davis, Jack E. 215,842.
- Wada, Kiyosaku, to Oneida Ltd. Spoon or similar article. 215,878, 11–4–69, Cl. D54—12.
- Weck, Edward, & Co., Inc.: *See*—
  - Biklen, Wayne M. 215,915.
- Weingardt, Wilfred W. Bottle opener. 215,807, 11–4–69, Cl. D8—40.
- Westcott, Edgar J.: *See*—
  - Bell, Mace, Jr., and Westcott. 215,836.
- Wheatley, William J., Jr., to Philadelphia Asbestos Corp. Fastener for securing together layers of paper board, asbestos cloth and similar materials. 215,826, 11–4–69, Cl. D9—252.
- White, Robert J.: *See*—
  - Curtin, Kenneth M., Kern, White, and Baechle. 215,846.
- Wignall, Mary. Canister for salt or the like. 215,867, 11–4–69, Cl. D44—6.
- Wilson & Cousins Co., Ltd.: *See*—
  - Campbell, Duncan H. 215,844.
- Wisdom, Gerald F.: *See*—
  - Fisher, James E., Mitchell, and Wisdom. 215,863.
- Wolf, Murray. Combined billfold and purse. 215,908, 11–4–69, Cl. D87—3.
- Woodall Industries Inc.: *See*—
  - Feer, Lawrence P., and Faul. 215,895.
- Wormser, Robert S., to Game-Time, Inc. Double park bench. 215,839, 11–4–69, Cl. D15—11.
- Wright, George M., Jr. Commercial building. 215,827, 11–4–69, Cl. D13—1.
- Xerox Corp.: *See*—
  - Kalvitis, Robert E. 215,849.

# LIST OF PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 4TH DAY OF NOVEMBER, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- AAA Pipe Cleaning Corporation: *See—*
  - Guthrie, Kenneth R., 3,476,139.
- AAI Corporation: *See—*
  - Barr, Irwin R., and Critcher, John L., 3,476,048.
- AB FLYGMAL Air Target Ltd.: *See—*
  - Sellman, Ulf Carl Iwar, and Ericsson, Gunnar Arthur, 3,476,208.
- AB Grythyttans Stalmobler: *See—*
  - Sjoblom, Eric A., 3,476,060.
- AB Medicinsk-Kemiska Laboraloriet Calab: *See—*
  - Jungner, Olof Gunnar Hugo, 3,476,518.
- AB Svenska Maskinverken: *See—*
  - Chambert, Lars Axel, 3,476,488.
- AB Tico: *See—*
  - Frisk, Knut Olov, and Gustafsson, Karl Paul, 3,476,017.
- Abar Corporation: *See—*
  - Cyrway, Edward N., Jr., and Metalsky, William J., 3,476,862.
- Abbott Laboratories: *See—*
  - Swett, Leo Ralph, Ratajczyk, James Daniel, and Kimura, Eugene Tatsuru, 3,476,748.
- Abbratozzato, Salvatore R.: *See—*
  - Harvey, David E., Amrein, Carl J., and Abbratozzato, Salvatore R. 3,476,965.
- Abramowitz, William L. Spray gun massager. 3,476,105, Cl. 128-065.
- Abrams, Harold B. Applicator for the placement of elastic bands on orthodontic appliances. 3,475,818, Cl. 032-066.
- Accles & Pollock Limited: *See—*
  - Hackett, Leslie Charles, 3,476,388.
- ACF Industries, Incorporated: *See—*
  - Carney, John L., Jr., and Dugge, Richard H., 3,476,042.
- Ackley, Edward L. Valved, fluid-operated actuator assembly. 3,476,015, Cl. 091-401.
- Acme Abrasive Co.: *See—*
  - Markotan, Robert J., 3,476,537.
- Adachi, Taiichi: *See—*
  - Kudo, Shiro, Mihara, Yoshihisa, Adachi, Taiichi, Tsurugi, Shinichi, Usuku, Tomoatsu, and Wada, Isamu 3,476,796.
- Adam, Karl, Schulz, Alfred, Haarer, Erich, and Winderl, Siegfried, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of adiponitrile. 3,476,793, Cl. 260-465.8
- Adams, Clyde M., Jr.: *See—*
  - Clarke, John F., and Adams, Clyde M., Jr. 3,476,579.
- Adams, Joan M.: *See—*
  - Block, Harry W., Adams, Joan M., and Finucane, Thomas P. 3,476,571.
- Adams, John Q.: *See—*
  - Koblin, Abraham, Woolfridge, Alfred L., and Adams, John Q. 3,475,965.
- Adams, Kenneth D., to Singer Company, The. Trimming device. 3,476,003, Cl. 083-357.
- Adams, Renard P. Suction backwash means for a low pressure, multiple element, filter assembly. 3,476,248, Cl. 210-153.
- Adams, Richard C.: *See—*
  - Isley, Ralph E., and Adams, Richard C. 3,476,643.
- Adams, Richard L. Safety electrical circuit for an automobile. 3,476,893, Cl. 200-052.
- Addor, Roger Williams, to American Cyanamid Company. Alkali metal salts of phosphorus dithiocarbamates. 3,476,837, Cl. 260-959.
- Addressograph-Multigraph Corporation: *See—*
  - Tregay, John L., and Martin, Edward J., Jr., 3,476,382.
- Adler, Imre, and Streng, Fritz F., to Hewitt-Robins Incorporated. Rotary plow feeder apparatus. 3,476,233, Cl. 198-212.
- Adler, Karl: *See—*
  - Ducommun, Georges, and Adler, Karl 3,477,007.
- Adler, Seymour, to Mattel, Inc. Doll head movable as a result of movement of another doll body part. 3,475,853, Cl. 046-120.
- Adra, Tarek, to Hubbell, Harvey, Incorporated. Floodlight reflector assembly. 3,476,925, Cl. 240-003.
- Aga Aktiebolag: *See—*
  - Soderberg, Leif Erik Roland, 3,476,594.
- Agarwal, Paul D., to General Motors Corporation. Motor power supply system. 3,476,998, Cl. 318-146.
- Agarwal, Paul D., to General Motors Corporation. Motor power supply system. 3,476,999, Cl. 318-146.
- Agerley, Harald J., to Aktiebolaget Electrolux, mesne. Air humidifier. 3,476,365, Cl. 261-024.
- Aggregate Plant Products Company: *See—*
  - Cox, George W., Garcia, Lloyd J., and Reyes, Edward, 3,476,270.
- Agrista, Dominic S., and Anastasia, Anthony S., to Mattel, Inc. Sheet clamping couple. 3,476,377, Cl. 269-021.
- Air Reduction Company, Incorporated: *See—*
  - Croix, Louise S., and Szur, Alex J., 3,476,860.
  - Terrell, Ross C., 3,476,811.
  - Terrell, Ross C., 3,476,812.
- Aisin Seiki Kabushiki Kaisha: *See—*
  - Kobayashi, Toyoaki, 3,476,220.
- Ajem Laboratories, Inc.: *See—*
  - Arnold, Orlan M., Hanson, Victor W., Jamison, Robert M., Panzica, Nicholas J., and Umbricht, Emil, 3,475,881.
- Aktiebolaget Bofors: *See—*
  - Jonsson, Sune Otto Gunnar, 3,476,117.
- Aktiebolaget Electrolux: *See—*
  - Agerley, Harald J., 3,476,365.
- Aktiengesellschaft Brown, Boveri & Cie: *See—*
  - Jahn, Dieter, 3,476,661.
- Albersmeyer, Walter, to Wibau Westdeutsche Industrie- und Strassenbau Maschinen-Gesellschaft m.b.H. Method and apparatus for the purification of sewage. 3,476,682, Cl. 210-007.
- Aldred, Derek Harry, and Edington, Robert Alexander, to Imperial Chemical Industries Limited. Adhesive compositions comprising the reaction product of a substituted phenol and a trioxohexahydro-s-triazine. 3,476,701, Cl. 260-029.3
- Aldrich Chemical Company, Inc.: *See—*
  - Biel, John H., 3,476,762.
- Aldrich, Richard W., and Holonyak, Nick, Jr., to General Electric Company. Five layer and junction bridging terminal switching device. 3,476,993, Cl. 317-235.
- Alfa-Laval AB: *See—*
  - Thoren, Georg M. I., and Lundahl, Lennart V. S., 3,476,397.
- Alford, Roscoe R., to Phillips Petroleum Company. Pressure control in a carbon black reactor. 3,476,512, Cl. 023-209.4
- Algemene Kunstzijde Unie N.V.: *See—*
  - Duiser, Johannes Aart, and Rieke, Johannes Cornelis, 3,476,849.
- Aliment, Lindy, Aliment, Randy Jarl, and Phillips, Manio Lido. Combination cushion storage arrangement and folding table for vehicles. 3,476,432, Cl. 296-023.
- Aliment, Randy Jarl: *See—*
  - Aliment, Lindy, Aliment, Randy Jarl, and Phillips, Manio Lido 3,476,432.
- Allan, George Graham, to Weyerhaeuser Company. Hydroxyesters of bark phenolic acids. 3,476,795, Cl. 260-473.5
- Allen Electronics, Inc.: *See—*
  - Boice, Clarence L., and Allen, Joseph Stevens, 3,476,873.
- Allen-Harper, Inc.: *See—*
  - Allen, Kenneth M., and Harper, Chester H., 3,476,234.
- Allen, Joseph C., to Texaco Inc. Method of hydrocarbon production by secondary recovery using a modified inverted 9-spot well pattern. 3,476,182, Cl. 166-245.
- Allen, Joseph Stevens: *See—*
  - Boice, Clarence L., and Allen, Joseph Stevens 3,476,873.
- Allen, Kenneth M., and Harper, Chester H., to Allen-Harper, Inc. Self-balancing vibrating structures. 3,476,234, Cl. 198-220.
- Allen, Lloyd R., to National Research Corporation. Production of boron carbide flakes. 3,476,525, Cl. 023-294.
- Allied Chemical Corporation: *See—*
  - Hartman, Paul F., 3,476,532.
  - Litke, Alvin C., 3,476,500.
- Altscher, Siegfried, and Fetscher, Charles A., to Diamond Shamrock Corporation. Process for producing a high molecular weight linear urethane polymer. 3,476,710, Cl. 260-077.5
- Aluminum Specialty Company: *See—*
  - Cowles, Craig H., 3,476,082.
- American Air Filter Company, Inc.: *See—*
  - Heh, George J., 3,476,635.
- American Can Company: *See—*
  - Asman, Norman John, 3,476,304.
  - Asman, Norman John, 3,476,305.
  - Skowronski, George Victor, 3,476,236.
- American Cyanamid Company: *See—*
  - Addor, Roger Williams, 3,476,837.
  - Miller, Bernard, and Margulies, Howard, 3,476,834.
  - Scharf, Edward Jonathan, and Kemme, Herbert Rudolph, 3,476,819.
- American Home Products Corporation: *See—*
  - Humber, Leslie G., 3,476,750.
  - Vezina, Claude, and Deghenghi, Romano, 3,476,779.
- American Safety Table: *See—*
  - Spinrad, Malcom, Haas, Kenneth C., and Hoverter, Bryce E., 3,477,001.
- American Seating Company: *See—*
  - Barecki, Chester J., and Lindberg, William S., 3,476,455.
- American Standard, Inc.: *See—*
  - LaVan, John F., 3,476,916.
  - Loewenthal, Henry J., 3,476,150.

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- American Velcro, Inc.: *See—*
  - Mates, Jack K., 3,475,810.
- Amerock Corporation: *See—*
  - Erickson, Karl H., 3,476,424.
- Ametek, Inc.: *See—*
  - Gruner, Frederick R., 3,476,340.
- AMP Incorporated: *See—*
  - Demler, Henry William, Sr., 3,476,412.
  - Graeff, Norwood Claude, and Shannon, Suel Grant, 3,476,115.
  - Shannon, Suel Grant, and Graeff, Norwood Claude, 3,476,114.
- Amrein, Carl J.: *See—*
  - Harvey, David E., Amrein, Carl J., and Abbratozzato, Salvatore R. 3,476,965.
- Amsted Industries Incorporated: *See—*
  - Drever, James Ross, Zimmerman, Philip D., and Brink, Allan B., 3,476,847.
  - Resener, Baird E., 3,476,227.
- Anaconda Company, The: *See—*
  - Sullivan, Robert E., 3,476,511.
- Anastasia, Anthony S.: *See—*
  - Agrista, Dominic S., and Anastasia, Anthony S. 3,476,377.
- Andeen, Richard E., and Kotfila, Ronald P., to Sperry Rand Corporation. Pseudo control stick steering system for aircraft having a damper system. 3,476,335, Cl. 244-077.
- Andersen, Clifford W., to Wurlitzer Company, The. Electronic communication system. 3,475,833, Cl. 035-005.
- Andersen, H. W., Products, Inc.: *See—*
  - Andersen, Harold Willids, Andersen, Harold W., and Harrison, Charles H., 3,476,506.
- Andersen, Harold W.: *See—*
  - Andersen, Harold Willids, Andersen, Harold W., and Harrison, Charles H. 3,476,506.
- Andersen, Harold Willids, Andersen, Harold W., and Harrison, Charles H., to Andersen, H. W., Products, Inc. Sterilization apparatus. 3,476,506, Cl. 021-091.
- Anderson, Bertil T.: *See—*
  - Fair, Donald G., and Anderson, Bertil T. 3,477,006.
- Anderson, David W., Sparacio, Francis J., and Tomasulo, Robert M., to International Business Machines Corporation. Controller for data processing system. 3,477,063, Cl. 340-172.5
- Anderson, Jack P.: *See—*
  - Jenny, Jacques, Teti, John, and Anderson, Jack P. 3,476,190.
- Anderson, Philip Carlton, and Rapp, Janet Lorraine Cooper, to Feed Service Corporation. Nutrient blocks containing gum arabic. 3,476,565, Cl. 099-002.
- Anderson, Robert O. Electrically heated ice cream scoop. 3,476,059, Cl. 107-048.
- Anderson, Roger. Anaesthesiology draping screen frame structure. 3,476,256, Cl. 211-086.
- Andrews Industries Incorporated: *See—*
  - Ludeman, Edwin H., 3,476,154.
- Angier, Richard, to UA Engineering Limited. Propulsion units. 3,475,912, Cl. 060-222.
- Appel, Wallace H., to Westinghouse Electric Corporation. Room air-conditioner improved mounting arrangement. 3,476,033, Cl. 098-094.
- ARBED, Acieries Reunies de Burbach-Eich-Dudelange, S.A.: *See—*
  - Glaesener, Ernest, 3,476,549.
- Argentieri, Michael: *See—*
  - Sabadishin, Steve, and Argentieri, Michael 3,475,958.
- Argoudelis, Alexander D., Grady, Joseph E., and Sayer, Gordon C., to Upjohn Company, The. Pentakis [N-(sulfomethyl] circulin and salts thereof. 3,476,738, Cl. 260-112.5
- Argoudelis, Alexander D., and Pyke, Thomas R., to Upjohn Company, The. Antibiotics rancomycin I, rancomycin II, their 2, 4-dinitrophenichydrazones, and microbiological and chemical process for preparing the same. 3,476,857, Cl. 424-118.
- Argus Chemical Corporation: *See—*
  - Kauder, Otto S., Leistner, William E., and Hecker, Arthur C., 3,476,699.
- Arkwright, Peter: *See—*
  - Czarnecki, Jerzy J., and Arkwright, Peter 3,476,053.
- Armour and Company: *See—*
  - Sebba, Felix, Jonaitis, Charles W., Ray, Charles L., and Baarson, Robert E., 3,476,553.
- Armour Industrial Chemical Company: *See—*
  - Malec, Robert E., 3,476,091.
- Armour Pharmaceutical Company: *See—*
  - Jones, John L., 3,476,509.
- Armstrong Cork Company: *See—*
  - Eckert, Lewis W., 3,476,318.
- Arnes, Lyle L. Window counter-balancing construction. 3,475,865, Cl. 049-445.
- Arnold, Fredric E., Jr., to Hydrometals, Inc. Antenna selector. 3,476,074, Cl. 116-114.
- Arnold, Orlan M., Hanson, Victor W., Jamison, Robert M., Panzica, Nicholas J., and Umbricht, Emil, to Ajem Laboratories, Inc. Method and apparatus for cleaning contaminated gases. 3,475,881, Cl. 055-094.
- Arnold, Roger F., to Grace, W. R., & Co. White tacky spray booth coating. 3,476,575, Cl. 106-002.
- Aro Corporation, The: *See—*
  - Hitt, Otis D., and Short, R Stanford, 3,476,147.
- Arrance, Frank C.: *See—*
  - Berger, Carl, and Arrance, Frank C. 3,476,601.
- Asahi Kasei Kogyo Kabushiki Kaisha: *See—*
  - Harada, Tadamasa, and Omura, Isao, 3,476,622.
  - Matsuoka, Shigeru, Fujisawa, Kiyoshi, Masai, Shohachi, and Asami, Atsumi, 3,475,891.
- Asami, Atsumi: *See—*
  - Matsuoka, Shigeru, Fujisawa, Kiyoshi, Masai, Shohachi, and Asami, Atsumi 3,475,891.
- Ashbaugh, Donald L., to United States Steel Corporation. Annealing furnace seal. 3,476,370, Cl. 263-040.
- Aslaksen, Erik W., to Bell Telephone Laboratories, Incorporated. Balanced signal mixers and power dividing circuits. 3,477,028, Cl. 325-446.
- Asman, Norman John, to American Can Company. Foldable carton and blank with pleated corner. 3,476,304, Cl. 229-031.
- Asman, Norman John, to American Can Company. Foldable carton and blank with integral corner structural support. 3,476,305, Cl. 229-031.
- Aso, Kotaro: *See—*
  - Tsunoda, Yoshimasa, Iwata, Hideo, Okada, Tsutomu, and Aso, Kotaro 3,475,801.
  - Chikamasa, Hiroshi, and Aso, Kotaro 3,476,363.
- Astheimer, Robert W., to Barnes Engineering Company. Clear air turbulence radiometer. 3,475,963, Cl. 073-355.
- Atlantic Richfield Company: *See—*
  - Steffgen, Frederick W., 3,476,809.
- Atlas Copco Aktiebolag: *See—*
  - Stromnes, Axel, 3,476,193.
- Atwood, Glenn A.: *See—*
  - Welty, Albert B., Jr., Johnson, Russell R., and Atwood, Glenn A. 3,476,513.
- Aucktor, Erich, to Lohr & Bromkamp GmbH. Universal joint. 3,475,924, Cl. 064-021.
- Austen, Jorg, to Porsche, Dr.-Ing., h.c.F., K.G., Firma. Heat exchanger for boat propulsion unit. 3,476,070, Cl. 115-000.5
- Auston, Vernon R. Material fastening apparatus. 3,476,301, Cl. 227-025.
- Automation Industries, Inc.: *See—*
  - Smith, Albert H., 3,476,517.
- Autoquip Corporation: *See—*
  - Clarke, Jesse E., 3,476,267.
- Autoscan, Inc.: *See—*
  - Pelta, Edmond R., 3,477,024.
- Avery, Donald H.: *See—*
  - Ehrreich, John E., and Avery, Donald H. 3,476,530.
- Avery, W. & T., Limited: *See—*
  - Knight, Douglas Frank, 3,477,017.
- Baarson, Robert E.: *See—*
  - Sebba, Felix, Jonaitis, Charles W., Ray, Charles L., and Baarson, Robert E. 3,476,553.
- Bachand, Gordon R., to United States Atomic Energy Commission. Magnetically settable counter. 3,476,919, Cl. 235-092.
- Bachmann, Horst, to Maschinenfabrik Hasenclever Aktiengesellschaft. Apparatus for noncutting shaping of metallic workpieces. 3,475,947, Cl. 072-419.
- Bachmann, Horst, to Maschinenfabrik Hasenclever Aktiengesellschaft. Process for electrically upsetting rod-shaped metal blanks, and die for carrying out the process. 3,476,911, Cl. 219-151.
- Bacon, John F.: *See—*
  - Nasca, Anthony V., and Bacon, John F. 3,476,637.
- Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See—*
  - Adam, Karl, Schulz, Alfred, Haarer, Erich, and Winderl, Siegfried, 3,476,793.
  - Beckmann, Wilhelm, Kengelbach, Werner Ludwig, Metzger, Horst, and Pape, Martin, 3,476,669.
  - Daumiller, Guenther, Kastning, Ernst-Guenther, and Naarmann, Herbert, 3,476,831.
  - Feldhoff, Heinrich, Becker, Klaus, and Schlereth, Georg, 3,476,963.
  - Kirner, Uwe, and Hartmark, Bjarne, 3,476,505.
  - Naarmann, Herbert, and Kastning, Ernst-Guenther, 3,476,830.
- Baer, John E.: *See—*
  - Nelson, Carl E., Baer, John E., and Foltz, Elwood L. 3,476,858.
- Bahnson Company, The: *See—*
  - King, James Frank, 3,476,078.
- Bailey Meter Company: *See—*
  - Golden, Raymond, Murzyn, Robert A., and Wilson, William E., 3,476,945.
- Bailey, Robert Linton, and Doner, Claude Edward, to RCA Corporation. Paralleling active circuit elements. 3,477,032, Cl. 330-030.
- Baker, Charles J., and Van Raden, Frederick F., to Peerless Trailer and Truck Service, Inc. Trailer dumper. 3,476,269, Cl. 214-002.
- Baker, Dale C.: *See—*
  - Howard, Robert C., and Baker, Dale C. 3,476,482.
- Baker, Robert E.: *See—*
  - Parks, George A., and Baker, Robert E. 3,476,552.
- Baklien, Asbjorn: *See—*
  - Roberts, Gwyneth M., Butt, Faye E., Baklien, Asbjorn, Gregory, Jocelyn M., and Kuiper, Jan 3,476,546.
- Balassa, Leslie L. Sterilizing and enhancing activity of a finely divided cartilage powder. 3,476,855, Cl. 424-095.
- Baldwin, D. H., Company: *See—*
  - Bereskin, Alexander B., 3,476,865.

  - Cunningham, Thomas W., 3,476,866.
  - Munch, Walter, Jr., and Uetrecht, Dale M., 3,476,864.
- Baldwin, John Granville, and Holt, William David, to Lucas, Joseph, (Industries) Limited. Electrical switches. 3,476,902, Cl. 200-168.
- Balint, Andrew, and Wohlrab, Hans Christoph, to Bell & Howell Company. Program tape discriminator. 3,476,477, Cl. 355-035.
- Ballou, Richard P., to General Motors Corporation. Electric fuel pump controls. 3,476,949, Cl. 290-036.
- Balon Corporation: *See—*
  - Scaramucci, Domer, 3,476,356.
- Bang, Mogens W., to Stackpole Carbon Company. Potentiometer with frictional slide. 3,477,057, Cl. 338-182.
- Banning, Thomas A., Jr. Synchronizing and phasing broadband cross-scan tape recordings. 3,476,872, Cl. 178-006.6
- Baran, John S., to Searle, G. D., & Co.3,14$\beta$, 17-Trisoxygenated 13$\beta$-alkyl-11, 14$\alpha$-epoxy- 8,14-secogona-1,3,5(10), 8-tetraenes. 3,476,773, Cl. 260-346.2
- Barch, John J., to Tenneco Chemicals, Inc. 2,4,5-Nitrodihalobenzyl thiocyanates. 3,476,790, Cl. 260-454.
- Bardenhagen, Dietrich, and Niemann, Helmut, to Hauni Werke Korber & Co. KG. Cut-off for cigarette rods or the like. 3,476,002, Cl. 083-310.
- Barecki, Chester J., and Lindberg, William S., to American Seating Company. Tape recorder cabinet. 3,476,455, Cl. 312-223.
- Barker, George E., to Monsanto Company. Pulsed solenoid force balance device. 3,476,128, Cl. 137-001.
- Barnes Engineering Company: *See—*
  - Astheimer, Robert W., 3,475,963.
  - Jankowitz, Gerald, and Falbel, Gerald, 3,476,938.
- Barr, Irwin R., and Critcher, John L., to AAI Corporation. Underwater ammunition. 3,476,048, Cl. 102-054.
- Bart, Philip D. Rotating toy simulated aircraft. 3,476,386, Cl. 272-031.
- Bartulin, Juan: *See—*
  - Taylor, Edward C., and Bartulin, Juan 3,476,756.
- Bathellier, Andre, to Commissariat a l'Energie Atomique. Trilaurylamine extraction of plutonium with precipitation in oxalic acid. 3,476,787, Cl. 260-429.1
- Bathory, Bela Istvan: *See—*
  - Stubbs, Dennis, Wilson, William Gordon, and Bathory, Bela Istvan 3,476,276.
- Battelle Development Corporation, The: *See—*
  - Hoenig, Stuart A., 3,475,882.
- Bausch & Lomb, Incorporated: *See—*
  - Benford, James R., 3,476,462.
  - Jackson, Earl V., and Mohrman, Richard C., 3,476,465.
  - Letter, Eugene C., 3,476,461.
- Bauwens, Jean: *See—*
  - Jehenson, Pierre Simon, and Bauwens, Jean 3,476,614.
- Bayer, John W., Gagnon, Donald W., Grinonneau, William C., and Santiago, Edgardo, to Owens-Illinois, Inc. Catalyst comprising (1) reaction product of a vanadium oxide and organic phosphorous compound, (2) a hydrocarbyl silane and a halo-aluminum compound, and polymerization. 3,476,732, Cl. 260-094.3
- Beatenbough, Paul K., and Richards, Gary E., to General Motors Corporation. Vacuum control system. 3,476,018, Cl. 091-419.
- Beatrice Foods Co.: *See—*
  - McMiller, Urban C., 3,476,162.
- Bechtel International Corporation: *See—*
  - Goerz, David J., Jr., 3,475,827.
- Becker, Klaus: *See—*
  - Feldhoff, Heinrich, Becker, Klaus, and Schlereth, Georg 3,476,963.
- Beckert, Werner: *See—*
  - Spiroch, Franz, and Beckert, Werner 3,476,299.
- Beckett, Allan Harry: *See—*
  - Bugg, Alfred Edward, 3,475,834.
- Beckman Instruments, Inc.: *See—*
  - Snyder, Robert B., and Petersen, Arne J., 3,476,672.
- Beckmann, Wilhelm, Kengelbach, Werner Ludwig, Metzger, Horst, and Pape, Martin, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Apparatus for photochemical reactions. 3,476,669, Cl. 204-193.
- Belcher, Lorne J., and Rinkus, Robert G., to United States Steel Corporation. Control system for automotive car. 3,476,889, Cl. 191-006.
- Bell, David M., and Bell, Floyd W., to Buckeye Stamping Company, The. Circuit board receiver and retainer. 3,476,982, Cl. 317-101.
- Bell, Floyd W.: *See—*
  - Bell, David M., and Bell, Floyd W. 3,476,982.
- Bell, George, and O'Connell, Anthony James, to Metal Box Company Limited, The. Centrifugally operating electrodeposition apparatus and method of use: 3,476,666, Cl. 204-181.
- Bell & Howell Company: *See—*
  - Balint, Andrew, and Wohlrab, Hans Christoph, 3,476,477.
  - Yamada, Yoshikazu, and Garland, Thomas H., 3,476,562.
- Bell Telephone Laboratories, Incorporated: *See—*
  - Aslaksen, Erik W., 3,477,028.
  - Burgess, Paul N., Cardwell, Robert E., and Remski, Frank R., 3,476,956.
  - Copeland, John A., III, 3,477,029.
  - Davis, John H., 3,476,875.
  - Dougherty, Thomas F., Jr., Mac Nutt, William J., and McKelvey, William J., 3,476,980.
  - Farrow, Cecil W., 3,477,043.
  - Flanagan, James L., 3,476,880.
  - Germanton, Charles E., 3,475,932.
  - Gittler, Frank L., 3,476,621.
  - Goetzberger, Adolf, and Nicollian, Edward H., 3,477,033.
  - Ligenza, Joseph R., and Povilonis, Edward I., 3,476,971.
  - Plevyak, Thomas J., 3,476,175.
- Bencze, William Laszlo, to Ciba Corporation. 1,2-diaryl-6-tertiary amino loweralkoxy-3,4- dihydro naphthalenes. 3,476,767, Cl. 260-326.3
- Bende, Friedrich: *See—*
  - Vollinger, Heinz, Pohl, Kurt, and Bende, Friedrich 3,476,805.
- Bende, Friedrich, Vollinger, Heinz, and Pohl, Kurt, to Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen. Method for the production of adipic acid and recovery of nitric acid components. 3,476,804, Cl. 260-531.
- Bendix Corporation, The: *See—*
  - Ditlinger, Richard J., and Toal, James J., 3,475,988.
- Benford, James R., to Bausch & Lomb, Incorporated. Low power microscope semi-objective with field flattening lens. 3,476,462, Cl. 350-177.
- Bennett, Roy Brian: *See—*
  - Heard, Jeffery Gerald, and Bennett, Roy Brian 3,476,961.
- Benteler, Erich, Schmidt, Wilhelm, and Schmidt, Willi, to Benteler-Werke Aktiengesellschaft. Pipe union. 3,476,409, Cl. 285-040.
- Benteler-Werke Aktiengesellschaft: *See—*
  - Benteler, Erich, Schmidt, Wilhelm, and Schmidt, Willi, 3,476,409.
- Bereskin, Alexander B., to Baldwin, D. H., Company. Variable time delay multivibrators. 3,476,865, Cl. 084-001.04
- Berg, Arthur A., and Horowitz, Charles, to Berg Mfg. & Sales Co. Air assisted emergency spring brake assembly. 3,476,019, Cl. 091-420.
- Berg, Gerhard, Blumel, Harald, and Glathe, Manfred, to Chemische Werke Huls A.G. Rubber tire reinforcement compositions, structures and methods. 3,476,642, Cl. 161-227.
- Berg Mfg. & Sales Co.: *See—*
  - Berg, Arthur A., and Horowitz, Charles, 3,476,019.
- Berger, Carl, to McDonnell Douglas Corporation. Deferred action self-timing fuel cell. 3,476,607, Cl. 136-086.
- Berger, Carl, and Arrance, Frank C., to McDonnell Douglas Corporation, mesne. Battery including inorganic fibrous material. 3,476,601, Cl. 136-006.
- Berkeley Scientific Laboratories, Inc.: *See—*
  - Glaser, Donald A., 3,476,291.
- Berkenblit, Melvin, and Reisman, Arnold, to International Business Machines Corporation. Method for producing improved epitaxial films. 3,476,592, Cl. 117-201.
- Berne, Hans Jorg Otto: *See—*
  - Gibson, Baylor D., and Berne, Hans Jorg Otto 3,475,896.
- Bertea, Octavian: *See—*
  - Stark, Louis E., and Bertea, Octavian 3,476,171.
- Bertelsen, Bruce I., and Reimer, Arnold E., to International Business Machines Corporation. Photoetch method. 3,476,561, Cl. 096-036.
- Berther, Clau, and Sailer, Richard, to Inventa A.G. fur Forschung und Patentverwertung. Process for the purification of lactams. 3,476,744, Cl. 260-239.3
- Bertoldi, Attilio. Fabric treating apparatus. 3,475,927, Cl. 068-018.
- Berve, O. M., Company: *See—*
  - Berve, Orven M., and Rich, Elwin F., 3,476,913.
- Berve, Orven M., and Rich, Elwin F., to Berve, O. M., Company. Electric sauna bath heater. 3,476,913, Cl. 219-365.
- Beteiligungs- und Patentverwaltungs G.m.b.H.: *See—*
  - Erdmann, Piers Kaspar, 3,477,035.
- Bethlehem Steel Corporation: *See—*
  - Thompson, Ted E., 3,476,362.
  - Wise, Warren J., 3,475,807.
- Bettens, Arsene H.: *See—*
  - Goodman, Ronald H., Bettens, Arsene H., and Josling, Clifford A. 3,476,939.
- Bezemer, Cornelis, Meijs, Franciscus H., van Zanten, Marinus, and Wittenwyler, Clifford V. Shell Oil Company Method for consolidating a permeable mass. 3,476,189, Cl. 166-295.
- Bickham, Euland M., and Rosenfeld, Samuel, to Instrument Systems Corporation. Sealer for packaging foodstuffs and the like. 3,475,880, Cl. 053-141.
- Biel, John H., to Aldrich Chemical Company, Inc.4'-Dimethylamino-4-[4-hydroxy-4-phenyl piperidino] butyrophenones and 4-[4-phenyl-4-hydroxy-piperidino] -1,1-ethylenedioxy-1-(4-dimethylaminophenyl) butanes. 3,476,762, Cl. 260-294.7
- Bienert, Herbert F. Process for producing a foamed polystyrene product having a hard skin. 3,476,841, Cl. 264-045.
- Bier, Albert, to Moeller & Neuman G.m.b.H. Rapid changeover arrangement for a group of rolling mill stands in continuous rolling mill lines. 3,475,939, Cl. 072-239.
- Biggle, Laurence C., to International Telephone and Telegraph Corporation. Control system for double-burner single- cavity oven. 3,476,315, Cl. 236-015.
- Bill, Walter E., and Payet, George L., to PPG Industries, Inc. Process of shrink-proofing goods containing keratinous fibers. 3,476,502, Cl. 008-127.6
- Binder, Gerhard, and Nordsiek, Karl-Heinz, to Chemische Werke Huls A.G. Polybutadiene modified to reduce low temperature crystallization. 3,476,721, Cl. 260-082.1
- Binder, Herbert, and Delaney, Robert V., to Singer-General Precision, Inc. Combination two-axis electromagnetic torque and pickoff. 3,475,971, Cl. 074-005.6
- Birch, Richard W. Traversing mechanism for pick-up transducer arm for disc records. 3,476,394, Cl. 274-023.

- Birck, Michael J., to Continental Corporation, mesne. Telephone signaling system including carrier frequency transmission on voice frequency loaded pairs. 3,476,883, Cl. 179-078.
- Birum, Herbert L., Jr. Partition assemblies. 3,475,870, Cl. 052-211.
- Biviator S.A.: *See—*
  - Ducommun, Georges, and Adler, Karl, 3,477,007.
- Black and Decker Manufacturing Company, The: *See—*
  - Harvey, David E., Amrein, Carl J., and Abbratozzato, Salvatore R., 3,476,965.
- Blackmore, Kenneth A. E.: *See—*
  - Markham, Aaron E., and Blackmore, Kenneth A. E. 3,476,740.
- Blaschke, Franz: *See—*
  - Schade, Gerhard, and Blaschke, Franz 3,476,708.
- Blazek, Otta, Herynk, Milon, and Rybar, Josef, to Skoda, narodni podnik. Apparatus for analyzing rotary motion. 3,475,973, Cl. 074-029.
- Blickstein, Martin J., and Mittler, Martin A., to Voltronics Corporation. Variable capacitor. 3,476,994, Cl. 317-253.
- Bliss, Bruce J., to Texas Instruments, Incorporated. High-temperature braze shim stock. 3,476,528, Cl. 029-182.3
- Block, Harry W., Adams, Joan M., and Finucane, Thomas P., to General Foods Corporation. Artificially sweetened fruit-flavored product. 3,476,571, Cl. 099-130.
- Blumel, Harald: *See—*
  - Berg, Gerhard, Blumel, Harald, and Glathe, Manfred 3,476,642.
- Blythe, Allan L., to Canadian Westinghouse Company, Limited. Electrical control systems with stabilizing control means. 3,477,014, Cl. 322-019.
- Bobbitt, Leonard E. Hosiery measuring and pairing apparatus. 3,476,242, Cl. 209-122.
- Bode, Charles H., Jr., and Wusseles, Peter J., to United States Steel Corporation. Torch-mounting apparatus for cutting pieces of irregular shape. 3,476,373, Cl. 266-023.
- Boehringer, C. F., & Soehne GmbH: *See—*
  - Voigtlander, Wolfgang, Kaiser, Fritz, Schaumann, Wolfgang, and Stach, Kurt, 3,476,742.
- Boice, Clarence L., and Allen, Joseph Stevens, to Allen Electronics, Inc. Method of and apparatus for reproducing signals recorded on magnetic tape with head switching means. 3,476,873, Cl. 178-006.6
- Bolkow Gesellschaft mit beschrankter Haftung: *See—*
  - Brunsch, Klaus, 3,476,484.
- Bonin, Edward L., to Texas Instruments, Incorporated. Phototransistor having light sensitive diode connected across collector-base junction to increase turnoff time. 3,476,941, Cl. 250-211.
- Book Covers, Incorporated: *See—*
  - Mullen, Edward K., and Carter, Leewood C., 3,476,406.
- Borg-Warner Corporation: *See—*
  - Harlin, Lester E., 3,476,309.
  - McMillen, Kenneth G., 3,476,148.
  - Shattuck, Robert, 3,476,852.
- Born, Gerald C., and Wesson, Guy W., to General Motors Corporation. Lubricant purging sealed ball joint assembly. 3,476,417, Cl. 287-087.
- Born, Klaus: *See—*
  - Krekeler, Hans, Jacobowsky, Armin, Born, Klaus, Schmitz, Heinz, and Wirtz, Peter 3,476,955.
- Bornstein, Leopold F., to Georgia-Pacific Corporation. Curing resorcinol-aldehyde resol resins employing aniline or aniline salts. 3,476,706, Cl. 260-054.
- Borsini, Giancarlo: *See—*
  - LoMonaco, Sergio, Melacini, Paolo, Borsini, Giancarlo, Magagnin, Luigi Ciligot, and Visani, Francesco 3,476,727.
- Bosch, Robert, GmbH: *See—*
  - Hettich, Alfred, Schadlich, Fritz, Walz, Heinz, and Paule, Kurt, 3,475,780.
  - Kuhn, Edgar, 3,477,015.
- Bottorf, Donald Thomas, and Moore, Edward Joseph, to Du Pont de Nemours, E. I., and Company. Process and apparatus for extruding polyolefins. 3,476,846, Cl. 264-095.
- Botts, Nelson F.: *See—*
  - Sutton, Walter T., Jr., Broyles, James D., Sims, James B., and Botts, Nelson F. 3,475,830.
- Bourgeois, Francis H.: *See—*
  - Westby, Lloyd R., and Bourgeois, Francis H. 3,476,204.
- Bowen Tools, Inc.: *See—*
  - Pilcher, David W., 3,475,991.
- Bower, Arnold B., Jr., to General Electric Company. Cutter bit. 3,476,438, Cl. 299-086.
- Bower, Richard R., to International Telephone and Telegraph Corporation. Assembly conveyor system. 3,476,231, Cl. 198-019.
- Bowman, Warren, Roberts, Dennis M., and Sellger, Paul G., to Du Pont de Nemours, E. I., and Company. Lacquer compositions containing nitrocellulose an ethylene/vinyl acetate copolymer and sucrose acetate isobutyrate. 3,476,694, Cl. 260-017.
- Boyd, John, to Westinghouse Electric Corporation. Self-aligning hydrostatic bearing. 3,476,447, Cl. 308-009.
- Boyd, Oley A. Water temperature control unit. 3,476,314, Cl. 236-012.
- Boyles, Robert L., to General Electric Company. Radio and alarm control mechanism. 3,475,899, Cl. 058-021.155
- Bracken, Joseph W., Jr., and Hubble, William S., to General Motors Corporation. Rotary regenerator matrix mount and drive. 3,476,173, Cl. 165-009.
- Brahm, Harry. Air pumping insert for shoes. 3,475,836, Cl. 036-003.
- Bramhall, Otis H., and Jess, Thurman S., to United-Carr Incorporated, mesne. Fuse actuator switch. 3,477,054, Cl. 337-202.
- Brandenburg, John T., Crone, John M., Jr., and Suggitt, Robert M., to Texaco Inc. Disproportionation of alkyl aromatics with decationized mordenite containing a sulfided metal. 3,476,821, Cl. 260-672.
- Brandes, Roy H., to General Motors Corporation. Speed-acceleration governor with fluid coupled inertia means. 3,475,970, Cl. 073-512.
- Brasseur, Jacques, to Societe Anonyme dite: Societe des Automobiles Simca. Torsion bar adjusting device. 3,476,375, Cl. 267-057.
- Bratten, Thomas A., and Naismith, Thomas D., to General Motors Corporation. Inertia sensing proportioner. 3,476,443, Cl. 303-024.
- Braun, Robert A., to Du Pont de Nemours, E. I., and Company. Perhalo containing air-drying monomers. 3,476,771, Cl. 260-340.7
- Brazel, Rudolf: *See—*
  - Ritz, Ernst, and Brazel, Rudolf 3,476,106.
- Breen, Dale H.: *See—*
  - Geiger, Eugene J., and Breen, Dale H. 3,475,804.
- Brekle, Oliver R., to M & B Metal Products Company. Garment form retainer. 3,476,298, Cl. 223-071.
- Brewer, C., and Company, Limited: *See—*
  - Hart, Charles W., 3,475,886.
- Brewer, Robert F., and Piechocki, Benjamin, to Western Electric Company, Incorporated. Palladium copper contact for soldering. 3,476,531, Cl. 029-195.
- Brewster, Charles A., and Plummer, Charles H., to Johnson & Johnson. Method for separating, conveying and collecting woodpulp fibers as a uniform layer and apparatus for carrying out the same. 3,475,791, Cl. 019-156.3
- Bright, James A., to General Motors Corporation. Pump with oscillating vanes. 3,476,056, Cl. 103-129.
- Brinckman, Eric Maria, to Gevaert-Agfa N.V. Thermographic method for producing thermostable prints. 3,476,578, Cl. 117-036.2
- Brink, Allan B.: *See—*
  - Drever, James Ross, Zimmerman, Philip D., and Brink, Allan B. 3,476,847.
- Brinkman, Thomas J., Fogt, Thomas H., Long, George B., and Whistler, Charles C., Jr., to General Motors Corporation. Clothes dryer with lint disposer. 3,475,829, Cl. 034-044.
- Bristol Siddeley Engines Limited: *See—*
  - Whittle, Frank, and Thomas, Derek, 3,476,196.
- British Nylon Spinners Limited: *See—*
  - Crosby, David W., 3,476,636.
- British Petroleum Company Limited, The: *See—*
  - Groszek, Aleksander Jerzy, 3,476,325.
- British Scientific Instrument Research: *See—*
  - Watkin, David Anthony, Noe, Edwin Henry, and Wade, Peter, 3,476,058.
- Brock, Eugene W., to General Motors Corporation. Head lamp lighting circuit with a time delay shut off and a switch position warning indicator. 3,476,975, Cl. 315-083.
- Brois, Stanley J., to Esso Research and Engineering Company. S-(2-aminoethyl)dithiophosphates and process for the preparation thereof. 3,476,833, Cl. 260-925.
- Brooks, Owen E., and Nubel, Robert C., to Pfizer, Chas., & Co., Inc. Gas liquid transfer apparatus. 3,476,366, Cl. 261-036.
- Brosig, Adolf: *See—*
  - Herold, Manfred, and Brosig, Adolf 3,476,218.
- Brosk, Doris A. Combined garment hanger and holder and toy. 3,475,852, Cl. 046-116.
- Brosseit, Fritz V., to Western Electric Company, Incorporated. Jam-free indexing mechanism. 3,475,974, Cl. 074-055.
- Brown, David A.: *See—*
  - Melton, Thomas M., and Brown, David A. 3,476,836.
- Brown, Francis Barton: *See—*
  - Coberly, Clarence J., and Brown, Francis Barton 3,476,413.
- Brown, Fred, to Union Tank Car Company, mesne. Method of expanding a railway tank car. 3,475,809, Cl. 029-412.
- Brown, John A., Jr.: *See—*
  - Murphy, Alfred M., Filak, Carl M., Long, Thomas P., and Brown, John A., Jr. 3,475,942.
- Brown, Kevan, to Wyeth, John, & Brother Limited, mesne. Certain 2,4-diarylthiazole-5-alkanoic acids and derivatives thereof. 3,476,766, Cl. 260-302.
- Brown, William E., Heitz, Roberg G., and Levine, Charles A., to Dow Chemical Company, The. Battery cell. 3,476,602, Cl. 136-006.
- Browning Engineering Corporation: *See—*
  - Browning, James A., 3,476,194.
- Browning, James A., to Browning Engineering Corporation. Flame jet drilling. 3,476,194, Cl. 175-014.
- Broyles, James D.: *See—*
  - Sutton, Walter T., Jr., Broyles, James D., Sims, James B., and Botts, Nelson F. 3,475,830.
- Bruce, Sylvester E. Photoelectric ambient light sign control apparatus. 3,476,943, Cl. 250-214.
- Bruckner, Germana: *See—*
  - Giannini, Umberto, and Bruckner, Germana 3,476,726.
- Brugh, Thomas H.: *See—*
  - Merkel, Charles M., Salmon, Joe E., and Brugh, Thomas H. 3,475,879.
- Brumbaugh, Bertrand L.: *See—*
  - Overstreet, Le Roy B., Brumbaugh, Eugene P., and Brumbaugh, Bertrand L. 3,475,889.
- Brumbaugh, Eugene P.: *See—*
  - Overstreet, Le Roy B., Brumbaugh, Eugene P., and Brumbaugh, Bertrand L. 3,475,889.
- Brumberger Company, Inc.: *See—*
  - Gruber, Cyril H., 3,475,848.

- Bruno, Guenter, to Mobil Oil Corporation. Derivatives of the growth reaction of ethylene with trihydrodicyclopentadienyl aluminum. 3,476,788, Cl. 260-448.
- Bruno, Guenter, to Mobil Oil Corporation. Method for preparing trihydrodicyclopentadienyl aluminum and substituted derivatives thereof. 3,476,789, Cl. 260-448.
- Brunsch, Klaus, to Bolkow Gesellschaft mit beschrankter Haftung. Rotor blade construction. 3,476,484, Cl. 416-230.
- Buchanan, Alan David: *See—*
  - Culbertson, Harry M., and Buchanan, Alan David 3,476,707.
- Buchanan, William L., and Straight, Harry F., Jr., to Esso Research and Engineering Company. Vortex burner. 3,476,494, Cl. 431-353.
- Buching, Franz, to Daimler-Benz Aktiengesellschaft. Drum and disk brake and dust cover therefor. 3,476,224, Cl. 188-218.
- Buchkremer, Rudolf, to Ludwig Riedhammer G.m.b.H. Tunnel furnace. 3,476,369, Cl. 263-036.
- Buckeye Stamping Company, The: *See—*
  - Bell, David M., and Bell, Floyd W., 3,476,982.
- Bucks County Enterprises, Inc.: *See—*
  - Edwards, Jacque R., 3,476,262.
- Buff, Fred, French, Marcus, and Pollock, Warren. Manufacture of expanded cellular products. 3,476,845, Cl. 264-054.
- Bugg, Alfred Edward, to White, Gordon Bruce, Sir Gelson, Edward William Beckett, Allan Harry, and Tapp, John William Theodore. Hydraulic models. 3,475,834, Cl. 035-019.
- Buhl, Wilhelm, to Daimler-Benz Aktiengesellschaft. Shaft seal with return rifling. 3,476,396, Cl. 277-059.
- Bulgatz, Jeffrey L.: *See—*
  - Bulgatz, Samuel N., 3,476,063.
- Bulgatz, Samuel N., to Bulgatz, Jeffrey L. Automatic sewing apparatus. 3,476,063, Cl. 112-002.
- Bullard, E. D., Company: *See—*
  - Raschke, Herbert A., 3,475,766.
- Bunger, Richard E. Apparatus for making livestock feeding trough. 3,476,352, Cl. 249-146.
- Bunn, Dorrance P., Jr., Janes, Edward F., and Williams, Dale, to Texaco Inc. Method of preparing cyclohexane from toluene. 3,476,818, Cl. 260-667.
- Burdett, Harold D. Expandable form for hollow-core concrete construction. 3,476,351, Cl. 249-082.
- Burger, J. C.: *See—*
  - Gilles, Wallace, Yamasaki, George K., and Burger, J. C. 3,476,970.
- Burgess, Paul N., Cardwell, Robert E., and Remski, Frank R., to Bell Telephone Laboratories, Incorporated. Bilateral transistor gate circuit. 3,476,956, Cl. 307-254.
- Burhans, Hollis M.: *See—*
  - Gray, Donald M., Burhans, Hollis M., and Gray, Wendell H. 3,476,249.
- Burke, James F. Apparatus and method for treating gaseous products of combustion. 3,476,524, Cl. 023-288.
- Burkhardt, Charles E., and Ellis, Belvin B., to Westinghouse Electric Corporation. Magnetic core structures. 3,477,053, Cl. 336-212.
- Burlington Industries, Inc.: *See—*
  - Jinnette, Allen J., 3,476,580.
- Burman & Sons Limited: *See—*
  - Ward, Benjamin, 3,475,984.
- Burney, Charles F., to Sylvania Electric Products, Inc. Optical intrusion detection system using dual beam peripheral scanning. 3,476,947, Cl. 250-224.
- Burrell, Donald V. Clips for use in anchoring outlet and switch boxes. 3,476,343, Cl. 248-216.
- Burton, Derek Rodney, to United Kingdom of Great Britain and Northern Ireland, Minister of Technology in Her Britannic Majesty's Government of. Cooling apparatus employing carbon dioxide. 3,475,918, Cl. 062-165.
- Burton, John Thomas. Weatherproof cover for swimming pools and the like. 3,475,768, Cl. 004-172.
- Burton, Robert M., and Harland, Glen E., to General Motors Corporation. Miniature power circuit assembly. 3,476,981, Cl. 317-100.
- Bush, Jack A., and Shaull, Stanley D., to Microdot Inc., mesne. Mold die construction for seal rings. 3,475,790, Cl. 018-036.
- Buswell, Richard F., to United Aircraft Corporation. Hydrogen generator including desulfurization with diffused hydrogen feedback. 3,476,535, Cl. 048-094.
- Buswell, Richard F., Setzer, Herbert J., and Sederquist, Richard A., to United Aircraft Corporation. Hydrogen generator including desulfurization with low pressure hydrogen feedback. 3,476,534, Cl. 048-094.
- Butt, Faye E.: *See—*
  - Roberts, Gwyneth M., Butt, Faye E., Baklien, Asbjorn, Gregory, Jocelyn M., and Kuiper, Jan 3,476,546.
- C.A.V. Limited: *See—*
  - Kellett, Eric, 3,475,907.
  - Kemp, Kenneth Albert Walters, and Wheeler, Terence Redvers, 3,476,050.
  - Kemp, Kenneth Albert Walters, 3,476,134.
  - Long, Stanley Thomas, 3,475,955.
- Cain, Cornelius K., to McNeil Laboratories, Incorporated. Pyrazino [2,3-β] pyrazines. 3,476,754, Cl. 260-250.
- Calgon Corporation: *See—*
  - Carothers, Robert O., 3,476,155.
- Califano, Francesco Paolo: *See—*
  - Steele, Martin C., and Califano, Francesco Paolo 3,477,041.
- California Institute Research Foundation: *See—*
  - Goetz, Alexander, 3,475,951.
- Calistrat, Mircea, to Koppers Company, Inc. Article actuated pneumatic separator. 3,476,380, Cl. 271-032.
- Callahan, James J., to McCord Corporation. Divisional lubricant feeder with bypass means. 3,476,214, Cl. 184-007.
- Callegari, Louis G. Snap-on removable can plugs. 3,476,284, Cl. 220-024.
- Callegari, Luciano: *See—*
  - Ferrari, Agostino, Callegari, Luciano, and Rivetta, Gianfranco 3,476,886.
- Cammarata, Italo: *See—*
  - Vecchio, Martino, Lodi, Luciano, Fattore, Vittorio, and Cammarata, Italo 3,476,817.
- Camossi, Carlo. Method for making vibration dampening and shock absorbing support. 3,476,851, Cl. 264-229.
- Campbell, Donald J., to Chicago Musical Instrument Co. Conversion of tonal character of aural signals. 3,476,863, Cl. 084-001.01
- Campbell, Douglas Gordon. Cartridge holding hair grooming device. 3,476,124, Cl. 132-147.
- Campbell, Duncan B., to General Motors Corporation. Electric drive motor logic control system. 3,477,002, Cl. 318-227.
- Campbell, James R. Honeycomb core panel mounting and connecting system. 3,476,422, Cl. 287-189.36
- Campbell, John M., and Miller, Arthur J., to Carrier Corporation. Inlet casing assembly for turbomachine. 3,476,487, Cl. 415-134.
- Canadian Patents and Development Limited: *See—*
  - Goodman, Ronald H., Bettens, Arsene H., and Josling, Clifford A., 3,476,939.
- Canadian Westinghouse Company, Limited: *See—*
  - Blythe, Allan L., 3,477,014.
- Canalizo, Carlos R., to Otis Engineering Corporation. Gas lift valve. 3,476,135, Cl. 137-155.
- Canavan, Daniel M.Artist's easel and carrying case. 3,476,456, Cl. 312-231.
- Caplan, Richard, to Technautics Corporation. Underwater structures. 3,475,915, Cl. 061-069.
- Carando Machine Works: *See—*
  - McCoy, Thomas A., 3,476,289.
- Carbond Corporation: *See—*
  - Corley, William G., and Sermon, George T., 3,476,677.
- Carbonneau, Rene R., to Ray Plastic Inc. Spring actuated pump type repeating gun. 3,476,100, Cl. 124-027.
- Carborundum Company, The: *See—*
  - Downie, Peter M., 3,476,323.
  - Kohnken, Kent H., 3,476,324.
- Cardenas, Armando: *See—*
  - Huber, Victor R., and Cardenas, Armando 3,476,168.
- Cardwell, Robert E.: *See—*
  - Burgess, Paul N., Cardwell, Robert E., and Remski, Frank R. 3,476,956.
- Carlson, Burnette J., and Johnson, John H., to TRW Inc. Linear ball bushing. 3,476,445, Cl. 308-006.
- Carlson, John W., to Speed-O-Print Business Machines Corporation. Duplicating machines. 3,476,381, Cl. 271-036.
- Carlson, Richard A., to General Motors Corporation. Alternator-rectifier control circuit. 3,476,950, Cl. 290-038.
- Carlson, Robert O., to SCM Corporation. Ventilated sound-reducing enclosure for a teleprinter. 3,476,210, Cl. 181-033.
- Carnall, Edward, Jr., to Eastman Kodak Company. Optically useful elements of hot pressed lithium fluoride doped magnesium oxide and method of forming same. 3,476,690, Cl. 252-300.
- Carney, John L., Jr., and Dugge, Richard H., to ACF Industries, Incorporated. Apparatus for automatically opening and closing hatch covers. 3,476,042, Cl. 105-377.
- Carothers, Robert O., to Calgon Corporation. Use of turbulence suppressing agents in water jet looms. 3,476,155, Cl. 139-127.
- Carrier Corporation: *See—*
  - Campbell, John M., and Miller, Arthur J., 3,476,487.
- Carroll, John F., Jr., to Eastman Kodak Company. Magnetic tape. 3,476,596, Cl. 117-239.
- Carrow, Donald J.: *See—*
  - Verdol, Joseph A., and Carrow, Donald J. 3,476,686.
- Carson, Don B.: *See—*
  - Heinze, Walter W., Jones, Evan A., and Carson, Don B. 3,476,283.
- Carson, Frank J.: *See—*
  - Ritter, George F., Jr., Carson, Frank J., and Hymore, Frank J. 3,476,540.
- Carson Laboratories, Inc.: *See—*
  - Weeks, Richard F., 3,476,483.
- Carta, Mario: *See—*
  - Ferrara, Gianfranco, Del Fa', Clemente, Carta, Mario, and Ciccu, Raimondo 3,476,243.
- Carter, Cecil O.: *See—*
  - Hutson, Thomas, Jr., and Carter, Cecil O. 3,476,825.
- Carter, Leewood C.: *See—*
  - Mullen, Edward K., and Carter, Leewood C. 3,476,406.
- Cascade Corporation: *See—*
  - Dixon, Thomas E., Faust, Donald M., and Frey, Max, 3,476,016.
- Case, John William, Crowder, Norman Frederic, and White, Wilfred Arthur Stephen, to Imperial Chemical Industries Limited. Treatment of textiles. 3,476,504, Cl. 008-138.

- Cashen, Terry F., and Hermelin, Marc S. Furniture. 3,476,497, Cl. 297-232.
- Cassella Farbwerke Mainkur Aktiengesellschaft: *See—*
  - Von Brachel, Hanswilli, and Engelhardt, Fritz, 3,476,717.
- Castellano, John: *See—*
  - Rudzitis, Karl, Castellano, John, and Wolz, Rudolph G. 3,476,475.
- Caterpillar Tractor Company: *See—*
  - Fangman, Charles N., 3,476,020.
- Cavaterra, Enrico, and Ferlazzo, Natale, to Montecatini Edison S.p.A. Catalytic oxidation of olefins to aldehydes. 3,476,810, Cl. 260-604.
- Cease, Vincent J., to Continental Oil Company. Oil-soluble sulfonic acids and process for manufacture thereof. 3,476,800, Cl. 260-505.
- Celanese Corporation: *See—*
  - Gibson, Baylor D., and Berne, Hans Jorg Otto, 3,475,896.
  - Pritchard, Ruth, 3,476,832.
  - Quynn, Richard G., 3,475,771.
- Center, Donald R., to Saraband Properties, Inc., mesne. Tire stud gun. 3,475,806, Cl. 029-212.
- Centraline Laboratorium Przemyslu Koncentratow Spozywczych: *See—*
  - Pazola, Zdzislaw, Switek, Henryk, Janicki, Jozef, and Michnikowska, Wanda, 3,476,646.
- Centre National de la Recherche Scientifique: *See—*
  - Foex, Marc, and Delmas, Robert, 3,476,907.
- Centre National de Recherches Metallurgiques: *See—*
  - Pirlet, Robert, 3,475,859.
  - Ledune, Jacques, and Nilles, Gaul, 3,476,550.
- Cepluch, Dale B. Assembly of elements supporting a bowling alley or the like. 3,476,387, Cl. 273-051.
- Cerutti, Giovanni: *See—*
  - Ricciardi, Giuseppe, and Cerutti, Giovanni 3,476,300.
- Ceskoslovenska Akademie ved: *See—*
  - Wichterle, Otto, 3,476,499.
- Chaboseau, Jacques, and Mech, Christian, to Societe Rateau. Axial thrust devices for rotating machines. 3,476,449, Cl. 308-010.
- Chambert, Lars Axel, to AB Svenska Maskinverken. Pump with spherical pump housing. 3,476,488, Cl. 415-182.
- Chan, Yum T., to Hughes Aircraft Company. Voltage controlled crystal oscillator. 3,477,039, Cl. 331-116.
- Charlton, Richard E., Jr., and McDaniel, Rupert A., to West Point-Pepperell, Inc. Method of making a needled composite sheet. 3,476,626, Cl. 156-148.
- Chartrand, Fernand, to Ridge Nassau Corporation. Lever type lock. 3,476,425, Cl. 292-113.
- Chatillon Societa Anonima Italiana per le Fibre Tessili Artificiali S.p.A.: *See—*
  - LoMonaco, Sergio, Melacini, Paolo, Borsini, Giancarlo, Magagnin, Luigi Ciligot, and Visani, Francesco, 3,476,727.
- Chauvin, Yves: *See—*
  - Cuzin, Daniel, Chauvin, Yves, and Lefebvre, Gilles 3,476,731.
- Chazelle, William H. Folding carrier for building materials. 3,476,431, Cl. 294-003.5
- Chemische Fabrik Kalk G.m.b.H.: *See—*
  - Jenkner, Herbert, 3,476,839.
- Chemische Werke Huls A.G.: *See—*
  - Berg, Gerhard, Blumel, Harald, and Glathe, Manfred, 3,476,642.
  - Binder, Gerhard, and Nordsiek, Karl-Heinz, 3,476,721.
  - Muller, Karl Adolf, Engel, Frederico, and Gude, Armin, 3,476,711.
  - Streck, Roland, and Seeliger, Wolfgang, 3,476,730.
- Chemische Werke Witten GmbH: *See—*
  - Huelsmann, Hans-Leo, and Renckhoff, Gustav, 3,476,785.
- Chesarek, Donald J., and Reynolds, Zack D., to International Business Machines Corporation. Display system. 3,476,973, Cl. 315-018.
- Chevron Research Company: *See—*
  - de Vries, Louis, 3,476,716.
  - Hampton, John W., 3,476,684.
- Chicago Dryer Company: *See—*
  - Roberts, Harold G., 3,476,492.
- Chicago Metallic Sash Company: *See—*
  - Jahn, Reinhardt H., 3,475,869.
- Chicago Musical Instrument Co.: *See—*
  - Campbell, Donald J., 3,476,863.
- Chikamasa, Hiroshi, and Aso, Kotaro, to Fuji Photo Film Co., Ltd. Method of adding and mixing. 3,476,363, Cl. 259-008.
- Childers, Clifford W.: *See—*
  - Gruver, Jerry T., and Childers, Clifford W. 3,476,829.
- Chilman, John Alfred: *See—*
  - Davies, Stuart Duncan, and Chilman, John Alfred 3,476,486.
- Chirco, Peter R., to Huck Manufacturing Company. Clearance tool assembly. 3,475,945, Cl. 072-391.
- Chitayat, Anwar K., to OPTOmechanisms, Inc. Alignment means for photo repeat machine. 3,476,476, Cl. 355-001.
- Chomerics, Inc.: *See—*
  - Ehrreich, John E., and Avery, Donald H., 3,476,530.
- Christenson, Howard W., to General Motors Corporation. C-6 Hydrostatic tractor transmission. 3,475,903, Cl. 060-019.
- Christian, Rodney E., and Taudvin, Peter C., to Traub Company, The, mesne. Casting method with laser beam melting of levitated mass. 3,476,170, Cl. 164-048.
- Christiansen, Godtfred Kirk, to Interlego A.G. Toy cranes. 3,475,851, Cl. 046-040.
- Chromalloy American Corporation: *See—*
  - Vogelman, Joseph Herbert, Stephenson, Kenrick, and Feinerman, Bernard, 3,476,882.
- Chu, Chang K., to Westinghouse Electric Corporation. Geometry of shorted-cathode-emitter for low and high power thyristor. 3,476,992, Cl. 317-235.
- Church, Warren C., to Lane Company Inc., The. Reclining chair. 3,476,495, Cl. 297-083.
- Churchill, Ralph, Jr., and Flock, Henry H., to Parker-Hanifin Corporation. Speed variable piston and cylinder arrangements. 3,476,014, Cl. 091-394.
- Ciancio, Peter G. Saddle support. 3,476,25[illegible], Cl. 211-013.
- Ciba Corporation: *See—*
  - Bencze, William Laszlo, 3,476,767.
- Ciccu, Raimondo: *See—*
  - Ferrara, Gianfranco, Del Fa', Clemente, Carta, Mario, and Ciccu, Raimondo 3,476,243.
- Cincinnati Industries, Inc.: *See—*
  - Krehnbrink, Lewis W., 3,476,644.
- Clairol Incorporated: *See—*
  - Flax, Martha A., 3,476,123.
- Clark, Kendall, Herrmann, Karl E., and Klein, William A., to International Business Machines Corporation. Die casting of core windings. 3,477,051, Cl. 336-065.
- Clark, Paul D., to Delbar Products, Incorporated. Remote control mirror system. 3,476,464, Cl. 350-299.
- Clarke, Jesse E., to Autoquip Corporation. Turning table for metal coils and the like. 3,476,267, Cl. 214-001.
- Clarke, John F., to Texas Instruments, Incorporated. Means to vapor deposit on a tubular substrate. 3,476,080, Cl. 118-044.
- Clarke, John F., and Adams, Clyde M., Jr., to Texas Instruments, Incorporated. Method and apparatus for coating metallic core with a metallic coating. 3,476,579, Cl. 117-051.
- Clarke, John F., and Coad, Brian C., to Texas Instruments, Incorporated. Clad metal. 3,475,811, Cl. 029-472.3
- Claussen, Paul-Otto, to Schloemann Aktiengesellschaft. Stretching machines. 3,475,943, Cl. 072-297.
- Clements, David H., to Rohm & Haas Company. Linear polymers with polyfunctional telomers and derivatives thereof. 3,476,697, Cl. 260-022.
- Cloran, Thomas S., to Crucible Inc. Method for removing oxides from alloy powder. 3,476,548, Cl. 075-000.5
- Close, Garth, to United Steel and Wire Company. Grocery store checkstand. 3,476,215, Cl. 186-001.
- Coad, Brian C.: *See—*
  - Clarke, John F., and Coad, Brian C. 3,475,811.
- Coastal Dynamics Corporation: *See—*
  - Krantz, John D., 3,476,144.
- Coberly, Clarence J., and Brown, Francis Barton, to Kobe, Inc. Friction-type joint with uniform wall thickness. 3,476,413, Cl. 285-332.3
- Cockerill-Ougree-Providence: *See—*
  - Levaux, Jean Marie, 3,476,321.
- Codman, Daniel S., Jr. Convertible boat hull. 3,475,773, Cl. 009-001.
- Coe Laboratories, Incorporated: *See—*
  - Molnar, Eugene J., 3,476,854.
- Cohen, Milton S., to Graphic Sciences, Inc. Acoustic insulating material. 3,476,209, Cl. 181-033.
- Cole, James Edward George, to McMurdo Instrument Company Limited, The. Connectors for laminar electric cables. 3,477,059, Cl. 339-099.
- Coleman, Richard L., to Texaco Inc. Solvent refining of hydrocarbon mixtures with N-methyl-2-pyrrolidone. 3,476,680, Cl. 208-326.
- Colgate-Palmolive Company: *See—*
  - Elkind, Vincent Theodore, Yurko, Joseph Aloyus, and Hunter, Robert Tweedy, 3,476,583.
  - Jatul, Bernard, and Costello, Christopher, 3,476,853.
  - Mees, Arthur Allan, and Olson, Frank Wesley, Jr., 3,476,489.
- Colibri Lighters: *See—*
  - Retzler, William, 3,476,158.
- Colijn, Hendrik, to United States Steel Corporation. Apparatus for charging a blast furnace continuously. 3,476,374, Cl. 266-027.
- Collister, Frank C. Key bolt. 3,476,007, Cl. 085-003.
- Colman, Derek: *See—*
  - Mize, Jack P., and Colman, Derek 3,476,991.
- Colvin, Donald, and Schultz, Vernon A., to Simplex Manufacturing Co. Electrolytic cell for chlorine production. 3,476,675, Cl. 204-242.
- Combustion Engineering, Inc.: *See—*
  - Ferrin, Charles R., 3,475,950.
  - Fisher, Richard L., Jr., and McLain, James L., 3,475,813.
- Commercial Carpet Corporation: *See—*
  - Saunders, James L., and Polimeni, Vincent, 3,475,871.
- Commissariat a l'Energie Atomique: *See—*
  - Bathellier, Andre, 3,476,787.
- Commonwealth of Australia: *See—*
  - Metcalfe, Kenneth A., Gillespie, Frank C., and Smith, Ian E., 3,476,935.
- Commonwealth Scientific and Industrial Research Organization: *See—*
  - Mills, John Cunningham, 3,476,936.
- Communications Satellite Corporation: *See—*
  - Wachs, Marvin R., 3,477,042.
- Complett S.p.A.: *See—*
  - Conti, Cesare L., 3,476,064.

- Condrac, Robert F., to United States Steel Corporation. Pipe joint. 3,476,414, Cl. 285-349.
- Conger, Ben D., to Electronic Associates Inc. Integrator rate test system for an analog computer. 3,476,924, Cl. 235-183.
- Conn, Leroy J. Rigid shaft coupler. 3,476,420, Cl. 287-119.
- Connelly, John A. Twin bar chain saw bar. 3,476,160, Cl. 143-032.
- Conrac Corporation: *See*—
  - Howard, Robert C., and Baker, Dale C., 3,476,482.
- Consolidated Papers, Inc.: *See*—
  - Langlois, Arthur C., and Ziegenhagen, Paul D., 3,475,956.
- Conti, Cesare L., to Complett S.p.A. Hosiery linking machine. 3,476,064, Cl. 112-025.
- Continental Can Company, Inc.: *See*—
  - Jacob, Yuash Pete, 3,476,239.
  - Kinnavy, James W., 3,476,287.
- Continental Corporation: *See*—
  - Birck, Michael J., 3,476,883.
- Continental/Moss-Fordin, Inc.: *See*—
  - Merkel, Charles M., Salmon, Joe E., and Brugh, Thomas H., 3,475,879.
- Continental Oil Company: *See*—
  - Cease, Vincent J., 3,476,800.
- Cook, George W., to Thiokol Chemical Corporation. System for evaluation of irregularities on large surfaces. 3,475,954, Cl. 073-146.
- Cook, Peter. Ignition system. 3,476,098, Cl. 123-148.
- Copeland, John A., III, to Bell Telephone Laboratories, Incorporated. Circuits using an LSA oscillator as an amplifier. 3,477,029, Cl. 330-005.
- Cordary, Bruce J.: *See*—
  - Van Note, Charles O., Jr., and Cordary, Bruce J. 3,476,415.
- Corley, William G., and Sermon, George T., to Carbond Corporation. Electrolytic grinding tools. 3,476,677, Cl. 204-294.
- Corman, Erskine G.: *See*—
  - Tiger, Emil," Corman, Erskine G., and Reick, Kenneth R. 3,476,479.
- Cormier, Louis A. Kit for constructing ladders and the like. 3,476,211, Cl. 182-022.
- Cornelius, Archie J., to Phillips Petroleum Company. Oil production by gas drive from adjacent strata. 3,476,185, Cl. 166-274.
- Cornelius Company, The: *See*—
  - Cornelius, Richard T., 3,476,395.
- Cornelius, Richard T., to Cornelius Company, The. Shaft seal assembly. 3,476,395, Cl. 277-035.
- Cornelius, Victor W. Multi-seal press. 3,476,632, Cl. 156-366.
- Cornett, William D., Jr. Solids spreader for agricultural aircraft. 3,476,337, Cl. 244-136.
- Cornish, Rodney H., and Finlayson, Lawrence A., to IIT Research Institute. Reaction frame for restraining high loads. 3,476,281, Cl. 220-003.
- Corwin, Frank R., to United Aircraft Corporation. Method of making microcircuit pattern masks. 3,476,658, Cl. 204-011.
- Cory Corporation: *See*—
  - Eisendrath, David C., 3,476,137.
- Costello, Christopher: *See*—
  - Jatul, Bernard, and Costello, Christopher 3,476,853.
- Cotton Silk & Man-Made Fibres Research Association: *See*—
  - Parish, Geoffrey James, 3,476,629.
- Council for Tobacco Research-U.S.A.: *See*—
  - Walton, Richard Rhodes, 3,476,119.
- County Commerical Cars Limited: *See*—
  - Davey, Joseph, 3,475,989.
- Cowell, Robert L., and May, Richard L., to Mattel, Inc. Means for automatically actuating an animating device in an oscillating toy. 3,475,856, Cl. 046-232.
- Cowles, Craig H., to Aluminum Specialty Company. Electrostatic coating device. 3,476,082, Cl. 118-635.
- Cowlishaw, Frank, and Town, Frank, to Dobson, W. E., & F Limited. Transportable load-carrying appliances. 3,476,275, Cl. 214-517.
- Cox, George W., Garcia, Lloyd J., and Reyes, Edward, to Aggregate Plant Products Company. Mobile concrete batching plant. 3,476,270, Cl. 214-002.
- Coyle, Robert D. Vehicle with shock absorbing mounting. 3,476,434, Cl. 296-035.
- Crawford Fitting Company: *See*—
  - Dodge, Harry G., 3,476,347.
  - Lennon, Fred A., Zahuranec, Emery J., Dodge, Harry G., and Szohatzky, Zoltan, 3,475,948.
- Crawford & Russell Incorporated: *See*—
  - Stovall, William B., 3,476,522.
- Creek, Kenneth O., and Leiby, David W., to United States of America, Atomic Energy Commission. Apparatus for checking distortion of a reactor fuel element. 3,475,825, Cl. 033-174.
- Crellin, Peter Lewis, to Sylvania Electric Products, Inc. Automatic switching control circuit. 3,476,953, Cl. 307-125.
- Cremer, Joseph: *See*—
  - Kern, Winfried, Cremer, Joseph, and Harnisch, Heinz 3,476,510.
- Crickmer, Charles D. Polish rod grip clamp. 3,475,798, Cl. 024-249.
- Crishal, Joan M., and Sandstrom, James P., to TRW Semiconductors Inc. Fabrication of diffused junction semiconductor devices. 3,476,620, Cl. 148-187.
- Critcher, John L.: *See*—
  - Barr, Irwin R., and Critcher, John L. 3,476,048.
- Croft, Philip: *See*—
  - Travis, Alfred, and Croft, Philip 3,476,371.
- Croix, Louise S., and Szur, Alex J., to Air Reduction Company, Incorporated. Halomethyl fluoroisopropyl ethers as anesthetic agents. 3,476,860, Cl. 424-342.
- Crone, John M., Jr.: *See*—
  - Brandenburg, John T., Crone, John M., Jr., and Suggitt, Robert M. 3,476,821.
- Cronin, Frederick W.: *See*—
  - Meinhardt, Johannes, and Schubert, Paul, 3,476,628.
- Crosby, David W., to British Nylon Spinners Limited. Needled nonwoven pile fabrics and method of making same. 3,476,636, Cl. 161-067.
- Cross, Alexander D., to Syntex Corporation. Tetrahydropyranyl and tetrahydrofuranyl esters of morphine and morphinans. 3,476,757, Cl. 260-268.
- Crowder, Norman Frederic: *See*—
  - Case, John William, Crowder, Norman Frederic, and White, Wilfred Arthur Stephen 3,476,504.
- Crowther, Harold, to Lucas, Joseph. (Industries) Limited. Gear pumps. 3,476,055, Cl. 103-126.
- Crucible Inc.: *See*—
  - Cloran, Thomas S., 3,476,548.
  - Dulis, Edward J., 3,476,616.
- Crump, Lawrence R.: *See*—
  - Turnage, Rodger Elmo, Jr., Stebbins, Jerald T., and Crump, Lawrence R. 3,476,974.
- Cukale, Edward: *See*—
  - Puczynski, Stanley, 3,475,860.
- Culbertson, Harry M., and Buchanan, Alan David, to Monsanto Chemicals (Australia) Limited. Production of high-ortho novolak resins. 3,476,707, Cl. 260-057.
- Culbertson, Richard, and Ostresh, Harvey Richard, to General Electric Company. Handle assembly for cartridge tape player. 3,476,392, Cl. 274-004.
- Cunder, Joseph: *See*—
  - Lally, Robert E., and Cunder, Joseph 3,476,786.
- Cunha, Joseph J., to Cunha Products, Inc. Detachable running gear for vehicles. 3,476,405, Cl. 280-415.
- Cunha Products, Inc.: *See*—
  - Cunha, Joseph J., 3,476,405.
- Cunningham, Thomas W., to Baldwin, D. H., Company. Low-pitched voices in electronic organs. 3,476,866, Cl. 084-001.26
- Currier, John A., to Scott & Williams, Inc., mesne. Knitted products. 3,475,925, Cl. 066-187.
- Curry, Charles E. Gas analyzer. 3,476,516, Cl. 023-254.
- Curry, Jack A. Eyeglass temples having adjustable ear-engaging bars. 3,476,467, Cl. 351-123.
- Curtland, Floyd E., to Lear Siegler, Inc. Reel assembly. 3,476,330, Cl. 242-045.
- Cussen, Arthur J., to Electro-Optical Industries, Inc. Temperature control arrangement. 3,476,914, Cl. 219-499.
- Cuzin, Daniel, Chauvin, Yves, and Lefebvre, Gilles, to Institut Francais du Petrole des Carburants et Lubrifiants. Stereospecific polymerization of 2-methyl-1, 3-pentadiene. 3,476,731, Cl. 260-094.2
- Cyrway, Edward N., Jr., and Metalsky, William J., to Abar Corporation. Electric resistance heating elements. 3,476,862, Cl. 013-025.
- Czaloun, Giovanni Gunter. Adhesion drive for automotive cable cars. 3,476,039, Cl. 104-226.
- Czarnecki, Jerzy J., and Arkwright, Peter, to De Laval Trubine Inc. Pump. 3,476,053, Cl. 103-044.
- Dahan, Paul C., to Mobil Oil Corporation. Apparatus and process for confining floating liquid products. 3,476,246, Cl. 210-083.
- Daimler-Benz Aktiengesellschaft: *See*—
  - Buching, Franz, 3,476,224.
  - Buhl, Wilhelm, 3,476,396.
  - Forster, Hans-Joachim M., and Katz, Klaus, 3,476,203.
  - Grieb, Hubert J., 3,476,334.
  - Harting, Werner, 3,476,178.
  - Hitzelberger, Erwin, 3,476,435.
  - Wilfert, Karl, 3,476,402.
- Dall'Asta, Gino:*See*—
  - Natta, Giulio, Dall'Asta, Gino, and Mazzanti, Giorgio 3,476,728.
- Damen, Leonardus W. J.: *See*—
  - Stahl, Dieter, Strolenberg, Otto Karel, and Damen, Leonardus W. J. 3,476,723.
- Darbo, Rolf E. Proportioning rule. 3,475,824, Cl. 033-137.
- Data Devices, Inc.: *See*—
  - Teuber, Anthony J., 3,475,782.
- Datamark, Inc.: *See*—
  - Wassermann, Carl I., 3,476,044.
- Daumiller, Guenther, Kastning, Ernst-Guenther, and Naarmann, Herbert, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of unsaturated isobutylene graft copolymers. 3,476,831, Cl. 260-879.
- Davenport, James D.: *See*—
  - Gorman, Marvin, Haney, Michael E., Jr., Lively, David H., and Davenport, James D. 3,476,648.
- Davey, Joseph, to County Commerical Cars Limited. Driving transmissions for the front and rear wheels of a vehicle. 3,475,989, Cl. 074-606.
- Davie, William R., to United States Steel Corporation. Antifoulant composition and method. 3,476,577, Cl. 117-033.
- Davies, James A., and Sherman, Philip B., to Texaco Inc. Method of solvent recovery in refining hydrocarbon mixtures with N-methyl-2-pyrrolidone. 3,476,681, Cl. 208-326.

- Davies, Stuart Duncan, and Chilman, John Alfred, to Dowty Rotol Limited. Gas turbine engines. 3,476,486, Cl. 415.068.
- Davis, David Maurice. Shell for cleaning a shotgun. 3,476,047, Cl. 102-039.
- Davis, James B. Fixed dorsal electrode system for electrocardiography. 3,476,104, Cl. 128-002.06
- Davis, John A., Jr., to Marathon Oil Company. Method of designing a soluble oil slug for an oil recovery process. 3,476,184, Cl. 166-273.
- Davis, John H., to Bell Telephone Laboratories, Incorporated. Digital clamping of pulse code modulated television signals. 3,476,875, Cl. 178-007.1
- Davison, Bartholomew J., and Peracchio, Aldo A., to United Aircraft Corporation. Swirl input fluid amplifier. 3,476,131, Cl. 137-081.5
- Davy and United Engineering Company: *See*—
  - Stubbs, Dennis, Wilson, William Gordon, and Bathory, Bela Istvan, 3,476,276.
- Dawson, Robert J.: *See*—
  - Krebs, Luis Soto, and Dawson, Robert J. 3,476,610.
- De Cat, Arthur Henri: *See*—
  - Monbaliu, Marcel Jacob, De Cat, Arthur Henri, and Van Poucke, Raphael Karel 3,476,763.
- Decaux, Jacques E., to Societe de Construction d'Appareils pour Gaz a l'Bau & Gaz Industriels. Reforming oven for a synthetic gas production plant. 3,476,519, Cl. 023-277.
- Deering, Edwin Naul, and Jones, Wickliffe, to Jones, R. A., and Company, Incorporated. Apparatus for erecting cartons. 3,476,024, Cl. 093-053.
- Deering Milliken Research Corporation: *See*—
  - Weitzel, Edward W., and Hamby, Charles H., 3,476,581.
- de Gaudermaris, Gabriel: *See*—
  - Rabilloud, Guy, Sillion, Bernard, and de Gaudermaris, Gabriel 3,476,590.
- Deghenghi, Romano: *See*—
  - Vezina, Claude, and Deghenghi, Romano 3,476,779.
- De Hart, Arnold O., Ferchland, Harold W., and Lenz, Robert G., to General Motors Corporation. In process gauge. 3,475,826, Cl. 033-174.
- Dejoux, Jean Veran, to Reisini, Nicolas. Viewer for animated strips. 3,476,470, Cl. 352-068.
- De Lain, Robert L. Chalk marking device. 3,475,822, Cl. 033-087,
- Delaney, Robert V.: *See*—
  - Binder, Herbert, and Delaney, Robert V. 3,475,971.
- De Laval Trubine Inc.: *See*—
  - Czarnecki, Jerzy J., and Arkwright, Peter, 3,476,053.
- Delbar Products, Incorporated: *See*—
  - Clark, Paul D., 3,476,464.
- Del Fa', Clemente:*See*—
  - Ferrara, Gianfranco, Del Fa', Clemente, Carta, Mario, and Ciccu, Raimondo 3,476,243.
- Delfino Bros.: *See*—
  - Delfino, Frank, and Pool, Robert E., 3,475,841.
- Delfino, Frank, and Pool, Robert E., said Delfino assor of 50% and said Pool assor of 5% to Delfino Bros. Scraper with eccentrically driven teeth. 3,475,841, Cl. 037-141.
- de Lisle, August Louis, to Phoenix Gems, Inc., mesne. Storage of seeds to produce a cereal product free of frag count and toxic residue. 3,476,568, Cl. 099-093.
- Delmas, Robert: *See*—
  - Foex, Marc, and Delmas, Robert 3,476,907.
- Demag-Lauchhammer, Maschinen -und Stahlbau GmbH: *See*—
  - Heitzer, Heinrich, 3,475,842.
- Demler, Henry William, Sr., to AMP Incorporated. Tubular connection device. 3,476,412, Cl. 285-322.
- Demol, Pierre, and Mathis, Pierre, to Solvay & Cie. Plural coated waterproof support. 3,476,587, Cl. 117-076.
- Dentek, Inc.: *See*—
  - Strauss, Walter S., and Shedlarski, George A., 3,476,181.
- Denver Fire Clay Company, The: *See*—
  - Saiki, Hiroshi, 3,476,368.
- DePew, Chester C., to Tridair Industries. Filler cap assembly. 3,476,285, Cl. 220-025.
- Depoorter, Henri, and Libeer, Marcel Jan, to Gevaert-Agfa N.V. Light-sensitive element containing methine dyes. 3,476,558, Cl. 096-001.7
- De Robertis, Joseph, to Sealectro Corporation. Circuitry system. 3,476,983, Cl. 317-101.
- De Serre, Charles G., and Johnson, Thomas L., to International Business Machines Corporation. Tens transfer mechanism with provision for end- around carry. 3,476,920, Cl. 235-137.
- De Vincent, Patsy, to General Motors Corporation. Steering wheel. 3,476,897, Cl. 200-061.57
- Devisme, Jacques J. V. C. System for assembling components for the construction of partitions or ceilings. 3,475,875, Cl. 052-581.
- Devol, George C. Binary-code controlled apparatus. 3,476,266, Cl. 214-001.
- de Vries, Louis, to Chevron Research Company. Conjugated $SO_2$-diene copolymers. 3,476,716, Cl. 260-079.3
- De Wulf, Maurice J., to United States Steel Corporation. Variable-pitch wire crimping means. 3,476,157, Cl. 140-105.
- Diamond Shamrock Corporation: *See*—
  - Altscher, Siegfried, and Fetscher, Charles A., 3,476,710.
  - Lally, Robert E., and Cunder, Joseph, 3,476,786.
- Diemas, John L., to Layne & Bowler Pump Company. Suction pump vortex control. 3,476,038, Cl. 103-220.
- Dingley, Regoer Gavin: *See*—
  - Friedl, Arno Rudolph, and Dingley, Regoer Gavin 3,476,503.
- Dinsmore, D. J., Company: *See*—
  - Wood, Edward H., 3,475,864.
- Ditlinger, Richard J., and Toal, James J., to Bendix Corporation, The. End fitting for tie-bar. 3,475,988, Cl. 074-579.
- Dixon, Thomas E., Faust, Donald M., and Frey, Max, to Cascade Corporation. Apparatus for producing coordinated, simultaneous actuation of multiple rams. 3,476,016, Cl. 091-411.
- Dobson, W. E., & F Limited: *See*—
  - Cowlishaw, Frank, and Town, Frank, 3,476,275.
- Dodge, Harry G.: *See*—
  - Lennon, Fred A., Zahuranec, Emery J., Dodge, Harry G., and Szohatzky, Zoltan 3,475,948.
- Dodge, Harry G., to Crawford Fitting Company. Pipe vise adaptor. 3,476,347, Cl. 248-316.
- Doland, George D. Multi-stage distillation unit for water and power plant system. 3,476,653, Cl. 202-173.
- Dole Valve Company, The: *See*—
  - Dolter, Paul A., 3,476,146.
  - Franz, Rudolph J., 3,476,316.
- Dolter, Paul A., to Dole Valve Company, The. Anti-knock flow valve. 3,476,146, Cl. 137-599.
- Doner, Claude Edward: *See*—
  - Bailey, Robert Linton, and Doner, Claude Edward 3,477,032.
- Donges, Hans: *See*—
  - Stumpe, August Christian, Seelig, Anton, and Donges, Hans 3,476,979.
- Doremus, R. Ellsworth, and Doremus, Richard E., to Golden Gate Manufacturing Company. Valve with stop and washout. 3,476,138, Cl. 137-323.
- Doremus, Richard E.: *See*—
  - Doremus, R. Ellsworth, and Doremus, Richard E. 3,476,138.
- Dorfman, Ralph I., to Syntex Corporation. Pest control compositions and method. 3,476,859, Cl. 424-317.
- Dornaus, Reinert F., to Price-Pfister Brass Manufacturing Company. Single-handled valve structure. 3,476,149, Cl. 137-625.4
- Dorsett, Henry Carl, to Friden, Inc. Board insertion and extraction system. 3,476,258, Cl. 211-041.
- Dorsey, Francis E., to Maul Bros. Inc. Lehr for heat treating glass. 3,476,543, Cl. 065-349.
- Dorsey, James C., to Du Pont de Nemours, E. I., and Company. Colorimetric indicator control of polyamide salt stoichiometry. 3,476,713, Cl. 260-078.
- Dosch, Peter, and Heck, Reinhard H., to Heberlein & Co. AG. Volume measurement of thread defects by directly integrating signals representing variations in thread thickness. 3,477,021, Cl. 324-061.
- Dougherty, Thomas F., Jr., Mac Nutt, William J., and McKelvey, William J., to Bell Telephone Laboratories, Incorporated. Control circuitry for crossbar switches. 3,476,980, Cl. 317-157.
- Douglas, Raymond J., Handler, Elliott, Iwasaki, Cedric E., Kossoff, Joseph, and Ryan, John W., to Mattel, Inc. Self-propelled figure toy combination. 3,475,857, Cl. 046-247,
- Dow Chemical Company, The: *See*—
  - Brown, William E., Heitz, Roberg G., and Levine, Charles A., 3,476,602.
  - Wineland, William H., 3,476,639.
- Dow Corning Corporation: *See*—
  - Renwick, William C., 3,476,842.
- Downie, Peter M., to Carborundum Company, The. Nozzle. 3,476,323, Cl. 239-590.5
- Dowty Rotol Limited: *See*—
  - Davies, Stuart Duncan, and Chilman, John Alfred, 3,476,486.
- Dresser Industries, Inc.: *See*—
  - Dunton, John T., 3,475,978.
  - Kunderman, Fred K., 3,476,485.
- Drever, James Ross, Zimmerman, Philip D., and Brink, Allan B., to Amsted Industries Incorporated. Method for making ceramic articles. 3,476,847, Cl. 264-102.
- Dros, Barbara, and Engel, Eric, to SCM Corporation, mesne. Butter-flavored salt. 3,476,572, Cl. 099-143.
- Dubin, Dennis S., and Frost, Solomon, to U.S. Composites Corporation. Reinforced iron base alloys containing boron fibers. 3,476,529, Cl. 029-183.5
- Duckworth, Byron R., to Sperry Rand Corporation. Quasi-square wave generating apparatus. 3,476,957, Cl. 307-261.
- Ducommun, Georges, and Adler, Karl, to Biviator S.A. Electric current limiter circuit for limiting electric motor torque in a tool. 3,477,007, Cl. 318-434.
- Dudley, John Trevor, to Sanky, Joseph, & Sons Limited. Change speed means for use with tilting cabs. 3,476,202, Cl. 180-077.
- Dugge, Richard H.: *See*—
  - Carney, John L., Jr., and Dugge, Richard H. 3,476,042.
- Duiser, Johannes Aart, and Rieke, Johannes Cornelis, to Algemene Kunstzijde Unie N.V. Process for the phase separation spinning of yarns from fiber-forming polyparaphenylene oxides. 3,476,849, Cl. 264-203.
- Dulis, Edward J., to Crucible Inc., mesne. Stainless steel bars and rods of improved cross-sectional hardness uniformity. 3,476,616, Cl. 148-012.
- Dumore Company, The: *See*—
  - Steibel, James P., 3,475,972.
- Dunfee, James D. Hydrostatic bearing unit. 3,476,444, Cl. 308-003.5

- Dunipace, Donald W.: *See—*
  - Mc Cown, William E., Gladieux, Norman K., and Dunipace, Donald W. 3,476,539.
- Dunlap, Laurel E. Tool guide support and saw guard. 3,476,161, Cl. 144-144.
- Dunton, John T., to Dresser Industries, Inc. Fire hydrant. 3,475,978, Cl. 074-089.15
- Du Pont de Nemours, E. I., and Company: *See—*
  - Bottorf, Donald Thomas, and Moore, Edward Joseph, 3,476,846.
  - Bowman, Warren, Roberts, Dennis M., and Sellger, Paul G., 3,476,694.
  - Braun, Robert A., 3,476,771.
  - Dorsey, James C., 3,476,713.
  - Engelhardt, Eugene Herman, 3,476,827.
  - Frazer, August Henry, and Memger, Wesley, Jr., 3,476,719.
  - Hoegger, Erhard F., 3,476,714.
  - Johnson, Donald R., Nadeau, Richard G., Nieuweboer, Gerrit, and Truett, William L., 3,476,515.
  - Magat, Eugene E., and Sharkey, William H., 3,475,898.
  - Miller, William C., and Trutna, William R., 3,476,751.
  - Nacci, George Raymond, 3,476,595.
  - Sauer, John C., 3,476,527.
  - Squires, Paul Herman, 3,476,627.
  - Wagner, Philip Lyle, 3,476,715.
  - Wolf, Herbert Otto, 3,476,806.
  - Wolfe, Kenneth R., 3,476,408.
- Duvall, Lee J. Preparation of lightweight rock products. 3,476,843, Cl. 264-043.
- Dyck, Gerhard J. Lawn sprinkler nozzle. 3,476,322, Cl. 239-515.
- Dynamics Corporation of America: *See—*
  - Smith, Peter B., 3,477,013.
- Dynamit Nobel Aktiengesellschaft: *See—*
  - Gawlick, Heinz, and Stahlmann, Rudolf, 3,476,049.
  - Menke, Helmut, and Roh, Peter, 3,476,623.
  - Schade, Gerhard, and Blaschke, Franz, 3,476,708.
- Eakins, William V. Combination stepladder and vertically movable platform. 3,476,212, Cl. 182-103.
- Eastern Company, The: *See—*
  - Pastva, John V., Jr., 3,476,410.
- Eastman Kodak Company: *See—*
  - Carnall, Edward, Jr., 3,476,690.
  - Carroll, John F., Jr., 3,476,596.
  - Guillet, James E., 3,476,813.
  - Hargis, Charles W., and Young, Howard S., 3,476,747.
  - Hoyle, Vinton A., Jr., and McConnell, Wayne V., 3,476,772.
  - Kiefer, John E., and Touey, George P., 3,476,120.
  - Loria, Anthony, 3,476,563.
  - Marvin, Edgar S., 3,476,471.
  - Nerwin, Hubert, 3,476,474.
  - Schneeberger, Donald R., and Seaberg, Leonard J., 3,476,472.
- Eaton Yale & Towne, Inc.: *See—*
  - Hass, David P., and Horan, Ralph P., 3,476,225.
  - Lauer, Ernst H., 3,476,219.
  - Line, Gerald D., 3,476,093.
  - Richardson, Robert W., 3,476,403.
  - Schultz, Wilfred R., 3,476,142.
- Ecke, George G., and Kolka, Alfred J., to Ethyl Corporation. Di(2,6-diisopropylphenyl) mono halo phosphite or (thio) phosphate. 3,476,838, Cl. 260-960.
- Eckert, George W., to Texaco Inc. Jet fuel composition. 3,476,533, Cl. 044-058.
- Eckert, Lewis W., to Armstrong Cork Company. Method and apparatus for spraying insulation. 3,476,318, Cl. 239-010.
- Economy Linen & Towel Service, Inc.: *See—*
  - Feldman, De Neal J., Feldman, Jack J., and Moscowitz, Milton J., 3,475,828.
- Edington, Robert Alexander: *See—*
  - Aldred, Derek Harry, and Edington, Robert Alexander 3,476,701.
- Edwards, Boggs & Boggs Co., Inc.: *See—*
  - Edwards, William H., 3,475,855.
- Edwards, Jacque R., to Bucks County Enterprises, Inc. Stacking arrangement for pie trays. 3,476,262, Cl. 211-126.
- Edwards, William H., to Edwards, Boggs & Boggs Co., Inc. Toy trundle device. 3,475,855, Cl. 046-220.
- Efimenko, Viktor Ivanovich. Moving iron ratiometer. 3,477,025, Cl. 324-140.
- Ehrenfels, Alfred L., and Kahl, Paul C., to Maxson Electronics Corporation. Pivot for snap-acting switch. 3,476,898, Cl. 200-067.
- Ehrreich, John E., and Avery, Donald H., to Chomerics, Inc. Iron based conductive filler for plastics. 3,476,530, Cl. 029-192.
- Eichner Organisation G.m.b.H.: *See—*
  - Spiroch, Franz, and Beckert, Werner, 3,476,299.
- Eigeman, Jacobus, and Tuinhof, Anton Dirk, to U.S. Philips Corporation. Housing and lead structure for high frequency semiconductor device operation. 3,476,990, Cl. 317-235.
- Eisenberg, Alfred. Packaging and shipping container for eggs and the like. 3,476,306, Cl. 229-040.
- Eisendrath, David C., to Cory Corporation. Controlled chemical feeder with antidiffusion means. 3,476,137, Cl. 137-268.
- Electric & Musical Industries Limited: *See—*
  - Kreuchen, Karl Heinz Robert Christian, 3,476,967.
- Electro-Clamp Corporation: *See—*
  - Lawlor, Robert E., 3,477,060.
- Electro-Optical Industries, Inc.: *See—*
  - Cussen, Arthur J., 3,476,914.
- Electronic Associates Inc.: *See—*
  - Conger, Ben D., 3,476,924.
- Elkind, Vincent Theodore, Yurko, Joseph Aloyus, and Hunter, Robert Tweedy, to Colgate-Palmolive Company. Method for rendering fibrous material oil and water repellent. 3,476,583, Cl. 117-063.
- Ellicott Machine Corporation: *See—*
  - Von Bolhar, Edgar J., 3,476,498.
- Elliott Associated Developments Limited: *See—*
  - Elliott, Herbert James, 3,476,441.
- Elliott Brothers (London) Limited: *See—*
  - Jablonski, Jan, 3,477,027.
- Elliott, Herbert James, to Elliott Associated Developments Limited. Transport of sulphur. 3,476,441, Cl. 302-066.
- Ellis, Belvin B.: *See—*
  - Burkhardt, Charles E., and Ellis, Belvin B. 3,477,053.
- Ellis, Joe D. Vehicle air conditioner with electrical drive means. 3,475,919, Cl. 062-228.
- Elstein, Jacob K. Surgical instrument for removal of thin layers. 3,476,112, Cl. 128-305.
- Elton Industries, Inc.: *See—*
  - Seitz, Russell, 3,477,037.
- Emerson Electric Co.: *See—*
  - Wallace, John H., 3,477,000.
- Emneus, Nils Ingvar Arne, Gelotte, Erik B., Rehn, Nils G., and Soderqvist, Bjorn G. F., to Pharmacia Fine Chemicals AB. Method for separating substances of different molecular sizes from a viscose solution of said substances. 3,476,737, Cl. 260-112.
- Engel, Eric: *See—*
  - Dros, Barbara, and Engel, Eric 3,476,572.
- Engel, Frederico: *See—*
  - Muller, Karl Adolf, Engel, Frederico, and Gude, Armin 3,476,711.
- Engelhardt, Eugene Herman, to Du Pont de Nemours, E. I., and Company. Coating compositions comprising polysilicic acid, selected organic polymers, and selected silicones. 3,476,827, Cl. 260-825.
- Engelhardt, Fritz: *See—*
  - Von Brachel, Hanswilli, and Engelhardt, Fritz 3,476,717.
- Englander Company, Inc., The: *See—*
  - Fasanella, George S., 3,475,769.
- English Electric Company Limited, The: *See—*
  - Heard, Jeffery Gerald, and Bennett, Roy Brian, 3,476,961.
- Ennulat, Dietrich F., and Zollweg, Robert J., to Westinghouse Electric Corporation. Capillary ceramic discharge lamp with closure means therefor. 3,476,969, Cl. 313-184.
- Entwicklungsring Sued GmbH: *See—*
  - Madelung, Gero Otto, 3,475,906.
- Epperly, William R.: *See—*
  - Robertson, Jerry L., and Epperly, William R. 3,476,822.
- Erdle, Jack A. Laminated electrical bus bar. 3,476,871, Cl. 174-088.
- Erdley, Harold R. Envelope opening device. 3,476,043, Cl. 083-575.
- Erdmann, Dietrich: *See—*
  - Mohr, Gunther, Erdmann, Dietrich, Niethammer, Konrad, Lust, Siegmund, Schneider, Gerhart, and Jacobi, Ernst 3,476,545.
- Erdmann, Piers Kaspar, to Beteiligungs- und Patentverwaltungs G.m.b.H. Circuit arrangement to integrate voltages or currents. 3,477,035, Cl. 330-104.
- Erickson, Karl H., to Amerock Corporation. Appliance latch. 3,476,424, Cl. 292-066.
- Ericsson, Gunnar Arthur: *See—*
  - Sellman, Ulf Carl Iwar, and Ericsson, Gunnar Arthur 3,476,208.
- Eriez Manufacturing Co.: *See—*
  - Merwin, Robert F., and Weiss, Fred W., 3,476,232.
- Erpenbach, Heinz: *See—*
  - Sennewald, Kurt, Erpenbach, Heinz, Rehberg, Heinrich, and Viertel, Gunter 3,476,776.
- ESB Incorporated: *See—*
  - Krebs, Luis Soto, and Dawson, Robert J., 3,476,610.
- Esposito, Charles R.: *See—*
  - Stanonis, David J., King, Walter D., and Esposito, Charles R. 3,475,823.
- Essex International, Inc.: *See—*
  - Pipes, Dennis A., and Smith, La Verne, 3,476,491.
- Esso Research and Engineering Company: *See—*
  - Brois, Stanley J., 3,476,833.
  - Buchanan, William L., and Straight, Harry F., Jr., 3,476,494.
  - Farrissey, William J., Jr., 3,476,816.
  - Griffin, Lindsay I., Jr.; 3,476,608.
  - Kearby, Kenneth K., and Lang, Robert J., 3,476,508.
  - Pine, Lloyd Albert, 3,476,803.
  - Richardson, James T., and Toups, Stanford S., 3,477,018.
  - Robertson, Jerry L., and Epperly, William R., 3,476,822.
  - Schroeder, Herbert F., 3,476,848.
  - Straight, Harry F., Jr., and Kivlen, John A., 3,476,180.
  - Welty, Albert B., Jr., Johnson, Russell R., and Atwood, Glenn A., 3,476,513.
- Estkowski, Michael H., to V-M Corporation. Tone arm set-down control means. 3,476,393, Cl. 274-010.
- Estvan, Charles, Jr. Dynamic display apparatus. 3,475,845, Cl. 040-106.51
- Etablissement Public: Centre National de la Recherche Scientifique: *See—*
  - Nomarski, Georges, 3,476,457.

- Etherington, Robert W., Jr., and Liauw, Koei-Liang, to Mobil Oil Corporation. Catalytic oxidative dehydrogenation of ketones. 3,476,808, Cl. 260-586.
- Ethyl Corporation: *See—*
  - Ecke, George G., and Kolka, Alfred J., 3,476,838.
  - Johnston, James D., and Sims, Leslie L., 3,476,807.
  - Meltsner, Bernard R., 3,476,814.
  - Zaweski, Edward F., and Filbey, Allen H., 3,476,774.
- Eucker, Robert A.: *See—*
  - Williams, Harrison L., and Eucker, Robert A. 3,476,868.
- European Atomic Energy Community (Euratom): *See—*
  - Jehenson, Pierre Simon, and Bauwens, Jean, 3,476,614.
- Evans Products Company: *See—*
  - Matyas, Tibor, and Moorehead, John P., 3,476,041.
- Ewing, Keith E.: *See—*
  - Herbst, Darwyn L., and Ewing, Keith E. 3,477,055.
- Executors of James Mills Limited: *See—*
  - Travis, Alfred, and Croft, Philip, 3,476,371.
- Faber, Peter, to Rheinisch-Westfalisches Elektrizitatswerk Aktiengesellschaft. Method of making an electrode grid. 3,476,604, Cl. 136-036.
- Fabric Bearings Limited: *See—*
  - Spence, Iain S., 3,475,923
- Faccone, Joseph A.: *See—*
  - Winchester, Charles M., Faccone, Joseph A., and Webb, Stephen F. 3,476,591.
- Facer, Walter K., and Rigo, Jane H. M., to United States Steel Corporation. Fluidizing chamber. 3,476,081, Cl. 118-620.
- Fair, Donald G., and Anderson, Bertil T., to Sundstrand Corporation. Motor control circuit with deceleration control means. 3,477,006, Cl. 318-331.
- Fairbanks, Daniel F., Larson, Warren L., Randall, Robert N., and Wong, James, to National Research Corporation. Niobium-titanium superconductor. 3,476,615, Cl. 148-011.5
- Fairchild Camera and Instrument Corporation: *See—*
  - Lehrer, William I., 3,476,593.
- Falbel, Gerald: *See—*
  - Jankowitz, Gerald, and Falbel, Gerald 3,476,938.
- Faltin, Hans G., and Faltin, William G. Foldable mailing piece. 3,476,307, Cl. 229-069.
- Faltin, William G.: *See—*
  - Faltin, Hans G., and Faltin, William G. 3,476,307.
- Fangman, Charles N., to Caterpillar Tractor Company. Engine block with case hardening of cylinder walls. 3,476,020, Cl. 092-169.
- Farbenfabriken Bayer Aktiengesellschaft: *See—*
  - Fest, Christa, and Hammann, Ingeborg, 3,476,490.
  - Schon, Nikolaus, Witte, Josef, and Pampus, Gottfried, 3,476,735.
- Farensbach, Harry B. Electric circuit employing phase control. 3,476,958, Cl. 307-305.
- Farrissey, William J., Jr., to Esso Research and Engineering Company. Vinylcyclohexenols. 3,476,816, Cl. 260-617.
- Farrow, Cecil W., to Bell Telephone Laboratories, Incorporated. Automatic D.C. offset compensation circuit for automatic equalizer. 3,477,043, Cl. 333-018.
- Fasanella, George S., to Englander Company, Inc., The. Dormitory furniture ensemble. 3,475,769, Cl. 005-002.
- Fattore, Vittorio: *See—*
  - Vecchio, Martino, Lodi, Luciano, Fattore, Vittorio, and Cammarata, Italo 3,476,817.
- Fauber, Eugene M., to Sinclair Research, Inc. Asphalt blends of hydrocarbon precipitated asphalts with hydrocarbon aromatic extracts. 3,476,679, Cl. 208-045.
- Faust, Donald M.: *See—*
  - Dixon, Thomas E., Faust, Donald M., and Frey, Max 3,476,016.
- Fauth, John M., and Scott, Donald S., to Singer Company, The. Motor with clutch-brake arrangements. 3,476,962, Cl. 310-076.
- Feed Service Corporation: *See—*
  - Anderson, Philip Carlton, and Rapp, Janet Lorraine Cooper, 3,476,565.
- Feinerman, Bernard: *See—*
  - Vogelman, Joseph Herbert, Stephenson, Kenrick, and Feinerman, Bernard 3,476,882.
- Fejko, Andrew. Combined ball game, gum dispenser and die. 3,476,391, Cl. 273-124.
- Feldhoff, Heinrich, Becker, Klaus, and Schlereth, Georg, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Multipart casing for an electrical machine. 3,476,963, Cl. 310-089.
- Feldman, Alfred P. Two-dimensional structure encoding typewriter. 3,476,311, Cl. 234-017.
- Feldman, De Neal J., Feldman, Jack J., and Moscowitz, Milton J., to Economy Linen & Towel Service, Inc. Steam and air garment finisher. 3,475,828, Cl. 034-022.
- Feldman, Jack J.: *See—*
  - Feldman, De Neal J., Feldman, Jack J., and Moscowitz, Milton J. 3,475,828.
- Felix, Ernst, to Zellweger Ltd. Apparatus and method for avoiding unnecessary cuts by electronic yarn cleaners. 3,476,329, Cl. 242-036.
- Fend, Frederick A., to Xerox Corporation. Font indicator. 3,476,473, Cl. 353-028.
- Fenselau, Allan H.: *See—*
  - Moffatt, John G., and Fenselau, Allan H. 3,476,794.
- Ferchland, Harold W.: *See—*
  - De Hart, Arnold O., Ferchland, Harold W., and Lenz, Robert G. 3,475,826.
- Ferguson Radio Corporation Limited: *See—*
  - Westwood, David John Sidney, 3,477,011.
- Ferlazzo, Natale: *See—*
  - Cavaterra, Enrico, and Ferlazzo, Natale 3,476,810.
- Ferrania, S.p.A.: *See—*
  - Mariani, Brunello, Guizzi, Alberto, and Tisselli, Eugenio, 3,476,564.
- Ferrara, Gianfranco, Del Fa', Clemente, Carta, Mario, and Ciccu, Raimondo. Pneumatic conduit type electrostatic separator. 3,476,243, Cl. 209-129.
- Ferrari, Agostino, Callegari, Luciano, and Rivetta, Gianfranco, to Societa Italiana Telecommunicazioni Siemens S.p.A. Foldable telephone set. 3,476,886, Cl. 179-103.
- Ferrari, Gianfranco, and Garberi, Angelo, to Montecatini Edison S.p.A. Process for the preparation of methanylic acid. 3,476,801, Cl. 260-508.
- Ferrin, Charles R., to Combustion Engineering, Inc. Chromatograph sample system. 3,475,950, Cl. 073-023.1
- Fest, Christa, and Hammann, Ingeborg, to Farbenfabriken Bayer Aktiengesellschaft. Methods of using particular carbamic acid esters for insecticidal and acaricidal purposes. 3,476,490, Cl. 424-300.
- Fetscher, Charles A.: *See—*
  - Altscher, Siegfried, and Fetscher, Charles A. 3,476,710.
- Fetzer, Hans: *See—*
  - Wilke, Werner, and Fetzer, Hans 3,475,894.
- Fifer, Rolland L. Transportable sewage treating apparatus. 3,476,250, Cl. 210-199.
- Filak, Carl M.: *See—*
  - Murphy, Alfred M., Filak, Carl M., Long, Thomas P., and Brown, John A., Jr. 3,475,942.
- Filbey, Allen H.: *See—*
  - Zaweski, Edward F., and Filbey, Allen H. 3,476,774.
- Fincham, Christopher J. B., to National Research Corporation. Electrical device. 3,476,557, Cl. 075-222.
- Finkel Outdoor Products, Inc.: *See—*
  - Militano, Vincent S., 3,476,169.
- Finlayson, Lawrence A.: *See—*
  - Cornish, Rodney H., and Finlayson, Lawrence A. 3,476,281.
- Finn, Lawrence A., to Wheelees, Inc. Skates. 3,476,399, Cl. 280-011.25
- Finucane, Thomas P.: *See—*
  - Block, Harry W., Adams, Joan M., and Finucane, Thomas P. 3,476,571.
- Fiorentino, Anthony J.: *See—*
  - Gelting, Raymond L., Fiorentino, Anthony J., and Rogers, Arthur C. 3,476,609.
- Fischer, Artur. Motion transmitting arrangement combined with toy construction kit. 3,475,849, Cl. 046-016.
- Fisher, John M., to Goodrich, B. F., Company, The. Inflatable ramp. 3,476,338, Cl. 244-137.
- Fisher, Richard L., Jr., and McLain, James L., to Combustion Engineering, Inc. Welding process involving post weld formation of molten pool. 3,475,813, Cl. 029-480.
- Fitch, Frederick T.: *See—*
  - Smith, Jean G., and Fitch, Frederick T. 3,476,691.
- Flanagan, James L., to Bell Telephone Laboratories, Incorporated. Transmitting system. 3,476,880, Cl. 179-001.5
- Flannigan, William J. Planter shroud and planter. 3,475,858, Cl. 047-034.
- Flax, Martha A., to Clairol Incorporated. Cosmetic container with single post rotatable mounting for plural trays and ball swivel mount for mirrored lid for the top tray. 3,476,123, Cl. 132-079.
- Fleischhacker, Joseph F., and Kawamoto, Frank T., to Tescom Corporation. Apparatus for flame spraying powder. 3,476,320, Cl. 239-085.
- Fleischmann, Nicholas. Heat and sound insulation. 3,476,634, Cl. 161-038.
- Fleissner, Heinz, to Vepa AG. Heat-treatment apparatus. 3,476,367, Cl. 263-003.
- Fletcher, Milton. Adjustable lamp structure. 3,476,931, Cl. 240-081.
- Flock, Henry H.: *See—*
  - Churchill, Ralph, Jr., and Flock, Henry H. 3,476,014.
- FMC Corporation: *See—*
  - Hogya, Bernard J., and Tillis, William J., 3,476,624.
- Foex, Marc, and Delmas, Robert, to Centre National de la Recherche Scientifique. Process for obtaining a permanent flow of plasma. 3,476,907, Cl. 219-121.
- Fogt, Thomas H.: *See—*
  - Brinkman, Thomas J., Fogt, Thomas H., Long, George B., and Whistler, Charles C., Jr. 3,475,829.
- Foley, Norman G. Electric hair dryer. 3,476,121, Cl. 132-009.
- Foltz, Elwood L.: *See—*
  - Nelson, Carl E., Baer, John E., and Foltz, Elwood L. 3,476,858.
- Foltz, Robert E., to Lawrence Brothers, Inc. Floating pin arrangement for a butt hinge. 3,475,784, Cl. 016-169.
- Fontaine, Marc F.: *See—*
  - Haynes, Stewart, Jr., and Fontaine, Marc F. 3,476,183.
- Foote, Daniel J., to Master Lock Company. Padlocks with dual locking lever mechanisms. 3,475,930, Cl. 070-038.
- Foote, Daniel J., to Master Lock Company. Padlock shackle guards. 3,475,931, Cl. 070-054.
- Foote, Daniel J., to Master Lock Company. Hasp staple and plate assembly. 3,476,429, Cl. 292-281.
- Ford, David Julian: *See—*
  - Pearson, Arthur Stanley, and Ford, David Julian 3,476,008.

Ford Motor Company: *See—*
Thompson, Tom H., 3,476,145.
Forster, Hans-Joachim M., and Katz, Klaus, to Daimler-Benz Aktiengesellschaft. Servo-steering system for motor vehicles. 3,476,203, Cl. 180-079.2
Fortenberry, Jerry A. Nosepiece for rocking connection to ophthalmic mounting. 3,476,468, Cl. 351-130.
Fosler, John R., and Sharpe, Verlos G., to General Motors Corporation. Washing machine support assembly. 3,476,253, Cl. 210-365.
Foster Wheeler Corporation: *See—*
Whitney, Gilbert Clinton, Jr., and Whitman, Raymond Clair, 3,475,938.
Fouche, Jean Clement Louis, to Rhone-Poulenc S.A.11-(4-Piperidyl) dibenzo [a,d] cycloheptadienes. 3,476,758, Cl. 260-293.
Fouche, Jean Clement Louis, to Rhone-Poulenc S.A.10-and 11-(4-piperidyl) dibenzo[a,d] cycloheptatrienes. 3,476,761, Cl. 260-293.4
Foy, Peter S. Theatrical transportation apparatus. 3,476,385, Cl. 272-024.
Francis, Ray D., to Swift & Company. Bacon slicer weight control. 3,476,198, Cl. 177-050.
Frank, Mark H., to General Motors Corporation. Belt-type drive with adjustable pulley tensioner. 3,475,982, Cl. 074-242.15
Frankenstein Group Limited: *See—*
Hawkins, James Mitchell, 3,475,774.
Franz, Rudolph J., to Dole Valve Company, The. Vacuum regulator. 3,476,316, Cl. 237-002.
Fraser, Richard S., and Jone, Paul Y., to Weyerhaeuser Company. Process of forming coated wood products. 3,476,585, Cl. 117-071.
Frazer, August Henry, and Memger, Wesley, Jr., to Du Pont de Nemours, E. I., and Company. 1,3,4-Thiadiazole-1,3,4-oxadiazole polymers. 3,476,719, Cl. 260-078.4
Fredriksen, Thorbjoern R., to International Business Machines Corporation. Hybrid closed loop stepping motor control system including acceleration and deceleration control. 3,476,996, Cl. 318-138.
Freeman, Forrest F. Pressure sensing device. 3,476,899, Cl. 200-084.
Freeport Sulphur Company: *See—*
Sennett, Paul S., Turner, Kenneth Lamar, and Morris, Horton Harold, 3,476,576.
French, Marcus: *See—*
Buff, Fred, French, Marcus, and Pollock, Warren 3,476,845.
Frey, Max: *See—*
Dixon, Thomas E., Faust, Donald M., and Frey, Max 3,476,016.
Fricke, Louis H., Jr.: *See—*
Gioia, Steve C., and Fricke, Louis H., Jr. 3,477,034.
Friden, Inc.: *See—*
Dorsett, Henry Carl, 3,476,258.
Lundquist, Ingemar H., 3,476,657.
Friedl, Arno Rudolph, and Dingley, Regoer Gavin, to International Synthetic Company Limited, The. Treatment of wool. 3,476,503, Cl. 008-128.
Friesen, Gordon A., International, Inc.: *See—*
Friesen, Gordon A., and Sproull, Reavis C., 3,475,767.
Friesen, Gordon A., and Sproull, Reavis C., to Friesen, Gordon A., International, Inc. Sanitary disposable receiver for liquid and solid materials, especially human wastes. 3,475,767, Cl. 004-110.
Friess, Klaus, Ulrich, Richard, and Kritikos, Athanasios, to Siemens Aktiengesellschaft. Ferromagnetic manganese-magnesium-zinc ferrite-body with rectangularly shaped hysteresis loop and process for its manufacture. 3,476,688, Cl. 252-062.6
Frindel, Louis Jean-Marie, to Nord-Aviation Societe Nationale de Constructions Aeronautiques. Arc spot-welding. 3,476,908, Cl. 219-127.
Frisk, Knut Olov, and Gustafsson, Karl Paul, to AB Tico. Power-limiting device for a machine provided with two or more working components. 3,476,017, Cl. 091-412.
Fritz, Jacques: *See—*
Schwachhofer, Ghislain, and Fritz, Jacques 3,476,835.
Frontier Chemical Company: *See—*
Penner, Siegfried E., and Malone, Alvis L., III, 3,476,792.
Frost, Solomon: *See—*
Dubin, Dennis S., and Frost, Solomon 3,476,529.
Fuji Photo Film Co., Ltd.: *See—*
Chikamasa, Hiroshi, and Aso, Kotaro, 3,476,363.
Tsunoda, Yoshimasa, Iwata, Hideo, Okada, Tsutomu, and Aso, Kotaro, 3,475,801.
Fuji Shashin Film Kabushiki Kaisha: *See—*
Sato, Masamichi, Honjo, Satoru, and Takimoto, Masaaki, 3,476,659.
Yasuda, Yukio, 3,476,560.
Fuji Transport Industry Co., Ltd.: *See—*
Kishimoto, Akira, 3,475,980.
Fujii, Tadayoshi: *See—*
Namba, Yasuhiro, Kessoku, Kazuo, Fujii, Tadayoshi, Ogura, Toshinobu, and Yoshiyama, Ichiro 3,476,028.
Fujisawa, Kiyoshi: *See—*
Matsuoka, Shigeru, Fujisawa, Kiyoshi, Masai, Shohachi, and Asami, Atsumi 3,475,891.
Fukata, Yasuo: *See—*
Oshima, Shintaro, Nakagome, Yukio, and Fukata, Yasuo 3,476,878.
Fukui, Kenichi, Kagiya, Tsutomu, Narisawa, Shizuo, Maeda, Taneo, and Kobata, Mikio, to Sumitomo Chemical Company, Ltd. Process for producing novel polyester amides. 3,476,712, Cl. 260-078.
Fuller, Ralph A., and Snodgrass, Earl D., to Waterman, Herrick. Packing apparatus. 3,475,877, Cl. 053-026.
Fuller, Ralph A., and Snodgrass, Earl D., to Waterman, Herrick, and. Carton handling machine. 3,476,023, Cl. 093-039.1
Furst, Andor, and Herzog, Ernst Gerhard, to Hoffmann-La Roche Inc.3-Keto-$\Delta^{1,4}$-,3-keto-$\Delta^{4,6}$-or 3-keto- $\Delta^{1,4,6}$-19-alkylidene steroids. 3,476,781, Cl. 260-397.3
Furst, Andor, Muller, Marcel, and Saucy, Gabriel, to Hoffmann-La Roche Inc.11-Oxygenated-10α-steroids. 3,476,746, Cl. 260-239.55
Furukawa, Junji, Morikawa, Hiroyuki, and Yamamoto, Ryuzo, to Mitsubishi Petrochemical Co., Ltd. Process for producing cyclododecatriene-(1,5,9). 3,476,820, Cl. 260-666.
Fuse, Motoyosi: *See—*
Morita, Hiroshi, Fuse, Motoyosi, Iwasaki, Sadaya, Yamagishi, Hisato, Kawaguchi, Syojiro, and Tanigawa, Koichiro 3,476,976.
Gaffney, William J. Soap bar holder. 3,476,254, Cl. 211-013.
Gagnon, Donald W.: *See—*
Bayer, John W., Gagnon, Donald W., Grinonneau, William C., and Santiago, Edgardo 3,476,732.
Gallant, Reginald R., and Loftus, Robert M., to Olivetti Underwood Corporation. Overdraft signal controlling devices. 3,476,312, Cl. 235-060.
Galle, Edward M., to Hughes Tool Company. Lubricant relief valve for rock bits. 3,476,195, Cl. 175-228.
Gangloff, Jean. Pump. 3,476,054, Cl. 103-087.
Garberi, Angelo: *See—*
Ferrari, Gianfranco, and Garberi, Angelo 3,476,801.
Garcia, Lloyd J.: *See—*
Cox, George W., Garcia, Lloyd J., and Reyes, Edward 3,476,270.
Garcia, Pedro Arnau. Shoes and like footwear and components thereof. 3,475,837, Cl. 036-024.5
Gardner, Earl E.: *See—*
Hackett, John W., and Gardner, Earl E. 3,476,079.
Garland, Thomas H.: *See—*
Yamada, Yoshikazu, and Garland, Thomas H. 3,476,562.
Garrett, John M.: *See—*
Miles, Clifford V., and Garrett, John M. 3,476,989.
Garrison, Langdon I., to Swenson, John, Granite Co., Inc., The. Panel for composite wall structure. 3,476,912, Cl. 219-213.
Gassner, Harold. Rail fasteners. 3,476,317, Cl. 238-290.
Gatti, Arno, to General Electric Company. Process for producing α-alumina whiskers. 3,476,613, Cl. 148-001.6
Gawlick, Heinz, and Stahlmann, Rudolf, to Dynamit Nobel Aktiengesellschaft. Practice ammunition. 3,476,049, Cl. 102-092.7
Gebel, Radames K. H., to United States of America, Air Force. Color matching system incorporating color analyzer. 3,476,132, Cl. 137-093.
Gebr. Pfeiffer Barbarossawerke AG.: *See—*
Schauer, Siegfried, 3,476,244.
Gebruder Buhler AG: *See—*
Rado, Antonio, and Tognazza Bruno G., 3,476,326.
Geiger, Eugene J., and Breen, Dale H., to International Harvester Company. Internal combustion engine piston with pre-stressed insert. 3,475,804, Cl. 029-156.5
Geller, Alan R., to International Business Machines Corporation. High speed multi-input adder. 3,476,923, Cl. 235-175.
Geller, Rodger E., to General Motors Corporation. Freezing device with helical actuator. 3,476,350, Cl. 249-071.
Gelotte, Erik B.: *See—*
Emneus, Nils Ingvar Arne, Gelotte, Erik B., Rehn, Nils G., and Soderqvist, Bjorn G. F. 3,476,737.
Gelson, Edward William: *See—*
Bugg, Alfred Edward, 3,475,834.
Gelting, Raymond L., Fiorentino, Anthony J., and Rogers, Arthur C., to United Aircraft Corporation. Fuel cell module. 3,476,609, Cl. 136-086.
General Aniline & Film Corporation: *See—*
Houser, Robert W., 3,476,940.
General Binding Corporation: *See—*
Staats, Henry N., 3,475,775.
General Dynamics Corporation: *See—*
Mantle, Peter J., and Hall, Arnold M., 3,476,069.
General Electric Company: *See—*
Aldrich, Richard W., and Holonyak, Nick, Jr., 3,476,993.
Bower, Arnold B., Jr., 3,476,438.
Boyles, Robert L., 3,475,899.
Culbertson, Richard, and Ostresh, Harvey Richard, 3,476,392.
Gatti, Arno, 3,476,613.
Gittinger, Norman C., 3,476,932.
Green, James, Jr., and Hauenstein, Max C., 3,476,331.
Greenwood, Allan N., 3,476,978.
Hallay, Alexander R., 3,476,977.
Howell, Edward K., 3,476,918.
Nasca, Anthony V., and Bacon, John F., 3,476,637.
Raphael, Thomas, and Johnson, William C., 3,476,589.
Vedder, Willem, and Schultz, John, Jr., 3,477,058.
Willyoung, David M., 3,476,964.
Willyoung, David M., 3,476,966.
Wingler, William C., 3,475,900.
General Foods Corporation: *See—*
Block, Harry W., Adams, Joan M., and Finucane, Thomas P., 3,476,571.
White, William V., Mahlmann, James P., and Stolz, Robert P., 3,476,566.
General Motors Corporation: *See—*
Agarwal, Paul D., 3,476,998.
Agarwal, Paul D., 3,476,999.

Ballou, Richard P., 3,476,949.
Beatenbough, Paul K., and Richards, Gary E., 3,476,018.
Born, Gerald C., and Wesson, Guy W., 3,476,417.
Bracken, Joseph W., Jr., and Hubble, William S., 3,476,173.
Brandes, Roy H., 3,475,970.
Bratten, Thomas A., and Naismith, Thomas D., 3,476,443.
Bright, James A., 3,476,056.
Brinkman, Thomas J., Fogt, Thomas H., Long, George B., and Whistler, Charles C., Jr., 3,475,829.
Brock, Eugene W., 3,476,975.
Burton, Robert M., and Harland, Glen E., 3,476,981.
Campbell, Duncan B., 3,477,002.
Carlson, Richard A., 3,476,950.
Christenson, Howard W., 3,475,903.
De Hart, Arnold O., Ferchland, Harold W., and Lenz, Robert G., 3,475,826.
De Vincent, Patsy, 3,476,897.
Fosler, John R., and Sharpe, Verlos G., 3,476,253.
Frank, Mark H., 3,475,982.
Geller, Rodger E., 3,476,350.
Glasford, Edmund J., 3,476,840.
Guernsey, Robert W., Ricketts, James M., and Zeek, Richard M., 3,476,174.
Gunlock, Donald E., 3,475,770.
Herbst, Darwyn L., and Ewing, Keith E., 3,477,055.
Hewko, Lubomyr O., 3,475,993.
Jacobs, James W., 3,475,920.
Johnson, Roger W., 3,476,676.
Kell, Nathaniel B., 3,475,994.
Kobrehel, Peter M., 3,475,933.
Le Masters, Paul D., 3,477,022.
Marquis, Donald Peter, 3,476,419.
Martyniuk, Ernest T., 3,476,547.
Phillips, Vaughan Mansel, 3,476,280.
Pietrzak, Joe P., and Strahan, Robert M., 3,475,921.
Pigeon, Dale W., and Root, Walter C., 3,477,046.
Pritchard, Paul B., 3,476,228.
Raby, Dallas J., 3,476,075.
Ristau, Theodore F., 3,476,345.
Rucins, Erik H., and Guernsey, Robert W., 3,476,094.
Schamel, Clyde H., 3,475,986.
Schroeder, Royal E., 3,476,904.
Schwing, Richard C., 3,475,917.
Sokol, Robert W., and Neal, Lonnie G., 3,475,975.
Stedfeld, Rowland L., 3,476,133.
Weisgerber, Thomas W., 3,476,136.
West, Charles E., Jr., and Schmidt, Jack W., 3,475,992.
Widmer, Paul, 3,476,430.
Williams, Lewis E., 3,476,021.
Williams, Russell C., 3,475,840.
General Technologies Corporation: *See—*
Milewski, John V., 3,476,641.
General Tire & Rubber Company, The: *See—*
Grover, Horace N., and Sommer, John G., 3,476,599.
Henley, Virgil E., 3,476,633.
Georgia-Pacific Corporation: *See—*
Bornstein, Leopold F., 3,476,706.
Markham, Aaron E., and Blackmore, Kenneth A. E., 3,476,740.
Georgian, Vlasios, and Kerwin, James F., to Smith Kline & French Laboratories. 6,6-Ethylene corticoids. 3,476,745, Cl. 260-239.55
Geppert, Albrecht: *See—*
Magner, Richard, and Geppert, Albrecht 3,476,985.
Gerard, Howard L., to Powell Electric Manufacturing Co. Motor operator for load break switch. 3,475,981, Cl. 074-143.
Germanton, Charles E., to Bell Telephone Laboratories, Incorporated. Combination lock. 3,475,932, Cl. 070-278.
Getz, Edward J.: *See—*
Mills, John E., and Getz, Edward J. 3,476,235.
Gevaert-Agfa N.V.: *See—*
Brinckman, Eric Maria, 3,476,578.
Depoorter, Henri, and Libeer, Marcel Jan, 3,476,558.
Vrancken, Marcel Nicolas, 3,476,937.
Gevaert Photo-Producten N.V.: *See—*
Monbaliu, Marcel Jacob, De Cat, Arthur Henri, and Van Poucke, Raphael Karel, 3,476,763.
Giannini, Umberto, and Bruckner, Germana, to Montecatini Edison S.p.A. Homopolymers and copolymers of unsaturated tertiary amines, and process for producing the same. 3,476,726, Cl. 260-089.7
Gibney, Grant Omer: *See—*
Wood, David Hugh, Jr., Gibney, Grant Omer, and Smith, Richard 3,476,567.
Gibson, Baylor D., and Berne, Hans Jorg Otto, to Celanese Corporation. Stabilizing yarn threadline during twisting. 3,475,896, Cl. 057-106.
Giddings & Lewis, Inc.: *See—*
Steiner, Daniel J., and Schneider, Cyril J., 3,475,998.
Wohlfeil, Jack A., 3,475,997.
Gielkens, Johannes W.: *See—*
Thoma, Jozef A., Gielkens, Johannes W., and Reichrath, Werner 3,476,664.
Gilchrist, Allan E., to SCM Corporation, mesne. Electrode assembly used in electrocoating hollow articles. 3,476,667, Cl. 204-181.
Gilles, Wallace, Yamasaki, George K., and Burger, J. C., to Westinghouse Electric Corporation. Hollow chathode electron discharge device for generating spectral radiation. 3,476,970, Cl. 313-209.
Gillespie, Frank C.: *See—*
Metcalfe, Kenneth A., Gillespie, Frank C., and Smith, Ian E. 3,476,935.
Gilmour, James, Jr. Axle mount. 3,476,416, Cl. 287-052.04
Gioia, Steve C., and Fricke, Louis H., Jr., to Monsanto Company. Zero supperssion circuit for differential amplifiers. 3,477,034, Cl. 330-069.
Girdner, William I., to Hewlett-Packard Company. Method of making an electromagnetic transducer. 3,475,815, Cl. 029-603.
Gittinger, Norman C., to General Electric Company. Rail vehicle location and control system. 3,476,932, Cl. 246-187.
Gittler, Frank L., to Bell Telephone Laboratories, Incorporated. Impurity diffusion source and method. 3,476,621, Cl. 148-189.
Gladieux, Norman K.: *See—*
Mc Cown, William E., Gladieux, Norman K., and Dunipace, Donald W. 3,476,539.
Glaesener, Ernest, to ARBED, Acieries Reunies de Burbach-Eich-Dudelange, S.A. Process for casting of metal from a refining furnace into a ladle. 3,476,549, Cl. 075-046.
Glaser, Donald A., to Berkeley Scientific Laboratories, Inc. Method and apparatus for dispensing measured quantities of liquids. 3,476,291, Cl. 222-076.
Glaser, Hermann: *See—*
Vogt, Wilhelm, and Glaser, Hermann 3,476,799.
Glasford, Edmund J., to General Motors Corporation. Method and apparatus for molding articles from thermoplastic sheet materials. 3,476,840, Cl. 264-025.
Glassey, Eugene A. Instrument for gauging liquid depth. 3,475,959, Cl. 073-296.
Glathe, Manfred: *See—*
Berg, Gerhard, Blumel, Harald, and Glathe, Manfred 3,476,642.
Glavan, Ivan. Pantograph. 3,475,819, Cl. 033-025.
Glaxo Laboratories Limited: *See—*
Smith, Gerald Arthur, and Phillipps, Gordon Hanley, 3,476,780.
Globe-Union Inc.: *See—*
Sabatino, Anthony, 3,476,611.
Godfrey, Arthur W.: *See—*
Oberender, Frederick G., Godfrey, Arthur W., and Wiley, Morris A. 3,476,685.
Goerz, David J., Jr., to Bechtel International Corporation, mesne. R.F. seal in microwave drier. 3,475,827, Cl. 034-001.
Goetz, Alexander, to California Institute Research Foundation. Device and process for collecting particulates from gases. 3,475,951, Cl. 073-028.
Goetz, George W., and Weinstein, Norman W., to Impact Casting Co., Inc. Methods of die casting materials of relatively high melting temperatures. 3,476,172, Cl. 164-133.
Goetzberger, Adolf, and Nicollian, Edward H., to Bell Telephone Laboratories, Incorporated. Amplifier using current conduction through wide gap layer. 3,477,033, Cl. 330-030.
Golden Gate Manufacturing Company: *See—*
Doremus, R. Ellsworth, and Doremus, Richard E., 3,476,138.
Golden, Harry, to Ideas for Auto and Bike Specialties, Inc. Plastic saddle and metal mounting rod and method of making same. 3,476,496, Cl. 297-195.
Golden, Raymond, Murzyn, Robert A., and Wilson, William E., to Bailey Meter Company. Flame detector for a multiple fuel-fired furnace. 3,476,945, Cl. 250-217.
Goodman, Ronald H., Bettens, Arsene H., and Josling, Clifford A., to Canadian Patents and Development Limited. Radioactive-source enclosure. 3,476,939, Cl. 250-106.
Goodrich, B. F., Company, The: *See—*
Fisher, John M., 3,476,338.
Huber, Victor R., and Cardenas, Armando, 3,476,168.
Schlatzer, Robert K., 3,476,722.
Goodyear Aerospace Corporation: *See—*
Penix, Ermal E., and Pfeiffer, Harry O., 3,476,197.
Gorby, Jack. Food canning machine. 3,476,037, Cl. 100-223.
Gorman, Marvin, Haney, Michael E., Jr., Lively, David H., and Davenport, James D., to Lilly, Eli, and Company. Process for pyrrolnitrin production. 3,476,648, Cl. 195-096.
Grace, W. R., & Co.: *See—*
Arnold, Roger F., 3,476,575.
Grady, Joseph E.: *See—*
Argoudelis, Alexander D., Grady, Joseph E., and Sayer, Gordon C. 3,476,738.
Graeff, Norwood Claude: *See—*
Shannon, Suel Grant, and Graeff, Norwood Claude 3,476,114.
Graeff, Norwood Claude, and Shannon, Suel Grant, to AMP Incorporated. Ligating implement with ligature severing means. 3,476,115, Cl. 128-326.
Graflex, Inc.: *See—*
Schreckendgust, Jay G., 3,476,029.
Grange, Arthur Savage, and Paton, John McDougall, to Torrington Company, The. Separating means for pillow block bearings. 3,476,450, Cl. 308-074.
Grant, John C., to Jackson, Byron, Inc. Pipe spraying device. 3,475,781, Cl. 015-210.
Graphic Sciences, Inc.: *See—*
Cohen, Milton S., 3,476,209.

- Gray, Donald M., Burhans, Hollis M., and Gray, Wendell H., to W.G.B. Oil Clarifier, Inc. Dual, pleated element, filter cartridge. 3,476,249, Cl. 210-188.
- Gray, Wendell H.: *See—*
  - Gray, Donald M., Burhans, Hollis M., and Gray, Wendell H. 3,476,249.
- Greasley, Eric Arthur, to Pressac Limited. Vehicular lamp holder. 3,476,928, Cl. 240-008.3
- Greco, Carl C., to Stauffer Chemical Company. Process for preparing carboxylic acid thioanhydrides. 3,476,784, Cl. 260-399.
- Green, James, Jr., and Hauenstein, Max C., to General Electric Company. Cord storage means and electrical appliance. 3,476,331, Cl. 242-085.1
- Greenwood, Allan N., to General Electric Company. Circuit interrupting means for a high voltage D-C system. 3,476,978, Cl. 317-011.
- Gregoire, Johannes H.C.M.A.: *See—*
  - Ottenheym, Johannes H., Thoma, Jozef A., and Gregoire, Johannes H.C.M.A. 3,476,665.
- Gregory, Jocelyn M.: *See—*
  - Roberts, Gwyneth M., Butt, Faye E., Baklien, Asbjorn, Gregory, Jocelyn M., and Kuiper, Jan 3,476,546.
- Grieb, Hubert J., to Daimler-Benz Aktiengesellschaft. Turbo-drive for high velocity helicopters. 3,476,334, Cl. 244-017.19
- Griffin, Lindsay I., Jr., to Esso Research and Engineering Company. Fuel cell and method for producing pulsating direct electrical current. 3,476,608, Cl. 136-086.
- Griggs Equipment, Inc.: *See—*
  - Motl, Anton, and Littlepage, James H., 3,476,342.
- Grinonneau, William C.: *See—*
  - Bayer, John W., Gagnon, Donald W., Grinonneau, William C., and Santiago, Edgardo 3,476,732.
- Groos, Horst Hans, Niggemeier, Friedrich, and Stapel, Heinz, to Schloemann Aktiengesellschaft. Tube extrusion presses with a retractable die carrier. 3,475,941, Cl. 072-257.
- Groszek, Aleksander Jerzy, to British Petroleum Company Limited, The. Method of grinding metal powder. 3,476,325, Cl. 241-016.
- Grover, Horace N., and Sommer, John G., to General Tire & Rubber Company, The. Metal cleaning composition and method. 3,476,599, Cl. 134-004.
- Grubben, Henri Peter Johannes: *See—*
  - Van Hensbergen, Gerrit Hendrik, and Grubben, Henri Peter Johannes 3,476,881.
- Gruber, Cyril H., to Brumberger Company, Inc. Electrically operated coin box device. 3,475,848, Cl. 046-003.
- Grumm, Walter. Horizontal coke oven batteries. 3,476,652, Cl. 202-142.
- Gruner, Frederick R., to Ametek, Inc. Mounting arrangement for laundry machines. 3,476,340, Cl. 248-022.
- Gruver, Jerry T., and Childers, Clifford W., to Phillips Petroleum Company. High impact polystyrene comprising a cross-linked blend of polystyrene, a diene rubber and a solution polymerized block copolymer. 3,476,829, Cl. 260-876.
- Gryctko, Carl E., to I-T-E Imperial Corporation, mesne. Circuit breaker mechanism mounting plate assembly. 3,477,044, Cl. 335-023.
- Gude, Armin: *See—*
  - Muller, Karl Adolf, Engel, Frederico, and Gude, Armin 3,476,711.
- Guenther, Emmerich: *See—*
  - Smith, Dexter E., Keeler, Robert M., and Guenther, Emmerich 3,476,729.
- Guernsey, Robert W.: *See—*
  - Rucins, Erik H., and Guernsey, Robert W. 3,476,094.
- Guernsey, Robert W., Ricketts, James M., and Zeek, Richard M., to General Motors Corporation. Regenerator matrix. 3,476,174, Cl. 165-009.
- Guillet, James E., to Eastman Kodak Company. Anhydrides of diperoxy dicarboxylic acids. 3,476,813, Cl. 260-610.
- Guizzi, Alberto: *See—*
  - Mariani, Brunello, Guizzi, Alberto, and Tisselli, Eugenio 3,476,564.
- Gunlock, Donald E., to General Motors Corporation. Border wire assembly. 3,475,770, Cl. 005-351.
- Gustafsson, Karl Paul: *See—*
  - Frisk, Knut Olov, and Gustafsson, Karl Paul 3,476,017.
- Guthrie, Kenneth R., to AAA Pipe Cleaning Corporation. Hose winding reel. 3,476,139, Cl. 137-355.16
- Haarer, Erich: *See—*
  - Adam, Karl, Schulz, Alfred, Haarer, Erich, and Winderl, Siegfried 3,476,793.
- Haas, Kenneth C.: *See—*
  - Spinrad, Malcom, Haas, Kenneth C., and Hoverter, Bryce E. 3,477,001.
- Hackett, John W., and Gardner, Earl E., to Procter & Gamble Company, The. Apparatus for applying a lateral stripe of adhesive to the tail of a severed web. 3,476,079, Cl. 118-040.
- Hackett, Leslie Charles, to Accles & Pollock Limited. Billiard cues. 3,476,388, Cl. 273-068.
- Hagen, Kenneth G., and Horton, Richard H. Snow scoop. 3,475,838, Cl. 037-053.
- Hagg, Arthur C., and Hoffman, Joseph H., to Westinghouse Electric Corporation. Sleeve bearings. 3,476,452, Cl. 308-127.
- Haines, Robert M.: *See—*
  - Martinek, Thomas W., Haines, Robert M., Weichman, Roger L., and Trainor, Wilbur J. 3,476,687.
- Haisma, Jan, to U.S. Philips Corporation, mesne. Gas laser. 3,477,036, Cl. 331-094.5
- Hall, Arnold M.: *See—*
  - Mantle, Peter J., and Hall, Arnold M. 3,476,069.
- Hallay, Alexander R., to General Electric Company. Impulse starting and operating circuit for gas discharge lamps. 3,476,977, Cl. 315-183.
- Halliburton Company: *See—*
  - Walton, John F., 3,477,020.
- Halstenberg, Reynold V., to North American Rockwell Corporation. Stabilization-orientation system. 3,476,129, Cl. 137-038.
- Hamby, Charles H.: *See—*
  - Weitzel, Edward W., and Hamby, Charles H. 3,476,581.
- Hamilton Tool Company, The: *See—*
  - Huffman, Harold W., 3,476,631.
- Hammann, Ingeborg: *See—*
  - Fest, Christa, and Hammann, Ingeborg 3,476,490.
- Hampton, John W., to Chevron Research Company. High dropping point aluminum grease. 3,476,684, Cl. 252-033.6
- Handler, Elliott: *See—*
  - Douglas, Raymond J., Handler, Elliott, Iwasaki, Cedric E., Kossoff, Joseph, and Ryan, John W. 3,475,857.
- Haney, Michael E., Jr.: *See—*
  - Gorman, Marvin, Haney, Michael E., Jr., Lively, David H., and Davenport, James D. 3,476,648.
- Hannen, James H., Jr.: *See—*
  - Szuba, Walter D., and Hannen, James H., Jr. 3,476,066.
- Hansen, Robert L., to Minnesota Mining and Manufacturing Company. Polyamide-acid polymers and polyimides prepared from azobenzene tetracarboxylic dianhydrides. 3,476,705, Cl. 260-047.
- Hansen, Robert L., to Minnesota Mining and Manufacturing Company. Tertiaryamino perfluoro alkylene sulfonic acid fluorides. 3,476,753, Cl. 260-247.1
- Hansen, Wilford N., and Osteryoung, Robert A., to North American Rockwell Corporation. Electrochemically controlled light reflection. 3,476,460, Cl. 350-160.
- Hanson, Bernard B.: *See—*
  - Hanson, Lila M., Hanson, Bernard B., and McCutcheon, George H. 3,476,261.
- Hanson, Lila M., Hanson, Bernard B., and McCutcheon, George H., to Westland Plastics, Inc. Baby food jar holder. 3,476,261, Cl. 211-074.
- Hanson, Victor W.: *See—*
  - Arnold, Orlan M., Hanson, Victor W., Jamison, Robert M., Panzica, Nicholas J., and Umbricht, Emil 3,475,881.
- Harada, Tadamasa, and Omura, Isao, to Asahi Kasei Kogyo Kabushiki Kaisha. Carboxy-terminated composite rocket propellant and process for producing using an amide additive. 3,476,622, Cl. 149-019.
- Hardison, Leslie C., to Universal Oil Products Company. Method and apparatus for alternately heating and cooling by indirect heat transfer. 3,476,176, Cl. 165-002.
- Hargis, Charles W., and Young, Howard S., to Eastman Kodak Company. Manufacture of 1,2-bis(aryl)ethylenes. 3,476,747, Cl. 260-240.
- Harland, Glen E.: *See—*
  - Burton, Robert M., and Harland, Glen E. 3,476,981.
- Harlin, Lester E., to Borg-Warner Corporation. Mounting arrangement for rotary compressor. 3,476,309, Cl. 230-235.
- Harnisch, Heinz: *See—*
  - Kern, Winfried, Cremer, Joseph, and Harnisch, Heinz 3,476,510.
- Harper, Chester H.: *See—*
  - Allen, Kenneth M., and Harper, Chester H. 3,476,234.
- Harrison, Charles H.: *See—*
  - Andersen, Harold Willids, Andersen, Harold W., and Harrison, Charles H. 3,476,506.
- Harrison, Henry: *See—*
  - Mindell, Marvin I., Heikkila, Andrew E., Harrison, Henry, and Wolz, Rudolph G. 3,477,008.
- Harrison, Robert R., to Nemo Corporation. Power control mechanism for outboard motors and the like. 3,475,911, Cl. 060-054.5
- Hart, Charles W., to Brewer, C., and Company, Limited. Method of harvesting sugar cane. 3,475,886, Cl. 056-001.
- Hartel, Gunter, to Lohner, Kurt, Professor Dr.-Ing. Fuel supply system for internal combustion engines. 3,476,096, Cl. 123-140.
- Harting, Werner, to Daimler-Benz Aktiengesellschaft. Hollow body. 3,476,178, Cl. 165-134.
- Hartman, Paul F., to Allied Chemical Corporation, mesne. Metal-containing complexes of oxidized polyethylene. 3,476,532, Cl. 044-007.
- Hartmann, Bert E., to Teledyne Industries Inc. Rupture strip for indicating earth movement. 3,477,019, Cl. 324-052.
- Hartmark, Bjarne: *See—*
  - Kirner, Uwe, and Hartmark, Bjarne 3,476,505.
- Hartzel, Lawrence W., to United States of America, Atomic Energy Commission. Process for recovering filler from elastomer. 3,476,526, Cl. 023-312.
- Harvey, David E., Amrein, Carl J., and Abbratozzato, Salvatore R., to Black and Decker Manufacturing Company, The. Interconnected brush spring and terminal. 3,476,965, Cl. 310-249.
- Harvey, Robert R., to Phillips Petroleum Company. Oil recovery with a drive comprising surfactants and minute solids. 3,476,187, Cl. 166-274.
- Harvey, Robert R., to Phillips Petroleum Company. Aqueous fluid drive process using minute solids in suspension. 3,476,188, Cl. 166-274.

- Hasko, Froese: *See—*
  - Hilgendorf, Joachim, and Hasko, Froese 3,477,064.
- Hass, David P., and Horan, Ralph P., to Eaton Yale & Towne, Inc. Mesh forcing with an engine connected brake. 3,476,225, Cl. 192-004.
- Hataya, Humio: *See—*
  - Sasaki, Ryoichi, and Hataya, Humio 3,476,556.
- Hattori, Tatsuaki: *See—*
  - Imoto, Saburo, Ikari, Kyoichiro, and Hattori, Tatsuaki 3,476,582.
- Hauenstein, Max C.: *See—*
  - Green, James, Jr., and Hauenstein, Max C. 3,476,331.
- Haugen, Leif Gunnar: *See—*
  - Holtermann, Hugo, Haugen, Leif Gunnar, Thorsdalen, Nils, Tjonneland, Knut, Wille, Knut, and Koutroulos, Jean 3,476,802.
- Hauni Werke Korber & Co. KG: *See—*
  - Bardenhagen, Dietrich, and Niemann, Helmut, 3,476,002.
- Hawkins, Benjamin K. Conduit system. 3,476,869, Cl. 174-068.
- Hawkins, Havilah S. Work feed mechanism for bandsaw machines. 3,476,159, Cl. 143-026.
- Hawkins, James Mitchell, to Frankenstein Group Limited. Inflatable body-attachments for marine lifesaving. 3,475,774, Cl. 009-341.
- Hawkins, William R., to Newcomb Electronics Corporation. Direct-coupled transistor amplifier employing resistive feedback and common biasing means. 3,477,030, Cl. 330-019.
- Hayes, Thomas E., to Penn Controls, Inc. Heat motor utilizing expansible fluid for driving a piston. 3,475,904, Cl. 060-023.
- Haynes, Stewart, Jr., and Fontaine, Marc F., to Texaco Inc. Recovery of oils by steam injection. 3,476,183, Cl. 166-272.
- Heard, Jeffery Gerald, and Bennett, Roy Brian, to English Electric Company Limited, The. Dynamo electric machines. 3,476,961, Cl. 310-054.
- Heberlein & Co. AG: *See—*
  - Dosch, Peter, and Heck, Reinhard H., 3,477,021.
- Heberlein Patent Corporation: *See—*
  - Lorenz, Fritz, and Weiss, Ernst, 3,476,501.
  - Raschle, Josef, 3,475,895.
- Heck, Reinhard H.: *See—*
  - Dosch, Peter, and Heck, Reinhard H. 3,477,021.
- Hecker, Arthur C.: *See—*
  - Kauder, Otto S., Leistner, William E., and Hecker, Arthur C. 3,476,699.
- Hegstad, Lester O., to Rockford Brass Works. Water softener valve. 3,476,151, Cl. 137-625.29
- Heh, George J., to American Air Filter Company, Inc. Graduated density filamentous mat. 3,476,635, Cl. 161-060.
- Heikkila, Andrew E.: *See—*
  - Mindell, Marvin I., Heikkila, Andrew E., Harrison, Henry, and Wolz, Rudolph G. 3,477,008.
- Heil-Quaker Corporation: *See—*
  - Herbert, Richard M., and Hinds, James C., 3,476,411.
- Hein-Werner Corporation: *See—*
  - Witwer, Wallace J., 3,476,274.
- Heinze, Walter W., Jones, Evan A., and Carson, Don B., to Universal Oil Products Company. Internally insulated and lined pressure vessel. 3,476,283, Cl. 220-015.
- Heitz, Roberg G.: *See—*
  - Brown, William E., Heitz, Roberg G., and Levine, Charles A. 3,476,602.
- Heitzer, Heinrich, to Demag-Lauchhammer, Maschinen -und Stahlbau GmbH. Dredge having bucket emptying means. 3,475,842, Cl. 037-189.
- Helme Products, Inc.: *See—*
  - Wood, David Hugh, Jr., Gibney, Grant Omer, and Smith, Richard, 3,476,567.
- Henebry, Thomas F. Memory device for controlling and/or timing an operation to be performed on a work piece. 3,475,987, Cl. 074-568.
- Henkel, Henry. Razor blade shave counter. 3,476,077, Cl. 116-133.
- Henley, Virgil E., to General Tire & Rubber Company, The. Tire building drum. 3,476,633, Cl. 156-415.
- Henry, William C.: *See—*
  - Jones, Charles E., and Henry, William C. 3,476,273.
- Herbert, Richard M., and Hinds, James C., to Heil-Quaker Corporation. Panel coupling having means for preventing axial and rotational movement. 3,476,411, Cl. 285-192.
- Herbst, Darwyn L., and Ewing, Keith E., to General Motors Corporation. Thermistor construction. 3,477,055, Cl. 338-022.
- Herchenroder, Hans, to Kocks, Friedrich, GmbH. Warping and holding winch for ships. 3,476,361, Cl. 254-172.
- Hercules Incorporated: *See—*
  - Vandenberg, Edwin James, 3,476,718.
- Herman, Stephen, and Stark, Edward W., to Sperry Rand Corporation. Optical reflectors. 3,476,930, Cl. 240-041.35
- Hermelin, Marc S.: *See—*
  - Cashen, Terry F., and Hermelin, Marc S. 3,476,497.
- Herold, Manfred, and Brosig, Adolf, to Maybach Mercedes-Benz Motorenbau GmbH. Hydrodynamic brake and regulating means therefor. 3,476,218, Cl. 188-090.
- Herrmann, Karl E.: *See—*
  - Clark, Kendall, Herrmann, Karl E., and Klein, William A. 3,477,051.
- Hertel, Heinrich. Body for light at high subsonic speed. 3,476,336, Cl. 244-130.
- Herubel, Jean Frederic, to Schlumberg, N. & Cie. Top roller arrangement in drafting systems of textile machines. 3,475,792, Cl. 019-267.
- Herynk, Milon: *See—*
  - Blazek, Otta, Herynk, Milon, and Rybar, Josef 3,475,973.
- Herzfeld, Fred, and van Hekken, Frans, to RCA Corporation. Cathode ray tube and method of manufacture. 3,476,025, Cl. 095-001.
- Herzog, Ernst Gerhard: *See—*
  - Furst, Andor, and Herzog, Ernst Gerhard 3,476,781.
- Heston, Eugene E., to NRM Corporation. Extruder. 3,475,787, Cl. 018-012.
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- Hettich, Alfred, Schadlich, Fritz, Walz, Heinz, and Paule, Kurt, to Bosch, Robert, GmbH. Shoe cleaning and polishing machine. 3,475,780, Cl. 015-036.
- Hewitt-Robins Incorporated: *See—*
  - Adler, Imre, and Streng, Fritz F., 3,476,233.
- Hewko, Lubomyr O., to General Motors Corporation. Friction drive transmission. 3,475,993, Cl. 074-798.
- Hewlett-Packard Company: *See—*
  - Girdner, William I., 3,475,815.
- Hilgendorf, Joachim, and Hasko, Froese, to Kienzle Apparate GmbH. System for effecting the read-out from a digital storage. 3,477,064, Cl. 340-172.5
- Hill, Edward D. Roller for applying paint, ink and the like. 3,475,803, Cl. 029-132.
- Hillseth, Paul W. Aircraft hanger and door structure associated therewith. 3,475,861, Cl. 049-358.
- Hinds, James C.: *See—*
  - Herbert, Richard M., and Hinds, James C. 3,476,411.
- Hinger, William R., to Wehr Corporation. Latch assembly for material handling magnet. 3,477,050, Cl. 335-285.
- Hiszpanski, Jan, to Zaklady Mechaniki Precyzyjnei- Przedsiebiorstwo Panstwowe Gdansk-Oliva. Submarine navigation device for a self-dependent diver. 3,475,957, Cl. 073-180.
- Hitachi, Ltd.: *See—*
  - Kajiwara, Toshiyuki, 3,475,935.
  - Katagiri, Shinjiro, and Minamikawa, Yoshihisa, 3,476,972.
  - Mikoshiba, Tomoyoshi, Suzuki, Yasuo, and Ishizawa, Shingo, 3,476,674.
  - Nagata, Minoru, 3,477,031.
  - Omura, Itiro, 3,476,968.
  - Sasaki, Ryoichi, and Hataya, Humio, 3,476,556.
  - Shimazu, Mitsuyoshi, 3,477,038.
  - Yanai, Hisayoshi, Kodera, Hiroshi, and Migitaka, Masatoshi, 3,476,942.
- Hitt, Otis D., and Short, R Stanford, to Aro Corporation, The. Two-stage control throttle mechanism. 3,476,147, Cl. 137-614.14
- Hitzelberger, Erwin, to Daimler-Benz Aktiengesellschaft. Motor vehicle seat. 3,476,435, Cl. 296-065.
- Hoegger, Erhard F., to Du Pont de Nemours, E. I., and Company. Biaxially oriented polypivalolactone film. 3,476,714, Cl. 260-078.3
- Hoenig, Stuart A., to Battelle Development Corporation, The. Separating components in gases. 3,475,882, Cl. 055-179.
- Hoffman, Joseph H.: *See—*
  - Hagg, Arthur C., and Hoffman, Joseph H. 3,476,452.
- Hoffmann, Klaus, to VEB Arzneimittelwerk. Silicomagnesium-aluminate-hydrate gel and method of preparing the same. 3,476,692, Cl. 252-317.
- Hoffmann-La Roche Inc.: *See—*
  - Furst, Andor, Muller, Marcel, and Saucy, Gabriel, 3,476,746.
  - Furst, Andor, and Herzog, Ernst Gerhard, 3,476,781.
- Hogan, John P., and Kitchen, Alonzo G., to Phillips Petroleum Company. Polymerization process and catalyst. 3,476,724, Cl. 260-088.2
- Hogya, Bernard J., and Tillis, William J., to FMC Corporation. Process of etching copper circuits. 3,476,624, Cl. 156-013.
- Hok-Shou, Ting, to Kader Industrial Company Limited. Mechanical lap counter for slot guided toy vehicles. 3,476,389, Cl. 273-086.
- Holiday Inns of America, Inc.: *See—*
  - Joseph, Guy G., Teverbaugh, Robert K., and Maniquis, Angelina A., 3,476,292.
- Holonyak, Nick, Jr.: *See—*
  - Aldrich, Richard W., and Holonyak, Nick, Jr. 3,476,993.
- Holt, Charles W. Portable roll up tent. 3,476,127, Cl. 135-001.
- Holt, William David: *See—*
  - Baldwin, John Granville, and Holt, William David 3,476,902.
- Holtermann, Hugo, Haugen, Leif Gunnar, Thorsdalen, Nils, Tjonneland, Knut, Wille, Knut, and Koutroulos, Jean, to Nyegaard & Co. A/S. N-Alkyl derivatives of 3,5-diacetamido-2,4,6- triiodobenzoic acid and salts thereof and process for preparing the same. 3,476,802, Cl. 260-518.
- Homan, Virgil A. Chip collector and exhauster. 3,476,439, Cl. 302-017.
- Honeywell G.m.b.H.: *See—*
  - Kingma, Cornelis S. J., 3,476,130.
- Honeywell Inc.: *See—*
  - Schmalbruch, T Dankward, 3,475,952.
  - Westbrook, Lowell V., 3,477,004.
- Honjo, Satoru: *See—*
  - Sato, Masamichi, Honjo, Satoru, and Takimoto, Masaaki 3,476,659.
- Hooker Chemical Corporation: *See—*
  - Quinn, Edward J., 3,476,696.
- Hopkins, Roger B. Forwardly folding eyeglass temples having ball and socket hinges. 3,476,466, Cl. 351-115.

- Horan, Ralph P.: *See—*
  - Hass, David P., and Horan, Ralph P. 3,476,225.
- Horowitz, Charles: *See—*
  - Berg, Arthur A., and Horowitz, Charles 3,476,019.
- Horowitz, Frederick: *See—*
  - Miller, Lewis S., and Horowitz, Frederick 3,476,695.
- Horton, Richard H.: *See—*
  - Hagen, Kenneth G., and Horton, Richard H. 3,475,838.
- Houser, Robert W., to General Aniline & Film Corporation. Photomultiplier system whereby dynode voltage supply is varied in accordance with modulation of incident light, holding output current constant and using measure of dynode voltage as measure of modulation of light. 3,476,940, Cl. 250-207.
- Hoverter, Bryce E.: *See—*
  - Spinrad, Malcom, Haas, Kenneth C., and Hoverter, Bryce E. 3,477,001.
- Hovestad, Adrian P.: *See—*
  - Merrick, John A., and Hovestad, Adrian P. 3,475,778.
- Hovey, Daniel T. Chemical addition of gas to liquid solvent apparatus. 3,476,520, Cl. 023-282.
- Howard, Robert C., and Baker, Dale C., to Conrac Corporation. Opacimeter for comparing light from different areas of sample sheet. 3,476,482, Cl. 356-199.
- Howell, Bryan Gordon, to Metal Box Company Limited, The. Containers. 3,476,240, Cl. 206-000.82
- Howell, Edward K., to General Electric Company. Card and tape reader. 3,476,918, Cl. 235-061.11
- Hoyle, Vinton A., Jr., and McConnell, Wayne V., to Eastman Kodak Company. Chroman derivatives of 2,5-dimethyl-2,4-hexadiene. 3,476,772, Cl. 260-345.5
- Hubbard, Harold C., to Motor Wheel Corporation. Electromagnet. 3,476,223, Cl. 188-164.
- Hubbell, Harvey, Incorporated: *See—*
  - Adra, Tarek, 3,476,925.
- Hubble, William S.: *See—*
  - Bracken, Joseph W., Jr., and Hubble, William S. 3,476,173.
- Huber, Victor R., and Cardenas, Armando, to Goodrich, B. F., Company, The. Dual chambered tire valve. 3,476,168, Cl. 152-427.
- Huck Manufacturing Company: *See—*
  - Chirco, Peter R., 3,475,945.
- Huddleston, Charles R. Sub-target aiming device. 3,475,821, Cl. 033-046.
- Huelsmann, Hans-Leo, and Renckhoff, Gustav, to Chemische Werke Witten GmbH. Process for the preparation of carboxylic acid aryl esters. 3,476,785, Cl. 260-410.5
- Huffman, Harold W., to Hamilton Tool Company, The. Method of and means for distributing glue to a moving web. 3,476,631, Cl. 156-291.
- Hughes Aircraft Company: *See—*
  - Chan, Yum T., 3,477,039.
  - Jones, Sheldon, and Schleifer, Otto, 3,476,921.
- Hughes Tool Company: *See—*
  - Galle, Edward M., 3,476,195.
- Humber, Leslie G., to American Home Products Corporation. Thiazolo and thiazino polycyclic isoquinolines. 3,476,750, Cl. 260-243.
- Humphries, Clarence Raymond: *See—*
  - Randklev, Ronald M., and Humphries, Clarence Raymond 3,476,584.
- Hunter Enterprises, Inc.: *See—*
  - Hunter, Warren S., 3,476,230.
- Hunter, Robert Tweedy: *See—*
  - Elkind, Vincent Theodore, Yurko, Joseph Aloyus, and Hunter, Robert Tweedy 3,476,583.
- Hunter, Warren S., to Hunter Enterprises, Inc. Paper roll carrier for use with typewriter carriage. 3,476,230, Cl. 197-133.
- Hurd, Jerome N., to United States Gypsum Company. Wallboard attachment and apparatus therefor. 3,476,302, Cl. 227-120.
- Hurney, William P. Fingertip bandages. 3,476,109, Cl. 128-157.
- Huska, Paul. Amplified mechanical actuator. 3,475,979, Cl. 074-089.16
- Hutson, Thomas, Jr., and Carter, Cecil O., to Phillips Petroleum Company. Formation and regeneration of catalyst in an alkylation and isomerization process. 3,476,825, Cl. 260-683.53
- Hydrometals, Inc.: *See—*
  - Arnold, Fredric E., Jr., 3,476,074.
- Hymore, Frank J.: *See—*
  - Ritter, George F., Jr., Carson, Frank J., and Hymore, Frank J. 3,476,540.
- I-T-E Imperial Corporation: *See—*
  - Gryctko, Carl E., 3,477,044.
- Ideas for Auto and Bike Specialties, Inc.: *See—*
  - Golden, Harry, 3,476,496.
- Igarashi, Yutaro: *See—*
  - Uda, Shukichi, and Igarashi, Yutaro 3,475,844.
- IIT Research Institute: *See—*
  - Cornish, Rodney H., and Finlayson, Lawrence A., 3,476,281.
- Ikari, Kyoichiro: *See—*
  - Imoto, Saburo, Ikari, Kyoichiro, and Hattori, Tatsuaki 3,476,582.
- Ikeguchi, Takeru: *See—*
  - Yamamoto, Yoshihiro, Yoshihara, Mitsuo, Ikeguchi, Takeru, and Sonoda, Sanenobu 3,476,702.
- Imoto, Saburo, Ikari, Kyoichiro, and Hattori, Tatsuaki, to Kurashiki Rayon Co., Ltd. Method of improving the water resistance of paper. 3,476,582, Cl. 117-062.2
- Impact Casting Co., Inc.: *See—*
  - Goetz, George W., and Weinstein, Norman W., 3,476,172.
- Imperial Chemical Industries Limited: *See—*
  - Aldred, Derek Harry, and Edington, Robert Alexander, 3,476,701.
  - Case, John William, Crowder, Norman Frederic, and White, Wilfred Arthur Stephen, 3,476,504.
  - Selwa, Tadeusz Ryszard, 3,476,660.
- Imperial Chemical Industries of Australia and New Zealand Limited: *See—*
  - Roberts, Gwyneth M., Butt, Faye E., Baklien, Asbjorn, Gregory, Jocelyn M., and Kuiper, Jan, 3,476,546.
- Ing. C., Olivetti, & C., S.p.A.: *See—*
  - Ricciardi, Giuseppe, and Cerutti, Giovanni, 3,476,300.
- Ingersoll-Rand Company: *See—*
  - Noerr, Donald G., Jr., 3,476,192.
  - Noerr, Donald G., Jr., 3,476,418.
- Innis, Frank B.: *See—*
  - Staats, Louis T., Sr., Misener, Cecil D., and Innis, Frank B. 3,475,888.
- Inoue, Kiyoshi. Method of and apparatus for increasing the accuracy of electrochemical grinding process. 3,476,662, Cl. 204-143.
- Institut Francais du Petrole, des Carburants et Lubrifiants: *See—*
  - Rabilloud, Guy, Sillion, Bernard, and de Gaudermaris, Gabriel, 3,476,590.
  - Cuzin, Daniel, Chauvin, Yves, and Lefebvre, Gilles, 3,476,731.
- Institut National de l'Industrie Charbonniere: *See—*
  - Ledent, Pierre Leon Victor, 3,476,649.
- Instrument Systems Corporation: *See—*
  - Bickham, Euland M., and Rosenfeld, Samuel, 3,475,880.
- Interchemical Corporation: *See—*
  - Winchester, Charles M., Faccone, Joseph A., and Webb, Stephen F., 3,476,591.
- Interlego A.G.: *See—*
  - Christiansen, Godtfred Kirk, 3,475,851.
- International Business Machines Corporation: *See—*
  - Anderson, David W., Sparacio, Francis J., and Tomasulo, Robert M., 3,477,063.
  - Berkenblit, Melvin, and Reisman, Arnold, 3,476,592.
  - Bertelsen, Bruce I., and Reimer, Arnold E., 3,476,561.
  - Chesarek, Donald J., and Reynolds, Zack D., 3,476,973.
  - Clark, Kendall, Herrmann, Karl E., and Klein, William A., 3,477,051.
  - De Serre, Charles G., and Johnson, Thomas L., 3,476,920.
  - Fredriksen, Thorbjoern R., 3,476,996.
  - Geller, Alan R., 3,476,923.
  - Locke, Charles H., 3,476,152.
  - Rottmann, Hans R., 3,475,805.
  - Shiber, Evelyn F., and Shiber, Jerome A., 3,476,885.
  - Wilcox, William L., and Wagner, Richard E., 3,476,383.
- International Harvester Company: *See—*
  - Geiger, Eugene J., and Breen, Dale H., 3,475,804.
  - Packard, Norman M., and Lenzi, William, 3,476,099.
  - Sullivan, Herbert D., 3,475,883.
- International Minerals and Chemical Corporation: *See—*
  - Vasan, Srini, 3,476,544.
- International Research and Development Corporation: *See—*
  - Kincaid, Harry R., 3,475,969.
- International Synthetic Company Limited, The: *See—*
  - Friedl, Arno Rudolph, and Dingley, Regoer Gavin, 3,476,503.
- International Telephone and Telegraph Corporation: *See—*
  - Biggle, Laurence C., 3,476,315.
  - Bower, Richard R., 3,476,231.
  - Powell, Ronald Cecil, 3,476,890.
- Inventa A.G. fur Forschung und Patentverwertung: *See—*
  - Berther, Clau, and Sailer, Richard, 3,476,744.
- Ionics Incorporated: *See—*
  - Morgan, Alonzo W., Jr., and Selmeczi, Joseph G., 3,476,600.
- Ishibashi, Hiroaki: *See—*
  - Ushioda, Tsunezo, Nonaka, Katsuhiko, Yasueara, Minoru, Sato, Katsuya, Ompo, Takeshi, and Ishibashi, Hiroaki 3,476,647.
- Ishikawajima-Harima Jukogyo Kabushiki Kaisha: *See—*
  - Komatsu, Toshiro, and Ujihara, Akira, 3,476,263.
- Ishizawa, Shingo: *See—*
  - Mikoshiba, Tomoyoshi, Suzuki, Yasuo, and Ishizawa, Shingo 3,476,674.
- Isley, Ralph E., and Adams, Richard C., to Standard Oil Company, The (Ohio). Acrylonitrile polymer-wood laminated articles. 3,476,643, Cl. 161-251.
- Iwasaki, Cedric E.: *See—*
  - Douglas, Raymond J., Handler, Elliott, Iwasaki, Cedric E., Kossoff, Joseph, and Ryan, John W. 3,475,857.
- Iwasaki, Sadaya: *See—*
  - Morita, Hiroshi, Fuse, Motoyosi, Iwasaki, Sadaya, Yamagishi, Hisato, Kawaguchi, Syojiro, and Tanigawa, Koichiro 3,476,976.
- Iwata, Hideo: *See—*
  - Tsunoda, Yoshimasa, Iwata, Hideo, Okada, Tsutomu, and Aso, Kotaro 3,475,801.
- Jablonski, Jan, to Elliott Brothers (London) Limited. Variable reluctance pickoff and switch to short circuit an output winding. 3,477,027, Cl. 323-051.
- Jackson, Byron, Inc.: *See—*
  - Grant, John C., 3,475,781.

- Jackson, Earl V., and Mohrman, Richard C., to Bausch & Lomb, Incorporated. Tangent screen field of vision testing apparatus. 3,476,465, Cl. 351n023.
- Jackson, Lloyd J., to United States of America, Navy. Arming wire assembly. 3,476,012, Cl. 089-001.5
- Jackson, Richard M., and Spruegel, Walter. Tire under inflation telltale device. 3,476,073, Cl. 116-034.
- Jacob, Yuash Pete, to Continental Can Company, Inc. Blister package and product thereof. 3,476,239, Cl. 206-078.
- Jacobi, Ernst: *See—*
  - Mohr, Gunther, Erdmann, Dietrich, Niethammer, Konrad, Lust, Siegmund, Schneider, Gerhart, and Jacobi, Ernst 3,476,545.
- Jacobowsky, Armin: *See—*
  - Krekeler, Hans, Jacobowsky, Armin, Born, Klaus, Schmitz, Heinz, and Wirtz, Peter 3,476,955.
- Jacobs, James W., to General Motors Corporation. Keeping insulation dry. 3,475,920, Cl. 062-273.
- Jacoby, Ben, Jr., to Owens-Illinois, Inc. Support structure for hollow article. 3,476,376, Cl. 269-020.
- Jahn, Dieter, to Aktiengesellschaft Brown, Boveri & Cie. Process for increasing the reverse voltage of thermally oxidized silicon members with at least one barrier layer. 3,476,661, Cl. 204-140.
- Jahn, Reinhardt H., to Chicago Metallic Sash Company. Ventilated suspended ceiling structure. 3,475,869, Cl. 052-173.
- Jamison, Robert M.: *See—*
  - Arnold, Orlan M., Hanson, Victor W., Jamison, Robert M., Panzica, Nicholas J., and Umbricht, Emil 3,475,881.
- Janes, Edward F.: *See—*
  - Bunn, Dorrance P., Jr., Janes, Edward F., and Williams, Dale 3,476,818.
- Janicki, Jozef: *See—*
  - Pazola, Zdzislaw, Switek, Henryk, Janicki, Jozef, and Michnikowska, Wanda 3,476,646.
- Jankowitz, Gerald, and Falbel, Gerald, to Barnes Engineering Company. Gun-flash detector. 3,476,938, Cl. 250-083.3
- Janome Sewing Machine Co., Ltd.: *See—*
  - Kato, Kenzi, 3,477,003.
- Jarke Corporation: *See—*
  - Jay, Richard S., 3,476,260.
- Jatul, Bernard, and Costello, Christopher, to Colgate-Palmolive Company. Sprayed opaque bandage composition. 3,476,853, Cl. 424-045.
- Jay, Richard S., to Jarke Corporation. Storage rack for cylindrical containers. 3,476,260, Cl. 211-071.
- Jeffery, Glynn Bennett. Rotary switches. 3,477,047, Cl. 335-206.
- Jehenson, Pierre Simon, and Bauwens, Jean, to European Atomic Energy Community (Euratom). Ductility of dispersed phase alloys, particularly Al-$Al_2O_3$. 3,476,614, Cl. 148-011.5
- Jenkins, Anthony, to Pye, W. G., & Co., Ltd. Liquid injection device. 3,475,964, Cl. 073-422.
- Jenkner, Herbert, to Chemische Fabrik Kalk G.m.b.H. Process of producing mono- or dialkyl phosphites or mixtures thereof. 3,476,839, Cl. 260-979.
- Jenny, Jacques, Teti, John, and Anderson, Jack P. Hoof-covering and method of its manufacture. 3,476,190, Cl. 168-004.
- Jerome, Wallace H. Poultry loading device. 3,476,089, Cl. 119-082.
- Jess, Thurman S.: *See—*
  - Bramhall, Otis H., and Jess, Thurman S. 3,477,054.
- Jinnette, Allen J., to Burlington Industries, Inc. Process for distributing a resin in a fabric. 3,476,580, Cl. 117-062.
- Jirik, Frank E. Indirect proportion reflux. 3,476,725, Cl. 260-089.1
- Johansen, Bergiton. Adjustable threshold. 3,475,866, Cl. 049-468.
- Johnson, Donald R., Nadeau, Richard G., Nieuweboer, Gerrit, and Truett, William L., to Du Pont de Nemours, E. I., and Company. Analytical test pack and process for analysis. 3,476,515, Cl. 023-230.
- Johnson, Gordon, Company: *See—*
  - Woods, William C., 3,475,785.
- Johnson, John H.: *See—*
  - Carlson, Burnette J., and Johnson, John H. 3,476,445.
- Johnson & Johnson: *See—*
  - Brewster, Charles A., and Plummer, Charles H., 3,475,791.
- Johnson, Marvin M. Structure having light controlling means. 3,475,868, Cl. 052-002.
- Johnson, Ralph E., to Singer Company, The. Sewing machines with needle and loop taker operable not in predictably timed relationship. 3,476,067, Cl. 112-182.
- Johnson, Robert L., to United States Steel Corporation. Cantilever platform extension. 3,475,779, Cl. 014-071.
- Johnson, Roger W., to General Motors Corporation. Electrical stock removal cutting tool electrode. 3,476,676, Cl. 204-284.
- Johnson, Russell R.: *See—*
  - Welty, Albert B., Jr., Johnson, Russell R., and Atwood, Glenn A. 3,476,513.
- Johnson, Thomas L.: *See—*
  - De Serre, Charles G., and Johnson, Thomas L. 3,476,920.
- Johnson, William C.: *See—*
  - Raphael, Thomas, and Johnson, William C. 3,476,589.
- Johnston, James D., and Sims, Leslie L., to Ethyl Corporation. Aluminum alkoxide process for preparing tertiary amines. 3,476,807, Cl. 260-583.
- Jonaitis, Charles W.: *See—*
  - Sebba, Felix, Jonaitis, Charles W., Ray, Charles L., and Baarson, Robert E. 3,476,553.
- Jonas, John J., to National Dairy Products Corporation. Method for treating polysaccharides in the presence of an oxygen accepting agent. 3,476,741, Cl. 260-209.
- Jone, Paul Y.: *See—*
  - Fraser, Richard S., and Jone, Paul Y. 3,476,585.
- Jones, Charles E., and Henry, William C., said Jones assor. of 25% to Thru-Way Equipment Company. Refuse collection vehicle. 3,476,273, Cl. 214-082.
- Jones, Cordis W. Apparatus for forming continuous pre-stressed concrete slabs. 3,475,800, Cl. 025-041.
- Jones, Evan A.: *See—*
  - Heinze, Walter W., Jones, Evan A., and Carson, Don B. 3,476,283.
- Jones, Faber B., to Phillips Petroleum Company. Sulfolane (tetrahydrothiophene-1,1-dioxide) as solvent for polymerization of diamines and ureas. 3,476,709, Cl. 260-077.5
- Jones, John L., to Armour Pharmaceutical Company. Production of water soluble basic aluminum halide compound. 3,476,509, Cl. 023-050.
- Jones, Malcolm H., to Joyce, Loebl, & Company Limited. Method and apparatus for improved centrifugal analysis. 3,475,968, Cl. 073-432.
- Jones, R. A., and Company, Incorporated: *See—*
  - Deering, Edwin Naul, and Jones, Wickliffe, 3,476,024.
- Jones, Sheldon, and Schleifer, Otto, to Hughes Aircraft Company. Infrared range computer. 3,476,921, Cl. 235-151.32
- Jones, Wickliffe: *See—*
  - Deering, Edwin Naul, and Jones, Wickliffe 3,476,024.
- Jonsson, Sune Otto Gunnar, to Aktiebolaget Bofors. Capacitor discharge medical stimulator. 3,476,117, Cl. 128-421.
- Jorgensen, Robert A. Hinge. 3,475,783, Cl. 016-128.
- Joseph, Guy G., Teverbaugh, Robert K., and Maniquis, Angelina A., to Holiday Inns of America, Inc., mesne. Apparatus for making polyurethane foam. 3,476,292, Cl. 222-135.
- Josling, Clifford A.: *See—*
  - Goodman, Ronald H., Bettens, Arsene H., and Josling, Clifford A. 3,476,939.
- Joyce, Loebl, & Company Limited: *See—*
  - Jones, Malcolm H., 3,475,968.
- Jungner, Olof Gunnar Hugo, to AB Medicinsk-Kemiska Laboraloriet Calab. Automatic pipetting device. 3,476,518, Cl. 023-259.
- Jusyk, Stanley J., to United Aircraft Corporation. Fluid tank shut-off valve and actuation system. 3,476,140, Cl. 137-392.
- Kabushiki Kaisha Yaskawa Denki Seisakusho: *See—*
  - Tanaka, Tameo, 3,476,952.
- Kader Industrial Company Limited: *See—*
  - Hok-Shou, Ting, 3,476,389.
- Kagiya, Tsutomu: *See—*
  - Fukui, Kenichi, Kagiya, Tsutomu, Narisawa, Shizuo, Maeda, Taneo, and Kobata, Mikio 3,476,712.
- Kahl, Paul C.: *See—*
  - Ehrenfels, Alfred L., and Kahl, Paul C. 3,476,898.
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- Kaiser, Carl, and Zirkle, Charles L., to Smith Kline & French Laboratories. Substituted piperidinoalkylthianaphthenes and benzofurans. 3,476,760, Cl. 260-293.4
- Kaiser, Fritz: *See—*
  - Voigtlander, Wolfgang, Kaiser, Fritz, Schaumann, Wolfgang, and Stach, Kurt 3,476,742.
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- Kajiwara, Toshiyuki, to Hitachi, Ltd. Control apparatus and system for strip rolling. 3,475,935, Cl. 072-009.
- Kaltenbach & Voigt: *See—*
  - Loge, Hans, 3,475,817.
- Kalve, Ernest. Cableway scraper excavator. 3,475,839, Cl. 037-117.
- Kameda, Isamu, and Uto, Yoshimitsu, to Mitsubishi Jukogyo Kabushiki Kaisha. Method of deposit welding chromium steels. 3,476,909, Cl. 219-137.
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  - Newman, Melvin S., and Karnes, Harold A. 3,476,791.
- Karpenko, Marija Pavlovna: *See—*
  - Kulbakh, Valter Osvaldovich, and Karpenko, Marija Pavlovna 3,476,856.
- Kaster, Robert L., to University of Minnesota, the Regents of the. Pivoting disc heart valve. 3,476,143, Cl. 137-527.8
- Kastner, Rene Louis, to Societe d'Exploitation des Roulements Rolltex. Plummer-blocks for the cylinders of rolling-mills. 3,476,453, Cl. 308-174.
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  - Naarmann, Herbert, and Kastning, Ernst-Guenther 3,476,830.
  - Daumiller, Guenther, Kastning, Ernst-Guenther, and Naarmann, Herbert 3,476,831.
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  - Forster, Hans-Joachim M., and Katz, Klaus 3,476,203.
- Kauder, Otto S., Leistner, William E., and Hecker, Arthur C., to Argus Chemical Corporation. Polyvinyl chloride and olefin polymer compositions having improved resistance to deterioration comprising an organic phosphite ester having at least one aromatic polycarbocyclic group. 3,476,699, Cl. 260-023.
- Kawaguchi, Syojiro: *See—*
  - Morita, Hiroshi, Fuse, Motoyosi, Iwasaki, Sadaya, Yamagishi, Hisato, Kawaguchi, Syojiro, and Tanigawa, Koichiro 3,476,976.
- Kawamoto, Frank T.: *See—*
  - Fleischhacker, Joseph F., and Kawamoto, Frank T. 3,476,320.
- Kawamura, Shigeo: *See—*
  - Murakami, Masuo, Takahashi, Kozo, Matsumoto, Jun, Murase, Kiyoshi, Tamazawa, Kazuharu, Kawamura, Shigeo, and Terao, Junichi 3,476,777.
- Kawamura, Syuzo: *See—*
  - Shimai, Junichiro, Matsui, Isamu, Kawamura, Syuzo, and Sakai, Syoji 3,476,328.
- Kazakov, Valentin Mikhailovich: *See—*
  - Karakashian, Zaven Oganezovich, Lariokhin, Vladimir Ivanovich, and Kazakov, Valentin Mikhailovich 3,476,040.
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- Keeler, Robert M.: *See—*
  - Smith, Dexter E., Keeler, Robert M., and Guenther, Emmerich 3,476,729.
- Kell, Nathaniel B., to General Motors Corporation. Vehicle speed controlled carburetor accelerator pump. 3,475,994, Cl. 074-857.
- Kellett, Eric, to C.A.V. Limited. Gas turbine with lubricant and fuel supply systems therefor. 3,475,907, Cl. 060-039.08
- Kemme, Herbert Rudolph: *See—*
  - Scharf, Edward Jonathan, and Kemme, Herbert Rudolph 3,476,819.
- Kemp, Kenneth Albert Walters, to C.A.V. Limited. Pressure regulating valves. 3,476,134, Cl. 137-115.
- Kemp, Kenneth Albert Walters, and Wheeler, Terence Redvers, to C.A.V. Limited. Liquid fuel pumping apparatus. 3,476,050, Cl. 103-002.
- Kendall Company, The: *See—*
  - Paulig, Konrad W., and Olson, Arthur R., 3,476,638.
- Kendrey Manufacturing Co.: *See—*
  - Kentfield, Lucius H., 3,476,423.
- Kengelbach, Werner Ludwig: *See—*
  - Beckmann, Wilhelm, Kengelbach, Werner Ludwig, Metzger, Horst, and Pape, Martin 3,476,669.
- Kennecott Copper Corporation: *See—*
  - Spedden, Henry Rush, and Malouf, Emil E., 3,476,554.
- Kennedy, George E., and Manganello, Samuel J., to United States Steel Corporation. Method of producing metal laminate composites. 3,475,812, Cl. 029-472.3
- Kentfield, Lucius H., to Kendrey Manufacturing Co. Tool for knotting bands. 3,476,423, Cl. 289-017.
- Kepner, Theodore S., to Sylvania Electric Products, Inc. Optical intrusion detection system using dual beam peripheral scanning and light directing tubes. 3,476,946, Cl. 250-224.
- Kern, Winfried, Cremer, Joseph, and Harnisch, Heinz. Process for the manufacture of magnesium- ammonium phosphate-hexahydrate. 3,476,510, Cl. 023-105.
- Kernan, George L. Bow sight. 3,475,820, Cl. 033-046.
- Kerwin, James F.: *See—*
  - Georgian, Vlasios, and Kerwin, James F. 3,476,745.
- Kerwin, James F., to Smith Kline & French Laboratories. 6,6-Ethylene-9α-fluoro steroids. 3,476,783, Cl. 260-397.45
- Kessoku, Kazuo: *See—*
  - Namba, Yasuhiro, Kessoku, Kazuo, Fujii, Tadayoshi, Ogura, Toshinobu, and Yoshiyama, Ichiro 3,476,028.
- Kida, Kazuyoshi: *See—*
  - Taira, Keon, and Kida, Kazuyoshi 3,475,892.
- Kiefer, John E., and Touey, George P., to Eastman Kodak Company. Cigarette filter tow. 3,476,120, Cl. 131-267.
- Kienzle Apparate GmbH: *See—*
  - Hilgendorf, Joachim, and Hasko, Froese, 3,477,064.
- Kimura, Eugene Tatsuru: *See—*
  - Swett, Leo Ralph, Ratajczyk, James Daniel, and Kimura, Eugene Tatsuru 3,476,748.
- Kincaid, Harry R., to International Research and Development Corporation. Arbor head tooling for connecting workpieces to drives. 3,475,969, Cl. 073-487.
- King, James Frank, to Bahnson Company, The. Vacuum impregnating apparatus. 3,476,078, Cl. 118-030.
- King, Walter D.: *See—*
  - Stanonis, David J., King, Walter D., and Esposito, Charles R. 3,475,823.
- Kingma, Cornelis S. J., to Honeywell G.m.b.H. Fuel valves with safety latching means. 3,476,130, Cl. 137-066.
- Kinkead Industries Incorporated: *See—*
  - Walker, Patrick J., 3,476,428.
- Kinnavy, James W., to Continental Can Company, Inc. Tripletite friction closures. 3,476,287, Cl. 220-042.
- Kinney, Robert E.: *See—*
  - Williams, Albert L., and Kinney, Robert E. 3,476,815.
- Kirby, Thomas E., Jr., to Reynolds Metals Company. Package construction. 3,476,237, Cl. 206-047.
- Kirner, Uwe, and Hartmark, Bjarne, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Bleaching fibrous material of natural cellulose. 3,476,505, Cl. 008-139.
- Kishimoto, Akira, to Fuji Transport Industry Co., Ltd. Ropeway with variable speed gear mechanism. 3,475,980, Cl. 074-089.22
- Kitchen, Alonzo G.: *See—*
  - Hogan, John P., and Kitchen, Alonzo G. 3,476,724.
- Kitsopoulos, George. Wheel traction means. 3,476,167, Cl. 152-225.
- Kittelson, Ronald L. Spring loaded gate fastener. 3,476,427, Cl. 292-175.
- Kivlen, John A.: *See—*
  - Straight, Harry F., Jr., and Kivlen, John A. 3,476,180.
- Klein, Hans Christof, to Teves, Alfred, G.m.b.H. Disk brake with galvanic corrosion protection. 3,476,222, Cl. 188-152.
- Klein, William A.: *See—*
  - Clark, Kendall, Herrmann, Karl E., and Klein, William A. 3,477,051.
- Klentz, Harley N.: *See—*
  - Schoepe, Adolf, and Klentz, Harley N. 3,476,200.
- Kline, Millard F. Retainer for purification media for gas from sewer line vents. 3,475,885, Cl. 055-357.
- Klinger, Calvin E. Illuminated camp mast. 3,476,929, Cl. 240-011.2
- Knapp, Walter E.: *See—*
  - Wright, Merrill W., and Knapp, Walter E. 3,476,238.
- Knapp, Wilhelm, to Teves, Alfred, G.m.b.H. Magnetic brake shoe securing means. 3,476,217, Cl. 188-073.
- Knapsack Aktiengesellschaft: *See—*
  - Krekeler, Hans, Jacobowsky, Armin, Born, Klaus, Schmitz, Heinz, and Wirtz, Peter, 3,476,955.
  - Sennewald, Kurt, Erpenbach, Heinz, Rehberg, Heinrich, and Viertel, Gunter, 3,476,776.
  - Vogt, Wilhelm, and Glaser, Hermann, 3,476,799.
- Knight, Douglas Frank, to Avery, W. & T., Limited. Transducer excitation circuits. 3,477,017, Cl. 323-051.
- Knowles, John Anthony, to Lucas, Joseph, (Industries) Limited. Solenoids. 3,477,048, Cl. 335-259.
- Kobata, Mikio: *See—*
  - Fukui, Kenichi, Kagiya, Tsutomu, Narisawa, Shizuo, Maeda, Taneo, and Kobata, Mikio 3,476,712.
- Kobayashi, Toyoaki, to Aisin Seiki Kabushiki Kaisha. Hydraulic disc brake apparatus and multiple operators therefor. 3,476,220, Cl. 188-106.
- Kobe, Inc.: *See—*
  - Coberly, Clarence J., and Brown, Francis Barton, 3,476,413.
- Koblin, Abraham, Woolfridge, Alfred L., and Adams, John O., to United States of America, Army. Continuous and automatic fallout sampler. 3,475,965, Cl. 073-432.
- Kobrehel, Peter M., to General Motors Corporation. Lock cylinder assembly. 3,475,933, Cl. 070-364.
- Kocks, Friedrich, GmbH: *See—*
  - Herchenroder, Hans, 3,476,361.
- Kodera, Hiroshi: *See—*
  - Yanai, Hisayoshi, Kodera, Hiroshi, and Migitaka, Masatoshi 3,476,942.
- Koehring Company: *See—*
  - Westerlund, Herbert A., and Westerlund, Robert E., 3,476,358.
- Kohfeld, Werner: *See—*
  - Viol, Gunter, and Kohfeld, Werner 3,476,630.
- Kohl, Heinz, and Souresny, Herbert, to Schoeller-Bleckmann Stahlwerke Aktiengesellschaft, Firma. Corrosion-resistant metallic articles and composition therefor. 3,476,555, Cl. 075-128.
- Kohnken, Kent H., to Carborundum Company, The. Nozzle. 3,476,324, Cl. 239-590.5
- Kokusai Denshin Denwa Kabushiki Kaisha: *See—*
  - Oshima, Shintaro, Nakagome, Yukio, and Fukata, Yasuo, 3,476,878.
- Kolka, Alfred J.: *See—*
  - Ecke, George G., and Kolka, Alfred J. 3,476,838.
- Kollar, John P., 1/2 to Kollar, Thomas J. Double-ended cutting insert and shank therefor. 3,475,802, Cl. 029-096.
- Kollar, Thomas J.: *See—*
  - Kollar, John P., 3,475,802.
- Kollsman Instrument Corporation: *See—*
  - Lis, Theodore M., 3,476,891.
- Komatsu, Toshiro, and Ujihara, Akira, to Ishikawajima-Harima Jukogyo Kabushiki Kaisha. Device for preventing the swaying of the suspending means in a crane. 3,476,263, Cl. 212-014.
- Koninklijke Industrieele Maatschappij Noury & van der Lande N.V.: *See—*
  - Schroeder, Arnold, and Nieuwenhuis, Paulus G. J., 3,476,704.
  - Stahl, Dieter, Strolenberg, Otto Karel, and Damen, Leonardus W. J., 3,476,723.
- Kontes Glass Company: *See—*
  - Petty, Richard, 3,476,671.
- Koppers Company, Inc.: *See—*
  - Calistrat, Mircea, 3,476,380.
- Kossoff, Joseph: *See—*
  - Douglas, Raymond J., Handler, Elliott, Iwasaki, Cedric E., Kossoff, Joseph, and Ryan, John W. 3,475,857.
- Kotfila, Ronald P.: *See—*
  - Andeen, Richard E., and Kotfila, Ronald P. 3,476,335.

- Koutroulos, Jean: *See—*
  - Holtermann, Hugo, Haugen, Leif Gunnar, Thorsdalen, Nils, Tjonneland, Knut, Wille, Knut, and Koutroulos, Jean 3,476,802.
- Kovar, Leonard J. Skiing support for ski boots. 3,475,835, Cl. 036-001.5
- Kowarik, Klaus: *See—*
  - Scheiber, Werner, Walter, Peter, Lehmann, Rolf, and Kowarik, Klaus 3,476,668.
- Kraffe de Laubarede, Leonce Marie Henri, to Societe Anonyme Plastus. Method and means for feeding internal combustion engines. 3,476,095, Cl. 123-119.
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- Krehnbrink, Lewis W., to Cincinnati Industries, Inc. Method and machine for producing double creped paper. 3,476,644, Cl., 162-111.
- Kreidler, Alfred, to Metall-Invent S.A. Electromagnetic actuating apparatus with the armature and pole pieces having corresponding surfaces in continuous rolling contact. 3,477,049, Cl. 335-276.
- Kreissl, Franz: *See—*
  - Meister, Gerhard, and Kreissl, Franz 3,476,179.
- Krekeler, Hans, Jacobowsky, Armin, Born, Klaus, Schmitz, Heinz, and Wirtz, Peter, to Knapsack Aktiengesellschaft. Process for the manufacture of vinyl chloride from contaminated 1,2-dichloroethane. 3,476,955, Cl. 260-656.
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- Kritikos, Athanasios: *See—*
  - Friess, Klaus, Ulrich, Richard, and Kritikos, Athanasios 3,476,688.
- Kudlaty, Walter J., to Marvel Engineering Company. Filter and housing structure. 3,476,251, Cl. 210-232.
- Kudlaty, Walter J., to Marvel Engineering Company. Reservoir filter assembly. 3,476,252, Cl. 210-323.
- Kudo, Shiro, Mihara, Yoshihisa, Adachi, Taiichi, Tsurugi, Shinichi, Usuku, Tomoatsu, and Wada, Isamu, to Kyowa Hakko Kogyo Co., Ltd. Phthalic acid diester preparation. 3,476,796, Cl. 260-475.
- Kuelling, Walter, to Process Equipment Engineering Co. Continuous fluid bed dryer. 3,475,832, Cl. 034-182.
- Kuhn, Edgar, to Bosch, Robert, GmbH. Voltage regulator for multiphase variable speed variable frequency generator, particularly for automotive use. 3,477,015, Cl. 322-024.
- Kuiper, Jan: *See—*
  - Roberts, Gwyneth M., Butt, Faye E., Baklien, Asbjorn, Gregory, Jocelyn M., and Kuiper, Jan 3,476,546.
- Kulbakh, Valter Osvaldovich, and Karpenko, Marija Pavlovna, to Leningradsky Nauchno-Issledoratelsky Institute Antibiotikov. Process for producing the sodium salt of nystatin and levorin. 3,476,856, Cl. 424-123.
- Kulzer, Gene T., to Torit Manufacturing Company. Filter bag collar. 3,475,884, Cl. 055-341.
- Kumamaru, Hiroyuki: *See—*
  - Sugi, Masao, and Kumamaru, Hiroyuki 3,475,893.
- Kunderman, Fred K., to Dresser Industries, Inc. Multistage centrifugal compressor. 3,476,485, Cl. 415-066.
- Kunstle, Gerhard, and Siegl, Herbert, to Wacker-Chemie G.m.b.H. Process for separating azeotropic mixtures from esters of aliphatic saturated or unsaturated carboxylic acids and alcohols by azeotropic distillation with a hydrocarbon halide. 3,476,798, Cl. 260-486.
- Kurashiki Rayon Co., Ltd.: *See—*
  - Imoto, Saburo, Ikari, Kyoichiro, and Hattori, Tatsuaki, 3,476,582.
  - Matsubayashi, Kanji, and Segawa, Hiroyuji, 3,476,850.
- Kyowa Hakko Kogyo Co., Ltd.: *See—*
  - Kudo, Shiro, Mihara, Yoshihisa, Adachi, Taiichi, Tsurugi, Shinichi, Usuku, Tomoatsu, and Wada, Isamu, 3,476,796.
- Lachance, Armand A. Safety device for automatic grocery carts. 3,476,216, Cl. 186-001.
- Laing, Robert L. Thermionic converter. 3,477,012, Cl. 322-002.
- Lally, Robert E., and Cunder, Joseph, to Diamond Shamrock Corporation. Method for producing finely divided water insoluble metallic salts of higher fatty acids. 3,476,786, Cl. 260-413.
- Lamson & Sessions Co., The: *See—*
  - Pajak, Henry C., 3,476,290.
- Landgren, Lars Olof Richard. Stereopicture reproduction. 3,476,458, Cl. 350-138.
- Lane Company Inc., The: *See—*
  - Church, Warren C., 3,476,495.
- Lang, Robert J.: *See—*
  - Kearby, Kenneth K., and Lang, Robert J. 3,476,508.
- Langlois, Arthur C., and Ziegenhagen, Paul D., to Consolidated Papers, Inc. Method and apparatus for detecting holes in a moving web. 3,475,956, Cl. 073-159.
- Lanier, Robert S.: *See—*
  - Seligson, Arnold L., and Lanier, Robert S. 3,476,887.
- Lariokhin, Vladimir Ivanovich: *See—*
  - Karakashian, Zaven Oganezovich, Lariokhin, Vladimir Ivanovich, and Kazakov, Valentin Mikhailovich 3,476,040.
- Larsen, Bent Werdelin. Welding of mountings on hollow sheet-metal bodies. 3,476,905, Cl. 219-093.
- Larson, Kenneth R., to Snap-On Tools Corporation. Pre-set adjustable torque measuring devices. 3,475,953, Cl. 073-139.
- Larson, Warren L.: *See—*
  - Fairbanks, Daniel F., Larson, Warren L., Randall, Robert N., and Wong, James 3,476,615.
- Lauer, Ernst H., to Eaton Yale & Towne, Inc. Overmatching rotor to stator retarder arrangement to combat cavitation. 3,476,219, Cl. 188-090.
- Laux, Friedrick Gunther. Pressing tool, specifically hand press. 3,475,946, Cl. 072-409.
- LaVan, John F., to American Standard, Inc. Electrical heater. 3,476,916, Cl. 219-552.
- Lawler, James R. Roll forming apparatus. 3,475,937, Cl. 072-181.
- Lawlor, Robert E., to Electro-Clamp Corporation. Electrical connector of integral sheet metal construction. 3,477,060, Cl. 339-266.
- Lawrence Brothers, Inc.: *See—*
  - Foltz, Robert E., 3,475,784.
- Lawson, Maurice O., to United States of America, Air Force. Electrofluid-dynamic generator. 3,476,959, Cl. 310-010.
- Layne & Bowler Pump Company: *See—*
  - Dicmas, John L., 3,476,038.
- Leach, Arthur, to Mac Whyte Company. Steel cable-laid body. 3,475,897, Cl. 057-144.
- Lear Jet Industries, Inc.: *See—*
  - Ve Nard, Dan L., 3,477,010:
- Lear Siegler, Inc.: *See—*
  - Curtland, Floyd E., 3,476,330.
  - Simons, John B., 3,476,156.
- Leath, Colin W., Waldman, Myron R., and Vallante, Thomas E., to Walco Electric Company. Wire heater temperature recording and control device. 3,476,910, Cl. 219-155.
- Le Claire, Harry Edward: *See—*
  - Trebotich, Thomas Samuel, and Le Claire, Harry Edward 3,476,917.
- Ledent, Pierre Leon Victor, to Institut National de l'Industrie Charbonniere. Carbonisation of solid fuels. 3,476,649, Cl. 201-012.
- Ledune, Jacques, and Nilles, Gaul, to Centre National de Recherches Metallurgiques, and Societe Anonyme des Forges de La Providence Mannesmann Aktiengesellschaft. Method for correcting the temperature of steel at the end of the refining process. 3,476,550, Cl. 075-052.
- Lee, Hop. Toy windmill. 3,475,850, Cl. 046-058.
- Lee, Lloyd T. Milk inlet sealing device. 3,476,357, Cl. 251-151.
- Leeds, Harry R. Medical sterilization apparatus. 3,476,507, Cl. 021-091.
- Lefebvre, Gilles: *See—*
  - Cuzin, Daniel, Chauvin, Yves, and Lefebvre, Gilles 3,476,731.
- Lehmann, Rolf: *See—*
  - Scheiber, Werner, Walter, Peter, Lehmann, Rolf, and Kowarik, Klaus 3,476,668.
- Lehrer, William I., to Fairchild Camera and Instrument Corporation. Method of forming gallium arsenide films by vacuum deposition techniques. 3,476,593, Cl. 117-201.
- Leiby, David W.: *See—*
  - Creek, Kenneth O., and Leiby, David W. 3,475,825.
- Leistner, William E.: *See—*
  - Kauder, Otto S., Leistner, William E., and Hecker, Arthur C. 3,476,699.
- Le Masters, Paul D., to General Motors Corporation. Electronic speedometer and odometer control circuit. 3,477,022, Cl. 324-070.
- Lemelson, Jerome H. Automatic measurement system. 3,476,481, Cl. 356-167.
- Lemieux, Raymond Urgel: *See—*
  - Raap, Rintje, Lemieux, Raymond Urgel, and Micetich, Ronald George 3,476,743.
- Lemieux, Raymond U., and Micetich, Ronald G., to R & L Molecular Research Ltd. Certain substituted isoxazoles. 3,476,765, Cl. 260-302.
- Lenard, Katherine: *See—*
  - Taylor, Edward C., and Lenard, Katherine 3,476,755.
- Leningradsky Nauchno-Issledoratelsky Institute Antibiotikov: *See—*
  - Kulbakh, Valter Osvaldovich, and Karpenko, Marija Pavlovna, 3,476,856.
- Lennon, Fred A., Zahuranec, Emery J., Dodge, Harry G., and Szohatzky, Zoltan, to Crawford Fitting Company. Tool holding device. 3,475,948, Cl. 072-462.
- Lenz, Robert G.: *See—*
  - De Hart, Arnold O., Ferchland, Harold W., and Lenz, Robert G. 3,475,826.
- Lenzi, William: *See—*
  - Packard, Norman M., and Lenzi, William 3,476,099.
- Lepetit S.p.A.: *See—*
  - Pifferi, Giorgio, and Testa, Emilio, 3,476,752.
- Leslie, John B., Mrs.: *See—*
  - Porter, Charles D., 3,475,914.
- Lester, Ralph, and Williams, Tegwyn Pierce, to Lever Brothers Company. Process for preserving the organoleptic properties of young potatoes. 3,476,573, Cl. 099-193.
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- Lever Brothers Company: *See—*
  - Lester, Ralph, and Williams, Tegwyn Pierce, 3,476,573.

Levine, Charles A.: *See—*
Brown, William E., Heitz, Roberg G., and Levine, Charles A. 3,476,602.
Lewin, Gerhard: *See—*
Parsonnet, Victor, Myers, George H., and Lewin, Gerhard 3,476,116.
Lewin, Gunnar Erik Werner. Spring lock. 3,476,426, Cl. 292-076.
Leybourne, Allen E., III, to Monsanto Company. Polymerizer apparatus. 3,476,523, Cl. 023-285.
Liauw, Koei-Liang: *See—*
Etherington, Robert W., Jr., and Liauw, Koei-Liang 3,476,808.
Libbey-Owens-Ford Company: *See—*
Mc Cown, William E., Gladieux, Norman K., and Dunipace, Donald W., 3,476,539.
Ritter, George F., Jr., Carson, Frank J., and Hymore, Frank J., 3,476,540.
Ritter, George F., Jr., 3,476,541.
Ritter, George F., Jr., 3,476,542.
Libeer, Marcel Jan: *See—*
Depoorter, Henri, and Libeer, Marcel Jan 3,476,558.
Licentia Patent-Verwaltungs-G.m.b.H.: *See—*
Magner, Richard, and Geppert, Albrecht, 3,476,985.
Otzipka, Willi, and Mally, Joachim, 3,476,997.
Stumpe, August Christian, Seelig, Anton, and Donges, Hans, 3,476,979.
Ligenza, Joseph R., and Povilonis, Edward I., to Bell Telephone Laboratories, Incorporated. Apparatus for plasma processing. 3,476,971, Cl. 313-231.
Liggett, James J., 1/2 to Sternberg, Erving S. Recovery of protein and oil from oil-containing seeds by treatments with a saturated solution of calcium hydroxide. 3,476,739, Cl. 260-123.5
Liljegren, Johan Ragnar. Methods of separating inorganic impurities from sewage and of making a soil improving composition from the impurities separated. 3,476,683, Cl. 210-008.
Lilly, Eli, and Company: *See—*
Gorman, Marvin, Haney, Michael E., Jr., Lively, David H., and Davenport, James D., 3,476,648.
Lindberg, William S.: *See—*
Barecki, Chester J., and Lindberg, William S. 3,476,455.
Linde Aktiengesellschaft: *See—*
Meister, Gerhard, and Kreissl, Franz, 3,476,179.
Line, Gerald D., to Eaton Yale & Towne, Inc. Hydraulic valve lifter. 3,476,093, Cl. 123-090.
Lippe, Friedrich Georg, and Suppan, Fritz. Method and means for purifying, discoloring and clarifying through a continuous and catalytic treatment at room temperature raw sugar juices obtained from sugar containing plants and fruit and also raw sugar solutions. 3,476,597, Cl. 127-048.
Lis, Theodore M., to Kollsman Instrument Corporation. Slide type electric switch. 3,476,891, Cl. 200-016.
Litke, Alvin C., to Allied Chemical Corporation. Concentrated colorants. 3,476,500, Cl. 008-093.
Littlepage, James H.: *See—*
Motl, Anton, and Littlepage, James H. 3,476,342.
Lively, David H.: *See—*
Gorman, Marvin, Haney, Michael E., Jr., Lively, David H., and Davenport, James D. 3,476,648.
Locke, Charles H., to International Business Machines Corporation. Multiple outlet valve. 3,476,152, Cl. 137-625.48
Lode, Tenny D., to Rosemount Engineering Company. Magnetic bearing. 3,476,448, Cl. 308-010.
Lodi, Luciano: *See—*
Vecchio, Martino, Lodi, Luciano, Fattore, Vittorio, and Cammarata, Italo 3,476,817.
Loewenthal, Henry J., to American Standard, Inc. Diverter valve. 3,476,150, Cl. 137-625.11
Loffler, Josef, Rampp, Egon, and Schall, Hans, to Siemens Aktiengesellschaft. Device for depositing strips. 3,476,378, Cl. 270-061.
Lofstrand, Warren A., to Sessions Clock Co., The. Connector for cam-actuated switch. 3,476,903, Cl. 200-168.
Loftus, Robert M.: *See—*
Gallant, Reginald R., and Loftus, Robert M. 3,476,312.
Loge, Hans, to Kaltenbach & Voigt. Portable holder for dental tools or the like. 3,475,817, Cl. 032-026.
Lohner, Kurt, Professor Dr.-Ing.: *See—*
Hartel, Gunter, 3,476,096.
Lohr & Bromkamp GmbH: *See—*
Aucktor, Erich, 3,475,924.
Lokken, Albert. Drain attachment for flexible cover for boats. 3,475,772, Cl. 009-001.
Lollmann, Paul. Device for uncorking champagne or suchlike bottles. 3,476,278, Cl. 215-055.
LoMonaco, Sergio, Melacini, Paolo, Borsini, Giancarlo, Magagnin, Luigi Ciligot, and Visani, Francesco, to Chatillon Societa Anonima Italiana per le Fibre Tessili Artificiali S.p.A. Process for the low-temperature homopolymerization and copolymerization of vinyl chloride. 3,476,727, Cl. 260-092.8
London Bankside Products Limited: *See—*
Wagstaffe, Aubrey H., 3,477,062.
London, William Herbert: *See—*
Mortlock, James Oswald, London, William Herbert, and Shaw, William 3,475,913.
Long, George B.: *See—*
Brinkman, Thomas J., Fogt, Thomas H., Long, George B., and Whistler, Charles C., Jr. 3,475,829.
Long, Stanley Thomas, to C.A.V. Limited. Counting apparatus. 3,475,955, Cl. 073-168.
Long, Thomas P.: *See—*
Murphy, Alfred M., Filak, Carl M., Long, Thomas P., and Brown, John A., Jr. 3,475,942.
Lorenz, Fritz, and Weiss, Ernst, to Heberlein Patent Corporation. Fabric treatment. 3,476,501, Cl. 008-125.
Loria, Anthony, to Eastman Kodak Company. Photographic silver halide elements containing two equivalent cyan couplers. 3,476,563, Cl. 096-100.
Loughren, Arthur V. Controlled ink-jet copy-reproducing apparatus. 3,476,874, Cl. 178-006.6
Lovendahl, Norman H. Precision position indicator. 3,475,983, Cl. 074-395.
Lowenheim, Frederick A., to M & T Chemicals, Inc. Process for treating metals. 3,476,551, Cl. 075-098.
Lucas, Joseph, (Industries) Limited: *See—*
Baldwin, John Granville, and Holt, William David, 3,476,902.
Crowther, Harold, 3,476,055.
Knowles, John Anthony, 3,477,048.
Rushton, Nigel John, 3,476,097.
Sharples, Richard Colin, 3,476,900.
Skinner, Robert Thomas John, 3,476,051.
Warne, Eugene Harold, 3,475,908.
Warne, Eugene Harold, 3,475,909.
Warne, Eugene Harold, 3,475,910.
Werda, Konrad, 3,476,901.
Ludeman, Edwin H., to Andrews Industries Incorporated. Dust-cap. 3,476,154, Cl. 138-089.
Ludwig Riedhammer G.m.b.H.: *See—*
Buchkremer, Rudolf, 3,476,369.
Luft, Karl, to Office National d'Etudes et de Recherches Aerospatiales. Infra-red gas analyzer for measuring the concen- tration of a particular gas. 3,476,934, Cl. 250-043.5
Lundahl, Lennart V. S.: *See—*
Thoren, Georg M. I., and Lundahl, Lennart V. S. 3,476,397.
Lundquist, Ingemar H., to Friden, Inc. Method of forming a font belt. 3,476,657, Cl. 204-006.
Lusher, Kenneth G., to Owens-Illinois, Inc. Method of offset printing multicolor images on glass articles. 3,476,045, Cl. 101-129.
Lust, Siegmund: *See—*
Mohr, Gunther, Erdmann, Dietrich, Niethammer, Konrad, Lust, Siegmund, Schneider, Gerhart, and Jacobi, Ernst 3,476,545.
Luttich, Werner Richard Gotthard. Method of influencing tobacco smoke aroma. 3,476,118, Cl. 131-143.
M & B Metal Products Company: *See—*
Brekle, Oliver R., 3,476,298.
M & T Chemicals, Inc.: *See—*
Lowenheim, Frederick A., 3,476,551.
Mack, Jules A., to Superior Continental Corporation. Handhole for electrical apparatus adapted for easy knockdown and reassembly. 3,476,867, Cl. 174-037.
MacMeekin, Robert A.: *See—*
Ryan, John W., MacMeekin, Robert A., and Meggs, Daniel Henry 3,475,854.
Mac Nutt, William J.: *See—*
Dougherty, Thomas F., Jr., Mac Nutt, William J., and McKelvey, William J. 3,476,980.
Mac Whyte Company: *See—*
Leach, Arthur, 3,475,897.
Madelung, Gero Otto, to Entwicklungsring Sued GmbH. Heat exchanger for aircraft air conditioning systems. 3,475,906, Cl. 060-039.07
Maeda, Taneo: *See—*
Fukui, Kenichi, Kagiya, Tsutomu, Narisawa, Shizuo, Maeda, Taneo, and Kobata, Mikio 3,476,712.
Magagnin, Luigi Ciligot: *See—*
LoMonaco, Sergio, Melacini, Paolo, Borsini, Giancarlo, Magagnin, Luigi Ciligot, and Visani, Francesco 3,476,727.
Magat, Eugene E., and Sharkey, William H., to Du Pont de Nemours, E. I., and Company. Static resistant filament. 3,475,898, Cl. 057-140.
Magner, Richard, and Geppert, Albrecht, to Licentia Patent-Verwaltungs-G.m.b.H. Semiconductor rectifier unit. 3,476,985, Cl. 317-234.
Mahlmann, James P.: *See—*
White, William V., Mahlmann, James P., and Stolz, Robert P. 3,476,566.
Maier, Martin: *See—*
Purrer, Josef, and Maier, Martin 3,475,890.
Malec, Robert E., to Armour Industrial Chemical Company, mesne. Process for cleaning valve in crankcase ventilating system and cleaning composition. 3,476,091, Cl. 123-001.
Mallory, P. R., & Co., Inc.: *See—*
Simmons, Harold T., and Pervorse, Richard E., 3,476,892.
Mally, Joachim: *See—*
Otzipka, Willi, and Mally, Joachim 3,476,997.
Malone, Alvis L., III: *See—*
Penner, Siegfried E., and Malone, Alvis L., III 3,476,792.
Malouf, Emil E.: *See—*
Spedden, Henry Rush, and Malouf, Emil E. 3,476,554.

Manganello, Samuel J.: *See—*
Kennedy, George E., and Manganello, Samuel J. 3,475,812.
Mango, Frank D., and Newey, Herbert A., to Shell Oil Company. Novel epoxides and cured polymer compositions obtained therefrom. 3,476,693, Cl. 260-002.
Maniquis, Angelina A.: *See—*
Joseph, Guy G., Teverbaugh, Robert K., and Maniquis, Angelina A. 3,476,292.
Mantle, Peter J., and Hall, Arnold M., to General Dynamics Corporation. Multiple hull vehicle with air cushion support. 3,476,069, Cl. 114-067.
Marasco, Harold E., to Marasco Shoe Machinery Company. Sole press. 3,475,776, Cl. 012-036.8
Marasco Shoe Machinery Company: *See—*
Marasco, Harold E., 3,475,776.
Marathon Oil Company: *See—*
Davis, John A., Jr., 3,476,184.
Marcelissen, Franciscus Hendrikus, to Van der Grinten N.V. Apparatus comprising one or more processing units for reproduction material. 3,476,480, Cl. 355-104.
Marchfelder, Richard. Automatic release separable fastener. 3,475,799, Cl. 024-230.
Marconi, Walter, to SNAM S.p.A. Polymerization of isoprene with catalyst of transition metal and polyiminoalane. 3,476,734, Cl. 260-094.3
Marcoux, Leo, to Texas Instruments, Incorporated. Aerosol heater with improved control means. 3,476,293, Cl. 222-146.
Marforio, Nerino, to S.p.A. Virginio Rimoldi & C. Sewing machine for attaching bindings on the edges of fabrics by means of chainstitch seams blind on one side of the binding. 3,476,065, Cl. 112-197.
Margulies, Howard: *See—*
Miller, Bernard, and Margulies, Howard 3,476,834.
Mariani, Brunello, Guizzi, Alberto, and Tisselli, Eugenio, to Ferrania, S.p.A. Silver halide emulsion containing an azo- pyrazolone coupler. 3,476,564, Cl. 096-100.
Markey, Roscoe I., to Teledyne, Inc. Spring washer. 3,476,009, Cl. 085-062.
Markey, Roscoe I., to Teledyne, Inc. Fixed screw joint system. 3,476,010, Cl. 085-062.
Markey, Roscoe I., to Teledyne, Inc. Self-adjusting bearing. 3,476,454, Cl. 308-207.
Markham, Aaron E., and Blackmore, Kenneth A. E., to Georgia-Pacific Corporation. Process for treating sulfonated lignin-containing material and product thereof. 3,476,740, Cl. 260-124.
Markotan, Robert J., to Acme Abrasive Co. Abrasive composition with limestone as the porosity-inducing agent. 3,476,537, Cl. 051-296.
Marotta Valve Corporation: *See—*
Tillman, Alfred, 3,476,141.
Marquis, Donald Peter, to General Motors Corporation. Idler arm assembly. 3,476,419, Cl. 287-117.
Marshner, Robert L. Reverse forming arrangement and method. 3,475,944, Cl. 072-347.
Martin, Edward J., Jr.: *See—*
Tregay, John L., and Martin, Edward J., Jr. 3,476,382.
Martin, Ronald E. Detachable clear view visor for motor vehicles. 3,476,436, Cl. 296-095.
Martinek, Thomas W., Haines, Robert M., Weichman, Roger L., and Trainor, Wilbur J., to Union Oil Company of California. High temperature grease. 3,476,687, Cl. 252-059.
Martyniuk, Ernest T., to General Motors Corporation. Method of making metal powder. 3,476,547, Cl. 075-000.5
Marum, Helmut, to Varityper Corporation. Hammer actuator mechanism. 3,476,229, Cl. 197-016.
Marvel Engineering Company: *See—*
Kudlaty, Walter J., 3,476,251.
Kudlaty, Walter J., 3,476,252.
Marvin, Edgar S., to Eastman Kodak Company. Trigger mechanism for a movie camera or the like. 3,476,471, Cl. 352-178.
Masai, Shohachi: *See—*
Matsuoka, Shigeru, Fujisawa, Kiyoshi, Masai, Shohachi, and Asami, Atsumi 3,475,891.
Maschinenfabrik Fahr Aktiengesellschaft: *See—*
Purrer, Josef, and Maier, Martin, 3,475,890.
Maschinenfabrik Hasenclever Aktiengesellschaft: *See—*
Bachmann, Horst, 3,475,947.
Bachmann, Horst, 3,476,911.
Massey, Roger G., to Torrington Company, The. Overrunning clutch with controlled operation. 3,476,226, Cl. 192-027.
Master Lock Company: *See—*
Foote, Daniel J., 3,475,930.
Foote, Daniel J., 3,475,931.
Foote, Daniel J., 3,476,429.
Mates, Jack K., to American Velcro, Inc. Separation of rigid members joined by hook and loop. 3,475,810, Cl. 029-427.
Matheson, James M. Disposable syringe. 3,476,111, Cl. 128-227.
Mathis, Pierre: *See—*
Demol, Pierre, and Mathis, Pierre 3,476,587.
Matsubayashi, Kanji, and Segawa, Hiroyuji, to Kurashiki Rayon Co., Ltd. Low elongation set spandex filaments and process for the preparation thereof. 3,476,850, Cl. 264-205.
Matsui, Isamu: *See—*
Shimai, Junichiro, Matsui, Isamu, Kawamura, Syuzo, and Sakai, Syoji 3,476,328.
Matsumoto, Jun: *See—*
Murakami, Masuo, Takahashi, Kozo, Matsumoto, Jun, Murase, Kiyoshi, Tamazawa, Kazuharu, Kawamura, Shigeo, and Terao, Junichi 3,476,777.
Matsuoka, Shigeru, Fujisawa, Kiyoshi, Masai, Shohachi, and Asami, Atsumi, to Asahi Kasei Kogyo Kabushiki Kaisha. Method of and apparatus for doffing yarns in the centrifugal pot spinning process. 3,475,891, Cl. 057-034.
Matsushita Denko Kabushiki Kaisha: *See—*
Morita, Hiroshi, Fuse, Motoyosi, Iwasaki, Sadaya, Yamagishi, Hisato, Kawaguchi, Syojiro, and Tanigawa, Koichiro, 3,476,976.
Matsushita Electric Industrial Co., Ltd.: *See—*
Kajitani, Masahiko, 3,476,884.
Matsushita Electric Works Ltd.: *See—*
Sauer, Hans, 3,477,045.
Matt, Albert R., Jr., and Steinert, Richard M., to Rowland Products, Incorporated. Immobilization shield. 3,476,107, Cl. 128-133.
Mattel, Inc.: *See—*
Adler, Seymour, 3,475,853.
Agrista, Dominic S., and Anastasia, Anthony S., 3,476,377.
Cowell, Robert L., and May, Richard L., 3,475,856.
Douglas, Raymond J., Handler, Elliott, Iwasaki, Cedric E., Kossoff, Joseph, and Ryan, John W., 3,475,857.
Ryan, John W., MacMeekin, Robert A., and Meggs, Daniel Henry, 3,475,854.
Mattly, Chris. Sun protection device for vehicles. 3,476,032, Cl. 098-002.
Matukas, Antanas G. Hand restraint. 3,476,108, Cl. 128-133.
Matyas, Tibor, and Moorehead, John P., to Evans Products Company. Flat car bulkhead. 3,476,041, Cl. 105-376.
Maul Bros. Inc.: *See—*
Dorsey, Francis E., 3,476,543.
Maxfield, Perry L., to Phillips Petroleum Company. Preparation of cyclopentadienyl nickel catalysts. 3,476,769, Cl. 260-332.5
Maximuk, Adam J. Protective shield devices for tools and the like. 3,475,990, Cl. 074-608.
Maxson Electronics Corporation: *See—*
Ehrenfels, Alfred L., and Kahl, Paul C., 3,476,898.
May, Richard L.: *See—*
Cowell, Robert L., and May, Richard L. 3,475,856.
Maybach Mercedes-Benz Motorenbau GmbH: *See—*
Herold, Manfred, and Brosig, Adolf, 3,476,218.
Mazur, Chester C., to United States Steel Corporation. Apparatus for measuring strip temperature. 3,475,962, Cl. 073-355.
Mazzanti, Giorgio: *See—*
Natta, Giulio, Mazzanti, Giorgio, Valvassori, Alberto, and Sartori, Guido 3,476,720.
Natta, Giulio, Dall'Asta, Gino, and Mazzanti, Giorgio 3,476,728.
McCarthy, Robert. Method of removing undesirable flavor and spoilage influencing substances from uncooked meat. 3,476,569, Cl. 099-107.
McConnell, Wayne V.: *See—*
Hoyle, Vinton A., Jr., and McConnell, Wayne V. 3,476,772.
McCord Corporation: *See—*
Callahan, James J., 3,476,214.
Mc Cown, William E., Gladieux, Norman K., and Dunipace, Donald W., to Libbey-Owens-Ford Company. Producing sheet glass. 3,476,539, Cl. 065-025.
McCoy, Thomas A., to Carando Machine Works. Bail-attachment ear for metallic containers. 3,476,289, Cl. 220-091.
McCutcheon, George H.: *See—*
Hanson, Lila M., Hanson, Bernard B., and McCutcheon, George H. 3,476,261.
McDaniel, Rupert A.: *See—*
Charlton, Richard E., Jr., and McDaniel, Rupert A. 3,476,626.
McDonnell Douglas Corporation: *See—*
Berger, Carl, and Arrance, Frank C., 3,476,601.
Berger, Carl, 3,476,607.
McDougall, Natt, Jr. Golf-baseball game apparatus. 3,476,076, Cl. 116-120.
McElroy, Philip W. Aggregate pumping apparatus. 3,476,057, Cl. 103-167.
McFarland, James W., to Pfizer, Chas., & Co., Inc. Thienylalanine. 3,476,768, Cl. 260-332.2
McGuffie, Peter A. Line marking machines. 3,476,294, Cl. 222-177.
McKelvey, William J.: *See—*
Dougherty, Thomas F., Jr., Mac Nutt, William J., and McKelvey, William J. 3,476,980.
McLain, James L.: *See—*
Fisher, Richard L., Jr., and McLain, James L. 3,475,813.
McMahon, Joseph F., and Milliken, Thomas H., to Pullman Incorporated. Hydrogen production. 3,476,536, Cl. 048-214.
McMillen, Kenneth G., to Borg-Warner Corporation. Valve detent mechanism. 3,476,148, Cl. 137-624.27
McMiller, Urban C., to Beatrice Foods Co., mesne. Latch mechanism for a car top carrier door. 3,476,162, Cl. 150-052.
McMurdo Instrument Company Limited, The: *See—*
Cole, James Edward George, 3,477,059.
McNeil Laboratories, Incorporated: *See—*
Cain, Cornelius K., 3,476,754.
Paragamian, Vasken, 3,476,759.
Rasmussen, Chris Royce, 3,476,749.

- McWilliams, Joseph E. Apparatus for loading bagged mail from a loading dock into a highway vehicle. 3,476,271, Cl. 214-006.
- Mech, Christian: *See—*
  - Chaboseau, Jacques, and Mech, Christian 3,476,449.
- Medical Supply Company: *See—*
  - Pearson, Ernest A., 3,475,786.
- Mees, Arthur Allan, and Olson, Frank Wesley, Jr., to Colgate-Palmolive Company. Method of making a shampoo. 3,476,489, Cl. 424-164.
- Meggs, Daniel Henry: *See—*
  - Ryan, John W., MacMeekin, Robert A., and Meggs, Daniel Henry 3,475,854.
- Meijs, Franciscus H.: *See—*
  - Bezemer, Cornelis, Meijs, Franciscus H., van Zanten, Marinus, and Wittenwyler, Clifford V. 3,476,189.
- Meinhardt, Johannes, and Schubert, Paul, to Cronin, Frederick W. Method of preparing surfaced panels. 3,476,628, Cl. 156-246.
- Meister, Gerhard, and Kreissl, Franz, to Linde Aktiengesellschaft. Plate-type heat exchanger. 3,476,179, Cl. 165-166.
- Melacini, Paolo: *See—*
  - LoMonaco, Sergio, Melacini, Paolo, Borsini, Giancarlo, Magagnin, Luigi Ciligot, and Visani, Francesco 3,476,727.
- Melton, Thomas M., and Brown, David A., to Mobil Oil Corporation. Phosphorus derivatives of benzylidene aniline. 3,476,836, Cl. 260-944.
- Meltsner, Bernard R., to Ethyl Corporation. Phenyl alkyl ether antioxidants. 3,476,814, Cl. 260-613.
- Memger, Wesley, Jr.: *See—*
  - Frazer, August Henry, and Memger, Wesley, Jr. 3,476,719.
- Mendelsohn, Morris A., to Westinghouse Electric Corporation. Large celled polyurethane foam. 3,476,933, Cl. 250-002.5
- Mengers, Paul E., to Sylvania Electric Products, Inc. Optical intrusion detection system using reflected dual beam peripheral scanning. 3,476,948, Cl. 250-224.
- Menke, Helmut, and Roh, Peter, to Dynamit Nobel Aktiengesellschaft. Metal azide electrically conductive priming composition and manufacture thereof. 3,476,623, Cl. 149-035.
- Merck & Co., Inc.: *See—*
  - Nelson, Carl E., Baer, John E., and Foltz, Elwood L., 3,476,858.
- Merck, E., A.G.: *See—*
  - Mohr, Gunther, Erdmann, Dietrich, Niethammer, Konrad, Lust, Siegmund, Schneider, Gerhart, and Jacobi, Ernst, 3,476,545.
- Merkel, Charles M., Salmon, Joe E., and Brugh, Thomas H., to Continental/Moss-Fordin, Inc. Apparatus for tying a compressed bale. 3,475,879, Cl. 053-124.
- Merrick, John A., and Hovestad, Adrian P., to Service Steel & Engineering Limited. Dockboard. 3,475,778, Cl. 014-071.
- Merwin, Robert F., and Weiss, Fred W., to Eriez Manufacturing Co. Permanent magnetic conveyor and elevator. 3,476,232, Cl. 198-041.
- Mesta Machine Company: *See—*
  - Petros, Andrew J., Jr., 3,475,940.
- Metal Box Company Limited, The: *See—*
  - Bell, George, and O'Connell, Anthony James, 3,476,666.
  - Howell, Bryan Gordon, 3,476,240.
- Metal Dynamics Corporation: *See—*
  - Rachman, Isadore B., 3,476,404.
- Metall-Invent S.A.: *See—*
  - Kreidler, Alfred, 3,477,049.
- Metallgesellschaft Aktiengesellschaft: *See—*
  - Scheiber, Werner, Walter, Peter, Lehmann, Rolf, and Kowarik, Klaus, 3,476,668.
- Metalsky, William J.: *See—*
  - Cyrway, Edward N., Jr., and Metalsky, William J. 3,476,862.
- Metalurgitschen Zavod 'Lenin':*See—*
  - Valtchev, Alexander J., and Valtcheva, Temenushka Nikolova, 3,476,586.
- Metcalfe, Kenneth A., Gillespie, Frank C., and Smith, Ian E., to Commonwealth of Australia, care of the Secretary Department of Supply. Control of xerographic images by charging the photoconductor with only an outer band of a corona discharge. 3,476,935, Cl. 250-049.5
- Mettalia, Joseph B., Jr., and Specht, Edward H., to Rohm & Haas Company. Process for the producing esters. 3,476,797, Cl. 260-484.
- Metzger, Horst: *See—*
  - Beckmann, Wilhelm, Kengelhach, Werner Ludwig, Metzger, Horst, and Pape, Martin 3,476,669.
- Meyer, Dietrich, to U.S. Philips Corporation, mesne. Circuit arrangement for the lineal control of the frequency or period of a sine oscillator by means of an electric quality. 3,477,040, Cl. 331-141.
- Micetich, Ronald G.: *See—*
  - Lemieux, Raymond U., and Micetich, Ronald G. 3,476,765.
- Micetich, Ronald George: *See—*
  - Raap, Rintje, Lemieux, Raymond Urgel, and Micetich, Ronald George 3,476,743.
- Michnikowska, Wanda: *See—*
  - Pazola, Zdzislaw, Switek, Henryk, Janicki, Jozef, and Michnikowska, Wanda 3,476,646.
- Microdot Inc.: *See—*
  - Bush, Jack A., and Shaull, Stanley D., 3,475,790.
- Migitaka, Masatoshi: *See—*
  - Yanai, Hisayoshi, Kodera, Hiroshi, and Migitaka, Masatoshi 3,476,942.
- Mihara, Yoshihisa: *See—*
  - Kudo, Shiro, Mihara, Yoshihisa, Adachi, Taiichi, Tsurugi, Shinichi, Usuku, Tomoatsu, and Wada, Isamu 3,476,796.
- Mikoshiba, Tomoyoshi, Suzuki, Yasuo, and Ishizawa, Shingo, to Hitachi, Ltd. Electrolytic shaping apparatus with CdS surfaced electrode. 3,476,674, Cl. 204-224.
- Miles, Clifford V., and Garrett, John M., to Westinghouse Brake and Signal Company Limited. Controlled rectifier semiconductor device. 3,476,989, Cl. 317-235.
- Milewski, John V., to General Technologies Corporation. High-strength single crystal whisker paper composites and laminates. 3,476,641, Cl. 161-170.
- Militano, Vincent S., to Finkel Outdoor Products, Inc. Furniture web. 3,476,169, Cl. 160-327.
- Millen, Edward G., to Thiokol Chemical Corporation. Organo-silane modified polysulfide polymers as adhesive additives or primers for high rank polysulfide based adhesive compositions. 3,476,826, Cl. 260-824.
- Miller, Arthur J.: *See—*
  - Campbell, John M., and Miller, Arthur J. 3,476,487.
- Miller, Bernard J. Sensing probe with metallic coating. 3,475,960, Cl. 073-304.
- Miller, Bernard, and Margulies, Howard, to American Cyanamid Company. β-Phosphonylvinyl phosphates. 3,476,834, Cl. 260-931.
- Miller, Jack M.: *See—*
  - Schack, Warren R., and Miller, Jack M. 3,476,574.
- Miller, Lewis S., and Horowitz, Frederick, to Weyerhaeuser Company. Precipitated resin-starch paperboard treatment. 3,476,695, Cl. 260-017.2
- Miller, William C., and Trutna, William R., to Du Pont de Nemours, E. I., and Company. Preparation of 3, 3'-ethylenebis (tetrahydro-4,6-dimethyl-2H-1,3,5-thiadiazine-2-thione. 3,476,751, Cl. 260-243.
- Milliken, Thomas H.: *See—*
  - McMahon, Joseph F., and Milliken, Thomas H. 3,476,536.
- Mills, John Cunningham, to Commonwealth Scientific and Industrial Research Organization. Apparatus for positioning specimens in electron microscopes or electron diffraction cameras. 3,476,936, Cl. 250-049.5
- Mills, John E., and Getz, Edward J., to Westinghouse Electric Corporation. Protective wrapper for tubular articles such as fluorescent lamps and the like. 3,476,235, Cl. 206-046.
- Minamikawa, Yoshihisa: *See—*
  - Katagiri, Shinjiro, and Minamikawa, Yoshihisa 3,476,972.
- Mindell, Marvin I., Heikkila, Andrew E., Harrison, Henry, and Wolz, Rudolph G., to Viewlex, Inc. Stall detector for rotatable shaft. 3,477,008, Cl. 318-461.
- Minnesota Mining and Manufacturing Company: *See—*
  - Hansen, Robert L., 3,476,705.
  - Hansen, Robert L., 3,476,753.
  - Randklev, Ronald M., and Humphries, Clarence Raymond, 3,476,584.
- Minolta Camera Kabushiki Kaisha: *See—*
  - Namba, Yasuhiro, Kessoku, Kazuo, Fujii, Tadayoshi, Ogura, Toshinobu, and Yoshiyama, Ichiro, 3,476,028.
- Miracle Hook Corporation: *See—*
  - Preston, Louis, 3,476,068.
- Misener, Cecil D.: *See—*
  - Staats, Louis T., Sr., Misener, Cecil D., and Innis, Frank B. 3,475,888.
- Mitchell, George A. View finder including a porro reflecting system. 3,476,011, Cl. 088-001.5
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  - Kameda, Isamu, and Uto, Yoshimitsu, 3,476,909.
- Mitsubishi Petrochemical Co., Ltd.: *See—*
  - Furukawa, Junji, Morikawa, Hiroyuki, and Yamamoto, Ryuzo, 3,476,820.
- Mittler, Martin A.: *See—*
  - Blickstein, Martin J., and Mittler, Martin A. 3,476,994.
- Miyayama, Shigeru: *See—*
  - Uchida, Isamu, Miyayama, Shigeru, Watanabe, Kenkihi, and Osako, Kyoichi 3,476,125.
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- Mobil Oil Corporation: *See—*
  - Bruno, Guenter, 3,476,788.
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  - Dahan, Paul C., 3,476,246.
  - Etherington, Robert W., Jr., and Liauw, Koei-Liang, 3,476,808.
  - Melton, Thomas M., and Brown, David A., 3,476,836.
  - Williams, Albert L., and Kinney, Robert E., 3,476,815.
- Moeller & Neuman G.m.b.H.: *See—*
  - Bier, Albert, 3,475,939.
- Moffatt, John G., and Fenselau, Allan H., to Syntex Corporation. 13,17-Seco-17-nitrile-$\Delta^{13(18)}$ steroids of the androstane and estrane series and the process for the preparation thereof. 3,476,794, Cl. 260-465.
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- Mohrman, Richard C.: *See—*
  - Jackson, Earl V., and Mohrman, Richard C. 3,476,465.
- Molnar, Eugene J., to Coe Laboratories, Incorporated. Antifungal resinous dental compositions and articles. 3,476,854, Cl. 424-078.
- Monaco, Foster, and Monaco, Rosario. Display-type food server. 3,476,282, Cl. 220-013.
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  - Culbertson, Harry M., and Buchanan, Alan David, 3,476,707.
- Monsanto Company: *See—*
  - Barker, George E., 3,476,128.
  - Gioia, Steve C., and Fricke, Louis H., Jr., 3,477,034.
  - Leybourne, Allen E., III, 3,476,523.
  - Schleppnik, Alfred A., and Oftedahl, Marvin L., 3,476,778.
  - Walsh, Robert J., 3,475,867.
- Montecatini Edison S.p.A.: *See—*
  - Cavaterra, Enrico, and Ferlazzo, Natale, 3,476,810.
  - Ferrari, Gianfranco, and Garberi, Angelo, 3,476,801.
  - Giannini, Umberto, and Bruckner, Germana, 3,476,726.
  - Natta, Giulio, Mazzanti, Giorgio, Valvassori, Alberto, and Sartori, Guido, 3,476,720.
  - Natta, Giulio, Dall'Asta, Gino, and Mazzanti, Giorgio, 3,476,728.
  - Rebaudo, Giovanni, 3,476,828.
  - Vecchio, Martino, Lodi, Luciano, Fattore, Vittorio, and Cammarata, Italo, 3,476,817.
- Moon, John J.: *See—*
  - Price, Lowell T., Moon, John J., and Stewart, Charles M. 3,476,823.
- Moore, Edward Joseph: *See—*
  - Bottorf, Donald Thomas, and Moore, Edward Joseph 3,476,846.
- Moore, R. D. Floating fish caller. 3,476,493, Cl. 431-126.
- Moorehead, John P.: *See—*
  - Matyas, Tibor, and Moorehead, John P. 3,476,041.
- Morgan, Alonzo W., Jr., and Selmeczi, Joseph G., to Ionics Incorporated, mesne. Rinsing machine-washed dishes. 3,476,600, Cl. 134-010.
- Morikawa, Hiroyuki: *See—*
  - Furukawa, Junji, Morikawa, Hiroyuki, and Yamamoto, Ryuzo 3,476,820.
- Morita, Hiroshi, Fuse, Motoyosi, Iwasaki, Sadaya, Yamagishi, Hisato, Kawaguchi, Syojiro, and Tanigawa, Koichiro, to Matsushita Denko Kabushiki Kaisha. Starting device for discharge lamp. 3,476,976, Cl. 315-101.
- Morris, Horton Harold: *See—*
  - Sennett, Paul S., Turner, Kenneth Lamar, and Morris, Horton Harold 3,476,576.
- Mortlock, James Oswald, London, William Herbert, and Shaw, William, to Rolls-Royce Limited. Fluid flow reversers. 3,475,913, Cl. 060-229.
- Moscowitz, Milton J.: *See—*
  - Feldman, De Neal J., Feldman, Jack J., and Moscowitz, Milton J. 3,475,828.
- Mossey, Paul W., to United States of America, Air Force. Probe for testing supersonic gases. 3,475,961, Cl. 073-343.
- Motl, Anton, and Littlepage, James H., to Griggs Equipment, Inc. Chair bracket. 3,476,342, Cl. 248-188.
- Motor Wheel Corporation: *See—*
  - Hubbard, Harold C., 3,476,223.
- Motorola, Inc.: *See—*
  - Phillips, Alvin B., 3,476,618.
  - Tolliver, Donald L., 3,476,619.
- Motz, Joseph W., to United States of America, Commerce. Apparatus for measuring the energy and current of an accelerator electron beam including apertured incident and exit electrodes. 3,477,023, Cl. 324-071.
- Mountain Copper Company of California: *See—*
  - Parks, George A., and Baker, Robert E., 3,476,552.
- Moustafa, Ahmad. Oleaginous material reclamation process. 3,476,570, Cl. 099-118.
- Moyer, Hallard C., to Sinclair Research, Inc. Wax compositions producing high gloss, smooth coatings. 3,476,700, Cl. 260-028.5
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- Mullen, Edward K., and Carter, Leewood C., to Book Covers, Incorporated. Book cover board structures and apparatus and method for making and coating the same. 3,476,406, Cl. 281-029.
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- Muller, Marcel: *See—*
  - Furst, Andor, Muller, Marcel, and Saucy, Gabriel 3,476,746.
- Munch, Walter, Jr., and Uetrecht, Dale M., to Baldwin, D. H., Company. Electronic organ reiteration system utilizing a zero-crossing preference circuit. 3,476,864, Cl. 084-001.03
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- Murase, Kiyoshi: *See—*
  - Murakami, Masuo, Takahashi, Kozo, Matsumoto, Jun, Murase, Kiyoshi, Tamazawa, Kazuharu, Kawamura, Shigeo, and Terao, Junichi 3,476,777.
- Murata Machinery, Ltd.: *See—*
  - Shimai, Junichiro, Matsui, Isamu, Kawamura, Syuzo, and Sakai, Syoji, 3,476,328.
- Murdock, Forrest L., Sr. Horizontal electric emulsion treater. 3,476,678, Cl. 204-308.
- Murphy, Alfred M., Filak, Carl M., Long, Thomas P., and Brown, John A., Jr., to Reynolds Metals Company. Apparatus for extruding tubular members from solid billets. 3,475,942, Cl. 072-265.
- Murzyn, Robert A.: *See—*
  - Golden, Raymond, Murzyn, Robert A., and Wilson, William E. 3,476,945.
- Myers, George H.: *See—*
  - Parsonnet, Victor, Myers, George H., and Lewin, Gerhard 3,476,116.
- Myrick, Joseph C., to Rixon Electronics, Inc. Information encoding and transmitting apparatus. 3,476,876, Cl. 178-017.
- Naarmann, Herbert: *See—*
  - Daumiller, Guenther, Kastning, Ernst-Guenther, and Naarmann, Herbert 3,476,831.
- Naarmann, Herbert, and Kastning, Ernst-Guenther, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of stereo block butadiene polymer. 3,476,830, Cl. 260-879.
- Nacci, George Raymond, to Du Pont de Nemours, E. I., and Company. Silica-coated magnetic tape. 3,476,595, Cl. 117-239.
- Nadeau, Richard G.: *See—*
  - Johnson, Donald R., Nadeau, Richard G., Nieuweboer, Gerrit, and Truett, William L. 3,476,515.
- Nagata, Minoru, to Hitachi, Ltd. Differential amplifier circuit employing multiple differential amplifier stages. 3,477,031, Cl. 330-030.
- Naismith, Thomas D.: *See—*
  - Bratten, Thomas A., and Naismith, Thomas D. 3,476,443.
- Nakagome, Yukio: *See—*
  - Oshima, Shintaro, Nakagome, Yukio, and Fukata, Yasuo 3,476,878.
- Nalco Chemical Company: *See—*
  - Newman, Theodore R., 3,476,689.
- Namba, Yasuhiro, Kessoku, Kazuo, Fujii, Tadayoshi, Ogura, Toshinobu, and Yoshiyama, Ichiro, to Minolta Camera Kabushiki Kaisha. Monocular narrow angle exposure meter. 3,476,028, Cl. 095-042.
- Narisawa, Shizuo: *See—*
  - Fukui, Kenichi, Kagiya, Tsutomu, Narisawa, Shizuo, Maeda, Taneo, and Kobata, Mikio 3,476,712.
- Nasca, Anthony V., and Bacon, John F., to General Electric Company. Polyphenylene oxide resin bonded glass fibrous sheet and process therefor. 3,476,637, Cl. 161-093.
- Nater, Abe, and Scarborough, Hugh J. Live-haul poultry trailer. 3,476,084, Cl. 119-012.
- National Cash Register Company, The: *See—*
  - Perkins, Paul E., Perkins, Warren E., Thomas, David E., and Taylor, James W., 3,476,877.
  - Steinke, James M., 3,475,976.
  - Steinke, James M., 3,475,977.
- National Dairy Products Corporation: *See—*
  - Jonas, John J., 3,476,741.
- National Research Corporation: *See—*
  - Allen, Lloyd R., 3,476,525.
  - Fairbanks, Daniel F., Larson, Warren L., Randall, Robert N., and Wong, James, 3,476,615.
  - Fincham, Christopher J. B., 3,476,557.
- National Research Development Corporation: *See—*
  - Wadsworth, Nicolas John, and Watt, William, 3,476,703.
- Natta, Giulio, Dall'Asta, Gino, and Mazzanti, Giorgio, to Montecatini Edison S.p.A. Process for the polymerization of cyclopentene to unsaturated high polymers. 3,476,728, Cl. 260-093.1
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- Neal, Lonnie G.: *See—*
  - Sokol, Robert W., and Neal, Lonnie G. 3,475,975.
- Neilson, William J., to Smith Industries International, Inc. Rock bit and bearing. 3,476,446, Cl. 308-008.2
- Nelson, Carl E., Baer, John E., and Foltz, Elwood L., to Merck & Co., Inc. Diuretic combinations of hydrochlorthiazide and ethacrynic acid. 3,476,858, Cl. 424-246.
- Nemo Corporation: *See—*
  - Harrison, Robert R., 3,475,911.
- Nerwin, Hubert, to Eastman Kodak Company. Slide projector for corner pivot slide mounts. 3,476,474, Cl. 353-108.
- Newcomb Electronics Corporation: *See—*
  - Hawkins, William R., 3,477,030.
- Newell, George K., to Westinghouse Air Brake Company. Angle cock. 3,476,359, Cl. 251-260.
- Newey, Herbert A.: *See—*
  - Mango, Frank D., and Newey, Herbert A. 3,476,693.
- Newman, Melvin S., and Karnes, Harold A., to Ohio State University, the Board of Trustees of. O-thiocarbamoyl benzoic acid esters. 3,476,791, Cl. 260-455.
- Newman, Theodore R., to Nalco Chemical Company. Composition for use in stabilizing calcium carbonate in cooling water. 3,476,689, Cl. 252-175.
- Nichols, Duane C., to Whirlpool Corporation. Battery charging circuit. 3,477,009, Cl. 320-023.
- Nicollian, Edward H.: *See—*
  - Goetzberger, Adolf, and Nicollian, Edward H. 3,477,033.
- Nielsen, James W. Electromagnetic uncoupler for model trains. 3,476,264, Cl. 213-075.

- Niemann, Helmut: *See—*
  - Bardenhagen, Dietrich, and Niemann, Helmut 3,476,002.
- Niethammer, Konrad: *See—*
  - Mohr, Gunther, Erdmann, Dietrich, Niethammer, Konrad, Lust, Siegmund, Schneider, Gerhart, and Jacobi, Ernst 3,476,545.
- Nieuweboer, Gerrit: *See—*
  - Johnson, Donald R., Nadeau, Richard G., Nieuweboer, Gerrit, and Truett, William L. 3,476,515.
- Nieuwenhuis, Paulus G. J.: *See—*
  - Schroeder, Arnold, and Nieuwenhuis, Paulus G. J. 3,476,704.
- Niggemeier, Friedrich: *See—*
  - Groos, Horst Hans, Niggemeier, Friedrich, and Stapel, Heinz 3,475,941.
- Nilles, Gaul: *See—*
  - Ledune, Jacques, and Nilles, Gaul 3,476,550.
- Nippon Denso Kabushiki Kaisha: *See—*
  - Kato, Takaaki, 3,476,205.
- Nippon Electric Company, Limited: *See—*
  - Tsuji, Shigeru, 3,476,986.
- Nitto Electric Industrial Co., Ltd.: *See—*
  - Yamamoto, Yoshihiro, Yoshihara, Mitsuo, Ikeguchi, Takeru, and Sonoda, Sanenobu, 3,476,702.
- Nixon, Charles L.: *See—*
  - Swett, James B., and Nixon, Charles L. 3,476,297.
- Noe, Edwin Henry: *See—*
  - Watkin, David Anthony, Noe, Edwin Henry, and Wade, Peter 3,476,058.
- Noerr, Donald G., Jr., to Ingersoll-Rand Company. Clutch for rotary hammer. 3,476,192, Cl. 173-012.
- Noerr, Donald G., Jr., to Ingersoll-Rand Company. Coupling arrangement. 3,476,418, Cl. 287-108.
- Nomarski, Georges, to Etablissement Public: Centre National de la Recherche Scientifique. Optical instrument with aligned mask and non-phasing coated screen. 3,476,457, Cl. 350-017.
- Nonaka, Katsuhiko: *See—*
  - Ushioda, Tsunezo, Nonaka, Katsuhiko, Yasueara, Minoru, Sato, Katsuya, Ompo, Takeshi, and Ishibashi, Hiroaki 3,476,647.
- Noorlander, Daniel O. Air-vent for milking inflation. 3,476,085, Cl. 119-014.36
- Norcon (Morris) Limited: *See—*
  - Wheeler, Kenneth J., 3,475,996.
- Nord-Aviation Societe Nationale de Constructions Aeronautiques: *See—*
  - Frindel, Louis Jean-Marie, 3,476,908.
- Nordsiek, Karl-Heinz: *See—*
  - Binder, Gerhard, and Nordsiek, Karl-Heinz 3,476,721.
- Norris, Edward O. Process for deriving precious metal values from sea water environments. 3,476,663, Cl. 204-151.
- North American Rockwell Corporation: *See—*
  - Halstenberg, Reynold V., 3,476,129.
  - Hansen, Wilford N., and Osteryoung, Robert A., 3,476,460.
  - Owens, Boone B., 3,476,605.
  - Owens, Boone B., 3,476,606.
- Novacel S.A.: *See—*
  - Villain, Pierre, 3,476,844.
- NRM Corporation: *See—*
  - Heston, Eugene E., 3,475,787.
  - Heston, Eugene E., 3,475,788.
  - Stroup, John F., and Sponaugle, Lloyd B., 3,475,789.
- Nubel, Robert C.: *See—*
  - Brooks, Owen E., and Nubel, Robert C. 3,476,366.
- Nyegaard & Co. A/S: *See—*
  - Holtermann, Hugo, Haugen, Leif Gunnar, Thorsdalen, Nils, Tjonneland, Knut, Wille, Knut, and Koutroulos, Jean, 3,476,802.
- Oakes, Leland F. Universal clamp assembly for bed hand rails. 3,476,346, Cl. 248-226.
- Oberender, Frederick G., Godfrey, Arthur W., and Wiley, Morris A., to Texaco Inc. Synthetic lubricating composition. 3,476,685, Cl. 252-046.7
- O'Connell, Anthony James:*See—*
  - Bell, George, and O'Connell, Anthony James 3,476,666.
- O'Connell, Raymond F. Surface attachable receptacle. 3,476,257, Cl. 211-013.
- Oderman, Samuel: *See—*
  - Thull, John F., and Oderman, Samuel 3,476,384.
- Odone, Giovanni, to Paillard S.A. Electronic photometer with photoelectric element controlled diode circuits. 3,476,944, Cl. 250-214.
- Oerkikon-Buhrle Holding Ltd.: *See—*
  - Spuhler, Hans Peter, 3,475,995.
- Oetiker, Hans. Spring tensioned band clamping device. 3,475,793, Cl. 024-020.
- Office National d'Etudes et de Recherches Aerospatiales:*See—*
  - Luft, Karl, 3,476,934.
- Oftedahl, Marvin L.: *See—*
  - Schleppnik, Alfred A., and Oftedahl, Marvin L. 3,476,778.
- Ogura, Toshinobu: *See—*
  - Namba, Yasuhiro, Kessoku, Kazuo, Fujii, Tadayoshi, Ogura, Toshinobu, and Yoshiyama, Ichiro 3,476,028.
- O'Hare, Joseph E. Sea-going craft. 3,476,071, Cl. 115-020.
- Ohio State University, the Board of Trustees of: *See—*
  - Newman, Melvin S., and Karnes, Harold A., 3,476,791.
- Okada, Tsutomu: *See—*
  - Tsunoda, Yoshimasa, Iwata, Hideo, Okada, Tsutomu, and Aso, Kotaro 3,475,801.
- Oldham, Albert H. Outboard motor control. 3,475,985, Cl. 074-512.
- Olivetti, Ing. C., & C., S.p.A.: *See—*
  - Panken, Irving, 3,476,559.
- Olivetti Underwood Corporation: *See—*
  - Gallant, Reginald R., and Loftus, Robert M., 3,476,312.
- Ollman, Lawrence H. Piano assembly. 3,476,005, Cl. 084-236.
- Olson, Arthur R.: *See—*
  - Paulig, Konrad W., and Olson, Arthur R. 3,476,638.
- Olson, Frank Wesley, Jr.: *See—*
  - Mees, Arthur Allan, and Olson, Frank Wesley, Jr. 3,476,489.
- Ompo, Takeshi: *See—*
  - Ushioda, Tsunezo, Nonaka, Katsuhiko, Yasueara, Minoru, Sato, Katsuya, Ompo, Takeshi, and Ishibashi, Hiroaki 3,476,647.
- Omura, Isao: *See—*
  - Harada, Tadamasa, and Omura, Isao 3,476,622.
- Omura, Itiro, to Hitachi, Ltd. Microwave ion source. 3,476,968, Cl. 313-063.
- OPTOmechanisms, Inc.: *See—*
  - Chitayat, Anwar K., 3,476,476.
- Oroschakoff, Georgi. Staggered reinforcement for concrete structures. 3,475,876, Cl. 052-581.
- Osako, Kyoichi: *See—*
  - Uchida, Isamu, Miyayama, Shigeru, Watanabe, Kenkihi, and Osako, Kyoichi 3,476,125.
- Osco Corporation: *See—*
  - Reisner, Sam, 3,475,934.
- Oshima, Shintaro, Nakagome, Yukio, and Fukata, Yasuo, to Kokusai Denshin Denwa Kabushiki Kaisha. Time-division synchronous system for a plurality of synchronous telegraph circuits. 3,476,878, Cl. 178-050.
- Osterrieth, Michel, and Voituron, Georges, to Solvay & Cie. Stabilized compositions of polyolefins containing surface active agents and phenols. 3,476,698, Cl. 260-023.
- Osteryoung, Robert A.: *See—*
  - Hansen, Wilford N., and Osteryoung, Robert A. 3,476,460.
- Ostresh, Harvey Richard: *See—*
  - Culbertson, Richard, and Ostresh, Harvey Richard 3,476,392.
- Otis Engineering Corporation: *See—*
  - Canalizo, Carlos R., 3,476,135.
- Ottenheym, Johannes H., Thoma, Jozef A., and Gregoire, Johannes H.C.M.A., to Stamicarbon N.V. Preparation of 7-amino-4-thiaoenanthic acid. 3,476,665, Cl. 204-158.
- Otzipka, Willi, and Mally, Joachim, to Licentia Patent-Verwaltungs-G.m.b.H. Brushless D.C. motor control. 3,476,997, Cl. 318-138.
- Overstreet, Le Roy B., Brumbaugh, Eugene P., and Brumbaugh, Bertrand L., said Overstreet assor to Thomson Machinery Company, Inc., mesne. Harvester for nuts and the like. 3,475,889, Cl. 056-328.
- Owens, Boone B., to North American Rockwell Corporation. Solid state electric cell utilizing as an electron acceptor material an organic ammonium polyiodide. 3,476,605, Cl. 136-083.
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- Owens-Corning Fiberglas Corporation: *See—*
  - Trethewey, William C., 3,476,538.
- Owens-Illinois, Inc.: *See—*
  - Bayer, John W., Gagnon, Donald W., Grinonneau, William C., and Santiago, Edgardo, 3,476,732.
  - Jacoby, Ben, Jr., 3,476,376.
  - Lusher, Kenneth G., 3,476,045.
- Ozaki, Kazuyoshi. Device for braking and stopping door leaf of automatic doors. 3,475,862, Cl. 049-360.
- P. & M. Co. (England) Limited, The: *See—*
  - Watts, Walter Alfred Henry, 3,476,213.
- Pace, Edward J. Grooved panel and fixture combination. 3,476,344, Cl. 248-216.
- Packard, Norman M., and Lenzi, William, to International Harvester Company. Head, gasket, and protector assembly and method. 3,476,099, Cl. 123-193.
- Paillard S.A.: *See—*
  - Odone, Giovanni, 3,476,944.
- Pajak, Henry C., to Lamson & Sessions Co., The. Escapement mechanism. 3,476,290, Cl. 221-297.
- Pampus, Gottfried: *See—*
  - Schon, Nikolaus, Witte, Josef, and Pampus, Gottfried 3,476,735.
- Panken, Irving, to Olivetti, Ing. C., & C., S.p.A., mesne. Electrostatic printing element comprising a dye sensitized zinc oxide coating on a high resistivity paper backing sheet and a process of using said element. 3,476,559, Cl. 096-001.7
- Panopix Research Inc.: *See—*
  - Wells, Leon W., 3,476,469.
- Panzica, Nicholas J.: *See—*
  - Arnold, Orlan M., Hanson, Victor W., Jamison, Robert M., Panzica, Nicholas J., and Umbricht, Emil 3,475,881.
- Papaleonidas, George Ioannon. Transformer system including a large number of magnetically independent transformer elements. 3,477,016, Cl. 323-048.
- Pape, Martin: *See—*
  - Beckmann, Wilhelm, Kengelbach, Werner Ludwig, Metzger, Horst, and Pape, Martin 3,476,669.
- Paragamian, Vasken, to McNeil Laboratories, Incorporated. 2- and 3-(4-piperidyl) indanes and indanols. 3,476,759, Cl. 260-293.
- Parish, Geoffrey James, to Cotton Silk & Man-Made Fibres Research Association. Process for metallizing fabrics. 3,476,629, Cl. 156-251.
- Parke, Davis & Company: *See—*
  - Scherrer, Robert A., 3,476,770.

- Parker-Hanifin Corporation: *See—*
  - Churchill, Ralph, Jr., and Flock, Henry H., 3,476,014.
- Parks, George A., and Baker, Robert E., to Mountain Copper Company of California. Mercury process. 3,476,552, Cl. 075-101.
- Parsonnet, Victor, Myers, George H., and Lewin, Gerhard. Non-polarizing electrode for physiological stimulation. 3,476,116, Cl. 128-417.
- Parsons Corporation: *See—*
  - Slivinsky, Cornell J., and Steed, Stanley, 3,476,625.
- Pastva, John V., Jr., to Eastern Company, The. Pipe coupling. 3,476,410, Cl. 285-112.
- Paton, John McDougall: *See—*
  - Grange, Arthur Savage, and Paton, John McDougall 3,476,450.
- Patterson, Robert C. Litter bag support. 3,476,341, Cl. 248-095.
- Paule, Kurt: *See—*
  - Hettich, Alfred, Schadlich, Fritz, Walz, Heinz, and Paule, Kurt 3,475,780.
- Paulig, Konrad W., and Olson, Arthur R., to Kendall Company, The. Impregnated nonwoven needled fabric consisting of a blend of synthetic fibers. 3,476,638, Cl. 161-148.
- Payet, George L.: *See—*
  - Bill, Walter E., and Payet, George L. 3,476,502.
- Pazola, Zdzislaw, Switek, Henryk, Janicki, Jozef, and Michnikowska, Wanda, to Centraline Laboratorium Przemyslu Koncentratow Spozywczych. Method for the microbiological production of carotenes. 3,476,646, Cl. 195-028.
- Pe Tel, Inc.: *See—*
  - Traxler, Peter E., 3,476,895.
- Peacock, Dixon W., to Phillips Petroleum Company. Oil shale process. 3,476,650, Cl. 201-032.
- Pearson, Arthur Stanley, and Ford, David Julian, to United-Carr Incorporated, mesne. Stud for assembly in an apertured support. 3,476,008, Cl. 085-005.
- Pearson, Ernest A., to Medical Supply Company, mesne. Tube closing machine. 3,475,786, Cl. 018-005.
- Pedu, Alexander A. High precision potentiometer and method making the same. 3,477,056, Cl. 338-135.
- Peerless Trailer and Truck Service, Inc.: *See—*
  - Baker, Charles J., and Van Raden, Frederick F., 3,476,269.
- Pelta, Edmond R., to Autoscan, Inc. Capacitive probe. 3,477,024, Cl. 324-126.
- Penix, Ermal E., and Pfeiffer, Harry O., to Goodyear Aerospace Corporation. Electron image correlator tube with improved read-out means. 3,476,197, Cl. 178-006.8
- Penn Controls, Inc.: *See—*
  - Hayes, Thomas E., 3,475,904.
- Penner, Siegfried E., and Malone, Alvis L., III, to Frontier Chemical Company. Production of hexachlorocyclopentadiene. 3,476,792, Cl. 260-648.
- Peracchio, Aldo A.: *See—*
  - Davison, Bartholomew J., and Peracchio, Aldo A. 3,476,131.
- Perkin-Elmer Corporation, The: *See—*
  - Kreuzer, Justin L., 3,476,463.
- Perkins, Paul E., Perkins, Warren E., Thomas, David E., and Taylor, James W., to National Cash Register Company, The. Spacecraft teleprinter using thermal printing techniques. 3,476,877, Cl. 178-023.
- Perkins, Warren E.: *See—*
  - Perkins, Paul E., Perkins, Warren E., Thomas, David E., and Taylor, James W. 3,476,877.
- Pervorse, Richard E.: *See—*
  - Simmons, Harold T., and Pervorse, Richard E. 3,476,892.
- Petersen, Arne J.: *See—*
  - Snyder, Robert B., and Petersen, Arne J. 3,476,672.
- Petro-Tex Chemical Corporation: *See—*
  - Woskow, Marvin Z., 3,476,824.
- Petros, Andrew J., Jr., to Mesta Machine Company. Fall-away spacer block. 3,475,940, Cl. 072-239.
- Petti, Marie. Safety pin. 3,475,796, Cl. 024-156.
- Petty, Richard, to Kontes Glass Company. Electrode assembly including an elastomeric cap. 3,476,671, Cl. 204-195.
- Pfeiffer, Harry O.: *See—*
  - Penix, Ermal E., and Pfeiffer, Harry O. 3,476,197.
- Pfizer, Chas., & Co., Inc.: *See—*
  - Brooks, Owen E., and Nubel, Robert C., 3,476,366.
  - McFarland, James W., 3,476,768.
- Pharmacia Fine Chemicals AB: *See—*
  - Emneus, Nils Ingvar Arne, Gelotte, Erik B., Rehn, Nils G., and Soderqvist, Bjorn G. F., 3,476,737.
- Phillipps, Gordon Hanley: *See—*
  - Smith, Gerald Arthur, and Phillipps, Gordon Hanley 3,476,780.
- Phillips, Alvin B., to Motorola, Inc. Semiconductor device. 3,476,618, Cl. 148-175.
- Phillips, Manio Lido: *See—*
  - Aliment, Lindy, Aliment, Randy Jarl, and Phillips, Manio Lido 3,476,432.
- Phillips Petroleum Company: *See—*
  - Alford, Roscoe R., 3,476,512.
  - Cornelius, Archie J., 3,476,185.
  - Gruver, Jerry T., and Childers, Clifford W., 3,476,829.
  - Harvey, Robert R., 3,476,187.
  - Harvey, Robert R., 3,476,188.
  - Hogan, John P., and Kitchen, Alonzo G., 3,476,724.
  - Hutson, Thomas, Jr., and Carter, Cecil O., 3,476,825.
  - Jones, Faber B., 3,476,709.
  - Kahre, Le Roy C., 3,476,736.
  - Maxfield, Perry L., 3,476,769.
  - Peacock, Dixon W., 3,476,650.
  - Price, Lowell T., Moon, John J., and Stewart, Charles M., 3,476,823.
  - Smith, Dexter E., Keeler, Robert M., and Guenther, Emmerich, 3,476,729.
- Phillips, Vaughan Mansel, to General Motors Corporation. Liftable covers for automobile body compartments. 3,476,280, Cl. 217-060.
- Phoenix Gems, Inc.: *See—*
  - de Lisle, August Louis, 3,476,568.
- Piechocki, Benjamin: *See—*
  - Brewer, Robert F., and Piechocki, Benjamin 3,476,531.
- Pietrzak, Joe P., and Strahan, Robert M., to General Motors Corporation. Combination freezing tray and grid. 3,475,921, Cl. 062-320.
- Pifferi, Giorgio, and Testa, Emilio, to Lepetit S.p.A. 4-Substituted-2,3-benzoxazines. 3,476,752, Cl. 260-244.
- Pigeon, Dale W., and Root, Walter C., to General Motors Corporation. Manual code pulsing magnetic reed switch. 3,477,046, Cl. 335-190.
- Pilcher, David W., to Bowen Tools, Inc. Transmission assembly. 3,475,991, Cl. 074-758.
- Pine, Lloyd Albert, to Esso Research and Engineering Company. Decarboxylation. 3,476,803, Cl. 260-526.
- Pinkham, Newell W. Material handling apparatus. 3,476,126, Cl. 134-060.
- Pipes, Dennis A., and Smith, La Verne, to Essex International, Inc., mesne. Burner assembly. 3,476,491, Cl. 431-046.
- Pirlet, Robert, to Centre National de Recherches Metallurgiques. Device for observing the contents of an enclosure. 3,475,859, Cl. 049-070.
- Pitel, Guy, to Societe d'Etudes Scientifiques et Industrielles de l'Ile-de-France. Process for coating tablets. 3,476,588, Cl. 117-100.
- Pless, Ernst. Device for indicating a predetermined portion of a tape coil and tape-winding apparatus incorporating such device. 3,476,894, Cl. 242-200.
- Plevyak, Thomas J., to Bell Telephone Laboratories, Incorporated. Vapor-phase cooling of electronic components. 3,476,175, Cl. 165-105.
- Plugge, Leonard Frank. Motor accumulator circuit. 3,477,026, Cl. 320-015.
- Plummer, Charles H.: *See—*
  - Brewster, Charles A., and Plummer, Charles H. 3,475,791.
- Pneumatic Scale Corporation: *See—*
  - Scully, John W., 3,476,022.
- Pohl, Kurt: *See—*
  - Bende, Friedrich, Vollinger, Heinz, and Pohl, Kurt 3,476,804.
  - Vollinger, Heinz, Pohl, Kurt, and Bende, Friedrich 3,476,805.
- Polimeni, Vincent: *See—*
  - Saunders, James L., and Polimeni, Vincent 3,475,871.
- Pollacco, William F. Visual control system. 3,475,843, Cl. 040-063.
- Pollock, Warren: *See—*
  - Buff, Fred, French, Marcus, and Pollock, Warren 3,476,845.
- Pontecorvo, Nicholas E. Apparatus for processing cheese curd into homogeneous cheese. 3,476,036, Cl. 099-243.
- Pool, Robert E.: *See—*
  - Delfino, Frank, and Pool, Robert E. 3,475,841.
- Poppenberg, Carl, to Westfalia Separator AG. Sealing of mounting of centrifugal separator. 3,476,310, Cl. 233-001.
- Porsche, Dr.-Ing., h.c.F., K.G., Firma: *See—*
  - Austen, Jorg, 3,476,070.
  - Schroeder, Gerhard Albert Richard, Trenkler, Werner, and Tomala, Hans, 3,476,437.
- Porter, Charles D., to Leslie, John B., Mrs. Boat bumper. 3,475,914, Cl. 061-046.
- Potzl, Friedrich, to U.S. Philips Corporation, mesne. Contact cooling and mounting device for a discharge tube. 3,476,177, Cl. 165-080.
- Povilonis, Edward I.: *See—*
  - Ligenza, Joseph R., and Povilonis, Edward I. 3,476,971.
- Powell Electric Manufacturing Co.: *See—*
  - Gerard, Howard L., 3,475,981.
- Powell, Ronald Cecil, to International Telephone and Telegraph Corporation. Switch. 3,476,890, Cl. 200-005.
- Powers, Joseph A., to Sperry Rand Corporation. Article handling apparatus. 3,476,265, Cl. 214-001.
- PPG Industries, Inc.: *See—*
  - Bill, Walter E., and Payet, George L., 3,476,502.
- Preformed Line Products Company: *See—*
  - Williams, Harrison L., and Eucker, Robert A., 3,476,868.
- Pressac Limited: *See—*
  - Greasley, Eric Arthur, 3,476,928.
- Preston, Louis, to Miracle Hook Corporation. Sewing hook and bobbin. 3,476,068, Cl. 112-231.
- Price, Harry Preston, Jr.Storage assembly for draftsman's articles. 3,476,259, Cl. 211-069.8
- Price, Leon V. Lawn edger having cuttings collection means. 3,475,887, Cl. 056-025.4
- Price, Lowell T., Moon, John J., and Stewart, Charles M., to Phillips Petroleum Company. Separation of products of ethylene polymerization. 3,476,823, Cl. 260-683.15
- Price-Pfister Brass Manufacturing Company: *See—*
  - Dornaus, Reinert F., 3,476,149.
- Pritchard, Paul B., to General Motors Corporation. Torque transmitter. 3,476,228, Cl. 192-107.

Pritchard, Ruth, to Celanese Corporation. Blends comprising oxymethylene polymers and rubbery polymers. 3,476,832, Cl. 260-887.
Process Equipment Engineering Co.: *See*—
  Kuelling, Walter, 3,475,832.
Procter & Gamble Company, The: *See*—
  Hackett, John W., and Gardner, Earl E., 3,476,079.
Progil S.A.: *See*—
  Schwachhofer, Ghislain, and Fritz, Jacques, 3,476,835.
Prontor-Werk Alfred Gauthier, G.m.b.H.: *See*—
  Rentschler, Waldemar T., and Rittmann, Dieter, 3,476,030.
  Starp, Franz W. R., 3,476,031.
Puczynski, Stanley, 50% to Cukale, Edward. Flush sliding door construction. 3,475,860, Cl. 049-129.
Pugh, Billy Gene. Jungle recovery device. 3,476,339, Cl. 244-137.
Pullman Incorporated: *See*—
  McMahon, Joseph F., and Milliken, Thomas H., 3,476,536.
Pulvari, Charles F. Ferrielectric devices. 3,476,951, Cl. 307-088.
Purrer, Josef, and Maier, Martin, to Maschinenfabrik Fahr Aktiengesellschaft. Plural rake haying machine with means for adjusting width of swath. 3,475,890, Cl. 056-370.
Puta, Ruben W., to Stoelting Brothers Company. Product pusher assembly for processing vat. 3,476,272, Cl. 214-017.
Pye, W. G., & Co., Ltd.: *See*—
  Jenkins, Anthony, 3,475,964.
Pyke, Thomas R.: *See*—
  Argoudelis, Alexander D., and Pyke, Thomas R. 3,476,857.
Quinn, Edward J., to Hooker Chemical Corporation. Polyurethane coatings. 3,476,696, Cl. 260-019.
Quynn, Richard G., to Celanese Corporation. Treatment of synthetic polyamide materials with a mixture of halogenated alkanes and halogenated monocarboxylic acids. 3,475,771, Cl. 008-173.2
R & L Molecular Research Ltd.: *See*—
  Lemieux, Raymond U., and Micetich, Ronald G., 3,476,765.
  Raap, Rintje, Lemieux, Raymond Urgel, and Micetich, Ronald George, 3,476,743.
Raap, Rintje, Lemieux, Raymond Urgel, and Micetich, Ronald George, to R & L Molecular Research Ltd. 6-Isothiazolylacetamido penicillanic acids. 3,476,743, Cl. 260-239.1
Rabilloud, Guy, Sillion, Bernard, and de Gaudermaris, Gabriel, to Institut Francais du Petrole, des Carburants et Lubrifiants. Process for preparing polyimidazole resins and use thereof in forming laminates. 3,476,590, Cl. 117-126.
Raby, Dallas J., to General Motors Corporation. Pointer instrument with color warning. 3,476,075, Cl. 116-116.
Rachman, Isadore B., to Metal Dynamics Corporation. Wheelchair lift. 3,476,404, Cl. 280-030.
Rado, Antonio, and Tognazza Bruno G., to Gehruder Buhler AG. Apparatus for degerming maize. 3,476,326, Cl. 241-073.
Rafos, Robert R., to Standard Oil Company, The (Ohio). Nitrile composite electrodes. 3,476,603, Cl. 136-022.
Ramires, Walter C. Incinerator for burning combustible waste and method. 3,476,062, Cl. 110-008.
Rampp, Egon: *See*—
  Loffler, Josef, Rampp, Egon, and Schall, Hans 3,476,378.
Randall, Freddie D.: *See*—
  Rundell, Theodore W., and Randall, Freddie D. 3,476,308.
Randall, Robert N.: *See*—
  Fairbanks, Daniel F., Larson, Warren L., Randall, Robert N., and Wong, James 3,476,615.
Randklev, Ronald M., and Humphries, Clarence Raymond, to Minnesota Mining and Manufacturing Company. Method of porcelain enameling metal foils. 3,476,584, Cl. 117-066.
Ransburg Electro-Coating Corporation: *See*—
  Thatcher, Charles R., 3,476,319.
Raphael, Thomas, and Johnson, William C., to General Electric Company, mesne. Glass fibers sized with polyphenylene oxide derivatives. 3,476,589, Cl. 117-126.
Rapp, Janet Lorraine Cooper: *See*—
  Anderson, Philip Carlton, and Rapp, Janet Lorraine Cooper 3,476,565.
Rapsis, Michael J. Immersion heaters. 3,476,915, Cl. 219-523.
Raschke, Herbert A., to Bullard, E. D., Company. Face shield mounting apparatus. 3,475,766, Cl. 002-009.
Raschle, Josef, to Heberlein Patent Corporation. Twist tube for false-twist device. 3,475,895, Cl. 057-077.3
Rasmussen, Chris Royce, to McNeil Laboratories, Incorporated. Benzothiazin-4-one-1,1-dioxide derivatives. 3,476,749, Cl. 260-243.
Ratajczyk, James Daniel: *See*—
  Swett, Leo Ralph, Ratajczyk, James Daniel, and Kimura, Eugene Tatsuru 3,476,748.
Rau, Ben W. Belt buckle assembly. 3,475,797, Cl. 024-230.
Ray, Charles L.: *See*—
  Sebba, Felix, Jonaitis, Charles W., Ray, Charles L., and Baarson, Robert E. 3,476,553.
Ray Plastic Inc.: *See*—
  Carbonneau, Rene R., 3,476,100.
RCA Corporation: *See*—
  Bailey, Robert Linton, and Doner, Claude Edward, 3,477,032.
  Herzfeld, Fred, and van Hekken, Frans, 3,476,025.
  Robinson, Paul Harvey, 3,476,617.
  Steele, Martin C., and Califano, Francesco Paolo, 3,477,041.
  Wennik, Lawrence Paul, and Scott, Phillips Brooks, 3,476,954.
Reactive Metals, Inc.: *See*—
  Stark, Louis E., and Bertea, Octavian, 3,476,171.
Reader, Trevor D., to Sperry Rand Corporation. Optical logic system with a screen made of photochromic material. 3,476,459, Cl. 350-160.
Rebaudo, Giovanni, to Montecatini Edison S.p.A. Preparation of a modified aminotriazinic resin and its mixtures. 3,476,828, Cl. 260-849.
Reerink, Engbert Harmen, Westerhof, Pieter, and Scholer, Hendrik Frederik Louis. 6,17-Dimethyl-9$\beta$,10$\alpha$-androstanes. 3,476,782, Cl. 260-397.4
Rees, James D., Jr., to Xerox Corporation. Apparatus for changing the magnification of a photo- copier without changing the conjugate length of the optical system. 3,476,478, Cl. 355-055.
Rees, Spencer C., to Singer Company, The. Double insulated power tools. 3,476,960, Cl. 310-050.
Reese, Richard R.: *See*—
  Scott, Robert A., Reese, Richard R., and Scott, David A. 3,476,087.
Rehberg, Heinrich: *See*—
  Sennewald, Kurt, Erpenbach, Heinz, Rehberg, Heinrich, and Viertel, Gunter 3,476,776.
Rehn, Nils G.: *See*—
  Emneus, Nils Ingvar Arne, Gelotte, Erik B., Rehn, Nils G., and Soderqvist, Bjorn G. F. 3,476,737.
Reichrath, Werner: *See*—
  Thoma, Jozef A., Gielkens, Johannes W., and Reichrath, Werner 3,476,664.
Reick, Kenneth R.: *See*—
  Tiger, Emil, Corman, Erskine G., and Reick, Kenneth R. 3,476,479.
Reimer, Arnold E.: *See*—
  Bertelsen, Bruce I., and Reimer, Arnold E. 3,476,561.
Reisini, Nicolas: *See*—
  Dejoux, Jean Veran, 3,476,470.
Reisman, Arnold: *See*—
  Berkenblit, Melvin, and Reisman, Arnold 3,476,592.
Reisner, Sam, to Osco Corporation. Lock-out key assembly. 3,475,934, Cl. 070-428.
Remski, Frank R.: *See*—
  Burgess, Paul N., Cardwell, Robert E., and Remski, Frank R. 3,476,956.
Renckhoff, Gustav: *See*—
  Huelsmann, Hans-Leo, and Renckhoff, Gustav 3,476,785.
Renfroe, J. C., & Sons, Inc.: *See*—
  Renfroe, Raymond L., 3,476,360.
Renfroe, Raymond L., to Renfroe, J. C., & Sons, Inc. Quick pry tools. 3,476,360, Cl. 254-131.
Renner, Eberhard, to Weka Metallbau Ulm, Walter und Kunzli. Venting element for profile glazing. 3,476,035, Cl. 098-097.
Reno, William H.: *See*—
  Temple, Fred, and Reno, William H. 3,476,407.
Rentschler, Waldemar T., and Rittmann, Dieter, to Prontor-Werk Alfred Gauthier, G.m.b.H. Photographic camera with interlens shutter. 3,476,030, Cl. 095-053.
Renwick, William C., to Dow Corning Corporation. Composite for sealing joints and method of making same. 3,476,842, Cl. 264-047.
Resener, Baird E., to Amsted Industries Incorporated. Flexible coupling device. 3,476,227, Cl. 192-105.
Retzler, William, to Colibri Lighters. Adaptors for use in refilling gas burning cigarette lighters. 3,476,158, Cl. 141-084.
Rex Asbestwerke Graf von Rex K.G.: *See*—
  Wilke, Werner, and Fetzer, Hans, 3,475,894.
Rexall Drug and Chemical Company: *See*—
  Swett, James B., and Nixon, Charles L., 3,476,297.
Reyes, Edward: *See*—
  Cox, George W., Garcia, Lloyd J., and Reyes, Edward 3,476,270.
Reynolds Metals Company: *See*—
  Kirby, Thomas E., Jr., 3,476,237.
  Murphy, Alfred M., Filak, Carl M., Long, Thomas P., and Brown, John A., Jr., 3,475,942.
Reynolds, Zack D.: *See*—
  Chesarek, Donald J., and Reynolds, Zack D. 3,476,973.
Rheinisch-Westfalisches Elektrizitatswerk Aktiengesellschaft: *See*—
  Faber, Peter, 3,476,604.
Rhone-Poulenc S.A.: *See*—
  Fouche, Jean Clement Louis, 3,476,758.
  Fouche, Jean Clement Louis, 3,476,761.
Ricciardi, Giuseppe, and Cerutti, Giovanni, to Ing. C., Olivetti, & C., S.p.A. Step by step feeding device for a punched support of a punching or reading apparatus. 3,476,300, Cl. 226-067.
Rich, Elwin F.: *See*—
  Berve, Orven M., and Rich, Elwin F. 3,476,913.
Richards, Gary E.: *See*—
  Beatenbough, Paul K., and Richards, Gary E. 3,476,018.
Richardson, James T., and Toups, Stanford S., to Esso Research and Engineering Company. Method to measure and control the catalytic activity of metallic catalyst systems. 3,477,018, Cl. 324-034.
Richardson, Robert W., to Eaton Yale & Towne, Inc. Safety device. 3,476,403, Cl. 280-150.
Ricketts, James M.: *See*—
  Guernsey, Robert W., Ricketts, James M., and Zeek, Richard M. 3,476,174.

Ridge Nassau Corporation: *See*—
  Chartrand, Fernand, 3,476,425.
Rieke, Johannes Cornelis: *See*—
  Duiser, Johannes Aart, and Rieke, Johannes Cornelis 3,476,849.
Rigo, Jane H. M.: *See*—
  Facer, Walter K., and Rigo, Jane H. M. 3,476,081.
Riley Stoker Corporation: *See*—
  Sheikh, Ramsey U., 3,476,090.
Rinkus, Robert G.: *See*—
  Belcher, Lorne J., and Rinkus, Robert G. 3,476,889.
Ristau, Theodore F., to General Motors Corporation. Mounting arrangement for collapsible steering columns. 3,476,345, Cl. 248-221.
Ritter, George F., Jr., to Libbey-Owens-Ford Company. Apparatus for spray cooling glass sheets. 3,476,541, Cl. 065-268.
Ritter, George F., Jr., to Libbey-Owens-Ford Company. Apparatus for spray cooling glass sheets. 3,476,542, Cl. 065-268.
Ritter, George F., Jr., Carson, Frank J., and Hymore, Frank J., to Libbey-Owens-Ford Company. Method of bending glass sheets. 3,476,540, Cl. 065-107.
Rittmann, Dieter: *See*—
  Rentschler, Waldemar T., and Rittmann, Dieter 3,476,030.
Ritz, Ernst, and Brazel, Rudolf, to Ritz-Motorenbau KG. Device for producing water streams in swimming pools. 3,476,106, Cl. 128-066.
Ritz-Motorenbau KG: *See*—
  Ritz, Ernst, and Brazel, Rudolf, 3,476,106.
Rivetta, Gianfranco: *See*—
  Ferrari, Agostino, Callegari, Luciano, and Rivetta, Gianfranco 3,476,886.
Rixon Electronics, Inc.: *See*—
  Myrick, Joseph C., 3,476,876.
Roberts, Dennis M.: *See*—
  Bowman, Warren, Roberts, Dennis M., and Sellger, Paul G. 3,476,694.
Roberts, Gwyneth M., Butt, Faye E., Baklien, Asbjorn, Gregory, Jocelyn M., and Kuiper, Jan, to Imperial Chemical Industries of Australia and New Zealand Limited. Bicyclo(2,2,2)oct-5-ene-2,3-dicarboxylic anhydrides as herbicides. 3,476,546, Cl. 071-088.
Roberts, Harold G., to Chicago Dryer Company. Electrical ignition system. 3,476,492, Cl. 431-071.
Roberts, Ronald W.: *See*—
  Roberts, William M., and Roberts, Ronald W. 3,475,999.
Roberts, William M., and Roberts, Ronald W. Racheting hand tool mechanism. 3,475,999, Cl. 081-063.
Robertson, Jerry L., and Epperly, William R., to Esso Research and Engineering Company. Separation process. 3,476,822, Cl. 260-674.
Robinson, John E., to United States Steel Corporation. Anchorage for suspension bridge main cable and the like. 3,475,777, Cl. 014-021.
Robinson, Paul Harvey, to RCA Corporation. Assembly having adjacent regions of different semiconductor material on an insulator substrate and method of manufacture. 3,476,617, Cl. 148-175.
Rockford Brass Works: *See*—
  Hegstad, Lester O., 3,476,151.
Rogers, Arthur C.: *See*—
  Gelting, Raymond L., Fiorentino, Anthony J., and Rogers, Arthur C. 3,476,609.
Roh, Peter: *See*—
  Menke, Helmut, and Roh, Peter 3,476,623.
Rohm & Haas Company: *See*—
  Clements, David H., 3,476,697.
  Mettalia, Joseph B., Jr., and Specht, Edward H., 3,476,797.
Roland, Max G., to Roland Mfg. Co. Foot control valve for dental machine. 3,476,153, Cl. 137-636.1
Roland Mfg. Co.: *See*—
  Roland, Max G., 3,476,153.
Roller Shear Corporation: *See*—
  Wheeler, Donald James, 3,476,000.
Rollins, Albert W., and Rollins, Ronald A. Apparatus for sorting the conductors of a multiconductor cable. 3,476,888, Cl. 179-175.25
Rollins, Ronald A.: *See*—
  Rollins, Albert W., and Rollins, Ronald A. 3,476,888.
Rolls-Royce Limited: *See*—
  Mortlock, James Oswald, London, William Herbert, and Shaw, William, 3,475,913.
Roloff, August F., and Roloff, Mina S. Non-piercing archery target. 3,476,390, Cl. 273-102.
Roloff, Mina S.: *See*—
  Roloff, August F., and Roloff, Mina S. 3,476,390.
Root, Walter C.: *See*—
  Pigeon, Dale W., and Root, Walter C. 3,477,046.
Root, Wayne N.: *See*—
  Van Tassell, Harry M., and Root, Wayne N. 3,476,656.
Rose, Donald. Water conditioner apparatus. 3,476,247, Cl. 210-095.
Rosemount Engineering Company: *See*—
  Lode, Tenny D., 3,476,448.
Rosen, Leon D. Music device. 3,476,004, Cl. 084-097.
Rosenfeld, Samuel: *See*—
  Bickham, Euland M., and Rosenfeld, Samuel 3,475,880.
Ross, Edgar A., to Southern Weaving Company. Resilient foldable woven electrical cable and method. 3,476,870, Cl. 174-069.
Ross, John W., to Texas Instruments, Incorporated. Gas-fired oven. 3,476,101, Cl. 126-019.
Ross, Margaret R.: *See*—
  West, Carl J., Jr., 3,475,878.
Roth, Daniel. Cancer cytoscreening. 3,476,514, Cl. 023-230.
Rothman, Matthew J. Portable illuminated mirror. 3,476,927, Cl. 240-004.2
Rottmann, Hans R., to International Business Machines Corporation. Apparatus for positioning articles on substrates. 3,475,805, Cl. 029-203.
Rovan, Joseph W., to United Aircraft Corporation. Resistance monitoring apparatus. 3,476,906, Cl. 219-121.
Rowland Products, Incorporated: *See*—
  Matt, Albert R., Jr., and Steinert, Richard M., 3,476,107.
Rownd, Robert M. Vacuum bottles having improved bottom closures. 3,476,277, Cl. 215-013.
Rucins, Erik H., and Guernsey, Robert W., to General Motors Corporation. Internal combustion engine ignition spark vacuum advance mechanism delay system. 3,476,094, Cl. 123-117.1
Ruckstuhl, Jakob E., to Terlinden & Company. Raised warp knit fabrics. 3,475,926, Cl. 066-194.
Rudzitis, Karl, Castellano, John, and Wolz, Rudolph G., to Viewlex, Inc. Film strip adapter. 3,476,475, Cl. 353-120.
Rundell, Theodore W., and Randall, Freddie D., to Tecumseh Products Company. Compressor construction. 3,476,308, Cl. 230-058.
Rushton, Nigel John, to Lucas, Joseph, (Industries) Limited. Spark ignition systems for internal combustion engines. 3,476,097, Cl. 123-148.
Rustad, George H. Book rest. 3,476,348, Cl. 248-445.
Ryan, John T. Tractor conversion unit. 3,476,207, Cl. 180-006.7
Ryan, John W.: *See*—
  Douglas, Raymond J., Handler, Elliott, Iwasaki, Cedric E., Kossoff, Joseph, and Ryan, John W. 3,475,857.
Ryan, John W., MacMeekin, Robert A., and Meggs, Daniel Henry, to Mattel, Inc. Self-propelled crawling toy. 3,475,854, Cl. 046-206.
Rybar, Josef: *See*—
  Blazek, Otta, Herynk, Milon, and Rybar, Josef 3,475,973.
Ryswick, Edward L., to Varispace Industries, Inc. Variable imprint spacing apparatus for rotary printing machine. 3,476,046, Cl. 101-216.
S.p.A. Virginio Rimoldi & C.: *See*—
  Marforio, Nerino, 3,476,065.
Sabadishin, Steve, and Argentieri, Michael. Angle of attack indicator. 3,475,958, Cl. 073-180.
Sabatino, Anthony, to Globe-Union Inc. Intercell connection and method of making same. 3,476,611, Cl. 136-134.
Saiki, Hiroshi, to Denver Fire Clay Company, The. High temperature kiln. 3,476,368, Cl. 263-020.
Sailer, Richard: *See*—
  Berther, Clau, and Sailer, Richard 3,476,744.
Sakai, Syoji: *See*—
  Shimai, Junichiro, Matsui, Isamu, Kawamura, Syuzo, and Sakai, Syoji 3,476,328.
Salmon, Joe E.: *See*—
  Merkel, Charles M., Salmon, Joe E., and Brugh, Thomas H. 3,475,879.
Sanders, Herbert L., to Varney Chemical Corporation. Sucrose based surfactants as aids in sugar refining and sugar crystallization processes. 3,476,598, Cl. 127-058.
Sandstrom, James P.: *See*—
  Crishal, Joan M., and Sandstrom, James P. 3,476,620.
Sanky, Joseph, & Sons Limited: *See*—
  Dudley, John Trevor, 3,476,202.
Santangini, Joseph A., to Western Electric Company, Incorporated. Bonding a beam leaded device to a substrate. 3,475,814, Cl. 029-589.
Santiago, Edgardo: *See*—
  Bayer, John W., Gagnon, Donald W., Grinonneau, William C., and Santiago, Edgardo 3,476,732.
Saraband Properties, Inc.: *See*—
  Center, Donald R., 3,475,806.
Sarbach, Ronald A. Safety control system. 3,476,442, Cl. 303-019.
Sarem, Amir M., to Union Oil Company of California. Recovery of petroleum by flooding with viscous aqueous solutions of acrylic acid-acrylamide- diacetone acrylamide copolymer. 3,476,186, Cl. 166-274.
Sarnoff, Stanley J. Thermal transfer garment and thermal transfer packet therefor. 3,476,102, Cl. 126-204.
Sartori, Guido: *See*—
  Natta, Giulio, Mazzanti, Giorgio, Valvassori, Alberto, and Sartori, Guido 3,476,720.
Sasaki, Ryoichi, and Hataya, Humio, to Hitachi, Ltd. Austenitic heat-resisting steel containing niobium and vanadium. 3,476,556, Cl. 075-128.
Sato, Katsuya: *See*—
  Ushioda, Tsunezo, Nonaka, Katsuhiko, Yasueara, Minoru, Sato, Katsuya, Ompo, Takeshi, and Ishibashi, Hiroaki 3,476,647.
Sato, Masamichi, Honjo, Satoru, and Takimoto, Masaaki, to Fuji Shashin Film Kabushiki Kaisha. Electrophotographic imaging and copying process. 3,476,659, Cl. 204-018.
Satula, Edward D. Optical system. 3,476,026, Cl. 095-018.
Saucy, Gabriel: *See*—
  Furst, Andor, Muller, Marcel, and Saucy, Gabriel 3,476,746.
Sauer, Hans, to Matsushita Electric Works Ltd. Electromagnetic reversing relay. 3,477,045, Cl. 335-151.
Sauer, John C., to Du Pont de Nemours, E. I., and Company. Boron hydride carbonyl compounds and process of producing them. 3,476,527, Cl. 023-361.
Saunders, James L., and Polimeni, Vincent, to Commercial Carpet Corporation. Wall base construction. 3,475,871, Cl. 052-273.

- Sayer, Gordon C.: *See—*
  - Argoudelis, Alexander D., Grady, Joseph E., and Sayer, Gordon C. 3,476,738.
- Scaramucci, Domer, to Balon Corporation. Valve and dual-ring seals therefor. 3,476,356, Cl. 251-151.
- Scarborough, Hugh J.: *See—*
  - Nater, Abe, and Scarborough, Hugh J. 3,476,084.
- Schack, Warren R., and Miller, Jack M., to Swift & Company. Canning. 3,476,574, Cl. 099-214.
- Schade, Gerhard, and Blaschke, Franz, to Dynamit Nobel Aktiengesellschaft. Hydrazine-modified polyester resins useful in insulating lacquers for wires. 3,476,708, Cl. 260-075.
- Schadlich, Fritz: *See—*
  - Hettich, Alfred, Schadlich, Fritz, Walz, Heinz, and Paule, Kurt 3,475,780.
- Schall, Hans: *See—*
  - Loffler, Josef, Rampp, Egon, and Schall, Hans 3,476,378.
- Schamel, Clyde H., to General Motors Corporation. Retractable window regulator handle assembly. 3,475,986, Cl. 074-547.
- Schanz, Hans, to Teves, Alfred, G.m.b.H. Piston-cylinder assembly with seal means and corrosion preventing means therefor. 3,476,221, Cl. 188-152.
- Schanz, Hans, to Teves, Alfred, Maschinen- und Armaturenfabrik KG. Seal assembly. 3,476,398, Cl. 277-162.
- Scharf, Edward Jonathan, and Kemme, Herbert Rudolph, to American Cyanamid Company. Isomerization of alpha isopropyl naphthalene to beta isopropyl naphthalene. 3,476,819, Cl. 260-668.
- Schauer, Siegfried, to Gebr. Pfeiffer Barbarossawerke AG. Sifter of the circulating air type. 3,476,244, Cl. 209-133.
- Schaumann, Wolfgang: *See—*
  - Voigtlander, Wolfgang, Kaiser, Fritz, Schaumann, Wolfgang, and Stach, Kurt 3,476,742.
- Scheiber, Werner, Walter, Peter, Lehmann, Rolf, and Kowarik, Klaus, to Metallgesellschaft Aktiengesellschaft. Electrophoretic coating process in a medium containing a resin plus powdered plastic material. 3,476,668, Cl. 204-181.
- Schenck, Hermann, and Wenzel, Werner. Conveying coking apparatus with a downwardly extending tubular heating means. 3,476,651, Cl. 202-117.
- Scherer, R. P., Corporation: *See—*
  - Yahner, Gilbert I., 3,476,110.
- Scherrer, Robert A., to Parke, Davis & Company. 2-Methyl-7-phenylindole-3-acetic acid compounds. 3,476,770, Cl. 260-326.13
- Schlabs, Charles V. Universal hitch for towing tilling implements. 3,476,191, Cl. 172-162.
- Schlatzer, Robert K., to Goodrich, B. F., Company, The. Process for polymerizing acrylic acid esters. 3,476,722, Cl. 260-086.1
- Schleifer, Otto: *See—*
  - Jones, Sheldon, and Schleifer, Otto 3,476,921.
- Schleppnik, Alfred A., and Oftedahl, Marvin L., to Monsanto Company. Gamma-pyrone synthesis. 3,476,778, Cl. 260-345.8
- Schlereth, Georg: *See—*
  - Feldhoff, Heinrich, Becker, Klaus, and Schlereth, Georg 3,476,963.
- Schloemann Aktiengesellschaft: *See—*
  - Claussen, Paul-Otto, 3,475,943.
  - Groos, Horst Hans, Niggemeier, Friedrich, and Stapel, Heinz, 3,475,941.
- Schlumberg, N. & Cie: *See—*
  - Herubel, Jean Frederic, 3,475,792.
- Schluter, Walter, to Wilhelmsburger Maschinenfabrik Hinrichs & Sohn. Apparatus for controlling a tool carriage moving in synchronism with a travelling band material. 3,476,001, Cl. 083-285.
- Schmalbruch, T Dankward, to Honeywell Inc. Torque testing instrument. 3,475,952, Cl. 073-134.
- Schmidt, Bob, Inc.: *See—*
  - Schmidt, Robert H. E., and Thompson, Robert E., 3,476,440.
- Schmidt, Jack W.: *See—*
  - West, Charles E., Jr., and Schmidt, Jack W. 3,475,992.
- Schmidt, Robert H. E., and Thompson, Robert E., to Schmidt, Bob, Inc. Portable abrasive container and dispenser unit. 3,476,440, Cl. 302-053.
- Schmidt, Wilhelm: *See—*
  - Benteler, Erich, Schmidt, Wilhelm, and Schmidt, Willi 3,476,409.
- Schmidt, Willi: *See—*
  - Benteler, Erich, Schmidt, Wilhelm, and Schmidt, Willi 3,476,409.
- Schmitz, Heinz: *See—*
  - Krekeler, Hans, Jacobowsky, Armin, Born, Klaus, Schmitz, Heinz, and Wirtz, Peter 3,476,955.
- Schneeberger, Donald R., and Seaberg, Leonard J., to Eastman Kodak Company. Strip retrieval device. 3,476,472, Cl. 353-026.
- Schneider, Cyril J.: *See—*
  - Steiner, Daniel J., and Schneider, Cyril J. 3,475,998.
- Schneider, Gerhart: *See—*
  - Mohr, Gunther, Erdmann, Dietrich, Niethammer, Konrad, Lust, Siegmund, Schneider, Gerhart, and Jacobi, Ernst 3,476,545.
- Schoeller-Bleckmann Stahlwerke Aktiengesellschaft, Firma: *See—*
  - Kohl, Heinz, and Souresny, Herbert, 3,476,555.
- Schoepe, Adolf, and Klentz, Harley N., said Klentz assor to said Schoepe. Interchangeable wheel suspension system in a four wheel drive vehicle. 3,476,200, Cl. 180-044.
- Scholer, Hendrik Frederik Louis: *See—*
  - Reerink, Engbert Harmen, Westerhof, Pieter, and Scholer, Hendrik Frederik Louis 3,476,782.
- Schon, Nikolaus, Witte, Josef, and Pampus, Gottfried, to Farbenfabriken Bayer Aktiengesellschaft. Preparation of polymers of conjugated dienes. 3,476,735, Cl. 260-094.7
- Schreckendgust, Jay G., to Graflex, Inc. Electrochromic shutter system. 3,476,029, Cl. 095-053.
- Schreiber, Franz, to SWF-Spezialfabrik fur Autozubehor Gustav Rau GmbH. Switch, especially for steering column switches in motor vehicles. 3,476,896, Cl. 200-061.54
- Schroeder, Arnold, and Nieuwenhuis, Paulus G. J., to Koninklijke Industrieele Maatschappij Noury & van der Lande N.V. Stabilized polyvinylchloride. 3,476,704, Cl. 260-045.75
- Schroeder, Gerhard Albert Richard, Trenkler, Werner, and Tomala, Hans, to Porsche, Dr.-Ing., h.c.F., K.G., Firma. Top for motor vehicles, especially for passenger motor vehicles. 3,476,437, Cl. 296-137.
- Schroeder, Herbert F., to Esso Research and Engineering Company. Process for forming board structures. 3,476,848, Cl. 264-120.
- Schroeder, Royal E., to General Motors Corporation. Conveyor roller member assembly. 3,476,904, Cl. 219-010.55
- Schubert, Paul: *See—*
  - Meinhardt, Johannes, and Schubert, Paul 3,476,628.
- Schultz, John, Jr.: *See—*
  - Vedder, Willem, and Schultz, John, Jr. 3,477,058.
- Schultz, Vernon A.: *See—*
  - Colvin, Donald, and Schultz, Vernon A. 3,476,675.
- Schultz, Wilfred R., to Eaton Yale & Towne, Inc., mesne. Multiple check valve. 3,476,142, Cl. 137-512.
- Schulz, Alfred: *See—*
  - Adam, Karl, Schulz, Alfred, Haarer, Erich, and Winderl, Siegfried 3,476,793.
- Schwachhofer, Ghislain, and Fritz, Jacques, to Progil S.A. Mono-, di- or tri-phosphites of chlorophenyl amino alcohols. 3,476,835, Cl. 260-944.
- Schwartzman, Everett H. Fluid bearing system. 3,476,451, Cl. 308-122.
- Schwing, Richard C., to General Motors Corporation. Electrostatic cleaner application. 3,475,917, Cl. 062-085.
- SCM Corporation: *See—*
  - Carlson, Robert O., 3,476,210.
  - Dros, Barbara, and Engel, Eric, 3,476,572.
  - Gilchrist, Allan E., 3,476,667.
- Scott, David A.: *See—*
  - Scott, Robert A., Reese, Richard R., and Scott, David A. 3,476,087.
- Scott, Donald S.: *See—*
  - Fauth, John M., and Scott, Donald S. 3,476,962.
- Scott, Eugene W., and Ter Bush, Charles F., to Westinghouse Electric Corporation. Liquid cooling chamber. 3,475,922, Cl. 062-394.
- Scott, Phillips Brooks: *See—*
  - Wennik, Lawrence Paul, and Scott, Phillips Brooks 3,476,954.
- Scott, Robert A., Reese, Richard R., and Scott, David A. Feeding device. 3,476,087, Cl. 119-052.
- Scott & Williams, Inc.: *See—*
  - Currier, John A., 3,475,925.
- Scully, John W., to Pneumatic Scale Corporation. Container forming machine. 3,476,022, Cl. 093-012.
- Seaberg, Leonard J.: *See—*
  - Schneeberger, Donald R., and Seaberg, Leonard J. 3,476,472.
- Sealectro Corporation: *See—*
  - De Robertis, Joseph, 3,476,983.
- Searle, G. D., & Co.: *See—*
  - Baran, John S., 3,476,773.
  - Wagner, Hans A., 3,476,764.
- Sebba, Felix, Jonaitis, Charles W., Ray, Charles L., and Baarson, Robert E., said Jonaitis, said Ray and said Baarson assors. to Armour and Company. Precipitate flotation process. 3,476,553, Cl. 075-108.
- Seckerson, Clifford Alexander, to United-Carr Incorporated. Stud mounted moulding fastener. 3,475,794, Cl. 024-073.
- Sederquist, Richard A.: *See—*
  - Buswell, Richard F., Setzer, Herbert J., and Sederquist, Richard A. 3,476,534.
- Seelig, Anton: *See—*
  - Stumpe, August Christian, Seelig, Anton, and Donges, Hans 3,476,979.
- Seeliger, Wolfgang: *See—*
  - Streck, Roland, and Seeliger, Wolfgang 3,476,730.
- Segawa, Hiroyuji: *See—*
  - Matsubayashi, Kanji, and Segawa, Hiroyuji 3,476,850.
- Seiter, Hartmut: *See—*
  - Sirtl, Erhard, and Seiter, Hartmut 3,476,640.
- Seitz, Russell, 1/3 to Elton Industries, Inc., mesne. Laser device employing fluid material for producing high efficiency laser beam. 3,477,037, Cl. 331-094.5
- Seligson, Arnold L., and Lanier, Robert S. Ionic electro-acoustic transducer. 3,476,887, Cl. 179-113.
- Sellger, Paul G.: *See—*
  - Bowman, Warren, Roberts, Dennis M., and Sellger, Paul G. 3,476,694.
- Sellman, Ulf Carl Iwar, and Ericsson, Gunnar Arthur, to AB FLYGMAL Air Target Ltd. Arrangement in an acoustically operating target indicator. 3,476,208, Cl. 181-000.5
- Selmeczi, Joseph G.: *See—*
  - Morgan, Alonzo W., Jr., and Selmeczi, Joseph G. 3,476,600.

- Selwa, Tadeusz Ryszard, to Imperial Chemical Industries Limited. Method of sequentially adjusting the anodes in a mercury-cathode cell. 3,476,660, Cl. 204-128.
- Sennett, Paul S., Turner, Kenneth Lamar, and Morris, Horton Harold, to Freeport Sulphur Company. Process for obtaining a size reduction of non- lamellar materials. 3,476,576, Cl. 106-309.
- Sennewald, Kurt, Erpenbach, Heinz, Rehberg, Heinrich, and Viertel, Gunter, to Knapsack Aktiengesellschaft. Process for the manufacture of alkane epoxides. 3,476,776, Cl. 260-348.5
- Sermon, George T.: *See—*
  - Corley, William G., and Sermon, George T. 3,476,677.
- Servco Company, The: *See—*
  - Van Note, Charles O., Jr., and Cordary, Bruce J., 3,476,415.
- Service Steel & Engineering Limited: *See—*
  - Merrick, John A., and Hovestad, Adrian P., 3,475,778.
- Sessions Clock Co., The: *See—*
  - Lofstrand, Warren A., 3,476,903.
- Setzer, Herbert J.: *See—*
  - Buswell, Richard F., Setzer, Herbert J., and Sederquist, Richard A. 3,476,534.
- Shannon, Suel Grant: *See—*
  - Graeff, Norwood Claude, and Shannon, Suel Grant 3,476,115.
- Shannon, Suel Grant, and Graeff, Norwood Claude, to AMP Incorporated. Ligating implement. 3,476,114, Cl. 128-326.
- Sharkey, William H.: *See—*
  - Magat, Eugene E., and Sharkey, William H. 3,475,898.
- Sharpe, Verlos G.: *See—*
  - Fosler, John R., and Sharpe, Verlos G. 3,476,253.
- Sharples, Richard Colin, to Lucas, Joseph, (Industries) Limited. Switch assemblies for use with printed circuits. 3,476,900, Cl. 200-166.
- Shattuck, Robert, to Borg-Warner Corporation. Method of molding thermoplastic articles. 3,476,852, Cl. 264-261.
- Shaull, Stanley D.: *See—*
  - Bush, Jack A., and Shaull, Stanley D. 3,475,790.
- Shaw, William: *See—*
  - Mortlock, James Oswald, London, William Herbert, and Shaw, William 3,475,913.
- Shedlarski, George A.: *See—*
  - Strauss, Walter S., and Shedlarski, George A. 3,476,181.
- Sheikh, Ramsey U., to Riley Stoker Corporation. Steam generating unit. 3,476,090, Cl. 122-478.
- Shell Oil Company: *See—*
  - Mango, Frank D., and Newey, Herbert A., 3,476,693.
- Sherman, Philip B.: *See—*
  - Davies, James A., and Sherman, Philip B. 3,476,681.
- Sherrill, Dana D. Guard cover for valve handwheels. 3,476,288, Cl. 220-085.
- Sherwood, John F. Magnetic valve. 3,476,355, Cl. 251-065.
- Shiber, Evelyn F., and Shiber, Jerome A., to International Business Machines Corporation. Information compression transference means. 3,476,885, Cl. 179-100.2
- Shiber, Jerome A.: *See—*
  - Shiber, Evelyn F., and Shiber, Jerome A. 3,476,885.
- Shimai, Junichiro, Matsui, Isamu, Kawamura, Syuzo, and Sakai, Syoji, to Toyo Boseki Kabushiki Kaisha, and Murata Machinery, Ltd. Automatic doffing apparatus of automatic winder. 3,476,328, Cl. 242-035.5
- Shimazu, Mitsuyoshi, to Hitachi, Ltd. Freon-rare gas laser. 3,477,038, Cl. 331-094.5
- Short, R Stanford: *See—*
  - Hitt, Otis D., and Short, R Stanford 3,476,147.
- Sieder, Everett N., to United States of America, Interior. Multistage flash distillation with scale removal. 3,476,654, Cl. 203-007.
- Sieder, Everett N., to United States of America, Interior. Descaling of saline water and distillation. 3,476,655, Cl. 203-007.
- Siegl, Herbert: *See—*
  - Kunstle, Gerhard, and Siegl, Herbert 3,476,798.
- Siemens Aktiengesellschaft: *See—*
  - Friess, Klaus, Ulrich, Richard, and Kritikos, Athanasios, 3,476,688.
  - Loffler, Josef, Rampp, Egon, and Schall, Hans, 3,476,378.
  - Sirtl, Erhard, and Seiter, Hartmut, 3,476,640.
  - Stenger, Heinrich, and Wilimzig, Herbert, 3,476,103.
- Sigmatex AG: *See—*
  - Weman, Per Olaf, 3,476,333.
- Sillion, Bernard: *See—*
  - Rabilloud, Guy, Sillion, Bernard, and de Gaudermaris, Gabriel 3,476,590.
- Simmons, Harold T., and Pervorse, Richard E., to Mallory, P. R., & Co., Inc. Shaft locking device. 3,476,892, Cl. 200-038.
- Simon, Karl: *See—*
  - Simon, Peter, 3,476,166.
- Simon, Peter, to Simon, Karl. Spike for vehicle tires and method of producing the same. 3,476,166, Cl. 152-210.
- Simons, John B., to Lear Siegler, Inc. Spring assembly and manufacture thereof. 3,476,156, Cl. 140-003.
- Simplex Manufacturing Co.: *See—*
  - Colvin, Donald, and Schultz, Vernon A., 3,476,675.
- Sims, James B.: *See—*
  - Sutton, Walter T., Jr., Broyles, James D., Sims, James B., and Botts, Nelson F. 3,475,830.
- Sims, Leslie L.: *See—*
  - Johnston, James D., and Sims, Leslie L. 3,476,807.
- Sinclair Research, Inc.: *See—*
  - Fauber, Eugene M., 3,476,679.
  - Moyer, Hallard C., 3,476,700.
  - Verdol, Joseph A., and Carrow, Donald J., 3,476,686.
- Singer Company, The: *See—*
  - Adams, Kenneth D., 3,476,003.
  - Fauth, John M., and Scott, Donald S., 3,476,962.
  - Johnson, Ralph E., 3,476,067.
  - Rees, Spencer C., 3,476,960.
  - Szuba, Walter D., and Hannen, James H., Jr., 3,476,066.
- Singer-General Precision, Inc.: *See—*
  - Binder, Herbert, and Delaney, Robert V., 3,475,971.
- Sirtl, Erhard, and Seiter, Hartmut, to Siemens Aktiengesellschaft. Smooth surface polycrystals. 3,476,640, Cl. 161-164.
- Siwersson, Olle Lennart, and Tell, Karl Gunnar. Conveying apparatuses. 3,476,296, Cl. 222-381.
- Sjoblom, Eric A., to AB Grythyttans Stalmobler. Goods support for pallets. 3,476,060, Cl. 108-055.
- Skinner, Robert Thomas John, to Lucas, Joseph, (Industries) Limited. Liquid pumps. 3,476,051, Cl. 103-005.
- Skoda, narodni podnik: *See—*
  - Blazek, Otta, Herynk, Milon, and Rybar, Josef, 3,475,973.
- Skowronski, George Victor, to American Can Company. Package construction and blank therefor. 3,476,236, Cl. 206-047.
- Skuttle Manufacturing Company: *See—*
  - Stiles, Walter R., 3,476,673.
- Slivinsky, Cornell J., and Steed, Stanley, to Parsons Corporation. Method of forming a composite spar about a metal tube. 3,476,625, Cl. 156-086.
- Smith, Albert H., to Automation Industries, Inc., mesne. Combustible gas detecting device. 3,476,517, Cl. 023-255.
- Smith, Dexter E., Keeler, Robert M., and Guenther, Emmerich, to Phillips Petroleum Company. Polymerization process control and apparatus therefor. 3,476,729, Cl. 260-093.7
- Smith, Gerald Arthur, and Phillipps, Gordon Hanley, to Glaxo Laboratories Limited. Production of equilenin and related compounds and intermediates therefor. 3,476,780, Cl. 260-397.3
- Smith, Ian E.: *See—*
  - Metcalfe, Kenneth A., Gillespie, Frank C., and Smith, Ian E. 3,476,935.
- Smith Industries International, Inc.: *See—*
  - Neilson, William J., 3,476,446.
- Smith, Jean G., and Fitch, Frederick T., may be granted to United States Atomic Energy Commission under provision of 42 U.S. C. 2182. Process for preparing an yttria aquasol. 3,476,691, Cl. 252-313.
- Smith Kline & French Laboratories: *See—*
  - Georgian, Vlasios, and Kerwin, James F., 3,476,745.
  - Kaiser, Carl, and Zirkle, Charles L., 3,476,760.
  - Kerwin, James F., 3,476,783.
- Smith, La Verne: *See—*
  - Pipes, Dennis A., and Smith, La Verne 3,476,491.
- Smith, Peter B., to Dynamics Corporation of America. Hydrostatic transmission coupled standby power supply. 3,477,013, Cl. 322-004.
- Smith, Richard: *See—*
  - Wood, David Hugh, Jr., Gibney, Grant Omer, and Smith, Richard 3,476,567.
- Smith, Richard Dunham. Collapsible receptacle. 3,476,303, Cl. 229-031.
- Smith, Richard G., to Westinghouse Electric Corporation. Adjustable support. 3,476,349, Cl. 248-476.
- Smith, Sidney. Vaporizer. 3,475,916, Cl. 062-052.
- Smith, William R., to Upjohn Company, The. Cross-contamination prevention device. 3,476,088, Cl. 119-072.5
- SNAM S.p.A.: *See—*
  - Marconi, Walter, 3,476,734.
- Snap-On Tools Corporation: *See—*
  - Larson, Kenneth R., 3,475,953.
- Snodgrass, Earl D.: *See—*
  - Fuller, Ralph A., and Snodgrass, Earl D. 3,475,877.
  - Fuller, Ralph A., and Snodgrass, Earl D. 3,476,023.
- Snyder, Robert B., and Petersen, Arne J., to Beckman Instruments, Inc. Electrode assembly. 3,476,672, Cl. 204-195.
- Societa Italiana Telecommunicazioni Siemens S.p.A.: *See—*
  - Ferrari, Agostino, Callegari, Luciano, and Rivetta, Gianfranco, 3,476,886.
- Societe Anonyme des Forges de La Providence Mannesmann Aktiengesellschaft: *See—*
  - Ledune, Jacques, and Nilles, Gaul, 3,476,550.
- Societe Anonyme dite: Societe des Automobiles Simca: *See—*
  - Brasseur, Jacques, 3,476,375.
- Societe Anonyme Plastus: *See—*
  - Kraffe de Laubarede, Leonce Marie Henri, 3,476,095.
- Societe Chimique des Charbonnages: *See—*
  - Sueur, Rene, 3,476,775.
- Societe d'Etudes Scientifiques et Industrielles de l'Ile-de-France:*See—*
  - Pitel, Guy, 3,476,588.
- Societe d'Exploitation des Roulements Roultex:*See—*
  - Kastner, Rene Louis, 3,476,453.
- Societe de Construction d'Appareils pour Gaz a l'Bau & Gaz Industriels:*See—*
  - Decaux, Jacques E., 3,476,519.
- Societe Rateau: *See—*
  - Chaboseau, Jacques, and Mech, Christian, 3,476,449.

- Soderberg, Leif Erik Roland, to Aga Aktiebolag. Applying heat-reflecting and electrically conductive coatings on glass. 3,476,594, Cl. 117-211.
- Soderqvist, Bjorn G. F.: *See—*
  - Emneus, Nils Ingvar Arne, Gelotte, Erik B., Rehn, Nils G., and Soderqvist, Bjorn G. F. 3,476,737.
- Soguel, Rene. Winding and hand-setting crown for diver watches. 3,475,901, Cl. 058-090.
- Sokol, Robert W., and Neal, Lonnie G., to General Motors Corporation. Electromagnetic gyroscope float assembly. 3,475,975, Cl. 074-005.7
- Solitron Devices, Inc.: *See—*
  - Tibol, George J., 3,476,984.
- Solvay & Cie: *See—*
  - Demol, Pierre, and Mathis, Pierre, 3,476,587.
  - Osterrieth, Michel, and Voituron, Georges, 3,476,698.
- Sommer, John G.: *See—*
  - Grover, Horace N., and Sommer, John G. 3,476,599.
- Sonoda, Sanenobu: *See—*
  - Yamamoto, Yoshihiro, Yoshihara, Mitsuo, Ikeguchi, Takeru, and Sonoda, Sanenobu 3,476,702.
- Souresny, Herbert: *See—*
  - Kohl, Heinz, and Souresny, Herbert 3,476,555.
- Southern, Edward J. Photographic film magazine. 3,476,027, Cl. 095-031.
- Southern Weaving Company: *See—*
  - Ross, Edgar A., 3,476,870.
- Southwestern Engineering Company: *See—*
  - Swallow, Douglas M., 3,476,245.
- Sparacio, Francis J.: *See—*
  - Anderson, David W., Sparacio, Francis J., and Tomasulo, Robert M. 3,477,063.
- Specht, Edward H.: *See—*
  - Mettalia, Joseph B., Jr., and Specht, Edward H. 3,476,797.
- Spedden, Henry Rush, and Malouf, Emil E., to Kennecott Copper Corporation. Process for recovering copper from leach solutions. 3,476,554, Cl. 075-109.
- Speed-O-Print Business Machines Corporation: *See—*
  - Carlson, John W., 3,476,381.
- Spence, Iain S., to Fabric Bearings Limited. Rotary couplings. 3,475,923, Cl. 064-014.
- Sperry Rand Corporation: *See—*
  - Andeen, Richard E., and Kotfila, Ronald P., 3,476,335.
  - Duckworth, Byron R., 3,476,957.
  - Herman, Stephen, and Stark, Edward W., 3,476,930.
  - Mueller, Werner J., and Wolff, Norman, 3,476,995.
  - Powers, Joseph A., 3,476,265.
  - Reader, Trevor D., 3,476,459.
  - Yiotis, Peter G., 3,476,922.
- Spinrad, Malcom, Haas, Kenneth C., and Hoverter, Bryce E., to American Safety Table. Reversing plug for electric motor. 3,477,001, Cl. 318-207.
- Spiroch, Franz, and Beckert, Werner, to Eichner Organisation G.m.b.H. Arrangement for monitoring movements of tape. 3,476,299, Cl. 226-032.
- Sponaugle, Lloyd B.: *See—*
  - Stroup, John F., and Sponaugle, Lloyd B. 3,475,789.
- Springston, George B., Jr., to United States of America, Navy. Nekton sampler. 3,475,846, Cl. 043-009.
- Sproull, Reavis C.: *See—*
  - Friesen, Gordon A., and Sproull, Reavis C. 3,475,767.
- Spruegel, Walter: *See—*
  - Jackson, Richard M., and Spruegel, Walter 3,476,073.
- Spuhler, Hans Peter, to Oerkikon-Buhrle Holding Ltd. Tailstock turret. 3,475,995, Cl. 077-025.
- Squires, Paul Herman, to Du Pont de Nemours, E. I., and Company. Process for coextruding multiple-layered, thermoplastic sheeting. 3,476,627, Cl. 156-244.
- Sta-Hi Corporation: *See—*
  - Thull, John F., and Oderman, Samuel, 3,476,384.
- Staats, Henry N., to General Binding Corporation. Plastic binding and apparatus for dispensing same. 3,475,775, Cl. 011-001.
- Staats, Louis T., Sr., Misener, Cecil D., and Innis, Frank B. Fruit picker. 3,475,888, Cl. 056-328.
- Stach, Kurt: *See—*
  - Voigtlander, Wolfgang, Kaiser, Fritz, Schaumann, Wolfgang, and Stach, Kurt 3,476,742.
- Stackpole Carbon Company: *See—*
  - Bang, Mogens W., 3,477,057.
- Stahl, Dieter, Strolenberg, Otto Karel, and Damen, Leonardus W. J., to Koninklijke Industrieele Maatschappij Noury & van der Lande N.V. Process for the peroxidic curing of a monomer- polymer syrupy solution containing a polymer of methylmethacrylate or a copolymer thereof with up to about 20% of another lower alkylmethacrylate. 3,476,723, Cl. 260-086.1
- Stahlmann, Rudolf: *See—*
  - Gawlick, Heinz, and Stahlmann, Rudolf 3,476,049.
- Stamicarbon N.V.: *See—*
  - Ottenheym, Johannes H., Thoma, Jozef A., and Gregoire, Johannes H.C.M.A., 3,476,665.
  - Thoma, Jozef A., Gielkens, Johannes W., and Reichrath, Werner, 3,476,664.
  - Van Den Berg, Cornelis E. P. V., 3,476,733.
- Stampfli, Harald. Servovalve. 3,476,353, Cl. 251-045.
- Standard Oil Company, The (Ohio): *See—*
  - Isley, Ralph E., and Adams, Richard C., 3,476,643.
  - Rafos, Robert R., 3,476,603.
- Stanonis, David J., King, Walter D., and Esposito, Charles R., to United States of America, Agriculture. Laboratory apparatus for the chemical modification of packaged yarns. 3,475,823, Cl. 033-125.
- Stapel, Heinz: *See—*
  - Groos, Horst Hans, Niggemeier, Friedrich, and Stapel, Heinz 3,475,941.
- Stark, Edward W.: *See—*
  - Herman, Stephen, and Stark, Edward W. 3,476,930.
- Stark, Louis E., and Bertea, Octavian, to Reactive Metals, Inc. Method for melting refractory metal. 3,476,171, Cl. 164-052.
- Starp, Franz W. R., to Prontor-Werk Alfred Gauthier, G.m.b.H. Self-winding photographic shutter with an electronic timing device. 3,476,031, Cl. 095-063.
- Stauffer Chemical Company: *See—*
  - Greco, Carl C., 3,476,784.
- Steadman, William D. Modular, bonded building wall. 3,475,873, Cl. 052-293.
- Stebbins, Jerald T.: *See—*
  - Turnage, Rodger Elmo, Jr., Stebbins, Jerald T., and Crump, Lawrence R. 3,476,974.
- Stedfeld, Rowland L., to General Motors Corporation. Valve operated by rate of fluid pressure change. 3,476,133, Cl. 137-115.
- Steed, Stanley: *See—*
  - Slivinsky, Cornell J., and Steed, Stanley 3,476,625.
- Steele, Guy, to Xerox Corporation. Transport system. 3,475,936, Cl. 072-053.
- Steele, Martin C., and Califano, Francesco Paolo, to RCA Corporation. Production of amplitude modulated light by a solid state oscillator. 3,477,041, Cl. 332-007.51
- Steffens, Karl, to Varta Aktiengesellschaft. Housing for electric storage cells and method of producing same. 3,476,286, Cl. 220-039.
- Steffgen, Frederick W., to Atlantic Richfield Company. Olefin oxidation catalyst. 3,476,809, Cl. 260-604.
- Steibel, James P., to Dumore Company, The. Controllable motion and force converter. 3,475,972, Cl. 074-025.
- Steinbach, Gerhard. Measuring device for testing the content of fluid containers, in particular fuel tanks. 3,475,967, Cl. 073-425.4
- Steiner, Daniel J., and Schneider, Cyril J., to Giddings & Lewis, Inc. Method and apparatus for controlling the motion of a reciprocable tool element or the like. 3,475,998, Cl. 077-032.7
- Steinert, Richard M.: *See—*
  - Matt, Albert R., Jr., and Steinert, Richard M. 3,476,107.
- Steinke, James M., to National Cash Register Company, The. Two-cycle transmission with adjustable velocity profile. 3,475,976, Cl. 074-063.
- Steinke, James M., to National Cash Register Company, The. Rotary step mechanism. 3,475,977, Cl. 074-066.
- Stenger, Heinrich, and Wilimzig, Herbert, to Siemens Aktiengesellschaft. Electrical amplifier with compensating circuit for measuring purposes, particularly for electro- cardiographs. 3,476,103, Cl. 128-002.06
- Stephenson, Constantine Dean. Bunker-Ramo Corporation, The Contact retention device. 3,477,061, Cl. 339-059.
- Stephenson, Kenrick: *See—*
  - Vogelman, Joseph Herbert, Stephenson, Kenrick, and Feinerman, Bernard 3,476,882.
- Sternberg, Erving S.: *See—*
  - Liggett, James J., 3,476,739.
- Stewart, Charles M.: *See—*
  - Price, Lowell T., Moon, John J., and Stewart, Charles M. 3,476,823.
- Stiles, Walter R., to Skuttle Manufacturing Company. Humidifier with electrolytic protection. 3,476,673, Cl. 204-196.
- Stoelting Brothers Company: *See—*
  - Puta, Ruben W., 3,476,272.
  - Thomson, Meredith C., 3,476,364.
- Stolz, Robert P.: *See—*
  - White, William V., Mahlmann, James P., and Stolz, Robert P. 3,476,566.
- Stovall, William B., to Crawford & Russell Incorporated. High viscosity reactors. 3,476,522, Cl. 023-285.
- Strahan, Robert M.: *See—*
  - Pietrzak, Joe P., and Strahan, Robert M. 3,475,921.
- Straight, Harry F., Jr.: *See—*
  - Buchanan, William L., and Straight, Harry F., Jr. 3,476,494.
- Straight, Harry F., Jr., and Kivlen, John A., to Esso Research and Engineering Company. Studded heat exchanger tubes. 3,476,180, Cl. 165-172.
- Strauss, Walter S., and Shedlarski, George A., to Dentek, Inc. Dental ingredient capsule. 3,476,181, Cl. 165-186.
- Streck, Roland, and Seeliger, Wolfgang, to Chemische Werke Huls A.G.Process for low-pressure polymerization of α- olefines. 3,476,730, Cl. 260-093.1
- Streng, Fritz F.: *See—*
  - Adler, Imre, and Streng, Fritz F. 3,476,233.
- Strolenberg, Otto Karel: *See—*
  - Stahl, Dieter, Strolenberg, Otto Karel, and Damen, Leonardus W. J. 3,476,723.
- Stromberg Dalagraphix, Inc.: *See—*
  - Turnage, Rodger Elmo, Jr., Stebbins, Jerald T., and Crump, Lawrence R., 3,476,974.

- Stromnes, Axel, to Atlas Copco Aktiebolag. Drill boom with parallel motion linkage means. 3,476,193, Cl. 173-043.
- Stroup, John F., and Sponaugle, Lloyd B., to NRM Corporation. Blown film dies. 3,475,789, Cl. 018-014.
- Stuart, Donald J., to United States Steel Corporation. Reinforcing members for a wooden pole. 3,475,874, Cl. 052-514.
- Stubblefield, Robert A. Load leveling shock absorber. 3,476,354, Cl. 251-063.
- Stubbs, Dennis, Wilson, William Gordon, and Bathory, Bela Istvan, to Davy and United Engineering Company. Manipulators. 3,476,276, Cl. 214-652.
- Stumpe, August Christian, Seelig, Anton, and Donges, Hans, to Licentia Patent-Verwaltungs-G.m.b.H. Electrical protection device for establishing a short circuit in response to the appearance of a low level overvoltage. 3,476,979, Cl. 317-031.
- Sueur, Rene, to Societe Chimique des Charbonnages. Recovery of maleic anhydride by plural stage thin layer vacuum evaporation and plural stage condensation. 3,476,775, Cl. 260-346.8
- Suggitt, Robert M.: *See—*
  - Brandenburg, John T., Crone, John M., Jr., and Suggitt, Robert M. 3,476,821.
- Sugi, Masao, and Kumamaru, Hiroyuki, to Sumitomo Electric Industries, Ltd. Method of manufacturing communication cable and manufacturing apparatus. 3,475,893, Cl. 057-058.84
- Suhr, John H. Joint construction for building elements. 3,475,872, Cl. 052-285.
- Sullivan, Herbert D., to International Harvester Company. Rotary screen seal. 3,475,883, Cl. 055-290.
- Sullivan, Robert E., to Anaconda Company, The. Calcination process for kaolin-containing clay. 3,476,511, Cl. 023-110.
- Sumitomo Chemical Company, Ltd.: *See—*
  - Fukui, Kenichi, Kagiya, Tsutomu, Narisawa, Shizuo, Maeda, Taneo, and Kobata, Mikio, 3,476,712.
- Sumitomo Electric Industries, Ltd.: *See—*
  - Sugi, Masao, and Kumamaru, Hiroyuki, 3,475,893.
- Sunbeam Business Equipment Co.: *See—*
  - Tiger, Emil, Corman, Erskine G., and Reick, Kenneth R., 3,476,479.
- Sundstrand Corporation: *See—*
  - Fair, Donald G., and Anderson, Bertil T., 3,477,006.
- Sundstrand, Oscar J., to Victor Comptometer Corporation. Calculating machine with short cut multiplication. 3,476,313, Cl. 235-060.
- Superior Continental Corporation: *See—*
  - Mack, Jules A., 3,476,867.
- Suppan, Fritz: *See—*
  - Lippe, Friedrich Georg, and Suppan, Fritz 3,476,597.
- Sutton, Walter T., Jr., Broyles, James D., Sims, James B., and Botts, Nelson F., to Texas Instruments, Incorporated. Dryer control. 3,475,830, Cl. 034-045.
- Sutz, Richard K. Sport fishing reel. 3,476,332, Cl. 242-099.
- Suzuki, Yasuo: *See—*
  - Mikoshiba, Tomoyoshi, Suzuki, Yasuo, and Ishizawa, Shingo 3,476,674.
- Swaine, Harry Dugdale. Drive system for a vehicle. 3,476,201, Cl. 180-065.
- Swallow, Douglas M., to Southwestern Engineering Company. Vibratory separator. 3,476,245, Cl. 209-254.
- Swenson, John, Granite Co., Inc., The: *See—*
  - Garrison, Langdon I., 3,476,912.
- Swett, James B., and Nixon, Charles L., to Rexall Drug and Chemical Company. Closured container and method of making same. 3,476,297, Cl. 222-480.
- Swett, Leo Ralph, Ratajczyk, James Daniel, and Kimura, Eugene Tatsuru, to Abbott Laboratories. Substituted 6,7-dihydro-5-H-pyrimidino thiazines. 3,476,748, Cl. 260-243.
- SWF-Spezialfabrik fur Autozubehor Gustav Rau GmbH: *See—*
  - Schreiber, Franz, 3,476,896.
- Swift & Company: *See—*
  - Francis, Ray D., 3,476,198.
  - Schack, Warren R., and Miller, Jack M., 3,476,574.
- Switek, Henryk: *See—*
  - Pazola, Zdzislaw, Switek, Henryk, Janicki, Jozef, and Michnikowska, Wanda 3,476,646.
- Sylvania Electric Products, Inc.: *See—*
  - Burney, Charles F., 3,476,947.
  - Crellin, Peter Lewis, 3,476,953.
  - Kepner, Theodore S., 3,476,946.
  - Mengers, Paul E., 3,476,948.
- Syntex Corporation: *See—*
  - Cross, Alexander D., 3,476,757.
  - Dorfman, Ralph I., 3,476,859.
  - Moffatt, John G., and Fenselau, Allan H., 3,476,794.
- Szohatzky, Zoltan: *See—*
  - Lennon, Fred A., Zahuranec, Emery J., Dodge, Harry G., and Szohatzky, Zoltan 3,475,948.
- Szuba, Walter D., and Hannen, James H., Jr., to Singer Company, The. Needle jogging mechanisms. 3,476,066, Cl. 112-158.
- Szur, Alex J.: *See—*
  - Croix, Louise S., and Szur, Alex J. 3,476,860.
- Taira, Keon, and Kida, Kazuyoshi, to Teijin Limited. Multiple-twist spindle. 3,475,892, Cl. 057-058.61
- Takahashi, Kozo: *See—*
  - Murakami, Masuo, Takahashi, Kozo, Matsumoto, Jun, Murase, Kiyoshi, Tamazawa, Kazuharu, Kawamura, Shigeo, and Terao, Junichi 3,476,777.
- Takahashi, Sasuke. Folding table. 3,476,061, Cl. 108-112.
- Takimoto, Masaaki: *See—*
  - Sato, Masamichi, Honjo, Satoru, and Takimoto, Masaaki 3,476,659.
- Tamazawa, Kazuharu: *See—*
  - Murakami, Masuo, Takahashi, Kozo, Matsumoto, Jun, Murase, Kiyoshi, Tamazawa, Kazuharu, Kawamura, Shigeo, and Terao, Junichi 3,476,777.
- Tanaka, Tameo, to Kabushiki Kaisha Yaskawa Denki Seisakusho. Apparatus for controlling the electro-parametric oscillation phase. 3,476,952, Cl. 307-088.
- Tanigawa, Koichiro: *See—*
  - Morita, Hiroshi, Fuse, Motoyosi, Iwasaki, Sadaya, Yamagishi, Hisato, Kawaguchi, Syojiro, and Tanigawa, Koichiro 3,476,976.
- Tapp, John William Theodore: *See—*
  - Bugg, Alfred Edward, 3,475,834.
- Tarsitano, John J. Pocket-sized crico-thyrotomy set. 3,476,113, Cl. 128-305.
- Taudvin, Peter C.: *See—*
  - Christian, Rodney E., and Taudvin, Peter C. 3,476,170.
- Taylor, Edward C., and Bartulin, Juan. 2-Substituted-1 hydroxyquinazoline 3-oxides and quinazoline 1,3-dioxides. 3,476,756, Cl. 260-256.4
- Taylor, Edward C., and Lenard, Katherine. 8,13-Diazasteroids. 3,476,755, Cl. 260-251.
- Taylor, James W.: *See—*
  - Perkins, Paul E., Perkins, Warren E., Thomas, David E., and Taylor, James W. 3,476,877.
- Technautics Corporation: *See—*
  - Caplan, Richard, 3,475,915.
- Tecumseh Products Company: *See—*
  - Rundell, Theodore W., and Randall, Freddie D., 3,476,308.
- Teijin Limited: *See—*
  - Taira, Keon, and Kida, Kazuyoshi, 3,475,892.
- Teledyne, Inc.: *See—*
  - Markey, Roscoe I., 3,476,009.
  - Markey, Roscoe I., 3,476,010.
  - Markey, Roscoe I., 3,476,454.
- Teledyne Industries Inc.: *See—*
  - Hartmann, Bert E., 3,477,019.
- Telfer, Henri E. Liquid dispensing apparatus having a dispensing top closure. 3,476,295, Cl. 222-183.
- Tell, Karl Gunnar: *See—*
  - Siwersson, Olle Lennart, and Tell, Karl Gunnar 3,476,296.
- Temple, Fred, and Reno, William H., to Westinghouse Air Brake Company. Automatic railway air hose connector. 3,476,407, Cl. 285-012.
- Tench, John R., to Westinghouse Electric Corporation. Storage battery plate insulation. 3,476,612, Cl. 136-147.
- Tenneco Chemicals, Inc.: *See—*
  - Barch, John J., 3,476,790.
- Tenshin Mancounting Machine Co. (Tenshin Kahei Keisanki Kabushiki Kaisha): *See—*
  - Uchida, Isamu, Miyayama, Shigeru, Watanabe, Kenkihi, and Osako, Kyoichi, 3,476,125.
- Ter Bush, Charles F.: *See—*
  - Scott, Eugene W., and Ter Bush, Charles F. 3,475,922.
- Terao, Junichi: *See—*
  - Murakami, Masuo, Takahashi, Kozo, Matsumoto, Jun, Murase, Kiyoshi, Tamazawa, Kazuharu, Kawamura, Shigeo, and Terao, Junichi 3,476,777.
- Terlinden & Company: *See—*
  - Ruckstuhl, Jakob E., 3,475,926.
- Terrell, Ross C., to Air Reduction Company, Incorporated. Fluorinated dialkyl sulfides. 3,476,811, Cl. 260-609.
- Terrell, Ross C., to Air Reduction Company, Incorporated. Fluorine containing halogenated dialkyl sulfides. 3,476,812, Cl. 260-609.
- Tescom Corporation: *See—*
  - Fleischhacker, Joseph F., and Kawamoto, Frank T., 3,476,320.
- Testa, Emilio: *See—*
  - Pifferi, Giorgio, and Testa, Emilio 3,476,752.
- Teti, John: *See—*
  - Jenny, Jacques, Teti, John, and Anderson, Jack P. 3,476,190.
- Teuber, Anthony J., to Data Devices, Inc., mesne. Magnetic tape cleaner. 3,475,782, Cl. 015-308.
- Teverbaugh, Robert K.: *See—*
  - Joseph, Guy G., Teverbaugh, Robert K., and Maniquis, Angelina A. 3,476,292.
- Teves, Alfred, G.m.b.H.: *See—*
  - Klein, Hans Christof, 3,476,222.
  - Knapp, Wilhelm, 3,476,217.
  - Schanz, Hans, 3,476,221.
- Teves, Alfred, Maschinen- und Armaturenfabrik KG: *See—*
  - Schanz, Hans, 3,476,398.
- Texaco Inc.: *See—*
  - Allen, Joseph C., 3,476,182.
  - Brandenburg, John T., Crone, John M., Jr., and Suggitt, Robert M., 3,476,821.
  - Bunn, Dorrance P., Jr., Janes, Edward F., and Williams, Dale, 3,476,818.
  - Coleman, Richard L., 3,476,680.
  - Davies, James A., and Sherman, Philip B., 3,476,681.
  - Eckert, George W., 3,476,533.
  - Haynes, Stewart, Jr., and Fontaine, Marc F., 3,476,183.
  - Oberender, Frederick G., Godfrey, Arthur W., and Wiley, Morris A., 3,476,685.

- Texas Instruments, Incorporated: *See—*
  - Bliss, Bruce J., 3,476,528.
  - Bonin, Edward L., 3,476,941.
  - Clarke, John F., and Coad, Brian C., 3,475,811.
  - Clarke, John F., 3,476,080.
  - Clarke, John F., and Adams, Clyde M., Jr., 3,476,579.
  - Marcoux, Leo, 3,476,293.
  - Mize, Jack P., and Colman, Derek, 3,476,991.
  - Ross, John W., 3,476,101.
  - Sutton, Walter T., Jr., Broyles, James D., Sims, James B., and Botts, Nelson F., 3,475,830.
  - Willoughby, Joseph A., 3,475,816.
- Tezuka, Kunitoshi. Melting device for regenerating recovered scrap iron. 3,476,372, Cl. 266-013.
- Thatcher, Charles R., to Ransburg Electro-Coating Corporation. Electrostatic powder-coating apparatus. 3,476,319, Cl. 239-015.
- Thiokol Chemical Corporation: *See—*
  - Cook, George W., 3,475,954.
  - Millen, Edward G., 3,476,826.
- Thoma, Jozef A.: *See—*
  - Ottenheym, Johannes H., Thoma, Jozef A., and Gregoire, Johannes H.C.M.A. 3,476,665.
- Thoma, Jozef A., Gielkens, Johannes W., and Reichrath, Werner, to Stamicarbon N.V. Preparation of 7-chloro-4-thia-oenanthic acid. 3,476,664, Cl. 204-158.
- Thomas, David E.: *See—*
  - Perkins, Paul E., Perkins, Warren E., Thomas, David E., and Taylor, James W. 3,476,877.
- Thomas, Derek: *See—*
  - Whittle, Frank, and Thomas, Derek 3,476,196.
- Thompson, Robert E.: *See—*
  - Schmidt, Robert H. E., and Thompson, Robert E. 3,476,440.
- Thompson, Ted E., to Bethlehem Steel Corporation. Highway barrier. 3,476,362, Cl. 256-013.1
- Thompson, Tom H., to Ford Motor Company. Fuel pump system. 3,476,145, Cl. 137-565.
- Thomson Machinery Company, Inc.: *See—*
  - Overstreet, Le Roy B., Brumbaugh, Eugene P., and Brumbaugh, Bertrand L., 3,475,889.
- Thomson, Meredith C., to Stoelting Brothers Company. Stirring paddle assembly for process vat. 3,476,364, Cl. 259-108.
- Thoren, Georg M. I., and Lundahl, Lennart V. S., to Alfa-Laval AB. Seal between stationary and rotary parts. 3,476,397, Cl. 277-083.
- Thorner, Robert H. Automotive speed control apparatus. 3,476,206, Cl. 180-108.
- Thorsdalen, Nils: *See—*
  - Holtermann, Hugo, Haugen, Leif Gunnar, Thorsdalen, Nils, Tjonneland, Knut, Wille, Knut, and Koutroulos, Jean 3,476,802.
- Thru-Way Equipment Company: *See—*
  - Jones, Charles E., and Henry, William C., 3,476,273.
- Thull, John F., and Oderman, Samuel, to Sta-Hi Corporation. Newspaper-stream reversing apparatus. 3,476,384, Cl. 271-076.
- Tibol, George J., to Solitron Devices, Inc. Schottky barrier semiconductor device. 3,476,984, Cl. 317-234.
- Tiger, Emil, Corman, Erskine G., and Reick, Kenneth R., to Sunbeam Business Equipment Co. Electrophotographic copying machine. 3,476,479, Cl. 355-064.
- Tillis, William J.: *See—*
  - Hogya, Bernard J., and Tillis, William J. 3,476,624.
- Tillman, Alfred, to Marotta Valve Corporation. Fluid flow fuse. 3,476,141, Cl. 137-498.
- Tinnerman, George A. Constant torque sheet metal fastener. 3,476,163, Cl. 151-014.
- Tisselli, Eugenio: *See—*
  - Mariani, Brunello, Guizzi, Alberto, and Tisselli, Eugenio 3,476,564.
- Tjonneland, Knut: *See—*
  - Holtermann, Hugo, Haugen, Leif Gunnar, Thorsdalen, Nils, Tjonneland, Knut, Wille, Knut, and Koutroulos, Jean 3,476,802.
- Toal, James J.: *See—*
  - Ditlinger, Richard J., and Toal, James J. 3,475,988.
- Tognazza Bruno G.: *See—*
  - Rado, Antonio, and Tognazza Bruno G. 3,476,326.
- Tolliver, Donald L., to Motorola, Inc. Semiconductor device stabilization. 3,476,619, Cl. 148-187.
- Tomala, Hans: *See—*
  - Schroeder, Gerhard Albert Richard, Trenkler, Werner, and Tomala, Hans 3,476,437.
- Tomasulo, Robert M.: *See—*
  - Anderson, David W., Sparacio, Francis J., and Tomasulo, Robert M. 3,477,063.
- Torit Manufacturing Company: *See—*
  - Kulzer, Gene T., 3,475,884.
- Torres, Noel M. Structural joint assembly. 3,476,421, Cl. 287-189.36
- Torrington Company, The: *See—*
  - Grange, Arthur Savage, and Paton, John McDougall, 3,476,450.
  - Massey, Roger G., 3,476,226.
- Touey, George P.: *See—*
  - Kiefer, John E., and Touey, George P. 3,476,120.
- Toups, Stanford S.: *See—*
  - Richardson, James T., and Toups, Stanford S. 3,477,018.
- Town, Frank: *See—*
  - Cowlishaw, Frank, and Town, Frank 3,476,275.
- Toyo Boseki Kabushiki Kaisha: *See—*
  - Shimai, Junichiro, Matsui, Isamu, Kawamura, Syuzo, and Sakai, Syoji, 3,476,328.
- Toyo Kogyo Company Limited: *See—*
  - Yamamoto, Kenichi, 3,476,092.
- Trainor, Wilbur J.: *See—*
  - Martinek, Thomas W., Haines, Robert M., Weichman, Roger L., and Trainor, Wilbur J. 3,476,687.
- Traub Company, The: *See—*
  - Christian, Rodney E., and Taudvin, Peter C., 3,476,170.
- Travis, Alfred, and Croft, Philip, to Executors of James Mills Limited. Apparatus for use in effecting controlled quenching of metal in bar form. 3,476,371, Cl. 266-006.
- Traxler, Peter E., to Pe Tel, Inc. Disconnect pick. 3,476,895, Cl. 200-061.19
- Trebotich, Thomas Samuel, and Le Claire, Harry Edward. Apparatus for data scanning and programming. 3,476,917, Cl. 235-061.7
- Tregay, John L., and Martin, Edward J., Jr., to Addressograph-Multigraph Corporation. Photoelectrostatic copying machine. 3,476,382, Cl. 271-052.
- Trenkler, Werner: *See—*
  - Schroeder, Gerhard Albert Richard, Trenkler, Werner, and Tomala, Hans 3,476,437.
- Trethewey, William C., to Owens-Corning Fiberglas Corporation. Process and apparatus for controlling the flow of molten glass. 3,476,538, Cl. 065-029.
- Tridair Industries: *See—*
  - DePew, Chester C., 3,476,285.
- Truett, William L.: *See—*
  - Johnson, Donald R., Nadeau, Richard G., Nieuweboer, Gerrit, and Truett, William L. 3,476,515.
- Truhan, Andrew. Gas meter calibration apparatus. 3,475,949, Cl. 073-003.
- Trutna, William R.: *See—*
  - Miller, William C., and Trutna, William R. 3,476,751.
- TRW Inc.: *See—*
  - Carlson, Burnette J., and Johnson, John H., 3,476,445.
- TRW Semiconductors Inc.: *See—*
  - Crishal, Joan M., and Sandstrom, James P., 3,476,620.
- Tsuji, Shigeru, to Nippon Electric Company, Limited. Pressure contact semiconductor devices. 3,476,986, Cl. 317-234.
- Tsunoda, Yoshimasa, Iwata, Hideo, Okada, Tsutomu, and Aso, Kotaro, to Fuji Photo Film Co., Ltd. Cutting apparatus. 3,475,801, Cl. 025-105.
- Tsurugi, Shinichi: *See—*
  - Kudo, Shiro, Mihara, Yoshihisa, Adachi, Taiichi, Tsurugi, Shinichi, Usuku, Tomoatsu, and Wada, Isamu 3,476,796.
- Tuinhof, Anton Dirk: *See—*
  - Eigeman, Jacobus, and Tuinhof, Anton Dirk 3,476,990.
- Turnage, Rodger Elmo, Jr., Stebbins, Jerald T., and Crump, Lawrence R., to Stromberg Dalagraphix, Inc. Digital controlled elliptical display. 3,476,974, Cl. 315-023.
- Turner, Kenneth Lamar: *See—*
  - Sennett, Paul S., Turner, Kenneth Lamar, and Morris, Horton Harold 3,476,576.
- Turner, Richard F., to United States of America, Atomic Energy Commission. Fuel segregation loading arrangement in nuclear fuel elements. 3,476,645, Cl. 176-071.
- U.S. Composites Corporation: *See—*
  - Dubin, Dennis S., and Frost, Solomon, 3,476,529.
- U.S. Philips Corporation: *See—*
  - Eigeman, Jacobus, and Tuinhof, Anton Dirk, 3,476,990.
  - Haisma, Jan, 3,477,036.
  - Meyer, Dietrich, 3,477,040.
  - Potzl, Friedrich, 3,476,177.
  - Van Hensbergen, Gerrit Hendrik, and Grubben, Henri Peter Johannes, 3,476,881.
- UA Engineering Limited: *See—*
  - Angier, Richard, 3,475,912.
- Uchida, Isamu, Miyayama, Shigeru, Watanabe, Kenkihi, and Osako, Kyoichi, to Tenshin Mancounting Machine Co. (Tenshin Kahei Keisanki Kabushiki Kaisha). Coin stacking apparatus for a coin wrapping machine. 3,476,125, Cl. 133-001.
- Uda, Shukichi, and Igarashi, Yutaro. Automatic book page turning apparatus. 3,475,844, Cl. 040-104.
- Uetrecht, Dale M.: *See—*
  - Munch, Walter, Jr., and Uetrecht, Dale M. 3,476,864.
- Ujihara, Akira: *See—*
  - Komatsu, Toshiro, and Ujihara, Akira 3,476,263.
- Ulich, Michael D., to Westinghouse Electric Corporation. Room air-conditioner improved mounting arrangement. 3,476,034, Cl. 098-094.
- Ulrich, Richard: *See—*
  - Friess, Klaus, Ulrich, Richard, and Kritikos, Athanasios 3,476,688.
- Umbricht, Emil: *See—*
  - Arnold, Orlan M., Hanson, Victor W., Jamison, Robert M., Panzica, Nicholas J., and Umbricht, Emil 3,475,881.
- Unger, Paul. Mounting plate or gauge for securing ski binding components to skis. 3,476,400, Cl. 280-011.35
- Unger, Paul. Safety binding for ski. 3,476,401, Cl. 280-011.35
- Ungerer, Fritz, deceased (by Ungerer, Irma, sole heir). System for the selective stacking of sheet material. 3,476,241, Cl. 209-073.

- Ungerer, Irma: *See—*
  - Ungerer, Fritz 3,476,241.
- Union Oil Company of California: *See—*
  - Martinek, Thomas W., Haines, Robert M., Weichman, Roger L., and Trainor, Wilbur J., 3,476,687.
  - Sarem, Amir M., 3,476,186.
- Union Tank Car Company: *See—*
  - Brown, Fred, 3,475,809.
- United Aircraft Corporation: *See—*
  - Buswell, Richard F., Setzer, Herbert J., and Sederquist, Richard A., 3,476,534.
  - Buswell, Richard F., 3,476,535.
  - Corwin, Frank R., 3,476,658.
  - Davison, Bartholomew J., and Peracchio, Aldo A., 3,476,131.
  - Gelting, Raymond L., Fiorentino, Anthony J., and Rogers, Arthur C., 3,476,609.
  - Jusyk, Stanley J., 3,476,140.
  - Rovan, Joseph W., 3,476,906.
- United-Carr Incorporated: *See—*
  - Bramhall, Otis H., and Jess, Thurman S., 3,477,054.
  - Pearson, Arthur Stanley, and Ford, David Julian, 3,476,008.
  - Seckerson, Clifford Alexander, 3,475,794.
- United Kingdom of Great Britain and Northern Ireland, Minister of Technology in Her Britannic Majesty's Government of: *See—*
  - Burton, Derek Rodney, 3,475,918.
- United States Atomic Energy Commission: *See—*
  - Bachand, Gordon R., 3,476,919.
  - Smith, Jean G., and Fitch, Frederick T., 3,476,691.
- United States Gypsum Company: *See—*
  - Hurd, Jerome N., 3,476,302.
- United States of America
  - Agriculture: *See—*
    - Stanonis, David J., King, Walter D., and Esposito, Charles R., 3,475,823.
    - Weiner, Bernard A., 3,476,670.
  - Air Force: *See—*
    - Gebel, Radames K. H., 3,476,132.
    - Lawson, Maurice O., 3,476,959.
    - Mossey, Paul W., 3,475,961.
  - Army: *See—*
    - Koblin, Abraham, Woolfridge, Alfred L., and Adams, John Q., 3,475,965.
  - Atomic Energy Commission: *See—*
    - Creek, Kenneth O., and Leiby, David W., 3,475,825.
    - Hartzel, Lawrence W., 3,476,526.
    - Turner, Richard F., 3,476,645.
    - Woolsey, Joseph W., 3,475,808.
  - Commerce: *See—*
    - Motz, Joseph W., 3,477,023.
  - Interior: *See—*
    - Sieder, Everett N., 3,476,654.
    - Sieder, Everett N., 3,476,655.
  - Navy: *See—*
    - Jackson, Lloyd J., 3,476,012.
    - Springston, George B., Jr., 3,475,846.
- United States Steel Corporation: *See—*
  - Ashbaugh, Donald L., 3,476,370.
  - Belcher, Lorne J., and Rinkus, Robert G., 3,476,889.
  - Bode, Charles H., Jr., and Wusseles, Peter J., 3,476,373.
  - Colijn, Hendrik, 3,476,374.
  - Condrac, Robert F., 3,476,414.
  - Davie, William R., 3,476,577.
  - De Wulf, Maurice J., 3,476,157.
  - Facer, Walter K., and Rigo, Jane H. M., 3,476,081.
  - Johnson, Robert L., 3,475,779.
  - Kennedy, George E., and Manganello, Samuel J., 3,475,812.
  - Mazur, Chester C., 3,475,962.
  - Robinson, John E., 3,475,777.
  - Stuart, Donald J., 3,475,874.
  - Zemberry, William L., 3,476,013.
- United Steel and Wire Company: *See—*
  - Close, Garth, 3,476,215.
- Universal Oil Products Company: *See—*
  - Hardison, Leslie C., 3,476,176.
  - Heinze, Walter W., Jones, Evan A., and Carson, Don B., 3,476,283.
  - Van Tassell, Harry M., and Root, Wayne N., 3,476,656.
- University of Minnesota, the Regents of the: *See—*
  - Kaster, Robert L., 3,476,143.
- Upjohn Company, The: *See—*
  - Argoudelis, Alexander D., Grady, Joseph E., and Sayer, Gordon C., 3,476,738.
  - Argoudelis, Alexander D., and Pyke, Thomas R., 3,476,857.
  - Smith, William R., 3,476,088.
- Ushioda, Tsunezo, Nonaka, Katsuhiko, Yasueara, Minoru, Sato, Katsuya, Ompo, Takeshi, and Ishibashi, Hiroaki. Growth promoting method for microorganisms. 3,476,647, Cl. 195-080.
- Usuku, Tomoatsu: *See—*
  - Kudo, Shiro, Mihara, Yoshihisa, Adachi, Taiichi, Tsurugi, Shinichi, Usuku, Tomoatsu, and Wada, Isamu 3,476,796.
- Uto, Yoshimitsu: *See—*
  - Kameda, Isamu, and Uto, Yoshimitsu 3,476,909.
- V-M Corporation: *See—*
  - Estkowski, Michael H., 3,476,393.
- Vallante, Thomas E.: *See—*
  - Leath, Colin W., Waldman, Myron R., and Vallante, Thomas E. 3,476,910.
- Valtchev, Alexander J., and Valtcheva, Temenushka Nikolova, to Metalurgitschen Zavod 'Lenin'. Method of coating carbon bodies and the resulting products. 3,476,586, Cl. 117-071.
- Valtcheva, Temenushka Nikolova: *See—*
  - Valtchev, Alexander J., and Valtcheva, Temenushka Nikolova 3,476,586.
- Valvassori, Alberto: *See—*
  - Natta, Giulio, Mazzanti, Giorgio, Valvassori, Alberto, and Sartori, Guido 3,476,720.
- Van Den Berg, Cornelis E. P. V., to Stamicarbon N.V. Process for the preparation of high molecular weight polymers of conjugated dienes. 3,476,733, Cl. 260-094.3
- Vandenberg, Edwin James, to Hercules Incorporated. Polymers of epoxy cyclic sulfones. 3,476,718, Cl. 260-079.3
- Van der Grinten N.V.: *See—*
  - Marcelissen, Franciscus Hendrikus, 3,476,480.
- Vander Wall, Edwin Robert. Ventilated cat toilet. 3,476,083, Cl. 119-001.
- van Hekken, Frans: *See—*
  - Herzfeld, Fred, and van Hekken, Frans 3,476,025.
- Van Hensbergen, Gerrit Hendrik, and Grubben, Henri Peter Johannes, to U.S. Philips Corporation, mesne. Resistance dialing receiver. 3,476,881, Cl. 179-016.
- Van Nice, Robert I., to Westinghouse Electric Corporation. High series capacitance winding for electrical inductive apparatus. 3,477,052, Cl. 336-070.
- Van Note, Charles O., Jr., and Cordary, Bruce J., to Servco Company, The. Coupling. 3,476,415, Cl. 285-396.
- Van Poucke, Raphael Karel: *See—*
  - Monbaliu, Marcel Jacob, De Cat, Arthur Henri, and Van Poucke, Raphael Karel 3,476,763.
- Van Raden, Frederick F.: *See—*
  - Baker, Charles J., and Van Raden, Frederick F. 3,476,269.
- Van Tassell, Harry M., and Root, Wayne N., to Universal Oil Products Company. Fractional distillation and recovery of styrene containing sulfur with subsequent bottoms separation. 3,476,656, Cl. 203-009.
- van Zanten, Marinus: *See—*
  - Bezemer, Cornelis, Meijs, Franciscus H., van Zanten, Marinus, and Wittenwyler, Clifford V. 3,476,189.
- Varispace Industries, Inc.: *See—*
  - Ryswick, Edward L., 3,476,046.
- Varityper Corporation: *See—*
  - Marum, Helmut, 3,476,229.
- Varlonga, Giovanni. Shutter window with an elastic element for holding and retaining the plate. 3,475,863, Cl. 049-367.
- Varney Chemical Corporation: *See—*
  - Sanders, Herbert L., 3,476,598.
- Varta Aktiengesellschaft: *See—*
  - Steffens, Karl, 3,476,286.
- Vasan, Srini, to International Minerals and Chemical Corporation. Fertilizer prill consisting of ammonium nitrate and langbeinite and the method of preparing said prill. 3,476,544, Cl. 071-059.
- Vaughn, Rudolph Marion. Captured panel fastener. 3,476,165, Cl. 151-069.
- Vawter, Verne E. System for numerically controlling large masses. 3,476,327, Cl. 242-018.
- Ve Nard, Dan L., to Lear Jet Industries, Inc. Synthetic wave three phase alternating current power supply system. 3,477,010, Cl. 321-005.
- VEB Arzneimittelwerk: *See—*
  - Hoffmann, Klaus, 3,476,692.
- Vecchio, Martino, Lodi, Luciano, Fattore, Vittorio, and Cammarata, Italo, to Montecatini Edison S.p.A. Process for the preparation of fluorinated organic compounds via fluorination in vapor phase of aliphatic hydrocarbons. 3,476,817, Cl. 260-653.7
- Vedder, Willem, and Schultz, John, Jr., to General Electric Company. Magnesia insulated heating elements and methods of production. 3,477,058, Cl. 338-238.
- Vepa AG: *See—*
  - Fleissner, Heinz, 3,476,367.
- Verdol, Joseph A., and Carrow, Donald J., to Sinclair Research, Inc. Ashless lubricating oil detergents. 3,476,686, Cl. 252-051.5
- Vezina, Claude, and Deghenghi, Romano, to American Home Products Corporation. Novel steroid compounds of the cholestane series. 3,476,779, Cl. 260-397.2
- Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen: *See—*
  - Bende, Friedrich, Vollinger, Heinz, and Pohl, Kurt, 3,476,804.
  - Vollinger, Heinz, Pohl, Kurt, and Bende, Friedrich, 3,476,805.
- Victor Comptometer Corporation: *See—*
  - Sundstrand, Oscar J., 3,476,313.
- Viertel, Gunter: *See—*
  - Sennewald, Kurt, Erpenbach, Heinz, Rehberg, Heinrich, and Viertel, Gunter 3,476,776.
- Viewlex, Inc.: *See—*
  - Mindell, Marvin I., Heikkila, Andrew E., Harrison, Henry, and Wolz, Rudolph G., 3,477,008.
  - Rudzitis, Karl, Castellano, John, and Wolz, Rudolph G., 3,476,475.
- Villain, Pierre, to Novacel S.A. Process for producing artificial sponges. 3,476,844, Cl. 264-049.

- Viol, Gunter, and Kohfeld, Werner. Method of making foldable wooden lamellae for folding doors and the like. 3,476,630, Cl. 156-268.
- Visani, Francesco: *See—*
    - LoMonaco, Sergio, Melacini, Paolo, Borsini, Giancarlo, Magagnin, Luigi Ciligot, and Visani, Francesco 3,476,727.
- Vogelman, Joseph Herbert, Stephenson, Kenrick, and Feinerman, Bernard, to Chromalloy American Corporation. Remote telephone extension system. 3,476,882, Cl. 179-041.
- Vogt, Wilhelm, and Glaser, Hermann, to Knapsack Aktiengesellschaft. Process for the manufacture of nitrilo-tris- methylene phosphonic acid. 3,476,799, Cl. 260-502.5
- Voigtlander, Wolfgang, Kaiser, Fritz, Schaumann, Wolfgang, and Stach, Kurt, to Boehringer, C. F., & Soehne GmbH. Cyclic ethers of cardenolide digitoxoside. 3,476,742, Cl. 260-210.5
- Voituron, Georges: *See—*
    - Osterrieth, Michel, and Voituron, Georges 3,476,698.
- Vollinger, Heinz: *See—*
    - Bende, Friedrich, Vollinger, Heinz, and Pohl, Kurt 3,476,804.
- Vollinger, Heinz, Pohl, Kurt, and Bende, Friedrich, to Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen. Adipic acid recovery from nitric acid oxidation. 3,476,805, Cl. 260-531.
- Voltronics Corporation: *See—*
    - Blickstein, Martin J., and Mittler, Martin A., 3,476,994.
- Von Bolhar, Edgar J., to Ellicott Machine Corporation. Bucket-wheel cutter for dredges. 3,476,498, Cl. 299-008.
- Von Brachel, Hanswilli, and Engelhardt, Fritz, to Cassella Farbwerke Mainkur Aktiengesellschaft. Process for the production of polymers. 3,476,717, Cl. 260-078.5
- Voullaire, Hans G. Expanding body for anchoring bolts, nuts or similar connecting elements in structual members. 3,476,164, Cl. 151-041.74
- Vrancken, Marcel Nicolas, to Gevaert-Agfa N.V. Thermographic recording method employing a record- ing material comprising a uniform layer of discrete hydrophobic thermoplastic polymer particles. 3,476,937, Cl. 250-065.
- W.G.B. Oil Clarifier, Inc.: *See—*
    - Gray, Donald M., Burhans, Hollis M., and Gray, Wendell H., 3,476,249.
- Wachs, Marvin R., to Communications Satellite Corporation. Constant level loading of F.M. modulator. 3,477,042, Cl. 332-016.
- Wacker-Chemie G.m.b.H.: *See—*
    - Kunstle, Gerhard, and Siegl, Herbert, 3,476,798.
- Wada, Isamu: *See—*
    - Kudo, Shiro, Mihara, Yoshihisa, Adachi, Taiichi, Tsurugi, Shinichi, Usuku, Tomoatsu, and Wada, Isamu 3,476,796.
- Wade, Peter: *See—*
    - Watkin, David Anthony, Noe, Edwin Henry, and Wade, Peter 3,476,058.
- Wadsworth, Nicolas John, and Watt, William, to National Research Development Corporation. Treatment of carbon fibres and composite materials including such fibres. 3,476,703, Cl. 260-037.
- Wagner, Hans A., to Searle, G. D., & Co.1,2,3,4-Tetrahydro-2-nitroso-9H-pyrido [3,4-$\beta$]- indole-3-carboxylic acid. 3,476,764, Cl. 260-295.
- Wagner, Josef. High pressure pump for sprayer. 3,476,052, Cl. 103-041.
- Wagner, Philip Lyle, to Du Pont de Nemours, E. I., and Company. Process for polymerizing propiolactones using tertiary phosphine catalysts. 3,476,715, Cl. 260-078.3
- Wagner, Richard E.: *See—*
    - Wilcox, William L., and Wagner, Richard E. 3,476,383.
- Wagstaffe, Aubrey H., to London Bankside Products Limited. Electric lamp bulb holders. 3,477,062, Cl. 339-088.
- Walco Electric Company: *See—*
    - Leath, Colin W., Waldman, Myron R., and Vallante, Thomas E., 3,476,910.
- Waldman, Myron R.: *See—*
    - Leath, Colin W., Waldman, Myron R., and Vallante, Thomas E. 3,476,910.
- Walker, Patrick J., to Kinkead Industries Incorporated. Magnetic latch mounting. 3,476,428, Cl. 292-251.5
- Wallace, John H., to Emerson Electric Co. Speed control system incorporating regenerative drive. 3,477,000, Cl. 318-197.
- Walsh, Robert J., to Monsanto Company. Processing of semiconductor wafers. 3,475,867, Cl. 051-281.
- Walter, Peter: *See—*
    - Scheiber, Werner, Walter, Peter, Lehmann, Rolf, and Kowarik, Klaus 3,476,668.
- Walton, John F., to Halliburton Company. Dynamic impedance analyzer including synchronous phase detector. 3,477,020, Cl. 324-057.
- Walton, Richard Rhodes, to Council for Tobacco Research-U.S.A. Smoking machine. 3,476,119, Cl. 131-171.
- Walz, Heinz: *See—*
    - Hettich, Alfred, Schadlich, Fritz, Walz, Heinz, and Paule, Kurt 3,475,780.
- Ward, Benjamin, to Burman & Sons Limited. Steering column assembly. 3,475,984, Cl. 074-492.
- Warne, Eugene Harold, to Lucas, Joseph, (Industries) Limited. Fuel systems for gas turbine engines. 3,475,908, Cl. 060-039.28
- Warne, Eugene Harold, to Lucas, Joseph, (Industries) Limited. Pumping apparatus for supplying fuel to an engine. 3,475,909, Cl. 060-039.28
- Warne, Eugene Harold, to Lucas, Joseph, (Industries) Limited. Fuel systems for gas turbine engines. 3,475,910, Cl. 060-039.28
- Wasemann, William A., to Westinghouse Electric Corporation. Clothes washing machine. 3,475,928, Cl. 068-023.2
- Wassermann, Carl I., to Datamark, Inc. Linear type font oscillating means for high speed printers and the like. 3,476,044, Cl. 101-093.
- Watanabe, Kenkihi: *See—*
    - Uchida, Isamu, Miyayama, Shigeru, Watanabe, Kenkihi, and Osako, Kyoichi 3,476,125.
- Waterman, Herrick: *See—*
    - Fuller, Ralph A., and Snodgrass, Earl D., 3,475,877.
    - Fuller, Ralph A., and Snodgrass, Earl D., 3,476,023.
- Watkin, David Anthony, Noe, Edwin Henry, and Wade, Peter, to British Scientific Instrument Research. Apparatus for controlling the thickness of sheet material. 3,476,058, Cl. 107-012.
- Watt, William: *See—*
    - Wadsworth, Nicolas John, and Watt, William 3,476,703.
- Watts, Walter Alfred Henry, to P. & M. Co. (England) Limited, The. Apparatus for applying liquid to the rails of railway tracks. 3,476,213, Cl. 184-003.
- Way, David G. Dog toy. 3,476,086, Cl. 119-029.
- Webb, Stephen F.: *See—*
    - Winchester, Charles M., Faccone, Joseph A., and Webb, Stephen F. 3,476,591.
- Weeks, Richard F., to Carson Laboratories, Inc. Motion measuring apparatus. 3,476,483, Cl. 356-256.
- Weems, Calvin T. Remote amperage control device for electric welders. 3,477,005, Cl. 318-266.
- Wehr Corporation: *See—*
    - Hinger, William R., 3,477,050.
- Weichman, Roger L.: *See—*
    - Martinek, Thomas W., Haines, Robert M., Weichman, Roger L., and Trainor, Wilbur J. 3,476,687.
- Weiner, Bernard A., to United States of America, Agriculture. Polarographic electrode structure. 3,476,670, Cl. 204-195.
- Weingart, Richard I. N. Portable locking device. 3,475,929, Cl. 070-014.
- Weinstein, Norman W.: *See—*
    - Goetz, George W., and Weinstein, Norman W. 3,476,172.
- Weir, Henry John. Laundry folding devices. 3,476,379, Cl. 270-080.
- Weisgerber, Thomas W., to General Motors Corporation. Hose and valve stem connector. 3,476,136, Cl. 137-231.
- Weiss, Ernst: *See—*
    - Lorenz, Fritz, and Weiss, Ernst 3,476,501.
- Weiss, Fred W.: *See—*
    - Merwin, Robert F., and Weiss, Fred W. 3,476,232.
- Weitzel, Edward W., and Hamby, Charles H., to Deering Milliken Research Corporation. Treatment of textiles with cross-linkable acrylic polymers and the resulting products. 3,476,581, Cl. 117-062.
- Weka Metallbau Ulm, Walter und Kunzli: *See—*
    - Renner, Eberhard, 3,476,035.
- Wells, Leon W., to Panopix Research Inc. Motion picture film. 3,476,469, Cl. 352-037.
- Welty, Albert B., Jr., Johnson, Russell R., and Atwood, Glenn A., to Esso Research and Engineering Company. Process and apparatus for the conversion of $So_2$ in flue gas to sulfur. 3,476,513, Cl. 023-225.
- Weman, Per Olaf, to Sigmatex AG. Automatic belt winder for safety belts. 3,476,333, Cl. 242-107.4
- Wennik, Lawrence Paul, and Scott, Phillips Brooks, to RCA Corporation. Electrical neuron circuit that includes an operational amplifier. 3,476,954, Cl. 307-201.
- Wenzel, Werner: *See—*
    - Schenck, Hermann, and Wenzel, Werner 3,476,651.
- Werda, Konrad, to Lucas, Joseph, (Industries) Limited. Means for making an electrical connection to a flexible printed circuit. 3,476,901, Cl. 200-166.
- Wessel, Paul. Diver's watch. 3,475,902, Cl. 058-126.
- Wesson, Guy W.: *See—*
    - Born, Gerald C., and Wesson, Guy W. 3,476,417.
- West, Carl J., Jr., deceased (by West, Margaret Ruth Ross, executor), to Ross, Margaret R. Packaging machine. 3,475,878, Cl. 053-030.
- West, Charles E., Jr., and Schmidt, Jack W., to General Motors Corporation. Power transmission. 3,475,992, Cl. 074-759.
- West, Margaret Ruth Ross: *See—*
    - West, Carl J., Jr. 3,475,878.
- West Point-Pepperell, Inc.: *See—*
    - Charlton, Richard E., Jr., and McDaniel, Rupert A., 3,476,626.
- Westbrook, Lowell V., to Honeywell Inc. Control apparatus. 3,477,004, Cl. 318-257.
- Westby, Lloyd R., and Bourgeois, Francis H. Vehicle speed control device. 3,476,204, Cl. 180-098.
- Westerhof, Pieter: *See—*
    - Reerink, Engbert Harmen, Westerhof, Pieter, and Scholer, Hendrik Frederik Louis 3,476,782.
- Westerlund, Herbert A., and Westerlund, Robert E., to Koehring Company. Gate valve. 3,476,358, Cl. 251-214.
- Westerlund, Robert E.: *See—*
    - Westerlund, Herbert A., and Westerlund, Robert E. 3,476,358.
- Western Electric Company, Incorporated: *See—*
    - Brewer, Robert F., and Piechocki, Benjamin, 3,476,531.
    - Brosseit, Fritz V., 3,475,974.
    - Santangini, Joseph A., 3,475,814.
- Westfalia Separator AG.: *See—*
    - Poppenberg, Carl, 3,476,310.

- Westinghouse Air Brake Company: *See—*
    - Newell, George K., 3,476,359.
    - Temple, Fred, and Reno, William H., 3,476,407.
- Westinghouse Brake and Signal Company Limited: *See—*
    - Miles, Clifford V., and Garrett, John M., 3,476,989.
- Westinghouse Electric Corporation: *See—*
    - Appel, Wallace H., 3,476,033.
    - Boyd, John, 3,476,447.
    - Burkhardt, Charles E., and Ellis, Belvin B., 3,477,053.
    - Chu, Chang K., 3,476,992.
    - Ennulat, Dietrich F., and Zollweg, Robert J., 3,476,969.
    - Gilles, Wallace, Yamasaki, George K., and Burger, J. C., 3,476,970.
    - Hagg, Arthur C., and Hoffman, Joseph H., 3,476,452.
    - Mendelsohn, Morris A., 3,476,933.
    - Mills, John E., and Getz, Edward J., 3,476,235.
    - Munson, William A., 3,476,268.
    - Scott, Eugene W., and Ter Bush, Charles F., 3,475,922.
    - Smith, Richard G., 3,476,349.
    - Tench, John R., 3,476,612.
    - Ulich, Michael D., 3,476,034.
    - Van Nice, Robert I., 3,477,052.
    - Wasemann, William A., 3,475,928.
    - Wolf, Charles B., 3,476,861.
    - Workman, Norma J., 3,475,831.
    - Zido, Joseph E., and Whalen, Thomas A., 3,476,987.
    - Zido, Joseph E., 3,476,988.
- Westland Plastics, Inc.: *See—*
    - Hanson, Lila M., Hanson, Bernard B., and McCutcheon, George H., 3,476,261.
- Westwood, David John Sidney, to Ferguson Radio Corporation Limited. AC to DC Voltage conversion circuit. 3,477,011, Cl. 321-015.
- Weyerhaeuser Company: *See—*
    - Allan, George Graham, 3,476,795.
    - Fraser, Richard S., and Jone, Paul Y., 3,476,585.
    - Miller, Lewis S., and Horowitz, Frederick, 3,476,695.
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    - Bugg, Alfred Edward, 3,475,834.
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Bode, Charles H., Jr., and Wusseles, Peter J. 3,476,373.
Wyeth, John, & Brother Limited: *See—*
Brown, Kevan, 3,476,766.
Xerox Corporation: *See—*
Fend, Frederick A., 3,476,473.
Rees, James D., Jr., 3,476,478.
Steele, Guy, 3,475,936.
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Elkind, Vincent Theodore, Yurko, Joseph Aloyus, and Hunter, Robert Tweedy 3,476,583.
Zahuranec, Emery J.: *See—*
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Felix, Ernst, 3,476,329.
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Kaiser, Carl, and Zirkle, Charles L. 3,476,760.
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351 : 3,475,770
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93 : 3,476,500
125 : 3,476,501
127.6 : 3,476,502
128 : 3,476,503
138 : 3,476,504
139 : 3,476,505
173 : 3,475,771
9– 1 : 3,475,772
3,475,773
341 : 3,475,774
11– 1 : 3,475,775
12– 36.8 : 3,475,776
13– 18 : 3,476,861
25 : 3,476,862
14– 21 : 3,475,777
71 : 3,475,778
3,475,779
15– 36 : 3,475,780
210 : 3,475,781
308 : 3,475,782
16–128 : 3,475,783
169 : 3,475,784
17– 52 : 3,475,785
18– 5 : 3,475,786
12 : 3,475,787
3,475,788
14 : 3,475,789
36 : 3,475,790
19–156.3 : 3,475,791
267 : 3,475,792
21– 91 : 3,476,506
3,476,507
23– 2 : 3,476,508
50 : 3,476,509
105 : 3,476,510
110 : 3,476,511
209.4 : 3,476,512
225 : 3,476,513
230 : 3,476,514
3,476,515
254 : 3,476,516
255 : 3,476,517
259 : 3,476,518
277 : 3,476,519
282 : 3,476,520
285 : 3,476,521
3,476,522
3,476,523
288 : 3,476,524
294 : 3,476,525
312 : 3,476,526
361 : 3,476,527
24– 20 : 3,475,793
73 : 3,475,794
122.6 : 3,475,795
156 : 3,475,796
230 : Re.26,703
3,475,797
3,475,799
249 : 3,475,798
25– 41 : 3,475,800
105 : 3,475,801
29– 96 : 3,475,802
132 : 3,475,803
156.5 : 3,475,804
182.3 : 3,476,528
183.5 : 3,476,529
192 : 3,476,530
195 : 3,476,531
203 : 3,475,805
212 : 3,475,806
400 : 3,475,807
401 : 3,475,808
412 : 3,475,809
427 : 3,475,810
472.3 : 3,475,811
3,475,812
480 : 3,475,813
589 : 3,475,814
603 : 3,475,815
630 : 3,475,816
32– 26 : 3,475,817
66 : 3,475,818

33– 25 : 3,475,819
46 : 3,475,820
3,475,821
87 : 3,475,822
125 : 3,475,823
137 : 3,475,824
174 : 3,475,825
3,475,826
34– 1 : 3,475,827
22 : 3,475,828
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45 : 3,475,830
82 : 3,475,831
182 : 3,475,832
35– 5 : 3,475,833
19 : 3,475,834
36– 1.5 : 3,475,835
3 : 3,475,836
24.5 : 3,475,837
37– 53 : 3,475,838
117 : 3,475,839
129 : 3,475,840
141 : 3,475,841
189 : 3,475,842
40– 63 : 3,475,843
104 : 3,475,844
106.51: 3,475,845
43– 9 : 3,475,846
15 : 3,475,847
44– 7 : 3,476,532
58 : 3,476,533
46– 3 : 3,475,848
16 : 3,475,849
40 : 3,475,851
58 : 3,475,850
116 : 3,475,852
120 : 3,475,853
206 : 3,475,854
220 : 3,475,855
232 : 3,475,856
247 : 3,475,857
47– 34 : 3,475,858
48– 94 : 3,476,534
3,476,535
214 : 3,476,536
49– 70 : 3,475,859
129 : 3,475,860
358 : 3,475,861
360 : 3,475,862
367 : 3,475,863
445 : 3,475,864
3,475,865
468 : 3,475,866
51–281 : 3,475,867
296 : 3,476,537
52– 2 : 3,475,868
173 : 3,475,869
211 : 3,475,870
273 : 3,475,871
285 : 3,475,872
293 : 3,475,873
514 : 3,475,874
581 : 3,475,875
3,475,876
53– 26 : 3,475,877
30 : 3,475,878
124 : 3,475,879
141 : 3,475,880
55– 94 : 3,475,881
179 : 3,475,882
290 : 3,475,883
341 : 3,475,884
357 : 3,475,885
56– 1 : 3,475,886
25.4 : 3,475,887
328 : 3,475,888
3,475,889
370 : 3,475,890
57– 34 : 3,475,891
58.61: 3,475,892
.84: 3,475,893
.89: 3,475,894
77.3 : 3,475,895
106 : 3,475,896
140 : 3,475,898
144 : 3,475,897
58– 21.155 3,475,899
3,475,900
90 : 3,475,901
126 : 3,475,902

60– 19 : 3,475,903
23 : 3,475,904
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39.07: 3,475,906
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3,475,910
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222 : 3,475,912
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61– 46 : 3,475,914
69 : 3,475,915
62– 52 : 3,475,916
85 : 3,475,917
165 : 3,475,918
228 : 3,475,919
273 : 3,475,920
320 : 3,475,921
394 : 3,475,922
64– 14 : 3,475,923
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65– 25 : 3,476,539
29 : 3,476,538
107 : 3,476,540
268 : 3,476,541
3,476,542
349 : 3,476,543
66–187 : 3,475,925
194 : 3,475,926
68– 18 : 3,475,927
23.2 : 3,475,928
70– 14 : 3,475,929
38 : 3,475,930
54 : 3,475,931
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71– 59 : 3,476,544
76 : 3,476,545
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72– 9 : 3,475,935
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159 : 3,475,938
181 : 3,475,937
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391 : 3,475,945
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419 : 3,475,947
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73– 3 : 3,475,949
23.1 : 3,475,950
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134 : 3,475,952
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296 : 3,475,959
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425.4 : 3,475,967
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512 : 3,475,970
74– 5.6 : 3,475,971
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66 : 3,475,977
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242.15: 3,475,982
395 : 3,475,983

74–492 : 3,475,984
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75– .5 : 3,476,547
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108 : 3,476,553
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128 : 3,476,555
3,476,556
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77– 25 : 3,475,995
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83–162 : 3,476,000
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357 : 3,476,003
575 : 3,476,043
84– 1.01: 3,476,863
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.26: 3,476,866
97 : 3,476,004
236 : 3,476,005
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85– 3 : 3,476,007
5 : 3,476,008
62 : 3,476,009
3,476,010
88– 1.5 : 3,476,011
89– 1.5 : 3,476,012
90– 12 : 3,476,013
91–394 : 3,476,014
401 : 3,476,015
411 : 3,476,016
412 : 3,476,017
419 : 3,476,018
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92–169 : 3,476,020
187 : 3,476,021
93– 12 : 3,476,022
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95– 1 : 3,476,025
18 : 3,476,026
31 : 3,476,027
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53 : 3,476,029
3,476,030
63 : 3,476,031
96– 1.7 : 3,476,558
3,476,559
22 : 3,476,560
36 : 3,476,561
88 : 3,476,562
100 : 3,476,563
3,476,564
98– 2 : 3,476,032
94 : 3,476,033
3,476,034
97 : 3,476,035
99– 2 : 3,476,565
65 : 3,476,566
82 : 3,476,567
93 : 3,476,568
107 : 3,476,569
118 : 3,476,570
130 : 3,476,571
143 : 3,476,572
193 : 3,476,573
214 : 3,476,574
243 : 3,476,036
100–223 : 3,476,037
101– 93 : 3,476,044
129 : 3,476,045
216 : 3,476,046

102– 39 : 3,476,047
52 : 3,476,048
92.7 : 3,476,049
103– 2 : 3,476,050
5 : 3,476,051
41 : 3,476,052
44 : 3,476,053
87 : 3,476,054
126 : 3,476,055
129 : 3,476,056
167 : 3,476,057
220 : 3,476,038
104–226 : 3,476,039
105– 4 : 3,476,040
376 : 3,476,041
377 : 3,476,042
106– 2 : 3,476,575
309 : 3,476,576
107– 12 : 3,476,058
48 : 3,476,059
108– 55 : 3,476,060
112 : 3,476,061
110– 8 : 3,476,062
112– 2 : 3,476,063
25 : 3,476,064
158 : 3,476,066
182 : 3,476,067
197 : 3,476,065
231 : 3,476,068
114– 67 : 3,476,069
115– .5 : 3,476,070
20 : 3,476,071
63 : 3,476,072
116– 34 : 3,476,073
114 : 3,476,074
116 : 3,476,075
120 : 3,476,076
133 : 3,476,077
117– 33 : 3,476,577
36.2 : 3,476,578
51 : 3,476,579
62 : 3,476,580
3,476,581
.2 : 3,476,582
63 : 3,476,583
66 : 3,476,584
71 : 3,476,585
3,476,586
76 : 3,476,587
100 : 3,476,588
126 : 3,476,589
3,476,590
148 : 3,476,591
201 : 3,476,592
3,476,593
211 : 3,476,594
239 : 3,476,595
3,476,596
118– 30 : 3,476,078
40 : 3,476,079
44 : 3,476,080
620 : 3,476,081
635 : 3,476,082
119– 1 : 3,476,083
12 : 3,476,084
14.36: 3,476,085
29 : 3,476,086
52 : 3,476,087
72.5 : 3,476,088
82 : 3,476,089
122–478 : 3,476,090
123– 1 : 3,476,091
8 : 3,476,092
90 : 3,476,093
117 : 3,476,094
119 : 3,476,095
140 : 3,476,096
148 : 3,476,097
3,476,098
193 : 3,476,099
124– 27 : 3,476,100
126– 19 : 3,476,101
204 : 3,476,102
127– 48 : 3,476,597
58 : 3,476,598
128– 2.06: 3,476,103
3,476,104
65 : 3,476,105
66 : 3,476,106
133 : 3,476,107

128–133 : 3,476,108
157 : 3,476,109
173 : 3,476,110
227 : 3,476,111
305 : 3,476,112
3,476,113
326 : 3,476,114
3,476,115
417 : 3,476,116
421 : 3,476,117
131–143 : 3,476,118
171 : 3,476,119
267 : 3,476,120
132– 9 : 3,476,121
53 : 3,476,122
79 : 3,476,123
147 : 3,476,124
133– 1 : 3,476,125
134– 4 : 3,476,599
10 : 3,476,600
60 : 3,476,126
135– 1 : 3,476,127
136– 6 : 3,476,601
3,476,602
22 : 3,476,603
36 : 3,476,604
83 : 3,476,605
3,476,606
86 : 3,476,607
3,476,608
3,476,609
107 : 3,476,610
134 : 3,476,611
147 : 3,476,612
137– 1 : 3,476,128
38 : 3,476,129
66 : 3,476,130
81.5 : 3,476,131
93 : 3,476,132
115 : 3,476,133
3,476,134
155 : 3,476,135
231 : 3,476,136
268 : 3,476,137
323 : 3,476,138
355.16: 3,476,139
392 : 3,476,140
498 : 3,476,141
512 : 3,476,142
527.8 : 3,476,143
544 : 3,476,144
565 : 3,476,145
599 : 3,476,146
614.14: 3,476,147
624.27: 3,476,148
625.11: 3,476,150
.29: 3,476,151
.4 : 3,476,149
.48: 3,476,152
636.1 : 3,476,153
138– 89 : 3,476,154
139–127 : 3,476,155
140– 3 : 3,476,156
105 : 3,476,157
141– 84 : 3,476,158
143– 26 : 3,476,159
32 : 3,476,160
144–144 : 3,476,161
148– 1.6 : 3,476,613
11.5 : 3,476,614
3,476,615
12 : 3,476,616
175 : 3,476,617
3,476,618
187 : 3,476,619
3,476,620
189 : 3,476,621
149– 19 : 3,476,622
35 : 3,476,623
150– 52 : 3,476,162
151– 14 : 3,476,163
41.74: 3,476,164
69 : 3,476,165
152–210 : 3,476,166
225 : 3,476,167
427 : 3,476,168
156– 13 : 3,476,624
86 : 3,476,625
148 : 3,476,626
244 : 3,476,627

Abstract (End)

156 – 246 : 3,476,628
251 : 3,476,629
268 : 3,476,630
291 : 3,476,631
366 : 3,476,632
415 : 3,476,633
160 – 327 : 3,476,169
161 – 38 : 3,476,634
60 : 3,476,635
67 : 3,476,636
93 : 3,476,637
148 : 3,476,638
151 : 3,476,639
164 : 3,476,640
170 : 3,476,641
227 : 3,476,642
251 : 3,476,643
162 – 111 : 3,476,644
164 – 48 : 3,476,170
52 : 3,476,171
133 : 3,476,172
165 – 2 : 3,476,176
9 : 3,476,173
3,476,174
80 : 3,476,177
105 : 3,476,175
134 : 3,476,178
166 : 3,476,179
172 : 3,476,180
186 : 3,476,181
166 – 245 : 3,476,182
272 : 3,476,183
273 : 3,476,184
274 : 3,476,185
3,476,186
3,476,187
3,476,188
295 : 3,476,189
168 – 4 : 3,476,190
172 – 162 : 3,476,191
173 – 12 : 3,476,192
43 : 3,476,193
174 – 37 : 3,476,867
43 : 3,476,868
68 : 3,476,869
69 : 3,476,870
88 : 3,476,871
175 – 14 : 3,476,194
228 : 3,476,195
325 : 3,476,196
176 – 71 : 3,476,645
177 – 50 : 3,476,198
178 – 6.6 : 3,476,872
3,476,873
3,476,874
.8 : 3,476,197
7.1 : 3,476,875
17 : 3,476,876
23 : 3,476,877
50 : 3,476,878
70 : 3,476,879
179 – 1.5 : 3,476,880
16 : 3,476,881
41 : 3,476,882
78 : 3,476,883
100.2 : 3,476,884
3,476,885
103 : 3,476,886
113 : 3,476,887
175.25: 3,476,888
180 – 6.7 : 3,476,207
20 : 3,476,199
44 : 3,476,200
65 : 3,476,201
77 : 3,476,202
79.2 : 3,476,203
98 : 3,476,204
105 : 3,476,205
108 : 3,476,206
181 – .5 : 3,476,208
33 : 3,476,209
3,476,210
182 – 22 : 3,476,211
103 : 3,476,212
184 – 3 : 3,476,213
7 : 3,476,214
186 – 1 : 3,476,215
3,476,216
188 – 73 : 3,476,217
90 : 3,476,218
3,476,219
106 : 3,476,220
152 : 3,476,221
3,476,222
164 : 3,476,223
218 : 3,476,224
191 – 6 : 3,476,889
192 – 4 : 3,476,225
27 : 3,476,226
105 : 3,476,227
107 : 3,476,228
195 – 28 : 3,476,646
80 : 3,476,647
96 : 3,476,648
197 – 16 : 3,476,229
133 : 3,476,230

198 – 19 : 3,476,231
41 : 3,476,232
212 : 3,476,233
220 : 3,476,234
200 – 5 : 3,476,890
16 : 3,476,891
38 : 3,476,892
52 : 3,476,893
61.19: 3,476,895
.54: 3,476,896
.57: 3,476,897
67 : 3,476,898
84 : 3,476,899
166 : 3,476,900
3,476,901
168 : 3,476,902
3,476,903
201 – 12 : 3,476,649
32 : 3,476,650
202 – 117 : 3,476,651
142 : 3,476,652
173 : 3,476,653
203 – 7 : 3,476,654
3,476,655
9 : 3,476,656
204 – 6 : 3,476,657
11 : 3,476,658
18 : 3,476,659
128 : 3,476,660
140 : 3,476,661
143 : 3,476,662
151 : 3,476,663
158 : 3,476,664
3,476,665
181 : 3,476,666
3,476,667
3,476,668
193 : 3,476,669
195 : 3,476,670
3,476,671
3,476,672
196 : 3,476,673
224 : 3,476,674
242 : 3,476,675
284 : 3,476,676
294 : 3,476,677
308 : 3,476,678
206 – .82: 3,476,240
46 : 3,476,235
47 : 3,476,236
3,476,237
59 : 3,476,238
78 : 3,476,239
208 – 45 : 3,476,679
326 : 3,476,680
3,476,681
209 – 73 : 3,476,241
122 : 3,476,242
129 : 3,476,243
133 : 3,476,244
254 : 3,476,245
210 – 7 : 3,476,682
8 : 3,476,683
83 : 3,476,246
95 : 3,476,247
153 : 3,476,248
188 : 3,476,249
198 : Re.26,706
199 : 3,476,250
232 : 3,476,251
323 : 3,476,252
365 : 3,476,253
500 : Re.26,709
211 – 13 : 3,476,254
3,476,255
3,476,257
41 : 3,476,258
69.8 : 3,476,259
71 : 3,476,260
74 : 3,476,261
86 : 3,476,256
126 : 3,476,262
212 – 14 : 3,476,263
213 – 75 : 3,476,264
214 – 1 : 3,476,265
3,476,266
3,476,267
2 : 3,476,268
3,476,269
3,476,270
6 : 3,476,271
17 : 3,476,272
82 : 3,476,273
138 : 3,476,274
517 : 3,476,275
652 : 3,476,276
215 – 13 : 3,476,277
55 : 3,476,278
217 – 12 : 3,476,279
60 : 3,476,280
219 – 10.55: 3,476,904
93 : 3,476,905
121 : 3,476,906
3,476,907
127 : 3,476,908
137 : 3,476,909

219 – 151 : 3,476,911
155 : 3,476,910
213 : 3,476,912
365 : 3,476,913
499 : 3,476,914
523 : 3,476,915
552 : 3,476,916
220 – 3 : 3,476,281
13 : 3,476,282
15 : 3,476,283
24 : 3,476,284
25 : 3,476,285
39 : 3,476,286
42 : 3,476,287
85 : 3,476,288
91 : 3,476,289
221 – 297 : 3,476,290
222 – 76 : 3,476,291
135 : 3,476,292
146 : 3,476,293
177 : 3,476,294
183 : 3,476,295
381 : 3,476,296
480 : 3,476,297
223 – 71 : 3,476,298
226 – 32 : 3,476,299
67 : 3,476,300
227 – 25 : 3,476,301
120 : 3,476,302
229 – 31 : 3,476,303
3,476,304
3,476,305
40 : 3,476,306
69 : 3,476,307
230 – 58 : 3,476,308
235 : 3,476,309
233 – 1 : 3,476,310
234 – 17 : 3,476,311
235 – 60 : 3,476,312
3,476,313
61.11: 3,476,918
.7 : 3,476,917
92 : 3,476,919
137 : 3,476,920
151.32: 3,476,921
153 : 3,476,922
175 : 3,476,923
183 : 3,476,924
236 – 12 : 3,476,314
15 : 3,476,315
237 – 2 : 3,476,316
238 – 290 : 3,476,317
239 – 10 : 3,476,318
15 : 3,476,319
85 : 3,476,320
422 : 3,476,321
515 : 3,476,322
590.5 : 3,476,323
3,476,324
240 – 3 : 3,476,925
4 : 3,476,926
.2 : 3,476,927
8.3 : 3,476,928
11.2 : 3,476,929
41.35: 3,476,930
81 : 3,476,931
241 – 16 : 3,476,325
73 : 3,476,326
242 – 18 : 3,476,327
35.5 : 3,476,328
36 : 3,476,329
45 : 3,476,330
85.1 : 3,476,331
99 : 3,476,332
107.4 : 3,476,333
200 : 3,476,894
244 – 17.19: 3,476,334
77 : 3,476,335
130 : 3,476,336
136 : 3,476,337
137 : 3,476,338
3,476,339
246 – 187 : 3,476,932
248 – 22 : 3,476,340
95 : 3,476,341
188 : 3,476,342
216 : 3,476,343
3,476,344
221 : 3,476,345
226 : 3,476,346
316 : 3,476,347
445 : 3,476,348
476 : 3,476,349
249 – 40 : Re.26,710
71 : 3,476,350
82 : 3,476,351
146 : 3,476,352
250 – 43.5 : 3,476,934
49.5 : 3,476,935
3,476,936
65 : 3,476,937
83.3 : 3,476,938
106 : 3,476,939
207 : 3,476,940
211 : 3,476,941
213 : 3,476,942

250 – 214 : 3,476,943
3,476,944
217 : 3,476,945
224 : 3,476,946
3,476,947
3,476,948
251 – 45 : 3,476,353
63 : 3,476,354
65 : 3,476,355
151 : 3,476,356
3,476,357
214 : 3,476,358
260 : 3,476,359
252 – 33.6 : 3,476,684
46.7 : 3,476,685
51.5 : 3,476,686
59 : 3,476,687
62.61: 3,476,688
175 : 3,476,689
300 : 3,476,690
313 : 3,476,691
317 : 3,476,692
254 – 131 : 3,476,360
172 : 3,476,361
256 – 13.1 : 3,476,362
259 – 8 : 3,476,363
108 : 3,476,364
260 – 2 : 3,476,693
.5 : 3,476,933
17 : 3,476,694
.2 : 3,476,695
19 : 3,476,696
22 : 3,476,697
23 : 3,476,698
3,476,699
28.5 : 3,476,700
29.3 : 3,476,701
37 : 3,476,702
3,476,703
45.75: 3,476,704
47 : 3,476,705
54 : 3,476,706
57 : 3,476,707
75 : 3,476,708
77.5 : 3,476,709
3,476,710
78 : 3,476,711
3,476,712
3,476,713
.3 : 3,476,714
3,476,715
.4 : 3,476,719
.5 : 3,476,717
79.3 : 3,476,716
3,476,718
.5 : 3,476,720
82.1 : 3,476,721
86.1 : 3,476,722
3,476,723
88.2 : 3,476,724
89.1 : 3,476,725
.7 : 3,476,726
92.8 : 3,476,727
93.1 : 3,476,728
3,476,730
.7 : 3,476,729
3,476,736
94.2 : 3,476,731
.3 : 3,476,732
3,476,733
3,476,734
.7 : 3,476,735
112 : 3,476,737
.5 : 3,476,738
123.5 : 3,476,739
124 : 3,476,740
209 : 3,476,741
210.5 : 3,476,742
239.1 : Re.26,705
3,476,743
.3 : 3,476,744
.55: 3,476,745
3,476,746
240 : 3,476,747
243 : 3,476,748
3,476,749
3,476,750
3,476,751
244 : 3,476,752
247.1 : 3,476,753
250 : 3,476,754
251 : 3,476,755
256.4 : 3,476,756
268 : 3,476,757
293 : 3,476,758
3,476,759
.4 : 3,476,760
3,476,761
294.7 : 3,476,762
.8 : 3,476,763
295 : 3,476,764
302 : 3,476,765
3,476,766
326.13: 3,476,770
.3 : 3,476,767
332.2 : 3,476,768

260 – 332.5 : 3,476,769
340.7 : 3,476,771
345.5 : 3,476,772
3,476,777
.8 : 3,476,778
346.2 : 3,476,773
.8 : 3,476,774
3,476,775
348.5 : 3,476,776
397.2 : 3,476,779
.3 : 3,476,780
3,476,781
.4 : 3,476,782
.45: 3,476,783
399 : 3,476,784
410.5 : 3,476,785
413 : 3,476,786
429.1 : 3,476,787
448 : 3,476,788
3,476,789
454 : 3,476,790
455 : 3,476,791
465 : 3,476,794
.8 : 3,476,793
473.5 : 3,476,795
475 : 3,476,796
484 : 3,476,797
486 : 3,476,798
502.5 : 3,476,799
505 : 3,476,800
508 : 3,476,801
518 : 3,476,802
526 : 3,476,803
531 : 3,476,804
3,476,805
570 : 3,476,806
583 : 3,476,807
586 : 3,476,808
604 : 3,476,809
3,476,810
609 : 3,476,811
3,476,812
610 : 3,476,813
613 : 3,476,814
3,476,815
617 : 3,476,816
648 : 3,476,792
653.7 : 3,476,817
656 : 3,476,955
666 : 3,476,820
667 : 3,476,818
668 : 3,476,819
672 : 3,476,821
674 : 3,476,822
680 : 3,476,824
683.15: 3,476,823
.53: 3,476,825
824 : 3,476,826
825 : 3,476,827
849 : 3,476,828
876 : 3,476,829
879 : 3,476,830
3,476,831
887 : 3,476,832
925 : 3,476,833
931 : 3,476,834
944 : 3,476,835
3,476,836
959 : 3,476,837
960 : 3,476,838
979 : 3,476,839
261 – 24 : 3,476,365
36 : 3,476,366
263 – 3 : 3,476,367
20 : 3,476,368
36 : 3,476,369
40 : 3,476,370
264 – 25 : 3,476,840
43 : 3,476,843
45 : 3,476,841
47 : 3,476,842
49 : 3,476,844
54 : 3,476,845
95 : 3,476,846
102 : 3,476,847
120 : 3,476,848
203 : 3,476,849
205 : 3,476,850
229 : 3,476,851
261 : 3,476,852
266 – 6 : 3,476,371
13 : 3,476,372
23 : 3,476,373
27 : 3,476,374
267 – 57 : 3,476,375
269 – 20 : 3,476,376
21 : 3,476,377
270 – 61 : 3,476,378
80 : 3,476,379
271 – 32 : 3,476,380
36 : 3,476,381
52 : 3,476,382
53 : 3,476,383
76 : 3,476,384
272 – 24 : 3,476,385
31 : 3,476,386

273 – 51 : 3,476,387
68 : 3,476,388
86 : 3,476,389
102 : 3,476,390
124 : 3,476,391
274 – 4 : 3,476,392
10 : 3,476,393
23 : 3,476,394
277 – 35 : 3,476,395
59 : 3,476,396
83 : 3,476,397
162 : 3,476,398
280 – 11.25: 3,476,399
.35: 3,476,400
3,476,401
30 : 3,476,404
150 : 3,476,402
3,476,403
415 : 3,476,405
281 – 29 : 3,476,406
285 – 12 : 3,476,407
21 : 3,476,408
40 : 3,476,409
112 : 3,476,410
192 : 3,476,411
322 : 3,476,412
332.3 : 3,476,413
349 : 3,476,414
396 : 3,476,415
287 – 52.04: 3,476,416
87 : 3,476,417
108 : 3,476,418
117 : 3,476,419
119 : 3,476,420
189.36: 3,476,421
3,476,422
289 – 17 : 3,476,423
290 – 36 : 3,476,949
38 : 3,476,950
292 – 66 : 3,476,424
76 : 3,476,426
113 : 3,476,425
175 : 3,476,427
251.5 : 3,476,428
281 : 3,476,429
336.3 : 3,476,430
294 – 3.5 : 3,476,431
74 : Re.26,704
296 – 23 : 3,476,432
24 : 3,476,433
35 : 3,476,434
65 : 3,476,435
95 : 3,476,436
137 : 3,476,437
297 – 83 : 3,476,495
195 : 3,476,496
232 : 3,476,497
299 – 8 : 3,476,498
86 : 3,476,438
302 – 17 : 3,476,439
53 : 3,476,440
66 : 3,476,441
303 – 19 : 3,476,442
24 : 3,476,443
307 – 88 : 3,476,951
3,476,952
125 : 3,476,953
201 : 3,476,954
254 : 3,476,956
261 : 3,476,957
305 : 3,476,958
308 – 3.5 : 3,476,444
6 : 3,476,445
8.2 : 3,476,446
9 : 3,476,447
10 : 3,476,448
3,476,449
74 : 3,476,450
122 : 3,476,451
127 : 3,476,452
174 : 3,476,453
207 : 3,476,454
310 – 9.1 : Re.26,707
10 : 3,476,959
50 : 3,476,960
54 : 3,476,961
76 : 3,476,962
89 : 3,476,963
198 : 3,476,964
249 : 3,476,965
270 : 3,476,966
312 – 223 : 3,476,455
231 : 3,476,456
313 – 30 : 3,476,967
63 : 3,476,968
184 : 3,476,969
209 : 3,476,970
231 : 3,476,971
237 : 3,476,972
315 – 18 : 3,476,973
23 : 3,476,974
83 : 3,476,975
101 : 3,476,976
183 : 3,476,977
317 – 11 : 3,476,978
31 : 3,476,979

317 – 100 : 3,476,981
101 : 3,476,982
3,476,983
157 : 3,476,980
234 : 3,476,984
3,476,985
3,476,986
3,476,987
3,476,988
235 : 3,476,989
3,476,990
3,476,991
3,476,992
3,476,993
253 : 3,476,994
318 – 6 : 3,476,995
138 : 3,476,996
3,476,997
146 : 3,476,998
3,476,999
197 : 3,477,000
207 : 3,477,001
227 : 3,477,002

318 – 227 : 3,477,003
257 : 3,477,004
266 : 3,477,005
331 : 3,477,006
434 : 3,477,007
461 : 3,477,008
320 – 15 : 3,477,026
23 : 3,477,009
321 – 5 : Re.26,708
3,477,010
15 : 3,477,011
322 – 2 : 3,477,012
4 : 3,477,013
19 : 3,477,014
24 : 3,477,015
323 – 48 : 3,477,016
51 : 3,477,017
3,477,027
324 – 34 : 3,477,018
52 : 3,477,019
57 : 3,477,020
61 : 3,477,021

324 – 70 : 3,477,022
71 : 3,477,023
126 : 3,477,024
140 : 3,477,025
325 – 446 : 3,477,028
330 – 5 : 3,477,029
19 : 3,477,030
30 : 3,477,031
3,477,032
3,477,033
69 : 3,477,034
104 : 3,477,035
331 – 94.5 : 3,477,036
3,477,037
3,477,038
116 : 3,477,039
141 : 3,477,040
332 – 7.51: 3,477,041
16 : 3,477,042
333 – 18 : 3,477,043
335 – 23 : 3,477,044
151 : 3,477,045

335 – 190 : 3,477,046
206 : 3,477,047
259 : 3,477,048
276 : 3,477,049
285 : 3,477,050
336 – 65 : 3,477,051
70 : 3,477,052
212 : 3,477,053
337 – 202 : 3,477,054
338 – 22 : 3,477,055
135 : 3,477,056
182 : 3,477,057
238 : 3,477,058
339 – 59 : 3,477,061
88 : 3,477,062
99 : 3,477,059
266 : 3,477,060
340 – 172.5 : 3,477,063
3,477,064
173.1 : Re.26,702
350 – 17 : 3,476,457
138 : 3,476,458

350 – 160 : 3,476,459
3,476,460
5,476,461
177 : 3,476,462
189 : 3,476,463
299 : 3,476,464
351 – 23 : 3,476,465
115 : 3,476,466
123 : 3,476,467
130 : 3,476,468
352 – 37 : 3,476,469
68 : 3,476,470
178 : 3,476,471
353 – 26 : 3,476,472
28 : 3,476,473
108 : 3,476,474
120 : 3,476,475
355 – 1 : 3,476,476
35 : 3,476,477
55 : 3,476,478
64 : 3,476,479
104 : 3,476,480

356 – 167 : 3,476,481
199 : 3,476,482
256 : 3,476,483
415 – 66 : 3,476,485
68 : 3,476,486
134 : 3,476,487
182 : 3,476,488
416 – 230 : 3,476,484
424 – 45 : 3,476,853
78 : 3,476,854
95 : 3,476,855
118 : 3,476,857
123 : 3,476,856
164 : 3,476,489
246 : 3,476,858
300 : 3,476,490
317 : 3,476,859
342 : 3,476,860
431 – 46 : 3,476,491
71 : 3,476,492
126 : 3,476,493
353 : 3,476,494

## Classification of Designs

D 1 – 26 : 215,800
D 2 – 359 : 215,801
D 4 – 24 : 215,802
D 5 – 4 : 215,803
215,804
215,805
D 8 – 4 : 215,806
40 : 215,807
45 : 215,808
52 : 215,809
58 : 215,810
113 : 215,811
154 : 215,812
161 : 215,813
215,814
179 : 215,815
198 : 215,816
D 9 – 8 : 215,817
10 : 215,818
83 : 215,819

D 9 – 119 : 215,820
185 : 215,821
187 : 215,822
189 : 215,823
220 : 215,824
239 : 215,825
252 : 215,826
D13 – 1 : 215,827
215,828
215,829
215,830
6 : 215,831
D14 – 3 : 215,832
215,833
215,834
6 : 215,835
D15 – 1 : 215,836
215,837
8 : 215,838
11 : 215,839

D15 – 11 : 215,840
D22 – 5 : 215,841
27 : 215,842
D23 – 19 : 215,843
34 : 215,844
148 : 215,845
150 : 215,846
D26 – 5 : 215,847
13 : 215,848
14 : 215,849
215,850
215,851
215,852
215,853
D28 – 1 : 215,854
D30 – 3 : 215,855
D33 – 1 : 215,856
3 : 215,857
14 : 215,858
24 : 215,859

D34 – 5 : 215,860
15 : 215,861
215,862
D35 – 3 : 215,863
D42 – 7 : 215,864
215,865
D44 – 1 : 215,866
6 : 215,867
9 : 215,868
10 : 215,869
15 : 215,870
29 : 215,871
215,872
D48 – 20 : 215,873
D49 – 13 : 215,874
18 : 215,875
22 : 215,876
D52 – 7 : 215,877
D54 – 12 : 215,878

D55 – 1 : 215,879
215,880
215,881
215,882
215,883
215,884
215,885
215,886
D56 – 1 : 215,887
215,888
D57 – 1 : 215,889
D59 – 14 : 215,890
D61 – 1 : 215,891
215,892
D64 – 11 : 215,893
D71 – 1 : 215,894
215,895
D72 – 1 : 215,896
D74 – 2 : 215,897

D80 – 8 : 215,898
215,899
9 : 215,900
215,901
215,902
D81 – 25 : 215,903
D83 – 12 : 215,904
215,905
D86 – 10 : 215,906
215,907
D87 – 3 : 215,908
D90 – 8 : 215,909
D92 – 1 : 215,910
215,911
4 : 215,912
15 : 215,913
26 : 215,914
D95 – 3 : 215,915
D96 – 12 : 215,916

# GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

| | |
|---|---|
| Alabama | 1 |
| Alaska | 2 |
| American Samoa | 3 |
| Arizona | 4 |
| Arkansas | 5 |
| California | 6 |
| Canal Zone | 7 |
| Colorado | 8 |
| Connecticut | 9 |
| Delaware | 10 |
| District of Columbia | 11 |
| Florida | 12 |
| Georgia | 13 |
| Guam | 14 |
| Hawaii | 15 |
| Idaho | 16 |
| Illinois | 17 |
| Indiana | 18 |
| Iowa | 19 |
| Kansas | 20 |
| Kentucky | 21 |
| Louisiana | 22 |
| Maine | 23 |
| Maryland | 24 |
| Massachusetts | 25 |
| Michigan | 26 |
| Minnesota | 27 |
| Mississippi | 28 |
| Missouri | 29 |
| Montana | 30 |
| Nebraska | 31 |
| Nevada | 32 |
| New Hampshire | 33 |
| New Jersey | 34 |
| New Mexico | 35 |
| New York | 36 |
| North Carolina | 37 |
| North Dakota | 38 |
| Ohio | 39 |
| Oklahoma | 40 |
| Oregon | 41 |
| Pennsylvania | 42 |
| Puerto Rico | 43 |
| Rhode Island | 44 |
| South Carolina | 45 |
| South Dakota | 46 |
| Tennessee | 47 |
| Texas | 48 |
| Utah | 49 |
| Vermont | 50 |
| Virginia | 51 |
| Virgin Islands | 52 |
| Washington | 53 |
| West Virginia | 54 |
| Wisconsin | 55 |
| Wyoming | 56 |
| U.S. Air Force | 57 |
| U.S. Army | 58 |
| U.S. Navy | 59 |

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

## PATENTS

1 : 3,475,879
3,476,298
3,476,523
3,476,626
4 : 3,475,882
3,476,335
3,476,351
3,476,352
3,476,568
3,476,618
3,476,619
3,476,957
5 : 3,476,261
6 : 3,475,766
3,475,781
3,475,782
3,475,815
3,475,827
3,475,841
3,475,845
3,475,850
3,475,853
3,475,854
3,475,856
3,475,857
3,475,858
3,475,861
3,475,877
3,475,919
3,475,934
3,475,951
3,475,959
3,475,979
3,476,004
3,476,011
3,476,012
3,476,023
3,476,032
3,476,036
3,476,037
3,476,038
3,476,057
3,476,062
3,476,076
3,476,084
3,476,085
3,476,108
3,476,124
3,476,127
3,476,129

6 : 3,476,144
3,476,149
3,476,153
3,476,161
3,476,165
3,476,186
3,476,200
3,476,212
3,476,231
3,476,258
3,476,279
3,476,289
3,476,291
3,476,303
3,476,315
3,476,327
3,476,344
3,476,355
3,476,360
3,476,384
3,476,385
3,476,405
3,476,413
3,476,415
3,476,421
3,476,422
3,476,423
3,476,446
3,476,451
3,476,460
3,476,482
3,476,516
3,476,534
3,476,535
3,476,552
3,476,562
3,476,593
3,476,601
3,476,602
3,476,605
3,476,606
3,476,607
3,476,620
3,476,645
3,476,657
3,476,672
3,476,675
3,476,684
3,476,693
3,476,716

6 : 3,476,794
3,476,808
3,476,809
3,476,859
3,476,873
3,476,890
3,476,899
3,476,914
3,476,917
3,476,921
3,476,925
3,476,946
3,476,947
3,476,948
3,476,973
3,476,974
3,476,996
3,476,998
3,476,999
3,477,002
3,477,024
3,477,030
3,477,039
3,477,060
7 : 3,475,836
8 : 3,475,800
3,475,868
3,476,184
3,476,288
3,476,368
3,476,769
3,476,913
3,477,019
9 : Re.26,703
3,475,799
3,475,802
3,475,963
3,475,987
3,476,026
3,476,069
3,476,073
3,476,107
3,476,126
3,476,131
3,476,140
3,476,176
3,476,226
3,476,257
3,476,266
3,476,312

9 : 3,476,313
3,476,463
3,476,483
3,476,522
3,476,609
3,476,658
3,476,663
3,476,768
3,476,816
3,476,898
3,476,903
3,476,906
3,477,000
3,477,013
10 : Re.26,705
3,475,898
3,476,515
3,476,527
3,476,595
3,476,694
3,476,714
3,476,718
3,476,719
3,476,771
3,476,806
3,476,827
11 : 3,476,199
3,476,311
3,476,951
12 : 3,476,359
3,476,381
3,476,399
3,476,467
3,476,953
13 : 3,476,302
3,476,576
15 : 3,475,886
16 : 3,476,314
3,476,943
17 : Re.26,710
3,475,769
3,475,775
3,475,779
3,475,784
3,475,786
3,475,795
3,475,797
3,475,809
3,475,833
3,475,839

17 : 3,475,860
3,475,869
3,475,878
3,475,883
3,475,953
3,475,983
3,476,014
3,476,019
3,476,020
3,476,074
3,476,099
3,476,113
3,476,137
3,476,146
3,476,151
3,476,157
3,476,167
3,476,204
3,476,210
3,476,239
3,476,251
3,476,252
3,476,260
3,476,267
3,476,271
3,476,281
3,476,283
3,476,287
3,476,292
3,476,306
3,476,316
3,476,340
3,476,382
5,476,416
3,476,424
3,476,428
3,476,477
3,476,479
3,476,492
3,476,521
3,476,544
3,476,572
3,476,574
3,476,598
3,476,656
3,476,670
3,476,686
3,476,687
3,476,689
3,476,700

17 : 3,476,739
3,476,741
3,476,748
3,476,764
3,476,773
3,476,847
3,476,852
3,476,854
3,476,872
3,476,879
3,476,883
3,476,891
3,476,916
3,476,960
3,477,006
3,477,061
18 : 3,475,903
3,475,904
3,475,914
3,475,988
3,475,992
3,475,994
3,476,133
3,476,148
3,476,227
3,476,228
3,476,255
3,476,319
5,476,330
3,476,370
3,476,450
3,476,648
3,476,679
3,476,892
3,476,893
3,476,975
3,476,977
3,476,981
3,477,022
19 : 3,476,346
20 : 3,476,792
21 : 3,476,024
3,476,150
3,476,250
3,476,259
3,476,635
3,476,843
3,476,864
22 : 3,475,823
3,476,803

22 : 3,476,807
3,477,005
23 : 3,476,111
3,476,159
3,476,343
24 : 3,475,767
3,475,843
3,475,846
3,475,885
3,475,944
3,475,965
3,476,048
3,476,071
3,476,087
3,476,102
3,476,349
3,476,380
3,476,498
3,476,691
3,476,965
3,477,023
3,477,042
25 : Re.26,707
3,475,776
3,475,811
3,475,816
3,475,899
3,475,900
3,476,022
3,476,080
3,476,086
3,476,090
3,476,100
3,476,105
3,476,109
3,476,119
3,476,209
3,476,211
3,476,216
3,476,238
3,476,525
3,476,528
3,476,530
3,476,557
3,476,579
3,476,589
3,476,615
3,476,637
3,476,638
3,476,706
3,476,707
3,476,869
3,477,054
26 : 3,475,770
3,475,790
3,475,804
3,475,826
3,475,872
3,475,881
3,475,917
3,475,933
3,475,945
3,475,970
3,475,982
3,475,986
3,476,005
3,476,021
3,476,041
3,476,075
3,476,083
3,476,088
3,476,091
3,476,093
3,476,094
3,476,110
3,476,136
3,476,142
3,476,145
3,476,156
3,476,170
3,476,173
3,476,174
3,476,206
3,476,219
3,476,223
3,476,225
3,476,308
3,476,345
3,476,393
3,476,403
3,476,417
3,476,419
3,476,430
3,476,438
3,476,455
3,476,537
3,476,547
3,476,625
3,476,639
3,476,673
3,476,676
3,476,677
3,476,738
3,476,774
3,476,814
3,476,840
3,476,842

26 : 3,476,857
3,476,904
3,476,949
3,476,950
3,477,009
3,477,010
3,477,046
27 : 3,475,772
3,475,884
3,476,059
3,476,063
3,476,143
3,476,162
3,476,230
3,476,254
3,476,320
3,476,383
3,476,395
3,476,584
3,476,611
3,476,705
3,476,753
3,476,770
3,476,920
3,477,004
3,477,012
28 : 3,475,785
3,475,889
3,476,433
3,476,466
3,476,468
29 : 3,475,818
3,475,867
3,475,974
3,476,042
3,476,128
3,476,160
3,476,431
3,476,497
3,476,778
3,476,888
3,476,995
3,477,034
30. : 3,475,835
3,476,098
3,476,511
31 : 3,476,565
33 : 3,475,925
3,476,194
3,476,912
34 : Re.26,709
3,475,771
3,475,777
3,475,791
3,475,870
3,475,871
3,475,932
3,475,949
3,475,958
3,475,971
3,476,003
3,476,025
3,476,053
3,476,066
3,476,067
3,476,116
3,476,138
3,476,141
3,476,154
3,476,180
3,476,229
3,476,233
3,476,235
3,476,246
3,476,264
3,476,377
3,476,390
3,476,406
3,476,469
3,476,481
3,476,489
3,476,494
3,476,508
3,476,509
3,476,513
3,476,532
3,476,536
3,476,543
3,476,551
3,476,571
3,476,583
3,476,591
3,476,608
3,476,617
3,476,624
3,476,641
3,476,671
3,476,710
3,476,755
3,476,756
3,476,760
3,476,767
3,476,786
3,476,788
3,476,789
3,476,815
3,476,819

34 : 3,476,822
3,476,826
3,476,832
3,476,833
3,476,834
3,476,837
3,476,845
3,476,848
3,476,853
3,476,860
3,476,875
3,476,880
3,476,885
3,476,915
3,476,924
3,476,938
3,476,971
3,476,980
3,476,984
3,476,994
3,477,029
3,477,033
3,477,037
3,477,041
3,477,043
3,477,044
35 : 3,475,808
3,476,745
3,476,919
36 : 3,475,765
3,475,773
3,475,796
3,475,805
3,475,810
3,475,822
3,475,848
3,475,852
3,475,866
3,475,880
3,475,915
3,475,936
3,475,938
3,475,976
3,475,977
3,476,018
3,476,027
3,476,029
3,476,044
3,476,046
3,476,068
3,476,077
3,476,112
3,476,122
3,476,123
3,476,152
3,476,169
3,476,172
3,476,175
3,476,181
3,476,207
3,476,248
3,476,249
3,476,265
3,476,268
3,476,282
3,476,284
3,476,285
3,476,323
3,476,324
3,476,331
3,476,332
3,476,366
3,476,386
3,476,392
3,476,445
3,476,456
3,476,461
3,476,462
3,476,465
3,476,471
3,476,472
3,476,473
3,476,474
3,476,475
3,476,476
3,476,478
3,476,485
3,476,496
3,476,500
3,476,506
3,476,507
3,476,514
3,476,517
3,476,520
3,476,524
3,476,533
3,476,559
3,476,561
3,476,563
3,476,566
3,476,567
3,476,592
3,476,596
3,476,685
3,476,690
3,476,696
3,476,699

36 : 3,476,784
3,476,790
3,476,821
3,476,846
3,476,855
3,476,871
3,476,874
3,476,882
3,476,887
3,476,918
3,476,922
3,476,923
3,476,927
3,476,929
3,476,930
3,476,931
3,476,932
3,476,940
3,476,958
3,476,964
3,476,966
3,476,969
3,476,970
3,476,983
3,476,993
3,477,008
3,477,051
3,477,055
3,477,056
3,477,058
3,477,063
37 : 3,475,864
3,475,896
3,476,078
3,476,242
3,476,580
3,476,867
38 : 3,475,966
3,476,293
39 : 3,475,787
3,475,788
3,475,789
3,475,803
3,475,806
3,475,828
3,475,829
3,475,831
3,475,840
3,475,847
3,475,874
3,475,911
3,475,920
3,475,921
3,475,922
3,475,928
3,475,948
3,475,961
3,475,969
3,475,985
3,475,990
3,475,993
3,475,999
3,476,000
3,476,007
3,476,033
3,476,034
3,476,045
3,476,056
3,476,079
3,476,081
3,476,132
3,476,139
3,476,147
3,476,163
3,476,168
3,476,171
3,476,197
3,476,214
3,476,247
3,476,253
3,476,290
3,476,338
3,476,347
3,476,350
3,476,376
3,476,387
3,476,408
3,476,410
3,476,439
3,476,443
3,476,491
3,476,526
3,476,538
3,476,539
3,476,540
3,476,541
3,476,542
3,476,548
3,476,570
3,476,575
3,476,599
3,476,603
3,476,631
3,476,633
3,476,643
3,476,644
3,476,667

39 : 3,476,722
3,476,732
3,476,791
3,476,838
3,476,863
3,476,865
3,476,866
3,476,868
3,476,877
3,476,895
3,476,897
3,476,945
3,476,956
3,476,959
3,476,982
40 : 3,475,950
3,476,185
3,476,187
3,476,356
3,476,650
3,476,678
3,476,709
3,476,724
3,476,729
3,476,736
3,476,823
3,476,825
3,476,829
41 : 3,476,015
3,476,016
3,476,234
3,476,269
3,476,436
42 : 3,475,807
3,475,812
3,475,814
3,475,838
3,475,888
3,475,905
3,475,940
3,475,952
3,475,960
3,475,962
3,475,978
3,476,013
3,476,043
3,476,047
3,476,114
3,476,115
3,476,155
3,476,188
3,476,190
3,476,192
3,476,232
3,476,262
3,476,273
3,476,307
3,476,309
3,476,317
3,476,318
3,476,362
3,476,373
3,476,374
3,476,391
3,476,404
3,476,407
3,476,412
3,476,414
3,476,418
3,476,420
3,476,434
3,476,442
3,476,444
3,476,447
3,476,452
3,476,459
3,476,464
3,476,487
3,476,502
3,476,529
3,476,531
3,476,577
3,476,600
3,476,612
3,476,613
3,476,616
3,476,621
3,476,697
3,476,749
3,476,754
3,476,759
3,476,783
3,476,797
3,476,800
3,476,858
3,476,861
3,476,862
3,476,889
3,476,933
3,476,954
3,476,978
3,476,987
3,476,988
3,476,992
3,477,001
3,477,028
3,477,032

42 : 3,477,052
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| 45 : | 215,870 |
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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 4, 1969 Volume 868 Number 1

# TRADEMARKS

## NOTICES

### Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5. 1946

**Reg. No. 102,661** (CANADIAN CLUB), Hiram Walker & Sons, Inc., Whisky; **Reg. No. 709,141** (C.C.), same **filed** July 29, 1969, D.C., S.D.N.Y., Doc. 69–C–3322, *Hiram Walker & Sons Inc.* v. *Charles Jacquin et Cie Inc.*

**Reg. No. 221,930** (GROTRIAN-STEINWEG), Grothrian, Helfferich, Schulz, Th. Steinweg Nachf., Pianos and grand pianos, **filed** July 29, 1969, D.C., S.D.N.Y., Doc. 69–C–3320, *Grotrian, Helfferich, Schulz, Th. Steinweg Nachf.* v. *Steinway & Sons.*

**Reg. No. 293,400** (ADAPTOLETTE), Lane Bryant, Inc., Hosiery, shoes of leather and fabric, rubbers, underwear, corsets, brassieres, dresses, coats, suits, hats, caps, raincoats, bathing suits, bathrobes, negligees; gloves of leather, rubber, and fabric; pajamas; said underwear, dresses, coats, suits, hats, and caps being for the use of women and children; **Reg. No. 293,873** (ADAPTO), same, **filed** Dec. 11, 1967, D.C., S.D.N.Y., Doc. 67–C–4854, *Lane Bryant, Inc.* v. *Exquisite Form Industries, Inc.* Stipulation and order of discontinuance without prejudice, May 14, 1969.

**Reg. No. 293,873.** (See Reg. No. 293,400.)

**Reg. No. 421,496** (FORMICA), Formica Corporation, Laminated sheets of wood, fabric, or paper impregnated with synthetic resin and consolidated under heat and pressure, for use on table tops, furniture and wall panelling, **filed** Apr. 16, 1969, D.C., S.D. Fla. (Miami), Doc. 69–459–C–CF, *Formica Corporation* v. *Tolco Corporation*. Final judgment, plaintiff is owner of trademark "Formica," Reg. No. 421,496; defendant has infringed and is restrained, Aug. 11, 1969.

**Reg. No. 430,311** (TUVARA), Tuvaché, Inc., Perfume and bath oil, **filed** Dec. 8, 1965, D.C., S.D.N.Y., Doc. 65–C–3730, *Tuvaché, Inc.* v. *Emilio Pucci Perfumes International, Inc. et ano.* Stipulation and order of dismissal, Aug. 13, 1969.

**Reg. No. 507,853** (FIRENZE), Tri-Valley Growers, Canned tomatoes and canned tomato paste, **filed** Aug. 28, 1969, D.C., S.D. Fla. (Miami), Doc. 69–1039–C–CA, *Tri-Valley Growers* v. *Cadur Trading Corporation.*

**Reg. No. 538,768** (HUSKIE PUPS AND REPRESENTATION OF PUP FACE), Hussco Shoe Company, Moccasins; **Reg. No. 573,792** (HUSKIES), same, Footwear—namely, shoes, moccasins, and slippers for men, women, and children, **filed** June 28, 1967, D.C., S.D.N.Y., Doc. 67–C–2515, *Huskies*

## CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1969

| | |
|---|---|
| Total number of applications awaiting action [excluding renewals and Sec. 12(c)] | 14,986 |
| Date of oldest new application | November 18, 1968 |
| Date of oldest amended application (filing date) | August 5, 1965 |

| C. M. WENDT, Director, Trademark Examining Operation<br>TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION | Oldest Application | |
|---|---|---|
| | New | Amended |
| (I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B | 3-17-69 | 10-6 -66 |
| (II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200 | 12-23-68 | 8-5 -65 |
| (III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36 | 12-17-68 | 2-17-67 |
| (IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107 | 11-18-68 | 8-22-66 |
| Renewals (All Classes) | 8-13-69 | -------- |
| Sec. 12(c) Publications (All Classes) | 8- 8-69 | -------- |

### For the Quarter July 1, 1969 through September 30, 1969

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| Applications Filed | 8011 |
| Registrations Issued | 6008 |
| Renewals Issued | 1830 |
| Cancellations Under Section 8 | 1765 |

Applications filed during the month of September 1969—2,715

| | |
|---|---|
| Registrations Issued | 553—No. 879,712 to No. 880,264 |
| Renewals Issued | 150 |

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

**PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.**

*Footwear, Inc.* v. *Wolverine World Wide Inc.* Consent judgment, defendant perpetually enjoined, Nov. 22, 1967.

**Reg. No. 539,954** (CAMEO), Cameo Curtains Inc., Window curtains composed of marquisette fabric and of voile fabric; **Reg. No. 562,570** (REPRESENTATION OF A CAMEO), same, **filed** Mar. 5, 1969, D.C., S.D.N.Y., Doc. 69–869, *Cameo Curtains Inc.* v. *Franklin Textile Corp.* Final judgment, defendant enjoined, June 26, 1969.

**Reg. No. 553,151** (BALI), Bali Brassiere Co., Inc., Brassieres and bandeaux, **filed** May 10, 1967, D.C., S.D.N.Y., Doc. 67–C–1841, *The Bali Company, Inc.* v. *Raymond Sultan, doing business as Sultan Shops.* Consent judgment, defendant permanently enjoined, May 26, 1967.

**Reg. No. 562,570.** (See Reg. No. 539,954.)

**Reg. No. 573,792.** (See Reg. No. 538,768.)

**Reg. No. 583,864** (BEMBERG 44 AND DESIGN), Beaunit Mills, Inc., Thread and yarn; **Reg. No. 634,410** (BEMBERG-PRE–SHRUNK), same, Woven, knitted, netted, textile, and pile fabrics in the piece, comprised of rayon, or in substantial part of rayon, combined with cotton, wool, silk, nylon, and other synthetic fibers; **Reg. No. 709,117** (BEMBERG ETC. AND DESIGN), same, Rayon yarn, **filed** June 29, 1966, D.C., S.D.N.Y., Doc. 66–C–1935, *Beaunit Corporation* v. *Simon Newell, doing business as Simon Newell Textiles.* Stipulation and order that action is hereby dismissed, Mar. 21, 1968.

**Reg. No. 587,494** (PURITAN SPORTSWEAR THE CHOICE OF ALL AMERICANS), The Puritan Knitting Mills, Inc., Garments for wear by men and children—namely, sweaters, bathing suits, bathing shirts, and bathing trunks, **filed** Aug. 12, 1969, D.C., W.D. Pa. (Pittsburgh), Doc. 69–954–CA, *Puritan Sportswear Corp.* v. *Herb Shure, also known as Herbert J. Shore, doing business as H & M Distributing Company and H & M Distributing, Inc.*

**Reg. No. 630,211** (SARDO ETC. AND DESIGN), Sardeau Incorporated, Bath oils, **filed** Jan. 28, 1969, D.C., S.D.N.Y., Doc. 69–346, *Sardeau Inc.* v. *Kerkoff Parfumeurs Inc. et ano.* Final judgment on consent, permanently restrained, May 29, 1969.

**Reg. No. 634,410.** (See Reg. No. 583,864.)

**Reg. No. 701,895** (MAGIC LADY), Exquisite Form Brassiere, Inc., Underwear panty, **filed** Jan. 22, 1969, D.C., S.D.N.Y., Doc. 69–243, *Exquisite Form Industries Inc.* v. *True Form Foundations Inc.* Action discontinued, May 12, 1969.

**Reg. No. 709,117.** (See Reg. No. 583,864.)

**Reg. No. 709,141.** (See Reg. No. 102,661.)

**Reg. No. 843,018** (TOUR TM MASTER), General Fire and Casualty Company, Underwriting travel insurance, **filed** Feb. 13, 1969, D.C., S.D.N.Y., Doc. 69–541, *General Fire and Casualty Co. et ano.* v. *Tourmasters Inc.* Consent judgment, May 1, 1969.

**Reg. No. 843,156** (HOT WHEELS), Mattel, Inc., Scale model toy vehicles, **filed** Jan. 29, 1969, D.C., S.D.N.Y., Doc. 69–C–365, *Mattel Inc.* v. *Mego Corp.* Final judgment, permanently restrained, Apr. 16, 1969.

**Reg. No. 844,514** (CHICAGO PUMP), FMC Corporation, Sewage and waste treatment equipment, **filed** May 8, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c996, *FMC Corporation* v. *Joseph Wooding, doing business as Chicago Pump Repair Service et al.* Consent decree, trademark valid and infringed, Aug. 28, 1969.

**Reg. No. 859,703** (POLYGLAS), The Goodyear Tire & Rubber Company, Tires, **filed** Aug. 21, 1969, D.C., W.D.N.C. (Charlotte), Doc. 2526, *The Goodyear Tire & Rubber Company* v. *Manufacturers Buyers Corp., doing business as Manufacturers-Buyers Co-Op, etc.* **Same, filed** Sept. 12, 1969, D.C., W.D.N.C. (Charlotte), Doc. 2538, *The Goodyear Tire & Rubber Company* v. *International Buyers Corporation, doing business as International Buyers Co-Op.*

**Reg. No. 872,066** (TRIM TWIST), Trim-Twist Inc., Swivel exercising board, **filed** Feb. 19, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–245–PH, *Trim Twist, Inc.* v. *Sunset House Distributing Corporation, also known as Sunset House.*

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# MARKS PUBLISHED FOR OPPOSITION

## SECTION 1

**The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.**

**A separate fee of twenty-five dollars for each class opposed must accompany the opposition.**

**[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]**

SN 259,477. Soule Steel Company, San Francisco, Calif. Filed Nov. 25, 1966.

**Soulé**

Owner of Reg. Nos. 530,146, 647,319, and others.

**Class 12—Construction Materials**

For Steel Window Frames and Doors; Reinforcing Commodities—Namely, Deformed Reinforcing Concrete Steel Bars, Welded Wire Fabric, Expansion Joints, Concrete Pipe Reinforcing in the Form of Steel Wire or Rods, Adjustable and Dome Type Steel Forms for Reinforcing Concrete Joists Construction; Steel Column Spirals; Prestressed and Post-Tension Reinforcing Materials; Reinforcing Accessories—Namely, Bar Supports and Spacers and Concrete Blocks and Steel Construction Clamps for Concrete Forms; Pre-Engineered Steel Structures and Specialty Buildings—Namely, Industrial and Farm Type Structures; Hi-Rib Sheets; Insulated Panels for Prefabricated and Specialty Buildings; Metal Lath; Stucco Netting and Stucco Mesh; Metal Lath and Attachments Sold as a Unit; Drywall Metal—Namely, Metal Studs, Track, Furring Channels and Attachments Sold as a Unit; Expanded Metal Products—Namely, Stair Treads; Architectural Decorative Expanded Metal Products—Namely, Sun Screens; Glare Barrier Expanded Metal for Highways; Sunshade Expanded Metal and Solar Metal Screens; Aluminum Residential Casements, Sliding Windows and Doors; Aluminum Monumental Windows, Doors, Curtain and Window Walls; Aluminum Wall Panels and Porcelain Wall Panels; Plain and Color Anodized Aluminum Extrusions and Panels; and Steel Mill Merchant Bar Products—Namely, Flats, Rounds, Angles and Squares (Int. Cl. 6).

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Steel Fence Posts and Accessories (Int. Cl. 6).

First use about 1911.

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SN 263,806. Andree Biallot, Ltd., New York, N.Y. Filed Feb. 2, 1967.

**HEI YU**

**Class 51—Cosmetics and Toilet Preparations**

For Perfume, Toilet Water, Bath Oil, Solid Perfume, Personal Sachet, and Dusting Powder (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Toiletry Soap (Int. Cl. 3).

First use Dec. 30, 1966.

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SN 272,654. Vita-Bark, Inc., d.b.a. Vita Bark Products, Sacramento, Calif. Filed May 29, 1967.

**VITA-BARK**

**Class 1—Raw or Partly Prepared Materials**

For Tree Bark for Use as a Decorative and Protective Ground Cover (Int. Cl. 31).

**Class 10—Fertilizers**

For Enriched Tree Bark for Use as a Mulch, as a Soil Amendment and Soil Conditioner, and as a Plant Growing Medium (Int. Cl. 1).

First use May 3, 1957.

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SN 281,746. Sawaya Pexton S/A Lanificio, Sao Paulo, Brazil. Filed Aug. 6, 1969.

**MOHAIRCRON**

Owner of U.S. Reg. No. 816,646.

**Class 39—Clothing**

For Men's, Women's and Children's Ready-Made Clothing, Made in Part or in Whole of Fabric or Yarns Containing Mohair—Namely, Mufflers, Aprons, Blouses, Overcoats, Waistcoats, Shawls, Scarves, Pants, Shorts, Collars, Swaddling Clothes, Skirts, Suits, Dressing Gowns, Mantillas, Vests, Pajamas, Kimonos, Nightgowns, Sweaters, Stoles, Turbans, and Dresses (Int. Cl. 25).

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Knitted, Netted and Textile Fabrics All Made Substantially or in Part of Mohair—Namely, Blankets, Bedspreads, Table Cloths, and Textile Fabrics in the Piece Made of Mohair Combined With Cotton, Alpaca, Hemp, Cashmere, Jute, Linen, Nylon, Ramie, Rayon and Silk (Int. Cl. 24).

First use at least as early as Oct. 14, 1968; in commerce at least as early as Oct. 14, 1968.

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SN 296,373. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Apr. 24, 1968.

**MALLINCKRODT**

Owner of Reg. Nos. 359,706, 747,503, and others.

**Class 2—Receptacles**

For Corrugated Shipping Cartons and Plastic Outer Containers for a Carboy (Int. Cl. 20).
First use May 15, 1956.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Hand Operated Mobile Turf Sprayers (Int. Cl. 7).
First use May 3, 1967.

**Class 26—Measuring and Scientific Appliances**

For Electron Microprobe (Int. Cl. 9).
First use Mar. 5, 1967.

**Class 38—Prints and Publications**

For Company Magazine (Int. Cl. 16).
First use December 1963.

**Class 44—Dental, Medical, and Surgical Appliances**

For Generators, Eluants, Milker Kits, Dispensers, and Evacuated Vials for Radioactive Technetium for Clinical Use (Int. Cl. 10).
First use Nov. 30, 1966.

**Class 46—Foods and Ingredients of Foods**

For Chemical Additives for Animal Feeds and Foods for Human Consumption (Int. Cl. 1).
First use May 16, 1941.

**Class 50—Merchandise Not Otherwise Classified**

For Bottle Caps Sold as a Component of Bottles Containing Analytical Reagents (Int. Cl. 21).
First use May 29, 1963.

**Class 52—Detergents and Soaps**

For Detergent Composition for Laboratory Ware (Int. Cl. 3).
First use Apr. 27, 1965.

**Class 100—Miscellaneous**

For Medical Isotope Consultation Services (Int. Cl. 42).
First use Feb. 20, 1967.

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SN 303,214. Avon Products, Inc., New York, N.Y. Filed July 22, 1968.

## PHENOMENA

**Class 51—Cosmetics and Toilet Preparations**

For Hair Conditioner, Facial Mask, and Cologne (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Toilet Soap (Int. Cl. 3).

First use June 24, 1968.

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SN 303,215. Avon Products, Inc., New York, N.Y. Filed July 22, 1968.

## PICTURESQUE

**Class 51—Cosmetics and Toilet Preparations**

For Foundation Makeup, Moisturized Face Cream, and Hair Conditioner (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Toilet Soap (Int. Cl. 3).

First use June 24, 1968.

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SN 304,236. Massie Tool & Mold, Inc., St. Petersburg, Fla. Filed Aug. 2, 1968.

## CAVAFORM

**Class 14—Metals and Metal Castings and Forgings**

For Metal Blanks for Further Use in the Industrial Arts (Int. Cl. 6).

**Class 106—Material Treatment**

For Production of Tools and Molds With Internal Forms Made to Order and/or Specification of Others (Int. Cl. 40).

First use June 28, 1968.

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SN 305,596. Eugen Hellmut Weber, d.b.a. Gebr. Krusius, Solingen, Germany. Filed Aug. 21, 1968.

## COMPLIMENT

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Hollow Table-Ware—Namely, Stainless Steel Dishes, Trays, Shakers, Plates, Bowls, Jars, Platters, Coasters, Egg Cups, Sugar and Creamer Sets, Tea Cup Sets and Gravy and Sauce Boats (Int. Cl. 21).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Cutlery—Namely, Shears, Scissors, Knives and Stainless Steel Flatware (Int. Cl. 8).

First use July 1, 1967; in commerce Mar. 19, 1968.

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SN 306,093. Tyco Laboratories, Inc., Waltham, Mass. Filed Aug. 28, 1968.

## TYCO

Owner of Reg. No. 730,717.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Electronic Power Supplies; Solid State Battery Chargers; and Temperature to Voltage Converters (Int. Cl. 9).
First use in or about March 1967.

**Class 26—Measuring and Scientific Appliances**

For Digital Volt Meters; Electronic Counters; Strain Gauge Load Cells; and Fluidic Controls—Namely, Load Monitors and Load Transducers (Int. Cl. 9).
First use in or about March 1967.

**Class 100—Miscellaneous**

For Chemical, Physical, and Electrochemical Research Services for Others (Int. Cl. 42).
First use in or about November 1965.

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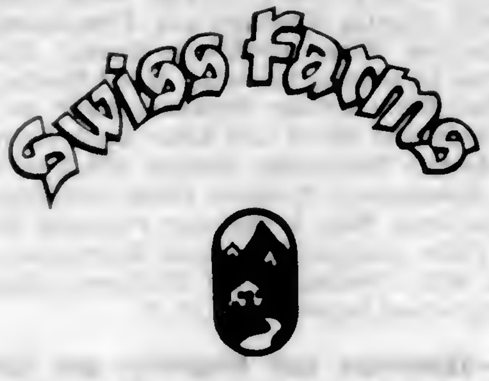
SN 308,543. Swiss Farms, Inc., Philmont, N.Y. Filed Sept. 30, 1968.



**Class 1—Raw or Partly Prepared Materials**

For Soils, Planting Mixes, Humus, and Charcoal (Int. Cl. 1).

**Class 6—Chemicals and Chemical Compositions**

For Insecticides for Use as Plant Sprays, and a Liquid or Spray Preparation for Leafy Plants Which Effects a Shine to the Surface of the Leaves (Int. Cls. 1 and 5).

**Class 10—Fertilizers**

For Bone Meal, Cow Manure, Horticultural Limestone, Peat Moss, Vermiculite, Fertilizers, and Plant Foods (Int. Cl. 1).

First use April 1941.

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SN 315,393. Digsmed Design Ltd., New York, N.Y. Filed Dec. 30, 1968.

## DIGSMED

**Class 2—Receptacles**

For Wooden Trays, Wooden Platters, Wooden Lazy Susans, Wooden Buckets, Wooden Coasters, and Wooden Trays and Lazy Susans Sold as Units With Glass or Ceramic Bowls for Placement on the Trays (Int. Cl. 21).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Wooden Cutting and Carving Boards, Forks and Kitchen Knives (Int. Cls. 8 and 21).

**Class 32—Furniture and Upholstery**

For Wooden Spice Racks, Wooden Spice Wheels, and Plastic Wheels With Small Containers Attached to the Spokes for Hanging on Walls for Keeping Buttons, Needles and Other Goods (Int. Cl. 20).

**Class 34—Heating, Lighting, and Ventilating Apparatus**

For Candles, Hibachi and Steel Enamel Fondue Pots With Attached Heating Apparatus (Int. Cls. 4 and 11).

**Class 50—Merchandise Not Otherwise Classified**

For Wooden Hot Pads and Trivets (Int. Cl. 21).

First use Nov. 10, 1966.

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SN 316,855. The Mephisto Tool Co., Inc., Hudson, N.Y. Filed Jan. 17, 1969.

## MEPHISTO

Owner of Reg. No. 73,964.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Tool Bits; Bit Sets; Augers; Bit Extensions; Hammers; Awls; Wrenches; Hand Saws and Parts Therefor; Snips; Snip Grips; Screwdrivers; Pliers; Pliers Grips; Plumbing Tools—Namely, Spud Keys and Packing Tools; Chisels; Gouges; Lead Picks; Punches; Star Drills; Bending Irons; Trimming Irons; Water Main Irons; Caulking Irons; Water Main Tool Kits Containing Water Main Irons, Hammers, Chisels and the Like; Auger Bit Tool Kits; Copper Working Tools—Namely, Flaring Tools, Tubing Benders, Swedging Tools, Copper Tubing Cutters and Replacement Parts Therefor; and Reamers (Int. Cls. 7 and 8).
First use Oct. 15, 1908.

**Class 26—Measuring and Scientific Appliances**

For Levels; Plumb Bobs and Wood Folding Rules (Int. Cl. 9).
First use 1959.

**Class 29—Brooms, Brushes, and Dusters**

For Hand Brushes for Cleaning Copper Fittings and Copper Tube Cleaning Brushes (Int. Cl. 21).
First use 1963.

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SN 321,104. FMC Corporation, San Jose, Calif. Filed Mar. 10, 1969.

Owner of Reg. Nos. 590,801, 616,832, and others.

**Class 1—Raw or Partly Prepared Materials**

For Microcrystalline Material, e.g., of Cellulose, Mineral Silicates, Polyamide, Polyester or Polyolefin, for General Use in the Arts; Fibers and Filaments for Use in Woven and Non-Woven Fabrics, Webs, Absorbents, Threads, Yarns, Cordage, Felts, and the Like; Sheets and Films of Plastic Material; and Sheet Material of Regenerated Cellulose or Cellulosic Materials Such as Cellulose Ethers or Cellulose Esters and Mixtures Thereof (Int. Cls. 1, 17, and 22).
First use Dec. 13, 1968.

**Class 6—Chemicals and Chemical Compositions**

For Microcrystalline Amylose and Microcrystalline Collagen, for General Use in the Arts (Int. Cl. 1).
First use Dec. 13, 1968.

**Class 7—Cordage**

For Cord; and Strapping Made of Fibrous or Plastic Material or Combinations Thereof (Int. Cl. 22).
First use Dec. 27, 1968.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Buckles, Ties or Seals for Securing Strapping (Int. Cl. 6).
First use Feb. 24, 1969.

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Fabrics of Fibers, Yarn or Cord for Wearing Apparel, Home Furnishings and Industrial Uses (Int. Cl. 24).
First use Dec. 17, 1968.

**Class 43—Thread and Yarn**

For Yarns, Threads, and Yarn and Thread Filaments (Int. Cl. 23).
First use Jan. 13, 1969.

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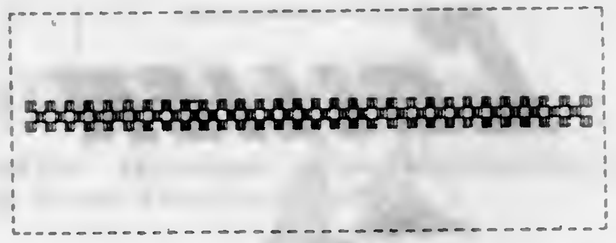
SN 324,325. Ralston Purina Company, St. Louis, Mo. Filed Apr. 14, 1969.



The drawing is lined for the color red, but no claim is made to color. Owner of Reg. Nos. 197,097, 861,540, and others.

**Class 18—Medicines and Pharmaceutical Preparations**

For Implants in the Nature of a Hormone in Pellet Form for Cattle (Int. Cl. 5).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Spring Actuated Gun for Administering a Hormone Like Substance to Cattle (Int. Cl. 10).

First use February 1969.

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SN 326,024. Interpace Corporation, Los Angeles, Calif. Filed May 1, 1969.

## MIDNIGHT MIST

**Class 30—Crockery, Earthenware, and Porcelain**

For Tableware—Namely, Dinnerware and Dinnerware Accessories of China (Int. Cl. 21).
First use in about November 1965.

**Class 33—Glassware**

For Tableware of Glass, Crystal Glass, and Glass Accessories (Int. Cl. 21).
First use Apr. 2, 1969.

# SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

## Class 1 — Raw or Partly Prepared Materials

SN 308,628. The Morgan Crucible Company Limited, London, England. Filed Oct. 1, 1968.

**MODMOR**

For Carbon and Graphite All in Fibrous or Threadlike Form for Use in Manufacture (Non-Textile) (Int. Cl. 1).

First use Aug. 28, 1968; in commerce Aug. 28, 1968.

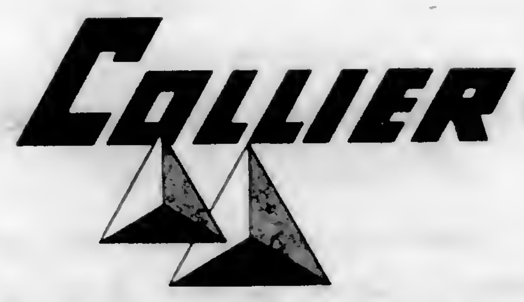
SN 311,093. Dow Corning Corporation, Midland, Mich. Filed Nov. 1, 1968.

**200**

For Silicone Fluids for General Industrial Applications Such as Mold Release Agent, as an Anti-Foaming Agent, and an Ingredient in Cosmetics and Skin Preparations, and a Component of Polishes and Chemical Specialties (Int. Cl. 1).

First use Mar. 1, 1943.

SN 323,432. Collier Carbon and Chemical Corporation, Los Angeles, Calif. Filed Apr. 2, 1969.



The drawing is lined to indicate shading only. Owner of Reg. No. 762,154.

For Calcined and Uncalcined Petroleum Coke (Int. Cl. 4).

First use August 1961.

## Class 2 — Receptacles

SN 309,057. M. Korn Packaging Co., Inc., New York, N.Y. Filed Oct. 7, 1968.

**TAPER TITE**

For Plastic Film Bags (Int. Cl. 20).

First use Sept. 24, 1968.

SN 320,966. National Union Electric Corporation, Bloomington, Ill. Filed Mar. 6, 1969.

**CHEMA-TIZED**

For Vacuum Cleaner Dust Bags (Int. Cl. 16).

First use Feb. 6, 1969.

## Class 4 — Abrasives and Polishing Materials

SN 325,342. Consolidated Foods Corporation, Old Greenwich, Conn. Filed Apr. 23, 1969.

**ELECTROLUX**

Owner of Reg. Nos. 195,691, 855,560, and others.

For Buffing Pads for Floor Polishers (Int. Cl. 21).

First use February 1960.

## Class 5 — Adhesives

SN 296,772. Standard Oil Company, Flemington, N.J. Filed Apr. 29, 1968.

**EXXON**

For Adhesives in Semi-Solid and Liquid Form, Sold as Such for Industrial Use (Int. Cl. 1).

First use Nov. 13, 1967.

## Class 6 — Chemicals and Chemical Compositions

SN 296,766. Standard Oil Company, Flemington, N.J. Filed Apr. 29, 1968.

**EXXON**

For Industrial Chemical Additives and Processing Aids for Improving and Altering Characteristics and Performance of Petroleum Products; and Rust Inhibitors (Int Cls. 1 and 2).

First use Nov. 2, 1967.

SN 296,767. Standard Oil Company, Flemington, N.J. Filed Apr. 29, 1968.

**EXXON**

For Aromatic, Hydrocarbon and Aliphatic Solvents for General Use in the Industrial Arts (Int. Cl. 1).

First use Oct. 6, 1967.

SN 316,803. Metallurgical Exoproducts, Inc., McKees Rocks, Pa. Filed Jan. 16, 1969.

**FONDER-RIM**

For Rimming Agents Used in Steel Making Processes (Int. Cl. 1).

First use June 17, 1966.

SN 317,083. Monsanto Company, St. Louis, Mo. Filed Jan. 21, 1969.

**MONTASE**

For Enzyme Preparation for General Industrial Use (Int. Cl. 1).

First use Dec. 15, 1968.

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SN 317,227. Hercules Incorporated, Wilmington, Del. Filed Jan. 22, 1969.

**HERCOFLOC**

For Flocculant Polymer (Int. Cl. 1).

First use Nov. 4, 1968.

SN 317,316. Ciba Limited, Basle, Switzerland. Filed Jan. 23, 1969.

**MONOCRON**

Owner of Swiss Reg. No. 213,474, dated Oct. 4, 1965.

For Chemical Preparations for Killing Weeds and Destroying Vermin, Preparations for Combating Plant Pests (Int. Cl. 5).

SN 317,359. NFC Brewing Service Corporation, Mount Vernon, N.Y. Filed Jan. 23, 1969.

**PURITASE**

Owner of Reg. No. 787,540.

For Enzyme Chillproofing Compound for Beer and Ale (Int. Cl. 1).

First use Nov. 19, 1968.

SN 317,368. Petrochemicals Company, Inc., Fort Worth, Tex. Filed Jan. 23, 1969.

**INTERN-A-STAT**

For Anti-Static Agents for Use in Plastics and Plastic Compositions (Int. Cl. 1).

First use Oct. 15, 1968.

SN 317,529. Continental Oil Company, Ponca City, Okla. Filed Jan. 27, 1969.

**CONOCO WBS**

For Foaming Agents (Int. Cl. 1).

First use Dec. 4, 1968.

SN 317,650. Universal Oil Products Company, d.b.a. UOP Johnson Division, Des Plaines, Ill. Filed Jan. 27, 1969.

**FAST BREAK**

For Chemicals To Reduce the Viscosity of Drilling Fluid Additive (Int. Cl. 1).

First use Oct. 7, 1968.

SN 318,018. American Cyanamid Company, Wayne, N.J. Filed Jan. 31, 1969.

**SODIUM AEROFLOAT**

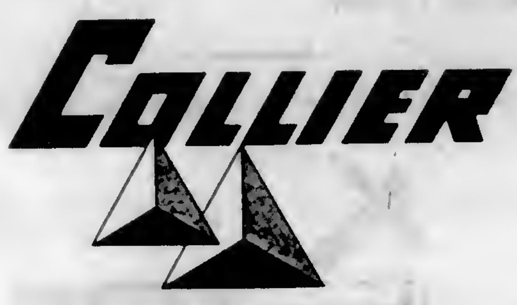
The word "Sodium" is disclaimed apart from the mark as shown. Owner of Reg. No. 257,817.

For Flotation Reagents for the Concentration of Minerals (Int. Cl. 1).

First use Mar. 15, 1928.

## Class 10 — Fertilizers

SN 323,794. Collier Carbon and Chemical Corporation, Los Angeles, Calif. Filed Apr. 7, 1969.



The drawing is lined to indicate shading only. Owner of Reg. No. 762,154.

For Chemical Fertilizers and Gypsum and Sulfur Sold for Use as Soil Conditioners (Int. Cl. 1).

First use Aug. 1, 1957.

## Class 11 — Inks and Inking Materials

SN 314,485. American Lacquer and Solvents Co. of Florida, d.b.a. American Lacquer and Solvents Co. of Fla., Tampa, Fla. Filed Dec. 16, 1968.

**UNI-COLOR**

For Pigment Dispersion for Flexo Ink (Int. Cl. 2).

First use Aug. 30, 1968.

## Class 12 — Construction Materials

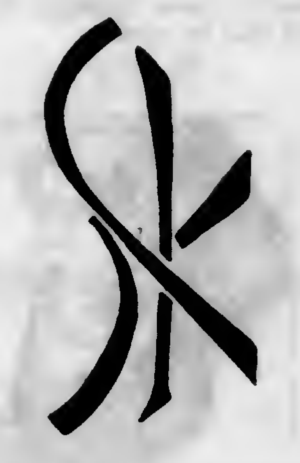
SN 289,756. Aktiebolaget Statens Skogsindustrier, Stockholm, Sweden. Filed Jan. 29, 1968.

**ROYALEX**

Owner of Swedish Reg. No. 109,361, dated Apr. 10, 1964.

For Wood Fiber Board (Int. Cl. 19).

SN 299,553. Rene J. Fortier, d.b.a. Skandia Custom Home Mfg. Co., Birmingham, Mich. Filed June 3, 1968.



For Exterior and Interior Prefabricated Building Panels (Int. Cl. 19).

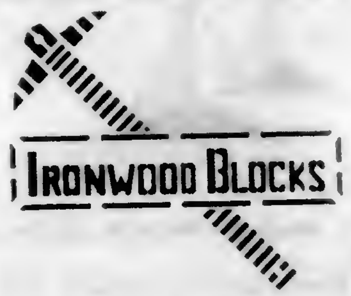
First use May 15, 1968.

SN 305,220. Glass Beads Company, Latrobe, Pa. Filed Aug. 15, 1968.

### HYBRALOX

For Hybrid Alumina Sealing Material for Hermetic Seals (Int. Cl. 17).
First use Jan. 19, 1967.

SN 315,732. Gordon Chatterton, Spokane, Wash. Filed Jan. 3, 1969.



Applicant disclaims the words "Ironwood" and "Blocks" apart from the mark as a whole.
For End-Grain Flooring (Int. Cl. 19).
First use Sept. 30, 1968.

SN 319,671. Edward Hines Lumber Co., Chicago, Ill. Filed Feb. 20, 1969.

### RANCH-PLY

For Plywood (Int. Cl. 19).
First use April 1968.

SN 327,561. Met-L-Wood Corporation, Chicago, Ill. Filed May 19, 1969.

### SEA-LOK

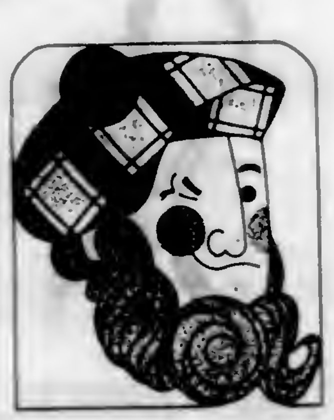
For Door Units (Int. Cl. 19).
First use no later than November 1968.

SN 328,251. Scotty's Home Builders Supply, Inc., Winter Haven, Fla. Filed May 26, 1969.

### SCOTTY'S

For Concrete Mix, Mortar Mix and Sand Mix. (Int. Cl. 19).
First use Mar. 31, 1969.

SN 328,252. Scotty's Home Builders Supply, Inc., Winter Haven, Fla. Filed May 26, 1969.



For Concrete Mix, Mortar Mix and Sand Mix (Int. Cl. 19).
First use Mar. 31, 1969.

## Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 304,524. Wilton Brass Company, Columbia, Pa. Filed Aug. 6, 1968.

### RWP

For Holloware and Flatware and Candle Shapers (Int. Cls. 8 and 21).
First use Dec. 1, 1962.

SN 304,825. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Aug. 9, 1968.

### SONY

For Key Rings (Int. Cl. 6).
First use July 20, 1967; in commerce July 20, 1967.

SN 314,546. Everingham Brothers Limited, Toronto, Ontario, Canada. Filed Dec. 16, 1968.

### International

For Aluminum and Stainless Steel Cooking Utensils—Namely, Sauce Pans, Frying Pans, Double Boilers, Roasters, Dutch Ovens, Egg Poaching Racks and Cups, Mixing Bowls, Pie Plates and Serving Trays (Int. Cls. 11 and 21).
First use May 22, 1968; in commerce Oct. 18, 1968.

SN 314,553. The Hale Company, Tulsa, Okla. Filed Dec. 16, 1968.

### AUTO CRANK

For Actuators for Butterfly Valves (Int. Cl. 6).
First use Aug. 28, 1968.

SN 315,164. Southco, Inc., Lester, Pa. Filed Dec. 24, 1968.

### DRAWBREAKER

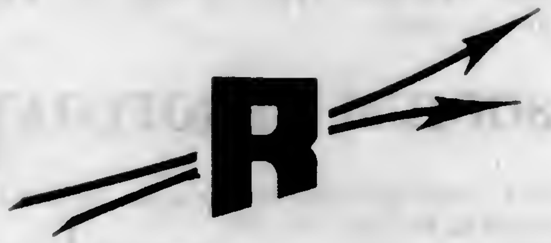
For Fasteners and Latches (Int. Cl. 6).
First use Dec. 16, 1968.

SN 317,393. Societe Anonyme Fichet-Bauche, Suresnes, Hauts-de-Seine, France. Filed Jan. 23, 1969.

### SERPRESS

Owner of French Reg. No. 744,936, dated July 15, 1968.
For Bolts, Nuts, Pins and Screws (Int. Cl. 6).

SN 322,190. Rockford Aerospace Products, Inc., Santa Ana, Calif. Filed Mar. 19, 1969.



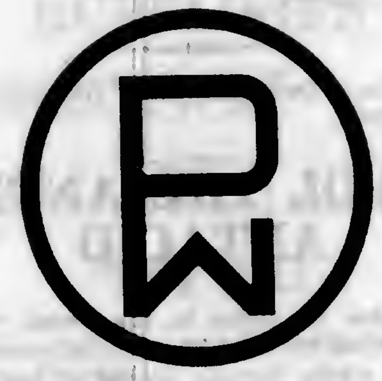
For Threaded Fasteners (Int. Cl. 6).
First use Jan. 30, 1969.

SN 322,805. American Standard Inc., New York, N.Y. Filed Mar. 26, 1969.

### SPECTRA 70

For Tubs and Shower Surrounds (Int. Cl. 11).
First use on or about Jan. 6, 1969.

SN 323,498. Webster Manufacturing, Inc., Tiffin, Ohio. Filed Apr. 2, 1969.



For Rivets (Int. Cl. 6).
First use Sept. 9, 1966.

SN 323,695. Eteco, S.A., Zwevegem, Belgium. Filed Apr. 4, 1969.

### MOTTO

Owner of U.S. Reg. No. 603,491.
For Barbed Wire for Fencing (Int. Cl. 6).
First use Nov. 17, 1953; in commerce Dec. 15, 1963.

## Class 15—Oils and Greases

SN 298,323. The Euclid Automatic Machining Company, Euclid, Ohio. Filed May 16, 1968.

### SLIDE PLATE

Applicant disclaims the word "Plate" apart from the mark as shown.
For Dry Spray Lubricant (Int. Cl. 4).
First use Feb. 28, 1968.

SN 312,668. Farmland Industries, Inc., d.b.a. Farmland Industries, Kansas City, Mo. Filed Nov. 20, 1968.

### LITH-SHIELD

For General Purpose Grease (Int. Cl. 4).
First use Feb. 20, 1968.

## Class 16—Protective and Decorative Coatings

SN 300,573. FMC Corporation, San Jose, Calif. Filed June 17, 1968.

### STA-FRESH

Owner of Reg. No. 601,542.
For Protective Coatings for Fruits and Vegetables (Int. Cl. 2).
First use in 1941.

SN 311,955. The Valspar Corporation, Rockford, Ill. Filed Nov. 12, 1968.

### COLOR PROFILE

No claim is made to the word "Color" apart from the mark as shown.
For Interior Paint and Enamel; Exterior Paint and Stains for Interior and Exterior Wood and Masonry (Int. Cl. 2).
First use July 25, 1968.

SN 314,991. Terrazzo Supply Corporation, North Hollywood, Calif. Filed Dec. 20, 1968.

### TESCO

For Protective Coating Composition for Terrazzo, Magnesite, Cement, Concrete, Marblecrete, Exposed Aggregate and Masonry Structures (Int. Cl. 2).
First use Nov. 27, 1957.

SN 315,917. Hotopp Paint & Varnish Co., Jersey City, N.J. Filed Jan. 6, 1969.

### WALL-DURA

Owner of Reg. No. 850,088.
For Interior Paints (Int. Cl. 2).
First use 1953; 1885 as to "Dura."

SN 315,918. Hotopp Paint & Varnish Co., Jersey City, N.J. Filed Jan. 6, 1969.

### DURATONE

Owner of Reg. No. 850,088.
For Interior Paints (Int. Cl. 2).
First use 1928; 1885 as to "Dura."

## Class 17—Tobacco Products

SN 305,108. Bayuk Cigars Incorporated, Philadelphia, Pa. Filed Aug. 14, 1968.

### TIPAROMA

For Cigars (Int. Cl. 34).
First use June 25, 1968.

SN 307,736. General Cigar Co., Inc., New York, N.Y. Filed Sept. 19, 1968.

### COLT

For Cigars (Int. Cl. 34).
First use Aug. 15, 1968.

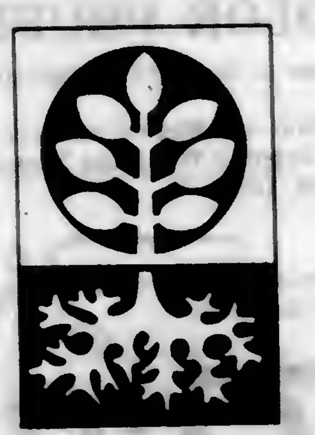
## Class 18—Medicines and Pharmaceutical Preparations

SN 265,100. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Feb. 20, 1967.

### LERRAMYCIN

Owner of Reg. No. 577,504.
For Antibiotic Preparation (Int. Cl. 5).
First use Dec. 19, 1966.

SN 295,562. Spezialchemie Gesellschaft mit beschraenkter Haftung & Co. Arzneimittelfabrik, Munich, Germany. Filed Apr. 12, 1968.



Owner of German Reg. No. 840,099, dated Feb. 19, 1966.

For Preparation for the Treatment of Geriatric Ailments (Int. Cl. 5).

SN 296,709. Ono Pharmaceutical Co., Ltd., Higashi-ku, Osaka, Japan. Filed Apr. 26, 1968.

### GAMIBETAL

For Pharmaceutical Preparations for Regulation of Metabolism of Brain Functions (Int. Cl. 5).

First use Dec. 2, 1960; in commerce in or about December 1962.

SN 297,659. Dixi Chem of Greenville, Inc., Greenville, S.C. Filed May 8, 1968.

### DIXI

For Throat, Kidney and Liver Preparations, Laxatives, and Liniment for Human Use (Int. Cl. 5).

First use on or about Apr. 1, 1949.

SN 301,414. Eastman Kodak Company, Rochester, N.Y. Filed June 26, 1968.

### MYVAJECT-500

For Vitamin Preparations (Int. Cl. 5).

First use Apr. 3, 1968.

SN 307,207. Hygee Laboratories, Inc., Summit, N.J. Filed Sept. 12, 1968.

### THE 20th HOLE

For Foot Balm (Int. Cl. 5).

First use Sept. 7, 1968.

SN 311,301. The Purdue Frederick Company, Yonkers, N.Y. Filed Nov. 4, 1968.

### XOREX

For Oral Antiseptic Mouthwash (Int. Cl. 5).

First use Oct. 18, 1968.

SN 311,303. The Purdue Frederick Company, Yonkers, N.Y. Filed Nov. 4, 1968.

### XEREX

For Preparation for Aid in the Removal of Ear Wax (Int. Cl. 5).

First use Oct. 18, 1968.

SN 312,500. Richardson-Merrell Inc., New York, N.Y. Filed Nov. 18, 1968.

For Medicinal Preparation for Relief From Acid Indigestion, Heartburn and Gas (Int. Cl. 5).

First use Sept. 1, 1968.

SN 313,677. Block Drug Company, Inc., Jersey City, N.J. Filed Dec. 5, 1968.

### SENTROL THE ANTI-GAS ANTACID

Applicant makes no claim to the words "The Anti-Gas Antacid," apart from the mark as a whole, reserving, however, all common law rights thereto. Owner of Reg. Nos. 600,913 and 845,778.

For Medicinal Preparation for the Relief of Headaches, Neuralgias, Minor Muscular Aches and Pains, Toothaches, the Discomforts of Colds and Functional Periodic Pains, Upset Stomach, Heartburn, Indigestion and Aerophagia (Int. Cl. 5).

First use on or about Nov. 21, 1968.

SN 316,700. The Upjohn Company, Kalamazoo, Mich. Filed Jan. 16, 1969.

### OPTASAN

For Ophthalmic Preparation (Int. Cl. 5).

First use Oct. 2, 1968.

SN 317,202. Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y. Filed Jan. 22, 1969.

### 'ECAPAR'

For Medicinal Preparation for the Treatment of Parasitosis (Int. Cl. 5).

First use Dec. 27, 1968.

SN 317,327. The Dow Chemical Company, Midland, Mich. Filed Jan. 23, 1969.

### TENLAR

For Analgesic (Int. Cl. 5).

First use Dec. 13, 1968.

SN 317,384. William H. Rorer, Inc., Fort Washington, Pa. Filed Jan. 23, 1969.

### ANTELUDE

For Sedative-Hypnotic Tablets (Int. Cl. 5).

First use Nov. 22, 1968.

SN 320,114. Schering Corporation, Bloomfield, N.J. Filed Feb. 26, 1969.

### NCDVAX

For Poultry Vaccine (Int. Cl. 5).

First use Nov. 11, 1968.

SN 321,108. Bengal Corporation, Baton Rouge, La. Filed Mar. 10, 1969.

### QUICKICK

For Flavored Glucose and Body Salt Supplement Preparation (Int. Cl. 5).

First use at least as early as Nov. 15, 1968.

SN 326,311. Parke, Davis & Company, Detroit, Mich. Filed May 5, 1969.

### RUBELOGEN

For Immunizing Vaccine (Int. Cl. 5).

First use on or before Apr. 17, 1969.

SN 326,591. Eli Lilly and Company, Indianapolis, Ind. Filed May 7, 1969.

### TOPTIC

For Veterinary Ear, Eye, and Skin Ointment (Int. Cl. 5).

First use Mar. 24, 1969.

SN 324,974. American Home Products Corporation, New York, N.Y. Filed Apr. 21, 1969.

### PRO-ARTH

For Analgesic Preparation (Int. Cl. 5).

First use Apr. 9, 1969.

SN 324,975. American Home Products Corporation, New York, N.Y. Filed Apr. 21, 1969.

### APF

For Analgesic Preparation (Int. Cl. 5).

First use Apr. 9, 1969.

SN 324,976. American Home Products Corporation, New York, N.Y. Filed Apr. 21, 1969.

### ARTHREST

For Analgesic Preparation (Int. Cl. 5).

First use Apr. 9, 1969.

SN 324,977. American Home Products Corporation, New York, N.Y. Filed Apr. 21, 1969.

### ARTHEZE

For Analgesic Preparation (Int. Cl. 5).

First use Apr. 9, 1969.

## Class 19—Vehicles

SN 326,035. D. P. Harris Hardware & Manufacturing Co., Inc., New York, N.Y. Filed May 1, 1969.

### Blue Devil

For Bicycles (Int. Cl. 12).

First use in 1966.

SN 288,123. Skyline Corporation, Elkhart, Ind. Filed Jan. 4, 1968.

### ALPINE

For Wheeled Tent Campers Adapted To Be Towed by a Tractive Vehicle and Equipped With Living Accommodations Such as a Stove, Sink, Refrigerator, Dinnette, and Bunks (Int. Cl. 12).

First use Dec. 1, 1967.

SN 299,775. Jet Avion Corp., Hialeah, Fla. Filed June 5, 1968.

### "CARGOMAT"

For Material Handling Pallet Dollies Having Casters Mounted on the Bottom and Top Thereof (Int. Cl. 12).

First use Dec. 1, 1967.

SN 300,079. Goodyear Aerospace Corporation, Akron, Ohio. Filed June 10, 1968.

### PARD

For Parachutes (Int. Cl. 12).

First use Mar. 18, 1968.

SN 304,818. Singer Products Company Incorporated, New York, N.Y. Filed Aug. 9, 1968.

### Sin Par

Owner of Reg. No. 612,549.

For Automotive Parts—Namely, Spring Shackles, Hydraulic Brakes and Parts, Brake Cables, Brake Drums, Tie Rods and Tie Rod Ends, Drag Links, King Bolt Sets and Fuel Lines (Int. Cl. 12).

First use August 1956.

SN 305,225. Mako Marine, Inc., Hialeah, Fla. Filed Aug. 15, 1968.

### MAKO

For Boats and Parts Thereof (Int. Cl. 12).

First use Apr. 15, 1967.

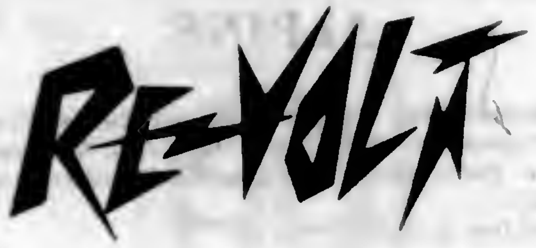
SN 306,054. General Dynamics Corporation, New York, N.Y. Filed Aug. 27, 1968.

### STAR

For Submersible Vehicles (Int. Cl. 12).

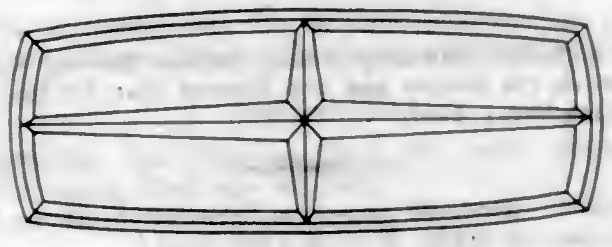
First use on or about July 16, 1964.

SN 308,141. Revolt, Inc., Ardmore, Okla. Filed Sept. 24, 1968.



For Electric Motor Scooters (Int. Cl. 12).
First use at least as early as May 28, 1968.

SN 308,885. Fuji Jyukogyo Kabushiki Kaisha, Shinjuku-ku, Tokyo-to, Japan. Filed Oct. 4, 1968.



Owner of Japanese Reg. No. 725,153, dated Nov. 18, 1966.
For Automobiles, Motor Trucks, Buses, and Airplanes (Int. Cl. 12).

SN 314,373. Vanguard Corporation, Chicago, Ill. Filed Dec. 12, 1968.

**POLYOID**

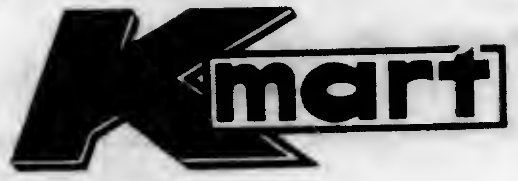
For Side Bearings for Railroad Car Trucks (Int. Cl. 12).
First use Dec. 2, 1968.

SN 314,716. Kolton Corporation, Midland, Tex. Filed Dec. 17, 1968.

**KOLTON**

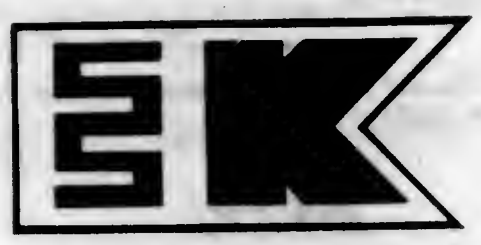
For Truck Trailers, Semi-Trailers, and Utility Trailers (Int. Cl. 12).
First use Nov. 14, 1968.

SN 320,352. S. S. Kresge Company, Detroit, Mich. Filed Feb. 28, 1969.



For Bicycles (Int. Cl. 12).
First use on or before Feb. 21, 1969.

SN 320,353. S. S. Kresge Company, Detroit, Mich. Filed Feb. 28, 1969.



For Bicycles (Int. Cl. 12).
First use on or before Feb. 21, 1969.

SN 322,137. Aloha Camper Corp., Beaverton, Oreg. Filed Mar. 19, 1969.

For Pickup Campers (Int. Cl. 12).
First use Feb. 17, 1969.

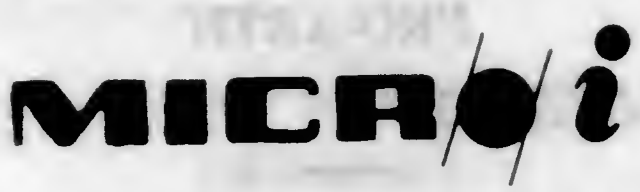
SN 323,083. Berry Mini-"T", Long Beach, Calif. Filed Mar. 28, 1969.

**MINI-T**

For Automobiles and Automobile Bodies and Parts Thereof (Int. Cl. 12).
First use July 15, 1968.

## Class 21—Electrical Apparatus, Machines, and Supplies

SN 258,469. American Precision Industries, Inc., Buffalo, N.Y. Filed Nov. 14, 1966.

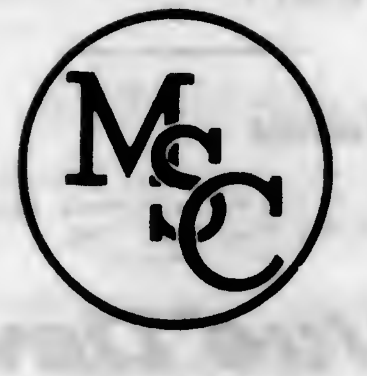


Applicant disclaims the term "Micro" apart from the mark as shown, without disclaiming the distinctive manner in which that term appears as a component of the entire mark.
For Electronic Coils (Int. Cl. 9).
First use Nov. 1, 1966.

SN 286,226. Woodward-Schumacher Electric Corporation, Chicago, Ill. Filed Dec. 4, 1967.

No claim is made to the word "Electronic" apart from the mark as shown, without waiving any common law rights therein.
For Electric Fence Charger (Int. Cl. 9).
First use on or about Oct. 2, 1967.

SN 295,543. Micron Sealing Corporation, Stone Park, Ill. Filed Apr. 12, 1968.



For Electrical Power Supplies, Coils, and Resins for Potting and Encapsulating Electrical Equipment (Int. Cl. 9).
First use Mar. 15, 1968.

SN 300,441. General Electric Company, Owensboro, Ky. Filed June 14, 1968.

**PERMA-CELL**

For Nickel Cadmium Rechargeable Electrical Batteries (Int. Cl. 9).
First use Mar. 5, 1968.

SN 302,941. Hankscraft Company, Reedsburg, Wis. Filed July 17, 1968.

**CRIB SET**

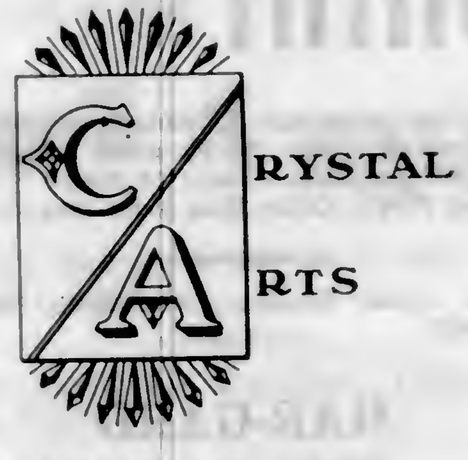
For Electrically Heated Feeding Dishes, and Electrically Heated Bottle Warmers (Int. Cl. 11).
First use July 1965.

SN 304,293. The H. J. Ashe Co., Inc., South Norwalk, Conn. Filed Aug. 5, 1968.

**FUN-FACE**

For Flashlights, Batteries, and a Mask for Attachment to the End of the Flashlight (Int. Cl. 11).
First use May 1, 1968.

SN 307,982. Crystal Arts, Los Angeles, Calif. Filed Sept. 23, 1968.



Applicant disclaims the word "Crystal."
For Electrically Powered Crystal Lamps (Int. Cl. 11).
First use Aug. 30, 1968.

SN 308,012. International Rectifier Corporation, Los Angeles, Calif. Filed Sept. 23, 1968.

**CRYDOM CONTROLS**

Applicant disclaims the term "Controls" apart from the mark as a whole.
For Solid State Power, Speed, and Temperature Controls (Int. Cl. 9).
First use Aug. 23, 1968.

SN 313,336. Seal, Incorporated, Derby, Conn. Filed Nov. 29, 1968.

**COMPRESS 101**

For Mounting and Laminating Machines, and Machines for Mounting, Laminating, Backing and for Making Transparencies (Int. Cl. 7).
First use Oct. 11, 1967.

SN 318,213. Motorola, Inc., Franklin Park, Ill. Filed Feb. 3, 1969.

**FAST BACK**

For Television Receiver Chassis (Int. Cl. 9).
First use Dec. 3, 1968.

SN 318,773. Paul Garrity, Stamford, Conn. Filed Feb. 10, 1969.

**DISPOZ-A-LAMP**

For Flashlight (Int. Cl. 11).
First use Nov. 18, 1968.

SN 318,876. Crallou Industries Ltd., Burnaby, British Columbia, Canada. Filed Nov. 4, 1968.

**"PEG-O-LITE"**

For Annunciator Boards (Int. Cl. 9).
First use August 1967; in commerce Oct. 18, 1968.

SN 320,753. Union Carbide Corporation, New York, N.Y. Filed Mar. 4, 1969.

**UCAR**

Owner of Reg. No. 837,046.
For Electrolytic Anodes (Int. Cl. 9).
First use on or about Oct. 30, 1968.

SN 321,160. Automatic Electric Company, Northlake, Ill. Filed Mar. 10, 1969.

**STYLELINE**

For Telephone Sets (Int. Cl. 9).
First use Jan. 17, 1969.

SN 321,803. Infinite Incorporated, Cocoa Beach, Fla. Filed Mar. 14, 1969.

**CYBERNET**

For Radio Transmitters (Int. Cl. 9).
First use Sept. 3, 1968.

## Class 22—Games, Toys, and Sporting Goods

SN 272,032. Educational Games, Inc., New York, N.Y. Filed May 22, 1967.

**WONDER WORDS**

Applicant disclaims "Words" apart from the mark as shown.
For Equipment Sold as a Unit for Playing an Educational Word-Learning Game (Int. Cl. 28).
First use Mar. 27, 1967.

SN 272,080. Meyers-Arnold Company, Inc., Greenville, S.C. Filed May 22, 1967.

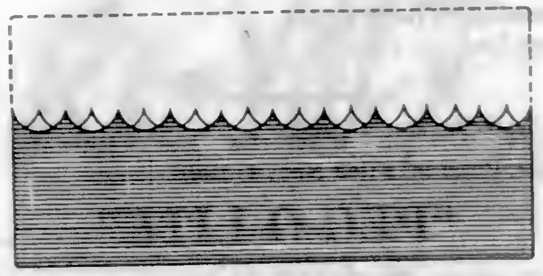
**MISSY CHRISTMAS**

For Children's Dolls (Int. Cl. 28).
First use November 1966.

SN 287,661. Miner Industries Inc., New York, N.Y. Filed Dec. 27, 1967.

For Wind-Up Toys (Int. Cl. 28).
First use Dec. 15, 1967.

SN 290,857. Ideal Fishing Float Company, Inc., Richmond, Va. Filed Feb. 12, 1968.



The drawing is lined for blue, but no claim is made to any specific color.

For Fishing Equipment of All Kinds, and, in Particular, Sinkers, Tackle Packs, Split Shot, Floats, Hooks, Fish and Frog Spears, Fishing Rods, and Parts Thereof (Int. Cl. 28).
First use September 1960.

SN 294,391. Gould-Cargill & Company, Inc., Minneapolis, Minn. Filed Mar. 28, 1968.

## HORSESHOE HANG-UP

For Apparatus or Equipment Sold in Plural Numbers for Use as a Parlor Game Through the Utilization of One To Pick Up Others in Succession Through Inter-Engagement (Int. Cl. 28).
First use Mar. 4, 1968.

SN 295,864. W. J. Voit Rubber Corp., Santa Ana, Calif. Filed Apr. 17, 1968.

## VOIT

Owner of Reg. Nos. 510,267, 609,517, and others.

For Athletic Balls, and Exercise, Swimming, Skin and Scuba Diving, Water Ski, Golf, and Other Athletic, Sports or Game Equipment and Accessories (Int. Cl. 28).
First use Jan. 1, 1923.

SN 297,326. Wiener Metallwarenfabrik Smolka & Co., Mauer, Vienna, Austria. Filed May 3, 1968.

Owner of Austrian Reg. No. 60,725, dated Nov. 22, 1967.
For Ski-Bindings (Int. Cl. 28).

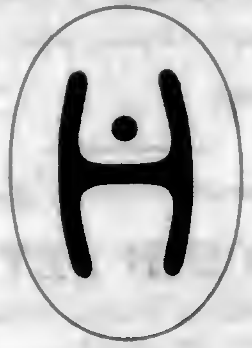
SN 297,456. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed May 6, 1968.

## FRED THE RAG DOLL

No claim of exclusive right is made to "The Rag Doll" for the goods recited.

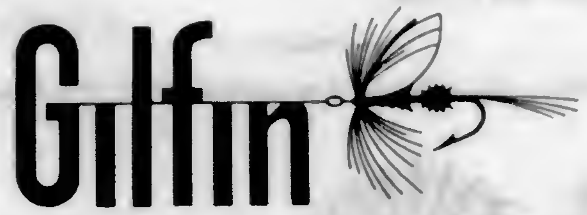
For Dolls and Doll Accessories (Int. Cl. 28).
First use in or about August 1967.

SN 298,241. John J. Noonan, d.b.a. Holly Industries, Manchester, N.H. Filed May 15, 1968.



For Snow Ski Equipment—Namely, Safety Straps, Long Thongs, Traction Harness, and Ski Poles (Int. Cl. 28).
First use Feb. 2, 1968.

SN 299,772. Y. E. Haswell Limited, London, England. Filed June 5, 1968.



No claim of exclusive right is made to the representation of the fly-type fishing lure for the goods recited. Owner of British Reg. No. 854,108, dated Sept. 16, 1963.

For Fishing Tackle (Other Than Nets) (Int. Cl. 28).

SN 300,793. A-Line Company, Minneapolis, Minn. Filed June 19, 1968.

## MAR-GARD

For Covering, Such as a Polyester-Type Plastic Material, To Be Applied to Skis (Int. Cl. 28).
First use Dec. 15, 1967.

SN 301,848. Lakeside Industries, Inc., Minneapolis, Minn. Filed July 2, 1968.

## COTTON MAGIC

Applicant disclaims the word "Cotton" apart from the mark as shown without waiving any common law or other rights which it may have in the mark.

For Toy Paint Sets (Int. Cl. 28).
First use Feb. 7, 1968.

SN 302,703. American Toy & Furniture Co., Inc., Chicago, Ill. Filed July 15, 1968.

## Daffy Awards

Applicant disclaims the word "Awards" apart from the mark as shown.

For Educational Toy Hobby Kit (Int. Cl. 28).
First use Mar. 7, 1968.

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SN 302,226. Cortland Line Company, Cortland, N.Y. Filed July 8, 1968.

## MICRON

For Fishing Tackle—Namely, Fishing Line (Int. Cl. 28).
First use June 1, 1968.

SN 303,590. Atlantic Lures, Inc., Providence, R.I. Filed July 25, 1968.

## MIKI-MOUSE

For Fishing Lures (Int. Cl. 28).
First use Aug. 10, 1956.

SN 304,213. Diversified Products Corporation, Opelika, Ala. Filed Aug. 2, 1968.

## GYM KING

The word "Gym" is disclaimed separate and apart from the mark as actually used.

For Manually Operated Variable Resistance, Rope Brake Physical Exercisers (Int. Cl. 28).
First use on or about June 14, 1968.

SN 306,060. International Assemblix Corporation, Toledo, Ohio. Filed Aug. 27, 1968.

## HAVE A BALL!

For Toy-Type Hobby Craft Kits (Int. Cl. 28).
First use Apr. 8, 1968.

SN 306,079. Spot-O-Gold Corporation, Philadelphia, Pa. Filed Aug. 27, 1968.

## RUB N WIN

For Equipment Sold as a Unit for Playing a Board-Type Party Game (Int. Cl. 28).
First use Aug. 22, 1968.

SN 306,175. Sportsman Supplier Corporation, Houston, Tex. Filed Aug. 28, 1968.

## EZEE

For Fishing Accessories—Namely, Fish Mouth Spreaders, Fishing Line Snaps, Fishing Reel Holders, Life Lights, Fishing Kits, and Fishing Rod Holders (Int. Cl. 28).
First use May 10, 1965.

SN 306,932. Milton Bradley Company, East Longmeadow, Mass. Filed Sept. 9, 1968.

## SANDLOT SLUGGER

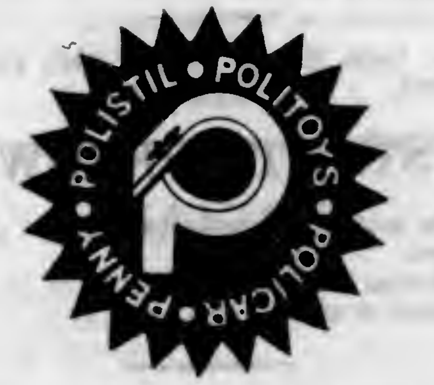
For Equipment Comprising a Playing Board, a Mechanical Batter, a Ball and Playing Pieces, for Playing a Baseball Type Skill and Action Game (Int. Cl. 28).
First use July 1, 1968.

SN 307,208. J.K.M. Manufacturing Co., Inc., Fort Worth, Tex. Filed Sept. 12, 1968.

## GIZMO-ROCKER

For Exercising Device Consisting of a Rigid Rectangular Loop Formed of Metal Tubing and Bent Right Angularly Intermediate Its Ends, Which May Be Used in Playing an Exercise Type Game (Int. Cl. 28).
First use Aug. 15, 1966.

SN 307,234. Polistil di Agrati Eugenio e Sala Ennio S.n.c., Milan, Italy. Filed Sept. 12, 1968.



Priority claimed under Sec. 44(d) on Italian application filed June 12, 1968; Reg. No. 229,317, dated July 19, 1968.

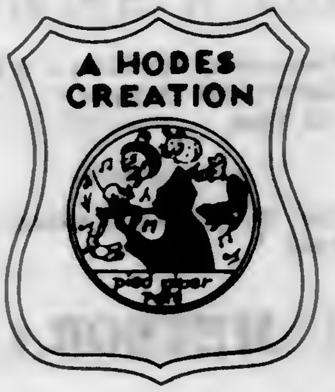
For Toy Auto Racing Kits and Miniature Model Racing Vehicles Therefor (Int. Cl. 28).

SN 307,659. Milton Bradley Company, East Longmeadow, Mass. Filed Sept. 18, 1968.

## I DOUBT IT

For Equipment Sold as a Unit for Playing a Board Game With Movable Pieces (Int. Cl. 28).
First use Sept. 3, 1968.

SN 309,046. William Hodes, d.b.a. Pied Piper Pets, New York, N.Y. Filed Oct. 7, 1968.



The word "Creation" is disclaimed separate and apart from the mark as shown.

For Stuffed Animated Finger and Hand Manipulative Toys (Int. Cl. 28).
First use August 1953.

SN 309,633. U.S. Divers Co., Santa Ana, Calif. Filed Oct. 14, 1968.

## ROCKET

For Swim Fins (Int. Cl. 28).
First use July 8, 1968.

SN 309,701. Sidney A. Tarrson Co., Chicago, Ill. Filed Oct. 15, 1968.

### KIDDIE-FLOAT

For Juvenile Float Having Safety Seat for Water Play (Int. Cl. 9).
First use Jan. 19, 1968.

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SN 309,743. Paul E. Biber, Woodside, Calif. Filed Oct. 16, 1968.

### LOTUS

For Snow Skis (Int. Cl. 28).
First use Nov. 28, 1967.

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SN 310,114. Louis Marx & Co., Inc., New York, N.Y. Filed Oct. 21, 1968.

### INSTANT SPEEDWAY

No claim is made to the word "Speedway" apart from the mark as shown.
For Toy Racing Cars and Track (Int. Cl. 28).
First use Sept. 6, 1968.

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SN 311,162. Emma Kreszentia McBride, Santa Fe, N. Mex. Filed Nov. 1, 1969.

### PSYCHIC BALL

No claim of exclusive right is made to the word "Ball" for the goods recited.
For Ball-Type Device and Playing Card for Answering Subconscious Questions (Int. Cl. 28).
First use Aug. 4, 1968.

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SN 311,368. Henry Honer, d.b.a. Rota-Twist Slenderizer Co., Los Angeles, Calif. Filed Nov. 5, 1968.

### Rota·twist

For Exercise Machines in the Form of a Rotatable Plate on Which the User Stands (Int. Cl. 28).
First use Aug. 15, 1968.

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SN 314,369. True Temper Corporation, Cleveland, Ohio. Filed Dec. 12, 1968.

### METEOR

Owner of Reg. No. 679,549.
For Ski Poles and Other Skiing Equipment, Exclusive of Wearing Apparel (Int. Cl. 28).
First use on or about Oct. 26, 1968.

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SN 314,464. Springbok Editions, Inc., New York, N.Y. Filed Dec. 13, 1968.

### ALPHABOK

For Equipment Sold as a Unit for Playing a Solitaire Word Puzzle-Type Game (Int. Cl. 28).
First use Nov. 23, 1968.

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SN 315,172. Wilson Sporting Goods Co., River Grove, Ill. Filed Dec. 24, 1968.

### THE CONTROLLER

For Baseball Gloves (Int. Cl. 28).
First use Nov. 14, 1968.

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SN 315,191. Under Sea Industries, Inc., Gardena, Calif. Filed Dec. 26, 1968.

### PRESSURIZER

For Water Sports Equipment—Namely, Skin Divers' Masks (Int. Cl. 28).
First use May 11, 1967.

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SN 316,587. Complex (Japan), Ltd., Fukiai-ku, Kobe, Japan, assignee of Arrow International, Ltd., d.b.a. Complex, Fukiai-ku, Kobe, Japan. Filed Jan. 15, 1969.

### ACTIONETT

For Golf Balls (Int. Cl. 28).
First use Nov. 3, 1968; in commerce Nov. 3, 1968.

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SN 316,590. Complex (Japan), Ltd., Fukiai-ku, Kobe, Japan, assignee of Arrow International, Ltd., d.b.a. Complex, Fukiai-ku, Kobe, Japan. Filed Jan. 15, 1969.

### MEDALLION

For Golf Balls (Int. Cl. 28).
First use Nov. 11, 1968; in commerce Nov. 11, 1968.

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SN 316,768. Butchart-Nicholls, Inc., New York, N.Y. Filed Jan. 16, 1969.

### Golden Master

For Golf Clubs and Irons (Int. Cl. 28).
First use December 1957.

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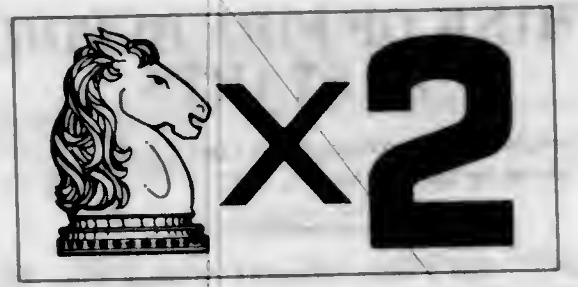
SN 316,794. Kent Sporting Goods Co., Ashland, Ohio. Filed Jan. 16, 1969.

### XLD

For Golf Balls (Int. Cl. 28).
First use Dec. 16, 1968.

SN 317,001. Createk, Los Angeles, Calif. Filed Jan. 21, 1969.



For Equipment for Playing a Team Chess Game (Int. Cl. 28).
First use July 5, 1968.

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SN 317,108. The Roalex Company, Inc., Forest Hills, N.Y. Filed Jan. 21, 1969.

### IDIOT'S DELIGHT

For Puzzle Comprising Colored Interlocking Sliding Square Pieces (Int. Cl. 28).
First use Oct. 24, 1968.

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SN 317,120. Select A Putt, Inc., Racine, Wis. Filed Jan. 21, 1969.

### PUBLINX

For Golf Clubs (Int. Cl. 28).
First use Sept. 1, 1968.

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SN 318,119. Wilson Sporting Goods Co., River Grove, Ill. Filed Jan. 31, 1969.

### ULTRADYNE

For Golf Clubs (Int. Cl. 28).
First use Dec. 19, 1968.

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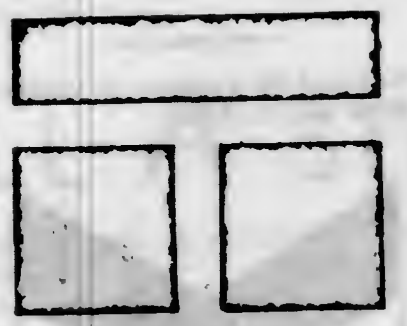
SN 319,210. Tensor Corporation, Brooklyn, N.Y. Filed Feb. 14, 1969.



For Rackets for Tennis, Badminton, Squash, or the Like (Int. Cl. 28).
First use May 29, 1968.

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SN 319,712. Les Davis Fishing Tackle Co., Tacoma, Wash. Filed Feb. 20, 1969.

### HERRING AID

For Artificial Fishing Lures (Int. Cl. 28).
First use Feb. 18, 1969.

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SN 324,348. Mattel, Inc., Hawthorne, Calif. Filed Apr. 14, 1969.

### SHOW & GO

For Case for Toy Miniature Automobiles and Automobiles Therein (Int. Cl. 28).
First use Jan. 31, 1969.

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SN 326,042. Mattel, Inc., Hawthorne, Calif. Filed May 1, 1969.

### KOZMIC KIDDLES

Owner of Reg. Nos. 814,385, 851,840, and others.
For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use Jan. 31, 1969.

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SN 326,046. Mattel, Inc., Hawthorne, Calif. Filed May 1, 1969.

### JANICE

For Dolls, Doll Clothing and Accessories (Int. Cl. 28).
First use Feb. 10, 1967.

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SN 326,047. Mattel, Inc., Hawthorne, Calif. Filed May 1, 1969.

### CHITTY CHITTY BANG BANG

Owner of Reg. No. 846,652.
For Dolls, Doll Clothing and Doll Accessories; Stuffed Animal Toys and Toy Vehicles (Int. Cl. 28).
First use Feb. 10, 1969.

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SN 326,048. Mattel, Inc., Hawthorne, Calif. Filed May 1, 1969.

### TWIST 'N TURN

For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use Feb. 15, 1967.

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SN 326,296. Exercycle Corporation, New York, N.Y. Filed May 5, 1969.

### ALL-BODY ACTION

Owner of Reg. No. 748,231.
For Exercising Machines (Int. Cl. 28).
First use August 1961.

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SN 326,304. Mattel, Inc., Hawthorne, Calif. Filed May 5, 1969.

### NUTTY NOGGINS

For Make and Play Toys Comprising Plastic Materials Which When Heated Change to a Predesigned Shape (Int. Cl. 28).
First use Dec. 3, 1968.

SN 326,956. Mattel, Inc., Hawthorne, Calif. Filed May 12, 1969.

### Hot Wheels

Owner of Reg. No. 843,156.
For Toy Miniature Automobiles and Accessories Therefor, Comprising Track, Buildings, Race Sets, a Power Drive Unit, and Carrying Case (Int. Cl. 28).
First use Mar. 1, 1969.

SN 327,456. Mattel, Inc., Hawthorne, Calif. Filed May 16, 1969.

### CHRISTIE

Owner of Reg. No. 821,093.
For Dolls, Doll Clothing and Doll Accessories (Int. Cl. 28).
First use Mar. 11, 1968.

## Class 23 – Cutlery, Machinery, and Tools, and Parts Thereof

SN 271,544. Sverre Munck Aksjeselskap, Bergen, Norway. Filed May 15, 1967.

### MUNCKLOADER

Priority claimed under Sec. 44(d) on Norwegian application filed Nov. 14, 1966; Reg. No. 71,551, dated Mar. 10, 1967. Owner of U.S. Reg. Nos. 842,365 and 842,763.
For Travelling Electric Gantry Crane With an Overhead Electric Travelling Traverse Crane, or the Like, and Parts Thereof for Use on Board Ships (Int. Cl. 7).
First use December 1962; in commerce April 1965.

SN 281,593. Leland-Gifford Co., Worcester, Mass. Filed Oct. 2, 1967.

### RIVETT LATHES & GRINDERS

The words "Lathes" and "Grinders" are disclaimed apart from the mark as shown. Owner of Reg. No. 820,704.
For Metal Turning Lathes and Attachments Therefor, and Internal and External Grinding Machines and Attachments Therefor (Int. Cl. 7).
First use at least as early as July 1966.

SN 283,076. Ag-Rain Incorporated, Havana, Ill. Filed Oct. 23, 1967.

### WATER-WINCH

For Self-Propelled, Automatic Traveling Sprinkler for Farm Irrigation (Int. Cl. 11).
First use Dec. 1, 1966.

SN 284,469. General Fire Extinguisher Corporation, Northbrook, Ill. Filed Nov. 9, 1967.

### THINK OF FIRE BEFORE IT STARTS

For Portable Fire Extinguishers (Int. Cl. 9).
First use on or before Jan. 31, 1967.

SN 285,078. The Vendo Company, Kansas City, Mo. Filed Nov. 16, 1967.

### VENDURA

Owner of Reg. Nos. 379,142, 727,697, and others.
For Merchandise and Beverage Vending Machines, and Parts Thereof (Int. Cl. 9).
First use Oct. 23, 1967.

SN 292,607. North Plains Fertilizer & Chemicals, Inc., Dumas, Tex. Filed Mar. 6, 1968.

### NOR-PAK

For Injection Systems—Namely, Injection Pumps Having a Discharge Conductor for Connection to a Water Line for Injecting Materials Into Such Water Line (Int. Cl. 7).
First use April 1967.

SN 293,229. Clarkson (Engineers) Limited, Nuneaton, England. Filed Mar. 14, 1968.

### CLARKSON RIPPA

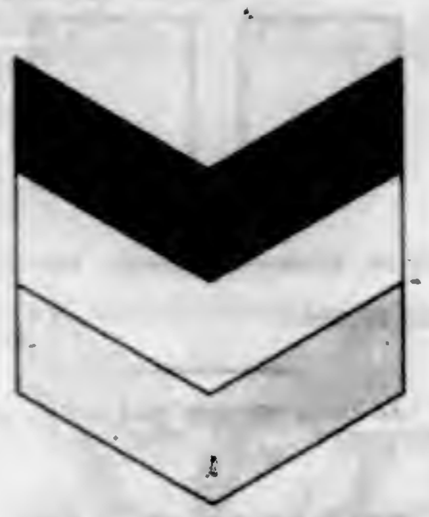
Owner of British Reg. No. B895,430, dated June 4, 1966; and U.S. Reg. No. 670,045.
For Cutting Tools for Use in Machine Tools (Int. Cl. 7).

SN 296,590. Standard Oil Company of California, San Francisco, Calif. Filed Apr. 25, 1968.

### CHEVRON

Owner of Reg. Nos. 185,958, 842,369, and others.
For Stands for Use in Supporting Automobiles While Being Repaired (Int. Cl. 8).
First use Mar. 8, 1968.

SN 296,591. Standard Oil Company of California, San Francisco, Calif. Filed Apr. 25, 1968.



Owner of Reg. Nos. 640,311, 640,661, 842,368, and others.
For Stands for Use in Supporting Automobiles While Being Repaired (Int. Cl. 8).
First use Mar. 8, 1968.

SN 299,435. Crescent Niagara Corporation, Buffalo, N.Y. Filed May 31, 1968.

### CRESTEX

For Insulated Hand Tools Such as Wrenches, Pliers, Snips, and the Like (Int. Cl. 8).
First use May 16, 1967.

SN 299,460. Howe Richardson Scale Company, Clifton, N.J. Filed May 31, 1968.

### MASTER-FLO

For Material Handling Apparatus—Namely, Devices for the Regulated Feeding of Powdered or Granular Material (Int. Cl. 7).
First use Apr. 15, 1968.

SN 299,764. Timothy A. Darwish, d.b.a. Trend-Setter Products, Detroit, Mich. Filed June 5, 1968.

### SIDEWINDERS

For Side Exhaust System Including Cover Assemblies for Mufflers and Exhaust Pipes Adapted To Extend Along the Side of a Vehicle Body (Int. Cl. 12).
First use May 15, 1968.

SN 299,779. Lesnor Maehr Mfg. Co., Farmingdale, N.Y. Filed June 5, 1968.

### SPINDLE –(M)– WIZARD

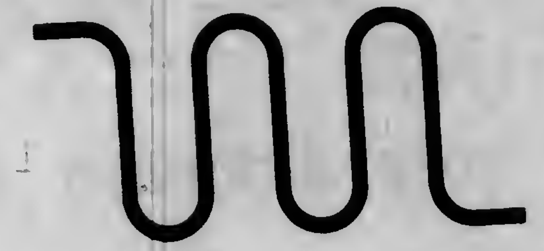
For Quill Actuators for Numerical Control of Milling and Drilling Machine Operations (Int. Cl. 7).
First use May 1967.

SN 300,345. Earl Manufacturing Co., Inc., Santa Fe Springs, Calif. Filed June 13, 1968.

### PULL-A-STEM

For Hand Tool for Removing and Installing Pneumatic Tire Valve Stems (Int. Cl. 8).
First use Feb. 9, 1968.

SN 303,189. Murdock, Inc., Compton, Calif. Filed July 19, 1968.



Owner of Reg. No. 847,010.
For Tools—Namely, Dies, Jigs, and Fixtures (Int. Cl. 7).
First use August 1964.

SN 304,689. Hills-McCanna Company, Carpentersville, Ill. Filed Aug. 8, 1968.

### McCANNA TROLP/D

Owner of Reg. Nos. 736,754 and 749,307.
For Adjustable Stroke Reciprocating Pumps (Int. Cl. 7).
First use Dec. 26, 1967.

SN 308,431. Peltzer & Ehlers, Krefeld, Germany. Filed Sept. 30, 1968.

### FORGEMASTER

Owner of German Reg. No. 840,913, dated Jan. 8, 1968; and U.S. Reg. Nos. 711,495 and 845,854.
For Machine Tools for Manufacturing Screws, Nuts, Rivets and Small Iron Parts as Well as Parts of These Machines; Machine for Drawing and Processing of Metal and Plastic Wire Rods (Int. Cl. 7).

SN 308,432. Peltzer & Ehlers, Krefeld, Germany. Filed Sept. 30, 1968.

### TWINMASTER

Owner of German Reg. No. 839,657, dated Nov. 29, 1967; and U.S. Reg. Nos. 711,495 and 845,854.
For Machine Tools for Manufacturing Screws, Nuts, Rivets and Small Iron Parts as Well as Parts of These Machines; Machine for Drawing and Processing of Metal and Plastic Wire Rods (Int. Cl. 7).

SN 308,434. Peltzer & Ehlers, Krefeld, Germany. Filed Sept. 30, 1968.

### SPEEDMASTER

Owner of German Reg. No. 799,627, dated Jan. 20, 1965; and U.S. Reg. Nos. 711,495 and 845,854.
For High Speed Presses for Manufacturing Screws, Nuts, and Sundry Parts (Int. Cl. 7).

SN 308,435. Peltzer & Ehlers, Krefeld, Germany. Filed Sept. 30, 1968.

### BALLMASTER

Owner of German Reg. No. 839,658, dated Nov. 29, 1967; and U.S. Reg. Nos. 711,495 and 845,854.
For Machine Tools for Manufacturing Screws, Nuts, Rivets and Small Iron Parts as Well as Parts of These Machines; Machine for Drawing and Processing of Metal and Plastic Wire Rods (Int. Cl. 7).

SN 309,439. Closure Corporation, Linden, N.J. Filed Oct. 11, 1968.

### BOT-O-MATIC

For Automatic Taping Machines for Sealing Corrugated Boxes and the Like (Int. Cl. 7).
First use July 30, 1965.

SN 309,557. Eastman Machine Company, Buffalo, N.Y. Filed Oct. 14, 1968.

### BEVEL-BLOC

For Knife Sharpeners for Use on Cloth Cutting Machines (Int. Cl. 7).
First use Sept. 25, 1968.

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SN 314,437. Oneida Ltd., Oneida, N.Y. Filed Dec. 13, 1968. Owner of Reg. No. 508,899.

### CLARION

For Flatware Made of Non-Precious Metal (Int. Cl. 8).
First use Oct. 5, 1967.

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SN 316,462. The Paine Company, Addison, Ill. Filed Jan. 13, 1969.

### Shuvette

For Electric Hammer Drills, Hammer Drill Bits, Hand and Power Operated Hammer Drivers for Fastening Pins and Studs in Concrete, and Parts Thereof (Int. Cls. 7 and 8).
First use October 1968.

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SN 316,569. Murray Iron Works Company, Burlington, Iowa. Filed Jan. 15, 1969.

### MURRAY

For Fuel Oil Pump Units; Combination Fuel Oil Pumping and Straining Units; and Combination Fuel Oil Pumping, Straining, and Heating Units (Int. Cl. 7).
First use prior to 1960.

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SN 316,961. Aldo Controls and Mfg., Inc., Crystal Lake, Ill. Filed Jan. 21, 1969.

### MAGIC LINK

For Kits for Converting Automatic Chokes on Automobiles to Manual Control Chokes (Int. Cl. 7).
First use Dec. 1, 1967.

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SN 317,640. Stanray Corporation, Chicago, Ill. Filed Jan. 27, 1969.

### JETSTAIR

For Moving Staircase for Transferring Passengers to or From an Aircraft (Int. Cl. 7).
First use Nov. 27, 1968.

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SN 317,682. Robert W. Erenberg, Benson, Minn. Filed Jan. 28, 1969.

### MAN-U-PAK

For Hand Operable Tool for Closing Cartons (Int. Cl. 8).
First use Nov. 18, 1968.

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SN 319,235. Eversharp, Inc., Milford, Conn. Filed Feb. 17, 1969.

### SCHICK SUPER WITH BLUE KRONA EDGE

Applicant disclaims the terms "Blue" and "Edge" apart from the mark as shown. Owner of Reg. Nos. 702,520 and 737,096.
For Safety Razors, Safety Razor Blades, and Dispensers Therefor (Int. Cl. 8).
First use Feb. 5, 1969.

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SN 319,413. Colgate-Palmolive Company, New York, N.Y. Filed Feb. 18, 1969.

### LANCE

Owner of Reg. Nos. 786,540, 860,685, and 866,954.
For Razor Blades (Int. Cl. 8).
First use Jan. 24, 1969.

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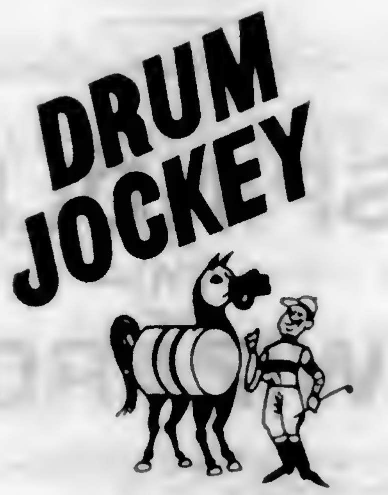
SN 319,786. Vermette Machine Company, Inc., Hammond, Ind. Filed Feb. 24, 1969.



The word "Drum" is disclaimed apart from the mark as shown.
For Handling Device for Drums—Namely, a Portable Hoist for Lifting, Dumping, Stacking, and Moving Such Containers (Int. Cl. 7).
First use Feb. 10, 1969.

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SN 323,901. SFM Corporation, Union, N.J. Filed Mar. 11, 1969.

### SPI-R-O-GRIND

For Tool Grinding and Form Relieving Fixtures and Machines (Int. Cl. 7).
First use November 1963.

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SN 324,107. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Apr. 9, 1969.

### TOPPER MIDGET

Owner of Reg. Nos. 788,458 and 860,019.
For Pump, Especially Adapted To Circulate Liquids Such as Liquid Cleaners in Industrial Operations (Int. Cl. 7).
First use Nov. 15, 1968.

SN 324,229. John J. Raiti, Greenville, Pa. Filed Apr. 10, 1969.

### KRU KUT

For Rotary Mower Blades (Int. Cl. 7).
First use Feb. 14, 1969.

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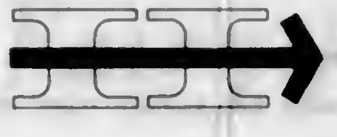
SN 324,593. Hydro Manufacturing & Sales, Inc., Missouri City, Tex. Filed Apr. 15, 1969.



### EDUCT-O-JET

For Nozzles for Wet-Sand Blasting (Int. Cl. 7).
First use August 1967.

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SN 324,993. The AFA Corporation of Florida, Miami, Fla. Filed Apr. 21, 1969.

### HURRICANE

For Manually Pressurized Hand Sprayers (Int. Cl. 8).
First use Feb. 5, 1968.

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SN 325,042. David Jaffe, d.b.a. Vac-U-Pic, Rahway, N.J. Filed Apr. 21, 1969.

### VAC-U-PIC

For Vacuum Operation System for Picking Up and Assembling Miniature Parts (Int. Cl. 7).
First use Apr. 15, 1965.

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SN 325,100. Wisconsin Foundry and Machine Company, Madison, Wis. Filed Apr. 21, 1969.

### STEIRO

For Machines for Making Concrete Pipes and Parts Thereof (Int. Cl. 7).
First use Jan. 1, 1960.

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SN 325,110. Grayline Housewares, Inc., Elgin, Ill. Filed Apr. 11, 1969.

### REAL-A-PEEL

For Fruit and Vegetable Hand-Paring Tools (Int. Cl. 8).
First use Nov. 1, 1936.

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## Class 24 — Laundry Appliances and Machines

SN 304,408. Systemation Inc., Scottsdale, Ariz. Filed Aug. 5, 1968.

### ASM

For Dry Cleaning Machines (Int. Cl. 7).
First use Mar. 15, 1967.

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SN 312,787. The Maytag Company, Newton, Iowa. Filed Nov. 21, 1968.

### PORTA-WASHER

For Clothes Washers, Accessories, and Parts Therefor (Int. Cl. 7).
First use in or before 1954.

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SN 316,486. Turco Manufacturing Company, Du Quoin, Ill. Filed Jan. 13, 1969.

### FRESH AS A DAISY

For Outdoor Clothesline Driers (Int. Cl. 22).
First use Dec. 22, 1968.

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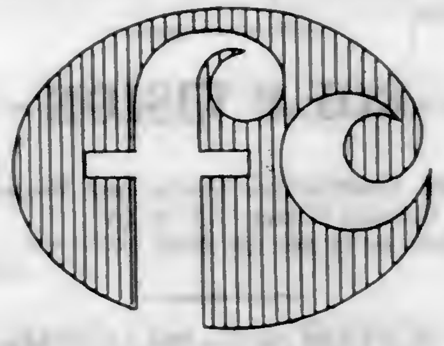
SN 321,428. Cleanamation, Inc., Anderson, Ind. Filed Jan. 17, 1969.



The drawing is lined for red, but color is not claimed as a part of the mark. Owner of Reg. Nos. 624,036, 631,723, and 766,677.
For Laundry and Dry Cleaning Equipment—Namely, Sleeve Presses, Puff Irons, Shirt Body Presses, Collar and Cuff Presses, Shirt Folders, Utility Presses, Coat Finishers, Pants Toppers, Pants Leg Presses, and Steam Cabinets (Int. Cl. 7).
First use October 1966.

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## Class 26 — Measuring and Scientific Appliances

SN 283,294. Western Geophysical Company of America, Houston, Tex. Filed Oct. 24, 1967.

### AQUAPULSE

For Marine Sound Sources and Non-Explosive Seismic Exploration Systems (Int. Cl. 9).
First use May 15, 1967.

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SN 291,692. Aden Supply Company, Grand Rapids, Mich. Filed Feb. 23, 1968.

### ADEN

For Safety Spectacles, Lenses, Cases for Safety Spectacles, Plant Visitors' Spectacles, Goggles, Optical Clip-Ons, Welding Helmets With Protective Plate Glass, Welding Filter Plates, Welding Cover Plates and Faceshields (Int. Cl. 9).
First use on or about July 1, 1958.

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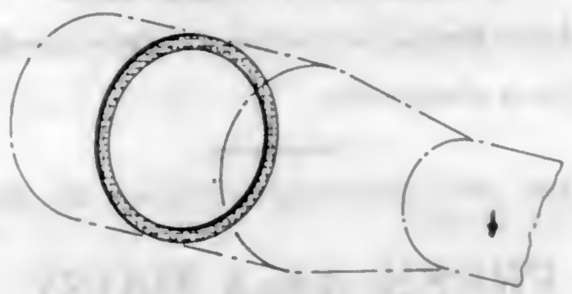
SN 297,016. Aden Supply Company, Grand Rapids, Mich. Filed May 1, 1968.

### A S

For Safety Spectacles, Lenses, Cases for Safety Spectacles, Plant Visitors' Spectacles, Goggles, Optical Clip-Ons, Welding Helmets With Protective Plate Glass, Welding Filter Plates, Welding Cover Plates and Faceshields (Int. Cl. 9).
First use on or about Jan. 15, 1968.

SN 299,780. Leupold & Stevens Instruments, Inc., Portland, Oreg. Filed June 5, 1968.



The drawing is lined for the color gold.
For Rifle Scopes (Int. Cl. 9).
First use January 1964.

SN 302,060. Radiant Corporation, Morton Grove, Ill. Filed July 31, 1969.

**ROLA VISION**

For Portable Combination Viewer and Projector for Use in Displaying Graphic Matter (Int. Cl. 9).
First use on or about Apr. 29, 1968.

SN 304,096. K Square Corporation, Pittsburgh, Pa. Filed Aug. 1, 1968.

**ULTRASCAN**

For Electronic Microscopes (Int. Cl. 9).
First use Oct. 3, 1967.

SN 305,202. Chain Lakes Research Corporation, Detroit, Mich., by change of name from Chain Lakes Research Associates, Inc., Detroit, Mich. Filed Aug. 15, 1968.

**SPEEDAR**

For Doppler Radar Units for Measuring Vehicle Speed (Int. Cl. 9).
First use June 11, 1968.

SN 306,370. Harnischfeger Corporation, Milwaukee, Wis. Filed Aug. 30, 1968.

**LODE-SAFE-T**

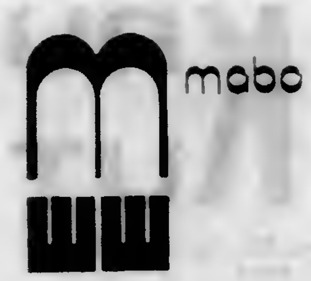
For Computer Designed To Warn a Crane Operator Whenever Any Combination of Load, Radius and Boom Length Approaches the Maximum Safe Ratings of the Crane (Int. Cl. 9).
First use July 3, 1968.

SN 306,502. Albert T. O'Neil, d.b.a. Learn-X Sensory Educational Systems, Lake City, Minn. Filed Sept. 3, 1968.

**LEARN-X**

For Manual and Electrical Teaching Devices for Teaching Arithmetic and Spelling (Int. Cl. 9).
First use July 31, 1968.

SN 308,314. Quenot & Cie., Trepillot, Besancon, France. Filed Sept. 26, 1968.



Owner of Reg. No. 782,821.
For Linear Measuring Instruments and Apparatus—Namely, Tape Measures and Rulers (Int. Cl. 9).
First use on or about Feb. 1, 1967; in commerce on or about Feb. 1, 1967.

SN 310,052. Auto-Photo Company, Los Angeles, Calif. Filed Oct. 21, 1968.

**AUTO-PHOTO**

Owner of Reg. Nos. 551,137, 620,555, and 651,463.
For Photographic Apparatus—Namely, Automatic or Coin-Actuated Camera and Film-Developing Equipment Contained in a Cabinet Designed To Accommodate the Seated Subject (Int. Cl. 9).
First use Feb. 14, 1947.

SN 316,137. Rodale Electronics, Inc., Garden City, N.Y. Filed Jan. 8, 1969.

Owner of Reg. No. 742,977.
For Potentiometer Tapping Kit (Int. Cl. 9).
First use Feb. 9, 1965.

SN 317,363. Omni Laboratories, Inc., Marblehead, Mass. Filed Jan. 23, 1969.

**OLYMPIC**

For Compasses, Wind Speed Meters, Marine Speedometers, and Depth Finders (Int. Cl. 9).
First use Dec. 24, 1968.

SN 317,364. OMNI Laboratories, Inc., Marblehead, Mass. Filed Jan. 23, 1969.

**OMNI**

For Compasses, Wind Speed Meters, Marine Speedometers, and Depth Finders (Int. Cl. 9).
First use Dec. 24, 1968.

SN 323,646. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Apr. 4, 1969.

**TRIMAR**

For Base Material, in Sheet or Strip Form, Upon Which a Layer of Photographically Sensitive Material Is Coated To Provide Photographic Film (Int. Cl. 1).
First use Mar. 26, 1969.

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## Class 27 — Horological Instruments

SN 316,356. World Wide Watch Co. Inc., New York, N.Y. Filed Jan. 10, 1969.

**DEPUTY SHERIFF**

For Watches (Int. Cl. 14).
First use Sept. 3, 1968.

SN 316,357. World Wide Watch Co. Inc., New York, N.Y. Filed Jan. 10, 1969.

*Fairy Princess*

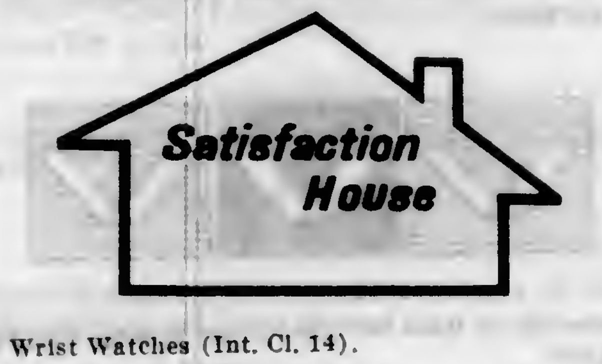
For Watches (Int. Cl. 14).
First use Sept. 3, 1968.

SN 316,359. World Wide Watch Co. Inc., New York, N.Y. Filed Jan. 10, 1969.

**ROAD RACER**

For Watches (Int. Cl. 14).
First use Sept. 3, 1968.

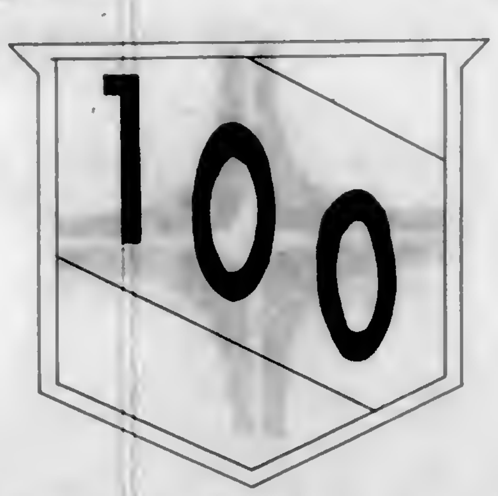
SN 327,941. Marketing Associates, Inc., d.b.a. Satisfaction House, St. Louis, Mo. Filed May 21, 1969.



For Wrist Watches (Int. Cl. 14).
First use Mar. 15, 1968.

## Class 28 — Jewelry and Precious-Metal Ware

SN 299,098. Century Diamond Ring Corp., New York, N.Y. Filed May 27, 1968.



For Finger Rings (Int. Cl. 14).
First use on or about Feb. 20, 1968.

SN 313,706. Kopelman & Shatz, Incorporated, Boston, Mass. Filed Dec. 5, 1968.

**K&S**

For Men's, Women's and Children's Jewelry, Rings, Earrings, Brooches, Necklaces, Bracelets, and the Like (Int. Cl. 14).
First use in or about September 1961.

SN 325,311. Zoltan Szatmari, Rio de Janiero, Brazil. Filed Apr. 23, 1969.

**SZ**

For Finger Rings, Earrings, Pins, Pendants, and Bracelets (Int. Cl. 14).
First use Apr. 21, 1969; in commerce Apr. 21, 1969.

## Class 30 — Crockery, Earthenware, and Porcelain

SN 292,506. Shenango Ceramics, Inc., New Castle, Pa. Filed Mar. 5, 1968.

**PALOS VERDES**

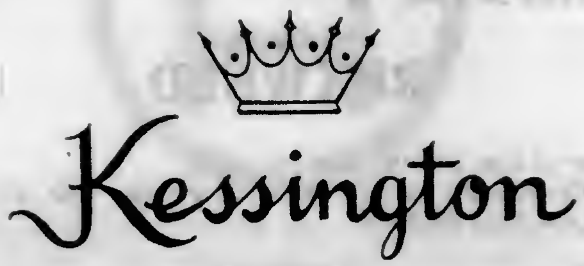
"Palos Verdes" is a Spanish expression meaning "green sticks"; it is also the Spanish plural form of the name of a thorny leafless tree or tall shrub.
For China Dinnerware (Int. Cl. 21).
First use Nov. 7, 1966.

SN 292,882. Elvin Buller, d.b.a. Merchandise Enterprises, Wichita, Kans. Filed Mar. 11, 1968.

**CROWN JEWEL**

For China Dinnerware (Int. Cl. 21).
First use on or about Aug. 19, 1960.

SN 324,510. Royal Song, Inc., Gardena, Calif. Filed Apr. 14, 1969.



For China Dinnerware (Int. Cl. 21).
First use May 1965.

## Class 31 — Filters and Refrigerators

SN 306,830. Wehr Corporation, d.b.a. Continental Air Filters, Inc., Milwaukee, Wis. Filed Sept. 6, 1968.

**CONO-45**

Owner of Reg. Nos. 656,432, 813,977, and others.
For Air Filters (Int. Cl. 11).
First use Apr. 23, 1968.

SN 307,819. AMBAC Industries, Inc., Detroit, Mich. Filed Sept. 20, 1968.

**MULTI-PORT**

For Filters for Hydraulic Fluid Systems (Int. Cl. 11).
First use Feb. 18, 1966.

SN 318,203. Lensclean Inc., New York, N.Y. Filed Feb. 3, 1969.

**ALL**

For Paper Coffee Filters (Int. Cl. 16).
First use Aug. 8, 1968.

## Class 32 — Furniture and Upholstery

SN 299,581. Packard Industries, Inc., Niles, Mich. Filed June 3, 1968.

**OFFICENTER**

For Office Work Station Units Consisting of Partitions and Desk-Forming Parts Supported by the Partitions (Int. Cl. 20).
First use May 25, 1968.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 294,205. Peerless of America, Incorporated, Chicago, Ill. Filed Mar. 26, 1968.

**SCREENTUBE**

For Heat Exchangers—Namely, Refrigerator Evaporators (Int. Cl. 11).
First use Feb. 21, 1968.

SN 303,399. Crucible Steel Corporation, Pittsburgh, Pa. Filed July 23, 1968.

**REXWELD**

Owner of Reg. No. 440,829.
For Consumable Metallic Welding Powder (Int. Cl. 1).
First use June 18, 1968.

SN 304,073. Fedders Corporation, Edison, N.J. Filed Aug. 1, 1968.

**LODESTONE**

For Air Conditioning Equipment—Namely, Cooling and Dehumidifying Units (Int. Cl. 11).
First use at least as early as 1963.

SN 304,075. Fedders Corporation, Edison, N.J. Filed Aug. 1, 1968.

**GOLDEN ERA**

For Room Air Conditioners (Int. Cl. 11).
First use at least as early as 1960.

SN 304,076. Fedders Corporation, Edison, N.J. Filed Aug. 1, 1968.

**FEDAIR**

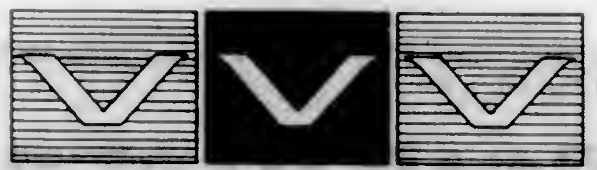
For Air Conditioning Equipment—Namely, Heating and Cooling Units for Home, Commercial, and Industrial Use (Int. Cl. 11).
First use at least as early as 1961.

SN 313,432. T. Wayne Miles, Los Angeles, Calif. Filed Dec. 2, 1968.

**FEATHEROCK**

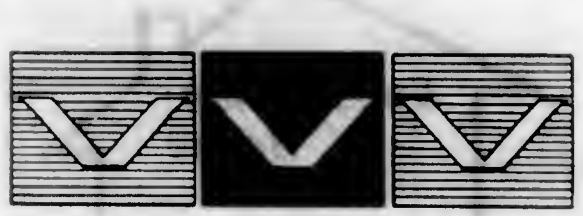
For Portable Barbecue Units (Int. Cl. 11).
First use Nov. 19, 1968.

SN 316,536. Jenn-Air Corporation, Indianapolis, Ind. Filed Jan. 14, 1969.



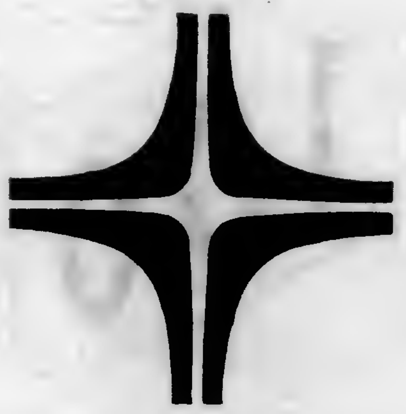
The drawing is lined for blue. Owner of Reg. Nos. 837,942 and 862,407.
For Ventilating Equipment—Namely, Air Ventilating and Exhausting Apparatus, and Combination Smoke Vent, Skylight and Air Supply Vent (Int. Cl. 11).
First use Feb. 15, 1966.

SN 316,537. Jenn-Air Corporation, Indianapolis, Ind. Filed Jan. 14, 1969.



The drawing is lined for blue. Owner of Reg. Nos. 837,942 and 862,407.
For Electric Cooking Stoves and Electric Cooking Stove Units—Namely, Ovens, Ranges, Broilers, Grills, Griddles; and Replacement Parts Therefor (Int. Cl. 11).
First use Nov. 18, 1966.

SN 319,378. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.



Owner of Reg. Nos. 861,348, 873,379, and others.
For Heat Exchangers (Int. Cl. 11).
First use Aug. 16, 1967.

SN 319,744. United Aircraft Products, Inc., Dayton, Ohio. Filed Feb. 20, 1969.

**UAP**

Owner of Reg. Nos. 625,261, 626,926, and others.
For Packaged Heat Transfer System, Comprising, in Part, a Heat Exchanger and Means for Circulating Fluids in Heat Transfer Relation therein, for Shipboard, Ground Equipment, and Aerospace Installations (Int. Cl. 11).
First use Dec. 2, 1966.

SN 320,627. Elmer O. Locker and Joyce T. Locker (joint owners), d.b.a. Ball Gift Shop, Santa Monica, Calif. Filed Mar. 3, 1969.

**LUV LITE**

Applicant disclaims the word "Lite" apart from the mark as shown.
For Candle Holder (Int. Cl. 21).
First use Jan. 7, 1969.

SN 323,011. Plastics, Inc., St. Paul, Minn. Filed Mar. 27, 1969.

**STARDUST**

For Plastic Outdoor Decorative Light Globes (Int. Cl. 11).
First use Feb. 6, 1969.

SN 323,086. Claudgen Limited, London, England. Filed Mar. 28, 1969.

**SANFIRE**

Owner of British Reg. No. 821,322, dated May 30, 1961.
For Incinerators and Parts Thereof (Int. Cl. 11).

SN 323,397. Western Gold and Platinum Company, Belmont, Calif. Filed Apr. 1, 1969.

**TIZIRBE**

For Brazing Alloys (Int. Cl. 6).
First use May 7, 1968.

SN 324,339. International Thermal Corporation, St. Louis, Mo. Filed Apr. 14, 1969.

**INTERTHERM**

For Oil, Gas and Electric Furnaces, Including Those for Mobile Homes and Travel Trailers, Metal Chimneys, Heating Duct Registers, Furnace-Mounted Humidifiers, Stoves, and Parts Therefor; Electric Baseboard Wall and Under-Cabinet Heaters and Air Conditioners (Int. Cl. 11).
First use Mar. 26, 1969.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 319,367. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.

**SPERRY RAND**

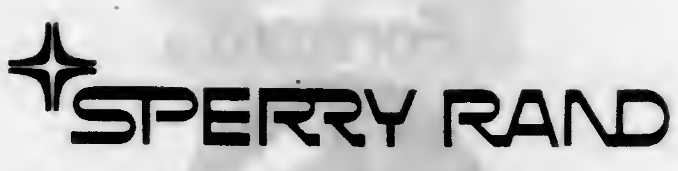
Owner of Reg. Nos. 861,348, 873,379, and others.
For Shaft Seals (Int. Cl. 17).
First use Aug. 16, 1967.

SN 319,373. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.

**SPERRY RAND**

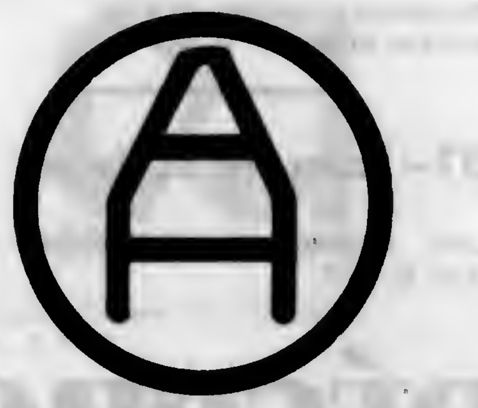
Owner of Reg. Nos. 861,348, 873,379, and others.
For Shaft Seals (Int. Cl. 17).
First use Aug. 16, 1967.

SN 319,385. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.



Owner of Reg. Nos. 861,348, 873,379, and others.
For Shaft Seals (Int. Cl. 17).
First use Aug. 16, 1967.

SN 320,410. Acme-Hamilton Manufacturing Corporation, Trenton, N.J. Filed Mar. 3, 1969.



The mark consists of the letters "AH" and circular design.
For Air Hose, Industrial Hose, Paint Spray Hose, Gasoline Hose, Oil Suction and Discharge Hose, Fire Engine Suction Hose, Bulk Material Transfer Hose, Steam Hose, Water Suction Hose, Vacuum Hose; Belting and Packing (Int. Cl. 17).
First use May 3, 1968.

SN 320,812. Garlock Inc., Palmyra, N.Y. Filed Mar. 5, 1969
Owner of Reg. No. 291,999.

**GUARDIAN**

For Fluorocarbon Resin Lined Flexible Duck and Rubber Expansion Joints and Connectors for Use in Piping Systems (Int. Cl. 17).
First use Aug. 11, 1966.

## Class 36 — Musical Instruments and Supplies

SN 305,833. J. Warner Killmon, d.b.a. Warner Piano Company, Philadelphia, Pa. Filed Aug. 23, 1968.

**Betsy Ross**

"Betsy Ross" is the name of an historical person who lived in the United States in the 18th and 19th centuries.
For Pianos (Int. Cl. 15).
First use Apr. 30, 1965.

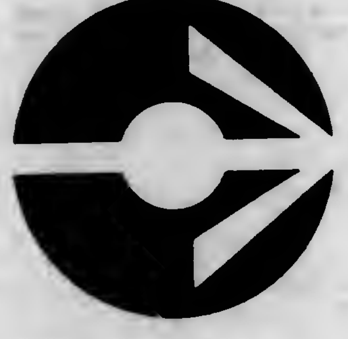
SN 330,397. Metro-Goldwyn-Mayer Inc., New York, N.Y. Filed June 18, 1969.

**MGM**

Owner of Reg. No. 516,143.
For Phonograph Records (Int. Cl. 9).
First use on or before Jan. 14, 1947.

SN 331,113. Forward Records Corporation, Los Angeles, Calif. Filed June 27, 1969.

**Forward**



For Phonograph Records (Int. Cl. 9).
First use Apr. 21, 1969.

## Class 37 — Paper and Stationery

SN 278,823. Riverside Paper Corporation, Appleton, Wis. Filed Aug. 22 1967.

**DÉCOROL**

For Poster and Construction Papers, for Arts and Crafts Use and Being Colored, Plain, Ruled, and Printed (Int. Cl. 16).
First use Jan. 13, 1967.

SN 299,042. Scott Paper Company, Philadelphia, Pa. Filed May 24, 1968.

**SOFT-WEVE PRINTS**

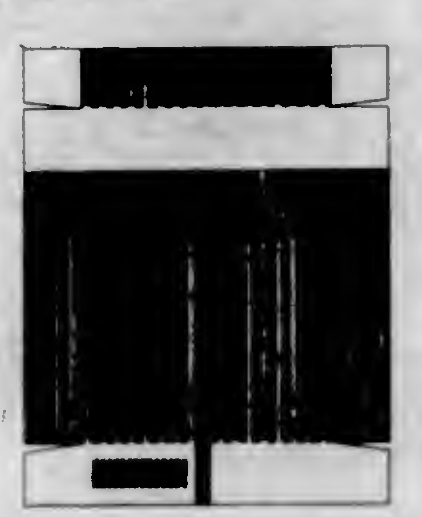
Applicant makes no claim to the word "Prints" apart from the mark as shown. Owner of Reg. No. 320,293.
For Bathroom Tissue (Int. Cl. 16).
First use Apr. 4, 1961.

SN 300,205. J. J. Lester & Co., Inc., d.b.a. Accountants' Supply House, Valley Stream, N.Y. Filed June 11, 1968.

**SIMPLA-PAY**

For Columnar Sheets and Pads for Accounting and Bookkeeping Purposes, payroll Systems—Namely, Employee Earnings Records, Payroll Journal Sheets, and Pay Notice Slips, and Forms for Both Purposes (Int. Cl. 16).
First use Oct. 23, 1967.

SN 301,117. Gary Industries, Inc., d.b.a. Acco Products, Chicago, Ill. Filed June 24, 1968.



Applicant disclaims the outline representation of the carton apart from the mark as shown. The drawing is lined for the color red. Owner of Reg. No. 735,684.
For Suspension Folders, File Folders, Loose-Leaf Binders, Covers for Loose-Leaf Sheets, Post Binders and Ring Binders (Int. Cl. 16).
First use on or about Mar. 1, 1968; 1909 as to the mark "Acco."

SN 310,395. Magic Marker Corporation, Glendale, N.Y. Filed Oct. 24, 1968.

**Magic Marker**

The exclusive right to the use of the word "Marker" apart from the mark as a whole is disclaimed. Owner of Reg. Nos. 641,610, 712,865, and others.
For Nylon Tipped Writing Instruments (Int. Cl. 16).
First use on or about Sept. 1, 1952.

SN 310,451. The Joseph Dixon Crucible Company, Jersey City, N.J. Filed Oct. 24, 1968.

**CLASSMATE**

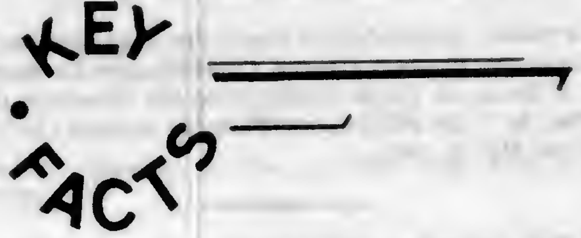
For Lead Pencils (Int. Cl. 16).
First use July 1, 1924.

SN 316,781. Ethyl Corporation, Richmond, Va. Filed Jan. 16, 1969.

**SCANAMASTER**

For Coated Papers Especially Coated for Receiving a Carbon Image (Int. Cl. 16).
First use in or about 1960.

SN 317,532. Data Management, Incorporated, Farmington, Conn. Filed Jan. 27, 1969.



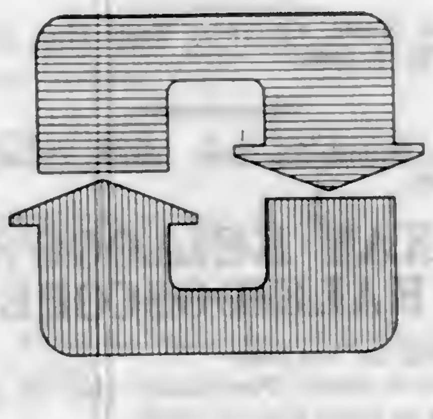
For Accounting and Bookkeeping Records—Namely, Binders, Ledger Sheets, Account Sheets; Sheets for Recording Tax Deductible Items, Income, Stock Dividends, and Various Other Items of Information; and Other Sheets for Recording and Deriving Information of Interest to Financial Status and Operations (Int. Cl. 16).
First use on or before Oct. 15, 1968.

SN 318,259. Westab Inc., Dayton, Ohio. Filed Feb. 3, 1969. Owner of Reg. Nos. 71,143 and 501,500.

**VARSITY**

For Stationery Products—Namely, Looseleaf Ring Binders and Contents Comprising Clip, Notebook Paper, Blank Books, Dictionary, and Index Cards and Guides (Int. Cl. 16).
First use Mar. 2, 1899, on blank books.

SN 329,818. United States Envelope Company, Springfield, Mass. Filed June 12, 1969.



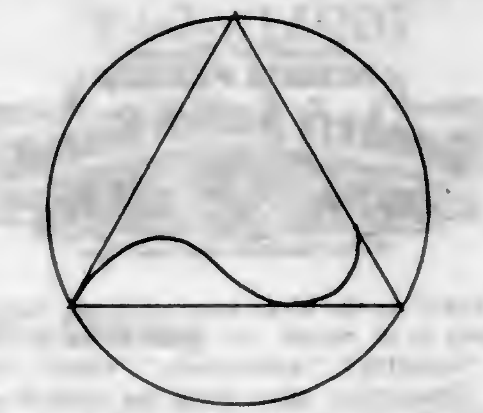
The drawing is lined for red and blue.
For Envelopes (Int. Cl. 16).
First use July 8, 1968.

## Class 38 — Prints and Publications

SN 278,533. State Alert Systems, Louisville, Ky. Filed Aug. 17, 1967.

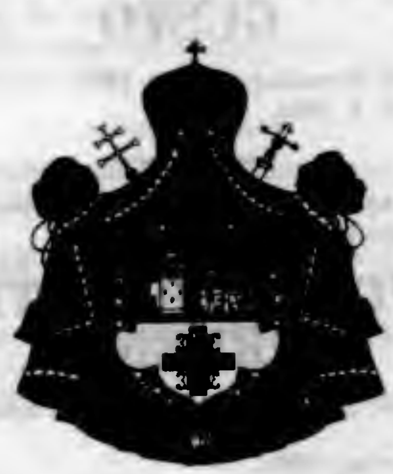
For Weekly Reports on Bills Being Considered in Selected State Legislatures (Int. Cl. 16).
First use 1967.

SN 285,961. W. John Weilgart, Decorah, Iowa. Filed Nov. 30, 1967.



For Books and Pamphlets (Int. Cl. 16).
First use Mar. 9, 1952.

SN 286,184. Serbian Orthodox Church, Chicago, Ill. Filed Dec. 4, 1967.



The drawing is lined for the colors red, blue, and gold.
For Religious Magazines (Int. Cl. 16).
First use Jan. 1, 1951.

SN 289,006. Camera Art School Photographers, Inc., Lewiston, Minn. Filed Jan. 17, 1968.

For Photographic Pictures (Int. Cl. 16).
First use Jan. 3, 1967.

SN 291,507. Larry Gore Associates, Inc., New York, N.Y. Filed Feb. 20, 1968.

**LARRY GORE'S THING**

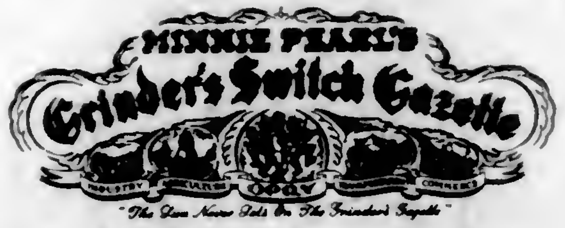
Larry Gore is president of applicant corporation.
For Newspaper Column (Int. Cl. 16).
First use Oct. 9, 1967.

SN 299,317. Lloyd H. Banning, Albany, Oreg. Filed May 29, 1968.

**CAL-KOMTER**

For Calorie Counting Guide Book and Calculator (Int. Cl. 16).
First use Apr. 15, 1968.

SN 302,748. Minnie Pearl's Chicken System, Inc., Nashville, Tenn. Filed July 15, 1968.



"Minnie Pearl" is the stage name of Sarah Ophelia Cannon whose consent is of record. No claim is made to the words "Gazette," "Industry," "Agriculture," "Opry," "Transportation," and "Commerce," apart from the mark as shown.
For Monthly Newsletter (Int. Cl. 16).
First use Feb. 17, 1968.

SN 307,573. Gusto International Ltd., New York, N.Y. Filed Sept. 17, 1968.

## GUSTO

For Quarterly Magazine (Int. Cl. 16).
First use Aug. 1, 1968.

SN 311,218. Abbott Laboratories, d.b.a. Ross Laboratories, North Chicago, Ill. Filed Nov. 4, 1968.

## PUBLIC HEALTH CURRENTS

For Periodical Newsletter Relating to Public Health (Int. Cl. 16).
First use January 1968.

SN 311,802. Abbott Laboratories, d.b.a. Ross Laboratories, North Chicago, Ill. Filed Nov. 12, 1968.

## PEDIATRIC NURSING CURRENTS

For Periodical Publication Relating to Pediatric Nursing (Int. Cl. 16).
First use May 1964.

SN 313,490. Bride's Showcase International, Inc., New York, N.Y. Filed Dec. 3, 1968.

## BRIDE WISE

For Monthly House Organ for Applicant's Franchise Bridal Shops (Int. Cl. 16).
First use Oct. 14, 1968.

SN 314,598. Newsday, Inc., Garden City, N.Y. Filed Dec. 16, 1968.

## DESIGNING WOMAN

For Syndicated Newspaper Column (Int. Cl. 16).
First use Sept. 23, 1968.

SN 314,803. Metallurgical Research and Development Company, Inc., Washington, D.C. Filed Dec. 18, 1968.

## NATIONAL MEDIA ANALYSIS

For Newsletter Issued From Time to Time (Int. Cl. 16).
First use Sept. 15, 1960.

SN 315,101. The Peterson System, Inc., d.b.a. Peterson Handwriting, Greensburg, Pa. Filed Dec. 23, 1968.

## SEE AND DO

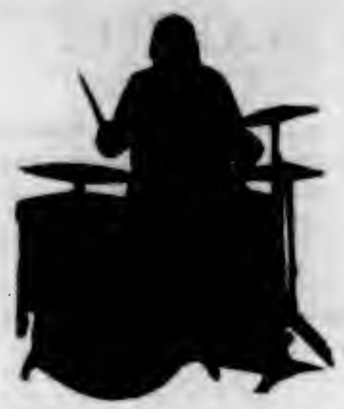
For Printed Materials for Teaching Handwriting to the Students in the Primary Grades, Consisting of Envelopes Containing a Series of Cards Illustrating the Direction of Movement That Is To Be Followed in Forming Letters (Int. Cl. 16).
First use May 6, 1968.

SN 317,697. American Map Company, Inc., New York, N.Y. Filed Jan. 28, 1969.

## MAGNEMAP

For Maps and Map Accessories—Namely, Maps Mounted on Ferrous Backing Material and Map Markers of Various Shapes, Including Permanent Magnets for Use With Such Maps (Int. Cl. 16).
First use at least as early as Jan. 1, 1956.

SN 319,505. Raldor Music Productions, Inc., Jericho, N.Y. Filed Feb. 18, 1969.



For Printed Music, e.g. Sheet Music (Int. Cl. 16).
First use Feb. 7, 1968.

SN 323,108. Kellogg Company, Battle Creek, Mich. Filed Mar. 28, 1969.

## KAY KELLOGG'S KALEIDOSCOPE

Owner of Reg. No. 601,700.
For Newsletter Issued Periodically (Int. Cl. 16).
First use on or about Nov. 15, 1968.

SN 323,825. L & N Company, Wichita, Kans. Filed Apr. 7, 1969.

## GLAS-ART

For Decorative Decals (Int. Cl. 16).
First use Jan. 20, 1969.

SN 323,826. L & N Company, Wichita, Kans. Filed Apr. 7, 1969.

## ASTRO-STIKS

For Decorative Decals (Int. Cl. 16).
First use Jan. 20, 1969.

SN 324,275. Archie Music Corp., New York, N.Y. Filed Apr. 11, 1969.

## MAD HOUSE MA-AD

For Comic Magazine (Int. Cl. 16).
First use Nov. 5, 1968.

SN 324,319. That Wilkin Boy, Inc., New York, N.Y. Filed Apr. 11, 1969.

## THAT WILKIN BOY

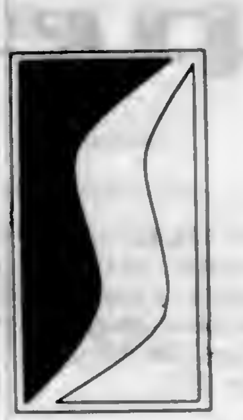
For Comic Magazine (Int. Cl. 16).
First use Oct. 8, 1968.

SN 324,398. Stephen W. Brener, New York, N.Y. Filed Apr. 14, 1969.

## MOTEL HEADLINES

For Periodical Newsletter (Int. Cl. 16).
First use February 1957.

SN 324,943. Stencel Aero Engineering Corporation, Arden, N.C. Filed Apr. 18, 1969.



The mark consists of a stylized letter "S" and design.
For Periodical Neswletter (Int. Cl. 16).
First use at least as early as June 1, 1968.

SN 324,944. Stencel Aero Engineering Corporation, Arden, N.C. Filed Apr. 18, 1969.

## STENCEL AEROGRAM

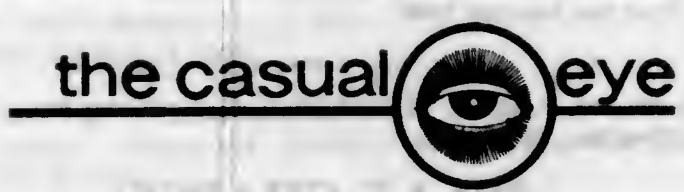
For Periodical Newsletter (Int. Cl. 16).
First use at least as early as Feb. 1, 1969.

SN 327,319. Marksman Enterprises, Inc., New York, N.Y. Filed May 15, 1969.

*The Metropolitan Clique*

For Correspondence Club Magazine (Int. Cl. 16).
First use May 1, 1969.

SN 327,853. Casual Corner Associates Inc., Washington, D.C. Filed May 21, 1969.



For Newspaper Published From Time to Time and Relating to Women's Clothing Fashions (Int. Cl. 16).
First use Apr. 1, 1969.

SN 328,803. Geo. J. Ball, Inc., West Chicago, Ill. Filed June 2, 1969.

## TAG-ALONG

Owner of Reg. No. 768,436.
For Printed Markers for Use by Commercial Plant Growers in Marking Plants and Plant Containers (Int. Cl. 16).
First use during 1962.

## Class 39 — Clothing

SN 275,144. International Playtex Corporation, Dover, Del. Filed June 30, 1967.

## SMOOTH 'N SHAPELY

Owner of Reg. No. 830,409.
For Foundation Garments (Int. Cl. 25).
First use May 24, 1967.

SN 283,140. Miss America Brassiere Company, Inc., Chicago, Ill. Filed Oct. 23, 1967.

## MISS AMERICA

Owner of Reg. Nos. 224,499, 660,389, and 768,211.
For Ladies' and Girls' Hosiery (Int. Cl. 25).
First use July 14, 1967; Feb. 16, 1926, on related goods.

SN 290,550. Valstar Limited, London, England. Filed Feb. 7, 1968.

## GANGSTERS

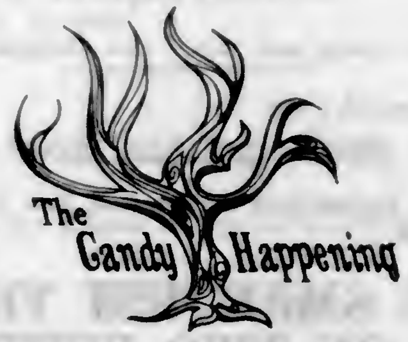
For Outerwear—Namely, Ladies' Rainwear, Casual Jackets, and Skirts (Int. Cl. 25).
First use July 1967; in commerce July 1967.

SN 304,754. Bartson's, Antwerp, Belgium. Filed Aug. 9, 1968.

**Bartson's**

Priority claimed under Sec. 44(d) on Belgian Reg. No. 20,137, dated June 10, 1968.
For Articles of Clothing, Especially Rainwear (Int. Cl. 25).

SN 306,118. The Candy Happening, Westwood, Calif. Filed Aug. 28, 1968.



For Dresses, Blouses, Skirts, Pants, Slacks, Hats, Scarfs, Bathing Suits, and Sweaters for Women (Int. Cl. 25).
First use Aug. 13, 1968.

SN 310,239. Lewis & Black Limited, London, England. Filed Oct. 22, 1968.

**BACCARAT**

For Articles of Clothing for Women and Girls—Namely, Dresses, Jeans, Slacks, Coats, Skirts, Suits, Blouses, Bathing Suits, Beach Robes, Jumpers, Cardigans, Shirts, Belts, Shorts, Jackets, Caps, Blazers, Jumpsuits, Shifts, Housecoats, Pajamas, Playsuits, Vests, Jodhpurs, Culottes, Tunics, Leotards, Raincoats, Pinafores, Slack-Suits, and Shoes (Int. Cl. 25).
First use January 1968; in commerce July 30, 1968.

SN 311,593. L. Gidding & Co., Inc., New York, N.Y. Filed Nov. 7, 1968.

**TRIM JUNIORS**

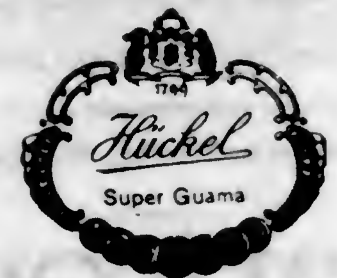
The word "Juniors" is disclaimed apart from the mark as shown. Owner of Reg. No. 690,976.
For Subteen, Young Junior, Preteen and Petite Junior Dresses, Blouses, Slacks, Shorts, Slips, Panties, Jumpers, Suits, Coats, Skirts, Swim Suits, Pajamas, Jackets, and Raincoats (Int. Cl. 25).
First use Jan. 10, 1968.

SN 318,134. Charles Komar & Sons, Seamprufe Corporation, New York, N.Y. Filed Feb. 3, 1969.

**SNAP WRAP**

The word "Wrap" is disclaimed apart from its use in the mark.
For House Coat (Int. Cl. 25).
First use December 1968.

SN 320,099. Tonak, Tovarna na Klobouky, Narodni Podnik, Novy Jicin, Czechoslovakia. Filed Feb. 25, 1969.



The word "Super" is disclaimed apart from the mark as shown. Owner of Czechoslovakian Reg. No. 158,166, dated Apr. 11, 1968; and U.S. Reg. No. 606,862.
For Headwear for Men, Women, and Children; and Hat Bodies (Int. Cl. 25).

SN 320,628. Lodenfrey Ltd., Holbrook, Mass. Filed Mar. 3, 1969.

**COATIQUE**

For Ladies' Coats and Men's and Children's Coats (Int. Cl. 25).
First use Dec. 23, 1968.

SN 320,957. Kayser-Roth Corporation, New York, N.Y. Filed Mar. 6, 1969.

**THE SMARTEST THING ON TWO FEET**

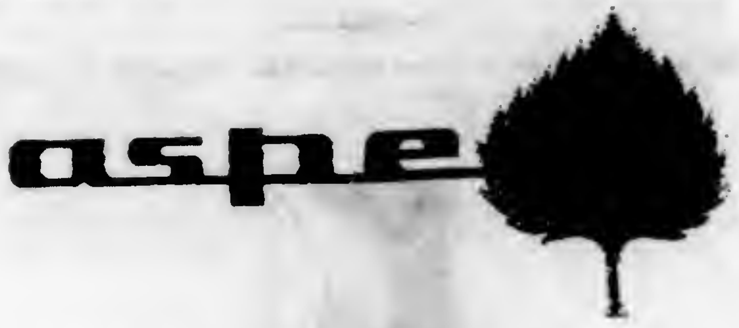
For Men's and Boys' Hosiery (Int. Cl. 25).
First use Mar. 1, 1948.

SN 321,221. Hilb Manufacturing Company, Denver, Colo. Filed Mar. 10, 1969.

**aspen**

Owner of Reg. Nos. 582,613 and 689,150.
For Children's, Ladies', and Men's Ski Wearing Apparel—Namely, Parkas, Pants, Sweaters, Wind Shirts, Turtleneck Knitted Shirts, Knickers, Warm-Up Pants, After-Ski Boots, Ski Hats, and Ski Caps (Int. Cl. 25).
First use May 1, 1949 on sweaters.

SN 321,222. Hilb Manufacturing Company, Denver, Colo. Filed Mar. 10, 1969.



Owner of Reg. Nos. 582,613 and 689,150.
For Children's, Ladies', and Men's Ski Wearing Apparel—Namely, Parkas, Pants, Sweaters, Wind Shirts, Turtleneck Knitted Shirts, Knickers, Warm-Up Pants, After-Ski Boots, Ski Hats, and Ski Caps (Int. Cl. 25).
First use February 1967.

SN 321,416. Vaned, Inc., Staten Island, N.Y. Filed Mar. 11, 1969.

Without relinquishing any of its common-law rights therein, applicant disclaims the terms "Fashioned by" and "U.S.A." apart from the mark in its entirety.
For Trousers, Slacks, and Pants for Men and Women (Int. Cl. 25).
First use Feb. 20, 1969.

SN 321,809. The Kandahar Sportswear Co., Inc., Allentown, Pa. Filed Mar. 14, 1969.

Kandahar
**escadrille**
**collection**

For Knit Shirts and Sweaters (Int. Cl. 25).
First use January 1969.

SN 321,999. Alice C. Stewart, d.b.a. Alyce, Spring Lake, N.J. Filed Mar. 17, 1969.

**"SLAX-CHAPS"**

For Aprons (Int. Cl. 25).
First use Feb. 27, 1969.

SN 322,635. Russel Taylor, Inc., New York, N.Y. Filed Mar. 24, 1969.

**CANOTTA**

For Ladies' and Men's Pile Fabric Coats (Int. Cl. 25).
First use Jan. 31, 1969.

SN 323,561. Grey Hosiery Mills, d.b.a. Mary Grey Hosiery Mills, Bristol, Va. Filed Apr. 3, 1969.

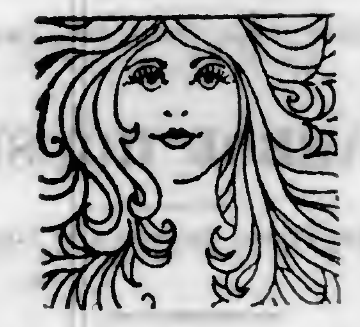
*Mary Grey*

STAY UP
**HipPetters**
with elastic top

"Mary Grey" is the name of a living individual whose consent is of record. The words "Stay Up With Elastic Top" are disclaimed apart from the mark shown. Owner of Reg. Nos. 396,554, 565,274, and others.
For Hosiery (Int. Cl. 25).
First use about Dec. 2, 1968.

SN 323,924. Wheels of Fashion, Inc., Los Angeles, Calif. Filed Apr. 8, 1969.

Wheels
of Fashion



The words "of Fashion" are disclaimed apart from the mark as shown.
For Ladies' and Misses' Dresses, Blouses, Sweaters, Suits, Slips, and Negligees (Int. Cl. 25).
First use Feb. 3, 1969.

SN 325,675. Zayre Corp. Natick, Mass. Filed Apr. 28, 1969.
The word "Press" is disclaimed apart from the mark as shown.

**VAL PRESS**

For Dress Shirts, Sport Shirts, Knit Shirts, Handkerchiefs, Walk Shorts, Work Shirts, Work Pants, Casual Slacks, T-Shirts, Boxer Shorts, Pajamas, and Robes for Men (Int. Cls. 24 and 25).
First use about Apr. 1, 1966.

SN 329,405. Camp and McInnes, Inc., Reading, Pa. Filed June 10, 1969.

**HEATHER GLEN**

For Men's Hosiery (Int. Cl. 25).
First use May 16, 1969.

SN 329,576. Camp and McInnes, Inc., Reading, Pa. Filed June 10, 1969.

**HEATHMOOR**

For Men's Hosiery (Int. Cl. 25).
First use May 16, 1969.

## Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 312,147. E. T. Barwick Industries, Inc., Chamblee, Ga. Filed Nov. 14, 1968.

**RUMPUS**

For Carpets (Int. Cl. 27).
First use May 10, 1966.

## Class 44—Dental, Medical, and Surgical Appliances

SN 311,846. Durallium Products Corp., Chicago, Ill. Filed Nov. 12, 1968.

**DURAMETRICS**

Owner of Reg. No. 396,869.
For Dental Alloys, Casting Materials, Dental Fittings, Orthodontic Appliances, Cast Dental Restorations, Wire and Wire Clasps for Dental Use, and Dentures (Int. Cls. 5 and 10).
First use 1954 on casting materials.

SN 325,280. Beam-Matic Hospital Supply, Inc., Long Island City, N.Y. Filed Apr. 23, 1969.

**BEAM-MATIC**

For Hospital Feeding Trays, Screens and Bed Rails (Int. Cls. 20 and 21).
First use on or about Mar. 1, 1953.

## Class 45—Soft Drinks and Carbonated Waters

SN 311,020. Duffy-Mott Company, Inc., New York, N.Y. Filed Oct. 31, 1968.

**APPLETIZER**

For Mixed Fruit Juice Drink (Int. Cl. 32).
First use Sept. 30, 1968.

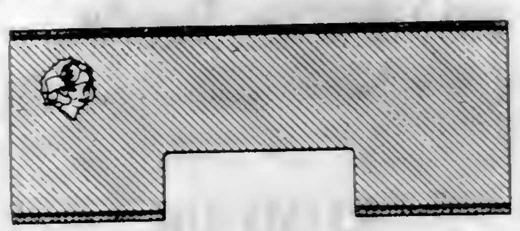
## Class 46—Foods and Ingredients of Foods

SN 229,360. John Krauss, Incorporated, Jamaica, N.Y. Filed Oct. 5, 1965.

**KRAUSS**

For Meat Products—Namely, Fresh, Cured and Smoked Hams, Bacon, Bologna, Fresh and Dry Sausage, and Franks (Int. Cl. 29).
First use December 1954.

SN 268,161. The Creamette Company, Minneapolis, Minn. Filed Apr. 3, 1967.

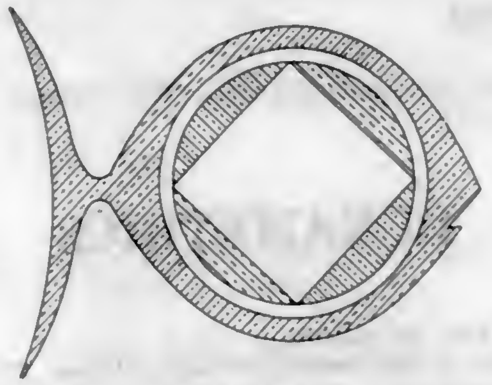


The Portrait of the girl is fanciful. The drawing is lined for the colors green and yellow. Owner of Reg. No. 216,574.

For Alimentary Pastes (Int. Cl. 30).

First use May 1, 1961; 1916 in a different form.

SN 287,455. New England Fish Company, Seattle, Wash. Filed Dec. 22, 1967.



The drawing is stippled for shading purposes only. Owner of Reg. Nos. 88,821, 655,320, and others.

For Seafoods, Including Canned, Fresh Frozen, Frozen, and Vacuum-Packed Seafoods (Int. Cl. 29).

First use on or about June 3, 1958.

SN 294,870. A. Szelagowski & Son, Inc., Buffalo, N.Y. Filed Apr. 3, 1968.

### SHELLY BRAND

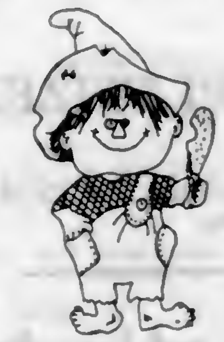
The word "Brand" is disclaimed apart from the mark as shown.

For Sausage, Smoked Meats, Frozen Poultry, Canned Meats, Fresh, Frozen and Cured Beef, Fresh Pork, and Lard (Int. Cl. 29).

First use Aug. 8, 1958.

SN 300,322. Plantation Boy Seasoning, d.b.a. Plantation Boy, Menasha, Wis. Filed June 13, 1968.

### PLANTATION BOY



For Batter Mix for Seafood and Fowl (Int. Cl. 30).

First use Apr. 21, 1967.

SN 303,354. The Smithfield Ham and Products Company, Incorporated, Smithfield, Va. Filed July 22, 1968.

### CHEE-ZE-QUE

For Barbecue Sandwich (Int. Cl. 29).

First use May 15, 1967.

SN 306,144. Hunt-Wesson Foods, Inc., Fullerton, Calif. Filed Aug. 28, 1968.

### CLAROLA

Owner of Reg. No. 114,155.

For Vegetable Oil (Int. Cl. 29).

First use Apr. 22, 1968.

SN 306,335. Carnation Company, Los Angeles, Calif. Filed Aug. 30, 1968.

### SMORGASBIRD

For Animal Feed—Namely, Domestic and Wild Bird Feed (Int. Cl. 31).

First use Aug. 13, 1968.

SN 306,337. Carnation Company, Los Angeles, Calif. Filed Aug. 30, 1968.

### SEREN-ADE

For Animal Feed—Namely, Domestic and Wild Bird Feed (Int. Cl. 31).

First use Aug. 13, 1968.

SN 308,620. Harbor House Foods, Inc., Tampa, Fla. Filed Oct. 1, 1968.

### HARBOR HOUSE

For Prepared and Frozen Shrimp Curry (Int. Cl. 29).

First use 1960.

SN 310,041. Western Meat Packers, Inc., Grand Junction, Colo. Filed Oct. 21, 1968.

For Meat Products—Namely, Pork Sausage Rolls, Pork Sausage Links, Italian Sausage, Bratwurst, Wieners, Bologna, Salami, Braunschweiger, Polish Sausage, Frankfurters, Chili, Pepperoni, Rendered Beef Fat, Smoked Hams, Boneless Smoked Hams, Slab Bacon, Smoked Pork Shoulder Picnics, Smoked Jowl Bacon, Sliced Bacon, and Lard (Int. Cl. 29).

First use on or about Jan. 10, 1964.

SN 310,937. Ruth Enos Tennison, d.b.a. Enos Confections, Clifton Heights, Pa. Filed Oct. 30, 1968.

The word "Sesame" is disclaimed apart from the mark.

For Confection Comprised Principally of Sesame Seed, Honey, Non-Fat Dry Milk (Int. Cl. 30).

First use Nov. 1, 1967.

SN 314,008. National Biscuit Company, New York, N.Y. Filed Nov. 8, 1968.

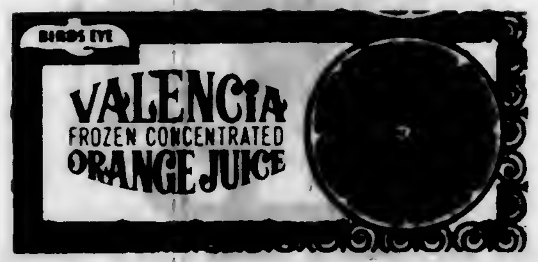
### PREMIUM SALTINES—THE CRACKER WITH CRUNCH

Applicant disclaims any exclusive rights to the words "Saltines" and "Cracker" apart from the mark as shown. Owner of Reg. No. 63,286.

For Biscuits and Crackers (Int. Cl. 30).

First use Oct. 23, 1968.

SN 316,428. General Foods Corporation, White Plains, N.Y. Filed Jan. 13, 1969.



Applicant disclaims the words "Valencia Frozen Concentrated Orange Juice" apart from the mark as shown. Owner of Reg. Nos. 664,142, 856,127, and others.

For Frozen Concentrated Orange Juice (Int. Cl. 32).

First use Sept. 20, 1967; Feb. 15, 1930, as to "Birds Eye."

SN 317,439. Crown Candy Corporation, Atlanta, Ga. Filed Jan. 24, 1969.

### PECANOLA

For Candy (Int. Cl. 30).

First use 1941.

SN 317,777. Uddo & Taormina Corporation, Jersey City, N.J. Filed Jan. 28, 1969.

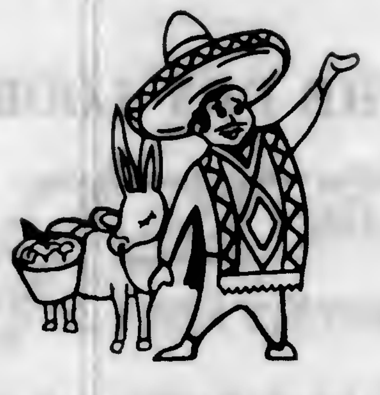
### PROGRESSO

Owner of Reg. Nos. 398,874, 708,478, and others.

For Edible Olive Oil, Frozen Prepared Pizza, Frozen Prepared Chicken Cacciatore, Frozen Prepared Shrimp Marianara, Frozen Prepared Spaghetti and Meatballs, Frozen Prepared Veal Scaloppine, Frozen Prepared Sweet Sausages and Peppers, Frozen Prepared Peppers Stuffed With Beef, and Frozen Prepared Beef Ravioli (Int. Cls. 29 and 30).

First use July 1909.

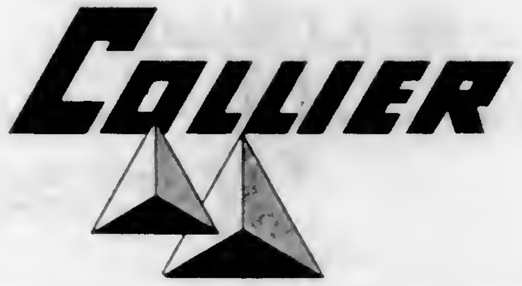
SN 318,311. La Preferida, Inc., Chicago, Ill. Filed Feb. 4, 1969.



For Frozen and Canned Prepared Foods—Namely, Menudo (Soup); Refried Beans, Refried Beans With Chorizo (Sausage); Beef; Tamales; Enchiladas; Beef Taco Filler, Taco Shells; Tortillas; Chili Con Carne, Chili With and Without Beans; Hot Peppers; and Hot Sauces (Int. Cls. 29 and 30).

First use Dec. 2, 1968.

SN 323,433. Collier Carbon and Chemical Corporation, Los Angeles, Calif. Filed Apr. 2, 1969.



The drawing is lined to indicate shading only. Owner of Reg. No. 762,154.

For Urea, Sold for Use as a Food Supplement for Animals (Int. Cl. 31).

First use May 25, 1967.

## Class 47 — Wines

SN 318,242. The Taylor Wine Company, Inc., Hammondsport, N.Y. Filed Feb. 3, 1969.

### LAKE COUNTRY WHITE

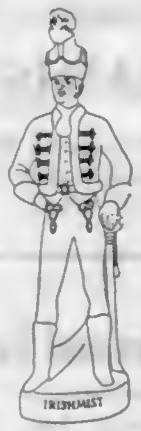
The word "White" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 833,775 and 833,776.

For Wine (Int. Cl. 33).

First use Aug. 1, 1968.

## Class 49 — Distilled Alcoholic Liquors

SN 306,911. The Irish Mist Liqueur Co. Ltd., Tullamore, Ireland. Filed Sept. 9, 1968.

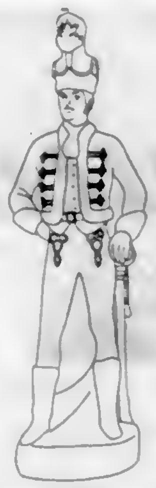


The mark consists of the representation of the container for the goods with the wording thereon. Owner of U.S. Reg. No. 615,941.

For Irish Liqueur (Int. Cl. 33).

First use on or about July 10, 1965; in commerce during September 1965.

SN 306,912. The Irish Mist Liqueur Co. Ltd., Tullamore, Ireland. Filed Sept. 9, 1968.



The mark consists of the representation of the container for the goods.
For Irish Liqueur (Int. Cl. 33).
First use on or about July 10, 1965; in commerce during September 1965.

SN 323,475. Schenley Distillers, Inc., d.b.a. Royal Club Import Co., New York, N.Y. Filed Apr. 2, 1969.

**CANADA CUP**

Applicant disclaims the word "Canada" apart from the mark as shown.
For Canadian Whisky (Int. Cl. 33).
First use Dec. 12, 1968.

## Class 50 — Merchandise Not Otherwise Classified

SN 296,688. Gerald Bernard Gallery, Inc., d.b.a. Up-Down Specialties, Chicago, Ill. Filed Apr. 26, 1968.

**OLD TOWN**

For Visual Effect Device Consisting of a Shallow Box, Translucent Panel With a Transparency, and Group of Electrical Lamps Displaying Various Color Effects (Int. Cl. 9).
First use Oct. 30, 1967.

SN 325,081. Sea-Mist Corporation, Barberton, Ohio. Filed Apr. 21, 1969.

**SEAMIST**

For Decorative Water Fountains Which Are Self-Sufficient Decorative Fountain Assemblies (Int. Cl. 11).
First use Dec. 9, 1968.

## Class 51 — Cosmetics and Toilet Preparations

SN 297,950. Avon Products, Inc., New York, N.Y. Filed May 13, 1968.

**CHARISMA . . . THE WOMAN WHO WEARS IT . . . HAS IT!**

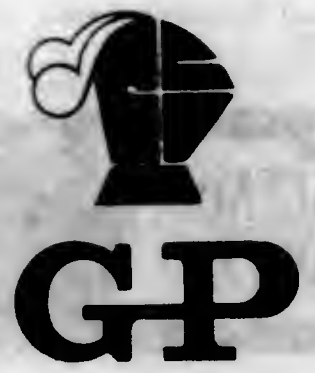
For Perfume, Cologne, Dusting Powder, Cream Sachet, and Powder Sachet (Int. Cl. 3).
First use Apr. 23, 1968.

SN 299,295. Avon Products, Inc., New York, N.Y. Filed May 29, 1968.

**SAGUARO**

For After Shave Lotion and Talcum Powder (Int. Cl. 3).
First use May 10, 1968.

SN 300,994. The J. R. Watkins Company (Africa) (Proprietary) Limited, New Era Springs, Transvaal, Republic of South Africa. Filed June 20, 1968.



Owner of South African Reg. No. 67/3698, dated Aug. 24, 1967.
For After Shave Lotion; Pre-Electric Shave Lotion; Foam Shave Cream; Cologne; Talcum Powder; Personal Deodorant; Foot Powder; and Hair Tonic (Int. Cls. 3 and 5).

SN 301,697. Bristol-Myers Company, New York, N.Y. Filed July 1, 1968.

**RANCHER'S**

For Skin Lotion (Int. Cl. 3).
First use May 29, 1968.

SN 310,945. Tom Fields, Ltd., Northvale, N.J. Filed Oct. 30, 1968.

**FLYING CLIPPER**

For Hair Tonic and an All-Purpose Skin Lotion (Int. Cl. 3).
First use Sept. 25, 1968.

SN 317,498. The Gillette Company, Boston, Mass. Filed Jan. 27, 1969.

**THE DRY LOOK**

For Hair Grooming Preparation (Int. Cl. 3).
First use Jan. 15, 1969.

SN 323,937. Bristol-Myers Company, New York, N.Y. Filed Apr. 8, 1969.

**SON OF VITALIS**

Owner of Reg. Nos. 712,615, 713,953, and 831,969.
For Hair Groom and Conditioner (Int. Cl. 3).
First use Mar. 12, 1969.

SN 327,452. The Gillette Company, Boston, Mass. Filed May 16, 1969.

**VOLTAGE**

For Cologne and After Shave Lotion (Int. Cl. 3).
First use Apr. 22, 1969.

SN 327,916. S. S. Kresge Company, Detroit, Mich. Filed May 21, 1969.

**SK**

The drawing is lined for the colors red and blue. Owner of Reg. Nos. 847,759, 856,165, and others.
For Toothpaste and Mouthwashes (Int. Cl. 3).
First use on or prior to Mar. 1, 1967.

SN 327,925. S. S. Kresge Company, Detroit, Mich. Filed May 21, 1969.

**Kmart**

The drawing is lined for the colors red and blue. Owner of Reg. Nos. 813,610, 817,528, and others.
For Toothpaste and Mouthwashes (Int. Cl. 3).
First use on or prior to Oct. 19, 1965.

SN 329,669. Chas. Pfizer & Co., Inc., New York, N.Y. Filed June 11, 1969.

**SWEDISH SECRET**

For Sun Tan Lotion (Int. Cl. 3).
First use Mar. 4, 1969.

SN 329,809. Irma Shorell, Inc., New York, N.Y. Filed June 12, 1969.

**Youth 25**
**by IRMA SHORELL**

"Irma Shorell" identifies Irma Shorell Lightman, whose consent is of record. Owner of Reg. Nos. 793,778, 831,199, and 831,200.
For Moisturizing Skin Cosmetic (Int. Cl. 3).
First use February 1967.

## Class 52 — Detergents and Soaps

SN 298,523. American Heritage Products, Inc., Portage, Ind. Filed May 20, 1968.

**FORMULA 88**

The word "Formula" is disclaimed apart from the mark as shown.
For Window Cleaner (Int. Cl. 3).
First use Feb. 15, 1968.

SN 305,612. Lever Brothers Company, New York, N.Y. Filed Aug. 21, 1968.

**MARS**

For Detergent for General Washing and Cleansing (Int. Cl. 3).
First use Aug. 15, 1968.

SN 315,271. Sterling Drug Inc., New York, N.Y. Filed Dec. 26, 1968.

**ALL-N-ONE**

For Medicated Hair Shampoos (Int. Cl. 3).
First use Sept. 3, 1968.

SN 325,999. Sanical, Inc., Long Beach, Calif. Filed Apr. 30, 1969.

**STERICAL**

For Cleansing Composition for Use as a Pre-Operative Scrub (Int. Cl. 3).
First use Mar. 5, 1969.

SN 327,151. Lanewood Laboratories, Inc., Framingham, Mass. Filed May 13, 1969.

**PUP-UP**

For Carpet, Floor, and Upholstery Cleaner (Int. Cl. 3).
First use May 6, 1969.

SN 327,153. Lanewood Laboratories, Inc., Framingham, Mass. Filed May 13, 1969.

**VEND**

For Aerosol Vending Machine Cleaner and Disinfectant (Int. Cl. 3).
First use May 6, 1969.

SN 327,155. Lanewood Laboratories, Inc., Framingham, Mass. Filed May 13, 1969.

**DECK HAND**

For All-Purpose Aerosol Boat Cleaner (Int. Cl. 3).
First use May 6, 1966.

# SERVICE MARKS

## Class 100 — Miscellaneous

SN 302,049. Color-Tel Corporation, Sherman Oaks, Calif. Filed July 5, 1968.

**COLOR-TEL**

For Advice and Consultation in the Production of Scenes for Television and Motion Pictures Utilizing Methods Which Enable Color Perception by Persons Viewing Black and White Television Sets and Black and White Film Projection (Int. Cl. 42).
First use April 1968.

SN 306,695. Thiokol Chemical Corporation, Bristol, Pa. Filed Sept. 5, 1968.

**MATERIALLY SPEAKING**

For Technical Assistance Services Regarding the Use and Application of Sealing Materials (Int. Cl. 42).
First use April 1965.

SN 308,503. Nedick's Stores, Inc., New York, N.Y. Filed Sept. 30, 1968.

**LITTLE NICK**

Owner of Reg. No. 629,705.
For Serving and Dispensing Foods and Beverages in Restaurants (Int. Cl. 42).
First use in or about 1949.

SN 308,876. Communication Management, Inc., Seattle, Wash. Filed Oct. 4, 1968.

**cmi**

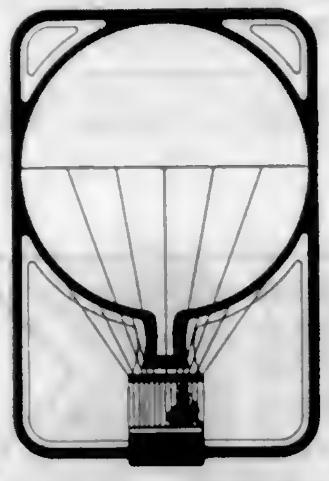
For Consulting Services—Namely, Advisory and Consultation Services in Connection With the Design, Installation, and Operation of Communication and Data Systems (Int. Cl. 42).
First use Sept. 14, 1965.

SN 312,439. Dayton Corporation, Minneapolis, Minn. Filed Nov. 18, 1968.

**MASTERPLAN**

For Furnishing Advice and Consultation in the Area of Home Decorating (Int. Cl. 42).
First use on or about Oct. 9, 1968.

SN 313,160. ClubAmerica, Inc., Dallas, Tex. Filed Nov. 27, 1968.



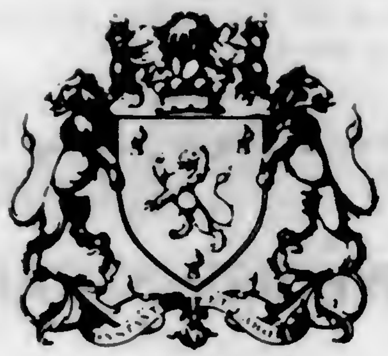
For Arranging for Entertainment, Purchase of Merchandise, Dining, and Travel for Members at Reduced Prices (Int. Cl. 42).
First use at least as early as October 1968.

SN 315,296. Allied Chemical Corporation, New York, N.Y. Filed Dec. 27, 1968.

**AGTRON**

For Computerized Consulting Services for the Farm Market (Int. Cl. 42).
First use July 24, 1967.

SN 318,009. Sanson Institute of Heraldry, Inc., Boston, Mass. Filed Jan. 31, 1969.



For Providing Certified Reports Relating to the Origination of Names and for Writing Articles Relating to the Origination of Names Written to the Order and/or Specification of Others—Namely, Newspapers and Like Publications (Int. Cl. 42).
First use at least as early as Feb. 10, 1967.

## Class 101 — Advertising and Business

SN 262,899. J. R. Wood & Sons, Inc., New York, N.Y. Filed Jan. 19, 1967.

**P.V.P.**

For Promoting the Sale of Jewelry by Others by Guaranteeing Trade-In Value of Goods Sold by Them (Int. Cl. 35).
First use June 1957.

SN 291,411. Re-Con Systems Corp., New York, N.Y., assignee of Thomas Hosie Main, d.b.a. The University Placement Service, Philadelphia, Pa. Filed Feb. 19, 1968.

**RE-CON**

For Personnel Placement Services (Int. Cl. 35).
First use Oct. 30, 1967.

SN 306,974. Chilton Corporation, d.b.a. Credit Bureau Services, Dallas, Tex. Filed Sept. 6, 1968.

**THE
CREDIMATIC
SYSTEM**

Applicant disclaims the terms "The" and "System."
For Computerized Credit Reporting (Int. Cl: 35).
First use Mar. 18, 1968.

SN 310,503. TSC Industries, Inc., d.b.a. Tractor Supply Co., Chicago, Ill. Filed Oct. 24, 1968.

**TSC**

The drawing is lined for the color red, but no claim is made to color.
For Retail Farm Supply, Hardware, Automotive Supply, and General Merchandise Store and Mail Order Services (Int. Cl. 35).
First use March 1966; December 1961 as to "TSC."

SN 310,576. Miller-Waltzer Associates, Inc., New York, N.Y. Filed Oct. 25, 1968.

**BANKBOOK BINGO**

Applicant disclaims the word "Bingo" except in connection with the entire mark.
For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Materials and Advertising Designed for Promotional Contests (Int. Cl. 35).
First use prior to Oct. 10, 1968.

SN 319,587. Dansico Associates, Inc., Birmingham, Mich. Filed Feb. 19, 1969.

**GAMERAMA**

For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Materials and Advertising Designed for Promotional Contests (Int. Cl. 35).
First use on or about Jan. 13, 1969.

SN 320,777. Maxam, Inc., Dallas, Tex. Filed Mar. 5, 1969.

**MAXAM**

For Retail Department Store Services (Int. Cl. 35).
First use at least as early as June 1967.

SN 322,941. Brattle Films, Inc., Cambridge, Mass. Filed Mar. 27, 1969.

**TRUC**

For Retail Men's and Women's Apparel Store Services (Int. Cl. 35).
First use November 1965.

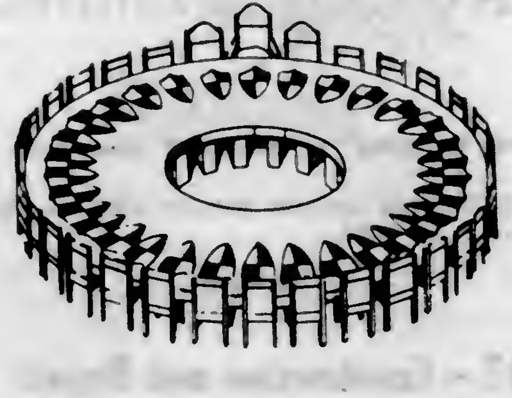
SN 323,052. Brattle Films, Inc., Cambridge, Mass. Filed Mar. 28, 1969.

**TRUC**

For Retail Men's and Women's Apparel Store Services (Int. Cl. 35).
First use November 1965.

## Class 102 — Insurance and Financial

SN 291,414. Million Dollar Round Table of the National Association of Life Underwriters, Chicago, Ill. Filed Feb. 19, 1968.



Owner of Reg. Nos. 677,105 and 687,001.
For Educational, Professional, and Informational Services to the Public, Legal Reserve Life Insurance Companies and Life Underwriters, Rendered by Means of Cooperative Studies of Problems Affecting Life Insurance and Techniques of Successful Underwriting, and Regular Distribution (Int. Cl. 36).
First use June 1957.

SN 305,639. Data Management Incorporated, Ann Arbor, Mich. Filed Aug. 21, 1968.

**FLEXIBILL**

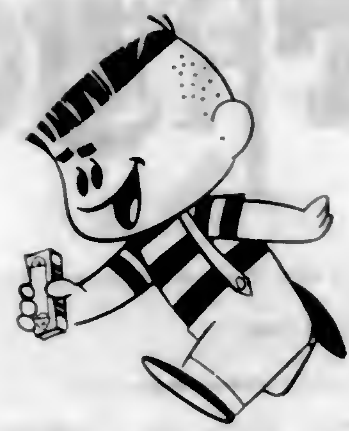
For Computerized Billing and Collection Service (Int. Cl. 36).
First use Aug. 1, 1968.

SN 310,641. 3M Credit Plan, Inc., Phoenix, Ariz. Filed Oct. 28, 1968.

**3M**

For Extending Credit to Others for Financing Their Expenditures by Issuing Redeemable Scrip (Int. Cl. 36).
First use Sept. 7, 1968.

SN 313,053. Banco Credito y Ahorro Ponceño, Ponce, Puerto Rico. Filed Oct. 14, 1968.



For Banking Services (Int. Cl. 36).
First use Apr. 8, 1967.

SN 314,954. Comonwealth National Bank, Boston, Mass. Filed Dec. 20, 1968.

free 'n easy COMMONWEALTH CHECKING

The word "Checking" is disclaimed apart from the mark as shown.
For Bank Checking Account Services (Int. Cl. 36).
First use Oct. 21, 1968.

## Class 103 — Construction and Repair

SN 306,833. Yorkshire Imperial Metals Limited, Stourton, Leeds, England. Filed Sept. 6, 1968.

'YIMpact'

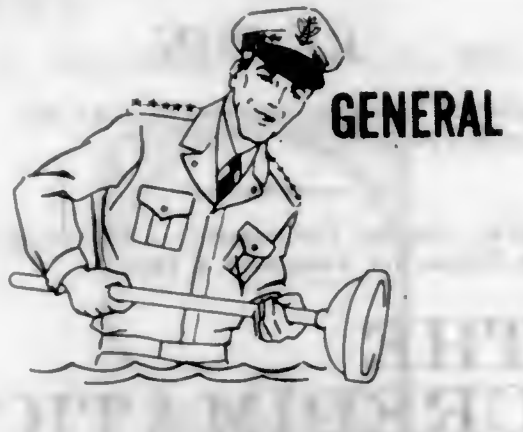
For Welding Services (Int. Cl. 37).
First use May 1966; in commerce May 1966.

SN 311,856. Alex Fox, d.b.a. Complete Electric Motor Repair Co., Chicago, Ill. Filed Nov. 12, 1968.

C.E.M.R.CO.

Owner of Reg. No. 738,818.
For Construction and Repair of Electric Motors, Generators, and the Like (Int. Cl. 37).
First use May 1, 1961.

SN 313,412. General Sewer Service, Inc., Spring Lake, N.J. Filed Dec. 2, 1968.



The portrait on the drawing does not represent any particular living person, but is entirely imaginative.
For Storm, Sanitary, Municipal, Commercial, Residential, and Industrial Sewer Cleaning Service (Int. Cl. 37).
Firs use Oct. 21, 1968.

## Class 105 — Transportation and Storage

SN 319,953. Priority Air Transport System, Redwood City, Calif. Filed Feb. 24, 1969.

CONVENTIONAIR

For Transportation Services—Namely, Air Taxi Services and Air Charter Service (Int. Cl. 39).
First use Sept. 17, 1968.

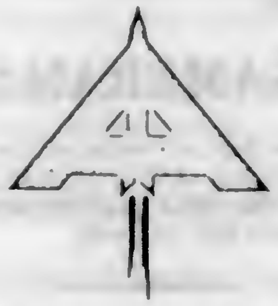
## Class 106 — Material Treatment

SN 194,645. Owens-Illinois, Inc., Toledo, Ohio, by change of name from Owens-Illinois Glass Company, Toledo, Ohio. Filed June 1, 1964.

PLASTECHNICS

Owner of Reg. No. 777,987.
For Custom Manufacture of Plastic Bottles and Containers (Int. Cl. 40).
First use Dec. 1, 1962.

SN 299,413. Aerobraze Corporation, Eastlake, Ohio. Filed May 31, 1968.



AEROBRAZE

For Brazing, Heat Treatment and Processing of Metals (Int. Cl. 40).
First use Sept. 1, 1956.

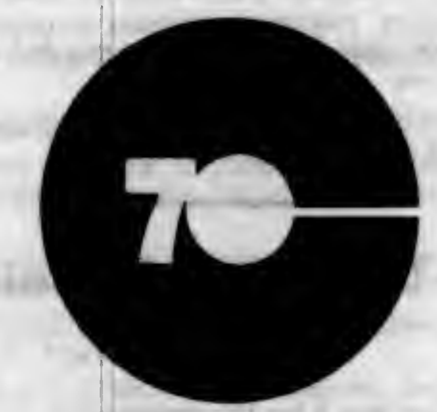
## Class 107 — Education and Entertainment

SN 289,124. Rogers Broadcasting Limited, Toronto, Ontario, Canada. Filed Jan. 18, 1968.

CANDLELIGHT AND WINE

Owner of Canadian Reg. No. 134,351, dated Jan. 24, 1964.
For Providing Entertainment by Means of a Radio Program (Int. Cl. 41).

SN 300,560. Cineversal 70 Productions, Ltd., New York, N.Y. Filed June 17, 1968.



For Production, Distribution and Exhibition of Motion Picture Films, and Television Productions (Int. Cl. 41).
First use June 20, 1967.

SN 303,550. John Balazs, d.b.a. University Design Center/Mobilia Productions, Ravenna, Ohio. Filed July 24, 1968.

the mobile change

For Audio and Visual Presentations Featuring Recorded Sounds and Projected Images (Int. Cl. 41).
First use Mar. 1, 1968.

SN 302,405. Richard Fragale, Lodi, N.J. Filed July 10, 1968.

THE SPIT-N-IMAGE

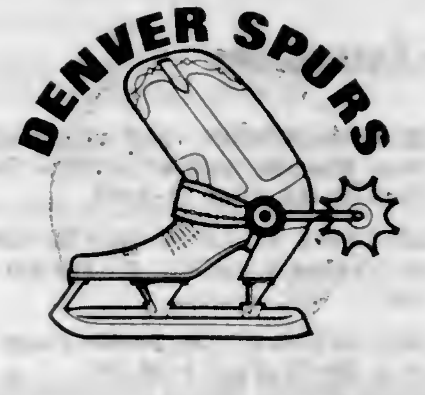
For Entertainment Services Rendered by a Vocal and Instrumental Group (Int. Cl. 41).
First use June 17, 1967.

SN 304,326. Epsilons, Washington, D.C. Filed Aug. 5, 1968.

EPSILONS

For Musical Entertainment Performed by a Dance Band (Int. Cl. 41).
First use September 1965.

SN 304,977. Sports Holdings, Inc., Denver, Colo. Filed Aug. 12, 1968.

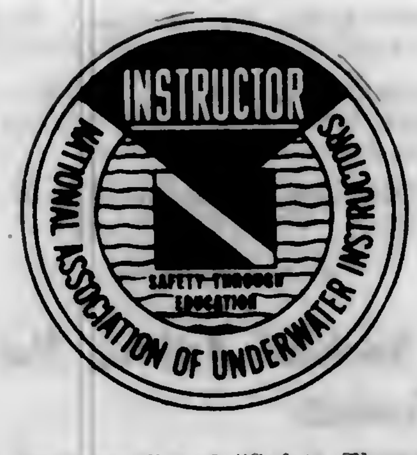


Applicant disclaims exclusive rights in and to the term "Denver" apart from the mark as shown.
For Entertainment Services in the Nature of Professional Hockey (Int. Cl. 41).
First use Mar. 10, 1968.

## COLLECTIVE MEMBERSHIP MARKS

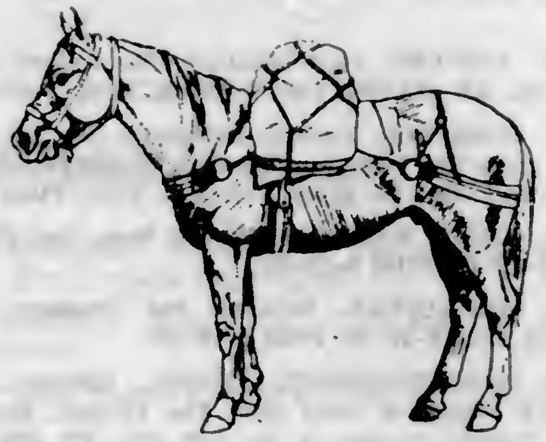
## Class 200

SN 292,705. National Association of Underwater Instructors, Los Angeles, Calif. Filed Mar. 7, 1968.


INSTRUCTOR
NATIONAL ASSOCIATION OF UNDERWATER INSTRUCTORS
SAFETY THROUGH EDUCATION

The words "Instructor" and "Safety Through Education" are disclaimed apart from the mark as shown.
For Indicating Membership in Applicant.
First use on or about May 31, 1961.

SN 313,906. Colorado Dude and Guest Ranch Association, Denver, Colo. Filed Dec. 9, 1968.



For Indicating Membership in Applicant.
First use July 1, 1968.

# TRADEMARK REGISTRATIONS ISSUED

## PRINCIPAL REGISTER

### Class 1 — Raw or Partly Prepared Materials

879,712. GREEN GIANT. Green Giant Company. SN 296,534. Pub. 8–19–69. Filed 4–25–68.

879,713. CASCADE AND DESIGN. Cascade Charcoal, Inc. SN 297,383. Pub. 8–19–69. Filed 5–6–68.

879,714. SYLVAMIX. SCM Corporation. SN 302,522. Pub. 8–19–69. Filed 7–11–68.

879,715. DEKO-CRAFT. Bernard Associates, Incorporated. MULTIPLE CLASS (Classes 1, 12, 37, and 40). SN 303,217. Pub. 8–12–69. Filed 7–22–68.

879,716. CHEM-BEN. Milchem Incorporated. SN 306,390. Pub. 8–19–69. Filed 8–30–68.

879,717. RYTAR. Gladwin Industries, Inc. SN 312,994. Pub. 8–19–69. Filed 11–25–68.

879,718. GG (DESIGN). Glen-Gery Corporation. MULTIPLE CLASS (Classes 1 and 12). SN 317,035. Pub. 8–19–69. Filed 1–21–69.

### Class 2 — Receptacles

879,719. GAF AND DESIGN. GAF Corporation, by change of name from General Aniline & Film Corporation. SN 284,467. Pub. 8–19–69. Filed 11–9–67.

879,720. PEDDLER'S VILLAGE. Earl H. Jamison. MULTIPLE CLASS (Classes 2 and 30). SN 298,451. Pub. 5–27–69. Filed 5–17–68.

879,721. HARD SHELL FOAM. Pacific Foam Packaging. SN 301,640. Pub. 4–29–69. Filed 6–28–68.

879,722. LINCUBE AND DESIGN. Linco Products Corporation. MULTIPLE CLASS (Classes 2 and 6). SN 304,534. Pub. 8–19–69. Filed 8–7–68.

879,723. PERMANEX. Sears, Roebuck and Co. SN 305,983. Pub. 8–19–69. Filed 8–26–68.

879,724. TEMP·RITE. Aladdin Industries, Incorporated (Delaware corporation), by merger from Aladdin Industries, Incorporated (Illinois corporation). SN 314,864. Pub. 8–19–69. Filed 12–19–68.

### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

879,725. PET·PEN AND DESIGN. The Gilbert & Bennett Mfg. Co. SN 255,086. Pub. 8–19–69. Filed 9–26–66.

879,726. LADYBUG. Villager Industries, Inc., by change of name from The Villager, Inc. MULTIPLE CLASS (Classes 3, 28, and 39). SN 294,878. Pub. 7–8–69. Filed 4–4–68.

879,727. CABIN BAG. Carl Pedro & Sons, Inc. SN 298,349. Pub. 8–19–69. Filed 5–16–68.

879,728. RETRIEVER. Superior Pet Products, Inc. SN 300,852. Pub. 8–19–69. Filed 6–19–68.

879,729. MISCELLANEOUS DESIGN. Villager Industries, Inc., by change of name from The Villager, Inc. MULTIPLE CLASS (Classes 3, 28, and 39). SN 302,252. Pub. 7–1–69. Filed 7–9–68.

879,730. FACE CASE. A. J. Siris Products Corp. SN 309,147. Pub. 8–19–69. Filed 10–8–68.

### Class 4 — Abrasives and Polishing Materials

879,731. BOAT DOC AND DESIGN. Donald D. Arnett. MULTIPLE CLASS (Classes 4 and 16). SN 295,296. Pub. 8–19–69. Filed 4–10–68.

879,732. SANI-IZE WITH SANI-WHITE. Hollywood Shoe Polish Inc. SN 297,291. Pub. 12–10–68. Filed 5–3–68.

879,733. CREST (DESIGN). Megular Enterprises. MULTIPLE CLASS (Classes 4 and 52). SN 298,023. Pub. 8–19–69. Filed 5–13–68.

879,734. MISCELLANEOUS DESIGN. C. Klingspor G.m.b.H. SN 306,252. Pub. 8–19–69. Filed 8–29–68.

### Class 6 — Chemicals and Chemical Compositions

879,722. (See Class 2 for this trademark.)

879,735. JAVEX. The Drackett Company, assignee, by mesne assignment, of Domtar Limited. MULTIPLE CLASS (Classes 6 and 52). SN 258,788. Pub. 8–19–69. Filed 11–16–66.

879,736. CHROMATOTEST. Baxter Laboratories, Inc. SN 284,078. Pub. 10–22–68. Filed 11–3–67.

879,737. CANDIFF. The Norwich Pharmacal Company (Delaware corporation), assignee of The Norwich Pharmacal Company (New York corporation). SN 294,234. Pub. 8–19–69. Filed 3–27–68.

879,738. COVERETTE. Leon J. Wirth, d.b.a. Wirth Co. Inc. SN 294,983. Pub. 8–19–69. Filed 4–4–68.

879,739. COPE (DESIGN). W. C. Copeland, Jr. SN 298,660. Pub. 8–19–69. Filed 5–16–68.

879,740. HEREFORD BRAND AND DESIGN OF COW. Chemical Industries, Inc. SN 300,065. Pub. 8–19–69. Filed 6–10–68.

879,741. SEAL-SKIN. Kent Industries, Inc. SN 300,824. Pub. 8–19–69. Filed 6–19–68.

879,742. ENZITE. Seravac Laboratories (Pty.) Limited. SN 302,135. Pub. 8–19–69. Filed 7–5–68.

879,743. PAGANO-LEVIN. E. R. Squibb & Sons, Inc. SN 303,201. Pub. 8–19–69. Filed 7–19–68.

879,744. MINIVAR. Sun Chemical Corporation. SN 312,344. Pub. 7–22–69. Filed 11–15–68.

879,745. TRILUTE. Miles Laboratories, Inc. SN 313,870. Pub. 8–19–69. Filed 12–9–68.

879,746. TETRALUTE. Miles Laboratories, Inc. SN 313,871. Pub. 8–19–69. Filed 12–9–68.

879,747. REDUCTONE. Olin Mathieson Chemical Corporation. SN 314,398. Pub. 8–19–69. Filed 12–13–68.

879,748. AMER-GLOSS. American Lacquer and Solvents Co. of Florida. MULTIPLE CLASS (Classes 6 and 11). SN 314,484. Pub. 8–19–69. Filed 12–16–68.

879,749. SUCRO TAB AND DESIGN. Sucrest Corporation. SN 316,059. Pub. 7–22–69. Filed 1–8–69.

### Class 8 — Smokers' Articles, Not Including Tobacco Products

879,750. GRAND PRIX. Swank, Inc. SN 294,218. Pub. 9–10–68. Filed 3–26–68.

### Class 9 — Explosives, Firearms, Equipments, and Projectiles

879,751. PYRO-CARB. Hitco. SN 268,409. Pub. 8–19–69. Filed 4–5–67.

879,752. ASTROLITE AND DESIGN. Explosives Corporation of America. SN 300 695. Pub. 8–19–69. Filed 6–18–68.

879,753. V. BERNARDELLI. Bernardelli Vincenzo S.p.A. SN 317,419. Pub. 8–19–69. Filed 1–24–69.

### Class 11 — Inks and Inking Materials

879,748. (See Class 6 for this trademark.)

879,754. "IT'S WHAT'S INSIDE THAT COUNTS!" Formulabs, Incorporated. SN 291,979. Pub. 8–19–69. Filed 2–27–68.

879,755. AQUASUN. Sun Chemical Corporation. SN 295,968. Pub. 8–19–69. Filed 4–18–68.

879,756. SUNTONE. Sun Chemical Corporation. SN 295,976. Pub. 8–19–69. Filed 4–18–68.

879,757. NU JET SPEED. UMC Industries, Inc. SN 300,762. Pub. 8–19–69. Filed 6–18–68.

### Class 12 — Construction Materials

879,715. (See Class 1 for this trademark.)

879,718. (See Class 1 for this trademark.)

879,758. TIGER THINGS AND DESIGN. Tiger Fabrics, Inc. SN 275,326. Pub. 8–19–69. Filed 7–3–67.

879,759. A AND DESIGN. Allenform Corporation. MULTIPLE CLASS (Classes 12 and 13). SN 294,901. Pub. 8–19–69. Filed 4–4–68.

879,760. STRUCTOFORS. Algemene Kunstzijde Unie N.V. SN 298,910. Pub. 8–19–69. Filed 5–23–68.

879,761. REFLITE. Nippon Valqua Industries, Ltd. SN 305,059. Pub. 8–19–69. Filed 8–13–68.

879,762. C BROS (DESIGN). Costantino Brothers, Inc. MULTIPLE CLASS (Classes 12, 13, and 14). SN 307,433. Pub. 8–19–69. Filed 9–16–68.

879,763. TEXDOR. Textone, Inc. SN 310,379. Pub. 8–19–69. Filed 9–9–68.

879,764. HAMAWOOD. Hama Plastics Co. Ltd. SN 315,138. Pub. 8–19–69. Filed 12–24–68.

### Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

879,759. (See Class 12 for this trademark.)

879,762. (See Class 12 for this trademark.)

879,765. HG. Hancock-Gross, Inc. SN 290,851. Pub. 8–19–69. Filed 2–12–68.

879,766. CHARLEY CHEK. Charles Wheatley Company. SN 292,994. Pub. 8–19–69. Filed 3–11–68.

879,767. NITE-KAP. Floyd L. Thayer, d.b.a. Nite-Kap Co. SN 298,658. Pub. 8–19–69. Filed 5–17–68.

879,768. LINESPOT. Robert W. Taylor-Myers. SN 305,575. Pub. 8–19–69. Filed 8–20–68.

879,769. ROLLOBAG. Evelyn V. Hawkes, d.b.a. Hawkes Enterprises. SN 310,661. Pub. 8–19–69. Filed 10–28–68.

879,770. TC. Gardner-Denver Company. SN 310,881. Pub. 8–19–69. Filed 10–30–68.

879,771. THE FASTENER HOUSE. The Fastener House, Inc. SN 311,124. Pub. 8–19–69. Filed 11–1–68.

879,772. WASHJET. Spraying Systems Co. SN 311,946. Pub. 8–19–69. Filed 11–12–68.

879,773. ROAST RIGHT. The Young Associates. SN 312,837. Pub. 8–19–69. Filed 11–21–68.

879,774. SAFE-A-MATIC. Harold Wiese, d.b.a. Safe-A-Matic Handrail Co. Inc. SN 313,144. Pub. 8–19–69. Filed 11–26–68.

879,775. TORRE. Metalurgica Vive y Casals, S.A. SN 316,753. Pub. 8–19–69. Filed 1–16–69.

### Class 14 — Metals and Metal Castings and Forgings

879,762. (See Class 12 for this trademark.)

879,776. CRODON. Chromium Corporation of America. SN 286,415. Pub. 8–19–69. Filed 12–7–67.

### Class 15 — Oils and Greases

879,777. RICHGLO. Kameyama Candle Company, Limited. MULTIPLE CLASS (Classes 15 and 34). SN 295,646. Pub. 8–19–69. Filed 4–15–68.

879,778. METER MAGIC. Time Mechanisms, Inc. SN 301,468. Pub. 8–19–69. Filed 6–26–68.

879,779. LP/NG. Diamond Shamrock Corporation. SN 320,679. Pub. 8–19–69. Filed 3–4–69.

879,780. ORCHEX. Standard Oil Company. SN 321,019. Pub. 8–19–69. Filed 3–7–69.

### Class 16 — Protective and Decorative Coatings

879,731. (See Class 4 for this trademark.)

879,781. WHITE AND DESIGN. White Stores, Inc. SN 268,253. Pub. 8–19–69. Filed 4–3–67.

879,782. THE BEAUTIFUL WAY TO STOP RUST. Master Bronze Powder Company, Inc. SN 276,756. Pub. 6–17–69. Filed 7–25–67.

879,783. MR. ANTIQUE. Products Incorporated. SN 276,952. Pub. 8–19–69. Filed 7–27–67.

879,784. FILMITE. W. R. Grace & Co. SN 285,226. Pub. 8–19–69. Filed 11–20–67.

879,785. ELMCO. Lumbermens Merchandising Corporation. SN 291,514. Pub. 8–19–69. Filed 2–20–68.

879,786. SHOP-RITE. Wakefern Food Corporation. SN 297,469. Pub. 8–19–69. Filed 5–6–68.

### Class 17 — Tobacco Products

879,787. PULLMAN. Rothmans of Pall Mall Limited. SN 275,471. Pub. 8–19–69. Filed 7–6–67.

879,788. ARMADA. Weltab S.A. SN 278,622. Pub. 8–19–69. Filed 8–18–67.

879,789. VISA. Weltab S.A. SN 278,623. Pub. 8–19–69. Filed 8–18–67.

879,790. CARIBBEAN ROUNDS. The S. Frieder & Sons Company, assignee of Regina Cigar Company, Inc. SN 283,711. Pub. 8–19–69. Filed 10–30–67.

879,791. WILDWOOD. R. J. Reynolds Tobacco Company. SN 321,876. Pub. 8–19–69. Filed 3–17–69.

## Class 18 — Medicines and Pharmaceutical Preparations

879,792. PACQUET. Mead Johnson & Company (Delaware corporation), assignee of Mead Johnson & Company (Indiana corporation). SN 260,629. Pub. 7-18-67. Filed 12-13-66.

879,793. WEIGHT WATCHERS. Weight Watchers International, Inc., assignee of The Low Calorie Candy Co., Inc. MULTIPLE CLASS (Classes 18 and 51). SN 281,253. Pub. 5-13-69. Filed 9-27-67.

879,794. ETAMUCIN. Etapharm Chem. Pharm. Laboratorium Gesellschaft m.b.H. SN 289,980. Pub. 8-19-69. Filed 1-31-68.

879,795. FERRO·LAC. Naremco, Inc. SN 291,278. Pub. 8-19-69. Filed 2-16-68.

879,796. NAREMCO. Naremco, Inc. SN 291,280. Pub. 8-19-69. Filed 2-16-68.

879,797. HEMO·PLEX. Naremco, Inc. SN 291,281. Pub. 8-19-69. Filed 2-16-68.

879,798. VELVA-TONE. A. R. Williams and Co. SN 291,306. Pub. 8-19-69. Filed 2-19-68.

879,799. HAZEL TOUCH. A. R. Williams and Co. SN 291,466. Pub. 8-19-69. Filed 2-20-68.

879,800. SUMITOMO. Sumitomo Chemical Co., Ltd. SN 292,025. Pub. 8-19-69. Filed 2-27-68.

879,801. SHOP-RITE. Wakefern Food Corporation. SN 297,462. Pub. 8-19-69. Filed 5-6-68.

879,802. MYCHEL. Rachelle Laboratories, Inc. SN 298,860. Pub. 8-19-69. Filed 5-22-68.

879,803. CRYOZOL. Crown Chemical Company Limited. SN 299,652. Pub. 8-19-69. Filed 6-4-68.

879,804. ENCORE. American Home Products Corporation. SN 308,734. Pub. 8-19-69. Filed 10-3-68.

879,805. PAVALETS. U.S. Ethicals Inc. SN 311,082. Pub. 8-19-69. Filed 10-31-68.

879,806. COMBISTEROID. Chas. Pfizer & Co., Inc. SN 311,988. Pub. 8-19-69. Filed 11-13-68.

879,807. U'-RUB. W. Valentine Deane, d.b.a. U'-Rub Research Laboratory. SN 312,440. Pub. 8-19-69. Filed 11-18-68.

879,808. BURSA-VAC. Sterwin Laboratories Inc. SN 312,819. Pub. 8-19-69. Filed 11-21-68.

879,809. SATERVITE. Orbit Pharmaceutical, Inc. SN 313,437. Pub. 8-19-69. Filed 12-2-68.

879,810. LEDERSPAN. American Cyanamid Company. SN 313,478. Pub. 8-19-69. Filed 12-3-68.

879,811. FERRO-GRADUMET. Abbott Laboratories. SN 313,548. Pub. 8-19-69. Filed 12-4-68.

879,812. X·259. Cameo, Inc. SN 314,407. Pub. 8-19-69. Filed 12-13-68.

879,813. RIFADIN. The Dow Chemical Company. SN 314,539. Pub. 8-19-69. Filed 12-16-68.

879,814. BRAKE TIME. Southwestern Drug Corporation, d.b.a. Truett Laboratories. SN 314,628. Pub. 8-19-69. Filed 12-16-68.

879,815. STREP-PAK. American Home Products Corporation. SN 320,676. Pub. 8-19-69. Filed 3-4-69.

879,816. EVEX. Syntex Laboratories, Inc. SN 321,131. Pub. 8-19-69. Filed 3-10-69.

## Class 19 — Vehicles

879,817. SAV-A-STEP. Signatronic Co., Ltd. SN 262,207. Pub. 8-19-69. Filed 1-9-67.

879,818. CHARIOTS UNLIMITED AND DESIGN. Robert L. Thompson. SN 272,761. Pub. 8-19-69. Filed 5-31-67.

879,819. COMMAND BRIDGE. Chris-Craft Industries, Inc. SN 276,220. Pub. 8-19-69. Filed 7-18-67.

879,820. FIREBALL DTR. Raleigh Industries Limited. SN 279,701. Pub. 8-19-69. Filed 9-6-67.

879,821. SISSY BAR. Bill Matthews, d.b.a. The Bill Matthews Company. SN 287,371. Pub. 8-19-69. Filed 12-21-67.

879,822. ROAD ROCKET. B.S.A. Motor Cycles Limited. SN 290,132. Pub. 8-19-69. Filed 11-28-67.

879,823. GENERAL HITCH. General Hitch Products, Inc. SN 293,509. Pub. 8-19-69. Filed 3-18-68.

879,824. BATCO AND DESIGN. E. G. Boyd Trailer Co. SN 293,619. Pub. 8-19-69. Filed 3-19-68.

879,825. CI LANCER AND DESIGN. C. Itoh & Co. (America) Inc. SN 299,774. Pub. 8-19-69. Filed 6-5-68.

879,826. LYON METAL PRODUCTS. Lyon Metal Products, Incorporated. SN 302,849. Pub. 8-19-69. Filed 7-16-68.

879,827. TOUR-PAK. American Machine & Foundry Company, assignee of Harley-Davidson Motor Co., Inc. SN 319,880. Pub. 8-19-69. Filed 2-24-69.

879,828. OCEAN QUEEN. River Queen Boat Works, Inc. SN 322,340. Pub. 8-19-69. Filed 3-20-69.

## Class 20 — Linoleum and Oiled Cloth

879,829. ARCHITECTURAL CRITERION. Kentile Floors, Inc. SN 295,441. Pub. 8-19-69. Filed 4-11-68.

## Class 21 — Electrical Apparatus, Machines, and Supplies

879,830. MIRATEL. Ball Brothers Research Corporation, assignee of Miratel Electronics Company. SN 271,717. Pub. 8-19-69. Filed 5-17-67.

879,831. WILCOX-CRITTENDEN ETC. AND DESIGN. North and Judd Manufacturing Company. SN 275,452. Pub. 8-19-69. Filed 7-6-67.

879,832. GEOSONDE. Donald L. Smith. SN 288,124. Pub. 8-19-69. Filed 1-4-68.

879,833. GREAT SCOTT. H. H. Scott, Inc. SN 293,318. Pub. 8-19-69. Filed 3-14-68.

879,834. PARTY-MATES. Scovill Manufacturing Company. SN 293,314. Pub. 8-19-69. Filed 3-14-68.

879,835. TOURING. Standard Elektrik Lorenz Aktiengesellschaft. SN 293,748. Pub. 8-19-69. Filed 3-20-68.

879,836. S C AND DESIGN. Superior Continental Corporation. SN 293,955. Pub. 8-19-69. Filed 3-22-68.

879,837. VALUELINE. Allis-Chalmers Manufacturing Company. SN 294,444. Pub. 8-19-69. Filed 3-29-68.

879,838. CROSSBEAM. Sony Corporation. SN 294,977. Pub. 8-19-69. Filed 4-4-68.

879,839. STELLA. Stella Lamp Company Limited. SN 296,728. Pub. 8-19-69. Filed 4-26-68.

879,840. MICADEL. Sprague Electric Company. SN 297,446. Pub. 8-19-69. Filed 5-6-68.

879,841. PAR. Princeton Applied Research Corporation. SN 297,703. Pub. 8-19-69. Filed 5-8-68.

879,842. FAWICK-MARVELTONE AND DESIGN. Thomas L. Fawick. SN 298,077. Pub. 8-19-69. Filed 5-14-68.

879,843. CHRONODYNE. Armec Corporation. SN 298,100. Pub. 8-19-69. Filed 5-14-68.

879,844. MULLARD INFRARED DETECTORS AND DESIGN., Mullard Limited. SN 299,368. Pub. 8-19-69. Filed 5-29-68.

879,845. TELE-TERMINAL. Electronics International Service. SN 316,527. Pub. 8-12-69. Filed 1-14-69.

879,846. OSMA. Omni Spectra, Inc. SN 318,916. Pub. 8-19-69. Filed 2-11-69.

879,847. CINTROJET. The Cincinnati Milling Machine Co. SN 320,705. Pub. 8-19-69. Filed 3-4-69.

## Class 22 — Games, Toys, and Sporting Goods

879,848. MISCELLANEOUS DESIGN. Fisher-Price Toys, Inc. SN 268,178. Pub. 8-19-69. Filed 4-3-67.

879,849. EAGLE DESIGN. Republic Tool & Manufacturing Corp. SN 289,208. Pub. 8-19-69. Filed 1-19-68.

879,850. REPUBLIC. Republic Tool & Manufacturing Corp. SN 289,209. Pub. 8-19-69. Filed 1-19-68.

879,851. PARA-BRAKE AND DESIGN. Glenn Gary Davis, Robert Walton Dahlin, and Morris Lavine. SN 291,383. Pub. 8-19-69. Filed 2-19-68.

879,852. PEOPLE PUPPET CRAFT. Kohner Bros., Inc. SN 296,841. Pub. 8-19-69. Filed 4-29-68.

879,853. CHALK-UP. Modern Lines Incorporated. SN 297,877. Pub. 8-19-69. Filed 5-10-68.

879,854. MIYA. Miyamae Light Metals Mfg. Co., Ltd. SN 298,466. Pub. 8-19-69. Filed 5-17-68.

879,855. CHAMONIX. Anderson & Thompson Ski Co., Inc. SN 298,683. Pub. 8-19-69. Filed 5-21-68.

879,856. SNOWFLAKE LOOM. Lisbeth Whiting Company, Inc. SN 298,832. Pub. 8-19-69. Filed 5-22-68.

879,857. METTS-ROCKET. Atlantic Lures, Inc. SN 298,915. Pub. 8-19-69. Filed 5-23-68.

879,858. PRO-SPORTS AND DESIGN. King Athletic Goods Company. SN 300,157. Pub. 8-19-69. Filed 6-11-68.

879,859. SLUMBERCHUM. Animal Fair, Inc. SN 309,539. Pub. 6-24-69. Filed 10-14-68.

879,860. MICRO. Berkley & Company, Inc. SN 311,230. Pub. 8-19-69. Filed 11-4-68.

879,861. SUSY GOOSE AND DESIGN. Kiddie Brush and Toy Co., Inc. SN 311,601. Pub. 8-19-69. Filed 11-7-68.

879,862. CUSTOM LTD. Brunswick Corporation. SN 312,427. Pub. 8-19-69. Filed 11-18-68.

879,863. BENGAL. Regent Sports Corporation. SN 319,358. Pub. 8-19-69. Filed 2-17-69.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

879,864. SEAL-A-MEAL. Dazey Products Company. SN 271,774. Pub. 8-19-69. Filed 5-18-67.

879,865. FRICTIONATOR. Defibrator Aktiebolag. SN 276,648. Pub. 8-19-69. Filed 7-24-67.

879,866. THRED-LOK. H. D. Hudson Manufacturing Company. SN 275,666. Pub. 8-19-69. Filed 7-10-67.

879,867. EARLY ROSE. Imperial Knife Associated Companies, Inc. SN 285,426. Pub. 8-19-69. Filed 11-22-67.

879,868. SEASWEPT. Imperial Knife Associated Companies, Inc. SN 285,427. Pub. 8-19-69. Filed 11-22-67.

879,869. ROBALIT 61. Leder- und Riemen-Patentverwertungsgesellschaft m.b.H. SN 285,563. Pub. 8-19-69. Filed 11-24-67.

879,870. LEADING. Hydromation Engineering Company. SN 289,679. Pub. 8-19-69. Filed 1-26-68.

879,871. GLAS-STAIR. The Reliance Electric & Engineering Company. SN 289,832. Pub. 8-19-69. Filed 1-29-68.

879,872. FLOPAK. Schaub Engineering Company, assignee of Syncroflo Inc. SN 291,913. Pub. 8-19-69. Filed 2-26-68.

879,873. BARNES AND DIAMOND DESIGN. Nicholson File Company. SN 293,164. Pub. 8-19-69. Filed 3-13-68.

879,874. JACKSON AND DESIGN. Jackson Lumber Harvester Co., Inc. SN 293,388. Pub. 8-19-69. Filed 3-15-68.

879,875. PLUS DESIGN. Ekco Products, Inc. SN 293,704. Pub. 8-19-69. Filed 3-20-68.

879,876. R ROTODYNE AND DESIGN. Rotodyne Manufacturing Corporation. SN 293,951. Pub. 8-19-69. Filed 3-22-68.

879,877. INTA-ROTO. The Inta-Roto Machine Company, Inc. SN 294,281. Pub. 8-19-69. Filed 3-27-68.

879,878. FAIRLANE. The Huffman Manufacturing Company. SN 294,396. Pub. 8-19-69. Filed 3-28-68.

879,879. SQURT. Snorkel Fire Equipment Company. SN 294,678. Pub. 8-19-69. Filed 4-1-68.

879,880. MARGAY. Marquette Tool and Die Company. SN 295,750. Pub. 8-19-69. Filed 4-16-68.

879,881. CLOVER LEAF DESIGN. Paul Ferd. Peddinghaus. SN 296,038. Pub. 8-19-69. Filed 4-19-68.

879,882. LOUDEN. American Chain & Cable Company, Inc. SN 297,835. Pub. 8-19-69. Filed 5-10-68.

879,883. RES-CULATOR. Breeze Corporations, Inc. SN 298,791. Pub. 8-19-69. Filed 5-22-68.

879,884. AIR-LEVATOR. Breeze Corporations, Inc. SN 298,792. Pub. 8-19-69. Filed 5-22-68.

879,885. STYLE-MATE. The Singer Company. SN 299,047. Pub. 8-19-69. Filed 5-24-68.

879,886. VENCO AND DESIGN. Santa Anita Mfg. Corp. SN 300,118. Pub. 8-19-69. Filed 6-10-68.

879,887. VENCO. Santa Anita Mfg. Corp. SN 300,117. Pub. 8-19-69. Filed 6-10-68.

879,888. TW DESIGN. Trans-Wheel, Inc. SN 308,246. Pub. 8-19-69. Filed 9-26-68.

879,889. SWEET BRIAR. Oneida Ltd. SN 314,443. Pub. 8-19-69. Filed 12-13-68.

879,890. TRU-TRED. Hupp, Inc. SN 314,556. Pub. 8-19-69. Filed 12-16-68.

879,891. WAYNE. Wayne Manufacturing Co. SN 317,410. Pub. 8-19-69. Filed 1-23-69.

879,892. HORIZON. Ing. C. Olivetti & C., S.p.A. SN 318,861. Pub. 8-19-69. Filed 2-3-69.

879,893. "SUPER-MIKE." Giddings & Lewis, Inc. SN 319,158. Pub. 8-19-69. Filed 2-14-69.

879,894. ECONO-MISER. Amchem Products, Inc. SN 319,255. Pub. 8-19-69. Filed 2-17-69.

879,895. MAGNA-SPACER. The Challenge Machinery Company. SN 319,431. Pub. 8-19-69. Filed 2-18-69.

879,896. GROBAT. Grob & Co. Limited. SN 320,260. Pub. 8-19-69. Filed 2-27-69.

879,897. ROLLOX. E. D. Bullard Company. SN 320,426. Pub. 8-19-69. Filed 3-3-69.

879,898. TOOLMASTER. The Cincinnati Milling Machine Co. SN 320,704. Pub. 8-19-69. Filed 3-4-69.

879,899. A AND DESIGN. Paul Abbott Co., Inc. SN 320,780. Pub. 8-19-69. Filed 3-5-69.

879,900. DUCTUBE. Cufflin Holdings Limited. SN 320,800. Pub. 8-19-69. Filed 3-5-69.

879,901. COURIER. Sears, Roebuck and Co. SN 320,864. Pub. 8-19-69. Filed 3-5-69.

879,902. MUDSLINGER. Challenge-Cook Bros., Incorporated. SN 321,041. Pub. 8-19-69. Filed 3-7-69.

879,903. DYNACARD. Roberts Company. SN 321,728. Pub. 8-19-69. Filed 3-14-69.

## Class 24 — Laundry Appliances and Machines

879,904. AMERICAN LAUNDRY MACHINERY INDUSTRIES AND DESIGN. McGraw-Edison Company. SN 297,077. Pub. 8-19-69. Filed 5-1-68.

## Class 25 — Locks and Safes

879,905. UNIVAULT. LeFebure Corporation. SN 295,747. Pub. 8-19-69. Filed 4-16-68.

879,906. NEIMAN. Societe d'Exploitation des Brevets Neiman. SN 296,353. Pub. 8-19-69. Filed 4-23-68.

## Class 26 — Measuring and Scientific Appliances

879,907. ABC. Automatic Burner Corporation. SN 274,580. Pub. 8–19–69. Filed 6–23–67.

879,908. MAP-O-GRAPH. Art-O-Graph Inc. SN 277,972. Pub. 8–19–69. Filed 8–10–67.

879,909. ATLAB. Atlas Chemical Industries, Inc. SN 258,969. Pub. 9–2–69. Filed 11–18–66.

879,910. ARDMORE. Tokheim corporation. SN 283,735. Pub. 8–19–69. Filed 10–30–67.

879,911. OVAL AND DESIGN. Oval Kiki Kogyo Kabushiki Kaisha, d.b.a. Oval Gear Engineering Co., Ltd. SN 288,712 Pub. 8–19–69. Filed 1–12–68.

879,912. EVAPOROGRAPH. Baird-Atomic, Inc. SN 292,169. Pub. 8–19–69. Filed 2–29–68.

879,913. GOLDEN FLOW. Payne Manufacturing Company Limited. SN 293,294. Pub. 8–19–69. Filed 3–14–68.

879,914. GRAPHANALOGUE. The Gerber Scientific Instrument Company. SN 294,833. Pub. 8–19–69. Filed 4–3–68.

879,915. PARSENSOR. Paramtic, Inc. SN 298,857. Pub. 8–19–69. Filed 5–22–68.

879,916. RAMALOG. Spex Industries, Inc. SN 303,357. Pub. 8–19–69. Filed 7–22–68.

879,917. DESIGN OF CIRCLE AND TRAPEZOID. General Time Corporation. SN 307,455. Pub. 8–19–69. Filed 9–16–68.

879,918. VISTARAMA. Andrew Smith Harkness Limited. SN 308,003. Pub. 8–19–69. Filed 9–23–68.

879,919. TRAIL-TAIL. F. W. Dwyer Mfg. Co., Inc. SN 312,286. Pub. 8–19–69. Filed 11–15–68.

879,920. MINIHELIC. F. W. Dwyer Mfg. Co., Inc. SN 322,218. Pub. 8–19–69. Filed 3–20–69.

## Class 27 — Horological Instruments

879,921. HOUR GLASS DESIGN. R. Gsell & Co., Inc. SN 295,139. Pub. 8–19–69. Filed 4–8–68.

879,922. WYCOFLEX. Fabrique Des Montres Wyler Societe Anonyme. SN 311,363. Pub. 8–19–69. Filed 11–5–68.

879,923. SKYSTAR. Bulova Watch Company, Inc. SN 312,020. Pub. 8–19–69. Filed 11–13–68.

## Class 28 — Jewelry and Precious-Metal Ware

879,726. (See Class 3 for this trademark.)

879,729. (See Class 3 for this trademark.)

879,924. MAD MODDERY. Mad Moddery Creations Limited. SN 300,716. Pub. 8–19–69. Filed 6–18–68.

879,925. NADIA'S CREATIONS. Nadia Z. Garden, d.b.a. N. G. Company. SN 304,458. Pub. 8–19–69. Filed 8–6–68.

879,926. GOLD CROWN. International Silver Company. SN 308,258. Pub. 8–19–69. Filed 9–26–68.

879,927. WEATHERLY. Hamilton Watch Company. SN 312,675. Pub. 8–19–69. Filed 11–20–68.

879,928. MADRILENA. Hamilton Watch Company. SN 312,676. Pub. 8–19–69. Filed 11–20–68.

879,929. KIN. Kinsman Ring Co., Inc. SN 318,432. Pub. 8–19–69. Filed 2–5–69.

879,930. CAROLINE EMMONS. C. H. Stuart & Co., Inc., by merger from Emmons Jewelers, Inc. SN 318,930. Pub. 8–19–69. Filed 2–12–69.

## Class 30 — Crockery, Earthenware, and Porcelain

879,720. (See Class 2 for this trademark.)

879,931. FLAMMFEST. Rosenthal Aktiengesellschaft. SN 304,712. Pub. 8–19–69. Filed 8–8–68.

## Class 31 — Filters and Refrigerators

879,932. MISCELLANEOUS DESIGN. Rayne Corporation. SN 273,983. Pub. 8–19–69. Filed 6–15–67.

## Class 32 — Furniture and Upholstery

879,933. MUNRO-SECURPLAND. D. R. Munro & Son, Inc. SN 287,230. Pub. 8–19–69. Filed 12–9–67.

879,934. CLASSICTREASURY. Drexel Enterprises, Inc., assignee of Drexel Enterprises, Inc. SN 289,014. Pub. 8–19–69. Filed 1–17–68.

879,935. RESTAIR. Tenneco Chemicals, Inc., by merger from General Foam Corporation. SN 289,672. Pub. 8–19–69. Filed 1–26–68.

879,936. WHERE SPACE IS ENGINEERED INTO WORKING STORAGE. Palmer-Shile Company. SN 294,650. Pub. 8–19–69. Filed 4–1–68.

879,937. BATH N' BED BY ROYAL-T. Royal-T Company. SN 295,178. Pub. 8–19–69. Filed 4–8–68.

879,938. GRACIAS. Broyhill Furniture Industries. SN 299,097. Pub. 8–19–69. Filed 5–27–68.

879,939. FOAMLAND U.S.A. AND DESIGN. Foamland U.S.A., Inc. SN 299,665. Pub. 8–19–69. Filed 6–4–68.

879,940. VYKAN. Monsanto Company. SN 303,429. Pub. 8–19–69. Filed 7–23–68.

879,941. PLACUBE. Monsanto Company. SN 312,686. Pub. 8–19–69. Filed 11–20–68.

879,942. CEZ-SAY SEE EASY AND DESIGN. Robert Yordy. SN 316,159. Pub. 8–19–69. Filed 1–8–69.

879,943. MALLOBIN. P. R. Mallory & Co. Inc. SN 319,924. Pub. 8–19–69. Filed 2–24–69.

879,944. SPLENDOUR. Wolff Products Co. SN 322,392. Pub. 8–19–69. Filed 3–21–69.

## Class 33 — Glassware

879,945. TOROGLAS AND DESIGN. Artistic Glass Products Co. SN 247,563. Pub. 7–4–67. Filed 6–8–66.

879,946. VARI-TRAN. Libbey-Owens-Ford Company, by change of name from Libbey-Owens-Ford Glass Company. SN 280,603. Pub. 8–19–69. Filed 9–18–67.

879,947. IG (DESIGN). Ingrid Hutte Kurt Wokan. SN 282,505. Pub. 8–19–69. Filed 10–13–67.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

879,777. (See Class 15 for this trademark.)

879,948. UNIBRAZE. Unibraze Corporation. SN 274,105. Pub. 8–19–69. Filed 6–16–67.

879,949. AMERICAN. American Farm Equipment Co. SN 305,906. Pub. 8–19–69. Filed 8–26–68.

879,950. ZADA. Zada Establishment. SN 308,649. Pub. 8–19–69. Filed 10–1–68.

879,951. BAR B CONE. Bar-B-Cone Manufacturing Co., Inc. SN 309,223. Pub. 8–19–69. Filed 10–9–68.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

879,952. COKGARD. Rex Chainbelt Inc., assignee of Cartriseal Corporation. SN 290,468. Pub. 8–19–69. Filed 2–7–68.

879,953. DRIVE RITE. Dayco Corporation. SN 318,408. Pub. 8–19–69. Filed 2–5–69.

879,954. FIBER-STEEL. The Firestone Tire & Rubber Company. SN 319,852. Pub. 8–19–69. Filed 2–24–69.

## Class 36 — Musical Instruments and Supplies

879,955. GLEN TRAVEL TAPE. Al. P. Wetle, d.b.a. Glen Recording Company. SN 250,662. Pub. 8–19–69. Filed 7–20–66.

879,956. A AMBICO AND DESIGN. Ambico Incorporated, by change of name from Ambico Trading Corporation. SN 274,391. Pub. 8–19–69. Filed 6–21–67.

879,957. GENAVOX. Excelsior Accordions, Inc. SN 283,829. Pub. 8–19–69. Filed 10–25–67.

879,958. THE HOUSE OF SOUND CARROLL SOUND AND DESIGN. Carroll Sound Incorporated. SN 308,464. Pub. 8–19–69. Filed 9–30–69.

879,959. CONDOR. Hammond Corporation. SN 316,641. Pub. 8–19–69. Filed 1–15–69.

879,960. BIRD AND H DESIGN. Hammond Corporation. SN 318,419. Pub. 8–19–69. Filed 2–5–69.

## Class 37 — Paper and Stationery

879,715. (See Class 1 for this trademark.)

879,961. REPRO-FAX. Colonial Carbon Company. SN 277,439. Pub. 4–22–69. Filed 8–3–67.

879,962. TELE-LOG. Tele-Quick Corporation. SN 287,768. Pub. 8–19–69. Filed 12–28–67.

879,963. ECONOKLEAR. Phillips Petroleum Company. SN 304,384. Pub. 8–19–69. Filed 8–5–68.

879,964. SPORTMARK. The Harding Jones Paper Company. SN 311,725. Pub. 8–19–69. Filed 11–6–68.

879,965. LADY LINEN. The Lynn Pacific Corporation. SN 313,592. Pub. 8–19–69. Filed 12–4–68.

879,966. ECHO NOTE. S-K Forms Company. SN 317,259. Pub. 8–19–69. Filed 1–22–69.

879,967. TUCKER COMBO. Tuckersharpe Pen Company, Inc. SN 317,774. Pub. 8–19–69. Filed 1–28–69.

879,968. S AND FLOWER DESIGN. Statler Tissue Corp. SN 318,465. Pub. 8–19–69. Filed 2–5–69.

879,969. PHOTO-LUCENT. Check Savers, Inc. SN 318,890. Pub. 8–19–69. Filed 2–11–69.

## Class 38 — Prints and Publications

879,970. MUSIC FUN·D·MENTALS AND DESIGN. Helen Briggs Crosier. SN 268,869. Pub. 8–19–69. Filed 4–11–67.

879,971. MUSIC FUN-D-MENTALS AND DESIGN. Helen Briggs Crosier. SN 268,870. Pub. 8–19–69. Filed 4–11–67.

879,972. $YOUR INVESTMENTS$. American Research Council, Inc. SN 282,760. Pub. 8–19–69. Filed 10–18–67.

879,973. AMERICAN INVESTOR THE MAGAZINE OF THE AMERICAN STOCK EXCHANGE. American Stock Exchange. SN 290,568. Pub. 8–19–69. Filed 2–8–68.

879,974. AIR CARGO. American Aviation Publications, Inc. SN 293,013. Pub. 8–19–69. Filed 3–12–68.

879,975. ATLAS A WINDOW ON THE WORLD. The World Press Company. SN 293,190. Pub. 8–19–69. Filed 3–13–68.

879,976. FOCAL. Digital Equipment Corporation. SN 293,484. Pub. 8–19–69. Filed 3–18–68.

879,977. CONFEDERATE AIR FORCE ETC. AND DESIGN. The Confederate Air Force. SN 293,803. Pub. 8–19–69. Filed 3–21–68.

879,978. WEEKENDER. Diversified Map Corporation. SN 302,926. Pub. 3–25–69. Filed 7–17–68.

879,979. CBAC. American Chemical Society. SN 304,538. Pub. 8–19–69. Filed 8–7–68.

879,980. DESIGN OF A FIGURE. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, assignee of Perfect Film & Chemical Corporation, d.b.a. Marvel Comics Group. SN 308,511. Pub. 8–19–69. Filed 9–30–68.

879,981. STATUS. The Curtis Publishing Company. SN 309,162. Pub. 8–19–69. Filed 10–8–68.

879,982. THE VILLAGER. Villager Industries, Inc., by change of name from The Villager, Inc. SN 311,190. Pub. 5–27–69. Filed 11–1–68.

879,983. MICROPLAYS. Marshall Jay Yaeger, d.b.a. Embassy Theatre Arts. SN 316,554. Pub. 8–19–69. Filed 1–14–69.

879,984. OFFICER FRIENDLY. The Sears-Roebuck Foundation. SN 317,118. Pub. 8–19–69. Filed 1–21–69.

879,985. CLP. Gelman Instrument Company. SN 317,338. Pub. 8–19–69. Filed 1–23–69.

879,986. DESIGN OF A ROOSTER IN A CIRCLE. Pathe News, Inc. SN 317,922. Pub. 8–19–69. Filed 1–30–69.

879,987. SPICY. Roth Greeting Cards. SN 319,961. Pub. 8–19–69. Filed 2–24–69.

879,988. WJB AND DESIGN. Walter J. Black, Inc. SN 319,999. Pub. 8–19–69. Filed 2–25–69.

879,989. THE INTERNATIONAL LIBRARY OF PIANO MUSIC. The University Society Inc. SN 320,883. Pub. 8–19–69. Filed 3–5–69.

879,990. TOMAHAWK. National Periodical Publications, Inc. SN 322,949. Pub. 8–19–69. Filed 3–27–69.

## Class 39 — Clothing

879,726. (See Class 3 for this trademark.)

879,729. (See Class 3 for this trademark.)

879,991. STUDIO PETITE AND DESIGN. Studio Petites. SN 98,314. Pub. 8–19–69. Filed 6–2–60.

879,992. CONESTOGA AND DESIGN. Davidson Shoe Corporation. SN 214,849. Pub. 2–22–66. Filed 3–24–65.

879,993. TIGER THINGS AND DESIGN. Tiger Fabrics, Inc. SN 275,327. Pub. 8–19–69. Filed 7–3–67.

879,994. OLIVIER DE VERLON. Societe Dite: Transocean Societe Anonyme. SN 280,102. Pub. 8–19–69. Filed 9–11–67.

879,995. DOODLES. Doodles, Inc. SN 282,690. Pub. 8–19–69. Filed 10–17–67.

879,996. IN THE WINNER'S CIRCLE AND DESIGN. Winner Hat Manufacturing Co. Inc. SN 287,690. Pub. 8–19–69. Filed 12–27–67.

879,997. DIP "N" DROP AND DESIGN. Robert D. Andrus, d.b.a. Dip "n" Drop Swimwear for Men. SN 289,956. Pub. 8–19–69. Filed 1–31–68.

879,998. BEAU BRUMMELL. B. W. Mayer & Cohan, Ltd. SN 290,631. Pub. 11–5–68. Filed 2–8–68.

879,999. JON JON AND DESIGN. Empire Pants and Boys' Wear Limited. SN 291,600. Pub. 8–19–69. Filed 2–21–68.

880,000. WEATHER WELT AND DESIGN. Mason Shoe Manufacturing Company. SN 291,515. Pub. 8–19–69. Filed 2–20–68.

880,001. THE CHOSEN FEW. Eugene F. Buell. SN 294,463. Pub. 2–11–69. Filed 3–29–68.

880,002. PATTY DAE. Patty Day, Inc. SN 294,523. Pub. 8–19–69. Filed 3–29–68.

880,003. TRUC. Brattle Films, Inc. MULTIPLE CLASS (Classes 39 and 52). SN 297,823. Pub. 8–19–69. Filed 5–10–68.

880,004. THE CHATTERY AND DESIGN. Sakowitz, Inc. MULTIPLE CLASS (Classes 39 and 101). SN 299,058. Pub. 8–19–69. Filed 5–27–68.

880,005. ROSY PARIS AND DESIGN. Etablissements Rosy. SN 299,223. Pub. 8–19–69. Filed 5–28–68.

880,006. MANDARIN COLLECTION OF DYNASTY. Mandarin Textiles Limited. SN 295,749. Pub. 8–26–69. Filed 4–16–68.

880,007. SPORT EASE FASHIONS AND DESIGN. Sport-Ease Fashions, Ltd. SN 301,455. Pub. 8–19–69. Filed 6–26–68.

880,008. DESIGN OF A WOMAN. Fort Howard Paper Company. SN 304,333. Pub. 8–19–69. Filed 8–5–68.

880,009. LAMBSKI AND DESIGN. Ronnie L. Merritt, d.b.a. Lambski. SN 304,368. Pub. 8–19–69. Filed 8–5–68.

880,010. PERMA-IRON. Cluett, Peabody & Co., Inc. SN 304,764. Pub. 8–19–69. Filed 8–9–68.

880,011. GREGORY COURT. Davenshire Inc. SN 305,536. Pub. 8–19–69. Filed 8–20–68.

880,012. SHUR-UP. Kayser-Roth Corporation. SN 306,251. Pub. 8–19–69. Filed 8–29–68.

880,013. DE SICA. Hampton Shirt Co., Inc. SN 306,664. Pub. 8–19–69. Filed 9–5–68.

880,014. MONTI. Chambers Sherwin, Inc. SN 306,881. Pub. 8–19–69. Filed 9–9–68.

880,015. SWEEPERS. Mister Pants, Inc. SN 308,389. Pub. 8–19–69. Filed 9–27–68.

880,016. FREEWAY. Cluett, Peabody & Co., Inc. SN 308,874. Pub. 8–19–69. Filed 10–4–68.

880,017. BANDURA. Joseph Bancroft & Sons Co. SN 309,015. Pub. 8–19–69. Filed 10–7–68.

880,018. SAILOR SCARF. Handcraft Incorporated. SN 309,583. Pub. 8–19–69. Filed 10–14–68.

880,019. SAILOR SQUARE. Handcraft Incorporated. SN 309,584. Pub. 8–19–69. Filed 10–14–68.

880,020. GALAPAGO. Villager Industries, Inc., by change of name from The Villager, Inc. SN 310,527. Pub. 5–20–69. Filed 10–25–68.

880,021. JACEL. Jacél, Inc. SN 311,039. Pub. 8–19–69. Filed 10–31–68.

880,022. GIANCARLO. Giancarlo Ltd. SN 311,480. Pub. 8–19–69. Filed 11–6–68.

880,023. FORDHAM FELT WORKS AND DESIGN. Fordham Felt Works, Inc. SN 311,644. Pub. 8–19–69. Filed 11–8–68.

880,024. DI MARO ELEGANTE. Gelles Neckwear Ltd., Inc. SN 312,450. Pub. 8–19–69. Filed 11–18–68.

880,025. "TD" JEANS BY SCORECARD. Unishops, Inc. SN 313,142. Pub. 8–19–69. Filed 11–26–68.

880,026. 2B (DESIGN). De Luxe Girdlecraft Co., Inc. SN 313,685. Pub. 8–19–69. Filed 12–5–68.

880,027. S & Q CLOTHIERS. S & Q Clothiers, Inc. SN 313,729. Pub. 8–19–69. Filed 12–5–68.

880,028. ROYAL SEALINO. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 315,596. Pub. 8–19–69. Filed 1–2–69.

880,029. ROYAL SEALINO AND CROWN DESIGN. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 315,597. Pub. 8–19–69. Filed 1–2–69.

880,030. DUNOON. Red Wing Shoe Company, Inc. SN 316,677. Pub. 8–19–69. Filed 1–15–69.

880,031. VULPERA. Southern Knitwear Mills, Inc. SN 316,914. Pub. 8–19–69. Filed 1–17–69.

880,032. NICOLA MANCINI. The Yorke Shirt Corporation. SN 317,171. Pub. 8–19–69. Filed 1–21–69.

880,033. THE RED EYE. Alleen, Inc. SN 317,805. Pub. 8–19–69. Filed 1–29–69.

880,034. FLORSHEIM FLEXIBLES. Interco Incorporated, d.b.a. The Florsheim Shoe Company. SN 318,269. Pub. 8–19–69. Filed 2–4–69.

880,035. MARK TAVENNER. L. E. Massey Shoes, Incorporated. SN 318,661. Pub. 8–19–69. Filed 2–7–69.

880,036. SEBRING. Higgins Company. SN 318,713. Pub. 8–19–69. Filed 2–10–69.

880,037. ISAACSON-CARRICO. Isaacson-Carrico Manufacturing Company. SN 319,543. Pub. 8–19–69. Filed 2–19–69.

880,038. WORSTED-TEX DESIGN STUDIO. House of Worsted-Tex, Inc. SN 320,605. Pub. 8–19–69. Filed 3–3–69.

880,039. MR. TRAVELER. Matsil Brothers, Inc. SN 320,642. Pub. 8–19–69. Filed 3–3–69.

880,040. IMAGINEERING. Angelica Corporation. SN 320,932. Pub. 8–19–69. Filed 3–6–69.

880,041. ROUNDERS. Craddock-Terry Shoe Corporation. SN 320,942. Pub. 8–19–69. Filed 3–6–69.

880,042. FRESH'NERS. Kimberly-Clark Corporation. MULTIPLE CLASS (Classes 39 and 42). SN 321,736. Pub. 8–19–69. Filed 3–14–69.

880,043. MARVALON. Kimberly-Clark Corporation. MULTIPLE CLASS (Classes 39 and 42). SN 321,739. Pub. 8–19–69. Filed 3–14–69.

880,044. TERICEL. Kimberly-Clark Corporation. MULTIPLE CLASS (Classes 39 and 42). SN 321,740. 8–19–69. Filed 3–14–69.

880,045. DESIGN MISCELLANEOUS. Trimfoot Company. SN 321,838. Pub. 8–19–69. Filed 3–14–69.

## Class 40 — Fancy Goods, Furnishings, and Notions

880,046. STYLE CREST AND DESIGN. La Maur, Inc., assignee of Famous Beauty Salons, Inc. SN 270,559. Pub. 2–13–68. Filed 5–3–67.

879,715. (See Class 1 for this trademark.)

880,047. WORLD'S STANDARD OF QUALITY. The Boye Needle Company. SN 280,758. Pub. 8–19–69. Filed 9–20–67.

880,048. INVIZA-MEND. Inviza-Mend Corporation. SN 295,531. Pub. 8–19–69. Filed 4–12–68.

880,049. "DIMENSION WELD." Pilgrim Industries Inc. SN 307,668. Pub. 8–19–69. Filed 9–18–68.

880,050. DEL-B-LON. Delbanco Wigs, Inc. SN 310,649. Pub. 8–19–69. Filed 10–28–68.

880,051. FRENCH LIFT. All-American Brush Mfg. Corp. SN 311,345. Pub. 8–19–69. Filed 11–5–68.

880,052. WALDES. Waldes Kohinoor, Inc. SN 315,454. Pub. 8–19–69. Filed 12–30–68.

## Class 41 — Canes, Parasols, and Umbrellas

880,053. BELAMI AND DESIGN. Telesco Brophey Limited. SN 306,594. Pub. 8–19–69. Filed 9–4–68.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

880,042. (See Class 39 for this trademark).

880,043. (See Class 39 for this trademark.)

880,044. (See Class 39 for this trademark.)

880,054. TEMPO DELUXE. The General Tire & Rubber Company. SN 277,162. Pub. 7–16–68. Filed 7–31–67.

880,055. LAURELCREST. Fieldcrest Mills, Inc. SN 299,449. Pub. 8–19–69. Filed 5–31–68.

880,056. SILART. Teijin Limited. SN 300,134. Pub. 8–19–69. Filed 6–10–68.

880,057. JIL AND DESIGN. Societe Anonyme, Etablissements Andre Giller. SN 301,366. Pub. 8–19–69. Filed 6–25–68.

880,058. CHEVALURE. Fieldcrest Mills, Inc. SN 302,733. Pub. 6–24–69. Filed 7–15–68.

880,059. VIGILON. C. R. Bard, Inc. SN 314,047. Pub. 8–19–69. Filed 12–10–68.

880,060. SCHLOSSBERG AND DESIGN. Schlossberg Textil AG. SN 320,744. Pub. 8–19–69. Filed 3–4–69.

880,061. VIVEAU. Fieldcrest Mills, Inc. SN 320,808. Pub. 8–19–69. Filed 3–5–69.

880,062. WINDSONG. Sears, Roebuck and Co. SN 320,865. Pub. 8–19–69. Filed 8–5–69.

880,063. PACITWIN. M. Lowenstein & Sons, Inc. SN 321,065. Pub. 8–19–69. Filed 3–7–69.

## Class 44 — Dental, Medical, and Surgical Appliances

880,064. LESTREBAND. Seton Products Limited. SN 291,645. Pub. 8–19–69. Filed 2–21–68.

880,065. WIG-L-CAPS. Crescent Dental Manufacturing Co. SN 298,811. Pub. 8–19–69. Filed 5–22–68.

880,066. NEURO. Howmet Corporation. SN 299,023. Pub. 8–19–69. Filed 5–24–68.

880,067. POLORATOR. Vogt Appliance Corporation, assignee of Vogt Appliance Company. SN 302,545. Pub. 8–19–69. Filed 7–11–68.

880,068. REGALCYCLE. Battle Creek Equipment Co. SN 304,300. Pub. 8–19–69. Filed 8–5–68.

880,069. STYLE-O-MATIC. La Maur, Inc. SN 306,094. Pub. 8–19–69. Filed 8–28–68.

880,070. HOLLYWOOD. Everest & Jennings, Inc. SN 306,655. Pub. 8–19–69. Filed 9–5–68.

880,071. MISCELLANEOUS DESIGN. Sound Ear Inc. SN 307,241. Pub. 8–19–69. Filed 9–12–68.

880,072. ANGISTAT. Medtronic, Inc. SN 317,080. Pub. 8–19–69. Filed 1–21–69.

880,073. SIMPLIQUE. Kimberly-Clark Corporation. SN 318,366. Pub. 8–10–69. Filed 2–5–69.

## Class 45 — Soft Drinks and Carbonated Waters

880,074. SINOLA. Sinalco Aktiengesellschaft. SN 253,943. Pub. 8–19–69. Filed 8–31–66.

880,075. PATHMARK AND DESIGN. Supermarkets General Corporation. SN 308,047. Pub. 8–19–69. Filed 9–23–68.

880,076. FOR THE BEST DRINK IN THE WOLD. Circle Enterprises, Inc. SN 309,237. Pub. 8–19–69. Filed 10–9–68.

## Class 46 — Foods and Ingredients of Foods

880,077. DUTCH PANTRY AND DESIGN. Dutch Pantry, Inc. SN 281,563. Pub. 8–19–69. Filed 10–2–67.

880,078. CAPE DOVER. Sea Harvest Corporation (Proprietary) Limited. SN 282,932. Pub. 8–19–69. Filed 10–19–67.

880,079. OLD NEW ORLEANS FRENCH MARKET. Gene J. Alessi, d.b.a. D.A. Company. SN 286,888. Pub. 8–19–69. Filed 12–14–67.

880,080. KOTOBUKI. Nishimoto Trading Co., Ltd. SN 292,003. Pub. 8–19–69. Filed 2–27–68.

880,081. UNITED STATES BAKING CO. INC. AND EAGLE DESIGN. United States Baking Company, Inc. SN 293,062. Pub. 8–19–69. Filed 3–12–68.

880,082. KB AND DESIGN. Kockos Bros., Inc., assignee of Kockos Bros., Ltd. SN 296,172. Pub. 8–19–69. 4–22–68.

880,083. HOT FISH SHOP. Lambert M. Kowalewski and Alphonse P. Bambenek, d.b.a. Hot Fish Shop Enterprises and Hot Fish Shop. SN 296,174. Pub. 8–19–69. Filed 4–22–68.

880,084. PETITE HOSPITALITY HAM AND DESIGN. Trunz, Inc. SN 297,227. Pub. 8–19–69. Filed 5–2–68.

880,085. STOP-N-GO. Marketing Merchandisers, Inc. SN 299,365. Pub. 8–19–69. Filed 5–29–68.

880,086. REGIO. Cudahy Company. SN 299,438. Pub. 8–19–69. Filed 5–31–68.

880,087. TAGGLE. General Foods Corporation. SN 299,839. Pub. 8–19–69. Filed 6–6–68.

880,088. WHIPSAW. General Foods Corporation. SN 299,840. Pub. 8–19–69. Filed 6–6—68.

880,089. CLIO AND DESIGN. Gem Packing Corporation. Pub. 8–19–69. Filed 9–4–68.

880,090. CARA-KRAUT. Richard K. Ransom, d.b.a. Hickory Farms of Ohio. SN 306,690. Pub. 8–19–69. Filed 9–5–68.

880,091. CRABBIES. Richard K. Ransom, d.b.a. Hickory Farms of Ohio. SN 306,691. Pub. 8–19–69. Filed 9–5–68.

880,092. LUCKY. Lucky Stores, Inc. SN 306,848. Pub. 8–19–69. Filed 9–9–68.

880,093. BEECH-NUT AND REP. OF A BABY. Beech-Nut, Inc. SN 307,061. Pub. 8–19–69. Filed 9–11–68.

880,094. SOOPER SCOOPERS. Snack Products, Inc., d.b.a. House of Snacks. SN 307,240. Pub. 8–19–69. Filed 9–12–68.

880,095. LUNDY'S ETC. AND DESIGN. S. Lundy's Sons. SN 307,336. Pub. 8–19–69. Filed 9–13–68.

880,096. IF IT'S BROKAY IT'S OKAY. Brokay Products, Inc. SN 308,359. Pub. 8–19–69. Filed 9–27–68.

880,097. DAIRY FRESH. Avoset Company. SN 309,643. Pub. 8–19–69. Filed 10–15–68.

880,098. ORANGE DELIGHT. Liberty Orchards Company, Inc. SN 309,974. Pub. 8–19–69. Filed 10–18–68.

880,099. DIXIE COLONEL BRAND AND DESIGN. A. & A. Spice and Food Company, Inc. SN 310,428. Pub. 8–19–69. Filed 10–24–68.

880,100. DOZEN+2. DCA Food Industries Inc. SN 312,281. Pub. 8–19–69. Filed 11–15–68.

880,101. COUNTRY VALLEY FARM. R. J. Reynolds Foods, Inc. SN 312,639. Pub. 8–19–69. Filed 11–20–68.

880,102. TENNESSEE RIVER. Hagy's. SN 313,869. Pub. 8–19–69. Filed 12–9–68.

880,103. MYTILIN. Aquaculture Corporation. SN 314,845. Pub. 8–19–69. Filed 12–19–68.

880,104. LHM. Aquaculture Corporation. SN 314,846. Pub. 8–19–69. Filed 12–19–68.

880,105. IOFIXT. Morton International, Inc. SN 316,055. Pub. 8–19–69. Filed 1–8–69.

880,106. BRANNETTE. Midwest Biscuit Company. SN 317,459. Pub. 8–19–69. Filed 1–24–69.

880,107. WILD ROSE. Midwest Biscuit Company. SN 317,460. Pub. 8–19–69. Filed 1–24–69.

880,108. KOFFEE SNACKERS. Midwest Biscuit Company. SN 317,461. Pub. 8–19–69. Filed 1–24–69.

880,109. SCOOTER-PIE. The Quaker Oats Company, d.b.a. Burry's and Burry Biscuit Division. SN 318,274. Pub. 8–19–69. Filed 2–4–69.

880,110. MY SECRET. International Minerals & Chemical Corporation. SN 319,240. Pub. 8–19–69. Filed 2–17–69.

880,111. TOAST 'EM. General Foods Corporation. SN 319,305. Pub. 8–12–69. Filed 2–17–69.

880,112. BANGYS. Confection Products Corporation. SN 320,325. Pub. 8–19–69. Filed 2–28–69.

880,113. PYRAMID. Sahara Packing Company. SN 322,530. Pub. 8–19–69. Filed 3–24–69.

880,114. ESTHER RACHEL'S. Abner Baldinger, d.b.a. Baldinger's Truffade Co. SN 322,812. Pub. 8–19–69. Filed 3–26–69.

## Class 47 — Wines

880,115. ESTRELLA ETC. AND DESIGN. Schenk S.A. SN 306,812. Pub. 8–19–69. Filed 9–6–68.

880,116. SOUTH PACIFIC. Hawaiian Wines, Ltd., d.b.a. Pacific Plantations. SN 323,194. Pub. 8–19–69. Filed 4–1–69.

## Class 50 — Merchandise Not Otherwise Classified

880,117. PIT STOP AND DESIGN. David W. Lupton, assignee of Contact Marketing Inc. SN 294,017. Pub. 8–19–69. Filed 3–25–68.

880,118. SM AND DESIGN. Marvel Equipment Corp. SN 305,949. Pub. 8–19–69. Filed 8–26–68.

880,119. INFLAT-A-BOOTREE. Inflat-A-Industries, Inc. SN 311,373. Pub. 8–19–69. Filed 11–5–68.

880,120. SLAKETTE. Cleaners Hanger Company. SN 313,905. Pub. 8–19–69. Filed 12–9–68.

## Class 51 — Cosmetics and Toilet Preparations

879,793. (See Class 18 for this trademark.)

880,121. LIGNE DE COEUR. Helene Curtis France S.A. SN 280,665. Pub. 8–19–69. Filed 9–19–67.

880,122. SHOW-BIZ. Helene Curtis Industries, Inc. SN 293,256. Pub. 8–19–69. Filed 3–14–68.

880,123. POWER SET. Helene Curtis Industries, Inc. SN 293,260. Pub. 8–19–69. Filed 3–14–68.

880,124. BATH WAND. Helene Curtis Industries, Inc. SN 293,263. Pub. 8–19–69. Filed 3–14–68.

880,125. LIP GUNS. Helene Curtis Indnstries, Inc. SN 293,265. Pub. 8–19–69. Filed 3–14–68.

880,126. GURU. The J. B. Williams Company, Inc. SN 300,216. Pub. 11–12–68. Filed 6–11–68.

880,127. GURU. The J. B. Williams Company, Inc., assignee of John H. Breck, Inc. SN 300,682. Pub. 11–12–68. Filed 6–18–68.

880,128. ENGLISH SPRING. Yardley of London, Inc. SN 302,877. Pub. 8–19–69. Filed 7–16–68.

880,129. DESIGN OF TWO TRIANGLES. Clairol Incorporated. SN 311,352. Pub. 8–19–69. Filed 11–5–68.

880,130. SEDATE. The Gillette Company. SN 312,386. Pub. 8–19–69. Filed 11–18–68.

880,131. NAUDET. Essential Products Company, Inc. SN 314,309. Pub. 8–19–69. Filed 12–12–68.

880,132. SUN SESSIONS. Chas. Pfizer & Co., Inc. SN 314,500. Pub. 8–19–69. Filed 12–16–68.

880,133. K AND SWORD DESIGN. Robert Herr. SN 319,541. Pub. 8–19–69. Filed 2–19–69.

## Class 52 — Detergents and Soaps

879,733. (See Class 4 for this trademark.)

879,735. (See Class 6 for this trademark.)

880,003. (See Class 39 for this trademark.)

880,134. MISCELLANEOUS DESIGN. Megular Enterprises. SN 298,022. Pub. 8–19–69. Filed 5–13–68.

880,135. OUR LADY. Nash-Finch Company, d.b.a. Nash Finch Company. SN 299,034. Pub. 8–19–69. Filed 5–24–68.

880,136. SEXAUER. J. A. Sexauer Mfg. Co., Inc. SN 302,346. Pub. 8–19–69. Filed 7–9–68.

880,137. EXCOLENE. North American Detergents Corp. SN 310,180. Pub. 8–19–69. Filed 10–22–68.

880,138. RESTORE. Economics Laboratory, Inc. SN 311,587. Pub. 8–19–69. Filed 11–7–68.

880,139. PET-GARD. Holliston Laboratories, Inc. SN 313,237. Pub. 8–19–69. Filed 11–29–68.

880,140. GOLDLUCENT. Shiseido Co. Ltd. SN 313,980. Pub. 8–19–69. Filed 12–9–68.

880,141. SURE THING. Calgon Corporation. SN 314,753. Pub. 8–19–69. Filed 12–18–68.

880,142 RAINBOW. Lensclean Inc. SN 318,204. Pub. 819–69. Filed 2–3–69.

880,143. .LANSOL. Utility Products Inc. SN 319,652. Pub. 8–19–69. Filed 2–19–69.

880,144. SUDDEN POWER. American Home Products Corporation. SN 320,902. Pub. 8–19–68. Filed 3–6–69.

## Service Marks

## Class 100 — Miscellaneous

880,145. HEMOFILE. The Central Laboratories, Inc. SN 282,437. Pub. 8–19–69. Filed 10–13–67.

880,146. BUFFET AND DESIGN. Buffet, Inc. SN 286,500. Pub. 8–19–69. Filed 12–8–67.

880,147. IDAHO NUCLEAR ENERGY COMMISSION AND DESIGN. The Idaho Nuclear Energy Commission. SN 287,069. Pub. 8–19–69. Filed 12–18–67.

880,148. V ET V AND DESIGN. Vincent A. Gesumaria, d.b.a. Vincent et Vincent. SN 288,209. Pub. 8–19–69. Filed 1–5–68.

880,149. GOLLOB ANALYTICAL SERVICE INC. AND DESIGN. Gollob Analytical Service Corp., assignee of Gollob Analytical Service, Inc. SN 291,065. Pub. 8–19–69. Filed 2–14–68.

880,150. AQR SERVICE AND DESIGN. R. C. Simpson & Staff, Inc. SN 291,439. Pub. 8–19–69. Filed 2–19–68.

880,151. DESIGN MISCELLANEOUS. Logicon, Inc. SN 292,209. Pub. 8–19–69. Filed 2–29–68.

880,152. WHAT'S IN YOUR NAME? Sanson Institute of Heraldry, Inc. SN 298,356. Pub. 8–19–69. Filed 5–16–68.

880,153. DALY. Wilbur L. Ihlenfeldt. SN 303,614. 8–19–69. Filed 7–25–68.

880,154. GRIFF'S BURGER BAR AND DESIGN. Griffs of America, Inc. SN 305,326. 8–19–69. Filed 8–16–68.

880,155. ECONO LODGE AND DESIGN. Econo Lodge, Inc. SN 307,441. Pub. 8–19–69. Filed 9–16–68.

880,156. DREAMMAKERS UNLIMITED. Ronald Downing, d.b.a. Dreammakers. SN 308,098. Pub. 8–19–69. Filed 9–24–68.

880,157. BR AND DESIGN. The Beef Ranch, Inc. SN 312,873. Pub. 8–19–69. Filed 11–22–68.

880,158. DUTCHLAND DAIRY. B/G Foods, Inc. SN 316,556. Pub. 8–19–69. Filed 1–15–69.

880,159. DUTCHLAND. B/G Foods, Inc. SN 316,559. Pub. 8–19–69. Filed 1–15–69.

880,160. BOWEN B AND DESIGN. Bowen Engineering Inc. SN 316,926. Pub. 8–19–69. Filed 1–21–69.

880,161. QUALITY MOTEL. Quality Courts Motels, Inc. SN 317,923. Pub. 8–19–69. Filed 1–30–69.

880,162. YUMMERS SAN FRANCISCO ROAST BEEF AND DESIGN. United States Franchise Corporation. SN 318,515. Pub. 8–19–69. Filed 2–6–69.

## Class 101 — Advertising and Business

880,004. (See Class 39 for this trademark.)

880,163. MARKET CHECK AND DESIGN. The Lloyd H. Hall Co. Inc. SN 280,417. Pub. 8–19–69. Filed 9–15–67.

880,164. BANDWAGON USA AND DESIGN. Bandwagon U.S.A., Inc. SN 280,540. Pub. 8–19–69. Filed 9–18–67.

880,165. MUSICPAGE AND DESIGN. Musicpage, Inc., assignee of Max Fetty, d.b.a. Max Fetty and Associates. SN 284,967. Pub. 8–19–69. Filed 11–16–67.

880,166. HOUSE OF NINE. House of Nine, Incorporated. SN 289,193. Pub. 8–12–69. Filed 1–19–68.

880,167. FORGE. Burroughs Corporation. SN 290,252. Pub. 8–19–69. Filed 2–5–68.

880,168. CHILTON. Chilton Company. SN 293,356. Pub. 8–19–69. Filed 3–15–68.

880,169. NATURAL RUBBER THREAD DOES SO MUCH BETTER NATURALLY AND DESIGN. Natural Rubber Thread Committee, Inc. SN 296,708. Pub. 8–19–69. Filed 4–26–68.

880,170. MINISHOW. H. Levitt, d.b.a. Levitt Ventures. SN 298,016. Pub. 8–19–69. Filed 5–13–68.

880,171. GS AND DESIGN. Golden State Advertising Co., Inc., d.b.a. Golden State Banner Co. SN 301,935. Pub. 8–19–69. Filed 7–3–68.

880,172. T AND DESIGN. Tomsett Associates, Inc. SN 301,977. Pub. 8–19–69. Filed 7–3–68.

880,173. ARTCARVED DIAMOND CENTER. J. R. Wood & Sons, Inc. SN 303,950. Pub. 8–19–69. Filed 7–30–68.

880,174. DATA BANK AND DESIGN. Dairy and Food Industries Supply Association, Inc. SN 305,408. Pub. 8–19–69. Filed 8–19–68.

880,175. ACME. Acme Personnel Service of Spokane, Inc. SN 306,206. Pub. 8–19–69. Filed 8–29–68.

880,176. COMPUTICKET. Computicket Corporation. SN 306,758. Pub. 8–19–69. Filed 9–6–68.

880,177. SANDER/LINE. Sander Wood Engraving Company, Inc. SN 307,674. Pub. 8–19–69. Filed 9–18–68.

880,178. STARCHED. Daniel Starch & Staff, Inc. SN 308,237. Pub. 8–19–69. Filed 9–25–68.

880,179. PS AND DESIGN. Purity Supreme, Inc., by change of name from Save-Mor Supermarkets, Inc. SN 311,991. Pub. 8–19–69. Filed 11–13–68.

880,180. TOWN & COUNTRY. Town & Country Auto Wash Systems. SN 314,689. Pub. 8–19–69. Filed 12–17–68.

880,181. CS DESIGN. Computersearch Corporation. SN 315,210. Pub. 8–19–69. Filed 12–26–68.

880,182. PLOMS. Associometrics, Incorporated. SN 318,385. Pub. 8–19–69. Filed 2–5–69.

880,183. GOODWAY. Goodway, Inc. SN 319,706. Pub. 8–19–69. Filed 2–20–69.

## Class 102 — Insurance and Financial

880,184. GIS AND DESIGN. Growth Industry Shares, Inc. SN 286,133. Pub. 8–19–69. Filed 12–4–67.

880,185. PROVIDENT COSTCONTROL. Provident National Bank. SN 295,871. Pub. 8–19–69. Filed 3–27–68.

880,186. COFFEE BREAK AUTO LOAN. First National City Bank. SN 303,517. Pub. 8–19–69. Filed 7–24–68.

880,187. PREMIUM SAVINGS ACCOUNT AND DESIGN. Upper Avenue National Bank of Chicago. SN 303,551. Pub. 8–19–69. Filed 7–24–68.

880,188. THE INSURANCE PEOPLE WITH IDEAS. Sun Life Assurance Company of Canada. SN 313,614. Pub. 8–19–69. Filed 12–4–68.

880,189. BP AND SHIELD DESIGN. The British Petroleum Company Limited. SN 322,124. Pub. 8–19–69. Filed 3–19–69.

## Class 103 — Construction and Repair

880,190. MISCELLANEOUS DESIGN. Binishells S.p.A. SN 275,826. Pub. 8–19–69. Filed 7–12–67.

880,191. SALVIACIM. Salviam. SN 285,680. Pub. 8–19–69. Filed 11–27–67.

880,192. CRAFTENEERED. John K. Gould. SN 288,692. Pub. 8–19–69. Filed 1–12–68.

880,193. CRAFTENEERING. John K. Gould. SN 290,846. Pub. 8–19–69. Filed 2–12–68.

880,194. UNI-CREST HOMES AND DESIGN. Bienville Investment Corporation. SN 301,402. Pub. 8–19–69. Filed 6–26–68.

880,195. BONDED. Bonded Oil Company. SN 310,441. Pub. 8–19–69. Filed 10–24–68.

880,196. MW AND DESIGN. Mobile Wash, Inc. SN 312,791. Pub. 8–19–69. Filed 11–21–68.

## Class 104 — Communication

880,197. CI AND DESIGN. Communications Industries, Inc. SN 292,555. Pub. 8–19–69. Filed 3–6–68.

880,198. OPRYLAND, USA. WSM, Incorporated. SN 313,532. Pub. 8–19–69. Filed 12–3–68.

## Class 105 — Transportation and Storage

880,199. MINILINER. Air West, Inc., by merger and change of name from West Coast Airlines, Inc. SN 274,373. Pub. 8–19–69. Filed 6–20–67.

880,200. MID-ATLANTIC AIRWAYS. Wimbish Aviation, Incorporated. SN 277,953. Pub. 8–19–69. Filed 8–9–67.

880,201. ALLEGHENY COMMUTER. Allegheny Airlines, Inc. SN 288,761. Pub. 8–19–69. Filed 1–15–68.

880,202. FORTY-NINER. National Airlines Inc. SN 308,629. Pub. 8–19–69. Filed 10–1–68.

## Class 106 — Material Treatment

880,203. BMT AND DESIGN. Brazing & Metal Treating, Inc. SN 297,522. Pub. 8–19–69. Filed 5–7–68.

880,204. DESIGN OF BUST OF FRANKLIN. The Franklin Mint, Inc. SN 303,571. Pub. 8–19–69. Filed 7–25–68.

880,205. PH (DESIGN). Putnam-Herzl Finishing Company, Inc. SN 308,398. Pub. 8–19–69. Filed 9–27–68.

## Class 107 — Education and Entertainment

880,206. AMERICAN BEHAVIORAL SCIENCE TRAINING LABORATORIES. Warren E. Avis. SN 289,958. Pub. 8–19–69. Filed 1–31–68.

880,207. THE RAINY DAYS ARE. The Rainy Days Are. SN 291,166. Pub. 8–19–69. Filed 2–15–68.

880,208. DESIGN OF HUMAN ETC. Warren E. Avis. SN 291,343. Pub. 8–19–69. Filed 2–19–68.

880,209. LOS VIOLINESS DE PEGO. Adolfo L. Pego and Juan L. Pego (joint owners). SN 296,190. Pub. 8–19–69. Filed 4–22–68.

880,210. SURF SIDE SIX. Thomas W. Saunders. SN 308,035. Pub. 8–19–69. Filed 9–23–68.

880,211. THE PURPLE PENQUIN. H & W Corporation. SN 311,870. Pub. 8–19–69. Filed 11–12–68.

## Collective Membership Mark

## Class 200

880,212. AMERICAN INSTITUTE FOR DESIGN AND DRAFTING AND DESIGN. American Institute for Design and Drafting. SN 298,528. Pub. 8-19-69. Filed 5-20-68.

## Certification Marks

## Class A — Goods

880,213. SUPIMA. Supima Association of America. SN 288,649. Pub. 8-19-69. Filed 1-11-68.

880,214. FLORIDA CITRUSA AND DESIGN. Florida Citrus Commission. SN 320,339. Pub. 8-19-69. Filed 2-28-69.

880,215. FLORIDA CITRUSA. Florida Citrus Commission. SN 320,340. Pub. 8-19-69. Filed 2-28-69.

# SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

## Class 2 — Receptacles

880,216. Star Vu Plastics, Ltd., New York, N.Y. SN 298,363. Filed P.R. 5-16-68; Am. S.R. 7-7-69.

### KRYSTAL FOAM

For Disposable Dishes, Containers, Boxes (Int. Cl. 21.)
First use Feb. 1, 1967.

880,217. Aladdin Industries, Incorporated (Delaware corporation), Nashville, Tenn., by merger from Aladdin Industries, Incorporated (Illinois corporation). SN 303,653. Filed P.R. 7-26-68; Am. S.R. 7-31-69.

### THE RUSTLESS ONE

For Vacuum Bottles (Int. Cl. 21).
First use July 13, 1968.

## Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

880,218. Quikey Manufacturing Company, Inc., Akron, Ohio. SN 290,019. Filed P.R. 1-31-68; Am. S.R. 7-15-69.

### CASH CADDY

For Wallet (Int. Cl. 18.)
First use Jan. 11, 1968.

## Class 18 — Medicines and Pharmaceutical Preparations

880,219. Fisons Pharmaceuticals Limited, Loughborough, England. SN 301,220. Filed P.R. 6-24-68; Am. S.R. 5-5-69.

### SPINCAP

For Pharmaceutical Preparation in Capsule Form Used in an Inhalator (Int. Cl. 5.)
Priority claimed under Sec. 44(d) on British Reg. No. 921,060, dated Feb. 14, 1968.

## Class 21 — Electrical Apparatus, Machines, and Supplies

880,220. Jim Marshall (Products) Limited, Bletchley, England. SN 300,466. Filed P.R. 6-14-68; Am. S.R. 7-18-69.

### MARSHALL

For Electronic Sound Amplifiers (Int. Cl. 9.)
First use in or about July 1962; in commerce in or about May 26, 1965.

## Class 27 — Horological Instruments

880,221. Kabushiki Kaisha Poparu, Tokyo-to, Japan. SN 287,224. Filed P.R. 12-19-67; Am. S.R. 8-29-69.

### CASLON

For Watches and Clocks (Int. Cl. 14.)
First use Feb. 15, 1965; in commerce June 25, 1966.

## Class 28 — Jewelry and Precious-Metal Ware

880,222. George Gubanez, Jr, Stratford, Conn. SN 312,631. Filed P.R. 11-18-68; Am. S.R. 9-2-69.

### HEATHERCRAFT

For Jewelry (Int. Cl. 14.)
First use Mar. 24, 1966.

## Class 36 — Musical Instruments and Supplies

880,223. Electronic Futures, Inc., North Haven, Conn. SN 291,503. Filed P.R. 2-20-68; Am. S.R. 8-27-69.

### AUDIO FLASHCARD

For Apparatus for Recording Sound on Cards and Reproducing Sound From the Same Insertable Cards (Int. Cl. 9).
First use July 10, 1967.

## Class 38 — Prints and Publications

880,224. The Product Workshop, Inc., Rochester, N.Y. SN 296,576. Filed P.R. 4-25-68; Am. S.R. 4-28-69.

### NEW PRODUCT OPPORTUNITIES

For Newsletter (Int. Cl. 16).
First use Jan. 25, 1968.

880,225. Technical Publishing Company, Barrington, Ill. SN 300,633. Filed P.R. 6-17-68; Am. S.R. 8-13-69.

### FACILITIES ENGINEERING

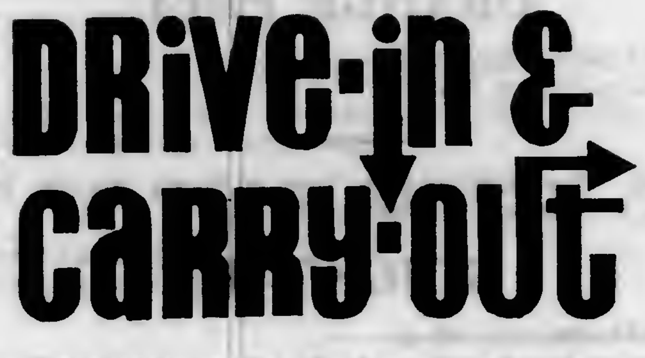
For Newsletter (Int. Cl. 16).
First use May 1966.

880,226. Paul Lemmons, Shelby, N.C. SN 303,054. Filed P.R. 7-18-68; Am. S.R. 7-28-69.

### INSTRUCTORS RAPID AVERAGER

For Printed Charts, Record Sheets and Aligning Markers for Averaging Scholastic Grades (Int. Cl. 16).
First use June 10, 1968.

880,227. Clissold Publishing Company, Chicago, Ill. SN 305,634. Filed P.R. 8-21-68; Am. S.R. 8-28-69.



For Trade Magazine (Int. Cl. 16).
First use Aug. 2, 1968.

880,228. McGraw-Hill, Inc., New York, N.Y. SN 305,663. Filed P.R. 8-21-68; Am. S.R. 8-8-69.

### OCEANICS NEWS

For Newsletter Issued Periodically (Int. Cl. 16).
First use July 29, 1968.

880,229. Institute for Scientific Information, Inc., Philadelphia, Pa. SN 307,578. Filed P.R. 9-17-68; Am. S.R. 8-14-69.

### INTERNATIONAL DIRECTORY OF RESEARCH & DEVELOPMENT SCIENTISTS

For Reference Volumes Issued Annually in the Nature of a Directory (Int. Cl. 16).
First use Aug. 8, 1968.

## Class 39 — Clothing

880,230. Peter Pan International, Inc., New York, N.Y. SN 298,147. Filed P.R. 5-14-68; Am. S.R. 8-13-69.

### SIMPLY SOFT

For Foundation Garments and Lingerie (Int. Cl. 25).
First use Apr. 30, 1968.

880,231. Glamorise Foundations, Inc., New York, N.Y. SN 299,346. Filed P.R. 5-29-68; Am. S.R. 8-15-69.

### PRETTY SMOOTH

For Foundation Garments (Int. Cl. 25).
First use Apr. 12, 1968.

880,232. Balfour Shirtmakers Ltd., New York, N.Y. SN 300,677. Filed P.R. 6-18-68; Am. S.R. 7-29-69.

### MISS BALFOUR

For Ladies' Shirts and Blouses (Int. Cl. 25).
First use June 13, 1968.

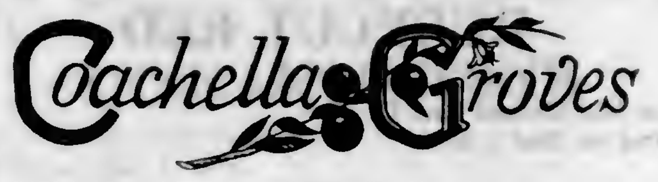
## Class 46 — Foods and Ingredients of Foods

880,233. R. Perri and Sons, Inc., New Haven, Conn. SN 282,623. Filed P.R. 10-16-67; Am. S.R. 12-17-68.

### PERRI

For Italian Brand Sausage (Int. Cl. 29).
First use July 1, 1938.

880,234. Coachella Groves, Coachella, Calif. SN 288,938. Filed P.R. 1-16-68; Am. S.R. 8-22-69.



For Citrus Fruits—Namely, Fresh Grapefruit and Fresh Tangerines (Int. Cl. 31).
First use Nov. 29, 1967.

880,235. Maryland Cup Corp., Owings Mills, Md. SN 295,542. Filed P.R. 4-12-68; Am. S.R. 8-7-69.

### FROOTY

For Ice Cream Cones (Int. Cl. 30).
First use on or about Mar. 26, 1968.

880,236. General Foods Corporation, White Plains, N.Y. SN 301,338. Filed P.R. 6-25-68; Am. S.R. 7-11-69.

### WESTERN STYLE

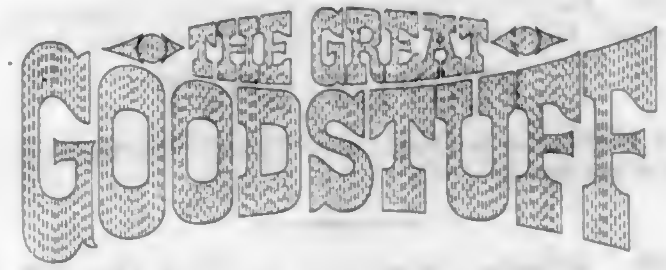
For Dog Food (Int. Cl. 31).
First use May 24, 1968.

880,237. General Foods Corporation, White Plains, N.Y. SN 301,340. Filed P.R. 6-25-68; Am. S.R. 7-11-69.

### COUNTRY STYLE

For Dog Food (Int. Cl. 31).
First use May 24, 1968.

880,238. Ralston Purina Company, St. Louis, Mo. SN 304,503. Filed P.R. 8-6-68; Am. S.R. 8-13-69.



The drawing is lined for shading purposes only. No claim is made to color.
For Breakfast Cereal (Int. Cl. 30).
First use July 23, 1968.

## Class 50 — Merchandise Not Otherwise Classified

880,239. Breeding Insulation Company, Inc., d.b.a. Ez-On Manufacturing Company, Nashville, Tenn. SN 320,238. Filed P.R. 2-27-69; Am. S.R. 8-7-69.

### EZ-ON

For Insulation Covers (Int. Cl. 17).
First use Apr. 1, 1966.

## Class 51 — Cosmetics and Toilet Preparations

880,240. Revlon, Inc., New York, N.Y. SN 304,126. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### RUBYCUT RED

For Nail Enamel (Int. Cl. 3).
First use May 3, 1968.

880,241. Revlon, Inc., New York, N.Y. SN 304,127. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### TEARDROP PINK

For Nail Enamel (Int. Cl. 3).
First use May 3, 1968.

880,242. Revlon, Inc., New York, N.Y. SN 304,128. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### CRYSTAL CORAL

For Nail Enamel (Int. Cl. 3).
First use May 3, 1968.

880,243. Revlon, Inc., New York, N.Y. SN 304,129. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### GREAT GRANNY RED

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,244. Revlon, Inc., New York, N.Y. SN 304,130. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### SKINNYDIP PINK

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,245. Revlon, Inc., New York, N.Y. SN 304,131. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### SWEET POTATO

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,246. Revlon, Inc., New York, N.Y. SN 304,132. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### POLAR BARE PINK

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,247. Revlon, Inc., New York, N.Y. SN 304,133. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### APRICOLA

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,248. Revlon, Inc., New York, N.Y. SN 304,134. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### ORANGE PEEL

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,249. Revlon, Inc., New York, N.Y. SN 304,135. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### GINGERALE

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,250. Revlon, Inc., New York, N.Y. SN 304,136. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### LICKETY PINK

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,251. Revlon, Inc., New York, N.Y. SN 304,137. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### IN THE FLESH

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,252. Revlon, Inc., New York, N.Y. SN 304,138. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### E. S. PINK

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,253. Revlon, Inc., New York, N.Y. SN 304,139. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### GRAPEVINE

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,254. Revlon, Inc., New York, N.Y. SN 304,141. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### PITHY PEACH

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,255. Revlon, Inc., New York, N.Y. SN 304,142. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### ENOUGH BUFF

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,256. Revlon, Inc., New York, N.Y. SN 304,143. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### GEORGY PEACH

For Lipstick (Int. Cl. 3).
First use May 6, 1968.

880,257. Revlon, Inc., New York, N.Y. SN 304,144. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### CANARY TOPAZ

For Eye Shadow (Int. Cl. 3).
First use May 3, 1968.

880,258. Revlon, Inc., New York, N.Y. SN 304,146. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### PLUM RUBY

For Lipstick (Int. Cl. 3).
First use May 3, 1968.

880,259. Revlon, Inc., New York, N.Y. SN 304,147. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### PEARSHAPED PEACH

For Lipstick (Int. Cl. 3).
First use May 3, 1968.

880,260. Revlon, Inc., New York, N.Y. SN 304,148. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### POPPY DIAMOND

For Lipstick (Int. Cl. 3).
First use May 3, 1968.

880,261. Revlon, Inc., New York, N.Y. SN 304,149. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### CABOCHON CORAL

For Lipstick (Int. Cl. 3).
First use May 3, 1968.

880,262. Revlon, Inc., New York, N.Y. SN 304,150. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### SHERRY TOPAZ

For Lipstick (Int. Cl. 3).
First use May 3, 1968.

880,263. Revlon, Inc., New York, N.Y. SN 304,152. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### APRICOT AMBER

For Lipstick (Int. Cl. 3).
First use May 3, 1968.

880,264. Revlon, Inc., New York, N.Y. SN 304,153. Filed P.R. 8-1-68; Am. S.R. 8-7-69.

### CINNAMONSTONE

For Lipstick (Int. Cl. 3).
First use May 3, 1968.

## TRADEMARK REGISTRATIONS RENEWED

74,056. "WIGWAM." Cl. 46 (Int. Cl. 30). 6-15-09.
75,757. REPRESENTATION OF CRESCENT PIERCED BY WINGED ARROW. Cl. 28 (Int. Cl. 14). 11-9-09.
76,150. CHALLENGE. Cl. 46 (Int. Cl. 30). 12-21-09.
257,652. CONCERT MASTER. Cl. 36 (Int. Cl. 15). 6-18-29.
258,220. "C O R O N A" AND REPRESENTATION OF CROWN. Cl. 23 (Int. Cl. 7). 7-2-29.
259,998. BEAUTY SLEEP. Cl. 42 (Int. Cl. 24). 8-13-29.
260,233. MARCO-POLO. Cl. 46 (Int. Cl. 29). 8-20-29.
261,696. "LIBERTY" AND SHIELD DESIGN. Cl. 39 (Int. Cl. 25). 9-24-29.
262,595. ONLIWON. Cl. 37 (Int. Cl. 16). 10-1-29.
263,544. COMMODORE. Cl. 27 (Int. Cl. 14). 11-5-29.
263,787. LUMARITH. Cl. 1 (Int. Cls. 1 and 17). 11-12-29.
263,906. "Y" AND DESIGN. Cl. 12 (Int. Cl. 19). 11-12-29.
263,907. Y. Cl. 12 (Int. Cl. 19). 11-12-29.
263,908. YOSEMITE. Cl. 12 (Int. Cl. 19). 11-12-29.
264,372. "WIMBLEDON" ETC. AND DESIGN. Cl. 39 (Int. Cl. 25). 11-26-29.
265,296. QUICK-STEP. Cl. 16 (Int. Cl. 2). 12-24-29.
266,307. RAG DOLL. Cl. 46 (Int. Cl. 29). 1-14-30.
267,236. FLAMO. Cl. 6 (Int. Cl. 4). 2-18-30.
442,734. CHINA GIRL AND DESIGN. Cl. 46 (Int. Cls. 29 and 30). 5-24-49.
442,861. HALOWAX. Cl. 15 (Int. Cl. 4). 6-7-49.
442,944. WECO. Cl. 13 (Int. Cl. 6). 6-21-49.
442,945. WECO AND DESIGN. Cl. 13 (Int. Cl. 6). 6-21-49.
443,304. SIOUX BRAND. Cl. 46 (Int. Cl. 31). 8-30-49.
443,358. ADLAKE. Cl. 21 (Int. Cls. 9 and 11). 9-6-49.
443,459. TOP FLIGHT. Cl. 35 (Int. Cl. 12). 10-18-49.
443,460. TOP FLIGHT DELUXE. Cl. 35 (Int. Cl. 12). 10-18-49.
443,636. ROYAL. Cl. 34 (Int. Cl. 11). 12-20-49.
443,693. MULE-HIDE. Cl. 19 (Int. Cl. 12). 1-17-50.
510,054. BY DREXEL. Cl. 32 (Int. Cl. 20). 5-24-49.
510,423. HI-10-SL. Cl. 35 (Int. Cl. 7). 5-31-49.
510,972. INLINE. Cl. 37 (Int. Cl. 16). 6-14-49.
511,397. SERGEANT. Cl. 37 (Int. Cl. 16). 6-21-49.
511,441. PLASTI-HIDE BY CROWN. Cl. 3 (Int. Cl. 18). 6-21-49.
511,724. TINTEX TINTS AS YOU RINSE. Cl. 6 (Int. Cl. 2). 6-28-49.
511,952. POPULAR PHOTOGRAPHY. Cl. 38 (Int. Cl. 16). 7-5-49.
511,953. POPULAR AVIATION. Cl. 38 (Int. Cl. 16). 7-5-49.
511,955. PHOTOGRAPHY. Cl. 38 (Int. Cl. 16). 7-5-49.
512,888. SIGUNIT. Cl. 12 (Int. Cl. 1). 7-26-49.
513,248. X-CELL-ALL. Cl. 16 (Int. Cl. 3). 8-9-49.
513,250. IRISH BRAND CREAM ALE AND DESIGN. Cl. 48 (Int. Cl. 32). 8-9-49.
513,378. AERTITE. Cl. 12 (Int. Cl. 19). 8-9-49.

513,393. VALLEY FORGE. Cl. 16 (Int. Cl. 2). 8–9–49.
513,985. READY-POWER. Cl. 21 (Int. Cl. 12). 8–23–49.
513,988. GOLDEN VOICE. Cl. 21 (Int. Cl. 9). 8–23–49.
514,185. SUPERIOR AND DESIGN. Cl. 6 (Int. Cls. 1 and 3). 8–23–49.
514,279. AIRLOOM. Cl. 42 (Int. Cl. 24). 8–23–49.
514,350. KOCKUMS MALMO AND DESIGN. Cl. 19 (Int. Cl. 12). 8–30–49.
514,372. G. B. RAFFETTO INC. Cl. 46 (Int. Cls. 29 and 30). 8–30–49.
514,385. MINNETONKA. Cl. 39 (Int. Cl. 25). 8–30–49.
514,397. FAIR AND DESIGN. Cl. 14 (Int. Cl. 6). 8–20–49.
514,529. PIPER. Cl. 19 (Int. Cl. 12). 8–30–49.
514,610. GECC. Cl. 102 (Int. Cl. 36). 8–30–49.
514,714. OK. Cl. 23 (Int. Cl. 7). 9–6–49.
514,787. AKRAD. Cl. 21 (Int. Cl. 9). 9–6–49.
514,818. HONEYSUCKLE. Cl. 39 (Int. Cl. 25). 9–6–49.
514,959. AGUA DE COLONIA ANEJA. Cl. 51 (Int. Cl. 3). 9–6–49.
515,043. SILVANA. Cl. 27 (Int. Cl. 14). 9–13–49.
515,081. FURMAN'S. Cl. 46 (Int. Cl. 29). 9–13–49.
515,120. PLISULATE. Cl. 12 (Int. Cl. 17). 9–13–49.
515,283. CENTAMATIC. Cl. 23 (Int. Cl. 16). 9–20–49.
515,431. BAGOLOGY. Cl. 38 (Int. Cl. 16). 9–20–49.
515,494. GIFT OF A LIFETIME. Cl. 27 (Int. Cl. 14). 9–20–49.
515,559. UNIFOLD. Cl. 3 (Int. Cl. 18). 9–27–49.
515,560. INDEX-IT. Cl. 3 (Int. Cl. 18). 9–27–49.
515,561. C.S.R. Cl. 6 (Int. Cl. 1). 9–27–49.
515,583. WILPUTTE. Cl. 34 (Int. Cl. 11). 9–27–49.
515,585. TIGER HEAD (DESIGN). Cl. 16 (Int. Cl. 2). 9–27–49.
515,638. JENKINS. Cl. 50 (Int. Cl. 18). 9–27–49.
515,669. CURTIS. Cl. 12 (Int. Cl. 19). 9–27–49.
515,684. KENCREST. Cl. 13 (Int. Cl. 20). 9–27–49.
515,697. SEMINOLE. Cl. 46 (Int. Cl. 31). 9–27–49.
515,703. KENNEY. Cl. 13 (Int. Cl. 20). 9–27–49.
516,145. FCA. Cl. 46 (Inc. Cl. 30). 10–11–49.
516,185. WHITE GARDEN AND DESIGN. Cl. 51 (Int. Cl. 3). 10–11–49.
516,234. CHACO. Cl. 46 (Int. Cl. 31). 10–11–49.
516,314. CHEEKS. Cl. 51 (Int. Cl. 3). 10–11–49.
516,374. PRESTIGE. Cl. 39 (Int. Cl. 25). 10–18–49.
516,410. PHILLIPS 66 AND DESIGN. Cl. 15 (Int. Cl. 4). 10–18–49.
516,425. PHILLIPS. Cl. 15 (Int. Cl. 4). 10–18–49.
516,531. KEL-F. Cl. 1 (Int. Cl. 1). 10–18–49.
516,541. BELRO. Cl. 1 (Int. Cl. 1). 10–18–49.
516,873. BALLOONIE. Cl. 22 (Int. Cl. 28). 10–25–49.
517,048. TORTOLETTE. Cl. 46 (Int. Cl. 29). 11–1–49.
517,249. YANKEE. Cl. 26 (Int. Cl. 9). 11–1–49.
517,331. WESTERN BUILDER. Cl. 38 (Int. Cl. 16). 11–8–49.
517,368. HARWOOD. Cl. 39 (Int. Cl. 25). 11–8–49.
517,579. PLAX. Cl. 16 (Int. Cl. 2). 11–15–49.
517,583. BOHANNON'S DETECTIVE. Cl. 17 (Int. Cl. 34). 11–15–49.
517,756. CHERRY BLOOM FABRICS. Cl. 42 (Int. Cl. 24). 11–22–49.
517,784. BRANDT. Cl. 26 (Int. Cl. 9). 11–22–49.
517,862. KRAGELEEN. Cl. 46 (Int. Cl. 1). 11–22–49.
517,868. USE AND DESIGN. Cl. 13 (Int. Cl. 6). 11–22–49.
517,878. E-Z-EST. Cl. 52 (Int. Cl. 3). 11–22–49.
517,912. LUCOFLINT. Cl. 16 (Int. Cl. 2). 11–22–49.
517,928. RITALIN. Cl. 18 (Int. Cl. 5). 11–22–49.
517,961. PARIOGEN. Cl. 18 (Int. Cl. 5). 11–22–49.
518,024. SEALY SMOOTHTOP. Cl. 32 (Int. Cl. 20). 11–22–49.
518,053. BODDLE BUGGY. Cl. 19 (Int. Cl. 12). 11–29–49.
518,059. BAKERS KNEAD. Cl. 46 (Int. Cl. 29). 11–29–49.
518,087. MAGLINER. Cl. 19 (Int. Cl. 12). 11–29–49.
518,198. COMPUTAX. Cl. 38 (Int. Cl. 16). 11–29–49.
518,199. POCKETAX. Cl. 38 (Int. Cl. 16). 11–29–49.
518,297. GASWELD AND DESIGN. Cl. 13 (Int. Cl. 7). 12–6–49.
518,302. CULLIGAN. Cl. 31 (Int. Cl. 1). 12–6–49.
518,366. PLICAST L-W-I. Cl. 12 (Int. Cl. 19). 12–6–49.
518,481. DESIGN OF A DOG. Cl. 21 (Int. Cl. 9). 11–6–49.
518,497. BLAZE CRETE. Cl. 12 (Int. Cl. 19). 12–6–49.
518,601. GASWELD. Cl. 13 (Int. Cl. 7). 12–13–49.
518,935. FLAMBEAU. Cl. 1 (Int. Cl. 18). 12–20–49.
518,936. MELLOGRAIN. Cl. 1 (Int. Cl. 18). 12–20–49.
518,938. SHAWNEE. Cl. 1 (Int. Cl. 18). 12–20–49.
519,311. NOVOCELL. Cl. 18 (Int. Cl. 5). 12–27–49.
519,351. SCHERMULY. Cl. 9 (Int. Cl. 9). 12–27–49.
519,429. ARMSTRONG. Cl. 20 (Int. Cl. 27). 1–3–50.
519,507. PRISCILLA. Cl. 40 (Int. Cl. 21). 1–3–50.
519,613. ALUMA SEAL. Cl. 50 (Int. Cl. 20). 1–10–50.
519,678. DISKIES. Cl. 22 (Int. Cl. 28). 1–10–50.
519,784. PICTURE OF RUNNING BOY. Cl. 100 (Int. Cl. 42). 1–10–50.
519,844. MILPRINT. Cl. 2 (Int. Cl. 16). 1–17–50.
519,855. EASI-BILD. Cl. 26 (Int. Cl. 16). 1–17–50.
520,055. DURAKOOL. Cl. 21 (Int. Cl. 9). 1–17–50.
520,079. STAYLASTIC. Cl. 16 (Int. Cl. 2). 1–17–50.
520,082. CAWSPAR. Cl. 16 (Int. Cl. 2). 1–17–50.
520,168. ZEPH-KID. Cl. 39 (Int. Cl. 25). 1–24–50.
520,207. SPENCER. Cl. 39 (Int. Cl. 25). 1–24–50.
520,297. AMERICAN BOY. Cl. 28 (Int. Cl. 14). 1–24–50.
520,298. AMERICAN CLIPPER. Cl. 28 (Int. Cl. 14). 1–24–50.
520,299. BANKER. Cl. 28 (Int. Cl. 14). 1–24–50.
520,300. CO-ED. Cl. 28 (Int. Cl. 14). 1–24–50.
520,301. DIRECTOR. Cl. 28 (Int. Cl. 14). 1–24–50.
520,302. EXCELLENCY. Cl. 28 (Int. Cl. 14). 1–24–50.
520,303. HER EXCELLENCY. Cl. 28 (Int. Cl. 14). 1–24–50.
520,304. HIS EXCELLENCY. Cl. 28 (Int. Cl. 14). 1–24–50.
520,305. LADY EXCELLENCY. Cl. 28 (Int. Cl. 14). 1–24–50.
520,306. MISS EXCELLENCY. Cl. 28 (Int. Cl. 14). 1–24–50.
520,307. MISS LIBERTY. Cl. 28 (Int. Cl. 14). 1–24–50.
520,308. PHANTOM. Cl. 28 (Int. Cl. 14). 1–24–50.
520,309. PRESIDENT. Cl. 28 (Int. Cl. 14). 1–24–50.
520,315. BULOVA "300." Cl. 27 (Int. Cl. 14). 1–24–50.
520,341. PURE-CREST. Cl. 46 (Int. Cl. 29). 1–31–50.
520,444. MILLICAL. Cl. 6 (Int. Cl. 1). 1–31–50.
520,476. GEBAUER'S. Cl. 6 (Int. Cl. 1). 1–31–50.
520,483. CHEVRON AND DESIGN. Cl. 15 (Int. Cl. 4). 1–31–50.
520,666. ANCHOR. Cl. 34 (Int. Cl. 11). 2–7–50.
520,728. ARSTRONG. Cl. 35 (Int. Cl. 17). 2–7–50.
520,754. EMPIRE. Cl. 23 (Int. Cl. 8). 2–7–50.
520,765. BRUNSWICK. Cl. 37 (Int. Cl. 16). 2–7–50.
520,773. SPRIGS. Cl. 46 (Int. Cl. 30). 2–7–50.
520,825. KALITE. Cl. 6 (Int. Cl. 1). 2–7–50.
520,917. HOT SHOPPES. Cl. 100 (Int. Cl. 42). 2–7–50.

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# TRADEMARK REGISTRATIONS CANCELED

## Section 8

351,702. A BROWNIE TANK AND DESIGN. Cl. 2. 11–2–37.
416,421. REPRESENTATION OF A BROWNIE. Cl. 2. 9–11–45.
734,083. KARWANIZED. Cl. 21. 7–10–62.
734,972. REDI-BOW. Cl. 40. 7–24–62.
737,089. MULTI-POINT. Cl. 23. 9–4–62.
738,404. AMERICAN FIDELITY ASSURANCE CO. AND DESIGN. Cl. 102. 9–25–62.
739,550. NATIONWIDE AND MAP DESIGN. Cl. 105. 10–16–62.
739,726. AEROFLEX ETC. AND DESIGN. Cl. 26. 10–23–62.
739,765. MOON-BASE. Cl. 39. 10–23–62.
740,950. MOON-SHOT. Cl. 39. 11–20–62.
740,951. REDSTONE. Cl. 39. 11–20–62.
740,952. CAPE CANAVERAL. Cl. 39. 11–20–62.
741,583. EVENSET. Cl. 23. 12–4–62.
741,716. LES PARFUMS DE GRES. Cl. 51. 12–4–62.
741,847. NEO-PREDNE-DOME. Cl. 18. 12–11–62.
743,184. AGVA LAVANDA AND DESIGN. Cl. 51. 1–1–63.
744,931. WHISTLING DAN AND DESIGN OF BOY. Cl. 46. 2–5–63.
744,932. WHISTLING DAN. Cl. 46. 2–5–63.
756,265. CLIP-LOK ETC. AND DESIGN. Cl. 21. 9–3–63.

*The following registrations issued Sept. 17, 1963*

756,600. CARIBOU. Cl. 1.
756,606. CYANASET. Cl. 1.

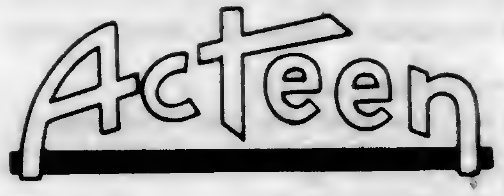
756,609. BURNIL. Cl. 1.
756,610. SAN-O-TAN. Cl. 1.
756,614. APPLITUBE. Cl. 2.
756,616. CLOSSTONE. Cls. 2 and 37.
756,617. HAVEG. Cl. 2.
756,620. INTER-CONTINENTAL. Cl. 3.
756,621. BUFFIT. Cl. 4.
756,627. GUARD-ALL. Cl. 6.
756,628. FLOWER KEEP. Cl. 6.
756,632. BUG-JUS. Cl. 6.
756,635. IBI DESIGN. Cl. 6.
756,640. HYDRIPULP. Cl. 6.
756,643. HOLLICIDE. Cl. 6.
756,644. GUSITOX. Cl. 6.
756,647. LAUNDERVAT. Cl. 6.
756,651. CARBONICATIONS. Cl. 11.
756,653. ROLLING. Cl. 12.
756,659. CALORIC. Cl. 12.
756,661. MUTOFLEX. Cl. 12.
756,665. FLOORINSUL. Cl. 12.
756,666. ECON-O-PAVE AND DESIGN. Cl. 12.
756,672. JET-KING. Cl. 13.
756,673. GOLDEN JET. Cl. 13.
756,675. JET-QUEEN. Cl. 13.
756,677. PLASTA-FLEX AND DESIGN. Cl. 13.
756,682. H AND DESIGN. Cl. 13.
756,683. SOAK RITE. Cl. 13.
756,685. V-V AND DESIGN. Cl. 13.
756,693. S AND DESIGN. Cl. 15.
756,700. HIGHTORQUE AND DESIGN. Cl. 15.
756,701. GOLDCHECK. Cl. 15.
756,717. FORTIDOM. Cl. 18.
756,719. W. J. RENDELL. Cl. 18.
756,720. SANBION. Cl. 18.
756,721. VETICILLIN. Cl. 18.
756,727. THOCTYL. Cl. 18.
756,732. CARNIPEC. Cl. 18.
756,733. OMNILAX. Cl. 18.
756,739. CAVEMAN CAVETTE. Cl. 19.
756,743. DURA-PAK. Cl. 21.
756,749. SURF-HAILER. Cl. 21.
756,753. SERVISTART. Cl. 21.
756,754. ULTRAMATIC. Cl. 21.
756,760. SPEED MASTER. Cl. 21.
756,767. TRIGNITER. Cl. 21.
756,768. GEMINI. Cl. 21.
756,770. TRAK AND DESIGN. Cl. 21.
756,773. HORSE WINKS. Cl. 22.
756,772. DIVOT-OFF. Cl. 22.
756,774. ANIMAL KOOKIES AND DESIGN. Cl. 22.
756,776. IRRITATION. Cl. 22.
756,777. SPARE SETTER. Cl. 22.
756,778. GOLFERINO. Cl. 22.
756,770. KING ZOR. Cl. 22.
756,780. ODD OGG. Cl. 22.
756,783. BLACK DEMON. Cl. 22.
756,785. BOPPER. Cl. 22.
756,788. AMEDCO. Cl. 22.
756,789. MAGIC SNOW CARPET. Cl. 22.
756,790. GIORI SIMULTAN. Cl. 23.
756,791. GIORI PERFORA. Cl. 23.
756,792. DAFFIN. Cl. 23.
756,793. MILL-U-NIT. Cl. 23.
756,798. BESTONE. Cl. 23.
756,800. TITAN. Cl, 23.
756,812. SYSTEMAIR. Cl. 23.
756,815. ASFO-SEALER. Cl. 23.
756,816. SNOWBUSTER. Cl. 23.
756,823. H & S ETC. AND DESIGN. Cl. 23.
756,830. CIN-CRAFT. Cl. 23.
756,836. DURA-MATIC. Cl. 23.
756,842. WINDOW-MATIC. Cl. 23.
756,844. B-W AND DESIGN. Cl. 24.
756,845. ACE. Cl. 26.
756,854. SLIM WOOD! Cl. 27.
756,856. HELIPOD. Cl. 19.
756,857. J AND DESIGN. Cl. 28.
756,858. CULTURED TURQUOISE. Cl. 28.
756,859. TOWNCREST. Cl. 28.
756,860. CB. Cl. 28.
756,861. P.F. Cl. 28.
756,862. VF AND DESIGN. Cl. 28.
756,867. SCARAB-MATE. Cl. 28.
756,868. CHF AND DESIGN. Cl. 28.
756,870. REPRESENTATION OF TWO CHECK MARKS. Cl. 28.
756,874. FERNWARE. Cl. 30.
756,875. TRANS H COOLER AND DESIGN. Cl. 31.
756,877. CERCOR. Cl. 31.
756,881. FABRAK. Cl. 32.
756,885. TRAZIDAZY. Cl. 32.
756,886. LAZIDAZY. Cl. 32.
756,889. MIRAGLASS. Cl. 33.
756,893. CALORIC. Cl. 34.
756,900. STRING-O-TUNES. Cl. 36.
756,903. SOF-TONE. Cl. 37.
756,913. THE GRAPHOANALYST. Cl. 38.
756,915. UNICARD. Cl. 38.
756,921. LIAISON. Cl. 38.
756,933. OGGI. Cl. 39.
756,935. COLLEEN. Cl. 39.
756,936. BEATRICE-MARTIN. Cl. 39.
756,938. LADY BRUMMELL. Cl. 39.
756,940. CARTWHEELS. Cl. 39.
756,951. WOOMO. Cl. 39.
756,952. REST-MOR. Cl. 39.
756,961. RAP-A-NAP. Cl. 40.
756,969. PHARR-MIST. Cl. 43.
756,972. RKG 100. Cl. 44.
756,973. W. J. RENDELL. Cl. 44.
756,976. EZEJECT. Cl. 44.
756,979. ZANADU. Cl. 46.
756,981. OLA-SHUG. Cl. 46.
756,991. SUREPORK SUPER. Cl. 46.
756,992. SURECATTLE. Cl. 46.
756,993. SURELAY. Cl. 46.
756,994. SUREMILK. Cl. 46.
756,995. SURERAISE. Cl. 46.
756,996. JUNGLE FRUIT. Cl. 46.
757,005. SUPREME KITCHEN RICH AND DESIGN. Cl. 46.
757,006. GELAQUICK. Cl. 46.
757,013. JACOB RUPPERT BAVARIAN. Cl. 48.
757,021. EARTH-NAIL. Cl. 50.
757,023. THE ARISTOCRAT. Cl. 50.
757,025. PLEXIGLAS. Cl. 50.
757,027. HOLD-IT. Cl. 51.
757,028. BLANCHE BY DAUPHINE. Cl. 51.
757,042. STRATEGIC UDY AND DESIGN. Cl. 100.
757,044. RESTAURANT 1776 AND DESIGN. Cl. 100.
757,047. HAKUHODO. Cl. 101.
757,048. SCOPE INTERNATIONAL AND DESIGN. Cl. 101.
757,051. CO/AD CLASSIFIED. Cl. 101.
757,061. PREVENTION ETC. AND DESIGN. Cl. A.
757,063. TRAVELBOWL HOLIDAY GUIDE ETC. AND DESIGN. Cl. B.

# REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

**The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.**

## Class 6 – Chemicals and Chemical Compositions

293,916. May 10, 1932. E. O. Corson, Berkeley, Calif. Pub. by registrant.



For Insecticides.

## Class 22 – Games, Toys, and Sporting Goods

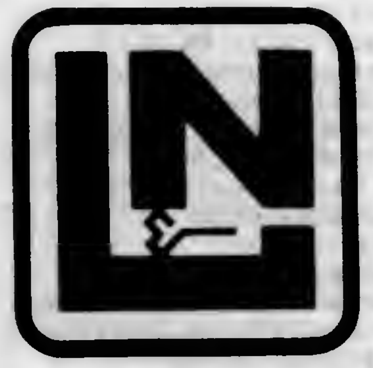
264,947. The Enterprise Manufacturing Company, Akron, Ohio. Pub. by Pflueger Corporation, Akron, Ohio.

**BOND**

For Fishing Reels (Int. Cl. 28).

## Class 26 – Measuring and Scientific Appliances

258,503. July 9, 1929. Leeds & Northrup Company, North Wales, Pa. Pub. by registrant.



For Electrical Measuring Instruments—Namely, Electric Meters and Indicators, etc. (Int. Cl. 9).

## Class 27 – Horological Instruments

33,231. July 18, 1899. American Waltham Watch Company, Waltham and Boston, Mass., and New York, N.Y. Pub. by Waltham Watch Company, Chicago, Ill.

**RUBY**

For Watches, Watch-Movements, and Parts of Watches (Int. Cl. 14).

33,232. July 18, 1899. American Waltham Watch Company, Waltham and Boston, Mass., and New York, N.Y. Pub. by Waltham Watch Company, Chicago, Ill.

**PEARL**

For Watches, Watch-Movements, and Parts of Watches (Int. Cl. 14).

33,233. July 18, 1899. American Waltham Watch Company, Waltham and Boston, Mass., and New York, N.Y. Pub. by Waltham Watch Company, Chicago, Ill.

**SAPPHIRE**

For Watches, Watch-Movements, and Parts of Watches (Int. Cl. 14).

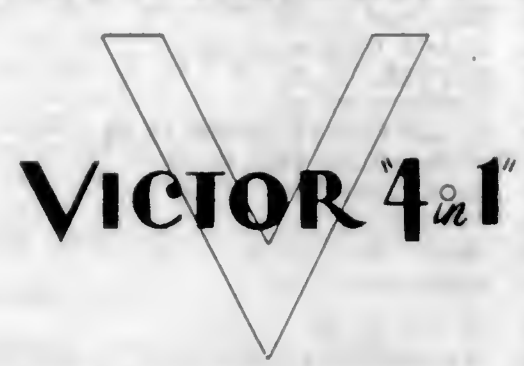
33,235. July 18, 1899. American Waltham Watch Company, Waltham and Boston, Mass., and New York, N.Y. Pub. by Waltham Watch Company, Chicago, Ill.

**GARNET**

For Watches, Watch-Movements, and Parts of Watches (Int. Cl. 14).

## Class 50 – Merchandise Not Otherwise Classified

443,041. July 5, 1949. Animal Trap Company of America, Lititz, Pa. Pub. by Woodstream Corporation, Lititz, Pa.



For Rodent Traps (Int. Cl. 21).

## Class 52 – Detergents and Soaps

72,373. Jan. 19, 1909. Lockwood, Adams and Company, Boston, Mass. Pub. by Laco Corp., Baltimore, Md.

**LACO**

For Soaps (Int. Cl. 3).

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# INDEX OF REGISTRANTS

## ISSUED NOVEMBER 4, 1969

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A. & A. Spice & Food Co., Inc., New Orleans, La. 880,099, pub. 8–19–69. Cl. 46.
Abbott Laboratories, North Chicago, Ill. 879,811, pub. 8–19–69. Cl. 18.
Abbott, Paul, & Co., Inc., Blytheville, Ark. 879,899, pub. 8–19–69. Cl. 23.
Ace Electronics Associates, Inc., Somerville, Mass. 756,845, canc. Cl. 26.
Acme Personnel Service of Spokane, Inc., Spokane, Wash. 880,175, pub. 8–19–69. Cl. 101.
Adams & Westlake Co., The, Chicago, Ill. 443,358, ren. 11–4–69. Cl. 21.
Admart, Inc., Chicago, Ill. 756,785, canc. Cl. 22.
Aeroflex Corp., The, Long Island City, N.Y. 739,726, canc. Cl. 26.
Aileen, Inc., New York, N.Y. 880,033, pub. 8–19–69. Cl. 39.
Air West, Inc., San Francisco, Calif., from West Coast Airlines, Inc., Seattle, Wash. 880,199, pub. 8–19–69. Cl. 105.
Aladdin Industries, Inc., from Aladdin Industries, Inc., Chicago, Ill. 879,724, pub. 8–19–69. Cl. 2.
Aladdin Industries, Inc., from Aladdin Industries, Inc., Nashville, Tenn. 880,217. Cl. 2.
Albany Perforated Wrapping Paper Co., to Concel Inc., New York, N.Y. 262,595, ren. 11–4–69. Cl. 37.
Alessi, Gene J., d.b.a. D.A. Co., Independence, La. 880,079, pub. 8–19–69. Cl. 46.
Algemene Kunstzijde Unie N.V., Arnhem, Netherlands. 879,760, pub. 8–19–69. Cl. 12.
All-American Brush Mfg. Corp., Newark, N.J. 880,051, pub. 8–19–69. Cl. 40.
Allegheny Airlines, Inc., Washington, D.C. 880,201, pub. 8–19–69. Cl. 105.
Allenform Corp., Chicago, Ill. 879,759, pub. 8–19–69. Multiple Class (Classes 12 and 13).
Allied Chemical Corp.: *See*—
  Wilputte Coke Oven Corp.
Allis-Chalmers Mfg. Co., Milwaukee, Wis. 879,837, pub. 8–19–69. Cl. 21.
Ambico Inc., from Ambico Trading Corp., Valley Stream, N.Y. 879,956, pub. 8–19–69. Cl. 36.
Ambico Trading Corp.: *See*—
  Ambico Inc.
Amchem Products, Inc., Ambler, Pa. 879,894, pub. 8–19–69. Cl. 23.
American Aviation Publications, Inc., Washington, D.C. 879,974, pub. 8–19–69. Cl. 38.
American Can Co., Jersey City, from A-W Glass Corp., East Brunewick, N.J. 756,889, canc. Cl. 33.
American Chain & Cable Co., Inc., Bridgeport, Conn. 879,882, pub. 8–19–69. Cl. 23.
American Chemical Society, Washington, D.C. 879,979, pub. 8–19–69. Cl. 38.
American Cyanamid Co., Wayne, N.J. 756,606, canc. Cl. 1.
American Cyanamid Co., Wayne, N.J. 756,721, canc. Cl. 18.
American Cyanamid Co., Wayne, N.J. 879,810, pub. 8–19–69. Cl. 18.
American Farm Equipment Co., Lake Zurich, Ill. 879,949, pub. 8–19–69. Cl. 34.
American Fidelity Assurance Co., Oklahoma City, Okla. 738,404, canc. Cl. 102.
American Home Products Corp., New York, N.Y. 879,804, pub. 8–19–69. Cl. 18.
American Home Products Corp., New York, N.Y. 879,815, pub. 8–19–69. Cl. 18.
American Home Products Corp., New York, N.Y. 880,144, pub. 8–19–69. Cl. 52.
American Institute for Design & Drafting, Fort Lauderdale, Fla. 880,212, pub. 8–19–69. Cl. 200.
American Lacquer & Solvents Co. of Florida, d.b.a. American Lacquer & Solvents Co. of Fla., Tampa, Fla. 879,748, pub. 8–19–69. Multiple Class (Classes 6 and 11).
American Machine & Foundry Co., New York, N.Y., from Harley-Davidson Motor Co., Inc., Milwaukee, Wis. 879,827, pub. 8–19–69. Cl. 19.
American Research Council, Inc., Rye, N.Y. 879,972, pub. 8–19–69. Cl. 38.
American Stock Exchange, New York, N.Y. 879,973, pub. 8–19–69. Cl. 38.
American Waltham Watch Co., Waltham and Boston, Mass., and New York, N.Y., by Waltham Watch Co., Chicago, Ill. 33,231–3, 12(c) pub. 11–4–69. Cl. 27.
American Waltham Watch Co., Waltham and Boston, Mass., and New York, N.Y., by Waltham Watch Co., Chicago, Ill. 33,235, 12(c) pub. 11–4–69. Cl. 27.
Anderson & Thompson Ski Co., Inc., Seattle, Wash. 879,855, pub. 8–19–69. Cl. 22.
Andrus, Robert D., Rochester, Minn. 879,997, pub. 8–19–69. Cl. 39.
Angelica Corp., St. Louis, Mo. 880,040, pub. 8–19–69. Cl. 39.
Animal Fair, Inc., Chanhassen, Minn. 879,859, pub. 6–24–69. Cl. 22.
Animal Trap Co. of America, by Woodstream Corp., Lititz, Pa. 443,041, 12(c) pub. 11–4–69. Cl. 50.
Armec Corp., Huntington Station, N.Y. 879,833, pub. 8–19–69. Cl. 21.
Armour & Co., Chicago, Ill., to Columbia Broadcasting System, Inc., New York, N.Y. 257,652, ren. 11–4–69. Cl. 36.
Armour & Co., to Armour & Co., Chicago, Ill. 518,059, ren. 11–4–69. Cl. 46.
Armour & Co., to Armour & Co., Chicago, Ill. 518,935–6, ren. 11–4–69. Cl. 1.
Armour & Co., to Armour & Co., Chicago, Ill. 518,938, ren. 11–4–69. Cl. 1.
Armstrong Cork Co., Lancaster, Pa. 519,429, ren. 11–4–69. Cl. 20.
Armstrong Cork Co., Lancaster, Pa. 520,728, ren. 11–4–69. Cl. 35.
Arnett, Donald D., Los Angeles, Calif. 879,731, pub. 8–19–69. Multiple Closs (Classes 4 and 16).
Artclif Mfg., Inc., Saginaw, Mich. 756,753, canc. Cl. 21.
Artistic Glass Products Co., Quakertown, Pa. 879,945, pub. 7–4–67. Cl. 33.
Art-O-Graph Inc., Minneapolis, Minn. 879,908, pub. 8–19–69. Cl. 26.
Associometrics, Inc., Dallas, Tex. 880,182, pub. 8–19–69. Cl. 101.
Atlantic Lures, Inc., Providence, R.I. 879,857, pub. 8–19–69. Cl. 22.
Atlas Chemical Industries, Inc., Wilmington, Del. 879,909, pub. 9–2–69. Cl. 26.
Automatic Burner Corp., Chicago, Ill. 879,907, pub. 8–19–69. Cl. 26.
Avis, Warren E., Detroit, Mich. 880,206, pub. 8–19–69. Cl. 107.
Avis, Warren E., Detroit, Mich. 880,208, pub. 8–19–69. Cl. 107.
Avoset Co., Oakland, Calif. 880,097, pub. 8–19–69. Cl. 46.
Aquaculture Corp., Burlingame, Calif. 880,103–4, pub. 8–19–69. Cl. 46.
B/G Foods, Inc., Chicago, Ill. 880,158–9, pub. 8–19–69. Cl. 100.
B.S.A. Motor Cycles Ltd., Birmingham, England. 879,822, pub. 8–19–69. Cl. 19.
Baird-Atomic, Inc., Cambridge, Mass. 879,912, pub. 8–19–69. Cl. 26.
Baldinger, Abner, d.b.a. Baldinger's Truffade Co., New York, N.Y. 880,114, pub. 8–19–69. Cl. 46.
Balfour Shirtmakers Ltd., New York, N.Y. 880,232. Cl. 39.
Ball Brothers Research Corp., Boulder, Colo., from Miratel Electronics Co., St. Paul, Minn. 879,830, pub. 8–19–69. Cl. 21.
Bancroft, Joseph, & Sons Co., Rockford, Wilmington, Del. 880,017, pub. 8–19–69. Cl. 39.
Bandwagon U.S.A., Inc., Philadelphia, Pa. 880,164, pub. 8–19–69. Cl. 101.
Bar B-Cone Mfg. Co., Inc., Wichita, Kans. 879,951, pub. 8–19–69. Cl. 34.
Bard, C. R., Inc., Murray Hill, N.J. 880,059, pub. 8–19–69. Cl. 42.
Barnett, Charles, Co., Inc., New York, N.Y. 756,860, canc. Cl. 28.
Battle Creek Equipment Co., Battle Creek, Mich. 880,068, pub. 8–19–69. Cl. 44.
Baxter Laboratories, Inc., Morton Grove, Ill. 879,736, pub. 10–22–68. Cl. 6.
Beatrice-Martin, Inc., New York, N.Y. 756,936, canc. Cl. 39.
Beech-Nut, Inc., New York, N.Y. 880,093, pub. 8–19–69. Cl. 46.
Beef Ranch, Inc., The, Chicago, Ill. 880,157, pub. 8–19–69. Cl. 100.
Bell Intercontinental Corp., New York, N.Y. 756,651, canc. Cl. 11.
Benson, Albert E., d.b.a. Benson Products, Ludington, Mich. 757,021, canc. Cl. 50.
Berkley & Co., Inc., Spirit Lake, Iowa. 879,860, pub. 8–19–69. Cl. 22.
Bernard Associates, Inc., Menlo Park, Calif. 879,715, pub. 8–12–69. Multiple Class (Classes 1, 12, 37, and 40).
Bernardelli Vincenzo S.p.A., Brescia, Italy. 879,753, pub. 8–19–69. Cl. 9.
Beverwyck Breweries, Inc., Albany, to The F & M Schaefer Brewing Co., Brooklyn, N.Y. 513,250, ren. 11–4–69. Cl. 48.
Bienville Investment Corp., Stapleton, Ala. 880,194, pub. 8–19–69. Cl. 103.
Binishells S.p.A., Bologna, Italy. 880,190, pub. 8–19–69. Cl. 103.
Black, Walter J., Inc., Flower Hill, Roslyn, N.Y. 879,988, pub. 8–19–69. Cl. 38.
Blake, C. L., d.b.a. C. L. Blake & Associates, Fort Worth, Tex. 756,677, canc. Cl. 13.
Blank, Henry, & Co.: *See*—
  Whiteside & Blank.
Blatchford Calf Meal Co., Waukegal, Ill. 756,991–5, canc. Cl. 46.
Bocher, Main R., d.b.a. Mainbocher, New York, N.Y. 516,185, ren. 11–4–69. Cl. 51.
Boehringer Ingelheim, Ingelheim am Rhein, Germany, from Geigy Chemical Corp., Ardsley, N.Y. 756,733, canc. Cl. 18.
Bonded Oil Co., Springfield, Ohio. 880,195, pub. 8–19–69. Cl. 103.
Borg-Warner Corp., Chicago, Ill., 756,844, canc. Cl. 24.
Boyd, E. G., Trailer Co., Dallas, Tex. 879,824, pub. 8–19–69. Cl. 19.

Boye Needle Co., The, Chicago, Ill. 880,047, pub. 8–19–69. Cl. 40.
Bowen Engineering Inc., North Branch, N.J. 880,160, pub. 8–19–69. Cl. 100.
Bradley Post, Meade, Kans. 757,063, canc. Cl. B.
Brandt Automatic Cashier Co., Watertown, Wis. 517,784, ren. 11–4–69. Cl. 26.
Brann, Donald R., to Easi-Bild Pattern Co., Inc., Pleasantville, N.Y. 519,855, ren. 11–4–69. Cl. 26.
Brattle Films, Inc., Cambridge, Mass. 880,003, pub. 8–19–69. Multiple Class (Classes 39 and 52).
Brazing & Metal Treating, Inc., Cleveland, Ohio. 880,203, pub. 8–19–69. Cl. 106.
Breck, John H., Inc.: *See*—
  Williams, J. B., Co., Inc., The.
Breeding Insulation Co., Inc., Nashville, Tenn. 880,239. Cl. 50.
Breeze Corp., Inc., Union, N.J. 879,883–4, pub. 8–19–69. Cl. 23.
British Petroleum Co., Ltd., The, London, England. 880,189, pub. 8–19–69. Cl. 102.
Brokay Products, Inc., Philadelphia, Pa. 880,096, pub. 8–19–69. Cl. 46.
Brother International Corp. of Pennsylanvia, New York, N.Y. 756,842, canc. Cl. 23.
Brown Steel Tank Co., Minneapolis, Minn. 351,702, canc. Cl. 2.
Brown Steel Tank Co., Minneapolis, Minn. 416,421, canc. Cl. 2.
Broyhill Furniture Industries, Lenoir, N.C. 879,938, pub. 8–19–69. Cl. 32.
Bru, Malcolm, d.b.a. Aldermaston Sales, Glen Cove, N.Y. 756,628, canc. Cl. 6.
Brunswick Corp.: *See*—
  Sherwood Medical Industries, Inc.
Brunswick Corp., Chicago, Ill. 756,777, canc. Cl. 22.
Brunswick Corp., Chicago, Ill. 879,862, pub. 8–19–69. Cl. 22.
Buell, Eugene F., Gibsonia, Pa. 880,001, pub. 8–19–69. Cl. 39.
Buffet, Inc., Portland, Oreg. 880,146, pub. 8–19–69. Cl. 100.
Bullard, E. D., Co., Sausalito, Calif. 879,897, pub. 8–19–69. Cl. 23.
Bulova Watch Co., Inc., Flushing, N.Y. 263,544, ren. 11–4–69. Cl. 27.
Bulova Watch Co., Inc., Flushing, N.Y. 515,494, ren. 11–4–69. Cl. 27.
Bulova Watch Co., Inc., Flushing, N.Y. 520,297–309, ren. 11–4–69. Cl. 28.
Bulova Watch Co., Inc., Flushing, N.Y. 520,315, ren. 11–4–69. Cl. 27.
Bulova Watch Co., Inc., Flushing, N.Y. 879,923, pub. 8–19–69. Cl. 27.
Burroughs Corp., Detroit, Mich. 880,167, pub. 8–19–69. Cl. 101.
CPC International Inc.: *See*—
  Corn Products Refining Co.
Calgon Corp., Pittsburgh, Pa. 880,141, pub. 8–19–69. Cl. 52.
Caloric Corp., Topton, Pa. 756,893, canc. Cl. 34.
Caloric Corp., Topton, Pa. 756,659, canc. Cl. 12.
Cameo, Inc., Toledo, Ohio. 879,812, pub. 8–19–69. Cl. 18.
Carey, Philip, Corp.: *See*—
  Lehon Co., The.
Carroll Sound Inc., Rochelle Park, N.J. 879,958, pub. 8–19–69. Cl. 36.
Cartriseal Corp.: *See*—
  Rex Chainbelt Inc.
Casade Charcoal, Inc., Los Angeles, Calif. 879,713, pub. 8–19–69. Cl. 1.
Caveman Camper, Inc., Grants Pass, Oreg. 756,739, canc. Cl. 19.
Celanese Corp.: *See*—
  Celluloid Corp.
Celles Neckware Ltd., Inc., Boston, Mass. 880,024, pub. 8–19–69. Cl. 39.
Celluloid Corp., Newark, N.J., to Celanese Corp., New York, N.Y. 263,787, ren. 11–4–69. Cl. 1.
Central Laboratories, Inc., The, Detroit, Mich. 880,145, pub. 8–19–69. Cl. 100.
Central Transformer Corp., Pine Bluff, Ark. 756,743, canc. Cl. 21.
Challenge-Cook Bros., Inc., Industry, Calif. 879,902, pub. 8–19–69. Cl. 23.
Challenge Machinery Co., The, Grand Haven, Mich. 879,895, pub. 8–19–69. Cl. 23.
Chambers Sherwin, Inc., New York, N.Y. 880,014, pub. 8–19–69. Cl. 39.
Channel Master Corp., Ellenville, N.Y. 756,768, canc. Cl. 21.
Chase Bag Co., New York, N.Y. 515,431, ren. 11–4–69. Cl. 38.
Chase & Co., Sanford, Fla. 515,697, ren. 11–4–69. Cl. 46.
Chase & Co., Sanford, Fla. 516,234, ren. 11–4–69. Cl. 46.
Chatham Mfg. Co., Elkin, N.C. 514,279, ren. 11–4–69. Cl. 42.
Chattanooga Implement & Mfg. Co., to De Soto, Inc., Des Plaines, Ill. 443,636, ren. 11–4–69. Cl. 34.
Check Savers, Inc., Park Ridge, Ill. 879,969, pub. 8–19–69. Cl. 37.
Chemical Industries, Inc., Borger, Tex. 879,740, pub. 8–19–69. Cl. 6.
Chesebrough-Pond's Inc.: *See*—
  Pond's Extract Co.
Chilton Co., Philadelphia, Pa. 880,168, pub. 8–19–69. Cl. 101.
Chinese Maid, Inc.: *See*—
  Min Sun Trading Co.
Chris-Craft Industries, Inc., Pompano Beach, Fla. 879,819, pub. 8–19–69. Cl. 19.
Chromium Corp. of America, Waterbury, Conn. 879,776, pub. 8–19–69. Cl. 14.
Ciba Corp.: *See*—
  Ciba Ltd.
Ciba Ltd., Basle, Switzerland, to Ciba Corp., Summit, N.J. 517,928, ren. 11–4–69. Cl. 18.
Cincinnati Milling Machine Co., The, Cincinnati, Ohio. 879,847, pub. 8–19–69. Cl. 21.
Cincinnati Milling Machine Co., The, Cincinnati, Ohio. 879,898, pub. 8–19–69. Cl. 23.
Cincinnati Tool Co., The, Cincinnati, Ohio. 756,830, canc. Cl. 23.
Circle Enterprises, Inc., Providence, R.I. 880,076, pub. 8–19–69. Cl. 45.
Circuit Materials Corp., New Brunswick, N.J. 734,083, canc. Cl. 21.
Clairol Inc., New York, N.Y. 880,129, pub. 8–19–69. Cl. 51.
Cleaners Hanger Co., Detroit, Mich. 880,120, pub. 8–19–69. Cl. 50.
Clissold Publishing Co., Chicago, Ill. 880,227. Cl. 38.
Cluett, Peabody & Co., Inc., New York, N.Y. 879,016, pub. 8–19–69. Cl. 39.
Cluett, Peabody & Co., Inc., New York, N.Y. 880,010, pub. 8–19–69. Cl. 39.
Coachella Groves, Coachella, Calif. 880,234. Cl. 46.
Co/Ad, San Jose, Calif. 757,051, canc. Cl. 101.
Colonial Carbon Co., Skokie, Ill. 879,961, pub. 4–22–69. Cl. 37.
Columbia Broadcasting System, Inc.: *See*—
  Armour & Co.
Commerce Clearing House, Inc. (New Jersey): *See*—
  Sinclair, Murray & Co., Inc.
Communications Industries, Inc., Dallas, Tex. 880,197, pub. 8–19–69. Cl. 104.
Computersearch Corp., Williamsville, N.Y. 880,181, pub. 8–19–69. Cl. 101.
Computicket Corp., New York, N.Y. 880,176, pub. 8–19–69. Cl. 101.
Concel Inc.: *See*—
  Albany Perforated Wrapping Paper Co.
Confection Products Corp., Perryville, Mo. 880,112, pub. 8–19–69. Cl. 46.
Confederate Air Force, The, Mercedes, Tex. 879,977, pub. 8–19–69. Cl. 38.
Consolidated Royal Chemical Corp., Chicago, Ill. 517,961, ren. 11–4–69. Cl. 18.
Contact Marketing, Inc.: *See*—
  Lupton, David W.
Coons, Alan H., d.b.a. Zit Laboratories, Los Angeles, Calif. 756,632, canc. Cl. 6.
Copeland, W. C., Jr., Madison, Fla. 879,739, pub. 8–19–69. Cl. 6.
Corn Products Refining Co., New York, N.Y., to CPC International Inc., Englewood Cliffs, N.J. 514,185, ren. 11–4–69. Cl. 6.
Corning Glass Works, Corning, N.Y. 756,877, canc. Cl. 31.
Corson, E. O., Berkeley, Calif. 293,916, 12(c) pub. 11–4–69. Cl. 6.
Costantino Brothers, Inc., Johnson, R.I. 879,762, pub. 8–19–69. Multiple Class (Classes 12, 13, and 14).
Craddock-Terry Shoe Corp., Lynchburg, Va. 880,041, pub. 8–19–69. Cl. 39.
Crescent Dental Mfg. Co., Chicago, Ill. 880,065, pub. 8–19–69. Cl. 44.
Crosier, Helen B., Madison, N.J. 879,970–1, pub. 8–19–69. Cl. 38.
Crown Chemical Co., Ltd., Kent, England. 879,803, pub. 8–19–69. Cl. 18.
Crown Luggage Co., Inc., Baltimore, Md., to Merchandisers Association, Inc., Chicago, Ill. 511,441, ren. 11–4–69. Cl. 3.
Cudahy Co., Phoenix, Ariz. 880,086, pub. 8–19–69. Cl. 46.
Cufflin Holdings Ltd., Retford, England. 879,900, pub. 8–19–69. Cl. 23.
Culligan, Inc.: *See*—
  Culligan Zeolite Co.
Culligan Zeolite Co., to Culligan, Inc., Northbrook, Ill. 518,302, ren. 11–4–69. Cl. 31.
Curtis Companies Inc., Clinton, Iowa, to Georgia-Pacific Corp., Portland, Oreg. 515,669, ren. 11–4–69. Cl. 12.
Curtis, Helene, Industries, Inc., Chicago, Ill. 880,121–5, pub. 8–19–69. Cl. 51.
Curtis Publishing, The, Philadelphia, Pa. 879,981, pub. 8–19–69. Cl. 38.
Czerefkow, Germaine, Paris, France. 741,716, canc. Cl. 51.
DCA Food Industries Inc., New York, N.Y. 880,100, pub. 8–19–69. Cl. 46.
D[illegible]ffin Corp., Hopkirs, Minn. 756,792–3, canc. Cl. 23.
Dairy & Food Industries Supply Association, Inc., Washington, D.C. 880,174, pub. 8–19–69. Cl. 101.
Dauphine, Ltd., New York, N.Y. 757,028, canc. Cl. 51.
Davenshire, Inc., Davenport, Iowa. 880,011, pub. 8–19–69. Cl. 39.
Davidson Shoe Corp., Lancaster, Pa. 879,992, pub. 2–22–66. Cl. 39.
Davis, Glenn Gary, and Robert Walton Dahlin, Palm Springs, Calif. 879,851, pub. 8–19–69. Cl. 22.
Day, Patty, Inc., Milwaukie, Oreg. 880,002, pub. 8–19–69. Cl. 39.
Dayco Corp., Dayton, Ohio. 879,953, pub. 8–19–69. Cl. 35.
Dazey Products Co., Kansas City, Mo. 879,864, pub. 8–19–69. Cl. 23.
Defibrator Aktiebolag, Stockholm, Sweden. 879,865, pub. 8–19–69. Cl. 23.
Delbanco Wigs, Inc., New York, N.Y. 880,050, pub. 8–19–69. Cl. 40.
De Luxe Girdlecraft Co., Inc., New York, N.Y. 880,026, pub. 8–19–69. Cl. 39.
Dennision Mfg. Co., to Dennison Mfg. Co., Framingham, Mass. 520,765, ren. 11–4–69. Cl. 37.
De Soto, Inc.: *See*—
  Chattanooga Implement & Mfg. Co.

Diamond Alkali Co., to Diamond Shamrock Corp., Cleveland, Ohio. 520,444, ren. 11–4–69. Cl. 6.
Diamond Alkali Co., to Diamond Shamrock Corp., Cleveland, Ohio. 520,825, ren. 11–4–69. Cl. 6.
Diamond Shamrock Corp.: *See*—
  Diamond Alkali Co.
Diamond Shamrock Corp., Cleveland, Ohio. 879,779, pub. 8–19–69. Cl. 15.
Digital Equipment Corp., Maynard, Mass. 879,976, pub. 8–19–69. Cl. 38.
Diversifield Map Corp., St. Louis, Mo. 879,978, pub. 3–25–69. Cl. 38.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 510,972, ren. 11–4–69. Cl. 37.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 511,397, ren. 11–4–69. Cl. 37.
Dome Chemicals, Inc., New York, N.Y. 741,847, canc. Cl. 18.
Domtar Ltd.: *See*—
  Drackett Co., The.
Doodles, Inc., New York, N.Y. 879,995, pub. 8–19–69. Cl. 39.
Dow Chemical Co., The, Midland, Mich. 879,813, pub. 8–19–69. Cl. 18.
Downing, Ronald, d.b.a. Dreammakers Unlimited, Raytown, Mo. 880,156, pub. 8–19–69. Cl. 100.
Drackett Co., The, Cincinnati, Ohio, from Domtar Ltd., Montreal, Quebec, Canada. 879,735, pub. 8–19–69. Multiple Class (Classes 6 and 52).
Drexel Enterprises, Inc.: *See*—
  Drexel Furniture Co.
Drexel Enterprises, Inc., from Drexel Enterprises, Inc., Drexel, N.C. 879,934, pub. 8–19–69. Cl. 32.
Drexel Furniture Co., to Drexel Enterprises, Inc., Drexel, N.C. 510,054, ren. 11–4–69. Cl. 32.
Duffy-Mott Co., Inc.: *See*—
  Pratt-Low Preserving Co.
Dura Corp., Oak Park, Mich. 756,836, canc. Cl. 23.
Durakool, Inc., Elkhart, Ind. 520,055, ren. 11–4–69. Cl. 21.
Dutch Pantry, Inc., Selinsgrove, Pa. 880,077, pub. 8–19–69. Cl. 46.
Dwyer, F. W., Mfg. Co., Inc., Michigan City, Ind. 879,919–20, pub. 8–19–69. Cl. 26.
Earl & Arlington, to Earl & Arlington, Inc., San Francisco, Calif. 519,678, ren. 11–4–69. Cl. 22.
Easi-Bild Pattern Co., Inc.: *See*—
  Brann, Donald R.
Eastridge Co., Inc., The, Lincoln, Nebr., from A. M. Gunderson, Minneapolis, Minn. 756,772, canc. Cl. 22.
Econo Lodge, Inc., Vestal, N.Y. 880,155, pub. 8–19–69. Cl. 100.
Economics Laboratory, Inc., St. Paul, Minn. 880,138, pub. 8–19–69. Cl. 52.
Effco, Inc., Chattanooga, Tenn. 756,265, canc. Cl. 21.
Eisenhut, John, Carrollton, Ohio. 756,776, canc. Cl. 22.
Eisenstadt Mfg. Co., St. Louis, Mo. 519,507, ren. 11–4–69. Cl. 40.
Ekco Products, Inc., Wheeling, Ill. 879,875, pub. 8–19–69. Cl. 23.
Electrotone Laboratories, Inc., Chicago, Ill. 756,767, canc. Cl. 21.
Electronic Futures, Inc., North Haven, Conn. 880,223. Cl. 36.
Electronics International Service, Wheaton, Md. 879,845, pub. 8–12–69. Cl. 21.
Empire Pants & Boy's Wear Ltd., Ontario, Canada. 879,999, pub. 8–19–69. Cl. 39.
Enterprise Mfg. Co., The, by Flueger Corp., Akron, Ohio. 264,947, 12(c) pub. 11–4–69. Cl. 22.
Essential Products Co., Inc., New York, N.Y. 880,131, pub. 8–19–69. Cl. 51.
Etablissements Rosy, Paris, France. 880,005, pub. 8–19–69. Cl. 39.
Etapharm Chem. Pharm. Laboratorium Gesellschaft m. b. H., Vienna, Austria. 879,794, pub. 8–19–69. Cl. 18.
Everest & Jennings, Inc., Los Angeles, Calif. 880,070, pub. 8–19–69. Cl. 44.
Excelsior Accordinons, Inc., New York, N.Y. 979,957, pub. 8–19–69. Cl. 36.
Explosives Corp. of America, Issaquah, Wash. 879,752, pub. 8–19–69. Cl. 9.
E-Z-Est Products Co., Inc.: *See*—
  Sampson, Arnold.
FMC Corp.: *See*—
  Well Equipment Mfg. Corp.
Fabrique des Montres Wyler Societe Anonyme, Bienne, Switzerland. 879,932, pub. 8–19–69. Cl. 27.
Fabrique d'Horlogerie Silvanna S.A., Tramelan, Switzerland. 515,043, ren. 11–4–69. Cl. 27.
Famous Beauty Salons, Inc.: *See*—
  La Maur, Inc.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 756,644, canc. Cl. 6.
Fastener House, Inc., The, Cleveland, Ohio. 879,771, pub. 8–19–69. Cl. 13.
Fawick, Thomas L., Cleveland, Ohio. 879,842, pub. 8–19–69. Cl. 21.
Feffer, Harry, New York, N.Y. 756,868, canc. Cl. 28.
Fetty, Max: *See*—
  Musicpage, Inc.
Fieldcrest Mills, Inc., Eden, N.C. 880,055, pub. 8–19–69. Cl. 42.
Fieldcrest Mills, Inc., Eden, N.C. 880,058, pub. 6–24–69. Cl. 42.
Fieldcrest Mills, Inc., Eden, N.C. 880,060, pub. 8–19–69. Cl. 42.
Firestone Tire & Rubber Co., The, Akron, Ohio. 879,954, pub. 8–19–69. Cl. 35.
First National City Bank, New York, N.Y. 880,186, pub. 8–19–69. Cl. 102.
Fisher-Price Toys, Inc., East Aurora, N.Y. 879,848, pub. 8–19–69. Cl. 22.
Fisons Pharmaceuticals Ltd., Leicestershire, England. 880,219. Cl. 18.
Flavor Corp. of America, Northbrook, Ill. 516,145, ren. 11–4–69. Cl. 46.
Flint & Walling Mfg. Co., Inc., Kendallville, Ind. 756,672, canc. Cl. 13.
Flint & Walling Mfg. Co., Inc., Kendallville, Ind. 756,673, canc. Cl. 13.
Flint & Walling Mfg. Co., Inc., Kendallville, Ind. 756,675, canc. Cl. 13.
Florida Citrus Commission, Lakeland, Fla. 880,214–15, pub. 8–19–69. Cl. A.
Flueger Corp.: *See*—
  Enterprise Mfg. Co., The.
Foamland U.S.A., Inc., West Hempstead, N.Y. 879,939, pub. 8–19–69. Cl. 32.
Fordham Felt Works, Inc, Paterson, N.J. 880,023, pub. 8–19–69. Cl. 39.
Formulabs, Inc., Escondido, Calif. 879,754, pub. 8–19–69. Cl. 11.
Fort Howard Paper Co., Green Bay, Wis. 880,008, pub. 8–19–69. Cl. 39.
Fourian, Paul, d.b.a. Boyajian's Sons Co., New York, N.Y. 756,861, canc. Cl. 28.
Franklin Mint, Inc., The, Yeadon, Pa. 880,204, pub. 8–19–69. Cl. 106.
Frieder, S., & Sons Co., The, from Regina Cigar Co., Inc., Philadelphia, Pa. 879,790, pub. 8–19–69. Cl. 17.
Furman Canning Co.: *See*—
  Furman, J. W., Cannery.
Furman, J. W., Cannery, to Furman Canning Co., Northumberland, Pa. 515,081, ren. 11–4–69. Cl. 46.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 879,719, pub. 8–19–69. Cl. 2.
Garden, Nadia Z., d.b.a. N.G. Co., Conyers, Ga. 879,925, pub. 8–19–69. Cl. 28.
Gardner-Denver Co., Quincy, Ill. 879,770, pub. 8–19–69. Cl. 13.
Garland Chemical Products Co., Garland, Tex. 756,700, canc. Cl. 15.
Gebauer Chemical Co., The, to Gebauer Chemical Co., Cleveland, Ohio. 520,476, ren. 11–4–69. Cl. 6.
Gelman Instrument Co., Ann Arbor, Mich. 879,985, pub. 8–19–69. Cl. 38.
Gem Packing Corp., Brooklyn, N.Y. 880,089, pub. 8–19–69. Cl. 46.
General Aniline & Film Corp.: *See*—
  GAF Corp.
General Electric Credit Corp., New York, N.Y. 514,610, ren. 11–4–69. Cl. 102.
General Foam Corp.: *See*—
  Tenneco Chemicals Ltd.
General Foods Corp.: *See*—
  Towle Maple Syrup Co., The.
General Foods Corp., White Plains, N.Y. 880,087–8, pub. 8–19–69. Cl. 46.
General Foods Corp., White Plains, N.Y. 880,111, pub. 8–19–69. Cl. 46.
General Foods Corp., White Plains, N.Y. 880,236–7. Cl. 46.
General Hitch Products, Inc., Detroit, Mich. 879,823, pub. 8–19–69. Cl. 19.
General Paint Corp., San Francisco, Calif., to SCM Corp., Cleveland, Ohio. 265,296, ren. 11–4–69. Cl. 16.
General Time Corp., Stamford, Conn. 879,917, pub. 8–19–69. Cl. 26.
General Tire & Rubber Co., The, Akron, Ohio. 880,054, pub. 7–16–69. Cl. 42.
Georgia-Pacific Corp.: *See*—
  Curtis Companies Inc.
Gerber Scientific Instrument Co., The, South Windsor, Conn. 879,914, pub. 8–19–69. Cl. 26.
Gesumaria, Vincent A., d.b.a. Vincent et Vincent, Washington, D.C. 880,148, pub. 8–19–69. Cl. 100.
Giancarlo Ltd., New York, N.Y. 880,022, pub. 8–19–69. Cl. 39.
Giddings & Lewis, Inc., Fond Du Lac, Wis. 879,893, pub. 8–19–69. Cl. 23.
Gilbert & Bennett Mfg. Co., The, Georgetown, Conn. 879,725, pub. 8–19–69. Cl. 3.
Gillespie Varnish Co.: *See*—
  National Chemical & Mfg. Co.
Gillette Co., The, Boston, Mass. 880,130, pub. 8–19–69. Cl. 51.
Gilman Paint & Varnish Co., Chattanooga, Tenn. 520,079, ren. 11–4–69. Cl. 16.
Glade, William P., Fort Worth, Tex. 756,815, canc. Cl. 23.
Gladwin Industries, Inc., Atlanta, Ga. 879,717, pub. 8–19–69. Cl. 1.
Glamorise Foundations, Inc., New York, N.Y. 880,231. Cl. 39.
Glen-Gary Corp., Reading, Pa. 879,718, pub. 8–19–69. Multiple Class (Classes 1 and 12).
Globe Tailoring Co., The, Cincinnati, Ohio. 756,938, canc. Cl. 39.
Golden State Advertising Co., Inc., d.b.a. Golden State Banner Co., North Hollywood, Calif. 880,171, pub. 8–19–69. Cl. 101.
Gollob Analytical Service Corp., from Gollob Analytical Service, Inc., Berkley Heights, N.J. 880,149, pub. 8–19–69. Cl. 100.
Gollob Analytical Service, Inc.: *See*—
  Gollob Analytical Service Corp.
Goodway, Inc., Philadelphia, Pa. 880,183, pub. 8–19–69. Cl. 101.
Gordon, Nels, Inc., Akron, Ohio. 757,048, canc. Cl. 101.

Gould John K., Detroit, Mich. 880,192–3, pub. 8–19–69. Cl. 103.
Grace, W. R., & Co., New York, N.Y. 879,784, pub. 8–19–69. Cl. 16.
Green Giant Co., Le Sueur, Minn. 879,712, pub. 8–19–69. Cl. 1.
Greene, Tweed & Co., to Greene, Tweed & Co., Inc., North Wales, Pa. 520,754, ren. 11–4–69. Cl. 23.
Griffs of America, Inc., Dallas, Tex. 880,154, pub. 8–19–69. Cl. 100.
Grob & Co. Ltd., Horgen, Zurich, Switzerland. 879,896, pub. 8–19–69. Cl. 23.
Growth Industry Shares, Inc., Chicago, Ill. 880,184, pub. 8–19–69. Cl. 102.
Gsell, R., & Co., Inc., New York, N.Y. 879,921, pub. 8–19–69. Cl. 27.
Gualtiero Giori, Lausanne, Switzerland. 756,790–1, canc. Cl. 23.
Gubanez, George, Jr., d.b.a. Connecticut Nurseries, Stratford, Conn. 880,222. Cl. 28.
Gurian, Elias, from E.G. Enterprises, Inc., New York, N.Y. 756,881, canc. Cl. 32.
H & W Corp., Fayetteville, N.C. 880,211, pub. 8–19–69. Cl. 107.
Habicht, Braun & Co., New York, N.Y., to Sun Crown Food Corp., San Francisco, Calif. 260,233, ren. 11–4–69. Cl. 46.
Hagy's, Hardin County, Tenn. 880,102, pub. 8–19–69. Cl. 46.
Hall, Lloyd H., Co., Inc., The, New York, N.Y. 880,163, pub. 8–19–69. Cl. 101.
Hall, Robert, Clothes, Inc., d.b.a. Robert Hall Clothes, New York, N.Y. 880,028–9, pub. 8–19–69. Cl. 39.
Halsam Products Co., Chicago, Ill. 756,773, canc. Cl. 22.
Hama Plastics Co. Ltd., Tokyo, Japan. 879,764, pub. 8–19–69. Cl. 12.
Hamilton Watch Co., Lancaster, Pa. 879,927–8, pub. 8–19–69. Cl. 28.
Hammond Corp., Deerfield, Ill. 879,959–60, pub. 8–19–69. Cl. 36.
Hammond Machinery Builders, Inc., Kalamazoo, Mich. 737,089, canc. Cl. 23.
Hampton Shirt Co., Inc., New York, N.Y. 880,013, pub. 8–19–69. Cl. 39.
Hancock-Gross, Inc., Philadelphia, Pa. 879,765, pub. 8–19–69. Cl. 13.
Handcraft Inc., New York, N.Y. 880,018–19, pub. 8–19–69. Cl. 39.
Harding Jones Paper Co., The, Middletown, Ohio. 879,964, pub. 8–19–69. Cl. 37.
Harford Pumps Ltd., London, England. 756,682, canc. Cl. 13.
Harkness, Andrew Smith, Ltd., Boreham Wood, England. 879,918, pub. 8–19–69. Cl. 26.
Harley-Davidson Motor Co., Inc.: *See—*
  American Machine & Foundry Co.
Harter, Isaac, Milling Co., The, Toledo, and Fostoria, to The Mennel Milling Co., Fostoria, Ohio. 76,150, ren. 11–4–69. Cl. 46.
Hartmann Luggage Co., Racine, Wis. 756,620, canc. Cl. 3.
Harwood Companies, Inc., The: *See—*
  Harwood Mfg. Corp.
Harwood Mfg. Corp., to The Harwood Companies, Inc., New York, N.Y. 517,368, ren. 11–4–69. Cl. 39.
Haveg Industries, Inc., Wilmington, Del. 756,617, canc. Cl. 2.
Hawaiian Wines, Ltd., Fresno, Calif. 880,116, pub. 8–19–69. Cl. 47.
Hawkes, Evelyn V., Washington, D.C. 879,769, pub. 8–19–69. Cl. 13.
Hayden, P. M., Corp., Riverside, Calif. 756,875, canc. Cl. 31.
Hayes & Stolz Industrial Mfg. Co., Fort Worth, Tex. 756,823, canc. Cl. 23.
Helipod, Inc., Oceanside, Calif. 755,856, canc. Cl. 19.
Herbst Shoe Mfg. Co., Milwaukee, Wis. 756,940, canc. Cl. 39.
Hercules Inc.: *See—*
  Hercules Powder Co.
Hercules Powder Co., to Hercules Inc., Wilmington, Del. 516,541, ren. 11–4–69. Cl. 1.
Herock Mfg. Co., Inc., to Arthur C. Mangels Industries, Inc., Philadelphia, Pa. 513,393, ren. 11–4–69. Cl. 16.
Herr, Robert, Miami, Fla. 880,133, pub. 8–19–69. Cl. 51.
Hershey Chocolate Corp., to Hershey Foods Corp., Hershey, Pa. 520,773, ren. 11–4–69. Cl. 46.
Hershey Foods Corp.: *See—*
  Hershey Chocolate Corp.
Higgins Co., Lineville, Ala. 880,036, pub. 8–19–69. Cl. 39.
Hitco, Alondra Station, Gardena, Calif. 879,751, pub. 8–19–69. Cl. 9.
Hollingshead, R. M., Corp., Camden, N.J. 756,643, canc. Cl. 6.
Holliston Laboratories, Inc., Boston, Mass. 880,139, pub. 8–19–69. Cl. 52.
Hollywood Shoe Polish Inc., Richmond Hill, N.Y. 879,732, pub. 12–10–68. Cl. 4.
Hot Shoppes, Inc., to Marriott Corp., Washington, D.C. 519,784, ren. 11–4–69. Cl. 100.
Hot Shoppes, Inc., to Marriott Corp., Washington, D.C. 520,917, ren. 11–4–69. Cl. 100.
House of Nine, Inc., Los Angeles, Calif. 880,166, pub. 8–19–69. Cl. 101.
House of Worsted-Tex, Inc., Philadelphia, Pa. 880,038, pub. 8–19–69. Cl. 39.
Howmet Corp., New York, N.Y. 880,066, pub. 8–19–69. Cl. 44.
Hubbard-Hall Chemical Co., The, Waterbury, Conn. 756,621, canc. Cl. 4.
Hubley Mfg. Co., Lancaster, Pa. 756,778, canc. Cl. 22.
Hudson, H. D., Mfg. Co., Chicago, Ill. 879,866, pub. 8–19–69. Cl. 23.
Huffman Mfg. Co., Miamisburg, Ohio. 879,878, pub. 8–19–69. Cl. 23.
Hull Protectors, Inc., San Diego, Calif. 756,754, canc. Cl. 21.
Hupp, Inc., Cleveland, Ohio. 879,890, pub. 8–19–69. Cl. 23.
Hutte, Ingrid, and Kurt Wokan, Euskirchen, Germany. 879,947, pub. 8–19–69. Cl. 33.
Hydromation Engineering Co., Livonia, Mich. 879,870, pub. 8–19–69. Cl. 23.
Idaho Nuclear Energy Commission, The, Boise, Idaho. 880,147, pub. 8–19–69. Cl. 100.
Ideal Toy Corp., Hollis, N.Y. 756,779–80, canc. Cl. 22.
Ihlenfeldt, Wilbur L., Birmingham, Mich. 880,153, pub. 8–19–69. Cl. 100.
Imperial Knife Associated Co., Inc., Providence, R.I. 879,867–8, pub. 8–19–69. Cl. 23.
Industrial Biochemicals, Inc., Edison, N.J. 756,635, canc. Cl. 6.
Inflat-A-Industries, Inc., New York, N.Y. 880,119, pub. 8–19–69. Cl. 50.
Information Dynamics, Wakefield, from Forbes & Waite Inc., Lexington, Mass. 756,915, canc. Cl. 38.
Olivetti, Ing. C., & C., S.p.A., Ivrea, Italy. 879,992, pub. 8–19–69. Cl. 23.
Institute for Scientific Information, Inc., Philadelphia, Pa. 880,229. Cl. 38.
Inta-Roto Machine Co., Inc., The, Richmond, Va. 879,877, pub. 8–19–69. Cl. 23.
Interco Inc., d.b.a. The Florsheim Shoe Co., Chicago, Ill. 880,034, pub. 8–19–69. Cl. 39.
International Grapho Analysis Society, Inc., Chicago, Ill. 756,913, canc. Cl. 38.
International Minerals & Chemical Corp., Skokie, Ill. 880,110, pub. 8–19–69. Cl. 46.
International Restaurants Corp., Washington, D.C. 757,044, canc. Cl. 100.
International Silver Co., Meriden, Conn. 879,926, pub. 8–19–69. Cl. 28.
Interstate Bag Co., Walden, N.Y. 756,616, canc. Multiple Class (Classes 2 and 37).
Inviza-Mend Corp., Los Angeles, Calif. 880,048, pub. 8–19–69. Cl. 40.
Isaacson-Carrico Mfg. Co., El Campo, Tex. 880,037, pub. 8–19–69. Cl. 39.
Italtubi S.p.A., Torre Annunziata, Italy. 756,653, canc. Cl. 12.
Itoh, C., & Co. (America) Inc., New York, N.Y. 879,825, pub. 8–19–69. Cl. 19.
Jacel, Inc., Philadelphia, Pa. 880,021, pub. 8–19–69. Cl. 39.
Jackson Lumber Harvester Co., Inc., Mondovi, Wis. 879,874, pub. 8–19–69. Cl. 23.
Jamison, Earl H., Lahaska, Pa. 879,720, pub. 5–27–69. Multiple Class (Classes 2 and 30).
Jenkins, George O., Co., Bridgewater, Mass. 515,638, ren. 11–4–69. Cl. 50.
Jerant Co., Inc., Los Angeles, Calif. 757,027, canc. Cl. 51.
Jo-Di Jewelry Mfg., Inc., New York, N.Y. 756,857, canc. Cl. 28.
Johns-Manville Corp., New York, N.Y. 513,378, ren. 11–4–69. Cl. 12.
Johns-Manville Corp., New York, N.Y. 518,497, ren. 11–4–69. Cl. 12.
Johns-Manville Corp., New York, N.Y. 756,665, canc. Cl. 12.
Jurow, Max Inc., New York, N.Y. 756,870, canc. Cl. 28.
Kabushiki Kaisha Hakuhodo, d.b.a. Hakuhodo Inc., Tokyo-To, Japan. 757,047, canc. Cl. 101.
Kabushiki Kaisha Koparu, Tokyo-To, Japan. 880,221. Cl. 27.
Kaiser Cement & Gypsum Corp.: *See—*
  Yosemite Portland Cement Corp.
Kameyama Candle Co., Ltd., Mie-Prefecture, Japan. 879,777, pub. 8–19–69. Multiple Class (Classes 15 and 34).
Kayser-Roth Corp., New York, N.Y. 880,012, pub. 8–19–69. Cl. 39.
Kellogg, M. W., Co., The, to Minnesota Mining & Mfg. Co., St. Paul, Minn. 516,531, ren. 11–4–69. Cl. 1.
Kenney Mfg. Co., Warwick, R.I. 515,684, ren. 11–4–69. Cl. 13.
Kenney Mfg. Co., Warwick, R.I. 515,703, ren. 11–4–69. Cl. 13.
Kent Industries, Inc., Fort Worth, Tex. 879,741, pub. 8–19–69. Cl. 6.
Kentile Floors Inc., Brooklyn, N.Y. 879,829, pub. 8–19–69. Cl. 20.
Kiddie Brush & Toy Co., Inc., Jonesville, Mich. 879,861, pub. 8–19–69. Cl. 22.
Kimberly-Clark Corp., Neenah, Wis. 880,042–4, pub. 8–19–69. Multiple Class (Classes 39 and 42).
Kimberly-Clark Corp., Neenah, Wis. 880,073, pub. 8–19–69. Cl. 44.
King Athletic Goods Co., Philadelphia, Pa. 879,858, pub. 8–19–69. Cl. 22.
Kinsman Ring Co., Inc., New York, N.Y. 879,929, pub. 8–19–69. Cl. 28.
Knomark Inc.: *See—*
  Park & Tilford.
Kockos Bros., Inc., from Kockos Bros., Ltd., Union City, Calif. 880,082, pub. 8–19–69. Cl. 46.
Kockos Bros., Ltd.: *See—*
  Kockos Bros., Inc.
Kockums Mekaniska Verkstads Aktiebolag, Malmo, Sweden. 514,350, ren. 11–4–69. Cl. 19.
Kohner Bros., Inc., East Paterson, N.J. 879,852, pub. 8–19–69. Cl. 22.
Koingspor, C., G.m.b.H., Dillkreis, Germany. 879,734, pub. 8–19–69. Cl. 4.
Koppers Co., Inc.: *See—*
  Union Carbide & Carbon Corp.
Kowalewski, Lambert M., and Alphonse P. Bambenek, d.b.a. Hot Fish Shop Enterprises & Hot Fish Shop, Winona, Minn. 880,083, pub. 8–19–69. Cl. 46.

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Kraft Foods Co., to Kraftco Corp., Chicago, Ill. 517,862, ren. 11–4–69. Cl. 46.
Kraftco Corp.: *See—*
  Kraft Foods Co.
Laboratorio Quimico Dominicano, Santo Domingo, Dominican Republic. 756,717, canc. Cl. 18.
Laco Corp.: *See—*
  Lockwood, Adams & Co.
La Maur, Inc., Minneapolis, Minn., from Famous Beauty Salons, Inc., Chicago, Ill. 880,046, pub. 2–13–68. Cl. 40.
La Maur, Inc., Minneapolis, Minn. 880,069, pub. 8–19–69. Cl. 44.
Landers, Frary & Clark, New Britain, Conn., to The J. B. Williams Co., Inc., New York, N.Y. 258,220, ren. 11–4–69. Cl. 23.
Lawrence, W. W., & Co., Pittsburgh, Pa., to The Sherwin-Williams Co., Cleveland, Ohio. 515,585, ren. 11–4–69. Cl. 16.
Leder- und Riemen-Patentverwertungsgesellschaft m.b.H., Vienna, Austria .879,869, pub. 8–19–69. Cl. 23.
Leeds & Northrup Co., North Wales, Pa. 258,503, 12(c) pub. 11–4–69. Cl. 26.
Lefebure Corp., Cedar Rapids, Iowa. 879,905, pub. 8–19–69. Cl. 25.
Lebon Co., The, Chicago, Ill., to Philip Carey Corp., Cincinnati, Ohio. 443,693, ren. 11–4–69. Cl. 19.
Lemmons, Paul, Shelby, N.C. 880,226. Cl. 38.
Lensclean Inc., New York, N.Y. 880,142, pub. 8–19–69. Cl. 52.
Levitt, H., d.b.a. Levitt Ventures, San Francisco, Calif. 880,170, pub. 8–19–69. Cl. 101.
Liaison Newsletter, Inc., New York, N.Y. 756,921, canc. Cl. 38.
Libbey-Owens-Ford Co., from Libbey-Owens-Ford Glass Co., Toledo, Ohio. 879,946, pub. 8–19–69. Cl. 33.
Libbey-Owens-Ford Glass Co.: *See—*
  Libbey-Owens-Ford Co.
Liberty Orchards Co., Inc., Cashmere, Wash. 880,098, pub. 8–19–69. Cl. 46.
Liberty Overall Co., to Liberty Trouser Co., Birmingham, Ala. 261,696, ren. 11–4–69. Cl. 39.
Liberty Trouser Co.: *See—*
  Liberty Overall Co.
Linco Products Corp., Chicago, Ill. 879,722, pub. 8–19–69. Multiple Class (Classes 2 and 6).
Liquid Carbonic Corp., The, Chicago, Ill. 518,297, ren. 11–4–69. Cl. 13.
Liquid Carbonic Corp., to Liquid Carbonic Corp., Chicago, Ill. 518,601, ren. 11–4–69. Cl. 13.
Lloyd Brothers, Inc., Cincinnati, Ohio. 756,732, canc. Cl. 18.
Lockwood, Adams & Co., Boston, Mass., by Laco Corp., Baltimore, Md. 72,373, 12(c) pub. 11–4–69. Cl. 52.
Logicon, Inc., San Pedro, Calif. 880,151, pub. 8–19–69. Cl. 100.
Lowe Brothers Co., The, Dayton, to The Sherwin-Williams Co., Cleveland, Ohio. 517,579, ren. 11–4–69. Cl. 16.
Low Calorie Candy Co., Inc., The: *See—*
  Weight Watchers International, Inc.
Lowenstein, M., & Sons, Inc., New York, N.Y. 880,063, pub. 8–19–69. Cl. 42.
Lucas, John, & Co., Inc., Philadelphia, Pa., to The Sherwin-Williams Co., Cleveland, Ohio. 517,912, ren. 11–4–69. Cl. 16.
Lucky Stores, Inc., San Leandro, Calif. 880,092, pub. 8–19–69. Cl. 46.
Lumbermens Merchandising Corp., Wayne, Pa. 879,785, pub. 8–19–69. Cl. 16.
Lundy's, S., Sons, Philadelphia, Pa. 880,095, pub. 8–19–69. Cl. 46.
Lupton, David W., from Contact Marketing, Inc., New York, N.Y. 880,117, pub. 8–19–69. Cl. 50.
Lynn Pacific Corp., The, Union City, Calif. 879,965, pub. 8–19–69. Cl. 37.
Lyon Metal Products, Inc., Aurora, Ill. 879,826, pub. 8–19–69. Cl. 19.
Mad Moddery Creations Ltd., Ontario, Canada. 879,924, pub. 8–19–69. Cl. 28.
Magazine Management Co., Inc., d.b.a. Marvel Comics Group, from Perfect Film & Chemical Corp., New York, N.Y. 879,980, pub. 8–19–69. Cl. 38.
Magline, Inc., Pinconning, Mich. 518,087, ren. 11–4–69. Cl. 19.
Magnet Mills, Inc.: *See—*
  Prestige, Inc.
Mallory, P. R., & Co., Inc., Indianapolis, Ind. 879,943, pub. 8–19–69. Cl. 32.
Mandarin Textiles Ltd., Kowloon, Hong Kong. 880,006, pub. 8–19–69. Cl. 39.
Mangels, Arthur C., Industries, Inc.: *See—*
  Herock Mfg. Co., Inc.
Marketing Merchandisers, Inc., Trotwood, Ohio. 880,085, pub. 8–19–69. Cl. 46.
Marks, Irving, Nite-Wear Corp., New York, N.Y. 756,952, canc. Cl. 39.
Marriott Corp.: *See—*
  Hot Shoppes, Inc.
Marquette Tool & Die Co., St. Louis, Mo. 879,880, pub. 8–19–69. Cl. 23.
Marshall, Jim, (Products) Ltd., Buckinghamshire, England. 880,220. Cl. 21.
Martin-Marietta Corp., Charlotte, N.C. 756,647, canc. Cl. 6.
Marvel Equipment Corp., Oshkosh, Wis. 880,118, pub. 8–19–69. Cl. 50.
Maryland Cup Corp., Owings Mills, Md. 880,235. Cl. 46.
Marymill Mfg. Corp., Phoenix, Ariz. 756,885–6, canc. Cl. 32.
Mason Shoe Mfg. Co., Chippewa Falls, Wis. 880,000, pub. 8–19–69. Cl. 39.
Massey, L. E., Shoes, Inc., Washington, D.C. 880,035, pub. 8–19–69. Cl. 39.
Master Bronze Powder Co., Inc., Chicago Heights, Ill. 879,782, pub. 6–17–69. Cl. 16.
Matail Bros., Inc., Long Island City, N.Y. 880,039, pub. 8–19–69. Cl. 39.
Matthews, Bill, d.b.a. The Bill Matthews Co., Temple City, Calif. 879,821, pub. 8–19–69. Cl. 19.
Mayer, B. W., & Cohan, Ltd., Cincinnati, Ohio. 879,998, pub. 11–5–68. Cl. 39.
McGraw-Edison Co., Elgin, Ill. 879,904, pub. 8–19–69. Cl. 24.
McGraw-Hill, Inc., New York, N.Y. 880,228. Cl. 38.
Mead Johnson & Co., to Mead Johnson & Co., Evansville, Ind. 879,792, pub. 7–18–67. Cl. 18.
Medtronic, Inc., Minneapolis, Minn. 880,072, pub. 8–19–69. Cl. 44.
Meguiar Enterprises, Pasadena, Calif. 879,733, pub. 8–19–69. Multiple Class (Classes 4 and 52).
Meguiar Enterprises, Pasadena, Calif. 880,134, pub. 8–19–69. Cl. 52.
Mennel Milling Co., The: *See—*
  Harter, Isaac, Milling Co., The.
Merchandisers Assoc., Inc.: *See—*
  Crown Luggage Co., Inc.
Merck & Co., Inc., Rahway, N.J. 756,976, canc. Cl. 44.
Merritt, Ronnie L., Yeso, N. Mex. 880,009, pub. 8–19–69. Cl. 39.
Metal Hydrides Inc., Beverly, Mass. 756,640, canc. Cl. 6.
Metalurgica Vive y Casals, S.A., Barcelona, Spain. 879,775, pub. 8–19–69. Cl. 13.
Midwest Biscuit Co., Burlington, Iowa. 880,106–8, pub. 8–19–69. Cl. 46.
Mid-West Bottle Cap Co., Belvidere, Ill., to U.S. Plywood-Champion Papers Inc., Hamilton, Ohio. 519,613, ren. 11–4–69. Cl. 50.
Milchem Inc., Houston, Tex. 879,716, pub. 8–19–69. Cl. 1.
Miles Laboratories, Inc., Elkhart, Ind. 879,745–6, pub. 8–19–69. Cl. 6.
Milprint, Inc., Milwaukee, Wis. 519,844, ren. 11–4–69. Cl. 2.
Min Sun Trading Co., to Chinese Maid, Inc., Chicago, Ill. 442,734, ren. 11–4–69. Cl. 46.
Minnesota Mining & Mfg. Co.: *See—*
  Kellogg, M. W., Co., The.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 756,609, canc. Cl. 1.
Minnetonka Moccasin Co., Inc., Minneapolis, Minn. 514,385, ren. 11–4–69. Cl. 39.
Miratel Electronics Co.: *See—*
  Ball Bros. Research Corp.
Mister Pants, Inc., New York, N.Y. 880,015, pub. 8–19–69. Cl. 39.
Mitchell, David V., d.b.a. Custom Muffler Mfg. Co., Pasadena, Calif. 756,798, canc. Cl. 23.
Miyamae Light Metals Mfg. Co., Ltd., Osaka, Japan. 879,854, pub. 8–19–69. Cl. 22.
Mobile Wash, Inc., Indianapolis, Ind. 880,196, pub. 8–19–69. Cl. 103.
Modern Lines Inc., Clark, N.J. 879,853, pub. 8–19–69. Cl. 22.
Modernair Corp., San Leandro, Calif. 756,812, canc. Cl. 23.
Monsanto Co., St. Louis, Mo. 879,940–1, pub. 8–19–69. Cl. 32.
Morton International, Inc., Chicago, Ill. 880,105, pub. 8–19–69. Cl. 46.
Motorola, Inc., Franklin Park, Ill. 513,988, ren. 11–4–69. Cl. 21.
Mullard Ltd., London, England. 879,844, pub. 8–19–69. Cl. 21.
Munro, D. R., & Son, Inc., Portland, Oreg. 879,933, pub. 8–19–69. Cl. 32.
Musicpage, Inc., from M. Fetty, d.b.a. Max Fetty & Associates, New Orleans, La. 880,165, pub. 8–19–69. Cl. 101.
Mutual Products Co., Inc.: *See—*
  Mutual Stationers Supply Corp.
Mutual Stationers Supply Corp., New York, N.Y., to Mutual Products Co., Inc., Worcester, Mass. 515,283, ren. 11–4–69. Cl. 23.
Naremco, Inc., Springfield, Mo. 879,795–7, pub. 8–19–69. Cl. 18.
Nash-Finch Co., d.b.a. Nash Finch Co., Minneapolis, Minn. 880,135, pub. 8–19–69. Cl 52.
National Airlines, Inc., Miami, Fla. 880,202, pub. 8–19–69. Cl. 105.
National Bag-O-Tunes, Island Park, N.Y. 756,900, canc. Cl. 36.
National Chemical & Mfg. Co., Chicago, Ill., to Gillespie Varnish Co., Jersey City, N.J. 513,248, ren. 11–4–69. Cl. 16.
National Periodical Publications, Inc., New York, N.Y. 879,990, pub. 8–19–69. Cl. 38.
National Printing Co., Union, N.J. 756,961, canc. Cl. 40.
Nationwide Trailer Rental System, Inc., from Nationwide Trailer Rental System, Inc., Wichita, Kans. 739,550, canc. Cl. 105.
Natural Rubber Thread Committee, Inc., Providence, R.I. 880,169, pub. 8–19–69. Cl. 101.
Neely, Harwell & Co., to Neely, Harwell & Co., Nashville, Tenn. 259,998, ren. 11–4–69. Cl. 42.
Neptune Cultured Pearl Syndicate, Ltd., New York, N.Y. 756,858, canc. Cl. 28.
Newberry, J. J., Co New York, N.Y. 756,800, canc. Cl. 23.
Nicholson File Co., Providence, R.I. 879,873, pub. 8–19–69. Cl. 23.
Nippon Valqua Industries, Ltd., Tokyo, Japan. 879,761, pub. 8–19–69. Cl. 12.
Nishimoto Trading Co., Ltd., Kobe, Japan. 880,080, pub. 8–19–69. Cl. 46.
North American Detergents Corp., Washington, D.C. 880,137, pub. 8–19–69. Cl. 52.

North American Knitting Co., to North American Knitting Co., Mansfield, Ohio. 520,168, ren. 11–4–69. Cl. 39.
North & Judd Mfg. Co., New Britain, Conn. 879,831, pub. 8–19–69. Cl. 21.
Norwich Pharmacal Co., The, to The Norwich Pharmacal Co., Norwich, N.Y. 879,737, pub. 8–19–69. Cl. 6.
Novocol Chemical Mfg. Co., Inc., Brooklyn, N.Y. 519,311, ren. 11–4–69. Cl. 18.
Oak Rubber Co., The, Ravenna, Ohio. 516,873, ren. 11–4–69. Cl. 22.
O'Bryan Bros., Inc., Chicago, Ill. 756,935, canc. Cl. 39.
Ogus, Rabinovich & Ogus, Inc., New York, N.Y. 264,372, ren. 11–4–69. Cl. 39.
Olavvarria & Co., Inc., New York, N.Y. 756,981, canc. Cl. 46.
Olin Mathieson Chemical Corp., New York, N.Y. 879,747, pub. 8–19–69. Cl. 6.
Olson Electronics Corp.: *See*—
  Olson Radio Warehouse, Inc.
Olson Radio Warehouse, Inc., to Olson Electronics Corp., Akron, Ohio. 514,787, ren. 11–4–69. Cl. 21.
Omni Spectra, Inc., Farmington, Mich. 879,846, pub. 8–19–69. Cl. 21.
Oneida Ltd., Oneida. N.Y. 879,889, pub. 8–19–69. Cl. 23.
Orbit Pharmaceutical, Inc., Kansas City, Kans. 879,809, pub. 8–19–69. Cl. 18.
Oval Kiki Kogyo Kabushiki Kaisha, d.b.a. Oval Gear Engineering Co., Ltd., Tokyo, Japan. 879,911, pub. 8–19–69. Cl. 26.
P. & M. Co., The, assor. to Poor & Co., to Portec, Inc., Oak Brook, Ill. 514,397, ren. 11–4–69. Cl. 14.
Pacific Foam Packaging, Los Angeles, Calif. 879,721, pub. 4–29–69. Cl. 2.
Palmer-Shille Co., Detroit, Mich. 879,936, pub. 8–19–69. Cl. 32.
Park & Tilford, New York, to Knomark Inc., Jamaica, N.Y. 511,724, ren. 11–4–69. Cl. 6.
Park Tissue Mills, Inc., New York, N.Y. 756,903, canc. Cl. 37.
Parmatic, Inc., Newark, N.J. 879,915, pub. 8–19–69. Cl. 26.
Pathe News, Inc., New York, N.Y. 879,986, pub. 8–19–69. Cl. 38.
Payne Mfg. Co. Ltd., Ontario, Canada. 879,913, pub. 8–19–69. Cl. 26.
Peddinghaus, Paul Ferd., Bevelsberg, Germany. 879,881, pub. 8–19–69. Cl. 23.
Pedro, Carl, & Sons, Inc., St. Paul, Minn. 879,727, pub. 8–19–69. Cl. 3.
Pego, Adolfo L., and Juan L. Pego, Miami, Fla. 880,209, pub. 8–19–69. Cl. 107.
Perfect Film & Chemical Corp.: *See*—
  Magazine Management Co., Inc.
Perfumeria Gal, S.A., Madrid, Spain. 514,959, ren. 11–4–69. Cl. 51.
Perri, R., & Sons, Inc., New Haven, Conn. 880,233. Cl. 46.
Peter Pan International, Inc., New York, N.Y. 880,230. Cl. 39.
Pfizer, Chas., & Co., Inc., New York, N.Y. 879,806, pub. 8–19–69. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 880,132, pub. 8–19–69. Cl. 51.
Pharr Yarns, Inc., Mc Adenville, N.C. 756,969, canc. Cl. 43.
Phillips Petroleum Co., Bartlesville, Okla. 516,410, ren. 11–4–69. Cl. 15.
Phillips Petroleum Co., Bartlesville, Okla. 516,425, ren. 11–4–69. Cl. 15.
Phillips Petroleum Co., Bartlesville, Okla. 879,963, pub. 8–19–69. Cl. 37.
Pilgrim Industries, Inc., New York, N.Y. 880,049, pub. 8–19–69. Cl. 40.
Piper Aircraft Corp., Lock Haven, Pa. 514,529, ren. 11–4–69. Cl. 19.
Plibrico Co.: *See*—
  Plibrico Jointless Firebrick Co.
Plibrico Jointless Firebrick Co., to Plibrico Co., Chicago, Ill. 515,120, ren. 11–4–69. Cl. 12.
Plibrico Jointless Firebrick Co., to Plibrico Co., Chicago, Ill. 518,366, ren. 11–4–69. Cl. 12.
Pond's Extract Co., to Chesebrough-Pond's Inc., New York, N.Y. 516,314, ren. 11–4–69. Cl. 51.
Portec, Inc.: *See*—
  P. & M. Co., The
Porter, H. K., Co., Inc.: *See*—
  Quaker Rubber Corp.
Pratt-Low Preserving Co., Santa Clara, Calif., to Duffy-Mott Co., Inc., New York, N.Y. 266,307, ren. 11–4–69. Cl. 46.
Prestige, Inc., to Reconstruction Finance Corp., Philadelphia, Pa., to Magnet Mills, Inc., New York, N.Y. 516,374, ren. 11–4–69. Cl. 39.
Princeton Applied Research Corp., Princeton, N.J. 879,841, pub. 8–19–69. Cl. 21.
Process Development Corp., Wayne, N.J. 756,760, canc. Cl. 21.
Product Workshop, Inc., The, Rochester, N.Y. 880,224. Cl. 38.
Products Inc., Paterson, N.J. 879,783, pub. 8–19–69. Cl. 16.
Provident National Bank, Philadelphia, Pa. 880,185, pub. 8–19–69. Cl. 102.
Puig, Antonio, y Cia, Barcelona, Spain. 743,184, canc. Cl. 51.
Puritan Fashions Corp., New York, N.Y. 756,933, canc. Cl. 39.
Purity Cheese Co., Mayville, Wis. 520,341, ren. 11–4–69. Cl. 46.
Purity Supreme, Inc., from Save-Mor Supermarkets, Inc., Billerica, Mass. 880,179, pub. 8–19–69. Cl. 101.
Putnam-Herzl Finishing Co., Inc., New York, N.Y. 880,205, pub. 8–19–69. Cl. 106.
Quaker Oats Co., The, d.b.a. Burry's and Burry Biscuit Division, Chicago, Ill. 880,109, pub. 8–19–69. Cl. 46.
Quaker Rubber Corp., Philadelphia, to H. K. Porter Co., Inc., Pittsburgh, Pa. 510,423, ren. 11–4–69. Cl. 35.
Quality Courts Motels, Inc., Silver Spring, Md. 880,101, pub. 8–19–69. Cl. 100.
Quikey Mfg. Co., Inc., Akron, Ohio. 880,218. Cl. 3.
RCA Corp.: *See*—
  Radio Corp. of America.
Rachelle Laboratories, Inc., Long Beach, Calif. 879,802, pub. 8–19–69. Cl. 18.
Radio Corp. of America, to RCA Corp., New York, N.Y. 518,481, ren. 11–4–69. Cl. 21.
Raffetto, G. B., Inc., Brooklyn, N.Y. 514,372, ren. 11–4–69. Cl. 42.
Rainy Days Are, The, Philadelphia, Pa. 880,207, pub. 8–19–69. Cl. 107.
Raleigh Industries Ltd., Nottingham, England. 879,820, pub. 8–19–69. Cl. 19.
Ralston Purina Co., St. Louis, Mo. 880,238. Cl. 46.
Ransom, Richard K., d.b.a. Hickory Farms of Ohio, Toledo, Ohio. 880,090–1, pub. 8–19–69. Cl. 46.
Raybe Corp., Santa Barbara, Calif. 879,932, pub. 8–19–69. Cl. 31.
Ready-Power Co., The, Detroit, Mich. 513,985, ren. 11–4–69. Cl. 21.
Red Wing Shoe Co., Inc., Red Wing, Minn. 880,030, pub. 8–19–69. Cl. 39.
Redi-Knot, Inc., Pittsburgh, Pa. 734,972, canc. Cl. 40.
Regent Sports Corp., Hauppage, N.Y. 879,863, pub. 8–19–69. Cl. 22.
Regina Cigar Co., Inc.: *See*—
  Frieder, S., & Sons Co., The.
Rendell, W. J., Ltd., London, England. 756,719, canc. Cl. 18.
Rendell, W. J., Ltd., London, England. 756,973, canc. Cl. 44.
Republic Tool & Mfg. Corp., Century City, Calif. 879,849–50, pub. 8–19–69. Cl. 22.
Revlon, Inc., New York, N.Y. 880,240–64. Cl. 51.
Rex Chainbelt Inc., Milwaukee, Wis., from Cartriseal Corp., Wheeling, Ill. 879,952, pub. 8–19–69. Cl. 35.
Reynolds, R. J., Foods, Inc., New York, N.Y. 880,101, pub. 8–19–69. Cl. 46.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 879,791, pub. 8–19–69. Cl. 17.
Rezendes, Mary G., d.b.a. Jo-Sand Jewelry Co., Providence, R.I. 756,867, canc. Cl. 28.
River Queen Boat Works, Inc., Gary, Ind. 879,828, pub. 8–19–69. Cl. 19.
Robbins Tire & Rubber Co., Inc., Tuscumbia, Ala. 443,459–60, ren. 11–4–69. Cl. 35.
Roberts Co., Sanford, N.C. 879,903, pub. 8–19–69. Cl. 23.
Rockeby Chemical Co., Marietta, Ohio. 756,627, canc. Cl. 6.
Rodale Press, Inc., Emmaus, Pa. 757,061, canc. Cl. A.
Rohm & Haas Co., Philadelphia, Pa. 757,025, canc. Cl. 50.
Rosenthal Aktiengesellschaft, Bavaria, Germany. 879,931, pub. 8–19–69. Cl. 30.
Roth Greeting Cards, Hollywood, Calif. 879,987, pub. 8–19–69. Cl. 38.
Rothmans of Pall Mall Ltd., Zurich, Switzerland. 879,787, pub. 8–19–69. Cl. 17.
Rotodyne Mfg. Corp., Brooklyn, N.Y. 879,876, pub. 8–19–69. Cl. 23.
Rowan, Lee, Co., St. Louis, Mo. 757,023, canc. Cl. 50.
Royal-T Co., Mount Pleasant, Mich. 879,937, pub. 8–19–69. Cl. 32.
Ruberoid Co., Ltd., The, London, England. 756,661, canc. Cl. 12.
Ruppert, Jacob, New York, N.Y. 757,013, canc. Cl. 48.
SCM Corp.: *See*—
  General Paint Corp.
SCM Corp., Cleveland, Ohio. 879,714, pub. 8–19–69. Cl. 1.
S-K Forms Co., Philadelphia, Pa. 879,966, pub. 8–19–69. Cl. 37.
S & Q Clothiers, Inc., Dallas, Tex. 880,027, pub. 8–19–69. Cl. 39.
Sagner's, A., Son, Frederick, Md. 756,951, canc. Cl. 39.
Sahara Packing Co., Brawley, Calif. 880,113, pub. 8–19–69. Cl. 46.
St. Lawrence Sales Inc., Birmingham, Mich. 756,783, canc. Cl. 22.
St. Thomas Inc.: *See*—
  Wilkins, E. J., Co.
Sakowitz, Inc., Houston, Tex. 880,004, pub. 8–19–69. Multiple Class (Classes 39 and 101).
Salmanson & Co., Inc., New York, N.Y. 756,816, canc. Cl. 23.
Salviam, Paris, France. 880,191, pub. 8–19–69. Cl. 103.
Sampson, Arnold, d.b.a. E-Z-Est Products Co., San Francisco, to E-Z-Est Products Co., Inc., Oakland, Calif. 517,878, ren. 11–4–69. Cl. 52.
Sander Wood Engraving Co., Inc., Chicago, Ill. 880,177, pub. 8–19–69. Cl. 101.
Sankyo Co. Ltd., Tokyo, Japan. 756,720, canc. Cl. 18.
Sanson Institute of Heraldry, Inc., Boston, Mass. 880,152, pub. 8–19–69. Cl. 100.
Santa Anita Mfg. Corp., Temple City, Calif. 879,886–7, pub. 8–19–69. Cl. 23.
Saunders, Thomas W., Grosse Pointe Woods, Mich. 880,210, pub. 8–19–69. Cl. 107.
Save-Mor Supermarkets, Inc.: *See*—
  Purity Supreme, Inc.
Scanner Corp. of America, Livonia, Mich. 756,749, canc. Cl. 21.
Schaefer, F & M. Brewing Co., The: *See*—
  Beverwyck Breweries, Inc.
Schaub Engineering Co., from Synchroflo Inc., Downers Grove, Ill. 879,872, pub. 8–19–69. Cl. 23.
Schenk S.A., Vaud, Switzerland. 880,115, pub. 8–19–69. Cl. 47.
Schermuly Ltd.: *See*—
  Schermuly Pistol Rocket Apparatus, Ltd.

Schermuly Pistol Rocket Apparatus, Ltd., to Schermuly Ltd., Surrey, England. 519,351, ren. 11–4–69. Cl. 9.
Schlossberg Textil AG., Zurich, Switzerland. 880,060, pub. 8–19–69. Cl. 42.
Scott, H. H., Inc., Maynard, Mass. 879,833, pub. 8–19–69. Cl. 21.
Scovill Mfg. Co., Waterbury, Conn. 879,834, pub. 8–19–69. Cl. 21.
Sea Harvest Corp. (Proprietary) Ltd., Saldanha, Cape Province, Republic of South Africa. 880,078, pub. 8–19–69. Cl. 46.
Sealy, Inc., Chicago, Ill. 518,024, ren. 11–4–69. Cl. 32.
Sears, Roebuck & Co., Chicago, Ill. 514,818, ren. 11–4–69. Cl. 39.
Sears, Roebuck & Co., Chicago, Ill. 879,723, pub. 8–19–69. Cl. 2.
Sears, Roebuck & Co., Chicago, Ill. 879,901, pub. 8–19–69. Cl. 23.
Sears, Roebuck & Co., Chicago, Ill. 880,062, pub. 8–19–69. Cl. 42.
Sears-Roebuck Foundation, The, Skokie, Ill. 879,984, pub. 8–19–69. Cl. 38.
Seravac Laboratories, (Pty.) Ltd., Cape Town, South Africa, 879,742, pub. 8–19–69. Cl. 6.
Seton Products Ltd., Oldham, England. 880,064, pub. 8–19–69. Cl. 44.
Sexauer, J. A., Mfg. Co., Inc., White Plains, N.Y. 880,136, pub. 8–19–69. Cl. 52.
Shell Oil Co., New York, N.Y. 756,701, canc. Cl. 15.
Sherwin-Williams Co., The: *See*—
  Lawrence, W. W., & Co.
  Lucas, John, & Co., Inc.
Shiseido Co. Ltd., Tokyo, Japan. 880,140, pub. 8–19–69. Cl. 52.
Shoe Sheen Products Corp., New York, N.Y. 756,614, canc. Cl. 2.
Signatronic Co., Ltd., East Elmhurst, N.Y. 879,817, pub. 8–19–69. Cl. 19.
Simpson, R. C., & Staff, Inc., Ridgewood, N.J. 880,150, pub. 8–19–69. Cl. 100.
Sinalco Aktiengesellschaft, Detmold, Germany. 880,074, pub. 8–19–69. Cl. 45.
Sinclair, Murray & Co., Inc., to Commerce Clearing House, Inc. (New Jersey), Clark, N.Y. 518,198–9, ren. 11–4–69. Cl. 38.
Singer Co., The, New York, N.Y. 879,885, pub. 8–19–69. Cl. 23.
Sioux Falls Rendering Co., Sioux Falls, S. Dak. 443,304, ren. 11–4–69. Cl. 46.
Siris, A. J., Products Corp., Bronx, N.Y. 879,730, pub. 8–19–69. Cl. 3.
Smith, Donald L., Houston, Tex. 879,832, pub. 8–19–69. Cl. 21.
Snack Products, Inc., d.b.a. House of Snacks, Downers Grove, Ill. 880,094, pub. 8–19–69. Cl. 46.
Snorkel Fire Equipment Co., St. Joseph, Mo. 879,879, pub. 8–19–69. Cl. 23.
Societe Anonyme Etablissements Andre Giller, Troyes (Aube), France. 880,037, pub. 8–19–69. Cl. 42.
Societe d'Exploitation des Brevets Neiman, Neuilly (Seine), France. 879,906, pub. 8–19–69. Cl. 26.
Societe dite: Transocean Societe Anonyme, Paris, France. 879,994, pub. 8–19–69. Cl. 39.
Sony Corp., Shinagawa-Ku, Tokyo, Japan. 879,838, pub. 8–19–69. Cl. 21.
Sound Ear Inc., Mt. Kisco, N.Y. 880,071, pub. 8–19–69. Cl. 44.
Southern Knitwear Mills, Inc., Charlotte, N.C. 880,031, pub. 8–19–69. Cl. 39.
Southwestern Drug Corp., Dallas, Tex. 879,814, pub. 8–19–69. Cl. 18.
Spencer Shoe Corp., Boston, Mass. 520,207, ren. 11–4–69. Cl. 39.
Spex Industries, Inc., Metuchen, N.J. 879,916, pub. 8–19–69. Cl. 26.
Sport-Ease Fashions, Ltd., Manitoba, Canada. 880,007, pub. 8–19–69. Cl. 39.
Sprague Electric Co., North Adams, Mass. 879,840, pub. 8–19–69. Cl. 21.
Spraying Systems Co., Bellwood, Ill. 879,772, pub. 8–19–69. Cl. 13.
Sprayon Products, Inc., Bedford Heights, Ohio. 756,693, canc. Cl. 15.
Squibb, E. R., & Sons, Inc., New York, N.Y. 879,743, pub. 8–19–69. Cl. 6.
Standard Brands Inc., New York, N.Y. 757,006, canc. Cl. 46.
Standard Elektrik Lorenz Aktiengesellschaft, Stuttgart-Zuffenhausen, Germany. 879,835, pub. 8–19–69. Cl. 21.
Standard Industries, Inc., Tulsa, Okla. 756,666, canc. Cl. 12.
Standard Oil Co., Flemington, N.J. 879,780, pub. 8–19–69. Cl. 15.
Standard Oil Co. of California, San Francisco, Calif. 267,236, ren. 11–4–69. Cl. 6.
Standard Oil Co. of California, San Francisco, Calif. 520,483, ren. 11–4–69. Cl. 15.
Star Vu Plastics, Ltd., New York, N.Y. 880,216. Cl. 2.
Starch, Daniel, & Staff, Inc., Mamaroneck, N.Y. 880,178, pub. 8–19–69. Cl. 101.
Statler Tissue Corp., Medford, Mass. 879,968, pub. 8–19–69. Cl. 37.
Stella Lamp Co. Ltd., London, England. 879,839, pub. 8–19–69. Cl. 21.
Sterwin Laboratories, Inc., Millsboro, Del. 879,808, pub. 8–19–69. Cl. 18.
Strategic Materials Corp., New York, N.Y. 757,042, canc. Cl. 100.
Stratton & Terstegge Co., Louisville, Ky. 520,666, ren. 11–4–69. Cl. 34.
Strauss & Co., Inc., Baltimore, Md. 517,756, ren. 11–4–69. Cl. 42.
Stuart, C. H., & Co., Inc., from Emmons Jewelers, Inc., Newark, N.Y. 879,930, pub. 8–19–69. Cl. 28.
Studio Petites, New York, N.Y. 879,991, pub. 8–19–69. Cl. 39.
Sucrest Corp., New York, N.Y. 879,749, pub. 7–22–69. Cl. 6.
Sumitomo Chemical Co., Ltd., Osaka, Japan. 879,800, pub. 8–19–69. Cl. 18.
Sun Chemical Corp., New York, N.Y. 741,583, canc. Cl. 23.
Sun Chemical Corp., New York, N.Y. 879,744, pub. 7–22–69. Cl. 6.
Sun Chemical Corp., New York, N.Y. 879,755–6, pub. 8–19–69. Cl. 11.
Sun Crown Food Corp.: *See*—
  Habicht, Braun & Co.
Sun Life Assurance Co. of Canada, Montreal, Quebec, Canada. 880,188, pub. 8–19–69. Cl. 102.
Sunbeam Corp., Chicago, Ill. 756,854, canc. Cl. 27.
Superior Continental Corp., Hickory, N.C. 879,836, pub. 8–19–69. Cl. 21.
Superior Pet Products, Inc., Curwensville, Pa. 879,728, pub. 8–19–69. Cl. 3.
Supermarkets General Corp., Cranford, N.J. 880,075, pub. 8–19–69. Cl. 45.
Supima Association of America, El Paso, Tex. 880,213, pub. 8–19–69. Cl. A.
Swank, Inc., Attleboro, Mass. 879,750, pub. 9–10–68. Cl. 8.
Syncroflo Inc.: *See*—
  Schaub Engineering Co.
Syntex Laboratories, Inc., Palo Alto, Calif. 879,816, pub. 8–19–69. Cl. 18.
Taylor Bros., Inc., Winston-Salem, N.C. 517,583, ren. 11–4–69. Cl. 17.
Taylor-Myers, Robert W., Hollywood, Calif. 879,768, pub. 8–19–69. Cl. 13.
Technical Publishing Co., Barrington, Ill. 880,225. Cl. 38.
Teijin Ltd., Osaka, Japan. 880,056, pub. 8–19–69. Cl. 42.
Tele-Quick Corp., New Haven, Ind. 879,962, pub. 8–19–69. Cl. 37.
Telesco Brophey Ltd., Montreal, Quebec, Canada. 880,053, pub. 8–19–69. Cl. 41.
Tenneco Chemicals, Inc., from General Foam Corp., New York, N.Y. 879,935, pub. 8–19–69. Cl. 32.
Teresa & Tom, Los Angeles, Calif. 756,774, canc. Cl. 22.
Terrace Ceramics, Inc., Zanesville, Ohio. 756,874, canc. Cl. 30.
Textone, Inc., Los Angeles, Calif. 879,763, pub. 8–19–69. Cl. 12.
Thayer, Floyd L., d.b.a. Nite-Kap Co., Duxbury, Mass. 879,767, pub. 8–19–69. Cl. 13.
Thompson, M. R., Inc., New York, N.Y. 756,727, canc. Cl. 18.
Thompson, Robert L., Big Lake, Minn. 879,818, pub. 8–18–69. Cl. 19.
Tiger Fabrics, Inc., New York, N.Y. 879,758, pub. 8–19–69. Cl. 12.
Tiger Fabrics, Inc., New York, N.Y. 879,993, pub. 8–19–69. Cl. 39.
Time Mechanisms, Inc., Ridgefield, N.J. 879,778, pub. 8–19–69. Cl. 15.
Tokheim Corp., Fort Wayne, Ind. 879,910, pub. 8–19–69. Cl. 26.
Tomsett Associates, Inc., Pittsburgh, Pa. 880,172, pub. 8–19–69. Cl. 101.
Tortola Enterprises, Inc.: *See*—
  Tortola, The.
Tortola, The, to Tortola Enterprises, Inc., San Francisco, Calif. 517,048, ren. 11–4–69. Cl. 46.
Towle Maple Syrup Co., The, St. Paul, Minn., to General Foods Corp., White Plains, N.Y. 74,056, ren. 11–4–69. Cl. 46.
Town & Country Auto Wash Systems, Youngstown, Ohio. 880,180, pub. 8–19–69. Cl. 101.
Town & Country Distributors, Harrisburg, Pa., from J. Ginsberg, d.b.a. Gerbun Distributors, New York, N.Y. 756,859, canc. Cl. 28.
Trak Inc., Columbus, Ohio. 756,770, canc. Cl. 21.
Trans-Wheel, Inc., Addison, Ill. 879,888, pub. 8–19–69. Cl. 23.
Trimfoot Co., St. Louis, Mo. 880,045, pub. 8–19–69. Cl. 39.
Trunz, Inc., Brooklyn, N.Y. 880,084, pub. 8–19–69. Cl. 46.
Tuckersharpe Pen Co., Inc., Richmond, Va. 879,967, pub. 8–19–69. Cl. 37.
UMC Industries, Inc., St. Louis, Mo. 879,757, pub. 8–19–69. Cl. 11.
Unibraze Corp., New Rochelle, N.Y. 879,948, pub. 8–19–69. Cl. 34.
Union Carbide & Carbon Corp., New York, N.Y., to Koppers Co., Inc., Pittsburgh, Pa. 442,861, ren. 11–4–69. Cl. 15.
Unishops, Inc., Jersey City, N.J. 880,025, pub. 8–19–69. Cl. 39.
United States Baking Co., Inc., Carrollton, Mo. 880,081, pub. 8–19–69. Cl. 46.
United Biscuit Co. of America, Melrose Park, Ill. 757,005, canc. Cl. 46.
U.S. Ethicals Inc., Long Island City, N.Y. 879,805, pub. 8–19–69. Cl. 18.
U.S. Expansion Bolt Co., York, Pa. 517,868, ren. 11–4–69. Cl. 13.
United States Franchise Corp., San Francisco, Calif. 880,162, pub. 8–19–69. Cl. 100.
U.S. Plywood-Champion Papers Inc.: *See*—
  Mid-West Bottle Cap Co.
University Society Inc., The, Midland, N.J. 879,989, pub. 8–19–69. Cl. 38.
Upper Avenue National Bank of Chicago, Chicago, Ill. 880,187, pub. 8–19–69. Cl. 102.
Utility Products Inc., Portland, Oreg. 880,143, pub. 8–19–69. Cl. 52.

Valentine, Deane W., Los Angeles, Calif. 879,807, pub. 8–19–69. Cl. 18.
Vector Mfg. Co., Inc., Southampton, Pa. 756,972, canc. Cl. 44.
Victoria Floating Opals, Inc., New York, N.Y. 756,862, canc. Cl. 28.
Villager, Inc., The: *See*—
 Villager Industries, Inc.
Villager Industries, Inc., from The Villager, Inc., Philadelphia, Pa. 879,726, pub. 7–8–69. Multiple Class (Classes 3, 28, and 39).
Villager Industries, Inc., from The Villager, Inc., Philadelphia, Pa. 879,729, pub. 7–1–69. Multiple Class (Classes 3, 28, and 39).
Villager Industries, Inc., from The Villager, Inc., Philadelphia, Pa. 879,982, pub. 5–27–69. Cl. 38.
Villager Industries, Inc., from The Villager, Inc., Philadelphia, Pa. 880,020, pub. 5–20–69. Cl. 39.
Vogt Appliance Co.: *See*—
 Vogt Appliance Corp.
Vogt Appliance Corp., from Vogt Appliance Co., Kalamazoo, Mich. 880,067, pub. 8–19–69. Cl. 44.
Voss International Corp., Hollywood, Calif. 756,685, canc. Cl. 13.
WSM, Inc., Nashville, Tenn. 880,198, pub. 8–19–69. Cl. 104.
Wakefern Food Corp., Elizabeth, N.J. 879,786, pub. 8–19–69. Cl. 16.
Wakefern Food Corp., Elizabeth, N.J. 879,801, pub. 8–19–69. Cl. 18.
Waldes Kohinoor, Inc., Long Island City, N.Y. 880,052, pub. 8–19–69. Cl. 40.
Waltham Watch Co.: *See*—
 American Waltham Watch Co.
Warner Electric Co., Inc., Chicago, Ill. 744,931–2, canc. Cl. 46.
Wayne Mfg. Co., Pomona, Calif. 879,891, pub. 8–19–69. Cl. 23.
Weight Watchers International, Inc., Great Neck, from The Low Calorie Candy Co., Inc., Yonkers, N.Y. 879,793, pub. 5–13–69. Multiple Class (Classes 18 and 51).
Well Equipment Mfg. Corp., Houston, Tex., to FMC Corp., San Jose, Calif. 442,944–5, ren. 11–4–69. Cl. 13.
Wellco Ro-Search Industries, Inc., from Wellco Shoe Corp., Waynesville, N.C. 739,765, canc. Cl. 39.
Wellco Ro-Search Industries, Inc., from Wellco Shoe Corp., Waynesville, N.C. 740,950–2, canc. Cl. 39.
Welsh Co., St. Louis, Mo. 518,053, ren. 11–4–69. Cl. 19.
Weltab S.A., Brussels, Belguim. 879,788–9, pub. 8–19–69. Cl. 17.
West Coast Airlines, Inc.: *See*—
 Air West, Inc.
Western Builder Publishing Co., Milwaukee, Wis. 517,331, ren. 11–4–69. Cl. 38.
Western Peat Co., Ltd., British Columbia, Canada. 756,600, canc. Cl. 1.
Wetle, Al P., d.b.a. Glen Recording Co., Chicago, Ill. 879,955, pub. 8–19–69. Cl. 36.
Wheatley, Charles, Co., Tulsa, Okla. 879,766, pub. 8–19–69. Cl. 13.
White Stores, Inc., Wichita Falls, Tex. 879,781, pub. 8–19–69. Cl. 16.
Whiteside & Blank, to Henry Blank & Co., Newark, N.J. 75,757, ren. 11–4–69. Cl. 28.
Whiting Lisbeth, Co., Inc., Jamaica, N.Y. 879,856, pub. 8–19–69. Cl. 22.
Wiesee, Harold, d.b.a. Safe-A-Matic Handrail Co., Inc., Madison, S. Dak. 879,774, pub. 8–19–69. Cl. 13.
Wilkinson, E. J., Co., to St. Thomas Inc., Gloversville, N.Y. 515,559–60, ren. 11–4–69. Cl. 3.
Williams, A. R., & Co., Carteret, N.J. 879,798–9, pub. 8–19–69. Cl. 18.
Williams, J. B., Co., Inc., The: *See*—
 Landers, Frary & Clark.
Williams, J. B., Co., Inc., The, from John H. Breck, Inc., New York, N.Y. 880,126–7, pub. 11–12–68. Cl. 51.
Willis, K. I., Corp., Milan, Ill. 514,714, ren. 11–4–69. Cl. 23.
Wilputte Coke Oven Corp., now by merger Allied Chemical & Dye Corp., to Allied Chemical Corp., New York, N.Y. 515,583, ren. 11–4–69. Cl. 34.
Wimbish Aviation, Inc., Greensboro, N.C. 880,200, pub. 8–19–69. Cl. 105.
Windman Bros., Los Angeles, to Yankee Photo Products, Inc., Gardena, Calif. 517,249, ren. 11–4–69. Cl. 26.
Winkler, Kaspar, & Co., Zurich, Switzerland. 512,888, ren. 11–4–69. Cl. 12.
Winner Hat Mfg. Co., Inc., New York, N.Y. 879,996, pub. 8–19–69. Cl. 39.
Wirth, Leon J., d.b.a. Wirth Co. Inc., Oakland, Calif. 879,738, pub. 8–19–69. Cl. 6.
Wolff Products Co., Long Island City, N.Y. 879,944, pub. 8–19–69. Cl. 32.
Wood, J. R., & Sons, Inc., New York, N.Y. 880,173, pub. 8–19–69. Cl. 101.
Woodstream Corp.: *See*—
 Animal Trap Co. of America.
Woolsey, C. A., Paint & Color Co., Inc., to Woolsey Marine Industries, Inc., New York, N.Y. 520,082, ren. 11–4–69. Cl. 16.
Woolsey Marine Industries, Inc.: *See*—
 Woolsey, C. A., Paint & Color Co., Inc.
Woric Corp., Rochester, N.Y. 756,683, canc. Cl. 13.
World Press Co., The, New York, N.Y. 879,975, pub. 8–19–69. Cl. 38.
Wrigley, Wm., Jr. Co., Chicago, Ill. 756,996, canc. Cl. 46.
Wyandotte Chemicals Corp., Wyandotte, Mich. 515,561, ren. 11–4–69. Cl. 6.
Yaeger, Marshall J., Englewood Cliffs, N.J. 879,983, pub. 8–19–69. Cl. 38.
Yankee Photo Products, Inc.: *See*—
 Windman Bros.
Yardley of London, Inc., New York, N.Y. 880,128, pub. 8–19–69. Cl. 51.
Yordy, Robert, Morton, Ill. 879,942, pub. 8–19–69. Cl. 32.
York Feather & Down Corp., Brooklyn, N.Y. 756,610, canc. Cl. 1.
Yorke Shirt Corp., The, New York, N.Y. 880,032, pub. 8–19–69. Cl. 39.
Yosemite Portland Cement Corp., Fresno, to Kaiser Cement & Gypsum Corp., Oakland, Calif. 263,906–8, ren. 11–4–69. Cl. 12.
Young Associates, The, Santa Monica, Calif. 879,773, pub. 8–19–69. Cl. 13.
Ypsilanti American Engineering & Development Corp., Ypsilanti, Mich. 756,788–9, canc. Cl. 22.
Zada Establishment, Vaduz, Liechtenstein. 879,950, pub. 8–19–69. Cl. 34.
Zanadu Gourmet Specialty Co., Fort Lauderdale, Fla. 756,979, canc. Cl. 46.
Ziff-Davis Publishing Co., Chicago, Ill., to Ziff-Davis Publishing Co., New York, N.Y. 511,952–3, ren. 11–4–69. Cl. 38.
Ziff-Davis Publishing Co., Chicago, Ill., to Ziff-Davis Publishing Co., New York, N.Y. 511,955, ren. 11–4–69. Cl. 38.

U.S. GOVERNMENT PRINTING OFFICE: O——1969

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 11, 1969 Volume 868 Number 2

# PATENTS

## NOTICES

### Board of Appeals Decisions Rendered in the Month of September 1969

| | |
|---|---|
| Examiner affirmed | 154 |
| Examiner affirmed in part | 20 |
| Examiner reversed | 23 |
| Total | 197 |

### Certificates of Correction for the Week of Nov. 11, 1969

3,110,716
3,208,260
3,236 092
3,246,303
3,256,699
3,256,701
3,256,702
3,301,730
3,303 561
3,320,408
3,321,454
3,325,358
3,328,454
3,331 895
3,346,370
3,348,755
3,364,179
3,365,111
3,367,911
3,368 844
3,370,981
3,372,377
3,376,574
3 377,198
3,377,243
3,377,249
3,377,358
3,377,867
3 378,112
3,378,465
3,378,485
3,379,640
3,379,660
3,380,898
3 381,714
3,382,058
3,382,180
3,382,434
3,383,280
3 383,371
3,383,858
3,384,213
3,384,637
3,384,663
3,385,208
3 385,349
3,385,696
3,385,725
3,385,840
3,386,068
3,386,518
3,386,955
3,387,264
3,387,840
3,387,988
3,388,169
3,388,773
3,388,939
3,389,170
3,389,363
3,389,473
3,389,899
3,390,107
3,390,302
3,390,356
3,400,260
3,400.450
3,418,230

### Presidential Documents

TITLE 3—THE PRESIDENT

Executive Order 11484

*Designating the United International Bureaux for the Protection of Intellectual Property (BIRPI) as a Public International Organization Entitled To Enjoy Certain Privileges, Exemptions, and Immunities*

By virtue of the authority vested in me by section 1 of the International Organizations Immunities Act, approved December 29, 1945 (59 Stat. 669), and having found that the United States participates in the United International Bureaux for the Protection of Intellectual Property (BIRPI) pursuant to the Convention of Paris for the Protection of Industrial Property of 20th March, 1883, as revised, 13 UST 1, and the joint resolution approved July 12, 1960, as amended, 22 U.S.C. 269f, I hereby designate the United International Bureaux for the Protection of Intellectual Property (BIRPI) as a public international organization entitled to enjoy the privileges, exemptions, and immunities conferred by the International Organizations Immunities Act.

The designation of the United International Bureaux for the Protection of Intellectual Property (BIRPI) as a public international organization within the meaning of the International Organizations Immunities Act shall not be deemed to abridge in any respect privileges, exemptions, and immunities which that organization may have acquired or may acquire by treaty or congressional action.

RICHARD NIXON.

THE WHITE HOUSE,
*September 29, 1969.*

[F.R. Doc. 69–11866; Filed, Oct. 1, 1969; 11:16 a.m.]

*Published in 34 F.R. 15337, Oct. 2, 1969*

### Examination of Patent Applications on Computer Programs

*Notice of Rescission of Guidelines*

Notice regarding the adoption by the Patent Office of guidelines for the examination of patent applications on computer programs was published in the Federal Register of October 22, 1968 (33 F.R. 15609), and in the OFFICIAL GAZETTE of the Patent Office of October 22, 1968 (855 O.G. 829).

In view of the decision by the U.S. Court of Customs and Patent Appeals in "In re Prater et al.," 162 USPQ 541, 866 O.G. 1034 (1969), the adopted guidelines are hereby rescinded, effective immediately. For the time being, adoption of new guidelines for the examination of patent applications is being deferred pending further judicial interpretation of the law on a case-by-case basis.

Consideration of "In re Prater et al.," has brought into question the advisability of issuing guidelines for the examination of patent applications on computer programs. Parties who desire to present their views, recommendations, or suggestions concerning such guidelines are invited to do so, by letter addressed to the Commissioner of Patents, Washington, D.C. 20231. Those parties who recommend the issuance of such guidelines are invited to submit comments concerning the proposed language of the guidelines.

WILLIAM E. SCHUYLER, JR.,
*Commissioner of Patents.*

Approved: October 3, 1969.
MYRON TRIBUS,
*Assistant Secretary for Science and Technology.*

[F.R. Doc. 6912194; Filed, Oct. 9, 1969, 8:48 a.m.]

*Published 34 F.R. 15724, October 10, 1969*

### New Applications Received During September 1969

| | |
|---|---|
| Patents | 8265 |
| Designs | 427 |
| Plant Patents | 7 |
| Reissues | 16 |
| Total | 8715 |

### Issue—November 11, 1969

| | | |
|---|---|---|
| Patents | 1300 | —No. 3,477,065 to No. 3,478,364, incl. |
| Designs | 80 | —No. 215,917 to No. 215,996, incl. |
| Plant Patents | 3 | —No. 2,937 to No. 2,939, incl. |
| Total | 1383 | |

## PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

### CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 20, 1969

*Denotes oldest new application.

| PATENT EXAMINING GROUPS | Actual Filing Date of Oldest New Case Awaiting Action |
|---|---|
| **CHEMICAL EXAMINING GROUPS** | |
| GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director<br>Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices. | 10-18-67 |
| GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director<br>Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides. | 4-21-67 |
| HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director<br>Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes. | 5-22-67 |
| COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director<br>Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography. | 5-08-67 |
| SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director<br>Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes. | *3-24-67 |
| **ELECTRICAL EXAMINING GROUPS** | |
| INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director<br>Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous. | 2-21-68 |
| SECURITY, GROUP 220—S. BOYD, Director<br>Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material. | 5-08-67 |
| INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director<br>Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts. | *5-02-67 |
| ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director<br>Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring. | 10-12-67 |
| PHYSICS, GROUP 280—R. L. EVANS, Director<br>Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments. | 1-02-68 |
| DESIGNS, GROUP 290—S. BOYD, Director<br>Industrial Arts; Household, Personal and Fine Arts. | 12-26-68 |
| **MECHANICAL EXAMINING GROUPS** | |
| HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director<br>Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages. | 4-16-68 |
| MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director<br>Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks. | *12-18-67 |
| AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director<br>Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination. | 1-17-68 |
| HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director<br>Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission. | 9-03-68 |
| FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director<br>Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures. | 7-12-68 |
| TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director<br>Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling. | 2-28-68 |

| | |
|---|---|
| Total number of pending applications (excluding Designs) | 182,339 |
| Total number of Design applications pending | 3,415 |

**Expiration of patents:** The patents within the range of numbers indicated below expire during October 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

| | |
|---|---|
| Patents | Numbers 2,612,639 to 2,616,080, inclusive |
| Plant Patents | Numbers 1,136 to 1,141, inclusive |

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# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

### IN RE ULF C. H. JACOBSON

*No. 8100. Decided March 6, 1969*

[56 CCPA —; 407 F.2d 880; 160 USPQ 795]

1. APPEAL TO THE BOARD OF APPEALS—NEW GROUND OF REJECTION—RULE 196(b)—35 U.S.C. 132.

"* * * we find no express provision in statute, rule, or manual that requires the Board to *designate* a new ground of rejection as such or as made 'pursuant to Rule 196(b).' The statutory requirement, as applicable to the Board as to examiners, is found in 35 U.S.C. 132, *In re Hughes* * * * *In re Jepson*, 53 CCPA 1023, 357 F.2d 406, 148 USPQ 736 (1966), and it requires that an applicant be notified of the reasons for a rejection so that he may be able to judge the propriety of continuing prosecution."

2. SAME—SAME—SAME—35 U.S.C. 102, 103, 132.

"It seems to us that a rule of reason must be applied to the application of 35 U.S.C. 132 and Rule 196(b) by both sides. It is certainly desirable that when the Board makes a *new* rejection, or an old rejection on a *new ground or statutory basis*, it should so inform the applicant. However, there is no magic in any particular form of words. When, as here, there is a shift in the statutory basis of a rejection, from section 102 to 103, but exactly the same references are relied on for the same disclosures and the section of the statute is expressly identified, the Board's meaning and the newness of the rejection being apparent from the opinion as a whole, we do not consider that appellant has been prejudiced or can ignore it on the ground that the Board did not designate it as 'new' or 'under Rule 196(b).' "

3. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—NEW GROUND OF REJECTION BY BOARD—35 U.S.C. 102 AND 103.

Where the Board of Appeals sustained the Examiner's rejection of the claims under 35 U.S.C. 102 and added that the claims "are, in any event, clearly unpatentable under section 35 U.S.C. 103" *Held* that "* * * there is [also] a section 103 rejection before us * * *."

4. PATENTABILITY—ANTICIPATION—INHERENCY.

"The third source of heat, which appellant defines in his claims as 'generated at least in part by frictional and shearing forces between the powder particles,' is at the center of the dispute here. Appellant gets the kinetic energy to do this from the rotating blade in his mixer which, in claim language, has the effect of 'maintaining the powder in a confined zone as a rapidly moving suspension * * *.' Doing this to the particles, he recites in his claims, generates heat by reason of 'frictional and shearing forces between the powder particles.' What he means by 'shearing' forces is not made clear since the word 'shearing' appears nowhere in his specification, only in the claims. One of appellant's arguments is that the claims require *both* frictional *and* shearing forces, but what the difference is and how it is obtained remains unexplained unless explanation is to be found in the fact that appellant's mixer has a high-speed rotating impeller and the references do not. But if an impeller striking particles produces shearing forces it is not seen why particles striking each other or other objects will not do the same. We cannot, under these circumstances, give any weight to the reference to both friction and shearing forces."

5. SAME—PROCESS—SAME PROCESS STEPS RESULT IN SAME PRODUCT.

"We * * * have to disagree with appellant that he [Samler] does not get a granular product. If appellant gets one by his *claimed* process, so will Samler because appellant's *claimed* steps are present in Samler."

6. SAME—ANTICIPATION—GENERAL DISCLOSURE IN REFERENCE DOES NOT ANTICIPATE SPECIFIC LIMITATION—SECTION 102.

"* * * we do not think that the general disclosure of Samler can be considered anticipatory of a specific limitation not disclosed merely because the general will *include* the specific. We hold, therefore, that the section 102 rejection of claims 7 and 12 cannot be sustained * * *."

7. SAME—AFFIDAVIT UNDER RULE 107—WELL KNOWN FACTS.

"Appellant assigns error in the Board's failure, on his request, to supply Rule 107 affidavits to support statements in its decision to the effect that heat would be generated by friction between particles in the reference processes and that those processes would produce a granular product or agglomerates. His theory is that the views of the Board on these matters, with which he disagrees, are obviously based on facts within the personal knowledge of an employee of the Patent Office and contrary to the disclosure of the references. We see no error here. As to friction producing heat, the Board was merely recognizing a fact known to anyone who has ever struck a match or slid down a rope. The mere failure of a reference to state the obvious is not cause for producing an affidavit. As for the production of agglomerates to a sufficient degree to produce a granular product from a powder, we have already explained why we find that implicit in Samler. Some things may be clear from disclosures though not expressed therein in so many words."

8. SAME—PARTICULAR SUBJECT MATTER—"PROCESSING OF POLYMERIZATES."

The refusal of certain claims in an application entitled "Processing of Polymerizates," as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 200,593.

AFFIRMED.

*James E. Bryan* for appellant.

*Joseph Schimmel* (*Lutrelle F. Parker*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of all claims in application Serial No. 200,593, filed April 30, 1962, entitled "Processing of Polymerizates," a continuation-in-part of Serial No. 690,259, filed October 15, 1957.

### THE INVENTION

The "processing" with which the application is concerned is a method of "dry-blending" thermoplastic materials, to be used for molding or extrusion, with the usual plasticizers, stabilizers, coloring, fillers, lubricants, and the like. Although the plasticizers and some of the other materials may be liquids, they are added at such a rate and under such conditions that the mixture remains substantially dry in appearance. It is explained that certain prior art processes produced a hot gelled mass which, after cooling, had to be disintegrated or granulated to get a material suitable for use in molding or extrusion and it is stated as an object to avoid such gelling with the necessity of subsequent granulation. It is further explained that some thermoplastic materials, particularly "emulsion polymerizates," polyvinyl chloride for example, are fine powders unsuitable for use in extruders as well as difficult to blend with plasticizer, etc., and that a granular product must be produced therefrom with which to feed the extruder. It is desired to get such a product without producing an aggregate which has to be ground up or granulated and appellant does this in a blender.

A brief description of appellant's Example I will serve to illustrate. A blender consisting of a container with an agitator blade in its bottom, similar in construction to the common kitchen "Waring Blendor," is used. This industrial version, however, has a capacity of 100 liters (about 26.5 gallons) and is driven by a 20 horsepower motor. Polyvinyl chloride emulsion polymerizate in the amount of 25 kg. with minor amounts of other dry ingredients are charged into it and the rotor started at 1400 r.p.m. while 7.5 kg. of liquid plasticizer (dioctyl phthalate) is added in a continuous stream during a 5-minute period. Rotor speed is then reduced to 700 r.p.m. and, after 2 minutes, 5 kg. additional plasticizer is added during 5 more minutes. After 2 minutes more, the product is discharged "as a dry, free-flowing granular material which could be processed in an extrude[r]" to form electrical cable insulation. It is said that by this technique up to 100% by weight of plasticizer and other liquids can be added without getting a wet or sticky product.

Heat is an essential part of this processing. According to the disclosure, the necessary heat, which makes the polymer receptive to plasticizer and also causes the powder particles to agglomerate to a controlled extent to form larger granules, can be produced in the blender from the friction between the particles and between the particles and the rotor. However, the specification does not limit the source of heat to the energy produced by the rotor and explains that two other sources may be used additionally, even preferably. One is the use of a heating jacket on the blender whereby the "time required for heating the charge may be reduced" and the other is that "the plasticizer and other liquid constituents may be preheated to a temperature of about 100° C., for example." In Example I there is no mention of outside sources of heat so it is assumed the necessary heat is produced by friction. In Example IV, on the other hand, the blender has a jacket heated to 130° C. and the plasticizer is heated to 130° C. before addition. The rotor in that example is run at 700 r.p.m.

It is important to the process of the invention not to heat too much. The desired range is disclosed as about 60 to 170° C., which is "below the gelling temperature of the mixture." The specification explains:

> Since the material does not gell in the blender, no disintegration or granulation of the product is necessary as it is discharged in granular form.

### THE CLAIMS

There are two independent claims from which all others depend. Claim 10 is the more specific and reads (our emphasis):

> 10. A process for forming free-flowing granules from thermoplastic powder which comprises maintaining the powder in a confined zone as a rapidly moving suspension and at an elevated temperature *below the gelling temperature of the thermoplastic*, resulting from the heat generated at least in part by frictional and shearing forces between the powder particles *and adding a liquid plasticizer to the suspension* whereby the particles are fused to form granules *containing plasticizer*.

Claim 1, the other independent claim, is claim 10 with the italicized words omitted. The dependent claims, 2–9 and 11–13, will be discussed later.

### THE REJECTION

The Examiner rejected all claims, 1–13, "under 35 U.S.C. 102 as fully met by" or "met by" (a less emphatic legal equivalent) the following references:

Sandler, 2,477,009, July 26, 1949.
Samler, 2,718,471, Sept. 20, 1955.

In affirming, the Board said:

> We have considered appellant's several arguments but will sustain the rejection of all the claims on each of the references. While the claims appear directly readable upon the references, except for dependent claim 13 specifying partial vacuum, they are, in any event, clearly unpatentable under section 35 U.S.C. 103. *In re Pyc et al.*, 148 USPQ 426 [53 CCPA 877, 355 F.2d 641 (1966)].

Before us, the Solicitor for the Patent Office contends that the issues presented by the appeal encompass both anticipation under section 102 and obviousness under section 103, in view of the Board's express reference to that section.

Appellant, on the contrary, says "the only rejection of the claims for review by this Honorable Court is that as fully met by the Samler and Sandler references under 35 U.S.C. 102." It seems to be his position that we are precluded from considering anything else—specifically, whether any claim is unpatentable for obviousness under section 103—because "the observation by the Board that the claims were unpatentable under section 103 did not constitute a new rejection by the Board under section 103 since there was no compliance with Rule 196(b)." The Solicitor says the Board's above-quoted statement does comply with that rule.

### *Is a Section 103 Rejection Before Us?*

Preliminarily, it seems desirable to resolve this question since the protagonists are taking diametrically opposed positions, it involves an important procedural matter of frequent occurrence, and the propriety of the rejection of certain claims depends on it.

The Board cited *In re Pye* in the above-quoted passage. The most relevant passage in *Pye* reads as follows:

> The record reveals some difficulty on the part of the Patent Office in agreeing on a statutory basis for the rejection. * * *
>
> The difficulty in formulating a ground of rejection seems to have arisen from the failure to ascertain whether Touey [the reference] does in fact disclose appellants' claimed composition, so to be on the safe side, language appropriate to both 35 U.S.C. 102 and 103 was employed. In close situations claims may be rejected on section 102 and, in the alternative, section 103. But such an alternative rejection does not eliminate the need for careful scrutiny of the references to determine precisely what is disclosed to the end that the applicant may be notified with the particularity required by 35 U.S.C. 132. Appellant does not seem to have been prejudiced by the confusion here, and has argued in this appeal the issues of novelty and obviousness in view of both Touey and Fikentscher. We will consider both issues.

Appellant here, on the other hand, relies on *In re Hughes*, 52 CCPA 1355, 345 F.2d 184, 145 USPQ 467 (1965), a case in which we found that neither the Examiner nor the Board had specified any statutory basis for the rejection. We deduced, however, from the language of the Examiner's answer that his rejection was based on section 102. The court divided as to what was the statutory basis of the Board's affirmance, the majority saying:

> Here, however the Board's opinion did not provide adequate notice that a new statutory ground of rejection was being relied on. For all that appellant knew, from the vague language used by the Board, the only rejection being passed upon was the one made by the Examiner under section 102. Thus, if we were to consider, on this appeal, issues which arise under section 103, we would be doing so without affording appellant an opportunity to be heard in the administrative tribunals of the Patent Office.

The situation here is not that which the majority saw in *Hughes*. The Board made it perfectly clear that, insofar as it might be necessary, i.e., to the extent that the references would not support the Examiner's section 102 rejection, it was relying on section 103. Before making the statement above quoted, the Board had recited that the Examiner's rejections were, as to each reference, based on section 102. Appellant was very much aware of the Board's partial shift in *the statutory basis* of the rejection, still based on the same references, as shown by his Request for Reconsideration, in which he said:

> In the second complete paragraph on page 3 of the Board's decision, the Board has gratuitously observed that the claims: "are, in any event, clearly unpatentable under section 35 U.S.C. 103."
>
> If this is, as it appears to be, a rejection under Rule 196(b), then it is requested that the Board *specifically designate it* as such or this gratuitous observation should be withdrawn. The rejection which has been affirmed is on the ground of *fully met* and that rejection obviously is not going to be sustained upon further appeal to the Court of Customs and Patent Appeals. Neither appellant nor that court should have to speculate as to the grounds of the rejection.

We are not speculating, nor do we understand why appellant should be. This case is not like the *Hughes* case, nor governed thereby.

From the above quotation and other arguments, it appears to us that it is appellant's theory that unless the Board, as it more often does than not, says "This is a new rejection under Rule 196(b)," any new rejection it may make, in any other form of statement, can be ignored. To illustrate, the Solicitor argues that there are four rejections before us: anticipation and obviousness in view of Samler, and anticipation and obviousness in view of Sandler. Appellant, however, insists that "the only rejection of the claims for review by this Honorable Court is that as fully met by the Samler and Sandler references under 35 U.S.C. 102." This theory is based on the alleged failure of the Board to comply with Rule 196(b). It is not quite clear to us what is the basis of this allegation. Appellant has quoted, with emphasis, that part of the rule on which he relies, as follows:

> Should the Board of Appeals have knowledge of any grounds not involved in the appeal for rejecting any appealed claim, it may include in its decision a statement to that effect *with its reasons for so holding*, which statement shall constitute a rejection of the claims.

He then states that "the observation of the Board concerning the alleged unpatentability of the claims under section 103 did not comply with Rule 196(b)," which appears to imply it was because the Board did not state "its reasons for so holding." At the same time, appellant seems to argue that the non-compliance resided in a failure to designate its section 103 rejection as "a rejection under Rule 196(b)."

As to the first point, we think the Board's *reasons* for holding unpatentability under section 103 are perfectly clear, namely, that whatever claim limitation could not be found expressly described in a single reference would nevertheless be obvious in view of the references. **[1]** as to the second point, we find no express provision in statute, rule, or manual that requires the Board to *designate* a new ground of rejection as such or as made "pursuant to Rule 196(b)." The statutory requirement, as applicable to the Board as to examiners, is found in 35 U.S.C. 132, *In re Hughes*, supra, *In re Jepson*, 53 CCPA 1023, 357 F.2d 406, 148 USPQ 736 (1966), and it requires that an applicant be notified of the reasons for a rejection so that he may be able to judge the propriety of continuing prosecution.

**[2]** It seems to us that a rule of reason must be applied to the application of 35 U.S.C. 132 and Rule 196(b) by both sides. It is certainly desirable that when the Board makes a *new* rejection, or an old rejection on a *new ground or statutory basis*, it should so inform the applicant. However, there is no magic in any particular form of words. When, as here, there is a shift in the statutory basis of a rejection, from section 102 to 103, but exactly the same references are relied on for the same disclosures and the section of the statute is expressly identified, the Board's meaning and the newness of the rejection being apparent from the opinion as a whole, we do not consider that appellant has been prejudiced or can ignore it on the ground that the Board did not designate it as "new" or "under Rule 196(b)."

Appellant insists that "no rejection as unpatentable over Samler [or Sandler] under section 103 was ever presented to *or considered by* the Board of Appeals * * *." [Emphasis ours.] While we have to agree that the Examiner did not *present* such a rejection, it is anomalous to say that having *made* such a rejection, the Board did not *consider* it. Appellant cannot pretend to have been trapped or surprised. The newness of the rejection fully impressed itself on his attorney's consciousness as demonstrated by the Request for Reconsideration in which he said, "If this is, as it appears to be, a rejection under Rule 196(b), then it is requested that the Board *specifically designate it* as such * * *." He also asked the Board to "make it clear as to just what section of the statute is relied upon." We think the Board did just that; it specified sections 102 and 103, alternatively. Yet appellant, neither in his Request for Reconsideration nor in this court, has had a word to say in response to any rejection based on section 103, electing to stand on technical arguments to the effect that no such rejection exists.

**[3]** Our conclusion is that, under the circumstances of this case, there is a section 103 rejection before us, which we shall consider in due course. But first we shall consider the section 102 rejection, made by the Examiner, and affirmed by the Board as to all claims except claim 13.

### OPINION

Both references, Samler and Sandler, are directed to the same purpose as appellant's invention, the blending of powdered plastics with liquid plasticizers, fillers, stabilizers, pigments, etc., to prepare them for molding or extrusion. Both refer to vinyl polymers. Both are "dry" processes. Both produce a free-flowing, granular product. Both recognize the necessity of heating the materials to the right degree during processing and both describe two of the three ways of heating which appellant describes: (1) by heating some of the ingredients before addition and (2) by heating the mixing vessel in one way or another. **[4]** The third source of heat, which appellant defines in his claims as "generated at least in part by frictional and shearing forces between the powder particles," is at the center of the dispute here. Appellant gets the kinetic energy to do this from the rotating blade in his mixer which, in claim language, has the effect of "maintaining the powder in a confined zone as a rapidly moving suspension * * *." Doing this to the particles, he recites in his claims, generates heat by reason of "frictional and shearing forces between the powder particles." What he means by "shearing" forces is not made clear since the word "shearing" appears nowhere in his specification, only in the claims. One of appellant's arguments is that the claims require *both* frictional *and* shearing forces, but what the difference is and how it is obtained remains unexplained unless explanation is to be found in the fact that appellant's mixer has a highspeed rotating impeller and the references do not. But if an impeller striking particles produces shearing forces it is not seen why particles striking each other or other objects will not do the same. We cannot, under these circumstances, give any weight to the reference to both friction and shearing forces.

Referring more specifically to the references, Samler shows an apparatus in his patent, which is entitled "Blending Method and Apparatus," consisting of a conical hopper into which a quantity of powdered or granular thermoplastic is placed. At the bottom is a screw feeder which moves material from the hopper into a curved pipe which carries material from the bottom of the hopper around an external loop and back into the top of the hopper where it reenters, striking a baffle and falling. Propulsion of the plastic particles is produced by means of an inert gas blown into the pipe at the end of the screw feeder. A short distance beyond the gas inlet, the liquid materials are injected into the particles by a jet fed from a pump. Speaking of the materials moving through the curved pipe, the patent states:

> The particles suspended in the gas are caused to move at high velocities, preferably from 1500 to 4000 feet per minute. The bend in the tube 23 produces extreme turbulence which causes any formed agglomerates to break up and further disperse.

Appellant and the Patent Office both rely on this passage to further their positions. The Patent Office says it discloses the claimed step of "maintaining the powder in a confined zone as a rapidly moving suspension" and that the high speed and turbulence will produce "frictional and shearing forces between the powder particles" with resulting generation of heat. We agree. Appellant argues that the passage shows that Samler does not get granules, which is the object of his invention, because of the statement that any agglomerates will be broken up. We think it is tolerably clear, however, that breaking up agglomerates is a relative matter and that while big agglomerates or lumps may be broken up, little ones, properly denoted as "granules," can and do remain in Samler's process as an end product. After a few passes through his machine, Samler necessarily stops blowing the particles through the curved tube and eventually dumps the hopper through a discharge spout at the bottom. In his hopper are stirring or circulating devices which lift the material up and allow it to fall through space in which there is gas turbulence. No doubt his particles, coated with plasticizer and subjected to heating, are going to agglomerate to some extent in the hopper (else why would he speak of breaking up agglomerates?) before they reach the discharge. He describes his discharged product as a "particle mass in free-flowing condition." **[5]** We therefore have to disagree with appellant that he does not get a granular product. If appellant gets one by his *claimed* process, so will Samler because appellant's *claimed* steps are present in Samler. Forming granules from powder is the result of limited agglomeration. We therefore find independent claims 1 and 10 anticipated by Samler.

We need not consider Sandler in detail in view of the above holding and will mention only the principal difference from Samler. Sandler mixes the thermoplastic, plasticizer, etc., in a double conical tumbler rotated at 20–25 r.p.m., producing "rubbing contact over a substantial period of time between the particles of the mass moving relative to each other in their free-flowing state." He may blow hot air into the tumbler for heat and preheat the plasticizer which is intermittently sprayed into the powder, at such a rate as to maintain a "substantially dry, free-flowing particle condition." We agree with the Board that Sandler also anticipates the independent claims, which justifies the section 102 rejection thereon. The Solicitor considered Samler the better reference and we likewise think it is on the ground that Samler probably generates more heat from friction due to the higher speed of the particles than Sandler would from his slower tumbling.

The remaining claims are all dependent and add limitations as to maximum temperature, temperature range, to use of filler, pigment, and specific vinyl thermoplastics, external heat, or partial vacuum. The Board found them all to be anticipated except for claim 13, the one specifying that "a partial vacuum is maintained in the confined zone." It is only as to that claim that the Board seems clearly to have based its affirmance of the rejection on section 103.

Considering now all the dependent claims with the exception of 13, appellant does not contend they are allowable for any different reasons than those advanced as to independent claims 1 and 10 with the exception of claims 7, 9, and 12 which he says are not anticipated for special reasons. These reasons are that claims 7 and 12 specify that "the thermoplastic is a vinyl emulsion polymerizate" and claim 9 specifies that "the confined zone is heated in part by external heat." Disposing of claim 9 first, the "confined zone" in Samler includes, in our judgment, both his hopper and his curved pipe through which the contents of the hopper are continuously circulated from the bottom of the hopper to the top of it. The hopper has a heating jacket and is heated in part by external heat. Even if the confined zone is construed to be only the curved pipe, it gets heat from two "external" sources, the heating jackets on the hopper and a heater for the inert gas which is blown into it. We therefore find this limitation disclosed in Samler.

Claims 7 and 12 present a somewhat different problem. Claims 1 and 10, from which they depend, respectively, recite "A process for forming free-flowing granules from thermoplastic powder * * *." The dependent claims say the thermoplastic is "a vinyl emulsion polymerizate." Appellant's specification says this is a type of plastic which is more difficult to handle by known blending methods and one for which his process is especially useful.[1] Appellant appears to be correct in contending that neither reference discloses vinyl *emulsion* polymerizates, even though polyvinyl thermoplastics are disclosed. For this reason, he says, claims limited thereto cannot be anticipated, i.e., rejected on section 102. The Patent Office argues that they are anticipated because Samler discloses his process as of value for treating heat-sensitive materials generally and as "applicable to * * * any thermoplastic material." **[6]** Assuming without deciding that the limitations of claim 7 and 12 are really process limitations (no question having been raised on this ground), we do not think that the general disclosure of Samler can be considered anticipatory of a specific limitation not disclosed merely because the general will *include* the specific. We hold, therefore, that the section 102 rejection of claims 7 and 12 cannot be sustained, relegating us to the section 103 rejection.

We affirm the Board in refusing claims 7, 12, and 13 as directed to obvious subject matter in view of the disclosures of Samler and Sandler. Clearly it would be obvious to use the blending process of either reference with any of appellant's thermoplastics, which are very closely related to those named in the references. As to using the partial vacuum of claim 13, which appellant's specification merely says enables a larger amount of plasticizer to be incorporated (60% as against 40%), Sandler teaches varying pressure, inter alia, in order to obtain optimum results. We think this would suggest partial vacuum to one of ordinary skill in the art.

**[7]** Appellant assigns error in the Board's failure, on his request, to supply Rule 107 affidavits to support statements in its decision to the effect that heat would be generated by friction between particles in the reference processes and that those processes would produce a granular product or agglomerates. His theory is that the views of the Board on these matters, with which he disagrees, are obviously based on facts within the personal knowledge of an employee of the Patent Office and contrary to the disclosure of the references. We see no error here. As to friction producing heat, the Board was merely recognizing a fact known to anyone who has ever struck a match or slid down a rope. The mere failure of a reference to state the obvious is not cause for producing an affidavit. As for the production of agglomerates to a sufficient degree to produce a granular product from a powder, we have already explained why we find that implicit in Samler. Some things may be clear from disclosures though not expressed therein in so many words.

**[8]** The decision of the Board is affirmed.

AFFIRMED.

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[1] The specification points out a difference between ***suspension*** polymerizates and ***emulsion*** polymerizates and says "a dry-blending process for preparing plasticized mixtures of suspension polymerizates has been introduced * * * [which] however, has not been applicable to the treatment of emulsion polymerizates * * *." He says his invention is a method particularly for blending the latter.

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## U.S. Court of Customs and Patent Appeals

IN RE JAMES A. UMBARGER

*No. 8098. Decided March 6, 1969*

[56 CCPA —; 407 F.2d 425; 160 USPQ 734]

1. PATENTABILITY—AFFIDAVIT—COMBINING REFERENCES—OBVIOUSNESS.

"An affidavit advanced as showing that the pulses derived from current passing through a spark plug will not saturate a magnetic core was relied on by appellant in connection with an argument pertaining to Horsch's coil 13. Since that element is eliminated when the references are combined in the manner we find obvious, discussion of that argument is unnecessary."

2. SAME—COMBINING REFERENCES—EVIDENCE—OBVIOUSNESS.

"As to the recitation in claims 40 and 42 that the pickup coil is of ferrite, appellant has not shown any error in the position of the Examiner and Board that the use of that material for the magnetic core of the inductive pickup substituted in Horsch would be obvious to a person of ordinary skill in the art in view of Douma which shows this known material used in an inductive pickup. While appellant's aforementioned affidavit does show that a particular pickup using a core of WO–3 ferrite gave a greater response than certain pickups using cores of certain other materials which were tested, it is not demonstrated that the difference is unexpected or unobvious. Also, appellant states in the application that '[t]he magnetic properties of ferrites vary according to their composition and also according to their particle size, compacting pressure, amount and kinds of binding resins and sintering temperature.' He further states that 'the best ferrite found to date is WO–3 ferrite * * *.' Thus, the affidavit does not support a conclusion that all ferrites are superior to other known magnetic materials for present purposes."

3. SAME—PARTICULAR SUBJECT MATTER—"IGNITION ANALYZING TACHOMETER INCLUDING FERRITE INDUCTIVE CONNECTOR MEANS."

The refusal of certain claims in an application entitled "Ignition Analyzing Tachometer Including Ferrite Inductive Connector Means" as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 38,147.

AFFIRMED.

*Learman, Learman & McCulloch* (*John K. McCulloch*, of counsel) for appellant.

*Joseph Schimmel* (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Board of Appeals affirming the Examiner's rejection of the only remaining claims, numbered 31 through 42, in appellant's application entitled "Ignition Analyzing Tachometer Including Ferrite Inductive Connector Means."[1]

The invention relates to a tachometer for operation from the ignition system of an internal combustion engine to indicate engine speed. One embodiment of the device is illustrated in FIG. 1 below:

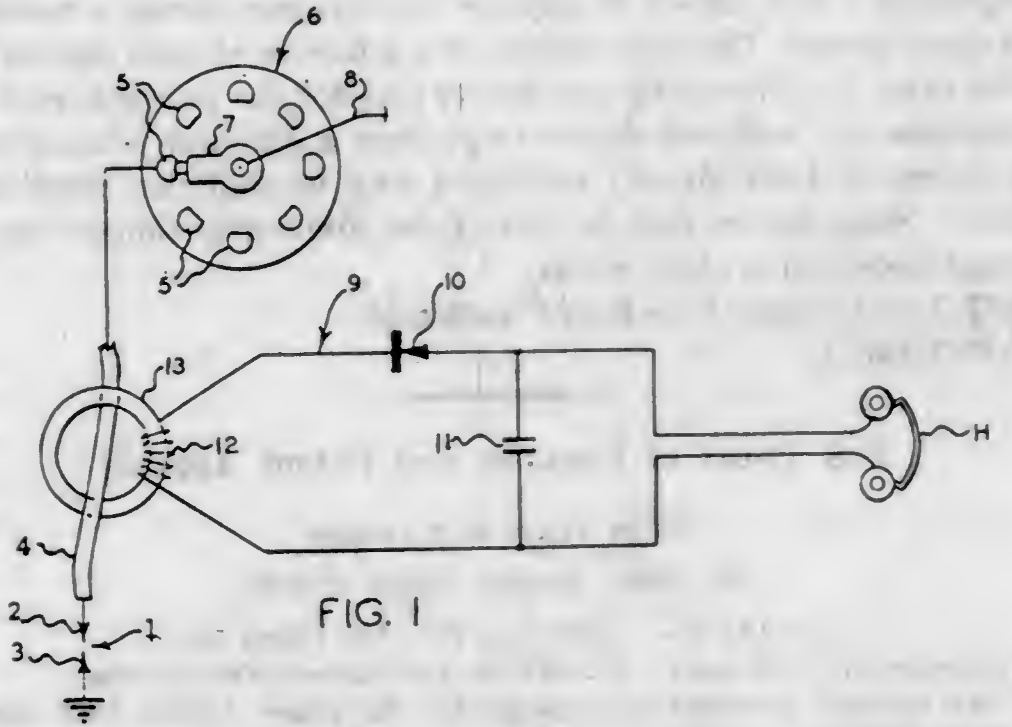

FIG. I

The illustrated apparatus is adapted for use with an internal combustion engine wherein an electrical conductor 4 connects one of the spark plugs 1 with one of the contacts 5 of the engine distributor 6. The distributor includes a conventional rotor 7 which is driven to engage each of the contacts 5 in turn to energize the spark plugs in sequence. Connected to the rotor 7 is a high tension conductor 8 energized from the secondary winding of the engine ignition coil.

Appellant's apparatus is operatively associated with the engine by threading the spark plug conductor 4 through an annular core 13 which is described as quickly magnetizable and demagnetizable and may be made from certain ceramic-base magnetic materials known as ferrites. An induction winding 12 is wound on the core and a circuit 9 made up of a half-wave rectifier 10 and a capacitor 11 in series is connected across the winding. A "headset" or set of headphones H is connected in parallel circuit with the capacitor.

Appellant points out that the occurrence of a spark across the electrodes of the spark plug in the arrangement of FIG. 1 will result in a pulse of current flowing through the conductor 4 to induce in winding 12 a voltage which in turn will cause current to flow through circuit 9 including the rectifier 10 to charge the capacitor 11. Upon cessation of the induced current flow in the circuit 9, the capacitor will discharge through the headphones to produce an audible signal. Appellant further states that, "[i]f the spark plug under test fires slowly enough, the audible signal will be heard as pops or clicks and may be counted, thereby permitting the headset to be used as an aural tachometer."

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[1] Serial No. 38,147, filed June 23, 1960.

Appellant discloses what he terms a "more sophisticated" embodiment of his invention in FIG. 2 of his drawing. That embodiment employs the same basic pulse responsive circuit made up of a half-wave rectifier in series with a capacitor but connects visual indicating means across the capacitor instead of the headphones H. That means includes a direct current milliammeter "calibrated to indicate the rate at which the pulses occur." The modified arrangement employs transformer type coupling means between the pickup coil on the core through which the conductor 4 is inserted and the circuit 9. It also includes a reversible plug connection between the pickup coil and the input winding to that coupling means.

Claims 31, 40 and 41 are representative and read as follows:

**31. Analyzing apparatus for an ignition system of the type including a spark discharge device connected in series with a conductor through which current pulses of substantially instantaneous duration periodically flow, said apparatus comprising an electric circuit having current pulse indicating means and an inductive winding and current pulse responsive means composed of magnetic material capable of being magnetized by said current pulses, said current pulse responsive means being inductively coupled to said winding and inductively coupled only to said conductor for inducing pulses in said circuit solely in response to the flow of said substantially instantaneous current pulses through said conductor.**

**40. A tachometer for measuring the speed of an internal combustion engine having at least one conductor connected in series with a spark discharge device and through which current pulses of substantially instantaneous duration periodically flow, said tachometer comprising a series circuit including a rectifier element, a condenser element, and an inductive winding; an annular ferrite core capable of being magnetized by said current pulses inductively coupled to said winding and adapted for inductive coupling only to said conductor for inducing current pulses in said circuit solely in response to the flow of pulses through said conductor; current pulse indicating means for indicating the number of pulses induced in said circuit per unit of time; and means electrically connecting said indicating means in said circuit only in parallel with one of said elements.**

**41. Analyzing apparatus for an ignition system of the type including a spark discharge device connected in series with a conductor through which current pulses of substantially instantaneous duration periodically flow, said apparatus comprising a circuit including a rectifier, a condenser, and an inductive winding; a first annular core formed of magnetic material capable of being magnetized by said current pulses and on which said winding is wound; a second annular core similar to said first core and adapted for inductive coupling only to said conductor; inductive means for coupling said cores, said cores and said coupling means being capable of inducing current pulses in said circuit solely in response to the flow of said substantially instantaneous current pulses through said conductor; and pulse indicating means connected to said circuit for indicating pulses therein.**

Only certain other claims merit specific mention at this point. Those include claim 34 which recites that the pulse indicating means produces an aural signal, and claim 35 which requires that such means comprise a current meter. Claim 42 is dependent on claim 41, adding thereto a recitation of a winding on each of the two cores with separable means interconnecting the windings and operable to reverse the connection.

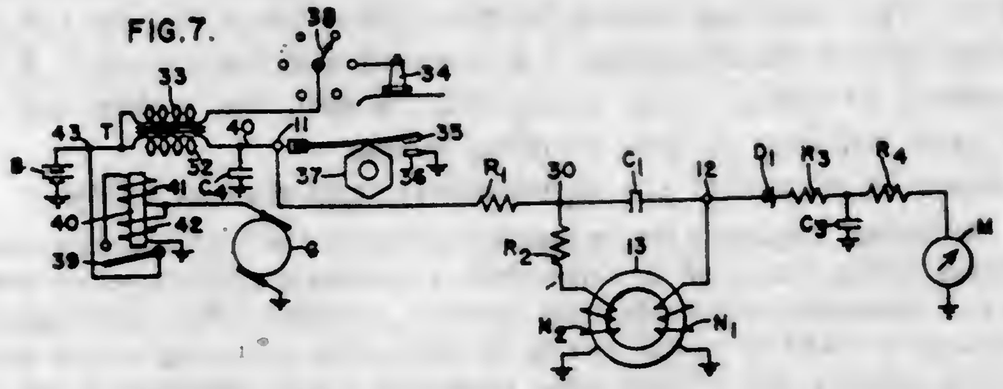
The claims stand rejected under 35 U.S.C. 103 as obvious in view of the prior art.

The references relied on below are:[2]

Stanek, 2,182,324, Dec. 5, 1939.
Byerlay, 2,645,751, July 14, 1953.
Hansel, 2,807,781, Sept. 24, 1957.
Douma, 2,808,566, Oct. 1, 1957.
Horsch, 2,962,657, Nov. 29, 1960.
Siemens and Halske Akt (French), 811,467, Jan. 18, 1937.

Considering the references in what we deem the most appropriate order, Horsch discloses an internal combustion engine tachometer illustrated in his FIG. 7 below:

FIG.7.



The left portion of the figure represents a conventional ignition system including an ignition coil having a primary winding 32 and a secondary winding 33. Upon its energizing circuit being periodically closed at contacts 35, 36 under control of distributor camshaft 37, the primary winding induces current in the secondary winding to send high tension pulses to the spark plugs, such as 34, through the distributor rotor 38. A circuit connected between point 11 and point 12 operates in response to pulses produced at 11 in synchronism with the opening and closing of contacts 35, 36 to provide what are described as "stabilized volt-time area output pulses" at terminal 12. According to the specification, the pulses at the latter terminal are passed through an asymmetrical conducting element which, for example, may consist of the rectifier D$_1$, and are applied to an intergrating circuit which may consist of resistor R$_3$ and capacitor C$_3$. Values of R$_3$ and C$_3$ are chosen to result in an appropriate time constant in a manner well known in the art. The D.-C. voltage at point 31 [the terminal common to R$_3$, C$_3$ and R$_4$] will be * * * directly proportional to the frequency of the applied input pulses. Consequently, a D.-C. meter M connected from point 31 to ground through a resistor R$_4$ may be calibrated to read directly the frequency of the input pulses.

Byerlay relates to a device for presenting a visual representation of the spark plug discharges of an internal combustion engine on the screen of a cathode ray tube. The voltage across either the primary or secondary winding of the ignition coil of the engine is connected to the vertical deflection elements of the tube. A synchronizing pulse pickup device produces pulses corresponding to the discharge of any selected spark plug and applies those pulses to a pulse amplifier which in turn controls a sawtooth wave generator for providing the horizontal deflection potential required to display the shape of the voltage signals applied to the vertical deflection elements on the tube. The pulse pickup device comprises a toroidal core on which a secondary or pickup coil is wound and which is of a size to permit the ignition lead to a spark plug to be passed therethrough. The pickup device is provided with shielding which "prevents stray currents and static discharges of the ignition system from creating false signals in the coil." A transformer couples the circuit of the pickup coil to the input of the pulse amplifier.

The French patent to Siemens and Halske discloses a high frequency measuring instrument inductively coupled to a conductor carrying current to be measured through an annular transformer core carrying a secondary winding. The secondary circuit includes a rectifier in series with a capacitor and a meter in a circuit parallel with the capacitor.

Douma discloses an energy measuring device in which a conductor carrying high frequency energy is inductively coupled to a secondary winding by an annular "Ferrite" core.

Stanek shows a high frequency current meter inductively coupled to the high frequency conductor by annular magnetic core carrying secondary windings. The latter windings are connected to the meter by a pin and socket connector.

Hansel relates to a frequency analyzing device using "audio-presentation means, such as * * * [a] loud speaker" for audio frequency signals.

Claims 31 to 33 and 35 to 40 were rejected by the Examiner as unpatentable over Horsch in view of the French Patent 811,467 (Siemens and Halske), Douma and Byerlay "under 35 U.S.C. 103." The Examiner stated that "Horsch discloses a tachometer D$_1$, C$_3$ and M equivalent to the tachometer comprising elements 10, 11, and H of applicant's FIGURE 1." He also noted that the French patent "shows a frequency sensitive circuit including a meter connected across a capacitor in series with a rectifier, structurally similar to applicant's elements 9, 10, and H of FIGURE 1 and D[D$_1$], C$_3$ and M of Horsch." The Examiner additionally stated:

> Byerlay shows that there is no invention in coupling a measuring or detecting circuit to the distributor-spark plug lead in an internal combustion engine by means of an inductive coupling, so that the measuring or detecting circuit is pulsed in synchronism with the distributor rotation and spark firing. It is noted that the Horsch tachometer is also operated by pulses generated in synchronism with the distributor rotation and spark firing. There would be no invention in inductively connecting a tachometer circuit such as shown by Horsch, D[D$_1$], C$_3$ and M to be operated by pulses in the distributor-spark plug lead, as shown by Byerlay. Similarly, the general use of a toroidal coupling means to effect such an inductive coupling of the Horsch tachometer, to any line or conductor is obvious in view of the French patent. The specific use of a ferrite toroid as an inductive coupling element is shown to be conventional by Douma.

In sustaining the rejection, the Board observed that the references show that it has long been conventional practice to connect test or analyzing equipment to an electrical circuit by an inductive coupling. It held that, in light of that practice, "it would be obvious to the routineer to connect the test circuit of Horsch inductive[ly] to the lead between 33 and 38 of his FIG. 7." The Board further referred to claims 37 to 39 as reciting "a conventional pulse counting circuit" such as is found in Horsch "inductively coupled to a circuit to be tested." Agreement was had with the Examiner that the use of ferrite as the magnetic core material would have been obvious in view of Douma.

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[2] Cited by the Board as additional references, but unnecessary, in our view, to determination of the appeal, are:

Laws Electrical Measurements, pages 563–564, published by McGraw Hill Book Company, 1917.
Electronic Measurements, pages 227–229, by Terman and Pettit, 2nd ed., published by McGraw Hill Book Company, 1952.

Claim 34 was regarded by the Examiner as unpatentable in further view of Hansel with its disclosure of a loud speaker to give aural signals indicative of frequency, and the Board agreed.

The Examiner considered claims 41 and 42 unpatentable further in view of Stanek. The Board referred to Byerlay in connection with the additional core and windings recited in claim 41 (and dependent claim 42), plainly relying on the transformer coupling between the pickup coil and pulse amplifier circuits there although setting forth an incorrect reference number to identify that element.

Our own consideration of the record in light of the briefs and arguments convinces us that the appealed claims were properly rejected under 35 U.S.C. 103. In the first place, it is evident that the Horsch tachometer performs the same function of measuring the speed of an internal combustion engine as does appellant's device. It is also apparent that the circuit consisting of the elements $D_1$, $R_3$, $C_3$, $R_4$ and M (hereinafter designated by its basic elements $D_1$, $C_3$ and M) connected to the terminal 12 in FIG. 7 of Horsch measures the frequency of the pulses produced at that terminal as an indication of the speed of the engine. The purpose of the portion of the Horsch circuit between points 11 and 12 is to provide pulses at 12 which correspond in frequency to the spark plug discharge and are particularly suited for providing an accurate indication when their frequency is measured by the circuit $D_1$, $C_3$ and M. Referring to the latter circuit, we fully agree with the Examiner that it would be "within the ability of one skilled in the art to link the specific detection circuitry, $D_1$, $C_3$ and M of Horsch, by inductive means, to the connection point shown by Byerlay." In other words, Byerlay employs an inductive pickup including a magnetic core encircling the lead to a spark plug to provide pulses corresponding in frequency to the firing of the spark plug and it would be an obvious alternative to employ such a pickup as the source of pulses to be measured by the pulse-frequency responsive circuit $D_1$, $C_3$ and M of Horsch as an indication of engine speed.

Appellant argues that "disconnecting Horsch's tachometer circuit from the terminal 11 and inductively connecting Horsch's tachometer circuit to the conductor leading to the spark plug 34" would result in a construction that is "inoperable or, at best, operable in a manner not disclosed and not intended by Horsch." He bases that argument on the particular nature of the signals provided at point 11 in Horsch and the specific circuit connected between points 11 and 12 therein. However, the rationale on which we base our analysis of the rejection involves the substitution of inductive pickup means as suggested by Byerlay for the entire pulse-providing means of Horsch including the pulse treating circuit preceding the pulse-frequency responsive circuit $D_1$, $C_3$ and M. It is true that such substitution omits the circuit portion which Horsch apparently regarded as his contribution to the art along with such advantages as it might provide. However, the modified apparatus is clearly obvious in view of the prior art and the retained circuit $D_1$, $C_3$ and M of Horsch will operate therein on the same principles as before to indicate engine speed as a function of applied pulse frequency.[3] *In re Irmscher*, 46 CCPA 761, 262 F.2d

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[3] It is further noted that Horsch states that it has been proposed in the past "to utilize a pulse output derived from the spark coil of the conventional ignition system of an internal combustion engine as a measure of the speed of operation of the engine." However, he regarded such systems "impractical or prohibitively expensive for several reasons" and offered his construction as an improvement thereon.

85, 120 USPQ 196; *In re Ratti*, 46 CCPA 976, 270 F.2d 810, 123 USPQ 349; and *In re Lobl*, 43 CCPA 734, 228 F.2d 234, 108 USPQ 229, cited by appellant, clearly are not authority for holding a rejection improper under such circumstances.

**[1]** An affidavit advanced as shown that the pulses derived from current passing through a spark plug will not saturate a magnetic core was relied on by appellant in connection with an argument pertaining to Horsch's coil 13. Since that element is eliminated when the references are combined in the manner we find obvious, discussion of that argument is unnecessary.

Appellant argues that the spark current in an ignition system of the kind of disclosed is a substantially instantaneous pulse and refers to claim 31 for the recitation of the current pulse responsive means as "composed of magnetic material capable of being magnetized by the substantially instantaneous current pulses." It is plain that such recitation fails to distinguish over the prior art. The inductive pickup of Byerlay responds to the same condition in a spark plug conductor as appellant's construction to produce pulses in the pickup winding and thus obviously and inherently complies with the recitation in the same manner.

Appellant also points out that his current pulse responsive means is defined as inductively coupled *only* to the spark conductor for inducing pulses *solely* in response to the current pulses in the spark plug conductor. We think it apparent that the inductive pickup of Byerlay inherently has those characteristics for the same reasons as appellant's device and additionally note the shielding provided in that reference device to "prevent false signals" in the pickup coil. It is argued in particular that Byerlay does not show connection *only* to the ignition system "inasmuch as a shielded cable 8 is provided for connection to either the primary or secondary of the ignition coil under test for the purpose of controlling vertical deflection of the beam of a cathode ray tube." However, one using the inductive coupling in Byerlay merely for activating a pulse-responsive tachometer circuit would find it obvious to dispense with that reference's additional connection of the ignition coil to the cathode ray tube.

**[2]** As to the recitation in claim 40 and 42 that the pickup coil is of ferrite, appellant has not shown any error in the position of the Examiner and Board that the use of that material for the magnetic core of the inductive pickup substituted in Horsch would be obvious to a person of ordinary skill in the art in view of Douma which shows this known material used in an inductive pickup. While appellant's aforementioned affidavit does show that a particular pickup using a core of WO–3 ferrite gave a greater response than certain pickups using cores of certain other materials which were tested, it is not demonstrated that the difference is unexpected or unobvious. Also, appellant states in the application that "[t]he magnetic properties of ferrites vary according to their composition and also according to their particle size, compacting pressure, amount and kinds of binding resins and sintering temperature." He further states that "the best ferrite found to date is WO–3 ferrite * * *." Thus, the affidavit does not support a conclusion that all ferrites are superior to other known magnetic materials for present purposes.

In connection with claim 34, which recites pulse-indicating means comprising a device responsive to the pulses to produce an aural signal, Hansel's disclosure of the use of a loud speaker as an audio-presentation means for signals of audio frequency clearly demonstrates that it would be obvious to use an aural indicator in the modified reference structure.

Claims 41 and 42 recite what is in effect a transformer coupling between the winding on the pickup coil and the pulse-responsive circuit. We agree with the Examiner and Board that this feature would be obvious to one of ordinary skill in the present art, noting in particular the transformer coupling provided between the pickup coil and the pulse amplifier in Byerlay. We also agree that the use of separable and reversible means between the pickup coil and the input to the remaining test apparatus would be obvious to one of ordinary skill in the art, noting in this case the separable pin connector of Stanek referred to by the Examiner.

**[3]** For the reasons stated above, the decision of the Board is affirmed.

AFFIRMED.

## U.S. Court of Customs and Patent Appeals

IN RE MYRON J. JURSICH AND GAIL T. RANDICH

*No. 8121. Decided May 22, 1969*

[56 CCPA —; 410 F.2d 803; 161 USPQ 675]

1. PATENTABILITY—DOUBLE PATENTING—DISCLOSURE CONSIDERED FOR MEANING OF PATENT CLAIMS.

"Although [in a double patenting rejection] the Stephenson patent disclosure is not available as evidence of prior art against appellants by reason of its later effective filing date, it is, of course, proper to refer to the patent disclosure to ascertain the meaning of expressions employed in the claims. *In re Baird*, 52 CCPA 1747, 348 F.2d 974, 146 USPQ 579 (1965); *In re Dinwiddie*, 52 CCPA 1693, 347 F.2d 1016, 146 USPQ 497 (1965)."

2. SAME—SAME—OBVIOUS VARIATION.

"While we agree with appellants that they and Stephenson are not claiming the *same* invention, it appears to us that the presently claimed process is but an obvious variation, in the double patenting rather than the § 103 sense, of the process already claimed by Stephenson and * * * is not allowable in view of our prior decisions. See *In re Rogers*, 55 CCPA 1092, 394 F.2d 566, 157 USPQ 569 (1968); *In re Cole*, 54 CCPA 1107, 373 F.2d 532, 152 USPQ 807 (1967)."

3. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—TERMINAL DISCLAIMER FILED AFTER BOARD DECISION.

"The record shows that appellants' assignee filed a terminal disclaimer in the Patent Office *after* the Board decision which the Board refused to consider because it was not timely presented or considered by the Examiner. Appellants assign error in that action by the Board, arguing that the terminal disclaimer 'eliminated the double patenting issue in the present case.' However accurate that statement may be, we cannot consider the disclaimer here, although appellants do not appear to be without further recourse. See *In re Rogers* and authorities cited therein."

APPEAL from Patent Office. Serial No. 398,418.

AFFIRMED.

*Herbert B. Keil*, *Marzall*, *Johnston*, *Cook & Root*, for appellants.

*Joseph Schimmel* (*Lutrelle F. Parker*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

The issues here are whether the Board of Appeals committed reversible error in sustaining the Examiner's rejection of claims 1–5 [1] as unpatentable over British Patent 883,973 under 35 U.S.C. 103, and on the ground of double patenting in view of the claims of Stephenson Patent 3,256,141 [2] considered with Australian Patent 163,501.

The invention is reflected in claim 1:

> 1. A method of *improving the retention of filler and fiber fines in the processing of paper* which comprises the step of adding to an aqueous paper pulp suspension at least a retention improving dosage of an organic water-soluble *terpolymer* formed as the reaction product of 85.0–95.0 parts by weight of acrylamide, 0.3–2.0 parts by weight of a polymerizable polycarboxylic acid selected from the group consisting of maleic acid, maleic anhydride and fumaric acid and 3–15 parts by weight of an ethylenically unsaturated water-soluble monomer, [Emphasis supplied.]

The "ethylenically unsaturated water-soluble monomer" employed by appellants may be acrylic or methacrylic acid, and salts and alkyl esters thereof, vinyl acetate, or acrylonitrile. In claim 5, the terpolymer is defined as the "reaction product of 89.5–94.5 parts by weight of acrylamide, 0.5–1.5 parts by weight of maleic anhydride and 5–9 parts by weight of methacrylic acid." When appellant flows his aqueous pulp suspension containing pulp, filler pigment, and terpolymer retention aid onto the travelling screen or cylinder of the conventional Fourdrinier or cylinder paper making machines, the terpolymer causes more of the filler and fiber fines to be retained on the screen or wire-covered cylinder and less to be lost with the "white water" [3] drained from the screens.

### *The Section 103 Rejection*

The British patent discloses a process for retaining pigment fillers on paper fibers when the latter are sheeted on a Fourdrinier screen which comprises the addition of acrylamide polymer "retention aid" to a slurry of cellulosic fibers containing the filler. According to British:

> * * * The polymer is at least *predominantly* composed of carbamoylalkylene linkages * * *. The polymer may be completely composed of carbamoylalkylene linkages as in the case of *polyacrylamide*, polymethacrylamide and polymerized acrylamidemaleamide mixtures or may be partially (at least about one-half) composed of such linkages, the remainder being inert linkages such as those derived from non-ionic vinyl monomers copolymerizable therewith such as *acrylonitrile*, *vinyl acetate* and *ethyl acrylate*. The foregoing monomers are substantially non-ionic. *Alternatively*, the polymer may contain carboxyalkylene linkages such as are introduced by *acrylic acid*, *methacrylic acid*, *maleic acid*, maleamic acid or sulpho groups such as are introduced for example by p-vinylbenzene-sulphonic acid. These polymers are thus anionic; the proportion of such groups may be up to 50 mol percent. *If desired, inert linkages may also be present.* [Emphasis supplied.]

The Examiner viewed the above disclosure as teaching that the polymeric retention aid of British could be a terpolymer composed of predominantly acrylamide, inert linkages derived from acrylonitrile, ethyl acrylate or vinyl acetate, and carboxyalkylene linkages derived from maleic acid—the same components that appellants employ. Realizing that the British patent does not disclose the precise ranges or amounts of terpolymer components set forth in the claims, the Examiner nevertheless thought it "would be obvious to one having ordinary skill in the art to determine the limits of proportions in order to obtain the optimum retention of fillers in making paper." The Board agreed.

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[1] Appearing in Serial No. 398,418, filed September 22, 1964, as a continuation-in-part of Serial No. 205,495, filed June 27, 1962 and entitled "Polymeric Compositions and Their Use in Paper Making Process."

[2] Issued June 14, 1966 on application Serial No. 406,868, filed October 27, 1964, as a continuation-in-part of application Serial No. 205,879, filed June 28, 1962. Both the Stephenson patent and the present application are assigned to Nalco Chemical Company.

[3] Appellants' brief explains:

> In general, there are two types of machines that are used in forming paper. In a Fourdrinier machine, pulp stock containing pulp fibers, filler, sizing, etc., is passed from a head box onto a moving, endless bronze wire screen. Substantial amounts of fiber and filler remain on the screen while most of the water in the pulp stock drains through along with unretained fiber fines and fillers. The water that is removed from the pulp is known as white water. * * *
>
> The second conventional type of paper forming device is the cylinder machine. In the cylinder machine a wire covered cylinder is rotated in a vat containing dilute paper stock. The paper stock is deposited on the turning screen as the water within the cylinder is removed.

With respect to claims 1–4, we find no reversible error in the conclusions of the Examiner and Board. It seems to us, as it did to the Board, that appellants have simply followed the suggestions of British as to the type and amount of terpolymer which should be employed as a retention aid, namely one which contains "predominantly" acrylamide with minor amounts of a monomer providing "carboxyalkylene linkages," such as maleic acid, and a monomer providing "inert linkages," such as vinyl acetate, acrylonitrile or ethyl acrylate. There is no evidence of record establishing that the broadly defined terpolymers containing the particular amounts of monomer components recited in claim 1, e.g., 3–15 parts by weight of such "ethylenically unsaturated water-soluble monomers" as vinyl acetate, acrylonitrile or ethyl acrylate, provide any different retention result or effectiveness than the terpolymers of British which perhaps include a broader contemplated range of amounts of those monomers.

A different question is presented by claim 5, calling for the use of a terpolymer containing particular amounts of acrylamide, maleic anhydride and methacrylic acid. The Board found that, "[s]ince the reference states that either methacrylic acid *or* maleic acid may be added to the acrylamide, we consider that it would be obvious to workers of ordinary skill in the paper-coating art that *both* of these acids could be present, up to a combined limit of 50 mol percent." [Emphasis supplied.] By contrast, the Examiner appears to have found no clear suggestion in British of the use of that particular terpolymer as a retention aid, inasmuch as his rejections fail to draw attention to that terpolymer as one disclosed by the reference. We don't think that particular terpolymer containing the claimed proportions of acrylamide, maleic anhydride and methacrylic acid, or the improved filler and fiber fines retention obtained by using it,[4] is clearly suggested to one of ordinary skill in the art by British either, noting, as did the Board, that the reference seems to describe the monomers providing the carboxyalkylene linkages in the disjunctive "or," not the conjunctive "and." Like appellants, we see no clear reason why one of ordinary skill would necessarily be led by British to employ in the claimed proportions two different monomers providing carboxyalkylene linkages—one a dicarboxylic acid and the other a monocarboxylic acid—as components of the polymeric retention aid to obtain the improved results appellants do.

The rejection of claims 1–4 under § 103 is *affirmed*, and the rejection of claim 5 under § 103 is *reversed.*

### *The Double Patenting Rejection*

The Stephenson patent, on which the double patenting rejection is predicated, relates to a method for improving the operational efficiency of "white water" recovery systems employed in the manufacture of paper. It appears that the purpose of those recovery or "saveall" systems is to permit economical recovery of the unretained fiber fines and filler pigment appearing in the "white water" of the paper making process and, concomitantly, to prevent pollution of the natural bodies of water into which "white water" is normally discharged. Stephenson describes two known types of saveall systems sought to be improved—*vacuum* systems and *flotation* systems. He improves those recovery systems by adding to the "white water" treated by the system the very same terpolymers appellants add to the aqueous pulp and pigment suspension in their process, as reflected in Stephenson claim 5:

> 5. The method of improving the operational efficiency of *vacuum* and *flotation* type [5] white water recovery systems *whereby increased amounts of fibers and solids materials are collected and removed from the white water*, which comprises the step of treating the white water with at least 0.1 p.p.m. based on total white water influent, of an organic water-soluble terpolymer formed as a reaction product of 89.5–94.5 parts by weight of acrylamide, 0.5–1.5 parts by weight of a polymerizable polycarboxylic acid monomer selected from the group consisting of a maleic acid, maleic anhydride, and fumaric acid, and 5–9 parts by weight of an ethylenically unsaturated water-soluble monomer differing from the above monomers. [Emphasis supplied.]

The Australian patent is directed to the use of water-soluble acrylamide polymers and acrylamide-acrylonitrile copolymers as (1) an aid in flocculating and removing suspended particles in various industrial waters after their use and prior to disposal, and (2) an aid in the precipitation and retention of size and filler on a screen of a paper making machine. Said the Examiner:

> * * * The claims of * * * [Stephenson] recite the use of the same terpolymer as recited in the present claims in the environment of flocculating the fibers and solid material present in white water recovery systems in papermaking. One purpose of the above is that the white water may be disposed of by discharge into streams or sewage systems without pollution thereof. The Australian patent discloses the alternative use of water-soluble acrylamide polymers for clarifying industrial water after use prior to disposal into natural water courses and for the retention of fillers in forming filled paper. It would be an obvious expedient to use the terpolymer recited in the claims of * * * [Stephenson] in the environment of improving filler retention in paper formation since the use of acrylamide polymers in both environments, clarifying industrial water and filler retention, is alternative as evidenced by the Australian patent.

The Board agreed.

Appellants' principal argument on this phase of the case is that the claims of Stephenson are directed to a flotation type saveall process in which suspended particles are brought to the *surface* of the liquid, whereas Australian clarifies water by coagulation and *settling*. As the *Solicitor* points out, and as it clear from the Stehpenson patent claim heretofore reproduced, appellants appear to have overlooked the fact that Stephenson also claims the use of the terpolymers in issue in a *vacuum* type saveall system—a system which bears a striking resemblance in principle of operation to the conventional Fourdrinier and cylinder screen paper making processes. In both types of processes, settling and retention of suspended particles on the wire screen of the apparatus is of importance and, insofar as the record shows, one of ordinary skill would have no cause to believe that a polymeric material effective to improve retention of pigment and fiber on the screen of a vacuum type saveall system would be ineffective to improve retention of pigment and fiber on a Fourdrinier or cylinder screen of a paper making machine.

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[4] Appellants present data in their specification which shows that pigment and fiber retention is considerably higher when a terpolymer within the limitations of claim 5 is employed than when a terpolymer outside the claimed monomer ranges is employed.

**[1]** [5] Although the Stephenson patent disclosure is not available as evidence of prior art against appellants by reason of its later effective filing date, it is, of course, proper to refer to the patent disclosure to ascertain the meaning of expressions employed in the claims. *In re Baird*, 52 CCPA 1747, 348 F.2d 974, 146 USPQ 579 (1965); *In re Dinwiddie*, 52 CCPA 1693, 347 F.2d 1016, 146 USPQ 497 (1965). In that regard, Stephenson states:

> * * * The *vacuum* type system operates on a simple principle. In this system a wire rotary drum having a plurality of foramen is employed and the paper stock as it passes over the wire drum is subjected to a vacuum which deposits the fibers on the wire with the water being passed through for re-use or disposal. In this type of system, the suspended solids of the system are collected on the drum wire and are then removed by scraping, dumping, or the like. Usually a breaker roll is used to contact the wire drum whereupon the vacuum is broken and the fibrous mat is transferred to the roll and subsequently re-used or discarded. * * *
>
> The principle upon which the *flotation* saveall systems operate is that of continuously dissolving air under pressure into a collected quantity of white water. This produces a flotatable mass consisting of fiber and other undissolved components which separate from the furnish used in the particular paper process. After the air has been dissolved under pressure into the white water, the compressed white water is then released to the atmosphere or to a reduced pressure system, usually by passage into a separate container. As a result, air bubbles are formed which carry the fiber and other suspended materials to the surface of the collecting container. After being carried to the surface of the container, the suspended materials which are frequently in the form of a frothy or foamy mass, are then skimmed by means of suitable mechanical skimmers and are then either returned for reprocessing or are discharged to waste. [Emphasis supplied.]

**[2]** While we agree with appellants that they and Stephenson are not claiming the *same* invention, it appears to us that the presently claimed process is but an obvious variation, in the double patenting rather than the § 103 sense, of the process already claimed by Stephenson and, on the present record, is not allowable in view of our prior decisions. See *In re Rogers*, 55 CCPA 1092, 394 F.2d 566, 157 USPQ 569 (1968); *In re Cole*, 54 CCPA 1107, 373 F.2d 532, 152 USPQ 807 (1967).

**[3]** The record shows that appellants' assignee filed a terminal disclaimer in the Patent Office *after* the Board decision which the Board refused to consider because it was not timely presented[6] or considered by the Examiner. Appellants assign error in that action by the Board, arguing that the terminal disclaimer "eliminated the double patenting issue in the present case." However accurate that statement may be, we cannot consider the disclaimer here, although appellants do not appear to be without further recourse. See *In re Rogers* and authorities cited therein.

The decision is affirmed.

AFFIRMED.

BALDWIN, *J.*, concurring.

Although I agree with the majority opinion and decision, I feel called upon to comment further in regard to the Patent Office's handling of a terminal disclaimer filed (albeit "not timely" under the existing criteria) in an effort to eliminate an obviousness-type double patenting rejection. Inasmuch as applicants have no *right* under the existing statutes or *present* Rules of Practice to have a terminal disclaimer considered by the Board of Appeals *or* the Examiner anytime after decision on appeal (or even after a final rejection), I am constrained to say that we cannot consider the matter for the first time, the Patent Office having declined to do so. What I find inexplicable is the failure of the Patent Office administration to provide appropriate procedural mechanisms for the consideration of a terminal disclaimer *at any stage*, as a matter of right, where a legal issue or controversy may be so easily and apparently obviated, thereby conserving judicial manpower. Here, the latter half of the majority opinion deals with an issue which would not even be before us but for the Patent Office's procedural restraints. Indeed, the Patent Office should *encourage* applicants to file terminal disclaimers to obviate obviousness-type double patenting rejections where the applicants are so inclined; it might even serve to reduce the Patent Office backlog about which we are so constantly advised. Moreover, it would be commendable for the Patent Office to join an appellant who should petition this court for remand of a pending appeal to the Patent Office for consideration of a terminal disclaimer filed, or sought to be filed, even after the filing of a notice of appeal to this court.

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[6] Compare *Ex Parte Fertig*, 155 USPQ 475.

## U.S. Court of Customs and Patent Appeals

### IN RE SAMUEL R. STILES

*No. 8060. Decided April 3, 1969*

[56 CCPA —; 408 F.2d 1057; 161 USPQ 210]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"TREATMENT OF HYDROCARBON MATERIALS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Treatment of Hydrocarbon Materials" as unpatentable over the prior art, is reversed.

APPEAL from Patent Office. Serial No. 172,800.

REVERSED.

*Arnold G. Gulko* (*John C. Quinlan*, *Dressler*, *Goldsmith*, *Clement & Gordon*, of counsel) for appellant.

*Joseph Schimmel* for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and Judges RICH, ALMOND, BALDWIN, and KIRKPATRICK[1]

ALMOND, *J.*, delivered the opinion of the court.

This appeal is from a decision of the Patent Office Board of Appeals affirming the Examiner's rejection of all the claims remaining in appellant's application entitled "Treatment of Hydrocarbon Materials."[2]

The sole issue is whether appellant's claimed invention is obvious and hence unpatentable under 35 U.S.C. 103.

The invention relates to a process for treatment of feed material to be used in an alkylation process such as may be performed at a refinery to provide high quality fuel. More particularly, this invention relates to the treatment of feed material to the reaction of an isoparaffin with an olefin in the presence of an acid catalyst (such as $H_2SO_4$). The feed material to this alkylation process may be obtained from fractionating, cracking, reforming, coking, and other means of processing crude refinery cuts, such as light naphtha, gasoline, kerosene and similar fractions to obtain most preferably the $C_3$ to $C_5$ fractions. Unfortunately, certain sulfur, oxygen and nitrogen contaminants are usually associated with the feed materials thus produced. The specification of appellant's application discloses that these contaminants include hydrogen sulfide and mercaptan contaminants as well as "natural contaminants comprising carbonyl sulfide and carbonyl sulfide-ammonia complexes * * * found in cracking products in many cases." The contaminants degrade the subsequent alkylation process in a number of ways, such as by poisoning the acid catalyst, by causing gummy materials which clog the process apparatus or by highly corrosive effects on the apparatus.

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Serial No. 172,800, filed February 12, 1962.

Appellant has discovered that these undesirable contaminants may be removed by treating the alkylation feed material, which is in the $C_3$–$C_6$ hydrocarbon range, with a washing medium comprising a solution of caustic hydroxide in water in which (1) the concentration of hydroxide in solution is at least 18%, and (2) the concentration of salt contaminant in the washing medium is controlled to below 0.5%.

All the appealed claims recite at least all of the limitations just described, claim 3 being the broadest:

> 3. A method for preparing alkylation feed stock which comprises: washing with a solution of alkaline material a hydrocarbon fraction containing predominantly $C_3$ to $C_6$ hydrocarbons and a minor amount of a contaminant boiling within the $C_3$ to $C_6$ hydrocarbon range and containing carbonyl sulfide, said contaminant forming a salt upon contact with the alkaline material and being selected from the group consisting of oxygen-, sulfur- and nitrogen-containing contaminants, said solution of alkaline material selected from the group consisting of hydroxides of sodium, lithium and potassium and wherein the concentration of the hydroxide in solution is at least 18 percent and controlling the concentration of the salt contaminant in the washing medium below about 0.5 percent; washing said hydrocarbon fraction to produce an alkylation feed stock containing less than a few parts per million of contaminant so that the resulting feed stock is capable of producing an alkylate product of improved lead susceptibility and ASTM end point.

The following references were relied on before the Board:

Goodman et al., 3,011,970, Dec. 5, 1961.
Betts et al., 2,769,765, Nov. 6, 1956.
Herthel, 2,374,996, May 1, 1945.
Retailliau, 1,936,210, Nov. 21, 1933.

Although we shall refer to these references in more detail later, their teachings may be briefly summarized as follows:

Herthel discloses an alkylation process to provide high quality fuel utilizing feed material products, obtained by a cracking operation, containing generally the same range of carbon atoms as appellant's feedstock. Herthel teaches caustic washing of this feed material prior to the alkylation step, as follows:

> If the product contains any substantial amount of sulfur, it may be passed through the line 20 to the hydrogen sulfide removal tower 22 and thence to the caustic wash apparatus 24 for removal of mercaptans, although either or both of these operations may be omitted if unnecessary. The liquid, with or without appropriate purification, is divided at the point 26 (or, if purification is unnecessary, the point 27) into two portions. Instead of treating all of the hydrocarbon to remove sulfur, such treatment may be applied to one or the other (or both) of the divided streams, usually that fed to the alkylation unit. * * *

Retailliau discloses treatment of a cracked distillate with caustic soda in a range of concentration from 30%–40% Baumé (25%–40%) to remove acidic impurities. Retailliau states:

> The cracked distillate, free from the hydrogen sulphide content, is then contacted with caustic soda of relatively high concentration, such, for example, as from 30° to 45° Baumé, for a sufficient length of time to remove all acidic compounds and to cause some compounds to polymerize. The treatment with caustic soda of relatively high concentration also tends to break up possible esters formed during the cracking reaction by the action of the organic acids and bases. After the material has been subjected to the caustic soda treatment, and allowed to settle, it is subjected to a water wash until all traces of the alkali are removed.

Betts discloses a "sweetening" process for the removal of mercaptan impurities from petroleum fractions by using a caustic wash. Periodically the spent wash is regenerated by removal of the mercaptan salts from the caustic wash. Betts contains the following statement:

> The art has generally recognized in the treating of hydrocarbon streams with aqueous solutions such as strong or weak caustic in a continuous type process, that the equilibrium is generally unfavorable for mercaptan extraction. Therefore, caustic solutions when they are only spent to a small extent in mercaptide salts will not give any further reduction in mercaptan content despite the fact that these treating solutions have a large residual-free caustic content. The art has also recognized that the efficiency of the spent caustic can be partially or fully restored by regeneration of these solutions. The regeneration normally consists of removal of a part or all of the mercaptide salts by means of hydrolysis and vaporization or by oxidation.

Goodman discloses caustic washing applied to a large range of hydrocarbon feeds.

The rejection of the claims is under 35 U.S.C. 103 as being unpatentable over Herthel in view of Retailliau. According to the Examiner, Herthel discloses caustic washing of cracked distillate containing $C_3$ and $C_4$ olefins prior to an alkylation step and it would be obvious to use appellant's concentration of caustic in such a process in view of Retailliau's teaching of the use of caustic in a concentration from 25%–40%. As to the claim limitation concerning the level of contaminant in the caustic wash, the Examiner pointed to Betts, stating "[i]t would involve nothing more than routine experimentation to determine the precise level of contaminant-salt concentration which could be tolerated in any particular process."

The Board agreed with the Examiner on the correctness of combining the teachings of Herthel and Retailliau to suggest the overall steps of appellant's process as well as the first limitation concerning the claimed range concentration of caustic in the wash. As to the second limitation of the claims concerning the level of contaminant in the wash, the Board did not discuss Betts but instead referred to Retailliau, stating in its original decision:

> After the alkali treatment [of Retailliau] the products are subjected to wash water until all traces of alkali are removed, page 2, lines 126 to 129. The washing or removal of the contaminants obtained by the alkali treatment to a concentration of below 0.5%, as recited in the claims, is considered obvious. It would appear that the washing of the product by Retailliau to the extent indicated would substantially remove the contaminants.

Further the Board stated:

> Appellant argues that he has produced an alkylation feedstock containing less than a few parts per million of contaminant. We consider that the process of Herthel, subjected to the further treatment of Retailliau using the concentration of caustic and the complete washing disclosed in this reference would substantially give a product having the low contaminant content recited in the claims.

In a subsequent decision on reconsideration, the Board stated that it relied on the reasons stated by the Examiner concerning the salt contaminant concentration in the washing medium.

On reviewing the record we are inclined to agree with the first portion of the Board's reasoning, namely, that the combined teachings of Herthel and Retailliau would make it obvious to one skilled in the art to wash a prealkylation feed material obtained by cracking and containing hydrocarbon fractions within the $C_3$–$C_6$ range, with a caustic hydroxide solution containing at least 18% of caustic. Such combined teaching, however, does not render obvious the invention defined in the claims, which requires that the concentration of the salt contaminant in the washing medium should be controlled "below about 0.5 percent."

It is therefore to this second limitation regarding the concentration of salt contaminant in the caustic washing medium that our attention must be directed. So far as the Board's finding of relevant teaching for this limitation in Retailliau is concerned, appellant argues that the Board misapplied Retailliau by confusing the concentration of contaminant salt in the caustic treating solution (recited in appellant's claims) with the complete removal of the caustic treating solution from the treated hydrocarbon (taught by Retailliau). In this connection, appellant's brief states:

> There is certainly no basis to believe that ordinary water can remove an impurity which the invention has found cannot be removed by caustic washing unless the concentration is above 18% *and which is even then ineffective unless the contaminant salt concentration in the caustic solution is minimized to a level below 0.5%.*
>
> If we assume for sake of discussion that the Retailliau concentrated caustic treatment is used in the process of Herthel, the only basis to conclude that the result would provide the low contaminant content recited in the claims is to assume that Retailliau also teaches the use of low salt concentration in the caustic wash, but there is no such teaching and the Board's decision makes it clear that they were confused and thought that the teaching to wash with water to remove alkali was the same as the teaching to wash with concentrated caustic substantially free of salt as required by the claims. Of course, this cannot be the case for water per se cannot be expected to extract something which even dilute caustic cannot extract and which concentrated caustic containing salts has left behind.

On this point we think appellant is correct and that the Board clearly erred in the manner he points out.

The next step in our inquiry, therefore, is to review the Examiner's position, adopted by the Board on reconsideration, and apply the Betts reference in connection with the limitation of the claims concerning the level of salt contaminant in the wash medium. Betts teaches regeneration of spent caustic, as indicated in the previously quoted portion from Betts, but the level of salt contaminant tolerated in the caustic treating solution while it is in use, is not entirely clear. At one treating zone (identified as zone 1 in the Betts patent) the cracked hydrocarbon oil to be treated is washed with initially fresh NaOH solution which is recirculated. The patent discloses:

> The spent caustic containing the mercaptans and phenols is removed from zone 1 by means of line 5 and recirculated by means of line 6 until about 10–90% spent of free caustic. * * *

From this disclosure it would appear that the level of contaminant salt in the recirculated fluid could possibly vary from an initial 0% up to 90% of the free caustic over a period of time. This would certainly not seem to amount to a teaching of "*controlling* the concentration of the salt contaminant in the washing medium below 0.5%."

At another point in the Betts process (identified as zone B in the patent) an NaOH treating solution is applied to virgin naphthas. Betts discloses:

> A typical analysis of the solution utilized in zone 13 for the treatment of virgin naphthas is free NaOH 20%, alkali metal soaps of aromatic mercaptans and phenols 35%, water 45% by weight.

Thus the teaching to be derived from this second portion of Betts is the use of a caustic treating solution in which the level of alkali metal soaps of aromatic mercaptans and phenols is 35%.

Furthermore, it is plain that the invention of Betts was directed solely to the removal of mercaptan compounds as contaminants. However, these do not appear to be the only significant contaminants in the feed material treated by appellant which appellant removes by his process.[3]

For the foregoing reasons, we think it apparent that Betts, with its disclosed tolerance of relatively high values of, and wide variations in, salt content in the alkaline wash, fails to suggest the upper limit of 0.5 percent required by the claims.

**[1]** The decision of the Board is therefore reversed.

REVERSED.

WORLEY, *Chief Judge*, and KIRKPATRICK, *J.*, took no part in the decision of this case.

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[3] In his specification, appellant states:

> The alkaline wash material used in the pretreatment of feeds in the present invention is preferably an aqueous caustic solution of from 18 percent to 50 percent concentration, containing not more than 0.5 percent salts of the acid gases such as sulfides, carbonates, etc., and most preferably containing none of these salt impurities. The hydrocarbon fractions may contain acid gases such as hydrogen sulfide, carbon dioxide, etc., which, when extracted with caustic, produce the corresponding salts. *These salts interfere with the extraction or dissolution of other contaminants such as mercaptans, carbonyl sulfides, ammonium complexes, etc. Therefore, it is important to maintain the salt concentration below about 0.5 percent in order that these salts do not reduce or interfere with the efficiency of the extraction of these* deleterious contaminants and to prevent "salting out" or inability to extract the weaker acids from the feed stock. [Emphasis supplied.]

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## U.S. Court of Customs and Patent Appeals

NEUTROGENA CORPORATION *v.* BRISTOL-MYERS COMPANY

*No. 8174. Decided May 22, 1969*

[56 CCPA —; 410 F.2d 1391; 161 USPQ 687]

1. TRADEMARK—CONFUSING SIMILARITY—"THERADERM" AND "KERA-DERM" FOR HAIR AND SKIN TREATMENTS.

"Appellant says that all the differences in the marks ['THERADERM' and 'KERA-DERM'] and in the goods [the former for hair and the latter for skin treatments] must be taken into consideration. We agree with that proposition. Having done so, it is our conclusion that the Board did not err. We feel that it is reasonable to assume that a substantial portion of purchasers and prospective purchasers would likely be either confused as to the goods or as to their origin by reason of the similarities in the marks, which are self-evident and require no analysis."

2. SAME—SAME—SAME.

"It is said that people looking for a liquid dandruff remedy [sold under the mark 'THERADERM'] are not likely to take or accept midicated discs [sold under the mark 'KERA-DERM']. While we think there is a possibility of mistake and that they might get a product they did not in fact want—due to the similarity of the marks, especially in sound—even if we put that aside, there is still, in our opinion, a likelihood that the two different products would be thought to have a common source."

APPEAL from Patent Office. Opposition No. 45,232.

AFFIRMED.

*Donald A. Kaul* (*Fulton Brylawski, Arnold, Roylance, Kruger and Durkee*, of counsel) for appellant.

*H. C. Dieserud* (*Robert B. Whittredge*, of counsel) for appellee.

Before RICH, *Acting Chief Judge*, HOLTZOFF and MCLAUGHLIN, *Judges, sitting by designation*, ALMOND and BALDWIN, *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Trademark Trial and Appeal Board, 153 USPQ 877, sustaining the opposition by appellee to appellant's application, Serial No. 198,975, filed July

31, 1964, to register on the Principal Register the word-mark "Kera-Derm" for "medicated discs for use in the treatment of acne, blackheads and scaley skin." Applicant's claimed date of first use was June 11, 1964.

Opposer-appellee relies on conceded prior use of the mark "THERADERM" and Reg. No. 663,684, of July 1, 1958 thereof for "Preparation for the treatment of the hair and scalp." The parties stipulated the facts about opposer's business in lieu of taking testimony.

Bristol-Myers, appellee-opposer, sells a number of pharmaceutical and costmetic preparations, the only one here pertinent being its "THERADERM," an over-the-counter, liquid preparation for the cure and prevention of dandruff. It acquired the goodwill of the business in this product and the mark in 1956 from Frank J. LiPuma, doing business in Chicago, Illinois, under the name Theraderm Laboratories. He adopted the "THERADERM" mark in 1948. Opposer's sales from 1956 to 1966 "largely exceeded $2,000,000" and during that period opposer expended "well over $1,500,000 in advertising its product bearing the 'THERADERM' trademark" on a national basis in magazines and on television.

Applicant's goods, as shown by a specimen package filed with the application, consist of medicated discs sold with an applicator to which they are to be attached in use. The discs contain a soap in combination with medication and are mildly abrasive, designed to be rubbed against the affected areas of the skin after being moistened with water. The Board concluded:

> The goods involved are closely related, albeit different in form, and would readily be assumed to originate with a single source if sold under the same or similar marks.
>
> * * * we are persuaded that applicant's mark does so resemble the mark of opposer as to be likely, when applied to its goods, to cause confusion as to origin.

This appeal contests these conclusions. Appellant urges that the cumulative differences in the goods and the marks sufficiently assure that there will not be confusion, mistake, or deception under section 2(d) of the Trademark Act of 1946 (15 U.S.C. 1052(d)), which is the controlling statute. At the same time, appellant frankly admits that "the products involved herein are probably each sold most commonly in drug stores," that the "class of purchasers of the products in the present case would be the average drug store shoppers who are used to examining and selecting products from shelves or racks," that these are non-prescription items, and that they are both for the treatment of the skin in one place or another.

**[1]** Appellant says that all the differences in the marks and in the goods must be taken into consideration. We agree with that proposition. Having done so, it is our conclusion that the Board did not err. We feel that it is reasonable to assume that a substantial portion of purchasers and prospective purchasers would likely be either confused as to the goods or as to their origin by reason of the similarities in the marks, which are self-evident and require no analysis.

It is argued, inter alia, that "Kera" and "Thera" have different suggestive meanings; that "Kera" is derived from "kerato-" and/or "keratogenous," both of which relate to horny skin tissues. We think only a small percentage of people would know this. It is further argued that "Thera-" is obviously derived from "therapy" or "therapeutic," which relate to healing. We feel the same about this and, further, that even to those aware of that fact it would not spontaneously strike most observers that that is the reason for the use of "Thera-" in "THERADERM." People with acne and dandruff are of all classes, educationally speaking, and the refined analyses of which lawyers are capable in taking these marks apart and putting them together are not likely to occur to the great bulk of the people walking into self-service stores or asking salesclerks for products of which they may have but dim recollections from having previously seen or heard one or the other of the involved marks.

**[2]** It is said that people looking for a liquid dandruff remedy are not likely to take or accept medicated discs. While we think there is a possibility of mistake and that they might get a product they did not in fact want—due to the similarity of the marks, especially in sound—even if we put that aside, there is still, in our opinion, a likelihood that the two different products would be thought to have a common source.

The decision of the Board is affirmed.

AFFIRMED.

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# PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

**2,584,109**, Blackburn and Steele, MOLD AND METHOD FOR MOLDING CERAMIC WARE; **2,584,110**, same, MOLD FOR POTTERY WARE; **2,627,641**, Steele and Jordan, MULTIPLE GUTER MOLD; **2,632,209**, Bryer and Steele, TREATMENT OF PLASTER MOLDS; **2,632,227**, Steele and Bryer; METHOD AND APPARATUS FOR THE RELEASE OF CERAMIC WARE FROM POROUS MOLDS; **2,733,493**, J. F. Bryer, METHOD AND APPARATUS FOR REMOVING SCRAP FROM DIES FOR THE PRESSING OF CLAY BODIES; **3,010,176**, Blackburn and Steele, METHOD OF MOLDING CERAMIC WARE, **filed** June 10, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1125–FW, *Ram Incorporated* v. *De Forest of California, Inc.*

**2,584,110.** (See 2,584,109.)

**2,627,641.** (See 2,584,109.)

**2,632,209.** (See 2,584,109.)

**2,632,227.** (See 2,584,109.)

**2,694,218**, Lapeyre and Lapeyre, SHRIMP DEVEINING MACHINE; **2,825,927**, same, SHRIMP VEIN REMOVER, **filed** July 10, 1969, D.C., S.D. Miss. (Biloxi), Doc. 3774, *The Laitram Corporation* v. *The Sea Coast Company.*

**2,733,493.** (See 2,584,109.)

**2,825,927.** (See 2,694,218.)

**3,010,176.** (See 2,584,109.)

**3,031,169**, Robinson and Kimmell, APPARATUS FOR AUTOMATICALLY CONTROLLING DRILLING, **filed** July 18, 1969, D.C., N.D. Tex. (Fort Worth), Doc. CA 4–1271, *Bear Manufacturing Corporation* v. *Pat & Chuck Supply Co., Inc. and Robert Benta.*

**3,032,054**, D. W. Irwin, PRESSURE REGULATOR CONSTRUCTION, **filed** Aug. 7, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1298–PH, *Fisher Governor Company* v. *American Meter Company.*

**3,033,988.** (See 3,249,001.)

**3,045,910**, H. M. McLearn, AUTOMATIC COUNTING MACHINE; **3,297,248**, same, FRUIT COUNTER WITH IMPROVED CONVEYOR AND CAMMED SWITCH OPERATOR, **filed** July 25, 1969, D.C., M.D. Fla. (Orlando), Doc. 69–157 Orl. C., *American Machinery Corporation* v. *Mims Citrus Growers Association.*

**3,050,087**, D. M. Caplan, FLEXIBLE HOSE; **3,194,705**, same, METHOD AND APPARATUS FOR MAKING REINFORCED CORRUGATED HOSE, **filed** Nov. 13, 1965, D.C., N.D. Ohio (Cleveland), Doc. No. C65–752, *H. K. Porter Co., Inc.* v. *The Goodyear Tire & Rubber Co.* Judgment, claims 1 and 2 of Patent No. 3,050,087 valid. Claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of Patent No. 3,194,705 valid. Defendant has infringed claims 1 and 2 of Patent No. 3,050,087 and claims 1, 2, 3, 5, 6, 13, 14, 15 and 16 of Patent No. 3,194,705. Defendant permanently enjoined and counterclaim dismissed, Aug. 1, 1969.

**3,070,457**, P. D. Labombarde, APPARATUS AND METHOD FOR GLOSSY WAX COATING; **Re. 25,792**, same; **3,202,532**, same, GLOSSY COATING MACHINE AND METHOD, **filed** Feb. 18, 1969, D.C. Mass. (Boston), Doc. (cross appeals) 7287 and 7288, *The International Paper Box Machine Company et al.* v. *Specialty Automatic Machine Corporation et al.* Judgment which held valid and not infringed claims 33, 34 and 36 of Patent No. 3,202,532 is affirmed. District court's dismissal of defendant's counterclaim affirmed. Judgment holding valid and infringed claims 3, 13 and 14 of Re. 25,792 is reversed and the case remanded to the district court with directions to enter a decree in accordance with the opinion filed, Aug. 8, 1969.

**3,194,705.** (See 3,050,087.)

**3,249,001**, N. L. Stauffer, AUTOMATIC FOCUSING PHOTOGRAPHIC PROJECTOR; **3,033,988**, H. E. Edgerton, METHOD OF AND APPARATUS FOR THE CONTROL OF ELECTRIC IMPULSES, **filed** July 30, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1593. *Honeywell, Inc. et al.* v. *AIC Photo, Inc. et al.*

**3,252,733**, Moore and Bacevius, ELECTRIC HAND LANTERN; **D. 203,517**, same, **filed** Oct. 10, 1966, D.C., S.D.N.Y., Doc. 66–C–3296, *The H. J. Ashe Company, Inc.* v. *Bridgeport Metal Goods Manufacturing Company.* Stipulation and order that action be dismissed. Dismissal provided without prejudice, except with respect to any claims against plaintiff under Design Patent No. 203,517 and Patent No. 3,252,733 which matured as of the date of this order, which claims shall be dismissed with prejudice, Apr. 26, 1968.

**3,269,805**, W. R. Evans, BLANK STRIP FROM WHICH FEMALE CONTACTS ARE TO BE FORMED FOR ELECTRICAL CONNECTING SYSTEM; **3,270,251**, same, ELECTRICAL CONNECTING SYSTEM AND PARTS; **3,363,224**, Gluntz, Lightner, and Shue, ELECTRICAL CONNECTOR, **filed** Mar. 27, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–579–IH, *AMP Incorporated* v. *S.A.E. Advanced Packaging Inc.* Consent judgment, dismissed without prejudice as to Patent No. 3,269,805; defendant etc. enjoined, June 20, 1969.

**3,270,251.** (See 3,269,805.)

**3,286,216**, Jackson and Braucksiek, ELECTRIC TERMINAL; **3,286,923**, same, THERMOSTATIC CONTROL DEVICE FOR NORMAL AND ABNORMAL CONDITIONS; **D. 207,342**, T. J. Dykzeul, THERMOSTAT TUBE, **filed** May 22, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1006–S, *Robertshaw Con-*

*trols Company* v. *International Telephone & Telegraph Corporation.* **Same, filed** July 12, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1132–S, *Robertshaw Controls Company* v. *Honeywell, Inc.*

**3,286,923.** (See 3,286,216.)

**3,297,248.** (See 3,045,910.)

**3,347,031,** De Long, Stout and Ries, CUCUMBER HARVESTER; **3,387,611,** O. L. Looker, VINE CROP HARVESTER, **filed** Aug. 11, 1969, D.C., W.D. Mich. (Grand Rapids), Doc. 6138, *Board of Trustees of Michigan State University and FMC Corp.* v. *Wilde Manufacturing, Inc.*

**3,363,224.** (See 3,269,805.)

**3,368,516,** MacDonald, Anderson and Barker, THROUGH-TRANSOM MARINE PROPULSION UNIT; **3,376,842,** J. R. Wynne, BOAT PROPULSION MECHANISM, **filed** June 30, 1969, D.C., E.D. Wis. (Milwaukee), Doc. 69–C–322, *AB Volvo Penta* v. *Brunswick Corporation.*

**3,376,842.** (See 3,368,516.)

**3,387,611.** (See 3,347,031.)

**Re. 25,792.** (See 3,070,457.)

**D. 203,517.** (See 3,252,733.)

**D. 207,342.** (See 3,286,216.)

# PLANT PATENTS

## GRANTED NOVEMBER 11, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

### 2,937
### NECTARINE TREE

**Leonard K. Wileman, Cutler, Calif., assignor to Reedley Nursery, Inc., Reedley, Calif., a corporation of California**

**Filed Oct. 23, 1967, Ser. No. 677,489**

**Int. Cl. A01h** *5/08*

**U.S. Cl. Plt.—41** **1 Claim**

A nectarine tree generally similar to, and a mutation of, the Red Grand (United States Plant Patent No. 1,060); the essential distinction being in the period of ripening of the large, clingstone fruit having yellow flesh, and yellow skin substantially entirely overspread with red at maturity.

### 2,938
### PLUM TREE

**George R. McFeely, 332 Wilson Road, Yuba City, Calif. 95991**

**Filed Nov. 13, 1967, Ser. No. 682,684**

**Int. Cl. A01h** *5/08*

**U.S. Cl. Plt.—38** **1 Claim**

A variety of plum tree which has a prostrate or "weeping" habit of growth, and which tree bears edible, semi-freestone fruit of relatively large size; the fruit having yellow flesh, and yellow skin substantially entirely overspread with red.

### 2,939
### AZALEA PLANT

**Howard Kerrigan, 3003 Tottterdell St., Oakland, Calif. 94611**

**Filed Jan. 16, 1968, Ser. No. 698,362**

**Int. Cl. A01h** *5/02*

**U.S. Cl. Plt.—57** **1 Claim**

1. A new and distinct variety of azalea plant of the Belgian indica type substantially as herein shown and described primarily characterized by: the unique combination of very double ruffled flower of glowing red color, plant that propagates easily, grows rapidly, is vigorous yet densely compact, sets bud heavily all over the bush, blooms evenly when forced and retains the open flowers for a long period of time.

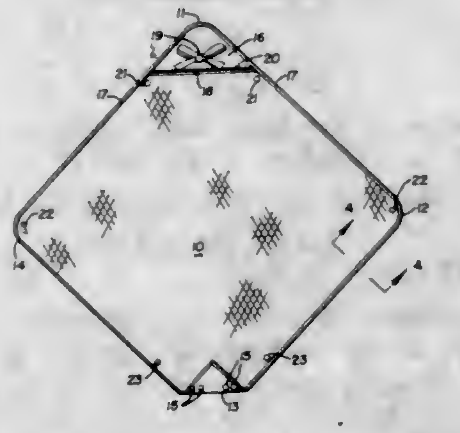
# PATENTS

## GRANTED NOVEMBER 11, 1969

# GENERAL AND MECHANICAL

### 3,477,065
### BABY WRAPPING BLANKET AND HOOD

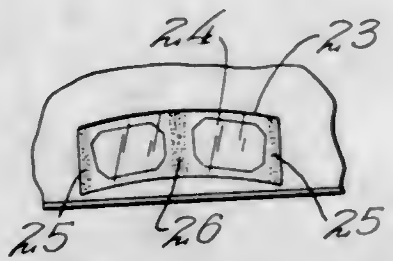
**Dorothy H. Hoover, Youngstown, Ohio, assignor to Frandee Corporation, Youngstown, Ohio, a corporation of Ohio**
**Filed Apr. 22, 1968, Ser. No. 722,859**
**Int. Cl. A41b** *13/06*
**U.S. Cl. 2—69.5** **1 Claim**



A baby wrap formed of a square of suitable material having a hood portion applied diagonally to one corner thereof and snap fasteners on the diagonally opposite corner for engagement with snap fasteners adjacent either side of said hood portion so that a baby positioned diagonally on the wrap with its head under the hood portion can be enclosed by the opposite diagonal portion of the wrap and the sides of the hood pulled around the sides of the baby's head by the fasteners. The opposite pair of corners are provided with secondary fasteners and are foldable inwardly to complete the wrap around the baby.

### 3,477,066
### COOLIE-TYPE HAT

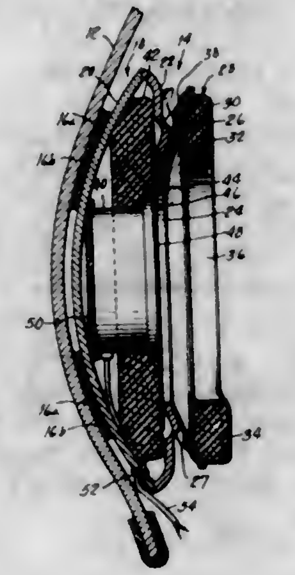
**Engelbert J. Peham, 1263 Donahue Ave., St. Paul, Minn. 55104**
**Filed Aug. 4, 1967, Ser. No. 658,529**
**Int. Cl. A42b** *1/02, 1/18*
**U.S. Cl. 2—177** **2 Claims**



A hat of conical shape such as is worn by coolies in oriental countries. One or more apertures extend through the body of the hat near the brim, the apertures providing sight openings forwardly of the eyes of the wearer. Sun shields of tinted or colored material, such as transparent plastic or flexible polarized film span the opening or openings, to admit softened or tinted light through the body of the forward portion of the hat body.

### 3,477,067
### EAR CUP WITH SPRING SUPPORTED RESILIENT SEAL

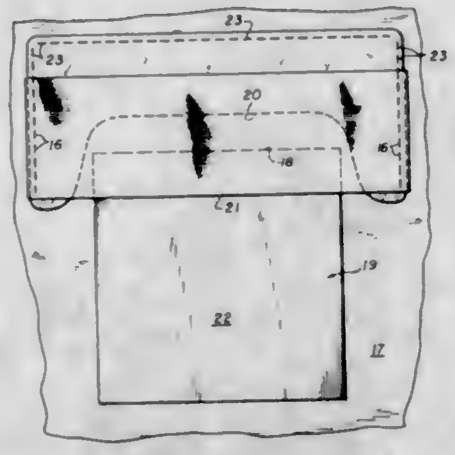
**Jackson A. Aileo, Carbondale, Pa., assignor, by mesne assignments, to Gentex Corporation, Carbondale, Pa., a corporation of Delaware**
**Filed May 5, 1966, Ser. No. 547,812**
**Int. Cl. A42b** *1/06, 3/00*
**U.S. Cl. 2—209** **10 Claims**



An ear cup in the form of a rigid shell and including a seal detachably mounted on the shell and supported on a slightly concave annular spring surrounding the ear-receiving opening. The ear cup is adapted for acoustic isolation from, and adjustable connection to, a helmet by means including first and second portions of fabric material known commercially as Velcro.

### 3,477,068
### POCKET GUARD

**Angelo Rizzo, 822 Koman Drive, Paramus, N.J. 07652**
**Filed Mar. 20, 1968, Ser. No. 714,540**
**Int. Cl. A41d** *27/20*
**U.S. Cl. 2—252** **5 Claims**



A pocket guard having a rigidly supported elastic member depending over the top edge of the pocket which it is to secure.

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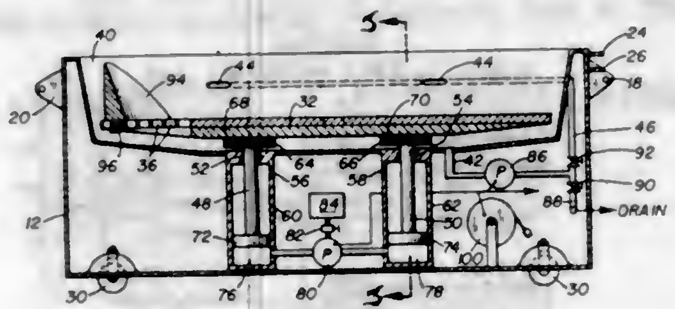
### 3,477,069
### BATHTUB WITH VERTICAL MOVABLE PLATFORM FOR HOSPITALS AND NURSING HOMES

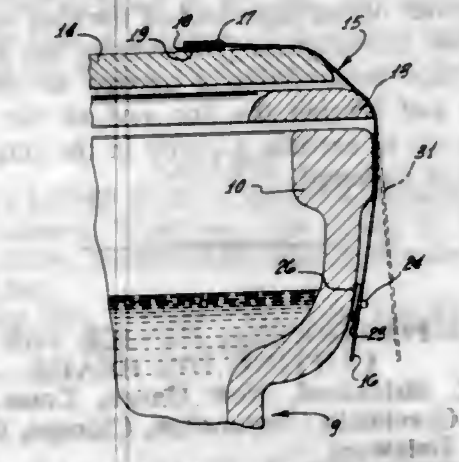
**Bryan E. Stiger, Rte. 1, Claremore, Okla. 74017**
**Filed Sept. 21, 1966, Ser. No. 580,957**
**Int. Cl. A47k** *3/12*
**U.S. Cl. 4—185** **3 Claims**



A bathing tub open atop a removable enclosure includes a vertically movable horizontal platform for supporting elderly or invalid persons and is vertically movable from a position adjacent atop the enclosure down into the tub barrier. Provision is made for cleaning the tub by pivotally supporting the platform to the vertical position.

### 3,477,070
### TOILET LID LOCK

**Diane W. Kimber, 3420 Beverly Drive, San Bernardino, Calif. 92405**
**Filed May 27, 1968, Ser. No. 732,438**
**Int. Cl. A47k** *13/24*
**U.S. Cl. 4—253** **5 Claims**



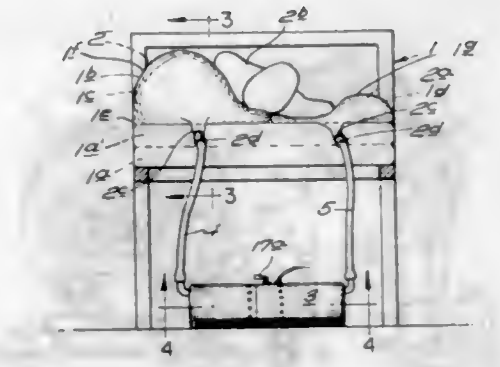
A simple flexible, plastic strap having pressure adhesive discs at its opposite ends for securing said ends respectively to the lid and bowl of a toilet fixture to deny access to the toilet bowl to irresponsible infants. One of the buttons has a readily detachable connection with the strap for freeing the lid to permit authorized use of the toilet bowl.

### 3,477,071
### DEVICE FOR AUTOMATICALLY SHIFTING THE BODY OF A PATIENT

**John H. Emerson, 44 Hopkins Road, Arlington, Mass. 02174**
**Continuation-in-part of application Ser. No. 655,125, July 21, 1967. This application Oct. 14, 1968, Ser. No. 777,953**
**Int. Cl. A61g** *7/10;* **A47c** *27/10*
**U.S. Cl. 5—61** **28 Claims**

A device for automatically and periodically shifting the position of the body of a bed patient by means of inflatable and deflatable cells applied to the patient's body so that inflation of one cell with simultaneous deflation of another will move the part of the body to which such one cell is applied relative to the part of the body to which the other cell is applied, to thereby shift the position of the body, and a mechanism for automatically and alternately inflating and deflating such cells according to a predetermined cycle to thereby shift the position of the body automatically and periodically according to a predetermined cycle.

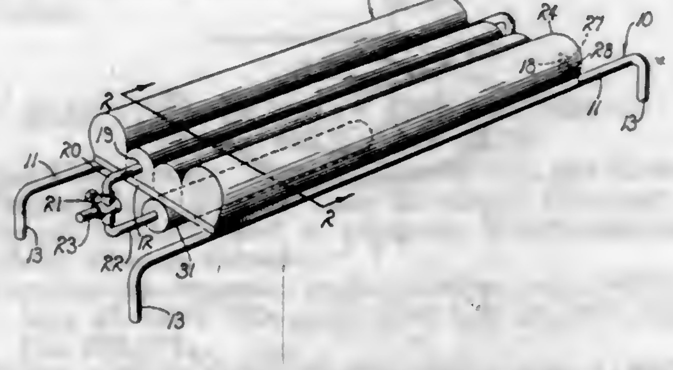
The cells are alternately inflated and deflated automatically without shifting control valves by means of a pair of turbine wheel blowers, one of which is connected to one cell and the other of which is connected to the other cell, switch means for alternately and cyclically turning on one blower and turning off the other and timer means for controlling the switch means to control the cyclical time during which each blower is turned on. Each blower is effective to blow air from the atmosphere into its cell to thereby inflate the cell when turned on and allows free passage of gas therethrough from its cell in the reverse direction when it is subsequently turned off to thereby cause deflation of the cell. Thus, communication is provided between the cells and the atmosphere at all times during cyclical operation and no shifting control valving is necessary.



These blowers are useful not only with cells which shift the position of the patient's body but also with a plurality of cells applied to the patient's body in such a way that alternating inflation and deflation of alternating cells will apply and release pressure to and from small alternating areas of the patient's body without actually shifting the position of the body in space.

### 3,477,072
### ENERGY ABSORBING MATTRESS

**James Dahle Frost, Box 775, Porterville, Calif. 93257**
**Continuation-in-part of application Ser. No. 406,656, Oct. 19, 1964. This application Mar. 4, 1966, Ser. No. 531,925**
**Int. Cl. A47c** *27/08*
**U.S. Cl. 5—348** **5 Claims**



1. An energy absorbing pneumatic mattress for supporting an object having weight and inertia, said mattress and object respectively being susceptible of energetic agitation and relative movement therebetween, comprising a flexible pneumatic envelope having a constricted outlet, and means connected to the envelope for continuously supplying fluid to the envelope at a rate sufficient to maintain a positive pressure therein to distend the same, said positive pressure and volume of the envelope being sufficient in relation to the size of the

outlet upon agitation gently to accommodate the inertia of the object and to absorb the energy of agitation and relative movement of the object and mattress short of complete collapse of the envelope and sufficient again to distend the envelope under the weight of such an object all while continuously discharging fluid through the outlet.

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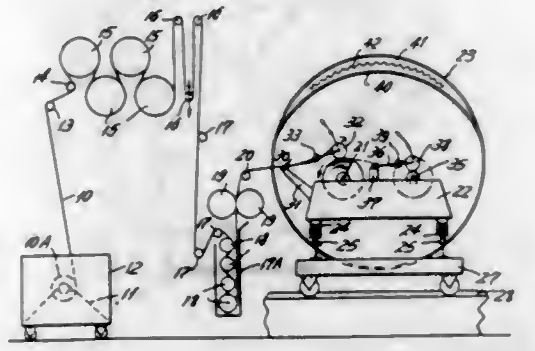
### 3,477,073
### METHOD AND APPARATUS FOR HIGH-TEMPERATURE DYEING OR FINISHING OF A FABRIC MATERIAL

**Charles Blount, Jr., Westport, Conn., and Arno Niepraschk, Edenton, N.C., assignors to United Piece Dye Works, Lodi, N.J., a corporation of New Jersey**
**Original application Sept. 7, 1966, Ser. No. 577,634, now Patent No. 3,402,577, dated Sept. 24, 1968. Divided and this application Apr. 12, 1968, Ser. No. 720,766**
**Int. Cl. D06m** *1/24*
**U.S. Cl. 8—149.1** **7 Claims**



This disclosure is directed to a method of dyeing and/or finishing a fabric material wherein the fixation of the dyestuffs or finishing chemicals in the fabric is conducted at elevated temperatures above 212° F. and at pressures above atmospheric.

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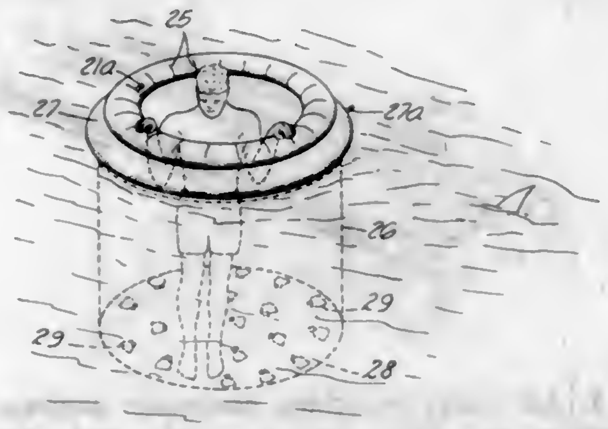
### 3,477,074
### ANTI-SHARK SAFETY DEVICE

**Perry S. Bezanis, 811 W. 29th,**
**San Pedro, Calif. 90731**
**Filed May 8, 1967, Ser. No. 642,629**
**Int. Cl. B63c** *9/04, 9/16*
**U.S. Cl. 9—11** **12 Claims**



This invention relates to an anti-shark safety device for humans which consists of floatable hollow sections provided with extended sidewalls and bottom thereby forming a cup-like structure which is unattractive to a shark by elimination or diminution of motion, visibility, sound and odor.

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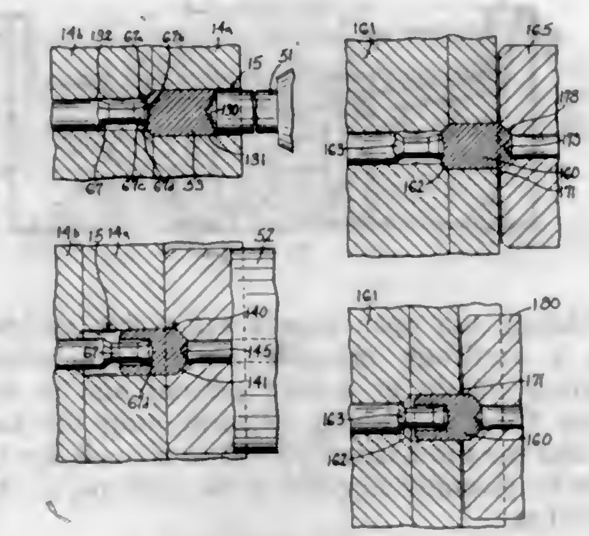
### 3,477,075
### METHOD OF MAKING SET SCREWS

**Anthony M. Putetti, Waterbury, Conn., assignor to Textron Inc., Providence, R.I., a corporation of Delaware**
**Filed Aug. 19, 1965, Ser. No. 480,955**
**Int. Cl. B21k** *1/44;* **B21d** *22/20*
**U.S. Cl. 10—10** **6 Claims**



A method of making set screws or the like which comprises the steps of inserting the entire length of a two-ended slug into a die shaped to receive said slug slidably, applying pressure to the ends of the slug while it is entirely confined within the die to taper the outside portion of the first end of the slug while, at the same time, indenting the center of the same end of the slug with an extruding pin and simultaneously indenting the second end of the slug, and maintaining a portion of the slug in the same die and forcing the first end of the slug over an extruding pin to extrude a cavity in the slug over at least a portion of its length.

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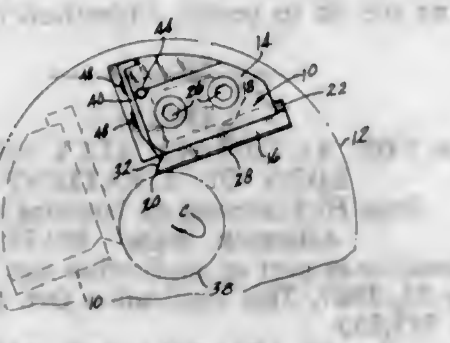
### 3,477,076
### CHASER-POSITIONING DEVICE FOR THREAD-CUTTING DIE HEADS

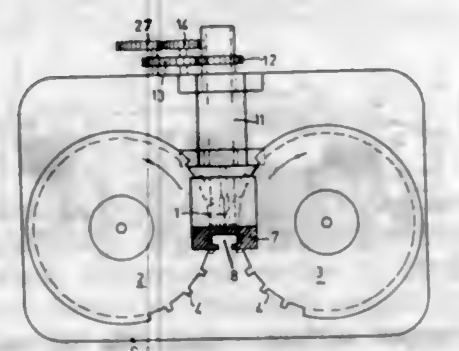
**Royce M. Strickland, New Haven, Conn., assignor to United-Greenfield Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Aug. 29, 1967, Ser. No. 664,168**
**Int. Cl. B23g** *5/10*
**U.S. Cl. 10—104** **4 Claims**



A chaser-positioning device for thread-cutting die heads with holders for each chaser, in which an adjustable positioning member is mounted on each holder for engagement with a gauging surface on the chaser adjacent the cutting tip. Once the chaser has been adjusted on the holder it can be removed for resharpening and replaced any number of times without re-adjusting the positioning stop during a prolonged threading operation.

### 3,477,077
### MACHINE FOR CUTTING INTERNAL THREAD IN PERFORATED OBJECTS

**Gerardus Cornelis van de Meerendonk, Helmond, Netherlands, assignor to Nedschroef Octrool Maatschappij N.V., Helmond, Netherlands, a limited liability company of the Netherlands**
**Filed June 5, 1967, Ser. No. 643,478**
**Claims priority, application Netherlands, June 6, 1966, 6607808**
**Int. Cl. B23g** *1/18, 11/00*
**U.S. Cl. 10—139** **9 Claims**



The disclosure is of a machine for cutting internal thread in perforated objects such as nut blanks and the like, and more particularly in a continuous series of said objects having substantially the same shape and dimensions. The machine includes a continuously rotatable tapping tool or tap for cutting thread in the bores of the objects, a feeding mechanism comprising a pair of oppositely rotatable toothed discs located in the plane of the tap at its respective sides for receiving the perforated objects and feeding them to the tap, and means for synchronizing the rate of rotation of said discs with the rate of advance of the objects as effected by said tap.

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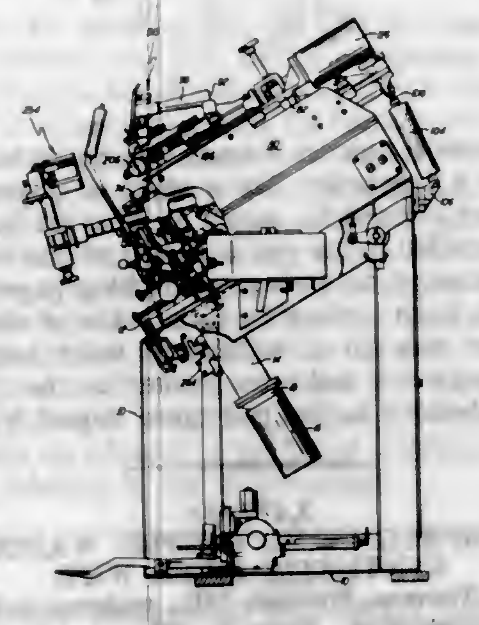
### 3,477,078
### END CLAMP FOR A SHOE ASSEMBLY

**Barry G. Andrews, Waltham, and Allen C. Harriman, Brockton, Mass., assignors to Jacob S. Kamborian, West Newton, Mass.**
**Filed Dec. 14, 1967, Ser. No. 690,527**
**Int. Cl. A43d** *21/00*
**U.S. Cl. 12—14.4** **28 Claims**



The instant disclosure is concerned with a shoe machine that includes mechanism for supporting a shoe assembly including a last having an insole located at the bottom thereof and a shoe upper draped thereabout. Means are provided for raising the shoe assembly into engagement with a substantially U-shaped yoke that is adapted to perform an upwiping operation on the shoe assembly. When manufacturing shoes of the moccasin type having a ridge or seam line formed at the periphery of the vamp of the upper, means are provided to selectively maintain the yoke in an out-of-the-way position so as to preclude its engagement with the shoe assembly during the rise thereof and mechanism is provided for this purpose. Mechanism is also provided for causing the yoke to clamp the upper to the last after the upwiping operation is effected.

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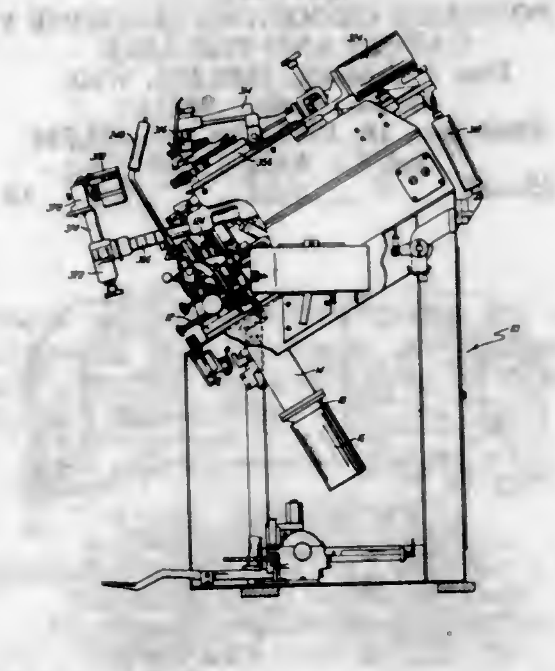
### 3,477,079
### UPPER PULLING OVER AND SHIFTING MECHANISM AND METHOD

**Normand Bergeron, Montreal, Quebec, Canada, and Allen C. Harriman, Brockton, and Antoni L. Sitko, Cambridge, Mass., assignors to Jacob S. Kamborian, West Newton, Mass.**
**Filed June 23, 1967, Ser. No. 648,360**
**Int. Cl. A43d** *21/00, 23/00, 9/00*
**U.S. Cl. 12—142** **26 Claims**



There is disclosed herein a machine and method for stretching the toe and forepart portion of an upper about a last by side pincers that grip and pull the forepart portions of the upper margin and a front pincers that grips and pulls the toe end portion of the upper margin. A handle is connected to each side pincers to enable the side pincers and the gripped forepart portions of the upper margin to be shifted in forward-rearward directions to thereby relocate the upper on the last and a heel clamp is provided that bears against the heel portion of the last to prevent twisting of the last during the shifting operation.

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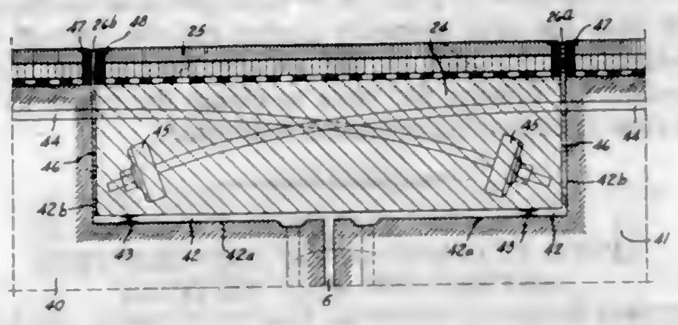
### 3,477,080
### ELEVATED HIGHWAY STRUCTURES OF PRESTRESSED CONCRETE

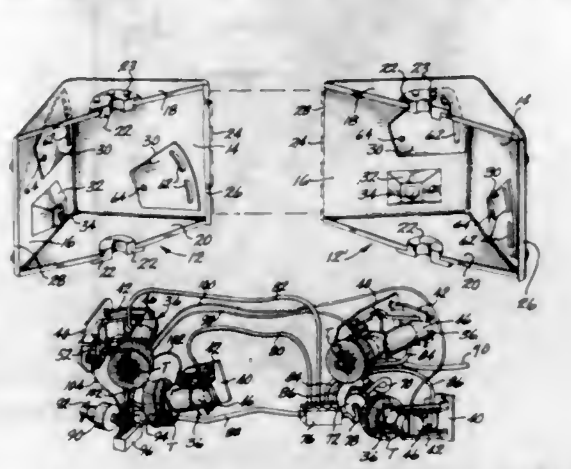
**Ulrich Finsterwalder, Munich-Obermenzing, and Klemens Finsterwalder, Socking, near Starnberg, Germany, assignors to Dyckerhoff & Widmann Kommanditgesellschaft, Munich, Germany**
**Continuation-in-part of application Ser. No. 284,797, May 29, 1963. This application July 21, 1967, Ser. No. 655,070**
**Claims priority, application Germany, June 1, 1962, D 39,057, D 39,058; Mar. 28, 1963, 1,243,711; Mar. 25, 1967, 1,658,446**
**Int. Cl. E01d** *19/06;* **E01c** *11/04*
**U.S. Cl. 14—16** **5 Claims**

Elevated highway or bridge construction where concrete elements of generally mushroom-like shape are supported on columns from which they extend in all directions to form rectangular or rhombohedral slabs which are placed at regular intervals, and the gaps between them are bridged by spans of concrete having ends defining inverted steps resting on corresponding step-like configurations formed at the adjacent ends of the supporting slabs with expansion compensating joint configurations between the ends of the support slabs and of the suspended spans.



### 3,477,081
### AIR POWERED GROOMING MACHINE FOR CABLES AND THE LIKE

**Don J. Schmidt, 5028 SW. Wait,**
**Seattle, Wash. 98116**
**Filed Dec. 18, 1967, Ser. No. 691,286**
**Int. Cl. A46b** *13/00*
**U.S. Cl. 15—88** **10 Claims**

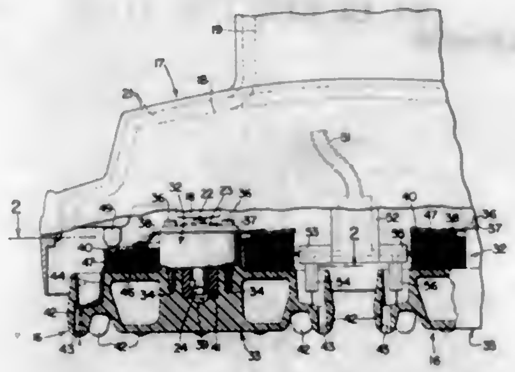


Plural air powered brush assemblies separately mounted on inner wall portions of a two part housing providing an enclosed brushing chamber. Each brush assembly includes a mounting bracket that is angularly adjustably affixable in position for changing the relationship of the plane of rotation of the brush to a cable or other elongated article movable relatively through the brushing chamber. Each air motor and brush unit is mounted on its bracket for pivotal movement towards the elongated article. An air cylinder means is connected between the air motor and the bracket for urging the air motor unit towards, and the brush thereof into contact with, the article. Hosing is provided for delivering compressed air from an outside source into one part of the housing. Additional hosing is located in the housing for delivering the air from each part of the housing into the other. Polishing wheels and other types of rotary tools may be used in place of the brushes.

### 3,477,082
### COMBINED SCRUBBING AND SHAMPOOING MEANS

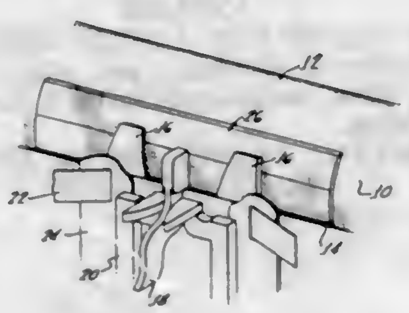
**Charles R. Odermann, Montville, and Willard A. Dix, Plainfield, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey**
**Filed Aug. 24, 1964, Ser. No. 391,590**
**Int. Cl. A47l** *11/34*
**U.S. Cl. 15—98** **9 Claims**

1. A foaming attachment adapted for use with a scrubbing and shampooing machine having a vertically disposed drive shaft and a depending camming button located adjacent to said shaft, said foaming attachment comprising cylindrical hub portion adapted to be connected to driven by said vertically disposed drive shaft, a shelf formed concentrically with respect to said hub, an annular sponge carried on said shelf, a flexible member carried by said hub, an annular squeeze plate secured to said flexible member and resting on said sponge and having an upper surface engageable by said camming button, a concentrically formed plate portion carried by said hub, said plate portion being formed with an annular trough, and a plurality of scrubbing buttons depending from the lower surface of said plate portion, at least one of said scrubbing buttons having a downwardly extending port, the upper end of which is in communication with said trough.



### 3,477,083
### TYPEFACE CLEANER

**Donald S. Park, 14615 San Esteban Drive,**
**La Mirada, Calif. 90638**
**Filed Feb. 23, 1967, Ser. No. 618,101**
**Int. Cl. A47l** *13/00, 17/00, 25/00*
**U.S. Cl. 15—104** **4 Claims**

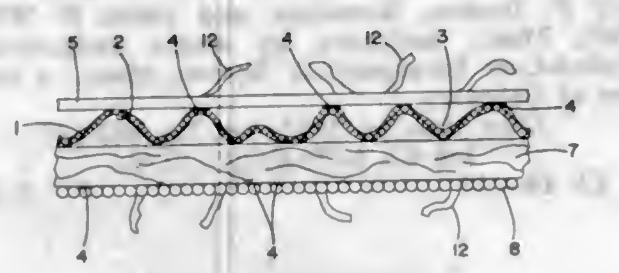


The cleaner comprises a small, flat pad which may be rolled into a typewriter like a sheet of paper, and the typefaces are cleaned by merely striking the keys against the pad. Included in the pad is a layer of clay-like cleaner material mounted on a sheet of backing paper and covered on its front surface by a thin skin of tissue paper. The cleaner material is sufficiently tacky and cohesive to cause excess ink and other matter on the typeface to become embedded in the pad upon impact by the key.

### 3,477,084
### OIL IMPREGNATED CREPED WADDING-SYNTHETIC FIBER WIPE

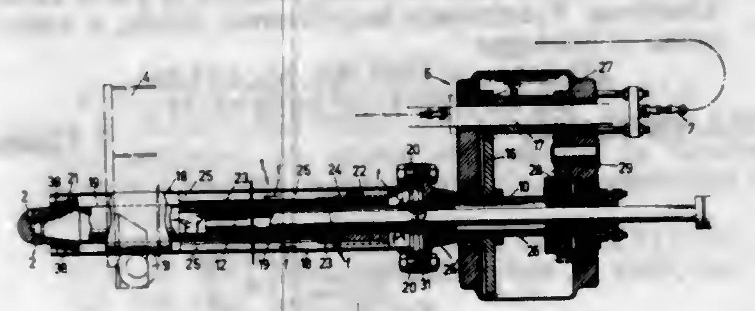
**Gordon D. Thomas, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware**
**Filed Sept. 11, 1967, Ser. No. 666,756**
**Int. Cl. A47l** *13/38;* **B32b** *3/00*
**U.S. Cl. 15—104.93** **3 Claims**

A dust cloth having a cloth-like appearance and formed basically by a sheet of creped cellulosic wadding and a web of relatively long synthetic fibers extending generally in one direction bridging peaks of the crepe; the fibers are retained on the crepe wadding by adhesive and in use serve to attract and encompass dust, retaining it between fibers and in the valleys of the crepe sheet. The cloth is oil impregnated to lubricate the fibers, to aid in abrasion resistance between fibers and to serve to provide a mild adhesive action to retain the fibers together and on the sheet. For general service the cloth is formed with two inner layers of cross-laid creped wadding and each outer surface carries a synthetic fiber web.



### 3,477,085
### SOOT BLOWING DEVICES

**Jean Eugène Julien Dulait, 30 Avenue Brugmann,**
**St.-Gilles-Brussels, Belgium**
**Filed Sept. 19, 1966, Ser. No. 580,271**
**Claims priority, application Belgium, Sept. 21, 1965,**
**669,895**
**Int. Cl. F23j** *3/00;* **F27d** *23/00;* **F28g** *13/00*
**U.S. Cl. 15—317** **19 Claims**

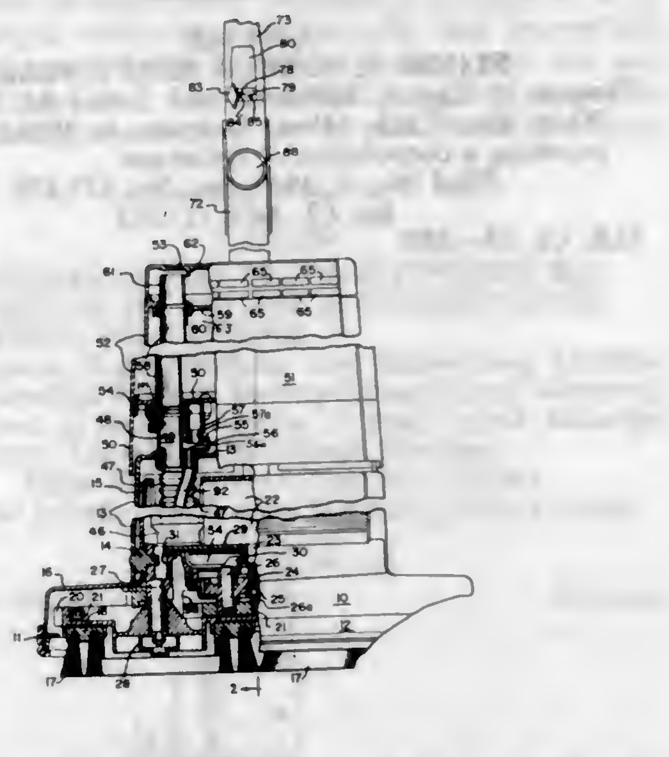


A device for blowing out the soot to clean heat exchangers, boilers, etc., said device comprising two lance telescopic sections which are supported by a trolley driven on rails. The external section is the lance carrier rotatably mounted on the said trolley while the internal section is provided with a nozzle to blow a blowing fluid inside the apparatus. The internal lance section is provided with an internal thread cooperating with a screw which is supported by the said carriage. The external face of the lance internal section is provided with catches engaging slides provided on the inner face of the lance-carrier. When on the trolley being moved the lance-carrier is rotated it drives in rotation the internal section of the lance, which on account of its thread engaging the screw moves in relation to the lance-carrier.

### 3,477,086
### FLOOR SCRUBBER AND POLISHER APPARATUS

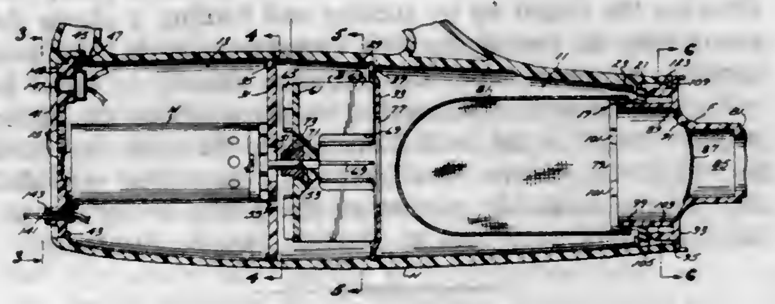
**David G. Koland, St. Paul, Minn., assignor to Whirlpool Corporation, a corporation of Delaware**
**Filed May 9, 1967, Ser. No. 637,176**
**Int. Cl. A47l** *11/16, 11/08, 11/283*
**U.S. Cl. 15—320** **2 Claims**

A combination floor scrubber and polisher apparatus adapted to be moved over a floor during use and including a casing capable of receiving and retaining a plurality of liquids in combination with separate liquid conduits for each liquid with a first liquid conduit from the casing being enclosed by a second liquid conduit from the casing and with both conduits being attached at each end to a single mounting means having separate passages therein for each liquid in order that the separate liquids are directed to their respective conduits and both conduits preferably being flexible to permit movement of the liquid containing casing relative to the floor contacting portion of the apparatus.



### 3,477,087
### VACUUM CLEANER

**Glen Robinson, Pasadena, Calif., assignor to Bon-Aire Industries, Inc., Long Beach, Calif.**
**Filed June 19, 1967, Ser. No. 646,996**
**Int. Cl. A47l** *5/24;* **B01d** *29/10*
**U.S. Cl. 15—344** **1 Claim**



A vacuum cleaner comprising an elongated housing forming a rearward motor compartment and a forward vacuum chamber. A motor is mounted on the rear side of an intermediate wall separating the chamber and compartment, and includes a drive shaft which projects forwardly through a bore in such wall. A blower is supported on the forward extremity of the shaft and includes a transverse base plate having a series of forwardly projecting impellers for blowing air from the vacuum chamber to create a partial vacuum therein. The blower also includes a series of rearwardly projecting impellers for drawing air forwardly through ventilating openings included in the intermediate wall to create a partial vacuum in the motor compartment to cause ventilating air to flow in through a vent disposed back of said motor and over the motor thereby cooling such motor.

To provide convenient structure for supporting a dirt bag, the forward end of the vacuum chamber is open and is covered by a fitting which includes a rearwardly projecting tubular receiver for mounting a bag holder. The fitting also includes a tubular retainer surrounding the receiver and terminating in a rearwardly facing edge which abuts a peripheral seal included in the bag holder and presses it against a peripheral flange formed by the housing to seal the forward end of the vacuum chamber.

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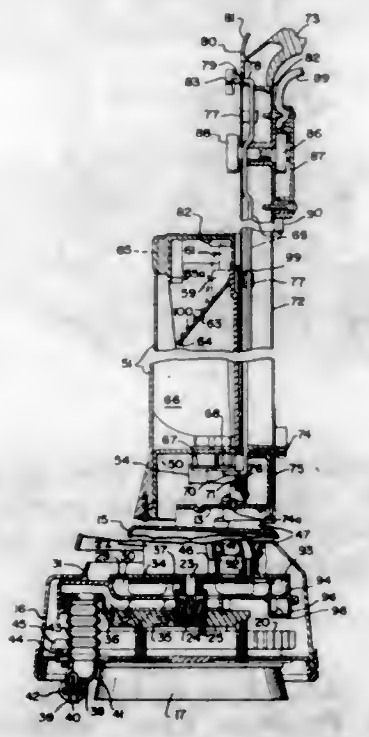
### 3,477,088
### FLOOR SCRUBBER SHAFT SEAL

**Thomas F. Eggert, Richfield, and James M. Robinson, White Bear Lake, Minn., assignors to Whirlpool Corporation, a corporation of Delaware**
**Filed May 9, 1967, Ser. No. 637,175**
**Int. Cl. A47l** *11/293*
**U.S. Cl. 15—353 1 Claim**



A floor cleaning apparatus for drawing and receiving liquid from a floor surface that has a receptacle in the apparatus above the floor for receiving liquid, an energizable pump such as an electric motor operated pump for drawing the liquid up by suction and forcing it above the pump into the receptacle with a sump means in the liquid conduit upstream from the entrance thereto in order to collect liquid from this conduit on deenergizing the pump to prevent the liquid back-flowing onto the floor, and such an apparatus where small air vent gaps are provided around the rotatable portion of the pump to replace the ordinary fluid seals and to provide electric insulation.

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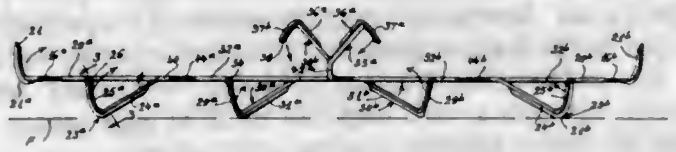
### 3,477,089
### METHOD OF AND MEANS FOR COUPLING SHEET-LIKE MEMBERS

**Jack Aaron, Tustin, Calif., assignor, by mesne assignments, to Ralph R. Erlich, Michael N. Fine, Charles P. De Vito, and Albert P. De Vito, as trustees**
**Continuation-in-part of application Ser. No. 443,794, Mar. 30, 1965. This application May 17, 1967, Ser. No. 643,010**
**Int. Cl. A47g** *27/04;* **A44b** *9/00*
**U.S. Cl. 16—16 20 Claims**



Sheet-like members are joined in edgewise relation by assembling the adjacent margins thereof face-to-face against flat frame coupling strip structure having prongs which are driven through the plane of the strip face into securing relation in the margins.

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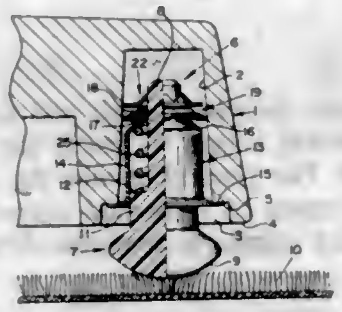
### 3,477,090
### RETRACTABLE CASTER GLIDE

**Henry F. Danico, Stoneham, and Julius B. Wilhelmi, Hull, Mass., assignors, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware**
**Filed Nov. 14, 1967, Ser. No. 682,837**
**Int. Cl. A47b** *91/00, 91/06*
**U.S. Cl. 16—44 6 Claims**



A caster glide which is seated in a hollow leg of a furniture piece has a spring loaded shoe which retracts into the leg when a load is placed on the furniture piece.

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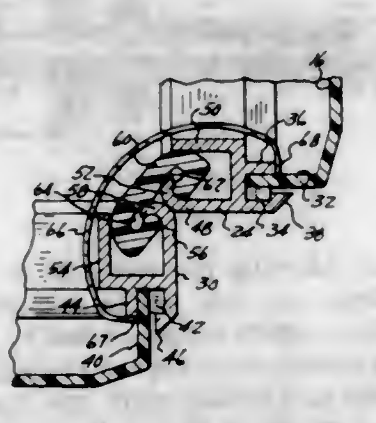
### 3,477,091
### INVISIBLE HINGE

**Alfred J. Gordon, Adrian, Mich., assignor to Great Lakes Aluminum Fabricators, Inc., Detroit, Mich., a corporation of Michigan**
**Filed Apr. 6, 1967, Ser. No. 629,006**
**Int. Cl. E05f** *1/12;* **B65d** *43/16*
**U.S. Cl. 16—180 5 Claims**



A hinge assembly employing a center extruded section having a substantially C-shaped cross section defining a pair of opposed, arcuate slots. An extruded side section is associated with each of the slots. Each side section has a pair of spaced, parallel flange sections, one of the flange sections having an arcuate lip along its extreme edge and directed toward the opposite flange section. The lips and the slots are engaged to provide a movable connection between the center section and the side sections. The center section permits at least 180 degrees relative movement between the side sections.

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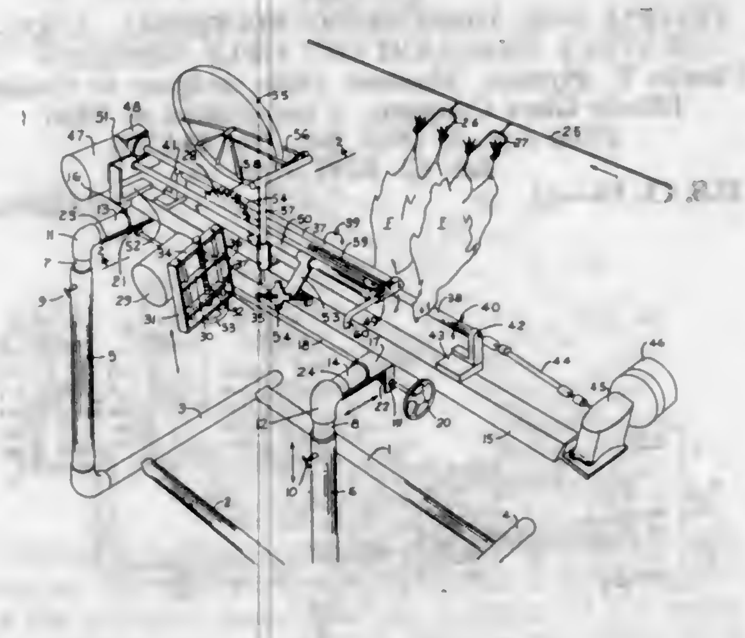
### 3,477,092
### FOWL KILLING MACHINE AND METHOD

**Lacy W. Simmons, P.O. Box 6205, Station A, Marietta, Ga. 30060**
**Filed May 29, 1967, Ser. No. 641,810**
**Int. Cl. A22b** *3/08;* **A22c** *21/00*
**U.S. Cl. 17—11 10 Claims**

A fowl killing machine having conveyor means for moving the fowl head down along a predetermined path for engagement by a rotatable disc having a serrated cutting edge is provided with positioning means in the form of a pair of spaced rollers rotating in opposite directions for receiving the necks of the fowl therebetween and for guiding the necks into engagement with the serrated cutter means. The predetermined path along which the fowl are moved by the conveyor means is parallel to the axes of the spaced rollers and the cutter element is arranged so that when it engages the neck of a fowl it causes rotation thereof in such manner as to result in the severing of both the jugular vein and carotid artery located on one side of the neck of the fowl.



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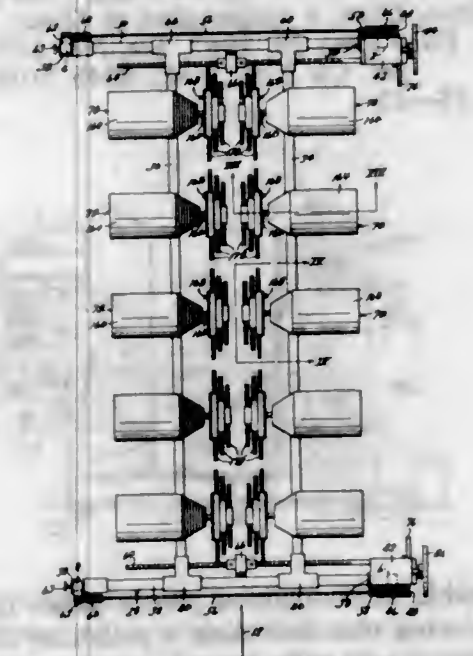
### 3,477,093
### POULTRY DEFEATHERING APPARATUS

**Ralph S. Zebarth and Henry E. Frederick, Kansas City, Mo., assignors, by mesne assignments, to Gordon Johnson Company, Kansas City, Mo., a corporation of Missouri**
**Continuation-in-part of application Ser. No. 617,925, Feb. 23, 1967. This application Sept. 7, 1967, Ser. No. 666,113**
**Int. Cl. A22c** *21/02;* **A22b** *5/08*
**U.S. Cl. 17—11.1 5 Claims**



A poultry defeathering apparatus, or "picker," comprising a series of picker heads arranged along opposite sides of the path of travel of poultry supported from shackles on a conveyor line. Each head has an axis intersecting the vertical plane of poultry travel, its rotatable about said axis, and consists of a series of cylindrical steps of graduated diameters coaxial with the rotational axis thereof, and a series of flexible picking fingers mounted in and extending radially from each of said steps. The heads are individually mounted in a frame so as to be adjustable vertically, longitudinally, and transversely with respect to the path of the poultry, and the axis of rotation of each head may be universally pivoted to adjust its angle relative to the vertical plane of poultry travel.

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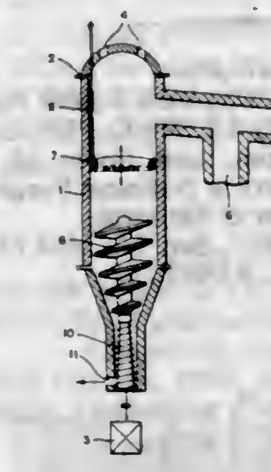
### 3,477,094
### APPARATUS FOR THE CONTINUOUS REMOVAL OF VOLATILE CONSTITUENTS FROM POLYAMIDES

**Paul Maahs, Bad Durkheim, and Hans-Georg Matthies and Friedrich Wenger, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**
**Filed Apr. 30, 1965, Ser. No. 452,243**
**Claims priority, application Germany, May 5, 1964, B 76,644**
**Int. Cl. B29j** *1/00*
**U.S. Cl. 18—2 3 Claims**



Apparatus for the continuous removal of volatile constituents from molten polyamides at elevated temperatures and subatmospheric pressures, said apparatus including a reactor having a cylindrical upper portion, a conical middle portion and a cylindrical lower portion, wherein are provided: (A) a suction pipe in said upper portion having at least one collecting container; (B) an annular slot die below the opening to said suction pipe, said slot die being movable in the direction of the main axis of the reactor and having at least one slot directed toward the wall of the reactor; (C) a motor-driven mixing member located in the lower portion of the reactor, the upper part of said mixing member being constructed as a stirrer and the lower part (located in said cylindrical lower portion of the reactor) being constructed as a screw.

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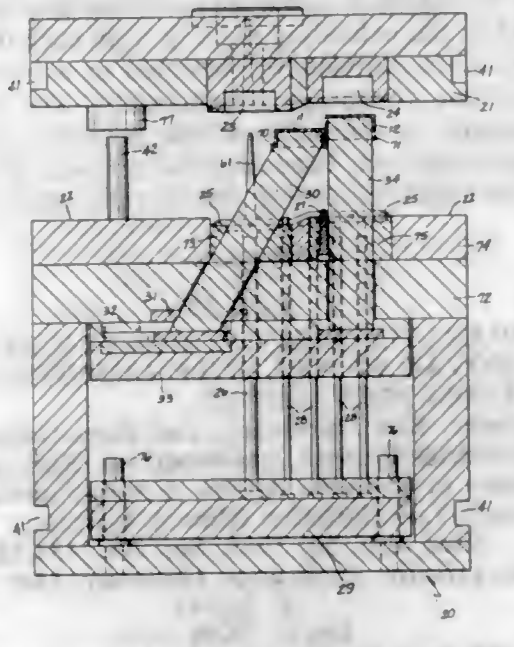
### 3,477,095
### APPARATUS FOR MOLDING AND ASSEMBLING A CONTAINER

**Albert Lensky, New York, N.Y., assignor to Swingline Inc., Long Island City, N.Y., a corporation of New York**
**Filed Dec. 2, 1966, Ser. No. 598,762**
**Int. Cl. B29c** *6/02*
**U.S. Cl. 18—2 2 Claims**

A mold is shown which includes a number of pairs of spaced cavities which are laterally and vertically spaced from one another. Said cavities are within an openable cover so that the mold may be opened. A plate is provided which is vertically movable and carries a diagonally disposed core which is also slidably movable within the plate. A second core is rigidly attached to the plate. This structure permits the molding and assembly of the parts of the container.



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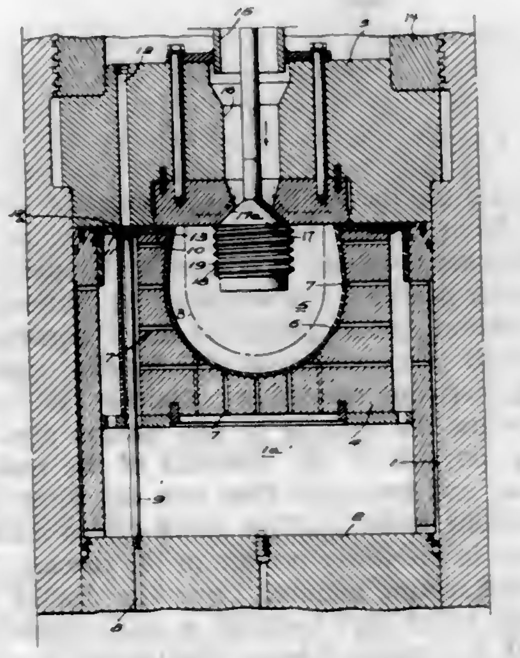
### 3,477,096
### SELF-CLOSING VACUUM PORT FOR DRY BAG ISOSTATIC MOULDING PRESS

**Arnold G. Bowles, Warren, and James M. Manelick, Youngsville, Pa., assignors to National Forge Company, Irvine, Pa., a corporation of Delaware**
**Filed July 20, 1967, Ser. No. 654,743**
**Int. Cl. B29c** *6/02*
**U.S. Cl. 18—5** **4 Claims**



An isostatic moulding press includes a mould chamber arranged to receive a charge of particulate material in granular or powdered form to be moulded after which the mould is then closed. Isostatic pressing of the charge is accomplished by means of an elastomeric tooling member one side of which lies in contact with the charge. A liquid is introduced into the press to engage the opposite side of the elastomeric member and pressure is applied to the liquid which is transmitted isostatically through the elastomeric member to the charge thus effecting the moulding. Prior to the pressurization phase, all air is exhausted from the mould chamber by means of a vacuum pump, and the port in the press through which the air is exhausted is arranged to be automatically cut off during the initial stage of pressurization by deformation of a part of the elastomeric member which serves to actuate a valve member controlling air flow through this exhaust port to its closed position.

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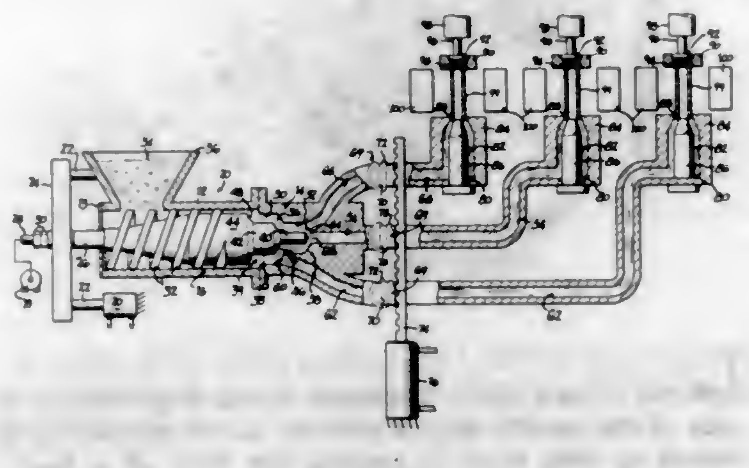
### 3,477,097
### SYSTEM FOR DISPENSING MATERIAL ACCURATELY THROUGH MULTIPLE ORIFICES

**Charles E. Plymale, Maumee, Ohio, assignor to Owens-Illinois Glass Company, a corporation of Ohio**
**Filed Apr. 1, 1965, Ser. No. 444,703**
**Int. Cl. B29f** *3/02*
**U.S. Cl. 18—12** **4 Claims**



A system is provided for accurately dispensing heated and plasticized thermoplastic material through a plurality of orifices communicating with a single source of material. The extrusion head has a terraced contour with a separate orifice being provided at each step of such terraced contour. A ram having a terraced contour corresponding to that of the chamber is reciprocal in the chamber between a first position permitting communication between the outlet orifices and the chamber and a second position isolating quantities of material between the ram and the chamber stepped contour.

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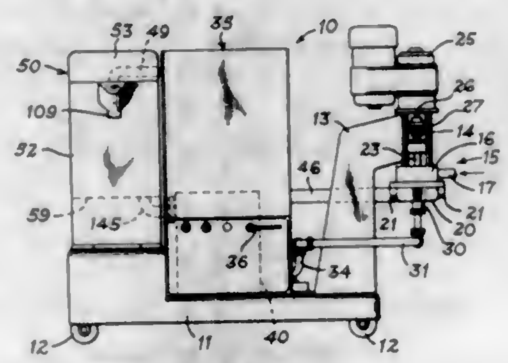
### 3,477,098
### APPARATUS FOR PRODUCING DRY PLASTIC PELLETS

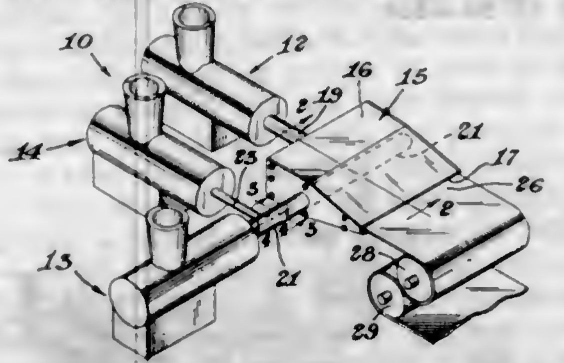
**James L. Swickard, Toledo, and Paul H. Koppehele, Fairfield, Ohio, assignors to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio**
**Filed June 20, 1967, Ser. No. 647,454**
**Int. Cl. B29f** *3/08;* **B04b** *3/00*
**U.S. Cl. 18—12** **7 Claims**



A portable self-contained plastic pellet forming, cooling and drying unit including a pelletizer for converting molten plastic into pellets and having a water supply system for cooling the pellets and conveying them in the form of slurry to a drier. A pellet drier is disclosed which centrifugally separates the water from the pellets, directs an air flow over the pellets and returns the water to the tank for recirculation.

### 3,477,099
### EXTRUSION APPARATUS

**Robert E. Lee and Harold J. Donald, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Original application Aug. 19, 1965, Ser. No. 481,016. Divided and this application Dec. 21, 1967, Ser. No. 709,513**
**Int. Cl. B29f** *3/02;* **B29c** *11/00*
**U.S. Cl. 18—13** **7 Claims**



Corrosive polymers such as vinylidene chloride polymers are extruded in a multilayer structure by encapsulating the corrosive material within a stream of non-corrosive material and subsequently shaping the stream to a film or sheet. Only a relatively small part of the extrusion equipment need be made from corrosion resistant materials.

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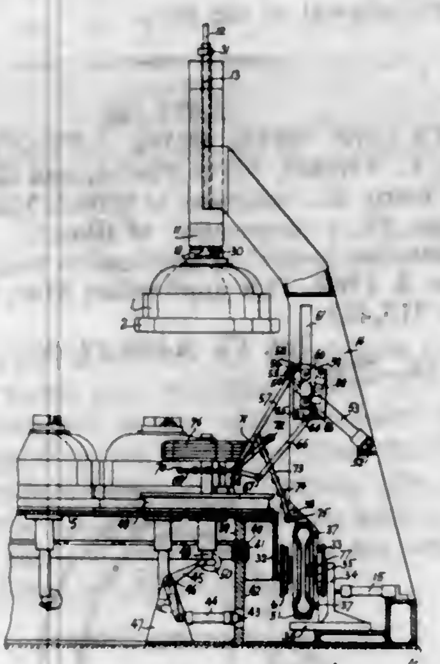
### 3,477,100
### VULCANIZING PRESSES

**Václav Pech, Jan Vebr, and Richard Spura, Chodov, Czechoslovakia, assignors to Chepos Zavody Chemickeho a Potrovinarskeho Strojirenstvi, oborovy Podnik, Brno, Czechoslovakia**
**Filed Aug. 31, 1966, Ser. No. 576,416**
**Claims priority, application Czechoslovakia, Sept. 2, 1965, 5,387/65**
**Int. Cl. B29h** *5/02*
**U.S. Cl. 18—17** **8 Claims**



Vulcanizing chambers for automobile tires circumferentially distributed on a horizontal turntable are opened at an operator's station, charged with the pre-assembled uncured tire components, and closed, and the enclosed tire components are vulcanized under heat and pressure while the chambers travel about the circumference of the turntable. The vulcanized tires are discharged into a stabilizing device mounted on the turntable, in which they are inflated while cooling during another turn of the table.

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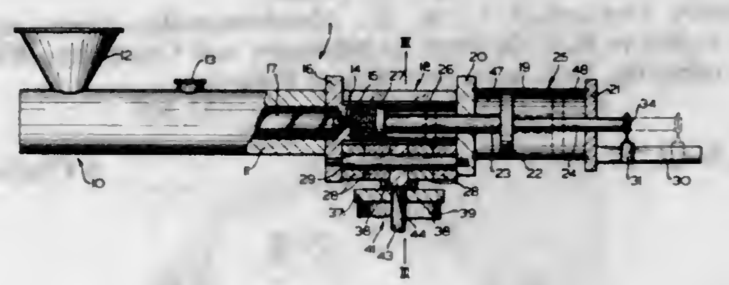
### 3,477,101
### APPARATUS FOR SHAPING RAW RUBBER BODIES

**Rudolf Paul Fritsch, Stuttgart-Weilimdorf, Germany, assignor to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a German company**
**Filed Feb. 21, 1966, Ser. No. 528,962**
**Claims priority, application Germany, Mar. 10, 1965, W 38,723**
**Int. Cl. B29h** *3/00*
**U.S. Cl. 18—30** **8 Claims**



A device for shaping form-stable generally cylindrical raw rubber bodies from thermoplastic raw rubber starting material comprises a screw conveyor for conveying the starting material while simultaneously heating the same by internal friction and/or external heat to a softening temperature, into a generally cylindrical shaping cavity one wall of which is resiliently displaceable to force the material by the counter pressure of said wall into a shape substantially filling the available space in the cavity. The thus obtained shaped rubber body is removed from the cavity while still being soft for further processing in a vulcanizing press.

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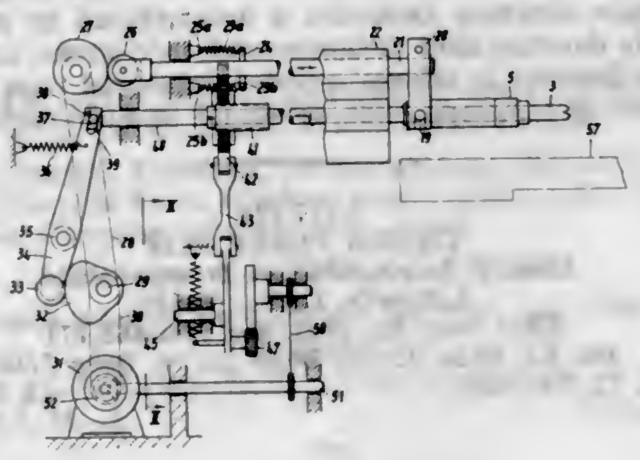
### 3,477,102
### METHOD OF MANUFACTURING TAMPONS

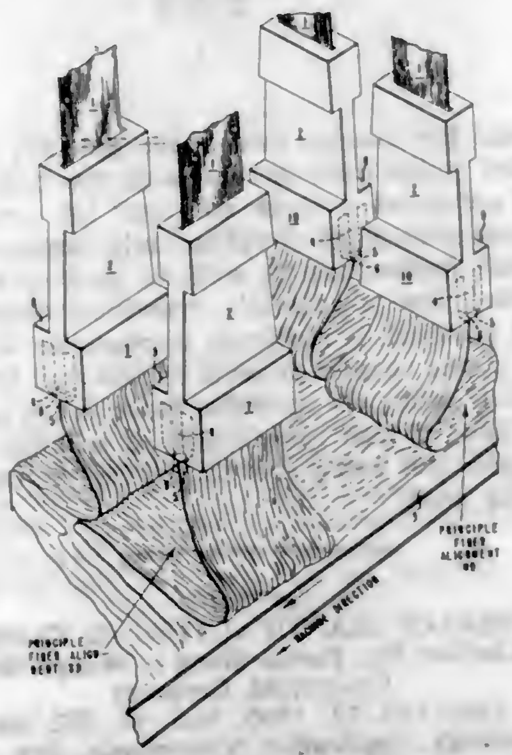
**Herbert Etz, Parksiedlung 6, Wuppertal-Langerfeld, Germany**
**Filed Oct. 21, 1965, Ser. No. 502,780**
**Claims priority, application Netherlands, Oct. 22, 1964, 6412326**
**Int. Cl. A61l** *15/00*
**U.S. Cl. 19—144.5** **2 Claims**



Tampon and apparatus and method of making such tampon, which tampon comprises a rolled piece of cotton wadding having a knotted loop of thread about a generally central portion of the wadding wherein the thread is looped about the wadding before rolling and the wadding is then folded about the thread and thereupon rolled starting from the thread-bearing portion of the wadding such as will provide such thread in the generally centrally disposed portion of the rolled wadding. The apparatus by which this wadding is made includes a rotary mandrel, a superimposed coaxial sleeve on said mandrel, means for reciprocating the sleeve, the mandrel and thread-guiding means on both the sleeve and the mandrel. According to the method described, cotton wadding is provided on a rotating mandrel, a loop of thread is slung, widthwise, about a portion of the wadding. The wadding is folded about the loop of thread to provide an annular recess suitable for superimposition upon the rotating mandrel and rolling up the thus folded wadding into a tampon having a drawstring attached thereto.

### 3,477,103
### PREPARATION OF NONWOVEN WEB STRUCTURE

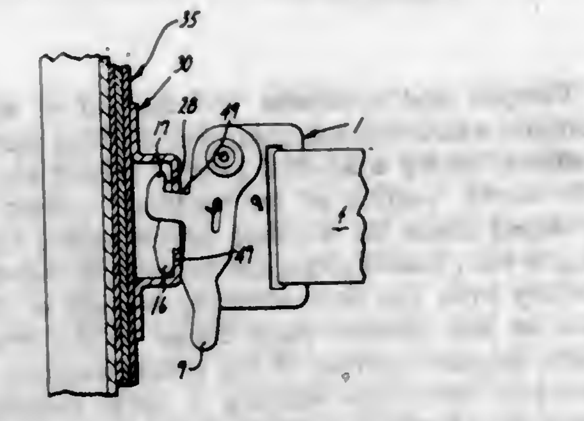
**Henry McCardell Troth, Jr., Hendersonville, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed July 7, 1967, Ser. No. 651,802**
**Int. Cl. D04h** *11/00*
**U.S. Cl. 19—163** **8 Claims**



Directional continuous filament nonwoven webs are prepared by depositing filaments from fluid streams each containing a plurality of continuous filaments, which streams have been deflected transverse to the initial fluid stream direction. Deflection is accomplished by periodically directing fluid streams at each fluid stream carrying the filaments to achieve specified transversal rates as the filaments transverse paths across the laydown receiver.

### 3,477,104
### CARGO STRAP CLIP

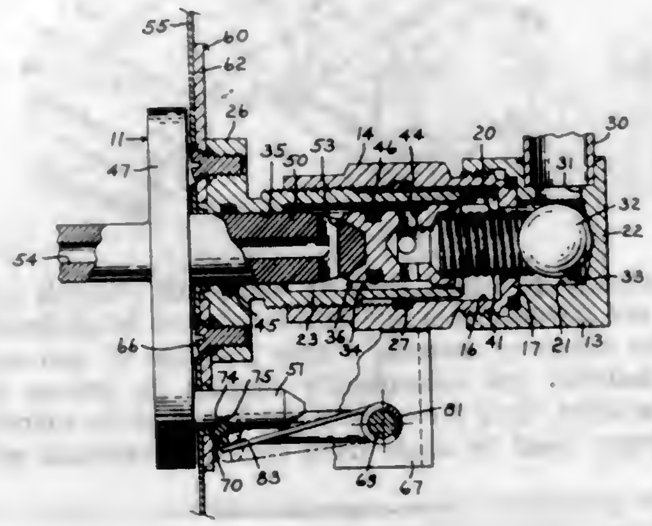
**Dean F. Lewis, 888 Las Trampas Road, Lafayette, Calif. 94549**
**Filed Nov. 22, 1967, Ser. No. 685,171**
**Int. Cl. B61d** *45/00;* **B63b** *25/24;* **B60p** *7/08*
**U.S. Cl. 24—201** **8 Claims**



This specification discloses a cargo strap clip consisting of a strap plate secured to a load holding member, a trigger member pivotally connected to the strap member, the strap plate and trigger member having projections adapted for coupling with the side walls of an opening, and means biasing the projections to a locking position.

### 3,477,105
### COUPLER ASSEMBLY

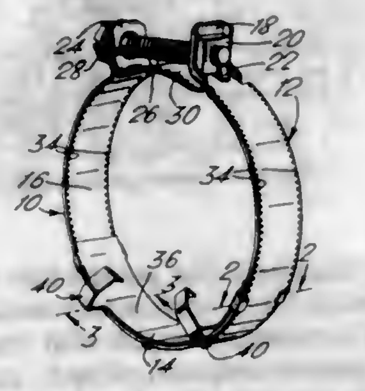
**Bidwell Chapman Cranage, Ferguson, Mo., assignor to Stile-Craft Manufactures, Inc., St. Louis, Mo., a corporation of Missouri**
**Filed Dec. 9, 1963, Ser. No. 329,319**
**Int. Cl. F16b** *21/06;* **F16l** *37/28*
**U.S. Cl. 24—230** **3 Claims**



The latching device includes a latching unit adapted to engage a compatible plug. The latching unit includes a cover plate, a bracket attached thereto and a latching arm mounted to the bracket. The latching arm comprises integrally formed hinge, latching and lever portions arranged to permit the plug to be inserted through the cover and into latched engagement with the latch arm. The hinge portion is so mounted that rotation of the hinge portion by the lever portion rotates the spring-loaded latch portion out of engagement with the plug to permit withdrawal of the plug.

### 3,477,106
### HOSE CLAMP WITH HOSE ATTACHING MEANS

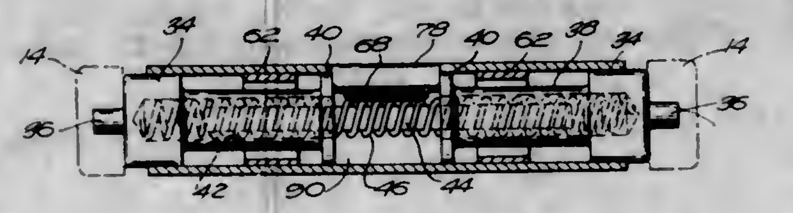
**Clarence C. Tetzlaff, River Forest, and George Chamberlain, Cicero, Ill., assignors to Wittek Manufacturing Co., Chicago, Ill., a corporation of Illinois**
**Continuation-in-part of application Ser. No. 620,472, Mar. 3, 1967. This application Mar. 22, 1968, Ser. No. 715,423**
**Int. Cl. A44b** *21/00*
**U.S. Cl. 24—279** **8 Claims**



A hose clamp of the type which has a metal strap or tension band adapted to be constricted about a length of hose to secure the hose to a spud or fitting in a conventional manner, the hose clamp being intended for securement to a length of hose as an assembly prior to the use of the said length, and the clamp being provided with hose clamp attaching means so that the clamp may be pre-spaced from the hose end and have a known circumferential disposition relative thereto. The hose clamp being of a type which has free ends intended to be brought together when the clamp is tightened by some suitable instrumentality such as a tangential screw, and the hose clamp attaching means comprising a flat strip member fixedly secured to the tension band remote from the tension ends, as by attaching the same diametrically opposite the screw, and said hose clamp attaching means including a pair of prongs of reverse bent bight configuration integral with an edge thereof, each prong having bent parts which enable the prong to be engaged over a hose end to space the clamp therefrom, and then be bent inwardly upon the inner surface of the hose and have a pointed piercing tip enter the wall of the hose in a radial direction, at approximately the axial location of the hose clamp edge so that no interference will be had with the tightening action of the hose clamp when the hose and clamp are installed in their final clamping condition. The preferred form of the structure has knurled ridges along the edges of the hose clamp tension band, and the attaching means has lugs which are bent over the edges of the tension band and pressed into engagement with the surface over said knurled ridges to effect securement and prevent movement of the attaching means relative to the band.

### 3,477,107
### ADJUSTABLE END CONNECTOR

**Clarence S. Nadeau, Seekonk, Mass., assignor to Bellavance, Inc., Attleboro, Mass., a corporation of Massachusetts**
**Continuation-in-part of application Ser. No. 709,052, Feb. 28, 1968. This application Nov. 12, 1968, Ser. No. 777,994**
**Int. Cl. A44c** *5/8*
**U.S. Cl. 24—265** **10 Claims**

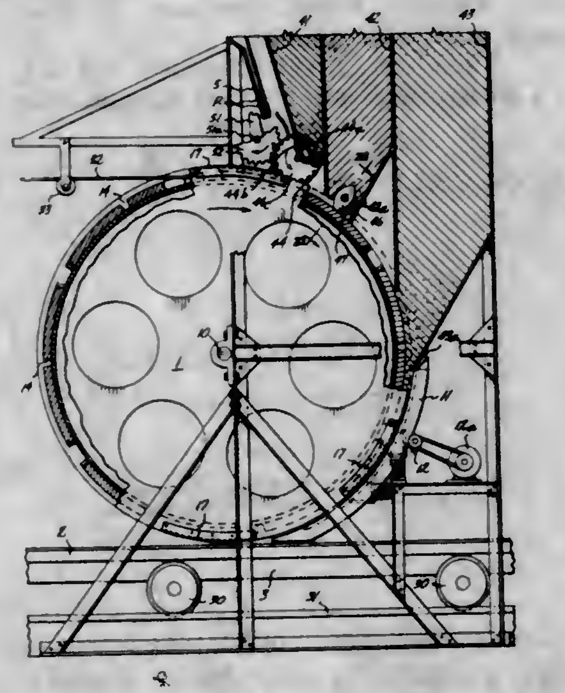


An adjustable end connector for attachment to the end lugs of a wrist watch and including pintle units that are automatically centered in the space between the wrist watch lugs regardless of the dimension therebetween, means being further provided for limiting inward movement of the pintle units so as to prevent inadvertent disengagement of the end connector from the wrist watch when a lateral force is applied thereto.

### 3,477,108
### HOUSE PREFABRICATING MACHINE

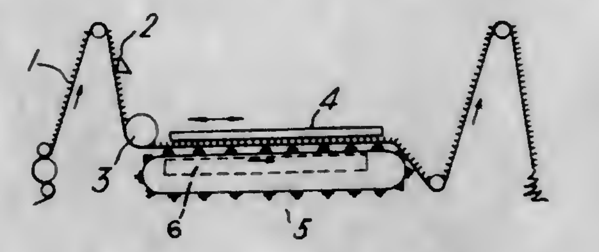
**John F. Stokes, Des Moines, Wash.**
**(1425 Puget Drive S., Renton, Wash. 98055)**
**Continuation-in-part of application Ser. No. 502,684, Oct. 22, 1965. This application May 11, 1966, Ser. No. 549,396**
**Int. Cl. B28b** *7/22, 21/56, 7/24*
**U.S. Cl. 25—41** **12 Claims**

A process and apparatus are disclosed for the continuous production of cementitious panels having a pattern of interconnected structural members on one face thereof. The members may have varying characteristics, such as different orientations on the face of the panels, different strengths and/or weights, and the presence or absence of solid reinforcement. According to the process, a cementitious mix is introduced into a mold having a pattern of indentations in one surface thereof, corresponding to the pattern of structural members on the face of the panels. In order to account for the varying characteristics among the members, the mix is introduced in a series of spaced operations in which different indentations are separately charged therewith, so as to form each of the panels in progressive stages on the mold. Then to make the process continuous, each panel is displaced from the mold onto a separate complementary platen, for curing and the mold is recharged in the foregoing manner until all of the panels are formed.



### 3,477,109
### METHOD OF MANUFACTURING SIMULATED FUR OF ACRYLIC COMPOSITE FIBER

**Yasuo Oonishi, Toyonaka, Takeshi Okazaki, Nishinomiya, and Masashi Kubo, Hirakata, Japan, assignors to Japan Exlan Company Limited, Osaka, Japan**
**Filed Nov. 4, 1966, Ser. No. 592,013**
**Claims priority, application Japan, Nov. 13, 1965, 40/69,866**
**Int. Cl. D06c** *29/00, 11/00;* **D04h** *17/00*
**U.S. Cl. 26—2** **3 Claims**



A method of treating simulated fur consisting of acrylic composite fibers, comprising subjecting said simulated fur to temperatures in the range of 50-120° C. in the presence of moisture so as to cause the fibers to become deformed, applying friction to the surface of said simulated fur so as to form a brushed surface, and heating the resultant product at a temperature of 60–90° C. to form simulated fur having interlaced fibers.

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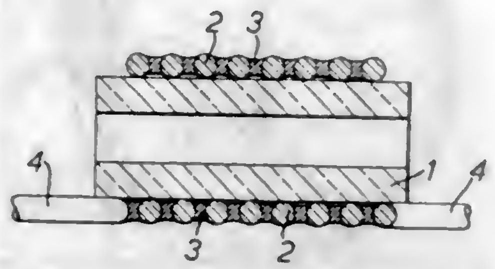
### 3,477,110

## METHOD OF MAKING ELECTRON DISCHARGE DEVICE CATHODES

**Walter John Honeyball, Chelmsford, England, assignor to English Electric Valve Company Limited, London, England, a British company**
**Filed Mar. 3, 1966, Ser. No. 531,621**
**Claims priority, application Great Britain, Mar. 11, 1965, 10,403/65**
**Int. Cl. H01j** *9/00*
**U.S. Cl. 29—25.14** **6 Claims**



An electron discharge tube thermionic cathode is made by winding a tungsten or molybdenum wire as a helix with spaced turns on a cylindrical former having a surface of alumina. Aluminate material is melted onto the wire winding to cover it, to penetrate the spaces between the turns and to amalgamate with the alumina. Thus the winding is encased in a solid mass when cooled.

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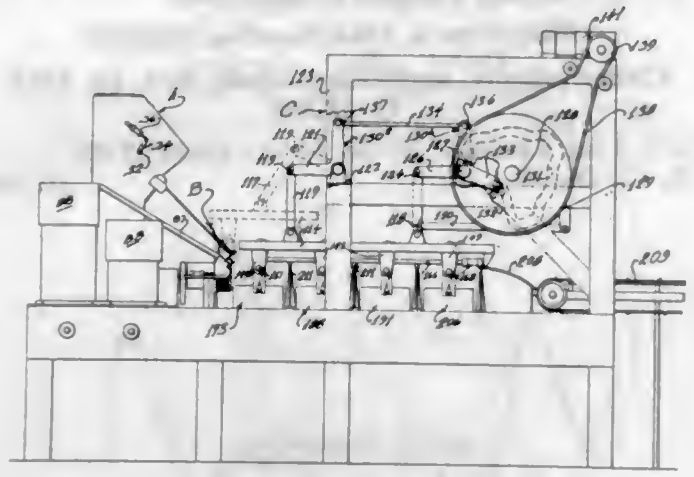
### 3,477,111

## PROCESS AND APPARATUS FOR MANUFACTURING CONCRETE FORM TIES

**Lloyd B. Smith and John T. Guinn, Jr., Birmingham, Ala., and Allan Cox, Clarksdale, Miss., assignors to The Dayton Sure-Grip and Shore Company, a corporation of Ohio**
**Filed July 12, 1967, Ser. No. 652,767**
**Int. Cl. B23p** *17/00;* **B23q** *7/10*
**U.S. Cl. 29—155** **8 Claims**



Process and apparatus for manufacturing concrete form ties in which pre-straightened blanks of wire are fed downwardly from a hopper, one by one, one end of the rod is chamfered, the wire is then threaded onto a multiplicity of washers and thereafter the ends of the wire are upset or headed, during the process of which the end washers on the wire are secured thereto, the intermediate or spreader washers are secured to the wire and the wire is crimped and coined, whereby a concrete form snap tie is provided.

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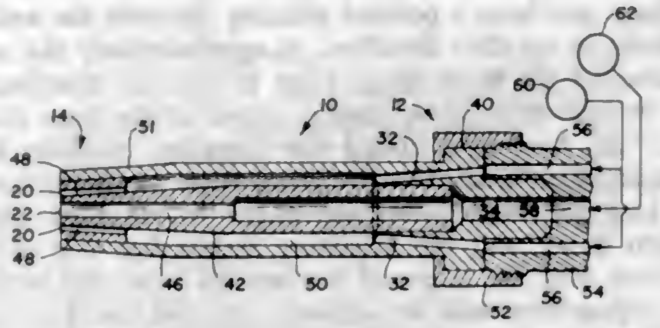
### 3,477,112

## METHOD FOR FORMING TORCH TIPS

**Stephen J. Yerkins, Glenshaw, Pa., assignor to Goss Gas, Inc., Glenshaw, Pa., a corporation of Pennsylvania**
**Original application Jan. 7, 1966, Ser. No. 519,376, now abandoned. Divided and this application Mar. 8, 1968, Ser. No. 711,710**
**Int. Cl. B21d** *53/00;* **B21k** *29/00*
**U.S. Cl. 29—157** **4 Claims**



Described is a method for forming tips of the type adapted to burn mixtures of fuel gases for heating and cutting metals, characterized in that the tips are formed from two separate integral pieces which facilitate elimination of much of the drilling required with conventional one-piece tips.

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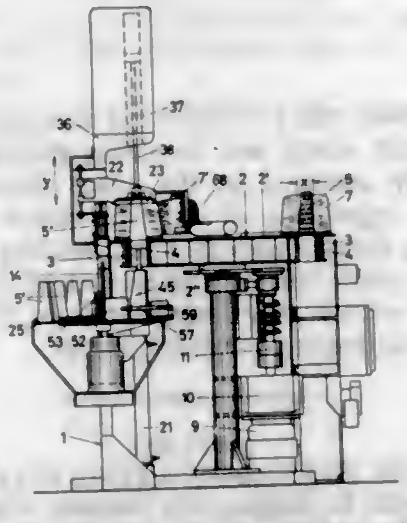
### 3,477,113

## APPARATUS FOR EJECTION AND INSERTION OF A WARP CHEESE CARRIER INTO THE AXIAL OPENING OF YARN SPOOLS OR THE LIKE

**Gerhard Tigges, Wuppertal-Cronenberg, Germany, assignor to Lebrecht Tigges, Wuppertal-Cronenberg, Germany, a corporation of Germany**
**Filed July 25, 1967, Ser. No. 655,953**
**Claims priority, application Germany, July 27, 1966, T 31,690**
**Int. Cl. B23p** *19/04;* **B23q** *7/10*
**U.S. Cl. 29—211** **6 Claims**



An apparatus for ejection and insertion of a warp cheese carrier into the axial opening of yarn spools or the like, which comprises a machine frame and a supporting table for yarn spools mounted in the machine frame. The supporting table has passage openings of about the largest diameter of a warp cheese carrier. A magazine carrying warp cheese carriers to be inserted is provided and a double-transport shed is movably disposed below one of the passage openings of the supporting table. The double-transport shed has two halves, and one of the halves is adapted to receive from above the ejected one of the warp cheese carriers and the other of the halves enters a position below the passage opening after the ejection of the warp cheese carrier. The other of the halves of the double-transport shed comprises a catching mouth receiving the warp cheese carrier to be inserted and pointing to the magazine.

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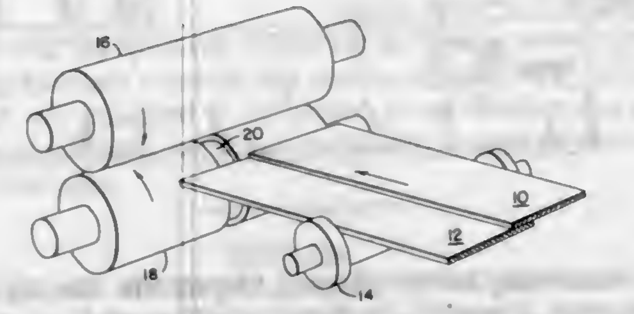
### 3,477,114

## METHOD AND APPARATUS FOR EDGE-BONDING METALLIC SHEETS

**Albert R. Kaufmann, Lexington, Mass., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California**
**Filed May 15, 1967, Ser. No. 638,286**
**Int. Cl. B23k** *21/00; 31/00*
**U.S. Cl. 29—470.1** **9 Claims**



A method and apparatus for edge-bonding metallic sheets of the same or different thicknesses are described. The metallic sheets are overlapped and fed to a pair of specially prepared rollers which simultaneously shear off a segment of one of the sheets and force the sheets together along the edges to create a strong metallurgical bond between the sheets. The shearing and bonding action are assisted by the placement of circumferentially extending grooves in at least one of the rollers which receive the sheared segment.

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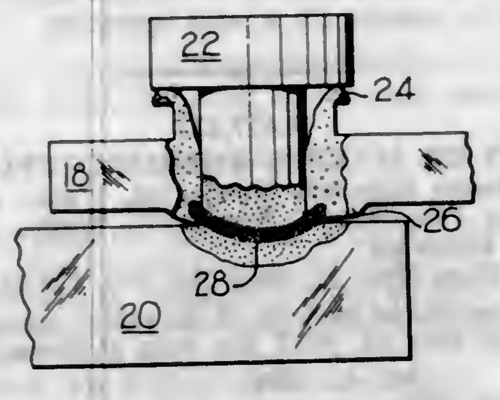
### 3,477,115

## METHOD OF FASTENING PARTS BY FRICTION WELDING

**Eugene R. Martin, East Peoria, and David I. Morton, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Mar. 17, 1967, Ser. No. 623,984**
**Int. Cl. B23k** *27/00*
**U.S. Cl. 29—470.3** **1 Claim**



Method of joining or clamping a first part to a second part by passing one end of a rapidly rotating rivet-like member through said first part and into frictional engagement with said second part to produce a friction weld between said rivet-like member and said second part.

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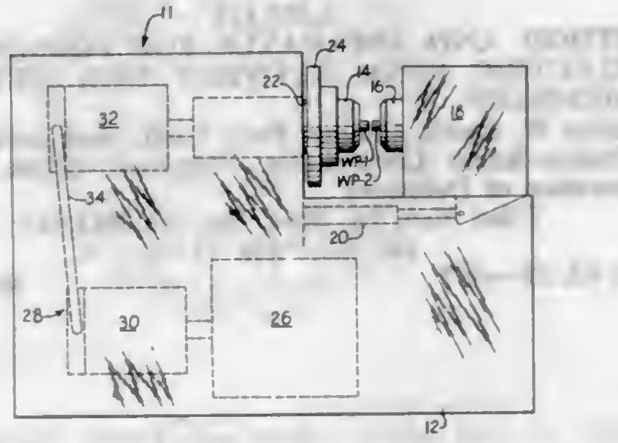
### 3,477,116

## WELDING HIGH HEAT CONDUCTIVE MATERIALS

**Marion R. Calton, East Peoria, and Carl D. Weiss, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed July 28, 1967, Ser. No. 656,924**
**Int. Cl. B23k** *27/00, 35/24*
**U.S. Cl. 29—470.3** **9 Claims**



Welding high heat conductive materials, such as copper, bronze, brass, aluminum-bronze and other alloys containing a high percentage of copper, to each other and to other metals by the friction welding process including parameters for the welding of these materials.

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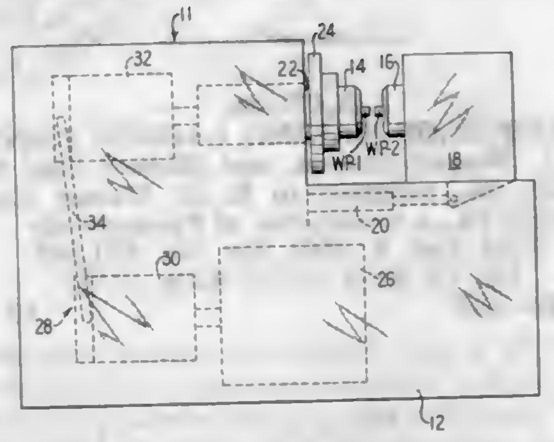
### 3,477,117

## WELDING OF DISPERSION STRENGTHENED ALLOYS

**Marion R. Calton, East Peoria, Theodore L. Oberle, Washington, and Carl D. Weiss, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Oct. 17, 1967, Ser. No. 675,873**
**Int. Cl. B23k** *27/00*
**U.S. Cl. 29—470.3** **4 Claims**



Welding dispersion strengthened alloys, such as TD Nickel (Thoria Dispersed) and S.A.P. (Sintered Aluminum Powder) to each other and to other metals by the friction welding process including parameters for the welding of these materials.

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### 3,477,118

## GLASS BEAD BONDING TO ALUMINOUS METAL

**James R. Terrill, Natrona Heights, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania**
**No Drawing. Filed Apr. 5, 1967, Ser. No. 628,549**
**Int. Cl. B23k** *31/02*
**U.S. Cl. 29—471.1** **5 Claims**

Glass beads, about a sixteenth to an eighth of an inch in diameter, can be brazed to an aluminous metal substrate by employing an aluminum brazing alloy consisting essentially of aluminum, 4 to 13% silicon and 1 to 8%, preferably 4 to 6%, magnesium. The brazing alloy may be provided in any form convenient for such use although providing such as an outer layer on an aluminum core is preferred.

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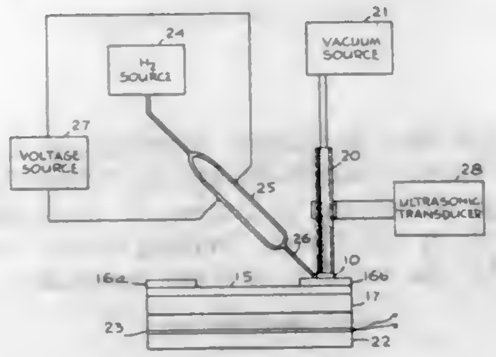
### 3,477,119
### METHOD AND APPARATUS FOR FORMING AN ELECTRIC BOND BETWEEN TWO METALLIC MEMBERS

**Charles W. Smith, Canoga Park, Calif., assignors to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware**
**Filed Nov. 23, 1964, Ser. No. 413,025**
**Int. Cl. B23k** *31/02*
**U.S. Cl. 29—497** **16 Claims**



A method of creating a eutectic bond between two members which method comprises the steps of placing the two members in contact with each other in the area where the bond is to be made, directing hot gas on the area where the bond is to be made to heat the members to an extent less than that necessary to create the bond and mechanically moving at least one of the members relative to the other to generate friction heat in the area of contact to thus create a bond between the members.

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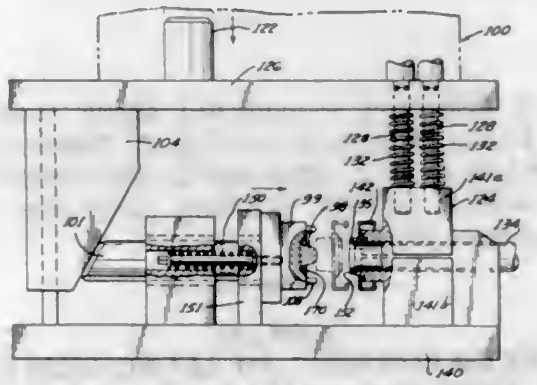
### 3,477,120
### METHOD OF MAKING LADDER JOINT

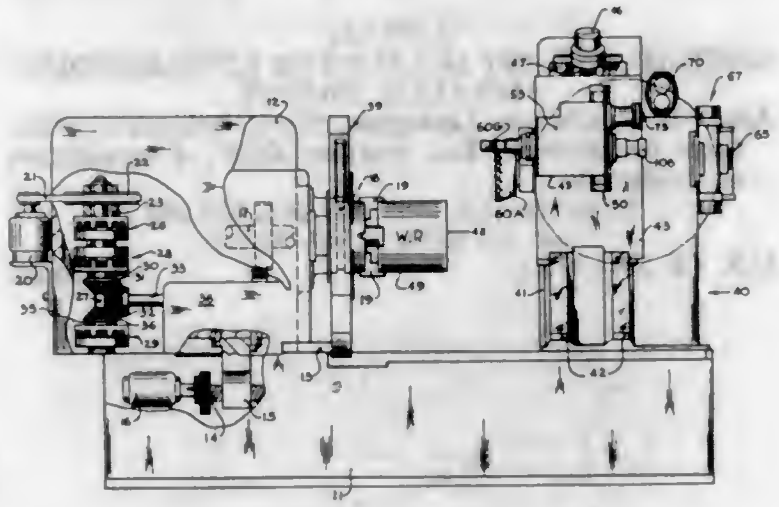
**Richard L. Werner, Sharon, and Richard Paul Sulecki, Transfer, Pa., assignors to R. D. Werner Co., Inc., Greenville, Pa., a corporation of Pennsylvania**
**Filed Aug. 9, 1966, Ser. No. 571,249**
**Int. Cl. B21d** *39/00;* **B23p** *11/00*
**U.S. Cl. 29—509** **13 Claims**



This application discloses a method of making a secure stress and strain resistant ladder joint between a rung part and rail part by utilizing a preflanged ferrule therebetween.

### 3,477,121
### MACHINING CENTER WITH DUAL FUNCTION TOOL OPERATOR

**John L. Martin, Wauwatosa, Wis., assignor to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin**
**Filed Aug. 25, 1967, Ser. No. 663,421**
**Int. Cl. B23b** *7/00*
**U.S. Cl. 29—568** **8 Claim**



A machining center adapted to perform turning operations with a stationary cutting tool, as well as milling and other machining operations requiring a rotating cutter. The tool operator has a spindle that may be fixed against rotation to accommodate a stationary cutting tool or may be rotated to operate a rotory cutting tool, selectively. The tool operator spindle is provided with a drive transmission to rotate a rotary cutting tool while it is engaged in the tool operator spindle. Both the stationary cutting tool and the rotary cutting tool are operably secured in the tool operator spindle by drawing them axially in with a draw-bar mechanism. The rotary cutting tools are provided with tapered surfaces that come into engagement with a tapered surface of the tool operator spindle to fix the rotary cutter in relationship to the spindle. To drivingly engage a rotary cutting tool, the tool operator spindle is provided with complementary splines that match up with splines located on the rear periphery of a rotary cutting tool. The stationary cutting tools are provided with tapered surfaces that come into engagement with a tapered surface of a stationary plate of the tool operator's frame to fix the stationary cutter in relationship to the tool operator's frame. The stationary cutting tools are provided with a key on their forward shank that matches with a keyway in the tool operator housing to lock it in position for a work operation.

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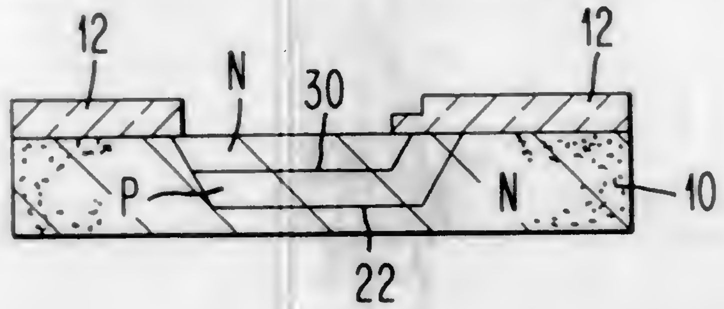
### 3,477,122
### METHOD OF MAKING THERMOCOUPLE PROBE

**Donald James Hamrick, Vancouver, Wash., assignor to Syndyne Corporation, Vancouver, Wash., a corporation of Delaware**
**Filed Nov. 27, 1964, Ser. No. 414,222**
**The portion of the term of the patent subsequent to July 11, 1985, has been disclaimed**
**Int. Cl. H01v** *1/08, 1/04*
**U.S. Cl. 29—573** **4 Claims**

The method of manufacturing a thermocouple device wherein insulated wires are inserted into a tubular body in association with metal powder. Heat is applied to melt the insulation at the ends of the wires and expose the same and form a thermocouple junction.

### 3,477,123
### MASKING TECHNIQUE FOR AREA REDUCTION OF PLANAR TRANSISTORS

**Fred Barson, Wappingers Falls, and Lubertus L. Kuiper, Fishkill, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Dec. 21, 1965, Ser. No. 515,327**
**Int. Cl. B01j** *17/00;* **H01l** *5/00*
**U.S. Cl. 29—578** **3 Claims**



A method of masking areas for diffusion to fabricate planar transistors wherein the emitter mask and a collector mask are designed to be placed in an overlapping arrangement with the resultant reduction in area of the required base area.

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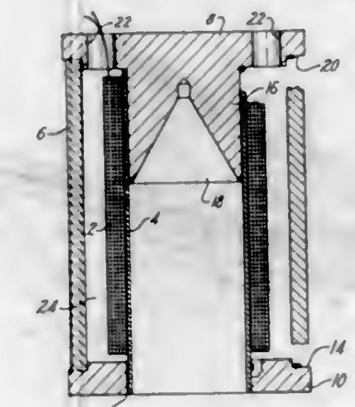
### 3,477,124
### METHOD OF MAKING AN ELECTRICAL RAPPER

**William E. Archer, Portuguese Bend, Everett L. Coe, Jr., Downey, and Leo O. Reed, Covina, Calif., assignors to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Oct. 7, 1965, Ser. No. 493,689**
**Int. Cl. H01f** *7/06;* **H02k** *15/00*
**U.S. Cl. 29—592** **9 Claims**



A method of making a magnetic assembly by forming a subassembly which is potted in an outer surrounding structure.

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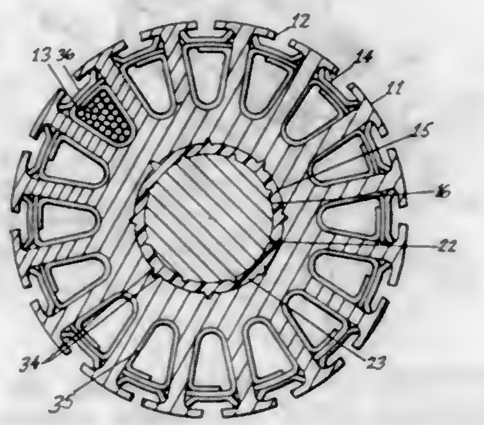
### 3,477,125
### METHOD OF MAKING A DOUBLE INSULATED ARMATURE

**Christian J. Schwartz, Springfield, Ohio, assignor to Robbins & Myers, Inc., Springfield, Ohio, a corporation of Ohio**
**Filed July 20, 1967, Ser. No. 654,839**
**Int. Cl. H02k** *15/02, 15/10*
**U.S. Cl. 29—596** **8 Claims**

This disclosure relates to a double insulated armature assembly wherein the core laminations and the commutator are insulated from the shaft by a suitable sleeve of nonconductive material. More particularly, the disclosure covers the means for achieving the foregoing in a simple and economical manner. This is accomplished by inserting a serrating tool through the bore of an assembled stack of core laminations to displace the core metal a slight amount toward the center of the bore to form minute tangs at spaced intervals about the bore. In the finally assembled condition, the tangs bite into the nonconductive sleeve thereby fixing the core against relative movement with respect to the shaft.



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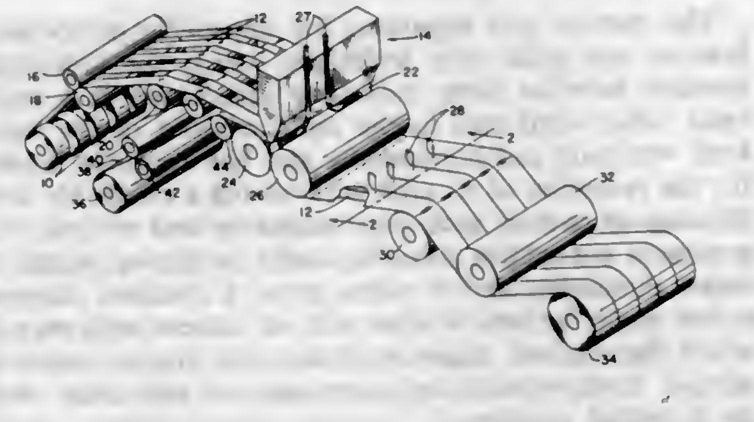
### 3,477,126
### METHOD OF MAKING STRIP CONDUCTOR MATERIAL

**Herbert K. Price, Richmond, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware**
**Filed Nov. 17, 1967, Ser. No. 684,050**
**Int. Cl. H01f** *7/06;* **H01g** *13/00*
**U.S. Cl. 29—605** **11 Claims**



An insulating coating is extruded onto a plurality of webs of electrical strip conductor material and slit to leave an overhang along each marginal edge sufficiently wide to prevent shorting of turns when the conductor is wound into coil form. In one embodiment, the insulating coating is extruded onto both sides of the conductor whereas in another form it is extruded only on one side. Initially, an auxiliary web is used to lead in the plurality of strips. Once the extrusion has commenced, the auxiliary web is severed.

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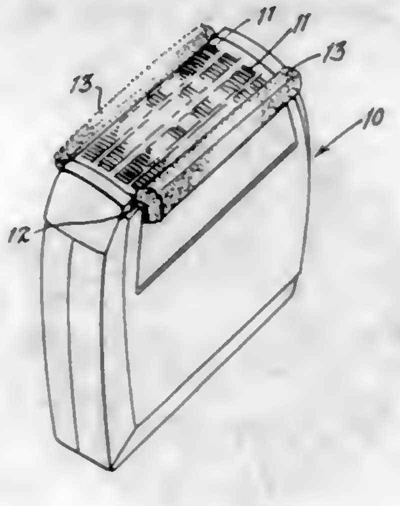
### 3,477,127
### EMOLLIENT APPLICATOR FOR ATTACHMENT TO AN ELECTRIC SHAVER

**Malachy J. Regan, 1516 York Ave., New York, N.Y. 10028**
**Filed Nov. 15, 1967, Ser. No. 683,335**
**Int. Cl. B26b** *19/48;* **B08b** *1/00*
**U.S. Cl. 30—41** **5 Claims**

This invention relates to a method and apparatus for preparing a man's face for shaving with an electric shaver, to prevent nicking, chafing and burning of the skin and pulling of the beard, such as is frequently experienced, by the application of a suitable emollient substance simultaneously with the act of shaving.



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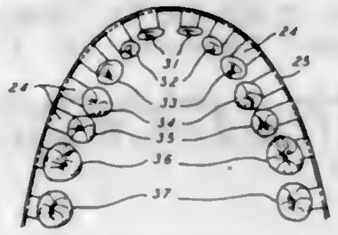
3,477,128

### METHOD AND APPARATUS FOR IMPROVED ORTHODONTIC BRACKET AND ARCH WIRE TECHNIQUE

**Lawrence F. Andrews, 1808 Cable St.,**
**San Diego, Calif. 92107**
**Filed Sept. 22, 1967, Ser. No. 669,919**
**Int. Cl. A61c** *7/00*
U.S. Cl. 32—14 **11 Claims**



The method and apparatus for improving orthodontic bracket and arch wire technique where the individual brackets have an inner radius for attachment to a tooth band which conforms to the outer contour of the tooth both vertically and horizontally and has a groove therein for the reception of an arch wire having a radius for conforming to overall arch wire geometry and wherein the groove is cut with a torquing angle, a tipping angle, an in-out dimension and in some cases, a rotation compensation angle for cooperation with an unbent arch wire in which the various angles built into the bracket result in desired force vectors for movement of individual teeth to a desired position.

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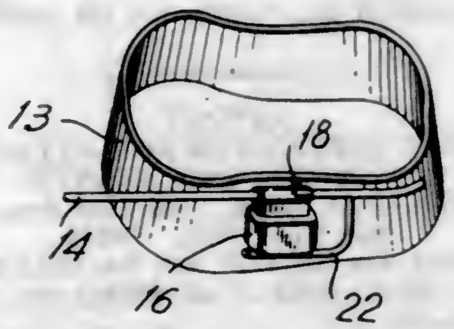
3,477,129

### ORTHODONTIC APPARATUS

**James M. Rubin, 141 W. 17th St.**
**New York, N.Y. 10011**
**Filed Oct. 24, 1967, Ser. No. 677,628**
**Int. Cl. A61c** *7/00*
U.S. Cl. 32—14 **4 Claims**



An orthodontic apparatus of the lingual arch type including an improved shaft and tube assembly in which the shaft surrounds the arch wire and is vertically inserted in the tube, with means being provided to removably secure the shaft in the tube.

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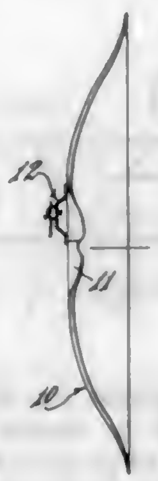
3,477,130

### BOWSIGHT

**Thomas F. Egan, 3 Hawthorne Road,**
**Gibbsboro, N.J. 08026**
**Filed Oct. 12, 1967, Ser. No. 674,824**
**Int. Cl. G01c** *15/12, 21/04, 21/10*
U.S. Cl. 33—46 **5 Claims**



This invention is concerned essentially with a sight for an archery bow which includes a carrier attached to the bow, and an elongate graduated scale connected to the carrier for selective rotary positioning relative thereto.

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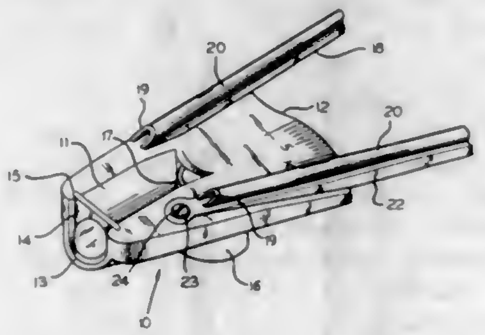
3,477,131

### POSITION FIXING INSTRUMENT

**William C. Warth, 3113 S. New York Ave., and Alfred W. Warth, 3111 S. New York Ave., both of Milwaukee, Wis. 53207**
**Filed Oct. 14, 1966, Ser. No. 586,789**
**Int. Cl. G01c** *3/10, 17/02, 19/36*
U.S. Cl. 33—66 **2 Claims**



A position fixing instrument with compass and relatively movable sighting tubes. From a divergence angle scale plate which supports the sighting tubes depends integrally a vertically elongated compass housing, and the cylindrical compass dial is so positioned at the end of a depending channel in the plate as to be readable from eye positions suitable also for sighting through both tubes.

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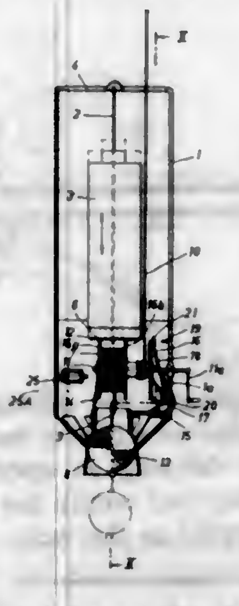
3,477,132

### DEPTH MEASURING DEVICE

**Günter Laurien, Bad Waldliesborn, Germany, assignor to Wilfried Kollmann, Werl-Aspe, Germany**
**Filed Dec. 29, 1967, Ser. No. 694,635**
**Claims priority, application Germany, Jan. 4, 1967, K 61,085**
**Int. Cl. G01f** *23/04;* **G01b** *3/28*
U.S. Cl. 33—126.6 **18 Claims**

A depth measuring device comprises a hollow housing for a vertically movable float which normally rests by gravity on one or more flanges of a reel. A sounding line is coiled onto the core of the reel and carries a weight which descends onto the bottom below a body of water when the housing is placed into water so that the float rises by buoyancy and releases the reel. The latter can form part of a counter which furnishes indications as to that length of the sounding line which passes thereover during descent of the weight. Also, the reel can carry a length of convoluted cord which can be coupled to a fishline if the user wishes to cast the depth measuring device by means of a fishing tackle. A releasable blocking device prevents rewinding of the sounding line during withdrawal of the housing from water.



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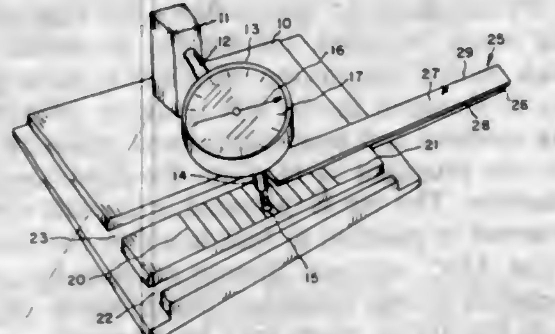
3,477,133

### MUSICAL INSTRUMENT REED MEASURING DEVICE AND METHOD FOR ADJUSTING REEDS

**Ben N. Armato, 17 Sherbrooke Road,**
**Hartsdale, N.Y. 10530**
**Filed Apr. 16, 1968, Ser. No. 721,764**
**Int. Cl. G01b** *5/00, 3/22*
U.S. Cl. 33—147 **12 Claims**



A device for comparing or measuring the thickness along transverse sections of a musical instrument reed to determine any unbalance, after which the higher side can be scraped down to balance the reed and make it playable. The device uses a dial indicator as a height sensor, and a movable reference surface on a base with indicia to allow different areas of the reed to be compared.

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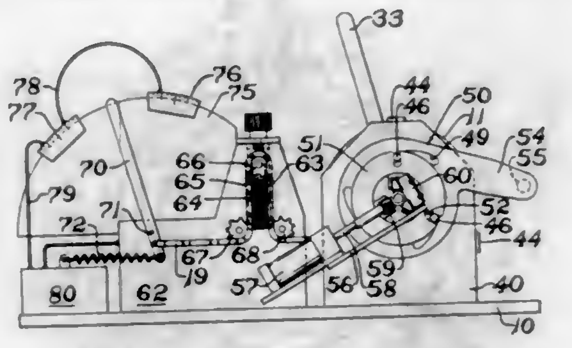
3,477,134

### HOSE TESTING APPARATUS

**Mathew Kuts, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York**
**Filed Sept. 13, 1966, Ser. No. 579,123**
**Int. Cl. G01b** *5/20*
U.S. Cl. 33—174 **9 Claims**

A hose testing method and apparatus wherein a plurality of circumferentialy spaced gauging elements cooperate to gauge the complete annular surface and cross sectional composite area wherein the individual outputs of the gauging element are interconnected to provide an output signal that is the summation of all the gauging elements.



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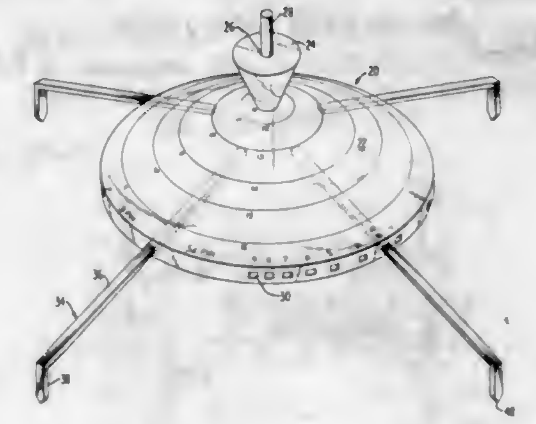
3,477,135

### CAKE DECORATOR'S GAUGE

**Ray Haapala, Dassel, Minn. 55325**
**Filed Mar. 26, 1968, Ser. No. 716,035**
**Int. Cl. B23q** *17/04;* **G01b** *3/00, 5/00*
U.S. Cl. 33—174 **9 Claims**



A hollow conical dome is provided with a downwardly projecting centering pin and radial guideways spaced at angular intervals corresponding to divisions into which the periphery of a cake is to be divided. Slidably insertable in the guideways are pins with down-turned outer ends which are used to score the cake periphery and the upper outside corner thereof. The dome adjacent the guideways is numbered according to the number of desired divisions into which the cake periphery is to be marked, and the dome is also marked concentrically into divisions of different radii by which the inward extent of the pins and, hence, the radial outward extent of their downwardly bent outer ends can be gauged.

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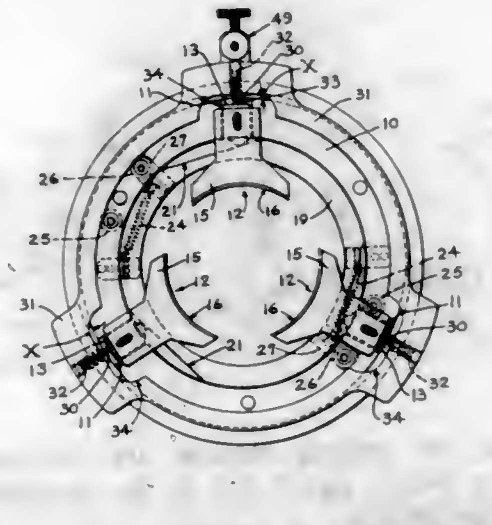
3,477,136

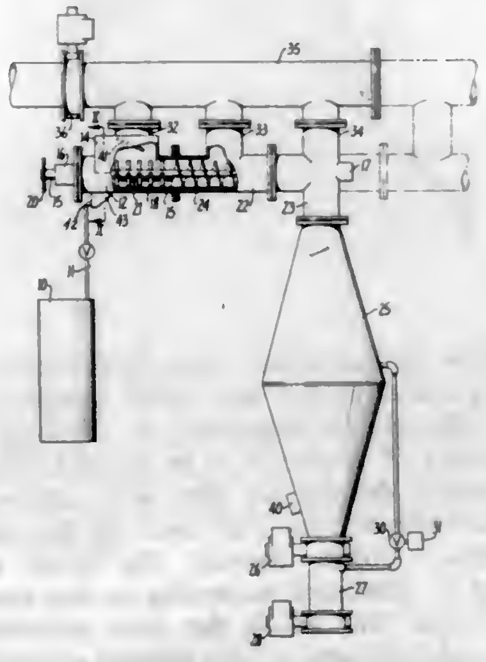
### DIMENSIONAL GAGE WITH EQUALIZED SPRING PRESSURE

**Lowell C. Johnson, Granby, Conn.**
**(820 Park Ave., Bloomfield, Conn. 06002)**
**Filed Nov. 28, 1967, Ser. No. 686,262**
**Int. Cl. G01b** *5/08, 7/12*
U.S. Cl. 33—178 **12 Claims**

The dimensional gage disclosed includes a support which radially guides the gaging elements each of which is spring biased into gaging contact. The spring bias reacts against an element which is freely movable relative to the guiding support to equalize the spring pressure on the gaging elements and thereby centralize the support or the gaging elements relatively to the other. The gaging elements are cammed radially in a direction to oppose the bias to open the same for insertion of a test part.

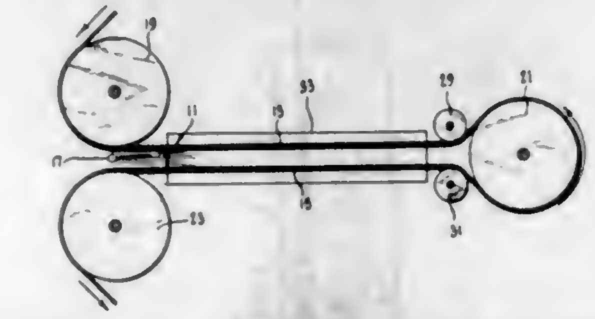


### 3,477,137
### QUICK FREEZING OF LIQUIDS FOR DEHYDRATION
**Arthur van Gelder, Ojai, Calif., assignor to Sun-Freeze, Inc., Oakview, Calif., a corporation of California**
**Continuation-in-part of application Ser. No. 607,517, Jan. 5, 1967. This application Mar. 25, 1968, Ser. No. 719,299**
**Int. Cl. F26b** *5/10, 17/20*
**U.S. Cl. 34—5** **5 Claims**



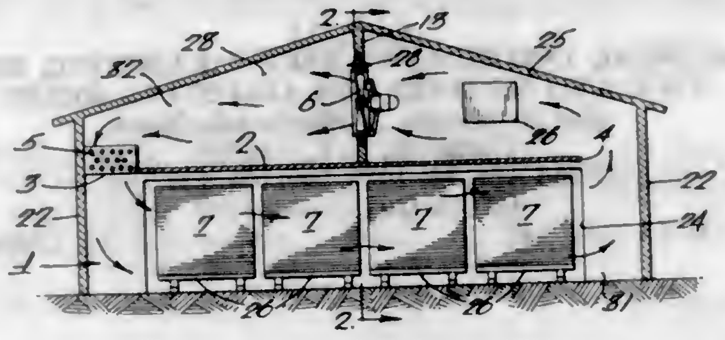
This invention is directed to preparation of liquids, with or without entrained solids, for subsequent dehydration, by feeding the product into a closed chamber under high vacuum with rapid vapor removal so that there is instantaneous freezing of the material into porous ice chunks, which are simultaneously broken into smaller sizes from pea size to powder, the frozen form being porous in nature throughout. The frozen pieces are then moved through the chamber subjected to the same vacuum vapor removal, care being exercised to insure that no more than 80% of the moisture content is removed by the time it reaches refrigerated storage or passes on for further and final dehydration. The entry of the material must be from the bottom of the treating chamber through an elongated opening, the feed being drawn by the suction of the low pressure in the chamber, interrupted only, if desired, by a proportioning device.

### 3,477,138
### METHOD AND APPARATUS FOR WEB DRYING
**Richard H. Snow, Chicago, Ill., assignor to Boxboard Research and Development Association, Kalamazoo, Mich.**
**Filed Jan. 3, 1968, Ser. No. 695,414**
**Int. Cl. F26b** *13/08*
**U.S. Cl. 34—23** **7 Claims**



A method and apparatus for drying web material by means of a flame heater in which a web is supported for movement in a path defining an open ended loop, and the flame heater is disposed within the loop for directing a flame generally parallel to the web.

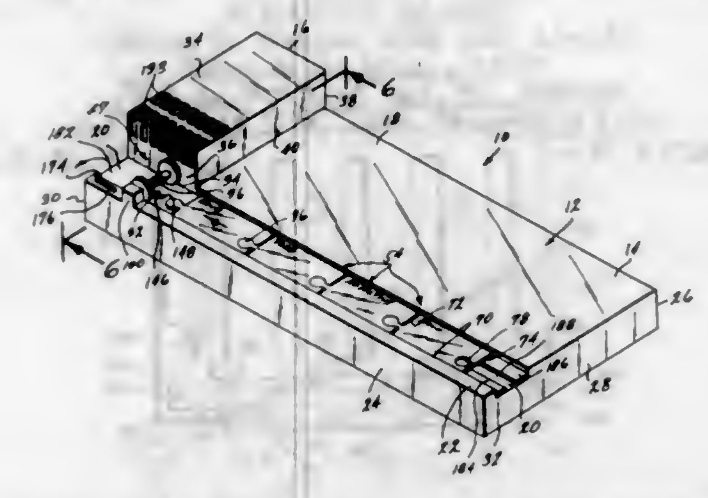
### 3,477,139
### DRYING CHAMBER FOR DRYING LUMBER
**Robert Hildebrand, Nurtinger Strasse 68, Oberbolhingen, Wurttemberg, Germany**
**Filed Dec. 7, 1967, Ser. No. 688,776**
**Int. Cl. F26b** *3/04, 25/06*
**U.S. Cl. 34—191** **5 Claims**



A drying chamber, particularly for lumber, having a drying room in which the lumber is placed and a loft through which the drying medium is recirculated. Fan means is mounted in the loft to effect circulation of the drying medium and temperature and moisture controlling means are provided to regulate the condition of the drying medium. The fan is mounted in the loft so that it may be reversed in position to face in either one direction or a direction 180° opposed thereto so that by pivoting the fan between is two positions, the direction of circulation through the drying room may be reversed.

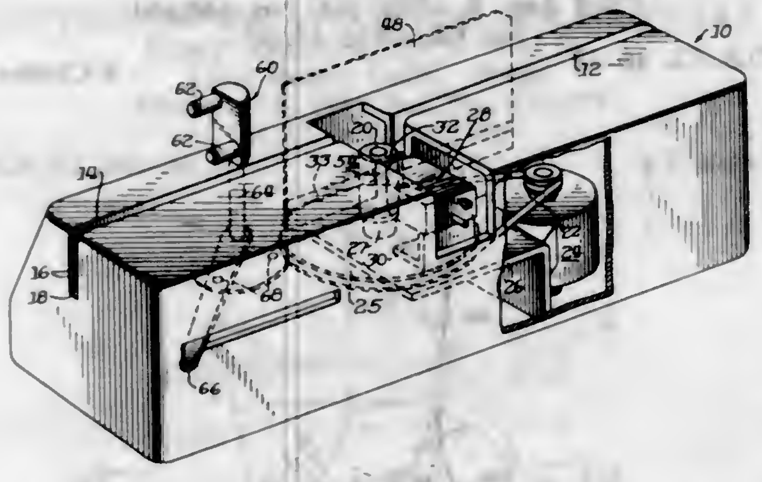
### 3,477,140
### SOUND REPRODUCING MEANS AND LINKING SOUND CARRIER MEANS TOY COMBINATION
**John W. Ryan, Los Angeles, Eugene J. Echterling, Manhattan Beach, Michael E. Golden, Los Angeles, John H. Goetz, Sherman Oaks, and Richard Shih-Teng Chang, Gardena, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of California**
**Filed Feb. 23, 1967, Ser. No. 618,164**
**Int. Cl. G09b** *1/00, 19/04;* **G11b** *3/68*
**U.S. Cl. 35—8** **8 Claims**

Individual, elongated, thin blocks have information, such as words or music, or sounds, all printed and recorded thereon. Each block includes a male connector at its front end and a female connector at its rear end for linking a plurality of blocks together so that they may be run through a player which translates the recorded information into an audible sound. Alternatively, the blocks may be run through the player individually and automatically from a hopper provided on the player. The blocks may also be provided with pictures identifying the words printed and recorded thereon. Additionally, the blocks may be color coded for grammatically identifying the printed and recorded words.



The connectors may be arrow-shaped to indicate the direction in which the blocks should be moved with respect to the player.

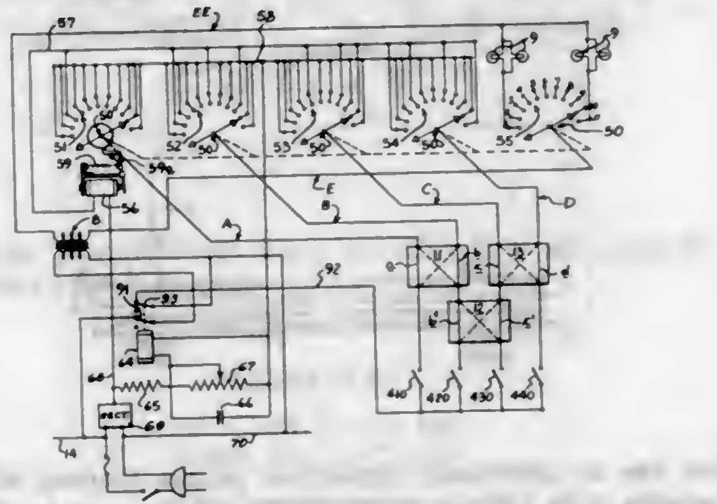
### 3,477,141
### NOTCHED CARD FOR TEACHING MACHINE
**Richard M. Davidson, Northbrook, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois**
**Filed Oct. 31, 1966, Ser. No. 590,963**
**Int. Cl. G09b** *7/06*
**U.S. Cl. 35—9** **11 Claims**



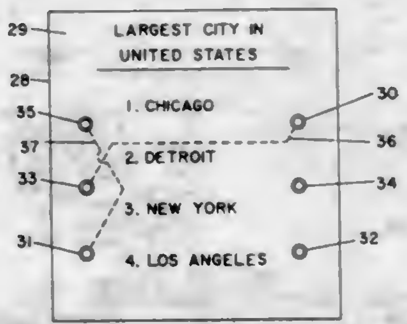
An information card has a peripheral opening to separate portions of the card engaged by the feed roller of a card handling machine. A circular card guide means is provided on the machine for selective positioning in and out of a card movement path to permit circular cards to be fed by the feed roller of the machine.

### 3,477,142
### MULTIPLE CHOICE TEACHING DEVICE
**Dudley E. Cornell III, and Robert A. O'Connell, Albuquerque, N. Mex., assignors to Teaching Machines, Inc., Albuquerque, N. Mex., a corporation of New Mexico**
**Filed July 17, 1967, Ser. No. 662,244**
**Int. Cl. G09b** *7/06*
**U.S. Cl. 35—9** **2 Claims**

A teaching machine comprising a frame for holding a sheet of question material having a series of questions each with at least four choices given as anwers, means for indicating which question the machine is set for, and depression means corresponding to the choices of answers. One of the depressions means, corresponding to the correct answer, is connected to a "correct answer line" to move the machine setting to the next question when this means is depressed. The other depression means are connected to an "incorrect answer line" to provide a time delay penalty when these means are depressed. Means are provided for recoding the "correct" and "incorrect" depression means for each new set of questions put in the machine. A student using the machine suffers a time delay penalty each time he gives a wrong answer, but advances on to the next question each time he gives a correct answer.



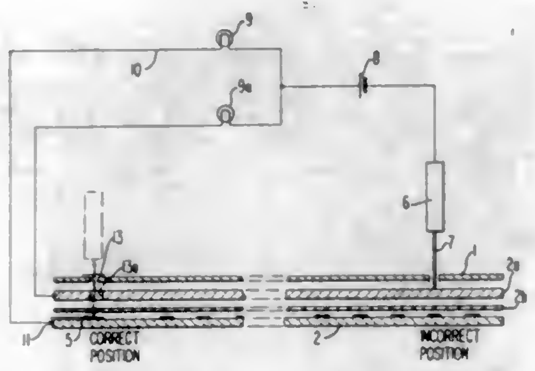
### 3,477,143
### ELECTRICAL TEACHING SYSTEM
**Robert E. Aumann, Rte. 1, Iron Ridge, Wis. 53035**
**Filed Dec. 6, 1967, Ser. No. 688,402**
**Int. Cl. G09b** *7/06*
**U.S. Cl. 35—9** **4 Claims**



An electrical teaching system including a selector device having a live terminal and a plurality of other terminals, a plurality of switches individually connected to the other terminals and to electrically activated indicator means, a question card having a plurality of electrical contacts removably engaged with the terminals of the selector device, an electrical conductor lead within the card selectively connecting the contact engaged with the live terminal and a contact engaged with another said terminal connected to one said switch, which lead completes a circuit when said switch is closed to activate the indicator means.

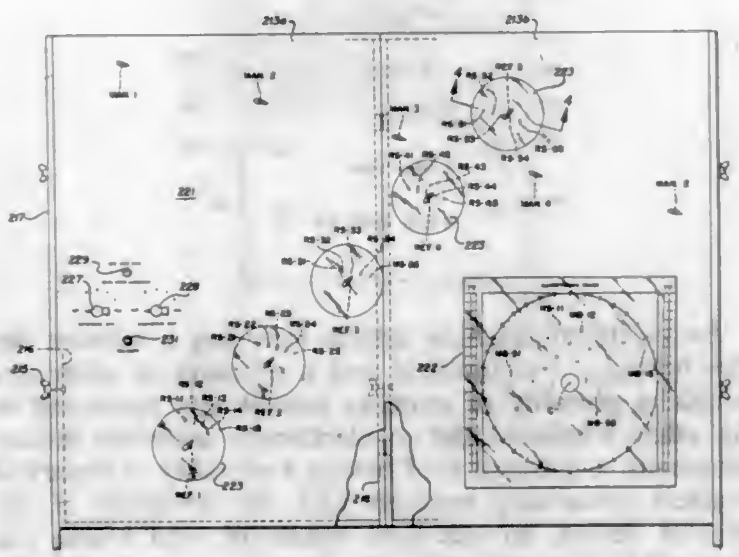
### 3,477,144
### APPARATUS FOR TEACHING KNOWLEDGE
**Gerald Barry Stillit, 15 Hill View, Primrose Hill Road, London NW. 3, England**
**Continuation-in-part of application Ser. No. 549,550, May 12, 1966. This application Apr. 8, 1968, Ser. No. 719,496**
**Claims priority, application Great Britain, Aug. 22, 1963, 33,333**
**Int. Cl. G09b** *7/06*
**U.S. Cl. 35—9** **6 Claims**

A backing member adapted to underlie a page of a book containing questions and multiple choice answers in which each possible answer has a related area which may be penetrated by a signalling probe which contacts the backing member to complete an electrical circuit indicating the correctness of the answer selected. The backing member has an electrically conductive pattern thereon which permits wide latitude in the format of the page or sheet containing the questions and answers without allowing the student to guess which answers are correct by virtue of their position on the page.



### 3,477,145
### TEACHING DEVICE

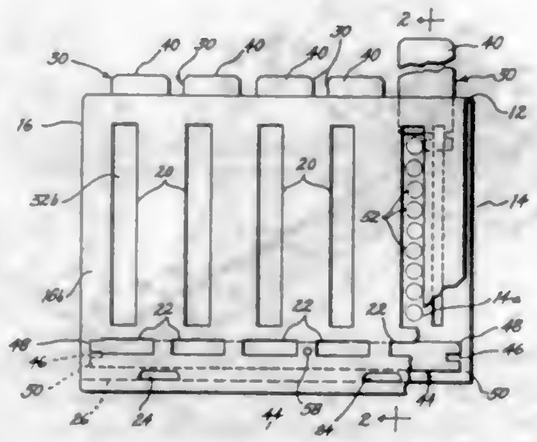
**Guy Kasten Tallmadge, Los Altos, Calif., assignor to American Institutes for Research, Palo Alto, Calif., a corporation of Pennsylvania**
**Filed Mar. 10, 1967, Ser. No. 622,218**
**Int. Cl. G09b** *23/06;* **G01c** *21/00*
**U.S. Cl. 35—19** **7 Claims**



A device is disclosed for teaching methods of solution to maneuvering board problems wherein successive positions of a maneuvering body and a reference body are displayed on a large board which also displays a standard maneuvering board. A lamp is provided in each position of the two bodies and lamps representing sightings of the maneuvering body by the reference body's radar are furnished adjacent to each position of the reference body. Additional lamps are mounted to illuminate points on the maneuvering board representing points to be plotted by the radar operator corresponding to the radar sightings. Two six-position, multi-stage switches control respectively the lamps illuminating the position of the maneuvering body and the reference body, the appropriate simulated radar blips, and the corresponding plotted points on the maneuvering board.

### 3,477,146
### TEACHING DEVICE

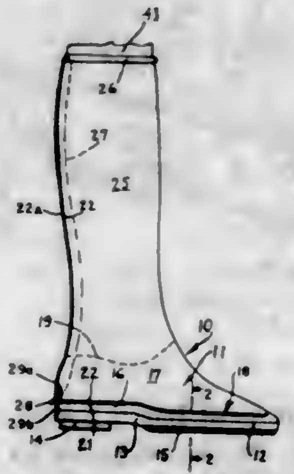
**Richard J. Warneke, 3824 Grand Ave., Western Springs, Ill. 60558**
**Filed Jan. 26, 1967, Ser. No. 611,960**
**Int. Cl. G09b** *1/16;* **G09f** *11/30*
**U.S. Cl. 35—75** **11 Claims**



A teaching device comprising a sheet having one or more slots formed therein, and movable members or slides, corresponding in number to the number of slots in the sheet, in engagement with the slots. The sheet and the movable members are provided with a learning program format comprising increments of information which can be correlated by movement of said members relative to the slots.

### 3,477,147
### SHOE COVERING AND GAITER

**William Bauer, 212 Forrester St., El Campo, Tex. 77437**
**Filed Aug. 2, 1966, Ser. No. 569,691**
**Int. Cl. A41d** *17/00*
**U.S. Cl. 36—2** **5 Claims**



The invention comprises the combination of a shoe covering and gaiter, both being of a pliant, protective sheet material, with the upper section overlapping at the rear and the overlap being preserved by the means which connects the upper and lower sections. A means is also provided to hold the lower section upon the shoe and at a predetermined elevation above the bottom surfaces of the shoe.

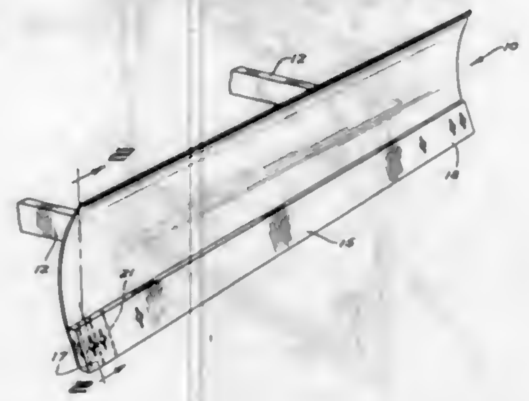
### 3,477,148
### FOOTWEAR HAVING IMPROVED BLOCK COPOLYMER FOXING ADHESION

**Jon W. Martin, Los Alamitos, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Apr. 8, 1968, Ser. No. 719,755**
**Int. Cl. A43b** *1/02*
**U.S. Cl. 36—2.5** **5 Claims**

Footwear assemblies are provided comprising a textile upper, a polymer soling and a block copolymer foxing wherein the foxing adhesion to the upper during wear, especially under wet conditions, is substantially improved by pretreatment of the uppers with polyvinyl chloride.

### 3,477,149
### SNOW PLOW MOLDBOARD WITH RESILIENT SCRAPING BLADE

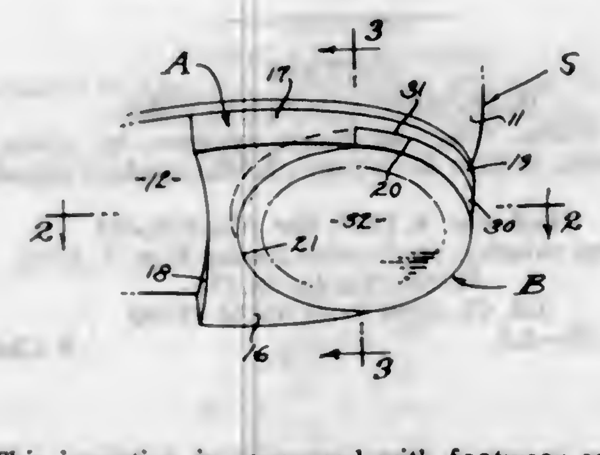
**Charles H. Wagner, 4920 10th Ave. S., Minneapolis, Minn. 55417**
**Filed Dec. 7, 1967, Ser. No. 688,865**
**Int. Cl. E01h** *5/06;* **A01b** *15/00;* **E02f** *3/76*
**U.S. Cl. 37—50** **3 Claims**



A road clearing blade to be carried on the moldboard of a snow plow being wedge-shaped in horizontal section formed of a tough hardened rubber-like abrasive resistant material being sufficiently resilient to resist nicking and breaking and having wear resistant inserts for bottom surface reinforcement.

### 3,477,150
### CONTROLLED ROTATION HEEL FOR FOOTWEAR

**Henry Shepherd, 122 W. Hill St., Long Beach, Calif. 90806**
**Filed Oct. 9, 1967, Ser. No. 673,797**
**Int. Cl. A43b** *21/433*
**U.S. Cl. 36—39** **6 Claims**

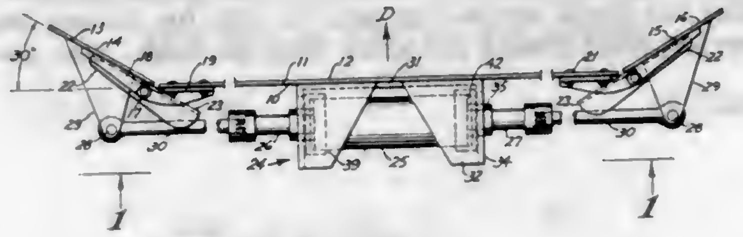


This invention is concerned with footwear and relates specifically to the heels of shoes, it being a general object of this invention to provide a replaceable heel that automatically revolves so as to wear evenly and that is controlled so that rotation is stopped when pressure is applied by means of a person standing thereon.

### 3,477,151
### SNOWPLOW

**Robert C. Zanella, 67 Western Ave., Sherborn, Mass. 01770**
**Filed July 6, 1965, Ser. No. 469,398**
**Int. Cl. E01h** *5/06;* **E02f** *3/76*
**U.S. Cl. 37—42** **15 Claims**

A snowplow having a primary blade straddled by a pair of pivotal auxiliary blades connected for simultaneous unidirectional movement. The auxiliary blades automatically assume relative position wherein one is aligned with the primary blade when the other is at an angle of less than 180° therewith.

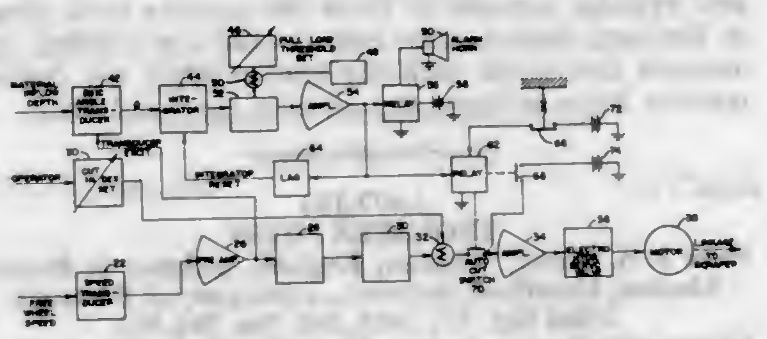


### ERRATUM

For Class 37—50 see:
Patent No. 3,477,149

### 3,477,152
### CONTROL OF EARTHMOVING MACHINERY

**Henry R. Ask, Wapping, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 537,556, Mar. 25, 1966. This application Dec. 28, 1966, Ser. No. 605,441**
**Int. Cl. E02f** *3/84;* **G01g** *23/18;* **A01b** *63/14*
**U.S. Cl. 37—129** **27 Claims**

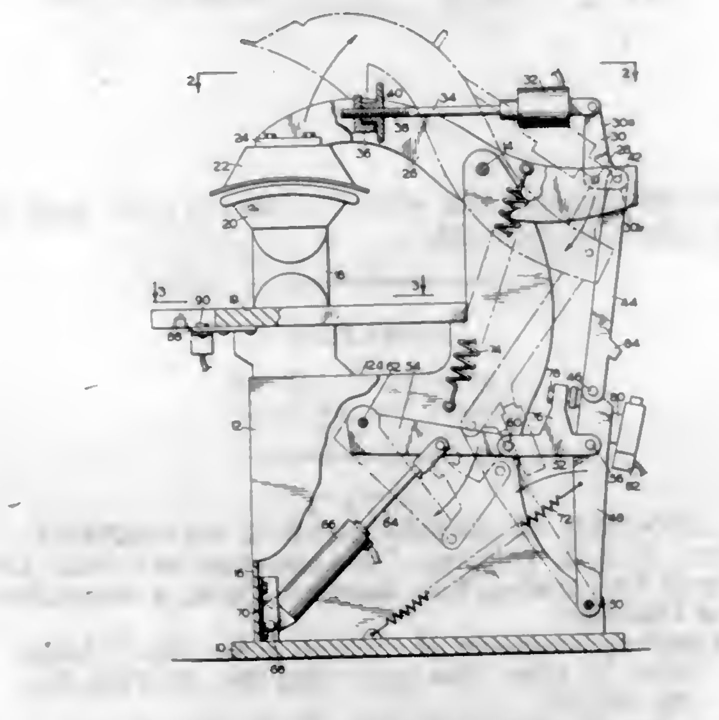


A control for earthworking and moving vehicles wherein the actual forward speed of the vehicle is measured and compared with a preselected speed, the selected speed being a function of the characteristics of the material being worked, to provide a speed error signal which is employed to control the position of an earth working blade on the vehicle to thereby maintain the optimum depth of cut of the blade. The system also measures the amount of material which has been loaded on self-loading equipment in order to provide a fully loaded condition indication, the fully loaded indication being employed to lift the blade out of the cut.

### 3,477,153
### POWER OPERATED CLOTHES PRESS

**Emil Dachtler, 8757 SE. Con Battin, Portland, Oreg. 97266**
**Filed Aug. 8, 1966, Ser. No. 571,074**
**Int. Cl. D06f** *71/08*
**U.S. Cl. 38—41** **2 Claims**

The invention concerns a clothes press having power means for moving a pressing head into a buck. The pressing head is mounted on an arm pivotally attached to the frame of the press. Pivotally connected to a bell crank lever mounted on the end of the arm opposite from the pressing head is an upper link of an upright toggle mechanism. The lower link of the toggle mechanism is pivotally connected to one end of a substantially horizontal link in turn connected at its other end to one end of another substantially horizontal link pivotally anchored to the frame of the press. A first fluid operated cylinder is connected to the last mentioned link for operating the toggle mechanism and the arm for moving the pressing head toward and away from the buck. Also pivotally connected to the bell crank lever is a second fluid operated cylinder the piston rod of which is connected to a forward portion of the arm. The second fluid operated cylinder operates to move the pressing head closer to the buck than the first cylinder and has a length adjustment connection with the arm to apply the desired pressing force between the pressing head and buck.



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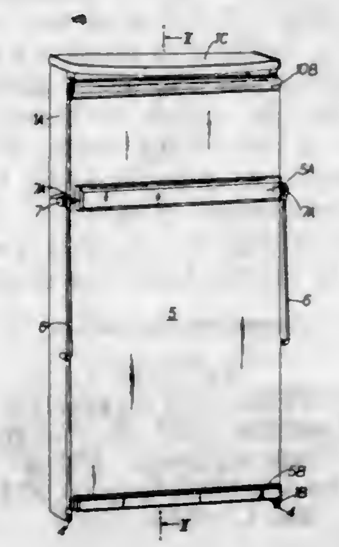
3,477,154

### TROUSERS PRESS

**Peter J. S. Corby, Windsor, England, assignor to Rondel Limited, Hamilton, Bermuda, a company of Bermuda**
**Filed Oct. 17, 1968, Ser. No. 768,450**
**Claims priority, application Great Britain, Oct. 23, 1967, 48,016**
**Int. Cl. D06f** *73/00*
**U.S. Cl. 38—71 6 Claims**



A trousers press has two flat members between which trousers are pressed. Each of two stretcher bars is movably mounted on a respective one of the two flat members, for gripping the upper part of the trousers between the stretcher bars during closing of the press and while the press is closed.

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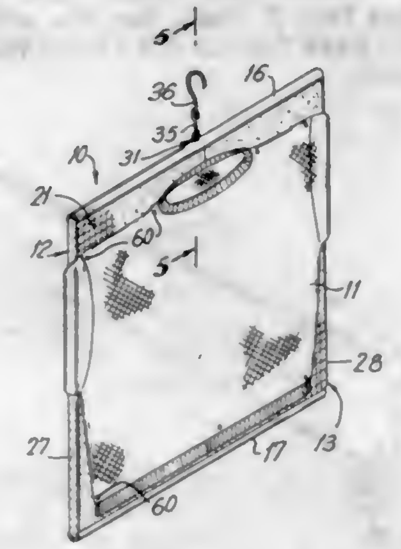
3,477,155

### TEXTILE STRETCHING AND DRYING DEVICE

**Nellie Ancona Feld and George J. Feld, both of 100 Ave. P, Brooklyn, N.Y. 11204**
**Filed June 24, 1968, Ser. No. 739,378**
**Int. Cl. D06c** *3/08;* **A41h** *5/00*
**U.S. Cl. 38—102.9 15 Claims**



This device comprises a pair of similar panels of water non-absorbable closed cell expanded foam, held in coplanar coextensive positions by top and bottom channel members slidable thereon. Means is provided to keep the panels from moving out of a common plane at their meeting edges. The device is of knockdown construction for easier shipping, packaging and to reduce bulk. The front and rear surfaces of the panels are grooved for air circulation and serrated to roughen the surfaces so that a sweater will cling better to said surfaces. The grooves are in equally spaced apart vertical and horizontal rows to permit measurement. The front and rear surfaces and outer side edges and end edges of the panels are pressed to harden said surfaces and edges. A hook is mounted on one channel for hanging the device.

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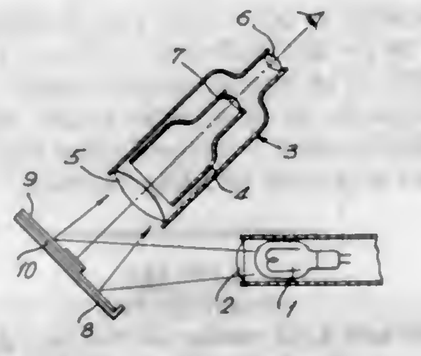
3,477,156

### IDENTIFICATION SYSTEM

**Masashi Naito, Tokyo-to, Japan, assignor, by mesne assignments, to Eizo Komiyama, Ichikawa-shi, Chiba-ken, Japan**
**Filed Apr. 4, 1967, Ser. No. 628,483**
**Claims priority, application Japan, Sept. 5, 1966, 41/58,193, 41/58,194**
**Int. Cl. G09f** *3/02;* **B42d** *15/00*
**U.S. Cl. 40—2.2 9 Claims**



An identification system such as a credit card system where a sheet, such as a card, carries indicia identifying the individual to whom the card was issued. The identifying indicia on the sheet is covered by a filter which is permeable only to light of a wave-length which is beyond the visible spectrum, so that the filter appears opaque in the visible spectrum and renders the identifying indicia covered by the filter invisible except when exposed to the light which is of a wave length beyond the visible spectrum.

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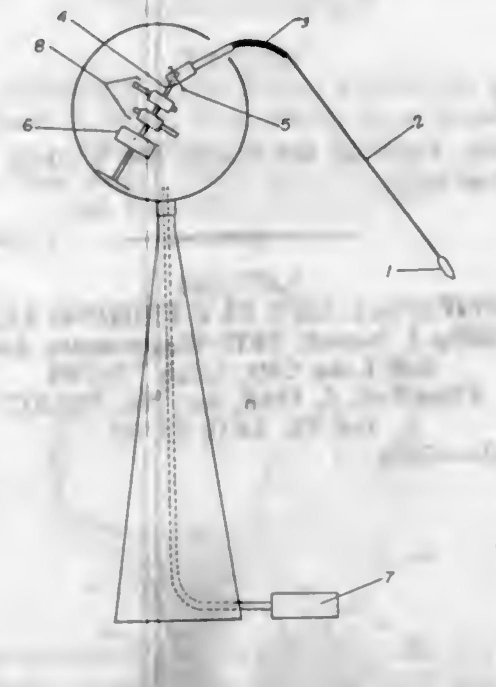
3,477,157

### ADVERTISING DISPLAY

**Elmer G. Paquette, Madison, Wis., assignor to Johan Bjorksten, Madison, Wis.**
**Filed Dec. 14, 1967, Ser. No. 690,521**
**Int. Cl. G09f** *19/02, 13/30*
**U.S. Cl. 40—126 4 Claims**



An advertising display simulating a firefly, comprising a flashing light source fixed at the end of an elongated, flexible, irregularly or randomly moving member.

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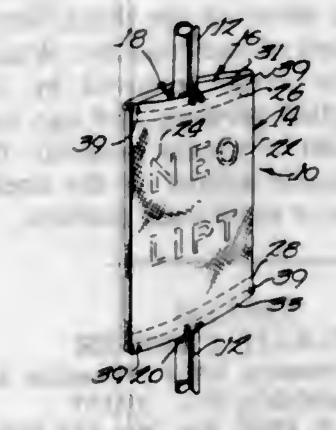
3,477,158

### DISPLAY BANNERS

**Laurence R. Chandos, 306 Summit, Winfield, Ill. 60190**
**Filed Jan. 29, 1968, Ser. No. 701,295**
**Int. Cl. G09f** *7/22*
**U.S. Cl. 40—128 8 Claims**



A display banner includes a flexible panel for receiving advertising material, a pair of sleeves forming two oppositely-disposed marginal edges at the top and bottom of the banner, and a pair of elastic strips extending across the banner between the panel and the sleeves. The sleeves receive battens which are attachable to a pole by means of a mounting device with the elastic strips maintained in a stretched condition.

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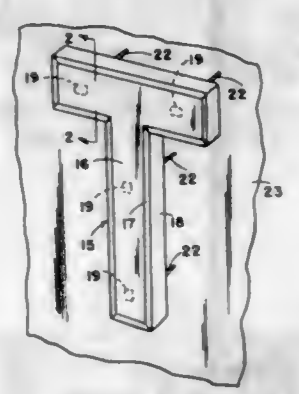
3,477,159

### SIGN LETTER MOUNTS

**William Bank, 3025 Ocean Ave., Brooklyn, N.Y. 11235**
**Filed Nov. 28, 1967, Ser. No. 686,053**
**Int. Cl. G09f** *7/18*
**U.S. Cl. 40—140 10 Claims**



A sign letter is provided with elongated fastener means one end of which is provided with a nut or other head means with said nut or head means being retained within a C-shaped bar secured to the rear face of the letter The other end of said fastener means is adapted to be forced into the desired supporting surface.

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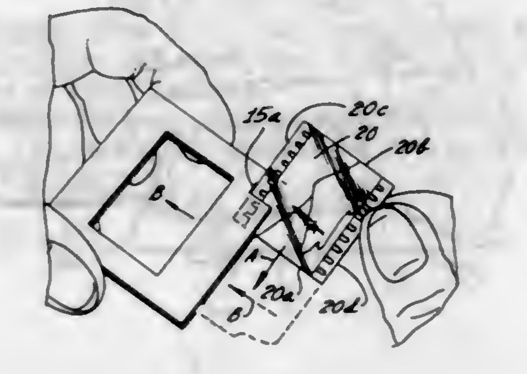
3,477,160

### SLIDE BINDER

**Thomas C. Clark, 8410 Gulana Ave., Apt. 2, Playa del Rey, Calif. 90291**
**Filed Jan. 12, 1968, Ser. No. 697,335**
**Int. Cl. G09f** *1/12*
**U.S. Cl. 40—152 12 Claims**



A slide binder is formed from two similar flat, overlying members forming a cavity with registering windows and entrance slot. Gripping bosses suspend a transparency in the cavity spreading the transparency flat at one window. The cavity permits thermal expansion of the transparency.

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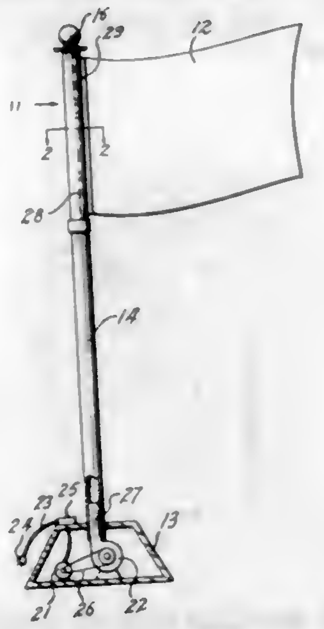
3,477,161

### FLAG HOLDER

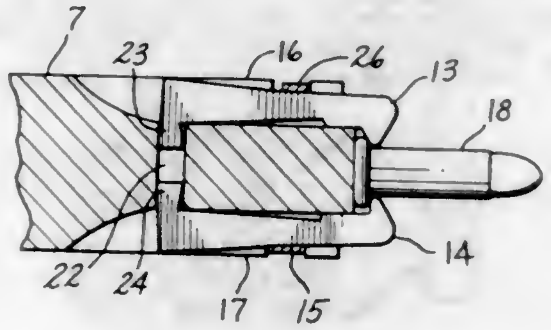
**Raymon S. Drexler, 1452 NW. 17th St., Miami, Fla. 33125**
**Filed Aug. 11, 1967, Ser. No. 659,980**
**Int. Cl. G09f** *17/00, 19/02*
**U.S. Cl. 40—218 4 Claims**

A flag holder for supporting a flag or banner and having a hollow tubular mast, a flag support mounted on the mast, a base, a blower mounted within the base, air ports in the mast adjacent the flag for discharging air from the blower to flutter the flag, plaques mounted to the mast on either side of the flag for carrying advertising messages or designs and bearings coupled to the mast to permit the flag to rotate.



### 3,477,162
### EXTRACTOR SYSTEM WITH A SINGLE SPRING EXERTING UNEQUAL FORCES UPON TWO FIREARM EXTRACTORS

**Charles H. Morse, Herkimer, N.Y., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware**
**Filed Dec. 28, 1967, Ser. No. 694,130**
**Int. Cl. F41c** *15/02*
**U.S. Cl. 42—25 6 Claims**

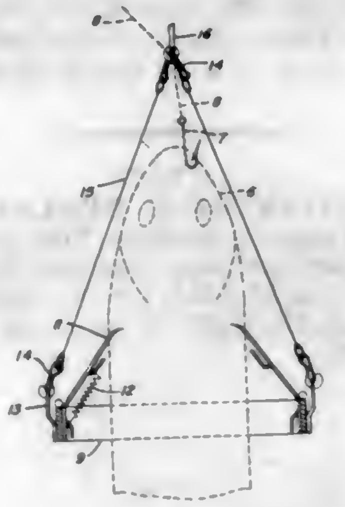


An extractor system for a firearm including both right and left extractors with a spring system to actuate both extractors. Both extractors are mounted in the bolt head and pivot in appropriate holes. The spring is a band type which encircles the bolt head to engage and actuate both extractors. The spring is slitted adjacent the left extractor and one resulting leaf removed so that one leaf actuates the left extractor and both leaves actuate the right extractor.

### 3,477,163
### FISHING GAFF

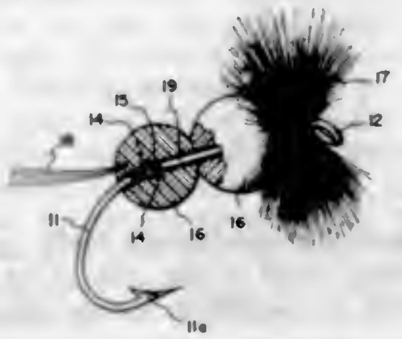
**Edward D. O'Connell and Kathryn M. O'Connell, both of 6109 Castor Ave., Philadelphia, Pa. 19149**
**Filed Jan. 16, 1967, Ser. No. 609,695**
**Int. Cl. A01k** *97/14*
**U.S. Cl. 43—5 1 Claim**

A fishing gaff has a circular frame provided with a plurality of pivotally connected, spring-loaded blade members. Flexible cables are releasably connected at one end to spaced points on the frame and have their other ends releasably connected together to provide a fishing line centering guide. Each of the blades has arcuate, bifurcated pointed free ends.



### 3,477,164
### ARTIFICIAL DRY FLY FISHING LURE

**Phillip J. Novak, 1816 Westminster Ave., Salt Lake City, Utah 84108**
**Filed Feb. 5, 1968, Ser. No. 703,017**
**Int. Cl. A01k** *85/08*
**U.S. Cl. 43—42.09 13 Claims**

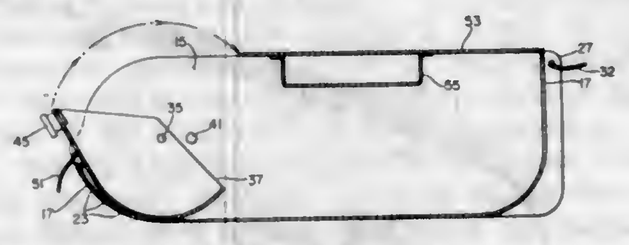


An artificial dry fly fishing lure having replaceable buoyant body components and usually having appendages, such as wings, hackle, tail. A barbed hook, which includes a shank and an eye for attachment to a fishing line, has its shank provided with projection or projections that permit body nodules of fragile, lightweight, and inexpensive buoyant material, such as a foamed plastic, to be freely slipped into place on the shank, but that thereafter resist displacement of such nodules. When damaged, these nodules can be easily removed by breaking or crumbling under applied pressure and can be easily replaced by fresh nodules of similar material. The appendages may be permanently affixed to the hook or shank or may be part of one or more body nodules.

### 3,477,165
### LIVE-BAIT CARRIER

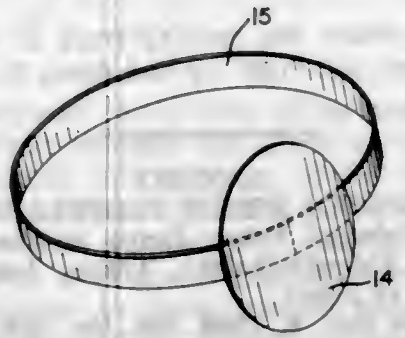
**Kenneth Y. Brancato, 6378 Columbia Ave., Philadelphia, Pa. 19151**
**Filed Dec. 5, 1967, Ser. No. 688,193**
**Int. Cl. A01k** *97/04*
**U.S. Cl. 43—55 9 Claims**

The present live-bait carrier provides an advantageous fabrication of preformed sections. Further, the present live-bait carrier provides: a stand-up means which enables the user to place the carrier upright in a boat or on a dock in such a manner that bait can readily be removed therefrom; an air chamber which keeps the carrier right-side up in the water; a self-locking door which does not spuriously open but which opens in such a manner as to enable the bait to be readily removed from the carrier; and an aperture arrangement in the body of the carrier which permits the water therein to be readily drained therefrom as the carrier is removed from the lake, river, pond, etc. and which is so located that water can enter the carrier to submerge the bait therein without excessive pressure on the bait if the carrier should be towed.



### 3,477,166
### AMUSEMENT AND EDUCATIONAL TOY

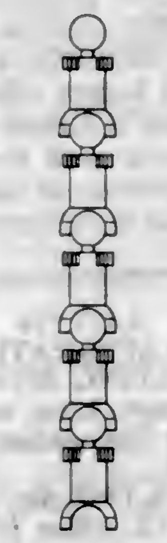
**Frank E. Wolf, 1240 Ashby State Road, Fitchburg, Mass. 01420**
**Filed Aug. 5, 1965, Ser. No. 477,527**
**Int. Cl. A63h** *33/14, 9/00*
**U.S. Cl. 46—1 1 Claim**



A toy combination is provided comprising a first water soluble plastic sheet having a first color and a second water soluble plastic sheet having a second color. Means for forming shapes from the sheets are preferably provided as are means for adhering the shapes to each other by the use of water in an uncomplicated highly amusing toy.

### 3,477,167
### FIGURE SHAPED BLOCKS WITH INTEGRAL CONNECTORS

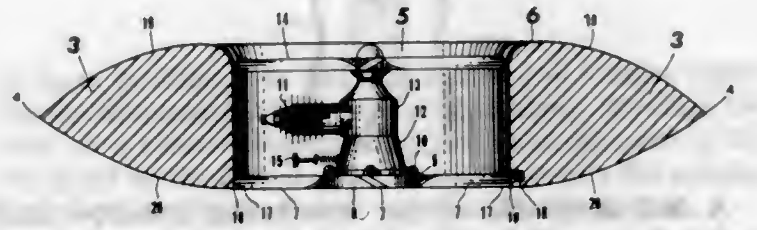
**Rene Ach, 47 Ave. des Gobelins, Paris, France**
**Filed Apr. 21, 1967, Ser. No. 632,809**
**Claims priority, application France, May 25, 1966, 62,933**
**Int. Cl. A63h** *33/08, 3/16*
**U.S. Cl. 46—22 3 Claims**



A constructional block shaped like a human or other animal figure having a cylindrical trunk, a spherical head above and spaced from the trunk by a short neck, bow legs at the other end of and extending in a semi-circular downwardly facing arc from the trunk and outstretched diverging arms which include arcuate inwardly directed relief portions near their ends, the arcuate portions of the arms and legs being of a radius which is the same as that of the head and of the trunk to facilitate assembly of the blocks.

### 3,477,168
### INTERNAL COMBUSTION ENGINE POWERED FLYING TOYS

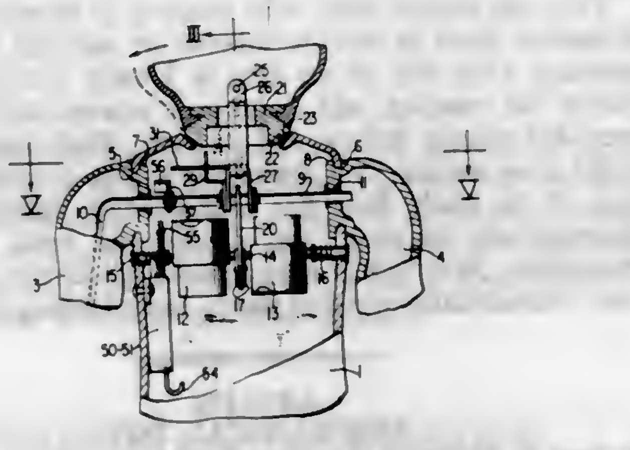
**James E. Trodglen, Jr., P.O. Box 15754, Tampa, Fla. 33614**
**Filed Mar. 20, 1967, Ser. No. 624,431**
**Int. Cl. A63h** *27/12*
**U.S. Cl. 46—75 3 Claims**



Apparatus including an annular body having a relatively thick central portion which tapers outwardly to a relatively thin outer edge and with the central portion having a generally cylindrical duct extending entirely therethrough substantially along the vertical axis. The upper portion flares upwardly and outwardly from the generally cylindrical portion to the upper surface of the body and a motor is mounted wherein said duct with a drive shaft having a propeller mounted thereon for creating lift for said body.

### 3,477,169
### DOLL SOUND PRODUCING MECHANISM WITH HEAD MOVEMENT

**Robert Gardel, New York, and Egon Gorsky, Brooklyn, N.Y., assignors to Lettam, Inc., New York, N.Y., a corporation of New York**
**Continuation-in-part of application Ser. No. 513,219, Dec. 13, 1965. This application Dec. 6, 1967, Ser. No. 688,386**
**Int. Cl. A63h** *5/00*
**U.S. Cl. 46—118 7 Claims**

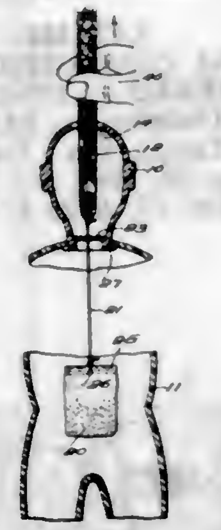


Doll sound producing and head moving mechanism in which the movement of one or both arms causes the sounding mechanism to rotate about a horizontal axis far enough to emit at least two sounds while the head nods forward and back or rocks from side to side, with or without some movement of the eyes, rotation of the head, or emission of tears.

**3,477,170**

### RETRACTABLE HAIR DOLL

**Vera D. Lilienstern, Port Chester, N.Y.,**
**(Pinehurst Drive, Purchase, N.Y. 10577)**
**Filed Mar. 27, 1967, Ser. No. 626,096**
**Int. Cl. A63h** *3/44*
**U.S. Cl. 46—135** **12 Claims**

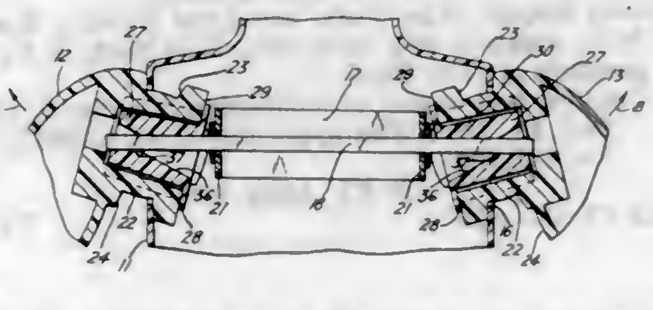


A doll or the like of the class having a hollow head and body provided with a lock of hair arranged in protruding relation through an opening in the head, is provided with weight or spring power means within the body for exerting force to retract the lock of hair inwardly through the opening, and with releasable means for resisting retraction of the lock of hair through the opening.

**3,477,171**

### TOY HAVING SHAFT-MOUNTED ROTATABLE AND PIVOTABLE APPENDAGE

**Joseph L. Bonanno, South Orange, N.J., assignor to Topper Corporation, a corporation of Delaware**
**Filed Nov. 15, 1966, Ser. No. 594,419**
**Int. Cl. A63h** *3/20;* **F16c** *11/08*
**U.S. Cl. 46—161** **7 Claims**



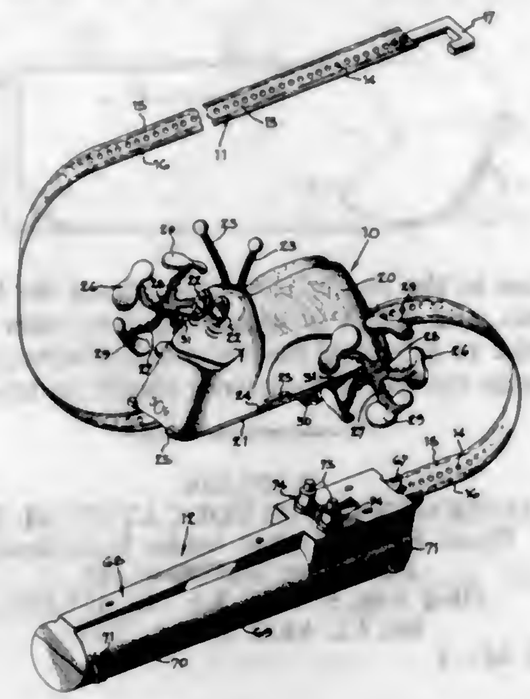
Doll has hollow body with opening in shoulder region. Rotatable shaft in body terminates at one end within the opening. One end of an arm is loosely accommodated within the opening, and a sleeve is non-rotatably accommodated within hollow end of arm. Shaft has non-circular cross-section, and sleeve has a bore accommodating end of the shaft. Bore has necked-down fulcrum region intermediate its ends, and diverges in both directions therefrom. Arm has annular groove relatively narrow at two diametrically opposed points and widening therefrom.

**3,477,172**

### MECHANICAL TOY

**Robert E. Polewski, Cincinnati, Ohio, assignor, by mesne assignments, to Kenner Products Company, Cincinnati, Ohio, a corporation of Delaware organized in 1967**
**Filed Nov. 10, 1966, Ser. No. 593,567**
**Int. Cl. A63h** *33/26*
**U.S. Cl. 46—243** **5 Claims**

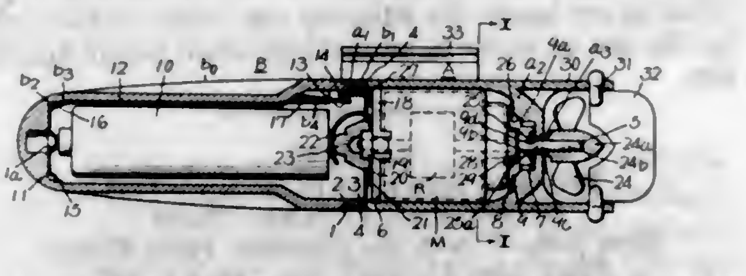
An electrically powered toy device that is selectively movable forward and backward on a flexible strip running track no matter what the spatial attitude of that strip. The toy provides a particular drive mechanism that is held in constant operating engagement with the flexible strip running track by novel structure within the toy so that even when the running track is vertically suspended, the toy will "run" up and down the flexible strip running track.



**3,477,173**

### MOTOR-DRIVEN SCREW PROPELLER DEVICE

**Takaichi Mabuchi, Tokyo, Japan, assignor to Tokyo Kagaku Kabushikikaisha, Tokyo, Japan, a corporation of Japan**
**Filed Dec. 8, 1966, Ser. No. 600,095**
**Claims priority, application Japan, Aug. 3, 1966, 41/50,927**
**Int. Cl. A63h** *33/26*
**U.S. Cl. 46—243** **10 Claims**



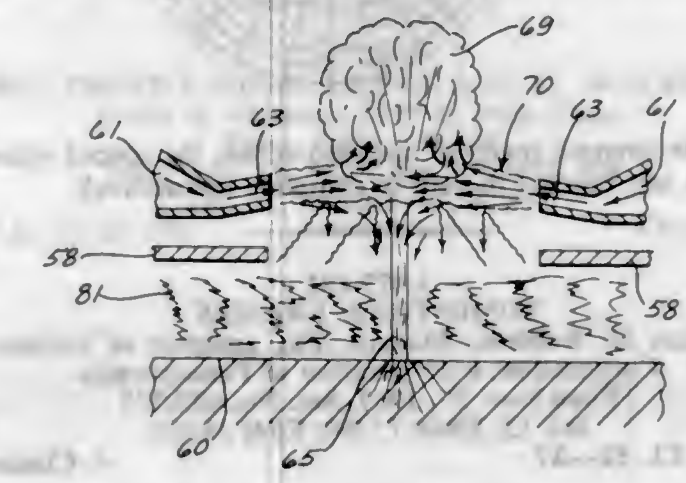
A motor-driven screw propeller device including first and second, telescopically connected cylindrical case members, a motor housed in said first case member, a rotary shaft of said motor projecting outwardly of said first case member, a screw propeller attached to said projecting end of said rotary shaft, a battery housed in said second case member, means for alternatively connecting and disconnecting said battery with said motor. The first cylindrical case member is formed with an inwardly projecting flange on an inner wall thereof for positively retaining the motor in position to maintain a hermetic seal between the housing and the motor shaft.

**3,477,174**

### METHOD AND APPARATUS FOR FLAME CULTIVATING ROW CROPS

**William F. Lalor, Ames, Iowa, assignor to Iowa State University Research Foundation, Inc., Ames, Iowa, a corporation of Iowa**
**Filed Aug. 28, 1967, Ser. No. 663,587**
**Int. Cl. A01m** *15/00*
**U.S. Cl. 47—1.44** **9 Claims**

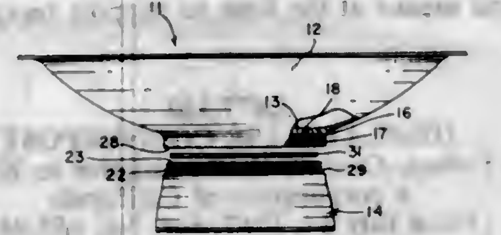
A portable frame adapted to travel along adjacent plant rows carries at its front end a pair of burners corresponding to each plant row. The burners of each pair of burners are arranged at opposite sides of a corresponding row to project the flames therefrom rearwardly and in a generally converging relation about the base of the plants in the row. Mounted on the frame, rearwardly of and corresponding to each pair of burners, is a pair of elongated air discharge nozzles. The nozzles in a pair of nozzles are located at opposite sides of and extended longitudinally of a row with the air streams therefrom directed toward the base of the lower most leaves of the plants to form an air curtain extended longitudinally of a row. This air curtain thermally insulates the plant leaves from the burner flames while acting concurrently to confine the flame heat adjacent to the base of the plants. To weed or flame cultivate different type plants at varying growth stages the velocity and direction of the air streams is controlled relative to the direction of the flames to concentrate the heat of the flames in a desired zone relative to the weeds to be removed. Additional burners on the frame are utilized to flame cultivate the central area between adjacent rows. To concentrate the heat from the burners between the rows a horizontal deflector plate extended longitudinally between adjacent rows is projected rearwardly of the burners at a position above the burner flames and below the air curtain.



**3,477,175**

### SEPARABLE VASE ASSEMBLY

**Mitchell T. Sakamato, 99—1840 Aiea Heights Drive, Aiea, Oahu, Hawaii**
**Filed Mar. 3, 1967, Ser. No. 620,428**
**Int. Cl. A01g** *5/00;* **A47g** *7/03*
**U.S. Cl. 47—41.13** **4 Claims**



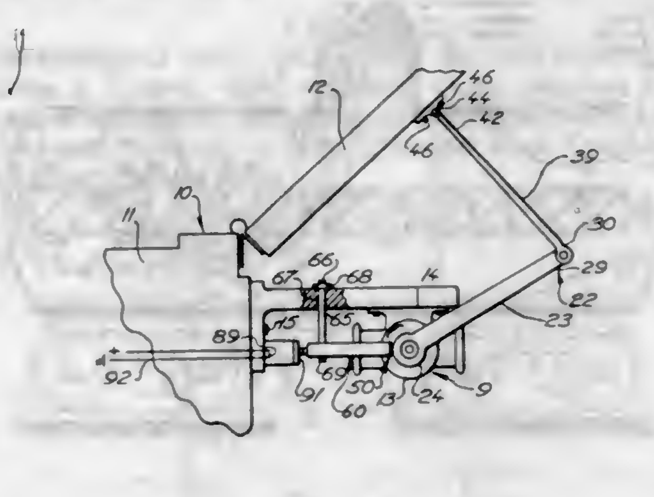
A vase assembly having a built-in frog for holding flowers and the like comprises an upper bowl and a separable base, the base containing fixed pins to provide the frog and being threadedly attached over an opening in the bottom of the bowl.

**3,477,176**

### MAGNETIC DOOR HOLDER

**Henry W. Tansley, 1403 Beach Ave., Suite 305, Vancouver 5, British Columbia, Canada**
**Filed July 15, 1968, Ser. No. 744,761**
**Int. Cl. E05f** *15/20, 3/02*
**U.S. Cl. 49—7** **11 Claims**

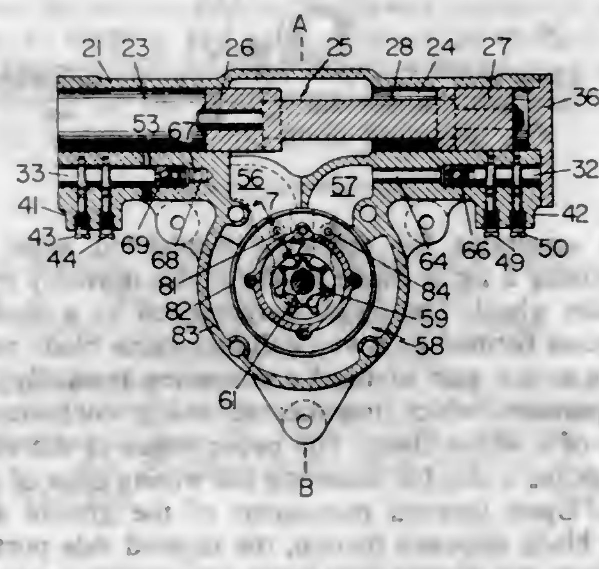
A door holding and releasing device wherein latching means carried by an armature is moved, through the mediacy of a normally energized electromagnet, into locking engagement with a locking member having a nonrotatable connection with the closer arm of a door closer so as to prevent closure of the door when the latter is in an open position. The latching means and locking member are disengaged to permit the door closer to return the door to a closed position when the electromagnet is deenergized by the circuit opening operation of a fire sensing device connected in circuit with the electromagnet.



**3,477,177**

### HYDRAULICALLY ACTUATED DOOR OPERATOR

**Benjamin Whitehead Tucker, Jr., South Orange, N.J., assignor to Otis Elevator Company, New York, N.Y., a corporation of New Jersey**
**Filed Apr. 18, 1967, Ser. No. 631,826**
**Int. Cl. E05f** *15/00*
**U.S. Cl. 49—138** **12 Claims**



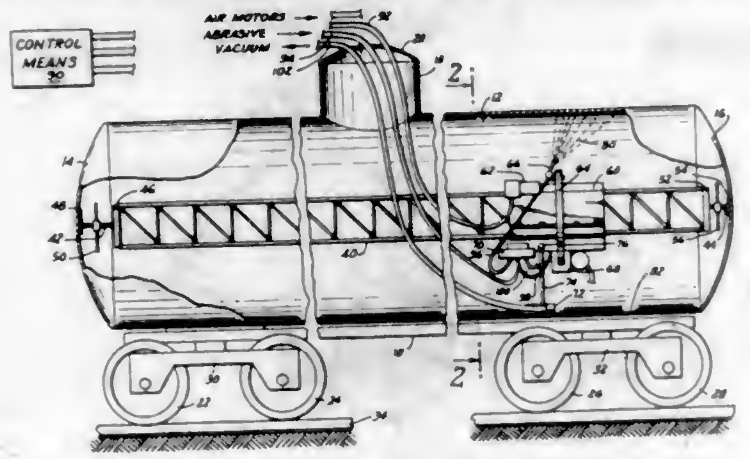
An operating mechanism in which a reversible pump establishes a fluid pressure differential between two conduits of an actuator which responds by moving a member in a first or a second direction depending upon the sense of the pressure differential, which sense is determined by the direction in which the pump operates.

**3,477,178**

### CYLINDER TREATER APPARATUS

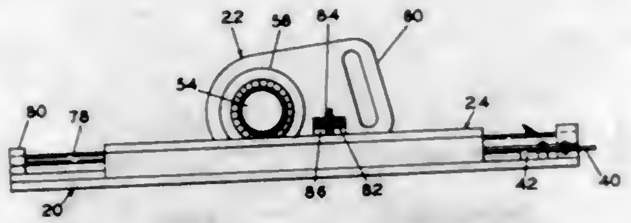
**Clarence E. Hulbert, Jr., Houston, Tex., assignor to Capvac Industries, Inc., Freeport, Tex., a corporation of Texas**
**Filed Oct. 20, 1965, Ser. No. 498,962**
**Int. Cl. B24c** *3/32;* **B08b** *9/08*
**U.S. Cl. 51—8** **6 Claims**

Apparatus for treating the inside of an elongated hollow member. Support means are disposed along the longitudinal axis of the elongated hollow member and carriage means including drive means and ring means are positioned on the support means. Nozzle means are coupled to the carriage means which may move axially and rotationally inside the elongated hollow member.



### 3,477,179
### METHOD AND APPARATUS FOR RENEWING USED OR WORN WINDSHIELD WIPER BLADES

**Thomas L. Dale, 5193 Mapleridge Drive,**
**Columbus, Ohio 43227**
**Filed June 6, 1967, Ser. No. 643,855**
**Int. Cl. B24b** *7/00, 9/00, 41/06*
**U.S. Cl. 51—34** **4 Claims**

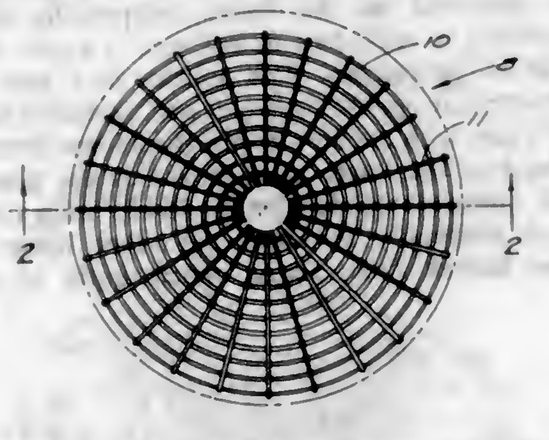


An apparatus for renewing windshield wiper blades comprising a jig or blade holder and a movably mounted abrasion wheel. The jig is characterized by a blade holding recess formed by a vertically movable blade receiving groove and a pair of fixed confronting inwardly tapered side portions which together generally conform to the shape of a wiper blade. The upper edges of the side portions define a slot for receiving the wiping edge of a wiper blade. Upon upward movement of the groove and the wiper blade disposed therein, the tapered side portions of the blade are moved into force transmitting engagement with the tapered side portions of the jig and the wiping edge of the blade is extended through the slot. The abrasion wheel then may be moved along the length of the wiping edge to remove the old edge portion and form a new wiping edge.

### 3,477,180
### REINFORCED GRINDING WHEELS AND REINFORCEMENT NETWORK THEREFOR

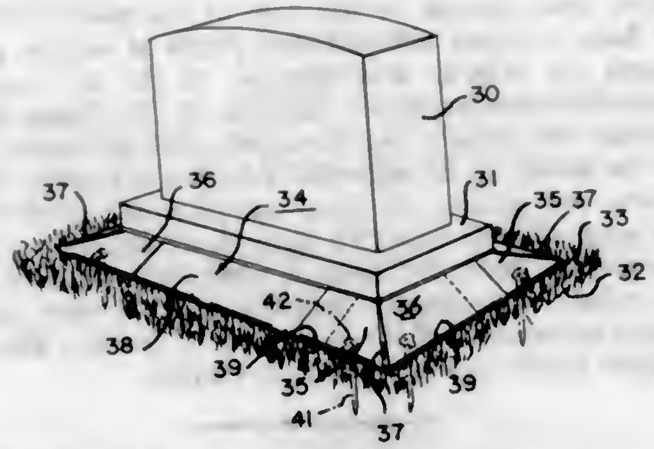
**John Robertson, Jr., Upton, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts**
**Filed June 14, 1965, Ser. No. 463,720**
**Int. Cl. B24d** *5/00, 7/00*
**U.S. Cl. 51—206** **2 Claims**

A rotatable abrasive article having a reinforcing network formed of a yarn made from continuous fiber glass filaments, the yarn being spirally wound about the axis of rotation of the article and including a plurality of circumferentially spaced radially extending bands of high tensile strength material disposed across the spaced spiral turns and bonded thereto to complete the network.



### 3,477,181
### TOMBSTONE FRAMES

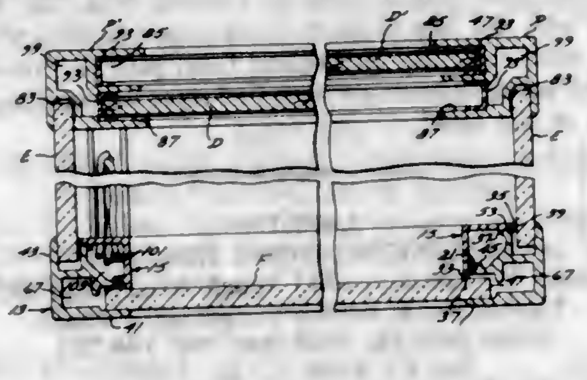
**William H. Robison, Madera, Pa., assignor to Robison Corporation, a corporation of Pennsylvania**
**Filed Nov. 27, 1967, Ser. No. 685,775**
**Int. Cl. E04h** *13/00;* **E04f** *19/02*
**U.S. Cl. 52—27** **4 Claims**



A tombstone frame made up of an adjustable rectilinear member having an opening slidably fitting over a tombstone and engaging the base periphery thereof and having an outer periphery spaced from said opening and having a relatively thin edge contacting the earth to substantially eliminate the access of light to the earth thereunder. The frame includes size adjusting structure, ground anchoring means and means at the base to support receptacles.

### 3,477,182
### DISPLAY CASE CORNERPOST

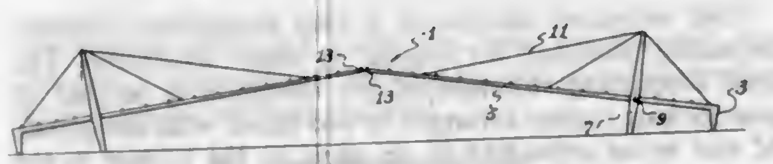
**Fred D. Fulton, Covina, Calif., assignor to Kimton, Inc., a corporation of California**
**Filed July 24, 1967, Ser. No. 655,460**
**Int. Cl. E04b** *2/60;* **E04f** *19/06, 17/00*
**U.S. Cl. 52—28** **8 Claims**



A display case cornerpost comprising an elongated receiver and cooperating retainer extending longitudinally of the adjacent edges of a pair of glass plates that are to be fastened together to form adjacent walls of the display case, the receiver includes a first pair of walls which cooperate to define a receptacle for receiving the adjacent edge of one of the plates and the extremity of the inner wall is forked to define a longitudinal notch having a flange bearing surface facing outwardly toward the outer wall, the receiver also includes a second pair of walls which cooperate to define a second receptacle for receiving the adjacent edge of the other glass plate and the extremity of the inner wall forms a notch defining a tongue retaining surface which faces outwardly toward the cooperating outer wall.

### 3,477,183
### LOW PROFILE RIGID FRAME METAL BUILDING

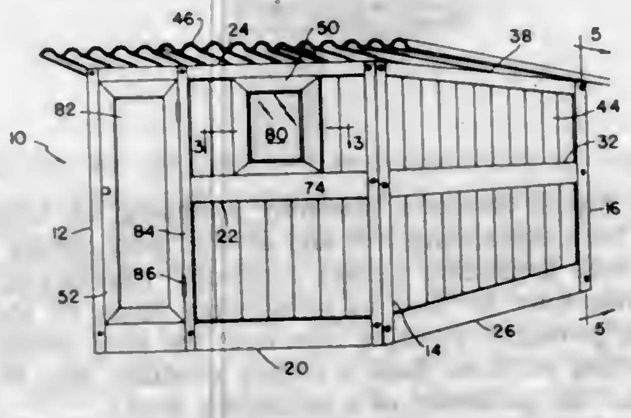
**David R. Graham, 2929 E. 44th Place,**
**Tulsa, Okla. 74105**
**Filed July 24, 1967, Ser. No. 655,489**
**Int. Cl. E04b** *7/16, 1/34*
**U.S. Cl. 52—73** **4 Claims**



A low profile rigid frame metal building of very wide span is characterized by a column pinned to the rafter intermediate the length of the rafter and guy cables interconnecting the upper end of the column and spaced points along the rafter located in rigid regions of the rafter, a fluid dashpot interconnects the upper free ends of opposed pairs of rafters, across the center line of the building, to damp relative movement of the free ends, a sliding connection between the free ends also prevents them from moving out of their common plane, and a ridge cap is pivotally carried by the upper ends of the rafters.

### 3,477,184
### EDUCATIONAL PLAYHOUSE

**Theodore W. Johnson, 60 E. Margaret St. 48203, and Ralph Silvola, 8590 Steel Ave. 48228, both of Detroit, Mich.**
**Filed May 8, 1967, Ser. No. 636,909**
**Int. Cl. E04b** *1/10, 2/08;* **E04c** *1/10*
**U.S. Cl. 52—105** **10 Claims**

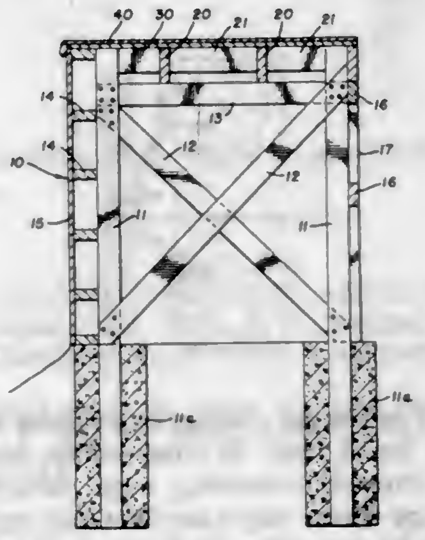


Building structure capable of being assembled and disassembled without the use of tools to provide an educational playhouse for children including vertical corner posts and coded horizontal frame members, both of which have grooves therein, and coded panels adapted to be secured between the corner posts and horizontal frame members in the grooves and structure for assembling the panels including a recess in a groove in one of each two vertically adjacent frame members for receiving one end of a panel to permit alignment of the panel with a groove in the other of the adjacent frame members.

Alternatively the corner posts may be slotted vertically to permit sliding of the coded panels into the grooves in the two vertically adjacent frame members.

### 3,477,185
### SWIMMING POOL SUPPORT CONSTRUCTION

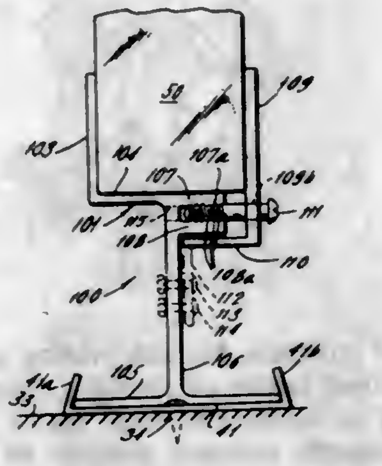
**Charles J. Linton, West Richfield, Ohio; Marilyn J. Linton, executrix of the estate of said Charles J. Linton, deceased, assignor to New Linwood Pool Corporation, a corporation of Ohio**
**Filed Nov. 28, 1967, Ser. No. 686,119**
**Int. Cl. E02d** *27/32;* **E04c** *3/04*
**U.S. Cl. 52—105** **4 Claims**



A supporting structure for a swimming pool including a series of generally rectangular upright brace members disposed about the periphery of the pool between the sides of the pool and the sides of the excavation in which the pool is placed. The braces providing an air space about the periphery of the pool and being interconnected on their inner and outer edges to space the sides of the pool from the surrounding earth thereby preventing buckling due to freezing and unfreezing of the ground. The brace members also provide a support for decking about the periphery of the pool while the air space provides access for maintenance and other purposes.

### 3,477,186
### CEILING CHANNEL ASSEMBLY FOR MOVABLE PARTITIONS

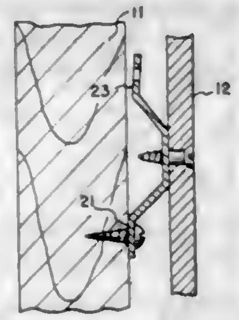
**Herbert L. Birum, Jr., Pleasant Valley,**
**Titusville, N.J. 08560**
**Original application June 3, 1965, Ser. No. 460,964, now Patent No. 3,358,411, dated Dec. 19, 1967. Divided and this application Aug. 28, 1967, Ser. No. 678,126**
**Int. Cl. E04c** *3/32;* **E04b** *2/82*
**U.S. Cl. 52—242** **5 Claims**



A floor mounting assembly for use in movable partition structures and the like designed to receive and support panel members including a first L-shaped section having a base portion for supporting a panel member and also including a second L-shaped section having a base portion cooperating with the base portion of said first section to enable the side portions of each section to rigidly embrace opposite sides of the panel member inserted between the two L-shaped sections.

### 3,477,187
### WALLBOARD MOUNTING CHANNEL

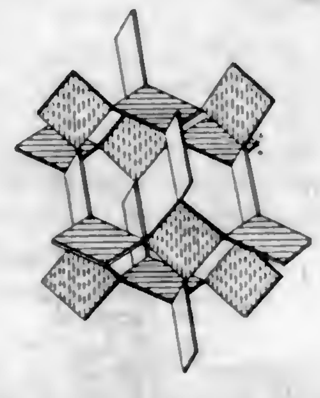
**Albert A. Fruman, 9650 French Road,**
**Franklin, Mich. 48213**
**Filed Jan. 19, 1968, Ser. No. 699,244**
**Int. Cl. E04f** *13/00;* **E04b** *2/30*
**U.S. Cl. 52—346** **1 Claim**



A wallboard mounting channel comprising an elongated strip of sheet metal bent in cross-section into a central section with obtusely extending edge sections of equal length and shape whose edges are bent into coplanar equal size flanges, with the pairs of flanges and edge sections thus being symmetrical about the central section. The channel is horizontally arranged upon a wall forming structure, such as conventional studs, to span a number of studs, and its lower edge is secured to the studs. The wallboard is secured to the central section. The sheet metal forming the channel is relatively soft and non-resilient, such as a soft, annealed steel. The weight of the wallboard, applied to the channel through screw fasteners bends the channel, particularly at the juncture between the lower flanges and its edge section, to thereby slightly space the upper flange away from the studs, after assembly, thereby providing a break in the sound transmission path between the channel and the studs.

### 3,477,188
### MODULAR STRUCTURE

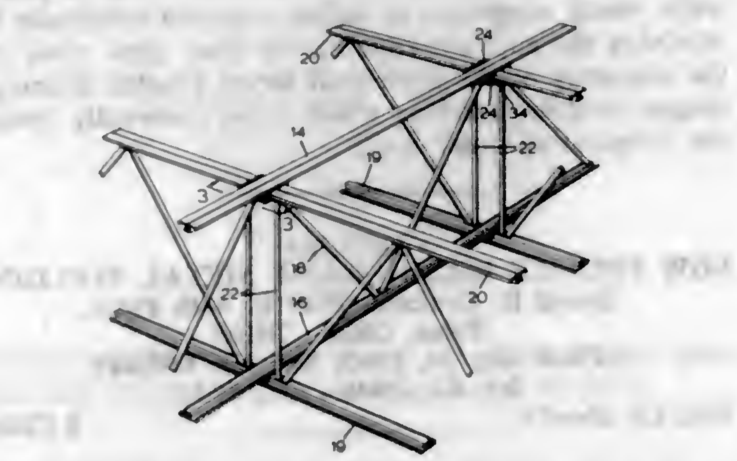
**John M. Kostick, Roxbury, Mass., assignor to Omniversal Design, Roxbury, Mass., a partnership**
**Filed Feb. 19, 1968, Ser. No. 706,253**
**Int. Cl. E04h** *1/00, 14/00;* **E04c** *2/42*
**U.S. Cl. 52—637** **8 Claims**



A modular structure for subdividing a volume into a three-dimensional lattice of similar contiguous cells. The structure may be constructed from sets of generally planar structural elements oriented parallel to three mutually orthogonal reference planes. In a preferred embodiment the resulting cells define tetraxi-decahedrons having six square structural faces and eight interposed hexagonal apertures.

### 3,477,189
### LOAD SUPPORTING STRUCTURE

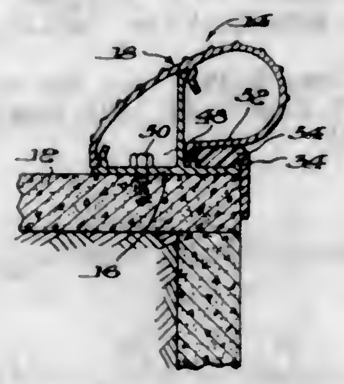
**Karol J. W. Merson, Toronto, Ontario, Canada, assignor to Anthes Imperial Limited**
**Filed Feb. 20, 1967, Ser. No. 617,201**
**Int. Cl. E04h** *12/10;* **E04c** *3/04;* **E04b** *5/14*
**U.S. Cl. 52—648** **8 Claims**



This invention consists of a load supporting structure primarily intended for ceiling or floor structures. The load supporting structure of the invention is formed of interlocking trusses arranged in two series with the trusses of one series extending at an angle to the trusses in the second series. To provide for interlocking of the trusses, the top chord members of the first series trusses are provided with regularly spaced openings whereby the second series trusses may be dropped through the openings to rest on the bottom chord members of the first series trusses. The top chord of the two series trusses are then connected together.

### 3,477,190
### INTEGRATED COPING ASSEMBLIES

**Charles L. Wood, Jr., Pittsburgh, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Feb. 9, 1967, Ser. No. 614,906**
**Int. Cl. E04f** *19/02;* **E04d** *13/15*
**U.S. Cl. 52—718** **7 Claims**

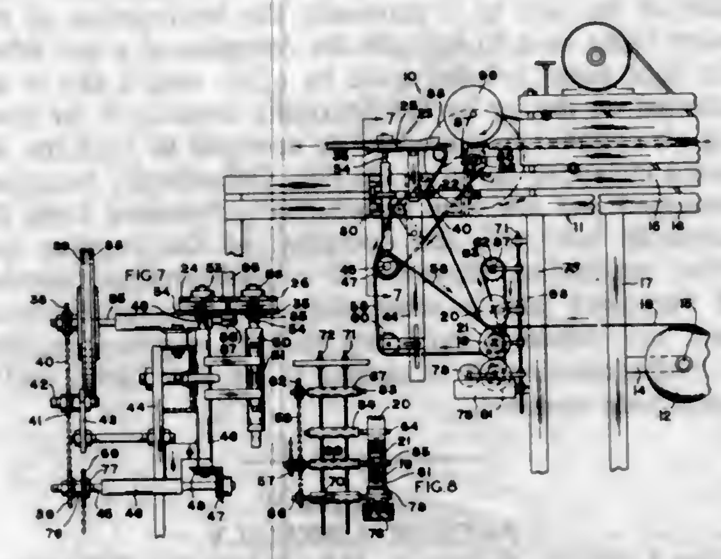


A coping structure assembly including an anchoring base with upstanding ribs and an overlying coping member with depending flanges resiliently interlocking with the ribs may be used as terminating edges of roofs or walls, providing finishing trim over the joint between intersecting surfaces. Such a coping structure may be used around the perimeter of a swimming pool.

### 3,477,191
### METHOD AND APPARATUS FOR PACKAGING DRINKING STRAWS

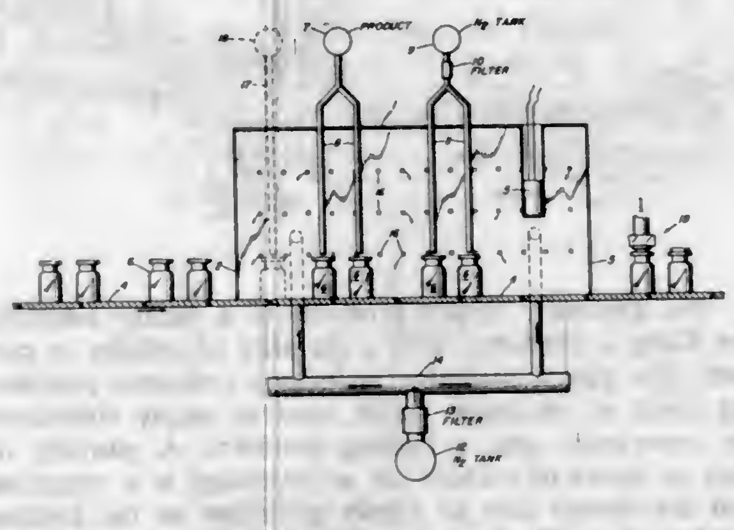
**Harry E. Davis, 544 Vinita Ave. 44320, and Fred B. Pfeiffer, 270 Ferndale Ave. 44304, both of Akron, Ohio**
**Filed Nov. 22, 1966, Ser. No. 601,283**
**Int. Cl. B65b** *9/06, 19/34, 61/00*
**U.S. Cl. 53—14** **5 Claims**

The present invention relates to a method and apparatus for wrapping drinking straws and more particularly to means adapted to be combined with, and function with, an automatic drinking straw-making machine, of a type that forms the straw body in the form of a continuous tube and feeds the tube, so formed, into severing means where drinking straws, of predetermined length, are cut off from the tube.



### 3,477,192
### CONTAINER FILLING PROCESS

**Michael Brown, Spring Valley, N.Y., and Donald Landrine Dickie, Upper Saddle River, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine**
**Filed Mar. 2, 1967, Ser. No. 620,003**
**Int. Cl. B65b** *31/02;* **B67c** *7/00*
**U.S. Cl. 53—22** **3 Claims**

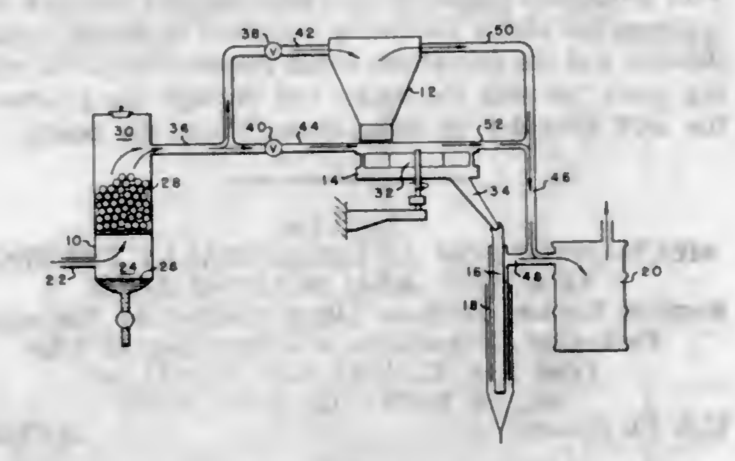


Machine for progressive automated filling of vials or other containers with materials which are sensitive to air, foaming, or to other factors, such as contamination, is designed with a hood over the conventional table or track along which vials or containers are moved. The hood is connected to a source of protective inert gas, such as nitrogen, and means are provided, such as a baffle with small openings, to introduce the nitrogen under slight positive pressure into the hood without excessive turbulence.

### 3,477,193
### AIR DRYER

**George A. Mobley, Spartanburg, S.C., assignor to Clemson Industries, Inc., White Stone, S.C., a corporation of Delaware**
**Filed July 10, 1967, Ser. No. 652,323**
**Int. Cl. B65b** *31/02*
**U.S. Cl. 53—22** **3 Claims**

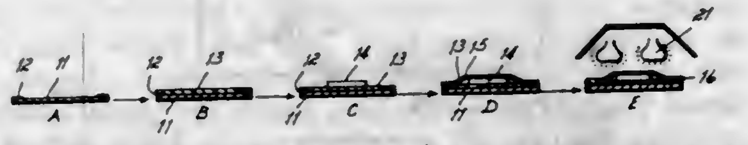
Method to provide a controlled atmosphere in a packaging process independent of the surrounding area by introducing dry sterile air into the system and maintaining the system at substantially atmospheric pressure so



that it is substantially in equilibrium with the surrounding atmosphere.

### 3,477,194
### HEAT SEALED THERMOPLASTIC PACKAGE

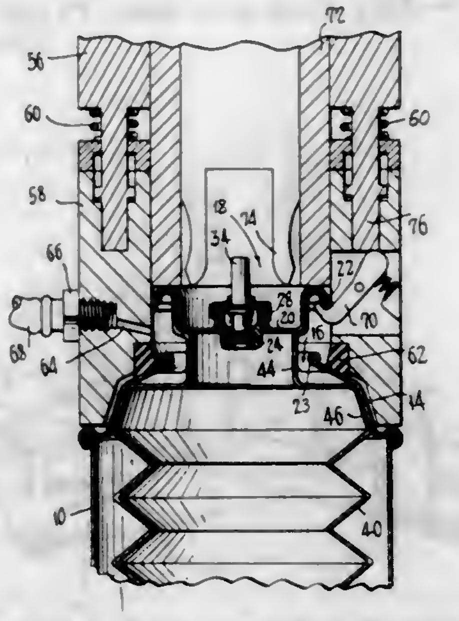
**Lester Corrsin, New Paltz, N.Y., assignor to U.S. Plywood-Champion Papers Inc., a corporation of New York**
**Filed Sept. 28, 1966, Ser. No. 582,730**
**Int. Cl. B65b** *9/04, 51/10*
**U.S. Cl. 53—33** **3 Claims**



Forming a package of thermoplastic films which must be sealed together by applying a pattern of radiation-absorbing material to a surface, bringing the films into contact with the surface, and radiating the material so that the heat absorbed by the radiation is conducted to said films to fuse and seal said films in the pattern of said material.

### 3,477,195
### METHOD OF PRESSURIZING A DISPENSING CONTAINER

**Charles D. Chambers, Huntington, Conn., assignor to Valve Corporation of America, Bridgeport, Conn., a corporation of Delaware**
**Filed Mar. 30, 1967, Ser. No. 627,048**
**Int. Cl. B65b** *31/02;* **B65d** *83/14;* **B67b** *3/02*
**U.S. Cl. 53—37** **3 Claims**



A vertically collapsible product-isolating sack having a reduced neck portion at its top, through which the product passes, and having below said neck portion an externally grooved annular shoulder adapted to fit within the top shoulder of the dispenser casing and to provide passages within the casing shoulder for the charging of the casing with propellant liquid. During said charging the sack neck is supported above the casing neck and in spaced relation thereto, and the propellant liquid passes through the existing space between the necks and through the grooves of the sack shoulder, in being brought into the casing.

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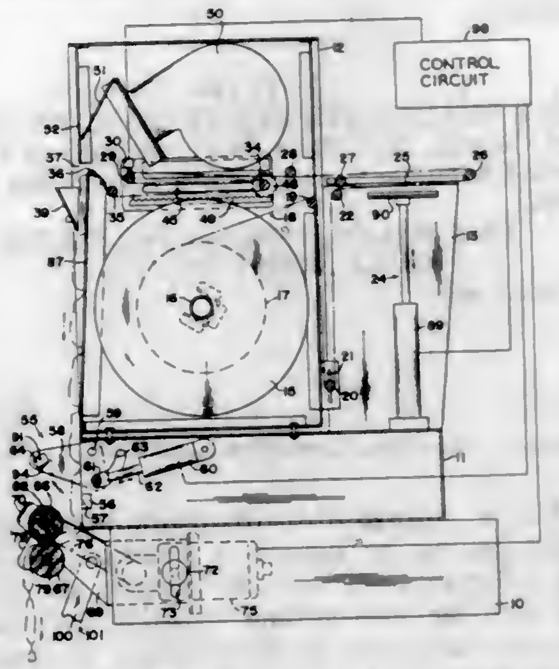
### 3,477,196
### MECHANISM FOR AUTOMATICALLY FEEDING, LOADING, AND SEALING BAGS

**Bernard Lerner, Hudson, Ohio, assignor to Automated Packaging Corporation, a corporation of Ohio**
**Filed Apr. 27, 1967, Ser. No. 634,242**
**Int. Cl. B65b** *7/02, 7/06, 51/16*
**U.S. Cl. 53—44** **21 Claims**



Apparatus which automatically feeds a selected one of a chain of bags to a bag closing station, and automatically brings upper portions of a loaded bag for closure.

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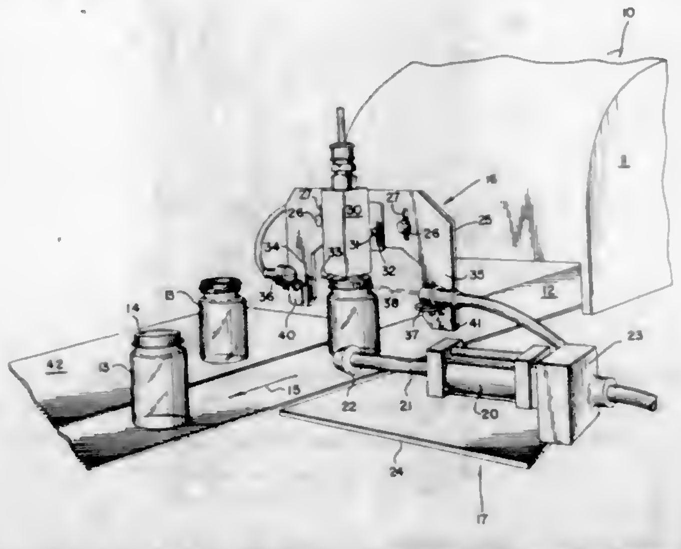
### 3,477,197
### DEVICE FOR MONITORING THE OPERATION OF A JAR CAPPING MACHINE

**Edward R. Budz, Brookfield, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York**
**Filed Nov. 6, 1967, Ser. No. 680,630**
**Int. Cl. B67b** *3/26;* **B65b** *57/08;* **B07c** *5/344*
**U.S. Cl. 53—53** **7 Claims**



A device for monitoring the operation of a capping machine which applies caps to containers, such as jars, including a proximity detector positioned above the conveyor belt carrying capped jars in single file out of the capping machine, for detecting the presence of the metal caps. A light source directs a beam of light across the path of the jars to a photocell; the interruption of the beam being used to indicate the detection of a jar. When the light beam is interrupted by a jar, and, a cap is not detected on the jar by the proximity detector, a jar ejecting air cylinder is caused to be operated to push the detected uncapped jar from the line. Occasionally occurring uncapped jars are thus automatically removed from the conveyor belt with the operation of the capping machine continuing. However, if a predetermined number of uncapped jars in succession, such as, for example, four, are detected, indicating that the capping machine is malfunctioning, it is caused to be shut down and a signal horn operated.

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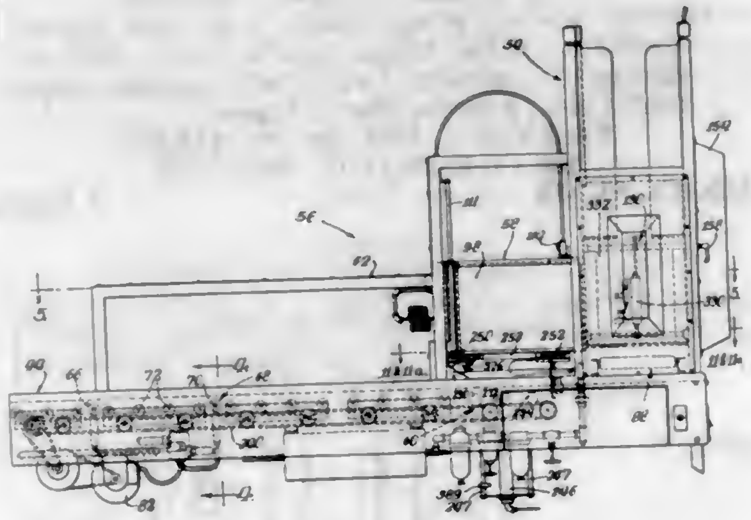
### 3,477,198
### PACKER ASSEMBLY

**Allan C. Davis, Baltimore, Md., assignor to The Meyercord Co., Wheaton, Ill., a corporation of Illinois**
**Filed Sept. 8, 1967, Ser. No. 666,521**
**Int. Cl. B65b** *57/14, 35/52, 43/44*
**U.S. Cl. 53—55** **34 Claims**



This disclosure relates generally to a packer assembly for filling a container with a plurality of articles or cartons. The packer assembly includes a container positioning tower or structure which receives empty containers for movement onto a loading platform. A plurality of tiers or layers of cartons are accumulated in a magazine and are moved into an empty container on the loading platform by a loader or pusher assembly to pack or fill the container. The magazine and pusher assembly are expandable to enable cartons of varying sizes to be packed into containers of varying sizes. An ejector assembly is provided for moving the filled container off the loading platform and positioning a next succeeding container on the loading platform.

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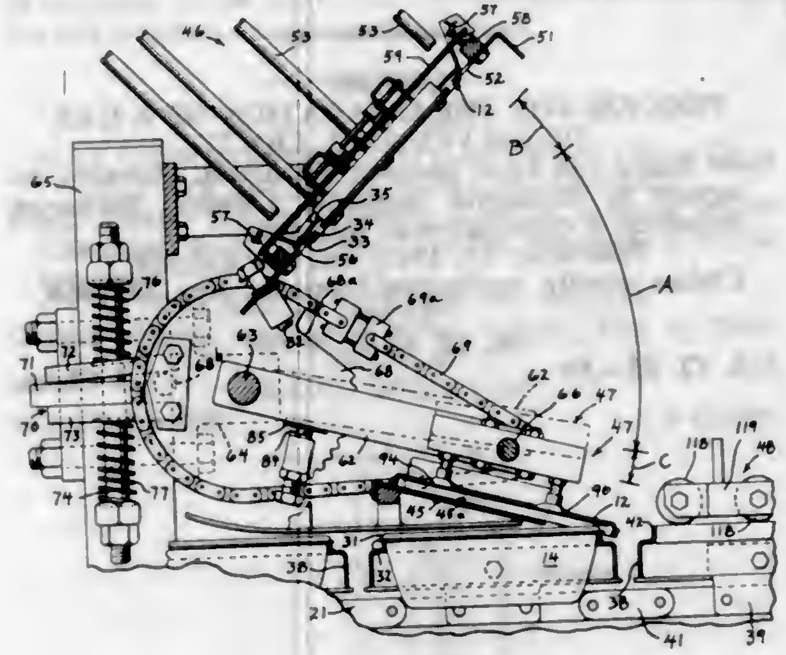
### 3,477,199
### COVER FEEDING APPARATUS

**Carl F. Keas, Rockford, Ill., assignor to Anderson Bros. Mfg. Co., Rockford, Ill., a corporation of Illinois**
**Filed Sept. 25, 1967, Ser. No. 670,074**
**Int. Cl. B65b** *57/04, 7/28*
**U.S. Cl. 53—67** **17 Claims**

A pocketed conveyor for advancing containers past an inclined guide. A cover magazine for holding a quantity of inverted covers. A pivotal arm having suction cups on a pivotally mounted head at the outer end of the arm. Vacuum lines leading to the suction cups and a valve for controlling vacuum thereto. The head arranged for withdrawing an inverted cover and rotating the same to a generally upright position as the arm swings to a point adjacent the guide. The valve then opening in response to reciprocation of the arm to dispense the cover on the guide.



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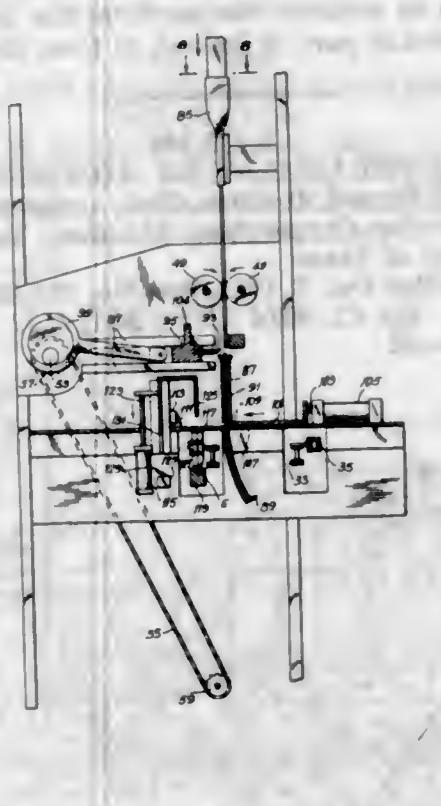
### 3,477,200
### FLEXIBLE PACKAGING EQUIPMENT

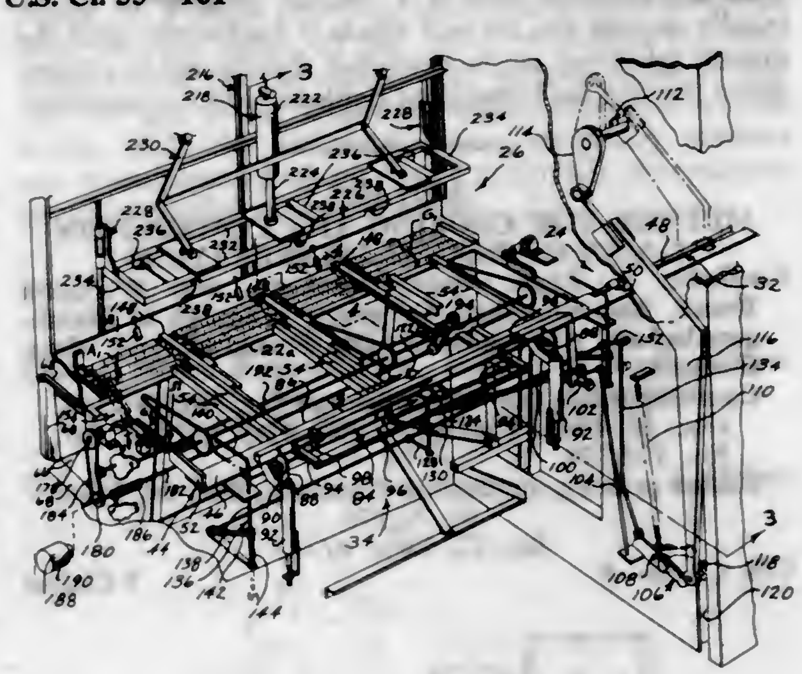
**Royal I. Weinberger, New York, N.Y., and Nicholas Lusch, Somerville, N.J., assignors to Holland-Rantos Company, Inc., New York, N.Y., a corporation of New York**
**Filed Apr. 6, 1966, Ser. No. 568,688**
**Int. Cl. B65b** *3/02, 9/08, 63/04*
**U.S. Cl. 53—120** **2 Claims**



This invention relates to the art of flexible packaging and more particularly to an equipment which will form a longitudinally folded pad from a continuous sheet and then fold such pad at least twice transversely of the length thereof and insert such folded pad into an envelope and after filling such envelope with solution to saturate the pad, will seal such envelope.

### 3,477,201
### PACKAGING MACHINE FOR SLAT-LIKE ARTICLES

**Guy W. Small, Covina, Calif. 91722**
**Filed July 19, 1965, Ser. No. 479,361**
**Int. Cl. B65b** *35/50, 35/40;* **B65g** *57/081*
**U.S. Cl. 53—161** **13 Claims**



A packaging machine for slat-like articles of manufacture, such as carpet anchor strips, is provided. The machine has an infeed platform terminating at a stacking well containing a stacking platform which is vertically movable within the well. The slat-like articles to be packaged are intermittently fed laterally in side by side relation along the infeed platform to periodically locate a leading group of the articles on the stacking platform. A following group of the articles on the infeed platform are then extracted and placed in an inverted position upon the leading group of articles. The stacking platform is then lowered to locate the uppermost group of articles flush with the infeed platform and the above stacking procedure is repeated. This stacking procedure continues until a predetermined number of the articles have been stacked on the stacking platform, after which the stack of articles are rejected endwise from the stacking well into a carton or the like.

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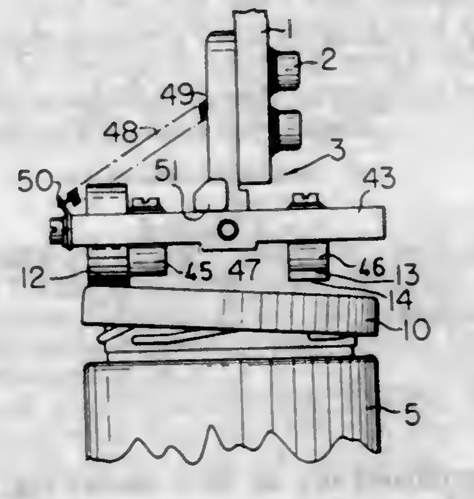
### 3,477,202
### DEVICE FOR PLACING THREADED CLOSURES ON CONTAINERS

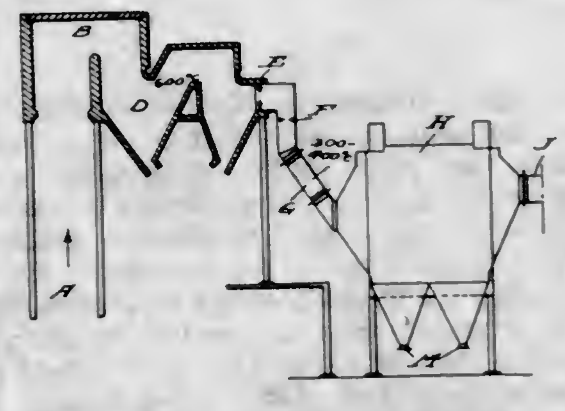
**Einar Zetterberg, Malmo, Sweden, assignor to Aktiebolaget Skane-Emballage, Staffanstorp, Sweden**
**Filed Nov. 16, 1965, Ser. No. 508,114**
**Int. Cl. B65b** *7/28;* **B67b** *3/20*
**U.S. Cl. 53—315** **10 Claims**



A machine which moves screw top containers along a path and including a device to guide and place screw caps at a location to be picked up by individual containers. A cap placement correcting shoe assembly, located where the cap is placed on a container is tiltably mounted along an axis extending in the direction of movement of the containers and has cap guiding shoes for engaging a misplaced cap resting on the moving container. Near one guiding shoe is a friction member to eccentrically engage the lid and rotate it backwards until the threads fall down on the container threads and to precondition the cap for subsequent tightening on the container.

### 3,477,203
### METHOD FOR COOLING THE COMBUSTION GASES OF REFUSE INCINERATORS

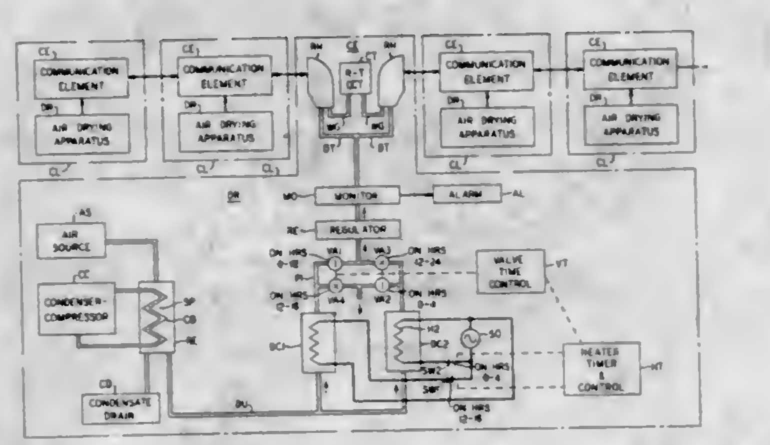
**Karlheinz E. Luge, Mainz-Mombach, and Wolfgang Braun, Bad Homburg, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany**
**Continuation-in-part of application Ser. No. 691,165, Dec. 20, 1967. This application May 1, 1968, Ser. No. 725,735**
**Claims priority, application Germany, Dec. 24, 1966, M 72,170**
**Int. Cl. B01d** *47/02*
**U.S. Cl. 55—9** **7 Claims**



A two step process for cooling the hot combustion gases of refuse incinerators prior to the cleaning of the gases in electrostatic dust collectors. In the first step, the hot gases are cooled to about 600° C. by injecting a cooling liquid directly into the gases in the furnaces of the plants, and in the second step the gases are further cooled to about 300 to 400° C. by infiltrating the gases with air.

### 3,477,204
### AIR DRYING SYSTEM

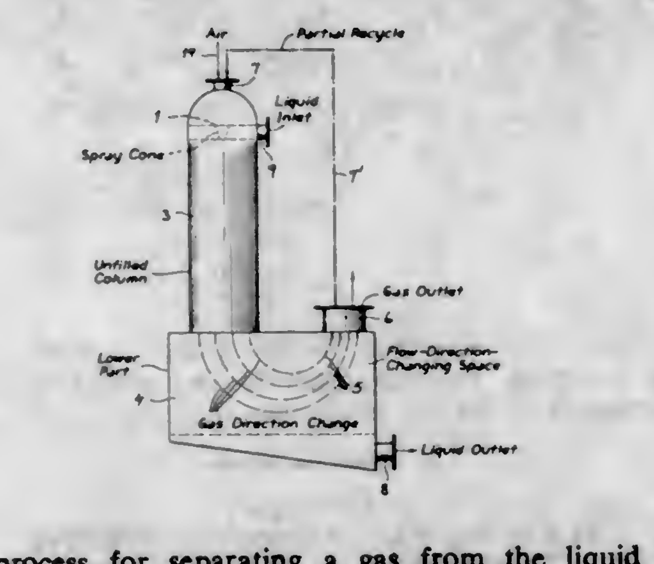
**Jesse M. Jackson, Fair Haven, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed Sept. 12, 1967, Ser. No. 667,156**
**Int. Cl. B01d** *53/02*
**U.S. Cl. 55—33** **10 Claims**



The continuous dry air flow needed for keeping telephone cable, or relay station antennas and waveguides, free of moisture is obtained by pumping ambient air through a moisture removing refrigerator, then pumping it through a desiccating column while diverting a part of the refrigerated air to clear moisture from a second desiccating column that is being heated, and then periodically alternating the heating operations as well as the flow through the columns.

### 3,477,205
### PROCESS FOR THE SEPARATION OF A GAS DISSOLVED IN A LIQUID

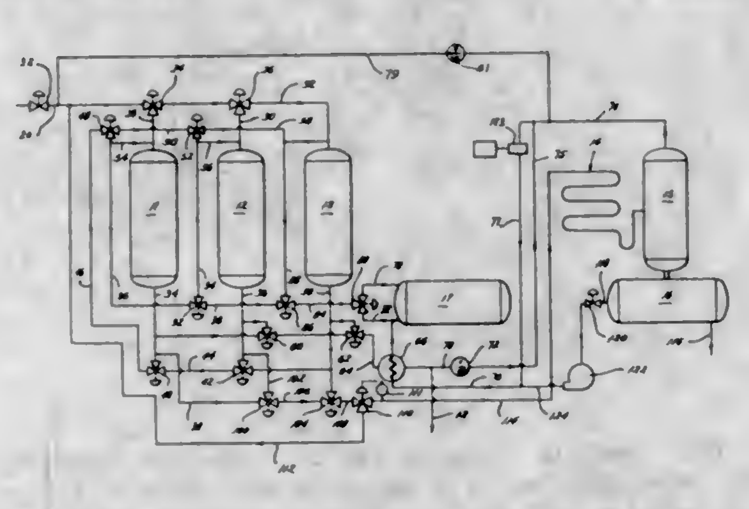
**Petre Potop and Liviu Brandus, Bucharest, Rumania, assignors to Ministerul Industriei Chimice, Bucharest, Rumania, a corporation of Rumania**
**Filed Mar. 27, 1967, Ser. No. 625,959**
**Claims priority, application Rumania, Apr. 16, 1966, 51,309**
**Int. Cl. B01d** *19/00*
**U.S. Cl. 55—53** **3 Claims**



A process for separating a gas from the liquid in which it is dissolved wherein a liquid film flowing in one direction is dispersed by an atomizing gas flowing in the same direction at a velocity of 25 to 100 m./sec. and a volume ratio of liquid to gas of 2.5 to $9.5 \times 10^{-3}$, the atomized liquid being then led through the open space of an unpacked column. At the base of this column, the dispersed particles and carrier gas are subject to a change in direction to separate the gas from the liquid, the gas being recycled in part, if desired, to form the carrier gas.

### 3,477,206
### GAS TREATMENT BY ADSORPTION

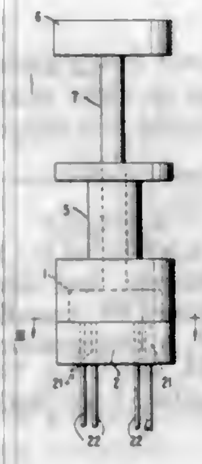
**George F. Russell, Houston, Tex., assignor to Russell Engineering Corporation, Houston, Tex., a corporation of Texas**
**Filed Oct. 7, 1965, Ser. No. 493,803**
**Int. Cl. B01d** *53/04;* **B01j** *1/22*
**U.S. Cl. 55—62** **6 Claims**



Apparatus and process for treatment of gaseous hydrocarbons to recover condensable materials therefrom comprising three beds of adsorbent materials which are alternately subjected to adsorbing, regeneration and cooling phases. The regeneration is accomplished by means of hot gas passing through the bed. When regeneration of a bed is substantially complete a portion of the hot gas from that bed is fed into the bed which is in the adsorption phase of the cycle. At the same time cool lean gas is directed into the bed which is on regeneration phase.

### 3,477,207
### GAS CHROMATOGRAPHY APPARATUS AND VALVES SUITABLE FOR USE THEREIN

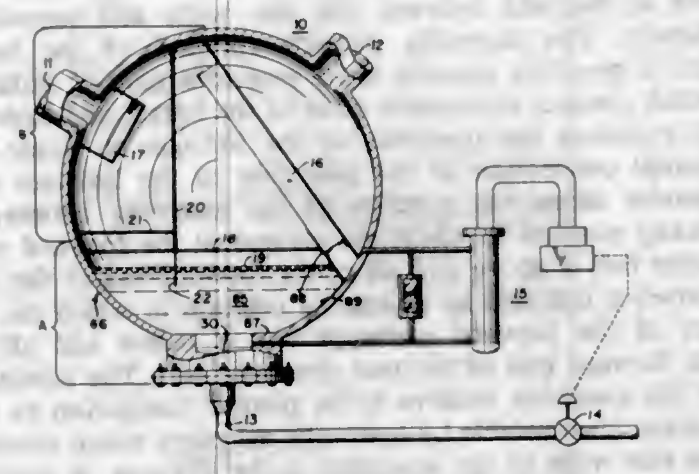
**Frank Pawley Auger, Surbiton, England, assignor to BP Chemicals (U.K.) Limited, London, England, a British company**
**Filed Aug. 3, 1967, Ser. No. 658,084**
**Claims priority, application Great Britain, Aug. 9, 1966, 35,517/66**
**Int. Cl. B01d** *15/08*
**U.S. Cl. 55—197** **6 Claims**



A valve suitable for use in gas chromatography which comprises two mating faces, rotatable relative to one another, one face having slots and the other a set of ports disposed around the centre of rotation of the two faces, wherein a second set of ports is provided between the centre of rotation and the first set of ports.

### 3,477,208
### SHIELDED LIQUID ZONE GAS-LIQUID SEPARATOR

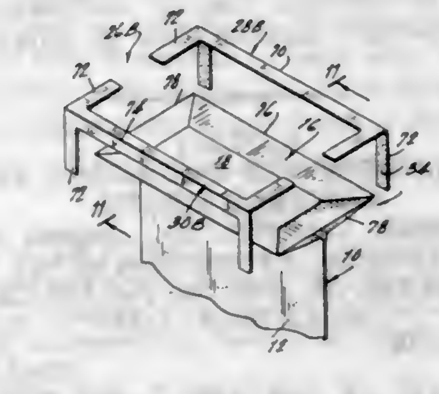
**Ben R. Keller, Sr., Mineral Wells, Tex. (5221 Valerie, Bellaire, Tex. 77401)**
**Filed Dec. 16, 1966, Ser. No. 602,246**
**Int. Cl. B01d** *19/00, 39/12, 45/06*
**U.S. Cl. 55—218** **7 Claims**



A gas-liquid separator characterized by the injection of pressurized gas with entrained liquid component into a spherical or cylindrically shaped pressure vessel to be deflected downwardly by a baffled deflector within the inlet, gas passing through a vertical screen with pressure drop resulting thereacross, while liquid components fall upon, and pass through that part of a horizontal screen below the deflector, the said horizontal screen extending completely across the pressure vessel and in all around abutment with imperforate wall means defining the liquid reservoir. Gas passing below the horizontal screen is deflected, by a baffle extending below the horizontal screen down into the liquid, to pass back up through the horizontal screen and on through the vertical screen to join with the gas in the area downstream from the vertical screen, while the horizontal screen completely presents any re-entrainment of the liquid with such downstream gas to be carried on to the outlet.

### 3,477,209
### FILTER BAG

**John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., a corporation of New York**
**Filed Nov. 29, 1965, Ser. No. 510,178**
**Int. Cl. B01d** *29/10*
**U.S. Cl. 55—367** **3 Claims**

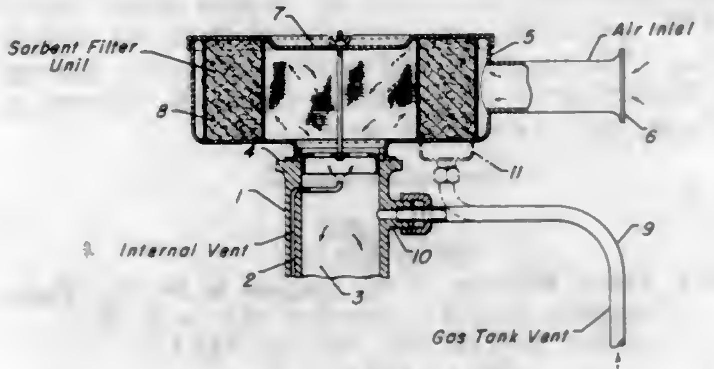


1. A vacuum cleaner filter bag comprising a bag body formed of air pervious sheet material, said body being closed at one end and openable at the other end, said openable end comprising a closed rectangular bottom closed by a valve defined by overlapping flaps said flaps being attached to said bag body and the collar along one edge thereof, said flaps being free of mutual securement to one another along their free edges and being movable into said bag body by vacuum pressure, and a collar means provided at said other end, said collar means having rectangular conformation and being secured along the marginal edge portions of said rectangular bottom at both of the opposite surfaces thereof, said collar means comprising a pair of collar segments consisting of a first and second segment to form a rectangular collar, the first segment overlying said other end along said peripheral edge and the second segment underlying said other end along said peripheral edge thereby defining said openable end for entry of dust laden air into said bag body, said collar segments each comprising a pair of U-shaped portions secured together along a common fold line, each portion consisting of two legs and a base member joining the legs, said base members being parallel, said U-shaped portions being in abutting relationship at the ends of the legs oposite the base members to form a center line along which said U-shaped portions are foldable.

### 3,477,210
### HYDROCARBON VAPOR CONTROL MEANS FOR USE WITH ENGINE CARBURETOR

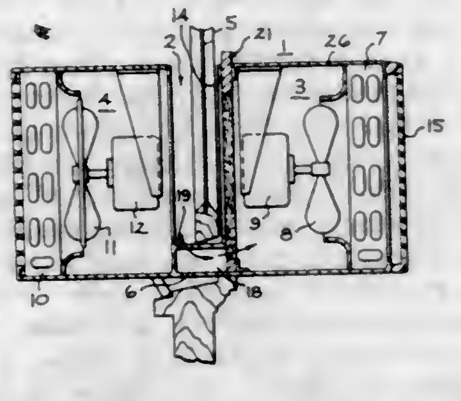
**George L. Hervert, Downers Grove, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**Continuation of application Ser. No. 668,356, Sept. 18, 1967. This application Aug. 12, 1968, Ser. No. 754,099**
**Int. Cl. B01d** *53/04, 53/14, 53/16*
**U.S. Cl. 55—387** **4 Claims**

The use of a combined hydrocarbon sorbent-air filter element in combination with the inlet section of a carburetor for an internal combustion engine provides a convenient means for trapping hydrocarbon vapors so that they are not released to the atmosphere. The combined sorbent-filtering element itself will comprise a fibrous matrix in the nature of a mat or a filtering paper or felt that may be manufactured or fabricated of a suitable natural or synthetic material and incorporating a hydrocarbon sorbent material such as activated carbon particles.



### 3,477,211
### AIR CONDITIONER INCLUDING VENT CONTROL MEANS

**Joseph A. Pietsch, Louisville, Ky., assignor to General Electric Company, a corporation of New York**
**Filed Feb. 25, 1966, Ser. No. 530,120**
**Int. Cl. B01d** *51/10*
**U.S. Cl. 55—418** **1 Claim**

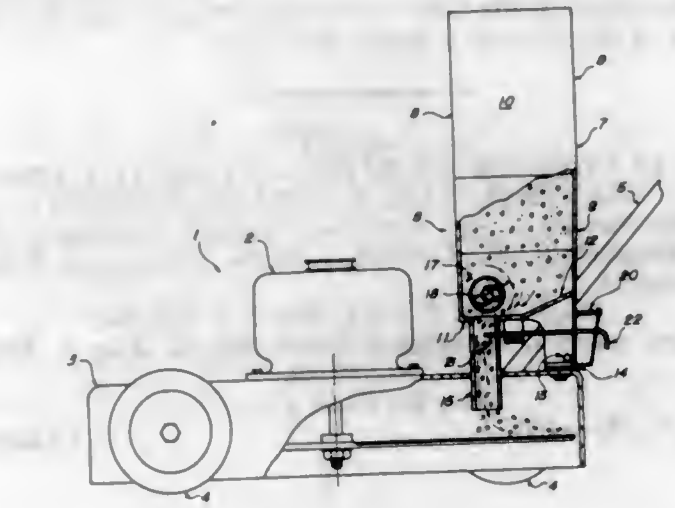


A room air conditioner having a unitary combination air filter and valve member with a filter portion and a valve portion. The air conditioner has a casing defining a first air flow passage for circulating a stream of indoor air through an air conditioning means and discharging conditioned air into the room, and a second air flow passage for the flow of a stream of outdoor air into the room. Means are provided to support the member in either one of two positions in the path of the air streams flowing through both of the passages. The valve portion substantially prevents the flow of outdoor air through the second passage when the member is in one of its positions and the filter portion filters both air streams when the member is in its second position.

### 3,477,212
### FERTILIZER SPREADER ATTACHMENT FOR ROTARY POWER MOWER

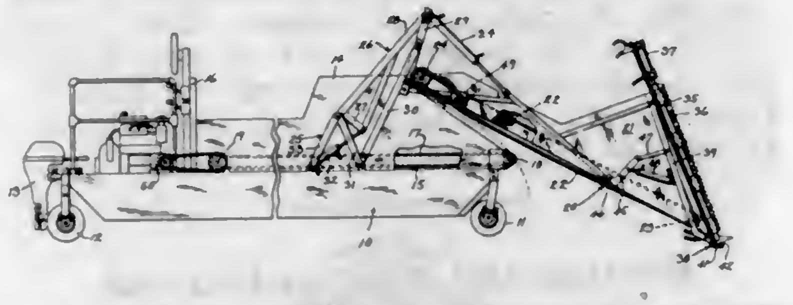
**Leroy Coffman, 4828 Wedgeview, Hurst, Tex. 76053**
**Filed July 19, 1967, Ser. No. 654,635**
**Int. Cl. A01d** *75/00, 55/18*
**U.S. Cl. 56—25.4** **7 Claims**

Specific improvements in a fertilizer spreader attachment for use with a rotary-type power lawn mower of conventional design having blades rotatable about a vertical axis, and having a housing, open on its under side, enclosing the blades and fitting closely around them, and having its lower edges in close proximity to the ground, and having wheels whereby it is supported.



### 3,477,213
### AQUATIC PICKUP AND UNLOADING APPARATUS

**Jerome O. Just, Sturtevant, and Howard W. Stern, Milwaukee, Wis., assignors to Aquatic Controls Corporation, Hartland, Wis., a corporation of Wisconsin**
**Filed July 28, 1967, Ser. No. 656,865**
**Int. Cl. A01d** *55/16;* **B63b** *27/00*
**U.S. Cl. 56—9** **9 Claims**



A propelled aquatic barge has a forward deck with side panels arising from the sides of the deck and with a reversably drivable wire mesh bed conveyor belt overlying the deck between the side panels. A pickup and unloading assembly including a pair of spaced side walls and a reversably drivable wire mesh forward conveyor belt is disposed between the side walls and supported thereby. The assembly projects forward of the barge and is pivotally secured at its rear to a pair of linkages which connect to opposite sides of the barge, and hydraulic cylinders are operable on the linkages to rotate the pivotal connection of the assembly to the linkages and thereby adjust the position of the assembly between a pickup position in which the aft end of the forward conveyor belt is above and aft of the forward end of the bed conveyor belt and an unloading position in which the aft end of the forward conveyor belt is below and aft of the forward end of the bed conveyor belt. The elevation of the assembly relative to its pivotal connection to the linkage is adjustable by hydraulic cylinders which connect the side walls of the assembly to the linkages. A vertical reciprocating cutter is disposed on the forward edge of each side wall of the assembly and a horizontal reciprocating cutter is disposed adjacent the forward edge of the forward conveyor belt. The horizontal cutter is mounted on the assembly for retraction in an aft direction to remove it from the forward end of the forward conveyor belt when the forward conveyor belt is used to unload.

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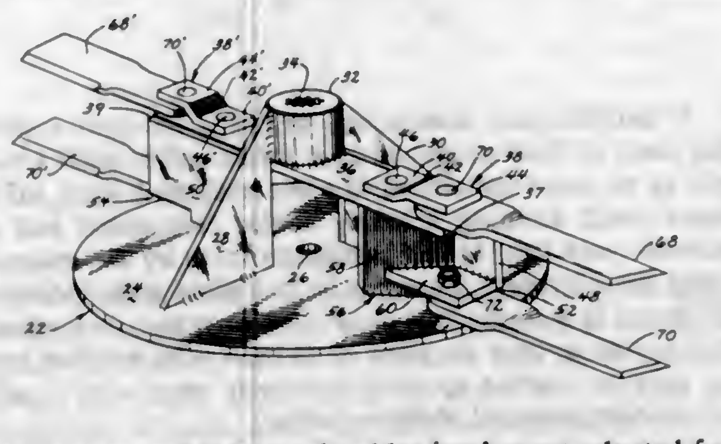
A hydraulic control system is provided to control the operation of the hydraulic cylinders for changing the position and elevation of the pickup and unloading assembly, to drive hydraulic motors for the conveyor belts in selected directions, and to reciprocatively drive hydraulic cylinders for operating the cutters. The hydraulic control system provides for automatic retraction of the horizontal cutter when the forward conveyor belt is driven in a forward direction to unload material from the barge.

### 3,477,214
### ROTOR ASSEMBLY FOR A SHREDDER IMPLEMENT

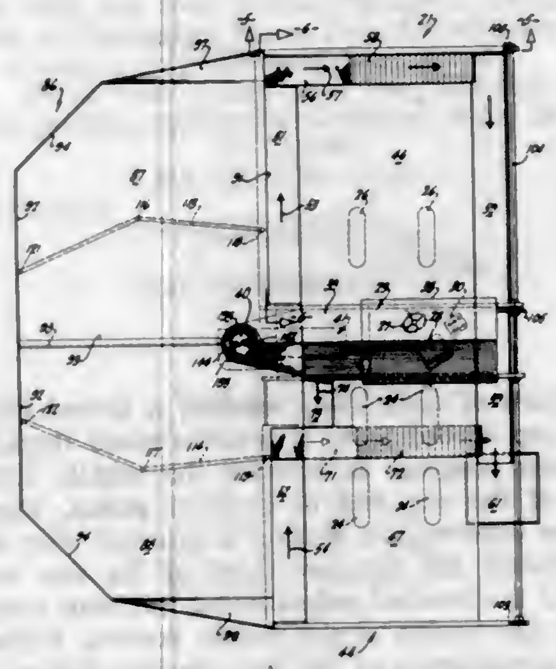
**John Harlan Rogers, Fort Dodge, Iowa, assignor to The Standard Engineering Company, Fort Dodge, Iowa**
**Filed Oct. 24, 1965, Ser. No. 504,854**
**Int. Cl. A01d** *55/18, 55/28*
**U.S. Cl. 56—295** **10 Claims**



A rotor assembly for a shredder implement adapted for cutting and shredding cornstalks, grass or the like. A cutting blade support means is secured to and supported above a flat, circular, horizontally disposed buffer plate which is operatively connected to a vertically disposed power driven shaft. The cutting blade support means supports the cutting blades in a plane above the buffer plate.

### 3,477,215
### COMBINED CROP SHAKER AND HARVESTER

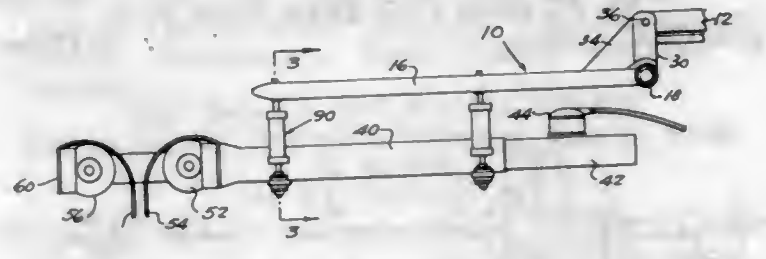
**Benjamin T. Herbst, P.O. Box 67, Esparto, Calif. 95627**
**Filed Jan. 10, 1967, Ser. No. 608,410**
**Int. Cl. A01d** *41/02;* **A01g** *19/00*
**U.S. Cl. 56—328** **9 Claims**



The disclosure relates to self-propelled apparatus movable alongside a row of crop bearing trees and being capable of stopping at each tree, shaking the tree and catching the entire crop shaken therefrom.

### 3,477,216
### SUSPENSION SHOCK ABSORBER FOR TREE SHAKING DEVICES

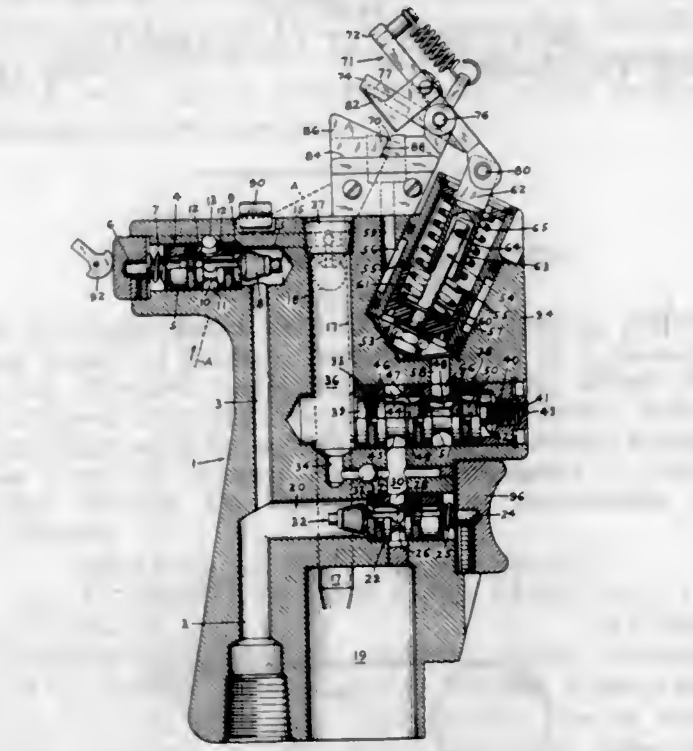
**Jack L. Martin, 5144 Western Ave., Olivehurst, Calif. 95961**
**Filed Feb. 24, 1967, Ser. No. 618,541**
**Int. Cl. A01g** *19/00;* **F16m** *1/02*
**U.S. Cl. 56—328** **2 Claims**



A tree shaking device suspension for a vibratory mechanism comprising upper and lower bolts resiliently connected to a support frame and the vibratory mechanism respectively and a cylindrical interconnection member securing two sets of annular resilient disks which in turn are received about the upper and lower bolts and form a resilient interconnection therebetween is disclosed.

### 3,477,217
### AUTOMATIC YARN SPLICER

**Charles C. Bell, Warwick, and Alvin H. Jobin, East Greenwich, R.I., assignors, by mesne assignments, to Allied Chemical Corporation, New York, N.Y., a corporation of New York**
**Filed Dec. 5, 1968, Ser. No. 781,427**
**Int. Cl. D01h** *17/00, 13/26*
**U.S. Cl. 57—22** **6 Claims**



A hand held yarn splicer operated by a timed jet of air. The start of the jet is timed by the rise of a control piston actuated by compressed air, and the jet is cut off by the shift of a valve actuated when a precise pressure is reached in a pressure chamber. The rate of build up of pressure in the pressure chamber is adjustable. The same control piston automatically closes the cover of the splicing chamber and operates cutters to trim the yarn ends off close to the zone in the yarn where the splice will be made, all before any splicing action begins.

### 3,477,218

## APPARATUS AND METHOD FOR PRODUCING CRIMPED FILAMENTARY MATERIALS

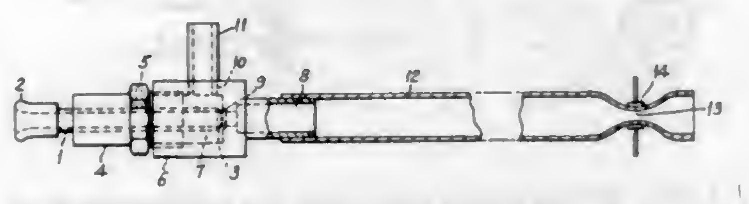
**Selwyn George Hawtin, Whitley, Coventry, and David Roger Smith and Dennis Ronald Field, Coventry, England, assignors to Courtaulds Limited, London, England, a British company**

**Filed July 6, 1967, Ser. No. 651,537**

**Claims priority, application Great Britain, July 21, 1966, 32,821/66**

**Int. Cl. D02g** *3/02;* **D01h** *13/00, 7/00*

**U.S. Cl. 57—34** **10 Claims**



Crimped bulked yarns and tows of continuous filaments are obtained by feeding plasticized filaments into a zone where they are twisted by the action of a fluid, passing the fluid while it is carrying the filaments through a constriction and then reducing the degree of plasticization of the filaments.

### 3,477,219

## APPARATUS FOR MAKING YARNS OF ARTIFICIAL POLYMERIC MATERIAL

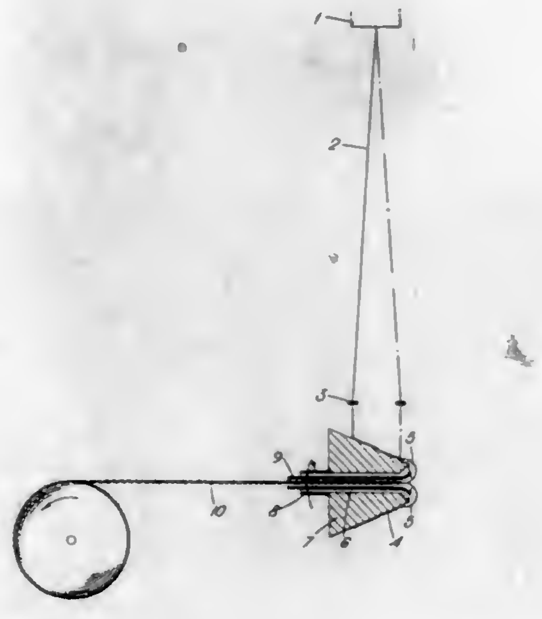
**Roy Alan Williams, Pontypool, England, assignor to Imperial Chemical Industries, Limited, London, England, a corporation of Great Britain**

**Filed May 7, 1968, Ser. No. 727,284**

**Claims priority, application Great Britain, May 10, 1967, 21,671/67**

**Int. Cl. D01h** *7/02, 13/26;* **D07b** *3/02*

**U.S. Cl. 57—59** **6 Claims**



A continuous filament yarn is made by leading continuous filaments through a traverse mechanism and then onto a rotating body possessing a discontinuous or irregular surface structure. The filaments become wrapped on the rotating body in the form of a sleeve comprising a number of overlaid and interconnected helices. A constant speed wind-up device pulls the sleeve off the rotating body and through an axially extending passage through the body thereby forming a yarn having special characteristics.

### 3,477,220

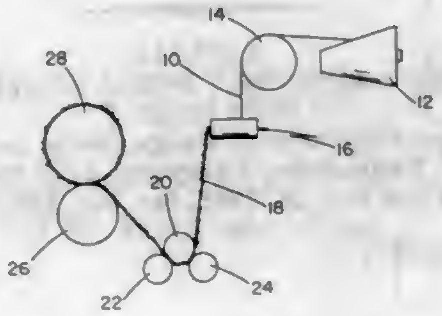
## DRAFTABLE NOVELTY YARNS AND PROCESS THEREFOR

**Preston F. Marshall, Walpole, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts**

**Filed Oct. 4, 1967, Ser. No. 672,821**

**Int. Cl. D02g** *3/02*

**U.S. Cl. 57—140** **9 Claims**



A multifilament continuous strand is fed into a whirling body of fluid contained in a vortex cell in such a manner as to cause the strand to pleat back and forth axially upon itself, forming a heavy denier compacted and extensible yarn held in self-sustaining form by the entanglement of individual filaments in a contiguous pleat. The yarn thus formed may be used as is, may be plied or twisted with another yarn, or may be drafted to yield a novelty yarn with a series of randomly-spaced slubs or nubs.

### 3,477,221

## PROCESS FOR IMPROVING THE UNIFORMITY OF THE MODULUS OF ELASTICITY IN A DRAW TWIST WOUND THREAD COP

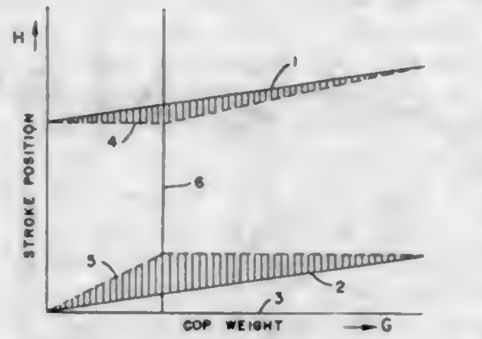
**Hans Ulrich Herwig, Erlenbach, Germany, assignor to Glanzstoff AG, Wuppertal, Germany**

**Filed Feb. 21, 1968, Ser. No. 707,216**

**Claims priority, application Germany, Feb. 24, 1967, G 49,389**

**Int. Cl. D02g** *3/02;* **D01h** *13/00;* **B65h** *1/00*

**U.S. Cl. 57—157** **16 Claims**



A process of draw twist winding a thread into a biconical cop according to a predetermined thread winding tension program as between the middle cylindrical portion of the cop and its reversal points, whereby a maximum difference in tension is attained after winding approximately the first one-third of the cop with the tension at the reversal points being less than about two-thirds of the tension of the middle portion, followed by gradual convergence of the two tensions during the remaining winding operation until they are about equal upon completion of the finished cop. The resulting biconical cop exhibits an improved uniformity in the modulus of elasticity of the thread in subsequent processing steps.

### 3,477,222

## CALENDAR CLOCK DEVICE

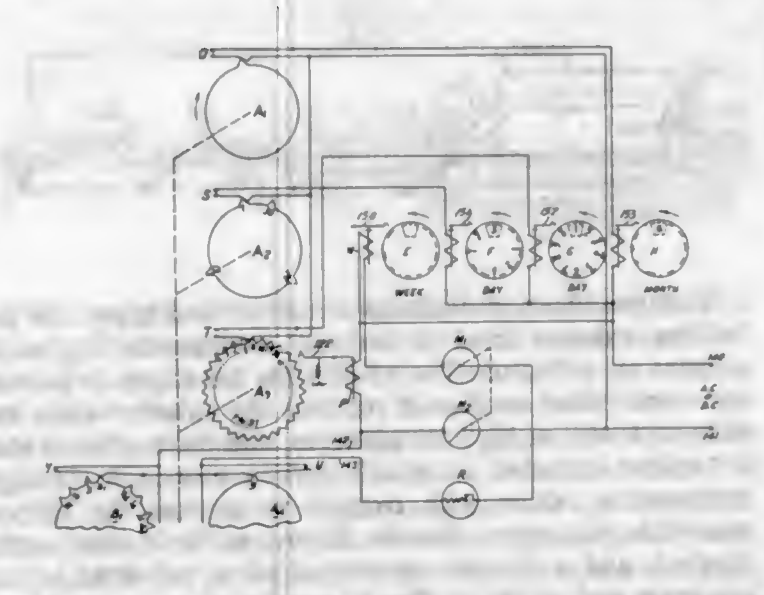
**Lau Chun Leung and Lau Chi Leung, both of 24 Pine St., 1st Floor, Tai Kok Tsui, Kowloon, Hong Kong**

**Filed Apr. 11, 1968, Ser. No. 720,571**

**Claims priority, application Great Britain, Apr. 24, 1967, 18,771/67**

**Int. Cl. G04b** *19/24*

**U.S. Cl. 58—4** **11 Claims**



In a calendar clock device, day and month wheels are provided steppable through series of positions corresponding to the days of a 31 day month and to successive month, the month wheel being advanced one step on the completion of each series of thirty one positions of the day wheel, the wheels being divided into a plurality of coaxial zones in each of which zones selected locations are differentiated from the remainder, whereby to initiate additional stepping operations of the day wheel in response to the wheels reaching certain combinations of angular positions corresponding to non-existent dates at the end of a month of less than thirty one days. Preferably the additional stepping operations are initiated by pairs of series connected contact sets cooperating with zones one on each of the wheels for closure by said differentiated locations.

### 3,477,223

## FREQUENCY STANDARD

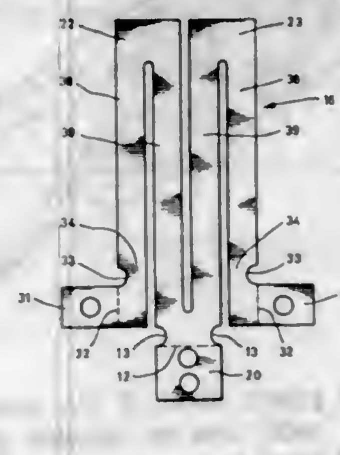
**Wilhelm Tilse and Rolf Weise, Pforzheim, Germany, assignors to The United States Time Corporation, Waterbury, Conn., a corporation of Connecticut**

**Filed Mar. 8, 1967, Ser. No. 621,482**

**Claims priority, application Germany, Mar. 24, 1966 U 12,540**

**Int. Cl. G04c** *3/00*

**U.S. Cl. 58—23** **5 Claims**



An electromechanical frequency standard for use in horology consists of two flat flexible spring plates. Each plate has two extending arms or reeds. Opposite reeds of each plate are fastened to connection pieces, one of which preferably carries a magnet and the other a coil. The plates are attached to a base and to their connection pieces by integral extensions which are bent at an angle, preferably of 90°, to the plates. The bends are made accurately and determine the active length, and therefore the desired frequency, of the oscillator.

### 3,477,224

## CLOCK CASE

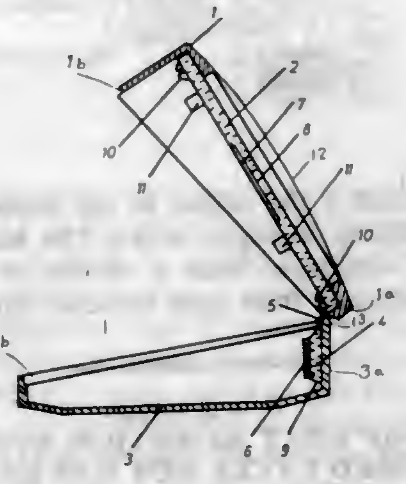
**Roland Siefert, Bad Durrheim, Germany, assignor to Kienzle Uhrenfabriken G.m.b.H., Schwenningen am Neckar, Germany, a limited-liability company of Germany**

**Filed June 20, 1967, Ser. No. 647,535**

**Claims priority, application Germany, June 28, 1966, K 54,883**

**Int. Cl. G04b** *37/04*

**U.S. Cl. 58—53** **5 Claims**



The invention is a timepiece case such as for a traveler's alarm clock having two mating somewhat shell-like halves, hinged together by a hinge formed as an integral part of a works carrier of flexible elastic plastic secured on the upper or front case half.

### 3,477,225

## HYDROSTATIC TRANSMISSION CONTROL SYSTEM

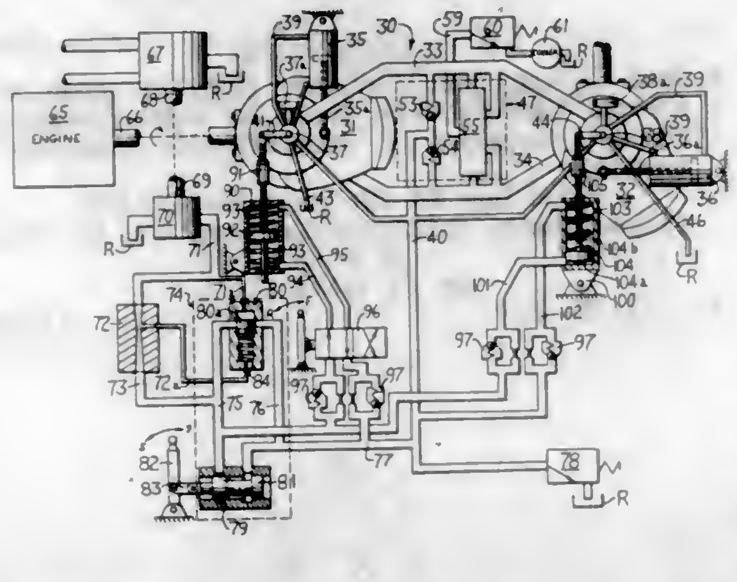
**John R. Cryder, Joliet, Willard J. Haak, John L. Hufeld, and Lionel L. Kinney, Peoria, Kenneth R. Lohbauer, Joliet, Howard A. Marsden, Pekin, Ill., Ralph W. Matthews, Franklin, Wis., William B. Norick, Joliet, Glen E. Stewart, Springfield, Rollin P. Vanzandt, Peoria, and Frank H. Winters, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**

**Filed June 14, 1967, Ser. No. 645,912**

**Int. Cl. F02b** *41/00;* **F15b** *15/18;* **F16d** *31/06*

**U.S. Cl. 60—19** **18 Claims**

Hydrostatic transmission, systems which transmit torque via fluid pressure circulating between a pump and motor, are now sufficiently perfected for use in work vehicles. Infinitely variable input to output ratios are available in such transmissions which make them especially useful in tractor type vehicles. However, for high efficiency the transmission ratio must be properly and continuously adjusted for maximum performance. Such control is accomplished in this invention by employing a separate control pump geared to the transmission power source, a valve controlled differential pressure stack connected to receive the output of the control pump wherein changes in its valve position will effect changes in pressures differential occurring within the stack, pressure responsive means having elements displaceable by pressure differential connected to the stack so that pressure differentials occurring therein are communicated to the elements and linkages connecting the elements with control means in the transmission for changing its ratio. Also included is flow sensitive system which is connected across the differential pressure stack to reduce the pressure differential if the output of the control pump drops due to a decrease in engine speed. The basic control system can be employed with a variety of subsystems to provide steering in track-type vehicles, reversing and the like.



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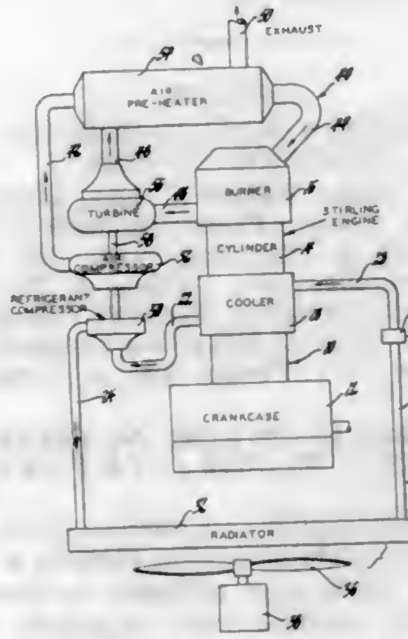
### 3,477,226
### HEAT PUMP HEAT REJECTION SYSTEM FOR A CLOSED CYCLE HOT GAS ENGINE

**Worth H. Percival, Grosse Pointe Woods, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Feb. 27, 1968, Ser. No. 708,716**
**Int. Cl. F03g** *7/06*
**U.S. Cl. 60—24** **5 Claims**



An external combustion hot gas engine cooling system requiring a substantially smaller radiator than conventional systems through use of a heat pump refrigerant system to increase the coolant temperature in the radiator. A gas turbine arrangement is utilized to drive the refrigerant compressor and a combustion air preheater is included to recover heat from the turbine exhaust gases. The turbine is driven by exhaust gas from the engine burner, which is pressurized by a supercharging compressor also driven by the turbine.

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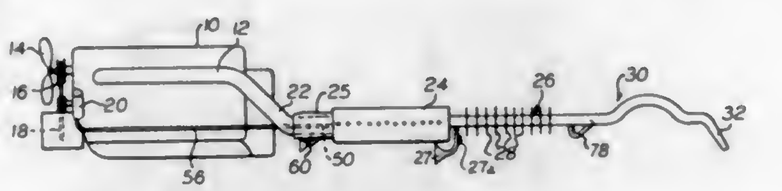
### 3,477,227
### ANTI-AIR POLLUTION DEVICE FOR INTERNAL COMBUSTION ENGINES

**Bruno Bettega, 179 Franklin St., Northvale, N.J. 07647, and George R. Stevens, 291 River Road, Bogota, N.J. 07603**
**Filed Mar. 5, 1968, Ser. No. 710,522**
**Int. Cl. F01n** *3/02, 3/14*
**U.S. Cl. 60—30** **14 Claims**



This specification discloses a method and apparatus for treating exhaust from an internal combustion engine to prevent air pollution. The muffler for the engine is located and constructed so that it receives the exhaust while the exhaust is still at high temperature, and the muffler is also a catalyst chamber in which carbon monoxide at high temperature reacts with oxygen to convert the carbon monoxide to carbon dioxide. Cupric oxide is used as the catalyst, and a limited amount of air is admitted to the upstream end of the muffler to supply the oxygen without diluting the exhaust so much as to cool it below the critical temperature for the catalytic reaction. The water vapor, or a substantial part of it, in the exhaust is condensed in the exhaust passage beyond the muffler; and the water is trapped and sprayed into the uncondensed remainder of the exhaust gases to wash particulate matter out of the exhaust stream and to drop the particle-carrying water on the street.

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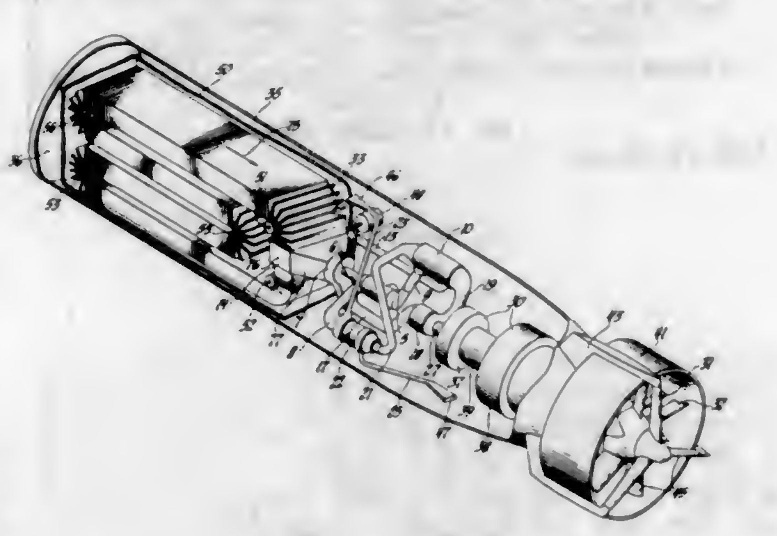
### 3,477,228
### GAS TURBINE POWER PLANT

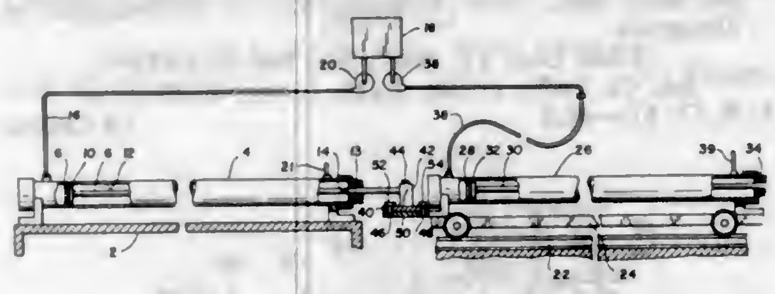
**Douglas Johnson, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Original application Dec. 12, 1966, Ser. No. 601,206. Divided and this application Aug. 15, 1968, Ser. No. 752,828**
**Int. Cl. F01k** *25/08, 3/24;* **C06b** *15/00*
**U.S. Cl. 60—36** **6 Claims**



A gas turbine power plant of the recuperative closed circuit type for such uses as torpedo propulsion. The motive fluid is heated by an exothermic reaction of the thermite type. The reaction material is embodied in a chain of plates fed successively through a reaction chamber. The plates embody a refractory metal frame and contain a reinforcing and diluting content of quartz fibers.

### 3,477,229
### HYDRAULIC CYLINDER ARRANGEMENT

**Daniel A. Katko, Hubbard, Ohio, assignor to Lombard Corporation, Youngstown, Ohio, a corporation of Ohio**
**Filed June 16, 1967, Ser. No. 646,596**
**Int. Cl. F15b** *11/18;* **F02b** *73/00;* **F01b** *15/02*
**U.S. Cl. 60—52** **3 Claims**



This patent discloses equipment that makes possible higher effective piston speeds in hydraulic apparatus. Possible damage to the packing between a hydraulic cylinder and either the piston rod or the piston itself limits the maximum permissible speed that the piston of a hydraulic cylinder may move, relative to its cylinder, to about 200 to 250 feet per minute. In accordance with the invention, there is described equipment whereby high effective speeds such as 500 feet per minute or possibly more are obtained, by providing a fixed cylinder and one or more cylinders movable on a carriage or upon ways, the movable cylinder or cylinders being propelled directly or indirectly by a piston associated with the fixed cylinder. Fluid is simultaneously pumped into both the fixed cylinder and the movable cylinder or cylinders, and at a rate with respect to each of the cylinders involved such that there exists a predetermined ratio of the speed of travel of each piston with respect to its associated cylinder, usually but not necessarily 1:1; and also a predetermined ratio between the speed of travel of the piston in the fixed cylinder with respect to its cylinder and the speed of travel of the piston in each movable cylinder with respect to a fixed location, e.g., 2:1, 3:1, or possibly more. In accordance with still a more limited aspect of the invention, there is further provided means for insuring that a propelled cylinder does not outrun the cylinder by means of which it is propelled, e.g., a rack-and-pinion arrangement.

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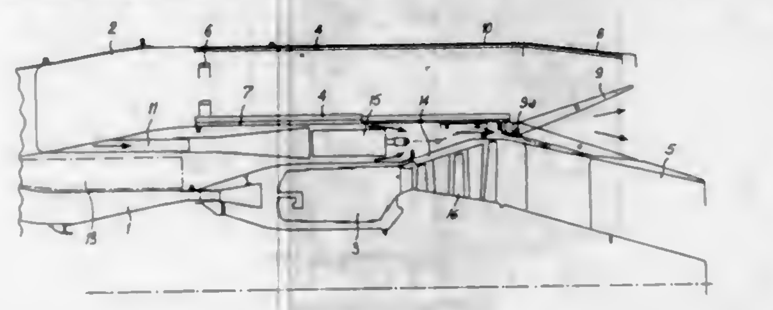
### 3,477,230
### TURBO-JET ENGINES AND OTHER JET ENGINES OF THE DUAL-FLOW TYPE

**Louis Jules Bauger, Vanves, Hauts-de-Seine, and Armand Jean Baptiste Lacroix, Itteville, Essonne, France, assignors to Societe National d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France**
**Filed July 24, 1967, Ser. No. 655,529**
**Claims priority, application France, July 28, 1966, 71,318**
**Int. Cl. F02k** *3/02*
**U.S. Cl. 60—224** **2 Claims**



Dual-flow jet engine comprising a gas turbine disposed in a central primary duct surrounded by an annular secondary duct, flaps movably mounted on the internal wall of the secondary duct and a duct for tapping off air from the secondary duct and injecting said air in the turbulent zone behind said flaps.

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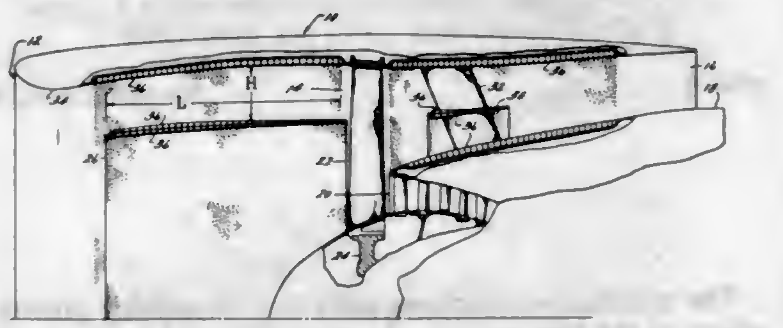
### 3,477,231
### NOISE REDUCTION

**Elmir E. Paulson, Topsfield, Mass., assignor to General Electric Company, a corporation of New York**
**Filed Dec. 26, 1967, Ser. No. 693,655**
**Int. Cl. F02k** *3/06, 11/00*
**U.S. Cl. 60—269** **3 Claims**



The disclosure shows the forward portion of a turbofan engine employed in the propulsion of aircraft. The inlet to this engine is defined by a cowl which directs air to a fan or low pressure compressor, having a rotor on which a first circumferential row of blades is mounted. The inner portion of the air pressurized by the fan is directed into the entrance of a core engine or gas generator which drives the fan. The outer portion of the air pressurized by the fan is discharged through an annular nozzle, defined by the cowl and an inner nacelle, to provide a propulsive force from the engine. An annular splitter is provided in advance of the fan blades, and a second annular splitter is provided downstream of the fan between the cowl and inner nacelle. The opposite sides of the two splitters are lined with sound absorbent material, as are the inner surface of the cowl and the outer surface of the inner nacelle. The provision of the splitters and the sound absorbent material in this fashion are highly effective in reducing the propagation of noise, generated by the fan.

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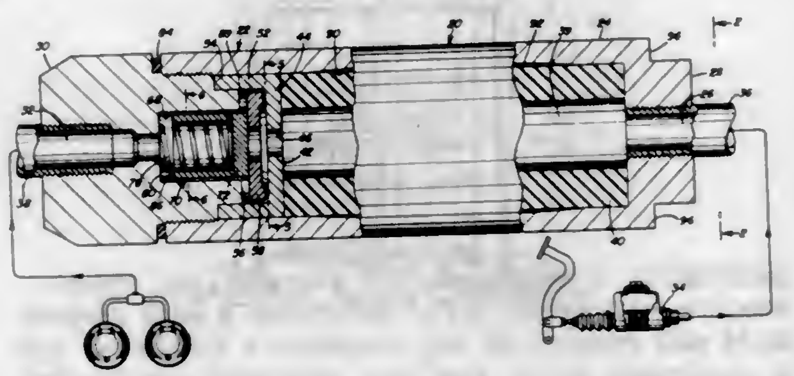
### 3,477,232
### BRAKE ARRESTER

**Gilbert E. Porter, 500 Valley Park Way, Apt. E, Escondido, Calif. 92025**
**Filed Feb. 14, 1968, Ser. No. 705,346**
**Int. Cl. F15b** *1/04, 7/00;* **B60t** *15/46*
**U.S. Cl. 60—54.5** **10 Claims**

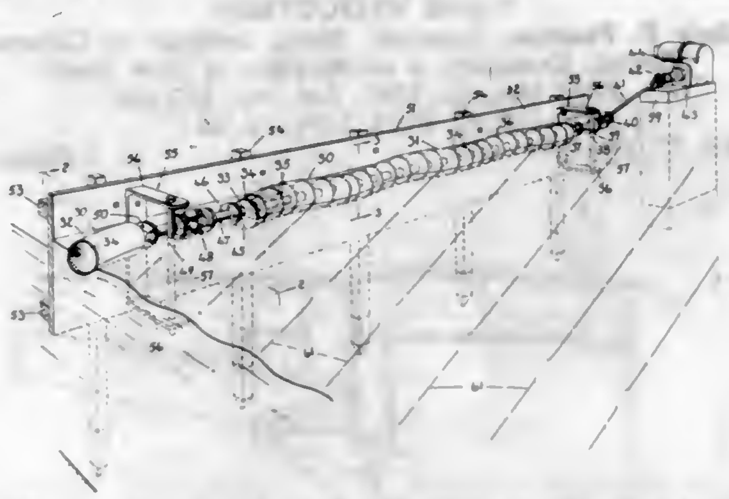


A fluid type braking system for a vehicle employing a brake arrester including valve mechanism which, after pressure, of a predetermined high value created at the master cylinder, is impressed on the brake shoe actuating mechanism, pressure in excess of that high value is prevented from being impressed on the brake shoe actuating mechanism, and the excess pressure is absorbed by an expansible and contractable chamber in the form of rubber.

3,477,233

### WAVE MACHINE INSTALLATIONS

**Per F. Andersen, 200 Roehampton Ave., Apt. 914,**
**Toronto, Ontario, Canada**
**Filed Mar. 7, 1966, Ser. No. 532,309**
**Int. Cl. E02b** *15/02, 3/00;* **E04h** *3/20*
**U.S. Cl. 61—1** **15 Claims**



The specification discloses machines for making gravity waves on the free surface of a body of liquid by the periodic motion of a buoyant member which is free to rise and fall with changes in the level of said surface. The buoyant member may be elongated and rotated about an axis parallel to its elongated direction by driving means separate from the member. Alternatively, the buoyant member may carry driving means and a weight, the driving means being arranged to move the weight relative to the buoyant member. The disclosure describes the machines as being used for keeping a channel or harbour free from ice.

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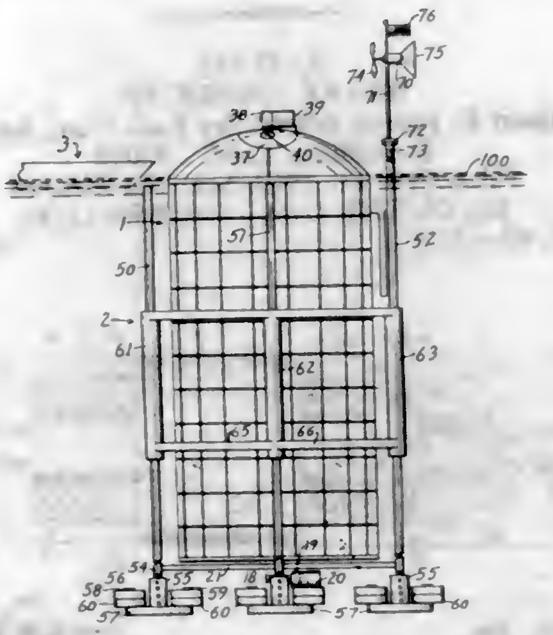
3,477,234

### SUBMERGIBLE HOUSING DEVICE

**Victor D. Aquino, P.O. Box 144, Hanapepe,**
**Kauai, Hawaii 96716**
**Filed Mar. 14, 1968, Ser. No. 713,219**
**Int. Cl. B63c** *11/38;* **E02d** *23/02*
**U.S. Cl. 61—69** **4 Claims**



A submergible housing device adapted for vertical reciprocatory movement in a body of water having interior chambers, transparent side walls, a dome shaped transparent roof and a bottom portion with openings to allow water to enter one of the interior chambers. Spaced apart guide means comprising post-like means weight anchored to the bottom of a body of water in engagement with sleeve means on the housing device to support the device in a manner that the housing can be vertically reciprocated.

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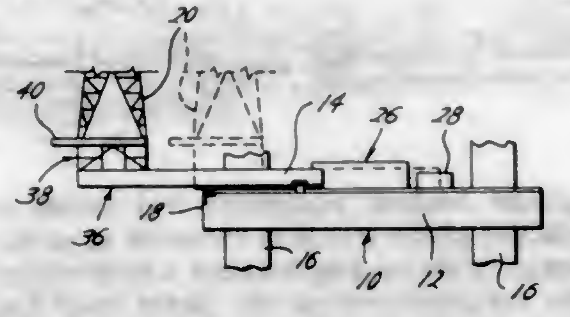
3,477,235

### CANTILEVERED OFFSHORE STRUCTURE

**Donald R. Branham, Richard J. Selfe, and Ray W. Hester, Jr., Houston, Tex., assignors to Crestwave Offshore Services, Inc., New Orleans, La., a corporation of Delaware**
**Filed Dec. 11, 1967, Ser. No. 689,421**
**Int. Cl. E02b** *17/00;* **E21b** *15/02;* **E04b** *1/34*
**U.S. Cl. 61—46.5** **14 Claims**



An offshore structure is disclosed which is provided with a cantilever assembly carrying drilling apparatus, the cantilever assembly being mounted for horizontal movement on a deck structure beyond an outboard edge thereof while being supported by the deck structure. The cantilever assembly is supported near the outboard edge of the deck structure by rocker bearings and is held down near its aft end by rocker hold down bearings which distribute stresses uniformly over sections of the girders of the cantilever assembly thereby avoiding gouging of the aft ends of the girders into the desk structure. A cantilever subassembly is movably carried by the cantilever assembly the subassembly in turn movably supporting the drilling apparatus and being constructed and arranged to be skidded off the end of the cantilever assembly onto tracks of a stationary platform supported on the underwater ground.

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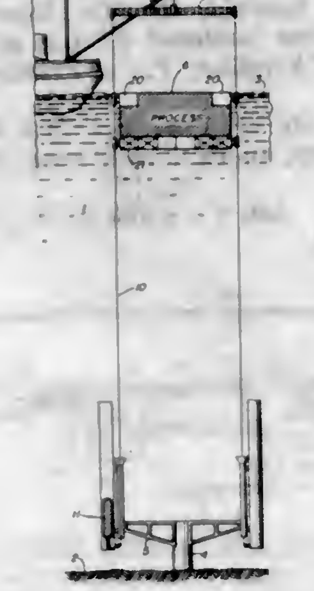
3,477,236

### SURFACE TO SUBSEA GUIDANCE SYSTEM

**Bill S. Burrus, Tulsa, Okla., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware**
**Continuation of application Ser. No. 671,365, Sept. 28, 1967. This application Nov. 12, 1968, Ser. No. 775,590**
**Int. Cl. B63b** *35/04;* **E21b** *33/035, 43/01*
**U.S. Cl. 61—46.5** **8 Claims**



A cable is attached to a float and pulley system at a subsea location for extension to the surface to act as a guide for structures passed between the surface and the subsea location.

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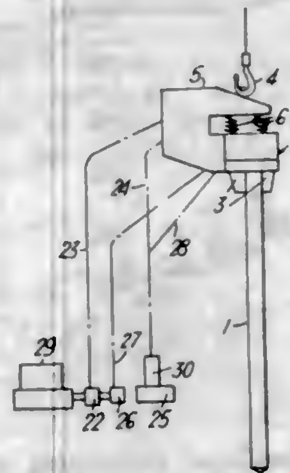
3,477,237

### METHOD OF VIBRATING A MEMBER TO DRIVE IT IN A RESISTIVE MEDIUM

**John C. Orkney, The Coach House, Drummond Place Lane, Stirling, Scotland**
**Continuation-in-part of application Ser. No. 460,171, June 1, 1965. This application Oct. 1, 1968, Ser. No. 764,099**
**Claims priority, application Great Britain, June 2, 1964, 22,696/64**
**Int. Cl. E02d** *7/18;* **E21c** *3/02;* **B06b** *1/10*
**U.S. Cl. 61—53.5** **11 Claims**



A method of driving a member such as a pile in a resistive medium such as earth is described. The member is biassed in a predetermined direction and a sinusoidally varying force is applied to the member while in contact with the resistive medium. The frequency of applied force is controlled so that it is always different from the fundamental natural frequency and harmonics thereof of the mass elastic system including the driven member and its driver. The controlled frequency is such that the driven member never vibrates at more than one-half the maximum amplitude at which it would vibrate if it were vibrated at that one of the instantaneous natural frequencies (fundamental resonant frequency and its harmonics) of the mass elastic system nearest to the controlled frequency.

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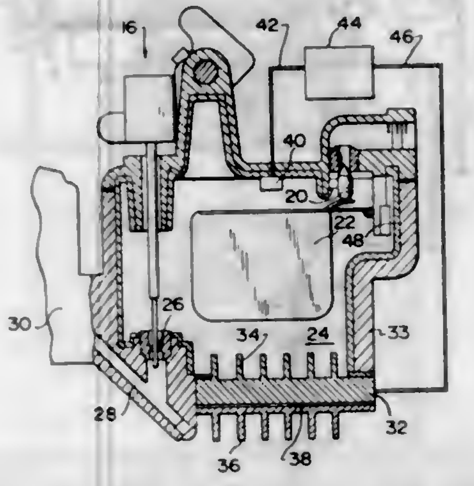
3,477,238

### THERMOELECTRIC ANTIPERCOLATOR DEVICE FOR THE FUEL SYSTEM OF AN INTERNAL COMBUSTION ENGINE

**Richard T. Race, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois**
**Filed Dec. 13, 1967, Ser. No. 690,114**
**Int. Cl. F25b** *21/02;* **F02m** *37/20*
**U.S. Cl. 62—3** **4 Claims**



A thermoelectric cooling device is mounted in the wall of the intake chamber of a fuel pump and in the float bowl of a carburetor to control the ambient temperature within the respective enclosures to eliminate percolating the fuel therein. A temperature sensitive resistor mounted within each of the enclosures is responsive to ambient temperature changes within the enclosure to vary the current through the thermoelectric cooling element to maintain the temperature of the enclosure below the boiling point of the fuel.

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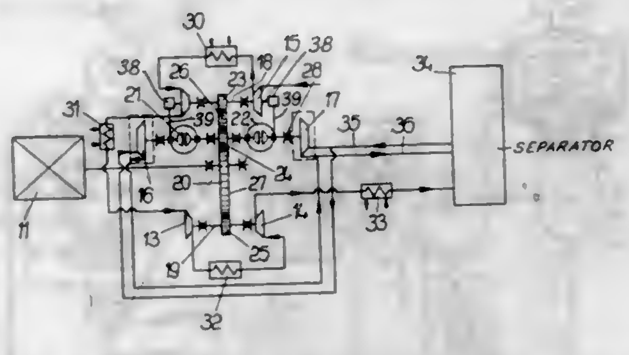
3,477,239

### MULTISTAGE COMPRESSION DRIVE IN GAS SEPARATION

**Ernst A. Rische, Duisburg-Rahm, Germany, assignor to Messer Griesheim G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany**
**Filed May 16, 1967, Ser. No. 638,916**
**Int. Cl. F25j** *3/00;* **F25d** *9/00*
**U.S. Cl. 62—38** **1 Claim**



In apparatus for separating a compressed gaseous mixture, the expansion supplies energy to a gear train for the multistage compressor. The gear train progressively subdivides the power in halves down to the individual compression stages.

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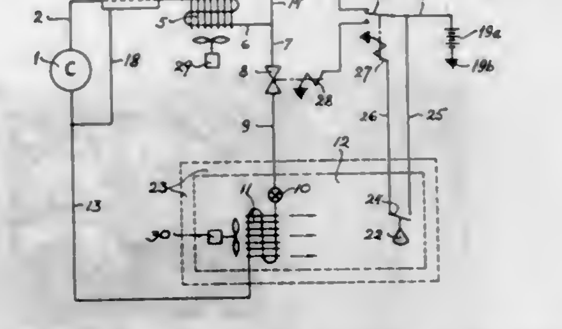
3,477,240

### REFRIGERATING METHOD AND SYSTEM FOR MAINTAINING SUBSTANTIALLY CONSTANT TEMPERATURE

**Olle G. Thoren, Stockholm, and Hans A. Axelson, Danderyd, Sweden, assignors to Refrigeration System AB, Stockholm, Sweden, a Swedish corporation**
**Filed Mar. 25, 1968, Ser. No. 715,760**
**Int. Cl. F25b** *1/00, 41/04*
**U.S. Cl. 62—115** **5 Claims**



Means are provided for circulating a refrigerating medium from a compressor to the refrigeration evaporator, by way of a condenser and the primary side of an indirect heat exchanger, and back to the compressor at its suction side; and means are also provided for diverting at least some of this medium flowing from the condenser and said primary side and returning it to the suction side of the compressor by way of the secondary side of the heat exchanger, so that the diverted medium by-passes the refrigeration evaporator. The latter is located in the space to be cooled, which also contains a temperature-sensitive member for controlling valve means operable to effect said diversion in response to a predetermined minimum temperature in said space and to discontinue said diversion in response to a predetermined maximum temperature in said space.

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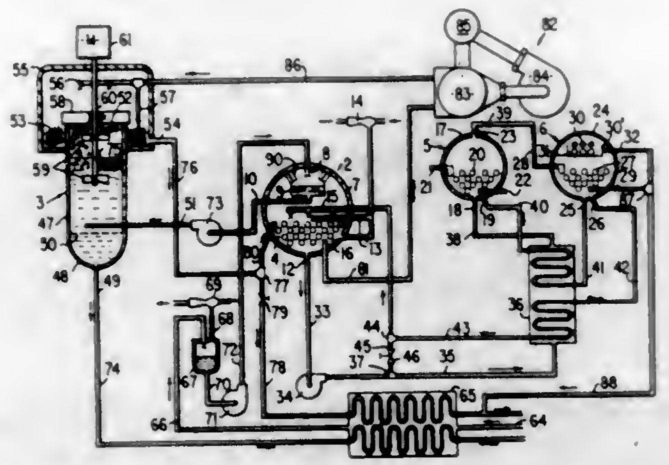
### 3,477,241
### SYSTEM FOR RENDERING A SALINE SOLUTION POTABLE

**Carlyle M. Ashley, Manlius, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware**
**Original application June 28, 1955, Ser. No. 518,431. Divided and this application Aug. 29, 1968, Ser. No. 756,333**
**Int. Cl. C02b** *1/12;* **F25b** *17/00*
U.S. Cl. 62—124 9 Claims



A system for rendering a saline solution potable in which an absorption refrigeration machine is utilized to form a mixture of ice and brine solution in its evaporator, the mixture being supplied to a separator, the ice separated from the brine solution, washed and melted to provide potable water.

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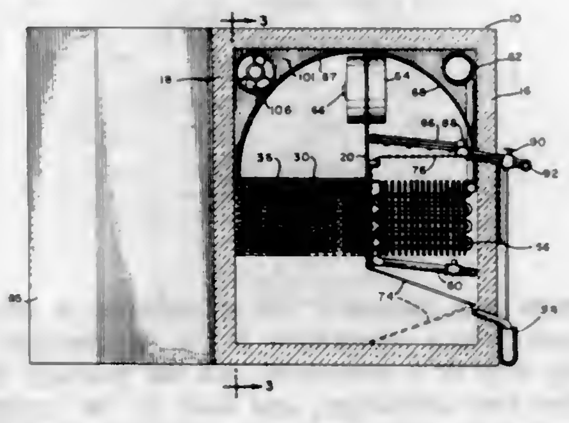
### 3,477,242
### FLUID BED APPARATUS FOR TREATING FOOD PRODUCTS

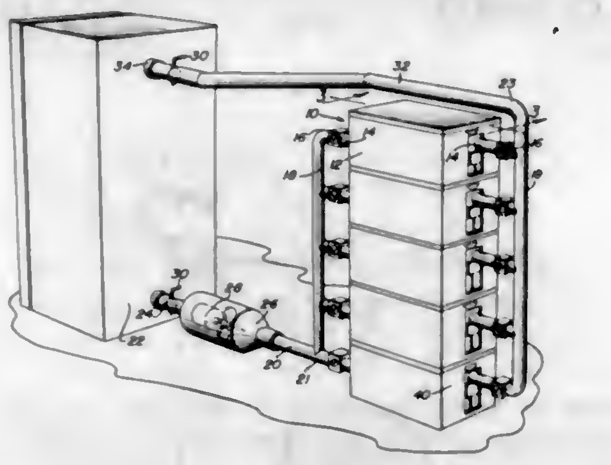
**Frank G. Lamb and Arthur R. Davidson, Lake Oswego, Oreg., assignors to Lamb-Weston, Inc., Portland, Oreg., a corporation of Oregon**
**Filed June 15, 1967, Ser. No. 646,338**
**Int. Cl. F25b** *5/00;* **F26b** *3/08;* **F25d** *25/04*
U.S. Cl. 62—283 8 Claims



Fluid bed food product treating apparatus such as dryer or freezer having perforated product support member. Air or other gas is blown through plate and flow resisting means is provided immediately beneath plate such that plate and such means effect even distribution of gas through product bed.

### 3,477,243
### REFRIGERATING SYSTEM

**Adolph C. Schroeder, P.O. Box 515 78164, and Nelton D. Huck, P.O. Box 117 78141, both of Yorktown, Tex.**
**Filed Jan. 4, 1968, Ser. No. 695,663**
**Int. Cl. F25d** *17/06*
U.S. Cl. 62—298 7 Claims



A number of insulated containers are stacked upon one another, each container including an inlet port and an outlet port. A parallel branch pipe system conducting refrigerated air therethrough is connected to the inlet ports of the containers. Likewise, a parallel branch pipe system is connected to the outlet ports of the containers thereby providing an air return from the containers to the source of refrigeration. The pipe system is fabricated from flexible hose for expediting disconnection of any container from the stack.

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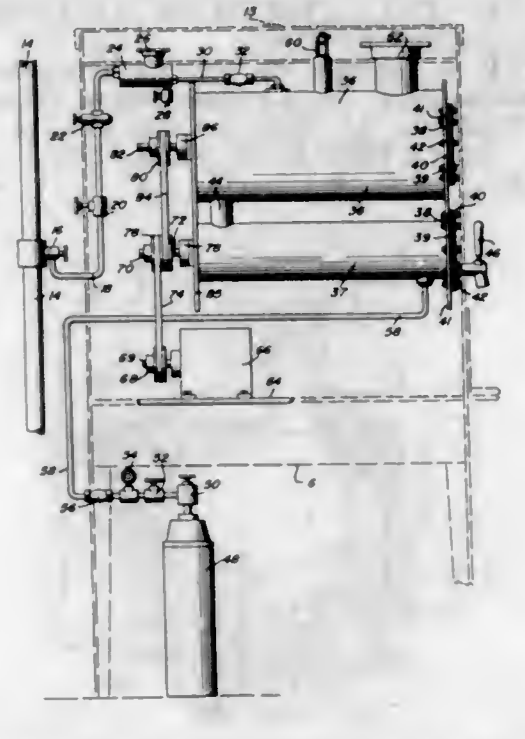
### 3,477,244
### SLUSH ICE CARBONATION MACHINE

**Cecil W. Scoggins, 1525 Piedmont Ave. NE., Atlanta, Ga. 30324**
**Filed Dec. 1, 1967, Ser. No. 687,386**
**Int. Cl. F25c** *7/16*
U.S. Cl. 62—306 1 Claim



A slush ice dispenser and a method for producing the same including a controlled water inlet means depositing a quantity of water into an agitator tank. A similarly controlled supply provides the agitator tank with a base liquid including vegetable gum and glycerine. The agitator tank communicates with a freezer cylinder which receives a portion of the liquid mixture from the agitator tank and chills the same to a degree resulting in an increased viscosity of the liquid mixture and a commensurate production of frozen particles therein. The liquid mixture is subjectd to saturation carbonation thereby resulting in the production of a fluffy and highly stacked slush ice carbonated food product which is selectively dispensed from the freezer cylinder.

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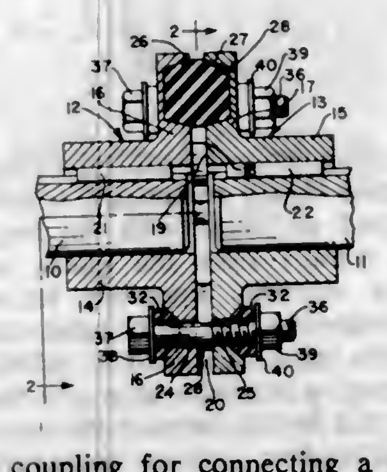
### 3,477,245
### FLEXIBLE COUPLING DEVICE

**William E. Martin, P.O. Box 187, Kewanee, Ill. 61443**
**Filed Jan. 10, 1968, Ser. No. 696,850**
**Int. Cl. F16d** *3/52*
U.S. Cl. 64—11 15 Claims



A flexible coupling for connecting a pair of axially aligned shafts that includes a pair of radially extending couplers mounted on the respective shafts; axially extending bolts extending between the couplers and anchored thereto in resilient elastomer sockets so as to permit the couplers to yield relative to one another; and elastomer elements or inserts extending between the couplers and interjoining the couplers to afford a resilient torque drive between the couplers.

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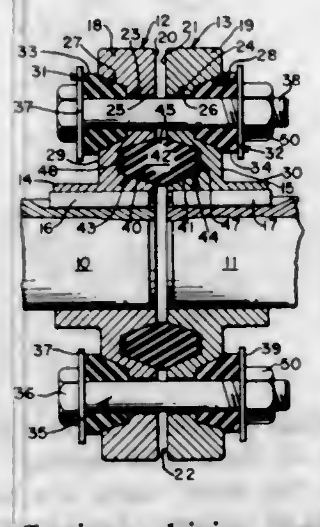
### 3,477,246
### SHAFT COUPLING

**William E. Martin, P.O. Box 187, Kewanee, Ill. 61443**
**Filed Jan. 10, 1968, Ser. No. 696,851**
**Int. Cl. F16d** *3/52*
U.S. Cl. 64—11 14 Claims



A coupling for effecting a driving connection between adjacent ends of a pair of axially aligned shafts comprising: first and second coupler members fixed to rotate with the respective shafts and having radial faces facing one another across an axial gap between the members and further having aligned holes extending lengthwise of the shaft and spaced radially from the axis of the shafts; bolts disposed in the holes and extending across the gap for connecting the first and second members and having adjustable nuts thereon for adjusting the gap between the members; rubber bushings within the holes about the bolt shanks; and an elastomer or rubber spacer between the members and in the gap between the members, the spacer being an annulus formed about the axis of the shafts.

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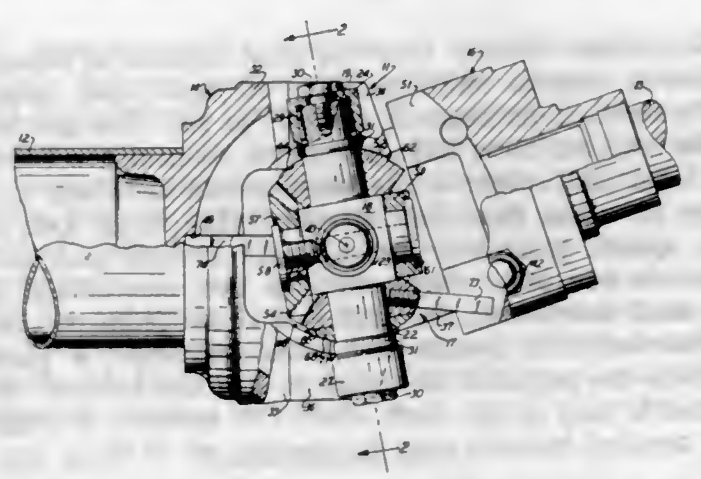
### 3,477,247
### DIFFERENTIAL GEAR CONSTANT VELOCITY JOINT

**Moses Shachter, Oak Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed June 3, 1968, Ser. No. 734,009**
**Int. Cl. F16d** *3/30*
U.S. Cl. 64—21 14 Claims



A constant velocity universal joint having a driving yoke, a driven yoke, and an intermediate cross member. The joint incorporates a double differential gear assembly which functions to position the cross member in a plane instantaneously bisecting the angles formed by the intersection of the axes of the yoke members.

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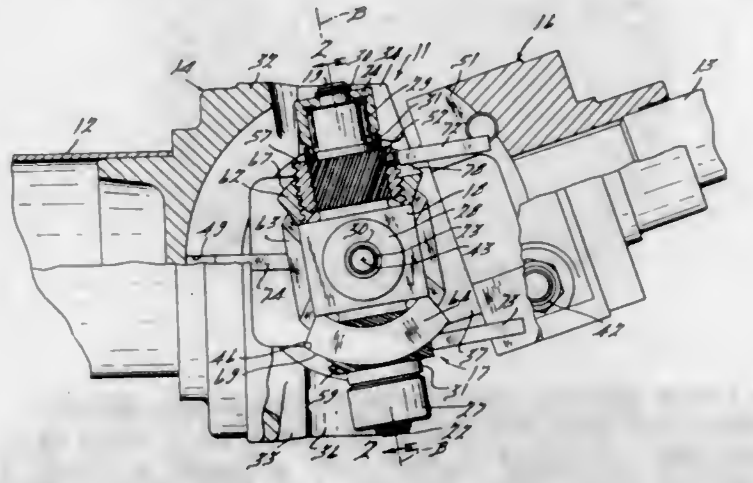
### 3,477,248
### DIFFERENTIAL SCREW CONSTANT VELOCITY JOINT

**Moses Shachter, Oak Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed June 3, 1968, Ser. No. 733,876**
**Int. Cl. F16d** *3/64, 3/34*
U.S. Cl. 64—21 14 Claims



A constant velocity universal joint having a driving yoke, a driven yoke, and an intermediate cross member. The joint incorporates a differential screw assembly that functions to position the cross member in a plane which instantaneously bisects the angles formed by the intersection of the axes of rotation of the yoke members.

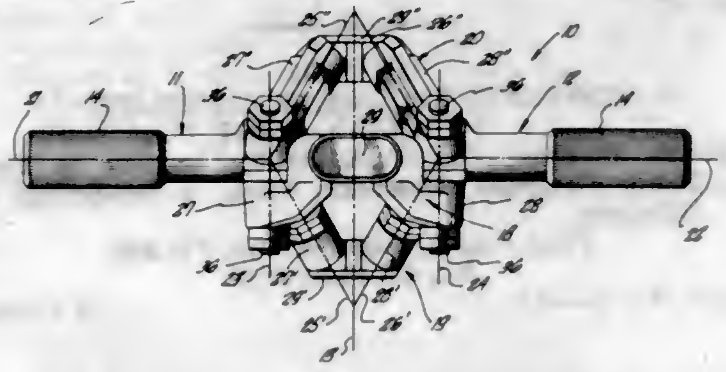
### 3,477,249
### CONSTANT VELOCITY UNIVERSAL JOINT

Irven H. Culver, Playa Del Rey, Calif., assignor to Southwestern Industries, Inc., Los Angeles, Calif., a corporation of California

Continuation-in-part of application Ser. No. 665,507, Sept. 5, 1967. This application July 8, 1968, Ser. No. 743,132

Int. Cl. F16d *3/30, 3/54*

U.S. Cl. 64—21 12 Claims



A constant velocity universal joint capable of accommodating angular misalignments of input and output shafts through the range of from 0° to 90°. The joint includes at least three linkage systems connected between the input and output shafts, each system including four hinge axes and three link members. The hinge axes in each system preferably are arranged so that each axis intersects one other hinge axis, the two axes closest to one shaft intersecting the shaft axis at the geometric end of the shaft; the system is symmetrical about a plane which is the perpendicular bisector of a line between the geometric ends of the shaft. Each link member is hingeably coupled between each intersecting set of hinge axes.

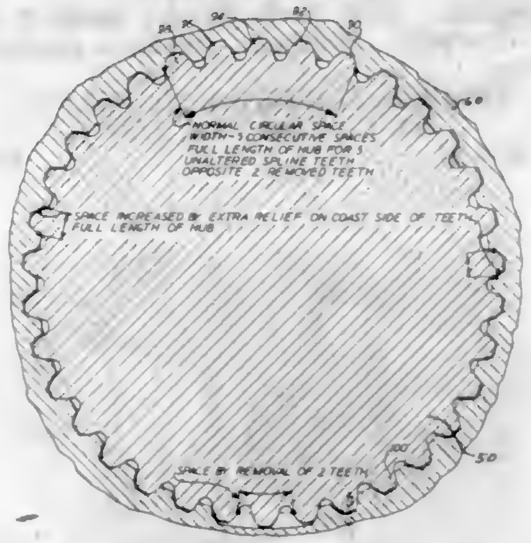
### 3,477,250
### ANCHOR TOOTH SPLINE FOR ROTATING GEAR MECHANISMS

Henry L. Gregorich, Bloomfield Hills, Clevoe D. Jones, Franklin, and Marion E. Phelps, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed June 20, 1968, Ser. No. 738,439

Int. Cl. F16d *3/06*

U.S. Cl. 64—23 6 Claims


NORMAL CIRCULAR SPACE WIDTH—3 CONSECUTIVE SPACES FULL LENGTH OF HUB FOR 3 UNALTERED SPLINE TEETH OPPOSITE 2 REMOVED TEETH
SPACE INCREASED BY EXTRA RELIEF ON COAST SIDE OF TEETH FULL LENGTH OF HUB
SPACE BY REMOVAL OF 2 TEETH
60
50
100

A torque delivery system wherein two torque delivery members are splined together by means of a series of strategically positioned anchor teeth arranged to transmit driving torque, other spline teeth of the splined connection being relieved to provide reduced tooth thickness whereby a piloting action occurs either between the major diameter of the internal spline teeth and the major diameter of external spline teeth or between the minor diameter of the internal spline teeth and the minor diameter of the external spline teeth.

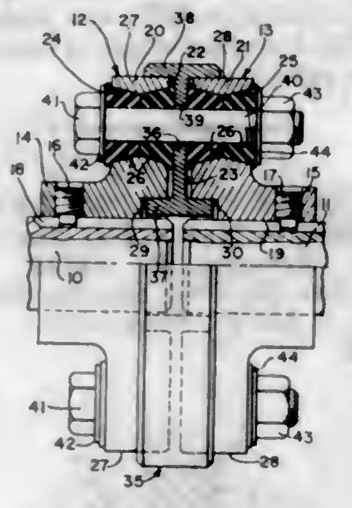
### 3,477,251
### SHAFT COUPLING DEVICE

William E. Martin, P.O. Box 187,
Kewanee, Ill. 61443

Filed Jan. 10, 1968, Ser. No. 696,882

Int. Cl. F16d *3/14*

U.S. Cl. 64—27 14 Claims



A flexible coupling device for drivingly connecting a pair of axially aligned shafts comprising a pair of coupler members mounted to rotate with the respective shafts and extending radially from the shafts, a plurality of rigid connecting elements extending between and for drivingly connecting the coupler members to one another with the elements being imbedded in rubber inserts carried by the respective members to premit the elements to yield and to permit flexing between the members, and an annular guide extending between the coupler members engaging complementary annular surfaces on the members for retaining close axial alignment between the members.

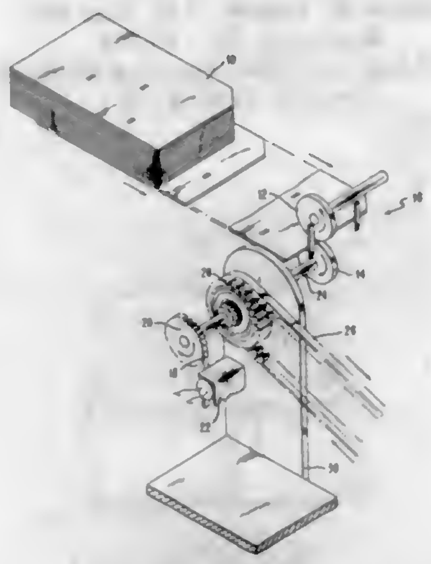
### 3,477,252
### SLIP CLUTCH

Theodore F. Flavin, Owego, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 18, 1968, Ser. No. 698,868

Int. Cl. F16d *7/02*

U.S. Cl. 64—30 3 Claims



Two ball bearings are mounted on a shaft contiguously. The outer races of these ball bearings are spaced apart by a ring while the inner races are biased toward one another by means of fasteners fixed to the shaft. Sufficient thrust is applied to inner races to cause the races to revolve together when rotational force is applied to the outer race unless the inner race is held from rotation. The thrust applied is less than the thrust which would damage the bearing.

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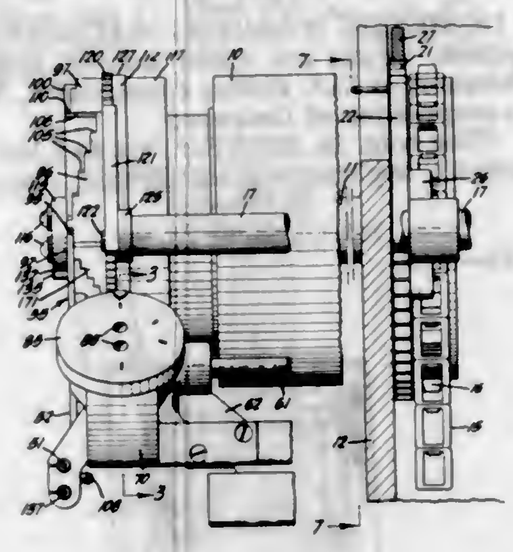
### 3,477,253
### PATTERN CHAIN CONTROL MEANS FOR KNITTING

James H. Boyer, Jr., Shillington, Pa., assignor, by mesne assignments, to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware

Filed Apr. 29, 1968, Ser. No. 724,885

Int. Cl. D04b *9/00, 15/66*

U.S. Cl. 66—40 10 Claims



Mechanism for controlling the operation of a pattern chain of a knitting machine including a ratchet associated with the chain, a main pawl acting on the ratchet for continuously indexing the chain in steps of the same extent throughout a fabric knitting cycle of the machine, a second pawl adapted to act on the ratchet, and pattern means for controlling the operation of the second pawl to index the chain an additional step of the same extent as the main pawl following predetermined indexing steps of the chain by the main pawl. The pattern means for controlling the second pawl also controls the operation of mechanism for forming tuck stitch size markings in the fabric.

### 3,477,254
### PATTERN CONTROL APPARATUS FOR A KNITTING MACHINE

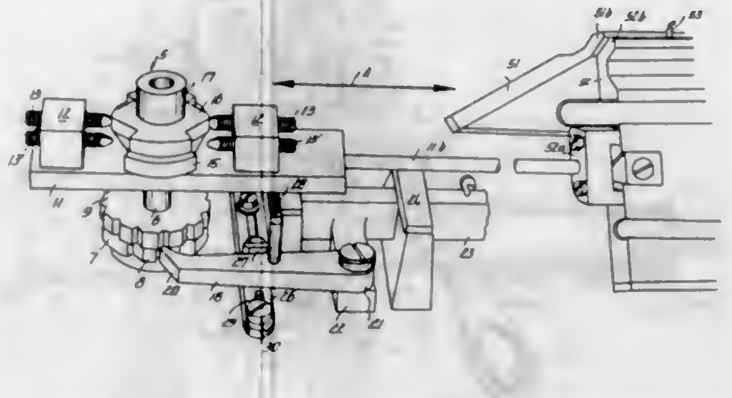
Jorge Rectoret Comas, Calle San Agustin 59, Mataro, Barcelona, Spain

Filed Mar. 14, 1966, Ser. No. 533,979

Claims priority, application Spain, Mar. 17, 1965, 311,029

Int. Cl. D04b *15/76*

U.S. Cl. 66—69 6 Claims



Pattern control apparatus for a knitting machine comprises a needle bed and an additional needle bed, a pattern chain, and means for shifting the one needle bed with reference to the other needle bed under the control of the pattern chain.

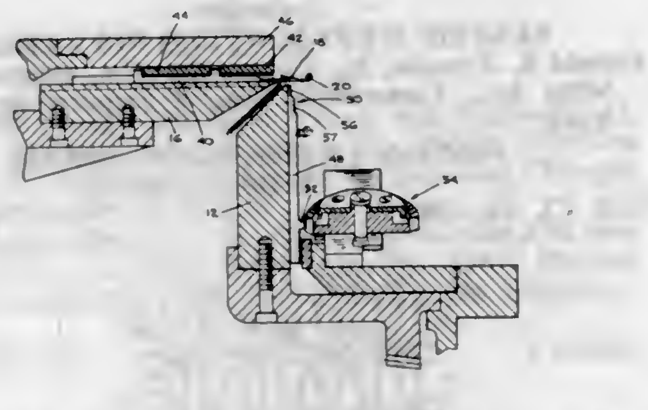
### 3,477,255
### APPARATUS FOR KNITTING LOOP FABRIC

Victor J. Lombardi, 2715 Charlotte Lane,
Burlington, N.C. 27215

Filed Aug. 24, 1967, Ser. No. 663,064

Int. Cl. D04b *9/12, 15/66*

U.S. Cl. 66—91 11 Claims



A circular knitting machine is provided with horizontally disposed needles and vertically disposed pattern jacks for knitting a loop fabric. The pattern jacks may be selectively operable to at least three vertical positions for producing multi-level loops in the knitted fabric. The pattern jacks include novel configurations at their upper terminal ends for forming multi-level loop fabric, or alternatively, a more uniform single level loop fabric. With the apparatus of this invention, random or pattern effects can be dictated in a knitted loop fabric, and the machine of this invention forms all loops on an outside surface of a tubular knit fabric.

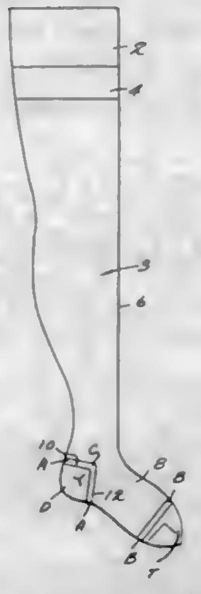
### 3,477,256
### STOCKING AND METHOD OF MAKING SAME

Leland A. Fillmore and Jack J. Jenkins, Harriman, Tenn., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

Filed Aug. 7, 1963, Ser. No. 300,492

Int. Cl. D04b *9/46;* A41b *11/02*

U.S. Cl. 66—172 7 Claims



1. A circular knit stocking including leg and foot portions knit with two body yarns and with a heel completely surrounded by a run-resist band which separates the heel from the rest of the stocking, said run-resist band comprising at least two courses knit with one of said body yarns in alternate plain and tuck stitches while the second body yarn in these courses is alternately plain knit and floated behind the tuck needles; at least one intermediate course of plain stitches knit with both of said body yarns; at least two further courses knit with

one of the body yarns in alternate plain and tuck stitches while the second body yarn is alternately plain knit and floated behind the tuck needles, the tucks and floats in these further courses being opposed to plain stitches in the first named courses; and at least one other course of plain stitches knit with both body yarns.

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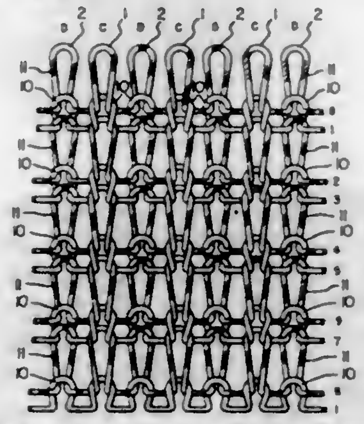
### 3,477,257
### ELASTIC WEFT-KNITTED RIB FABRIC

**Harold E. Towslee, Jr., Cartersville, Ga., assignor to E-Z Mills Inc., Cartersville, Ga., a corporation of New York**
**Filed Feb. 14, 1968, Ser. No. 705,426**
**Int. Cl. D04b** *1/20*
**U.S. Cl. 66—200** **3 Claims**



Elastic weft-knitted rib fabric having alternate courses of relatively inelastic yarn and of a crimped synthetic yarn having elastic properties where the loops of knitted yarn of the synthetic material are shorter in length than the knitted loops of the synthetic yarn.

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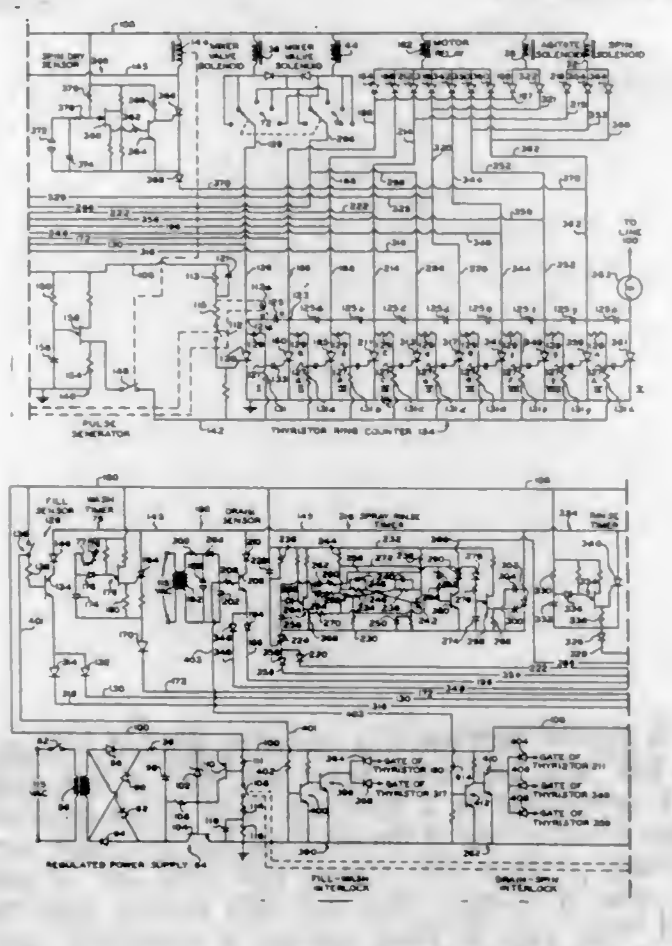
### 3,477,258
### TOTAL SENSING AUTOMATIC WASHER

**Douglas J. Walker and Oscar A. W. Tichy, St. Joseph, Mich., assignors to Whirlpool Corporation**
**Filed May 20, 1968, Ser. No. 736,918**
**Int. Cl. D06f** *33/00;* **H01h** *33/59, 7/00*
**U.S. Cl. 68—12** **14 Claims**



An electronic sequential control utilizing a thyristor ring counter, each successive stage of which controls such functions as water fill, agitate, drain and extract that make up the cycle of operation for a laundry appliance. Advancement through all successive steps of the cycle of operation is controlled either by RC timer circuitry having a number of selective delays or by circuitry responsive to sensed conditions. The counter selects the appropriate delay in the timer or the proper condition responsive circuit which causes the counter to advance to the next successive stage.

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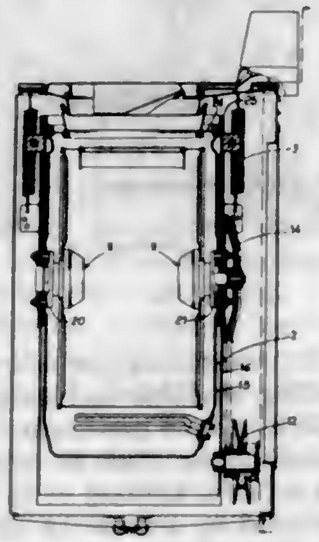
### 3,477,259
### DOMESTIC WASHING MACHINES

**Philip Barnish, Leeds, and Colin Barrett, Halifax, England, assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware**
**Filed Aug. 30, 1967, Ser. No. 664,394**
**Claims priority, application Great Britain, Aug. 31, 1966, 38,890/66**
**Int. Cl. D06f** *23/02*
**U.S. Cl. 68—23.1** **3 Claims**



A washing machine of composite construction having a rotatable drum positioned within an inner polypropylene washing tub; the inner tub being attached to and supported by an outer metal casing which provides the necessary weight for minimizing vibration during the operation of the machine.

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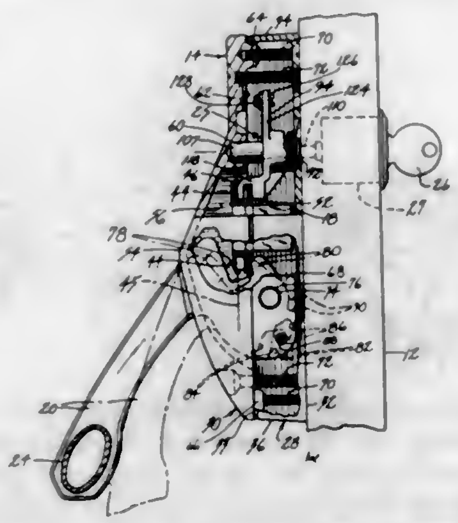
### 3,477,260
### EMERGENCY EXIT LOCK

**Walter O. Balducci, New Britain, and Nicholas A. Welch, West Hartford, Conn., assignors to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut**
**Filed Jan. 18, 1968, Ser. No. 698,755**
**Int. Cl. E05b** *65/10;* **E05c** *15/02*
**U.S. Cl. 70—92** **19 Claims**



A panic bar actuated emergency exit lock characterized by a relatively slender elongated case structure and having a latch bolt biased to projected position and a key actuated retractor mechanism operable independently of the bar for moving the latch bolt to and selectively holding it in retracted position. An adjustment screw associated with the retractor mechanism and accessible externally of the case predetermines the degree of latch bolt retraction in response to the operation of the key.

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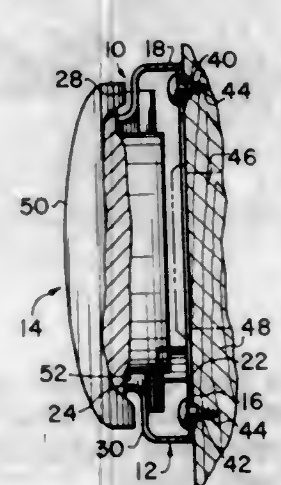
### 3,477,261
### APPARATUS FOR PREVENTING ACCESS TO A LOCK MECHANISM

**Robert Siana, 445 Grand St., Brooklyn, N.Y. 11211**
**Filed July 11, 1967, Ser. No. 652,571**
**Int. Cl. E05b** *17/18, 65/52;* **F16k** *35/10*
**U.S. Cl. 70—427** **2 Claims**



An apparatus for preventing access to a door lock which includes a receptacle adapted to fit about the lock and a cap which is removably fastened to the receptacle. The receptacle comprises a rear wall and a front wall connected thereto by a peripheral wall. Aligned bores are provided in the front and rear walls so that when the rear wall is affixed to a door the door lock is positioned in the rear wall bore and access may be had to the lock through the front wall bore. The cap includes a rearwardly extending portion which slidably fits within the front wall bore. This portion is provided with a key-operated retractable arm which is adapted to be received in an open-ended slot in the receptacle when the arm is extended to prevent unauthorized removal of the cap thereby preventing access to the door lock.

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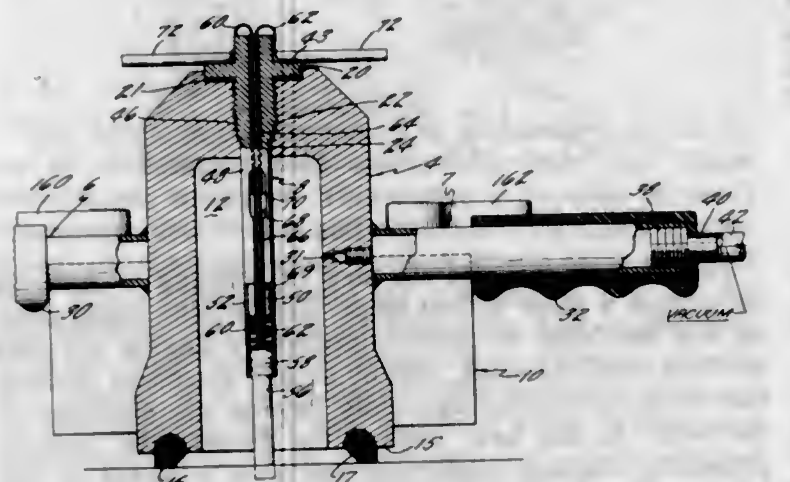
### 3,477,262
### EXPLOSIVE JOINING DEVICE

**Richard A. Schmidtke, Jupiter, and Frederick C., Polhemus, Jr., Lake Park, Fla., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed July 22, 1965, Ser. No. 473,960**
**Int. Cl. B21d** *26/00;* **B23k** *1/00*
**U.S. Cl. 72—56** **18 Claims**



A hand-held high explosive, material working tool which can be held in position against a material or materials to be worked. A housing contains a chamber which opens to the exterior thereof with an explosive charge positioned therein, said housing having handles for positioning and holding the open end of said chamber against a work piece. Means being provided for igniting the charge. Means are provided for creating a vacuum in the chamber when it is positioned against a workpiece which can be sealed therewith.

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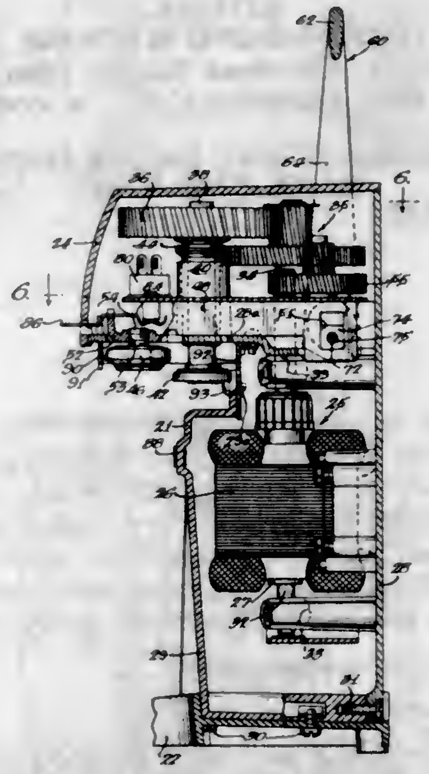
### 3,477,263
### CAN OPENER

**Ivar Jepson, South Duxbury, Mass., and Sophocles, J. Dokos, Chicago, and Sigmund H. Bielak, Downers Grove, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois**
**Original application Sept. 10, 1965, Ser. No. 486,339, now Patent No. 3,313,023, dated Apr. 11, 1967. Divided and this application Nov. 21, 1966, Ser. No. 595,924**
**Int. Cl. B21d** *43/28*
**U.S. Cl. 72—71** **4 Claims**



A method for opening cans utilizing a cutter which severs the cover from the can without the cutter entering into the food containing portion of the can.

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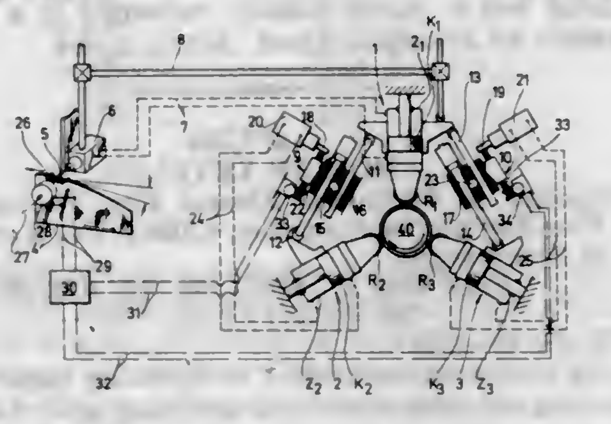
### 3,477,264
### DUPLICATING MACHINE TOOL

**Just Söhlemann, Munich, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, near Munich, Germany**
**Filed Dec. 21, 1967, Ser. No. 692,377**
**Claims priority, application Germany, Dec. 22, 1966, B 90,421**
**Int. Cl. B21d** *22/00*
**U.S. Cl. 72—81** **10 Claims**



The disclosure is directed to a duplicating machine tool including a plurality of tools, with one tool, serving as a guide tool, being controlled by a duplicating feeler scanning the contour of a duplicating templet, and the other tools being controlled by respective follower devices scanning the position of the guide tool. Each of the following tools is offset by a certain adjustable amount, relative to the guiding tool, in both a radial and axial direction with respect to the axis of the workpiece.

In accordance with the disclosure, a tangent feeler is associated with the duplicating feeler and has two contact points with a templet contour, the tangent feeler being set by the templet contour in an angular position corresponding substantially to the slope of the contour at the site or location of the duplicated point and controlling the adjustable radial offset, axial offset, or both of the follower tools in dependence on the angular position of the tangent feeler and through known transmission means, the tangent feeler may be either separate from the duplicating feeler or may be incorporated therewith.

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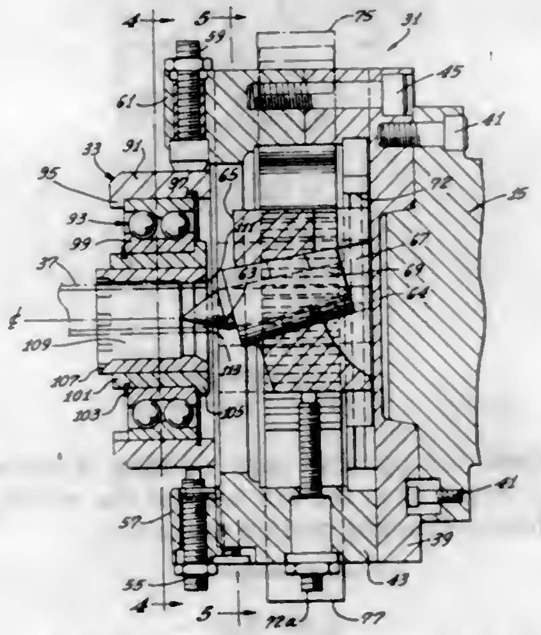
**3,477,265**

## TUBE FLARING MACHINE

**John E. Szitar, Jr., Cleveland Heights, Ohio, assignor to Teledyne, Inc., Gardena, Calif., a corporation of Delaware**
**Filed Sept. 5, 1967, Ser. No. 665,502**
**Int. Cl. B21d** *41/02*
**U.S. Cl. 72—117** **20 Claims**



This disclosure describes a tube flaring machine which may include a die for receiving the tube and a flaring tool for cooperating with the die to flare the tube. The force applied by the flaring tool to the tube can be regulated and adjusted so that the flared portion of the tube has smooth surfaces and is of uniform wall thickness. Preferably, the flaring tool is moved radially outwardly in a controlled fashion by a variable speed electric motor.

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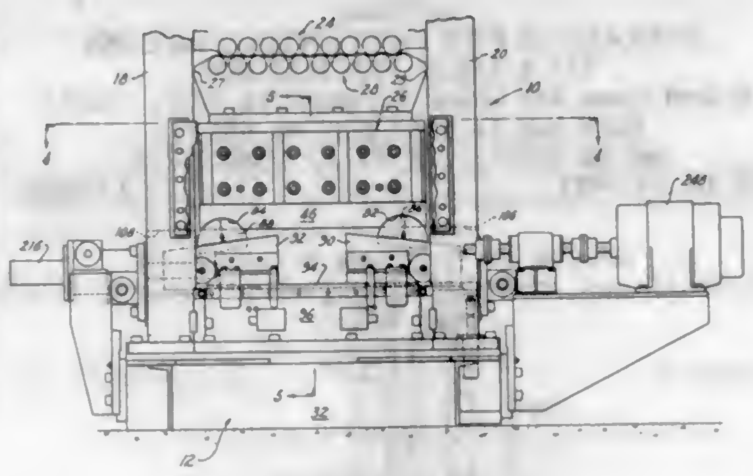
**3,477,266**

## ROLLER LEVELER

**Augustine A. Fornataro, Elwood City, Pa., assignor to Voss Engineering Company, Callery, Pa., a corporation of Pennsylvania**
**Filed May 17, 1967, Ser. No. 639,106**
**Int. Cl. B21d** *1/02, 3/02*
**U.S. Cl. 72—165** **18 Claims**

An apparatus for leveling or flattening metal sheets by working the sheet over the interrupting arcs of upper and lower sets of long slender leveling rolls carried by a top frame and a bottom frame. The bottom frame supports the lower set of leveling rolls and is adjusted relative to the top frame by a pair of opposed wedges at each side of the frame. Mechanical actuators are connected to the wedges and are actuated by drive motors to raise and lower the entire frame or selectively raise or lower a side edge of the frame, the front or the rear edge of the frame to thereby adjust and position the lower set of leveling rolls relative to the upper set of leveling rolls for optimum leveling or flattening metal sheets.



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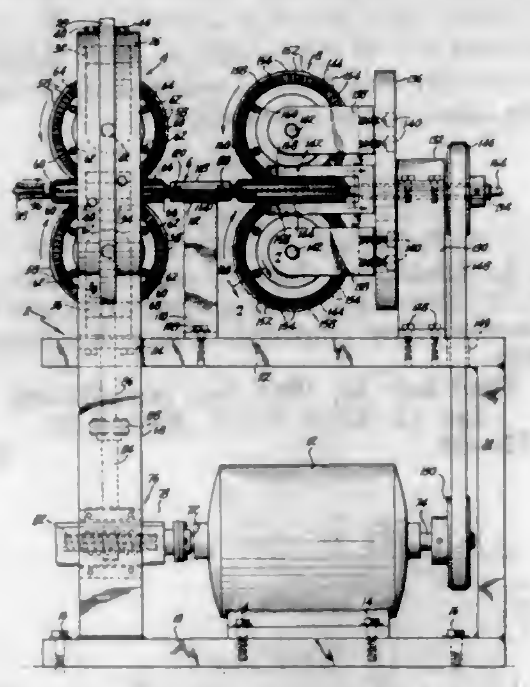
**3,477,267**

## METHOD AND APPARATUS FOR MAKING BALLS FROM ROD STOCK

**Harold W. Crumley, 308 Love St., Johnson City, Tenn. 37601**
**Filed Oct. 6, 1967, Ser. No. 673,395**
**Int. Cl. B21d** *7/024*
**U.S. Cl. 72—185** **16 Claims**



The method includes the step of forming a chain of balls from a piece of rod stock, the forming being done so that the balls are interconnected by linking portions on the axis of the stock, and by axially extending flashing that projects radially outwardly beyond the diameter of the balls. In the next step of the method the radially projecting flashing connecting the balls adjacent to the first ball of the chain is held, and the first ball is then separated from the next-succeeding ball by cutting away the connecting flashing, and by breaking through twisting the linking portion.

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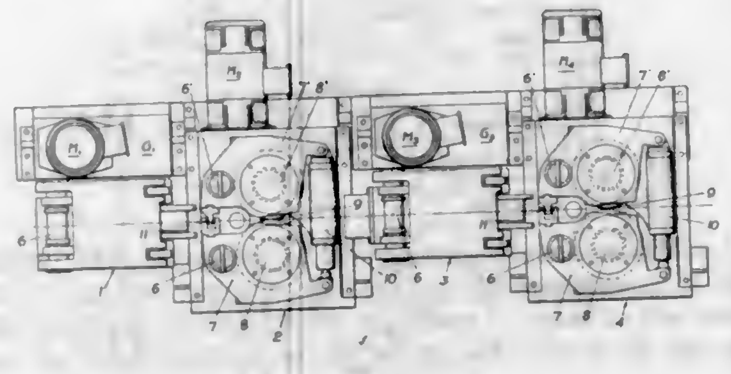
**3,477,268**

## DEVICE FOR SHAPING METAL BARS

**Rudolf Schöffmann, Linz, Austria, assignor to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellshaft, Linz, Austria, a company of Austria**
**Filed July 10, 1967, Ser. No. 652,095**
**Claims priority, application Austria, Feb. 3, 1967, A 1,020/67**
**Int. Cl. B21b** *13/10, 31/32*
**U.S. Cl. 72—234** **3 Claims**



Apparatus for shaping metal bars is described, comprising a plurality of rolling mills arranged in a row, with the directions of the rolls on successive mills alternating between horizontal and vertical. The rolls of each pair are supported on respective rockers that are hinged at one end and pivotally adjustable by hydraulic means to vary the spacing between rolls. Synchronization means couple the rockers of each mill to divide the movement provided by the shifting means equally between the rockers to obtain symmetrical movement of the rolls relative to the center line of the gap between the rolls.

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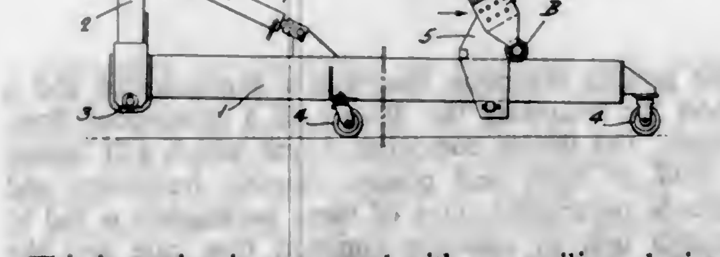
**3,477,269**

## VEHICLE REPAIR DEVICE

**David Dinerman, 304 Brandywine Road, Savannah, Ga. 31405**
**Filed Dec. 7, 1967, Ser. No. 688,860**
**Int. Cl. B21d** *31/00*
**U.S. Cl. 72—292** **5 Claims**



This invention is concerned with an auxiliary device for use in conjunction with automobile body and frame straightening machines. This device is capable of ready attachment, detachment and adjustment on different components of the automobile body or frame being operated upon which cooperate with the machine, so that the desired straightening forces are brought to bear on the body portions which require correction. In particular, the device consists of a wide flexible belt or band of strong inelastic material fitted with end links which may engage temporarily parts of an automobile body or frame, or the ends of a rod or bar connected with the force-generating straightening machine, to which is transmitted a thrust transverse to the axis of the latter. The belt constitutes an effective holding device for the portion of the automobile body or frame encompassed between the ends of the band and the automobile frame or bar connected thereto, to make possible the rapid application of straightening forces to the desired parts of the frame or body.

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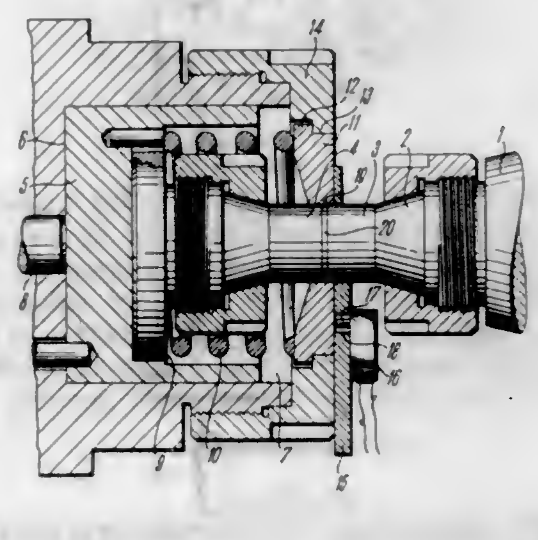
**3,477,270**

## COIN PRESS

**Kurt Finsterwalder, Goppingen, Germany, assignor to L. Schuler GmbH, Goppingen, Germany**
**Filed Dec. 22, 1966, Ser. No. 604,070**
**Int. Cl. B21d** *22/00;* **B21j** *7/26;* **B21c** *5/00*
**U.S. Cl. 72—359** **5 Claims**



A coin press comprising a frame and die holder together with a drivable ram, the ram and die holder being displaceable relative to the frame and to each other. A press ring is mounted adjacent the die holder and is displaceable by the ram under overload. Means are provided to immobilize the coin press dependently upon the displacement of the press ring.

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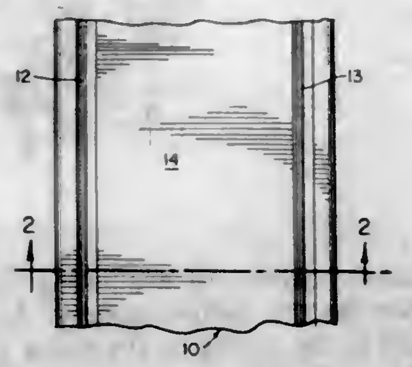
**3,477,271**

## METHOD FOR REDUCING EDGE CRACKING DURING ROLLING OF METAL SHAPES

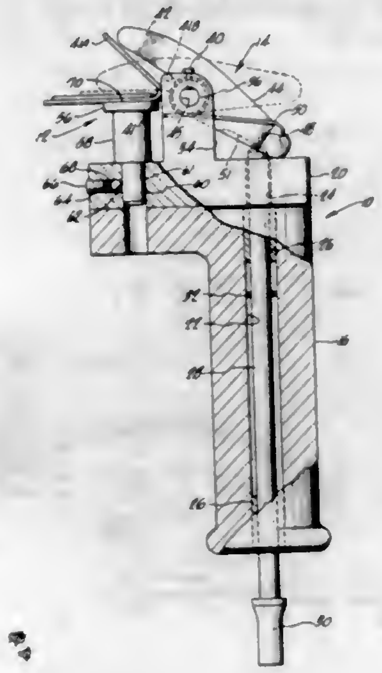
**Emery I. Valyi, 5200 Sycamore Ave., Riverdale, N.Y. 10471**
**Filed July 31, 1967, Ser. No. 657,313**
**Int. Cl. B21b** *1/22*
**U.S. Cl. 72—365** **3 Claims**



The method of reducing the loss of metal due to edge cracking which occurs during the rolling of metal shapes wherein one or a pair of grooves is formed in the sides of the metal shape adjacent the edges thereof to form lines of weakness. During rolling, any edge cracks extend only to this line of weakness. After rolling, the edge portions are trimmed off along these lines of weakness to leave the body of the metal shape free of edge cracks.

### 3,477,272
### CRIMPING TOOL

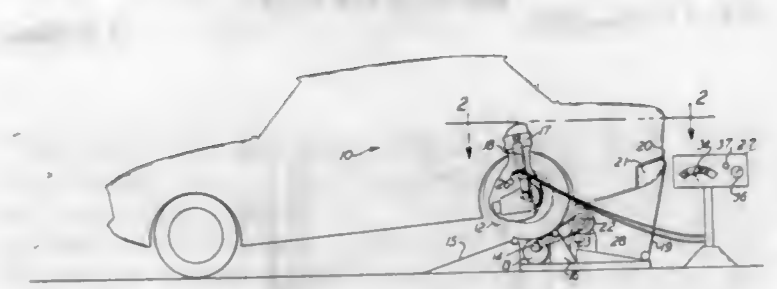
Travis L. Hunter, 5002 Persimmon Ave., Temple City, Calif. 91780
Filed Mar. 28, 1967, Ser. No. 626,575
Int. Cl. B23p *11/00*
U.S. Cl. 72—445 15 Claims



A crimping tool having a holder, a pivoting hammer and an anvil. The anvil is interchangeable to permit insertion of contoured anvils which prevents deformation of contoured parts to be crimped.

### 3,477,273
### SHOCK ABSORBER EVALUATION METHOD

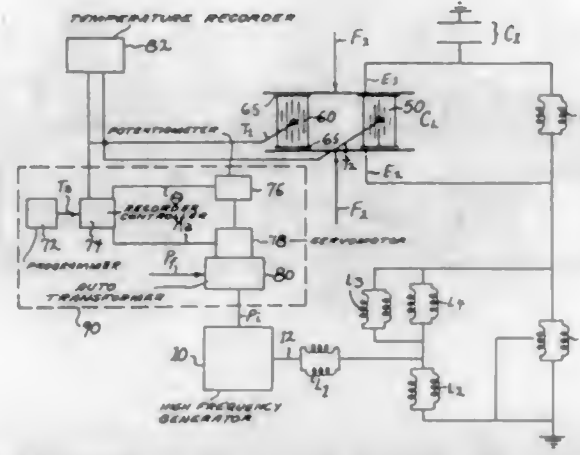
Robert C. Scheider, Toledo, Ohio, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 29, 1968, Ser. No. 701,269
Int. Cl. G01m *17/04*; G01k *1/08*
U.S. Cl. 73—11 11 Claims



A nondestructive method of evaluating the quality of a shock absorber has the following steps. A heat sensing probe is attached to the casing of the shock absorber and connected to apparatus which measures a change in an electrical characteristic of the probe which varies with the temperature measured by the probe. The shock absorber is actuated by moving the members interconnected thereby and the movement is terminated after a period of time. The change from an initial value of the electrical characteristic of the probe caused by the temperature increase of the shock absorber is displayed on the measuring apparatus. The quality of the tested shock absorber is classified as a function of the displayed change of the characteristic.

### 3,477,274
### DIFFERENTIAL THERMAL ANALYSIS METHOD AND MEANS EMPLOYING HIGH FREQUENCY HEATING

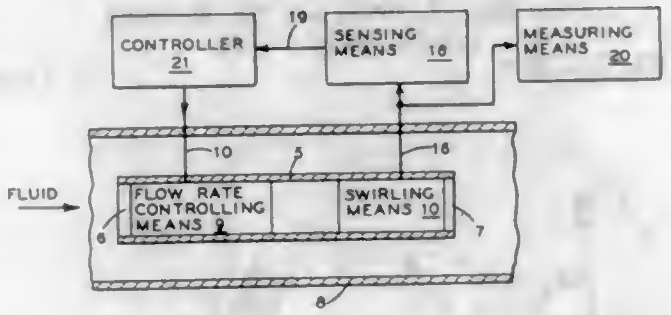
Stephen A. Wald, Swarthmore, Pa. (225 Canterbury Drive, Wallingford, Pa. 19086), and Charles C. Winding, 124 Olin Hall, Ithaca, N.Y. 14850
Filed Oct. 18, 1966, Ser. No. 587,503
Int. Cl. G01n *25/20*
U.S. Cl. 73—15 9 Claims



Differential thermal data is obtained from an apparatus employing high frequency heating. The sample and reference material are maintained in volumetrically constant configuration between the electrodes of a high frequency generator and heated simultaneously at the same rate.

### 3,477,275
### DENSITOMETER

Alan E. Rodely, Scotch Plains, N.J., assignor to American Standard Inc., a corporation of Delaware
Filed Feb. 25, 1966, Ser. No. 529,986
Int. Cl. G01n *9/32*
U.S. Cl. 73—32 7 Claims

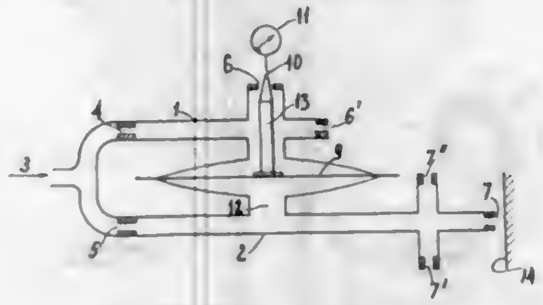


The present invention describes a densitometer and a method for recording the density of a continuous flowing fluid. The device comprises a unit which will induce the fluid to swirl and precess causing frequency and amplitude parameters. One of these parameters is fed to a control unit to maintain constant flow rate and the other parameter will measure the density of the fluid.

### 3,477,276
### DIFFERENTIAL PNEUMATIC MEASURING OR SERVO DEVICES

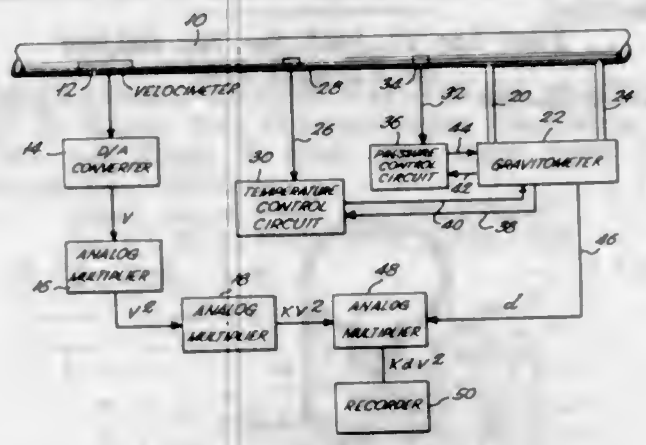
Andre Louis Fortier, 12 Rue Leon Cambillard, 92, Clamart, France
Filed Oct. 30, 1968, Ser. No. 771,850
Claims priority, application France, Nov. 15, 1967, 128,226
Int. Cl. G01b *13/08*
U.S. Cl. 73—37.5 3 Claims

In a differential pneumatic measuring or servo device having two pipelines intended to be linked in parallel to the same source of compressed gas, upstream and downstream orifices in the pipelines and a chamber joined to the pipelines between the upstream and downstream orifices and divided by a movable pressure sensitive wall attached to a control member. At least one supplementary outlet orifice is provided in at least one of the pipelines. The perimeter of which supplementary orifice is such that the ratio of the sums of the perimeters of the downstream orifices of the pipelines is equal to the ratio of the cross-sections of the upstream orifices of the respective pipelines.



### 3,477,277
### APPARATUS FOR CONTINUOUSLY DETERMINING THE ADIABATIC BULK MODULUS OF A LIQUID WITHIN A PIPELINE

Wolfgang J. Wostl, South Holland, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 30, 1967, Ser. No. 686,925
Int. Cl. G01n *11/00, 9/00*
U.S. Cl. 73—53 11 Claims

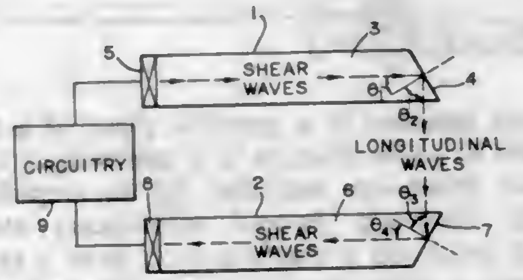


Apparatus for measuring the adiabatic bulk modulus $B_s = Kdv^2$ of a liquid within a pipeline, wherein $K$ is a constant, $d$ is the density of the liquid, and $v$ is the velocity of sound within the liquid. A velocimeter within the pipeline measures the velocity of sound in the liquid. A gravitometer measures the density of a sample of the liquid temporarily diverted from the pipeline. Temperature and pressure sensors and control circuits insure that the sample temperature and pressure are the same as the temperature and pressure within the pipeline.

### 3,477,278
### ULTRASONIC MEASUREMENT

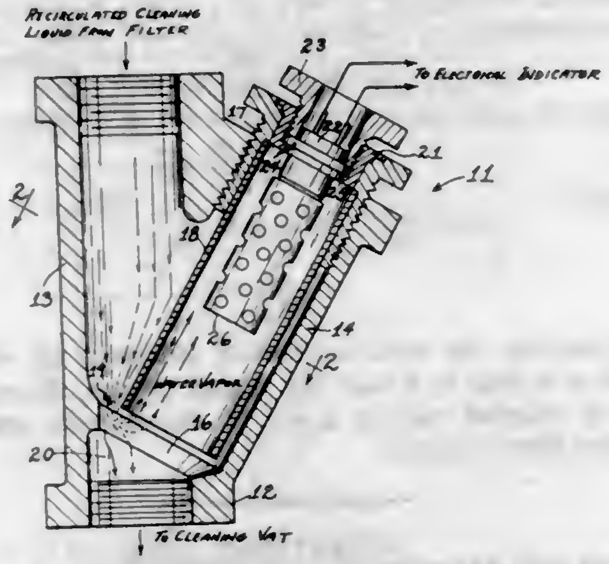
Lawrence C. Lynnworth, Waltham, Mass., assignor to Parametrics, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Dec. 23, 1966, Ser. No. 604,357
Int. Cl. G01n *11/10*
U.S. Cl. 73—53 10 Claims

There is described a system for measuring the ultrasonic longitudinal wave transmission characteristics of a solid, fluid, or solids immersed in said fluid, where the environment at the medium requires that the wave generating crystal be removed some distance from it. The system employs a long probe having a shear wave crystal bonded to one end and having its other end bevelled so that shear waves transmitted normal to the face of the crystal are mode converted into longitudinal waves at the bevelled surface. The longitudinal waves are then emitted into the test fluid from the side of the probe adjacent to the bevelled surface. Internal reflections are suppressed either by choice of a critical bevel angle or by the use of a filter within the probe. The filter is formed of a material having an acoustic characteristic impedance widely different from that of the probe material.



### 3,477,279
### FLUID HYGROMETRIC SAMPLING DEVICE

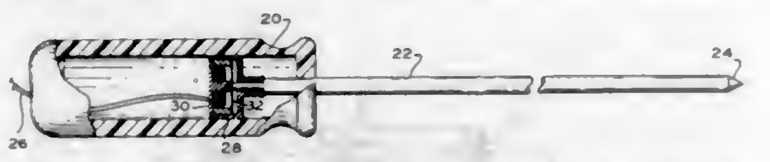
Leopold Perlaky, Lanham, Md., assignor to Hygrodynamics, Inc., Silver Spring, Md.
Filed June 5, 1967, Ser. No. 643,497
Int. Cl. G01n *11/02*
U.S. Cl. 73—61.1 10 Claims



A moisture detector for a dry cleaning fluid circulating system, consisting of a Y-fitting with a first leg connected directly in the main flow conduit between the recirculation filter and the cleaning vat of the system, and the other leg containing a cylindrical sleeve projecting convergently into the path of flow through the first leg. The inner end of the sleeve projects close to the junction of the bores of the two legs so as to define a restriction or nozzle and to cause vaporization of water carried by the recirculating cleaning fluid, the water vapor diffusing into the sleeve. An electrical humidity sensing element is mounted inside the sleeve and is exposed to water vapor entering the sleeve. The sensing element is connected to an external electrical indicator to provide a quantitative measurement of the amount of water in the recirculated cleaning fluid.

### 3,477,280
### MULTIPOINT VIBRATION DETECTOR

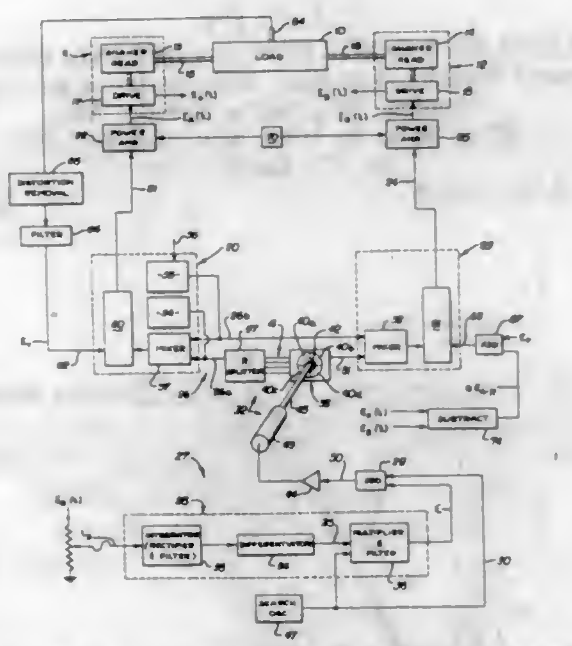
**Harold D. Blackmer, 11748 SE. Morrison, Portland, Oreg. 97216**
**Filed Feb. 3, 1966, Ser. No. 535,278**
**Int. Cl. G01n** *9/18*
**U.S. Cl. 73—71.4** **6 Claims**



A probe attached to a movable piece of a transducer is vibrated to cause changes in a magnetic circuit of the transducer which are amplified by an amplifier having adjustable feedback. Several transducers attached to separated points on a machine each have a radio transmitter, and a radio receiver is selectively tuned to the transmitters.

### 3,477,281
### MULTIPLE SHAKER CONTROL SYSTEM

**James G. Helmuth, Monrovia, Calif., assignor to Chadwick-Helmuth Electronics, Inc., Monrovia, Calif., a corporation of California**
**Filed Nov. 4, 1965, Ser. No. 506,330**
**Int. Cl. G01n** *29/00*
**U.S. Cl. 73—71.6** **9 Claims**

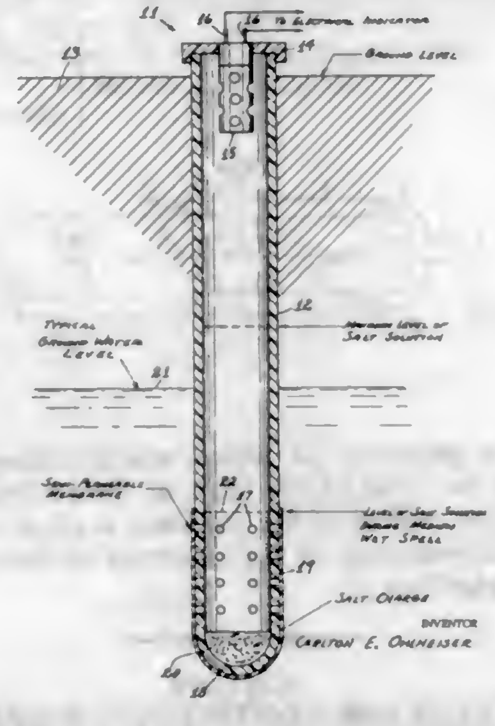


Apparatus for optimization of efficiency of vibration drive of a load in a multiple shaker system, through control of relative current inputs to the shakers, and input current phase control.

### 3,477,282
### GROUND MOISTURE MEASURING APPARATUS

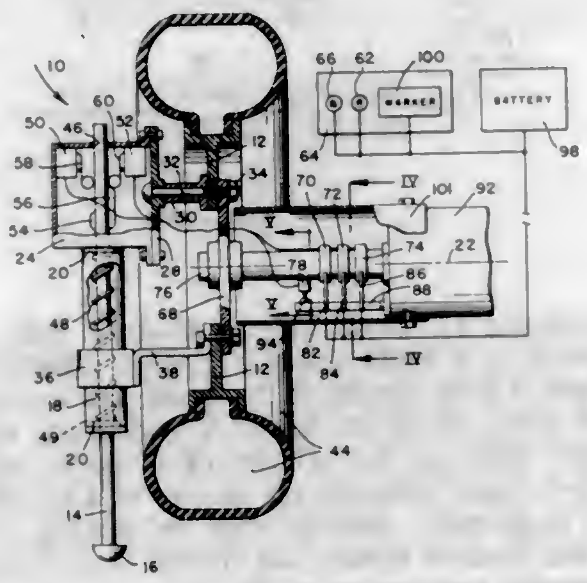
**Carlton Edward Ohlheiser, Silver Spring, Md., assignor to Hygrodynamics, Inc., Silver Spring, Md.**
**Filed June 29, 1967, Ser. No. 649,878**
**Int. Cl. G01n** *25/56*
**U.S. Cl. 73—76** **8 Claims**

A ground moisture measuring apparatus consisting of a rigid tubular container, sealed at its top end, adapted to be inserted in the ground to a depth at which moisture measurement is desired. The lower end of the container is perforated and contains a charge of salt. The perforated lower end is covered by an osmotic film in the form of a semipermeable membrane to allow water to pass from the ground to the salt, and reversely from the salt to the ground, by osmosis. The wet salt is always retained within the container. An electric hygrometer sensing element is mounted in the sealed top of the container and is connected to an external indicating circuit. The measured relative humidity in the free vapor space above the salt charge is always less than 100% and depends on the amount of water which has passed to the salt through the osmotic film. The process is reversible, so that the varying moisture content of the ground can be continuously measured.


TO ELECTRONIC INDICATOR
GROUND LEVEL
TYPICAL GROUND WATER LEVEL
MAXIMUM LEVEL OF SALT SOLUTION
SEMI-PERMEABLE MEMBRANE
LEVEL OF SALT SOLUTION DURING MEDIUM WET SPELL
SALT CHARGE
INVENTOR
CARLTON E. OHLHEISER

### 3,477,283
### GROUND SURFACE HARDNESS TESTER

**Cyrl W. Terry, Oxnard, Calif., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Apr. 21, 1965, Ser. No. 449,900**
**Int. Cl. G01n** *3/00*
**U.S. Cl. 73—84** **5 Claims**



The present invention relates to a ground surface hardness tester which is mounted to the wheel of a vehicle. With each revolution of the wheel the tester penetrates the ground surface and the depth of penetration indicates the surface's load carrying characteristics. The tester includes a penetrating rod which is mounted on the wheel so that it is extendable beyond the periphery of the wheel. The rod is biased outwardly from the wheel axis and means are provided for indicating the penetration of the rod into the ground surface. Additional means are provided to prevent any significant abrasion of the penetrating rod end as the wheel rotates.

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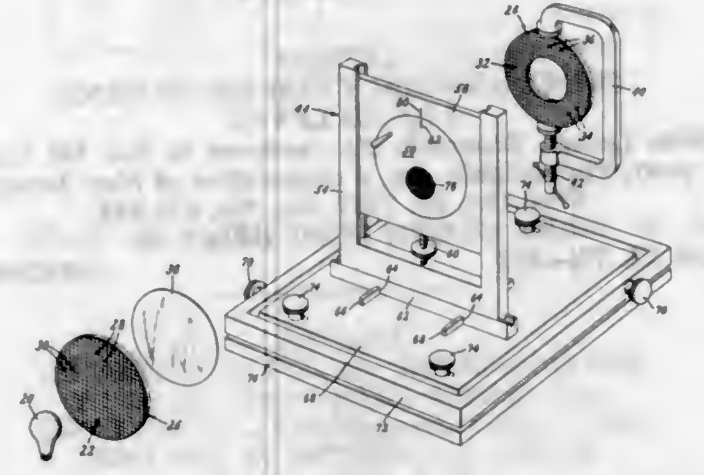
### 3,477,284
### TECHNIQUE FOR DEFORMATION ANALYSIS

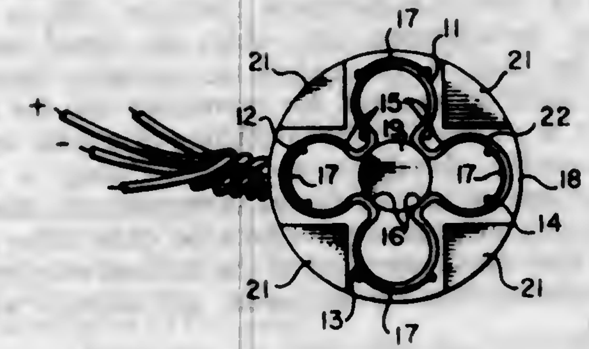
**Cletus R. Schwallie, Claymont, Del., and Earl I. Riegner, Springfield, Pa., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware**
**Filed June 12, 1968, Ser. No. 736,433**
**Int. Cl. G01n** *3/00;* **G01b** *11/18*
**U.S. Cl. 73—88** **13 Claims**



A method and apparatus for analyzing deformation in a test specimen. When an image of a master grid is superposed on a congruent working grid of a test specimen or, conversely, the working grid is superposed on the master grid, and the specimen is deformed, successive fringes appear which are essentially parallel to the grid lines. A barrier in the form of a polarizing filter is positioned between the master grid and the specimen so as to obscure part of the image such that a resulting display of fringes appears as distinguishable and apparently dissimilar colors.

### 3,477,285
### FOUR-LOBED DIAMETRAL-STRAIN GAGE

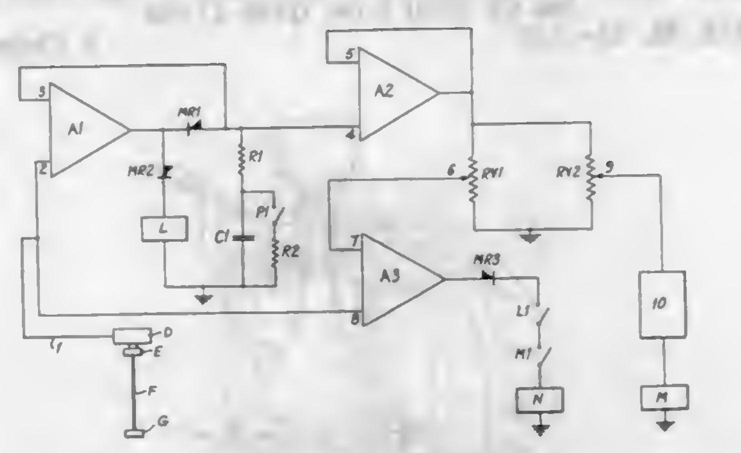
**Joseph M. Krafft, 1709 Oakcrest Drive, Alexandria, Va. 22302, and Frank W. Bird, 7204 Alger Road, Falls Church, Va. 22042**
**Filed Aug. 4, 1967, Ser. No. 658,987**
**Int. Cl. G01n** *3/00, 3/08;* **G01b** *7/00*
**U.S. Cl. 73—88.5** **6 Claims**



This invention is directed to a strain gage base upon which suitable strain gage elements are mounted for measuring the diametral strain on a compression sample at different strain rates, and at low temperatures with high accuracy and sensitivity. The strain gage is of cruciform shape with two pairs of diametrically opposite lobes. Each lobe is provided with at least one strain gage element on the surface thereof each of which are connected electrically to form a complete Wheatstone bridge circuit. The strain gage base is placed over a cylindrical test specimen then inserted into a compression loader. A load applied to the compression specimen acts upon the strain gages on the base to determine the strain.

### 3,477,286
### PEAK LOAD DETECTORS

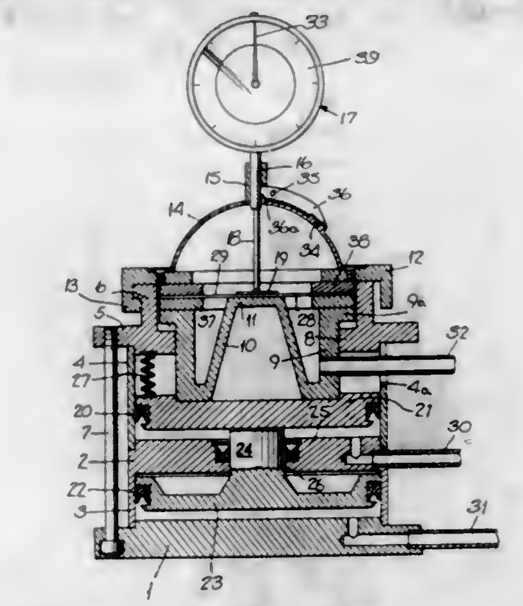
**Bernard Stuart Baker, Coventry, England, assignor to Courtaulds Limited, London, England, a British company**
**Filed Sept. 7, 1967, Ser. No. 666,208**
**Claims priority, application Great Britain, Sept. 30, 1966, 43,778/66**
**Int. Cl. G01n** *3/08*
**U.S. Cl. 73—95** **7 Claims**



A method of detecting a peak load applies to an article under test (e.g. in a tensile testing apparatus) which comprises continuously generating a signal having a voltage proportional to the load applied to the article, storing a charge which is equal, at any time, to the maximum voltage of the signal reached up to that time during the test, and continuously comparing a predetermined proportion of the voltage of the stored charge with the voltage of the signal to give an indication when the former exceeds the latter. An electrical circuit for carrying out the method is also claimed.

### 3,477,287
### APPARATUS FOR TESTING BURST RESISTANCE AND DOME ELASTICITY OF SHEET MATERIAL

**Paul Dubach, Wattwil, Switzerland, assignor to Heberlein & Co. AG., Wattwil, Switzerland, a corporation of Switzerland**
**Filed Feb. 27, 1967, Ser. No. 618,797**
**Claims priority, application Switzerland, Mar. 17, 1966, 3,860/66**
**Int. Cl. G01n** *3/26*
**U.S. Cl. 73—102** **2 Claims**



Apparatus for testing burst resistance and dome elasticity of flexible sheet material including a holding fixture, means associated with the fixture for supporting material to be tested, a tension clamp, a piston drive system for urging the fixture and clamp together to clamp the material to be tested, and means admitting fluid under pressure to one side of the material.

### 3,477,288
### TESTING APPARATUS AND METHOD FOR SHEET MATERIAL

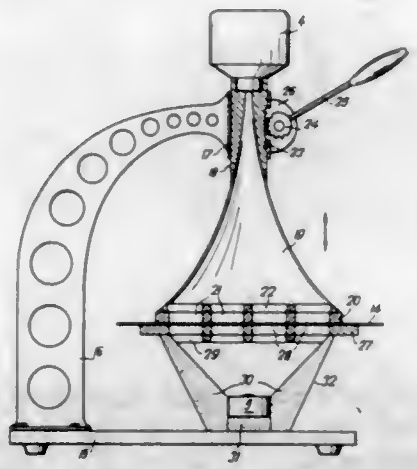
**Zdeněk Krčál, Gottwaldov, and Eduard Mück and Jaroslav Krčmár, Otrokovich, Czechoslovakia, assignors to Statni Vyzkumny Ustav Kozedelny, Gottwaldov, Czechoslovakia**

**Filed Oct. 19, 1967, Ser. No. 676,513**

**Claims priority, application Czechoslovakia, Oct. 21, 1966, 6,690/66**

**Int. Cl. G01l** *5/04;* **G10k** *11/00*

**U.S. Sl. 73—159** **8 Claims**



Leather or leatherlike sheet material is tested for suppleness while its edge is clamped between perforated plates by directing acoustic oscillations against a first exposed face of the material and measuring the intensity of the attenuated oscillations emitted from the second exposed face. The oscillations are generated by an electro-acoustical transducer in an exponential horn directed toward the first face, and sensed by a microphone in a chamber closed by the second face. The sensed attenuation is a measure of the suppleness of the sheet material.

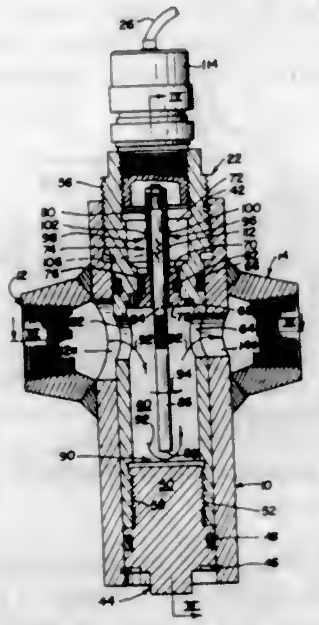
### 3,477,289
### COMBINED RATE OF FLOW, PRESSURE AND TEMPERATURE GAGE

**Donald Wiebe, Greensburg, Pa., assignor to William S. Hansen, doing business as A. Stucki Company, Pittsburgh, Pa.**

**Filed Aug. 25, 1966, Ser. No. 575,094**

**Int. Cl. G01f** *1/00*

**U.S. Cl. 73—198** **9 Claims**



A combined flow rate, pressure and temperature measuring probe having a tubular member projecting from one end of the probe and a cantilever vane secured to the outermost projecting end of the tubular member. Displacement of the vane due to fluid flow is measured by two strain gages mounted on the tubular member; while another two strain gages sense pressure when the probe is adjusted to stop fluid flow. Temperature may be determined by an appropriate connection of the gages into a strain gage bridge.

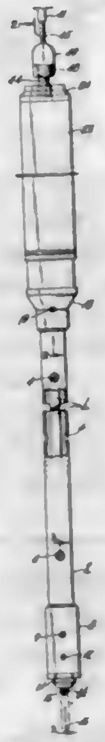
### 3,477,290
### PROBE ASSEMBLY FOR MEASURING LIQUID LEVEL

**Julius Lerner, Broomall, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey**

**Filed Oct. 20, 1967, Ser. No. 676,848**

**Int. Cl. G01f** *23/00;* **H01g** *1/00*

**U.S. Cl. 73—292** **10 Claims**



A capacitive probe assembly for measuring liquid level has a pair of concentric elongated electrodes with an annular space therebetween, into which the liquid being measured can enter. At one end of the assembly, there is a metallic member arranged for movement into the annular space in response to the contacting of a solid body by said assembly, thereby to produce a change in the capacitance between said electrodes. A temperature sensor is provided at a location intermediate the ends of the assembly, so that the temperature of the ambient surrounding the assembly can be measured, alternatively with liquid level.

### 3,477,291
### RADIATION THERMOMETERS

**Hideo Osawa, Yokohama-shi, Yosio Sakamoto, Sagamihara-shi, and Masayuki Kondo, Ayase-machi, Koza-gun, Kanagawa-ken, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan**

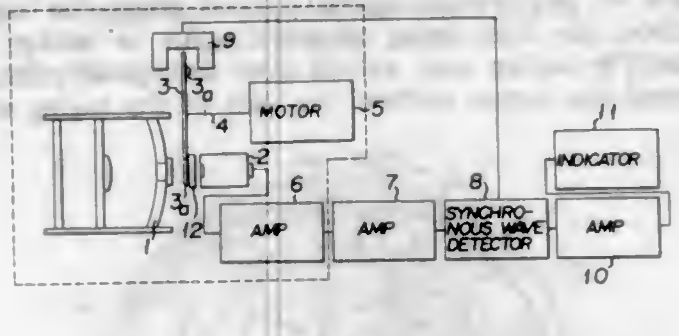
**Filed Sept. 6, 1967, Ser. No. 665,790**

**Claims priority, application Japan, Sept. 5, 1966, 41/58,262**

**Int. Cl. G01k** *13/00*

**U.S. Cl. 73—355** **1 Claim**

A radiation thermometer capable of measuring the temperature of an object by measuring the quantity of infrared rays radiated from the object. A filter passing only radiation having a wavelength of 4.26±0.2 microns is placed between the object and thermometer to eliminate the effects of sunlight and aqueous vapor in the atmosphere.



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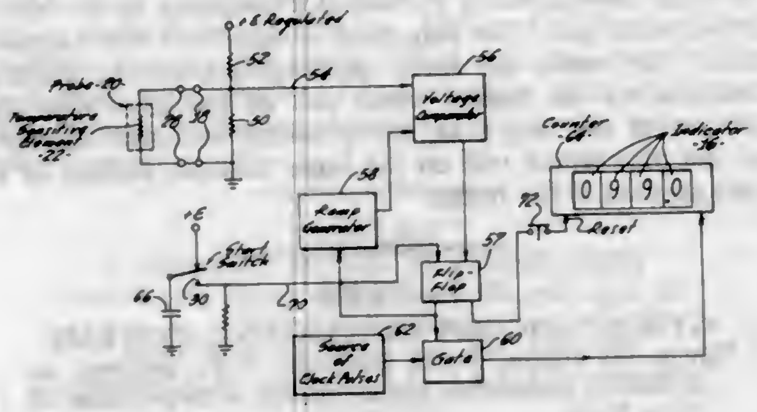
### 3,477,292
### DIGITIZED CLINICAL THERMOMETER

**William E. Thornton, San Antonio, Tex.**
**(205 Echo Ave., Friendswood, Tex. 77546)**

**Filed Nov. 6, 1967, Ser. No. 680,716**

**Int. Cl. G01k** *5/18*

**U.S. Cl. 73—362** **3 Claims**



An improved temperature measuring instrument having particular utility as a clinical thermometer. The instrument is of the electrical type, and it includes a digitizing circuit connected so that the number of pulses produced corresponds to the temperature being measured, and a pulse counting means connected to the digitizing circuit, with appropriate means to display the temperature directly as decimal numbers on the basis of the count.

### 3,477,293
### APPARATUS FOR MEASURING TERRESTRIAL GRAVITY FROM A MOVING VEHICLE

**Ernst Brede, Berlin, Gemany, assignor to Continental Elektroindustrie A.G., Berlin-Mariendorf, Germany, a corporation of Germany**

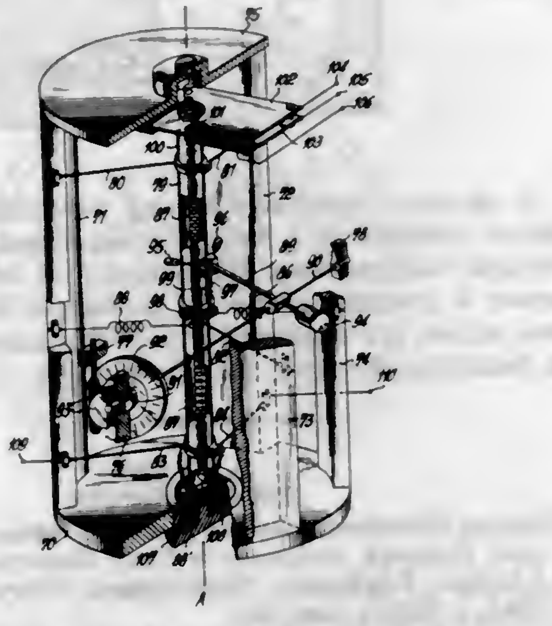
**Filed July 19, 1967, Ser. No. 654,495**

**Claims priority, application Germany, Apr. 27, 1967, C 42,157**

**Int. Cl. G01m** *1/12*

**U.S. Cl. 73—382** **8 Claims**

Apparatus for measuring gravity from a moving vehicle, comprises a housing and a gravitational mass mounted in the housing for oscillatory movement along its axis from a zero position and for rotation about its axis. An electrical device is coupled to the gravitational mass for producing an electrical signal corresponding to the position of the gravitational mass relative to the zero position and to the housing. A recording device coupled to the electrical device records an electrical signal varying with the gravity acting on the mass. A guide is coupled to the gravitational mass for restricting the gravitational mass to a rectilinear path of gravity-responsive motion away from the zero position along the axis of the gravitational mass in a vertical direction. The guide comprises a plurality of spaced filamentary tensioning members affixed to the housing and the gravitational mass in different planes spaced from each other. Each of the tensioning members is affixed to the housing and the gravitational mass whereby it extends taut in a substantially tangential direction relative to the gravitational mass and flexible in a direcion substantially parallel to the axis of the gravitational mass. Tension springs are affixed to the housing and the gravitational mass for imparting a torque on the gravitational mass for tensioning the filamentary tensioning members whereby such springs extend taut in substantially tangential directions relative to the gravitational mass and flexible in a direction substantially parallel to the axis of the gravitational mass.



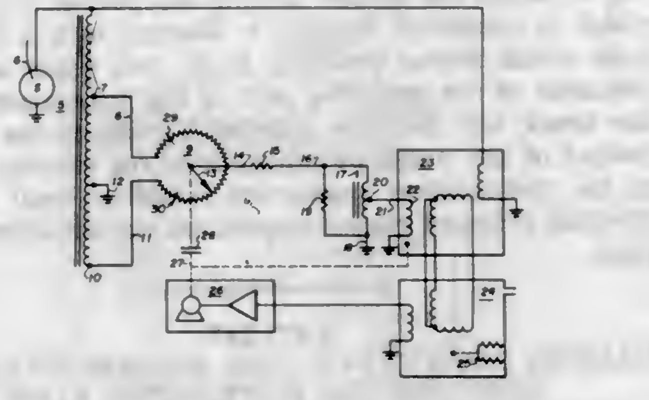
### 3,477,294
### SENSOR HYSTERESIS COMPENSATING SYSTEM

**William Brandau, Westwood, N.J., assignor to The Bendix Corporation, a corporation of Delaware**

**Filed Feb. 29, 1968, Ser. No. 709,473**

**Int. Cl. G01l** *7/12*

**U.S. Cl. 73—386** **5 Claims**

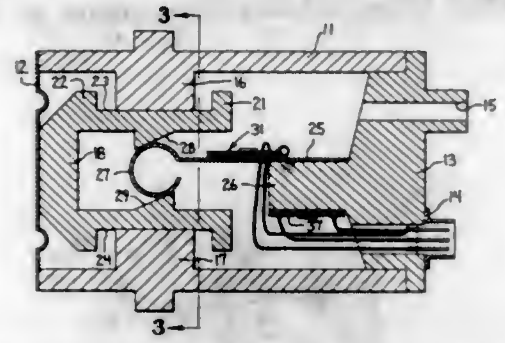


A compensating system is disclosed including a potentiometer for providing a means of eliminating the normal discrepancies between the up-scale and down-scale readouts of a diaphragm-type, electromechanical, servo-driven pressure sensor caused by spring hysteresis inherent in the diaphragm capsule assembly.

3,477,295

### PRESSURE TRANSDUCER

**Rudolph H. Sumpter, Lancaster, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed June 12, 1967, Ser. No. 645,552**
**Int. Cl. G01f** *23/14*
**U.S. Cl. 73—398** **4 Claims**



A pressure transducer having a semiconductor strain sensor attached to a bendable beam and having a diaphragm actuated cam for flexing said beam. A second sensor is provided within the transducer housing and the two sensors are connected in a Wheatstone bridge circuit to determine the amount of bending.

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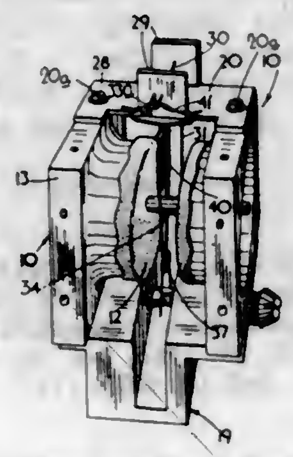
3,477,296

### INSTRUMENTS

**Norman Horwood, Moseley, and Alexander Gray, Greenock, England, assignors to Gray Horwood Engineering Limited, Edgbaston, Birmingham, Warwickshire, England, a British company**
**Filed Aug. 28, 1967, Ser. No. 663,825**
**Claims priority, application Great Britain, July 21, 1967, 33,617/67**
**Int. Cl. G01l** *7/08, 7/04*
**U.S. Cl. 73—406** **15 Claims**



Transmission mechanisms particularly for instruments such as pressure gauges or other instruments having pointers, in which the spindle driving the pointer has a crank which is connected through a filament with a U-shaped yoke which moves generally in its own plane under the influence of the operative part of the instrument to rock the crank and thus the spindle. Variations use a roller instead of the crank and also means for varying the rate of the transmission mechanism. Unidirectional and differential pressure gauges employ the transmission mechanism.

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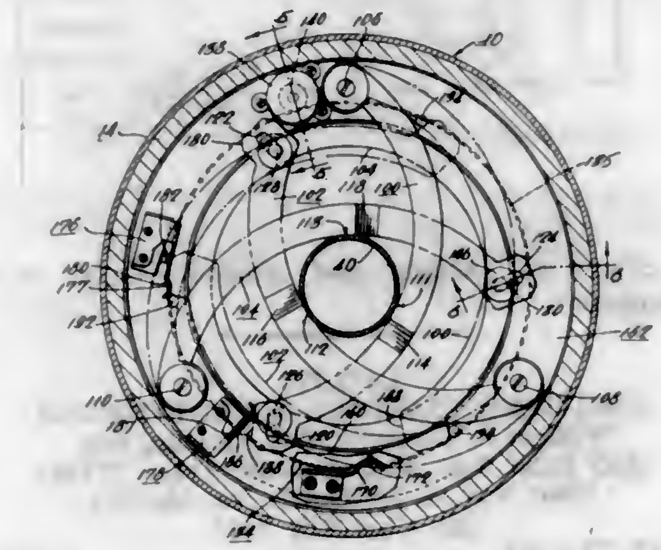
3,477,297

### CAGING APPARATUS AND SENSOR STABILIZATION SYSTEM EMPLOYING SAME

**Edwin W. Howe, North Baldwin, N.Y., assignor to AMBAC Industries, Incorporated, New York, N.Y.**
**Filed Oct. 6, 1966, Ser. No. 584,840**
**Int. Cl. G01c** *19/24*
**U.S. Cl. 74—5.1** **7 Claims**

A caging system for a two-degree-of-freedom gyro of the type in which the gyro rotor is mounted on a frame by means of an inner and outer gimbal. In the caged condition, a caging surface on a large central object carried by and fixed to the inner gimbal is contacted simultaneously by a plurality of caging arms pivoted from the frame at points equiangularly-spaced about the caging surface, the arms being pivotable apart to uncage the gyro. The caging arms extend from their pivot points to beyond the caging surface, the ends of the caging arms remote from the pivot points being driven in rotation through corresponding pin-and-slot couplings to a motor-driven ring gear. The ring gear is supported for rotation either by means of three equiangularly-spaced rollers mounted on the frame, which roll on the inner circular surface of the ring gear, or by rollers mounted on each of the pins which roll on the inner circular surface of a ring secured to the frame.



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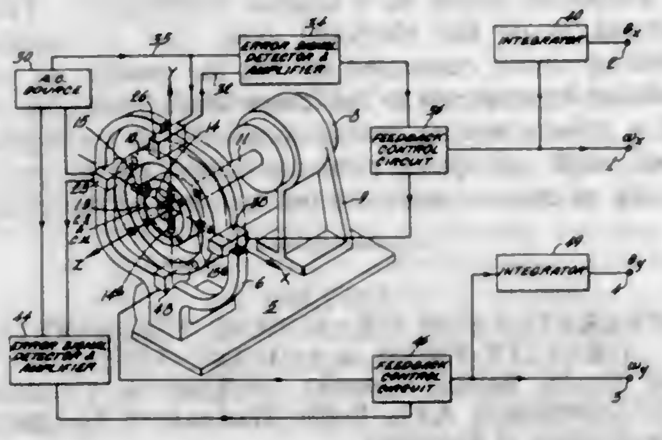
3,477,298

### GYROSCOPIC APPARATUS AND SYSTEMS

**Edwin W. Howe, North Baldwin, N.Y., assignor to AMBAC Industries, Incorporated, a corporation of New York**
**Filed Aug. 17, 1966, Ser. No. 572,935**
**Int. Cl. G01c** *19/28, 19/08*
**U.S. Cl. 74—5.34** **11 Claims**



A two-degree-of-freedom gyro of the rotating suspension type in which control signals indicative of, deviations of the spin axis about a sensing axis normal to the spin axis are applied to produce a torque on the rotor about an axis normal to both the spin and sensing axes so as to maintain the spin axis deviation near zero. When the gyro is balanced, the control signals represent rate of rotation, when the gyro is unbalanced, the control signals represent acceleration. Sensing and torquing are preferably applied about two sets of mutually perpendicular axes to provide information as to rate and acceleration about all axes except the spin axis. Two such gyros driven from a common shaft, one balanced and one unbalanced, provide accurate information as to rate, total angle, linear acceleration and linear velocity. Torquing is preferably by equal energy pulses, and provides a convenient digital output.

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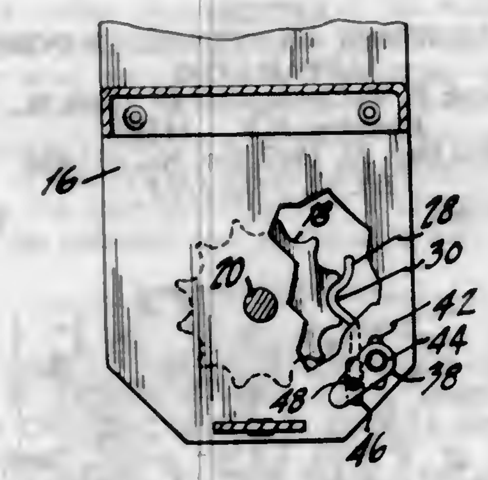
3,477,299

### DETENT SYSTEM

**Walter F. Speer and James M. Simmons, Indianapolis, Ind., assignors to RCA Corporation, a corporation of Delaware**
**Filed Apr. 1, 1968, Ser. No. 717,843**
**Int. Cl. F16h** *35/18*
**U.S. Cl. 74—10.41** **3 Claims**



An adjustable detent system for aligning the rotor and stator contacts of the rotary switches within a radio receiver tuner after final assembly of the tuner includes an index wheel secured to a tuner channel selecting shaft and a resilient detent member. One end of the resilient member engages the index wheel and the member is positioned with respect to the selecting shaft such that the contacts of the rotary swiches within the tuner are fully engaged.

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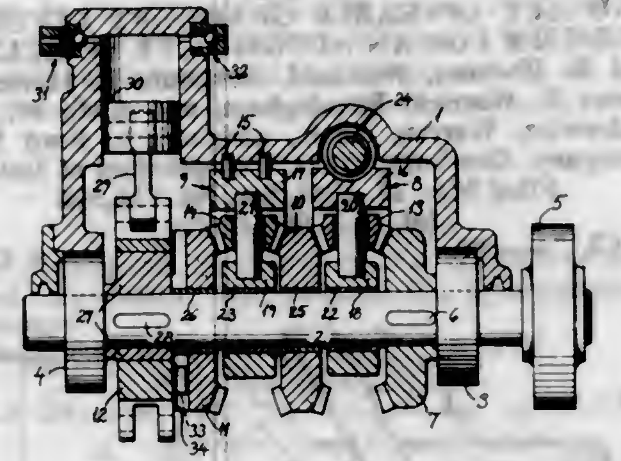
3,477,300

### VARIABLE SPEED TRANSMISSION

**Carl-Gustaf Hård af Sederstad, Strandvagen 22, Sandviken, Sweden**
**Filed Nov. 28, 1967, Ser. No. 686,168**
**Claims priority, application Sweden, Nov. 30, 1966, 16,348/66**
**Int. Cl. F16h** *37/06, 27/00, 29/00*
**U.S. Cl. 74—112** **8 Claims**



This disclosure relates to a device for the continuous variation of a gear transmission including a housing, a driving gear and a driven gear in coaxial relationship carried by the shaft, an intermediate transmission gear coaxially carried by the shaft and coupled between the driven and driving gears, a reversing gear adjacent the driven gear, a planetary gear adjacent the driving gear, the reversing gear including a toothed wheel coupling the driven gear to the intermediate transmission gear wherein the toothed wheel of said planetary gear includes a rod projecting outwardly of said housing whereby said last-mentioned toothed wheel can be manually arcuately adjusted to vary the relative displacement of said driving and driven gears.

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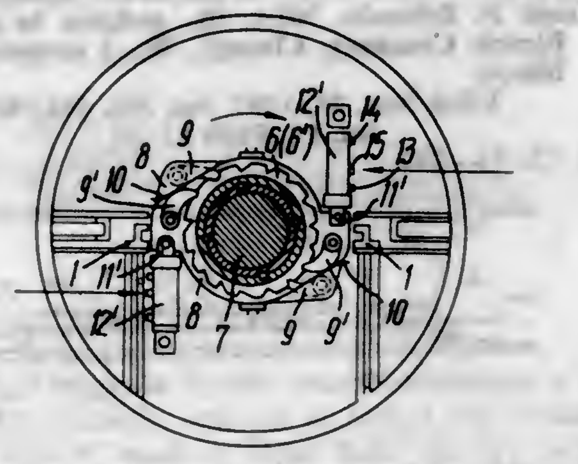
3,477,301

### DEVICE FOR DRIVING A WORKING MEMBER OF ROTARY TYPE IN A MECHANIZED DRIFTING SHIELD

**Evgeny Moiseevich Bolotin, Otkrytoe shosse 24, korp. 25, kv. 12; Lev Abramovich Blyakher, Poledny per. 1/22, kv. 6; Boris Nikolaevich Ierusalimsky, Otkrytoe shosse 24, korp. 5–A, kv. 45; Leonid Ivanovich Saveliev, Otkrytoe shosse 29, korp. 11, kv. 58; Vladimir Ivanovich Razmerov, Leningradsky prospekt 62, kv. 90; Leonid Konstantinovich Khaidurov, Otkrytoe shosse 24, korp. 5–g, kv 31, all of Moscow, U.S.S.R.**
**Filed Mar. 1, 1967, Ser. No. 619,798**
**Int. Cl. F16h** *27/02, 31/00*
**U.S. Cl. 74—129** **2 Claims**



A device for driving a working member of a rotary type therein comprising two pairs of double-action hydraulic cylinders and two ratchet-and-pawl mechanisms whose working or ratchet wheels are fixed on the shaft of the working member, each moving element of said mechanism comprisingly pawls pivotally attached to a pair of said cylinders which create a couple of forces transmitted through the ratchet and pawl mechanisms to the shaft of the working member.

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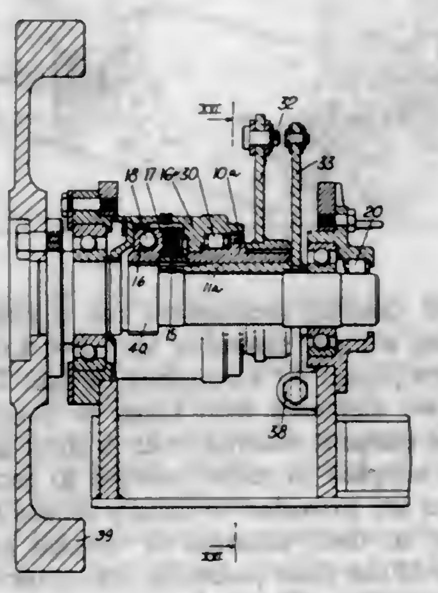
3,477,302

### CLUTCHES

**Oswald Webb, Whitley, England, assignor to Harry Ferguson Research Limited, Gloucestershire, Great Britain**
**Filed May 3, 1967, Ser. No. 635,868**
**Claims priority, application Great Britain, May 7, 1966, 20,317/66**
**Int. Cl. F16h** *27/02, 31/00*
**U.S. Cl. 74—142** **10 Claims**



A friction drive coupling is described in which ball-and-ramp actuated one-way clutches are interposed between driving and driven members, the arrangement permitting the driven member to overrun the driving member in one direction of rotation. In order to permit the driven member to overrun in the opposite direction of rotation, a portion of the coupling, namely a pressure plate having one set of ramped grooves, is connected to a one-way brake which prevents ball-and-ramp actuation of the driven member in the said opposite direction. Modifications include the provision of interacting ramps between the brake and the said pressure plate for the purpose of facilitating reverse overrun from a locked condition of the coupling. An indexing mechanism incorporating such a coupling is also described.

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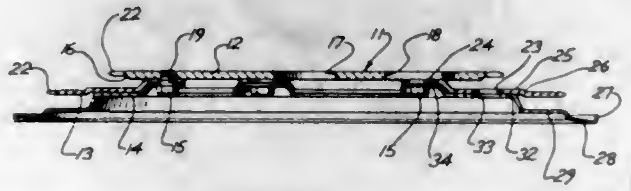
### 3,477,303
## DOUBLE PLATEAU SPROCKET ASSEMBLY
**Frank P. Brilando, Niles, Ill., assignor to Schwinn Bicycle Company, Chicago, Ill., a corporation of Illinois**
**Filed Nov. 28, 1967, Ser. No. 686,062**
**Int. Cl. F16h** *55/30*
**U.S. Cl. 74—243 5 Claims**



Assembly of two sprockets and chain guard stamped from thin stock to eliminate milling of sprocket teeth, and offset for strengthening, to provide guide for movements of chain from one sprocket to other, and to form tangs offset to avoid use of separate spacers.

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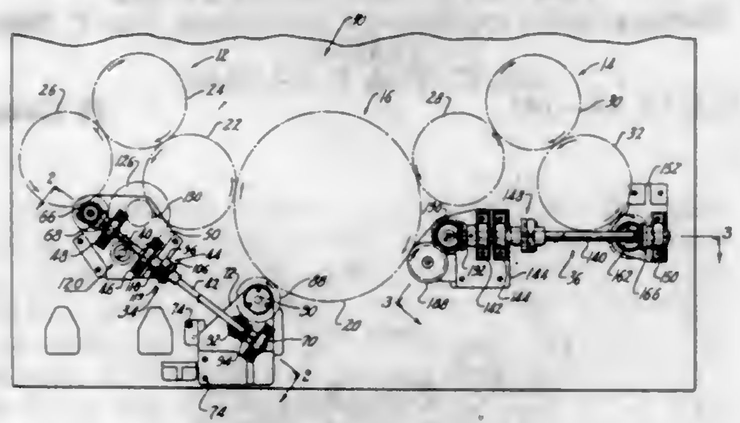
### 3,477,304
## PRINTING PRESS BACKLASH CONTROL MECHANISM
**William G. Young, Shaker Heights, Ohio, assignor to Miller Printing Machinery Co., Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Nov. 22, 1967, Ser. No. 685,105**
**Int. Cl. F16h** *55/20*
**U.S. Cl. 74—409 7 Claims**



A backlash control mechanism for a rotary printing press including a shaft assembly with two axially aligned shaft members joined by a coupling device. The coupling device has two elements with faces in abutting engagement and one element secured to each shaft member. The elements are adapted to rotate relative to each other and locking means are provided to fixedly secure the elements to each other in their adjusted or rotated position. The opposite ends of the shaft assembly are connected through gearing to separate cylinder drive gears in the meshing cylinder drive gear train. A controlled amount of torque is applied to the shaft members by rotating the elements of the coupling device and locking the coupling device with the torque in the shaft members. The torque is transmitted through the connecting gearing to separate gears of the cylinder drive gear train. The torque in the shafts exerts a position pressure or load on the meshing gear teeth in the direction of gear rotation so that backlash of the gears caused by external vibrations and cyclic load variations is minimized.

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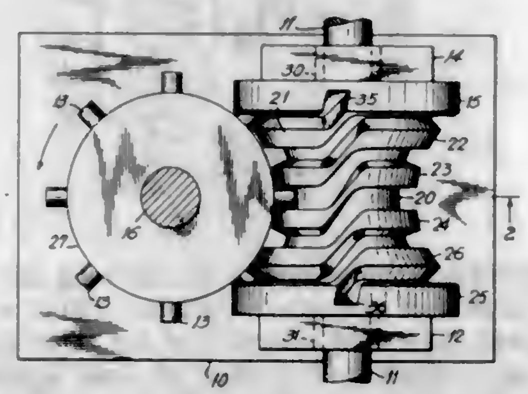
### 3,477,305
## SPHERICAL WORM AND PIN GEAR INDEXING APPARATUS
**Joseph P. McCartin, 43—29 158th St., Flushing, N.Y. 11358**
**Filed Dec. 22, 1967, Ser. No. 692,880**
**Int. Cl. F16h** *1/12*
**U.S. Cl. 74—426 7 Claims**



A compact and intermittent motion, right-angle indexing device for use in the precision indexing of machine tools having a roller gear with a concave profile with equally spaced cam ribs formed within the contour of the gear so that the slots between the cam ribs will engage a plurality of cam followers which project into the concave area from a corresponding cam follower wheel. The cam ribs include a gradual transition area which connects adjacent ribs to form a continuous slot within the roller gear so that cam followers will advance the cam wheel one position for each rotation of the roller gear during the operation of the indexing components.

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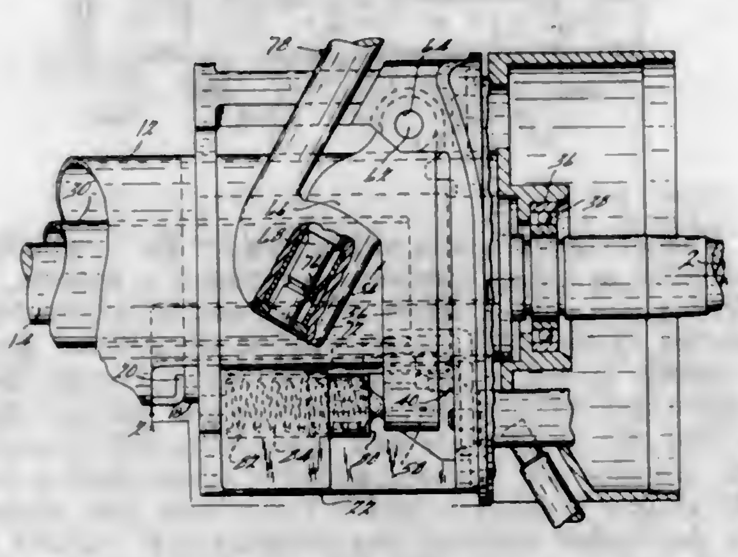
### 3,477,306
## MANUALLY OPERABLE GEARSHIFT LEVER ASSEMBLY FOR AN AUTOMOTIVE VEHICLE
**David R. Houston, Westland, Benjamin T. Howes and James E. Warrick, Birmingham, and Alvin W. Alexandrowicz, Warren, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Mar. 27, 1968, Ser. No. 716,596**
**Int. Cl. G05g** *11/00*
**U.S. Cl. 74—485 8 Claims**



A manually controlled gearshift lever assembly for a steering post mounted gearshift linkage mechanism in an automotive vehicle. The assembly includes a gearshift lever having one end thereof situated within the hub

region of the vehicle steering wheel. That end is connected mechanically to a ratio selecting pawl which engages a ratio controlling gate as the pawl is moved in a direction generally parallel to the axis of the steering column. The pawl is pivoted on a socket member which is fixed to a steering tube running concentrically with respect to the steering shaft. Rotary motion is imparted to the steering tube as the gearshift lever is rotated in a controlled pattern about the axis of the steering column. The inward end of the gearshift lever becomes released from the lever assembly if it is subjected to an impact load. The mechanical advantage of the gearshift lever system makes it possible to move the gearshift controlling elements of the system through the shift pattern determined by the gate structure with a minimum displacement of the extended end of the shift lever.

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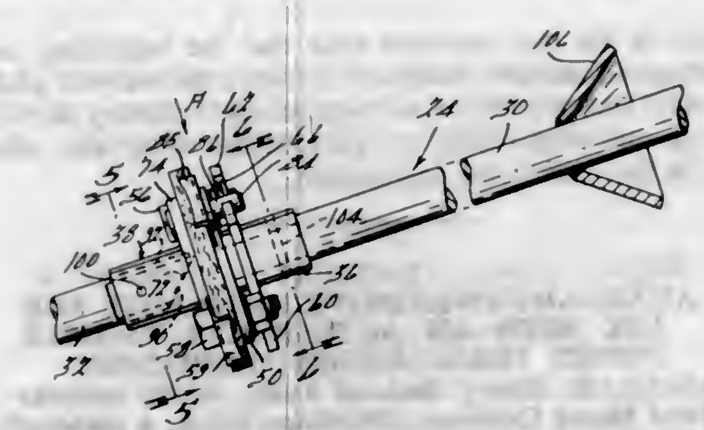
### 3,477,307
## COLLAPSIBLE STEERING COLUMN
**Charles F. Maddox, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Dec. 18, 1967, Ser. No. 691,409**
**Int. Cl. B62d** *1/16;* **B60k** *27/00, 33/00*
**U.S. Cl. 74—492 9 Claims**



A steering system for a motor vehicle having a two-piece steering shaft with one end connected to the steering gear and the other end connected to the steering wheel. The two shaft pieces are connected by a flexible coupling and each shaft is joined to the coupling by a frangible member. In the event the steering gear is displaced rearwardly, the frangible members will break and the shaft pieces will be disconnected thereby preventing the upper shaft piece from also being displaced rearwardly.

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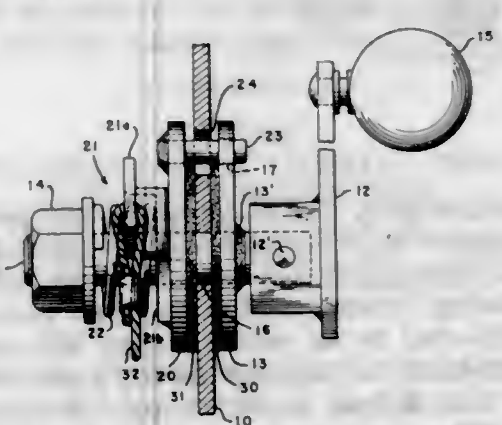
### 3,477,308
## LEVER MOUNTING
**Robert A. Wagstaff, New Holland, Pa., assignor to Sperry Rand corporation, New Holland, Pa., a corporation of Delaware**
**Filed Jan. 4, 1968, Ser. No. 695,615**
**Int. Cl. G05g** *1/08*
**U.S. Cl. 74—504 4 Claims**



A lever mounting wherein a pair of axially spaced plates, separated by friction pads and a mounting wall, are connected by means of a pin extending transversely between the plates through an aperture in the wall so that as a first lever located on one side of the wall is turned the load is transferred from the first plate to the second plate by the pin, causing a second lever, fixed to the second plate, to operate, while the friction pads serve to retain the device in a desired setting.

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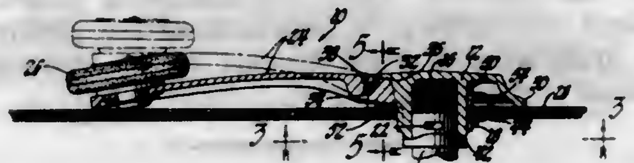
### 3,477,309
## WINDOW REGULATOR HANDLE ASSEMBLY
**Raymond G. Sprecher, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed May 10, 1968, Ser. No. 728,186**
**Int. Cl. G05g** *1/00*
**U.S. Cl. 74—547 3 Claims**



A window regulator handle assembly includes a hub which is conventionally attached by splines and an omega clip to a window regulator input shaft. An arm having a manual control knob mounted at one end is nonrotatably secured to the hub and is fulcrumed thereon for pivotal movement between a stored position adjacent a vehicle body trim panel and an extended use position. A spring clip maintains the fulcrum engagement and biases the handle to the stored position.

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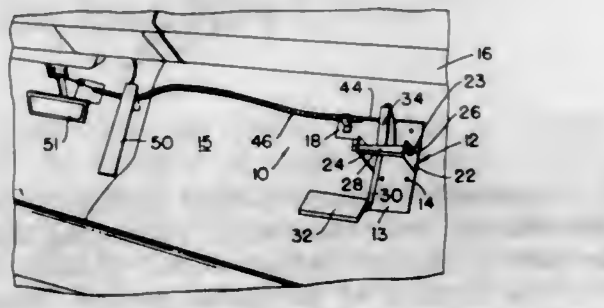
### 3,477,310
## DUAL DRIVER CONTROLS OF THE CABLE TYPE FOR VEHICLES WITH AUTOMATIC OR STANDARD TRANSMISSIONS
**Salvador A. Garcia, 15334 Artesian Ave., Detroit, Mich. 48223**
**Filed Dec. 11, 1967, Ser. No. 689,471**
**Int. Cl. G05g** *1/14*
**U.S. Cl. 74—562.5 2 Claims**



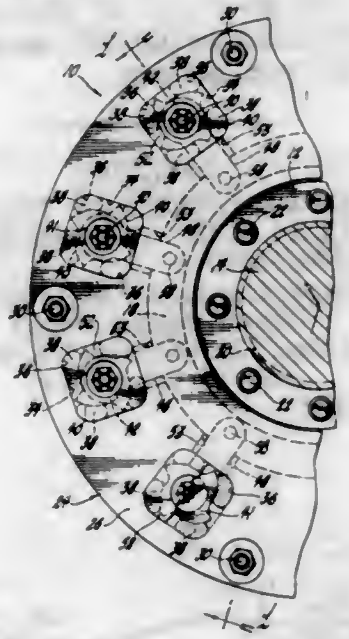
Two versions of a cable-type control for student automobile driver training are disclosed, one for installation in a vehicle equipped with an automatic transmission and the other for a vehicle having a standard foot pedal-controlled transmission. The principle of operation and essential structural features of the control of the invention are the same in both adaptations.

That is, a rigid bracket is mounted to the floorboard of the automobile beneath its dashboard and on the side of the front seat occupied by the instructor; and this bracket pivotally supports, on a horizontal axis substantially above the floorboard, a foot pedal (or two pedals in the case of a standard transmission installation). Such pedal means is employed by the instructor to operate elongated flexible cable means extending over to the driver side of the vehicle front seat and operatively attached to the brake pedal (or brake and clutch pedals in a standard shift application). Appropriate floor bracket-mounted guide pulleys control the tension transmitting element of the cable, using a direct and efficient vertical action of said element in alignment with the driver pedal means. The usual cable conduit or sheath is anchored by appropriate clamps to the floorboard in the sub-dashboard zone of the vehicle.

The arrangement is such that the instructor may instantaneously take over the operation of the brake and/or clutch pedal in any possible emergency, overriding its operation by the student driver. Spring means of a suitable sort return the instructor pedal or pedals to a neutral position upon cessation of his control effort, also maintaining the cable's force transmitting element under continuing slight tension. Thus, the overriding action, when desired or necessary, is instantaneous and positive upon the application of pedal pressure by the instructor, i.e., without lost motion.

### 3,477,311
### TORSIONAL VIBRATION DAMPER

**Charles H. McGreary, Oak Park, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed June 25, 1968, Ser. No. 739,834**
**Int. Cl. F16f *15/12***
**U.S. Cl. 74—574** **4 Claims**

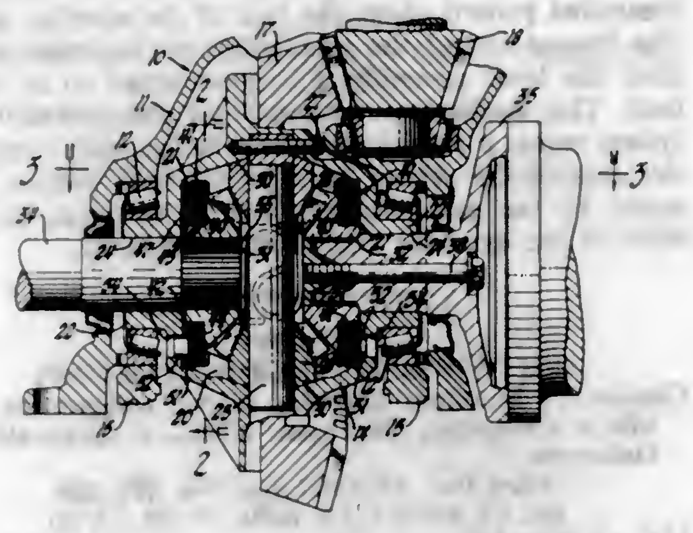


A torsional vibration damper having, in a preferred embodiment, lever-cam means connecting the hub with the inertia member through elastic elements compressed into the corners of polygonal pockets formed in the inertia member. Oscillation of the inertia member on the hub is resisted and damped by the action of the lever-cam means acting to compress the elastic elements.

### 3,477,312
### LIMITED SLIP DIFFERENTIAL WITH ANTICHATTER CLUTCH

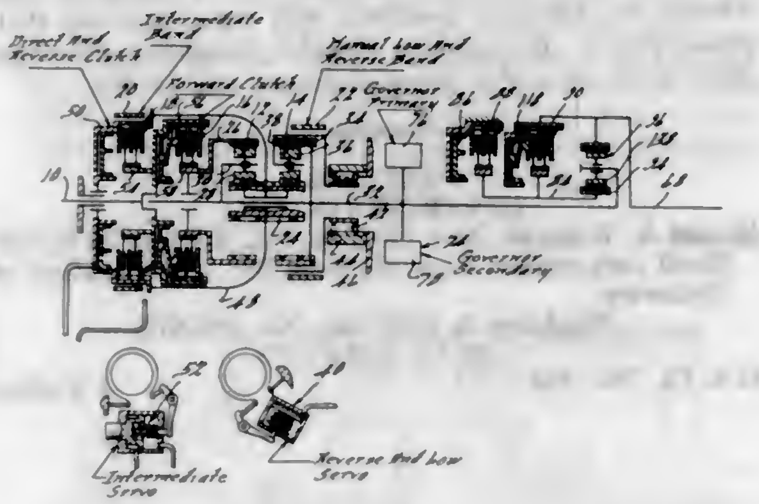
**Morris J. Duer, Lansing, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Apr. 12, 1968, Ser. No. 720,860**
**Int. Cl. F16h *1/44***
**U.S. Cl. 74—711** **10 Claims**

A limited slip differential having, in preferred embodiments, multiple plate clutch packs arranged between the side gears and the casing so as to resist differential action. In each pack, two groups of alternate plates are arranged such that the plates of one group are nonresiliently connected to one of two relatively rotatable members and the plates of the other group are connected with varying degrees of torsional resilience to the other of the two members such that the beginnings and endings of relative movement between the various plates of each clutch pack occur sequentially, reducing physical shock and eliminating or diminishing observable chatter in the differential mechanism.



### 3,477,313
### AUXILIARY OVERDRIVE GEAR UNIT FOR USE WITH AN AUTOMOTIVE VEHICLE POWER TRANSMISSION MECHANISM

**Frederick A. Ringe, Orchard Lake, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Apr. 29, 1968, Ser. No. 724,941**
**Int. Cl. F16h *37/00, 57/00***
**U.S. Cl. 74—740** **6 Claims**



A multiple-ratio, geared, power transmission for use in an automotive vehicle driveline including a planetary gear overdrive unit that is adapted to be secured to the main housing for transmission, the main housing in turn being connected to the vehicle engine, and an overdrive clutch-and-brake arrangement having a pressure-shiftable element that defines in part a pair of opposed pressure chambers, the clutch-and-brake being independent of the gear elements of the planetary gear unit whereby the gear tooth forces are isolated with respect to the clutch-and-brake.

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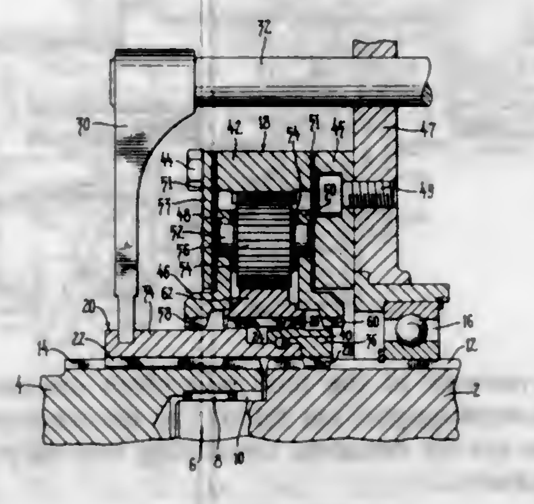
### 3,477,314
### CHANGE SPEED PLANETARY TRANSMISSION

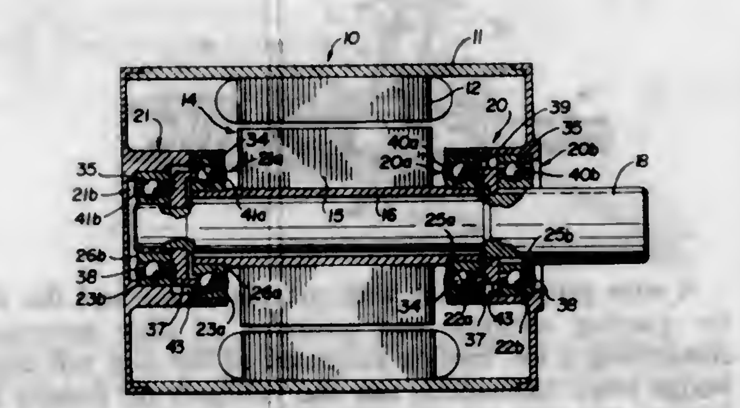
**Gerald L. Rutkowski, Westland, Mich., assignor to Massey-Ferguson Inc., Detroit, Mich., a corporation of Maryland**
**Filed Nov. 28, 1967, Ser. No. 686,154**
**Int. Cl. F16h *3/62***
**U.S. Cl. 74—750** **3 Claims**



A transmission and more specifically a three-speed planetary gear unit is disclosed which has one control means operable to provide three speed ratios.

### 3,477,315
### DYNAMOELECTRIC DEVICE WITH SPEED CHANGE MECHANISM

**Elmer Fred Macks, Willow Lane, Vermilion, Ohio 44089**
**Filed Dec. 18, 1967, Ser. No. 691,590**
**Int. Cl. F16h *13/06***
**U.S. Cl. 74—798** **17 Claims**

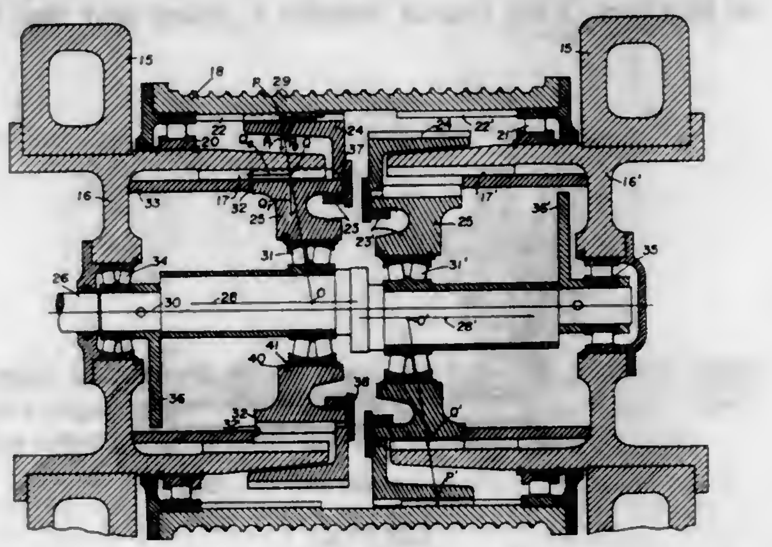


A power device has a rotor section including coaxially disposed shafts journaled by spaced bearing sets, with at least one set being a drive speed change mechanism.

### 3,477,316
### GEAR DRIVE WITH COAXIAL INPUT AND OUTPUT MEMBERS

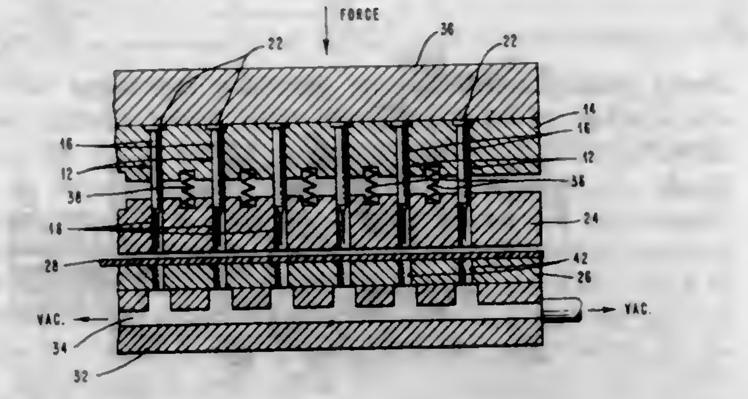
**Ernest Wildhaber, Brighton, N.Y.**
**(124 Summit Drive, Rochester, N.Y. 14620)**
**Filed Dec. 26, 1967, Ser. No. 693,464**
**Int. Cl. F16h *1/32, 57/00***
**U.S. Cl. 74—805** **17 Claims**

The invention relates to gear drives with internal gears and driving and driven members that have a common axis. The internal gears are engaged in axially spaced regions by two pairs of external gears having the same two tooth numbers slightly smaller than those of their internal mates. Said two pairs are mounted on axes parallel to said common axis and equally offset therefrom in opposite directions. Helical teeth of opposite hand may be provided on corresponding gears of said two pairs and their mates, together with floating mounting, to positively equalize the loads on both pairs. The two pairs may be kept together axially and in parallel planes by thrust bearings whose balls contact both pairs directly.



### 3,477,317
### METHOD FOR PRODUCING AN IMPROVED DIE FOR USE WITH A MULTI-ELEMENT PUNCH

**Leonard E. Liander, Fishkill, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Apr. 12, 1967, Ser. No. 630,340**
**Int. Cl. B21k *5/20;* B26d *5/08;* B26f *1/14***
**U.S. Cl. 76—107** **6 Claims**

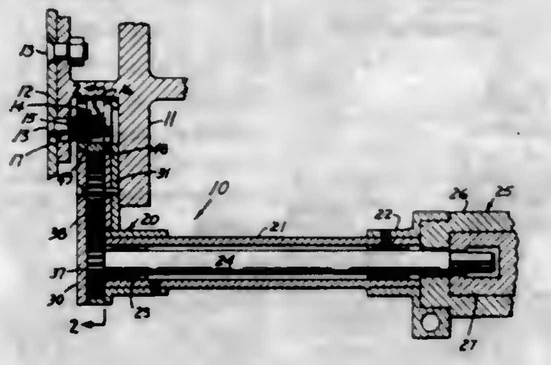


The method comprises boring holes of a diameter greater than the diameter of respective punch elements through a backup plate at locations which correspond to the locations of the respective punch elements; positioning said backup plate with respect to said punch elements so that said bored holes and respective punch elements are coaxial; attaching a soft, wear resistant material to the punch element facing surface of said backup plate and operating said punch elements to simultaneously punch holes through said soft material, each hole being within the area of a respective bore hole in said backup plate.

### 3,477,318
### OFFSET DRIVER FOR THREADED FASTENERS

**Ronald W. Batten, Torrance, Calif., assignor to Hi-Shear Corporation, Torrance, Calif., a corporation of California**
**Filed Sept. 8, 1967, Ser. No. 666,435**
**Int. Cl. B25b *17/00***
**U.S. Cl. 81—57** **5 Claims**

This invention relates to a driver for setting threaded fasteners in height-limited environments. The driving portion of the device need not be moved axially, but may be applied to the fastener it is to set by lateral movements, thereby significantly reducing height and manipulations. It includes a body to which are mounted a power shaft and a laterally extending gear train driven by the power shaft which gear train terminates in a pair of branches. Each branch includes a driven gear that is engaged to a driving socket. The socket and the body have alignable slots and the angular extent of the slot at the periphery is less than the angular spacing of the driving gears around the center of rotation of the socket whereby the socket is always driven by at least one of the branches.



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3,477,319

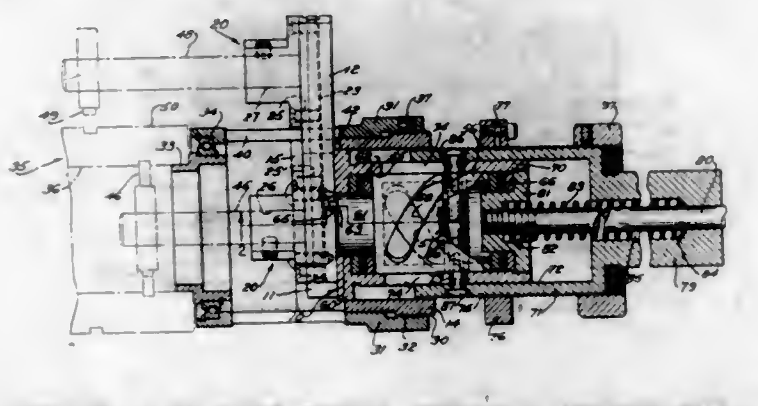
### RECESSING TOOL

**Eldo K. Koppelmann, Cumberland, R.I., assignor to Madison Industries, Inc., a corporation of Rhode Island**

**Filed Aug. 16, 1965, Ser. No. 479,956**

**Int. Cl. B23b** *3/00, 21/00, 47/00*

**U.S. Cl. 82—1** **4 Claims**



A tool for forming an annular recess in a hole or on the outer surface of a work piece in which there is a member slidably mounted to move radially of the axis of the tool and be actuated radially by relative axial movement of parts of the tool.

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3,477,320

### TOOLHOLDER APPARATUS AND TURNING METHOD

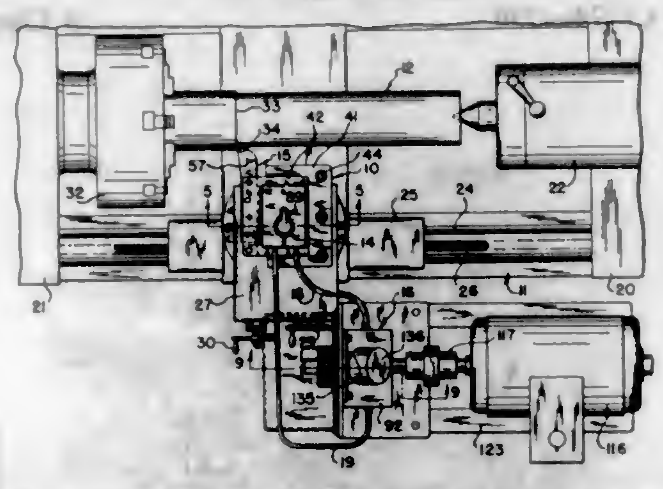
**Howard J. Findley, Cleveland, Ohio, assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island**

**Filed July 25, 1963, 297,637**

**Int. Cl. B23b** *29/00, 3/00;* **B24b** *7/00*

**U.S. Cl. 82—36** **22 Claims**

1. In toolholder apparatus; a support means including an abutment means; holder means having flexible means adjacent said abutment means; a cutting tool connected with said flexible means and engageable with a workpiece along a cutting path; fluid pressure responsive means effective between said abutment means and said flexible means for flexing the latter in a direction transverse to the cutting path; and fluid pressure pulsation producing means connected with said responsive means for supplying spaced discrete fluid pressure pulsations spaced in time to the latter to cause repeated sudden short-stroke pulse movements of the tool in a given direction from a normal working position relative to the workpiece portion being cut for breaking the cutting into chips as it is being produced.



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3,477,321

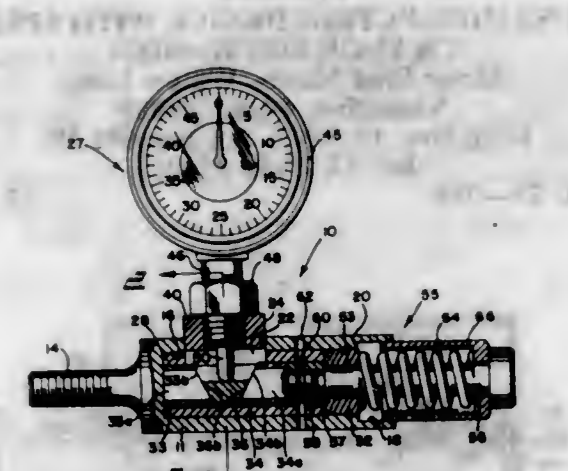
### STOP GAUGE

**Arthur C. Wise, 205 Pioneer Trail, Aurora, Ohio 44202**

**Filed May 18, 1967, Ser. No. 639,508**

**Int. Cl. B23b** *3/36;* **G01b** *5/14, 3/00*

**U.S. Cl. 82—34** **3 Claims**



A stop gauge for use with machine tools and the like for gauging accurate end positions of slide movement comprising a lost motion extension of the stop rod and a wedge block mechanism and dial indicator for sensing the extent of movement through the lost motion connection.

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3,477,322

### DEVICE FOR CUTTING SHEET MATERIAL

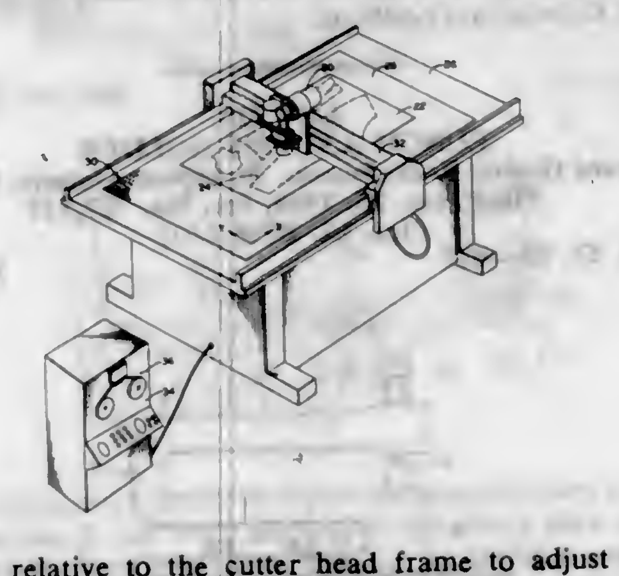
**Heinz Joseph Gerber, West Hartford, and Robert J. Pavone, Wapping, Conn., assignors to The Gerber Scientific Instrument Company, South Windsor, Conn., a corporation of Connecticut**

**Filed Sept. 21, 1966, Ser. No. 581,065**

**Int. Cl. B26d** *5/30;* **B26f** *1/24*

**U.S. Cl. 83—71** **12 Claims**

A device for cutting parts, patterns or the like from paper or other thin sheet material consists of a cutter head supported for movement above a work supporting surface and controlled in two dimensional movements relative thereto by an associated automatic controller. A reciprocating tool of the cutter head has a cutting edge facing the work and located in a plane perpendicular to the axis of reciprocation, and the tool is rotated about its axis of reciprocation during a cutting process to maintain the cutting edge tangent to the line of cut. The cutter head is gravity biased toward the work and is vertically supported by a presser member having a flat load bearing face engageable with the work to limit its downward movement. The presser member is in turn vertically adjustable relative to the cutter head frame to adjust the maximum amount by which the cutter tool projects beyond the flat face of the presser member during its reciprocation.



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3,477,323

### SHEET STACKING APPARATUS

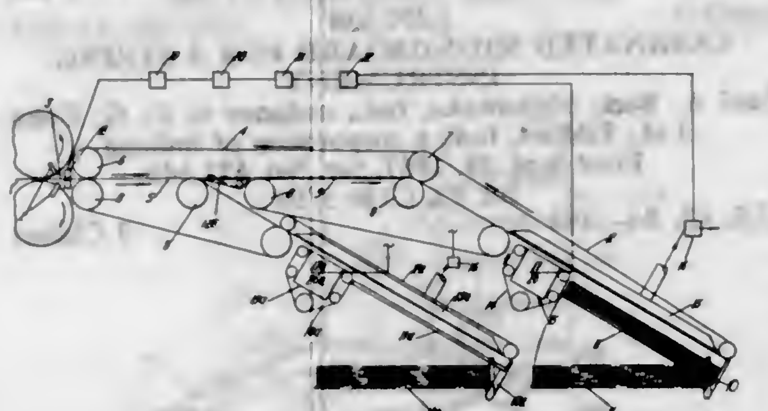
**Howard Osborn, Aylesbury, England, assignor to Wiggins Teape Research & Development Limited, London, England, a British company**

**Filed Mar. 13, 1967, Ser. No. 622,504**

**Claims priority, application Great Britain, Mar. 18, 1966, 12,034/66**

**Int. Cl. B26d** *5/28, 7/06*

**U.S. Cl. 83—79** **20 Claims**



Sheets being delivered to form a stack on a support are moved towards a stop at a high linear speed and before the leading edge of a sheet engages the stop the trailing end portion of the sheet is engaged by a selectively operable retarding device which reduces considerably the linear speed of the sheet and continues the movement of the sheet at the lower speed until the leading edge of the sheet engages the stop.

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3,477,324

### DEVICE FOR CONTINUALLY WITHDRAWING SINGLE SHEETS FROM A STACK OF SHEETS

**Adolf Schwebel, Offenbach am Main, Germany, assignor to Mabeg Maschinenbau G.m.b.H., Nachf. Hense & Pleines G.m.b.H. & Co., Offenbach am Main, Germany, a German firm**

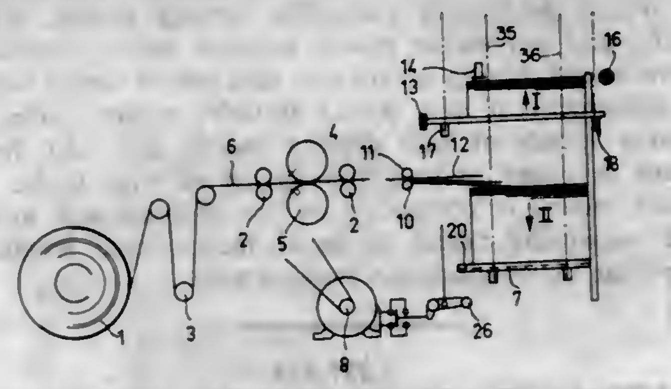
**Filed July 11, 1967, Ser. No. 652,466**

**Claims priority, application Germany, July 15, 1966, M 70,245; June 29, 1967, M 74,572**

**Int. Cl. B65h** *35/04*

**U.S. Cl. 83—79** **6 Claims**

There is shown a device for continually withdrawing single sheets from a stack of sheets. The device provides an upper stack of sheets from which sheets are successively withdrawn one by one for transport to a point of utilization and a lower stack to the top surface of which sheets, having been cut, are fed and which is combined with the upper stack to a single stack by lifting the lower stack into engagement with the bottom of the upper stack when the lower stack is built up to a predetermined height.



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3,477,325

### APPARATUS FOR PRODUCING FOAM PLASTIC SHEET STACKS

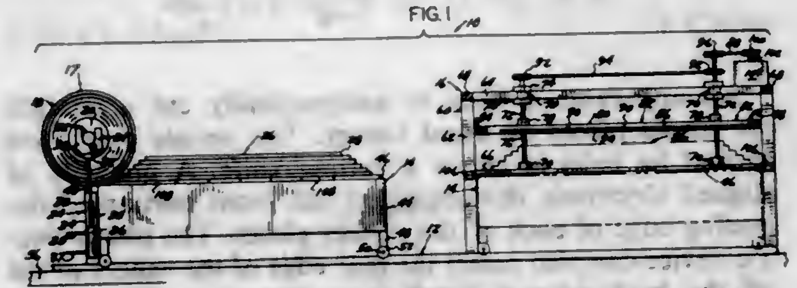
**Gerhard Kracht, Allen Park, and Paul M. Svihra, Inkster, Mich., assignors to Swedish Crucible Steel Company, Detroit, Mich., a corporation of Michigan**

**Original application Jan. 6, 1967, Ser. No. 607,808. Divided and this application Nov. 18, 1968, Ser. No. 776,684**

**Int. Cl. B26d** *7/10*

**U.S. Cl. 83—171** **11 Claims**

FIG. 1



This apparatus produces stacked foam plastic sheets from spirally-rolled foam plastic material by radially severing the spiral roll of material into stacks of strips while on its core and axle, unrolling and depositing the thusly severed stacks of strips in stepped piles upon a carriage. This carriage is rolled beneath a frame structure carrying a vertically-movable subdividing cutter assembly, such as spaced heated cross wires, which descends and cuts its way through the piles and severs them into subdivided stacks of short lengths and widths. An expansible core (FIGURES 3 to 5) accommodates spiral rolls of foam plastic material having different diameters of central openings.

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3,477,326

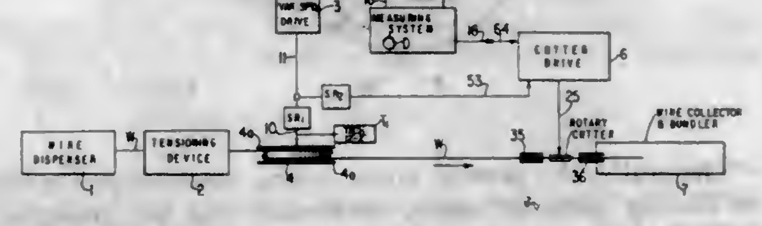
### HIGH SPEED WIRE CUT-OFF MACHINE

**Walton Rainey, Ardmore, Pa., assignor to Thomas & Betts Corporation, Princeton, N.J., a corporation of New Jersey**

**Filed June 23, 1966, Ser. No. 559,992**

**Int. Cl. B23d** *25/16, 25/12;* **B26d** *1/56*

**U.S. Cl. 83—296** **8 Claims**



A high speed wire cut-off machine for severing selected lengths of wire from a continuously moving wire. The machine includes means for feeding wire and continuously adjustable measuring means for determining the selected length of wire to be cut, said measuring means being adapted to be continuously adjustable to measure selected lengths of wire of different lengths. The measuring means preferably comprises driving means, driven means and adjustable power transfer means connected between said driving means and said driven means wherein adjustment of said power transfer means varies the relative speeds of said driving means and said driven means in order to vary the length of wire to be cut. Cutter means is controlled by the continuously adjustable measuring means to sever the selected length of wire from the continuously moving wire.

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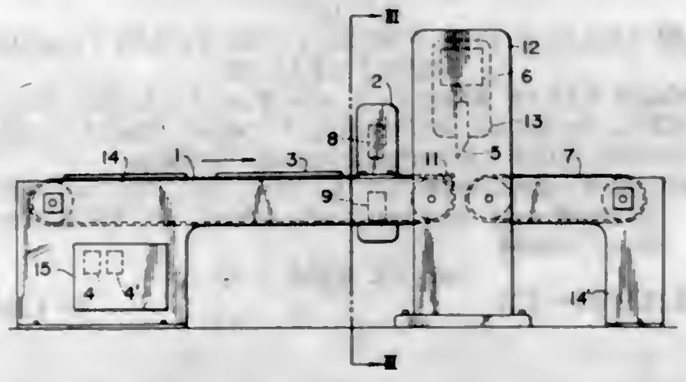
### 3,477,327
### AUTOMATIC VENEER CUTTING APPARATUS
**Tadashi Aizawa, 24 5-chome, Dataku Shinmachi, Minami-ku, Nagoya-shi, Aichi-ken, Japan**
**Filed Apr. 13, 1967, Ser. No. 630,700**
**Int. Cl. B26d** *5/38*
**U.S. Cl. 83—371** **2 Claims**



An apparatus is used to automatically cut a straight cut across pieces of wood veneer. The veneer pieces are carried by belts to below a cutting knife. A plurality of aligned electronic devices detect the front portion of the leading edge of each of the veneer pieces. The photo-electric device can also detect the rear edge of the veneer to cut off the back edge to form a straight edge. The photoelectric devices control operation of the knife by means of a time-delay circuit.

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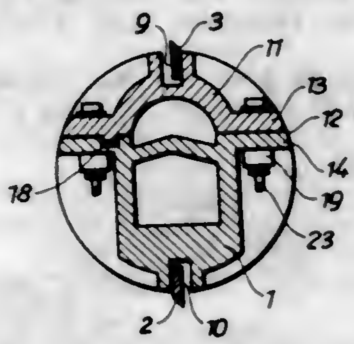
### 3,477,328
### CROSS CUTTING ASSEMBLAGE FOR USE IN CUTTING PAPER, CARDBOARD AND SIMILAR MATERIALS
**Herbert Schonmeier, Dusseldorf-Benrath, and Horst Mohle, Hilden, Germany, assignors to Jagenberg-Werke AG, Dusseldorf, Germany**
**Filed Jan. 23, 1967, Ser. No. 611,002**
**Claims priority, application Germany, Feb. 2, 1966, J 29,964; Dec. 7, 1966, J 32,428**
**Int. Cl. B26d** *1/12*
**U.S. Cl. 83—677** **11 Claims**



Generally, the present cross cutting assemblage for use in cutting webs of paper, cardboard and like materials includes a fixed knife, a rotatable cutter head, at least one knife for the head cooperable with the fixed knife to cut the web upon the rotation of the head, means for mounting the one knife on the head for movement from an inoperative position within the head to an operative position projecting beyond the periphery of the head, and means operably connected to the mounting means for longitudinally shifting the mounting means to move the one knife to said positions.

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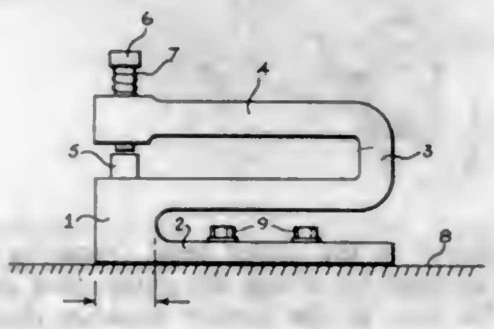
### 3,477,329
### PUNCH AND DIE HOLDER
**Gerard Gaston Frans Smeets, Brampton, Ontario, Canada**
**Filed Mar. 25, 1968, Ser. No. 727,117**
**Int. Cl. B26f** *1/02*
**U.S. Cl. 83—685** **1 Claim**



The invention is directed to a sheet material punching unit in which the die is located in an anvil-like member having an extended foot portion for facilitating securing of the unit to a work table while the punch is supported by a C-type frame cantilevered from the anvil and immune to the effects of warping or bending of the extended foot portion.

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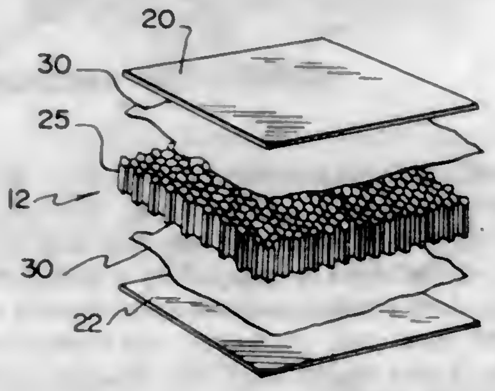
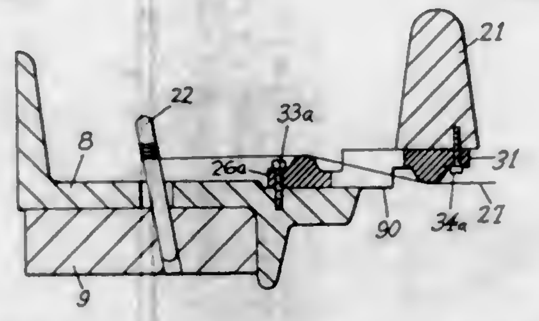
### 3,477,330
### LAMINATED SOUNDBOARD FOR A STRING INSTRUMENT
**Paul A. Bert, Mishawaka, Ind., assignor to C. G. Conn Ltd., Elkhart, Ind., a corporation of Indiana**
**Filed Sept. 29, 1967, Ser. No. 671,643**
**Int. Cl. G10c** *3/06*
**U.S. Cl. 84—193** **3 Claims**



This soundboard for use in a piano includes a honeycomb core of low density material sandwiched between first and second thin sheets of plastic material. The sheets have a relatively high modulus of elasticity to give the board great stiffness, and are bonded to the core. The core, which makes up almost 90% of the volume of the board but only 10% of its weight, provides for low internal attenuation of the piano tones and gives excellent response to all frequencies which are concerned in the piano. The board can be supported in the piano around the peripheral edges in the conventional manner or can be supported solely by the strings which are connected to bridges fastened to the board so that the soundboard behaves as a free-moving diaphragm.

### 3,477,331
### FORWARD TERMINATION MEANS FOR THE SPEAKING LENGTH OF PIANO STRINGS AND THE LIKE
**Harold A. Conklin, Jr., Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio**
**Filed Aug. 15, 1966, Ser. No. 572,554**
**Int. Cl. G10c** *3/04*
**U.S. Cl. 84—215** **19 Claims**



An elongated metallic string terminating element rigidly attached to the front portion of the string plate of a stringed musical instrument between an adjacent pair of longitudinal ribs, the termination element being perforated intermediate its opposite side edges for the passage of strings therethrough, the strings contacting oppositely directed string deflecting means extending lengthwise of the termination element on opposite sides of the perforations therein.

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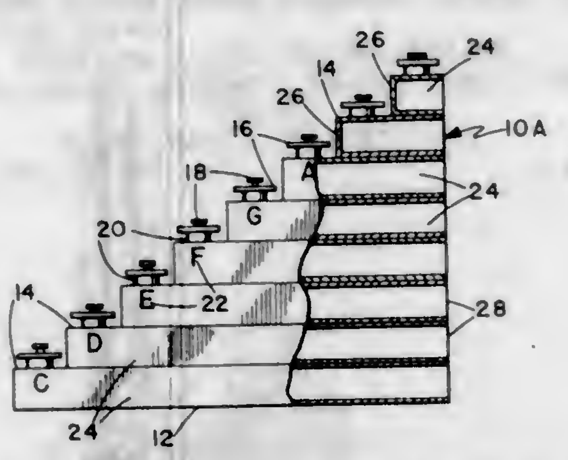
### 3,477,332
### PERCUSSION INSTRUMENT WITH VERTICALLY STEPPED SCALE
**Hulda E. Kreiss, 4702 E. Mountain View Drive, San Diego, Calif. 92116**
**Filed Sept. 11, 1967, Ser. No. 666,639**
**Int. Cl. G10d** *13/08;* **G09b** *15/00*
**U.S. Cl. 84—403** **1 Claim**



The instrument is primarily for teaching or training purposes and has vertically stepped, tone producing striker bars in progressive order to show their natural sequence, the vertical stepping representing the frequency relationships of the various tones in a scale. The instrument can be used for playing tunes and the scale can be used to demonstrate progressive order in other series of units, characters of values.

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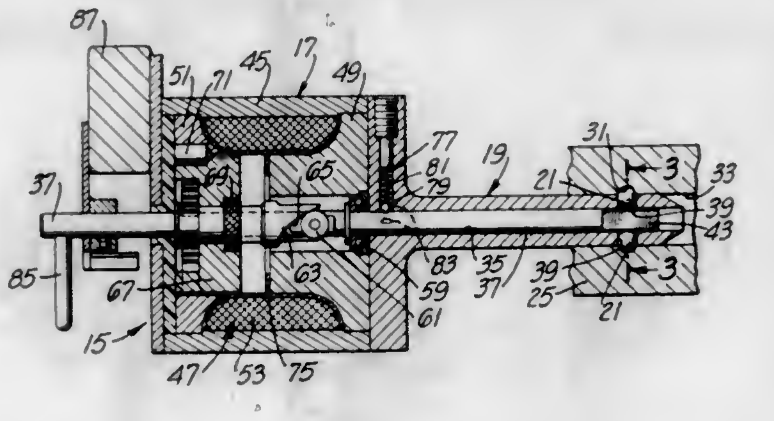
### 3,477,333
### RELEASABLE FASTENING DEVICE
**Thomas R. Boyd, Rolling Hills Estates, Frank J. Cosenza, Palos Verdes Peninsula, and Albert K. Yamamoto, Huntington Beach, Calif., assignors, by mesne assignments, to Tridair Industries, Redondo Beach, Calif.**
**Filed Nov. 21, 1966, Ser. No. 595,659**
**Int. Cl. F16b** *19/00;* **F42b** *15/10*
**U.S. Cl. 85—5** **13 Claims**

This disclosure describes a releasable fastener which may include a body member having a passageway therein and at least one port extending from the passageway to the exterior of the body member. A detent member is mounted in the port for movement between locking and releasing positions and actuator means which is mounted for movement within the passageway controls the movement of the detent member. The actuator means is in turn controlled by a solenoid.



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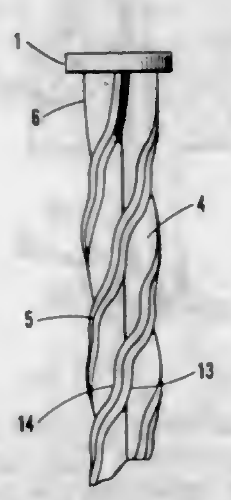
### 3,477,334
### NAIL
**Phillip D. Stone, Hanover, and Michael F. Stone, Brockton, Mass. (both of 57 Pine St., Canton, Mass. 02021)**
**Filed Nov. 2, 1967, Ser. No. 680,246**
**Int. Cl. F16b** *15/06, 15/08, 15/00*
**U.S. Cl. 85—21** **2 Claims**



A headed nail having a head and shank with the shank having a plurality of radially extending flanges in cross section. The flanges undulate or are longitudinally crimped with the undulations or crimps extending from the inner longitudinal edge to the outer longitudinal edge. In a modification, the flanges are spiralled and in another modification the outer edges are barbed.

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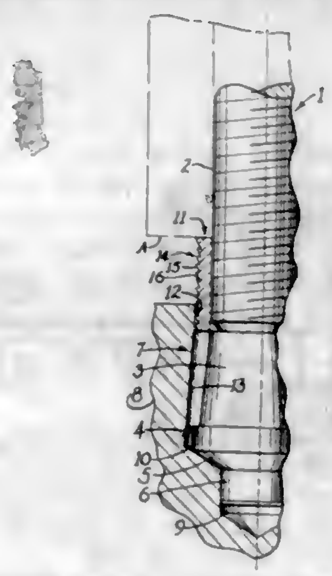
### 3,477,335
### HIGH STRENGTH STUD OR INSERT
**Harold Gold, 3645 Tolland Road, Shaker Heights, Ohio 44122, and Fred Macks, 5234 Willow Lane, Vermilion, Ohio 44089**
**Filed Jan. 31, 1968, Ser. No. 701,961**
**Int. Cl. F16b** *31/02, 13/04, 33/04*
**U.S. Cl. 85—62** **5 Claims**

A fastener assembly comprising a support structure, an insert member and a sleeve member. The support structure is provided with a specifically configurator aperture into which is inserted a correspondingly shaped insert. The insert is maintained in position by the expandable sleeve received in the aperture over a tapered portion of the insert.



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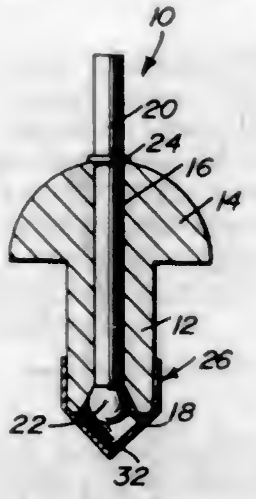
### 3,477,336
### METHOD OF AND RIVET ASSEMBLY FOR JOINING METAL PANELS

**Foster B. Thorpe, St. Augustine, Fla., assignor to Honeycomb Systems, Inc., a corporation of Florida**
**Filed May 17, 1968, Ser. No. 730,179**
**Int. Cl. F16b** *13/04, 33/04*
**U.S. Cl. 85—68** **2 Claims**



A rivet structure including a shank portion integrally attached to a head termination. The structure is coaxially bored and includes an expanding pin therein. A piercing point is frictionally retained on the shank end of the rivet. During riveting of two overlying plates, the rivet is driven through the plates and the expanding pin is forced outwardly causing the outward shank portion to deform in a manner causing compression of the plates between the headed and deformed rivet portions. The deformation also causes an expansion and decrease of frictional retention of the piercing member by the rivet which causes the same to separate from the rivet structure.

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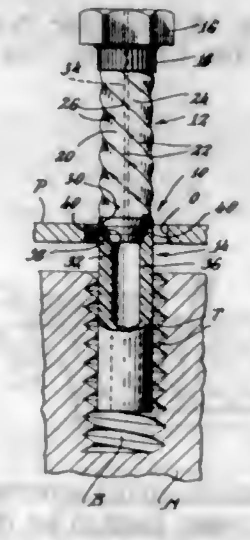
### 3,477,337
### UNIVERSAL INTERNAL THREAD FASTENER ASSEMBLY

**John A. Racki, 180 Fresh Meadow Lane,**
**Milford, Conn. 06460**
**Continuation-in-part of application Ser. No. 618,377, Feb. 24, 1967. This application Feb. 27, 1968, Ser. No. 708,584**
**Int. Cl. F16b** *13/04, 15/06, 39/28*
**U.S. Cl. 85—73** **10 Claims**

A universal internal thread fastener assembly including a locking bolt and a distortion sleeve which is insertable into a threaded bore. The locking bolt has a spiral fluted shank twisted in the direction opposite to that of the threaded bore spiral, and has locking spurs extending outwardly from the shank for interaction with the bore threads, the spurs being arranged on a spiral formed in the same direction as the threaded bore spiral. The locking bolt is insertable into the distortion sleeve to rigidly hold the locking bolt in the threaded bore.



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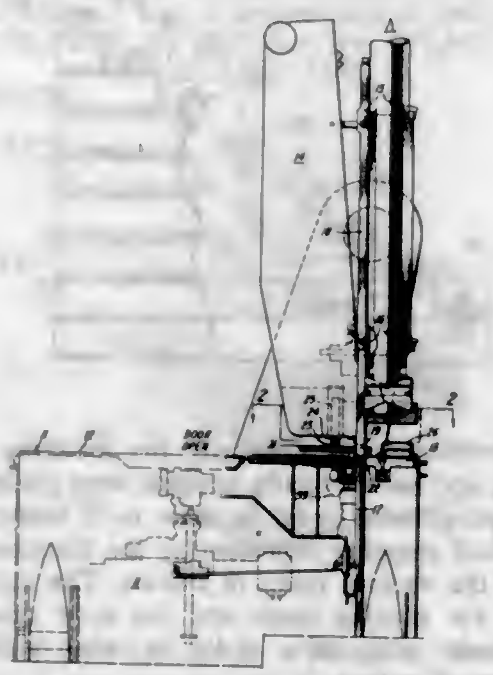
### 3,477,338
### BLAST DOOR FOR MISSILE LAUNCHING SYSTEM

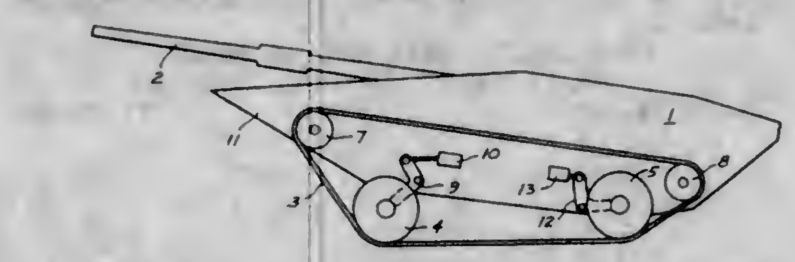
**Myron J. Bauer, New Brighton, Milton C. Neuman, Minneapolis, and Roger H. Wiethoff, Wayzata, Minn., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed Feb. 14, 1968, Ser. No. 705,485**
**Int. Cl. F41f** *3/04*
**U.S. Cl. 89—1.805** **1 Claim**



The blast door is part of a missile launching system having a magazine, storing missiles in a vertical position, and provided with a cover or base ring assembly on which is mounted a launcher guide arm receiving missiles from the magazine. The door opens and closes to permit the passage of the missiles from the magazine to the guide arm. It is provided with safety devices to prevent firing of the missile until the door is closed and sealed. It prevents the exhaust gases, from the missile, entering the magazine and carries a spanner rail extension for missile travel that bridges the rail of the magazine and the rail of the guide arm.

### 3,477,339
### TRACK-LAYING VEHICLE WHICH MAY VARY IN ELEVATION WHILE TRACK TENSION REMAINS CONSTANT

**Lars Olof Lundin and Hans Manne Alvar Salomonsson, Karlskoga, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a Swedish company**
**Filed Apr. 24, 1968, Ser. No. 723,839**
**Claims priority, application Sweden, May 10, 1967, 6,571/67**
**Int. Cl. F41f** *23/08;* **B62d** *55/30*
**U.S. Cl. 89—40** **5 Claims**



The elevational position of a track-laying vehicle such as a weapon carrier with a gun fixedly mounted thereon is controlled without causing high stresses in the tracks of the vehicle by feeding signals representative of the spatial positions of the support wheels for the tracks relative to the vehicle chassis and manually variable elevational control signals for controlling the elevational position of the vehicle to a comparator which in turn controls the spatial positions of the wheels so as to maintain the stresses in the tracks at acceptable values.

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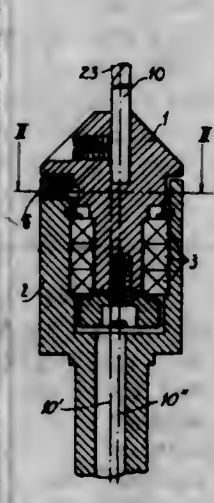
### 3,477,340
### MILLING CUTTER HOLDER

**Per Ragnar Faugli, Nuggerudv. 34; Ivar Odd Faugli, Hellerudfaret 21; and Øivind Hegsvold, Tormods vei 15, all of Oslo, Norway**
**Filed June 1, 1966, Ser. No. 554,391**
**Claims priority, application Norway, June 9, 1965, 158,421**
**Int. Cl. B23c** *1/00, 3/00, 7/00*
**U.S. Cl. 90—11** **3 Claims**



A milling cutter comprises a drive spindle rotatable about a first axis, a head carried by the spindle, and a milling cutter tool removably carried by the head. A cutting portion of the tool is asymmetric with respect to the spindle axis, and means are provided such that upon reversal of rotation of the spindle, the head and spindle move relative to each other to reposition the cutter tool relative to the spindle axis. Thus, two different work operations can be performed depending on the direction of rotation.

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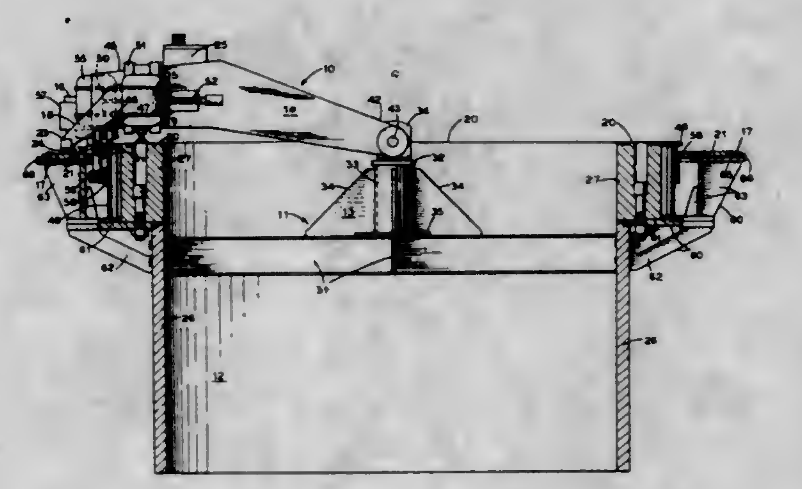
### 3,477,341
### PORTABLE MACHINE

**Gary H. Rickenbrode, Wadsworth, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey**
**Filed May 25, 1967, Ser. No. 641,273**
**Int. Cl. B23c** *1/20, 1/16, 1/18*
**U.S. Cl. 90—12** **10 Claims**



A portable machine for facing a workpiece surface including a frame to which there is pivoted an arm having a free end rollably supported by the workpiece, the arm having a movable machine head mounted thereon that is movable by a tracer unit operably connected to trace a template mounted on the workpiece so that the workpiece surface is faced in correspondence with the template surface.

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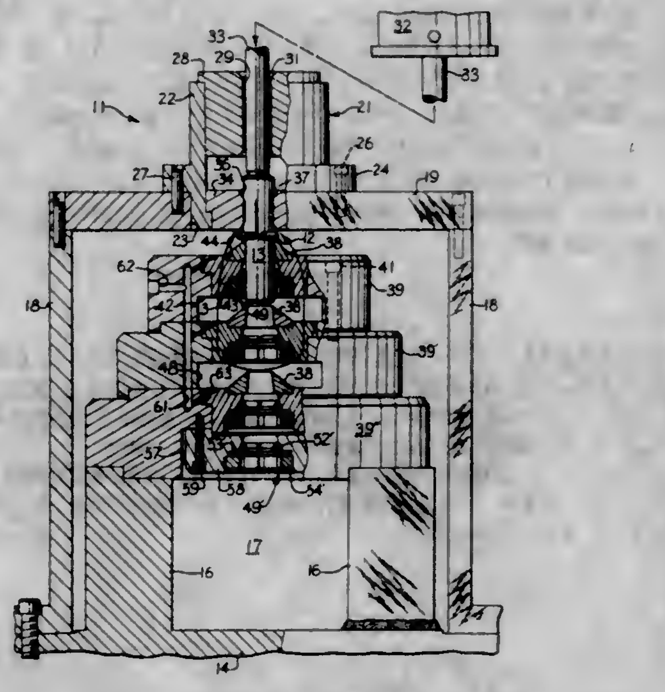
### 3,477,342
### PIN PEELER

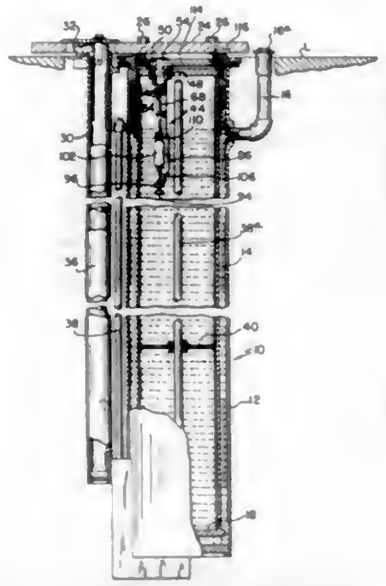
**James W. McMichael, Jr., Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of Illinois**
**Filed Oct. 19, 1967, Ser. No. 676,578**
**Int. Cl. B23d** *1/00, 3/00, 5/00*
**U.S. Cl. 90—24** **2 Claims**



A surface layer of material is shaved from metal stock of round cross-section by driving the stock through a series of spaced coaxial annular cutting edges of progressively diminishing diameter. Accurate positioning of the work stock is maintained by a series of resilient guide rings which seat in tapered bores in fixed guide ring holders. A spring exerts an axial force on each guide ring whereby a centering force acts on the stock.

### 3,477,343
## LIFT MECHANISM

**Arthur Dayson, Parma, Ohio, assignor to Curtis Manufacturing Company, Cleveland, Ohio, a corporation of Missouri**
**Filed Jan. 2, 1968, Ser. No. 699,985**
**Int. Cl. F15b** *21/04, 15/20*
**U.S. Cl. 91—4** **20 Claims**



A lift for moving a load, such as a vehicle from ground level upwardly and returning the load to ground level comprising a reciprocal fluid powered cylinder and piston unit and including an air valve assembly for controlling the application of air pressure to the operating liquid for the vehicle lift, which liquid is adapted when under predetermined air pressure to cause raising of the piston of the lift with respect to the cylinder. The valve assembly includes an axially movable valve with a depending stem, a float movable relative to the stem and operable to move the valve upwardly into closed position against a valve seat, and shoulder means on the stem for locking the valve in closed condition during separation of the float and the liquid upon raising of the lift. The valve mechanism includes adjustable lock seat means for coaction with the aforementioned shoulder means on the stem, as actuated by the float, for locking the valve in closed condition as the operating liquid and float separate during application of air pressure in the raising operation of the lift, so that even though the level of the liquid is below a coacting relation with the float of the valve mechanism, the valve remains in closed condition to maintain operability of the lift.

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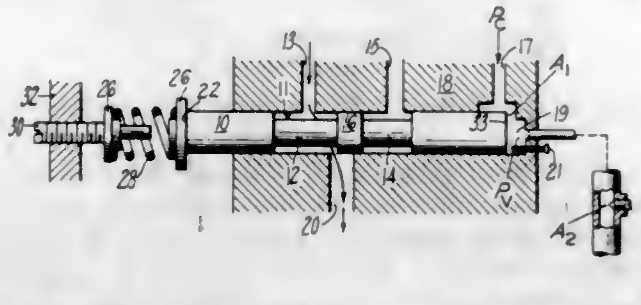
### 3,477,344
## FLUID MECHANICAL HYSTERETIC DEVICE

**George A. Fisher, Windsor Locks, Conn., assignor to United Aircraft Corporation, East Hartford, Connecticut, a corporation of Delaware**
**Filed May 24, 1967, Ser. No. 640,904**
**Int. Cl. F15b** *13/042, 11/10;* **F16k** *31/12*
**U.S. Cl. 91—52** **7 Claims**



One end of a piston, slidable in a housing, cooperates with the housing walls to define a variable orifice and a pressure chamber. A fixed orifice is located downstream from the chamber. When an increase in control pressure overcomes a piston bias, the piston moves from a first to a second position, increasing the cross-sectional area of the variable orifice, thereby causing an additional increase in chamber pressure. To return the piston to its first position, it is necessary to decrease the control pressure, thereby creating a hysteresis action.

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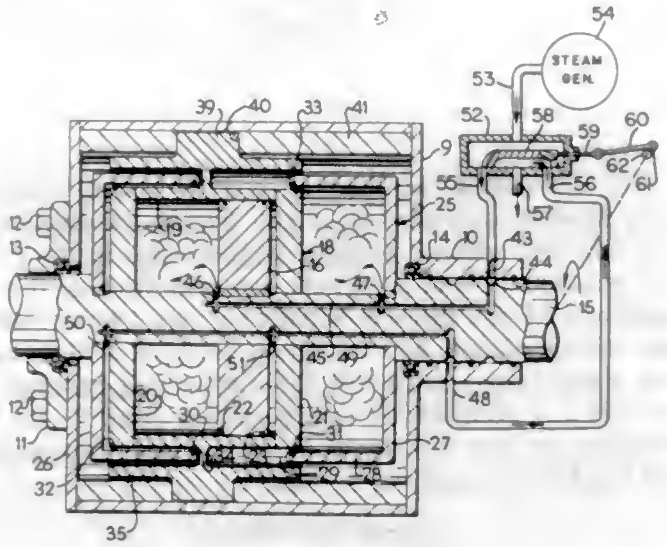
### 3,477,345
## RECIPROCATING ENGINE, PUMP OR MOTOR

**Don E. Johnson, Mesa, Ariz., assignor to Thermodynamic Systems, Inc., Newport Beach, Calif., a corporation of Delaware**
**Filed Aug. 25, 1967, Ser. No. 663,280**
**Int. Cl. F01b** *7/20, 3/10, 15/00*
**U.S. Cl. 91—207** **11 Claims**



A first closed-ended cylinder receives a piston that is fixed on a rotatable shaft. A means extends outwardly from the first cylinder to engage an undulant groove in an outer cylindrical housing. A second cylinder inside the housing circumscribes the first cylinder and is coupled to it, while the cylinder assembly is coupled to the shaft. Pressurized fluid enters the first cylinder on one side of the piston adjacent one end of the first cylinder, and enters the second cylinder exteriorly of the opposite end of the first cylinder. This provides pressure on both ends of the first cylinder that drives it axially through a stroke, which because of its engagement with the groove is caused to rotate, turning the shaft. A similar effect drives the first cylinder through the return stroke, and as the cycle is repeated the shaft is rotated continuously.

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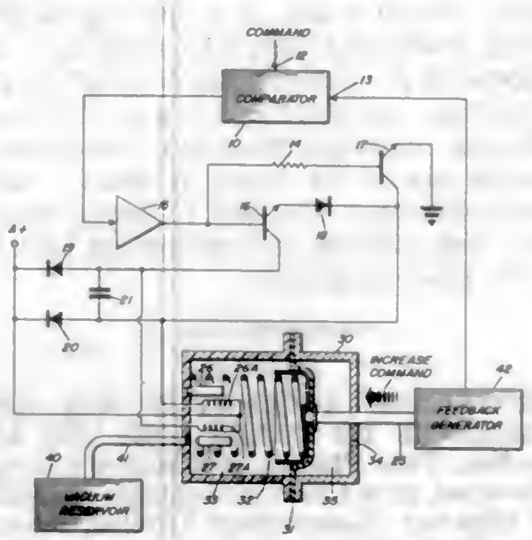
### 3,477,346
## INTEGRATED VACUUM MODULATOR AND ACTUATOR

**Michael Slavin, Raymen F. Emery, and Ralph W. Carp, Baltimore, Md., assignors to The Bendix Corporation, a corporation of Delaware**
**Filed Oct. 24, 1967, Ser. No. 677,705**
**Int. Cl. F15b** *13/16, 11/10;* **F16j** *3/00*
**U.S. Cl. 91—361** **18 Claims**

An integrated vacuum modulator and actuator for use in a vacuum actuated, electromechanical servo loop in which a hermetically sealed chamber has as one side a collapsible spring loaded diaphragm which is positioned in response to the pressure differential across it. Two solenoid valves are located within the hermetically sealed chamber. One valve, which is normally opened, allows communication between the chamber and atmospheric air. The other valve which is normally closed connects the chamber to a vacuum source when open. Power is applied to one end

of each solenoid winding, while the other ends are connected to ground through an error signal controlled logic circuit. Upon increasing error signal, the normally open valve will close before the normally closed valve opens. A potentiometer is driven by the diaphragm connected rod so as to generate a servo loop feedback signal correlative to rod position.



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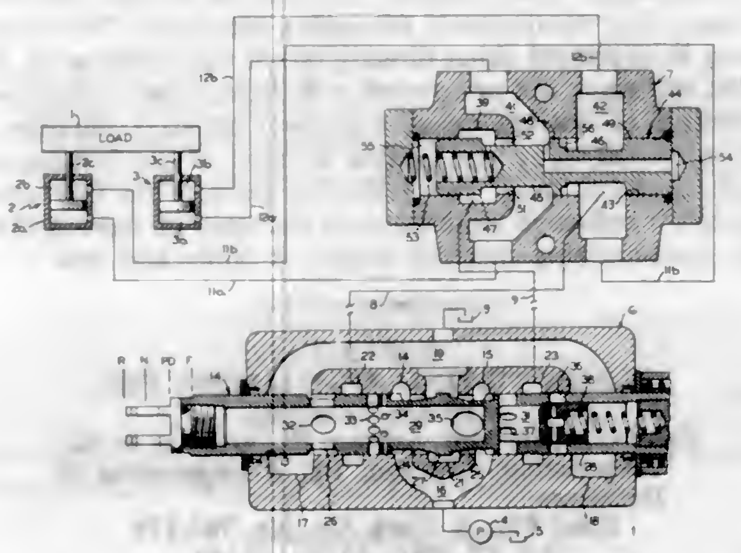
### 3,477,347
## HYDRAULIC POWER CIRCUIT AFFORDING PARALLEL REGENERATION PATHS

**Orval L. Rice, Scotts, Mich., assignor to General Signal Corporation, a corporation of New York**
**Filed May 17, 1968, Ser. No. 730,121**
**Int. Cl. F15b** *11/08, 13/04*
**U.S. Cl. 91—438** **4 Claims**



A hydraulic power circuit for actuating a component and for effecting rapid and controlled movement of the component under the action of external loads. The circuit is characterized in that it provides a pair of parallel regeneration paths through which oil can be simultaneously transferred from the contracting to the expanding ends of the actuating cylinders. One path extends through and is throttled selectively by a directional control valve, and the second is throttled by a separate by-pass valve which is located at or near the cylinders and is controlled so as to limit the rate of flow through the first path. A bleed connection containing a fixed orifice permits oil displaced by the rods of differential area cylinders to escape from the first path to a tank.

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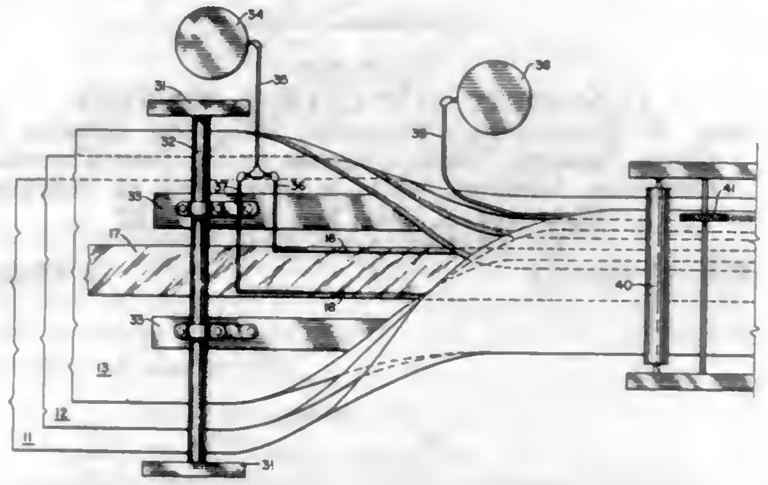
### 3,477,348
## METHOD OF MAKING A DECOMPOSITION RESISTANT BAG

**Charles K. Watters, Middletown, Ohio, assignor to Albemarle Paper Company, Richmond, Va., a corporation of Virginia**
**Original application July 6, 1965, Ser. No. 469,778, now abandoned. Divided and this application Apr. 28, 1966, Ser. No. 560,341**
**Int. Cl. B31b** *49/04, 1/60, 15/60*
**U.S. Cl. 93—35** **4 Claims**



A process for forming one or more paper plies into a decomposition resistant bag having a lapped seam made with a conventional casein adhesive. A strip of plastic material overlies the lapped seam on the interior of the bag and is attached thereto by means of a decomposition resistant adhesive. The strip prevents acidic materials or fungi from attacking the casein adhesive used in the lapped seam of the bag.

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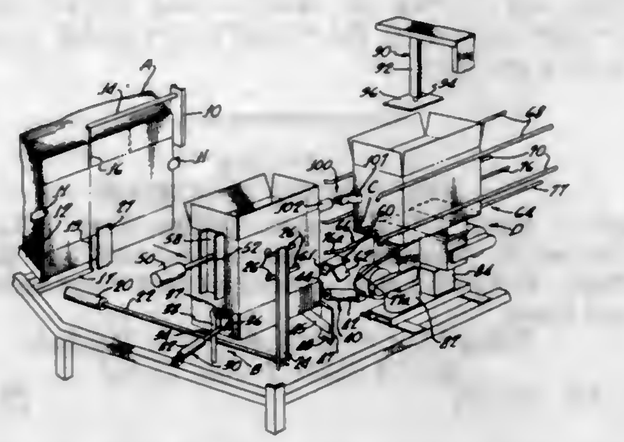
### 3,477,349
## AUTOMATIC CASE ASSEMBLING APPARATUS

**Joseph C. Berney, Newport Beach, Calif.**
**(2701 (22–B) Peterson Way, Costa Mesa, Calif. 92626)**
**Filed Nov. 13, 1967, Ser. No. 682,197**
**The portion of the term of the patent subsequent to Apr. 1, 1986, has been disclaimed**
**Int. Cl. B31b** *1/80, 1/68;* **B65b** *61/24*
**U.S. Cl. 93—53** **12 Claims**



Apparatus for opening a knocked-down case, folding the bottom flaps upwardly into a substantially closed position and stapling the bottom flaps together. The apparatus is pneumatically operated and functionally synchronized so that the knocked-down cases are automatically opened and assembled for use. The apparatus comprises a case feeding station, a forming station, a bottom side flap folding station, and a bottom flap fastening station. A pair of spaced actuated-anvil stapler heads are mounted below the position of the case in the bottom flap fastening station so that each of said stapler heads is positioned below one of the end flaps. A vertically extending hold down plate is mounted above the stapler heads on a piston rod of a double-action air cylinder for vertical movement downwardly into the case to prevent movement of the bottom flaps of the case away from the stapler heads when staples are being injected into the case. The hold down plate and the stapler heads are synchronously actuated. The fastening station in one embodiment also includes a case advancing mechanism comprising a horizontally mounted air cylinder which is activated after the first set of staples are injected into the case to advance the case into position for receiving a second set of staples to provide a reinforced bottom for the case.

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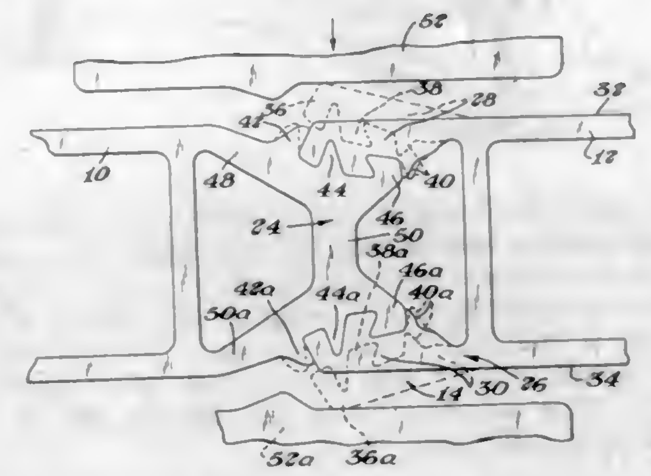
### 3,477,350
### COMPOSITE STRUCTURAL SECTION

**Karl F. Braeuninger, Ferguson, Mo., and Gordon K. Glaza, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed Apr. 5, 1968, Ser. No. 727,122**
**Int. Cl. E01c** *5/00;* **E04c** *1/30*
**U.S. Cl. 94—13** **4 Claims**



This invention relates to composite structural member composed of at least two elongated structural sections which are placed together along abutting lengthwise edges and then locked together by bending adjacent upper and lower edge parts of the sections to engage the adjacent edges of the abutting sections. The locked together top and bottom edges have interlocking upper and lower tooth-like elements which engage each other and become fixed in position as the upper and lower edges are bent. The configuration of the locking joints utilize deformable locking and bearing rib elements and are arranged in a way which minimizes functional forces which would tend to unlock the joint.

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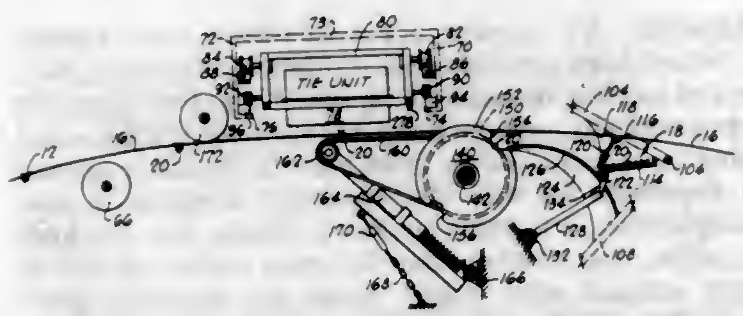
### 3,477,351
### BAR TYING MACHINE

**Floyd S. Funk, 6744 Avalon, Dallas, Tex. 75214, and Grover L. Roundtree, Seagoville, and Joe E. West, Plano, Tex.; said Roundtree and said West assignors to said Funk**
**Filed Mar. 4, 1968, Ser. No. 710,244**
**Int. Cl. E01c** *19/00, 23/02*
**U.S. Cl. 94—39** **27 Claims**



Apparatus for binding rectangularly arrayed longitudinal and transverse paving material reinforcing bars in situ, the apparatus consisting of a self-propelled frame assembly which includes means for raising up each individual one of the longitudinally arrayed reinforcing bars and for periodically tying a transverse bar thereacross with a plurality of binder ties placed at selected intersections of longitudinal and transverse bars. The frame includes transversely arrayed means for supporting the plurality of longitudinal reinforcing bars and inserting a transverse bar therebeneath in position to receive binding ties; thereafter, a carriage assembly bearing a pair of spaced tying assemblies and supported movably on the frame is driven intermittently across the frame to effect a tie at every other longitudinal bar. The next following transverse bar is similarly tied with the carriage moving back across the frame in the opposite direction.

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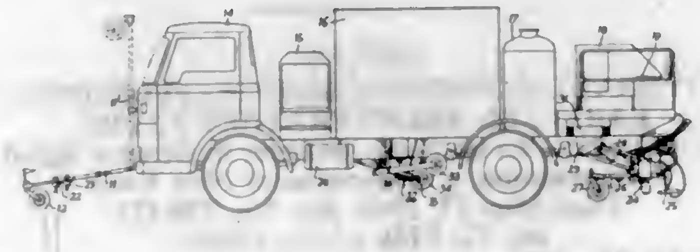
### 3,477,352
### SELF-PROPELLED APPARATUS FOR APPLYING MARKINGS TO ROADS AND THE LIKE

**John Harding, Peter Placzek, and Sidney Glenroy Campbell, Rowfant, near Crawley, England, assignors to Universal Highway (Contracting) Limited, Rowfant, near Crawley, England**
**Filed Dec. 21, 1967, Ser. No. 692,515**
**Claims priority, application Great Britain, Dec. 28, 1966, 57,982/66**
**Int. Cl. B05b** *7/16, 9/06*
**U.S. Cl. 94—44** **11 Claims**



A road-marking is applied by depositing a strip of thermoplastic road-marking material on a road surface from a first continuously advancing spray gun. This strip may be deposited either directly on the road surface or, if that surface is wet or covered with frost, over a strip-like coating of solvent-based, adhesive material deposited by a second spray gun located in front of the first spray gun. A third spray gun following behind the first gun sprays a reflective material onto the strip of thermoplastic road-marking material before it cools and sets.

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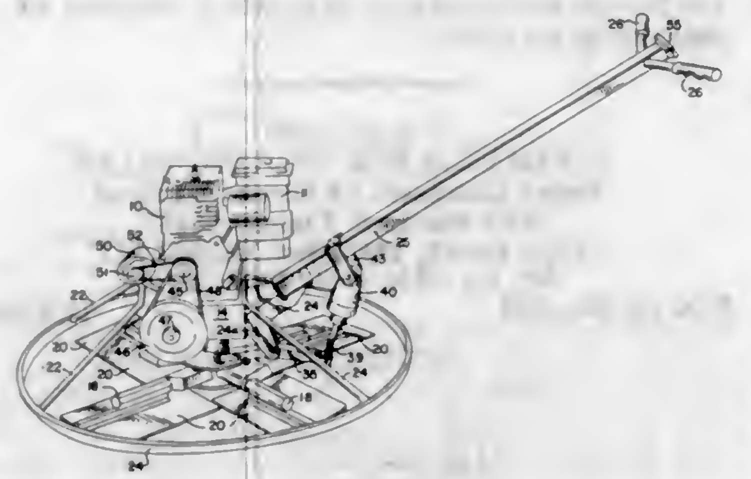
### 3,477,353
### BLADE TILTING MECHANISM FOR POWER TROWEL

**Peter G. Rebechini, Aurora, Ill., assignor to Skil Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Feb. 5, 1968, Ser. No. 703,179**
**Int. Cl. E01c** *19/42, 19/44*
**U.S. Cl. 94—45** **3 Claims**

Each of the tiltably mounted blades of the power trowel includes a cam following arm engaged by a common cam collar encircling the downwardly depending shaft which rotates the blades upon operation of the trowel's internal combustion engine. An arm is pivotly mounted intermediate the ends thereof from the housing or base of the trowel. One end of this arm engages an upper surface of the collar; the other end thereof is engaged by actuating screw member of a reversible electric motor which is supported from the handle of the trowel. Energizing of this motor in one direction serves to move the collar downwardly relative to the driving shaft thereby simultaneously tilting all the blades in one direction. Operation of the motor in the other direction allows the collar to move upwardly relative to the shaft. The cam following arms follow the collar during the upward movement allowing the blades to tilt in the other direction. The electric motor is energized from a generator mounted adjacent the internal combustion engine and driven thereby. Operator control means are mounted on the handle adjacent the operator's hand pieces thereby providing means for selectively energizing the motor in either direction thereof.



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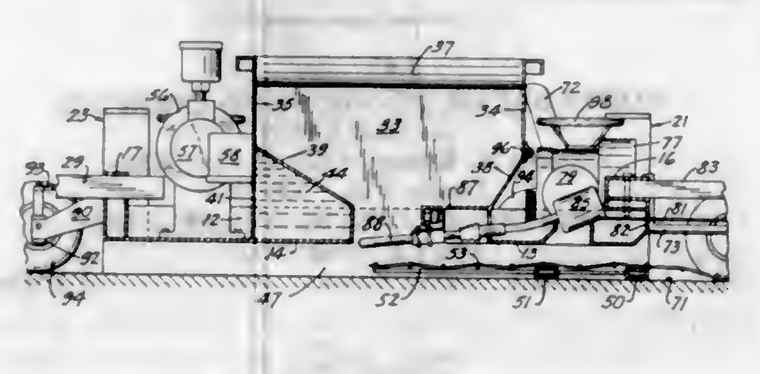
### 3,477,354
### SLIP FORM PAVER

**Richard H. Rink, Huron, S. Dak., assignor, by mesne assignments, to Northwestern National Bank of Sioux Falls, Huron, S. Dak.**
**Filed Nov. 1, 1967, Ser. No. 679,763**
**Int. Cl. E01c** *19/48*
**U.S. Cl. 94—46** **7 Claims**



A compact, readily movable slip-form paving apparatus for laying and finishing concrete strips (8 to 14 feet wide) utilizing vibratory means for causing the concrete mass to have a fluent character and uniform thickness conforming to the shape of the forming portion of the apparatus without the use of stationary forms.

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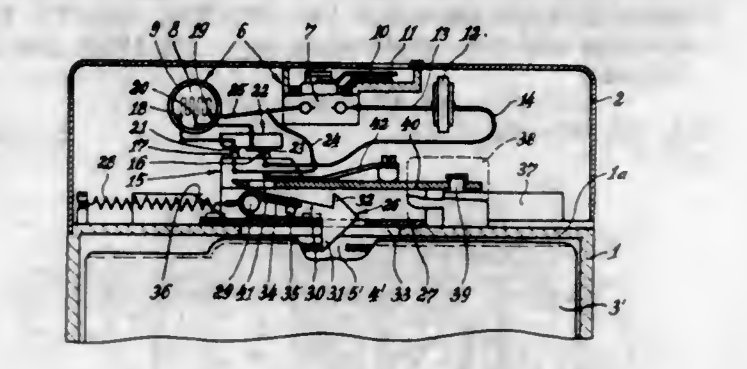
### 3,477,355
### AUTOMATIC FILM SPEED SETTING FOR CAMERAS

**Gotthard Kinder, Braunschweig, Germany, assignor to Voigtlander, A.G., Braunschweig, Germany**
**Filed Mar. 28, 1967, Ser. No. 626,524**
**Claims priority, application Germany, Apr. 14, 1966, V 18,871**
**Int. Cl. G03b** *19/04, 9/02;* **G01j** *1/00*
**U.S. Cl. 95—31** **5 Claims**

A camera capable of having its light meter automatically set in accordance with the speed of the film which is exposed. The electrical circuit of the light meter is adjusted by coaction of a set of stationary and a set of movable contacts, and a cassette which carries the film is sensed by a sensing structure which controls the movable contacts with respect to the stationary contacts. The cassette has a structure indicative of the speed of the film therein, and the sensing structure engages the cassette in accordance with the structure thereof which is indicative of the film speed for locating the movable contacts in this way at a predetermined location with respect to the stationary contacts for influencing the light meter in accordance with the film speed. The cassette sensing structure is displaced from a starting position to its position coacting with the cassette by the film advancing structure of the camera.



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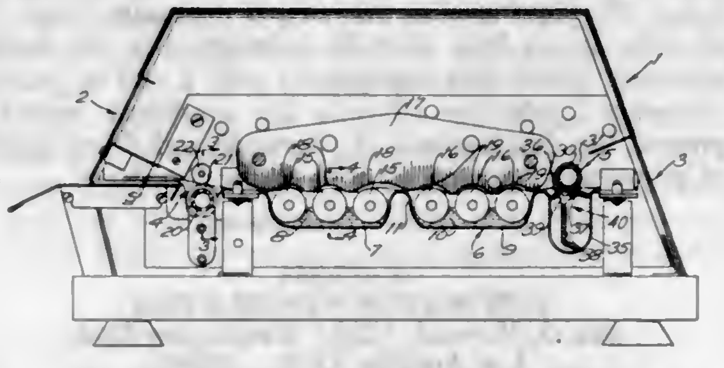
### 3,477,356
### PHOTOGRAPHIC PROCESSING MECHANISM

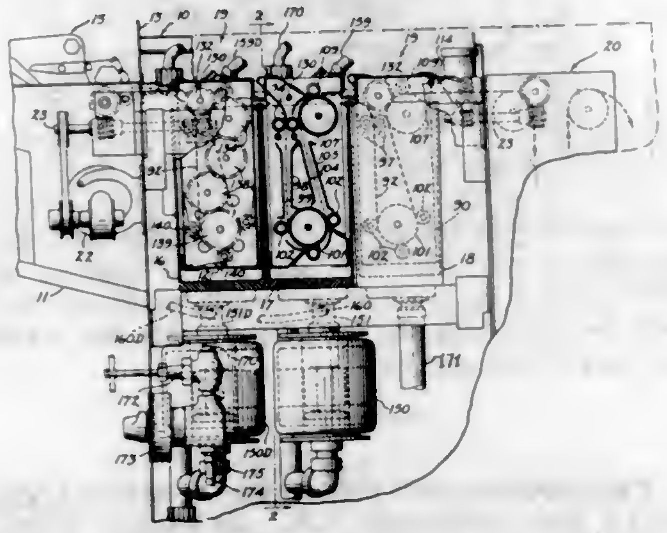
**Ford P. Ray, Hauppauge, N.Y., and Thomas W. Slingsby, Old Saybrook, Conn., assignors to Peerless Photo Products, Inc., Shoreham, N.Y., a corporation of New York**
**Filed May 4, 1967, Ser. No. 636,081**
**Int. Cl. G03d** *3/12*
**U.S. Cl. 95—94** **11 Claims**



A photographic processing mechanism which has a reservoir for activator solution and a reservoir for stabilizer solution. Three applicator rollers are mounted in each reservoir to apply activator and stabilizer solution to a photosensitive sheet. Each of the applicator rollers has a roughness of over 50 microinch ASA, and preferably between 80 and 100 microinch ASA. The activator solution rollers are rotated at a speed of from about 20 to about 34 feet per minute and the stabilizer solution rollers are rotated at a speed of from about 14 to about 23 feet per minute. The diameter of each of the applicator rollers are between ⅝ of an inch and 1 inch, and preferably are about ¾ of an inch. A plurality of spaced guides are mounted above the rollers substantially at right angles to the axes of the rollers. The guides have an undulating lower surface to form grooves above each of the rollers. A feed roller assembly is provided which has a press down roller and a feed roller which has a plurality of space gripping surfaces thereon. An exit roller assembly is provided comprising an exit roller with a plurality of spaced gripping surfaces thereon. A wiper blade assembly is positioned below the exit roller and comprises a body portion having two wiper blades extending in opposite directions therefrom. An opening is provided at the juncture between the wiper blade and the body portion to permit excess solution to pass therethrough and the exit roller is positioned between the apexes of said diverging wiper blades.

### 3,477,357
### PROCESSOR

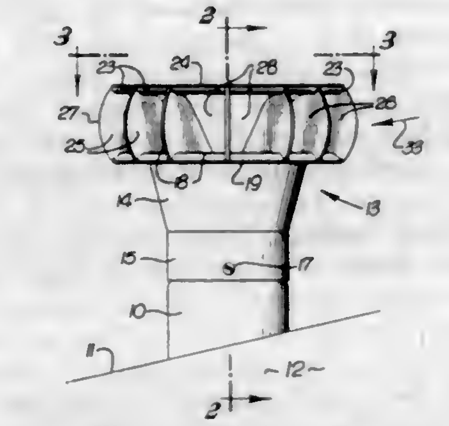
**James L. Snarr, Cleveland Heights, Ohio, assignor to Picker Corporation, White Plains, N.Y., a corporation of New York**
**Application Feb. 10, 1967, Ser. No. 615,260, now Patent No. 3,418,913, dated Dec. 31, 1968, which is a continuation of application Ser. No. 296,999, July 23, 1963. Divided and this application Sept. 19, 1968, Ser. No. 760,868**
**Int. Cl. G03d** *3/12*
**U.S. Cl. 95—94** **5 Claims**



An X-ray film processor which includes a plurality of film transport mechanisms, each positioned in a different processing tank. The transport mechanisms are constructed such that film may be directly transferred from one transport mechanism to another, or to a drier as the case may be, without any intermediate transfer mechanisms. The fluid level in the tanks is maintained such that all rolls are at least partially submerged in the fluid or normally biased into engagement with a roll so partially submerged, whereby all rolls are constantly wetted to prevent the development of encrusted and dried deposits of processing fluids on all rolls of the processor.

### 3,477,358
### INSPIRATOR VENTILATOR

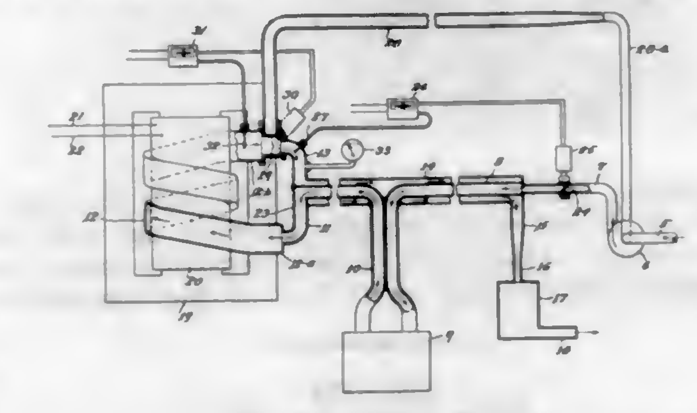
**Ben O. Howard, 12954 Washington Blvd., Los Angeles, Calif. 90066**
**Filed Dec. 21, 1967, Ser. No. 692,409**
**Int. Cl. F23l** *17/08;* **B60h** *1/30*
**U.S. Cl. 98—64** **7 Claims**



The invention involves a stationary type ventilator of such character that when air impinges upon it, the air will be directed inwardly and downwardly into an appropriate chamber to be ventilated, in a path of flow such that there will be no appreciable flow outwardly. The invention makes use of a ventilator apparatus on the top of a vent pipe which is substantially symmetrical throughout the entire circumference, there being provided an inlet area at the outermost circumference subdivided by baffles into a multiplicity of separate channels, the interior of the stationary portion being specially formed to deflect air from the windward side downwardly into a passage, the shape and capacity of which is one encouraging the continued downward flow of air in such manner that the down-flowing air serves as a fluidic valve to cut off flow outwardly on the downwind side of the device. Inasmuch as the device is symmetrical, this effect will prevail irrespective of from which direction air impinges upon the device.

### 3,477,359
### APPARATUS FOR HEATING FLUID

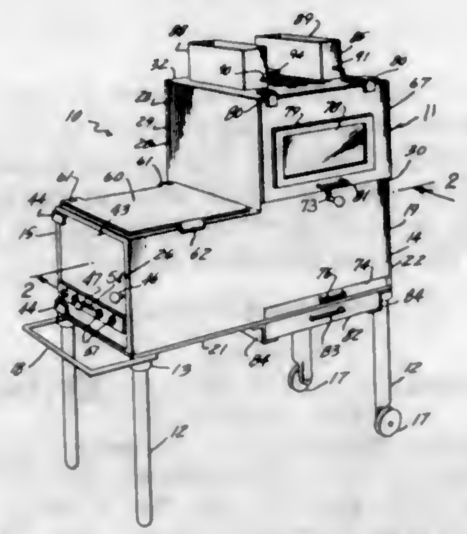
**Henry J. Burnett, 55 Glenbrook Road, West Hartford, Conn. 06107**
**Filed June 8, 1965, Ser. No. 462,312**
**Int. Cl. A23c** *9/00;* **B65b** *55/06*
**U.S. Cl. 99—252** **12 Claims**



An apparatus for sterilizing a continuous flow of a fluid, such as milk, in such a manner that it will keep in good condition for a long period of time without refrigeration; said apparatus being adapted to quickly heat the fluid by electrical induction to a sterilizing temperature and then quickly cool said fluid without causing cooking or burning thereof.

### 3,477,360
### PORTABLE OUTDOOR FOOD COOKING APPARATUS

**William H. Raney, 4320 E. Fort King, Ocala, Fla. 32670**
**Filed Dec. 18, 1967, Ser. No. 691,344**
**Int. Cl. F24b** *1/22*
**U.S. Cl. 99—339** **3 Claims**



A portable outdoor food cooking apparatus which is equipped with a cooking compartment and a fuel combustion compartment is disclosed. Heat is supplied to the cooking compartment by the discharge of the gaseous combustion products into the compartment and the combustion compartment has a hot plate used for cooking foods exteriorly of the apparatus. A dual vent arrangement is provided at the top of the cooking compartment to control heat dissipation through the hot plate.

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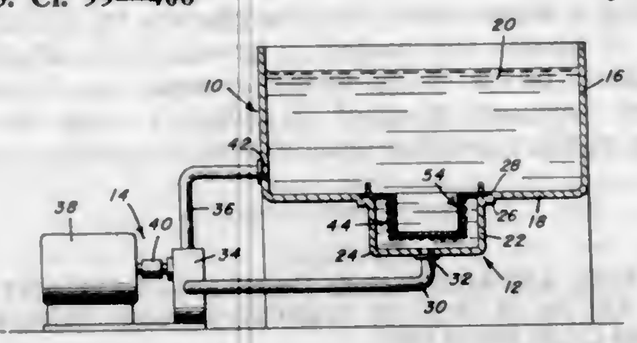
### 3,477,361
### DEEP FAT FRYER FILTERING SYSTEM

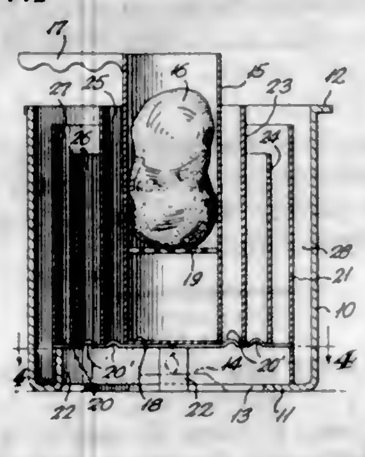
**Wright D. Bradshaw, 7160 Augusta Blvd., Seminole, Fla. 33540**
**Filed Aug. 9, 1968, Ser. No. 751,464**
**Int. Cl. A47j** *37/12*
**U.S. Cl. 99—408** **5 Claims**



A filter and strainer assembly incorporated into the bottom portion of a deep fat fryer combined with an external motor driven pump for pumping liquefied fat from the bottom of the fryer through the filter and strainer assembly and then back into the deep fat fryer.

### 3,477,362
### RADIANT HEAT COOKING APPARATUS

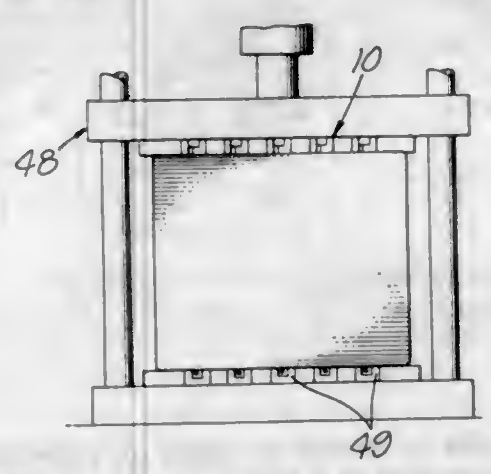
**David Meade Peebles, 325 Marcy Ave., Oxon Hill, Md. 20021**
**Filed Dec. 20, 1967, Ser. No. 692,126**
**Int. Cl. A47j** *43/18, 27/00*
**U.S. Cl. 99—441** **4 Claims**



An apparatus which allows cooking over a small flame or other small heat source including means to radiate heat inwardly toward a small central cooking receptacle and to concentrate the heat upon the article or substance within the receptacle to cook the same efficiently.

### 3,477,363
### WIRE TIE DEVICE

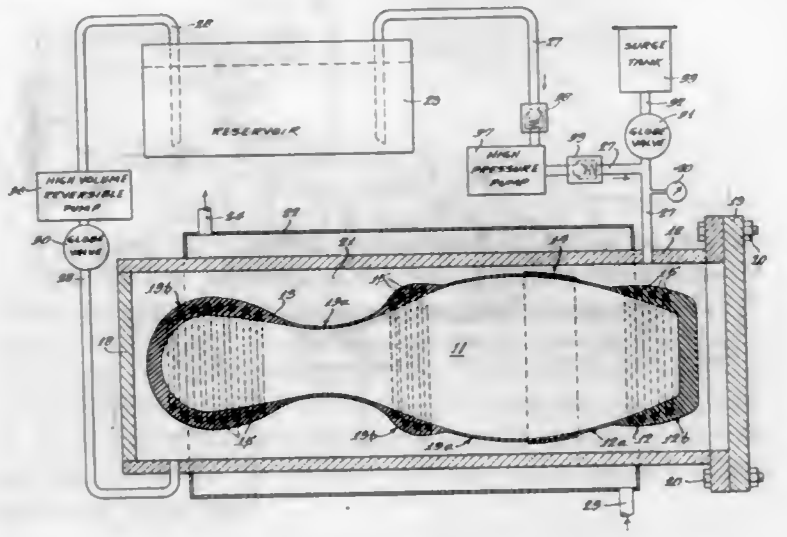
**Cecil Dale Trumbo, La Mirada, Calif., assignor to Winn Engineering Company, Buena Park, Calif., a partnership**
**Filed Mar. 14, 1968, Ser. No. 713,241**
**Int. Cl. B65b** *13/04, 13/26*
**U.S. Cl. 100—34** **15 Claims**



An apparatus connected to one of a pair of movable platens in a baling press to guide the preformed ends of a wire into a knot forming position and adapted to release the tied wire when the platens move apart.

### 3,477,364
### APPARATUS FOR DENSIFYING WOOD BOWLING PIN CORES AND OTHER ARTICLES

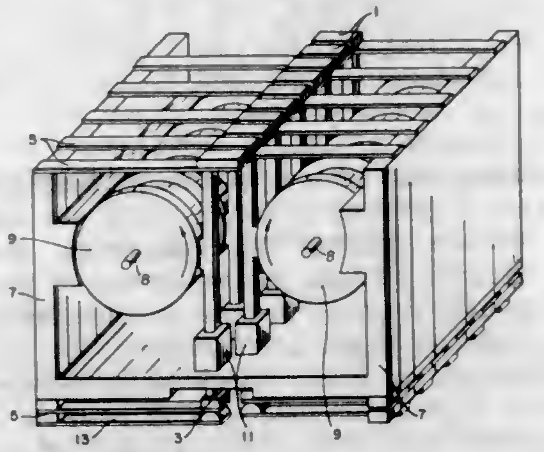
**Fred E. Satchell, Cincinnati, Ohio, and Foster W. Berry, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware**
**Filed Feb. 12, 1965, Ser. No. 432,193**
**Int. Cl. B30b** *5/02;* **A63d** *9/00*
**U.S. Cl. 100—93** **8 Claims**



Apparatus for the manufacture of densified articles such as wood bowling pin cores wherein the article is enveloped in a close-fitting flexible sleeve which is reinforced in areas not to be densified, e.g., the head, shoulder and base regions of a pin core, but is not reinforced in regions where it is desired to densify, e.g., the neck and belly regions of the pin core. The sleeve and article assembly is placed in a jacketed pressure chamber which is then temporarily pressurized with hydraulic fluid from a reservoir of such fluid via valve and pump arrangements to densify the article at the non-reinforced portions.

### 3,477,365
### HYSTERESIS DRIVE FOR HIGH SPEED PRINT HAMMERS

**Alexander Nyman, Dover, Mass., assignor, by mesne assignments, to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York**
**Filed July 22, 1966, Ser. No. 567,307**
**Int. Cl. B41j** *9/38*
**U.S. Cl. 101—93** **13 Claims**



This invention applies to high speed printing and particularly to printers in which rapidly moving fonts of selected characters pass print locations and high speed hammers are actuated when the required characters in the font are in position for printing. Energy in a rotating ferromagnetic drum is transferred to the hammers when hysteresis and eddy current drag is induced in the drum by activating elements that are connected to the hammers.

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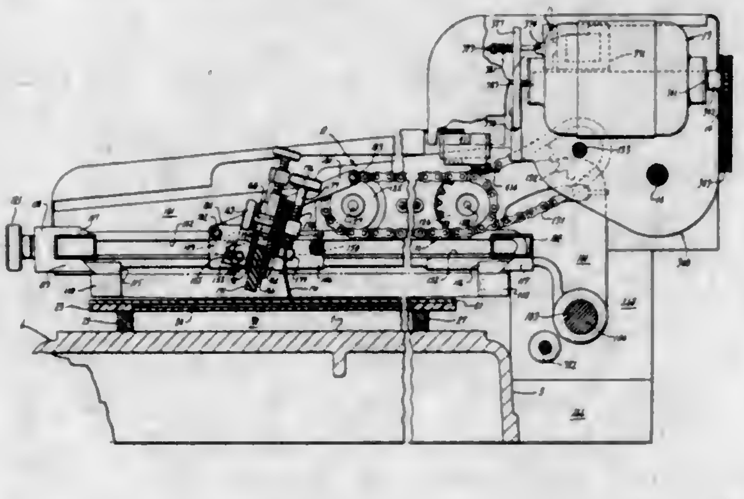
### 3,477,366

### SCREEN PRINTING SQUEEGEE AND FLOOD BAR APPARATUS

**Charles F. Forslund, 3660 Loma Vista Ave.,**
**Oakland, Calif. 94619**
**Original application Feb. 15, 1965, Ser. No. 432,528, now Patent No. 3,359,895, dated Dec. 26, 1967. Divided and this application Dec. 22, 1967, Ser. No. 692,992**
**Int. Cl. B41l** *27/00*
**U.S. Cl. 101—123** **5 Claims**



A printing head adapted to receive a porous screen wherein a squeegee and flood bar assembly is mounted on the head for reciprocation along the screen on a side thereof opposite a workpiece, and a drive and positioning mechanism is mounted on the head and connected with the assembly for automatically and alternately displacing the flood bar and squeegee into and out of contact with the screen in sequence respectively with an ink applying stroke and a printing stroke of the reciprocating assembly.

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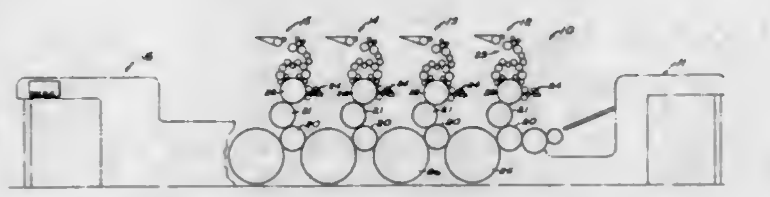
### 3,477,367

### PRINTING PRESS

**Alan W. Richards, Lyndhurst, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware**
**Filed July 14, 1967, Ser. No. 653,442**
**Int. Cl. B41f** *5/16*
**U.S. Cl. 101—137** **19 Claims**



Each printing unit of a multiunit printing press includes a pair of printing cylinders which are relatively movable between printing and nonprinting positions. Electrical circuitry controls the movement of the cylinders. The circuitry includes a series of relays and means providing a timing signal for energizing the relays to effect with the proper delays the sequential movement of the cylinders of the units into printing position, as well as the sequential movement of the cylinders of the units from printing position. A selector switch is provided in the circuits for each unit and, when operated, effects movement of the cylinders of that unit from their printing to their nonprinting position in response to a timing signal. The cylinders are moved between their printing and nonprinting positions by electroresponsive means. The electroresponsive means is actuated by a first timing signal. A second timing signal actuates a relay having contacts in the actuating circuit which condition the actuating circuit for energization by the first timing signal, and the relay has further contacts which condition a delay circuit for energization by a timing signal. A master trip control is provided for effecting energization of the electroresponsive means of all units to effect movement of all of the cylinders which are in printing position simultaneously to their nonprinting position.

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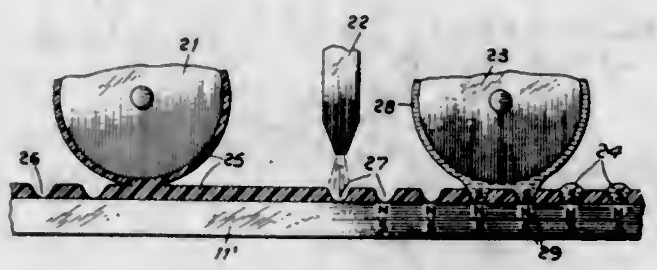
### 3,477,368

### PRINTING APPARATUS EMPLOYING MAGNETIC TRANSFER BAND IN WHICH IMAGE IMPRESSIONS CAN BE MADE

**David B. Spaulding, Carlisle, Mass., assignor to International Telephone and Telegraph Corporation, a corporation of Delaware**
**Filed Oct. 24, 1967, Ser. No. 677,594**
**Int. Cl. B41m** *5/20*
**U.S. Cl. 101—150** **4 Claims**



An arrangement is provided for forming a transferable pattern on a continuously moving transfer band and for transferring said pattern across an air gap to a transversely moving record surface.

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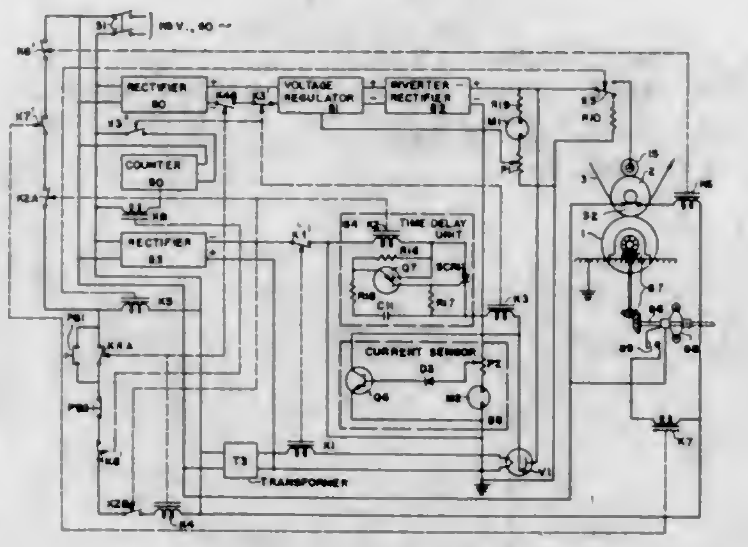
### 3,477,369

### ELECTROSTATICALLY ASSISTED INTAGLIO PRINTING

**Robert G. Adamson, Charles H. Angell, Jay C. Roote, Joel F. Hutchison, and Daniel A. Coberley, Danville, Ill., assignors to Hurletron Incorporated, Danville, Ill., a corporation of Delaware**
**Filed May 4, 1967, Ser. No. 636,089**
**Int. Cl. B41f** *9/06;* **B41m** *5/20*
**U.S. Cl. 101—153** **6 Claims**



The invention is directed to means for electrostatically assisting the transfer of ink from a pattern thereof on a printing cylinder to a web of substantially non-conductive material, such as paper, paper board, plastic film and the like, as the web passes between and in contact with the printing cylinder and an impression cylinder.

A covering of electrically conductive, resilient material is provided on the cylindrical surface of the impression cylinder, and a layer of electrical insulating material is disposed between said conductive covering and the cylindrical, metallic body of the impression cylinder. A source of relatively high voltage current is provided and connected with an electrically conductive member which is insulated from short circuiting the current to ground and which bears directly upon said conductive covering on the impression cylinder, thus establishing a difference in potential from said covering, through the web to the printing cylinder, which is grounded, to polarize the ink on the printing cylinder and attract it to the web.

The invention also provides safety devices for preventing the further flow of current from said source to said conductive member when it reaches a preselected value and for preventing current flow to the conductive member until the impression is made and the printing and impression cylinders have reached a predetermined rotational speed. Current flow to the conductive member is also discontinued automatically in case of a break in the web.

When the length of the printing and impression cylinders exceed the width of the web, a relatively thin covering of high dielectric material may be provided over the portion or portions of said conductive covering on the impression cylinder which extend beyond one or both edges of the web and, preferably, such portion of the conductive covering is thinner than the remaining portion covered by the web, by an amount equal to or slightly more than the thickness of said dielectric material.

When an additional, relatively rigid metal cylinder is required to back up the impression cylinder and prevent its flexing, the cylindrical surface of the back-up cylinder is also covered by a relatively thin coating or sheet of high dielectric material.

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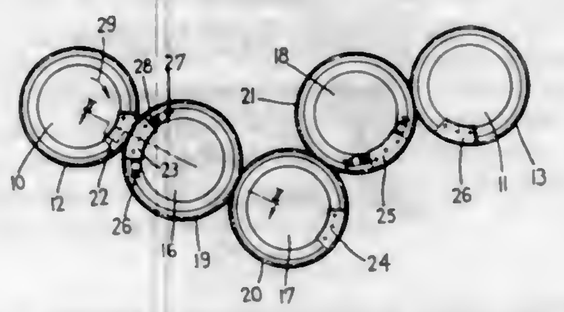
### 3,477,370

### REGISTER MAINTAINING DEVICE FOR MULTI-COLOR SHEET-FED ROTARY PRINTING PRESSES

**Hermann Fischer, Augsburg, Germany, assignor to Maschinenfabrik Augsburg-Nurnberg AG, Augsburg, Germany, a corporation of Germany**
**Filed Feb. 28, 1967, Ser. No. 619,474**
**Claims priority, application Germany, Mar. 3, 1966, M 68,605**
**Int. Cl. B41f** *5/16;* **F16h** *55/18*
**U.S. Cl. 101—183** **7 Claims**



A supplemental gearing arrangement is interposed adjacent the direct drive gears of the transfer cylinders of multi-color sheet-fed rotary printing presses incorporating a resilient adjustment for accommodating the backlash in the driving gears at the place of transfer of the sheets between the various cylinders so that the sheets will not become misaligned as a result of the backlash during transfer from one station of the press to the next.

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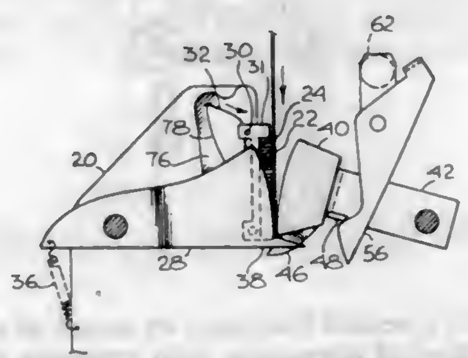
### 3,477,371

### VALIDATING METER APPARATUS

**Robert C. Ringholz, San Bernardino, Calif., assignor to Valometer Sales Co., San Bernardino, Calif., a partnership**
**Filed Aug. 10, 1966, Ser. No. 571,637**
**Int. Cl. B41k** *1/02*
**U.S. Cl. 101—283** **6 Claims**



A parking ticket validating machine is provided wherein the ticket is inserted into a slot in a device which includes means for printing a validating stamp on the ticket which is so inserted. Means are provided for requiring the ticket to be fully inserted into the slot before it can be withdrawn, and for retracting the printing device fully as the ticket is being withdrawn to avoid smearing. Means are also provided to audibly indicate that the validating device is being used.

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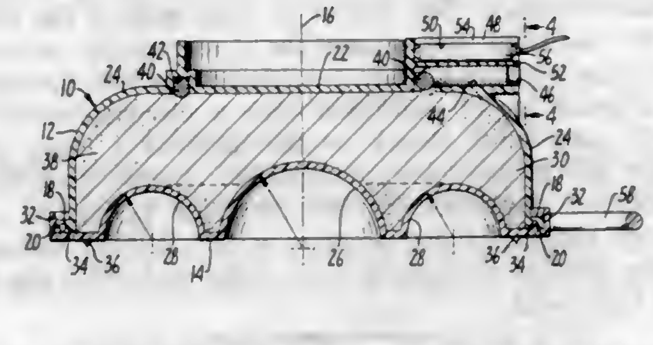
### 3,477,372

### DIRECTIONAL CHARGE EXPLOSIVE DEVICE

**William D. McFerrin, 335 Phillips Ave., Sparks, Nev. 89431, and Harve P. Nelson, 1235 Palisades Drive, Reno, Nev. 89502**
**Filed Dec. 11, 1967, Ser. No. 689,405**
**Int. Cl. F42b** *3/08, 1/02*
**U.S. Cl. 102—24** **2 Claims**



A directional charge explosive device is provided with a dome-shaped casing and a bottom cover which entirely encloses the bottom of the casing and has therein a central downwardly opening circular concavity and an outer downwardly opening semi-toroidal concavity. The concavities in the bottom cover, when used in conjunction with a 360° "over-drive" detonation arrangement, direct the force of the detonated explosive charge in the desired direction.

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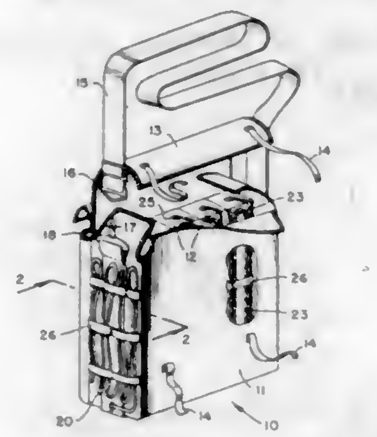
### 3,477,373

### UNDERWATER DEMOLITION PACKAGE

**Charles W. Falterman, China Lake, and William J. Griffith, Inyokern, Calif., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Apr. 4, 1968, Ser. No. 718,763**
**Int. Cl. F42b** *1/04*
**U.S. Cl. 102—24** **2 Claims**

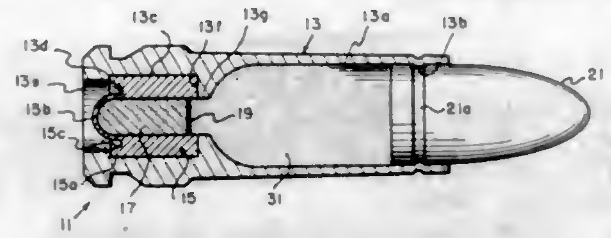
An improved underwater demolition package which has its buoyancy adjusted to about ¼ lb. positive buoyancy at depths ranging from 20 to 200 feet making it easier for a swimmer to carry and handle. The package consists of a haversack provided with a plurality of water-resistant synthetic foam inserts placed in the flotation pocket for neutral buoyancy and/or a number of explosive billets



adjusted to a neutral buoyancy by means of synthetic foam sections layered alternately with explosive to provide the proper buoyancy for the complete package.

### 3,477,374
### FIXED PRIMER SET-BACK CARTRIDGE

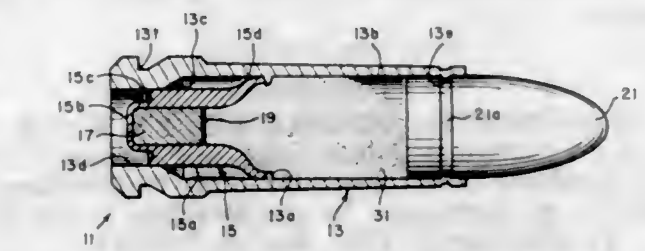
**Irwin R. Barr, Lutherville, Md., assignor to AAI Corporation, Cockeysville, Md., a corporation of Maryland**
**Filed Apr. 11, 1968, Ser. No. 720,559**
**Int. Cl. F42b** *5/28*
**U.S. Cl. 102—45** **8 Claims**



A cartridge is disclosed having a single-unit primer fixedly disposed in the base portion of a propellant containing cartridge casing for use in automatic and semi-automatic firearms which operate on the principle of primer set-back. The primer is open toward the interior of the cartridge casing and has a rearwardly protruding cup-shaped piston portion containing a primer charge that is adapted to be deformed into a circumferential rim anvil upon being struck by the head of a firing pin to ignite the primer charge contained therein and fire the propellant contained in the cartridge casing to create a high propellant gas pressure which in turn causes the piston portion to expand rearwardly and drive the firing pin backward.

### 3,477,375
### PISTON-PRIMER CARTRIDGE

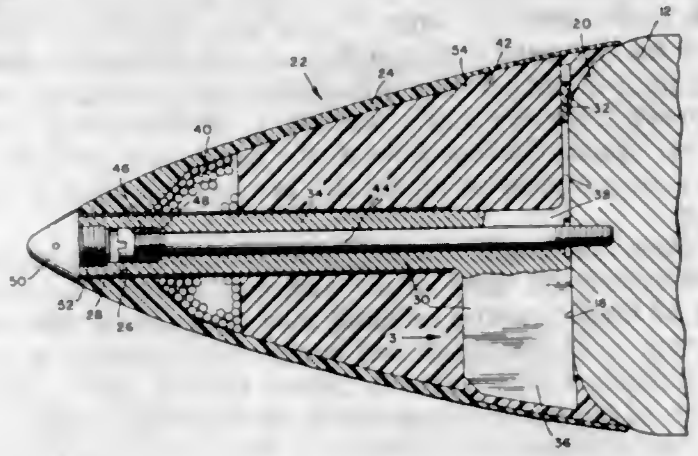
**Irwin R. Barr, Lutherville, Md., assignor to AAI Corporation, Cockeysville, Md., a corporation of Maryland**
**Filed Apr. 11, 1968, Ser. No. 720,549**
**Int. Cl. F42b** *5/28*
**U.S. Cl. 102—45** **7 Claims**



A cartridge is disclosed having a single-unit movable piston primer for use in automatic and semi-automatic firearms which operate on the principle of primer set-back. The single-unit piston primer is cup-shaped with a circumferential rim-fire rear wall and contains a primer charge. The cup-shaped piston primer is open toward the interior of the cartridge casing with an annular flared flange portion formed at the open end which is adapted to obturate to provide a gas seal and limit the longitudinal movement of the piston primer in both the forward and rearward directions by engaging respectively both forward and rearward limit stop means formed in the cartridge casing.

### 3,477,376
### MISSILE NOSE CAP

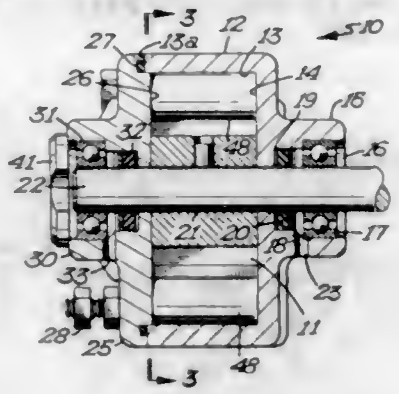
**Harry A. Nelson, Sierra Madre, Ernest N. Oeland, Jr., West Covina, Howard A. Miller, Altadena, and Milton D. Blatt, Covina, Calif., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Mar. 6, 1968, Ser. No. 711,471**
**Int. Cl. F42b** *15/20, 15/22, 22/00*
**U.S. Cl. 102—54** **3 Claims**



Nose for a rocket propelled missile, carrying a depth charge, formed of frangible components which disintegrate upon water entry, absorbing some of the energy of impact. The nose is shaped to reduce air drag on the missile, increasing its velocity, and its distribution of mass moves the C.G. of the missile forwardly, improving its stability during its air trajectory after separation from its booster rocket.

### 3,477,377
### ROLLER PUMP

**Harry J. Sadler, Minneapolis, Minn., assignor to Hypro, Inc., Minneapolis, Minn., a corporation of Ohio**
**Filed May 22, 1967, Ser. No. 641,434**
**Int. Cl. F04c** *1/00;* **F01c** *1/00*
**U.S. Cl. 103—136** **5 Claims**



A roller pump having a housing defining a pumping chamber, and a rotor rotatably mounted within the chamber with the axis of the rotor being offset from the axis of the pumping chamber, the rotor having a plurality of roller receiving slots formed about the periphery thereof and being adapted to receive rollers therein. The rollers disposed in these slots are selected so as to provide substantial clearances between the radially disposed slot faces, these slot faces being spaced apart a distance of from five percent to eleven percent greater than the diameter of the roller received therein.

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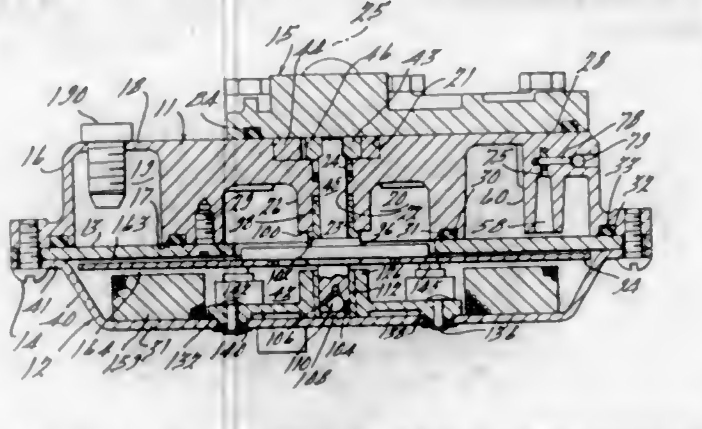
### 3,477,378
### HYDRAULIC POWER UNIT WITH DISC MOTOR

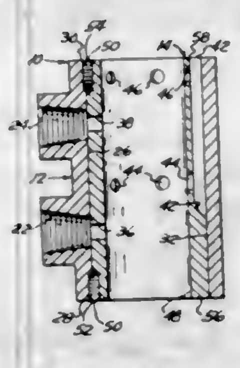
**Robert E. Shelhart, Dearborn, Mich., assignor to Dura Corporation, Oak Park, Mich., a corporation of New York**
**Filed June 6, 1968, Ser. No. 734,985**
**Int. Cl. F04c** *15/02;* **F15b** *15/18;* **H02k** *1/22*
**U.S. Cl. 103—118** **23 Claims**



There is herein disclosed an electric motor-hydraulic pump-hydraulic reservoir power unit for operation of a hydraulic actuator or the like of the type used to actuate vehicle windows, convertible tops, and the like.

### 3,477,379
### COMPOSITE FLUID PRESSURE PUMP OR MOTOR CASING BODY AND METHOD OF MAKING THE SAME

**Ferdinand J. Henkel, Birmingham, Mich., assignor to Lamina, Inc., Oak Park, Mich., a corporation of Michigan**
**Filed Jan. 16, 1968, Ser. No. 698,209**
**Int. Cl. F04b** *21/08*
**U.S. Cl. 103—216** **6 Claims**

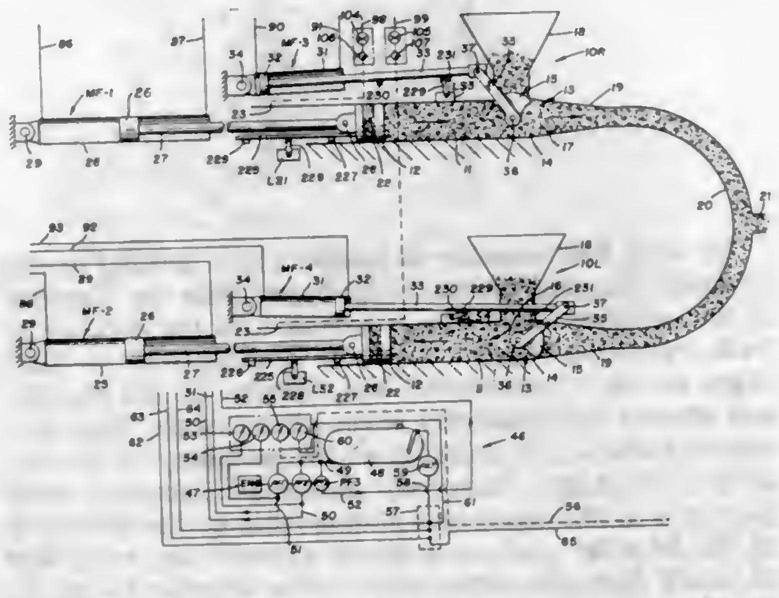


This composite fluid pressure pump or motor casing body and method provides tubular outer and inner casing body components which are separately produced and machined with complex fluid passageways both longitudinal and transverse, and are then assembled and secured to one another in telescoping relationship after their respective passageways have been properly aligned. This enables the production of such a casing body with complex passageways which could not be produced in the conventional single piece construction by known conventional machining methods or apparatus, especially where the construction requires greatly elongated longitudinal passageways with transverse portions.

### 3,477,380
### ELECTRIC CONTROL CIRCUIT AND HYDRAULIC SYSTEM FOR CONCRETE PUMPING APPARATUS

**Frederic R. Johanson and Meredith E. Smith, Jr., Columbus, Ohio, assignors to The Jaeger Machine Company, Columbus, Ohio, a corporation of Ohio**
**Filed Jan. 3, 1968, Ser. No. 695,464**
**Int. Cl. F04b** *17/00, 7/00*
**U.S. Cl. 103—49** **26 Claims**

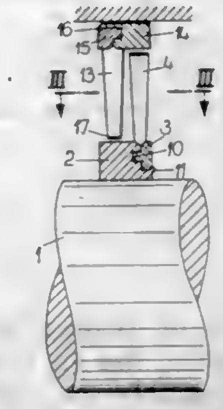
A control system is provided for concrete pumping apparatus and the system includes a hydraulic system which effects the several operations and an electrical control circuit which controls the hydraulic system in the performance of the several operations. Fluid control valves in the hydraulic system control the cyclic operation of each of several independently operable concrete pumping units. The electrical control circuit which includes electromechanical interconnection with the several pumping units provides several modes of operation for a concrete pumping apparatus having two independently operable pumping units with the modes of operation including synchronous operation of both units, independent manual operation of either or both units, or any combination of automatic operation with respect to one pumping unit and manual operation with respect to the other pumping unit. Solid state circuitry is employed in the electrical control circuit to provide an automatic control sequence for automatic synchronous operation as well as independent automatic operation of a particular pumping unit. Manual switching elements are incorporated in the solid state circuitry which are selectively operable to by-pass the automatic circuit components and permit manual operation of each or both of the pumping units at any particular point in an operational cycle and for any part of a cycle.



### 3,477,381
### TURBO-MOLECULAR PUMP

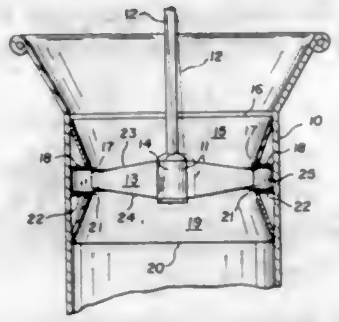
**Willi Becker, Wetzlar, Germany, assignor to Arthur Pfeiffer Hochvakuumtechnik G.m.b.H., Wetzlar, Germany**
**Filed Dec. 27, 1967, Ser. No. 693,793**
**Claims priority, application Germany, Dec. 30, 1969, P 41,123**
**Int. Cl. F01d** *5/02, 5/22;* **F04d** *3/00*
**U.S. Cl. 103—84** **4 Claims**

A stator or rotor disc for a turbo-molecular pump consists of a two-part securing ring between the two parts of which are clamped their radially extending blades which are twisted to overlap each other and at the free



ends have tip portions substantially parallel to the axis of rotation and welded one to the other.

### 3,477,382
## WAY FOR AXIAL FLOW IMPELLER
**Ralph M. Watson, 4780 Makyes Road, Syracuse, N.Y. 13215**
**Filed Feb. 15, 1968, Ser. No. 705,819**
**Int. Cl. F04d** *3/00, 29/32*
**U.S. Cl. 103—89** **14 Claims**



An axial flow impeller is mounted in a housing having an inside diameter substantially larger than the diameter of the impeller, and a way is provided for the impeller by walls extending inward from the housing wall to form edges having approximately the diameter of the impeller and located approximately in the planes of the input and output faces of the impeller at the periphery of the impeller. The edges form two constricted zones of small clearance at the input and output faces of the periphery of the impeller and substantially prevent any back flow of liquid from the output side of the impeller to the input side of the impeller. The space between the edges allows some lateral motion of the impeller so that the housing need not be made to close tolerances, and the impeller can be run without a submerged bearing.

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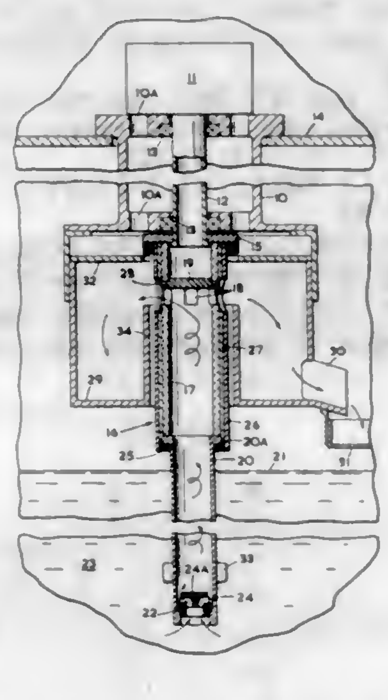
### 3,477,383
## CENTRIFUGAL PUMPS
**Peter John Rawson and Michael Kevin Shaw, Whetstone, England, assignors to The English Electric Company Limited, London, England, a British company**
**Filed Mar. 27, 1968, Ser. No. 716,445**
**Claims priority, application Great Britain, Mar. 28, 1967, 13,978/67**
**Int. Cl. F04d** *1/14, 1/00;* **C21b** *7/14*
**U.S. Cl. 103—99** **2 Claims**



A centrifugal pump of extreme simplicity, especially for pumping liquid metal, has an impeller comprising a simple cylinder (preferably of refractory material), which is supported in bearings above the highest level reached by the liquid being pumped.

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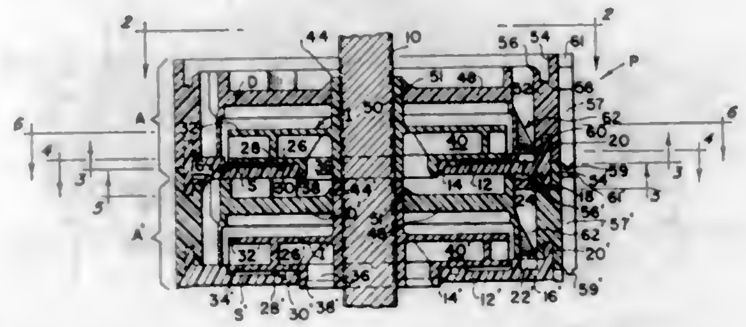
### 3,477,384
## SUBMERSIBLE MULTI-STAGE DIFFUSER TYPE PUMP
**Edward A. Hlinka, Westchester, Ill., assignor to Dempster Industries Inc., Beatrice, Nebr., a corporation of Nebraska**
**Filed Jan. 4, 1968, Ser. No. 695,716**
**Int. Cl. F04d** *1/06, 13/14, 29/08*
**U.S. Cl. 103—102** **6 Claims**



A submersible multi-stage type pump wherein the stages themselves and the members making up the stages are fitted together through and complementary shaped flange arrangement. Continuous crush rings formed on the surface of the grooves serve to seal the stages against pressure leakage.

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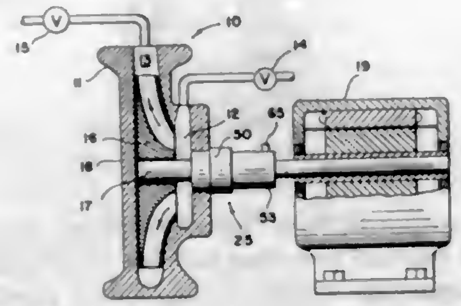
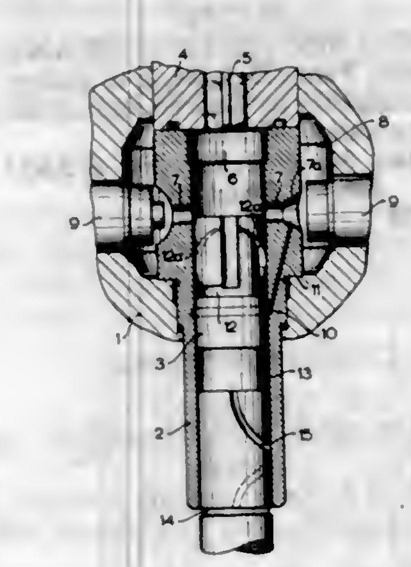
### 3,477,385
## CENTRIFUGAL PUMP SEALING SYSTEM FOR VISCOUS ABRASIVE LIQUIDS
**Lawrence N. Tangeman and Warren W. Williams, Beatrice, Nebr., assignors to Dempster Industries, Inc., Beatrice, Nebr., a corporation of Nebraska**
**Filed Jan. 19, 1968, Ser. No. 699,077**
**Int. Cl. F04d** *29/10;* **F16j** *15/44, 41/04*
**U.S. Cl. 103—111** **9 Claims**



A non-wearing sealing system for a centrifugal pump or the like for use in moving viscous and abrasive liquids, including a sealing unit having an outer portion connected to the casing of the device and an inner portion connected to the shaft, said portions being non-contacting and defining therebetween a continuously open tortuous or labyrinth passage. The outer end of this passage is at atmospheric pressure and may have a flexible lip-type seal element permitting external air to flow into the passage; and the inner end of this passage terminates adjacent the impeller inlet as applied to a centrifugal pump such that any flow of air through the passage is dependent upon the pressure conditions adjacent the inner end. Inflow to and outflow from the pump is controlled by valves or the like, thus varying the pressure inside the pump adjacent the inner end of the passage. A negative pressure may be effected to induce an inflow of air through the passage, thus sealing against leakage of the viscous abrasive liquid, while avoiding wear problems of contact type seals, or the pressures across the seal may be balanced to effect sealing.

### 3,477,386
## FUEL INJECTION PUMP
**Heinrich Staudt, Markgroningen-Talhausen, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany, a corporation of Germany**
**Filed May 13, 1968, Ser. No. 728,516**
**Claims priority, application Germany, June 16, 1967, B 93,043**
**Int. Cl. F04b** *19/22, 7/06;* **F02m** *55/00*
**U.S. Cl. 103—154** **4 Claims**



A fuel injection pump of the type including a piston reciprocating in a bore, means for controlling the backflow of fuel to meter the fuel quantities to be delivered to an engine; the improvement resides in the provision on said piston of two axially spaced circumferential annular grooves interconnected by a helically extending groove; said circumferential annular grooves are so arranged that during a portion of the pressure stroke of said piston said backflow fuel is forced into said grooves and at the end of the suction stroke of said piston the fuel confined in said grooves is discharged therefrom thus effecting a thorough lubrication of the sliding faces, a continuous exchange of fuel and an efficient removal of solid particles from between the sliding faces.

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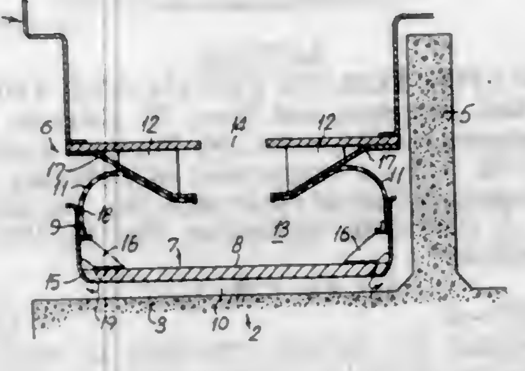
### 3,477,387
## LOAD-SUPPORTING APPARATUS
**Alan John Bing, Lyndhurst, England, assignor to Hovercraft Development Limited, London, England, a British company**
**Filed May 18, 1967, Ser. No. 639,488**
**Claims priority, application Great Britain, May 27, 1966, 23,783/66; Mar. 9, 1967, 11,082/67**
**Int. Cl. B60v** *3/04;* **A63g** *1/08;* **B61b** *13/08*
**U.S. Cl. 104—23** **12 Claims**



Load-supporting apparatus suitable for use as a two-stage suspension system for a track-guided air-cushion vehicle comprises a base connected, by means of a flexible membrane, to a load-accepting member so as to define a flexible chamber.

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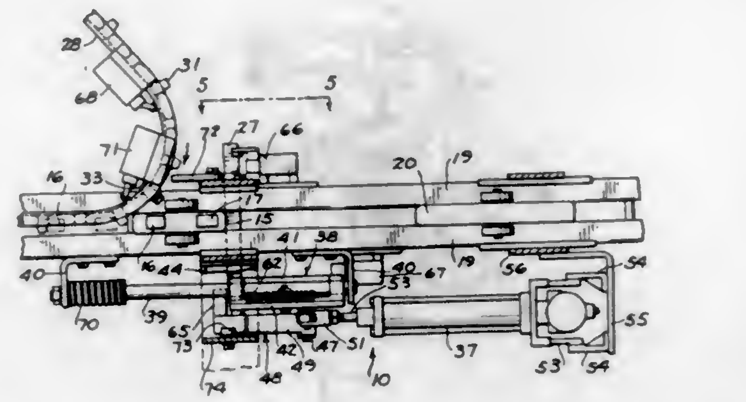
### 3,477,388
## ENTRANCE SWITCH FOR POWER AND FREE CONVEYORS
**Paul Klamp, St. Clair Shores, Mich., assignor, by mesne assignments, to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York**
**Filed Mar. 3, 1966, Ser. No. 531,477**
**Int. Cl. B61j** *1/06;* **E01b** *25/26;* **B61k** *1/02*
**U.S. Cl. 104—96** **20 Claims**



A power and free conveyor system having a main line including a main continuously driven conveyor, a spur line merging with the main line, and a transfer conveyor at the area of juncture of the spur line and main line. Means are provided for holding a carrier in a first position on the spur line out of the path of the transfer conveyor, moving the carrier to a second position in the path of the transfer conveyor and holding it in said second position for release to the transfer conveyor when a carrier is absent on the main conveyor.

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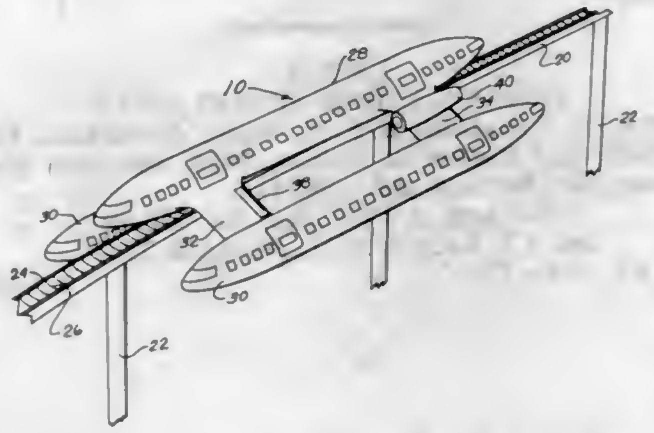
### 3,477,389
## RAPID TRANSIT SYSTEM
**Lamartine C. Trent, Portuguese Bend, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware**
**Filed June 27, 1966, Ser. No. 560,558**
**Int. Cl. B61b** *13/06;* **E01b** *25/08;* **B61d** *15/00*
**U.S. Cl. 104—118** **17 Claims**

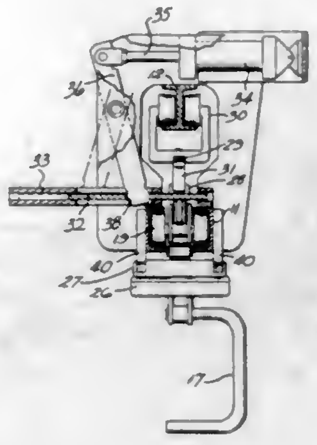


A monorail system has a single track supported on piers which are banked on curves. A high speed vehicle has a center of gravity below the track and is supported thereon by wheels which are laterally movable across the track so that free rolling movement of the vehicle about the track is permitted over a limited range within which no side loads are applied to the track. The stated rolling movement occurs about a roll axis substantially coinciding with the center of curvature of the concave track surface when seen in transverse cross-section. Gravity and acceleration forces are applied to the track and supporting piers substantially as pure compression loads during vehicle operation and no lateral forces are applied to the passengers in the vehicle.

### 3,477,390
### ACCUMULATING CONVEYOR SYSTEM

**Walter R. Dolding, St. Clair Shores, Mich., assignor, by mesne assignments, to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York**

**Filed May 29, 1967, Ser. No. 642,105**
**Int. Cl. B61b** *13/06;* **B61c** *11/02;* **B61k** *7/16*
**U.S. Cl. 104—172** **8 Claims**

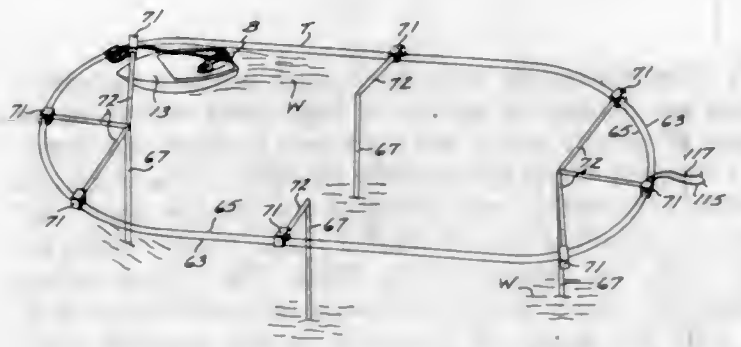


The power and free conveyor system disclosed herein comprises a main track along which a plurality of carriers are movable and a conveyor chain track along which a chain is movable, the conveyor track and the chain track in the zone in question being uniformly spaced relative to one another. Each carrier is provided with a movable pusher dog that is engaged by pusher lugs on the conveyor chain to move the carrier along the track. In order to interrupt the movement of the carrier to perform an operation on the work supported by the carrier or to accommodate timing of the operations in the conveyor system, a stop member is movable into the path of the pusher dogs to move the pusher dogs out of the path of the pusher lugs of the conveyor chain. The pusher dog is interconnected with an accumulating lever that is movable when the pusher dog is depressed to a position where it engages a fixed stop on the conveyor track to prevent inadvertent forward movement of the carrier along the track.

### 3,477,391
### TRACK GUIDED MODEL BOAT

**Thomas S. Langford, 675 N. Rose, Escondido, Calif. 92025, and Robert L. Hubert, 2510 Anchovie Apartments, San Pedro, Calif. 90731**

**Filed Aug. 3, 1967, Ser. No. 658,087**
**Int. Cl. A63g** *3/00, 1/10;* **A63h** *23/04*
**U.S. Cl. 104—73** **6 Claims**

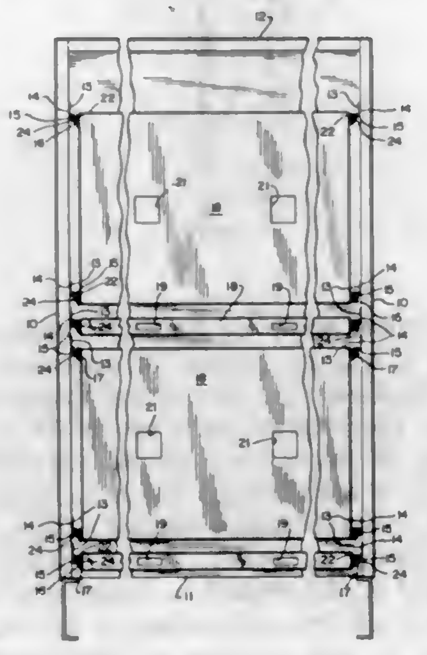


A model boat comprising a hull and an electric motor mounted therein for driving a propeller disposed exteriorly of said hull. A boom is supported at its lower extremity from the aft portion of said hull and angles upwardly and forwardly to support a guide for engagement with, and tracking along, an electrically conductive track disposed above and parallel to the surface of the water on which the hull is to float. An electrical brush is supported at the upper extremity of the boom for engagement with the track and an electric lead connects such brush with the motor.

### 3,477,392
### LADING SEPARATING MEANS

**Russell M. Loomis, Palos Heights, and Henry D. Breen, Chicago, Ill., assignors to Unarco Industries, Inc., Chicago, Ill., a corporation of Illinois**

**Filed Jan. 30, 1967, Ser. No. 612,611**
**Int. Cl. B61d** *45/00*
**U.S. Cl. 105—376** **5 Claims**



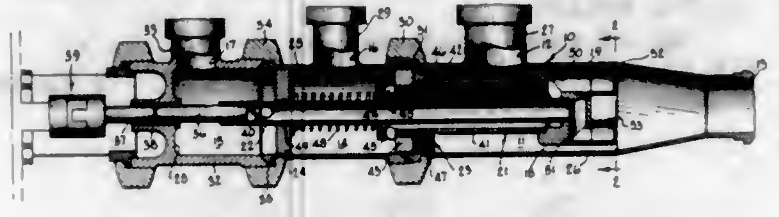
A pallet that may serve selectively as a pallet or lading separating bulkhead, in a freight car that is equipped with horizontal track means along the side walls, is provided by a rectangular panel of a length substantially to span the inside of the freight car and having apertures in the longitudinal edges and faces of the bulkhead to provide means for manipulation thereof by the tines of a fork-lift truck. The ends of the panel carry pivoted support elements for sliding cooperation with slide-type track means when the panel is either in horizontal or vertical attitude. Selectively operable latch means separate from the support elements lock the panel against longitudinal and vertical movement. Latch-actuating members are provided extending across the face apertures for actuation by the fork-lift's tines when the panel is transported.

### 3,477,393
### VARIEGATOR FOR ICE CREAM AND THE LIKE

**Kenneth Bell, Marengo, and Harry W. Grossen, Chicago, Ill., assignors to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 462,486, June 9, 1965. This application May 15, 1967, Ser. No. 638,427**
**Int. Cl. A23g** *3/20*
**U.S. Cl. 107—1** **15 Claims**

A variegator for spirally entwining at least two or more continuously flowing streams of materials, such as ice creams, flavorings or a combination thereof, in which each of the streams is introduced into the hollow interior of an elongated casing having a rotatable unit. The latter has discrete passageways for isolating and conveying the streams longitudinally of the casing. The streams are

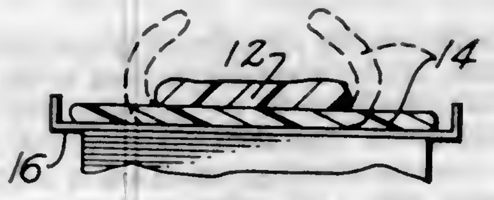
rotated with the unit about an axis in the casing and are discharged at the terminal end of the rotatable unit and are spirally entwined to form a variegated product. In a first embodiment, one stream forms an outer exterior wall about an interior spiral stripe or stripes issuing from the rotatable unit. In another embodiment, each of the streams is rotated to form a product having each of the materials distinctly visible on the exterior of the product.



### 3,477,394
### METHOD FOR MAKING CANDY WITH GUM INSIDE

**Thomas T. Tidwell, Atlanta, Ga. (% Triple T. Company Inc., 1495 Stoneridge Drive, Stone Mountain, Ga. 30083)**

**Filed Nov. 28, 1966, Ser. No. 597,362**
**Int. Cl. A23g** *3/08, 3/20, 3/30*
**U.S. Cl. 107—54** **2 Claims**

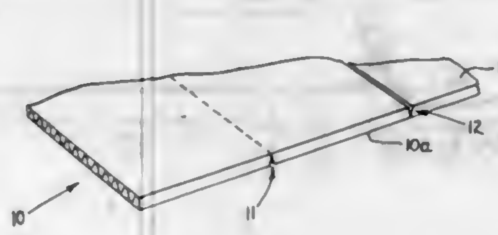


A method of making a hard candy pop or sucker with bubble gum inside which comprises making a batch of workable candy and then placing the bubble gum mixture on the candy and folding the candy over the bubblegum after which the mixture of candy and gum is made into a rope-like form and fed into a commercially available sucker forming machine which makes bubblegum suckers.

### 3,477,395
### PALLET LEG STRUCTURE

**Philip H. Brown, Zionsville, and Lloyd W. Ellson, Indianapolis, Ind., assignors to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana**

**Filed Feb. 28, 1968, Ser. No. 709,003**
**Int. Cl. B65d** *19/00, 19/40*
**U.S. Cl. 108—51** **4 Claims**

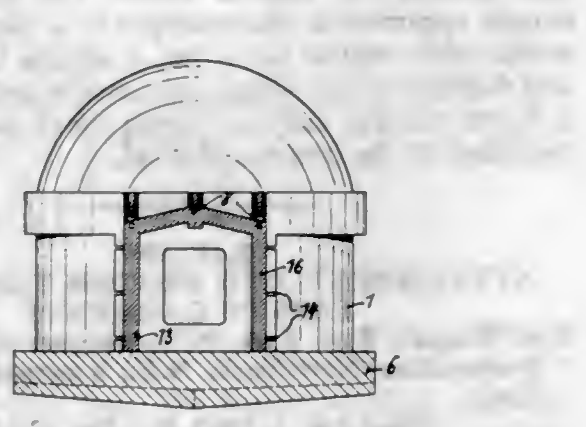


The inventive concept is embodied in a pallet leg or runner which is formed by multiple folding on itself of a slit scored sheet of corrugated board, with one liner component of the corrugated extended to wrap around the folded, corrugated board, and adhered to it with a wet adhesive.

### 3,477,396
### MEANS FOR SECURING PREFABRICATED REINFORCED CONCRETE BUNKER SECTIONS

**Gustave Luding, Saganer Str. 1, Nuremberg-Langwasser, Germany**

**Filed June 19, 1967, Ser. No. 648,187**
**Int. Cl. E05g** *1/02*
**U.S. Cl. 109—1** **2 Claims**

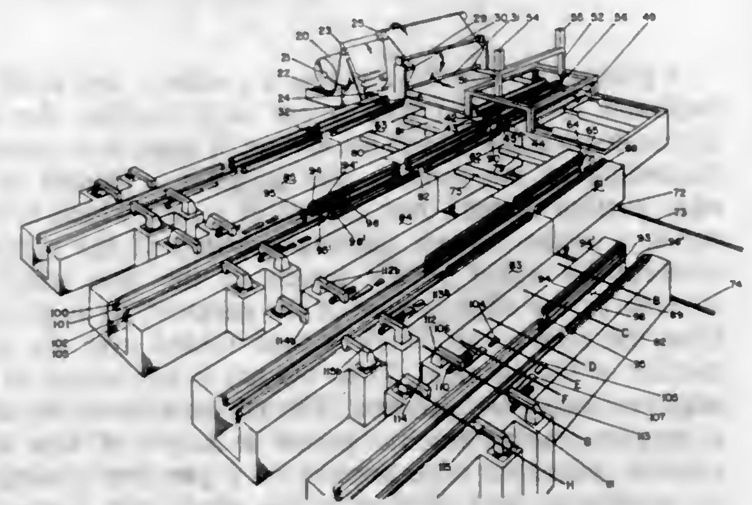


Prefabricated bunker units are provided with alignable steel half-sections in which are secured shear-resistant inserts pressed into the wall sections of units and are formed as wedges. Concrete fill is provided between the adjacent units which also have air escape holes.

### 3,477,397
### FLAT ARTICLE PROCESSING APPARATUS HAVING A COMMON BLANK SUPPLY FEEDING A PLURALITY OF WORKLINES

**George F. Hawley, Bogota, N.J., assignor to Wagner Research Corporation, New York, N.Y., a corporation of New York**

**Filed Oct. 20, 1967, Ser. No. 676,756**
**Int. Cl. D05b** *25/00, 27/00*
**U.S. Cl. 112—2** **21 Claims**

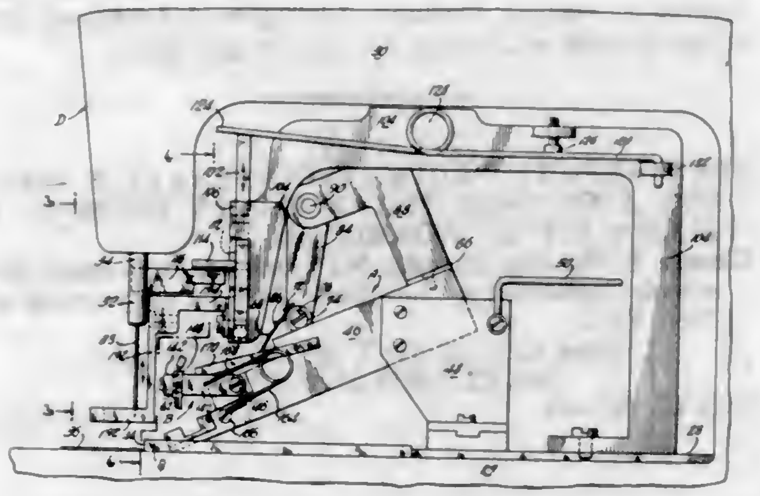


Integrated apparatus for automatically processing bulk limp materials into finished flat articles, such as bedsheets, in which the full potential of a common material blank sizing and cutting device is exploited. The overall apparatus employs a novel method and device for sizing and cutting relatively large material blanks using vertical depression of the material for sizing and a guillotine type cutter for separating the sized material from the bulk supply. Transfer and conveyance of the cut blank is accomplished with the blank in a hanging condition. The material blank is transferred to a shuttle which distributes successive blanks sequentially to each workline or sew line of a plurality of worklines or sew lines. During the sizing operating the material is depressed into a sizing channel such that the cut blank is in a hanging condition. This hanging condition of the blank is preserved throughout transfer and conveyance. The blank is conveyed along a work or sewing line which during conveyance folds a hem on both cut ends of the blank and hem stitches the hem folds. The stitched hems are also closed on both ends during such conveyance thus forming the finished article. The structure of the overall apparatus is characterized by a short draw mechanism, with vertical draw bar, a shuttle for transferring and distributing cut blanks and narrow sewing lines with a blank transfer channel having work surfaces on the shoulders of the transfer channel.

### 3,477,398
## ATTACHMENT AND PROCESS FOR SEWING TABS TO GARMENTS

**Karl Weigert, Rego Park, N.Y., assignor to Kayser Roth Corporation, New York, N.Y., a corporation of New York**

**Filed Jan. 4, 1965, Ser. No. 423,091**
**Int. Cl. D05b** *3/12, 37/04*
**U.S. Cl. 112—104** **27 Claims**

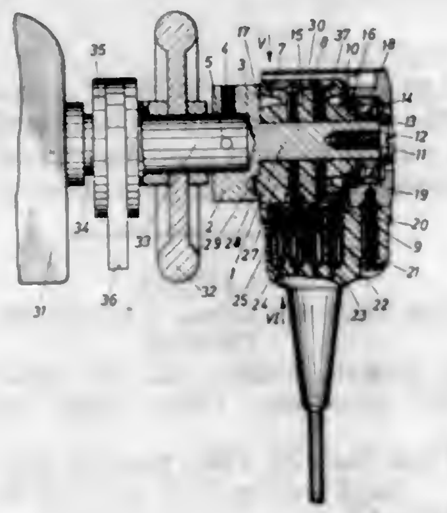


A process for sewing a tab to a garment, and a tab attachment to be used with a bar tack machine for mechanically bringing about the sewing of a tab to a garment. According to the process, the garment is placed at an edge portion thereof over an end of a tape which is then cut at a distance from the edge portion of the garment substantially equal to the length of the tape which is covered by the edge portion of the garment, so as to form from the tape a tab which is then folded over the edge portion of the garment. Then the tab is bar-tacked to the edge portion of the garment. The tab attachment includes a support means which supports a length of tape at a position where an edge portion of a garment is adapted to overlap an end portion of the tape, and a severing means of the tab attachment is located adjacent to the support means to cut through the length of tape at a distance from the edge portion of the garment so as to separate from the length of tape a tab which is to be sewn to the edge portion of the garment. The tab attachment further includes a folding means which is located next to the support means for folding around the edge portion of the garment the part of the tab which projects beyond the edge portion thereof, and a control means of the tab attachment is operatively connected with the severing means and the folding means as well as to the bar-tacking machine for first actuating the severing means to cut through the tape, for then actuating the folding means to fold the tab around the edge portion of the garment, and for then setting the machine into operation to sew the tab to the garment, all during a single operating cycle of the control means.

### 3,477,399
## SWITCHING DEVICE FOR A SEWING MACHINE

**Ernst Becker, Darmstadt, and Karl Notz, Kulmbach, Germany, assignors to Quick-Rotan Becker & Co., Darmstadt, Germany, a German company**

**Continuation-in-part of application Ser. No. 542,087, Apr. 12, 1966. This application Feb. 19, 1969, Ser. No. 800,691**
**Int. Cl. D05b** *69/12;* **H01h** *19/00;* **H01r** *39/16*
**U.S. Cl. 112—219** **8 Claims**

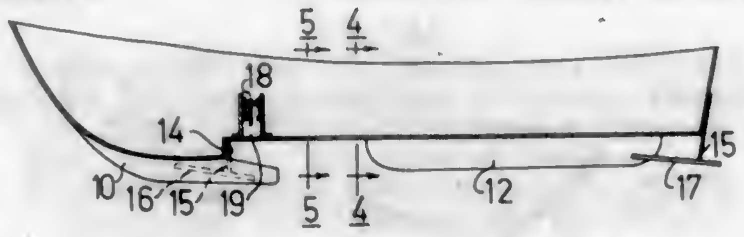


A switching device for controlling operation of a sewing machine can be releasably secured to the machine by sliding the drive shaft of the machine into a bore in a shaft of the device. This shaft mounts contact making and breaking commutator rings which are in continuous electric contact with each other and coact with contact brushes mounted in a housing whereby depending upon the angular setting of the commutator rings on the shaft of the device selected circuit connections for operating the machine can be effected with a minimum of commutator rings and brushes coacting therewith.

### 3,477,400
## HYDROFOIL CRAFT

**Hamilton Walker, 24 Kiripaka Road, Whangarei, Auckland, New Zealand**

**Filed Dec. 14, 1967, Ser. No. 690,453**
**Claims priority, application New Zealand, Dec. 20, 1966, 147,403**
**Int. Cl. B63b** *1/20, 1/38*
**U.S. Cl. 114—66.5** **18 Claims**

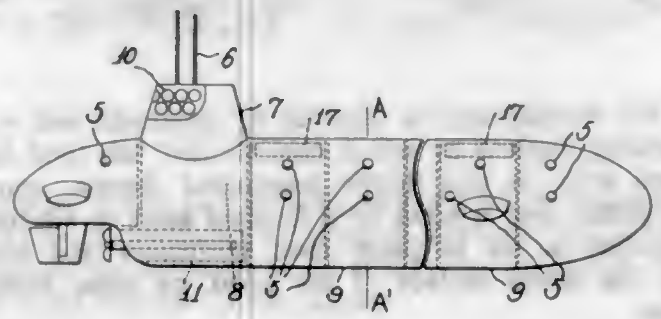


An improved hydrofoil craft having three foils, one a central leading foil, and the other two foils being respectively at each side towards the rear of the craft and a divided keel structure, with one hull part extending between the leading foil and the respective side foils providing a tunnel, for which the leading foil acts as a wave breaker, the side foils serve to give stability to the hull, and the tunnel acting as an airfoil.

### 3,477,401
## OIL TANKER

**Akio Hayama, 1/7 Miyakojima-Hondori-5-chome, Miyakojima-ku, Osaka, Osaka-fu, Japan**

**Filed May 6, 1968, Ser. No. 726,827**
**Claims priority, application Japan, May 15, 1967, 42/30,685**
**Int. Cl. B63b** *25/12;* **B63g** *8/00*
**U.S. Cl. 114—74** **1 Claim**

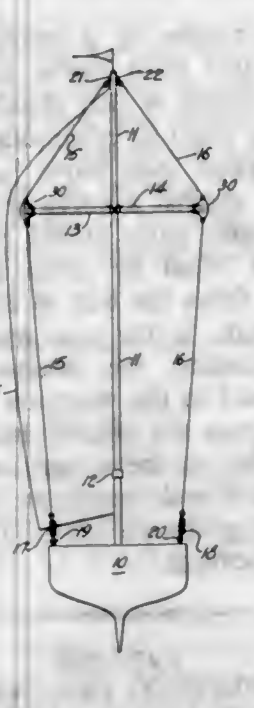


The tanker has a hull, an air tight and water pressure resistant bridge portion on said hull, ballast tanks and a water tight engine space in said hull having a propulsion engine therein. The hull has a plurality of compartments therein, the lower portion of each compartment being air tight and the upper part having holes therein. A flexible bag is provided in each compartment having the edges thereof secured in air tight engagement with the walls of the compartment between the upper and lower portions thereof, and an oil inlet and discharge means is provided in the lower portion of each compartment for feeding and withdrawing oil from within the bag in the lower portion of the compartment.

### 3,477,402
## ATTACHMENT FOR THE SPREADER OF A SAIL BOAT MAST

**Frank M. Le Compte, Watchung, N.J., assignor to Tingley Rubber Corporation, a corporation of New Jersey**

**Filed Aug. 9, 1968, Ser. No. 751,423**
**Int. Cl. B63b** *15/02*
**U.S. Cl. 114—102** **8 Claims**

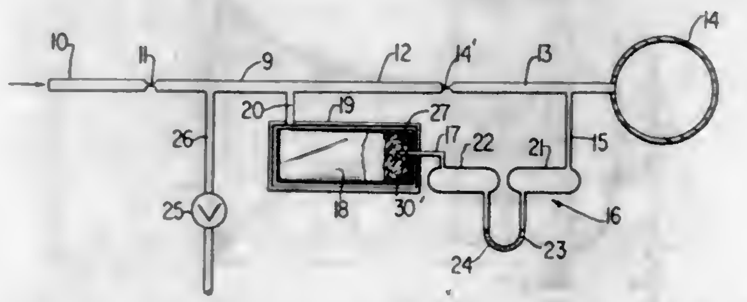


This attachment is intended to house the spreader ends and the shrouds and shroud guides thereon as well as to form a smooth protective surface for contact with the sails. The attachment is made of plastic and has a main portion with a longitudinal passage and interior pocket to contain shroud guides.

### 3,477,403
## OXYLUMINESCENT CONTROL APPARATUS

**Robert B. Hartman, Bridgeport, Conn., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware**

**Filed Apr. 7, 1967, Ser. No. 629,253**
**Int. Cl. G01d** *21/00*
**U.S. Cl. 116—114** **8 Claims**

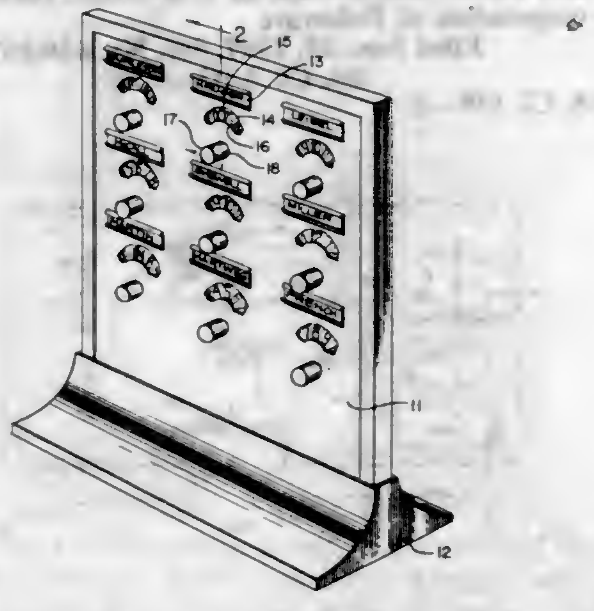


An apparatus for separating and controlling flow of gas from and into a flexible chamber with the use of a liquid filled U-tube trap. The flexible chamber can have an oxyluminescent material therein which will produce light when the gas reaches it.

### 3,477,404
## CALL BOARD

**Clifford C. Robinson, Kansas City, Mo., assignor to Springer Industries, Inc., Mount Vernon, N.Y., a corporation of New York**

**Filed Feb. 7, 1968, Ser. No. 703,777**
**Int. Cl. G09f** *9/40*
**U.S. Cl. 116—133** **3 Claims**



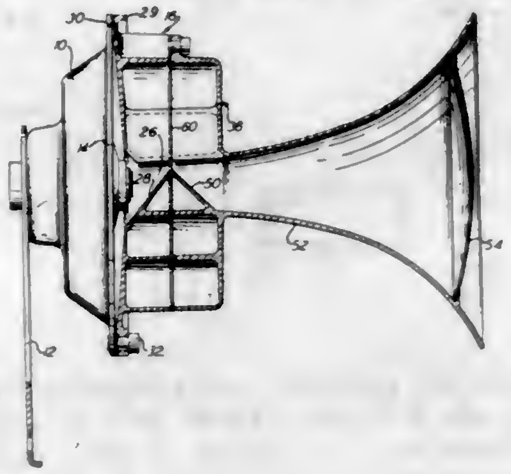
A call board has a vertical panel with a number of circular indicating wheels inside the vertical panel. A portion of each wheel is visible through an indicating window from each side of the panel, the indicating window being below a name holder. A knob attached to the indicating wheel extends through each side of the vertical panel so that the indicating wheel may be set from either side to indicate whether the individual whose name appears in the name holder is in, out or will return at a time indicated in the indicating window.

### 3,477,405
## ADJUSTABLE FREQUENCY HORN

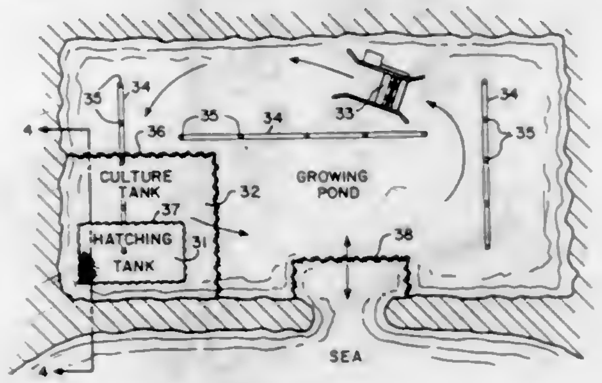
**William G. Jensen, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**

**Filed July 19, 1967, Ser. No. 654,587**
**Int. Cl. G10k** *9/00, 9/10;* **G08b** *3/00*
**U.S. Cl. 116—137** **10 Claims**

A horn or sound projector suitable for use in an automotive vehicle in which the frequency of the sound emitted from the horn may be adjusted over wide limits. The horn has two spirally shaped air passages, separated by a sound barrier or guide therebetween having an aperture, and a deflection means within the passages. The position of the aperture and this deflection means may be suitably adjusted to adjust the lengths of the air passages thereby varying or adjusting the frequency of the sound emitted therefrom.

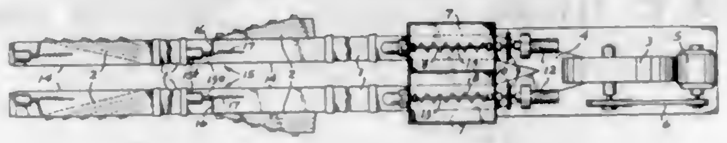


### 3,477,406
## METHOD OF CULTIVATION OF PENAEID SHRIMP
**Motosaku Fujinaga, Tokyo, Japan, assignor, by direct and mesne assignments, to Marifarms, Incorporated, a corporation of Delaware**
**Filed June 29, 1967, Ser. No. 650,067**
**Int. Cl. A01k** *61/00*
**U.S. Cl. 119—2** **40 Claims**



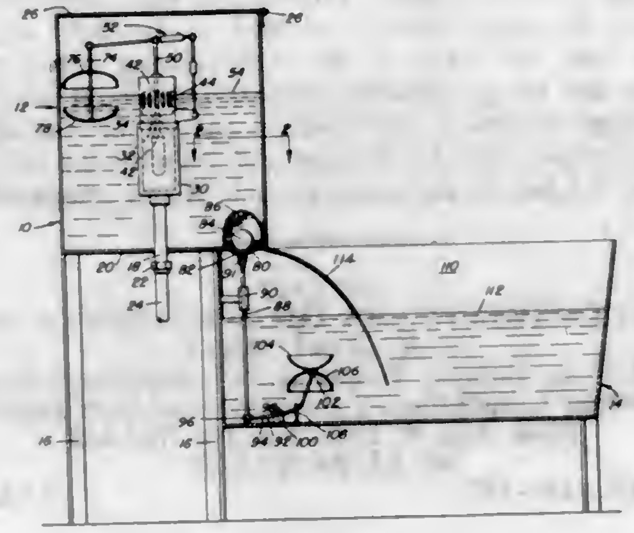
Shrimp, especially the penaeid species, are spawned, hatched and fed under artificially controlled conditions to accelerate growth to marketable sizes. Species are selected for long or optimum spawning seasons and for maximum early growth rates which combine for maximum continuity and production. Food in early stages, comprising plankton and artemia, is grown and nourished under conditions to maximize food supply for the shrimp while keeping the system self purged from adverse contamination. Natural sea water is used, with suitable filtering to exclude predatory fish and other creatures. In later development stages invertebrate sea food supplements are added with appropriate controls to avoid contamination. Spawning and hatching tanks and culture tanks may be separate, or may be included with suitable partition means in larger cultivation ponds, or alternatively, single tanks or vessels may be used continuously for growing the shrimp from freshly hatched larvae to adulthood, by appropriate and periodic changes in lighting, introduction of changing food and other nutrients in suitable sequence.

### 3,477,407
## FISH FEEDING DEVICE
**Percy O. Loudon, 10113 Highway 99, Vancouver, Wash. 98665**
**Filed July 10, 1967, Ser. No. 652,321**
**Int. Cl. A01k** *61/00*
**U.S. Cl. 119—51** **8 Claims**



This development is directed to apparatus and to an opertaing method by which comminuted fish food intermixed with air and jointly intermixed therein, may be distributed over a pond by a directed blast of air that is directable so as to place food uniformly and evenly over the entire surface of the pond, or other body of water.

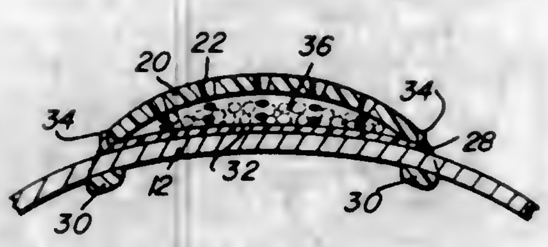
### 3,477,408
## PORTABLE AUTOMATIC ANIMAL WATERER WITH QUICK DISCHARGE MECHANISM
**Leonard E. Mull, Rte. 3, Clover, S.C. 29710**
**Filed Nov. 13, 1967, Ser. No. 682,169**
**Int. Cl. A01k** *7/02;* **F16k** *31/18*
**U.S. Cl. 119—78** **12 Claims**



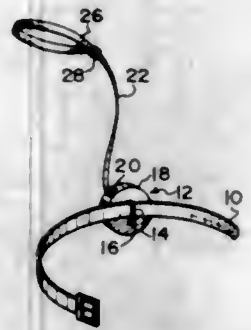
This invention relates to a readily portable animal watering trough and to a valve mechanism therefor, which valve mechanism is also capable of being used in the water box of a toilet or commode. The valve mechanism includes a water inlet valve having a valve lifted to closed position against a valve seat by a float, and a quick discharge water valve closed by a water weighted float which, when lifted by actuating mechanism, discharges the water from the box to either a commode or to a watering trough, as the case may be. In the watering trough combination, the discharge valve actuating mechanism is located in the watering trough, but is separated by a shield from the animal drinking area. In addition, the water inlet to the water box has a hose connection, and the box and trough are provided with legs, so that the watering trough may be carried to and set up at any desired location.

### 3,477,409
## ANIMAL DEODORIZING COLLAR ATTACHMENT
**Kathryn N. Costanzo, 18 Bent Ave., Port Chester, N.Y. 10573**
**Filed Oct. 20, 1967, Ser. No. 676,966**
**Int. Cl. A01k** *29/00*
**U.S. Cl. 119—106** **9 Claims**

An elongated and slightly arcuate housing or receptacle including portions at its opposite ends adapted to snugly and slidably receive longitudinally spaced portions of an animal collar therethrough and including a closure for the receptacle which is automatically retained in the closed position by the receptacle being mounted upon an associated collar, certain wall portions of the receptacle being provided with vapor passages whereby vapors from a deodorizing agent disposed within the receptacle may pass to the exterior of the latter.



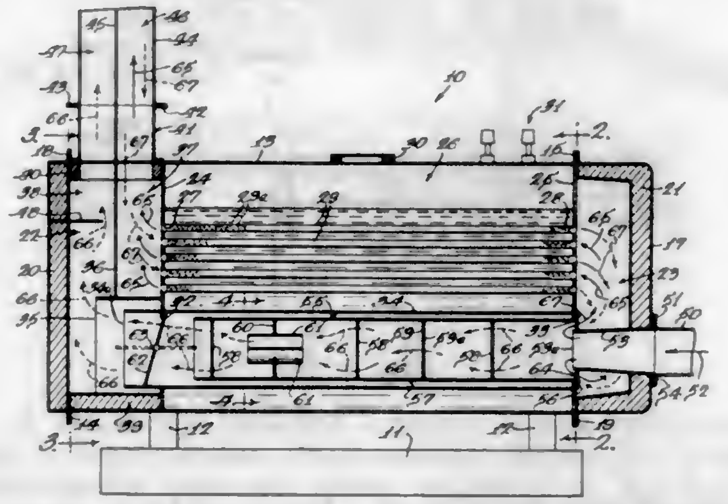
### 3,477,410
## READILY REMOVABLE PORTABLE RETRACTABLE LEASH FOR SMALL ANIMALS
**Gerard L. Lettieri, 1094 Edgewood Lane, Fort Lee, N.J. 07024**
**Filed May 15, 1967, Ser. No. 638,472**
**Int. Cl. A01k** *27/00*
**U.S. Cl. 119—109** **6 Claims**



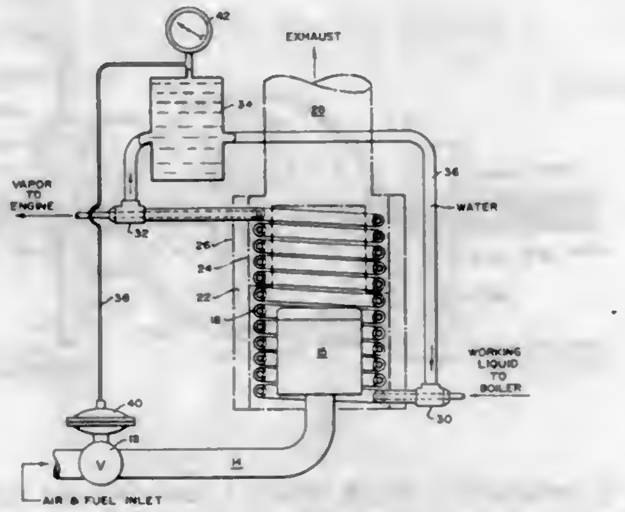
A portable retractable leash for domestic small animals having a spring actuated latch so that the leash can be extended or retracted to any predetermined length and then locked at each desired length by said latch to facilitate better control over the animal. In addition, the least has a snap-on clip which can be easily attached to or removed from a collar or harness of the small animal and be carried in a pocket or handbag leaving the small animal free for movement without having the burden of a leash attached thereon.

### 3,477,411
## HEAT RECOVERY BOILER WITH BYPASS
**Frank Gething, Milwaukee, Wis., assignor to Aqua-Chem, Inc., a corporation of Wisconsin**
**Filed Dec. 22, 1967, Ser. No. 692,836**
**Int. Cl. F22b** *9/12*
**U.S. Cl. 122—7** **25 Claims**

A boiler connected to an external source of heated medium, such as the exhaust of a turbine or engine; and including means for bypassing the heated medium around the heat exchange tubes. The bypassing means is in the form of an insulated furnace drum extending through the heat exchange chamber; and the furnace drum and the heat exchange tubes contain means for silencing the sound of the source of heated medium. A converging nozzle is provided at the entrance end of the furnace drum for drawing cooling air in through the heat exchange tubes during a bypassing operation to compensate for any heat given to the heat exchange chamber through the furnace drum.



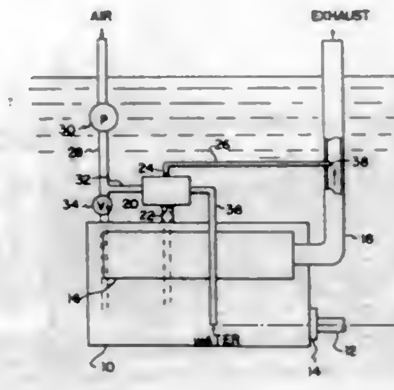
### 3,477,412
## VAPOR ENGINE BOILER
**Sotiris Kitrilakis, Newtonville, Mass., assignor to Thermo Electron Corporation, Waltham, Mass., a corporation of Delaware**
**Filed Mar. 18, 1968, Ser. No. 713,647**
**Int. Cl. F22b** *1/02*
**U.S. Cl. 122—33** **5 Claims**



A boiler for a vapor engine in which the working fluid or vapor is protected from potentially harmful effects of heat by means of a protective jacket of water which is held in a closed system incorporating a pressure sensor for controlling the flow of fuel to the heat source for the boiler. The vapor or working fluid is confined in a tube which is formed into a coil within the boiler. A similar tube of larger diameter encloses the working fluid coil and is concentric with it. The water in the outer tubular member also serves as a buffer stage between the heat from the boiler and the working fluid.

### 3,477,413
## CRANKCASE BREATHER SYSTEM AND STRUCTURE
**Raymond Johnston, Madison Heights, Edwin G. Moran, Centerline, and Ralph J. Clark, Detroit, Mich., assignors to Continental Motors Corporation, Muskegon, Mich., a corporation of Virginia**
**Filed Mar. 25, 1968, Ser. No. 715,689**
**Int. Cl. F02b** *77/00*
**U.S. Cl. 123—1** **15 Claims**

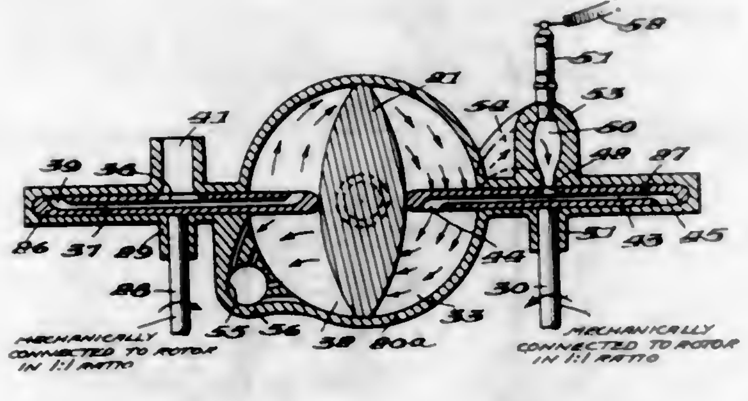
A crankcase breather system for a water-submersible internal combustion engine having one valve operable as crankcase pressure increases above a preselected value to vent crankcase gases under non-submerged operation and



a second valve openable at a higher crankcase pressure during submersion, with the first valve being held closed during submersion.

### 3,477,414
### ROTARY FLUID-HANDLING MECHANISM

**Alvaro Marin A., Juan Palan 1845, Santiago, Chile**
**Filed Dec. 15, 1967, Ser. No. 691,018**
**Int. Cl. F02b** *53/06;* **F01c** *1/08, 3/00*
**U.S. Cl. 123—13** **9 Claims**

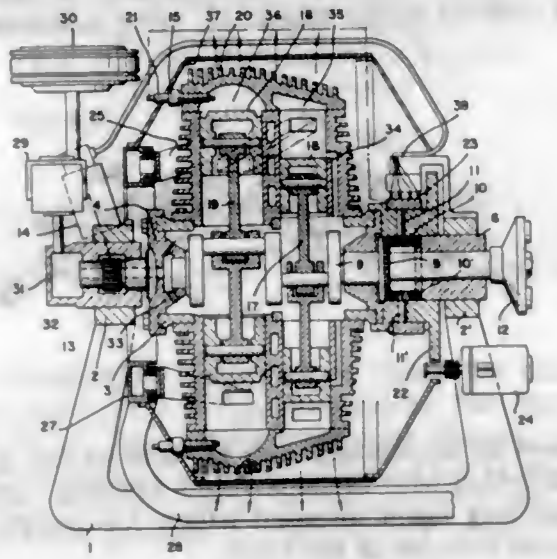

MECHANICALLY CONNECTED TO ROTOR IN 1:1 RATIO
MECHANICALLY CONNECTED TO ROTOR IN 1:1 RATIO

A mechanism which effects a repeated and rapid variation in volume of gases from a low figure up to a maximum and back again, principally by means of three rotary elements, permitting high speed operation substantially free of vibration. The mechanism may be an integral part of an internal combusion engine or it may be driven by another engine in order to compress gases or pump fluids.

### 3,477,415
### ROTARY PISTON ENGINE

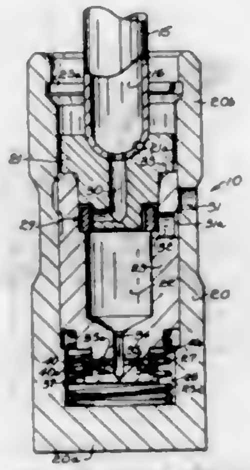
**Hans Wyssbrod, 10 Fuchsenriedweg,**
**2500 Biel, Bern, Switzerland**
**Filed Feb. 21, 1967, Ser. No. 617,572**
**Claims priority, application Switzerland, Feb. 23, 1966, 2,714/66**
**Int. Cl. F02b** *57/00*
**U.S. Cl. 123—44** **4 Claims**

A rotary-piston engine in which the crankshaft is journaled at one end in a cylinder housing and is coupled by a planetary gear at its other end with the housing such that the crankshaft rotates at twice the speed of the housing in the same sense. The planetary gear arrangement includes a fixed sun gear, a rotatable sun gear connected with the crankshaft and a pair of planetary gears on a planetary cage connected with the housing, the cage also being provided with another gear adapted to be driven by the starting motor. A stub on the housing remote from the planetary gears extends into a support shaft wherein it drives the magneto and is used to supply the cylinders with the explosive mixture.



### 3,477,416
### HYDRAULIC LIFTER

**Gerald D. Line, Saginaw, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Sept. 27, 1967, Ser. No. 670,976**
**Int. Cl. F01l** *1/24;* **F16k** *15/00, 21/04*
**U.S. Cl. 123—90** **2 Claims**

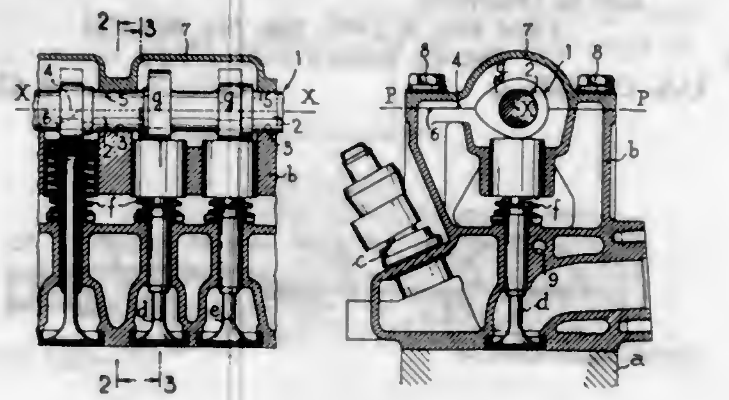


A check valve is provided in a hydraulic lifter. The hydraulic valve lifter includes a body member having a plunger member therein. The check valve cooperates with the lower portion of the plunger member to control the flow of fluid from a fluid reservoir defined at least in part by the plunger member to a pressure chamber disposed between the lower portion of the plunger member and the body member. The check valve means comprises a resilient member which encircles the lower portion of the plunger member and yields in response to the application of fluid pressure thereon to control the flow of fluid from the fluid reservoir into the pressure chamber.

### 3,477,417
### CAMSHAFT IN A HEAT ENGINE OR COMPRESSOR AND THE MACHINE RESULTING THEREFROM

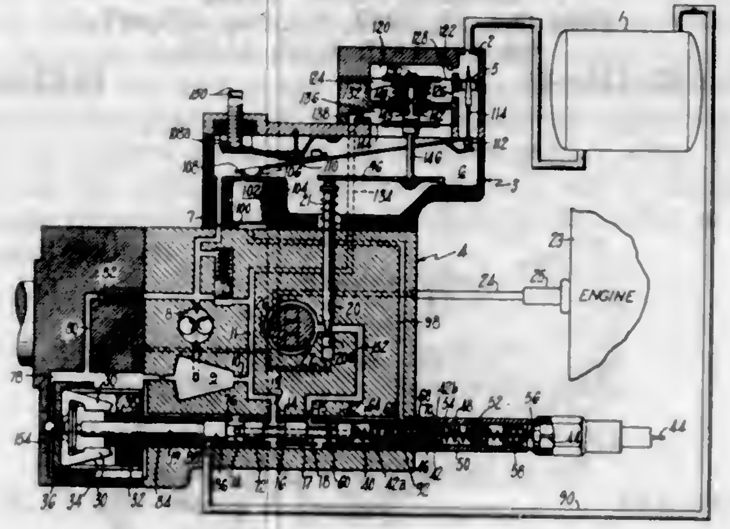
**Jean Moulin, Chatou, France, assignor to Automobiles Peugeot, Paris, France, a French body corporate, and Regie Nationale des Usines Renault, Billancourt, France, a French body corporate**
**Filed Nov. 22, 1967, Ser. No. 684,986**
**Claims priority, application France, Dec. 15, 1966, 87,521**
**Int. Cl. F01l** *1/00;* **F02f** *11/00;* **F01m** *11/02*
**U.S. Cl. 123—90** **1 Claim**

An arrangement for a camshaft of the overhead type for a machine constituting an engine or compressor, wherein the camshaft is journalled in semi-cylindrical bearing portions provided directly and respectively in the cylinder head and in a rigid cover attached to the cylinder head, the joint plane between the cylinder head and the cover intersecting the axis of the camshaft.



### 3,477,418
### FUEL SUPPLY SYSTEM

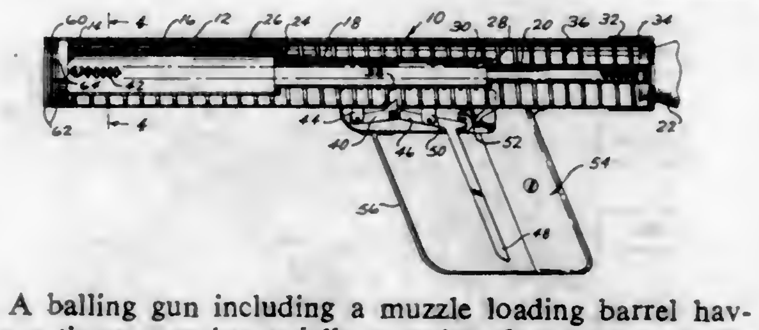
**Vernon D. Roosa, West Hartford, Conn. (% Hartford Machine Screw Company, P.O. Box 1440, Hartford, Conn. 06102)**
**Filed Nov. 20, 1967, Ser. No. 684,137**
**Int. Cl. F02d** *31/00, 35/00;* **F04b** *49/00*
**U.S. Cl. 123—140** **26 Claims**



A fuel supply system for an internal combustion engine which includes a torque limiting valve in series with and actuated independently of a governor controlled metering valve. The torque limiting valve is inactive except when, at a given engine speed, the flow of fuel to the engine reaches a preselected level which varies with the throttle setting and initiates the operation of a servomotor to close the torque limiting valve. The fuel to the engine flows through a variable control orifice which includes a movable needle valve to vary the effective size of the control orifice with engine speed. A speed related control pressure, which operates through a piston and lever to move the needle valve, is developed in a chamber of the governor assembly wherein an axially shiftable ported governor spring seat cooperates with a hand throttle control rod to provide a variable spill port for the control pressure so that it varies with axial force of a centrifugal governor on the metering valve. An adjustable variable rate spring opposes the control pressure in adjusting the control needle. Adjustable manifold temperature and pressure compensators may be incorporated.

### 3,477,419
### BALLING GUNS FOR ANIMALS

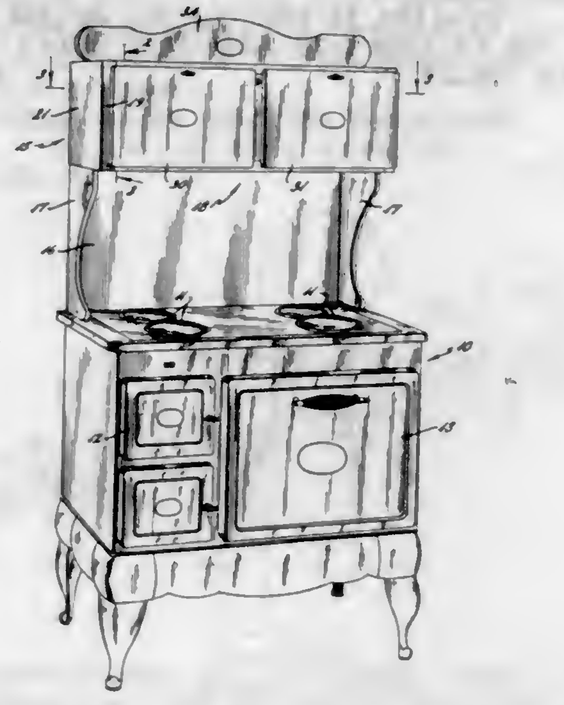
**Edward Caetano, 20416 Arline St.,**
**Lakewood, Calif. 90715**
**Filed Feb. 26, 1965, Ser. No. 435,594**
**Int. Cl. F41b** *7/00;* **F41c** *19/00;* **F41d** *11/02*
**U.S. Cl. 124—27** **3 Claims**



A balling gun including a muzzle loading barrel having a thrust member axially movable therein. An axially telescopable retraction means connected to the thrust member and including a cocking handle movable rearwardly to telescope the retraction means to a retracted position. A bias means interposed between the thrust member and the rear of the gun for urging the thrust member forwardly to discharge material, deposited in the barrel, out the muzzle. Trigger means is provided for holding the thrust member in its retracted position.

### 3,477,420
### HIGH CLOSET RANGE HOOD

**James Leonard Raulston, 800 Holly Ave., and Stephen L. Rogers, Jr., 400 Magnolia Ave., both of South Pittsburgh, Tenn. 37380**
**Filed Mar. 5, 1968, Ser. No. 710,469**
**Int. Cl. F24c** *15/20;* **F23j** *11/00*
**U.S. Cl. 126—299** **5 Claims**

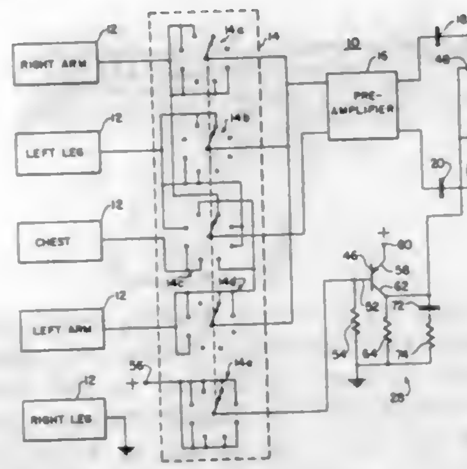


Apparatus located above a stove including a housing divided into multiple compartments with at least certain of the compartments having heating means for keeping food at a warm, palatable temperature.

### 3,477,421
### CARDIAC AMPLIFIER SYSTEM WITH FAST SWITCHING

**Leslie W. Partridge, Janesville, Wis., assignor to The Burdick Corporation, Milton, Wis., a corporation of Delaware**
**Filed Jan. 11, 1967, Ser. No. 608,546**
**Int. Cl. A61b** *5/04;* **H01f** *7/08*
**U.S. Cl. 128—2.06** **2 Claims**

A cardiac amplifier system with several patient electrodes includes a push-pull amplifier with a capacitor-coupled input and a switch for selecting different input combinations. A pair of transistors short circuit the amplifier input and the coupling capacitors when the selector switch is operated to prevent application of undesirable transients to the amplifier, and to allow the capacitors to discharge. The transistors are controlled by a non-shorting wiper of the selector switch engageable with fixed contacts to which a control voltage is applied.



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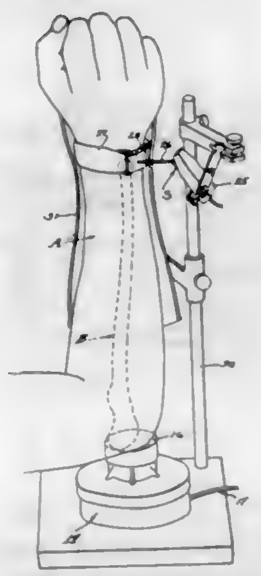
### 3,477,422
### VIBRATORY BONE DENSITY DETERMINATION METHOD AND APPARATUS

**John M. Jurist, Jr., Canoga Park, Calif. (2016 Westbrook Lane, Madison, Wis. 53711), and Wilbur A. Selle, Los Angeles, Calif. (4545 Perham Road, Corona Del Mar, Calif. 92625)**

**Filed Oct. 15, 1965, Ser. No. 496,336**
**Int. Cl. A61b** *5/10;* **A61h** *1/00;* **A61n** *1/32*
**U.S. Cl. 128—2** **14 Claims**



This disclosure relates to a diagnostic method and apparatus for determining the density of skeletal elements, namely bones, in vivo; the method comprising the steps of externally imposing vibratory motion into one end of the bone, varying the frequency of said motion and then detecting maximum resonance at the other end of the bone; the apparatus comprising spaced vibration generating and pick up means, the latter being juxtapositioned laterally of the bone in vivo and having a postlike sensing element adapted to detect both longitudinal and transverse modes of vibration in said bone, all in the presence of intact body tissues surrounding said bone.

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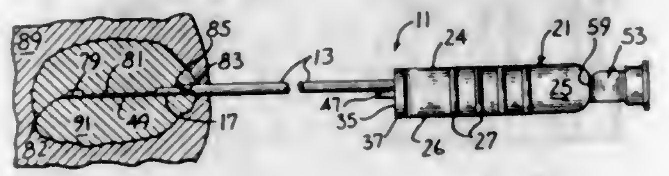
### 3,477,423
### BIOPSY INSTRUMENT

**Llonell K. Griffith, Chicago, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware**

**Filed Jan. 9, 1967, Ser. No. 608,014**
**Int. Cl. A61b** *10/00, 17/34*
**U.S. Cl. 128—2** **8 Claims**



An elongated obturator has a forward tissue piercing end portion with an adjacent tissue receiving pocket and is limitedly relatively reciprocative into and out of the front end of a tubular sheath with a pointed tissue severing forward end to isolate a tissue specimen in said pocket. The point of the tissue piercing end portion and the point on the sheath are secured 180° apart by guide means defining the path of relative reciprocation and the wall defining the tissue severing forward end is sloped for smooth flow of tissue about the instrument upon its penetration with said pocket closed.

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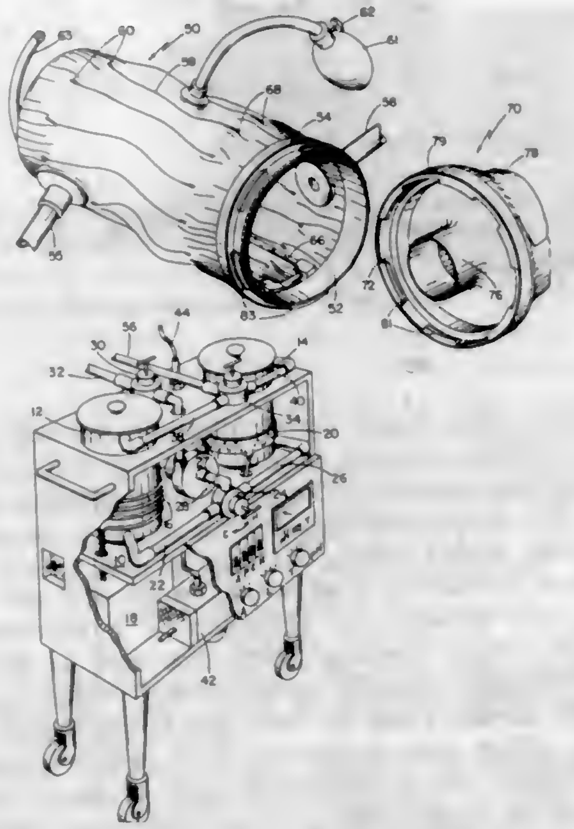
### 3,477,424
### MOBILE HYDROTHERAPY EQUIPMENT

**Thomas H. Tracy, 30 Cross St., Gardner, Mass. 01440**

**Filed Oct. 31, 1967, Ser. No. 679,407**
**Int. Cl. A61h** *9/00, 33/06*
**U.S. Cl. 128—66** **10 Claims**



Bed-side hydrotherapy equipment includes a mobile cabinet having separate sources of cold and hot liquid, and a remote portable sleeve compartment having transparent flexible film walls and associated inflatable bladder means for expanding the compartment walls to maintain the internal volume of the compartment around a body member inserted and sealed water-tight in the compartment, together with connecting conduits with associated valves so that liquid may be circulated through the compartment selectively from and to either of the sources. Aeration is provided to the compartment in cross flow relation to the liquid flow through the compartment to provide whirlpool effects.

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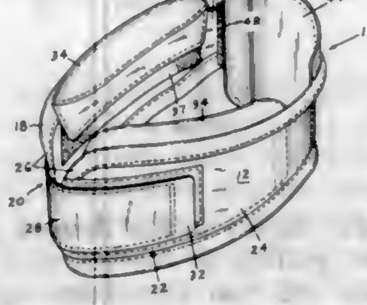
### 3,477,425
### SUPPORT COLLAR

**Simmon Grassl, Mount Peter Estate, Warwick, N.Y. 10990**

**Filed Apr. 21, 1966, Ser. No. 544,288**
**Int. Cl. A61h** *1/02;* **A61f** *5/37*
**U.S. Cl. 128—75** **6 Claims**



The disclosure relates to a support collar for wearing by a user around the neck of the user and comprises an individual longitudinally flexible transversely rigid collar, said collar being opened at its front, a padding provided at the upper and lower edges of said collar, support pads releasably attached to the inner surface of the collar for cradling the jawbone of the user between the upper edge of the support collar and the support pads, a strap for closing the collar from the front thereof, and a locking means disposed on said strap for locking said collar in a closed position.

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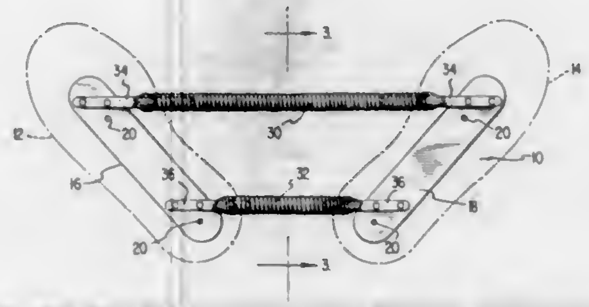
### 3,477,426
### CLUBFOOT SPLINT

**Joseph J. Wincheski, 1606 Gridley Lane, Silver Spring, Md. 20902**

**Filed Nov. 30, 1966, Ser. No. 597,926**
**Int. Cl. A61f** *5/00;* **A63b** *21/02*
**U.S. Cl. 128—80** **18 Claims**



A clubfoot splint including two plate mounting members adapted to be fixed to the shoes of a user, and a pair of tightly wound coil springs interconnecting the mounting members to normally hold them in laterally spaced coplanar position against movement in the same plane while permitting relative movement of the mounting members about an axis transverse to the coil springs to allow the user to move his feet vertically relative to each other thereby providing flexibility in the ankles and knees.

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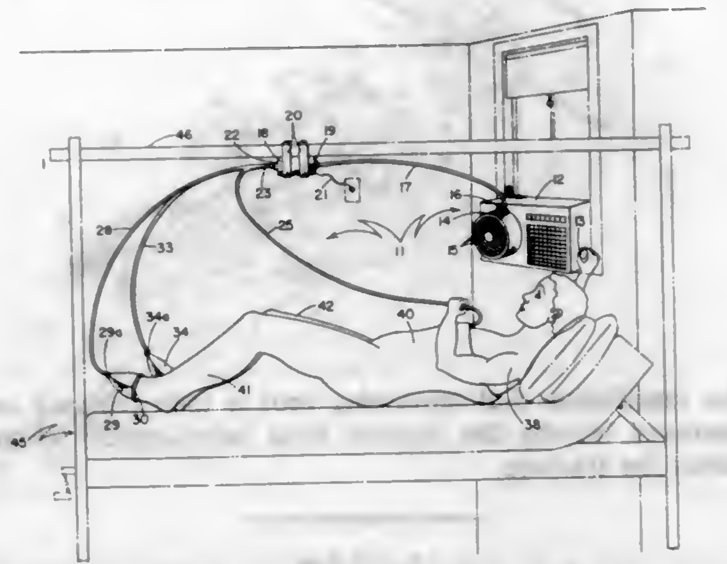
### 3,477,427
### CAST COOLER

**Roy Lapidus, 18 Dorr Road, Newton, Mass. 02158**

**Filed Sept. 27, 1967, Ser. No. 670,864**
**Int. Cl. A61f** *7/00;* **A61h** *33/06*
**U.S. Cl. 128—82.1** **7 Claims**



A method and apparatus for preventing skin shriveling and infection among patients having casts on portions of their body, comprising forcing a current of cool, low-humidity air between the cast and the body area enclosed by it.

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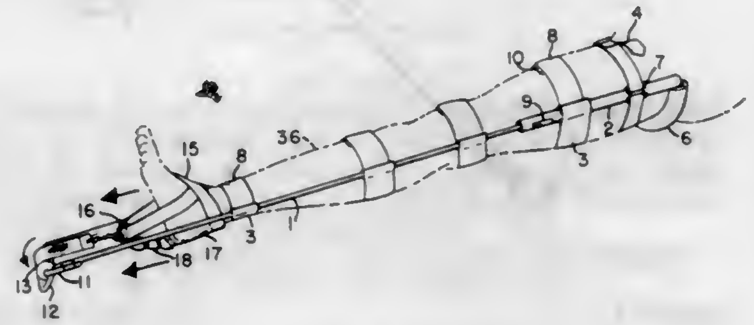
### 3,477,428
### COMBINED SPLINT AND TRACTION DEVICE

**Glenn F. Hare, San Diego, Calif., assignor, by mesne assignments, to Dyna-Med, Inc., San Diego, Calif., a corporation of California**

**Filed June 29, 1967, Ser. No. 649,907**
**Int. Cl. A61f** *5/04;* **A61h** *1/02*
**U.S. Cl. 128—85** **6 Claims**



An improved splint and leg traction means with a ratchet arrangement for applying and maintaining traction on a fractured leg including a member for retaining the foot in a supported position and novel transverse splint straps.

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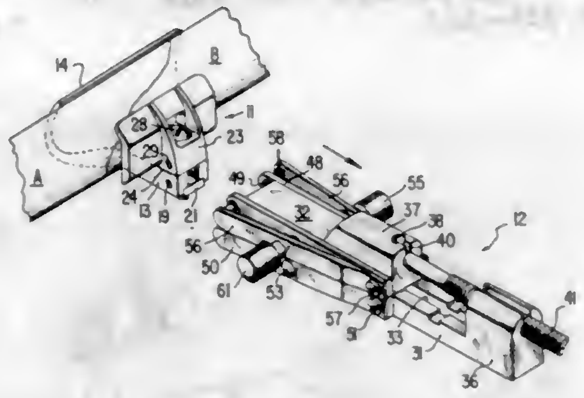
### 3,477,429
### EXTRA-CORTICAL CLAMP WITH DETACHABLE TENSIONING TOOL FOR INTERNAL FIXATION OF BONE FRACTURES

**Arnold Sampson, Pittsburgh, Pa., assignor to The Sampson Corporation**

**Filed June 30, 1967, Ser. No. 650,348**
**Int. Cl. A61b** *17/00;* **A61f** *5/04*
**U.S. Cl. 128—92** **12 Claims**

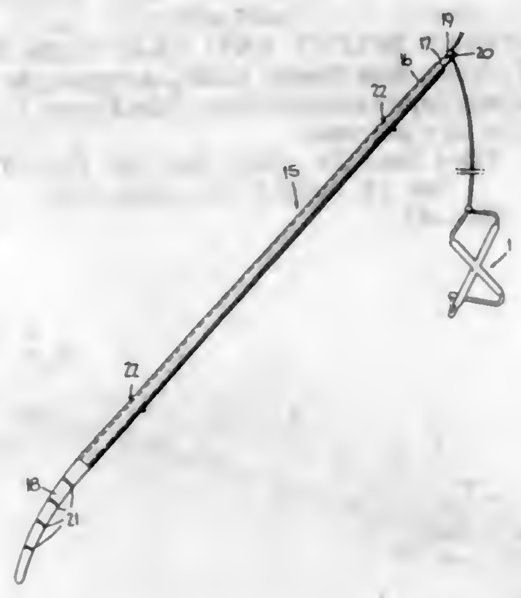
A clamp for internal fixation of bone fractures including a two-jaw implant head and an installation and tensioning tool adapted to be secured to the implant head during reduction and internal fixation of the fracture.

Power means on the tool causes movement of the implant head jaws with respect to each other. Locking means on the implant head retains the positioning of the jaws and the installation and tensioning tool is then released and removed leaving the implant head permanently secured about the fracture.



## 3,477,430
## INTRAUTERINE DEVICE, INSERTING MECHANISM THEREFOR AND METHOD OF INSERTING SAME

**Michael Seth Burnhill, Brooklyn, N.Y., assignor, by mesne assignments, to American Caduceus Industries, Inc., New York, N.Y., a corporation of Delaware**
**Filed May 13, 1966, Ser. No. 549,837**
**Int. Cl. A61f** *5/46*
**U.S. Cl. 128—130** **11 Claims**

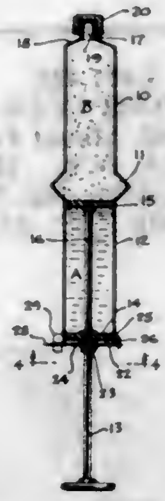


A tool for inserting an intrauterine device having a tail. The tool has a plunger which is provided with a tail grasping slit which permits the intrauterine device to be withdrawn within an outer sleeve surrounding the tool plunger.

## 3,477,431
## COMBINED MIXING SYRINGE AND CONTAINER

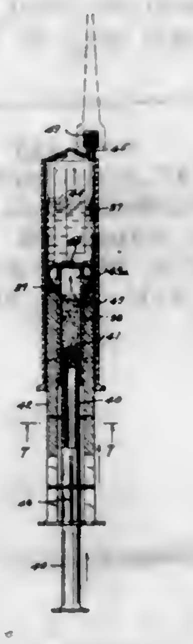
**Leonard Edward Walecka, Lake Bluff, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois**
**Filed Feb. 3, 1967, Ser. No. 613,774**
**Int. Cl. A61j** *1/00;* **A61m** *5/18*
**U.S. Cl. 128—218** **4 Claims**

A combined syringe and plural-compartment container for storing solid and liquid ingredients separately for subsequent mixing and injection. The syringe barrel includes an enlarged portion around its periphery at about the center of its longitudinal dimension, and together with the syringe pistons forms a plural-compartment container. When two pistons are used, one of the pistons is positioned immediately adjacent to the enlarged portion of the syringe barrel and the other seals off the open end of the barrel, thus forming two compartments, each of which may contain a different ingredient. By depressing the syringe plunger slightly so that the one piston extends into the enlarged portion of the barrel, a flow path is provided whereby the two ingredients can mix. Lock means are also provided in order to prevent accidental displacement of the plunger during transport and storage.



## 3,477,432
## COMBINATION MIXING AND INJECTING MEDICAL SYRINGE

**Joseph Denman Shaw, 1944 E. 123rd St., Cleveland, Ohio 44106**
**Continuation of application Ser. No. 384,148, Sept. 21, 1964. This application Aug. 24, 1967, Ser. No. 663,167**
**Int. Cl. A61m** *5/00;* **A61j** *1/00*
**U.S. Cl. 128—218** **5 Claims**

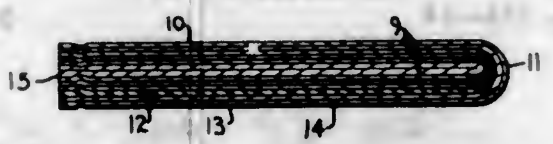


A combined mixing and injecting syringe has an outer barrel to contain a first ingredient and provided with an injection outlet, has an inner barrel slidable in a sealed manner longitudinally of the outer barrel for containing a second ingredient, and has a plunger slidable in a sealed manner longitudinally of the inner barrel. The inner barrel has a discharge opening communicating with the hollow of the outer barrel and providing a fully open outlet from the inner barrel normally closed by a full size plug which is of less diameter than the outer barrel so as to clear the discharge opening for free exit of a dispensable solid ingredient from the inner barrel to

mix with the first ingredient in the outer barrel, after which the mixture may be injected by relative movement of the two barrels. Various expedients are used to cause opening movement of the plug.

## 3,477,433
## SANITARY NAPKIN

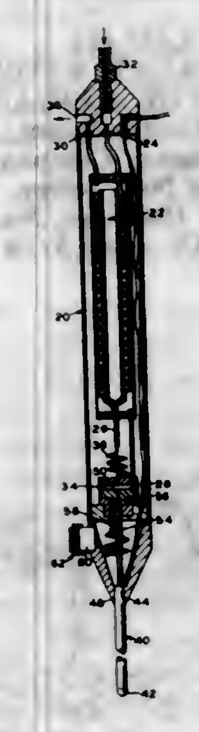
**Rosemary A. Dillon, 9622 Mohawk Drive, Shawnee Mission, Kans. 66206**
**Filed Dec. 23, 1966, Ser. No. 604,311**
**Int. Cl. A61f** *13/20;* **A61m** *15/00*
**U.S. Cl. 128—290** **4 Claims**



A very thin sanitary napkin particularly designed for very light flow periods is formed of a plurality of absorbent tissue paper sheets with a liquid impervious sheet therebeneath. A bottom sheet of tissue paper lies beneath the impervious sheet, presenting substantial surface friction, and thereby avoids unwanted relative movement of the napkin with respect to the underclothes of the wearer.

## 3,477,434
## CRYOSURGICAL APPARATUS

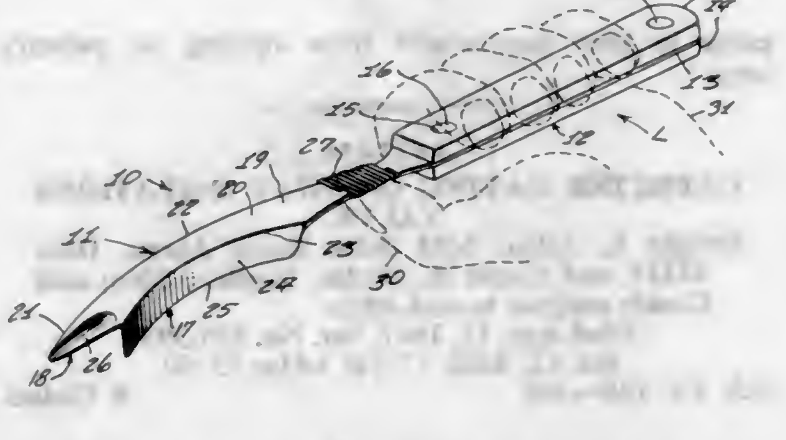
**Charles B. Hood, Jr., and Ira W. Simons, Columbus, Ohio, assignors to CVI Corporation, a corporation of Ohio**
**Continuation-in-part of application Ser. No. 441,687, Mar. 22, 1965. This application June 2, 1965, Ser. No. 460,751**
**Int. Cl. A61b** *17/36;* **A61f** *7/12*
**U.S. Cl. 128—303.1** **18 Claims**



A cryosurgical apparatus characterized by a housing means adapted for manual manipulation by a surgeon, and a probe portion provided with a cold tip. The apparatus further includes a miniature cryogenic heat exchanger including a warmer path extending axially within said handle portion for conducting a flow of refrigerant to said cold tip and a colder path for conducting a counter flow of said refrigerant in heat exchange relationship with said first path. The apparatus is further characterized by flow control valve means for the refrigerant for controlling the temperature of the cold tip, and heating means at the cold tip for rapidly raising the temperature thereof.

## 3,477,435
## TONGUE CLEANER

**Mario Artelli, Rapallo, Italy (% SS Oceanic, 42 Broadway, New York, N.Y. 10004)**
**Filed Dec. 19, 1966, Ser. No. 602,955**
**Int. Cl. A61b** *17/24;* **B26b** *9/02*
**U.S. Cl. 128—304** **2 Claims**



A tongue scraper formed of a metal blade like member having one end formed to fit between opposed wood parts all secured together to provide a handle with the blade like member extending forwardly of the handle which latter is shaped to be grasped in the hand of a user of the device. The blade like member projecting from the handle is arcuately shaped to form a flat arcuate top portion and a depending arcuate flange perpendicular thereto the lower edge of the flange forming a transverse tongue scraping blade. The forward terminal end or tip portion of the top portion is tapered and downwardly depressed at its center to provide a scraper for use at the base of the tongue. Adjacent to the forward portion of the handle the blade like member is provided with a tightly wound wire secured to the blade to provide a non-slipping surface that is engaged by the thumb of the hand. The blade member may be arcuately shaped such as to be usable in one form by a right hand person and in another form by a left hand person.

## 3,477,436
## METHOD OF ACCELERATING WOUND HEALING BY USE OF INTERACTING METALLIC SUTURES

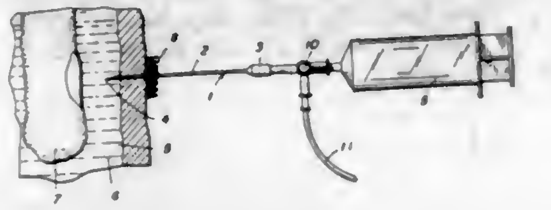
**Philip N. Sawyer, Brooklyn, N.Y., assignor, by mesne assignments, to Research Corporation, New York, N.Y., a New York non-profit corporation**
**No Drawing. Filed Mar. 11, 1966, Ser. No. 533,451**
**Int. Cl. A61l** *17/00;* **A61b** *17/08*
**U.S. Cl. 128—335.5** **3 Claims**

A wound closure method is disclosed in which the wound is closed by an aluminum suture which reacts with the tissues to accelerate healing. The acceleration of healing is particularly enhanced in the case of contralateral incisions by utilizing an aluminum suture wire to close one of the incisons and a second suture wire of stainless steel or other material different from aluminum for closing the contralateral incision.

## 3,477,437
## THORACENTESIS APPARATUS

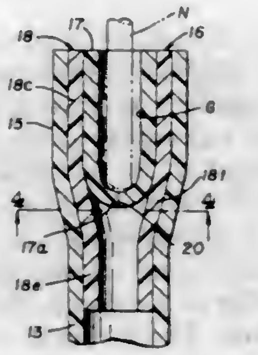
**Allan M. Goldberg, Sepulveda, Calif., assignor, by mesne assignments, to American Hospital Supply Corporation, a corporation of Illinois**
**Filed June 30, 1967, Ser. No. 650,370**
**Int. Cl. A61b** *17/34;* **A61m** *25/00*
**U.S. Cl. 128—347** **7 Claims**

Thoracentesis apparatus for removing liquid from a patient's lung cavity, which apparatus has a hypodermic needle connected through a three-way valve to a hypodermic syringe. An open wound metal coil spring grips to a smooth outer surface of the needle's cannula and longitudinally adjusts along the cannula to form a depth gauge to keep the cannula from injuring the patient's lung.



### 3,477,438
### CATHETER HAVING ONE-WAY INFLATIONS VALVE

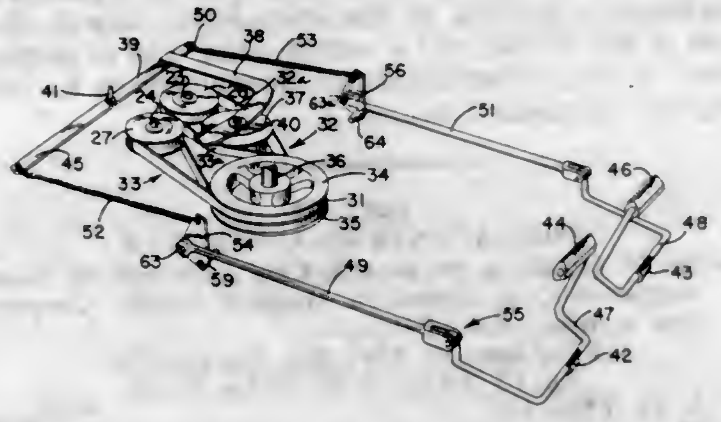
**Dwight L. Allen, 2495 Brice Road, Akron, Ohio 44313, and Glenn H. Grable, Medina, Ohio; said Grable assignor to said Allen**
**Filed Apr. 17, 1967, Ser. No. 631,395**
**Int. Cl. A61b** *17/34;* **A61m** *25/00*
**U.S. Cl. 128—349** **8 Claims**



Valve means and method for inflating or deflating retention balloons of a Foley-type surgical catheter, without necessarily using a hypodermic needle, employing a novel plug affixed in a side-arm of the catheter. Plug has an integral normally closed self-sealing apertured inner end portion having a guide passage therethrough. The end portion is yieldingly distended either by direct inward engagement thereof by a blunt end on a syringe nozzle or by fluid pressure exerted against the end wall, to provide a substantial opening for quick passage of fluid therethrough.

### 3,477,439
### RIDING MOWER WITH FORWARD AND REVERSE BELT DRIVE

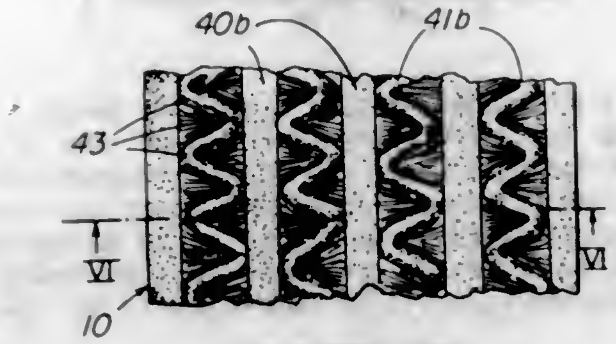
**George J. Hamouz, Clarendon Hills, and James W. Zurek, Berkeley, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware**
**Filed Mar. 20, 1968, Ser. No. 714,698**
**Int. Cl. B60k** *17/00;* **F16h** *9/00*
**U.S. Cl. 180—70** **9 Claims**



A self-propelled riding lawn mower having lawn cutting means, power means, and a control system for determining the direction of travel of the mower. The control system includes a pair of pedals, a forward belt drive, a reverse belt drive, and an idler pulley movable to selectively engage the forward or reverse belt drives in response to actuation of the pedals.

### 3,477,440
### RECONSTITUTED TOBACCO SHEET

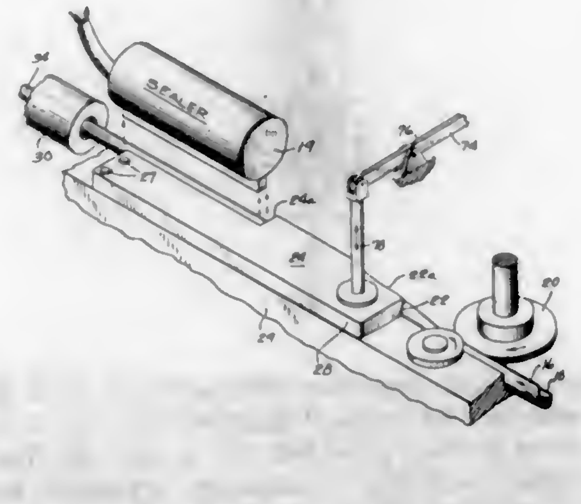
**Osvalds F. Licis, Richmond, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia**
**Original application Sept. 1, 1966, Ser. No. 576,676, now Patent No. 3,431,915, dated Mar. 11, 1969. Divided and this application Mar. 11, 1968, Ser. No. 739,571**
**Int. Cl. A24b** *3/14*
**U.S. Cl. 131—14** **2 Claims**



Reconstituted tobacco shreds having an increased filling power are made from reconstituted tobacco sheet material which has been fed between coacting rollers so as to result in spaced longitudinal bands of uniform thickness with intervening creped areas, the latter manifesting disproportionate internal stress valves. Shreds made from the sheet will tend to curl and kink thus increasing the bulk density of the filler.

### 3,477,441
### AIR ACTUATED APPARATUS FOR CONTROLLING THE DIAMETER OF A CIGARETTE ROD

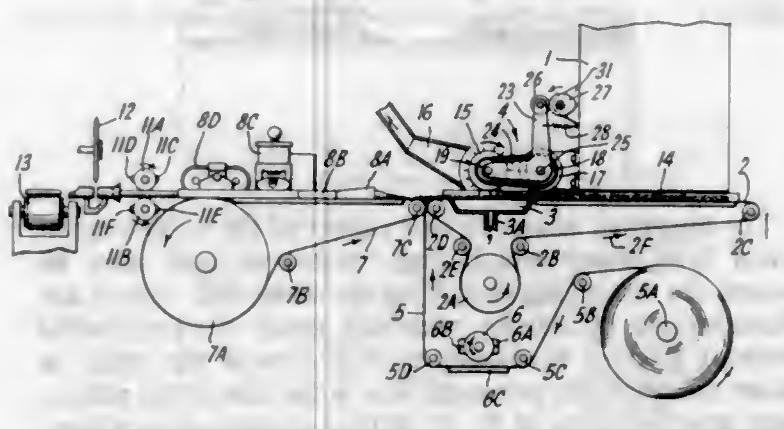
**Colin S. McArthur, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a corporation of New Jersey**
**Filed May 31, 1968, Ser. No. 733,390**
**Int. Cl. A24c** *5/18*
**U.S. Cl. 131—21** **7 Claims**



An apparatus for monitoring and controlling rod diameter in a cigarette or filter rod machine by pneumatically measuring rod diameter as it is formed, amplifying and mechanically applying the pneumatic measurement to adjustably raise or lower the folder block and thereby vary rod diameter. A fluid actuated mechanism is mechanically connected to the folder block and is also connected to the amplifier. The fluid actuated mechanism mechanically effects the vertical adjustment of the folder block in response to the imbalances in an air bridge monitor of the rod diameter.

### 3,477,442
### HIGH SPEED CIGAR BUNCH MACHINE

**Harry Allison Hooper, Larchmont, N.Y., assignor to American Machine & Foundry Company, a corporation of New Jersey**
**Filed Nov. 23, 1964, Ser. No. 413,028**
**Int. Cl. A24c** *1/00*
**U.S. Cl. 131—61** **10 Claims**



A machine for manufacturing cigars comprising means for trimming a moving stream of tobacco filler to modify a contour periodically at regular intervals, enveloping the stream so shaped in a web of reconstituted tobacco and crimping the stream at positions of modified contour to form cigar bunches.

### 3,477,443
### METHOD OF IMPARTING FLAVOR TO SMOKING TOBACCOS

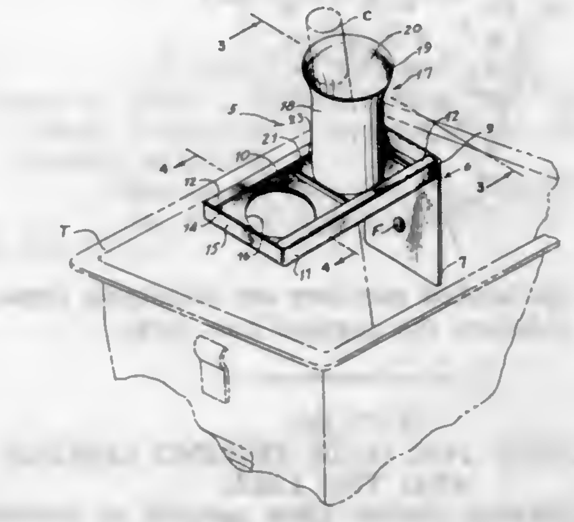
**Masakazu Yamada and Hayashi Komoda, Tokyo-to, Japan, assignors to Nisshin Sangyo Kabushiki Kaisha, Tokyo-to, Japan, and Masakazu Yamada & Hayashi Komoda, a joint-stock company of Japan**
**No Drawing. Filed Apr. 27, 1967, Ser. No. 634,088**
**Claims priority, application Japan, Apr. 28, 1966, 41/26,923**
**Int. Cl. A24b** *3/12, 15/00*
**U.S. Cl. 131—144** **6 Claims**

Tobacco products, such as cigars and the like, are flavored by spraying the tobacco products with liquid flavor components obtained by separation from the fermentation gas evolved during manufacture of alcoholic beverages, this fermentation gas comprising a large amount of carbon dioxide plus the flavor components. Separation of the flavor components is effected by bubbling the fermentation gas through a solvent for the flavor components, maintained at a temperature below the temperature of the fermentation gas, or by condensing the fermentation gas at a temperature below the liquefying temperature of the flavor components but above the liquefying temperature of the carbon dioxide.

### 3,477,444
### COMBINED CIGARETTE RECEIVER, EXTINGUISHER AND DISCARDER

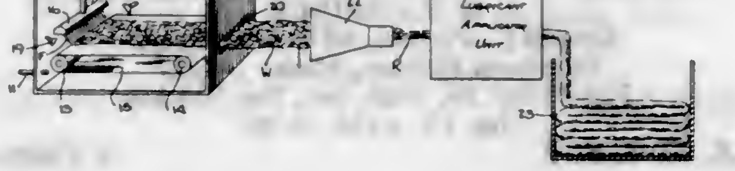
**Elizabeth F. Adams, 142 High St., and Anthony W. du Pont, Jr., 81 Oliver St., both of Bristol, R.I. 02811**
**Filed Oct. 24, 1967, Ser. No. 677,561**
**Int. Cl. A24f** *13/18*
**U.S. Cl. 131—235** **2 Claims**

A combined multi-purpose cigarette receiver, extinguisher and discarder for use in conjunction with the ash trays of automobiles and other vehicles, for use alone if desired, in the office and home, and for other purposes, the invention including a supporting bracket with a confining track and orifice in the track, assembled with a tube-like cigarette holder and extinguisher, open at both ends, having a squared base plate cooperating with and movable in the track, the latter serving as a snuffer when in one position in the track, and as a discarder of the cigarette butt and debris when in another position at the outer end of the track with the bottom opening of the tube registering with the opening of the track.



### 3,477,445
### NON-WOVEN CIGARETTE FILTER ROD

**Billy Ray Price, Pensacola, Fla., Richard Ernest St. Pierre, Charlotte, N.C., and Neil E. Lloyd, Rock Hill, S.C., assignors to Celanese Corporation, a corporation of Delaware**
**Original application May 15, 1962, Ser. No. 194,778, now Patent No. 3,232,268, dated Feb. 1, 1966. Divided and this application Oct. 12, 1965, Ser. No. 508,409**
**Int. Cl. A24f** *7/04, 13/02;* **B01d** *27/00*
**U.S. Cl. 131—267** **1 Claim**

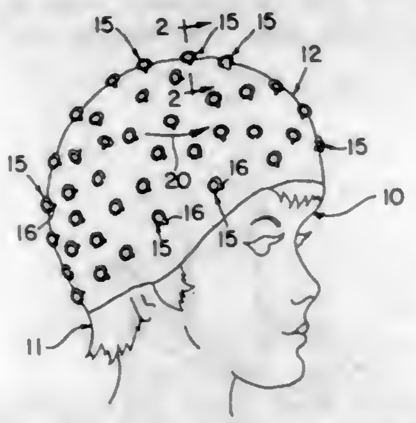


A non-woven cigarette filter rod having its peripheral surface free of wrinkles or dimples comprising a mass of synthetic continuous filaments wandering randomly throughout the structure in a multiplicity of directions and including numerous irregular crimp, bends and entanglements, said synthetic filaments having a lubricant applied thereto substantially immediately after formation.

### 3,477,446
### HAIR-TREATING METHOD AND APPARATUS

**Gabriel J. Terrenzio, 158 York Road, and Margaret Westbrook, 411 Maple Ave., both of Warminster, Pa. 18974**
**Filed Mar. 22, 1967, Ser. No. 625,252**
**Int. Cl. A45d** *7/00*
**U.S. Cl. 132—7** **6 Claims**

The instant invention embraces a novel apparatus and method wherein an elastic cap having a plurality of hooked members extending therethrough is applied to a subject's hair to engage the hooked members with locks of hair, after which the hooked members are withdrawn through the cap to withdraw the engaged hair locks.



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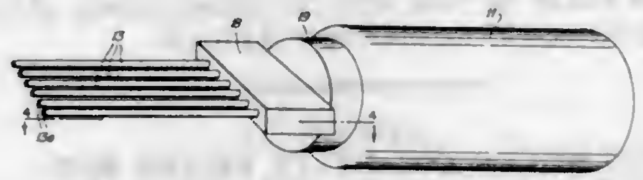
**3,477,447**

### APPLICATOR FOR HAIR TINTING LIQUIDS AND THE LIKE

**Gladys C. Eldredge, Ogden, Utah, assignor of one-third each to Glenn S. Eldredge, Vernon D. Eldredge, and Joseph U. Eldredge, all of Ogden, Utah**
**Filed Jan. 5, 1968, Ser. No. 696,029**
**Int. Cl. A45d** *19/16, 24/22*
**U.S. Cl. 132—9** **8 Claims**



An applicator for depositing and distributing various liquids on the scalp at the base of the hair. A screw cap, adapted for attachment to a plastic bottle, is fitted with a distributor head carrying a plurality of stiffly flexible liquid-supply nozzles. Liquid is fed to the nozzles adapted to conform at their tips to scalp contour through a manifold passage which is located in the distributor head and which communicates with the bottle through the screw cap.

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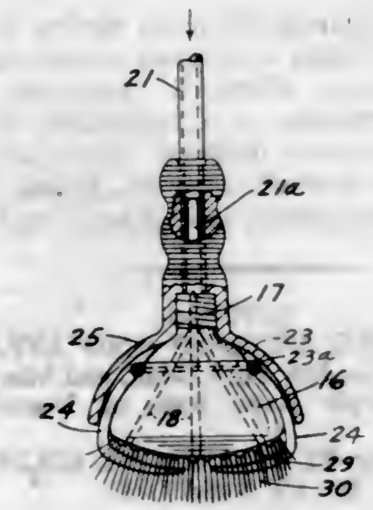
**3,477,448**

### DEVICE FOR CLEANING AND SETTING A HAIRPIECE

**Gerald C. Peruski, 6472 Kingsbury,**
**Dearborn Heights, Mich. 48127**
**Filed Mar. 26, 1968, Ser. No. 716,120**
**Int. Cl. A45d** *19/00*
**U.S. Cl. 132—9** **6 Claims**



This application discloses a device for holding a hairpiece for cleaning and setting. The invention resides in the provision of a perforated base member on which the hairpiece is mounted, means for holding the hairpiece in position, and means for introducing water or shampoo materials to the hairpiece through the base.

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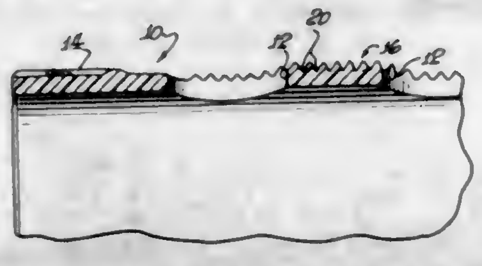
**3,477,449**

### HAIR ROLLERS

**Kenneth Reiner, 7875 Telegraph Road,**
**Pico Rivera, Calif. 90660**
**Filed Sept. 2, 1965, Ser. No. 484,524**
**Int. Cl. A45d** *2/00*
**U.S. Cl. 132—40** **10 Claims**



The invention relates to hair rollers of the hollow cylindrical type about which long tresses of hair may be wound for imparting a curl to the hair. The rollers are characterized by having relatively small circumferential external grooves extending entirely around the roller in planes substantially perpendicular to the axis of the rollers, such grooves being of V, or similar configuration whereby successive layers of hair rolled about such rollers cause the lowermost strand in each groove to be forced into the thinnest portion of the groove and mechanically held therein. Webs may be provided across and within the grooves, at spaced intervals along their length, to increase the frictional drag forces acting on the hair strands.

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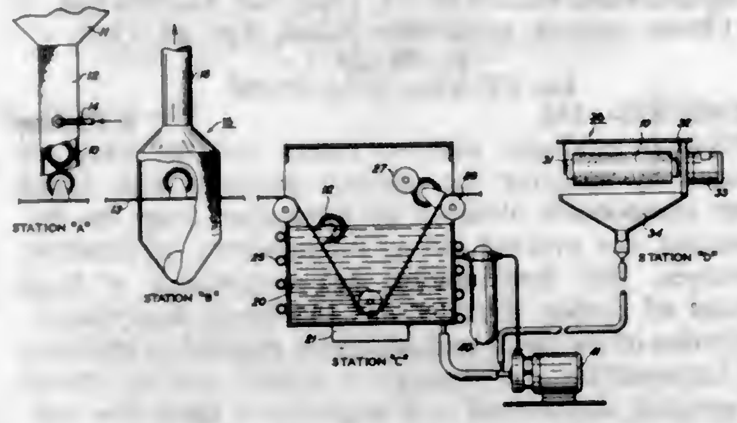
**3,477,450**

### BRUSH RECLAIMING

**Lloyd F. Berardi and Michael A. Panetta, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York**
**Filed Dec. 30, 1966, Ser. No. 606,306**
**Int. Cl. B08b** *3/10*
**U.S. Cl. 134—1** **5 Claims**



A method for cleaning soils from a cleaning brush without damaging the brush hair fibers or the brush support material. The brush is scrubbed in a solvent bath by ultrasonic waves and then rapidly dried with the hair fibers in a natural extended posture.

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**3,477,451**

### REMOVAL OF DEPOSITS FROM PROCESS VESSELS

**Theodore E. Majewski, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**No Drawing. Filed Aug. 30, 1967, Ser. No. 664,274**
**Int. Cl. C23g** *5/02;* **B08b** *9/02*
**U.S. Cl. 134—22** **11 Claims**

The method concerns removing or cleaning carbonaceous deposits from process vessels fouled therewith used in the manufacture of styrene monomers, conjugated diene monomers, alpha-monoolefin monomers or styrene-butadiene rubbers by contacting the deposits with a $C_5$–$C_{12}$ alkyl-substituted phenol or a halo-substituted phenol, or mixture thereof at temperatures between about 300° and 575° F.

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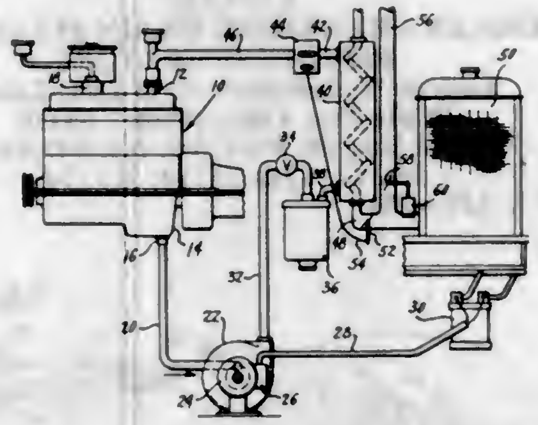
**3,477,452**

### APPARATUS FOR CIRCULATING HEATED CLEANING SOLVENT THROUGH ENGINES

**Ahmed Mohamed, 6549 Landis Ave.,**
**Carmichael, Calif. 95608**
**Filed Feb. 21, 1967, Ser. No. 617,531**
**Int. Cl. B08b** *3/00, 9/06*
**U.S. Cl. 134—57** **1 Claim**



This disclosure relates to a recirculation system including a pump, a filter and a heat exchanger for heating and circulating cleaning solvent through vehicle engines and, more particularly, discloses a heat exchanger in which the heat from the exhaust of an auxiliary engine which is used to rotate the engine being cleaned during the cleaning operation is used to preheat the cleaning solvent prior to passing the solvent through the engine to be cleaned.

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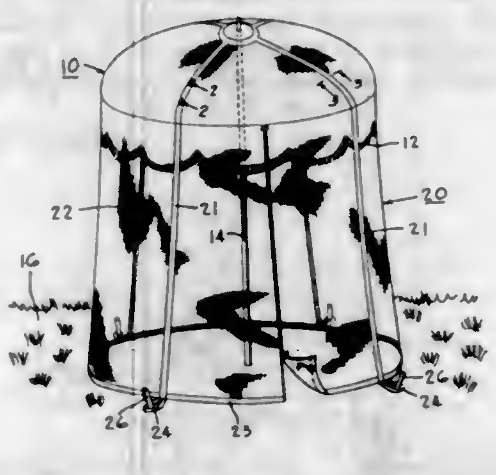
**3,477,453**

### NET ADAPTOR FOR CONVERTING UMBRELLA TO SHELTER FROM INSECTS

**William D'Ulisse and Lucille D'Ulisse, both of 800 Fairfax Road, Drexel Hill, Pa. 19026**
**Filed Jan. 23, 1968, Ser. No. 699,941**
**Int. Cl. A45b** *23/00;* **A45f** *1/04*
**U.S. Cl. 135—2** **4 Claims**



An adaptor consisting of a dome-shaped covering for beach-type umbrellas, made of net impenetrable by winged and other insects, adapted to rest on the roof of the umbrella and possessing sidewalls that extend to the ground. A hole is provided in the center of the covering to permit the umbrella support pole to protrude therethrough, and loops are provided at the bottom, perimetral portions of the sidewalls for use in staking the adaptor to the ground. Devices are provided on the dome of the adaptor for securing it to the umbrella or preventing motion of the adaptor relative to the umbrella, examples of such devices including rubber, anchor-like grippers, or magnetic or magnetizable materials which coact with magnetizable or magnetic materials on the surface of the umbrella.

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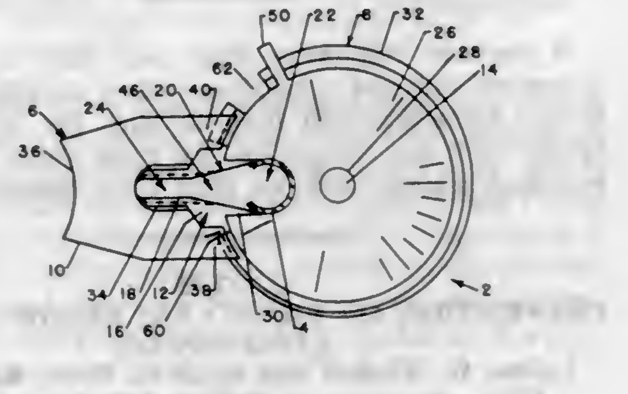
**3,477,454**

### FLOW CONTROL DEVICE

**Mack R. Fields, Lighthouse Point, Fla., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois**
**Filed Jan. 9, 1967, Ser. No. 608,088**
**Int. Cl. G05d** *7/00;* **F16l** *55/14*
**U.S. Cl. 137—1** **9 Claims**



A flow control for a compressable tube that includes a slotted member and a rotatable cam connected to the slotted member, the slotted member flattens and immobilizes a transverse portion of the tube to prevent fluid flowing past the flattened and immobilized transverse portion and to isolate the flattened and immobilized transverse portion away from the unflattened transverse portion so as to minimize or wholly reduce any effect on the unflattened transverse portion, and the rotatable cam engages the unflattened portion to vary the size of the channel in the unflattened portion of the tube in order to provide a generally unvarying controlled fluid flow rate.

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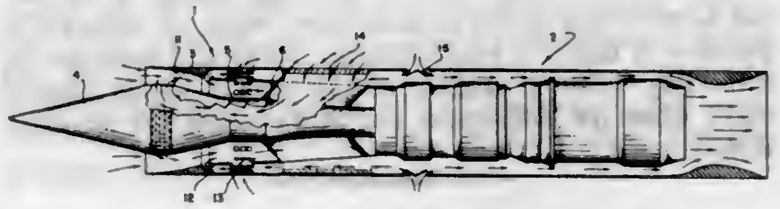
**3,477,455**

### SUPERSONIC INLET FOR JET ENGINES

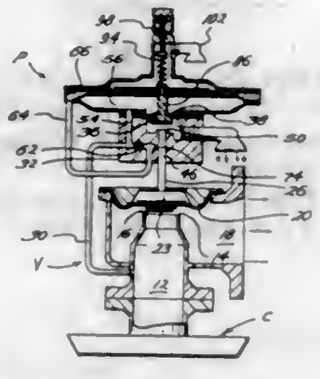
**David H. Campbell, Van Nuys, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.**
**Filed Oct. 15, 1965, Ser. No. 496,505**
**Int. Cl. F02b** *27/00;* **B64d** *33/02*
**U.S. Cl. 137—15.1** **5 Claims**



A supersonic inlet consisting of a translating spike and a cowl arrangement wherein the spike has a conical compression section followed by a gradual divergence to maximum diameter and then gradual convergence. The cowl forms a duct of gradually decreasing area, along a non-focusing isentropic curve to the throat and thereafter the diameter remains substantially constant. The maximum diameter of the spike is forward of the throat which contributes to a translation distance of less than one inlet radius.

### 3,477,456
### VALVE

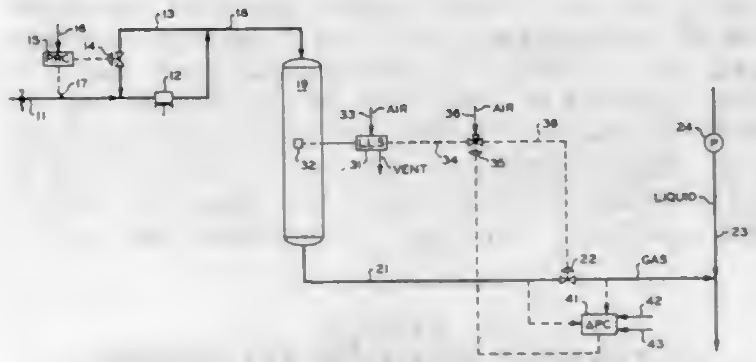
**Walter W. Powell, Houston, Tex., assignor to Anderson, Greenwood & Co., Bellaire, Tex., a corporation of Texas**
**Filed Apr. 3, 1967, Ser. No. 627,917**
**Int. Cl. F16t** *1/14;* **F04f** *1/18;* **F16k** *31/18*
**U.S. Cl. 137—171** **12 Claims**



A pressure responsive pilot controlled valve adapted to control pressure conditions with a variable restriction in the actuating fluid lines to vary the control signal to the pilot for controlling the main valve in a predetermined manner and the pilot valve therefor.

### 3,477,457
### PREVENTION OF LIQUID BACKFLOW INTO GAS COMPRESSOR

**Leland G. Kitchen and Keith G. Rhea, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**
**Filed Nov. 15, 1967, Ser. No. 683,284**
**Int. Cl. F04f** *1/18*
**U.S. Cl. 137—209** **9 Claims**

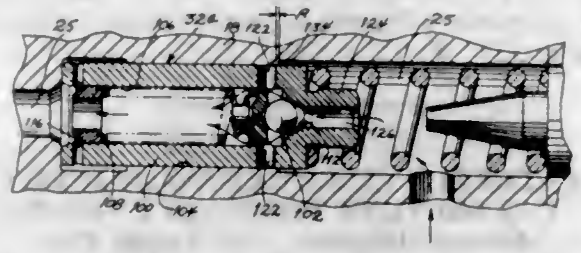


The output of a gas compressor is passed through a chamber containing a liquid level switch and then through a conduit containing a control valve and into a liquid pipeline. A differential pressure controller measures the differential pressure across the control valve and actuates a three-way valve to pass the output of the liquid level switch to the control valve when the differential pressure is below a predetermined value and actuates the three-way valve to connect an air supply to the control valve when the differential pressure exceeds the predetermined value.

### 3,477,458
### FUEL DELIVERY VALVE ASSEMBLY AND METHOD

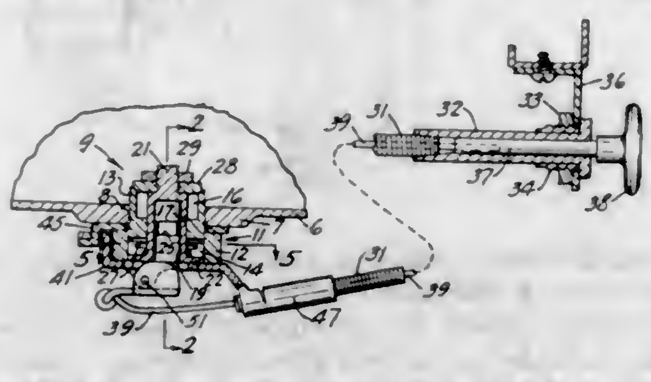
**Raymond J. Maddalozzo, Chicago, Ill., assignor to International Harvester Company, a corporation of Delaware**
**Original application Jan. 7, 1965, Ser. No. 423,916, now Patent No. 3,309,024. Divided and this application July 27, 1966, Ser. No. 582,773**
**Int. Cl. F02m** *47/00*
**U.S. Cl. 137—327** **7 Claims**

Delivery valve providing bidirectional fuel flow, and having a ball check return spring of helical form located in an essentially blind, cylindrical bore in the valve body. The spring has a fixed end anchored within the open end of the blind bore by means of: an annular groove in the bore just inside its open end, a cone shaped spring seat on which the fixed end of the spring seats, and a removably installed snap ring between the seat and the groove and wedged by the cone on the former in a direction forceably seated in the groove.



### 3,477,459
### VEHICLE CRANKCASE DRAIN PLUG WITH REMOTE OPERATOR

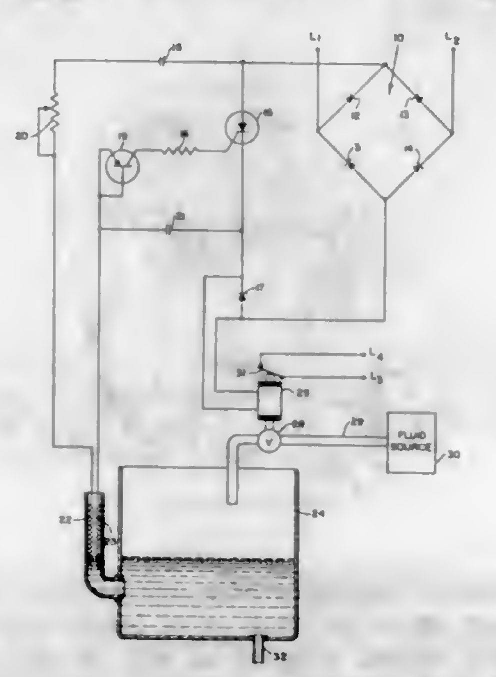
**George W. Schossow, 2316 Lilac Lane, White Bear Lake, Minn. 55110**
**Filed June 20, 1967, Ser. No. 647,430**
**Int. Cl. F16k** *31/14, 31/524*
**U.S. Cl. 137—351** **6 Claims**



A self-closing dual valve assembly in a plug for draining oil from an internal combustion engine and a remote control mechanism for operating said valve.

### 3,477,460
### FLUID LEVEL CONTROL SYSTEM

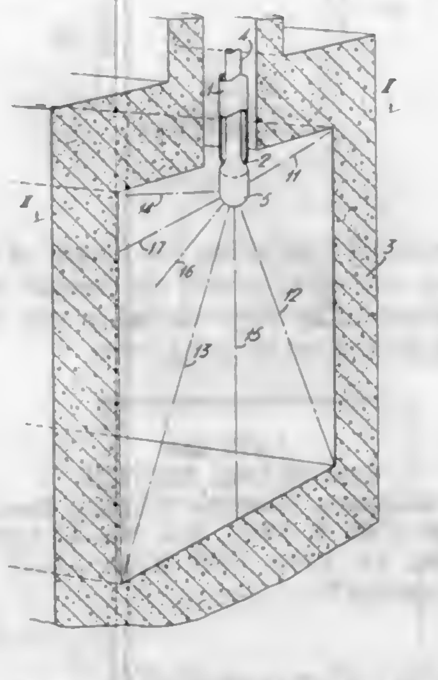
**Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware**
**Filed Aug. 2, 1965, Ser. No. 476,451**
**Int. Cl. G05d** *9/12*
**U.S. Cl. 137—392** **3 Claims**



A solid-state circuit in conjunction with a variable resistor and a pair of resistors placed in a fluid controls the fluid level through actuation of a solenoid which controls the fluid flow.

### 3,477,461
### RADIOISOTOPE INJECTION DEVICE FOR MEASUREMENT OF FLUID FLOW

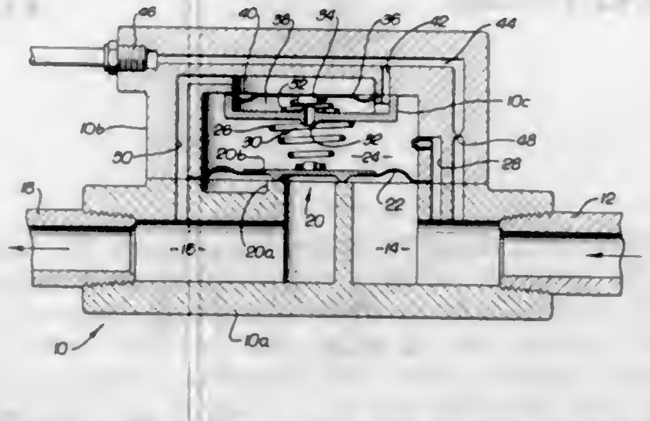
**Colin G. Clayton, Shippon, Abingdon, and Ramon Spackman, Upton, Didcot, England (both % United Kingdom Atomic Energy Authority, 11 Charles II St., London, SW. 1, England)**
**Filed Jan. 19, 1966, Ser. No. 521,579**
**Claims priority, application Great Britain, Jan. 20, 1965, 2,600/65**
**Int. Cl. B01f** *5/04;* **G01f** *1/00;* **G01n** *23/12*
**U.S. Cl. 137—599.1** **4 Claims**



Injection apparatus comprises means to withdraw a subsidiary flow from a mainstream, means to inject into the subsidiary flow a measured quantity of radioisotope, an injection probe situated in the mainstream, and pump means receiving the subsidiary flow after addition of the radioisotope to deliver the same to the injection probe. The probe has a plurality of nozzles designed to distribute the subsidiary flow to a plurality of points within the main flow in quantities proportional to the velocity of the main flow at the points of delivery.

### 3,477,462
### HIGH CAPACITY PRESSURE REGULATED GAS DIAPHRAGM VALVE

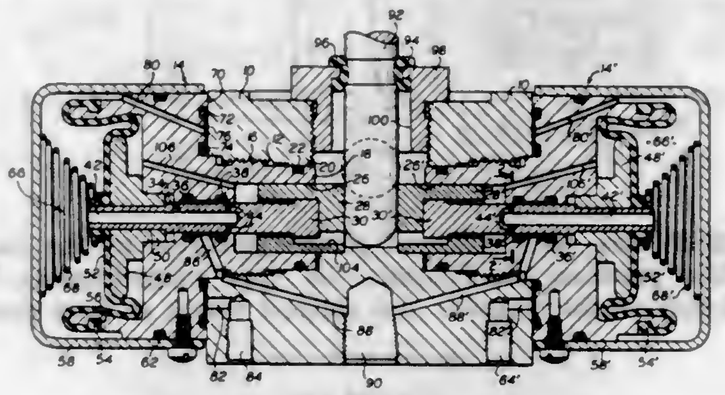
**William A. Ray, North Hollywood, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland**
**Filed June 30, 1966, Ser. No. 562,160**
**Int. Cl. F23n** *1/00*
**U.S. Cl. 137—489** **1 Claim**



The invention includes a main diaphragm valve which has a pressure-regulated output through the control of pilot pressure regulator.

### 3,477,463
### VALVE STRUCTURE AND CONTROLLER OPERATED THEREBY

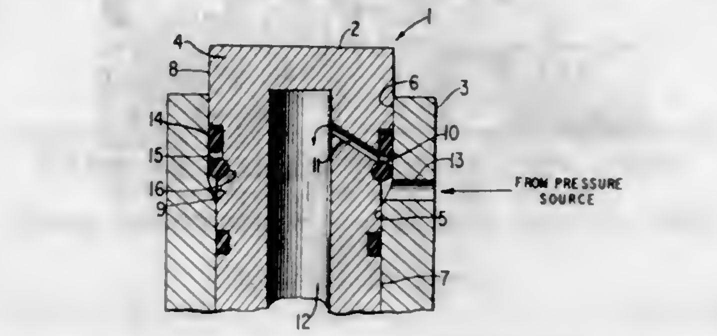
**Donald A. Worden, Pompton Plains, N. J., assignor to Marotta Valve Corporation, Boonton, N.J., a corporation of New Jersey**
**Filed May 8, 1967, Ser. No. 636,794**
**Int. Cl. F16k** *31/145;* **F17d** *3/02*
**U.S. Cl. 137—495** **10 Claims**



A slide valve has a stem that slides axially in a sealing ring, preferably an O-ring. Radial openings communicate with a passage extending axially within the stem. Movement of the radial openings to different sides of the O-ring pressurizes or vents the passage selectively. The O-ring is wider than the radial passages for a third condition where it closes them. A manual actuator moves the stem against pressure in a sensing chamber so that resistance to movement of the actuator handle can be "felt."

### 3,477,464
### SURGE CUT-OFF DEVICE FOR PRESSURE SENSING UNITS

**John J. Ryan, Glen Cove, N.Y., assignor to H. & R. Development Company, Inc., Nutley, N.J., a corporation of Delaware**
**Filed Sept. 6, 1967, Ser. No. 665,910**
**Int. Cl. F16k** *17/28, 15/14, 17/34*
**U.S. Cl. 137—517** **4 Claims**

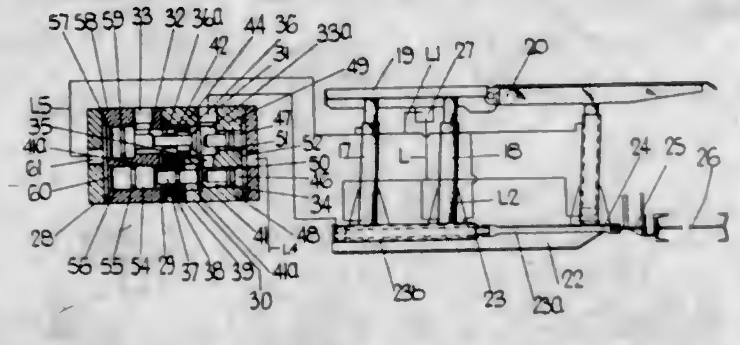


A surge cut-off device having a resilient O-ring positioned in an annular chamber communicating with a source of pressure and with a pressure chamber within the device and a predetermined clearance past the resilient O-ring so that a surge of fluid pressure will move the O-ring to block the passage communicating with the pressure chamber within the device.

### 3,477,465
### PILOT-OPERABLE HYDRAULIC VALVE

**Frank Town, Burton Joyce, England, assignor to W. E. & F. Dobson Limited**
**Filed May 22, 1967, Ser. No. 640,280**
**Claims priority, application Great Britain, May 25, 1966, 23,301/66**
**Int. Cl. F15b** *13/06*
**U.S. Cl. 137—596.18** **3 Claims**

In or for a hydraulic circuit of a hydraulic mine roof support system, hydraulic valves which are pilot-operated for extending conveyor-advancing jacks and in which pressure and exhaust valve means after operation by pilot signals are maintained operated by action of the main pressure fluid in predetermined passages against the valve members, thereby to relieve the pilot system for other uses, with enlarged pistons operable by the main fluid pressure under control of main control valves for acting on the pressure and exhaust valves to reset them.



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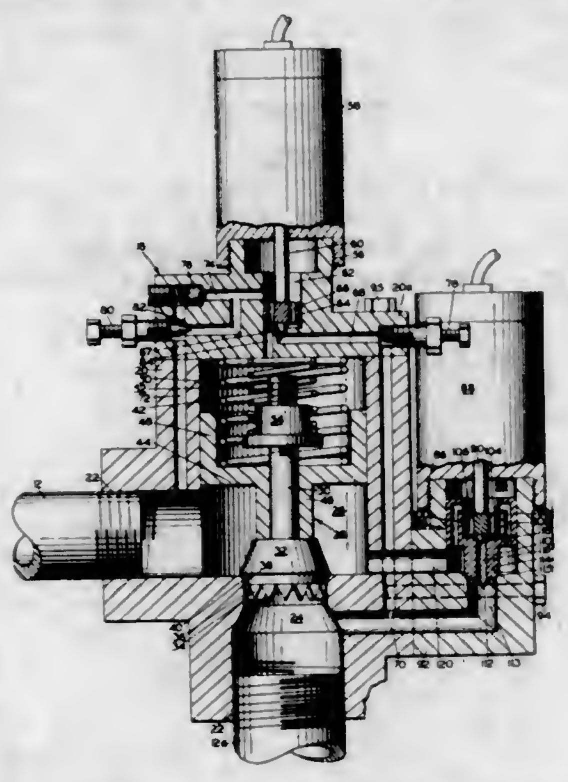
### 3,477,466
### ELEVATOR FLUID CONTROL VALVE MECHANISM

**Lewis D. Sturm, 664 N. Russell,**
**Portland, Oreg. 97227**
**Filed Apr. 3, 1967, Ser. No. 627,708**
**Int. Cl. F16k** *11/00, 31/12;* **F15b** *13/04*
**U.S. Cl. 137—599** **13 Claims**



Valve mechanism that is connected between a conventional pump and a fluid operated piston of the type which operates an elevator in up and down and stop functions. The mechanism includes a housing in which is incorporated several individual valves for controlling the flow of fluid through the housing. Some of the valves are operated in part by solenoids controlled by conventional elevator selector means.

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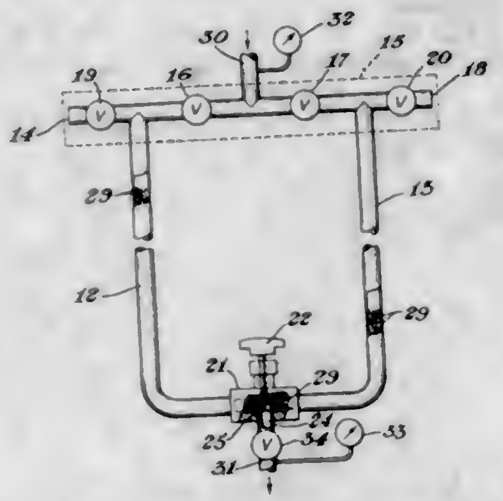
### 3,477,467
### ADJUSTABLE PRESSURE REDUCING VALVE

**Sewood Sewell, Concord, and Melvin F. Katzer, Danville, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed Oct. 5. 1967, Ser. No. 673,134**
**Int. Cl. F16k** *11/00;* **F15d** *1/02*
**U.S. Cl. 137—599** **7 Claims**

Valving apparatus is provided in which the pressure on a flowing liquid, especially liquid solutions of polymers, is reduced across a packing of displaceable solid shapes contained within at least one of a plurality of conduits interconnected in a parallel flow pattern. By operating shut-off valves on the inlets of the conduits, the solid shapes may be partially displaced into one or more of the conduits used as storage legs. The pressure drop is controlled by adjusting the length of the packing of solid shapes contained within the conduit experiencing liquid flow. Pressure drops produced in this manner subject the liquid to minimal shearing force.



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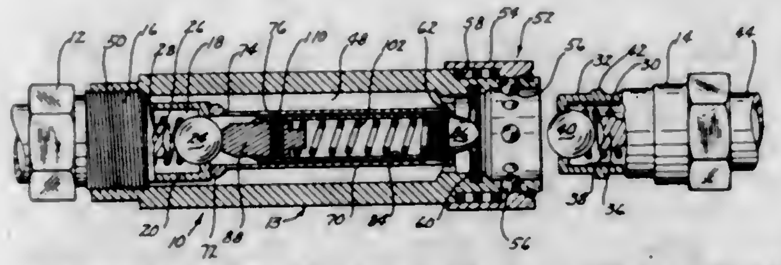
### 3,477,468
### COUPLING DEVICE

**Larry A. Kopaska, Guthrie Center, Iowa 50115**
**Filed Feb. 9, 1967, Ser. No. 614,867**
**Int. Cl. F17c** *3/00;* **F16k** *31/12*
**U.S. Cl. 137—614.05** **8 Claims**



A coupling device for detachably connecting a pair of conduits including first and second fittings adapted to be connected to the pair of conduits respecively and a means in one of the first and second fittings adapted to unseat the check valves in the first and second fittings at times and to prevent the undesirable seating of the check valves in the fittings during the operation of the equipment to which the conduits are connected.

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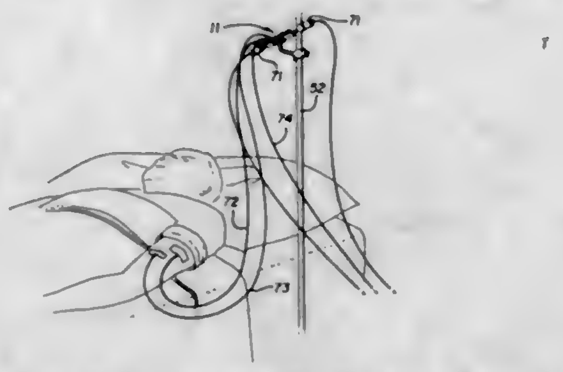
### 3,477,469
### MANIFOLD ASSEMBLY

**Hyman W. Paley, 20 Broadmoor Drive,**
**San Francisco, Calif. 94132**
**Filed Apr. 25, 1967, Ser. No. 633,505**
**Int. Cl. A61m** *5/14*
**U.S. Cl. 137—608** **8 Claims**



Manifold assembly comprised of a holder and a manifold removably mounted on the holder in which cooperative means is provided to prevent rotational movement of the manifold with respect to the holder and to permit mounting of the manifold in various predetermined positions on the holder.

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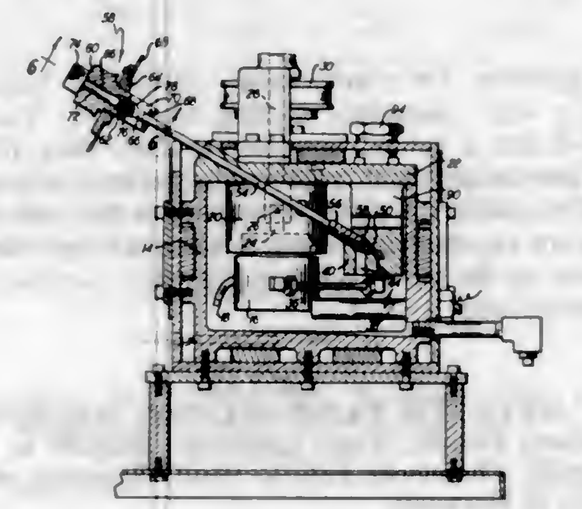
### 3,477,470
### FLUID PRESSURE CONTROL MEANS

**Roger S. Estabrooks, North Quincy, Mass., assignor to International Shoe Machine Corporation, Boston, Mass., a corporation of Massachusetts**
**Original application Mar. 15, 1965, Ser. No. 439,661, now Patent No. 3,332,581, dated July 25, 1967. Divided and this application July 25, 1966, Ser. No. 567,523**
**Int. Cl. G05d** *7/00, 16/02*
**U.S. Cl. 137—612.1** **8 Claims**



A device for regulating the rate at which fluid may flow through a conduit.

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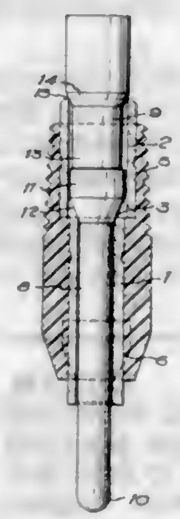
### 3,477,471
### VALVES FOR CONTROLLING THE SUPPLY OF DRINKING WATER TO POULTRY OR OTHER LIVESTOCK

**Ronald I. Mallinson, Marten, Kebroyd, Triangle,**
**near Halifax, Yorkshire, England**
**Filed Dec. 11, 1967, Ser. No. 689,480**
**Claims priority, application Great Britain, Feb. 7, 1967, 5,684/67**
**Int. Cl. F17d** *3/00;* **A01k** *7/02;* **F16k** *51/00*
**U.S. Cl. 137—614.18** **4 Claims**



Valve for supplying drinking water to poultry which comprises a plastic body with different diameter aligned bores in which metal tubes are located. The ends of the metal tubes serve as valve seats for two poppet valves which are serially arranged, there being a slight clearance between the end of the stem of one valve and the top of the adjacent valve which insures the seating of both valves. The stem of one of the poppet valves projects from the valve body and serves for the actuation of both valves.

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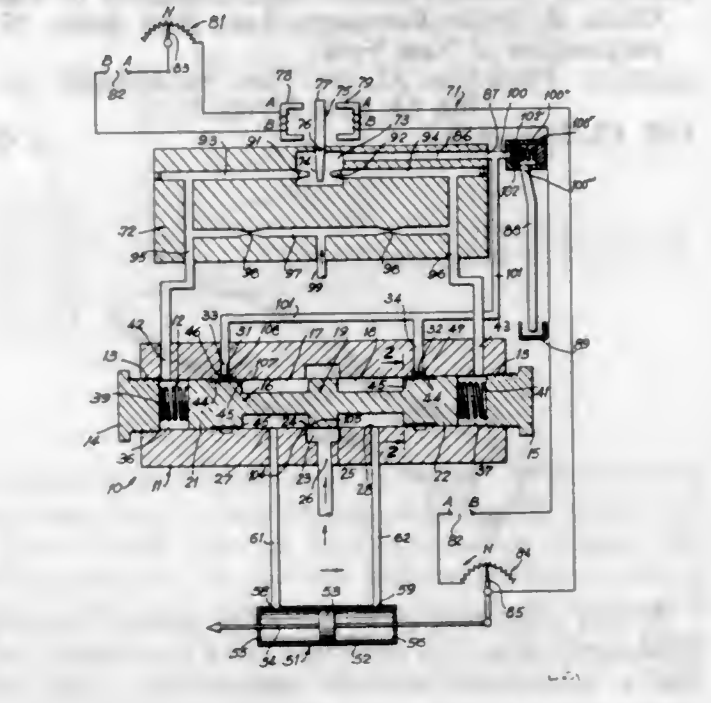
### 3,477,472
### SERVOCONTROL VALVE AND SYSTEM

**Jean Mercier, 501 Bloomfield Ave.,**
**Caldwell, N.J. 07006**
**Filed Dec. 5, 1966, Ser. No. 599,210**
**Int. Cl. F16k** *11/07, 11/24*
**U.S. Cl. 137—625.62** **1 Claim**



This invention relates to the art of servo systems to effect precise control of a hydraulic actuator and comprises a distributor valve and a control actuator valve therefor, the distributor valve being conformed to pressurize the hydraulic actuator at all times and having a valve member balanced by capillary passageways to prevent sticking, the control actuator having an associated control system to restrain rapid movement of the hydraulic actuator.

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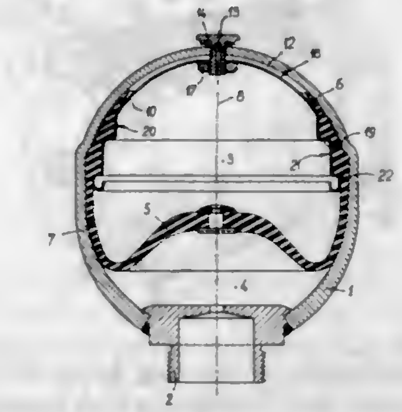
### 3,477,473
### DIAPHRAGM-TYPE HYDRAULIC ACCUMULATORS

**Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France**
**Filed June 19, 1967, Ser. No. 646,842**
**Claims priority, application France, July 21, 1966, 70,313**
**Int. Cl. F16l** *55/04*
**U.S. Cl. 138—30** **4 Claims**



Means for fastening the edge of a diaphragm separating, notably in a hydraulic accumulator or in a suspension system of vehicles, a gaseous medium from a liquid, characterized in that a clamping plate reserves between it, the inner wall of the accumulator and the edge of said diaphragm a free space caused to communicate with the gaseous medium contained in the accumulator, the fluid-tightness with respect to the atmosphere surrounding the accumulator being obtained by providing a gasket sealing the joint of an inflation plug.

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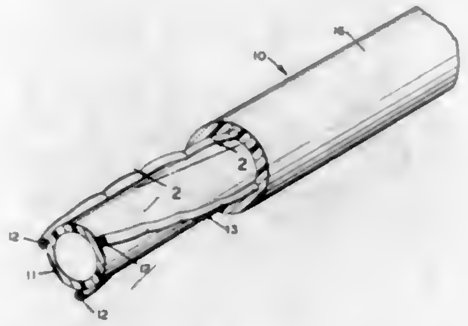
### 3,477,474
### WIRE REINFORCED CONDUIT

**Lilburn L. Mesler, Palmyra, Mich., assignor to American Chain & Cable Company, Inc., New York, N.Y., a corporation of New York**
**Filed Mar. 22, 1967, Ser. No. 625,075**
**Int. Cl. F16l** *11/08, 9/12*
**U.S. Cl. 138—133 6 Claims**



A wire reinforced push-pull cable conduit wherein the reinforcing wires are deformed prior to assembly to provide a mechanical interlock between the wires and the plastic sheath which is extended thereover.

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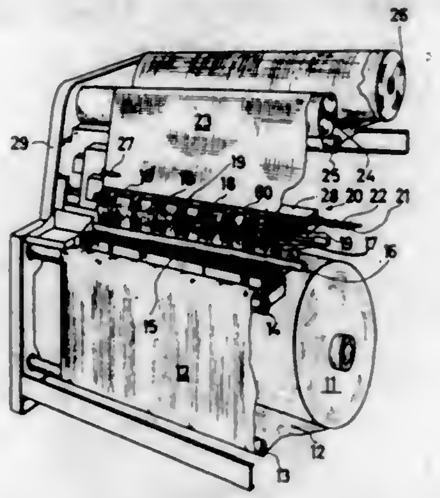
### 3,477,475
### WEAVING LOOM

**Rudolf H. Rossmann, Gauting, near Munich, Germany, and Edgar Strauss, Ruti, Zurich, Switzerland, assignors, by direct and mesne assignments, of one-half to Ruti Machinery Works Ltd., Ruti, Zurich, Switzerland, a corporation of Switzerland, and one-half to U.T.L. Incorporated, Scranton, Pa., a corporation of Pennsylvania**
**Filed Nov. 14, 1967, Ser. No. 682,881**
**Claims priority, application Switzerland, Nov. 22, 1966, 16,868/66**
**Int. Cl. D03d** *41/00, 49/60*
**U.S. Cl. 139—12 18 Claims**



An arrangement on a weaving loom for the actuation or control of reed dent lamellae which extend through the shed, including a bearing spindle extending perpendicular to the warp threads, the lamellae being arranged along said bearing spindle and being individually pivotal about the spindle, and a guide means for preventing lateral bending of the reed dent lamellae, the guide means including laminar guide elements arranged between the reed dent lamellae.

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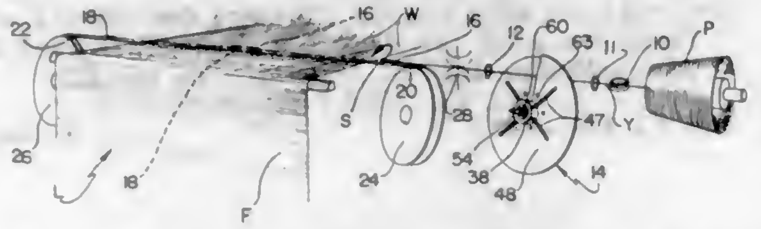
### 3,477,476
### STORAGE DEVICE

**Charles W. Brouwer, East Greenwich, and Hans H. Richter, Warwick, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts**
**Filed Feb. 26, 1968, Ser. No. 708,272**
**Int. Cl. D03d** *47/30;* **B65h** *59/22*
**U.S. Cl. 139—122 4 Claims**



Apparatus for continuously unwinding yarn from a supply and releasably storing the yarn. The yarn is guided into a helical loop having more than 180° of arc and pressurized fluid from within the loop is directed outwardly against the yarn. As tension in the yarn decreases, the yarn expands outwardly to form a larger loop, and as tension in the yarn increases, the yarn contracts to form a smaller loop.

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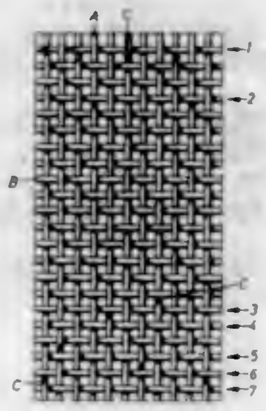
### 3,477,477
### SIEVE FOR PAPER-MAKING MACHINES

**Bernhard Domin, Bonn, Germany, assignor to Dr. Plate GmbH Chemische Fabrik, Bonn, Germany, a corporation of Germany**
**Filed May 20, 1966, Ser. No. 551,693**
**Claims priority, application Germany, May 25, 1965, P 36,884**
**Int. Cl. D03d** *27/00, 13/00, 1/00*
**U.S. Cl. 139—383 3 Claims**



An endless sieve for paper-making machines which sieve is woven from synthetic filaments, the connections between the ends of the individual warp filaments being distributed over a large area of the web and the warp filaments being connected together at their end face pointing in the filament direction independently of the weft filaments, i.e. in laterally movable relation to the weft filaments.

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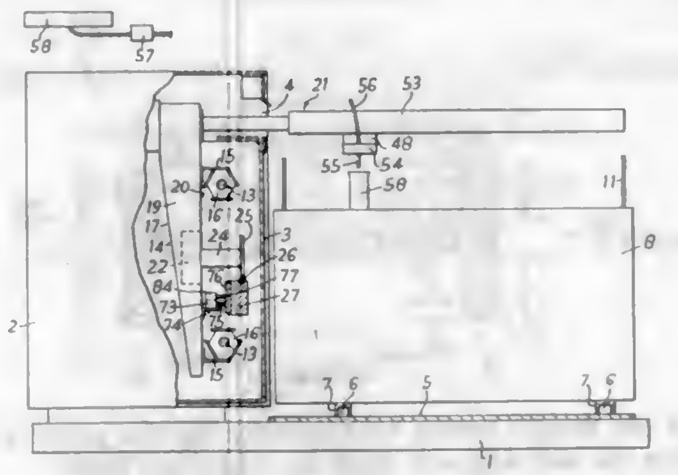
### 3,477,478
### MATERIAL DISPENSING DEVICE

**Gavin W. E. Robertson and Cyril W. C. Dyson, London, England, assignors to Baird and Tatlock (London) Limited, Chadwell Heath, England, a company of Great Britain**
**Filed Feb. 28, 1966, Ser. No. 530,597**
**Claims priority, application Great Britain, Feb. 26, 1965, 8,421/65**
**Int. Cl. B67c** *3/26, 3/34;* **B65b** *43/42*
**U.S. Cl. 141—284 9 Claims**

The invention concerns a material dispensing device comprising a dispenser mounted on a carriage above a plurality of material receiving locations arranged in rows as a rectangular array, a first reversible motor for moving the dispenser relative to the carriage parallel to the rows, a second motor for moving the carriage normal to the direction of the rows and control means for controlling operation of the motors so that the dispenser registers with each location in succession while travelling in opposite directions along adjacent rows.



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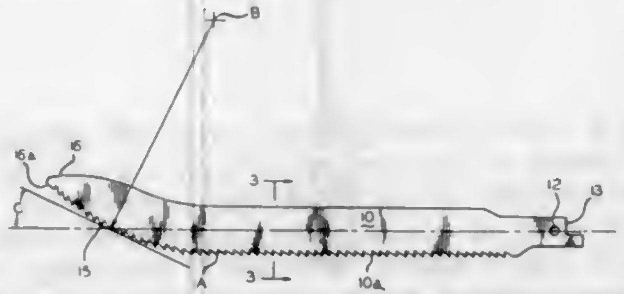
### 3,477,479
### SAW BLADE

**Myrle M. Doty, 818 Stevens Ave., Sycamore, Ill. 60178**
**Filed Sept. 7, 1967, Ser. No. 666,151**
**Int. Cl. B27b** *19/02*
**U.S. Cl. 143—133 4 Claims**



A saw blade for portable reciprocating power saws of sabre saw type in which the end of the blade is given a curvature to enable self-starting of the blade while minimizing breakage of the blades.

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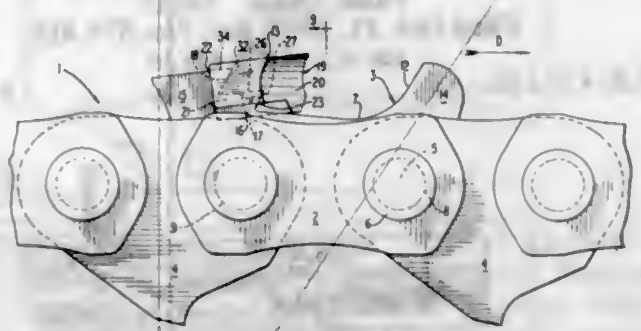
### 3,477,480
### STABILIZED CUTTING TIP FOR CHAIN SAW CUTTER LINK

**William L. Gasner, Gardena, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin**
**Filed Jan. 31, 1968, Ser. No. 701,936**
**Int. Cl. B27b** *33/14, 33/02*
**U.S. Cl. 143—135 6 Claims**



A cutter link including a planar base plate and a generally blocklike, carbide cutting tip. The base plate includes a wedge-shaped corner having a surface facing generally in the direction of cutting travel of the cutter link as well as generally toward the kerf edge cutting edge of the link. A wedged-shaped notch in the carbide tip snugly receives the wedge-shaped corner of the base plate so as to resist cutting forces tending to separate the tip from the base plate.

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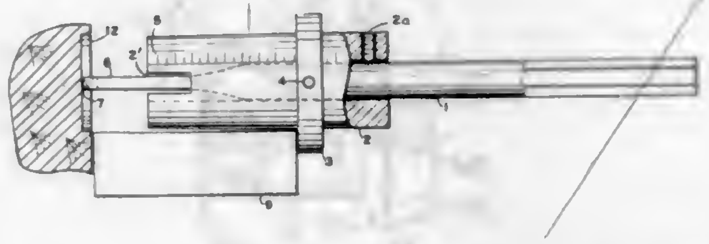
### 3,477,481
### DRIVEN CUTTING TOOL

**John F. Czerniewicz, 337 Foch Blvd., Mineola, N.Y. 11501**
**Filed Mar. 28, 1967, Ser. No. 626,531**
**Int. Cl. B27c** *5/00*
**U.S. Cl. 144—144 3 Claims**



A cutting tool adapted to be driven by an electric drill comprising, a tool holder having an adjustable depth control and a shank member mounted in said holder. The shank member has a flat end portion having a pair of cutting blades. A cutting spur is mounted on the outside edge of one of said blades. When held against a guide the tool will cut grooves, slots, or large holes of predetermined adjustable depth.

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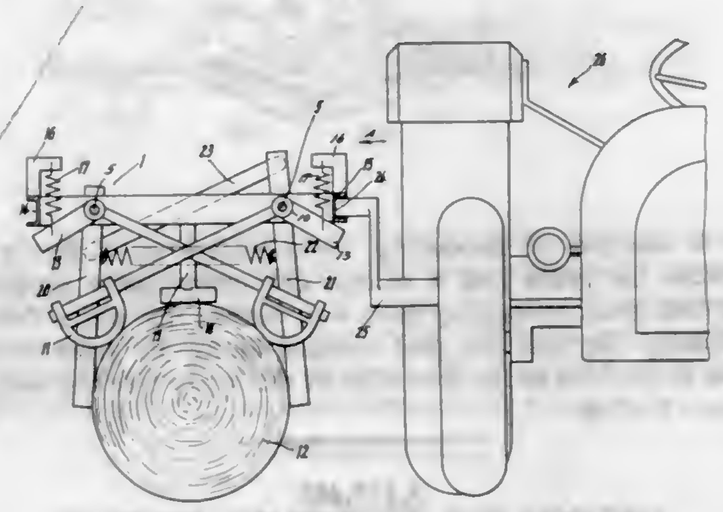
### 3,477,482
### DEVICE FOR DEBARKING TREE TRUNKS

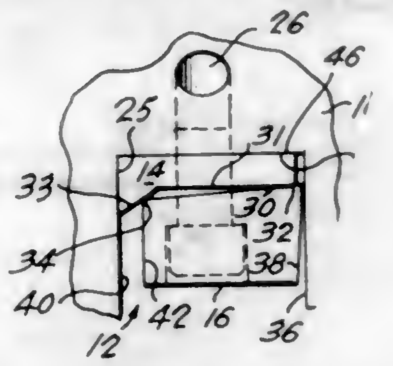
**Alfred Heilig, Gallingen Kreis Constance, and Gerhard Zerrer, Korb, Germany, assignors, by mesne assignments, to Otto Jackle, Schlatt am Randen, Germany**
**Filed Jan. 23, 1968, Ser. No. 699,871**
**Claims priority, application Germany, Jan. 25, 1967, St 26,408**
**Int. Cl. B27l** *1/00*
**U.S. Cl. 144—208 20 Claims**



An apparatus for debarking tree trunks, which includes a frame carrying two rows of spring urged levers with peeling knives which are so arranged that when the frame is pulled over and in the longitudinal direction of the trunk to be debarked, the knives respectively pertaining to said rows of levers and occupying their peeling positions will be located on opposite sides of the central longitudinal vertical plane of symmetry of the trunk and a projection of said knives of said two rows of levers upon a plane perpendicular to said central vertical plane of symmetry will describe a portion of at least approximately the circumferential contour of the trunk being debarked.

### 3,477,483
### KNIFE CLAMP

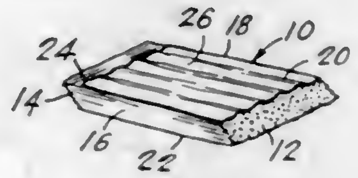
**Joseph Andrew Lapointe, Pointe Claire, Quebec, Canada, assignor to Domtar Limited, Montreal, Quebec, Canada, a company of Canada**
**Filed June 26, 1967, Ser. No. 648,596**
**Claims priority, application Canada, July 14, 1966, 965,496**
**Int. Cl. B27h** *13/00*
**U.S. Cl. 144—218** **3 Claims**



The present invention relates to a knife clamp adapted to engage a knife at spaced locations and to also engage one side wall of a knife cavity thereby wedging the knife into engagement with the bottom and other side wall of the knife cavity.

### 3,477,484
### WOOD WAFERING

**Joseph Andrew Lapointe, Pointe Claire, Quebec, Canada, assignor to Domtar Limited, Montreal, Quebec, Canada, a Canadian company**
**Filed Feb. 12, 1968, Ser. No. 704,700**
**Claims priority, application Canada, Feb. 25, 1967, 983,818**
**Int. Cl. B27l** *11/00*
**U.S. Cl. 144—326** **2 Claims**

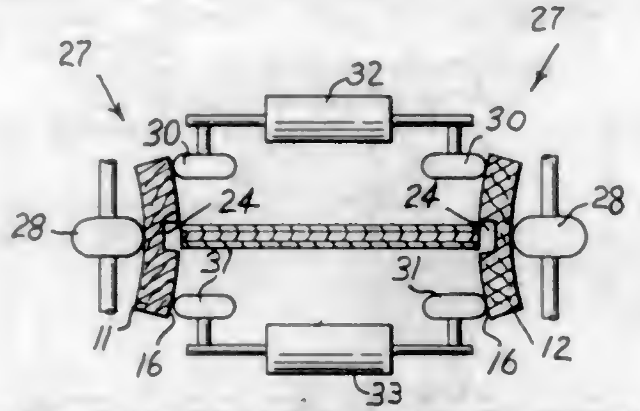


A method of producing wood wafers by a first cut across the grain and a second cut substantially parallel to the grain extending part way across the wafer from adjacent the first cut, and splitting along the grain from the second cut to the free edge of the log to free the wafer from the log.

### 3,477,485
### METHOD FOR ASSEMBLING WOODEN T AND I BEAMS

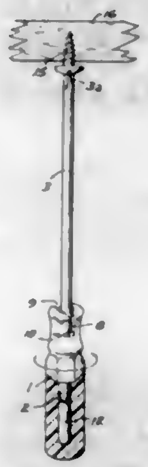
**John W. Talbott, Moscow, Idaho, assignor to Potlatch Forests, Inc., Lewiston, Idaho, a corporation of Delaware**
**Filed May 19, 1967, Ser. No. 639,731**
**Int. Cl. B27g** *27/00*
**U.S. Cl. 144—319** **10 Claims**

The disclosure describes a method of assembling I beams having plywood, flake board or particle board webs. Initially two flange members are fed past saws to form longitudinal grooves in the inner faces of the flange members. Glue is applied to the upper and lower surfaces of the web member adjacent the side edges. Bending roller sets bend the flanges transversely to open up the grooves. The flanges are moved laterally to enclose the side edges in the grooves. As the flanges move past the bending roller sets the flanges spring back to close up the grooves and grasp the web edges to form an assembled beam.



### 3,477,486
### RATCHET-ACTION TOOL HOLDER

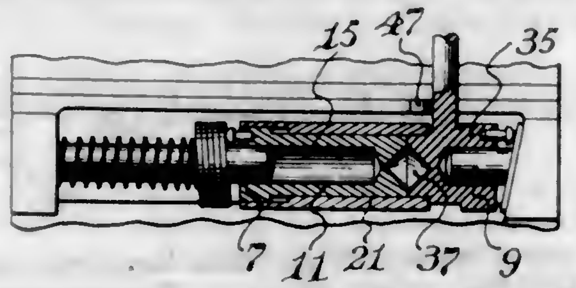
**Henry J. Modrey, Eagle Drive, Stamford, Conn. 06903**
**Filed Oct. 27, 1967, Ser. No. 678,687**
**Int. Cl. B25b** *15/04, 23/16*
**U.S. Cl. 145—50** **14 Claims**



There is disclosed a tool for applying a rotary force to a work piece. According to one form a round driver is rotatably fitted into a holder and a coil tightly encompasses rotatably fitted into a holder and a coil spring tightly encompasses the round driver portion within the holder with a plurality of turns. A tang extending from one end of the coil spring engages a slot in the holder whereby turning of the holder in one direction with the driver applied to a work piece causes tightening of the coil spring thereby transmitting a turning force to the driver and turning of the holder in opposite direction causes partial loosening of the coil spring so that the driver is held stationary by the work piece while the holder is turned.

### 3,477,487
### APPARATUS FOR APPLYING PRESSURE

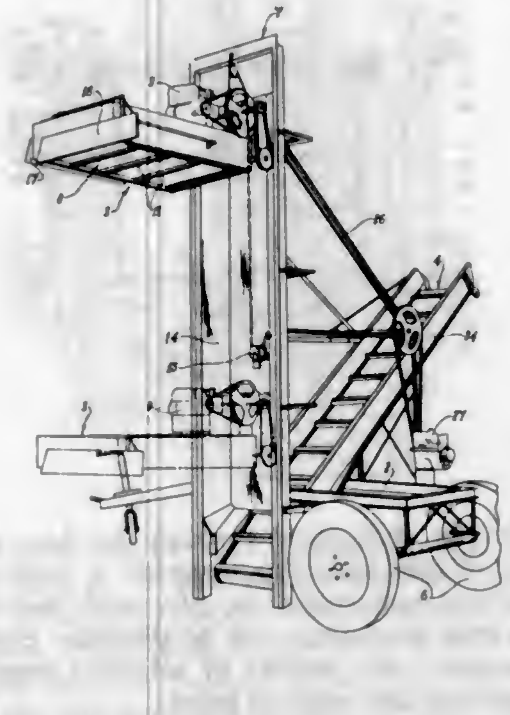
**Sherman H. Holt, 847 N. Marion, Tulsa, Okla. 74115**
**Filed Oct. 31, 1967, Ser. No. 679,418**
**Int. Cl. A47j** *43/26*
**U.S. Cl. 146—16** **8 Claims**



A pair of opposed jaws are movable relatively to each other, transom lock means being associated with one of said jaws for selectively preventing its movement away from said other jaw.

### 3,477,488
### APPARATUS FOR CUTTING AND DELIVERING SILAGE FROM STACKS

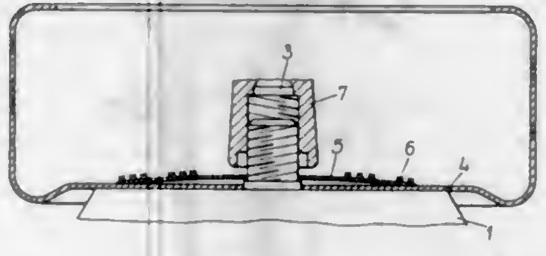
**Gregory John Burrows, Weebar Road, Drouin, Victoria, Australia**
**Filed May 22, 1967, Ser. No. 640,128**
**Int. Cl. A01f** *17/02, 29/00*
**U.S. Cl. 146—70** **9 Claims**



Apparatus for cutting and delivering silage from a stack includes a cutting unit incorporating a feeding conveyor and which is capable of upward and downward movement through the stack whereby an open topped vertical gap is cut in the silage through which the unit moves downwardly whilst the silage is being simultaneously cut and removed from the stack and delivered by said conveyor.

### 3,477,489
### SHREDDER

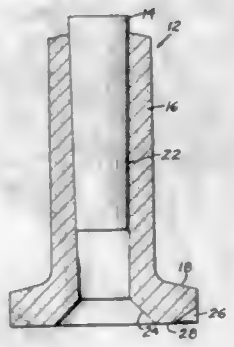
**Manfred Michaelis, Langen, Germany, assignor to Braun Aktiengesellschaft, Frankfurt, Germany**
**Filed Nov. 21, 1967, Ser. No. 684,859**
**Claims priority, application Germany, Nov. 23, 1966, B 89,972**
**Int. Cl. A23l** *1/02;* **A23n** *1/02*
**U.S. Cl. 146—76** **10 Claims**



A shredding member in a juice extractor consists of a disc of relatively thin elastically deformable material. The disc has a convex first side which is provided with a plurality of clusters of projecting teeth, and a concave second side which is adapted to overly a substantially planar support surface in surface-to-surface engagement therewith when deflecting pressure is exerted against the convex first side, the disc being reinforced by such engagement.

### 3,477,490
### TIRE STUD

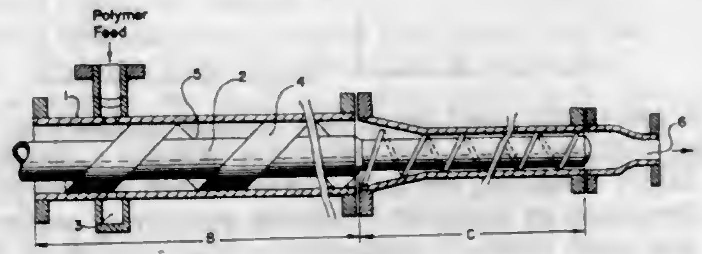
**Ragnar L. Carlstedt, Valley Heights, Pa., assignor to Kennametal Inc., Latrobe, Pa., a corporation of Pennsylvania**
**Filed Aug. 16, 1967, Ser. No. 661,000**
**Int. Cl. B60c** *11/16*
**U.S. Cl. 152—210** **12 Claims**



The invention relates to a tire stud for being inserted into a tire tread to increase the traction thereof on a roadway in which the stud is made up of a metal body and a carbide pin in the body and wherein the body is made of a sintered powdered metal material having a relatively low heat conductivity.

### 3,477,491
### WIPED-FILM EVAPORATOR

**Carl Mac Henry, Ardsley, N.Y., and John A. Weaver, Berkeley, and Gordon D. Towell, Orinda, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed Jan. 16, 1968, Ser. No. 698,271**
**Int. Cl. B01d** *1/22*
**U.S. Cl. 159—6** **3 Claims**

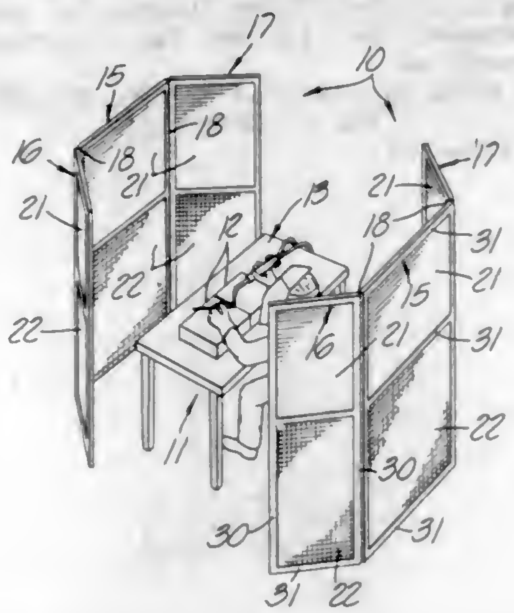


A wiped-film evaporator having improved efficiency comprises a single screw evaporating section with narrow clearance combined with an annular vapor exhaust passage, the evaporating section being followed by a pumping section of reduced diameter for discharge of devolatilized product under superatmospheric pressure.

### 3,477,492
### FOLDING GUARD SCREEN ASSEMBLY

**Edmund V. Suess, 19127 Prairie St., Northridge, Calif. 91324**
**Filed July 10, 1967, Ser. No. 652,246**
**Int. Cl. A47g** *5/00*
**U.S. Cl. 160—135** **1 Claim**

A portable and convertible industrial safety guard assembly for use about welders, electrical equipment, machinery and the like to safeguard personnel in the vicinity against injury from electric arcs, flying chips, harmful fluids, electric sparks and the like hazards without interfering with essential ventilation and air supply. The guard assembly is readily moved from place to place to suit the user's needs and additionally serves to conceal confidential operations from view by passersby. The various panels are readily replaceable with panels of different construction and utility and enable a user to meet a



variety of widely varying needs with a minimum investment in guard equipment.

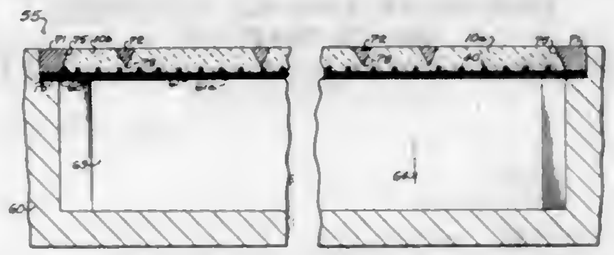
### 3,477,493
### METHOD OF MAKING A REFRACTORY HOT TOP PANEL INSERT

**Walter M. Charman, Jr., Shaker Heights, and George J. Middaugh, Jr., Chesterland, Ohio, assignors to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware**

**Filed May 4, 1967, Ser. No. 636,072**

**Int. Cl. B22c** *9/08, 15/22;* **B22d** *37/00*

**U.S. Cl. 164—7** **3 Claims**



A refractory panel insert unit to be surrounded by an ingot mold wall or a hot top casing includes a plurality or highly insulating refractory panels which are integrally connected by frangible refractory connecting portions. A wire mesh netting is embedded at least partially in the back of the panels and provides a hinge interconnection between the panels upon breaking of the frangible connecting portions. The entire insert unit is manufactured by making a slurry of sand, a resin binder, an inorganic fibrous material, and water, and depositing the slurry on a filter screen in a frame over a vacuum box, and embedding the wire netting in the layer of slurry. Applying a vacuum under the filter screen in the vacuum box effects removal of part of the water from the slurry and leaves a wet mat in which is embedded wire netting. The wet mat is then dried to form the highly insulating refractory panel insert unit.

### 3,477,494
### CONTINUOUS CASTING MOLTEN METAL FEED DEVICE

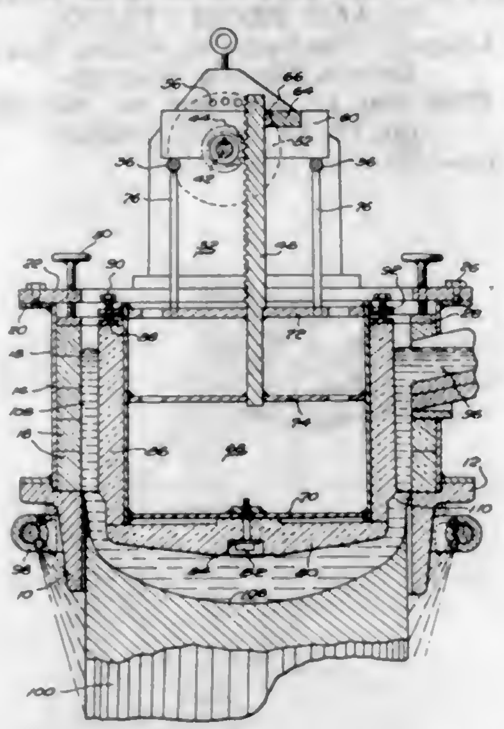
**Alan R. Burkart, Shrewsbury, Mass., and John H. Mudge, Parma, Ohio, assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Sept. 1, 1966, Ser. No. 576,768**

**Int. Cl. B22d** *11/00, 15/04*

**U.S. Cl. 164—281** **2 Claims**

A continuous casting mechanism comprising a chill mold substantially defining the exterior transverse contiguous surface of a body, such as an ingot or billet, to be continuously cast and extracted therefrom; a heat insulating mold in unitary connection and communication in advance of said chill mold; a core or displacer disposable within and in spaced relationship to interior defining walls of both the chill and heat insulating molds; and the core or displacer contactable by molten metal supplied to the chill mold through the heat insulating mold being of heat insulating material. A method of continuous casting employing the aforesaid mechanism in which the heat insulating core or displacer extends into a molten metal crater defined by solidified exterior walls of a continuously cast ingot or billet.



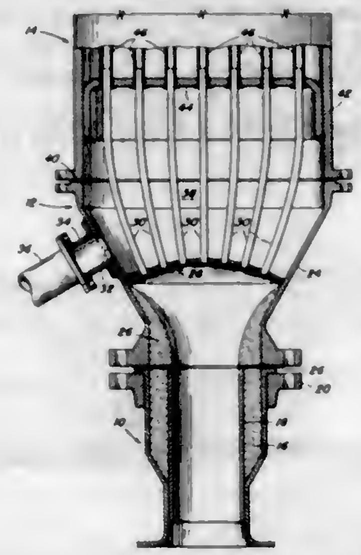
### 3,477,495
### INLET CONE DEVICE AND METHOD

**William Tucker, Great Neck, N.Y., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware**

**Original application May 13, 1966, Ser. No. 549,852, now Patent No. 3,374,832, dated Mar. 26, 1968. Divided and this application Jan. 19, 1968, Ser. No. 725,969**

**Int. Cl. F28f** *1/00, 11/00*

**U.S. Cl. 165—1** **3 Claims**



This invention relates to the transfer of hydrocarbon fluids from heaters to shell and tube heat exchangers in conical connecting conduits. In essence, the process of the present invention comprises the steps of excluding the hydrocarbon fluids from regions between the tube sheet of the heat exchanger and the narrow end of the conduit so that the hydrocarbon fluid will flow therethrough and into said tubes; and providing inert fluids at pressures above that of the hydrocarbon fluid within said region.

### 3,477,496
### REGENERATOR

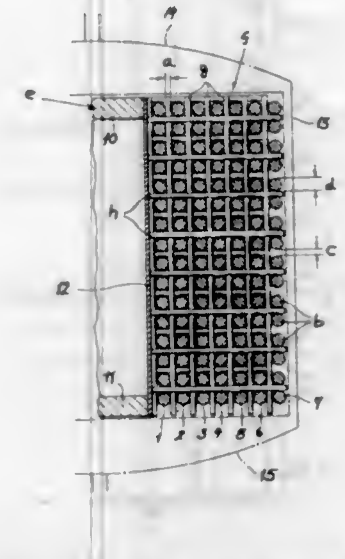
**Rudolf Becker, Munich, Germany, assignor to Linde Aktiengesellschaft, Wiesbaden, Germany, a German corporation**

**Filed Apr. 9, 1968, Ser. No. 719,929**

**Claims priority, application Germany, Apr. 17, 1967, L 56,267**

**Int. Cl. F28d** *17/00;* **F28f** *27/00*

**U.S. Cl. 165—10** **10 Claims**



A regenerative-type thermal-storage heat exchanger having a mass of thermal storage material formed by a plurality of radially spaced coaxial coils of solid-cross-section wire surrounding a core with the turns of each coil spaced apart by radially extending linear pieces of wire and the corresponding turns of the coils being spaced apart by axially extending, radially spaced pieces of wire, the spacer wires and the coil wires being welded together, the axial spacing between turns of each coil ranging from one fifth to one tenth the diameter of the coil wire and the spacer wires having a corresponding fraction of the diameter of the core wire, the radial spacing between coils ranging from ⅕ to 1 diameter of the coil wire.

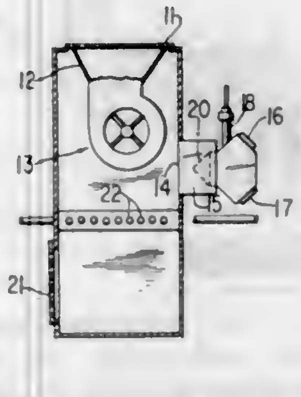
### 3,477,497
### AIR CONDITIONING

**Robert M. Warren, Jr., Red Bank, N.J., assignor to Buensod-Stacey Corporation, New York, N.Y., a corporation of Ohio**

**Original application May 4, 1965, Ser. No. 453,034, now Patent No. 3,367,407, dated Feb. 6, 1968. Divided and this application Feb. 1, 1968, Ser. No. 702,390**

**Int. Cl. F25b** *29/00;* **B60h** *1/00;* **B61d** *29/00*

**U.S. Cl. 165—22** **4 Claims**



A device having a housing with primary and recirculated air inlets, there being a fan in the housing and a heat exchanger through which the recirculated air passes, the primary air inlet being connected to the side of the housing.

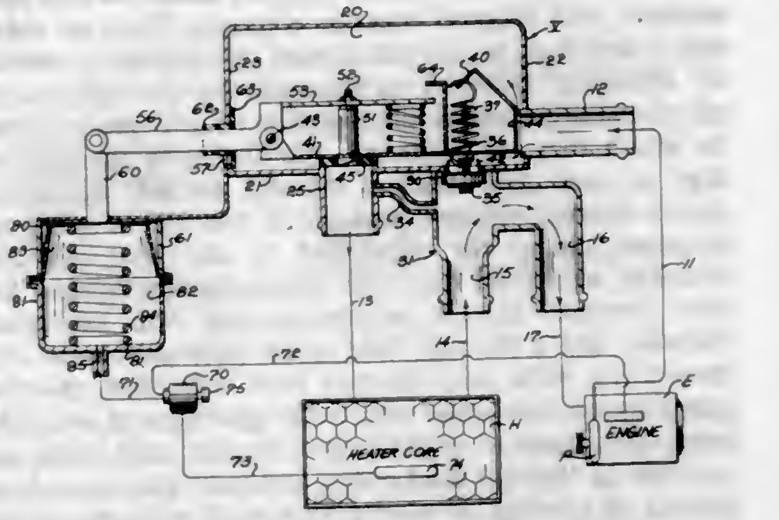
### 3,477,498
### LIQUID FLOW CONTROL VALVE MECHANISM

**Roland B. Caldwell, Columbus, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio**

**Filed Aug. 4, 1967, Ser. No. 658,497**

**Int. Cl. G05d** *16/00;* **F17d** *3/00*

**U.S. Cl. 165—38** **9 Claims**



A heating system for an automobile interior comprising a closed liquid circulating circuit for circulating heated liquid from the cooling jacket of the engine through an air heater core, the passage of liquid to the heater being controlled by a valve mechanism in the circuit between the engine and the heater and comprising a valve chamber to receive the liquid and a movable valve member in the chamber for regulating the flow of liquid to the heater, a liquid flow bypass being provided from the chamber around the heater and back to the engine, pressure responsive valve means being provided to divert liquid from the chamber through the bypass to limit the liquid pressure in the chamber, and the movable valve member is effective to block the liquid entrance to the chamber when the member is positioned to materially throttle the flow of liquid from the chamber to the heater. The valve mechanism includes a low capacity flow bypass downstream of the throttling valve and around the heater so that the total flow through the throttling valve opening is substantially greater than the flow through the heater, thereby minimizing clogging of the valve parts in their throttling position.

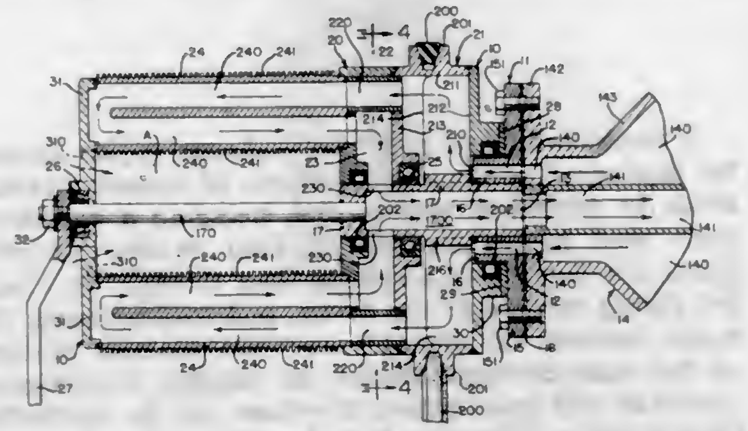
### 3,477,499
### ROTATABLE THERMAL TRANSFER UNITS

**Edward E. Goetz, 20719 Ontago, Farmington, Mich. 48024**

**Filed June 13, 1968, Ser. No. 736,674**

**Int. Cl. F28d** *11/00;* **F28f** *5/00;* **F25b** *3/00*

**U.S. Cl. 165—86** **6 Claims**



A thermal transfer unit for cooling or heating thermal fluid of the cooling or heating circulation system of other equipment, said thermal transfer unit comprising a fixed mounting means including a non-rotatable shaft extending therefrom, a pump element having a suitably vaned pump chamber and a thermal fluid collection chamber rotatably mounted on said fixed shaft, a plurality of suitably formed preferably finned thermal transfer elements having U-shaped thermal passages therein fixedly mounted on and extending axially outwardly from said pump element and disposed in annularly spaced relationship with respect to each other and the axis of rotation of said pump element, said thermal transfer elements being so shaped and oriented as to provide forced circulation of ambient air thereover whereby to increase the thermal transfer effectiveness thereof during rotation of said pump element on which they are mounted, the U-shaped thermal passage of each said thermal transfer element being connected through suitable passages at one end to said pump chamber and at the other end to said fluid collection chamber, said fixed mounting means having thermal fluid inlet passages therein communicating with said pump chamber and a thermal fluid outlet passage therein communicating with said thermal fluid collection chamber, said thermal fluid inlet and outlet passages of said fixed mounting means of said thermal transfer unit being connectable to thermal fluid outlet and inlet passages of said cooling or heating circulation system of said other equipment. If the thermal fluid of the circulation system of said other equipment is at a temperature higher than that of ambient air, then the thermal transfer unit functions to cool said thermal fluid. However, if the thermal fluid of the circulation system of said other equipment is at a temperature lower than that of ambient air, then the thermal transfer unit functions to heat said thermal fluid.

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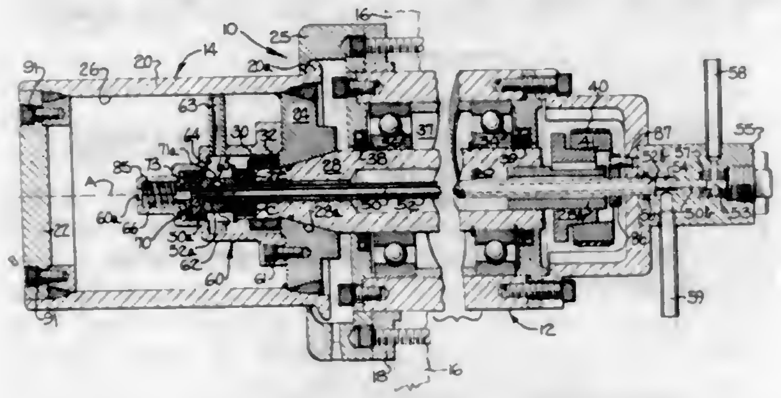
### 3,477,500
## APPARATUS FOR HIGH-SPEED TREATMENT OF CONTINUOUSLY MOVING MATERIAL
**Stuart B. Sear, 6714 Brookmeade Drive,**
**Charlotte, N.C. 28211**
**Filed Oct. 27, 1967, Ser. No. 678,662**
**Int. Cl. F28f** *5/02;* **F28d** *11/02*
**U.S. Cl. 165—89** **9 Claims**



A rotatable hollow roll heat exchange device adapted for high-speed continuous treatment of material passing about its peripheral surface and including a cylindrical outer shell having an internal fluid heating chamber, means for circulating a heating fluid through the chamber during rotation of the device, and sealing means disposed between the rotatable and non-rotatable portions of the heat exchange device for sealing the chamber against loss of heating fluid therefrom and for facilitating the circulation of heating fluid therethrough; and wherein the sealing means includes frictionally-engaging relatively movable sealing surfaces positioned closely adjacent the axis of rotation of the device to minimize frictional wear on the surfaces.

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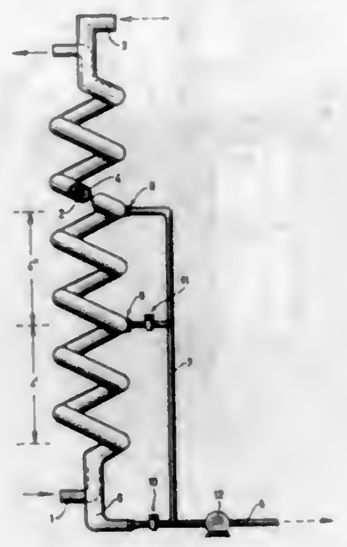
### 3,477,501
## HEAT EXCHANGER
**Machiel van Es, Amsterdam, Netherlands, assignor to Gebr. Stork & Co's Apparatenfabriek N.V., Amsterdam, Netherlands**
**Filed Dec. 12, 1967, Ser. No. 689,842**
**Int. Cl. F28f** *27/02;* **F28d** *7/10*
**U.S. Cl. 165—103** **2 Claims**



A heat exchanger comprising a tubular element divided into two spaces by a wall, one of the spaces being connected to a supply and to a discharge conduit for a condensable heat-carrier the other space being traversed by the product to be heated, said discharge conduit being connected via a bypass to at least one other location of said tube.

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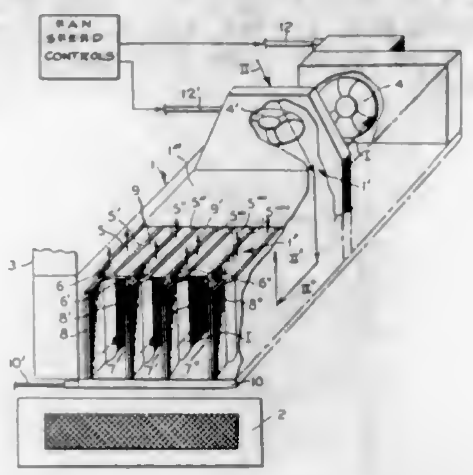
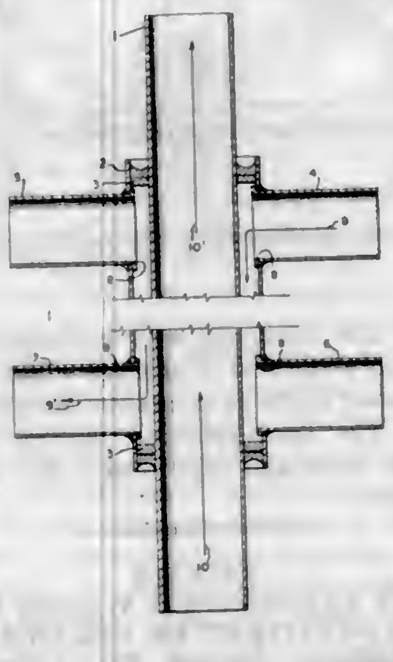
### 3,477,502
## HEAT-EXCHANGING FLUID CIRCULATING APPARATUS
**Leonhard Katz, Woburn, Mass., assignor to Astro Dynamics, Inc., Burlington, Mass., a corporation of Massachusetts**
**Filed May 27, 1966, Ser. No. 553,333**
**Int. Cl. F28f** *3/00, 13/12;* **F24h** *3/06*
**U.S. Cl. 165—122** **5 Claims**



The present invention involves a heat-exchanging fluid circulating structure in which a fluid such as external air is passed along a first path defined by a set of heat conducting sheets in heat exchanging relationship with a second path independent of and out of contact with the fluid passing along the first path but circulating a separate fluid along the second path.

### 3,477,503
## DOMESTIC HOT WATER GENERATOR
**John L. Curren, 705 W. 10th St.,**
**Wilmington, Del. 19801**
**Filed Nov. 14, 1967, Ser. No. 685,731**
**Int. Cl. F28d** *7/10;* **F28f** *9/26;* **F22b** *1/02*
**U.S. Cl. 165—154** **1 Claim**



A heat exchanger particularly adapted for use as a hot water generator for domestic hot water is described. This hot water generator consists essentially of a vertical tube with ports at top and bottom and an outer tubular jacket having two upper and two lower ports suitably spaced to permit connecting two or more of the generators in parallel alignment. In operation the inner tube(s) of the generator, or generators, is connected to the hot water storage tank and the outer tube(s) is connected to the hot water boiler, e.g., the boiler in the domestic furnace.

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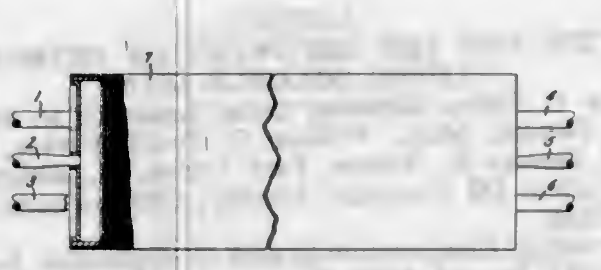
### 3,477,504
## POROUS METAL AND PLASTIC HEAT EXCHANGER
**Duard B. Colyer, Schenectady, and Robert B. Fleming, Scotia, N.Y., assignors to General Electric Company, a corporation of New York**
**Filed May 29, 1967, Ser. No. 641,918**
**Int. Cl. F28d** *7/02*
**U.S. Cl. 165—164** **6 Claims**



A heat exchanger made with two or more channels in which fluids pass in counterflow and parallel flow through a plurality of plates made of porous heat conductive material. Alternate layers of conductive plates and non-conductive separators or gaskets are bonded together to form channels through which the fluids pass without mixing together. The fluids flow down the axis of the exchanger while heat transfer is effected laterally across the flow path.

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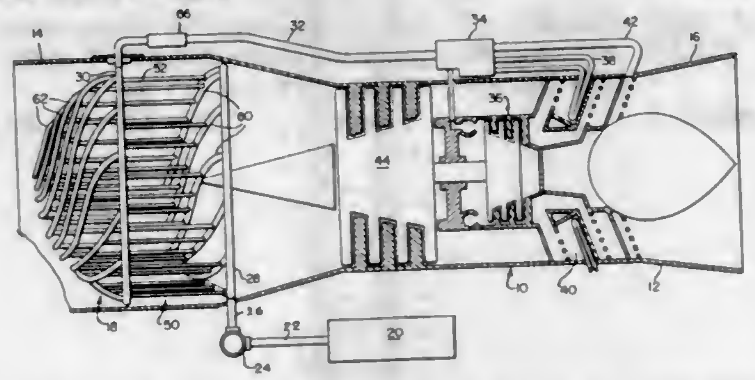
### 3,477,505
## HEAT EXCHANGER
**Rodney McGann, Northridge, Calif., assignor, by mesne assignments, to Texaco Inc., New York, N.Y., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 346,197, Feb. 20, 1964. This application July 13, 1967, Ser. No. 653,206**
**Int. Cl. F28d** *7/02;* **F02k** *3/00, 11/00*
**U.S. Cl. 165—164** **4 Claims**



Heat exchangers of particular utility in air breathing reaction engines comprise a bundle of substantially parallel pipes, input header means supplying fluid to one end of the pipes in the bundle and outlet header means withdrawing fluid from the other end of the pipes, the lengths of the pipes and their longitudinal positions in the bundle being such that the inlet and outlet headers lie in the nonplanar surfaces or in planar surfaces oriented at angles of less than 90° with the longitudinal axes of the pipes in the bundle and the dimensions of the headers being such that the maximum total transverse area of the headers in any transverse plane therethrough does not exceed the maximum total transverse area of the pipes in any transverse plane through the bundle. The surfaces defined by the inlet and outlet headers may be curvilinear or planar.

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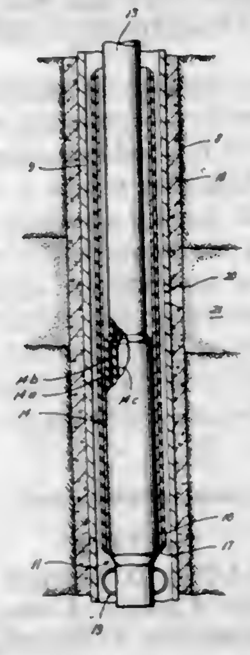
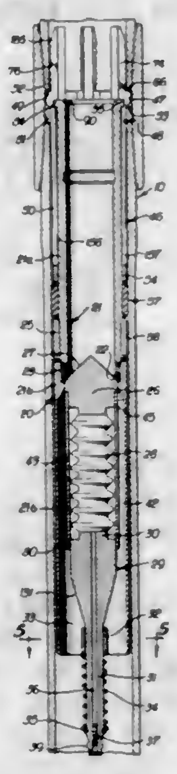
### 3,477,506
## APPARATUS RELATING TO FABRICATION AND INSTALLATION OF EXPANDED MEMBERS
**Billy C. Malone, Houston, Tex., assignor to Lynes, Inc., a corporation of Texas**
**Continuation of application Ser. No. 501,599, Oct. 22, 1965. This application July 22, 1968, Ser. No. 752,444**
**Int. Cl. E21b** *43/10, 29/00, 23/04*
**U.S. Cl. 166—207** **5 Claims**



A method and apparatus useful in and adaptable for fabrication in situ of expanded members to patch or repair pipe, to position, install and seal various tubular members in well bores, cased holes or the like, and to expand members to a conforming configuration within a surrounding structure such as a mold, hole, pipe or the like.

### 3,477,507
### WELL SAFETY VALVE

**John S. Page, Jr., Long Beach, Calif., assignor, by mesne assignments, to Cook Testing Co., Long Beach, Calif., a corporation of California**
**Filed June 13, 1967, Ser. No. 652,385**
**Int. Cl. E21b** *33/126;* **F16k** *13/04, 17/34*
**U.S. Cl. 166—224** **28 Claims**



The disclosure concerns a sub-surface well valve that includes a plug and an expansible and gas containing chamber, such as a bellows, movable for effecting plug closure toward a seat to block upward flow in the well, in response to fluid pressure drop. Further, as the fluid pressure rises so as to collapse the chamber, a portion of the chamber spaced from the plug is bodily movable relative to the seated plug so that the latter may remain seated.

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### 3,477,508
### METHOD OF MAXIMIZING EFFICACY OF SURFACTANT IN FLOODING WATER

**Billy G. Hurd, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York**
**Filed Oct. 9, 1967, Ser. No. 673,883**
**Int. Cl. E21b** *43/22, 49/00*
**U.S. Cl. 166—250** **11 Claims**

This specification discloses a method of waterflooding a subterranean formation containing oil and saline water to recover the oil. The mtehod comprises injecting into the formation through injection means a slug of an aqueous solution of surfactant having a salinity which is not more than one-half that of the saline water contained in the formation being flooded to minimize adsorption of the surfactant onto the matrix of the subterranean formation. Thereafter, by injecting water behind the aqueous solution of surfactant, the solution and displaced oil are driven toward production means where the oil is produced to the surface of the earth.

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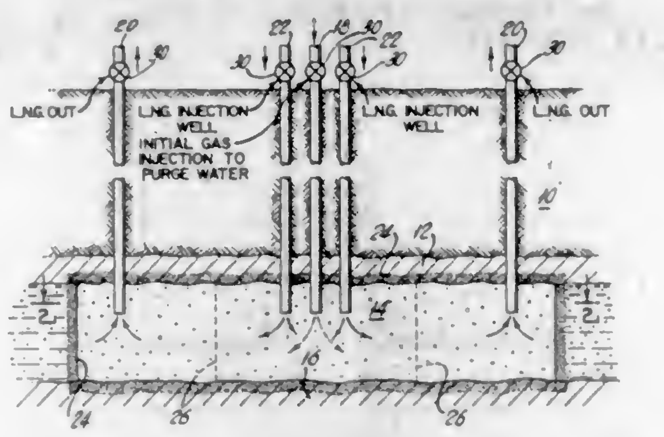
### 3,477,509
### UNDERGROUND STORAGE FOR LNG

**Harry S. Arendt, New Canaan, Conn., assignor to Esso Research and Engineering Company, a corporation of Delaware**
**Filed Mar. 15, 1968, Ser. No. 713,538**
**Int. Cl. E21b** *43/20;* **B65g** *5/50*
**U.S. Cl. 166—252** **8 Claims**

An underground liquefied gas storage and vaporization chamber is formed by injecting a purge gas under sufficient pressure into an aquifier or water bearing sand reservoir to displace the water and create a gas bubble. Liquefied gas, such as liquefied natural gas (LNG), ethane, ethylene, etc. is injected into the gas bubble whereupon freezing of the surrounding water in the aquifier occurs. There is appreciable heat flow to the stored liquefied gas from the overlying and underlying formations which vaporizes a portion of the gas which may be withdrawn in gaseous form at positions remote from the injection wells. The non-vaporized portion can be withdrawn in liquid form and vaporized in the usual revaporization facilities.



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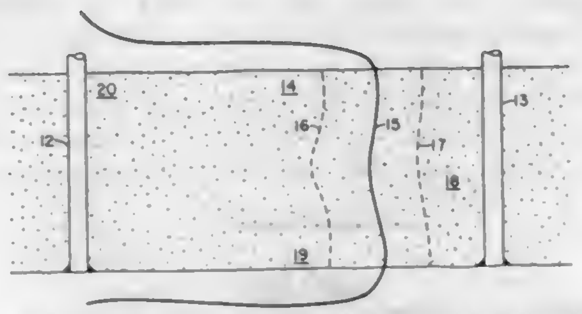
### 3,477,510
### ALTERNATE STEAM-COLD WATER INJECTION FOR THE RECOVERY OF VISCOUS CRUDE

**Arthur G. Spillette, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware**
**Filed Feb. 1, 1968, Ser. No. 702,407**
**Int. Cl. F21b** *43/24*
**U.S. Cl. 166—272** **9 Claims**



A process for improving thermal efficiency and vertical conformance in a thermal process for recovery of petroleum crude wherein relatively small volumes of steam and water are alternately injected through an input well and petroleum is produced from the input well or from a separate output well.

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### 3,477,511
### PROCESS FOR THE RECOVERY OF PETROLEUM USING SOLUBLE OILS

**Stanley C. Jones, Littleton, Colo., Laurence R. Sanders, Jr., Detroit, Mich., William C. Tosch, Parker, Colo., and Charles B. Wenger, Park Forest, Ill., assignors to Marathon Oil Company, Findlay, Ohio., a corporation of Ohio**
**No Drawing. Continuation-in-part of application Ser. No. 610,803, Jan. 23, 1967. This application Sept. 13, 1968, Ser. No. 759,782**
**Int. Cl. E21b** *43/22*
**U.S. Cl. 166—274** **15 Claims**

The present invention comprises recovery of petroleum by injection into petroleum-bearing formations of a slug of soluble oil comprising specially selected cosurfactants. The soluble oil slug comprises about 20 to 80% hydrocarbons; about 0.01 to 10% oil-soluble, substantially water-insoluble cosurfactant; about 2–20% surfactant; and about 5 to 55% water (all percents being percent by volume of the total slug). A fluid drive material, e.g., water or thickened water, may be injected into injection wells to move the slug and displace petroleum toward production wells.

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### 3,477,512
### OIL WELL FRACTURING METHOD USING WAX EMULSIONS

**Frederick Herman Siegele, Westport, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine**
**No Drawing. Filed Dec. 15, 1967, Ser. No. 690,748**
**Int. Cl. E21b** *43/26*
**U.S. Cl. 166—283** **3 Claims**

A novel wax emulsion is disclosed for sealing against fluid loss including acid losses which may be incurred when in fracturing operations acid is employed to etch carbonate formations. The emulsion comprises a microcrystalline wax having one or more natural gum colloids to impart emulsion stability and fungicidal and/or bactericidal preservatives with tetrapotassium pyrophosphate added to the emulsion for freeze-thaw stability. In particular, the tetrapotassium pyrophosphate provides emulsion stability through (at least one of) freeze-thaw cycle. The method of making the wax emulsion comprises the mixing of the wax emulsion constituents at a temperature sufficient to melt the wax component and then passing the emulsion through a homogenizing valve at low pressure, whereby the average particle size of the wax is maintained relatively large. The method of employing the emulsion in fracturing operations comprises the pumping of the dilute emulsion into an oil well while it is being fractured, thereby sealing the porous surface of the formation as it is created as a consequence of applying hydraulic pressure to the oil bearing formations. As mentioned above, the emulsions may also be usefully employed in the acid used to etch carbonate formations. After fracturing and propping and/or acid treatment of the fractured formations, the wax emulsion of the invention is dissolved by the hydrocarbons that are produced when the well is put into production.

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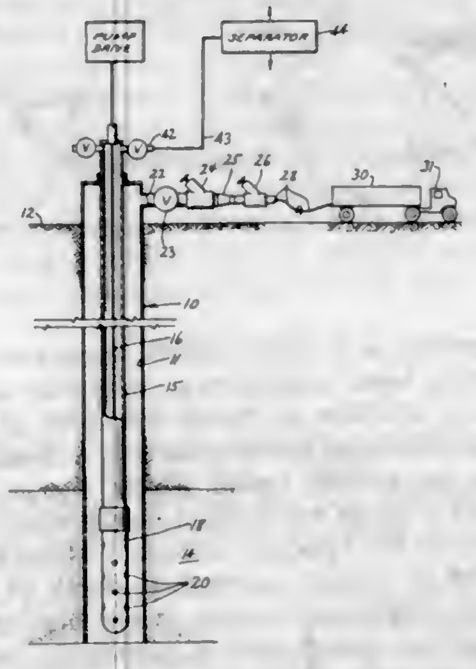
### 3,477,513
### WELL CLEANING WITH MIXED LIQUEFIED PROPANE AND BUTANE SOLVENT

**James D. Ferguson, Jefferson County, Tex., assignor to Petro Well Service, Inc., Winnie, Tex., a corporation of Texas**
**Filed May 8, 1968, Ser. No. 727,592**
**Int. Cl. E21b** *21/00*
**U.S. Cl. 166—304** **8 Claims**



The invention disclosed is a method for cleaning wells, primarily pumping wells, with specific mixtures of the liquefied petroleum gases, propane and butane, to remove paraffin and paraffin-sand mixtures, or the like, from the wells.

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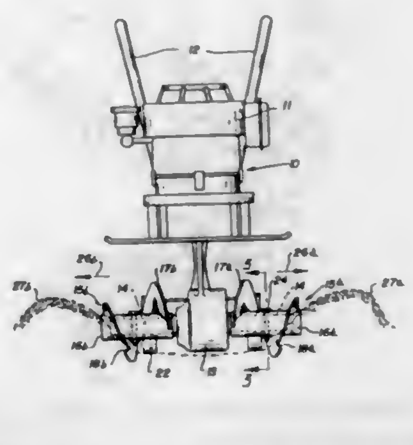
### 3,477,514
### HILLER ATTACHMENT FOR GARDEN TRACTORS

**Andrew J. Woitas, P.O. Box 35, Bruderheim, Alberta, Canada**
**Continuation of application Ser. No. 484,356, Sept. 1, 1965. This application Dec. 16, 1968, Ser. No. 785,452**
**Int. Cl. A01b** *33/02, 33/10;* **E02f** *5/04*
**U.S. Cl. 172—42** **1 Claim**



A garden tractor having a drive axle projecting to opposite sides from a power-driven transmission. A hiller attachment for the tractor consists of a pair of screw augers removably mounted on the axle at opposite sides of the transmission. Each auger has a hub and a spiral blade which decreases in radial dimension from the inner to the outer end of the hub. The marginal edge of the blade is provided with tooth-like indentations.

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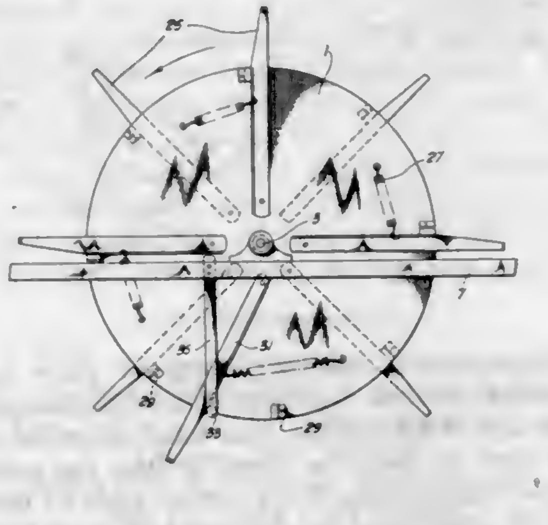
### 3,477,515
### SPRING-LOADED HOE

**Melvin Kiemele, 2108 7th Ave. S., Lethbridge, Alberta, Canada, and Henry J. Bergen, P.O. Box 560, Coaldale, Alberta, Canada**
**Filed Dec. 2, 1966, Ser. No. 598,705**
**Claims priority, application Canada, Oct. 21, 1966, 973,775**
**Int. Cl. A01b** *35/06, 33/04*
**U.S. Cl. 172—96** **10 Claims**

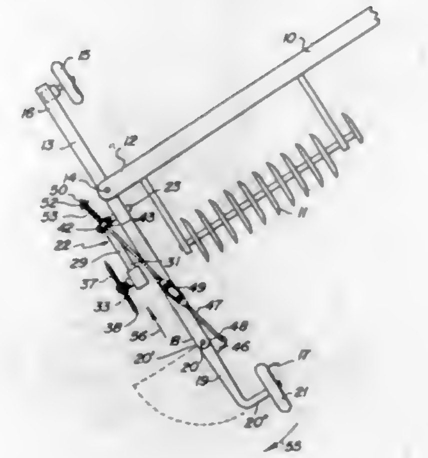


A rotary hoe with a rotating carrier having pivoted radially extending hoe members which are spring-biased in their forward direction of movement, and are restrained immediately prior to reaching the lower part of their path of movement and then released for subsequent rapid movement through the lower part of their path of movement.

3,477,516

### ADJUSTABLE STABILIZING DISC ASSEMBLY FOR DISC CULTIVATORS AND THE LIKE

**Ralph W. Sweet, Forgan, Saskatchewan, Canada**
**Filed Dec. 17, 1965, Ser. No. 514,459**
**Int. Cl. A01b** *49/02, 5/04*
**U.S. Cl. 172—184** **5 Claims**

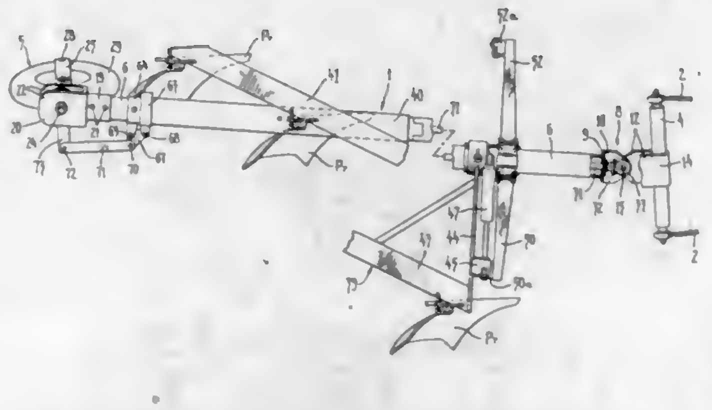


A diagonal frame drawing a gang of discs and having a rudder beam pivoted to one end thereof, the rear end of the rudder beam having a rudder wheel assembly pivoted thereto. A stabilizing disc is mounted at one side of the rudder beam for raising and lowering movement in a plane parallel to the rudder beam, and linkage operatively connects the rudder wheel assembly to the stabilizing disc for raising and lowering the same.

3,477,517

### SEMI-MOUNTED PLOW

**Clarence B. Richey, Fresno, Calif., assignor to Massey-Ferguson Inc., Detroit, Mich.**
**Filed Apr. 19, 1967, Ser. No. 632,009**
**Int. Cl. A01b** *3/28, 3/56, 69/00*
**U.S. Cl. 172—212** **1 Claim**

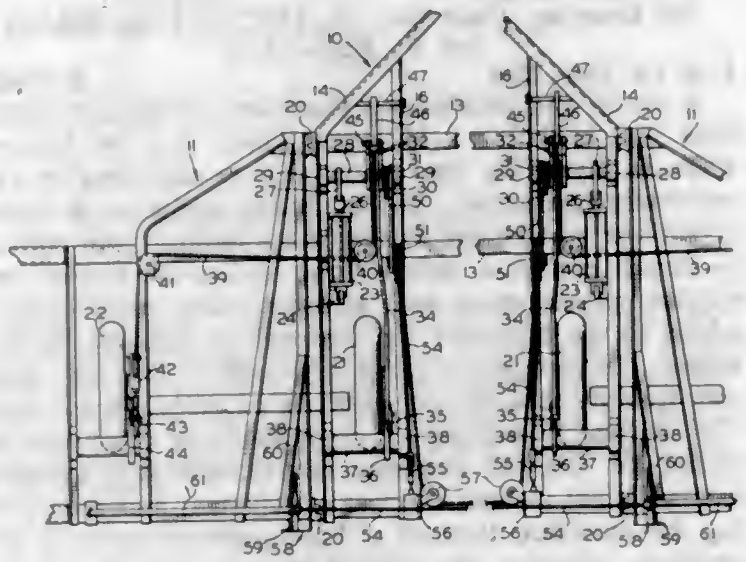


A semi-mounted, two-way, turnover plow having a ground wheel steered in accordance with changes in the direction of a draft vehicle, and interconnected with the turnover plow to cause the wheel to steer the trailing end of the plow respectively to the left or right of the tractor longitudinal axis when the left-hand or right-hand plow bottoms are in plowing positions, and to steer the trailing end of the plow in line with the tractor longitudinal axis when the plows are in transport position.

3,477,518

### AGRICULTURAL IMPLEMENT

**Dennis W. Walker and Eugen Bexton, Hamilton, Ontario, Canada, assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware**
**Filed Mar. 28, 1966, Ser. No. 537,926**
**Int. Cl. A01b** *49/00, 63/10*
**U.S. Cl. 172—311** **12 Claims**

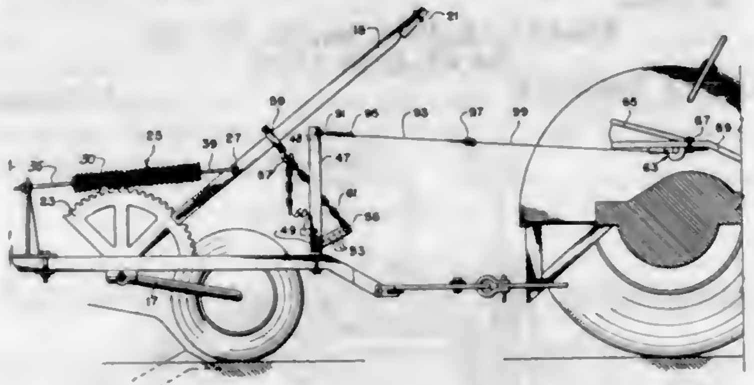


An agricultural implement having wing sections hinged to a main section, wheels to control penetration of the implement and provide a transportation means and power transmission means to raise and lower the wheels and wing sections.

3,477,519

### DEPTH CONTROL APPARATUS

**Keith C. Converse, Pawnee Rock, Kans. 67567**
**Filed Dec. 8, 1965, Ser. No. 512,435**
**Int. Cl. A01b** *63/04;* **F16c** *1/10;* **G05g** *1/04*
**U.S. Cl. 172—315** **5 Claims**



This invention is a depth control apparatus connected to an adjusting lever secured to a crank axle on a tractor with the lever movable to change the depth of soil working. More particularly, this invention is a means to rotate an axle having biasing means urging the same in one direction and a winch and control means selectively moving the same in the opposite direction. More specifically, this invention is a means to regulate depth of soil working of a farm implement having means biasing the same in one direction; winch means adjustably moving the same in the opposite direction; and an adjustable chain means interconnecting the same to readily regulate the resultant movement achieved therefrom.

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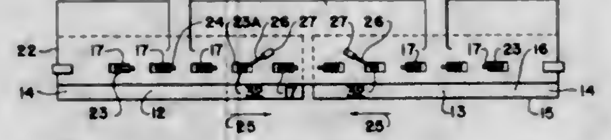
3,477,520

### QUICKLY DETACHABLE SCRAPER BLADES

**James J. Gray, 217 Windermere Road, Calgary, Alberta, Canada**
**Filed Jan. 16, 1968, Ser. No. 698,324**
**Int. Cl. A01b** *35/32, 39/22, 35/20*
**U.S. Cl. 172—719** **1 Claim**

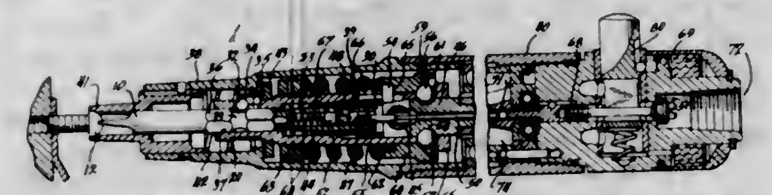


A mould board provided with a horizontal row of apertures and a scraper blade superposed on the front of the mould board. The blade carries wedge blocks which project through the apertures to the back of the mould board and have cam edges which lock against edges of the apertures to lock the blade and mould board together when the blade is moved horizontally by means of an eye bolt extending between a block on the blade and a bracket on the mould board.

3,477,521

### AUTOMATIC POWER TOOL

**George S. Kiester and R Stanford Short, Bryan, Ohio, assignors to The Aro Corporation, a corporation of Ohio**
**Filed Oct. 5, 1967, Ser. No. 673,201**
**Int. Cl. E21c** *5/10;* **B23q** *5/06*
**U.S. Cl. 173—12** **9 Claims**



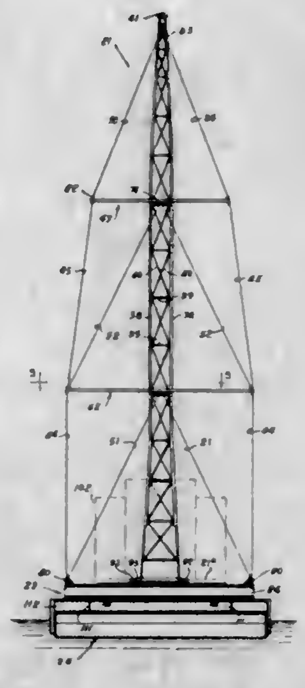
The specification discloses a comparatively simple automatic power tool that turns on by engagement with work to be driven, and which turns off upon a predetermined torque being attained. A novel clutch and power control assembly is provided in which a driver element driven by the motor has a plurality of cam surfaces or grooves formed therein, preferably three, which receive radially movable drive transfer balls which coact with an axially slidable follower element as well as a slotted driven element. The balls coact with a conical cam surface end of the follower, the opposite end of which engages a clip which actuates a sleeve mechanism containing a ball release assembly that operates to control the air supply to the motor in response to the torque applied to the implement portion of the tool.

3,477,522

### BOOM AND BRACING

**John B. Templeton, 1000 Singleton Blvd., Dallas, Tex. 75212**
**Filed July 7, 1967, Ser. No. 651,905**
**Int. Cl. E21c** *9/00, 11/00;* **E04h** *12/34*
**U.S. Cl. 173—43** **14 Claims**

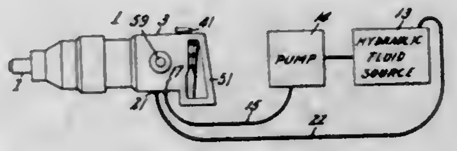
A guide boom structure for a pile driver including longitudinal guy lines connected between the boom base, the boom tip, and lateral outrigger struts longitudinally spaced along the boom. The boom base is rotatable and has a cable arrangement for bracing and providing a supplementary turning force. The lateral boom bracing particularly adapts the boom to support pile driver and leads apparatus for driving heavy battered piles at angles which normally causes excesses cantilevered side loads on and resultant failure of a conventional boom.



3,477,523

### HYDRAULICALLY OPERATED TOOL FOR OPERATING UNDER NONATMOSPHERIC PRESSURES

**Ernest Eber Lewis, Topsfield, Mass., assignor to General Electric Company, a corporation of New York**
**Filed Mar. 20, 1968, Ser. No. 714,585**
**Int. Cl. E21b** *3/12, 7/12;* **F01d** *15/06*
**U.S. Cl. 173—163** **4 Claims**



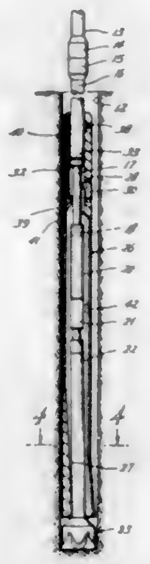
A hydraulically operated tool is provided comprising a case for housing a hydraulic motor, an output device, such as a wrench, means for coupling the hydraulic motor to the output device, and operating controls for the hydraulic motor. Hydraulic fluid which is supplied to operate the motor is further utilized for equalization of the internal case pressure with the ambient pressure so that the tool can be operated at great depths or high altitudes. In operation, the fluid, after leaving the motor, is first discharged into the case so that the case is filled. To effect pressure equalization, a diaphragm, positioned in the wall portion of the case, acts upon the case fluid to compress or expand the effective volume thereof in response to action thereupon by the ambient pressure.

3,477,524

### FULL BORE DIRECTIONAL DRILLING TOOL

**Alfred R. Marks, Jr., 1006 N. Travis St., Liberty, Tex. 77575**
**Filed Feb. 6, 1968, Ser. No. 703,476**
**Int. Cl. E21b** *7/04, 7/06*
**U.S. Cl. 175—82** **14 Claims**

This directional drilling tool consists of a casing having an internal deflecting face and a mandrel extending entirely through the casing and biased toward the deflecting face. The mandrel may be latched to the casing for running the tool and its full bore bit into the well and drilling out obstructions on the way, and the latch is disengaged and one or more stabilizing lugs actuated to permit rotation and advancement of the mandrel within the casing.



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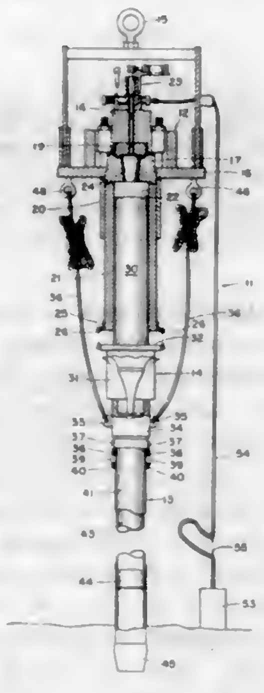
### 3,477,525
### HARD SEDIMENT GUN CORER

**Thomas P. Farrell, Yonkers, and Jason H. Taylor, Stony Point, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed Nov. 21, 1967, Ser. No. 684,847**
**Int. Cl. E21b** *49/02, 7/12;* **E21c** *19/00*
**U.S. Cl. 175—4** **4 Claims**



The disclosure provides a gun corer having a compact frame and adapted to fire a projectile containing a corer and core liner into hard sediment from a selected distance above the surface of the sediment. The corer is tethered to a surface object and when ready for free fall carries a plummet which is disposed below the cutting head the selected distance. The plummet when reaching bottom releases a seer which in turn releases the firing pin causing firing of the 40 mm. shell and propelling the corer and core liner into the bottom.

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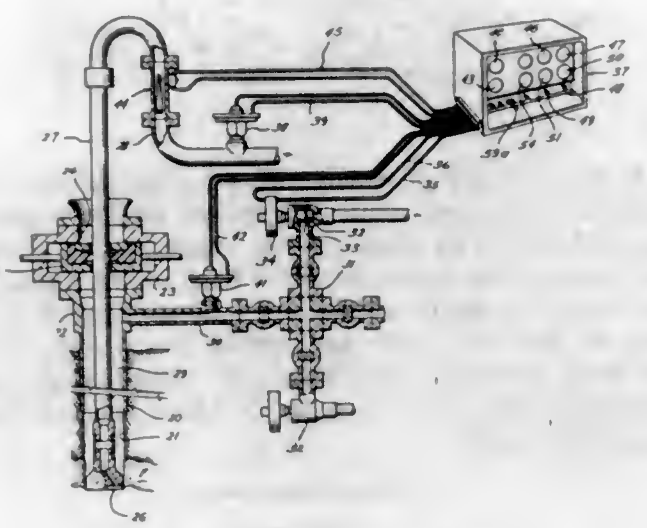
### 3,477,526
### APPARATUS FOR CONTROLLING THE PRESSURE IN A WELL

**Marvin R. Jones and Benton F. Baugh, Houston, Tex., assignors to Cameron Iron Works, Inc., Houston, Tex.**
**Filed June 7, 1967, Ser. No. 645,566**
**Int. Cl. E21b** *3/12, 21/04, 7/00*
**U.S. Cl. 175—25** **30 Claims**



Control apparatus for use in drilling a well wherein drilling fluid is circulated through a drill string extending into a wellbore and the annulus therebetween exiting when the well is shut-in through an outlet regulated by a choke. The control apparatus maintains the pressure differential between the bottom hole pressure of the drilling fluid and the formation fluid at a predetermined value. To accomplish this, the choke is provided with signal-responsive operating means which moves a choke member toward and away from a maximum flow-restricting position in accordance with signals from the apparatus. Sensing devices at the inlet and outlet of the well measure the inlet and outlet circulating pressures and, when there is no circulation, the static pressure. A sensing device located at the inlet is responsive to the density and circulation rate of the drilling fluid. Other parameters of the well are also determined. Signals corresponding to the parameters are fed into a console having a computer which produces from the input signals a control signal which is effective to urge the choke member toward maximum flow-restricting position. A signal representing the outlet pressure is effective to urge the choke member away from the maximum flow-restricting position. The control signal and the outlet pressure signal cooperate to move the choke member to an equilibrium position at which the pressure differential is substantially equal to the predetermined value.

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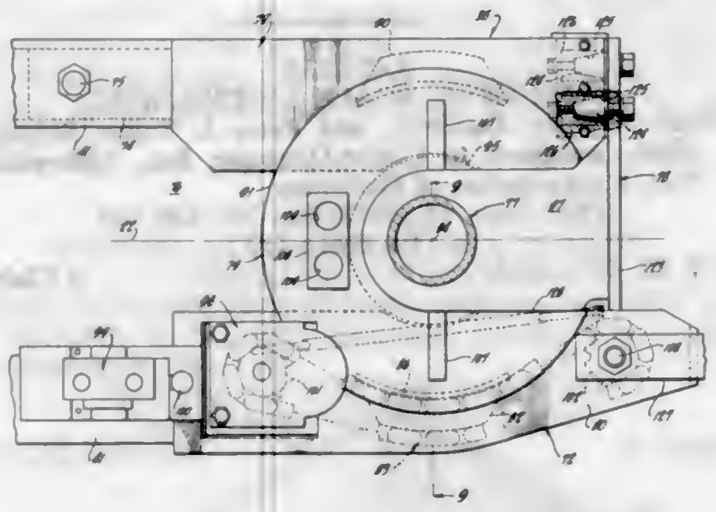
### 3,477,527
### KELLY AND DRILL PIPE SPINNER-STABBER

**Nick Koot, South Laguna, Calif., assignor to Global Marine Inc., Los Angeles, Calif., a corporation of Delaware**
**Filed June 5, 1967, Ser. No. 643,645**
**Int. Cl. E21b** *17/00;* **E21c** *19/00*
**U.S. Cl. 175—85** **21 Claims**

A drill pipe and kelly handling mechanism for gripping a pendulously supported drill pipe or kelly adjacent its lower end and for moving the same into or out of alignment with a drill hole in a drilling rig. The mechanism includes a rotary handling head for rotating a pipe joint or kelly to make up or break a connection in a drill string, the head being mounted for reciprocation toward and away from a base for the mechanism. The mechanism has a "pass-through" arrangement to facilitate movement of a pipe to over the drill hole from externally of the drilling rig.



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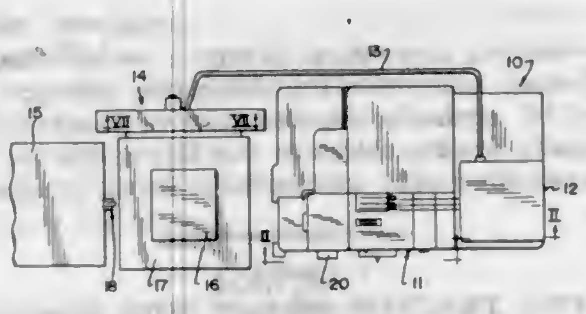
### 3,477,528
### AUTOMATIC WEIGHING AND METERING CONTROL DEVICE

**Richard G. Schmollinger, Ridgefield, N.J., assignor to The Reuben H. Donnelley Corporation, New York, N.Y., a corporation of Delaware**
**Filed Sept. 26, 1966, Ser. No. 581,922**
**Int. Cl. G01g** *23/38*
**U.S. Cl. 177—3** **5 Claims**



A weighing device actuating an electrical-mechanical linkage for automatically operating a postal meter in accordance with the weight of an object placed on the weighing device.

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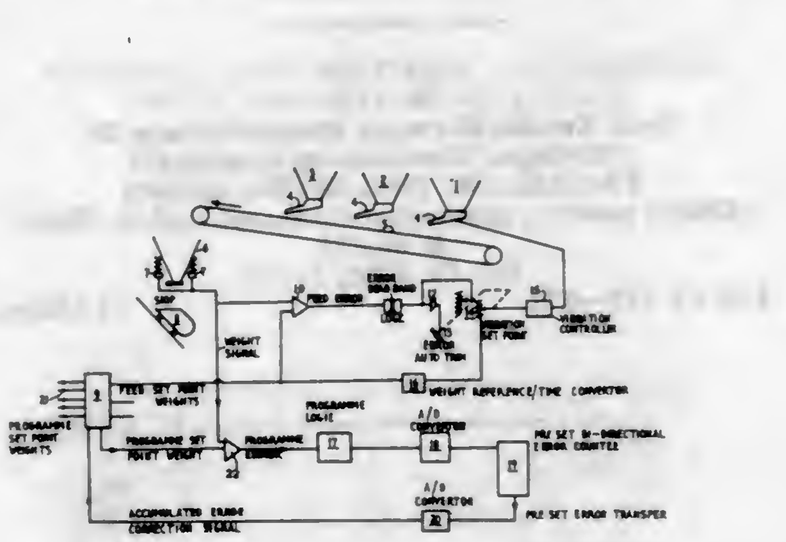
### 3,477,529
### SIMPLIFIED AUTOMATIC CHARGING SYSTEM FOR BLAST FURNACES

**Patrick Marion Burn and Ronald Arthur Nevison, Wollongong, New South Wales, Australia, assignors to Australian Iron & Steel Pty. Limited, Sydney, New South Wales, Australia, a corporation of New South Wales, Australia**
**Filed July 5, 1967, Ser. No. 651,202**
**Claims priority, application Australia, July 6, 1966, 7,976/66**
**Int. Cl. G01g** *19/52*
**U.S. Cl. 177—50** **6 Claims**

The invention is for an apparatus for automatically measuring and feeding weighed ingredients from stock bins or the like to a blast furnace without having to provide weighing devices at or near the individual bins. Logic means are used on which programmed set point weights for each ingredient can be set. Instructions are passed to a selected bin and a vibratory feeder associated with it so that the bin feeds for a preselected time determined by the programme set point weight as modified by the accumulated errors in feeding (called the feed set point weight). The actual weight delivered to a weigh hopper is measured and compared with the programme set point weight and, when the error exceeds a set value, the error is used to adjust the feed set point weight to a new value. The actual weight may also be compared with the feed set point weight to obtain an error signal to adjust the feed rate. The rate of weight increase can be measured and used to modify the feed time to allow for material lying on the belt after feed stops.



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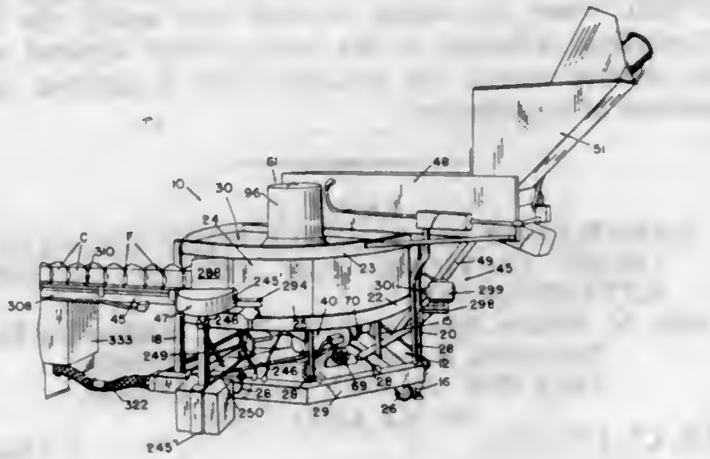
### 3,477,530
### CONTAINER SUPPLY MECHANISM FOR WEIGHING APPARATUS

**Donald W. Garnett, Grand Ledge, Mich., assignor to The Olofsson Corporation, Lansing, Mich., a corporation of Michigan**
**Original application Nov. 6, 1964, Ser. No. 409,543. Divided and this application Aug. 31, 1967, Ser. No. 664,815**
**Int. Cl. G01g** *13/24*
**U.S. Cl. 177—55** **8 Claims**



A mechanism is shown for supplying set-up or erected cartons or like containers to a high speed rotary weighing machine, the supply being under the control of the weighing machine and in such a way that, when the weigher detects an inacceptable overweight or an underweight of product to be packaged in the cartons, it will originate and forward a reject signal to control apparatus of the mechanism. The control means responds to this signal with the result that a carton which would otherwise receive the inacceptable charge of product is halted in a normal feed-in movement, as part of a series of cartons, to the weigher. This, in turn, results in the overweight or underweight charge being dumped from a weighing receptacle to a disposal point without being packaged, the halting of a carton having occasioned an absence of a carton at the product dump zone.

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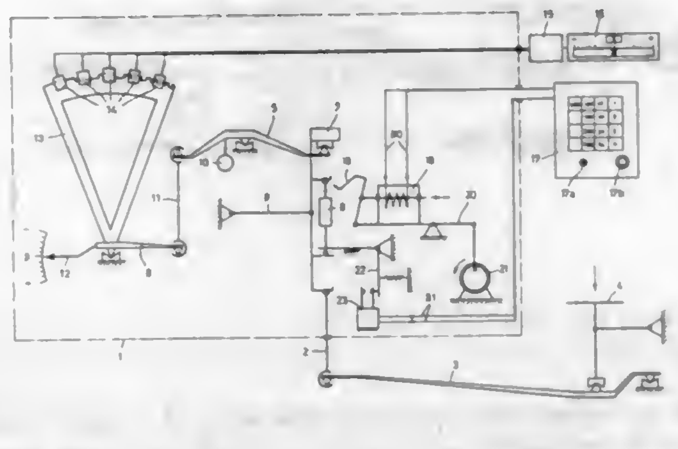
### 3,477,531
### SCALE

**Ernst Kuhnle, Hermann Rommel Strasse 28,
Balingen, Wurttemberg, Germany
Filed Mar. 30, 1967, Ser. No. 627,602
Claims priority, application Germany, Apr. 1, 1966,
B 86,473
Int. Cl. G01g** *23/14*
**U.S. Cl. 177—171 24 Claims**



A scale, comprising balance means having spaced end portions respectively located on opposite sides of the fulcrum. First biasing means biases the balance means to one side of the fulcrum. Second biasing means normally counteracts the first biasing means and maintains the balance means in a position of equilibrium. Selector means reduces the biasing force exerted by the second biasing means by selectable amounts each of which corresponds to a given weight. Indicator means is operatively associated with the balance means for indicating when the same is in a position of equilibrium, as well as deviations from such position. Load supporting means is operatively connected with the balance means and arranged to support a variable-weight load so that, when the weight of such load equals the corresponding reduction in the biasing force selected with the selector means, the balance means is restored to its position of equilibrium.

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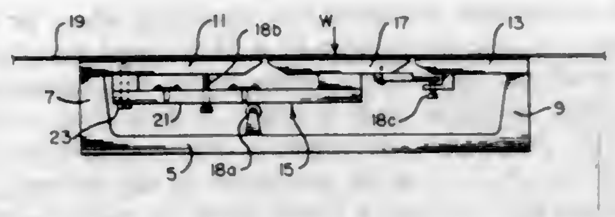
### 3,477,532
### CANTILEVER BEAM SCALE WITH REDUCED CROSS SECTIONS FOR STRAIN GAUGE ATTACHMENT

**Leslie N. Wilder, New Rochelle, N.Y., assignor to Icore
Industries, a corporation of California
Filed Mar. 16, 1967, Ser. No. 623,618
Int. Cl. G01g** *3/14*
**U.S. Cl. 177—211 2 Claims**



A weighing cell of the type wherein the weight is measured by the amount of deflection of a beam wherein measurements of the deflection are made at two different places along the beam whereby the bending moment produces a difference reading representing the true weight of the item being weighed, independent of the position of the item on the pan of the scale.

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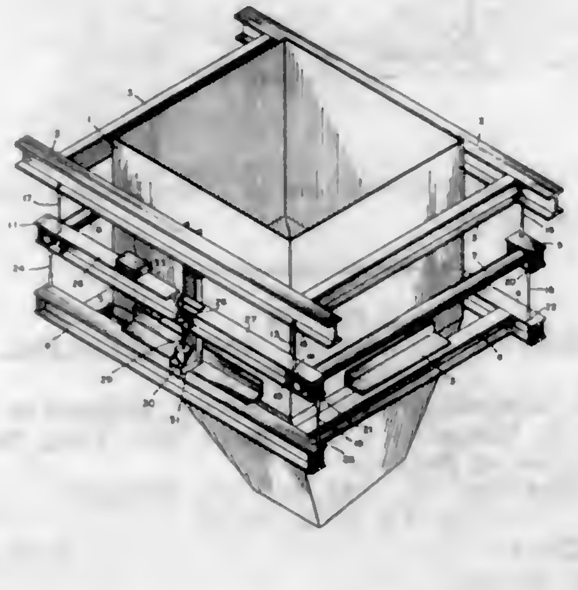
### 3,477,533
### WEIGHING SCALE MECHANISM

**Frank S. Hyer, Duxbury, and Peter J. Tolan, Scituate,
Mass., assignors to Cutler-Hammer, Inc., Milwaukee,
Wis., a corporation of Delaware
Filed Nov. 21, 1967, Ser. No. 684,701
Int. Cl. G01g** *1/12*
**U.S. Cl. 177—220 3 Claims**



A weighing apparatus having a weigh frame with equalization and force transformation linkages all suspended by vertically disposed relatively inextensible but universally flexible cables or the like which are capable of transmitting only substantially purse tension forces.

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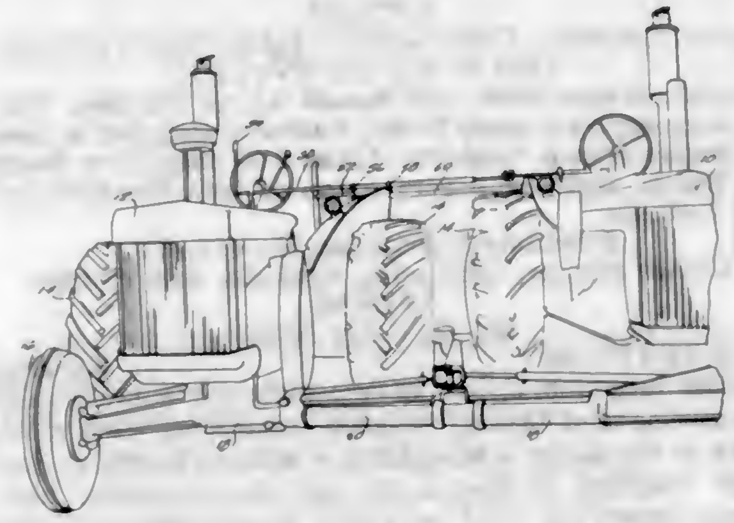
### 3,477,534
### TWO TRACTOR SIDE-BY-SIDE HOOKUP

**William A. Ladwig, Jr., P.O. Box 881,
Lusk, Wyo. 82225
Filed Dec. 7, 1967, Ser. No. 688,897
Int. Cl. B60d** *1/16, 1/00;* **B62d** *11/00*
**U.S. Cl. 180—14 3 Claims**



The side-by-side hookup for two tractors provides an arrangement so that there is a single front axle, means for pulling a load device from a center point of the two tractors, and in which there is a single drawbar and in which there are several broken joints intermediate the rear drawbar and the single front axle, so each tractor can twist or turn one way conjointly with the other and still pull evenly and not place a strain on any part of the main frame of the arrangement, and in which the device can be removed so that the tractors can be returned to the normal operation by jacking up the front axle, taking out the two bolts and pins thereof and replacing the front wheels, which can be done in about 55 minutes to one hour.

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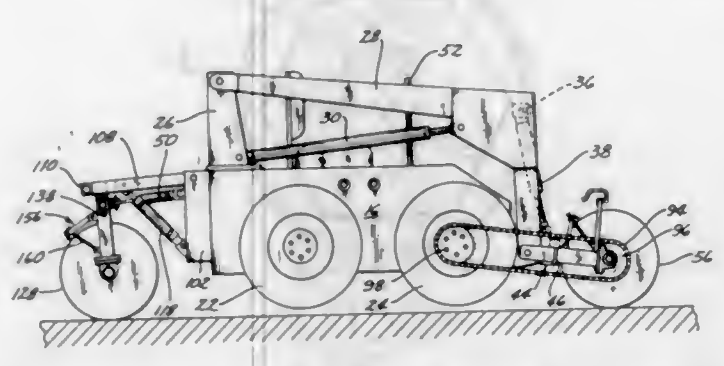
### 3,477,535
### ROLLER ATTACHMENT FOR A SELF-PROPELLED VEHICLE

**Harold M. Wyatt, Hudson, Iowa, assignor, by mesne assignments, to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Mar. 10, 1967, Ser. No. 622,354
Int. Cl. B60b** *19/12;* **E01c** *19/26*
**U.S. Cl. 180—20 5 Claims**



A roller attachment for a self-propelled vehicle, said loader including a frame means having a pair of wheels rotatably mounted at opposite sides thereof, a boom means pivotally mounted on the frame means, a first roller means pivotally secured to said boom means, a second roller means pivotally secured to the frame means at the rearward end thereof.

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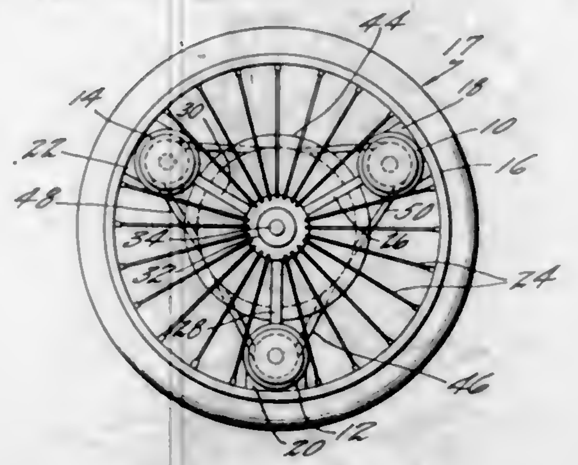
### 3,477,536
### ELECTRIC DRIVE SYSTEM

**Eugene P. Carini, Andover, Conn., assignor to Energy
Systems, Inc., Andover, Conn., a corporation of
Connecticut
Filed Sept. 21, 1967, Ser. No. 669,536
Int. Cl. B60k** *1/00;* **F16h** *37/06;* **H02k** *7/00*
**U.S. Cl. 180—65 4 Claims**



An electric drive system wherein each driven member comprises an integral unit including a plurality of electric motors, suitable torque transmitting means and means for delivering electric power to the motors. The electric motors are rigidly mounted adjacent the periphery of the driven member and are coupled to the axle about which the member rotates by the torque transmitting means, the motors thus rotating with the member.

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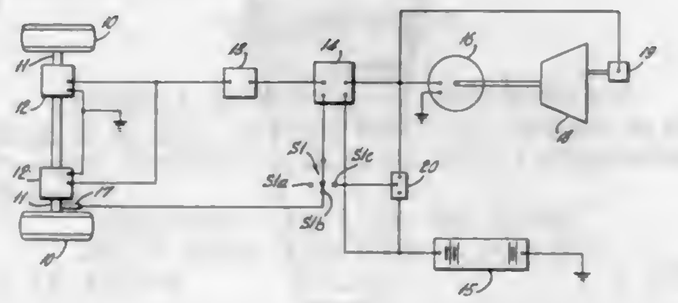
### 3,477,537
### ELECTRIC MOTOR-DRIVEN AUTOMOBILE

**Paul J. Plishner, 6 Manitou Court,
Westport, Conn. 06880
Filed Dec. 19, 1967, Ser. No. 691,756
Int. Cl. B60k** *1/00;* **B60l** *11/12*
**U.S. Cl. 180—65 8 Claims**



A motor vehicle includes electric motor-driven traction wheels, a gas turbine-driven electric generator regulated to provide a constant voltage output and a storage battery. A network responsive to the vehicle speed connects the motor through a motor speed control to the battery or generator when the vehicle speed is respectively below and above a predetermined value, and means are provided for selectively effecting these connections independently of the vehicle speed. The battery is connected to the generator through a voltage regulator to charge the battery.

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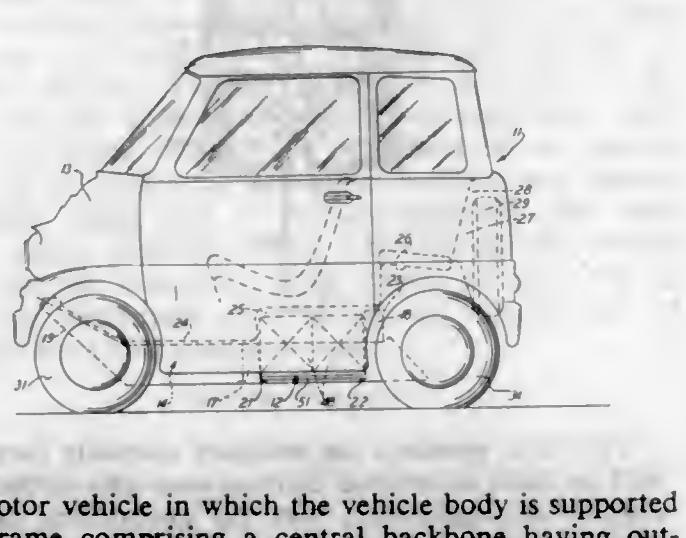
### 3,477,538
### ELECTRIC PROPULSION MOTOR VEHICLE

**Leslie Hall, Hadleigh, and Arthur E. Lynes, Thorpe Bay,
England, assignors to Ford Motor Company, Dearborn,
Mich., a corporation of Delaware
Filed Jan. 22, 1968, Ser. No. 699,701
Claims priority, application Great Britain, Apr. 12, 1967,
16,781/67, 16,782/67, 16,784/67, 16,786/67
Int. Cl. B60k** *1/00;* **B61c** *3/00*
**U.S. Cl. 180—65 3 Claims**



A motor vehicle in which the vehicle body is supported on a frame comprising a central backbone having outriggers projecting therefrom. The frame supports at least one prime mover in the form of an electric motor and the electric energy producing power cells for supplying current to the motor are located between and supported by the outriggers.

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### ERRATUM

For Class 180—70 see:
Patent No. 3,477,439

### 3,477,539

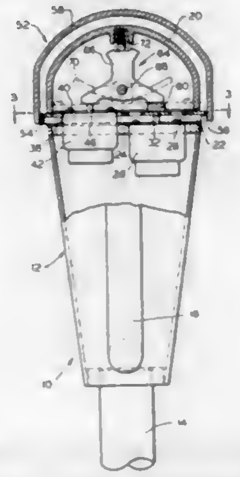
## SAFETY DEVICE FOR A VEHICLE

**Gary L. De Pung and Louis A. Haddock, Jr., Battle Creek, Mich., assignors to Clark Equipment Company, a corporation of Delaware**

**Original application Dec. 16, 1965, Ser. No. 514,202, now Patent No. 3,411,060. Divided and this application Dec. 28, 1967, Ser. No. 694,241**

**Int. Cl. B60k** *27/00;* **H01h** *3/16*

**U.S. Cl. 180—91** **6 Claims**



A safety device for vehicles operable to reverse the direction of a self-propelled industrial type hand truck when the control lever engages an object during forward movement of the truck.

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### 3,477,540

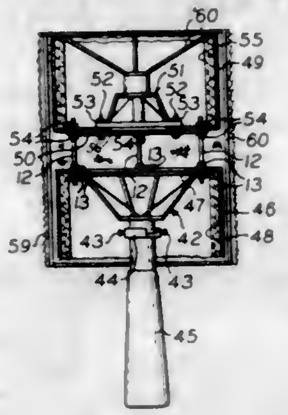
## SPEAKER SYSTEM

**Alfonso Rizo-Patron R., A. de la Torre Gonzalez 147, San Isidro, Lima, Peru**

**Continuation-in-part of application Ser. No. 518,202, Jan. 3, 1966. This application Dec. 27, 1966, Ser. No. 609,988**

**Int. Cl. G10k** *13/00;* **H04r** *7/16*

**U.S. Cl. 181—31** **6 Claims**



Two cone speakers are mounted coaxially face-to-face with an axial separation therebetween and in unconfined acoustic communication with the surrounding air. Each said speaker has an acoustic radiator which produces both front and rear waves of acoustic energy when excited by audio frequency signals. Said speakers when designed for the high audio frequency range do not require a baffle and their phasing is not critical. When the speakers are reproducing low audio frequencies it has been found that open baffles of a sound opaque material such as lead reproduce adequate bass or low frequency response and for such purposes the speakers should be excited 180° out of phase. The entire speaker system has been found to produce outstanding omnidirectional response. The assembly can be enclosed in acoustic cloth on a wire frame and supported so as to resemble a lamp.

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### 3,477,541

## DEVICE FOR REDUCING ACOUSTIC OSCILLATIONS ORIGINATING FROM THE ROTATION OF A PRISMATIC MEMBER IN A CYLINDRICAL CASING

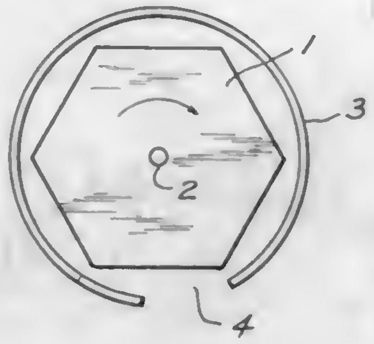
**Carl Harje Gustav Thunholm, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a Swedish company**

**Filed Sept. 25, 1968, Ser. No. 762,541**

**Claims priority, application Sweden, Sept. 27, 1967, 13,298/67**

**Int. Cl. E04b** *1/99*

**U.S. Cl. 181—33** **4 Claims**



A rotating mirror prism within a cylindrical drum with an opening for allowing radiation from the outside to strike the prism. One edge of the opening extends at an oblique angle to the generatrix lines of the drum to prevent the air current produced by the rotation of the prism from striking all points on the edge simultaneously, thereby reducing the noise caused by the air current striking the edge.

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### 3,477,542

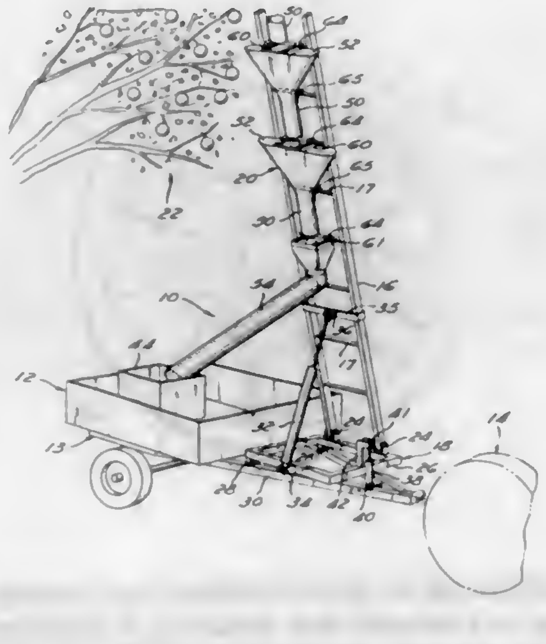
## FRUIT PICKING DEVICE

**Wilbur J. McNenny, P.O. Box 257, Longwood, Fla. 32750**

**Filed Feb. 15, 1967, Ser. No. 616,309**

**Int. Cl. A01g** *19/08;* **A62b** *1/20*

**U.S. Cl. 182—49** **8 Claims**



Fruit harvesting equipment including a ladder, positioning apparatus which swivels the ladder about a vertical axis as well as tilts it vertically and from side to side, fruit lowering apparatus including a communicating series of vertically spaced funnel-shaped sections along the ladder, each adapted to receive fruit and deliver it to the next lower section, and a series of stopper assemblies having flexible flaps for catching each piece of fruit and holding it until the next piece of fruit bumps the held piece through the flaps and is in turn held by the flaps.

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### 3,477,543

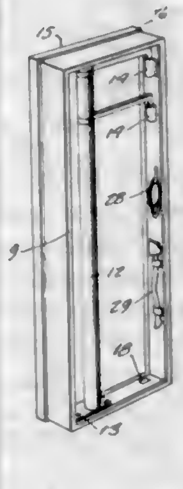
## CONCEALED BEDROOM FIRE EXIT

**Kenneth J. Vigluicci, 103 Crest Road,**
**Toms River, N.J. 08753**

**Filed Oct. 23, 1967, Ser. No. 677,394**

**Int. Cl. A62b** *1/06, 1/20*

**U.S. Cl. 182—76** **5 Claims**



A concealed fire exit for buildings and homes consisting of a first internal door which is concealed by a mirror within the structure and covers a second door forming part of the external wall of the structure. The external door can be easily removed or pushed out to expose the exit and permit a telescoping tube or other escape means to swing out in order to permit the occupants to escape from the building.

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### 3,477,544

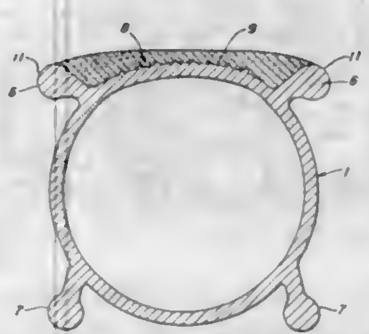
## RUNG FOR A LADDER AND METHOD OF MAKING THE SAME

**Henry Hopfeld, Ross, Calif.**
**(732 A St., San Rafael, Calif. 90701)**

**Filed Feb. 15, 1968, Ser. No. 709,169**

**Int. Cl. E06c** *7/08*

**U.S. Cl. 182—228** **2 Claims**



A generally cylindrical metal rung which has four diametrically opposite longitudinal ribs; two of the ribs defining the top of the rung and are bent outwardly away from one another. The space between the top ribs is the step and has a plurality of longitudinal grooves and at least a middle portion is serrated and dented in such fashion as to lock the material which forms the frictional step surface on the rung; this frictional step surface is formed as follows: epoxy is applied to the serrated middle portion of the top of the rung so as to substantially fill the space between the top ribs, then a layer of grit is placed upon and pressed into the epoxy and baked, and while still hot another layer of epoxy is spread on the grip surface so as to solidify and integrate the friction layer on the rung; the extreme ends of the rung are provided with spaced teeth and pressed into a hole in the respective rails of the ladder, the hole containing epoxy so that the epoxy flows around the toothed end portion of the rung and also into the end of the rung to cushion and bind the rung in place.

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### 3,477,545

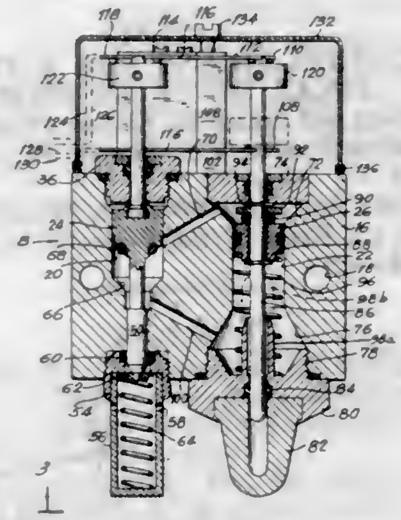
## LUBRICANT DISTRIBUTION SYSTEM

**William E. Durnan, Rochelle Park, N.J., assignor to Auto Research Corporation, Boonton, N.J., a corporation of Delaware**

**Filed Mar. 9, 1967, Ser. No. 621,859**

**Int. Cl. F01m** *1/00;* **F16n** *17/06, 13/22*

**U.S. Cl. 184—6** **5 Claims**



The present disclosure describes a lubricant distribution system with a plurality of outlets controlled by measuring valves, all having parallel liquid communication to a central high pressure lubricant source and each providing a periodic delivery of a metered quantity of lubricant. Electrical switch means are operated by the pistons of each of the measuring valves when they reciprocate and these are in turn connected by an electric circuit to an indicating means to indicate any distributing unit which fails to operate normally. The indicating means indicates both actuation of the switch means for an excessively long period of time due to failure of movement of a piston, as well as lack of actuation for a long period of time.

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### 3,477,546

## LUBRICATING OIL PUMPING STATION AND MASTER CONTROL CENTER FOR POSITIVE DISPLACEMENT TYPE METERING VALVES

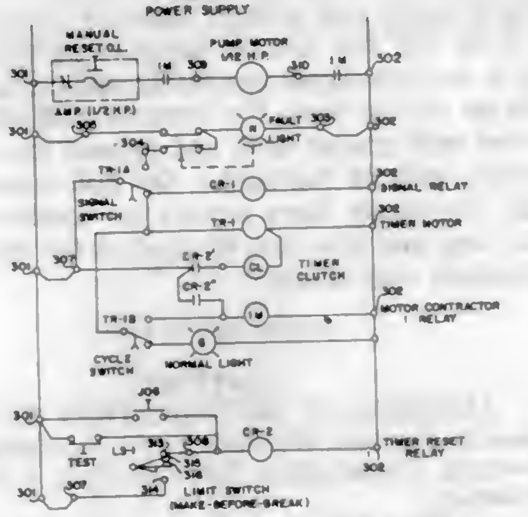
**Thomas J. Gruber, Hunting Valley, Chagrin Falls, and William W. Lyth, Cleveland, Ohio, assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio**

**Filed June 16, 1967, Ser. No. 646,603**

**Int. Cl. F01m** *1/12;* **F16n** *7/14, 13/00*

**U.S. Cl. 184—7** **10 Claims**

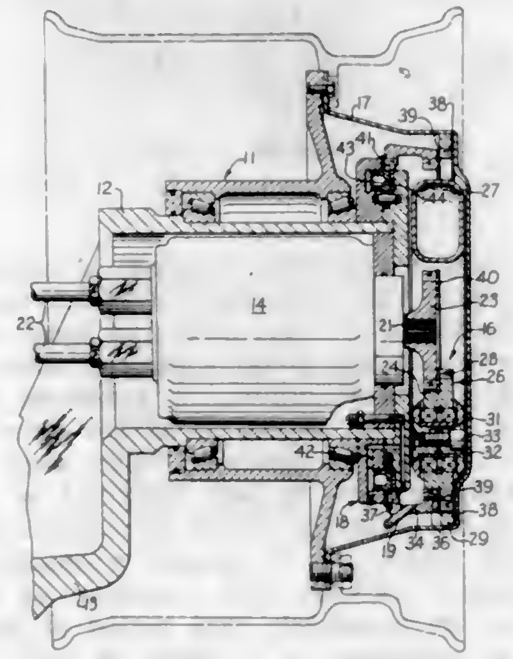
An automatic lubricating oil pumping station comprising a reservoir, pump, reversing valve, four-way valve, and timer control for use in centralized lubrication systems. The timer control is designed to operate the pumping station to feed lubricant to all types of positive displacement metering valves including the parallel system valve, series system valve, and spring-return system valve.



### 3,477,547
### LUBRICATION MEANS FOR A PLANETARY FINAL DRIVE ASSEMBLY

**Ralph H. Kress and James M. Kostas, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**

**Filed Sept. 25, 1967, Ser. No. 670,300**
**Int. Cl. F16n** *25/04;* **B60r** *17/34, 17/30*
**U.S. Cl. 184—63** **4 Claims**

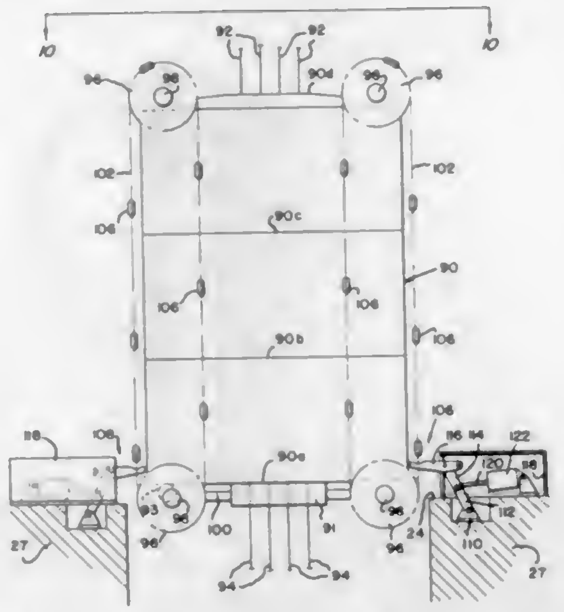


A drive assembly for providing hydrostatic power to drive a normally non-driven wheel of a vehicle and thus increase the effective power of the vehicle under adverse conditions comprising a hydraulic motor in the wheel spindle to transfer driving power to the wheel through a planetary gear arrangement disposed in a generally cylindrical housing which rotates with the wheel. To reduce friction between the moving members of the drive assembly and the lubricant in the housing, the amount of lubricant is reduced so that, during higher speed rotation of the wheel, centrifugal force retains the fluid lubricant about the periphery of the gear housing to permit free motion of the gears relative thereto. To insure continuous lubrication of the gears, small angled tubes are mounted on a portion of the planetary gear arrangement for rotation relative to the housing and peripherally disposed lubricant whereupon the tubes collect lubricant from the housing periphery and direct it inwardly upon the gears.

### 3,477,548
### CURRENT LIMIT CHAIRING SYSTEM

**William G. A. Trollope, Terrasse Vaudreuil, Quebec, Canada, assignor to Canadian Ingersoll-Rand Company Limited, Montreal, Quebec, Canada, a corporation of Canada**

**Filed June 4, 1965, Ser. No. 461,475**
**Int. Cl. B66b** *1/24*
**U.S. Cl. 187—29** **16 Claims**

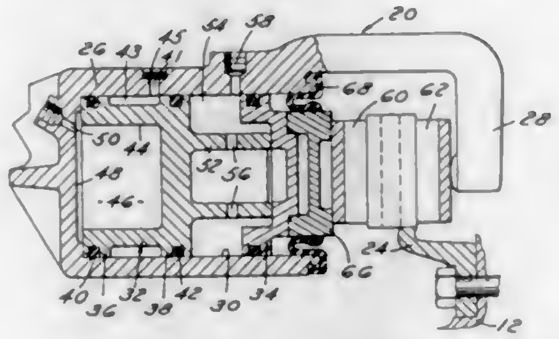


A hoist apparatus for moving a load into alignment with a loading level, which is constructed such that the load is stopped by the hoist drive at a position adjacent the loading level and then moved by fluid operated motor means at low speed into alignment with the loading level.

### 3,477,549
### DUAL AUTOMOTIVE BRAKE SYSTEM

**David W. Barton, Birmingham, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**

**Filed June 4, 1968, Ser. No. 734,329**
**Int. Cl. B60t** *11/20, 11/24*
**U.S. Cl. 188—152** **5 Claims**



A disc brake construction for a dual automotive braking system having a caliper that straddles a brake rotor. A bore in the caliper contains a pair of pistons arranged in tandem fashion. Hydraulic pressure chambers are situated between the pistons and between the depth of the bore and the inner piston. Either or both of these chambers may be pressurized to move the outer piston against the brake lining and apply the brake.

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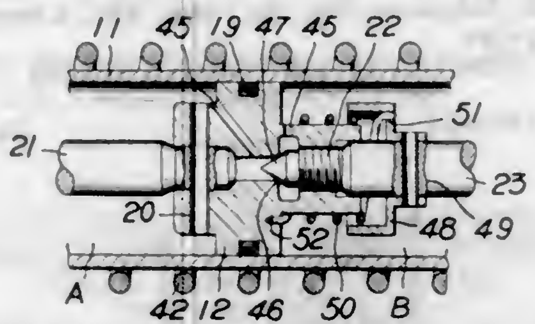
### 3,477,550
### HYDRAULIC LOCK DEVICE

**Kensei Suzuki, 4316 Dota, Kani-machi, Kani-gun, Gifu-ken; Shigeo Tamura, 32 Kamono, Kamono-cho, Minokamo-shi, Gifu-ken; Yoshinori Kawachi, 2595 Sakurai, Dota, Kani-machi, Kani-gun, Gifu-ken; and Naohiro Nagafuji, 3041-2 Wakamiya, Ota-cho, Minokamo-shi, Gifu-ken, all of Japan**

**Filed May 3, 1968, Ser. No. 726,500**
**Claims priority, application Japan, Oct. 5, 1967 (utility model), 42/84,496; Feb. 27, 1968 (utility model), 43/14,158**
**Int. Cl. F16d** *57/06*
**U.S. Cl. 188—96** **9 Claims**

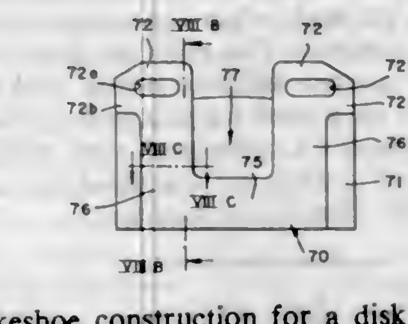


A hydraulic lock device, in which in order to hydraulically lock a piston fitted into a sealed cylinder at a desired position within the cylinder, one end of a connecting rod is securely fixed to one side of the piston while the other end of the connecting rod extends beyond one end of the cylinder and has a fixture member so as to prevent the rotation of the piston; one end of an extended bracket is securely fixed to the other end of the cylinder while the other end of the extended bracket has another fixture member; the piston has a communication bore bored therethrough for communication between chambers on both sides of the piston, said bore having therein a valve seat; a piston rod is threaded to the piston so as to oppose to the valve seat; the threaded end of the piston rod is formed into a valve which moves to and away from the valve seat when the piston rod is rotated from the outside of the hydraulic lock device.

### 3,477,551
### BRAKESHOE CONSTRUCTION FOR DISK BRAKES

**Friedrich Beuchle and Heinz Hahm, Frankfurt am Main, and Hans Christof Klein, Hattersheim (Main), and Hans Beller, Bad Vilbel, Germany, assignors to Alfred Teves GmbH, Frankfurt am Main, Germany, a corporation of Germany**

**Filed Jan. 19, 1968, Ser. No. 699,203**
**Claims priority, application Germany, Jan. 28, 1967, T 33,098 thru T 33,107; Feb. 17, 1967, T 33,229**
**Int. Cl. F16d** *69/02*
**U.S. Cl. 188—250** **10 Claims**

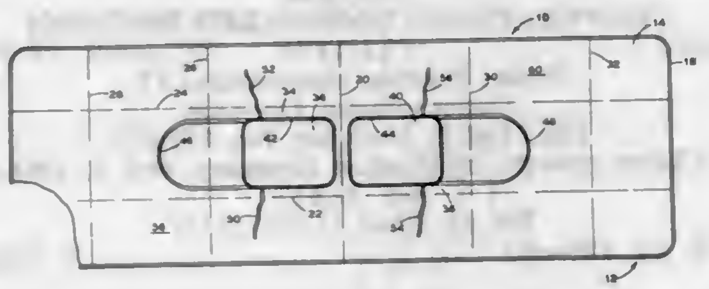


A brakeshoe construction for a disk brake in which a brake lining of ceramic or ceramic-like material is surrounded in whole or in part by a band which may form a frame for an open-work web into the interstices of which the brake lining extends or a sheet-metal web with or without perforations. When the frame has no web, it preferably completely surrounds a large step milled into the lining material or is spring-biased by inherent resilience against the periphery of the lining. When provided with a web, the band may be a flange extending along the periphery of the web to retain the lining in a pocket formed within the flange or a frame for an opening, later being embedded in the lining body. In all cases, guide apertures for the guide rods of a disk brake are formed integrally by lugs of the frame or web or are located within the frame.

### 3,477,552
### COMBINATION MAT AND TOTE BAG

**Herbert S. Goldman, Westfield, N.J., assignor to Acme Quilting Company, Inc., New York, N.Y., a corporation of New York**

**Filed Aug. 8, 1967, Ser. No. 659,191**
**Int. Cl. A47c** *17/82;* **A47g** *9/00*
**U.S. Cl. 190—2** **3 Claims**

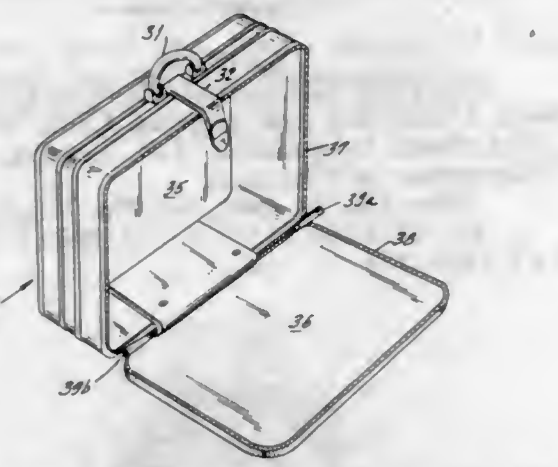


A combination mat and tote bag comprising a flexible mat symmetrical about a central transverse fold line. The mat is foldable about spaced longitudinal and transverse fold lines which define center panels on each side of the central fold line. Each center panel mounts a pocket so that when the mat is folded along the fold lines the pockets are located exteriorly of the mat to provide a storage area. Means are also provided for carrying the mat and for maintaining the mat in a folded condition so that it can be used as a tote bag.

### 3,477,553
### LUGGAGE HAVING A ZIPPER CLOSURE

**Michael Kish, Jr., Hightstown, N.J., assignor, by mesne assignments, to Atlantic Products Corporation, Trenton, N.J., a corporation of Delaware**

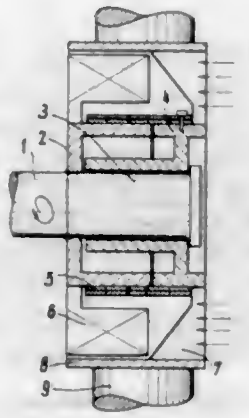
**Filed June 21, 1967, Ser. No. 647,841**
**Int. Cl. A45c** *3/00;* **B23p** *9/00;* **A44b** *19/00*
**U.S. Cl. 190—41** **9 Claims**



A zipper closure for luggage extends around one edge of the main frame to close a side panel of the luggage. The frame, including the zipper half extending along one side, is manufactured in the flat, and thereafter bent to tubular form. A lining tube extends from the zipper half in the flat, and is cuffed inwardly and over the frame interior after the frame is bent to the tubular form. An extruded plastic welt is used which has an inwardly curled top surface which curls over the stitch line otherwise visible from the exterior of the bag, with the outer edge of the inwardly curled section latching into a cooperating extension in the body portion of the welt to hold the flat in position. The cooperating zipper halves lie atop rigid plastic strips which generally abut one another when the zipper is closed and serve to reinforce the zipper fabric and to permit easier opening and closing of the zipper. A lock construction is formed with two zipper runners used for the zipper closure, each having L-shaped pulls which are pivotally mounted and swivelly extend from the runner. The two pulls are butted against one another with their L-shaped pulls wrapping over the edge of the bag and are received in spaced slots on the bag wall. A closure strap extending from the center of the frame overlies the zipper pulls and is locked into a receiving clamp to prevent access to the zipper pulls while the leather strap is in position.

### 3,477,554
### TEMPERATURE CONTROLLED FRICTION CLUTCH

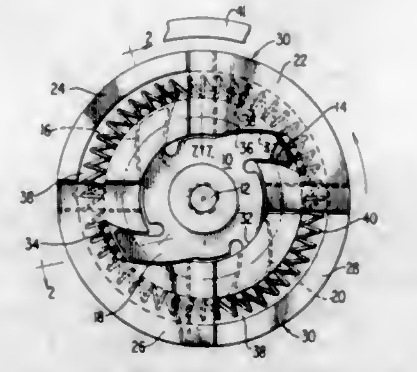
**Walter Schiffer, Hauptstrasse 12,**
**Niederhofheim, Germany**
**Filed Oct. 2, 1967, Ser. No. 672,037**
**Claims priority, application Germany, Oct. 3, 1966,**
**Sch 39,617**
**Int. Cl. F16d** *11/06, 13/14*
**U.S. Cl. 192—81** **1 Claim**



A temperature-controlled two-part friction clutch employs a helically-wound, bimetallic element which is responsive to the temperature of the environment. When the temperature reaches a predetermined level the bimetallic element which is attached to the second clutch part contracts to seize the first clutch part to couple them together. The first clutch part is secured to a rotatable shaft and carries a plurality of fan blades.

### 3,477,555
### CENTRIFUGAL FRICTION CLUTCH

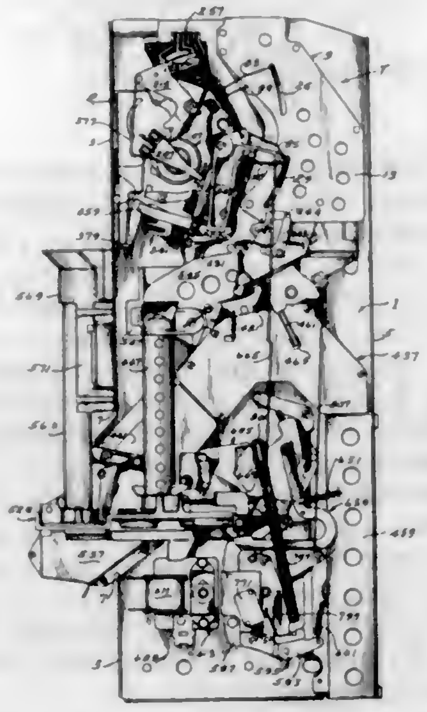
**Harry I. Hazzard, Los Angeles, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin**
**Filed Jan. 30, 1968, Ser. No. 708,470**
**Int. Cl. F16d** *23/10, 13/72;* **B60t** *1/00*
**U.S. Cl. 192—105** **15 Claims**



A centrifugally actuated friction clutch having a plurality of sectorial clutch shoes held radially inward by an encompassing coil spring and a hub having a plurality of guide arms extending outwardly into slots in the clutch shoes, the improvement residing in the self-retention of the elements of the clutch by the structure of the clutch shoes and the radially inwardly biasing coil spring. The outwardly extending guide arms of the hub, the spring receiving groove of the clutch shoes, and the overlapping edges of the clutch shoes provide the axial restraint. Alternative embodiments include the alternating of symmetrically opposed, but otherwise identical, clutch shoes and completely identical clutch shoes. Construction of the clutch shoes encourages the cooling flow of air through the clutch.

### 3,477,556
### CONTROL AND CHANGE MAKER FOR A VENDOR

**James T. Schuller, St. Ann, Harry C. Haeusser, St. Louis County, and Barry L. Smith, Florissant, Mo., assignors to UMC Industries, Inc., St. Louis, Mo., a corporation of Delaware**
**Filed Oct. 23, 1967, Ser. No. 677,380**
**Int. Cl. G07f** *5/08, 9/00*
**U.S. Cl. 194—17** **36 Claims**

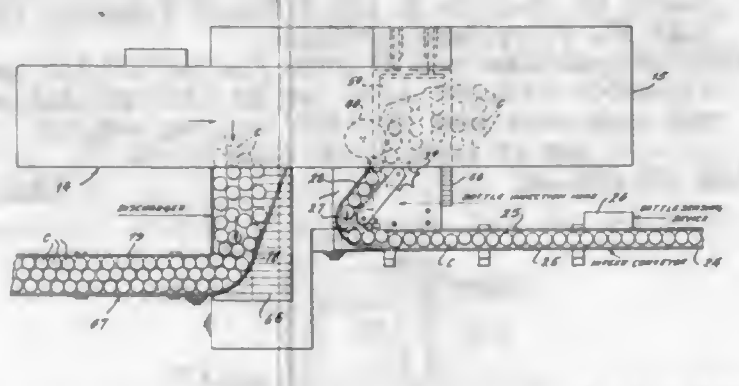


A coin-handling and change-making unit for controlling the operation of a vending machine for vending items at different prices and for making change in accordance with the amount in coin deposited in the machine and the price of an item selected by a purchaser. The unit is adapted to accept nickels, dimes, quarters and half-dollars and to escrow deposited coins for return prior to a purchase. It has nickel and dime change tubes, nickels deposited in the unit being fed to the nickel tube for maintaining a supply of nickels for change. The dime tube is a preloaded tube. Provision is made for nickel and dime payback in change as long as there is a supply of dimes in the dime tube, with automatic switch-over from nickel and dime payback to all-nickel payback when the supply of dimes in the dime tube is depleted. The unit has dual credit registers for vending at two different prices, and these are automatically reset on a vend for acceptance of coins and registration of credit for a subsequent vend while change is being issued. Half dollars are escrowed on edge separately from nickels, dimes and quarters.

### 3,477,557
### CONTAINER MOVING AND METERING APPARATUS

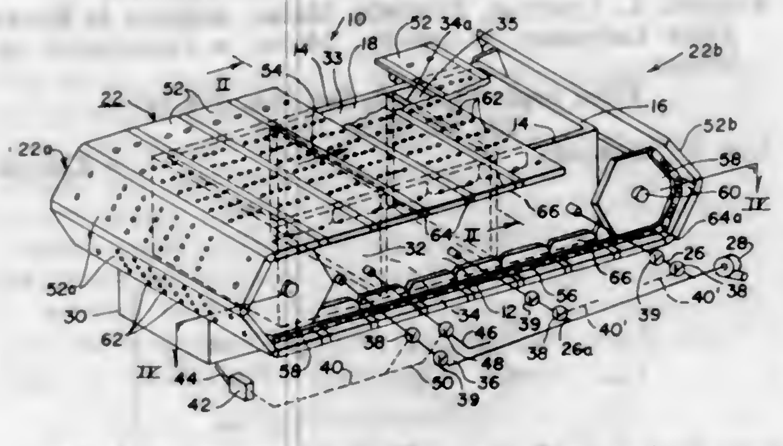
**Momir Babunovic and John C. Goessmann, St. Louis, Mo., assignors to Barry-Wehmiller Company, St. Louis, Mo., a corporation of Missouri**
**Filed May 26, 1967, Ser. No. 641,512**
**Int. Cl. B65g** *47/52*
**U.S. Cl. 198—22** **9 Claims**

Apparatus for moving and metering the movement of containers into processing machinery, such as container rinsers, in multiple sequence such that a continuously moving pocketed conveyor may be constantly filled with containers through the action of a metering device which permits high speed handling.



### 3,477,558
### AIR LIFT AND VACUUM CONVEYORS AND FORAMINOUS BELT MEANS THEREFOR

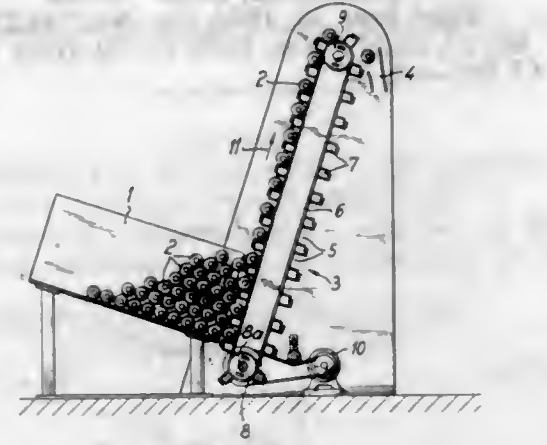
**Fred J. Fleischauer, 726 10th St.,**
**Oakmont, Pa. 15139**
**Continuation-in-part of application Ser. No. 589,945, Oct. 27, 1966. This application May 29, 1967, Ser. No. 651,082**
**Int. Cl. B65g** *15/58*
**U.S. Cl. 198—184** **11 Claims**



The present invention utilizes air float and vacuum support principles in general conveying or transporting of articles, without the use of high differential pressures, movable vacuum heads, and large leakage rates. The principles of the invention are adaptable to a variety of general conveying operations such as elevated or overhead conveying, elevating, diverting, unscrambling, stacking, unstacking, palletizing, accumulation and alignment. The invention also provides a foraminous conveyor with means for controlling leakage rates therethrough, and novel conveyor structures for supporting and moving the foraminous belt without extensive contact with apertured slide surfaces. In some cases the vacuum or air lift conveyor can be hooded, with the hood coupled to the blower inlet or outlet as the case may be, in order to increase the pressure differential across the foraminous belt and to reduce the volumetric load on the blower. Certain of the vacuum conveyor arrangements are shaped to engage irregular objects and/or are provided with novel release mechanisms to quickly equalize the differential pressures across the belt in order to release articles adhered thereto. Novel mechanisms are provided for cleaning the foraminous belt for either vacuum or air lift conveyors described herein. When a variety of articles are transferred by the air lift or vacuum conveyor, a discriminator and time delay circuit can be associated therewith for discharging the conveyed articles selectively to pre-selected discharge stackers or cross-conveyors. Novel lateral seals are provided for sealing the edges of the foraminous belt to the pressure chamber in either of the air lift or vacuum conveyors. A novel depalletizer including a horizontally movable delivery plate having an inclined edge is associated with a vacuum conveyor and with an alignment conveyor. Another novel depalletizer, wherein the indexing requirement of conventional depalletizers is eliminated, is associated with a lifting feature of the vacuum conveyor.

### 3,477,559
### PICK-UP DEVICE FOR CONVEYING INDIVIDUAL TEXTILE COILS OUT OF STORAGE

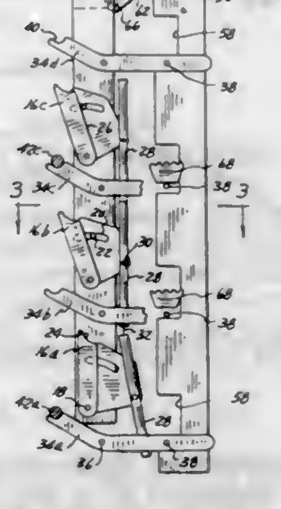
**Hans Raasch, Rheydt, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany, a corporation of Germany**
**Filed Jan. 24, 1968, Ser. No. 700,181**
**Claims priority, application Germany, Feb. 1, 1967,**
**R 45,169**
**Int. Cl. B65g** *15/44*
**U.S. Cl. 198—198** **1 Claim**



A pick-up device for individually taking textile coils out of a magazine or other supply comprises two parallel endless belts which carry a multiplicity of troughs for the respective coils, each trough having its two longitudinal wall structures fastened to the two belts respectively. The two belts are driven at the same speed and are displaceable relative to each other in the running direction to thereby change the width of the troughs for adapting them to coils of respectively different thicknesses.

### 3,477,560
### AUTOMATIC ACCUMULATING DOWN ELEVATOR

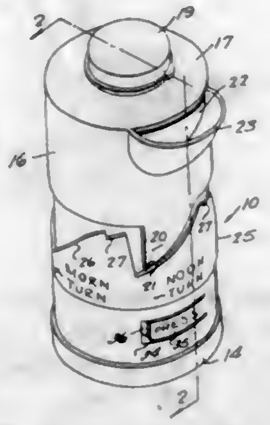
**Richard Broser, Royal Oak, Mich., assignor to Accum-Matic Systems, Inc., Warren, Mich.**
**Filed Dec. 8, 1967, Ser. No. 689,054**
**Int. Cl. B65g** *25/04*
**U.S. Cl. 198—218** **2 Claims**



Mechanism is provided for conveying workpieces vertically downwardly in discrete increments between adjacent holding stations. A vertically reciprocating transfer bar has a plurality of vertically spaced lift fingers mounted thereon which selectively remove a workpiece from a given holding station and transfer it downwardly and deposit it at the next adjacent lower holding station. Detector arms at each holding station sense the presence or absence of a workpiece of the respective station. If a holding station is vacant, the corresponding detector arm will automatically activate all the appropriate lift fingers to cause all upwardly located workpieces to simultaneously advance one holding station upon a single reciprocation of the transfer bar.

### 3,477,561
## RECORDING PILL DISPENSER

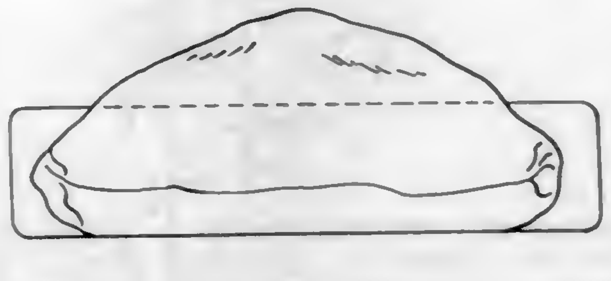
**Martin Espinal, 5529 Marconi Ave., Carmichael, Calif. 95608**
**Filed June 26, 1968, Ser. No. 740,253**
**Int. Cl. B65d** *83/04;* **G07f** *11/00;* **G01f** *11/26*
**U.S. Cl 206—42** **10 Claims**



A cylindrical pill dispenser container having a pill dispensing opening normally closed by a vertically reciprocating closure is disclosed. The closure is moved vertically by a rotating cam band having means indicative of the last previous time or event when the dispenser was opened.

### 3,477,562
## PACKAGE OF COMPACTED MATERIAL

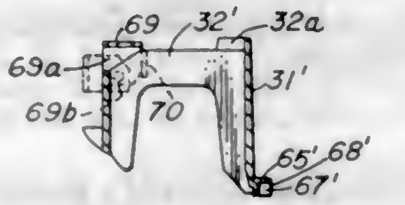
**Edward M. Allen, Doylestown and Cloyde G. Dye, Barberton, Ohio, and Joseph A. Smrdel, Beaumont, Tex., assignors to PPG Industries Inc., Pittsburgh, Pa., a corporation of Pennsylvania**
**Original application Feb. 14, 1964, Ser. No. 344,964. Divided and this application Apr. 5, 1967, Ser. No. 643,770**
**Int. Cl. B65d** *85/72*
**U.S. Cl. 206—46** **4 Claims**



A package comprising finely-divided, compacted, siliceous pigment contained in a paper bag such that the bag exerts a compressive force on the pigment, thereby retaining the pigment in its compacted form.

### 3,477,563
## SLIDE PROJECTOR

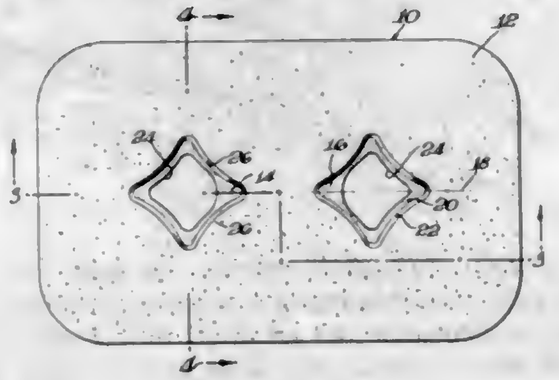
**Irwin M. Gould, Skokie, and Gerald A. Moe, Buffalo Grove, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois**
**Original application June 23, 1964, Ser. No. 377,232, now Patent No. 3,336,836, dated Aug. 22, 1967. Divided and this application June 16, 1967, Ser. No. 668,724**
**Int. Cl. G03b** *23/00;* **G09f** *11/30*
**U.S. Cl. 206—62** **8 Claims**



For a slide projector having gravitational feed of slides from downwardly open compartments of an indexable slide tray, a releasable slide retaining element is mounted on the tray with an integral finger disposed in each compartment opening for supporting a slide from below. A part of each finger is arranged for engagement by an element of the projector, which element can remove the finger from the opening for downward feeding of slides from selected compartments.

### 3,477,564
## MOLDED CONTAINER POSITIONER

**Kenneth L. Crabtree, Fairfield, Maine, assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine**
**Filed Sept. 28, 1967, Ser. No. 674,082**
**Int. Cl. B65d** *71/00*
**U.S. Cl. 206—65** **4 Claims**

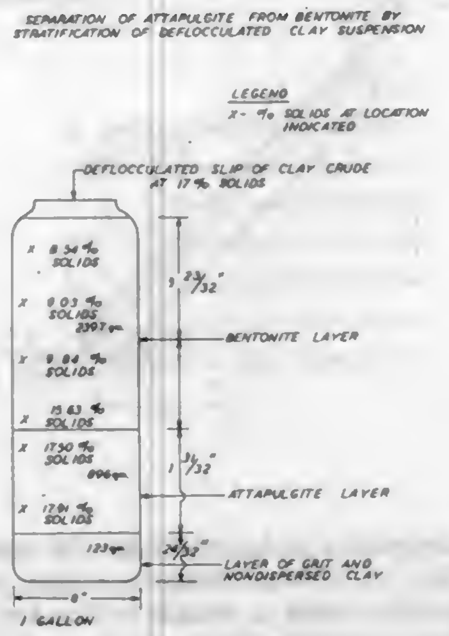


Packages comprising six similar cylindrical containers in two parallel rows of three containers each with an upper positioner adjacent the tops of the containers and, in many instances, a lower positioner adjacent the container bottoms. Each positioner includes a sheet of generally rectangular overall configuration having a pair of integrally molded depressions formed therein with each depression extending into the interior of the package between a group of four adjacent containers. An outerwrap of heat shrinkable flexible transparent film surrounds the upper and lower positioners and the containers confined therebetween.

### 3,477,565
## METHOD FOR THE SIMULTANEOUS CONCENTRATION OF CONSTITUENTS OF SOLID MIXTURES IN LIQUID SUSPENSION

**Tom A. Cecil, Highland Park, Harold J. Gerstenmler, Menlo Park, Herbert R. Hamill, Iselin, and Victor Puskar, Piscataway, N.J., assignors, by mesne assignments, to Engelhard Minerals & Chemicals Corporation, Menlo Park, N.J., a corporation of Delaware**
**Filed May 22, 1967, Ser. No. 640,313**
**Int. Cl. B03d** *3/06*
**U.S. Cl. 209—5** **12 Claims**

A flocculable-deflocculable mixture of very finely divided particles, such as a mixture of colloidal attapulgite and colloidal bentonite in a clay crude, is formed into a concentrated deflocculated fluid suspension. The suspension is aged quiescently in the form of a shallow pool until finely divided particles concentrate in well-defined strata of deflocculated particles, the strata differing from each other in the finely divided constituent and also differing from each other in solids content. Thus, in the bentonite-attapulgite separation, the bentonite concentrates in an upper, relatively dilute (low solids) deflocculated stratum simultaneously with the concentration of the attapulgite in a lower more concentrated deflocculated stratum. When present, grit or nondeflocculated particles form a bottom, nondispersed layer or sludge. The strata are separated and, if an improved recovery and/or purity is desired, a deflocculated stratum is diluted with more liquid and permitted to restratify by the prolonged quiescent aging. The process is also used to separate finely divided mineral coloring matter from clay, to separate clay from diatomaceous earth and to separate constituents of phosphatic slimes.


SEPARATION OF ATTAPULGITE FROM BENTONITE BY STRATIFICATION OF DEFLOCCULATED CLAY SUSPENSION
LEGEND
X - % SOLIDS AT LOCATION INDICATED
DEFLOCCULATED SLIP OF CLAY CRUDE AT 17% SOLIDS
X 8.54 % SOLIDS
X 9.03 % SOLIDS
X 9.84 % SOLIDS
X 15.63 % SOLIDS
X 17.50 % SOLIDS
X 17.81 % SOLIDS
123 gm
23/32"
31/32"
24/32"
BENTONITE LAYER
ATTAPULGITE LAYER
LAYER OF GRIT AND NONDISPERSED CLAY
8"
1 GALLON

### 3,477,566
## PROCESS FOR THE ELECTROSTATIC SEPARATION OF THE SYLVITE (KCl) COMPONENT OF A MINERAL

**Hans Autenrieth, Hannover-Kirchrode, and Heinrich Wirries, Hannover, Germany, assignors to Kali Forschungs Anstalt GmbH, Hannover, Germany**
**No Drawing. Filed Dec. 12, 1966, Ser. No. 600,711**
**Claims priority, application Germany, Mar. 11, 1966, K 58,696**
**Int. Cl. B03b** *1/04*
**U.S. Cl. 209—9** **5 Claims**

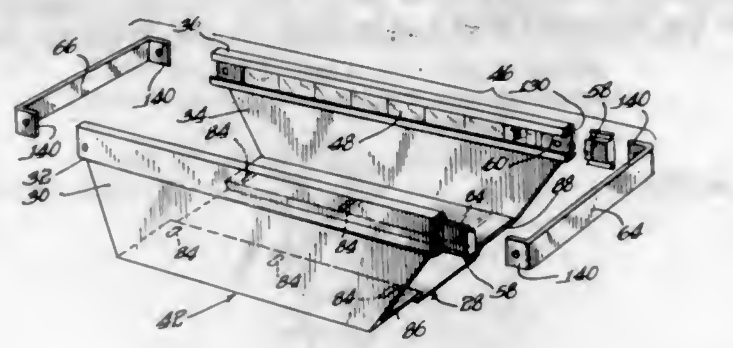
A process for the electrostatic separation of mineral mixtures, and particularly to conditioned particulate crude potassium salts and the electrostatic separation thereof.

In particular embodiments of the present invention crude particulate potassium salt mixtures are treated with inorganic mineral acids or inorganic alkaline reacting substances before, during or after the particulate material is treated with organic conditioning agents, comprising anionic compounds which form negatively charged radicals that split off positive ions and thereby control the electrostatic charging of the particulate material.

### 3,477,567
## FILE CONTAINER ASSEMBLY

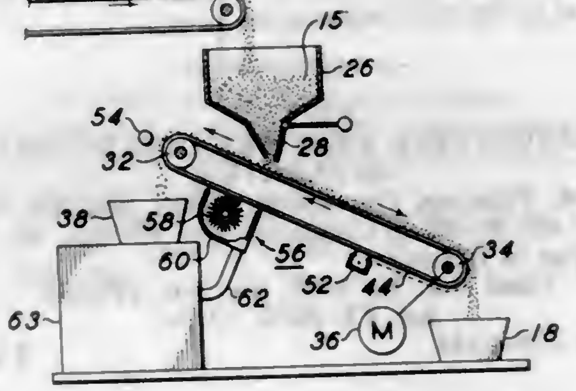
**Ernest A. Dahl, Jr., 729 Greenwood Ave., Wilmette, Ill. 60091**
**Filed May 1, 1967, Ser. No. 635,157**
**Int. Cl. B07c** *5/34;* **B42f** *21/00, 19/00*
**U.S. Cl. 209—111.8** **6 Claims**

This invention relates to a magnetic file assembly having a base wall, sidewalls and a pair of mounting channels formed by a single integral extrusion to provide a rigid unitary body for supporting first and second magnet means in a predetermined relationship with data-bearing members.



### 3,477,568
## ELECTROSTATIC SEPARATION OF ROUND AND NONROUND PARTICLES

**Robert W. Madrid, Macedon, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**
**Filed Nov. 1, 1966, Ser. No. 591,174**
**Int. Cl. B03b** *7/08, 7/04*
**U.S. Cl. 209—127** **16 Claims**

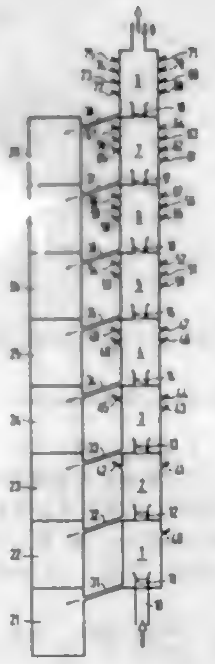


Unsorted particles are caused to be advanced relative to a conveyor surface so that particles are electrostatically attracted towards the conveyor surface whereby rounds are caused to advance at a faster rate in response to advancing forces and nonrounds being effected to a greater degree by a frictional and electrostatic retarding forces are caused to move at a slower rate or actually stick to the conveyor surface thereby effecting the separation of rounds from nonrounds.

### 3,477,569
## VORTEX TYPE SEPARATOR AND COLLECTOR SYSTEM

**Heinrich Klein, Erlangen, Eduard Weber, Nuremberg, Rudolf Pieper, Erlangen, and Alfred Hoffmann, Forchheim, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany**
**Filed Mar. 18, 1966, Ser. No. 535,491**
**Claims priority, application Germany, Mar. 18, 1965, S 96,027**
**Int. Cl. B04c** *3/04, 3/00*
**U.S. Cl. 209—144** **5 Claims**

Apparatus for analyzing grain size of dust-like particles entrained in a gaseous medium includes a plurality of toronado-flow vortex separators connected to one another and respectively having a main inlet at one end and outlet at the other end. A pre-twist nozzle is located in the main inlet of each separator for imparting a twist to the medium supplied to the separator. Auxiliary inlet means communicating with the interior of a cylindrical enclosure included in each separator have a flow direction tangential to the enclosure wall and inclined to the enclosure axis for causing auxiliary gas flow to excite particle-separating circulatory motion in the main flow. The auxiliary inlet means of each separator has a total cross section different from that of the other separators.



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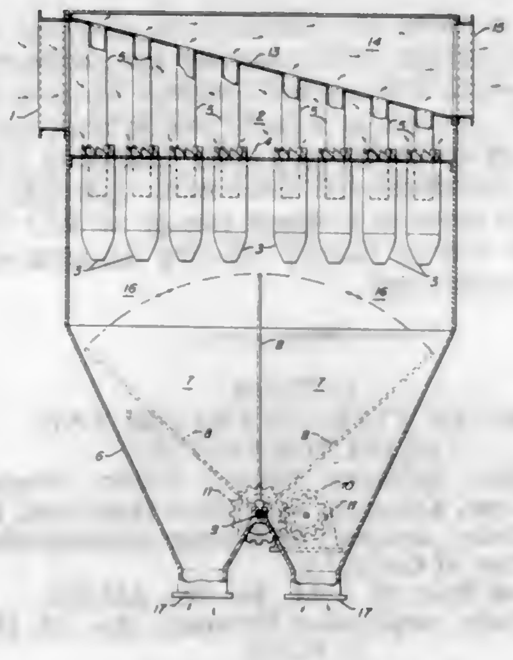
**3,477,570**

### ADJUSTABLE PARTICLE COLLECTION APPARATUS

**Alfred A. Petersen, Greenwich, Conn., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**Filed Oct. 31, 1967, Ser. No. 679,413**
**Int. Cl. B07b** *13/04*
**U.S. Cl. 209—144** **4 Claims**



An improved form of particle classifying-separating-collecting apparatus, more particularly an adjustable partitioning means in a collector bin for effecting the collection of different classes of particles.

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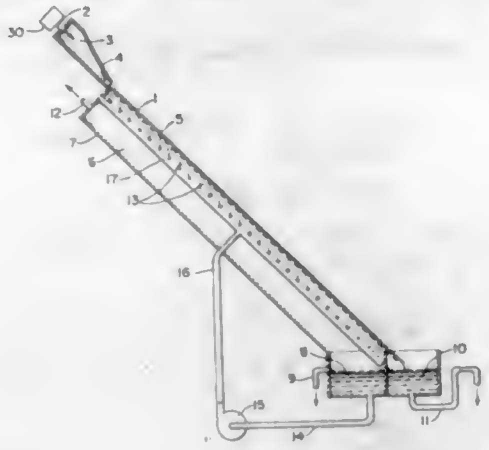
**3,477,571**

### APPARATUS AND METHOD FOR SCREENING FIBROUS SLURRIES

**Gustav A. Maag, Fort Wright, Ky., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio**
**Filed Nov. 14, 1966, Ser. No. 594,017**
**Int. Cl. B03b** *11/00*
**U.S. Cl. 209—250** **5 Claims**



A screening apparatus and method for the reclamation and classification of fibrous slurries, which screening apparatus is provided with a nozzle orifice for projecting a fibrous slurry downwardly over a screening surface disposed at an angle of about 0 degrees to about 60 degrees with the vertical. The screening apparatus can be provided with a woven wire screening surface, but preferably the screening surface is a thin perforated metal plate having a multiplicity of holes with diameters of about 0.005 inch to about 0.050 inch. Means for inducing a pressure differential through the screening surface independent of the slurry medium is provided.

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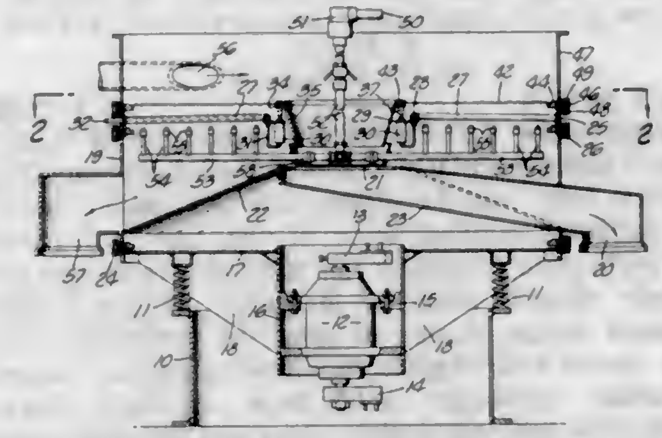
**3,477,572**

### VIBRATORY SEPARATOR

**Richard K. McKibben, La Canada, Calif., assignor to SWECO, Inc., a corporation of California**
**Filed May 22, 1967, Ser. No. 640,242**
**Int. Cl. B07b** *1/40, 1/06*
**U.S. Cl. 209—255** **5 Claims**



A vibratory separator including a housing structure with a circular screen positioned horizontally therein, the screen having a central aperture and a conical duct attached to the aperture for directing material passing therethrough; a first discharge duct and a second discharge duct isolated from the first discharge duct and means for vibrating the screen and housing structure; a vertical conduit projecting through the aperture and isolated from

the vibrations generated by the vibrating means, and horizontal fluid-bearing conduits communicating with the vertical conduit and adapted to spray the underside of the screen with a cleaning fluid.

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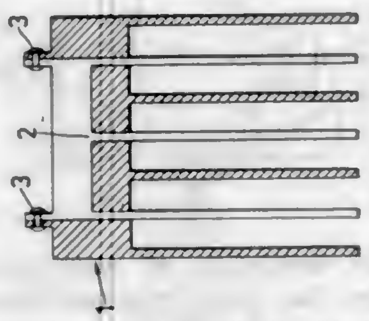
**3,477,573**

### APPARATUS FOR SCREENING BULK MATERIAL

**Hugo Andersson, 5 Bondevagen, Storuman, Sweden**
**Filed Apr. 18, 1967, Ser. No. 631,838**
**Int. Cl. B07b** *1/28*
**U.S. Cl. 209—260** **5 Claims**



Apparatus for loading and screening bulk materials, such as stones and the like, which includes a bucket which may be moved from a horizontal transport position to a vertical dumping position, a pair of grating members having alternating ribs or the like which form a substantially plane screen in the bottom of the bucket and link means connecting the first and second grating members to one another so that the screens are not displaced when in the horizontal position but separate to clean the screens when the bucket is in its vertical dumping position.

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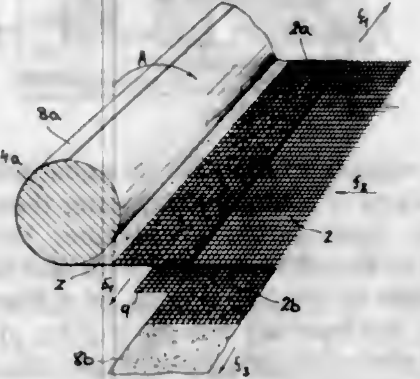
**3,477,574**

### SCREEN

**Rémy Malfroy, Pantin, France, assignor to Claude Boivin, Versailles, France**
**Continuation-in-part of application Ser. No. 558,163, May 23, 1966. This application July 22, 1968, Ser. No. 746,458**
**Claims priority, application France, May 26, 1965, 18,499**
**Int. Cl. B07b** *1/04, 1/00*
**U.S. Cl. 209—403** **5 Claims**



Screen construction wherein a square or rectangular frame has grooves to accommodate four orthogonal rods to which the four sides of a fabric, wire net or other perforate flexible sheet having the same general dimensions as the frame are peripherally secured so that rotation of any rod stretches the sheet in a respective direction, the rods being lockable in their grooves against rotation to maintain the sheet taut.

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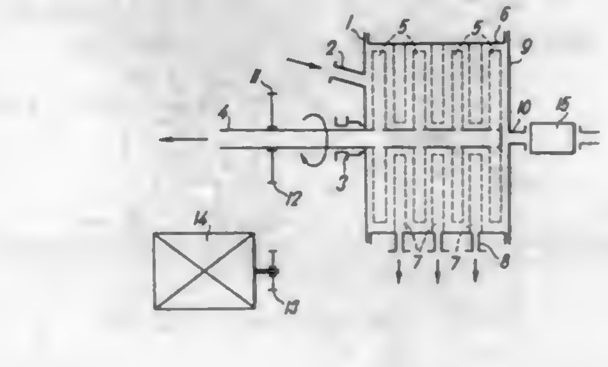
**3,477,575**

### METHOD OF CONTINUOUS DYNAMIC FILTRATION AND AN APPARATUS FOR CARRYING OUT THE SAME

**Jindřich Němec, Jan Kašpar, and Josef Soudek, Pardubice, Czechoslovakia, assignors to Vyzkumny ustav organickych syntex, Pardubice-Rybitvi, Czechoslovakia**
**Filed Dec. 19, 1967, Ser. No. 691,858**
**Claims priority, application Czechoslovakia, Dec. 21, 1966, 8,169/66**
**Int. Cl. B01d** *29/36, 33/02, 33/28*
**U.S. Cl. 210—67** **5 Claims**



A suspension is continuously filtered by a first set of filter elements rotatably mounted on a hollow shaft and a second set of elements extending between the elements of the first set. The separated particles are continuously remixed with the suspension. The thickened suspension is discharged from the filter housing at a rate which is controlled by the difference between the instantaneous valve and a preset valve of the twisting moment necessary to rotate the shaft.

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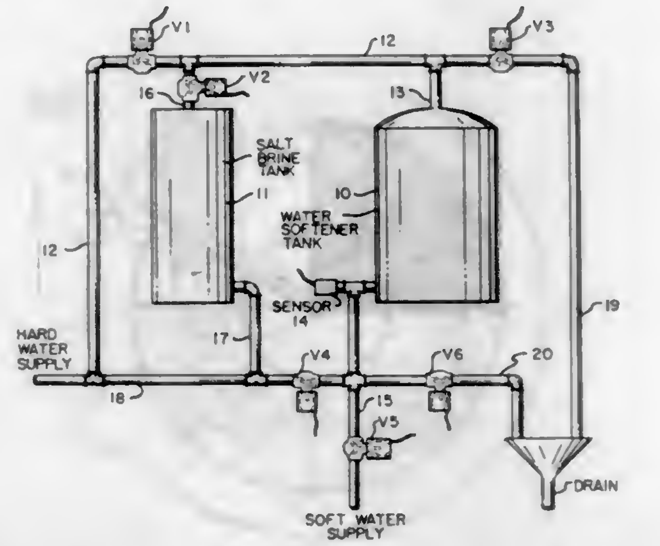
**3,477,576**

### WATER SOFTENER CONTROL

**James R. Luck and Frank S. Mills, Minneapolis, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**
**Filed Oct. 3, 1966, Ser. No. 583,585**
**Int. Cl. C02b** *1/16*
**U.S. Cl. 210—96** **9 Claims**

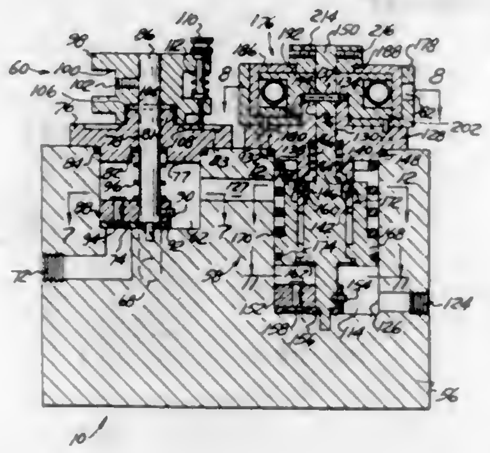


A water hardness sensor is disclosed wherein the sensing element is a material which shrinks to one dimension when exposed to hard water and to a smaller second dimension when exposed to brine. A differential transformer arrangement is combined with the sensing element to provide an electrical control signal. A circuit is disclosed in combination with the sensor by means of which positive control over all the operating phases of a water softener is achieved.

3,477,577

### CONTROL DEVICE FOR ALTERNATELY OPERATING DUAL LIQUID FILTERS

**John Anthony Florkowski, Dearborn Heights, Mich., assignor to John A. Juskevic, Dearborn, Mich.**
**Filed Apr. 1, 1968, Ser. 717,519**
**Int. Cl. B01d** *29/38*
**U.S. Cl. 210—108** 7 Claims

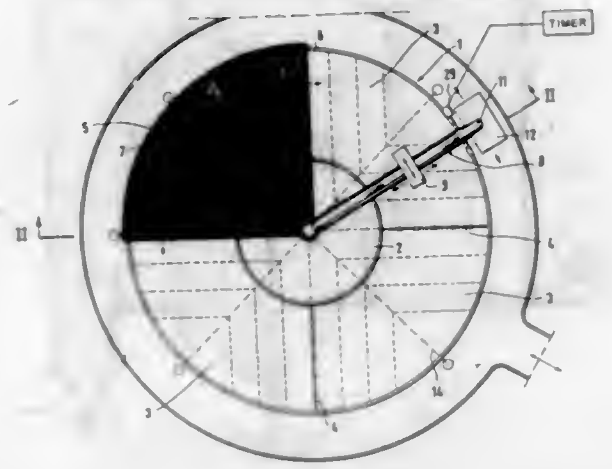


A device for controlling dual liquid filters which alternately places the filters in operation by automatically switching fluid flow from a filter, when the filtering element therein becomes partially clogged, and simultaneously therewith directing flow through the other filter, so that the inactive filter may be cleaned without interrupting flow through the hydraulic system.

3,477,578

### DRY BED INSTALLATION FOR DRYING SLUDGE IN SEWAGE CLEARING PLANTS

**Albert Bahr, Parallelstrasse 2a, Elversberg, Saar, Germany**
**Filed Aug. 30, 1967, Ser. No. 664,399**
**Claims priority, application Germany, Sept. 2, 1966, M 70,804; June 2, 1967, M 74,242**
**Int. Cl. C02c** *1/36*
**U.S. Cl. 210—138** 11 Claims

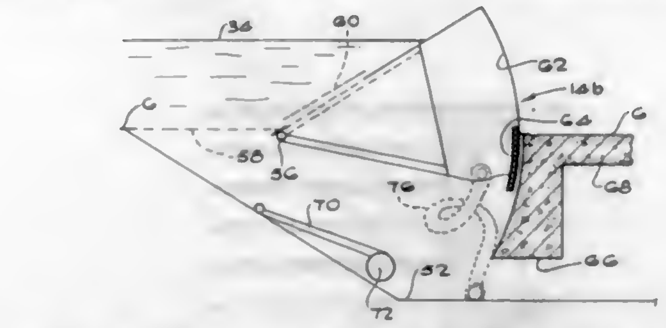


Drying bed installation for sewage plant having a radial carrying bridge supported for rotation centrally of the drying bed or beds and riding with its outer end of the wall of the bed, and a cell wheel movable longitudinally on the rotatable bridge which picks up sludge with a scraping knife at its lower apex and discharges it inwardly from the upper apex, and where the bridge may also be equipped with downwardly extending plowshares for loosening sludge.

3,477,579

### SELF-CLEARING SCREENING APPARATUS FOR USE IN IRRIGATION AND LIKE PROJECTS

**Lawrence Alexander Turner, Middleton, Cape Province, Republic of South Africa, assignor to Fluid Dynamics (Proprietary) Limited, Middleton, Republic of South Africa**
**Filed Oct. 16, 1967, Ser. No. 675,441**
**Claims priority, application Republic of South Africa, Oct. 20, 1966, 66/6,366**
**Int. Cl. B01d** *35/22, 35/16*
**U.S. Cl. 210—156** 8 Claims

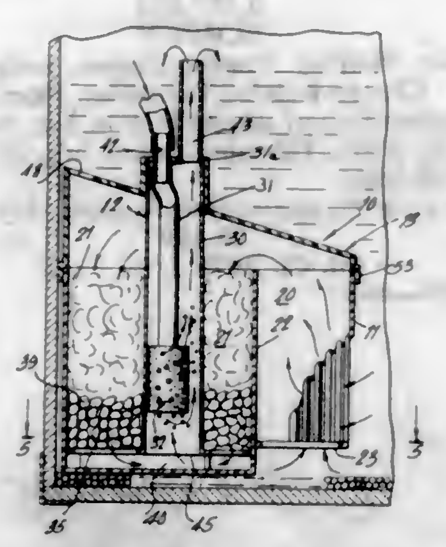


The invention consisting of self-clearing screening means is intended for use in irrigation projects in which water is required to be led off from an impounded body of water in a weir, dam, or the like into a diversion canal. The apparatus of the invention is designed to prevent as far as possible the passage of floating debris into such diversion canal and is in the form of a screen arranged to be self-clearing.

3,477,580

### BOTTOM AQUARIUM FILTER

**Allan H. Willinger, New Rochelle, N.Y., assignor to Aquariums Incorporated, Maywood, N.J. a corporation of Delaware**
**Filed Sept. 22, 1966, Ser. No. 581,208**
**Int. Cl. E04h** *3/20*
**U.S. Cl. 210—169** 2 Claims

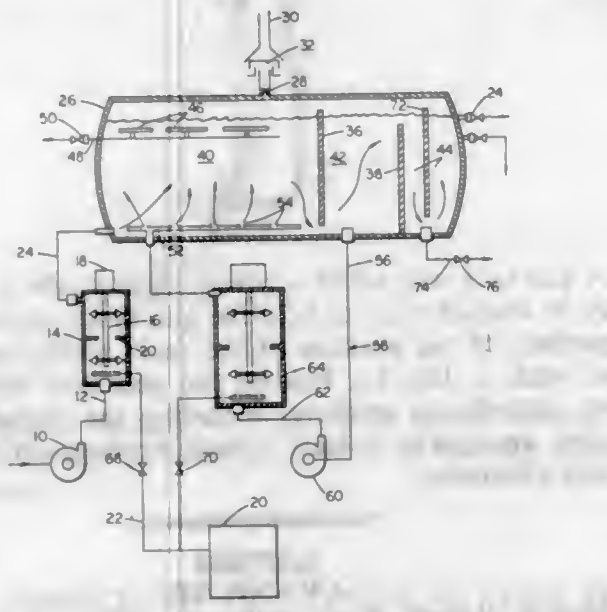


A bottom acquarium filter for an aquarium tank having contaminated and decontaminated water therein, said filter comprising in combination a container having an inlet compartment in fluid flow relation with said tank, said container adaptable to contain a mass of a filtering material and having a first opening for the ingress of air into said filtration compartment and egress of decontaminated water out of said filtration compartment, said inlet compartment having inlet means comprising a second opening in the lower end thereof, adaptable to be positioned above any sand or gravel in said aquarium, through which contaminated water from the tank may flow, and an air stream supply means disposed in said container which directs ingressed air from said first opening into said filtration compartment thereby causing contaminated water from said tank to flow through said second opening into said inlet compartment and therefrom into said filtration compartment where said contaminated water is substantially decontaminated by said filtering material before being egressed through said first opening into said tank.

3,477,581

### SEWAGE DISPOSAL SYSTEM

**Donald M. Stearns, 5581 Woodwind Drive, Birmingham, Mich. 48010**
**Filed Sept. 21, 1967, Ser. No. 669,570**
**Int. Cl. C02c** *1/26, 5/04, 5/06*
**U.S. Cl. 210—195** 8 Claims

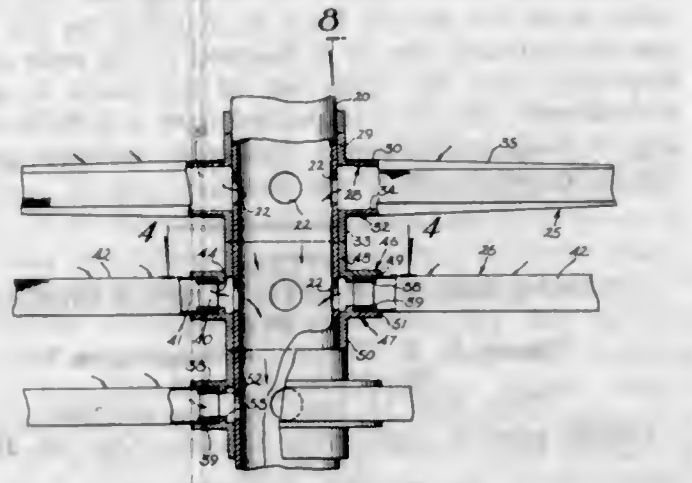


A system for treating sewage and organic waste materials which includes means for receiving waste water and air under pressure and breaking the waste content and air into particle sizes of less than 100 microns and dispersing it into a closed vessel having a pressure head for holding the waste particles in suspension for aerobic digestive elimination and which also includes means for floated waste separation and a recirculatory system for rejuvenating active sludge that settles out so that the residual effluent is at a tolerable level before final discharge.

3,477,582

### GRID STRUCTURE FOR FILTERS

**Beecher B. Baldwin, Los Angeles, Calif., assignor to Universal Filtration Inc., Los Angeles, Calif., a corporation of California**
**Continuation of application Ser. No. 629,819, Apr. 10, 1967, which is a continuation of application Ser. No. 435,661, Feb. 26, 1965. This application June 3, 1968, Ser. No. 739,924**
**Int. Cl. B01d** *39/08*
**U.S. Cl. 210—232** 4 Claims

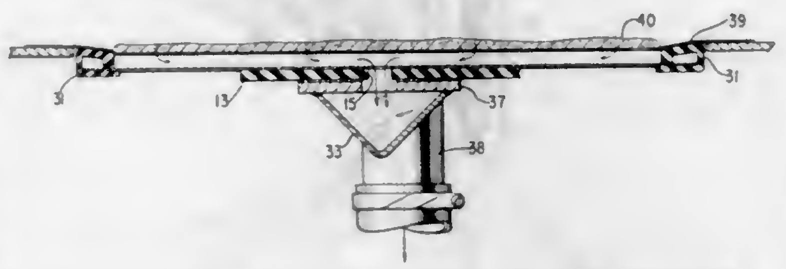


A replacement grid for filters of the type having a manifold pipe mounting a number of orignial disc-shaped filter grids in axially spaced side-by-side relation, the replacement grid having a porous grid member with a central opening of larger diameter than any manifold type on which the grid is to be installed, and replaceable tubular adaptors releasably engaged with opposite sides of the grid member, whereby the replacement grid may be installed on manifold pipes of various diameters and hole spacings in place of an inoperative original filter grid.

3,477,583

### HORIZONTAL TRAVELLING BELT FILTER

**John E. Krynski and Richard E. Engwall, East Moline, Ill., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware**
**Filed July 21, 1967, Ser. No. 655,161**
**Int. Cl. B01d** *33/04*
**U.S. Cl. 210—401** 7 Claims

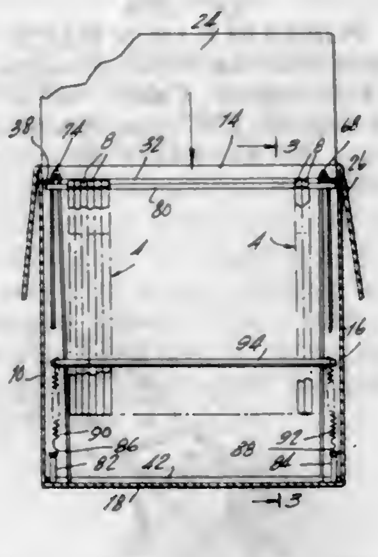


A horizontal endless belt filter arrangement wherein the belt is composed of a plurality of interconnected grid elements, there being drainage slots in the tracking belt which communicate with slots in the grid elements.

3,477,584

### REEL CARRIAGE

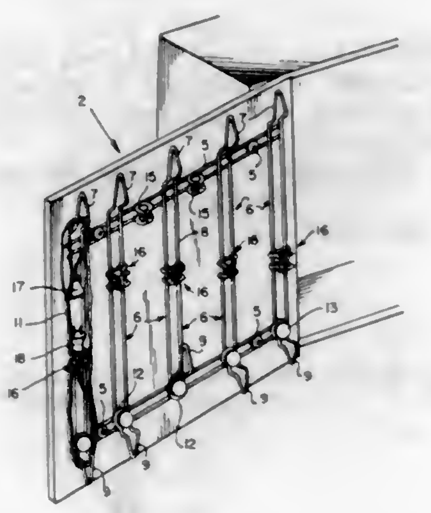
**Ralph Maslow and Arthur L. Maslow, both of 5 Reynal Crossing, Scarsdale, N.Y. 10583**
**Filed Apr. 5, 1968, Ser. No. 719,008**
**Int. Cl. A47g** *29/00;* **G03c** *17/56;* **A47b** *81/00*
**U.S. Cl. 211—40** 4 Claims



A reel carriage adapted to carry reels or reel cases provided with a hooking member on the periphery thereof, said carriage comprising a generally rectangular cubic container, a first rod extending between two parallel top sides and connecting the same, a second rod positioned beneath said first rod and in the same vertical plane as said first rod, said second rod positioned when containing a reel in elevated position from the bottom sides via yielding members, said second rod adapted to pass through the core of a reel or reel case suspended therein and to bear against said core.

### 3,477,585
### RACK FOR ELECTRICAL CORDS

**Katharen B. Adams, 2922 S. Garfield St.,**
**Denver, Colo. 80210**
**Filed Sept. 5, 1967, Ser. No. 665,621**
**Int. Cl. A47f** *7/00, 5/08;* **F16g** *11/00*
**U.S. Cl. 211—60** **8 Claims**



Rack for flexible cords comprising one or plurality of spaced support members carried by backing member arranged mounting on wall surface. Each support member including staitonary offset portion and elongated intermediate portion having two continuous stretches and movable offset portion mounted adjacent intermediate portion oppositely of stationary offset portion for winding cord in coiled form thereon. Movable offset portion mounted to rotatably move from supporting position to position shortening distance between offset portions for quick detachment of coiled cord. Stationary and movable holding members on rack having portions for securing attachment device on end of cord. Movable holding member having gripping surfaces for slidable movement along intermediate portion.

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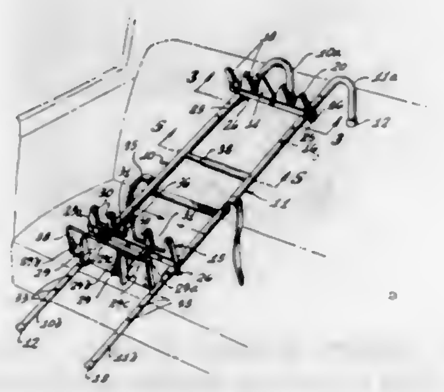
### 3,477,586
### PORTABLE GUN RACK

**Lawrence Haluska, 10646 Holman Ave.,**
**Los Angeles, Calif. 90024**
**Filed Aug. 28, 1967, Ser. No. 663,619**
**Int. Cl. A47f** *7/00*
**U.S. Cl. 211—64** **1 Claim**



A portable gun rack holds a plurality of guns for safe transport, particularly when carried in an automobile or other vehicle. The rack is adjustable in width and length to adapt it to a wide variety of conditions and gun sizes. The rack may also be carried manually or used as a storage rack.

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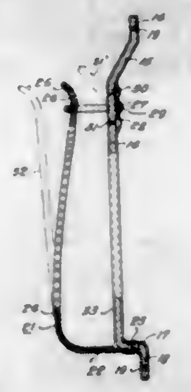
### 3,477,587
### GUN RACK

**Raymond V. Hart, San Angelo, Tex., assignor to San Angelo Die Casting and Manufacturing Co., Inc., San Angelo, Tex., a corporation of Texas**
**Filed Aug. 30, 1967, Ser. No. 664,515**
**Int. Cl. A47f** *5/08, 5/13*
**U.S. Cl. 211—64** **5 Claims**



A gun rack into which a gun, such as a rifle or shotgun, may be latched so as to hold the gun in a positive fashion regardless of the position of the rack, which has a movable latch or link for holding the gun, and which is almost entirely, or entirely, including the movable latch or link, encased in at least a single homogeneous layer of a soft elastomer.

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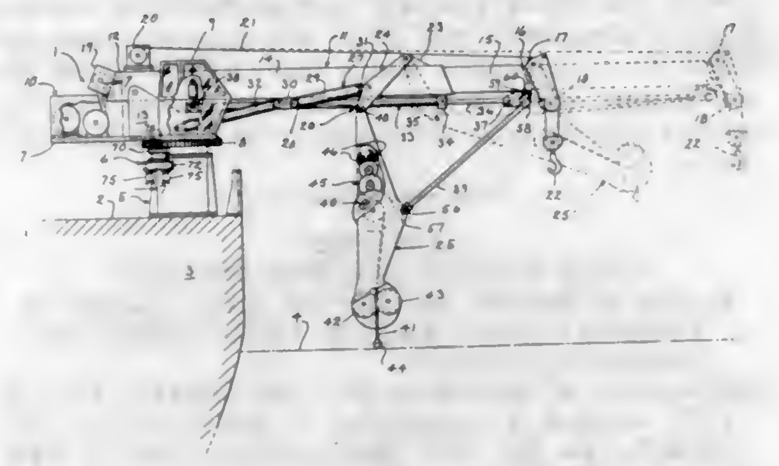
### 3,477,588
### CRANE JIB

**Karl E. Reischl, South Milwaukee, Wis., assignor to Bucyrus-Erie Company, South Milwaukee, Wis., a corporation of Delaware**
**Filed Apr. 6, 1967, Ser. No. 628,934**
**Int. Cl. B66c** *23/06, 23/84, 23/62*
**U.S. Cl. 212—55** **11 Claims**



A ship mounted hydraulic crane having a cantilevered telescoping boom has a jib pivotally suspended from the foot section of the boom. Rods connect the jib to the intermediate boom section for hoisting the jib, and the cable drum for the jib hook is mounted on the jib. In one embodiment, the jib is fastened to the ends of arms suspended from the upper side of the boom. In another embodiment, the jib is suspended from a slidable mounting. In both embodiments, hydraulic cylinders position the jib longitudinally of the boom.

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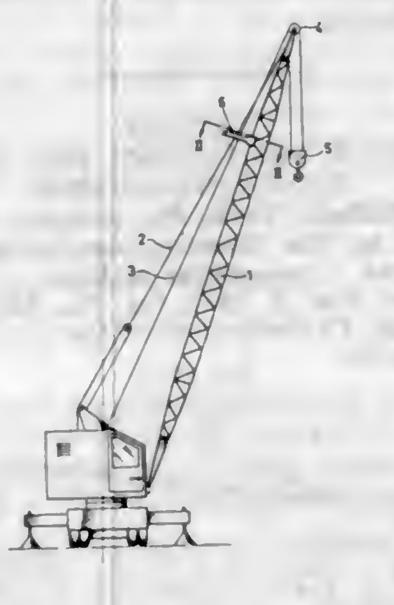
### 3,477,589
### CRANE BOOMS, PARTICULARLY MOBILE CRANE BOOMS

**Gunnar E. E. Thalin, Karlbergsvagen 73,**
**Stockholm, Sweden**
**Filed Aug. 23, 1967, Ser. No. 662,746**
**Claims priority, application Sweden, Aug. 31, 1966,**
**11,713/66**
**Int. Cl. B66c** *23/06, 23/62*
**U.S. Cl. 212—59** **2 Claims**

A crane having a vertically pivotable boom is supported at its outer end by movable tie cables. To limit lateral bowing of the boom, a retention member is secured to the boom and projects adjacent to the tie cables and is engaged thereby in response to initial bowing of the boom for any position of said tie cables with respect to said boom.



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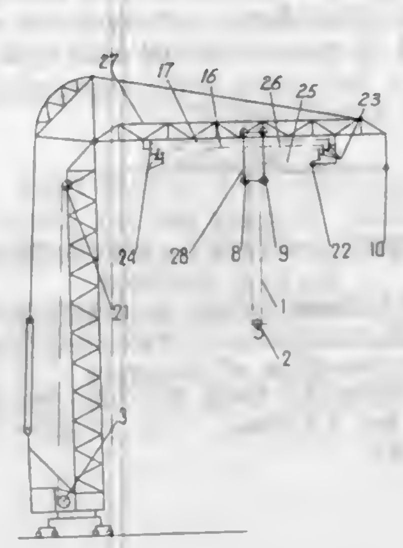
### 3,477,590
### METAL STRUCTURE TENSIONING SYSTEM FOR CRANE DEVICES AND ROPE ARRANGEMENT THEREFOR

**Wojciech Pillich, ul. Spichrzowa 1, Zabrze, Poland**
**Filed Nov. 22, 1967, Ser. No. 685,051**
**Claims priority, application Poland, Dec. 2, 1966,**
**P 117,778**
**Int. Cl. B66c** *23/02, 17/06, 23/62*
**U.S. Cl. 212—63** **3 Claims**



A method of tensioning metal structures of crane equipment loaded statically and dynamically, consisting in the use of the weight of the displaced load in order to produce tensioning forces in a system of tension members, or a "self-tensioning of the supporting structure." The tension member system for effecting this method comprises an assembly of tension members running through a system of pulleys and pulley blocks, where the reversible pulleys are protected from swinging by means of a guide, which at the same time permits a linear shift of the reversible pulley as the tension members undergo elongation. The assembly is fitted to the supporting structure in order to displace the underslung load.

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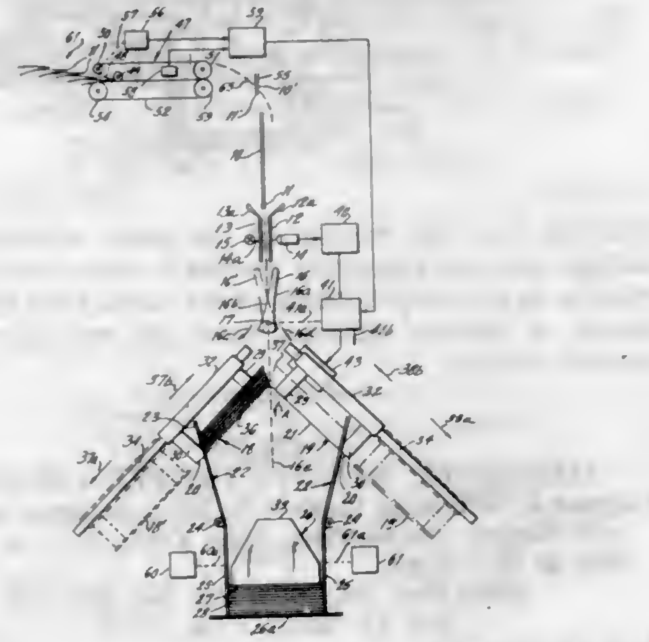
### 3,477,591
### MEANS FOR SEPARATING AND STACKING NEWSPAPERS AND THE LIKE

**Anders Ingvar Andersson, Farsta, Sweden, assignor to AB Bonnierforetagen, Stockholm, Sweden**
**Filed Dec. 15, 1967, Ser. No. 690,886**
**Claims priority, application Sweden, Dec. 23, 1966,**
**17,690/66**
**Int. Cl. B65g** *57/16, 11/00;* **B65h** *33/00*
**U.S. Cl. 214—6.5** **20 Claims**



A device for counting newspapers, magazines, signature and the like, entering into the mechanism in either a separated or overlapped fashion. Means for counting the signatures are provided at a predetermined location. A diverting means controlled by the counting device diverts or deflects a predetermined count of signatures so as to be stacked upon a selected one of two pockets. When a predetermined number of signatures are stacked in a pocket the floor of the pocket is withdrawn from the stack causing the stack to fall between two side members, which preferably experience vibratory motion for straightening the stack.

As soon as the predetermined count is reached the diverting means is shifted to a second position causing the stream of signatures to be diverted toward and fall upon the remaining pocket. Means are provided for pushing a completed stack developed between the side walls to an output station. A completed stack which reaches the output station may be comprised of signatures delivered from only one of said pockets or may be comprised of signatures delivered from both of said pockets with the folded or binded edge of the signature groups from each pocket being arranged in alternating fashion to produce a level stack.

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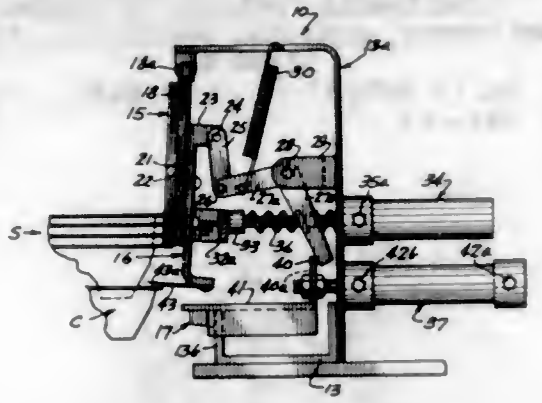
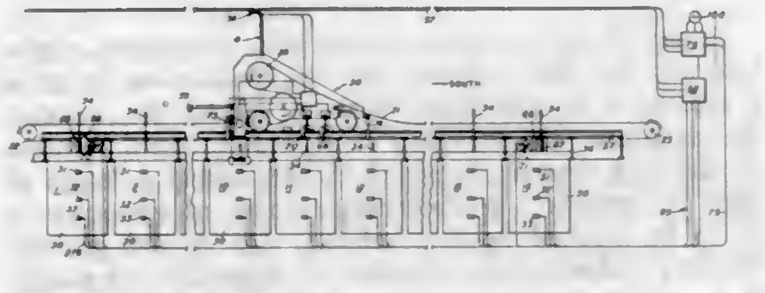
### 3,477,592
### DENESTER

**Roy M. Kuhlman, Crown Point, Ind., assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware**
**Filed Mar. 27, 1968, Ser. No. 716,370**
**Int. Cl. B65g** *59/06;* **B65h** *3/28*
**U.S. Cl. 214—8.5** **5 Claims**

An apparatus for successively denesting individual articles from the bottom of a stack of articles arranged in nested relation. The stack initially rests upon a power-actuated indexing means when the latter is in an extended position. While the stack is so disposed, it is resiliently engaged and retained in said position by a power-actuated stack-holding means. Simultaneous with the stack being resiliently engaged by the stack-holding means, a projecting portion of a stripper element is positioned between the peripheries of the two lowermost articles in the stack. The indexing means is then retracted so as to be spaced laterally from the bottom of the stack, whereupon the stripper element projecting portion is moved downwardly relative to the stack-holding means causing the lowermost article to become denested from the remainder of the stacked articles.

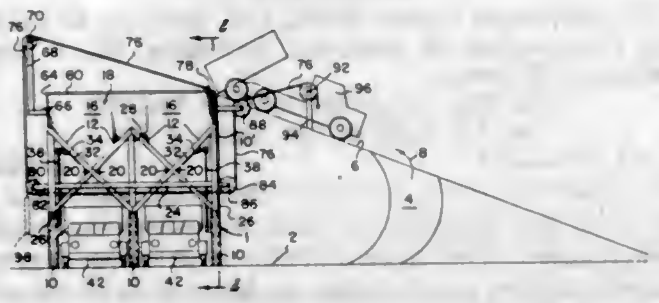


### 3,477,593
## AUTOMATIC REMOTE TRIPPER CONTROL
**Latham E. Whitham, Hurley, N. Mex., assignor to Kennecott Copper Corporation, New York, N.Y., a corporation of New York**
**Filed Nov. 25, 1966, Ser. No. 596,976**
**Int. Cl. B65g** *1/06, 15/00*
**U.S. Cl. 214—16** **33 Claims**



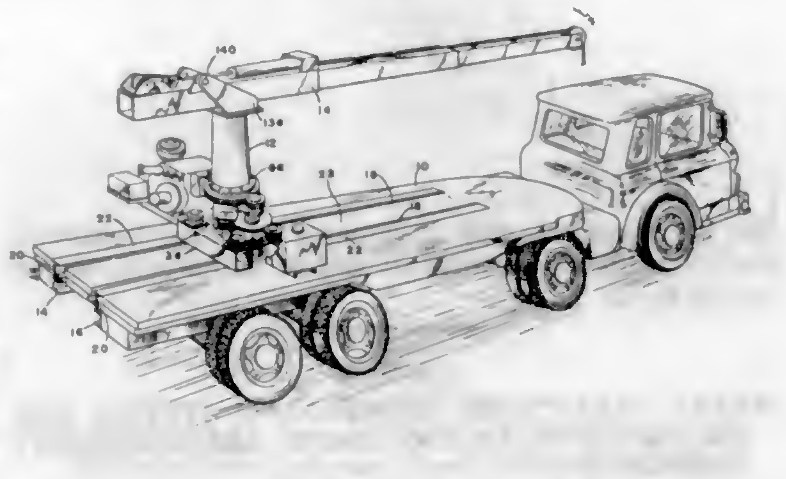
A control system for a tripper, providing a remotely controlled programmed mode of operation whereby the tripper unloads a conveyor into a selected group of storage locations by continuously traversing between selected points. When one of said storage locations becomes overfull, sensing means disables the remote control circuitry and energizes control circuitry on said tripper, providing autonomous control for unloading the conveyor in a second programmed mode whereby the tripper sequentially fills empty storage locations and bypasses full locations.

### 3,477,594
## VEHICLE LOADING BIN
**Peter A. Di Cicco, 287 Grove St., Brockton, Mass. 02402**
**Filed July 5, 1967, Ser. No. 651,182**
**Int. Cl. B65g** *67/04;* **E04h** *7/00*
**U.S. Cl. 214—41** **10 Claims**



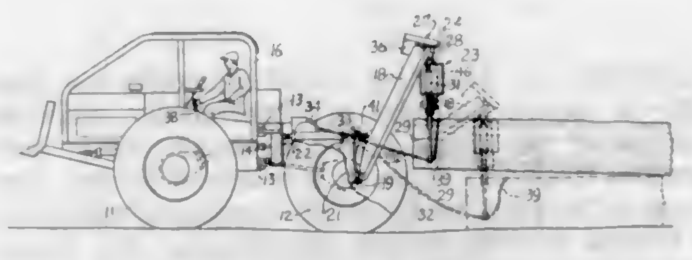
A vehicle loading bin having at least one generally V-shaped receptacle portion for receiving, retaining and dispensing of material into a vehicle, the bin having a door located on at least one side of the receptacle adjacent the two sides forming the V. Means are included for opening and closing the door, together with means for covering the receptacle. The bin is elevated to receive a plurality of trucks.

### 3,477,595
## CARRIAGE MECHANISM FOR A LOAD HANDLING DEVICE
**Joseph E. Whitfield, York, Pa., assignor, by mesne assignments, to The Greater Iowa Corporation, Des Moines, Iowa, a corporation of Iowa**
**Filed Mar. 3, 1967, Ser. No. 620,441**
**Int. Cl. B60p** *1/46;* **B66c** *23/06*
**U.S. Cl. 214—75** **19 Claims**



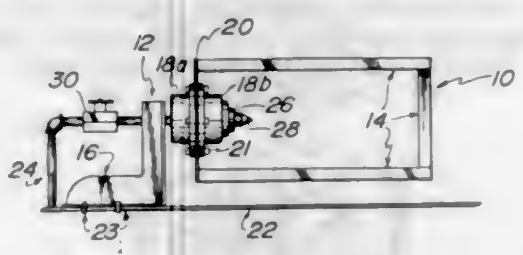
A mobile vehicle having a lateral boom extending from a mast extending upward from a carriage which is supported by roller means for movement along track means which extend longitudinally below the bed of the vehicle, the roller means all being driven for unidirectional engagement with either upper or lower portions on the track means to provide positive driving engagement therewith regardless of incidental canting of the carriage relative to the bed of the vehicle and said mast being rotatable through a full circle while supporting said boom from the upper portion thereof.

### 3,477,596
## LOG SKIDDER WITH CAB-CONTROLLED CABLE BINDER
**Reynold R. Michaelson, Pelkie, and Philip E. Latendresse, Baraga, Mich., assignors to Pettibone Mulliken Corporation, a corporation of Delaware**
**Filed Nov. 23, 1966, Ser. No. 596,526**
**Int. Cl. B66c** *1/42, 23/36*
**U.S. Cl. 214—92** **14 Claims**



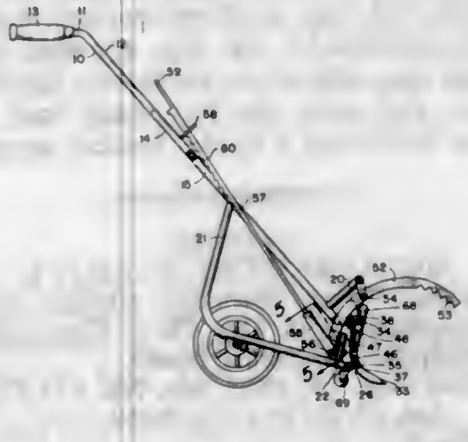
A log skidder is disclosed in which the seizing and release of loads is controlled from the cab. A cable from a hydraulic winch has a large loop at the end thereof threaded through the tips of hydraulically actuated tongs, hung from a boom which can swing downwardly to lower the tongs over a log or group of logs. This movement drapes around the intended load the length of cable spanning between the tips of the tongs. The tongs are then closed sufficiently to engage lower surfaces of the load. The winch draws the cable in to draw the spanning length thereof taut around the load; the boom swings up to raise the engaged end of the load, and the vehicle moves to drag the load to the desired location, whereupon the load is dropped and the entire vehicle and gear freed therefrom simply by opening the tongs. The tongs may be hydraulically swiveled to lie transversely of an intended load, so that the vehicle need not approach it from a particular angle. For use as a conventional skidder, the tongs may be locked up in the boom, and the cable threaded through pulleys located high enough to lift the log ends by cable pull. Contributing details are disclosed.

### 3,477,597
## APPARATUS AND METHOD FOR OPENING CANS WITH TEAR STRIPS
**Lloyd Robert Benner, Sr., Nampa, Idaho, assignor to Armour and Company, Chicago, Ill., a corporation of Delaware**
**Filed Sept. 12, 1966, Ser. No. 578,548**
**Int. Cl. B65b** *69/00;* **B67b** *7/24*
**U.S. Cl. 214—304** **8 Claims**



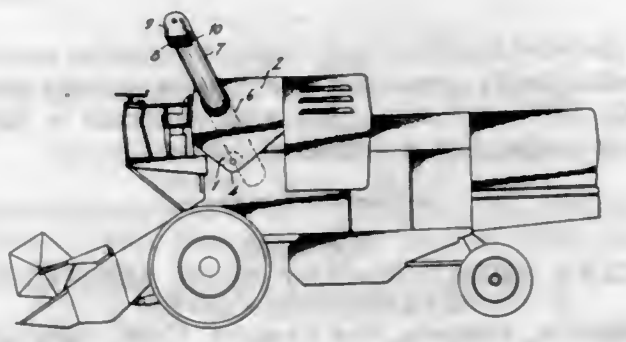
A rotatably mounted frame adapted to receive and hold in a fixed position a can having a tear strip, the frame providing access to the tear strip. One end of the frame is provided with an air needle adapted to puncture the can upon insertion of the same in the frame and eject the contents after removal of the tear strip.

### 3,477,598
## LOG HANDLING DEVICE
**Clark E. Hassell, Rte. 1, Skiatook, Okla. 74070, and Lowernze D. Dobbs, P.O. Box 1044, Sperry, Okla. 74073**
**Continuation-in-part of application Ser. No. 513,675, Dec. 9, 1965. This application Aug. 28, 1967, Ser. No. 663,817**
**Int. Cl. B65g** *7/12;* **A01d** *9/06*
**U.S. Cl. 214—379** **3 Claims**



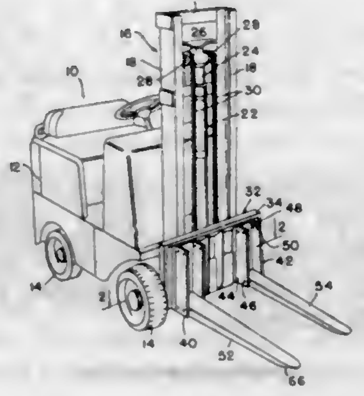
A log handling device adapted to be pushed forwardly so that a pair of arms on a pivotal cradle can be inserted under a log or the like; a curved tong mounted on the frame of the device is pivoted downwardly towards the cradle to engage the upper side of the log after which the tong is locked into position; the device can now be wheeled to the desired position after which the tong is elevated, the cradle is released to pivot downwardly and deposit the log at the desired location.

### 3,477,599
## UNLOADING DEVICE FOR COMBINES
**Frans J. De Coene, Zedelgem, Belgium, assignor to Clayson N.V., Zedelgem, Belgium, a company of Belgium**
**Filed Dec. 18, 1967, Ser. No. 691,612**
**Claims priority, application Belgium, Apr. 3, 1967, 46,703, Patent 696,478**
**Int. Cl. B60p** *1/40;* **A01d** *90/00*
**U.S. Cl. 214—519** **4 Claims**



Improved device for unloading combines, comprising two coaxially mounted spiral conveyors, one of which located within the collecting tank of the combine and the other outside of said tank.

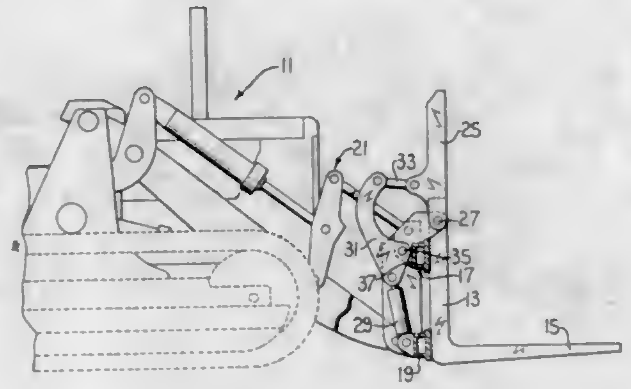
### 3,477,600
## HINGED FORK FOR FORK-LIFT TRUCKS
**Edward C. Sawyer, 9200 River Valley Drive, Brighton, Mich. 48116**
**Filed Feb. 6, 1967, Ser. No. 614,230**
**Int. Cl. B66f** *9/16*
**U.S. Cl. 214—700** **5 Claims**



The fork-lift truck has a vertically movable carriage and a lifting fork or forks extending outwardly from the carriage. Two pins mount the inner end of each fork on the carriage. If only one pin is inserted, the fork can oscillate vertically so that it can be worked up and down and gradually inserted under a load. When both pins are inserted, the fork is locked in a substantialy horizontal position for conventional lifting and transfer of the load.

### 3,477,601
### MATERIAL HANDLING FORK

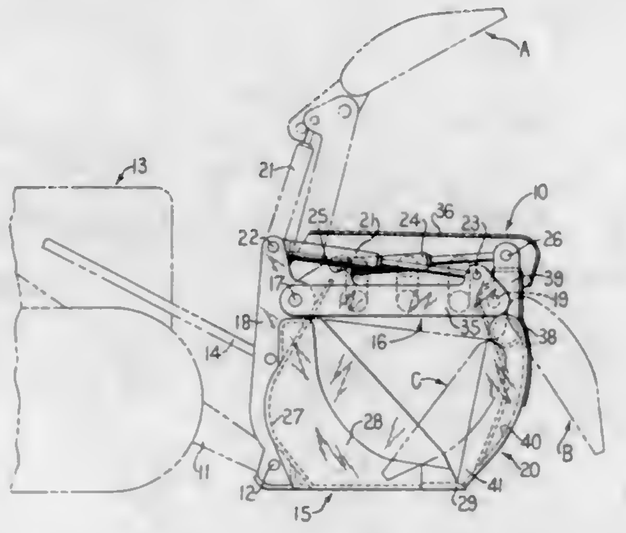
**Charles W. Gardner and Gail G. Barbee, Aurora, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Dec. 14, 1967, Ser. No. 690,646**
**Int. Cl. B66c** *3/00;* **E02f** *3/00;* **B66f** *9/18*
**U.S. Cl. 214—767** **2 Claims**



A material handling fork having a clamping arm which is hydraulically controlled and can be rotated approximately 180° so that it can clamp materials to the fork tines or can be used as a material "kicker."

### 3,477,602
### BUCKET ARRANGEMENT WITH ARTICULATED GATHERING COVER

**Robert A. Peterson, San Leandro, Calif., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Dec. 29, 1967, Ser. No. 694,695**
**Int. Cl. E02f** *3/28, 3/40*
**U.S. Cl. 214—767** **6 Claims**

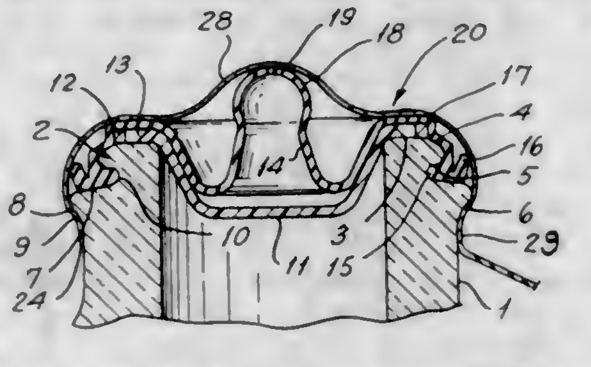


A bucket arrangement comprises a bucket portion having an articulated gathering cover pivotally mounted thereon. Actuating means are provided for pivoting the articulated cover relative to the bucket portion for excavation and like purposes.

### 3,477,603
### FEEDING BOTTLE HAVING INTEGRAL OPENING MEANS

**Stanley J. Koll, Keansburg, N.J., assignor to American Flange & Manufacturing Co. Inc., New York, N.Y., a corporation of Delaware**
**Filed Nov. 30, 1967, Ser. No. 686,856**
**Int. Cl. A61j** *9/08, 11/04;* **B65d** *43/02*
**U.S. Cl. 215—11** **10 Claims**

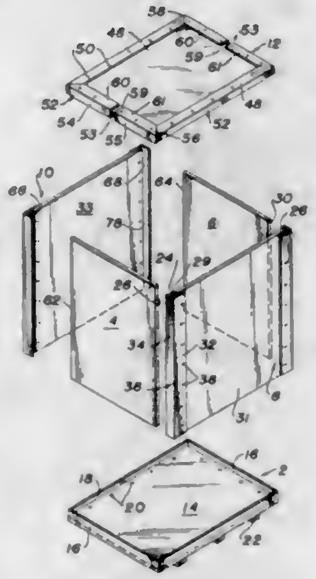
A completely sterile, infant formula package which is a self-contained unit comprising a container, nipple and overlying sealing cap which safeguards the container contents against contamination and undetected tampering. The cap is easily and quickly removed by means of the



unaided hand causing the nipple to automatically assume an erect feeding position.

### 3,477,604
### DEMOUNTABLE CONTAINERS AND BASES AND PANEL JOINTS THEREOF

**Charles E. Kridle, 1535 Grove St., Berkeley, Calif. 94709**
**Filed Mar. 15, 1967, Ser. No. 623,334**
**Int. Cl. B65d** *9/12*
**U.S. Cl. 217—12** **1 Claim**



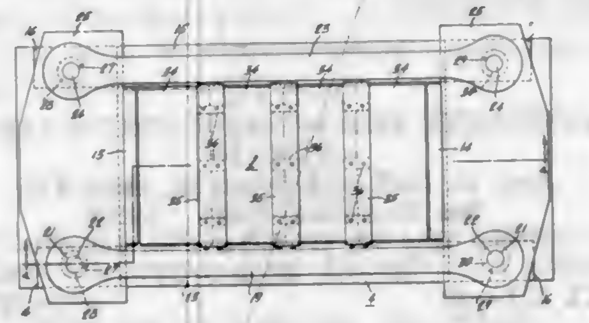
A demountable, typically rectangular parallellepiped container having readily separable top, bottom, and four side panels. The top and bottom each have lips at their edges transverse to their planes to retain the side panels, when assembled, against lateral displacement. A displaceable side panel is grooved along each of its vertical edges to receive and retain the adjacent vertical edge of each adjacent panel. Steel bands around the container in planes parallel to the grooved panel secure the assembled container. Flexibility and resiliency of the top enable reasonable upward force on that edge of the top contacting the grooved panel to bend the top, when the band near that edge is absent, enough to release that panel from retention by the lips, allowing its displacement to open one side of the container. Upon release of the force on that edge, the top snaps back into plane configuration producing a stable, 3-sided, open container.

### 3,477,605
### HIGH-PRESSURE FACILITY

**Charles Garland, Aston Township, Chester, Pa., assignor to Sun Shipbuilding & Dry Dock Company, Chester, Pa., a corporation of Pennsylvania**
**Filed Sept. 29, 1967, Ser. No. 671,874**
**Int. Cl. F17c** *1/00;* **B65d** *7/42*
**U.S. Cl. 220—3** **3 Claims**

An open-ended cylindrical shell, formed from a suitable high-strength steel, is positioned with its longitudinal axis extending substantially horizontally, the shell being

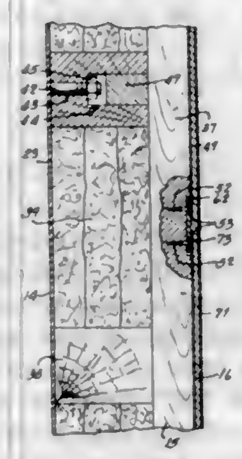
movable bodily in a vertical direction by means of an elevator mechanism. A pair of stationary end closures are provided for the shell, these closures being rigidly secured together by coupling members located outside the shell, in such a way as to prevent displacement of the



closures in a direction away from each other. The shell is selectively movable by the aforementioned elevator mechanism into operative relationship with the end closures, to form a closed chamber, or out of operative relationship with the end closures, to allow access to the interior of the shell.

### 3,477,606
### MEMBRANE TANK STRUCTURES

**Alfred H. Schwendtner, New York, N.Y., assignor, by mesne assignments, to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company**
**Filed Mar. 25, 1965, Ser. No. 442,657**
**Int. Cl. B65d** *25/16, 25/18*
**U.S. Cl. 220—9** **6 Claims**

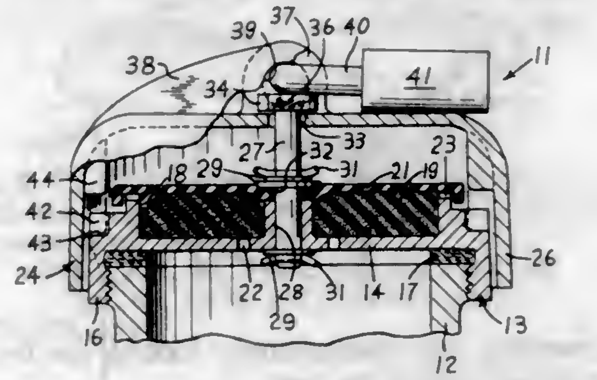


A membrane tank structure for storing and transporting cryogenic liquids such as liquefied methane gas, of the type in which a load-bearing insulating shell supports a thin, liquid-impervious membrane liner. Thermal expansion and contraction problems are solved by using for the insulating shell (or at least for its inner face) a material having a thermal stress, for the temperature range between ambient and that of the cryogenic liquid, substanitally lower than the ultimate strength of the material, and for the membrane, using a thin, smooth, uncorrugated low-expansion sheet material in direct contact with and fully restrained against the inner face of the insulating shell, so that substantially no relative movement between the two occurs under large temperature changes and the sheet does not buckle.

### 3,477,607
### LOCKABLE SPOUT CLOSURE CAP

**Joe E. Fuzzell, Peoria, John C. Thompson, Canton, and John L. Johnson, Jr., Dunlap, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Oct. 24, 1967, Ser. No. 681,054**
**Int. Cl. B65d** *41/04;* **B67d** *5/32;* **E05b** *65/52*
**U.S. Cl. 220—39** **1 Claim**

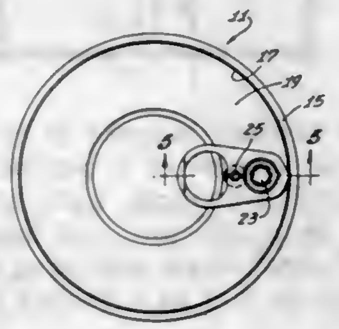
A closure for the spout of a fuel tank, hydraulic fluid reservoir or the like, has an inner cap for engaging the spout and an outer cap which prevents direct grasping of the inner cap. The outer cap may be moved towards the inner cap to engage projections which transmit turning



motion to the inner cap and may also be locked at an outward position at which the projections are disengaged and no torque is transmitted to the inner cap by turning of the outer cap.

### 3,477,608
### EASY-OPENING CAN END HAVING VENT MEANS

**Ermal C. Fraze, 355 W. Stroop Road, Dayton, Ohio 45429**
**Continuation-in-part of application Ser. No. 644,957, June 9, 1967. This application Nov. 21, 1968, Ser. No. 777,584**
**Int. Cl. B65d** *17/24, 51/16;* **B21d** *51/40*
**U.S. Cl. 220—54** **26 Claims**

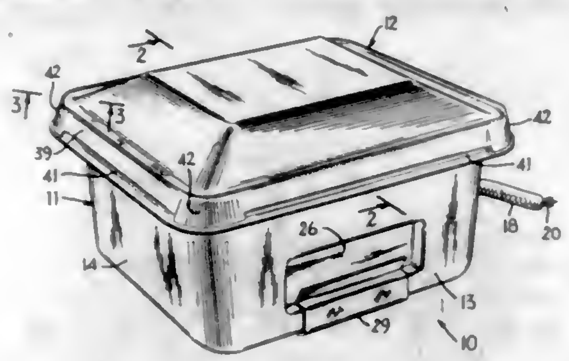


This disclosure describes an easy-opening container wall having a first line of weakness defining a panel removable from the can end and a tab connected to the panel for causing removal of the panel from the container wall. The tab is connected to the panel by first and second attachment means and a second rupturable line of weakness in the container wall extends between one of the attachment means and the lifting end of the tab. In one form of the invention, the second line of weakness extends between the two attachment means and one of the attachment means is rupturable so that upon lifting of the tab, the rupturable attachment means and the second rupturable line of weakness both rupture to provide vent openings. According to another form of the invention, the second line of weakness extends intermediate the second attachment means and the lifting end of the tab and both of the attachment means are nonrupturable in ordinary usage of the tab. The disclosure also describes a rupturable vent rivet and a method of making same.

### 3,477,609
### PLASTIC BOX HAVING SNAP COVER WITH SEAL

**David W. Winkler, Jr., Groton, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware**
**Filed Oct. 24, 1968, Ser. No. 770,143**
**Int. Cl. B65d** *43/10, 53/04;* **H01r** *13/46*
**U.S. Cl. 220—60** **5 Claims**

In the particular embodiment of the invention described herein an electrical terminal box comprises a plastic body and a plastic cover having complementary mating surfaces gasketed to form a hermetic seal and complementary rim configurations locking the body and cover together outside the seal.



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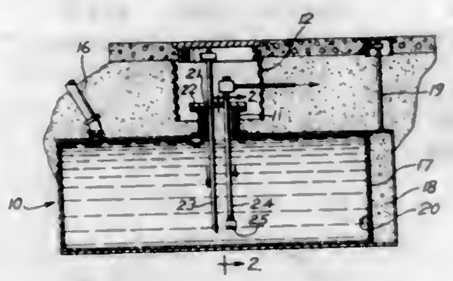
### 3,477,610

### TANK LINER ASSEMBLY

**Clayton C. Hansen, 202 Willow Lane,**
**Elk Grove Village, Ill. 60007**
**Filed Mar. 8, 1968, Ser. No. 711,621**
**Int. Cl. B65d** *25/16;* **B67d** *1/00*
**U.S. Cl. 220—63** **7 Claims**



A tank liner assembly adapted to be erected and suspended from the interior of a previously erected horizontally disposed cylindrical bulk storage tank, the liner normally being collapsed and hangingly supported along its longitudinal length and being expanded against the side walls of the tank as a product is loaded into the liner.

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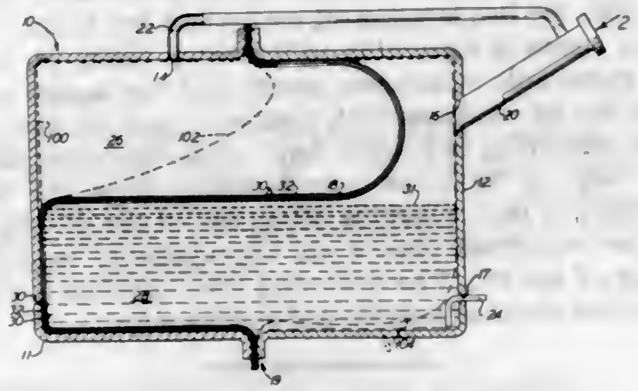
### 3,477,611

### FUEL TANK HAVING REDUCED FUEL VAPOR EMISSION

**Harold T. Niles, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Apr. 3, 1968, Ser. No. 718,570**
**Int. Cl. B65b** *3/00;* **B67c** *3/00;* **B65d** *51/16*
**U.S. Cl. 220—86** **11 Claims**



A flexible impervious diaphragm fastened inside a relatively rigid fuel tank tends to rest on the surface of any fuel in the tank and thereby divides the tank into air and fuel chambers. A filler tube cap seats at two locations in the filler tube for the fuel tank and the air chamber is connected to the compartment formed in the filler tube between the two seats. A two-way check valve located in the cap between the compartment and the atmosphere permits air flow into the air chamber at a low pressure differential and permits air flow out of the air chamber at a higher pressure differential. A one-way check valve between the compartment and the fuel chamber prevents air flow into the fuel chamber while permitting fuel vapors to flow out of the fuel chamber only at a still higher pressure differential.

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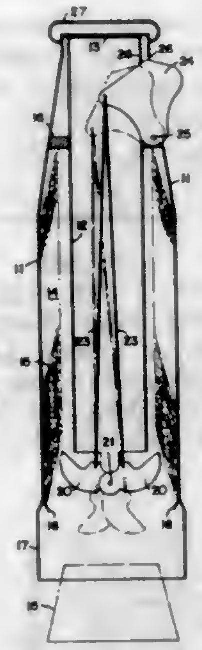
### 3,477,612

### DISPENSER FOR HOLLOW TRUNCATED ARTICLES

**Don G. Hoff, 680 Beach St., Suite 431,**
**San Francisco, Calif. 94109**
**Filed May 20, 1968, Ser. No. 730,470**
**Int. Cl. B65h** *3/24*
**U.S. Cl. 221—40** **2 Claims**



A dispenser for dispensing hollow truncated articles is disclosed comprising an elongated housing and a stacking column axially enclosed therein defining an elongated peripheral space between the housing and the stacking column for receiving and stacking hollow truncated articles. The housing includes at least one inwardly extending projection at its open end to retain a stack of hollow truncated articles in the elongated peripheral space between the stacking column and housing. Means are provided for deformably pushing the outermost truncated cone from a stack over the inwardly extending projection of the housing to thereby dispense the outermost hollow truncated article from the stack.

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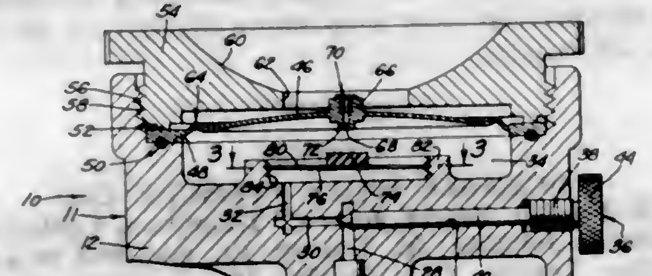
### 3,477,613

### AEROSOL DISPENSER ACTUATED BY PROPELLANT PRESSURE

**John J. Mangel, Riverside, Calif., assignor to Dart Industries Inc., Los Angeles, Calif., a corporation of Delaware**
**Filed Feb. 29, 1968, Ser. No. 709,394**
**Int. Cl. B67d** *5/08;* **B65d** *83/14;* **F16k** *31/50*
**U.S. Cl. 222—70** **5 Claims**



A flow-control valve allows pressurized liquid to leak slowly from an aerosol container into a chamber having a valve-actuating, snap-action diaphragm on one side thereof. The diaphragm is spherically crowned toward a first, valve-closed position, and any pressure applied against the concave side creates internal stresses within the diaphragm, causing it to resist deflection under load. As pressure builds up in the chamber, it pushes the diaphragm past a certain point, causing it to snap over to a second, valve-open position. As pressure is released through the open valve, the diaphragm snaps back to its original valve-closed position.

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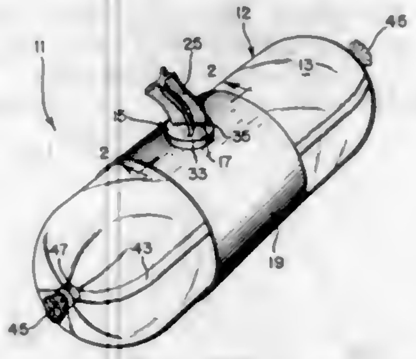
### 3,477,614

### DISPENSER

**Heinz F. Runge, Niles, Ill., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware**
**Filed Jan. 25, 1968, Ser. No. 700,474**
**Int. Cl. B65d** *35/08, 35/14, 47/10*
**U.S. Cl. 222—107** **11 Claims**



Flowable products of differing viscosities may be dispensed in a controlled stream from a nozzle of an inexpensive dispensing means which is adapted to be attached to a wall of a package. Relatively viscous products, such as processed cheese, may be packaged in a dispenser having such a dispensing means attached to a collapsible wall of the dispenser. The collapsible wall is punctured through the nozzle and is then squeezed to force the cheese to extrude through the nozzle. Preferably, a flexible strip is bonded to the collapsible wall in the region of the puncture and reinforces the wall against uncontrolled enlarging and tearing by the flowing cheese.

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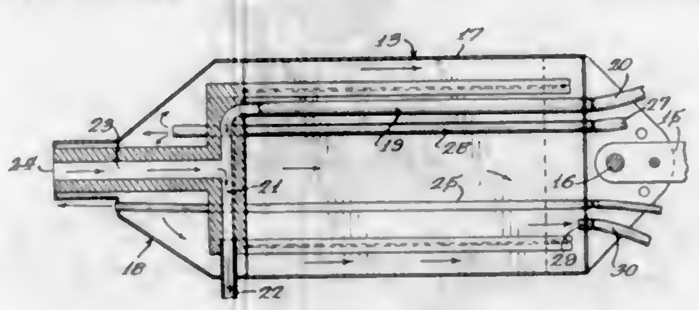
### 3,477,615

### APPARATUS FOR MOVING MOLTEN METAL

**Johnny W. Anderson, 3922 W. Roosevelt Road,**
**Chicago, Ill. 60624**
**Filed Feb. 9, 1968, Ser. No. 704,286**
**Int. Cl. B67d** *5/54;* **B05b** *7/04*
**U.S. Cl. 222—193** **2 Claims**



An aspirating device formed with a nozzle at one end and adapted to be passed through a furnace door into a furnace with its nozzle directed toward a pocket in the furnace bed from which molten metal is to be removed, including an air conduit having an inlet opening at the head end thereof and disposed longitudinally therein and including a transversely extending exhaust branch opening to one side of the device and a suction branch connected to the exhaust branch and opening to the nozzle of the device. The aspirator further includes an oxygen conduit having its inlet at the head end of the device and its outlet adjacent the nozzle of the device whereby to support combustion and maintain steel in molten condition when aspirating a pool thereof from a fault in an open hearth furnace bed. It may also include a cooling water conduit disposed in and around the device having inlet and outlet openings at the head end thereof.

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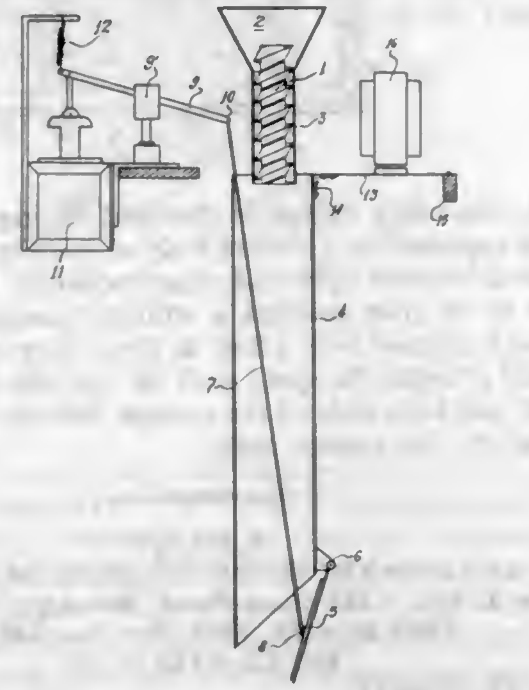
### 3,477,616

### METERING DEVICE

**Ferruccio C. Calvano, Buenos Aires, Argentina, assignor to Mainar S.A. Industrial, Buenos Aires, Argentina, a corporation of Argentina**
**Filed Jan. 16, 1968, Ser. No. 698,309**
**Int. Cl. B65g** *3/12, 65/70, 33/14*
**U.S. Cl. 222—197** **6 Claims**



A metering device for machines for packing powdered and finely crystallized products comprising a hopper with a downwardly extending tubular portion, the lower end of this tubular portion extending into the upper end of an outer tube member. An endless screw member in the tubular portion of the hopper is continuously rotated by an adjustable control means at a predetermined speed, and metering into the package is completed through a closure member controlled by adjusting means which may be mechanical, electrical, electromechanical, hydraulic or pneumatic.

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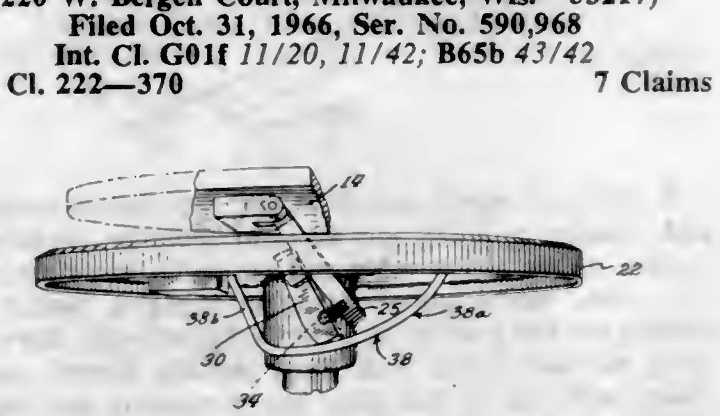
### 3,477,617

### INDEXING TYPE OF FILLING MACHINE WITH BOTTOM FLAP VALVE

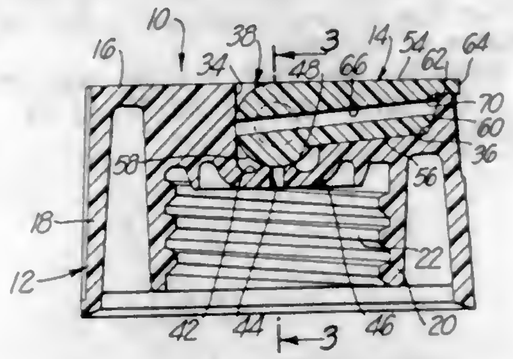
**Herbert F. Techtmann, Fox Point, Wis.**
**(220 W. Bergen Court, Milwaukee, Wis. 53217)**
**Filed Oct. 31, 1966, Ser. No. 590,968**
**Int. Cl. G01f** *11/20, 11/42;* **B65b** *43/42*
**U.S. Cl. 222—370** **7 Claims**



A volumetric dispenser for package filling, in which a rotary cup holder supports a plurality of cups, a filling means for said cups is mounted above the holder, a bottom gate is mounted below each cup, and a track below said cups. The track has means to open and close the gates at the proper time.

### 3,477,618
### DISPENSING CLOSURE

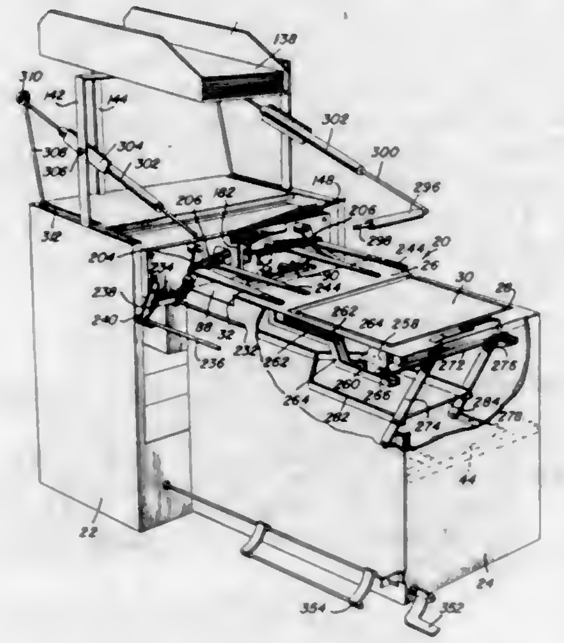
**Robert E. Hazard, North Kingstown, R.I., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts**
**Continuation-in-part of application Ser. No. 654,779, July 20, 1967. This application June 10, 1968, Ser. No. 735,697**
**Int. Cl. B67d** *3/00*
**U.S. Cl. 222—534** **3 Claims**



A dispensing closure is disclosed having a spout rotatably mounted on a closure body so that the spout may be rotated between open and closed positions. With this closure in an open position, a straight passage through the spout is aligned with a hole in the closure body, and in a closed position the spout seals off the hole in the closure body and both ends of the passage through this spout are closed by the closure body.

### 3,477,619
### AUTOMATIC SHIRT FOLDING MACHINE

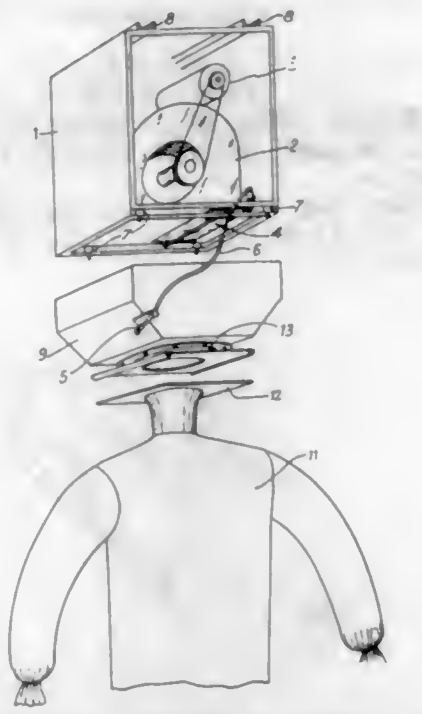
**Wing J. Lee, 1322 Neck Road, Brooklyn, N.Y. 11229**
**Filed June 28, 1967, Ser. No. 649,695**
**Int. Cl. A41h** *33/00*
**U.S. Cl. 223—37** **14 Claims**



A table top having means at one end thereof engaging and creasing a collar and adjacent shoulder portions of a shirt, means at the other end engaging the tail portion of a shirt, means adjacent the tail engaging portion for folding the tail portion of a shirt longitudinally into overlying relation to the main body portion thereof, means along each side of the table top to support and engage the sleeve of the shirt and fold them inwardly into overlying relation to the folded tail portion of the shirt and means along each side of the table top engaging the side portions of the shirt to fold the side portions of the shirt along with the folded sleeves into overlapping relation to each other and in overlying relation to the folded tail portion of the shirt.

### 3,477,620
### GARMENT-TREATING MACHINE

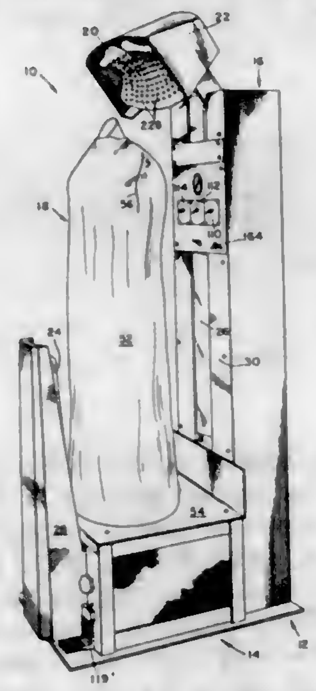
**Gérard Jean Rebiscoul, 20 Rue Charles Chefson 92, Bois-Colombes, France**
**Filed Apr. 26, 1968, Ser. No. 724,444**
**Claims priority, application France, May 5, 1967, 105,332**
**Int. Cl. A41h** *43/00*
**U.S. Cl. 223—51** **1 Claim**



A machine for treating garments laid over a dummy or the like forming body suspended in the air at the lower end of a casing secured to the ceiling or wall of any premises, said casing enclosing means feeding simultaneously steam and air into the forming body, so that the fluids pass throughout the garment which is not in contact with the floor.

### 3,477,621
### METHOD AND APPARATUS FOR SHAPING AND FINISHING A GARMENT

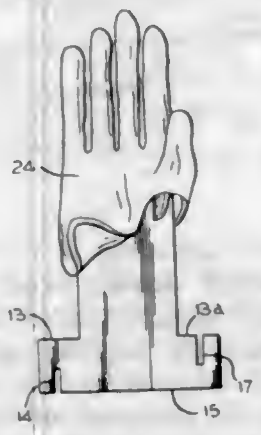
**Harry D. Forse, 220 Woods Road, Edgewood Addition, Anderson, Ind. 46011**
**Filed Mar. 16, 1967, Ser. No. 623,692**
**Int. Cl. D06c** *5/00*
**U.S. Cl. 223—57** **21 Claims**



A method and apparatus for simultaneously shaping and finishing a garment while it is mounted on a single form comprising a buck for shaping the garment in the neck and shoulder region and a fluid-pervious bag for supporting the garment in draped relation from the buck. The buck, which has an outer surface defining neck and shoulder portions corresponding to those of the human body, is provided with an inner chamber and a plurality of passageways communicating between the chamber and the outside surface. Means are provided for supplying hot, wet vapor and then dry vapor to the buck chamber, thereby heating and dampening and then drying the shoulder and neck region of the garment. Separate means are provided for supplying hot, wet vapor and then dry vapor to the bag, thereby heating and dampening and then drying the body of the garment. A flexible, perforated pressing plate is provided which is contoured to apply pressure to selected areas of a garment supported on the buck for shaping the neck and shoulder portion of the garment.

### 3,477,622
### GLOVE DRYING DEVICES

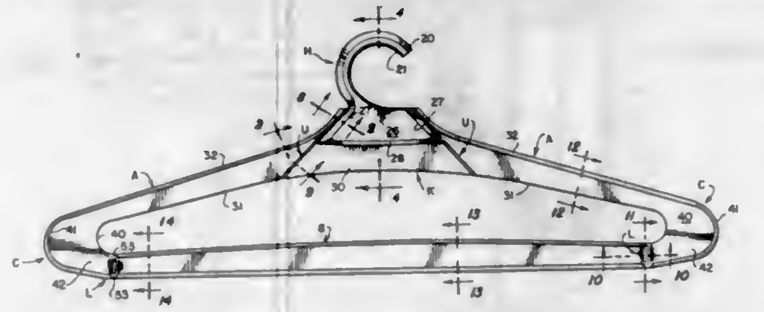
**Edna Appelt, 2390 S. Kinnickinnic Ave., Apt. 1, Milwaukee, Wis. 53207**
**Filed Jan. 29, 1969, Ser. No. 795,090**
**Int. Cl. A41d** *19/00*
**U.S. Cl. 223—78** **3 Claims**



Glove drying device including a structure having a contour which simulates gloves so that it can support the gloves for drying. The structure is modular and interconnected so that when it is disassembled it is flat and can be stored.

### 3,477,623
### HANGER FOR COATS AND THE LIKE

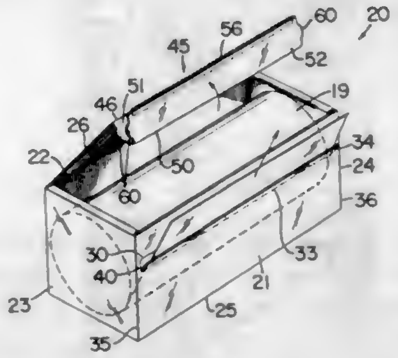
**Kenneth A. Milette, Pasadena, and Clair A. Samhammer, Orange, Calif., assignors to Samsonite Corporation, Denver, Colo., a corporation of Colorado**
**Filed Oct. 26, 1967, Ser. No. 678,249**
**Int. Cl. A47j** *51/097*
**U.S. Cl. 223—88** **12 Claims**



A hanger for coats and the like is molded of polypropylene or other plastic having resistance to stress reversal and includes a top hook, a pair of diverging arms, a pair of rounded corners at the lower end of each arm and a lower bar extending between the corners. An integral plastic hinge at the upper end of each arm and slanting outwardly at a lesser angle than the respective arm, as well as an integral, transverse plastic hinge between the lower, inner end of each corner and the lower bar, permit the corners to twist, when the weight of a coat is placed on the hanger and thereby provide a greater surface area for supporting the shoulder area of the coat. A rearwardly extending apron below the hook and between the upper hinges provides greater support for the neck area of the coat, when the arms are twisted forwardly, while the arms and corners are reinforced by an outer rib and the lower bar may be channel-shaped in cross section.

### 3,477,624
### DISPENSING CARTON FOR WEB MATERIAL AND BLANKS FOR MAKING SAME

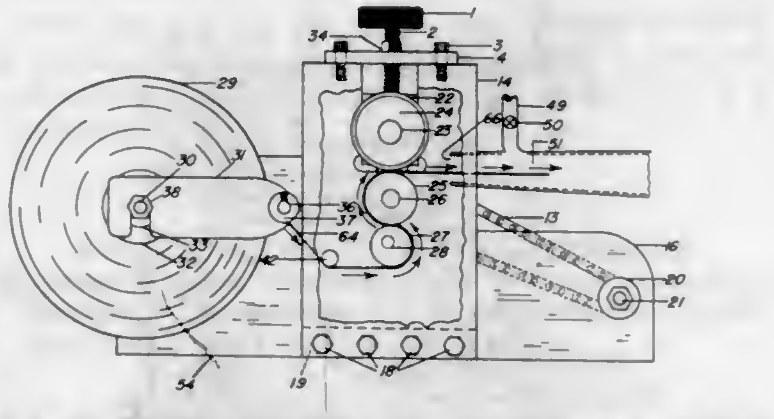
**James Curtis Branyon and Allen L. Harshbarger, Louisville, and Maxie Martin, Pleasure Ridge Park, Ky., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware**
**Filed Apr. 17, 1967, Ser. No. 635,295**
**Int. Cl. B26f** *3/02;* **B65d** *5/72;* **B65h** *75/32*
**U.S. Cl. 225—43** **19 Claims**



This invention pertains to an improved dispensing carton for web material, such as a web of metal foil, or the like, particularly adaptable to be used by commercial food packers and to blanks for making such dispensing carton. The improved dispensing carton of this invention has an elongated horizontally positioned rectangualr slot located along the center portion of front wall means thereof adapted for pulling such web material therethrough. An extension flap is provided in its top wall means and such extension flap has cutting means provided in its terminal edge. The extension flap is adapted to be folded upon itself and the folded configuration is tucked behind the front wall means of such dispensing carton to position the cutting means above the top edge of the front wall means. Web material is easily pulled through the rectangular slot and cut to the desired length by pulling across the cutting means.

### 3,477,625
### ROTARY CUTTING APPARATUS

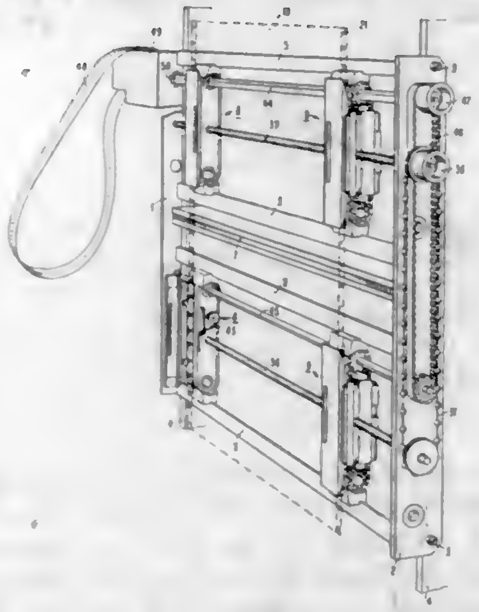
**Lee Johnston Wiest, Baltimore, Md., assignor to Torginol of America, Inc., Montebello, Calif., a corporation of California**
**Filed Jan. 30, 1967, Ser. No. 612,381**
**Int. Cl. B65h** *35/00, 35/10;* **B26f** *1/00*
**U.S. Cl. 225—96** **8 Claims**



An improved apparatus for completely scrapless cutting of paper or other sheet material into a non-geometric fracture pattern comprises a pattern rotary die and a backup roller between which sheet material is passed, with final separation of the cut sheet material being effected by an air blast from within the rotary die and with air siphon chamber means being used to remove the cut sheet material from between the rotary die and the backup roller.

### 3,477,626
### PAPER FEED DEVICE

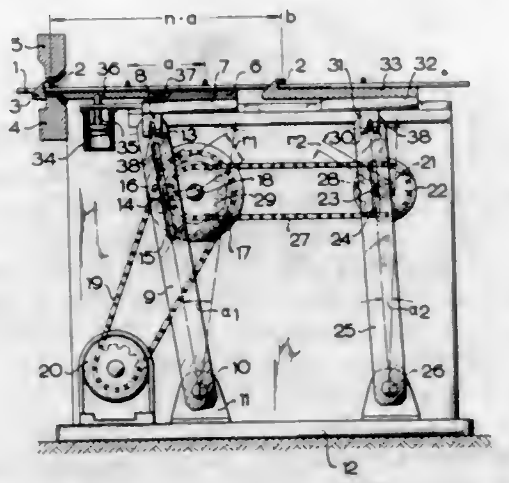
**Fritz Hilpert, Boblingen, Germany, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Oct. 30, 1967, Ser. No. 678,880**
**Claims priority, application Germany, Dec. 24, 1966, J 32,630**
**Int. Cl. B65h** *17/40*
**U.S. Cl. 226—9** **7 Claims**



A device for simultaneously advancing two paper webs, particularly in a record carrier controlled printer, by means of tractors driven by a square shaft, which are arranged on either side of the paper web and which comprise a continuous timing belt disposed over two sprocket wheels and provided with attachments fitting the transfer holes of the paper web.

### 3,477,627
### SYNCHRONIZED RECIPROCATING FEED DEVICES

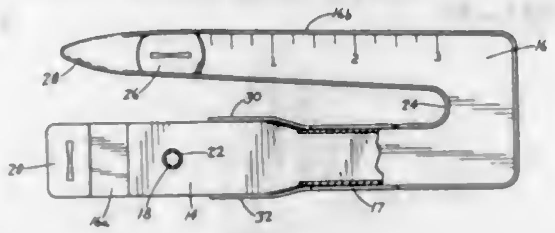
**Heinz Webers, Osterath, Germany, assignor to Bau-Stahlgewebe GmbH, Dusseldorf-Oberkassel, Burggrafenstrasse, Germany, a corporation of Germany**
**Filed Jan. 15, 1968, Ser. No. 697,883**
**Claims priority, application Germany, Jan. 13, 1967, B 90,721**
**Int. Cl. B65h** *17/36*
**U.S. Cl. 226—54** **7 Claims**



Intermittent work feeding apparatus comprises a pair of synchronously operated first and second reciprocating slides carrying first and second feet pawls engaging a workpiece, to feed the same in a common predetermined direction. The first slide is operated by a source of rotary power through a first rotary-to-oscillating motion conversion device, to feed the workpiece with a first predetermined feed stroke, while the second slide is operated through a second rotary-to-oscillating motion conversion device in synchronism with said first device, to feed the workpiece with a stroke being a fraction of said predetermined feed stroke. As a result, with both feed pawls engaging the workpiece, the latter is fed with said first feed stroke, while with said first pawl disengaged temporarily from the workpiece, the latter is fed with said second feed stroke, respectively.

### 3,477,628
### CONVERTIBLE STAPLER

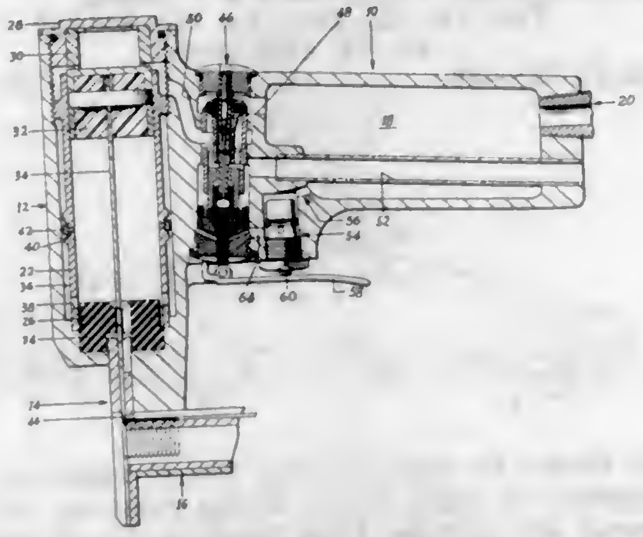
**Lendrum A. MacEachron, 3820 New Brighton Road, St. Paul, Minn. 55112**
**Filed July 11, 1967, Ser. No. 652,464**
**Int. Cl. B25c** *5/02;* **B27f** *7/08*
**U.S. Cl. 227—110** **9 Claims**



A stapling device including a slotted member with two arms and a staple driving head that can be connected to the slotted member in at least two different positions for conventional stapling and long reach stapling respectively. In the latter case, the stapling head is connected to one of the arms of the slotted member and aligned over an anvil on the other arm.

### 3,477,629
### PNEUMATIC FASTENER APPLYING DEVICE

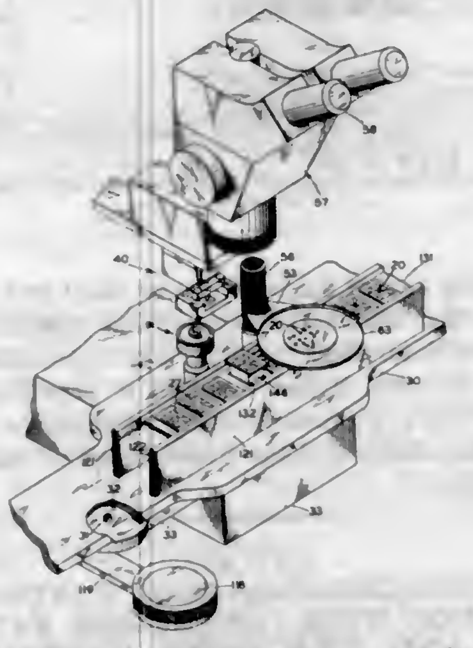
**Carl T. Becht, Cincinnati, Ohio, assignor to Senco Products, Incorporated, Cincinnati, Ohio, a corporation of Ohio**
**Filed Nov. 23, 1966, Ser. No. 596,540**
**Int. Cl. B27f** *7/22*
**U.S. Cl. 227—130** **16 Claims**



Pneumatic fastener applying device having control structure providing automatic repetitive cycling including cooperating passages and pneumatic valving between the main valve for the working cylinder and the operator controlled valve so that the operator controlled valve is effective via the passage and pneumatic valving to open the main valve; the passages and pneumatic valving are also arranged to utilize, only after the main valve has opened, fluid under pressure to permit the main valve to reclose even though the operator controlled valve remains actuated.

### 3,477,630
### APPARATUS FOR ASSEMBLING ARTICLES

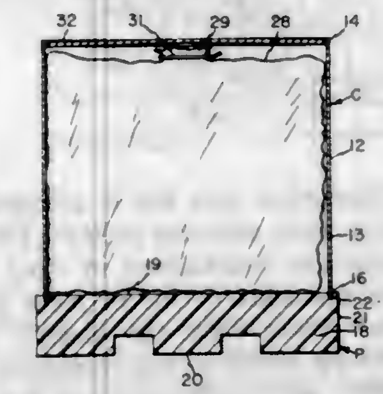
**Fred J. Schneider, Catasauqua, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed Apr. 26, 1968, Ser. No. 724,380**
**Int. Cl. B23k** *37/04;* **B23q** *19/00;* **H05k** *13/02*
**U.S. Cl. 228—6** **4 Claims**



An apparatus for aligning a first article, such as a beam-lead integrated circuit supported on a pivotally mounted tray with a reference image, and then operating a bonding head to pick up the circuit at an assembly position. The tray and bonding head are moved away from the assembly position and a conveyor is indexed to move a second article, such as a substrate, on a workholder beneath the bonding head. The workholder is lifted out of a nest in the conveyor and elevated to a bonding level where the substrate is aligned with the reference image after which the head is actuated to bond the beam-lead integrated circuit to the substrate.

### 3,477,631
### COMBINATION PALLET AND CONTAINER

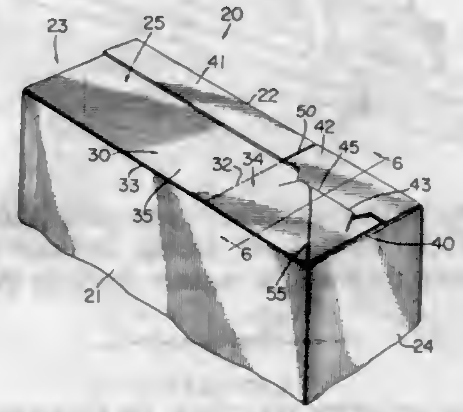
**Charles K. Dunlap, Jr., and Walter E. Johnson, Hartsville, and William M. Harper, Darlington, S.C., assignors to Sonoco Products Company, Hartsville, S.C., a corporation of South Carolina**
**Filed Aug. 16, 1968, Ser. No. 753,252**
**Int. Cl. B65d** *3/10, 19/44, 7/42*
**U.S. Cl. 229—14** **6 Claims**



A tubular body having one end secured in sealing relationship to the top surface of a base member of rigid expanded plastic foam material to form a container with the bottom surface of the base member being provided with at least one pair of channels for receiving a pair of lifting forks of an associated lift truck.

### 3,477,632
### DISPENSING CONTAINER MEANS AND BLANKS FOR MAKING SAME

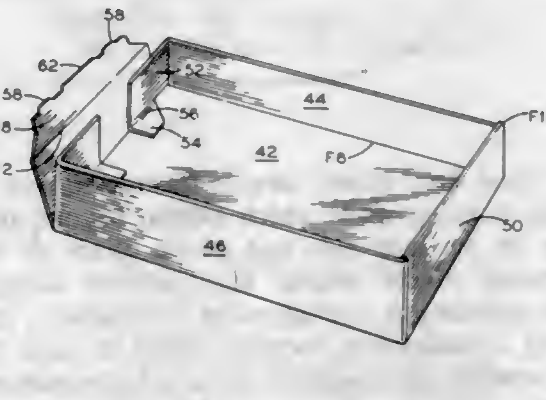
**Gary M. Donahue, Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware**
**Filed June 8, 1967, Ser. No. 644,635**
**Int. Cl. B65d** *5/74*
**U.S. Cl. 229—17** **9 Claims**



This disclosure relates to a dispensing container means having extension flap means extending from its vertical wall means which are adapted to be fastened in a common plane to define top wall means for such container means, and such extension flap means comprise integral V-shaped chute means adapted to be extended outwardly from the top wall means for dispensing the contents of the container means therethrough.

### 3,477,633
### BOX CONSTRUCTION

**Abbot Greene, 24 Carter Road, and Paul Densen, 27 Colony Drive E., both of West Orange, N.J. 07052**
**Filed Oct. 10, 1967, Ser. No. 674,195**
**Int. Cl. B65d** *5/22*
**U.S. Cl. 229—34** **2 Claims**

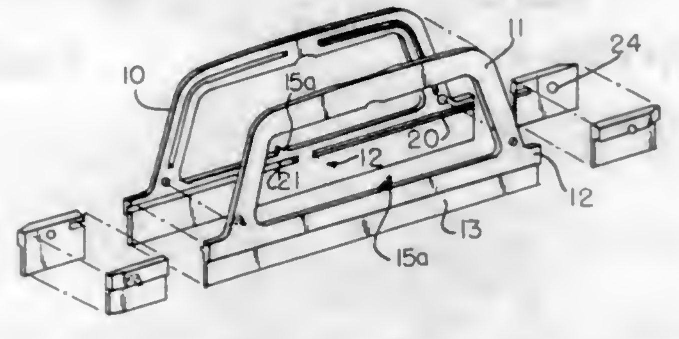


An open end box and cover therefor, each of which is formed of a single blank of sheet material constructed and arranged with improved fastening means when it is in the erected condition.

### 3,477,634
### BAG AND CLOSURE MEANS THEREFOR

**Seymour Kamins, Oceanside, and Norman Rosenberg, Bayside, N.Y., assignors to CTP Industries Inc., Brooklyn, N.Y., a corporation of New York**
**Filed Oct. 18, 1967, Ser. No. 676,201**
**Int. Cl. B65d** *31/00, 33/06;* **A45c** *13/26*
**U.S. Cl. 229—54** **4 Claims**

The disclosure relates to a two-piece handle for a thin film, thermoplastic bag. Each of the two handle members is identical, and each comprises an elongate bar portion having a flat surface adapted for sealing to one of the open mouths of the bag. Each member further is provided with a handle grip which is integrally connected with the elongate bar portion. The two members are further provided with functionally engaging elements which are respectively located on facing surfaces of the two members when they are in register to close the mouth of the bag.



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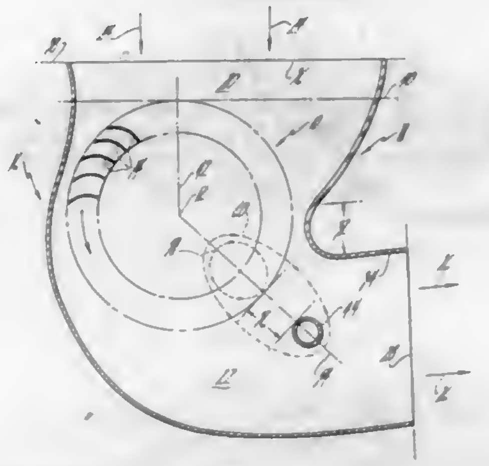
### 3,477,635
### LOW NOISE NINETY DEGREE TRANSVERSE FLOW BLOWER WITH IMPROVED HOUSING AND VORTEX CONTROL MEMBER

**Dov Zeev Glucksman, West Newton, Mass., and Thomas W. Fay, New Britain, Conn., assignors to Torin Corporation, Torrington, Conn., a corporation of Connecticut**

**Filed Dec. 26, 1967, Ser. No. 693,556**
**Int. Cl. F04d** *17/08, 29/44*
**U.S. Cl. 230—125 12 Claims**



A low noise level ninety degree transverse flow blower comprising housing walls which extend beyond the rotor periphery on the inlet side and which direct air through approximately ninety degree in a smooth arcuate and low noise generation configuration throughout, and also comprising a judiciously located vortex control member having a smooth arcuate outer surface for minimum noise generation.

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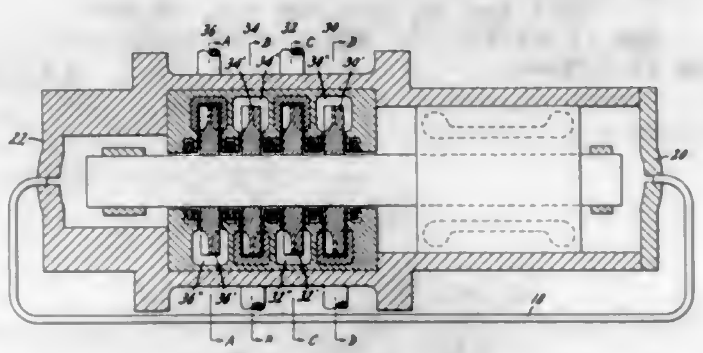
### 3,477,636
### BALANCING OF GAS PRESSURE FORCES IN MULTI-STAGE REGENERATIVE COMPRESSORS

**Robert L. Gessner, Ballston Lake, N.Y., assignor to General Electric Company, a corporation of New York**

**Filed Apr. 4, 1968, Ser. No. 718,829**
**Int. Cl. F04d** *17/12, 29/66*
**U.S. Cl. 230—129 1 Claim**

A stage and ducting arrangement for a multi-stage regenerative compressor which arrangement is used for approximately balancing the radial and axial forces caused by pressure distribution within the compressor. Also, the tendency to thermal distortion of the stationary parts is reduced. A stripper sector is disposed between the inlet and outlet of each stage of the compressor and each stripper sector is circumferentially positioned with respect to the stripper sectors of adjacent stages so that radial forces acting on that stage, due to the static pressure rise, oppose similar radial forces exerted on the adjacent stages. The said positioning also distributes the regions of low and high temperature in the stationary parts. The stages are axially positioned in a non-consecutive sequence from a low pressure end of the compressor shaft to a high pressure end so that the axial forces on the impellers of each stage, due to interstage leakage, are approximately offsetting. An external bypass conduit is provided between the ends of the compressor casing to equalize the thrust producing, interstage leakage pressure which accumulates at these points.



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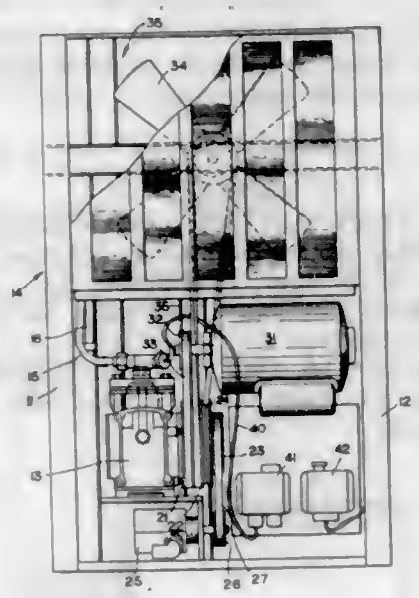
### 3,477,637
### MOBILE REFRIGERATION UNIT HAVING SHAFT IN COMMON WITH COMPRESSOR, FAN DRIVE MEANS AND SELECTABLE HYDRAULIC OR ELECTRIC MOTOR

**Randall W. Johnson, Lexington, Mass., assignor to Automatic Radio Mfg. Co., Inc., Melrose, Mass., a corporation of Massachusetts**

**Filed May 2, 1968, Ser. No. 726,126**
**Int. Cl. F04b** *49/02, 27/00;* **F04d** *15/02*
**U.S. Cl. 230—214 6 Claims**

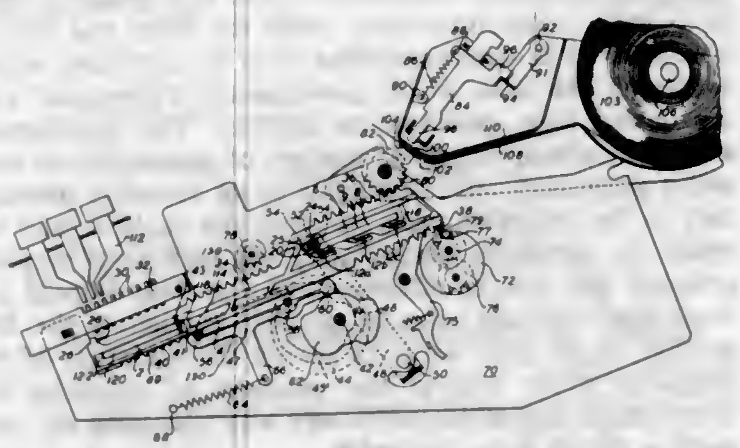


A mobile refrigeration unit has a compressor with a crankshaft carrying three adjacent pulleys. The two closest pulleys are continually maintained in fixed relationship to the compressor crankshaft. One of these pulleys is for receiving rotative power from an electric motor. The other is for delivering power to the condensor and evaporator fans. A clutch selectively connects the third pulley in fixed relationship to the crankshaft for then receiving rotative power from a hydraulic motor. When the compressor is driven hydraulically, the clutch is engaged and the electric motor idles. When the compressor is driven electrically, the clutch is disengaged so that the hydraulic motor does not load the system.

### 3,477,638
### ACTUATOR HOLDING MEANS

**Armin O. Fischer, Cranford, N.J., assignor to Litton Business Systems, Inc., Orange, N.J., a corporation of New York**

**Filed Feb. 21, 1968, Ser. No. 707,117**
**Int. Cl. G06c** *29/00, 25/00*
**U.S. Cl. 235—60 14 Claims**



The actuator holding means comprises bars uniformly spring biased throughout their length, which are provided on the racks of a calculating machine. The bars apply a uniform frictional force to a rack driving bail, after it has stopped driving the racks but while it is still moving itself, to hold the racks in position against a stopping means with a constant amount of force, throughout the remaining travel of the drive bail.

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### ERRATUM

For Class 235—61 see:
Patent No. 3,478,195

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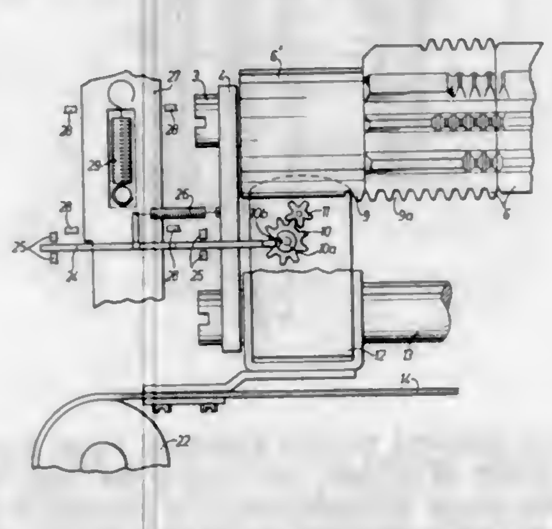
### 3,477,639
### APPARATUS FOR THE CHECKING OF MULTIDIGIT NUMBERS

**Gösta R. Englund, Stockholm, Sweden, assignor to Svenska Dataregister AB, Solna, Sweden, a corporation of Sweden**

**Filed Oct. 3, 1966, Ser. No. 583,731**
**Claims priority, application Sweden, Oct. 6, 1965, 12,979/65**
**Int. Cl. G06c** *1/00*
**U.S. Cl. 235—61 12 Claims**



Each ordinal position of a business machine has associated therewith a code element with eagh digit position thereof provided with a number of test elements corresponding to the digit and ordinal values thereof. Entry of a number (with or without a check digit) into the business machine effects a corresponding setting of the code elements to align corresponding test elements along a test path. Subsequent sensing of the test elements to a predetermined modulo is effective to indicate whether the entry is correct or incorrect.

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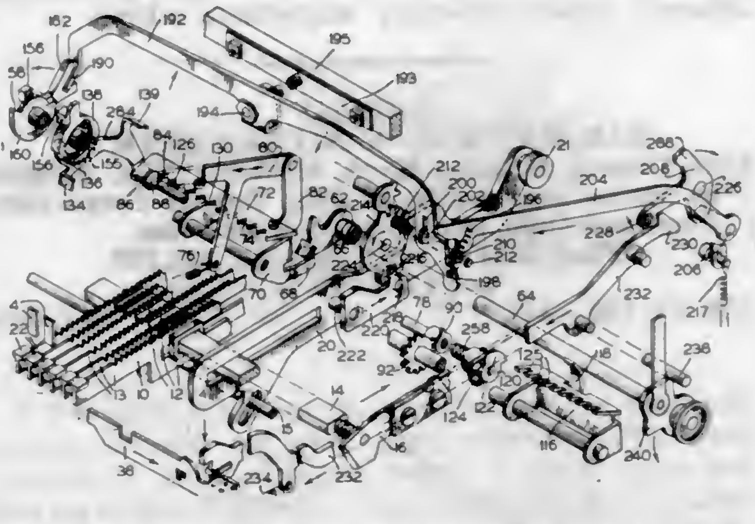
### 3,477,640
### DIVISION TERMINATING MECHANISM

**Martin E. Henes, Denville, N.J., assignor to Litton Business Systems, Inc., Orange, N.Y., a corporation of New York**

**Filed Oct. 12, 1967, Ser. No. 675,134**
**Int. Cl. G06c** *23/06*
**U.S. Cl. 235—63 14 Claims**



A device which operates in conjunction with a division mechanism in a calculating machine to cause the dividing part of the overall division process to terminate after a preset number of orders have been divided. This operates before normal termination of the division process to thereby limit the number of digits in the quotient. An external settable dial is provided which can be set to a number which is related to the desired number of orders which are to be divided before termination, or which can be set to a position whereby the termination mechanism is disabled and the division process continues to its normal termination.

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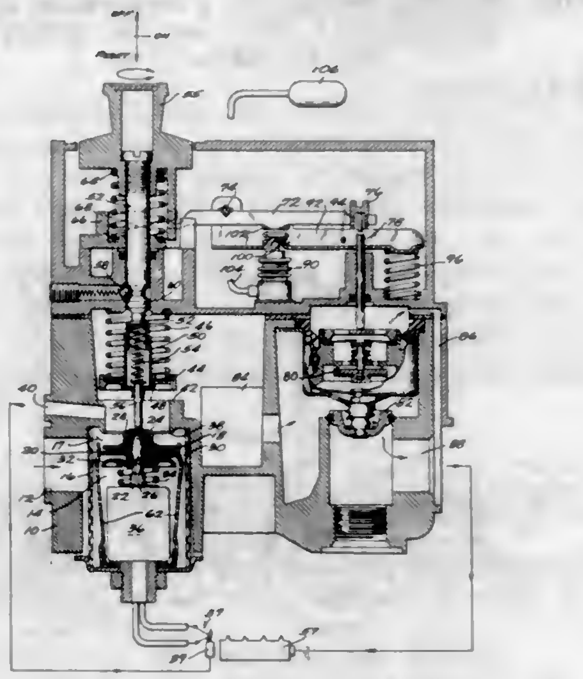
### 3,477,641
### FLOW INTERRUPTER TYPE GAS SAFETY CONTROL OPERATED BY ROTARY KNOB FOR PILOT, ON AND OFF IN ANY ROTARY POSITION OF KNOB

**Richard K. Fairley, Deerfield, Ill., and Lourdes V. McCarty, Milwaukee, Wis., assignors to Controls Company of America, Melrose Park, Ill., a corporation of Delaware**

**Filed June 23, 1967, Ser. No. 648,490**
**Int. Cl. F23n** *5/06;* **G05d** *23/12*
**U.S. Cl. 236—1 10 Claims**



The manually operated knob is rotated to turn cam surface to set the bias on and temperature to be maintained by the temperature responsive valves. In any rotary position of the knob it can be pushed in (pilot position) to interrupt gas flow to the main burner while allowing flow to the pilot burner for ignition purposes and the knob may be pulled out to allow the safety valve to close even though the thermo-electrically energized electromagnet is energized. The knob cannot be depressed to "pilot" if the magnet is still energized after having moved the knob to "off." "On," "off," and "pilot" functions are obtained without changing temperature setting.

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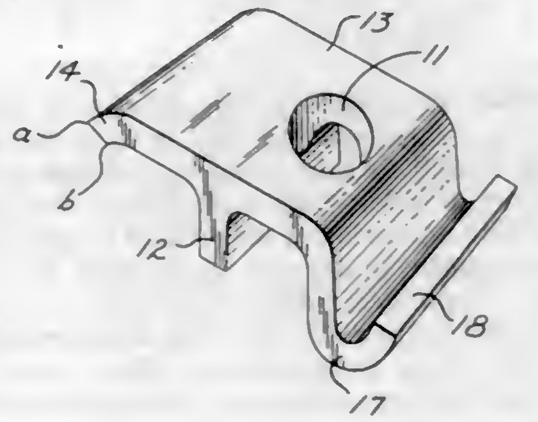
### 3,477,642
## RAILWAY RAIL FASTENER DEVICE

**Carl Thomas Jackson, North Madison, Ohio, assignor, by mesne assignments, to True Temper Corporation, Cleveland, Ohio, a corporation of Delaware**
**Filed June 1, 1967, Ser. No. 642,780**
**Int. Cl. E01b** *9/28*
**U.S. Cl. 238—349** **8 Claims**



There is disclosed herein a specially designed rail clip having an opening through which a hold down device, such as a bolt, may pass, said clip having a two point bearing contact on a rail flange and a bearing contact upon the cross tie.

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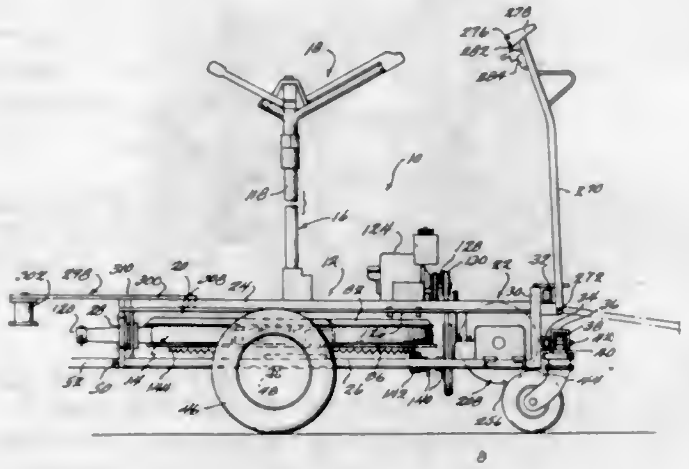
### 3,477,643
## SPRINKLER IRRIGATION DEVICE WITH IMPROVED HOSE HANDLING MEANS AND METHOD OF DEPLOYING THE SAME PREPARATORY TO A SPRINKLER IRRIGATION CYCLE

**Kenneth J. Bruninga, Peoria, Ill., assignor to L. R. Nelson Mfg. Co., Inc., Peoria, Ill., a corporation of Illinois**
**Filed Oct. 23, 1967, Ser. No. 677,221**
**Int. Cl. B05b** *17/00*
**U.S. Cl. 239—1** **15 Claims**



The specification discloses a sprinkler irrigation device adapted to be moved along an elongated predetermined path in a sprinkler irrigation cycle during which a source of water under pressure is communicated with sprinkler means on the device by a length of flexible collapsible hose. The sprinkler irrigation device includes a hose reel mounted for power driven rotational movement about a generally vertical axis operable after the irrigation cycle has been completed to wind up the hose in a generally collapsed condition substantially free of contained water in a single coiled formation, while the inner end thereof is connected in communication with the sprinkler means to permit the hose to be conveniently transported with the device from one area to another. The specification also discloses an improved method of deploying the hose and a propelling cable and cable drum assembly preparatory to the irrigation cycle in which the cable is paid out while the device is towed along the path in a properly oriented but reverse direction and the hose is paid out from the hose reel onto the ground parallel to the first portion of the path so as to permit the initiation of the irrigation cycle without the necessity of orienting the direction of the device or in any way changing the connection of the hose therewith.

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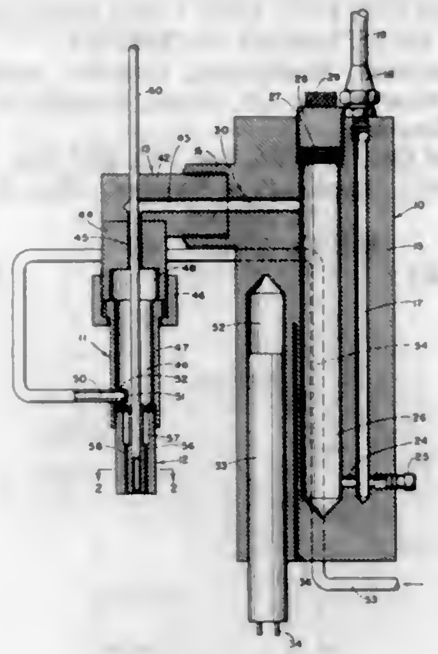
### 3,477,644
## LIQUID FUEL BURNER

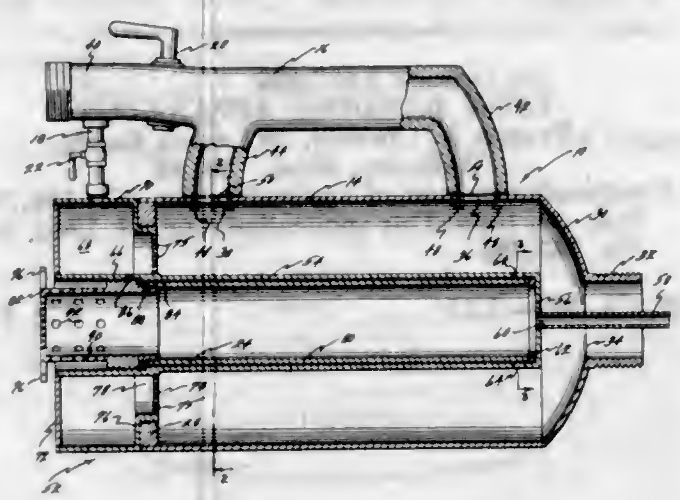
**Leon M. Bablouzian, Newtonville, Roger A. Castonguay, Lynn, and Joseph F. Wenckus, Needham, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts**
**Filed Mar. 6, 1968, Ser. No. 710,915**
**Int. Cl. B05b** *1/24;* **F23d** *11/04*
**U.S. Cl. 239—135** **11 Claims**



A burner designed to burn vaporized liquid fuel and a gaseous source of oxygen. By varying the ratio of gaseous oxygen source to liquid fuel, it is possible to provide a heat source operating over a wide temperature range. In the burner at least a portion of the oxygen source is premixed with the vaporized fuel prior to ignition. The burner may be used as a high-temperature, high-intensity torch and is thus particularly suitable for incorporation in crystal-growing furnaces, as well as in spheroidizing apparatus for refractory metals and oxides and for use in welding, cutting and melting apparatus. It may also be used as a low-capacity burner to be used in water heaters, residential heating apparatus, and the like.

### 3,477,645
## PORTABLE STEAM-CLEANING APPARATUS

**Harry E. Murphy, Chicago, Ill., assignor of one-half to Edwin L. Spangler, Jr., and Max L. Wymore, doing business as Anderson, Spangler & Wymore, both of Denver, Colo.**
**Filed Dec. 26, 1967, Ser. No. 693,254**
**Int. Cl. B05b** *15/00;* **F22b** *37/00*
**U.S. Cl. 239—136** **12 Claims**



This invention relates to a miniature hand-held boiler heated by a disposable pyrotechnic cartridge that can be connected to an ordinary garden hose. Water can be fed through the hollow handle directly into the boiler in substantial volume to be heated or, alternatively, it can be sprayed therein and converted to steam. The gases evolved from the burning pyrotechnic device are mixed with the steam in the spray nozzle to impart additional energy to the latter. Means are also provided for admitting water from the boiler into the cartridge chamber for the purpose of extinguishing the pyrotechnic device.

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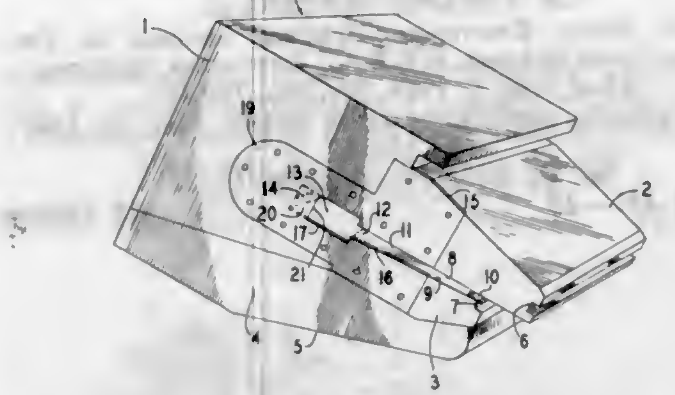
### 3,477,646
## SCARFING UNIT

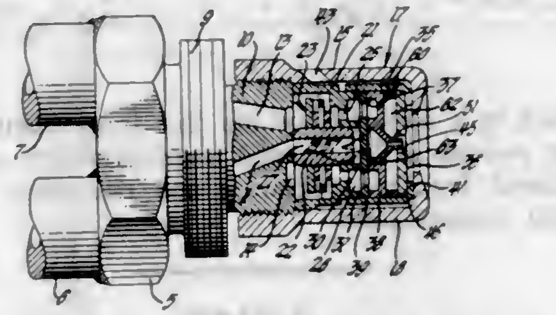
**Thomas J. Lytle, West Orange, N.J., assignor to Union Carbide Corporation, a corporation of New York**
**Filed Jan. 6, 1967, Ser. No. 607,830**
**Int. Cl. B05b** *1/00;* **G23f** *7/00*
**U.S. Cl. 239—433** **6 Claims**



A continuous slot scarfing unit having higher capacity than heretofore obtainable and which at the same time produces scarfed surfaces of very high quality is obtained by having its continuous slot nozzle tapered to converge toward its discharge end and, additionally, by having an expansion chamber in back of the slotted nozzle. These improvements cause the sheet-like stream of scarfing oxygen emitted from the scarfing unit to have a uniform velocity and flow rate across the entire width of the nozzle. These scarfing units when used in a bank of units have no side-walls on the slot and only stub side-walls on the expansion chamber on those sides of each unit which form the inside of the bank.

### 3,477,647
## FUEL SPRAY NOZZLE

**Richard G. Grundman, Grand Rapids, Mich., and Cecil H. Sharpe, Brownsburg, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Feb. 20, 1967, Ser. No. 617,142**
**Int. Cl. B05b** *1/34;* **F23d** *11/14*
**U.S. Cl. 239—468** **8 Claims**



A fuel spray nozzle of the swirl type for use with fuels bearing abrasive particles resists erosion of the swirl chamber by introducing the fuel at a radius much less than the radius of the swirl chamber and not much greater than the radius of the outlet. Also, the outer wall of the swirl chamber is a replaceable ring which may be of very hard metal.

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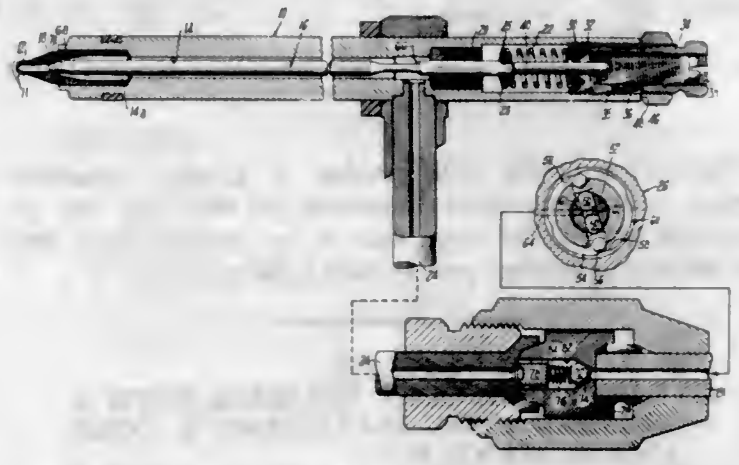
### 3,477,648
## FUEL INJECTION NOZZLE

**Vernon D. Roosa, West Hartford, Conn. (Hartford Machine Screw Co., P.O. Box 1440, Hartford, Conn. 06102)**
**Filed July 12, 1967, Ser. No. 652,872**
**Int. Cl. B05b** *1/32;* **F23k** *5/00*
**U.S. Cl. 239—533** **1 Claim**



A fuel injection nozzle for internal combustion engines having an inwardly opening pressure operated valve positioned in a bore and guided for reciprocal movement to open and close the valve wherein the discharge tip is provided with a small passage bypassing the valve to discharge a portion of the fuel prior to the opening of the valve and including a one-way valve for preventing reverse flow of fuel toward the inlet of the nozzle to prevent combustion gases from entering the nozzle through the passage.

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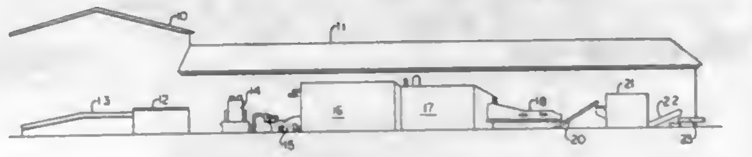
### 3,477,649
## SOLID WASTE RECLAIMING METHOD AND SYSTEM

**Le Roy E. Dalberg, 13005 W. 72nd Ave., and Herbert Dalberg, 12925 W. 72nd Ave., both of Arvada, Colo. 80002**
**Filed Sept. 26, 1967, Ser. No. 670,602**
**Int. Cl. B02c** *17/02;* **B07b** *13/00;* **B03c** *1/00*
**U.S. Cl. 241—24** **8 Claims**

A system for reclaiming useful materials from solid waste comprises a feed hopper which supplies the waste to a series of treating devices. The waste is first sized and then beaten to separate unlike materials; the mass of waste is then passed through apparatus for separating and removing in order magnetic material, film plastic, paper, rubber and rags. The remaining waste material is then supplied to a ball mill or the like for reduction to fine size to provide a fine ground material which can readily be treated for the separating and collecting of its individual components.



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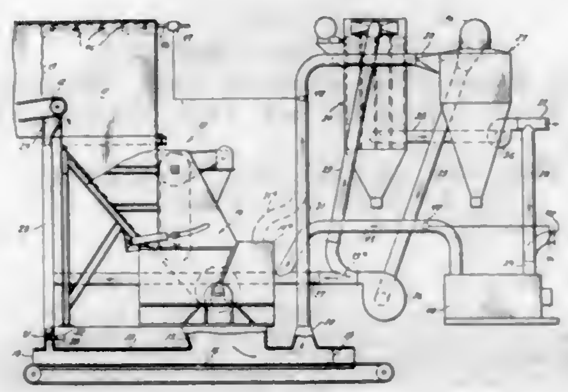
### 3,477,650
### APPARATUS TO PROVIDE INERT ATMOSPHERE IN MATERIAL REDUCING MILLS

**Robert M. Williams, Ladue, Mo., assignor to Williams Patent Crusher & Pulverizer Co., Inc., St. Louis, Mo., a corporation of Missouri**
**Filed Nov. 28, 1967, Ser. No. 686,074**
**Int. Cl. B02c** *21/00, 23/00;* **F26b** *21/12*
**U.S. Cl. 241—47** **5 Claims**



Material reducing mill, crusher or grinder apparatus having means connected therewith to maintain the atmosphere within the apparatus at an oxygen level that will inhibit explosion and ambient pollution.

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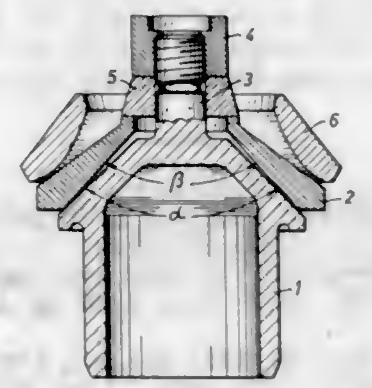
### 3,477,651
### GYRATORY OR CONE CRUSHER WITH A CRUSHER CONE INCLUDING A CORE AND A MANTLE

**Hanns Decker, Cologne-Rath, Helmut Stöckmann, Wesseling, near Cologne, and Heinz Hurtmanns, Cologne, Germany, assignors to Klockner-Humboldt-Deutz A.G., Cologne-Deutz, Germany, a corporation of Germany**
**Filed Aug. 31, 1967, Ser. No. 664,753**
**Int. Cl. B02c** *1/00, 2/00*
**U.S. Cl. 241—293** **9 Claims**



Crusher cone in a gyratory or cone crusher has a core with a conical outer surface a mantle with a conical inner surface, and means for fastening the mantle onto the core with the respective surfaces mutually adjacent, the conical outer surface of the core having an apex angle greater than the apex angle of the inner conical surface of the mantle, and the fastening means being adopted to stress the mantle so as to reduce the apex angle of the inner conical surface thereof and effect mutual abutting engagement of the inner conical surface of the mantle and the outer conical surface of the core.

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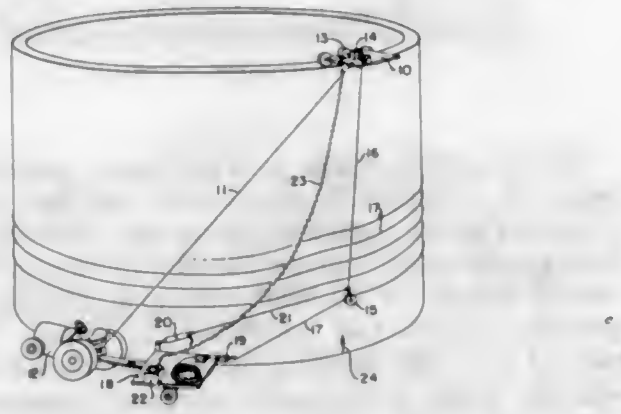
### 3,477,652
### TANK BANDING APPARATUS

**Francis X. Crowley, 24 Lanark Road, Wellesley, Mass. 02180**
**Continuation-in-part of application Ser. No. 538,764, Mar. 30, 1966. This application Apr. 17, 1968, Ser. No. 742,990**
**Int. Cl. B65h** *81/06*
**U.S. Cl. 242—7.21** **1 Claim**



Apparatus for banding the wall of an upright tank with reinforcing wire, comprising an overhead carriage on the tank and a wire banding and tensioning vehicle on the ground, an electrically operated winch on the carriage, a wire guide suspended therefrom, and a calibrated electric timer on the vehicle having electric connections with the winch on the carriage.

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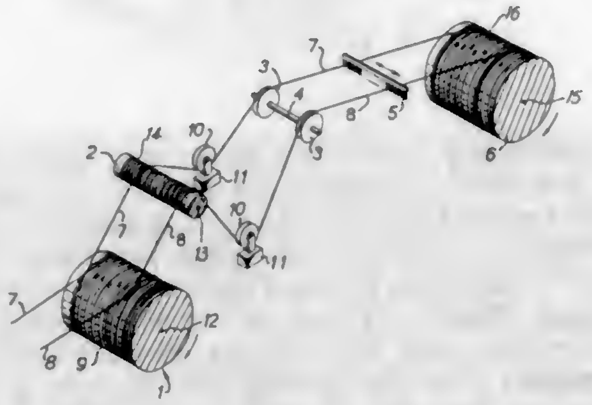
### 3,477,653
### METHOD AND MEANS FOR WINDING OF STRAND MATERIAL

**Guido J. Peene, Zwevegem, Belgium, assignor to Trefileries Leon Bekaert, P.V.B.A., Zwevegem, Belgium**
**Filed Mar. 5, 1968, Ser. No. 710,481**
**Claims priority, application Great Britain, Mar. 28, 1967, 14,154/67**
**Int. Cl. B65h** *54/00;* **D02b** *13/22*
**U.S. Cl. 242—25** **18 Claims**



Method of and apparatus for winding separate strands side by side on a reel including drag means, the strand passing from the drag means via a separate pulley for each strand biased to tension its associated strand. The tension on each strand varies with the rate at which the strand is taken up on the reel.

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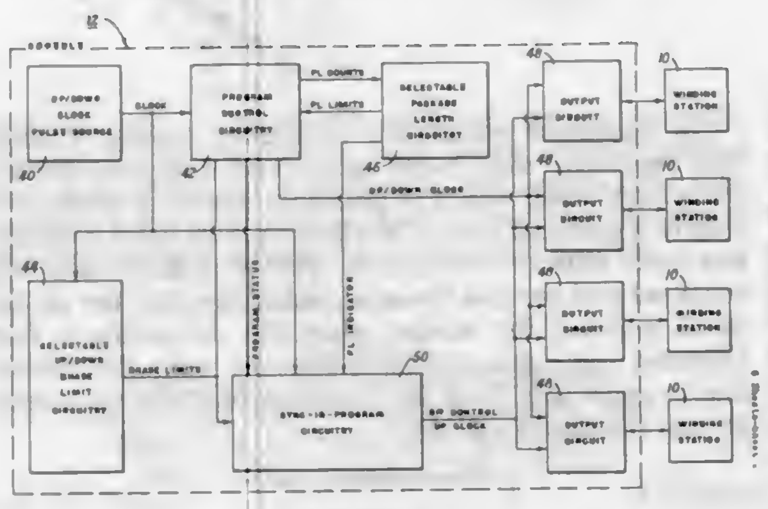
### 3,477,654
### SELECTIVELY VARIABLE WINDING PATTERN CONTROL APPARATUS FOR THREAD WINDERS

**Frank Nicholas Tonnies, Bayside, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine**
**Filed Aug. 1, 1967, Ser. No. 657,570**
**Int. Cl. B65h** *54/22*
**U.S. Cl. 242—26.1** **16 Claims**


12
CONSOLE
UP/DOWN CLOCK PULSE SOURCE
40
CLOCK
PROGRAM CONTROL CIRCUITRY
42
PL COUNTS
PL LIMITS
SELECTABLE PACKAGE LENGTH CIRCUITRY
46
UP/DOWN CLOCK
48
OUTPUT CIRCUIT
10
WINDING STATION
44
SELECTABLE UP/DOWN CHASE LIMIT CIRCUITRY
CHASE LIMITS
PROGRAM STATUS
PL INDICATOR
50
SYNC-IN-PROGRAM CIRCUITRY
UP CONTROL
UP CLOCK

The disclosed system for controlling thread winding apparatus to form selected thread packages includes program control circuitry feeding electrical pulses to separate thread guide mechanisms for producing traversing movements thereof relative to rotating thread bobbins; the extent of movement in each direction being established by chase limit circuitry according to a selected winding program. Package length circuitry reverses the winding program mode when the thread guide mechanisms reach positional limits corresponding to a selected thread package length. Sync-in-program circuitry operates to bring the thread guide mechanisms into a winding program in progress.

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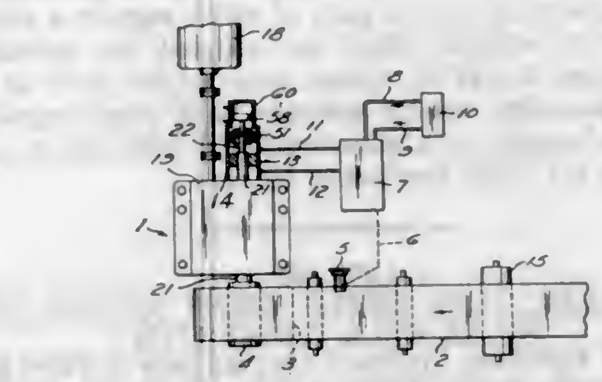
### 3,477,655
### REEL DRUM LATERAL MOVEMENT CONTROL

**Lyle V. Anderson, Pittsburgh, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware**
**Filed Mar. 2, 1967, Ser. No. 620,130**
**Int. Cl. B65h** *25/26, 75/18*
**U.S. Cl. 242—57.1** **12 Claims**



Reel apparatus, for winding or unwinding strip material, e.g., steel, that laterally positions an edge of the strip by moving axially of the coil only the coil and the drum and as few other moving parts as necessary.

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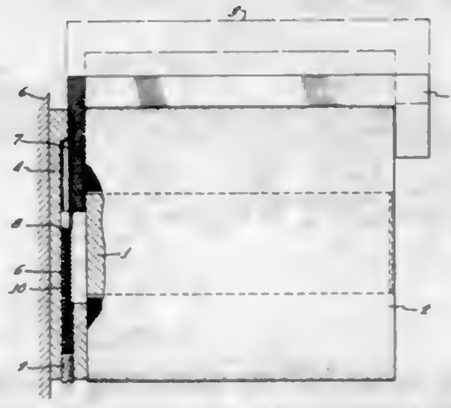
### 3,477,656
### PAPER ROLL DISPENSER

**Bert Muller, 211 Vienna Drive, Santa Ana, Calif. 92703**
**Filed Oct. 5, 1967, Ser. No. 678,143**
**Int. Cl. B65h** *19/00*
**U.S. Cl. 242—55.2** **3 Claims**



A paper roll dispenser comprising a support frame, a spindle extending from the frame and supporting a roll of paper, and a pressure arm, spring biased into engagement with the roll of paper to provide a tensioning effect thereto.

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### 3,477,657
### APPARATUS FOR MEASURING AND WINDING A GIVEN LENGTH OF RIBBON ONTO A SPOOL

**Max Norbisrath, Solingen, Germany, assignor to Spezial-Papiermaschinenfabrik August Alfred Krupp, Hilden, near Dusseldorf, Germany**
**Filed Jan. 30, 1968, Ser. No. 701,584**
**Claims priority, application Germany, Jan. 31, 1967, S 108,093**
**Int. Cl. B65h** *19/20, 25/04*
**U.S. Cl. 242—56** **12 Claims**

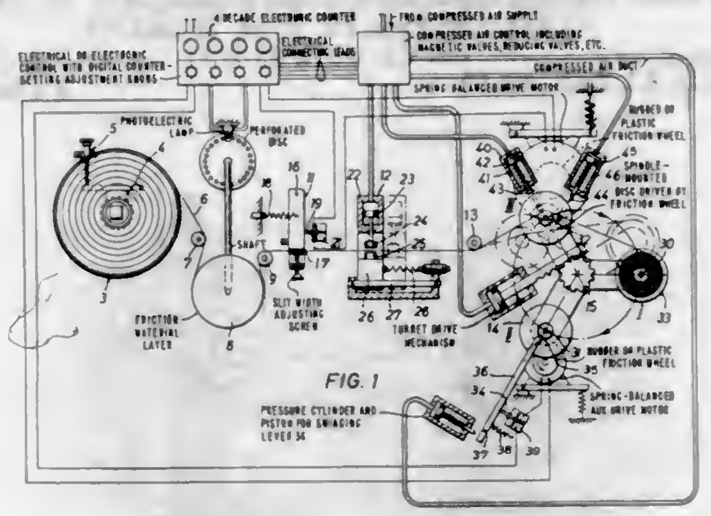
4 DECADE ELECTRONIC COUNTER
FROM COMPRESSED AIR SUPPLY
COMPRESSED AIR CONTROL INCLUDING MAGNETIC VALVES, REDUCING VALVES, ETC.
ELECTRICAL OR ELECTRONIC CONTROL WITH DIGITAL COUNTER-SETTING ADJUSTMENT KNOBS
ELECTRICAL CONNECTING LEADS
COMPRESSED AIR DUCT
SPRING BALANCED DRIVE MOTOR
PHOTOELECTRIC LAMP
PERFORATED DISC
RUBBER OR PLASTIC FRICTION WHEEL
SPINDLE-MOUNTED DISC DRIVEN BY FRICTION WHEEL
SHAFT
SLIT WIDTH ADJUSTING SCREW
FRICTION MATERIAL LAYER
TURRET DRIVE MECHANISM
RUBBER OR PLASTIC FRICTION WHEEL
SPRING-BALANCED AIR DRIVE MOTOR
PRESSURE CYLINDER AND PISTON FOR SWINGING LEVER 34
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FIG. 1

An apparatus for measuring and winding a ribbon, such as the inked ribbon of a typewriter, onto a spool. The ribbon is supplied by a rotary supply means for movement along a given path, and while moving along this path the ribbon extends around a rotary measuring wheel means which will measure the preselected length of ribbon which is to be wound on a spool. The ribbon is wound onto an empty spol at a rotary turret head which carries a plurality of driven spindles on which spools are located and which is angularly displaceable to locate the several spools respectively at a plurality of predetermined operating stations. In the region of one of these stations is a clip-feeler means for feeling a clip on an empty spool, and at the region of another station is a clip-pressing means for pressing a clip with a ribbon attached thereto against the core of the spool for fastening the ribbon thereto. A cutting means is located in the region of the rotary turret for cutting through a ribbon.

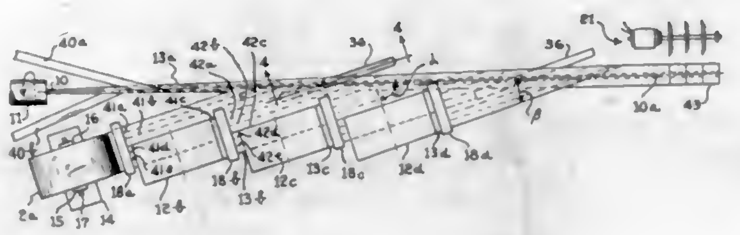
### 3,477,658
### PAPERMAKING METHOD AND APPARATUS

**Charles T. Banks, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware**

**Filed Aug. 2, 1967, Ser. No. 657,921**

**Int. Cl. B65h** *19/20*

**U.S. Cl. 242—56** **18 Claims**



A winding apparatus for producing a roll of two-ply sheet material comprising an elongate mandrel, a series of supply rolls of single ply sheet material positioned so that the sheet material winds onto the mandrel at a relatively small acute angle measured from the axis of the mandrel with the web from each of the rolls partially overlapping the web from an adjacent roll, a perforator for perforating each of the webs with longitudinal perforate lines with the perforators and supply rolls being so disposed that side edges and lines of perforation of successive webs wound onto the mandrel are in register, and a cutter for cutting off segments of the sheet material as so wound on the mandrel. A pair of embossing discs may be substituted for each perforator.

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### 3,477,659
### ROTATABLE SPOOL FISHING REEL

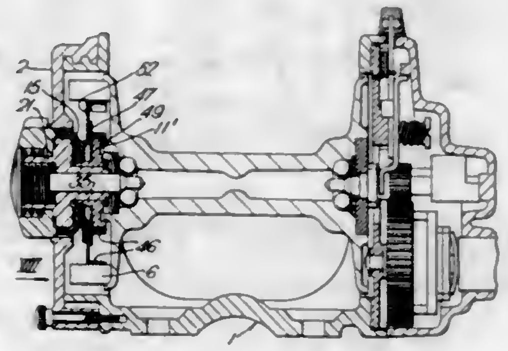
**Kenneth Patrick Morritt, Cheam, England, assignor to K. P. Morritt Limited, Falmouth, Cornwall, England**

**Filed Mar. 25, 1966, Ser. No. 537,533**

**Claims priority, application Great Britain, Apr. 28, 1965, 17,841/65; Aug. 19, 1965, 35,602/65**

**Int. Cl. A01k** *89/02*

**U.S. Cl. 242—84.52** **8 Claims**



A rotating spool fishing reel is provided with a friction brake acting between the casing and the spool only when the latter rotates in one direction and governed so that it acts either only at a lowermost range of speeds of such rotation or both at a lowermost and at a highermost range of speeds of such rotation. In one embodiment a pivotally mounted governor has a single brake shoe urged into engagement with a part of the friction brake either by the effect of centrifugal force on the mass of the governor itself and by a spring, at highest and lowest speeds respectively; in another embodiment a pivotally mounted governor has two brake shoes one urged into engagement with a part of the friction brake by a spring, at a lowermost range of speeds of rotation of the spool. It is desirable that the maximum frictional coupling between casing and spool shall be adjustable.

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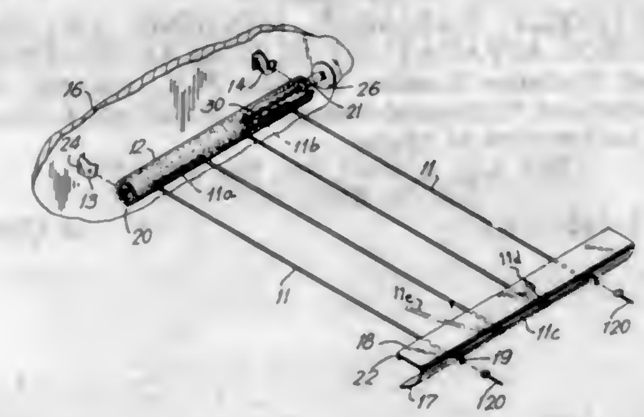
### 3,477,660
### RETRACTABLE CLOTHESLINE

**Garnett Abraham, 215 Manor Road, Staten Island, N.Y. 10314**

**Filed Oct. 5, 1967, Ser. No. 673,162**

**Int. Cl. B65h** *75/38;* **D06f** *53/02*

**U.S. Cl. 242—100.1** **6 Claims**



An improved retractable clothesline having a single line interlaced over many spans and dispensed from a retractable roller which is pivotably mounted against one wall of a confined area. The clothesline includes a decorative cover structure which may serve as a shelf when fully retracted and permits the cord which supports the clothes to be adjusted for tension when the clothesline is fully extended and connected to its opposite wall. The clothesline is removable from its mounting brackets for storage or use at other locations.

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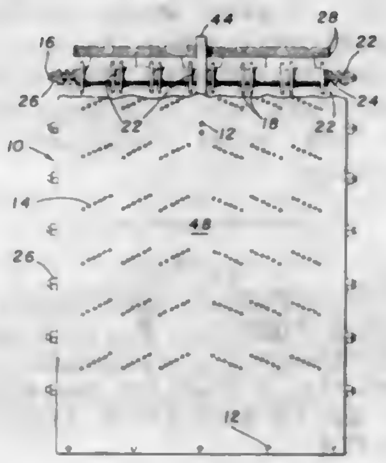
### 3,477,661
### WARP YARN CREEL FOR WEAVING

**Paul D. Emerson, Raleigh, Fred H. Engelman, Cary, Frank A. Baggett, Durham, and John C. Oatfield, Cary, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**

**Filed Mar. 20, 1968, Ser. No. 714,702**

**Int. Cl. B65h** *49/14*

**U.S. Cl. 242—131** **9 Claims**



A yarn supply creel is comprised of a plurality of bobbin mounting stations each of which support a plurality of yarn bobbins which are adapted for individual rotation and a braking system provided for each of the bobbin mounting stations whereby each yarn emanating from the bobbins of a given station is subjected to substantially the same unwinding tension.

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### 3,477,662
### PNEUMATIC TUBE DEPLOYMENT MEANS, AND SOLAR CELL THEREWITH

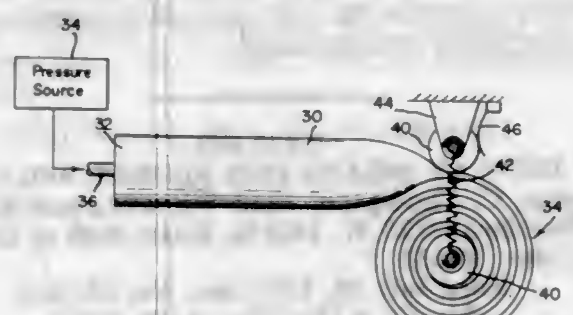
**Philip N. Anderson, Malibu, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio**

**Filed July 26, 1965, Ser. No. 474,928**

**Int. Cl. H01l** *15/02*

**U.S. Cl. 244—1** **19 Claims**

A deployment mechanism having a relatively thin-walled flexible tube closed at one end and passing through a constriction means which compresses the tube laterally to form in the tube a flow inhibiting restriction, and pressurizing means for inflating the closed end portion of the tube to extend the tube longitudinally in the direction of its closed end. A deployable assembly having normally retracted deployable means, such as an array of articulated solar panels for a spacecraft, and utilizing the tube deployment mechanism for extending the deployable means from its retracted position to an extended position.



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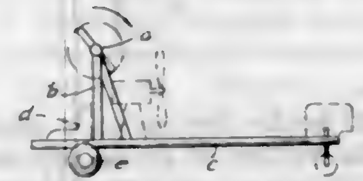
### 3,477,663
### AIRCRAFT OR TOWED GLIDERS

**Paolo Orazi, Via S. Fiorano 1, Brescia, Italy**

**Filed Dec. 6, 1966, Ser. No. 599,479**

**Int. Cl. B64c** *27/22, 27/00, 39/00*

**U.S. Cl. 244—8** **2 Claims**



Aircraft or towed glider of the spanwise rotary wing type, in which the wing is mounted on a special framework, at a fair distance from the body of the said aircraft.

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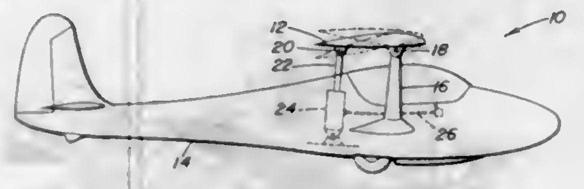
### 3,477,664
### FLUTTER WING FOR A SAILPLANE

**Edward B. Jones, General Delivery, Perryman, Md. 21130**

**Filed Oct. 11, 1967, Ser. No. 674,534**

**Int. Cl. B64c** *31/02*

**U.S. Cl. 244—16** **6 Claims**



Air turbulence supplements thermal lift in the sailplane of this invention. The wing is mounted on one rear and two forward trunnions. The forward trunnions hinge the wing to the main struts extending from the sailplane fuselage. The rear trunnion links to the fuselage through a movable strut which terminates in a pilot controllable delay dashpot. The angle of attack of the wing is thus made to follow with controlled delay the inertial and lifting forces to provide a flutter type of forward propulsion.

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### 3,477,665
### VIBRATION ATTENUATING METHOD AND ELECTROHYDRAULIC ATTENUATOR FOR ROTARY-WING AIRCRAFT

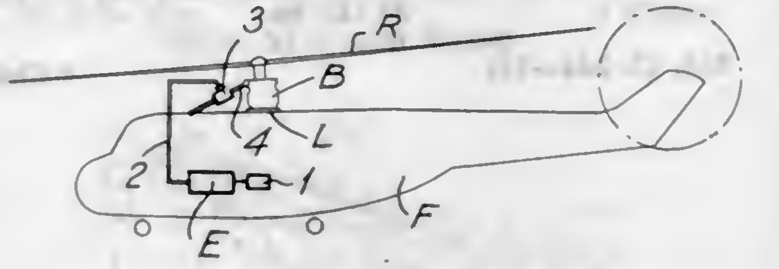
**Louis François Georges Legrand, Aix-en-Provence, France, assignor to Sud-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France**

**Filed Aug. 17, 1967, Ser. No. 661,341**

**Claims priority, application France, Sept. 16, 1966, 76,594**

**Int. Cl. B64** *27/32*

**U.S. Cl. 244—17.25** **13 Claims**



Vibrations aboard a rotary wing aircraft are attenuated electrohydraulically by converting electrical signals, generated by dynamic accelerations measured on the aircraft, into changes in hydraulic pressure in a double-acting jack supported by a structural member interconnecting the rotor support and the aircraft fuselage to produce pulses countering the vibrations.

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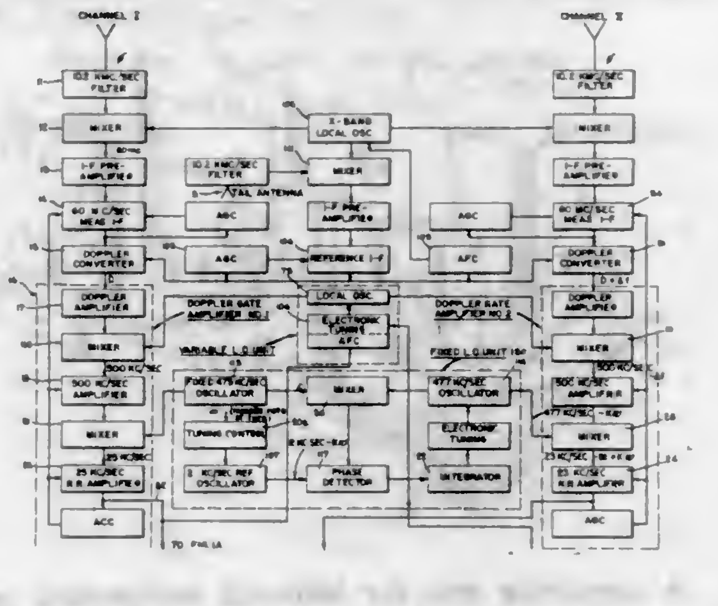
### 3,477,666
### GUIDANCE SYSTEM

**Robert L. Kent, Winchester, and Rosario S. Badessa, West Roxbury, Mass.; Carl Barus, Swarthmore, Pa.; Joseph M. Dunn, Winchester, Mass.; Raymond Arthur Glaser, Kirkland, Wash.; and Leonard B. Johnson, Hingham, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**

**Filed May 14, 1958, Ser. No. 736,442**

**Int. Cl. F41g** *7/18;* **G06f** *15/50*

**U.S. Cl. 244—3.19** **13 Claims**



1. In a CW homing system for receiving reflected signals from targets, comprising two Doppler gate amplifier units for selecting the desired target signal among all Doppler-shifted signals and for providing a tunable narrow pass-band to improve signal to noise ratio, a variable local oscillator unit connected to each of said Doppler gate amplifier units for supplying a varying frequency signal for heterodyning in said Doppler gate units, a phase locked frequency loop having circuitry connected between one of said Doppler gate amplifier units and said variable local oscillator unit for varying the frequency of the signal from said variable local oscillator unit whereby a selected Doppler target signal to

said Doppler gate amplifier units is tracked by said variable local oscillator unit to maintain the selected Doppler target signal within the pass-band of the Doppler gate amplifier units.

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### 3,477,667
### WINDSHIELD FOR SUPERSONIC AIRCRAFT

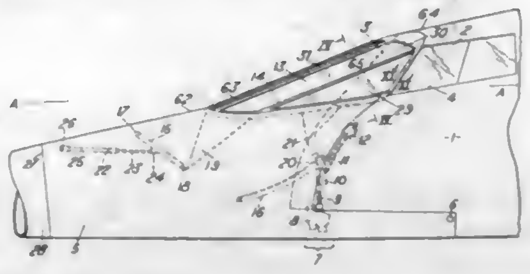
**Stanley Anthony Lock, Kingswood, Bristol, England, assignor to British Aircraft Corporation (Operating) Limited, London, England, a British company**

**Filed July 11, 1967, Ser. No. 652,499**

**Claims priority, application Great Britain, July 29, 1966, 34,123/66**

**Int. Cl. B64c** *1/14, 23/00*

**U.S. Cl. 244—121** **6 Claims**



For supersonic flight, an aircraft has a movable shield which in raised window covering position is inclined at an angle between 18° and 22° to the fore-and-aft axis of the aircraft. The drag produced by the inclined shield is economically acceptable.

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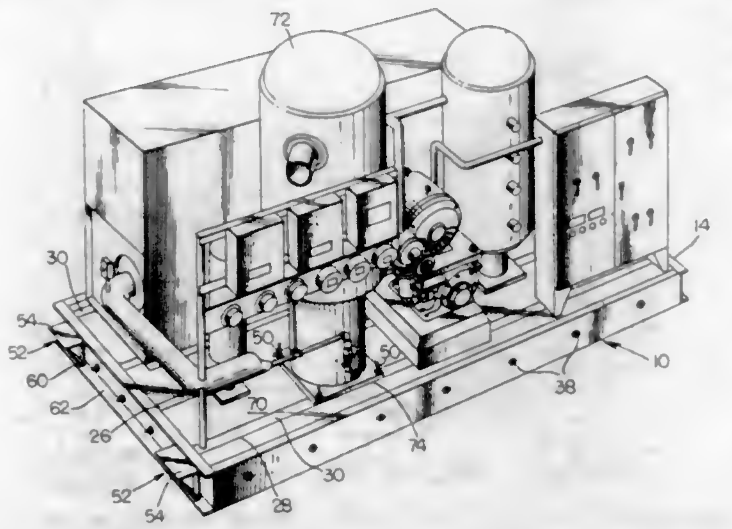
### 3,477,668
### SUPPORTING BASE FOR INDUSTRIAL REFRIGERATION APPARATUS

**Joseph R. Tippmann, Fort Wayne, Ind., assignor to Tippmann Engineering, Inc., Fort Wayne, Ind., a corporation of Indiana**

**Filed Mar. 4, 1968, Ser. No. 710,312**

**Int. Cl. E02d** *27/44*

**U.S. Cl. 248—19** **13 Claims**



A supporting base for industrial refrigeration apparatus comprising a relatively flat, rigid frame of channel irons positioned with the webs thereof upright. Said frame in one form is rectangular so as to have spaced-apart side and end members, these members being the aforementioned channel irons. A steel plate is welded to the bottom flanges of the channel irons so as to provide a floor in the frame, the provision of this floor thereby defining with the channel irons a concrete-containing mold. A plurality of elongated angle irons extend between and are securely affixed to the end channels and constitute a reinforcing part of the frame. These angle irons are spaced above the floor and affixed to the channel irons immediately adjacent to the top portions thereof. A body of solidified concrete fills the frame. The concrete body is bonded to the angle irons and defines therewith a flat top surface. A plurality of elongated reinforcing rods extend between the side and end members, respectively, within the volume of the concrete body, but they are not bonded thereto. The rods are tensioned and thereby forcefully compress the side and end channels against the perimeter of the concrete body.

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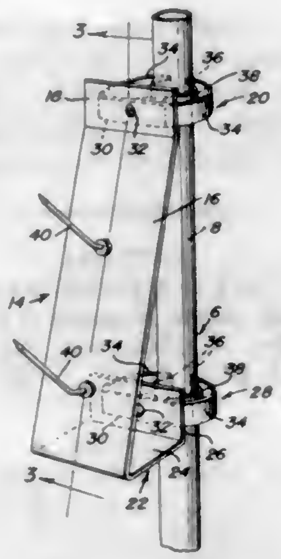
### 3,477,669
### DISPLAY MEANS FOR FLORAL SPRAYS

**George C. Thompson, 1313 7th Ave., and Paul M. Stoddard, 2728 W. 14th St. Road, both of Greeley, Colo. 80631**

**Filed July 20, 1967, Ser. No. 654,846**

**Int. Cl. A47g** *7/04;* **A47b** *96/06*

**U.S. Cl. 248—27.8** **5 Claims**



A floral spray holder for use on a portable easel-type stand. It permits the florist, or an experienced arranger, to attach and add two or more floral sprays. It embodies pointed prongs which penetrate and anchor the backing of the floral spray. The upper and lower ends of the prong-equipped panel are equipped with spring clips uniquely mounted and so oriented that the inclined panel assumes an angle for best viewing. These clips can be adjusted so that several sprays on one upright can be arranged for the display effect desired.

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### 3,477,670
### HINGED SUPPORT FOR MOTORS AND OTHER MACHINERY

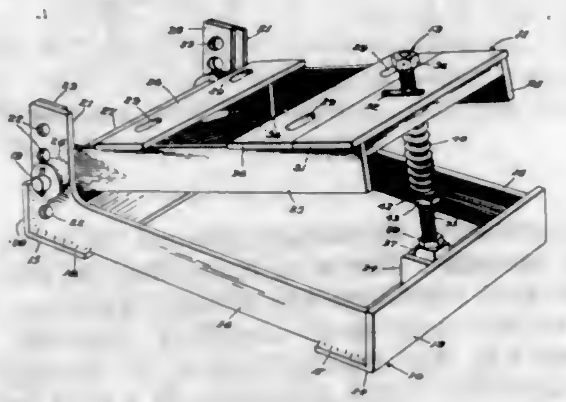
**Jerome J. Sloyan, Trenton, N.J.**

**(℅ Automatic Motor Base Co., Windsor, N.J. 08561)**

**Filed Jan. 10, 1968, Ser. No. 696,747**

**Int. Cl. F16f** *15/00;* **F16m** *1/00, 7/00*

**U.S. Cl. 248—23** **5 Claims**



A pivoted or tilting support for a motor or other machinery, said support having individual means for adjusting to a standard belt length and for adjusting to load conditions and belt tension.

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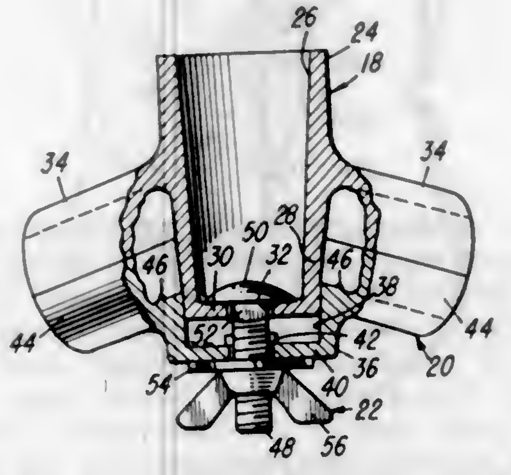
### 3,477,671
### SUPPORT STAND FIXTURE

**Walter R. Goodridge, Greenville, R.I., assignor to Mr. Christmas, Inc., New York, N.Y., a corporation of New York**

**Filed Nov. 22, 1967, Ser. No. 685,053**

**Int. Cl. A47g** *33/12*

**U.S. Cl. 248—44** **6 Claims**



A fixture for a support stand for supporting Christmas tree trunks, flag staffs, display signs and the like and including a pair of clampingly engaged castings which include opposed leg-clamping sockets formed by overlying, radiating and downwardly directed semi-cylindrical sleeve-like portions and a central depending socket-and-sleeve arrangement tightened by an axially disposed wing nut-and-bolt assembly, and in which the upper casting includes an upwardly opening socket for removably receiving the lower end of a tree trunk, flag staff, etc.

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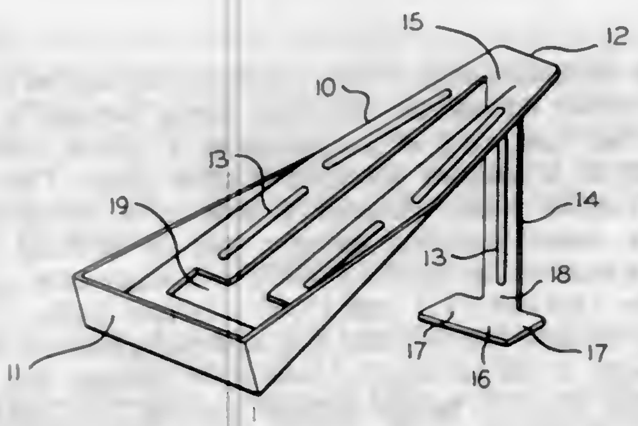
### 3,477,672
### STANDS FOR SUPPORTING FLAT-IRONS

**Peter Agrusa, 1014 E. Pearson St., Milwaukee, Wis. 53202**

**Filed Mar. 14, 1967, Ser. No. 623,518**

**Int. Cl. D06f** *79/02*

**U.S. Cl. 248—117.2** **2 Claims**



Relates to an improved stand which includes a body for contacting and supporting a flat-iron, said body having a bottom portion which flanges extending therefrom and from the sides. A support member extends vertically downward from an upper portion of a body portion to engage a flat surface for providing stability to the stand. The support member is formed from a portion of said body portion.

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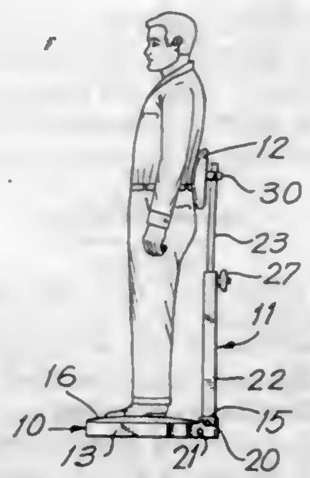
### 3,477,673
### LEANING DEVICE TO REDUCE FATIGUE

**Sigmund Bereday, 11 Suchville, Bayamon, Puerto Rico 00619**

**Filed Feb. 3, 1967, Ser. No. 613,835**

**Int. Cl. A47g** *29/00*

**U.S. Cl. 248—121** **4 Claims**



Apparatus having a soft platform on which a person stands and body supporting element against which he may lean while in a standing position to reduce fatigue.

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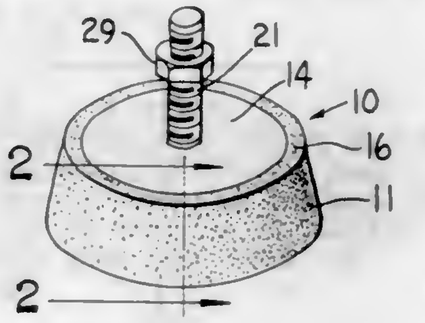
### 3,477,674
### VIBRATION DAMPING PAD

**Harold E. Schaller, East Aurora, N.Y., assignor to John E. Smith's Sons Co., Division of Hobam, Inc., Buffalo, N.Y., a corporation of New York**

**Filed Nov. 24, 1967, Ser. No. 685,460**

**Int. Cl. F16f** *15/04*

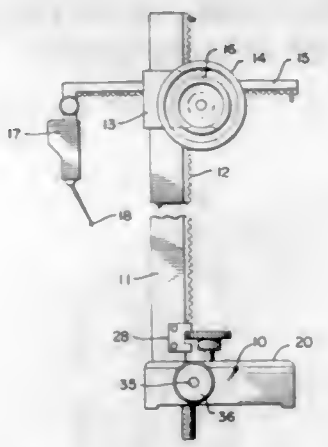
**U.S. Cl. 248—24** **2 Claims**



A vibration damping pad consisting of a substantially frustoconical body member of neoprene rubber having a circular metallic plate embedded in each of its upper and lower bases, with each plate being bordered by a ring of the material of the body member to aid in holding each plate in position, the upper plate mounting a nut on its underside for removably receiving a stud which is attachable to the leg of a machine or the like, and the ring formed about the lower plate tending to deform into anti-creep engaging contact with the surface on which the pad is mounted as a result of bearing the weight of the machine.

### 3,477,675
### SUPPORT FOR GAGING PROBE

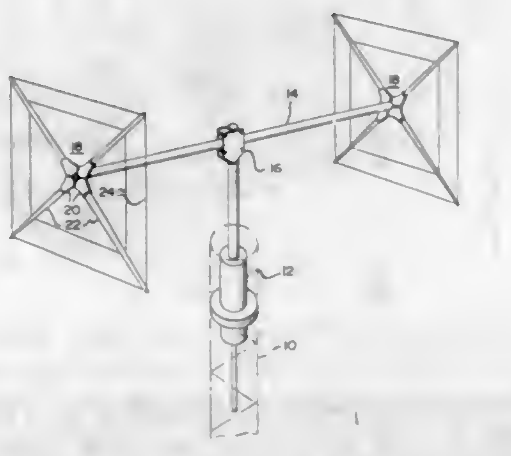
**John Klink, Pine Plains, N.Y., assignor to Standard Gage Company, Inc., Poughkeepsie, N.Y., a corporation of New York**
**Filed Dec. 27, 1967, Ser. No. 693,864**
**Int. Cl. F16m** *11/04*
**U.S. Cl. 248—124** **10 Claims**



The device described herein is a support for an electronic gaging probe and resembles the common "height gage." The device includes a column on a base, a head geared for vertical adjustment along a rack on the column, and a cross rack to support a gaging probe. The column is a heavy rigid column which is press-fitted in the base and in a base cover, the base and cover being fixed to the column at points spaced a short axial distance apart, a lever system being provided between the base and cover so that the column can be deflected by very slight and precise amounts, thereby providing fine adjustments, the amount of the adjustment being controlled by a screw which operates on the lever system.

### 3,477,676
### ANTENNA SUPPORT STRUCTURE

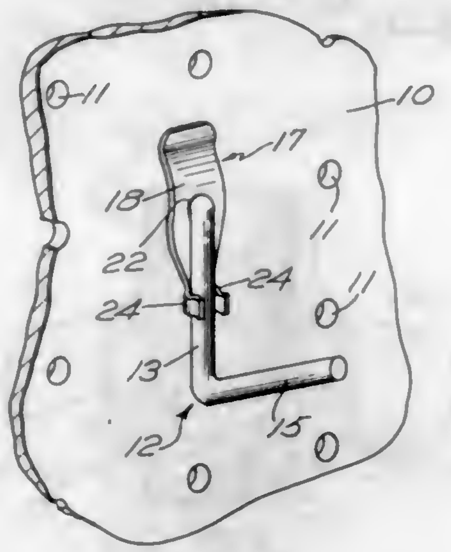
**Clarence C. Moore, P.O. Box 1000, Elkhart, Ind. 46514**
**Filed Mar. 22, 1967, Ser. No. 625,102**
**Int. Cl. A47b** *95/06;* **F16m** *13/02*
**U.S. Cl. 248—201** **2 Claims**



The support structure for a loop antenna system includes a center support having four separate and identical tubular leg members which are secured together in uniform angular displacement around a center boom pole which can be of almost any diameter. The legs can be secured either by bolting adjacent leg members to each other or by bolting brackets between adjacent leg members. The hollow portions of the separate leg members receive poles for supporting the antenna wires.

### 3,477,677
### CATCH FOR PERFORATED BOARD ATTACHMENTS

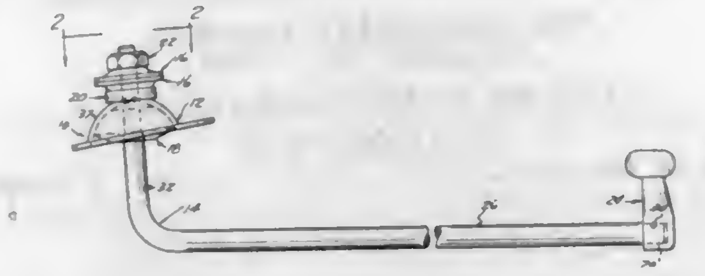
**James W. Hindley, Dexter Rock Road, Lincoln, R.I. 02865**
**Filed Jan. 11, 1968, Ser. No. 697,221**
**Int. Cl. A47h** *1/10;* **E06b** *7/28*
**U.S. Cl. 248—220.5** **3 Claims**



A catch for perforated boards which will secure attachments in place in the perforated board by holding a portion thereof in frictional contact with the perforated board.

### 3,477,678
### UNIVERSAL VEHICLE SUN VISOR MOUNT

**William M. Icke, 41 N. Duval Road, Grosse Pointe Shores Mich. 48236, and Harry C. Veryser, Mount Clemens, Mich.; said Veryser assignor to said Icke**
**Filed Dec. 1, 1966, Ser. No. 598,454**
**Int. Cl. B60j** *3/02*
**U.S. Cl. 248—288** **4 Claims**



An elongated arm of an L-shaped rod carries a sun visor while the shorter bent arm passes through a hole in a ball consisting of a segment of a sphere rockably seated in a concave spherical bracket plate. The bent rod portion passes through a hole in a compression spring device including either a pair of abutting cone spring washers facing one another or a single cone spring washer (FIGURES 5 and 6) or a helical spring (FIGURE 7), and has its outer end enlarged either by being threaded at its corners to receive a threaded nut and squared where it passes through the ball (FIGURES 1 to 5) or recessed and upset at its upper end (FIGURES 6 and 7). The modifications shown in FIGURES 6 and 7 employ a tapered rod portion fitting a tapered bore in the ball with the upper end recessed and upset or enlarged to retain the single cone washer of FIGURE 6 or the helical spring of FIGURE 7.

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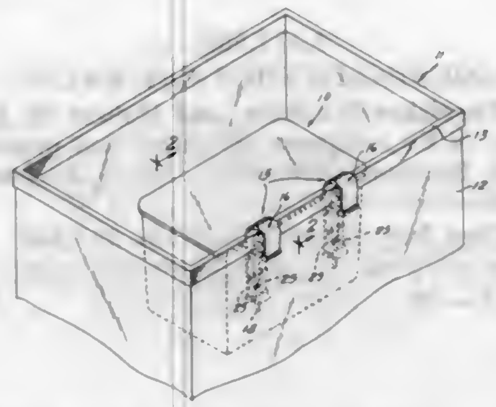
### 3,477,679
### HANGER DEVICE FOR SUPPORTING AN ARTICLE ON A WALL MEMBER

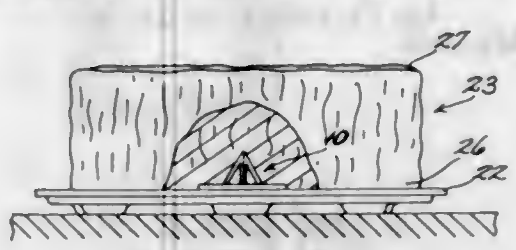
**David D. Lovitz, Short Hills, N.J., assignor to Sternco Industries, Inc., Harrison, N.J., a corporation of New Jersey**
**Filed Feb. 2, 1968, Ser. No. 702,593**
**Int. Cl. A47g** *29/00*
**U.S. Cl. 248—309** **5 Claims**



A hanger device for adjustably supporting an article on a wall, such as a fish breeder tank within an aquarium. The device comprises a T-shaped bracket and a hook member, the bracket extending from the supported article, and hook member being adapted to be hooked on to the upper rim of the supporting wall. The hook member has a longitudinal slot through which the stem of the T-shaped bracket extends and a plurality of spaced ridges along said slot for underlying supporting engagement with the cross-bar of the T-shaped bracket, whereby the supported article may be positioned at a selected level. The hook member has opposite abutments at the bottom thereof for engaging the supported article and the supporting wall, thereby keeping the article and wall out of contact.

### 3,477,680
### DEVICE FOR PREVENTING A CAKE FROM SLIPPING ON A PLATE

**Louis R. Fliger, Jr., New Hampton, Iowa; Josephine Fliger and Marnell Fox, administrators of said Louis R. Fliger, Jr., deceased**
**Filed July 21, 1967, Ser. No. 655,010**
**Int. Cl. A47g** *29/00*
**U.S. Cl. 248—346** **2 Claims**

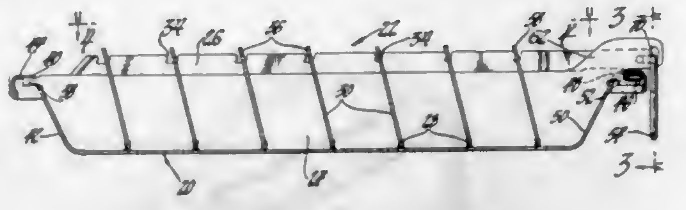


This invention relates generally to a cake device for securing a cake to a plate, which device is small so as to be held in the hand, of plastic or the like with an upstanding projection on a base, the latter to be adhered to a plate or the like whereby the upstanding projection projects into the cake, thereby preventing sliding movement of same.

### 3,477,681
### GRID AND HANDLE WITH INTERCONNECTED PIN AND SLOT ACTUATOR

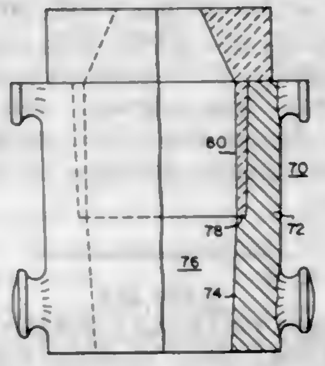
**Cletus L. Moorman, Trotwood, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed May 5, 1967, Ser. No. 636,327**
**Int. Cl. F25c** *1/24*
**U.S. Cl. 249—72** **5 Claims**

In the preferred form, a pivoted horizontal handle is formed of a rod having its opposite ends formed into pivot pins extending into pivoting holes in the front projecting ends of the twin upper longitudinal wall. The opposite ends of the rod are also formed with offset portions offset from the pivoting axis which engage vertical slots in the front projecting ends of the twin lower longitudinal walls. The lower longitudinal walls are locked in the tray to provide a connection between the handle and the tray. The movement of the handle from its lower to its upper position moves the upper longitudinal walls and the top portions of the transverse walls toward the handle for ejecting ice cubes from the compartments of the grid and tray.



### 3,477,682
### INGOT MOLD WITH HOT TOP AND REFRACTORY LINING FOR INDUCING PROGRESSIVE AXIAL SOLIDIFICATION

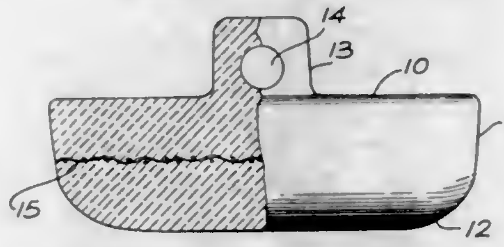
**Kay M. Shupe, Fredonia, N.Y., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania**
**Filed May 17, 1965, Ser. No. 456,434**
**Int. Cl. B22d** *7/10;* **B22c** *1/00*
**U.S. Cl. 249—106** **5 Claims**



Apparatus is described for reducing the tendency to form secondary pipe in ingots. It includes a refractory lining to an ingot mold with the use of a hot top for inducing progressive axial solidification from the bottom to the top of the mold cavity.

### 3,477,683
### BOTTLE TOP CAP FOR INGOT MOLDS

**Michael E. La Bate, Ellwood City, Pa., assignor to Insul Company Incorporated, East Palestine, Ohio**
**Filed Apr. 19, 1967, Ser. No. 631,934**
**Int. Cl. B22c** *1/00;* **B22d** *7/06*
**U.S. Cl. 249—134** **4 Claims**

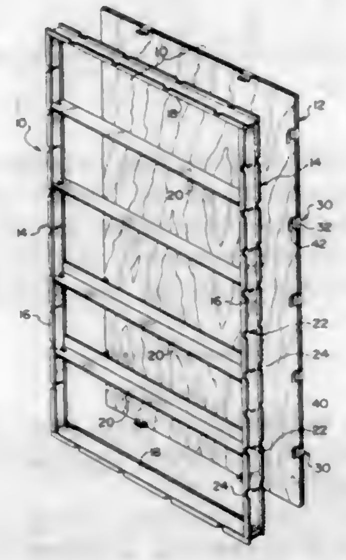


A bottle top cap formed of a material that will harden into a ceramic when installed on an ingot mold and subjected to the temperature of molten metal therein so as to form a hard dense ceramic cap that will not stick to the metal.

### 3,477,684
### CONCRETE FORM PANEL WITH SNAP-IN FACING

**Richard T. Dagiel, Elk Grove Village, Ill., assignor to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware**

**Filed Nov. 24, 1967, Ser. No. 685,364**
**Int. Cl. E04g** *9/02, 17/04;* **E04c** *2/26*
**U.S. Cl. 249—189** **8 Claims**

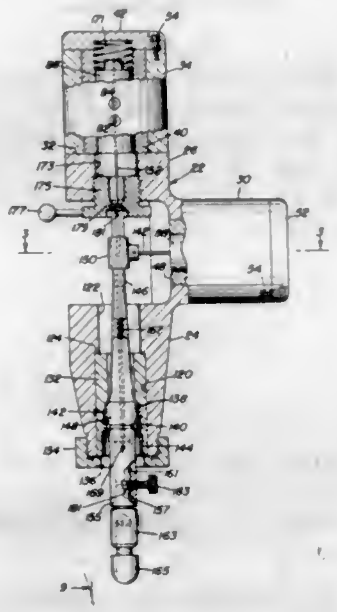


A steel-studded concrete form panel having a plywood facing which is assembled on the metallic reinforcing studding by pushing the same in place. A series of metal latch clips have anchor points which are pressed into the edges of the facing, and when they are all in position, the facing is pushed into its terminal position in the studding and the latch clips interlock with a seating flange upon which the facing rests. The panel facing may be removed for replacement purposes by a reversal of the assembly process.

### 3,477,685
### PATTERN TRACING INSTRUMENT

**Roger D. Ring, 1305 I Ave., National City, Calif. 92050**

**Filed Apr. 18, 1966, Ser. No. 543,127**
**Int. Cl. B23q** *35/18;* **F16k** *35/10, 51/00*
**U.S. Cl. 251—3** **7 Claims**

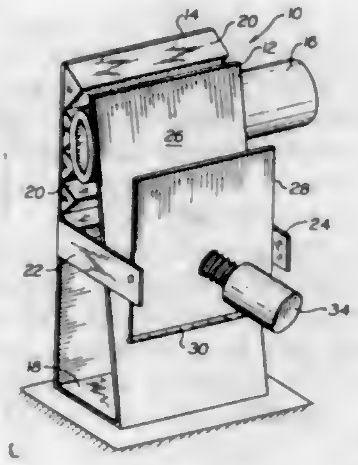


A pattern tracing instrument, the main body of which forms a bearing for a hollow nutatable rod. The rod forms a longitudinally extending bearing for a reciprocating stylus guide. One end of a stiff, resilient wire is fixed to the stylus guide and the other end is fixed to a spool of a spool type bearing. A collar surrounds the rod and the rod is movable axially through the collar. Stiff resilient wires are fixed to the collar and to spools, the axes of which are disposed at angles to the axis of the first mentioned spool.

### 3,477,686
### ADJUSTABLE SHUT-OFF VALVE

**Harvey J. Engelsher, Yonkers, and Robert W. McKirdy, Scarsdale, N.Y., assignors, by direct and mesne assignments, to Horizon Industries, Ltd., a corporation of New York**

**Filed July 20, 1964, Ser. No. 383,880**
**Int. Cl. F16l** *55/14;* **F16g** *11/06, 11/00*
**U.S. Cl. 251—10** **3 Claims**

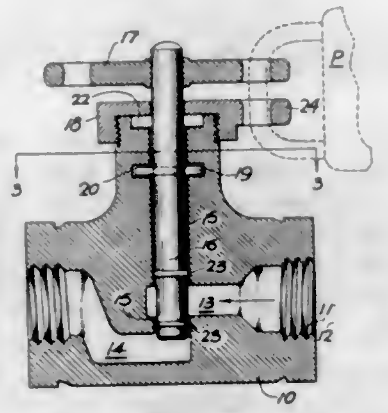


An adjustable shut-off valve for selectively controlling the flow rate of a fluid through resilient tubing.

### 3,477,687
### VALVE

**Kingsley A. Doutt, 115 Maple St., Alpena, Mich. 49707**

**Filed Oct. 3, 1967, Ser. No. 672,579**
**Int. Cl. F16k** *1/08, 15/18*
**U.S. Cl. 251—100** **1 Claim**



A valve for controlling low pressure fluids including inlet and outlet orifices having a communicating passageway including a cylindrical chamber and a valve element in the form of a plunger having O rings in spaced relation thereon movably positioned in said cylindrical chamber, so as to block or open said passageway depending on the position of said plunger.

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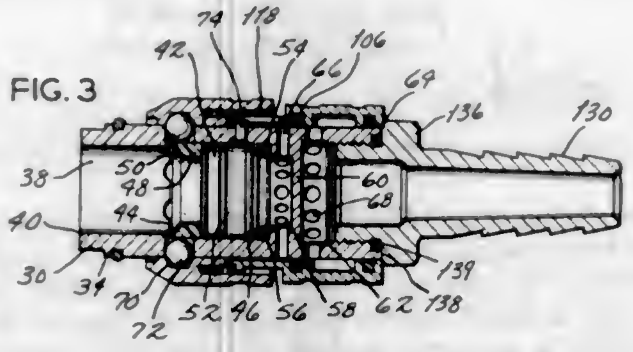
### 3,477,688
### FLUID LINE COUPLING

**Lee H. Cruse, Springfield, Mo., assignor to Foster Manufacturing Co., Inc., Springfield, Mo., a corporation of Missouri**

**Filed Oct. 31, 1966, Ser. No. 590,721**
**Int. Cl. F16l** *29/00, 37/28*
**U.S. Cl. 251—149.9** **12 Claims**

FIG. 3

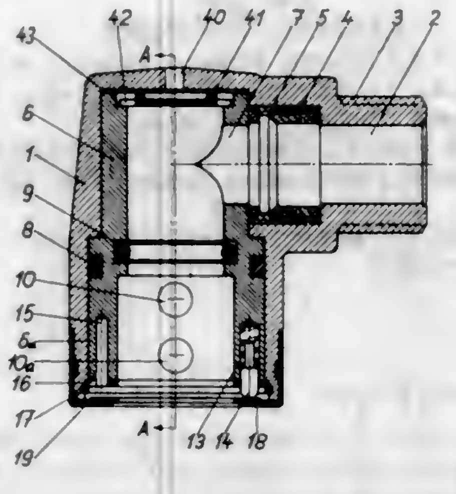


This invention is directed to a fluid line coupling of the quick-connect variety, with the latching sleeve and valve sleeve biased apart by a spring disposed between the two sleeves.

### 3,477,689
### PIPE COUPLING CONTAINING A VALVE

**Hans Berghoefer, Alte. Landstrasse 274, Hamburg-Poppenbuettel, Germany**

**Filed Nov. 2, 1966, Ser. No. 591,531**
**Int. Cl. F16k** *5/02;* **F16l** *37/28*
**U.S. Cl. 251—149.9** **23 Claims**

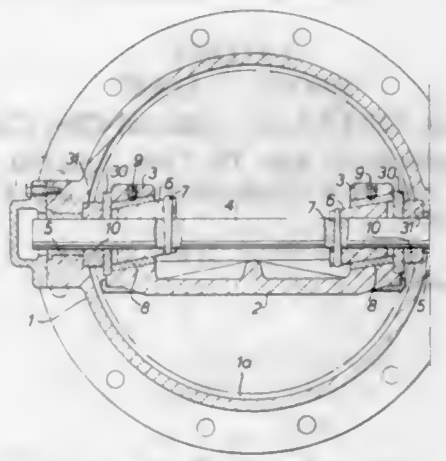


A hose coupling wherein a housing which is provided with communicating fluid-admitting and fluid-discharging passages accommodates a rotary valve member having a main opening in communication with the fluid-discharging passage, a second opening which communicates with the fluid-admitting passage in an open position of the valve, and a third opening accommodating a portion of a first ball which normally extends into the main opening but can be fully withdrawn into the third opening and into a recess of the housing in a predetermined second position of the valve. The latter is further provided with a second ball which permanently extends into the main opening. This main opening can receive a male connector which has an axial slot for reception of the second ball and a radial slot which receives the first ball when the connector is inserted in the second position of the valve and is thereupon rotated in the housing to rotate the valve in the fluid-discharging passage.

### 3,477,690
### STEM-CRANKED, CAM-ADJUSTED BUTTERFLY VALVE ASSEMBLIES

**Shozaburo Murota, Tokyo, and Masaharu Yoshida, Kawasaki, Japan, assignors to Nippon Chuzo Kabushiki Kaisha, Tokyo, Japan**

**Filed Sept. 7, 1966, Ser. No. 582,196**
**Int. Cl. F16k** *1/22, 25/00*
**U.S. Cl. 251—163** **8 Claims**

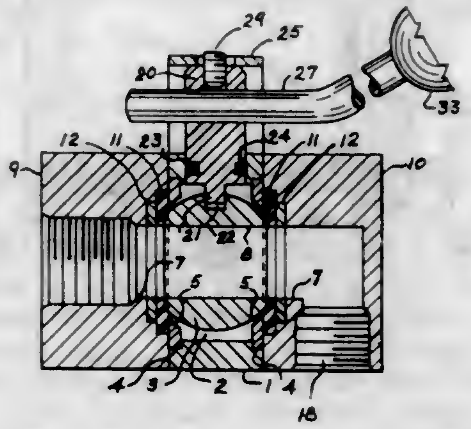


A butterfly valve assembly in which a valve disc rotates about an axis normal to a central axis surrounded by a valve seat between open and closed angular positions while moving along the axis surrounded by the valve seat to and from engagement with the valve seat. All of the opening movements are brought about from a drive which rotates uniformly in one direction while all of the closing movements are brought about by the same drive during rotary movement thereof in the opposite direction. During closing movement, a transmission transmits motion from the rotary drive through a shaft which carries the valve disc to turn the latter to a position parallel to the plane of the valve seat, this transmission having its action automatically terminated while the continued rotary movement of the drive then acts through a second transmission to displace the shaft which carries the valve disc axially. This axial movement of the latter shaft is then converted by coacting skew cylinders and sleeves respectively connected with the shaft and valve disc into movement of the latter along the axis surrounded by the valve seat into engagement with the latter. The opening movements take place with the reverse of these operations.

### 3,477,691
### SPHERICAL PLUG VALVE

**Owen H. Griswold, 681 Beechwood Drive, Westwood, N.J. 07675, and Richard E. Hitchcock, 67 Mill Glen Road, Upper Saddle River, N.J. 07458**

**Filed Mar. 25, 1966, Ser. No. 538,479**
**Int. Cl. F16k** *25/00, 51/00*
**U.S. Cl. 251—172** **10 Claims**



A spherical plug valve, for controlling the flow of fluids, having one or more valve seals which seal and support the spherical plug in a diaphragm like manner and a construction that permits the fluid conduit connections to be placed in a choice of positions. The valve operating stem is directly and externally removable. The operating lever can be installed in a choice of positions to provide a visible indication of the open or closed condition of the internal flow path.

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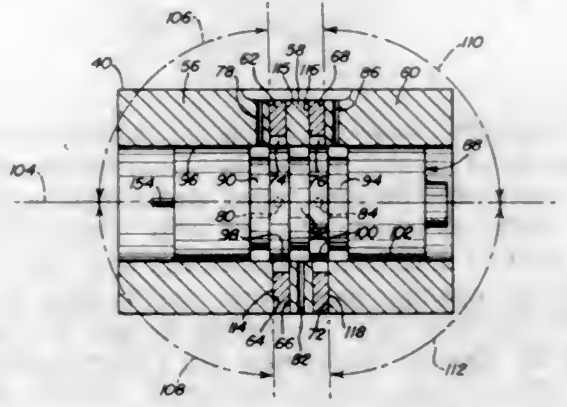
### 3,477,692
## SPOOL VALVE

**Roger D. Ring, 1305 I Ave., National City, Calif. 92050**
**Original application Apr. 18, 1966, Ser. No. 543,127. Divided and this application Oct. 25, 1968, Ser. No. 770,479**
**Int. Cl. F16k** *5/02, 15/08*
**U.S. Cl. 251—205** **2 Claims**



A spool valve including two bodies having axially aligned and equal diameter, inner cylindrical surfaces with a ring interposed between the bodies, the inner diameter of the ring being larger than that of the bodies. The end faces of the bodies confronting the ring are disposed at an angle offset slightly from a line at right angles to the axis of the cylindrical surfaces of the bodies.

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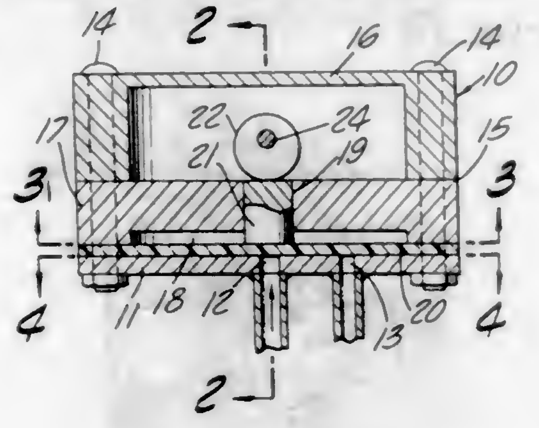
### 3,477,693
## CAM OPERATED FLUID VALVE

**Perry S. Bezanis, 811 W. 29th, San Pedro, Calif. 90731**
**Filed Dec. 16, 1966, Ser. No. 602,287**
**Int. Cl. F16k** *31/52, 7/16, 15/14*
**U.S. Cl. 251—251** **5 Claims**



A fluid valve wherein the fluid flow therethrough is controlled by a cam-actuated plunger displacing a flexible diaphragm into closure contact with the valve inlet orifice.

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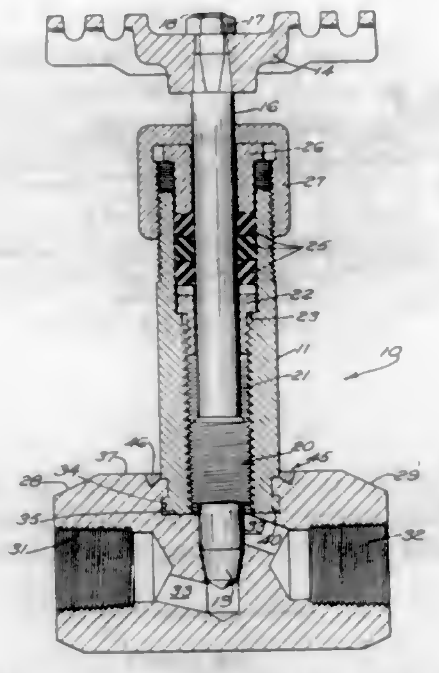
### 3,477,694
## BAR STOCK VALVE AND METHOD OF MAKING THE SAME

**Gordon H. Milligan, Pawtucket, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware**
**Filed May 31, 1967, Ser. No. 642,003**
**Int. Cl. F16k** *15/18, 5/00*
**U.S. Cl. 251—367** **9 Claims**



A bar stock valve having a bonnet and body joined by swaging a portion of the body into a groove running about the periphery of the lower end of the bonnet. The swaging is preferably accomplished by forcing a hardened ring into the body about the bonnet.

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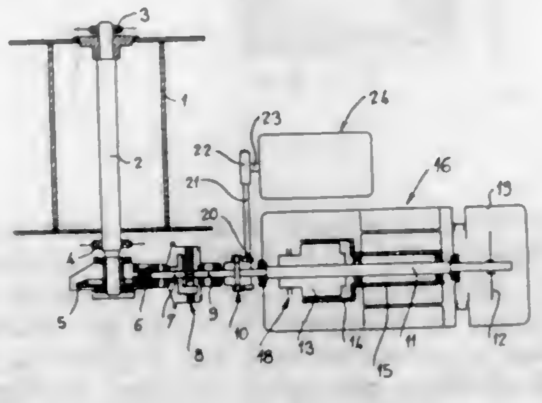
### 3,477,695
## LIFTING WINCHES

**Jean Noly, La Clayette, France, assignor to Societe Potain S.A., La Clayette, Saone et Loire, France, a joint-stock company of France**
**Filed Feb. 12, 1968, Ser. No. 704,602**
**Claims priority, application France, Feb. 20, 1967, 48,314**
**Int. Cl. B66d** *1/50;* **F16d** *67/06*
**U.S. Cl. 254—150** **8 Claims**

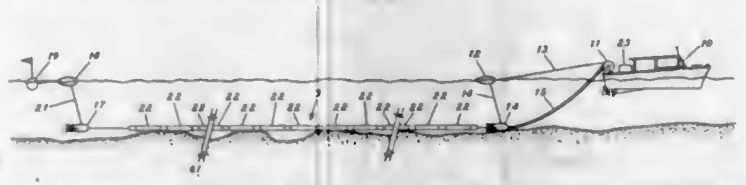


A lifting winch for a crane, swing bridge or like mechanism has two driving motors **16** and **24** (FIGURE 1), which are energised simultaneously when the winch is operated. The main motor **16** rotates constantly in the direction of raising the load whilst the excess speed motor **24** acts on the drum **1** in the direction of lowering.

An eddy current clutch **13–14** is connected between the main motor **16** and the drum, and its supply voltage is regulated to vary the speed of the winch. This regulation operates by comparing the rotor voltage of the slip-ring induction motor **24** with an adjustable reference voltage.

### 3,477,696
## OFFSHORE SEISMIC CABLE STRESS SENSING SYSTEM

**John E. Walstrom, Orinda, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 627,878, Apr. 3, 1967. This application Apr. 17, 1968, Ser. No. 722,069**
**Int. Cl. B66d** *1/48*
**U.S. Cl. 254—173** **1 Claim**



A sensing device is positioned adjacent to and in sensing contact with a seismic cable adapted to be towed submerged behind a boat. On the occurrence of abnormal stress in or near the cable at the sensing device a signal is transmitted to the tow boat to cause loosening of a loosenable connection between the boat and cable. The sensing device may be a strain gauge or an acceleration responsive element and may be operative while the cable is being reeled in or while it is being towed behind the tow boat.

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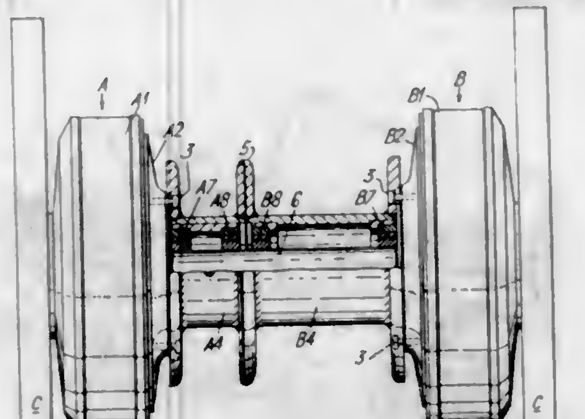
### 3,477,697
## WINCHES

**Bernard Dov Schreier, 233 Regents Park Road, London N. 3, England**
**Filed Jan. 8, 1968, Ser. No. 696,442**
**Claims priority, application Great Britain, Jan. 19, 1967, 2,841/67**
**Int. Cl. B66d** *1/26*
**U.S. Cl. 254—184** **5 Claims**



A double-drum winch comprises two motors, coaxially facing one another, two coaxial drums between said motors each connected to one motor, and a common lay shaft supporting and steadying said drums extending between said motors, but of length shorter than the spacing between the motors in order to allow lateral removal of the drums and lay shaft from between the motors. Hydraulic motors may be used, and may be independently operable.

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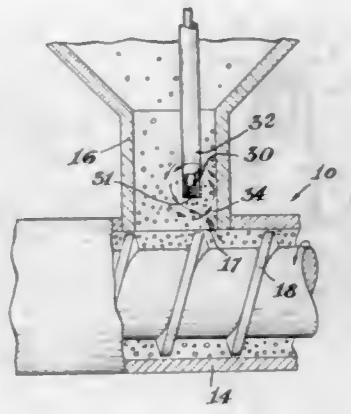
### 3,477,698
## METHOD AND APPARATUS FOR ADDITIVE FEEDING

**Vernon J. Smith, Lake Jackson, Tex., and Charles R. Webster, Rolling Hills Estates, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed Apr. 10, 1968, Ser. No. 720,200**
**Int. Cl. B01f** *15/02, 13/10*
**U.S. Cl. 259—25** **7 Claims**

An additive feeder adapted to be employed with the hopper of an injection molding machine for molding thermoplastic materials. The additive feeder, which can introduce colorants, nucleating agents, stabilizers, regrinds, and the like, meters the additives into a feed tube extending down into the throat of the hopper. There exists in the hopper, when a moving screw is being fed, an area of cycloidal turbulence of resin particles above the screw towards the forward end of the hopper. The open bottom end of the feed tube is located such that it properly intersects this area of turbulence whereby additives are mixed with the resin particles in the hopper by the swirling action of the resin particles. This results in a uniform mix of the additives and resin particles being fed to the screw. The lower end of the feed tube should be positioned such that the additives are introduced into the part of the swirling resin particle stream moving downward to permit and aid the outflow of additives from the feed tube.



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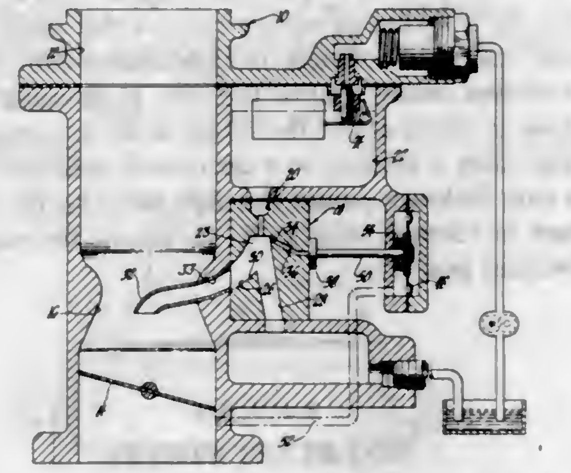
### 3,477,699
## METERING MEANS

**William L. Drayer, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Sept. 16, 1965, Ser. No. 487,803**
**Int. Cl. F02m** *51/00, 45/00, 47/00*
**U.S. Cl. 261—36** **12 Claims**



In a carburetor having a throttle for controlling air flow and a venturi for creating an air flow responsive pressure signal, fuel is delivered through a proportional fluid amplifier to a nozzle discharging into the venturi. Fuel is metered by the amplifier in accordance with the venturi pressure signal, transmitted to the amplifier interaction region through one outlet of the amplifier, and in accordance with an opposed atmospheric pressure signal, transmitted past a valve responsive to manifold vacuum. The splitter of the amplifier is contoured to provide a nonlinear metering characteristic.

### 3,477,700

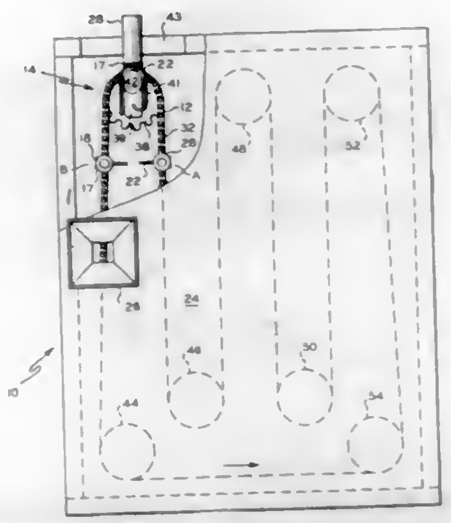
## PARISON HEATING AND TRANSFER

**William G. Kinslow, Jr., Kansas City, Mo., assignor to Phillips Petroleum Company, a corporation of Delaware**

**Filed Jan. 8, 1968, Ser. No. 696,329**

**Int. Cl. F27b** *9/24;* **F27d** *3/12*

**U.S. Cl. 263—8** **9 Claims**



Preformed hollow parisons are received on vertically disposed pins attached to an endless chain which conveys these parisons through a heating oven. After the parisons have traveled through the oven and been heated to the desired temperature, the pins are rotated 90° so as to transfer the parisons to a horizontal position. These horizontally disposed parisons are then ready to be received by a molding station. A preferred apparatus for accomplishing the transfer of the parisons from a vertical to a horizontal position comprises a support base to which the support pins are fixedly attached, this base being hinged at one end to a flange extending upwardly from a link plate on the chain; a cam follower fixedly attached to the other end of this base; and a stationary cam plate. The support base is biased so as to support the support pin in a vertical position by a spring or spring clip; as the chain advances the cam follower contacts the stationary cam plate; this cam follower riding against the cam plate causes the support base to pivot about the hinge so as to rotate the support pin from a vertical to a horizontal position, and then as the cam follower passes the high point on the cam plate the base is rotated back so as to return the support pin to a vertical position.

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### 3,477,701

## HOT-BLAST STOVES

**Ryo Ando, Teruo Shimotsuma, and Kanichiro Chihara, Kawasakishi, Japan, assignors to Nippon Kokan Kabushiki Kaisha, Tokyo, Japan**

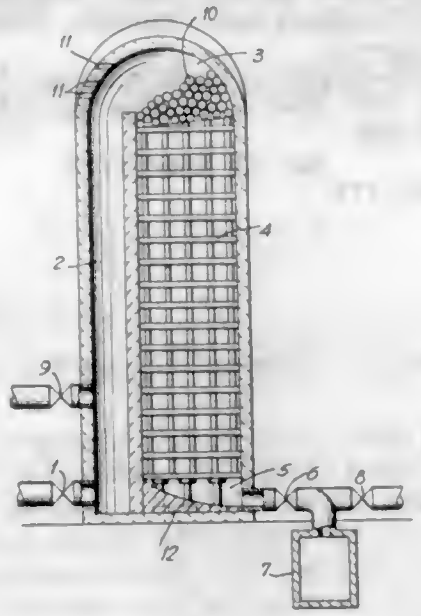
**Filed Apr. 13, 1967, Ser. No. 630,683**

**Claims priority, application Japan, May 16, 1966, 41/23,802; Mar. 28, 1967, 42/19,012**

**Int. Cl. F23l** *15/00;* **F23m** *9/00*

**U.S. Cl. 263—19** **5 Claims**

A hot-blast stove including a gas combustion chamber and a heat accumulating chamber interconnected by a dome at the top. A flow-resistance means is situated in the dome to provide uniform flow of combustion gases or hot air. Further a concave air baffle is provided at the bottom of the heat accumulating chamber to prevent biased flow of cold air therein. The flow-resistance means may take a number of forms such as a pile of spherical members.



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### 3,477,702

## HEATING OF STONE FOR A ROTARY KILN

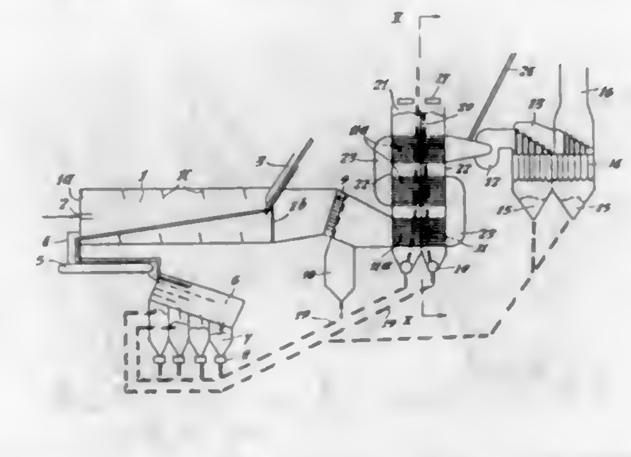
**Herbert Brandt, 5961 Rothemuhle uber Olpe, Westphalia, Germany**

**Filed May 22, 1967, Ser. No. 640,201**

**Claims priority, application Germany, May 25, 1966, A 52,576; Nov. 2, 1966, A 53,978**

**Int. Cl. F27b** *7/34*

**U.S. Cl. 263—32** **13 Claims**



To ensure that waste gases issuing to atmosphere from a stone heating plant conform to regulations regarding dust-content, fine-grain stone is heated in a recuperatively heated trickle heater so that the stone does not make direct contact with the heating medium. The trickle heater may be provided with its own fuel combustion means, or may be heated by the waste gases from a device, comprising a rotating drum, in which coarse-grain stone is heated.

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### 3,477,703

## SAND CIRCULATION OVEN FOR BALL-SHAPED PRODUCTS

**Michel Tamalet, Rueil-Malmaison, France, assignor to Societe Anonyme Heurtey, Paris, France**

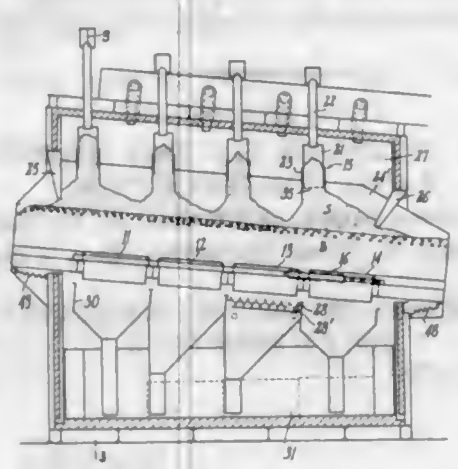
**Filed Jan. 12, 1968, Ser. No. 697,474**

**Claims priority, application France, Jan. 23, 1967, 92,129**

**Int. Cl. F27b** *15/00;* **F28d** *13/06*

**U.S. Cl. 263—40** **18 Claims**

A sand-circulation oven for the continuous heat treatment of ball-shaped products, characterised in that said products are carried through the oven while a material consisting of fine particles, such as sand, is circulated through said products in order to produce a heat transfer between said products and said material.



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### 3,477,704

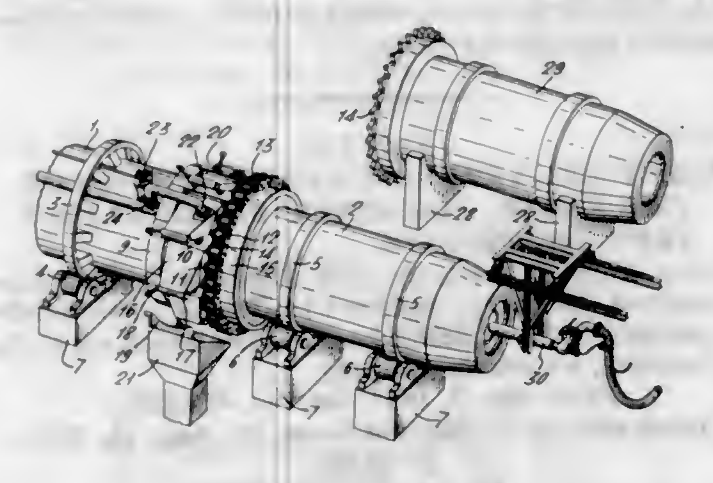
## CONNECTION APPARATUS FOR SECTIONS OF A ROTARY FURNACE

**William Lyon Sherwood, P.O. Box 2161, Vancouver, British Columbia, Canada**

**Filed May 1, 1967, Ser. No. 636,243**

**Int. Cl. F27b** *7/02, 7/26*

**U.S. Cl. 266—11** **7 Claims**



A connection apparatus between two communicating sections of an elongated rotary furnace is described. Both sections are rotated by a single drive unit for one furnace section, and torque is transmitted by the way of a coupling device to a second furnace section thus forming an integral furnace unit, whereby a fixed maximum amount of relative movement is allowed between the adjoining ends of the sections, to obviate stress and distortion caused by high temperature and the like being transmitted directly across the connection. The embodiment illustrated employs a roller chain coupling which is adapted for convenient disconnection of one furnace section and replacement by an alternate one, to facilitate repair of the refractory lining. There is also a cylindrical screening apparatus adjacent to the coupling adapted for removal of fine-sized materials from the furnace. The screen section is made up in segments, wherein each segment is provided with an enclosing exterior hopper and discharge gate, all held in place within a rigid supporting structure incorporated into the furnace.

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### 3,477,705

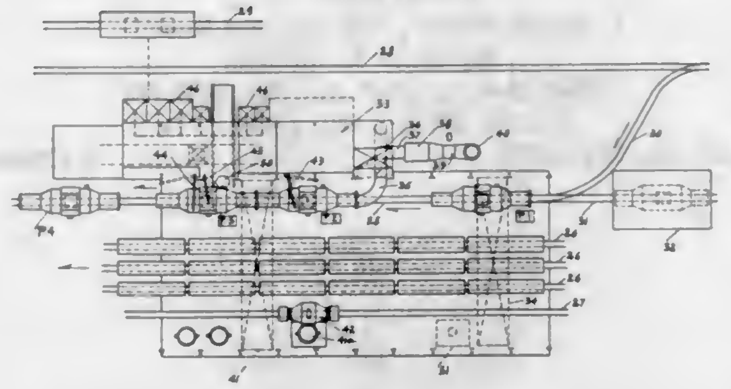
## STEEL MAKING APPARATUS

**Loreley Spencer Mobley, Franklin, Ohio, assignor to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Original application July 6, 1964, Ser. No. 380,285, now Patent No. 3,331,681, dated July 18, 1967. Divided and this application Feb. 28, 1967, Ser. No. 619,304**

**Int. Cl. C21c** *5/46;* **F27b** *19/04*

**U.S. Cl. 266—13** **5 Claims**



An apparatus for oxygen refining of steel utilizing a succession of mobile furnaces movable along a trackway, each furnace having a flue at each end for communication with the flue of an adjacent furnace, the roof of each furnace having an oxygen lance port and a charging opening, each furnace being rotatable about its longitudinal axis. Along the trackway are positioned a scrap loading station, a scrap preheating station, and an oxygen lance station, the preheating station having a movable duct for connection with the rear flue of a furnace having its forward flue communicating with the rear flue of a furnace at the adjacent oxygen lance station for preheating the charge in the furnace at the preheating statior.

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### 3,477,706

## METALLURGICAL VESSEL, SUCH AS A CRUCIBLE OR CONVERTER

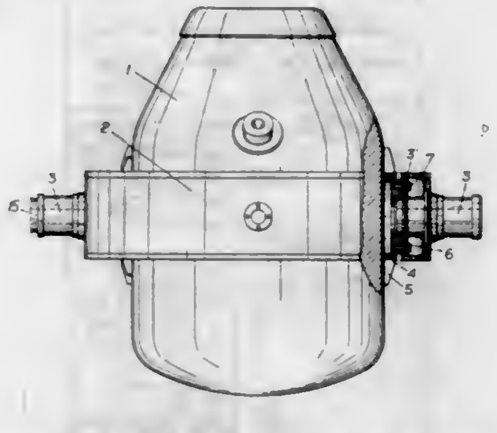
**Othmar Pühringer, Linz, and Heinz Gruber, Ottensheim, Austria, assignors to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria**

**Filed Nov. 15, 1967, Ser. No. 683,186**

**Claims priority, application Austria, Sept. 15, 1967, 8,431/67**

**Int. Cl. F27b** *14/02*

**U.S. Cl. 266—36** **12 Claims**



The invention provides a tiltable metallurgical vessel suspended in a carrying ring having diametrically spaced trunnions by a new type of supporting means arranged to respectively take up bearing and tilting forces in a statically easily definable fashion and to accommodate any stresses caused by thermal expansion, while avoiding impact shocks during tilting, wherein the supporting means for taking up the bearing forces are arranged to extend substantially along the axis of said trunnions and comprise two annular lugs connected to the converter shell and adapted to receive corresponding carrying disks connected to the carrying ring, and wherein the means for taking up the tilting force is arranged to extend substantially perpendicular of the trunnion axis and again comprises an annular lug connected to the converter shell and receiving a corresponding tilting disk connected to the carrying ring.

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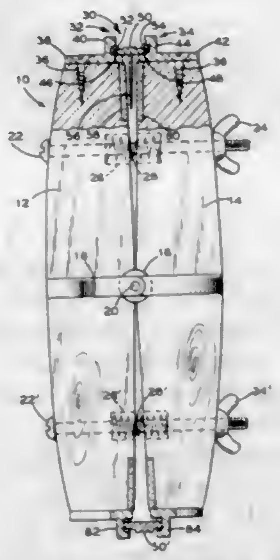
### 3,477,707
### JEWELER'S VISE

**David Pfeffer, 2190 Boston Road,**
**Bronx, N.Y. 10462**
**Filed Dec. 6, 1967, Ser. No. 688,571**
**Int. Cl. B25b** *1/10, 1/04, 1/24*
**U.S. Cl. 269—219** **6 Claims**



A jeweler's vise that includes a clamping structure mounted on the jaws thereof for supporting and gripping a plurality of substantially similar sized workpieces therebetween.

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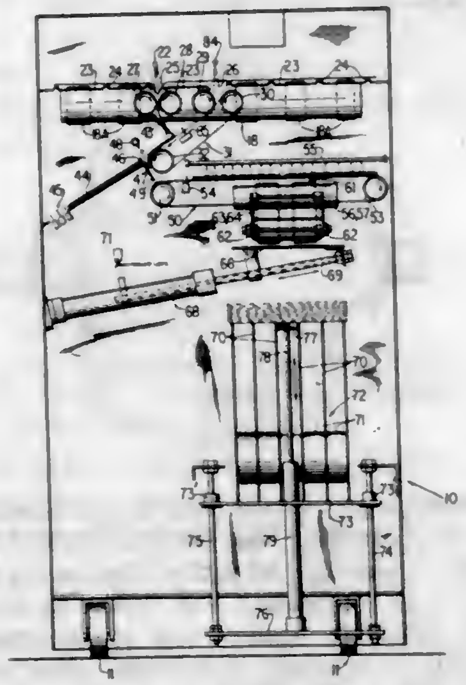
### 3,477,708
### LAUNDRY FOLDING MACHINE TO PRODUCE VARIOUS TYPES OF FOLDS

**Frank B. Henry, Rock Island, and Harvey L. Windmiller, Moline, Ill., assignors to Ametek, Inc., New York, N.Y., a corporation of Delaware**
**Filed Oct. 24, 1965, Ser. No. 504,774**
**Int. Cl. B65h** *45/00*
**U.S. Cl. 270—69** **3 Claims**



Laundry folding machine including a belt conveyor having a first air jet means at the longitudinal centerline and a second air jet means parallel thereto, revolving pinch rolls beneath each jet means for receiving an article therebetween and providing a fold in the article according to which jet means is activated, and a second conveyor means below the first one for receiving a once-folded article and air jet means thereover to produce a second fold.

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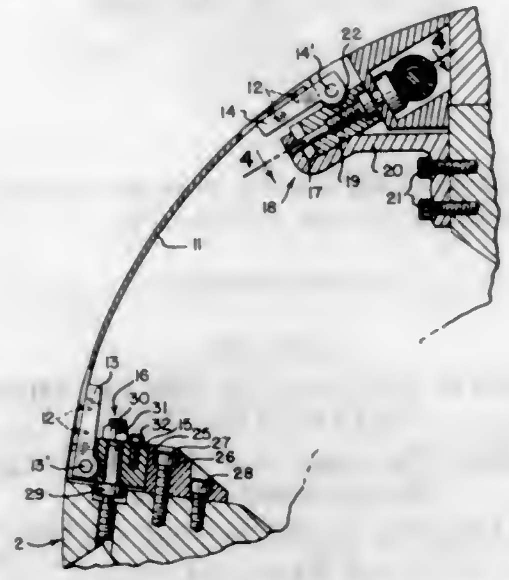
### 3,477,709
### FOLDING CYLINDER HAVING ADJUSTABLE BAND CONSTRUCTION

**Frank Neal, Green Brook, and Robert A. Snyder, Gillette, N.J., assignors to Wood Industries, Inc., a corporation of Virginia**
**Filed Mar. 20, 1967, Ser. No. 624,591**
**Int. Cl. B65h** *45/16*
**U.S. Cl. 270—71** **4 Claims**



Folding cylinder for a page folder having adjustable circumferentially extending bands on the outer surface thereof to increase or decrease the effective circumference of the cylinder to accommodate various number of pages being run through the folder.

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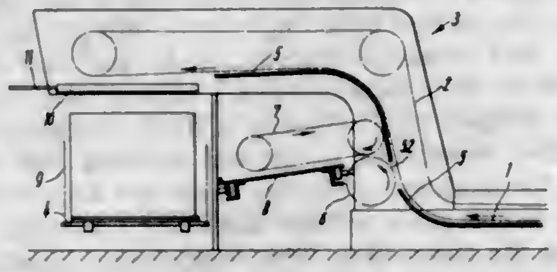
### 3,477,710
### SHEET DELIVERY MECHANISM FOR SHEET-PROCESSING MACHINES, PARTICULARLY PRINTING PRESSES

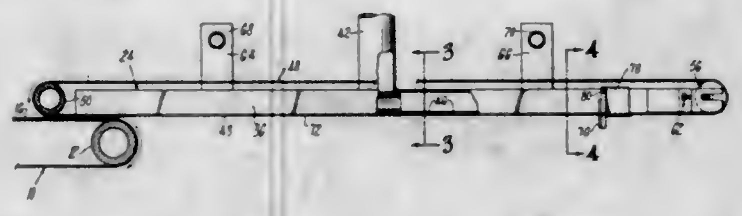
**Werner Koch, Gotzenhaln, and Friedrich Preuss, Neu-Isenbrug, Germany, assignors to Roland Offsetmaschinenfabrik Faber & Schleicher AG., Offenbach am Main, Germany, a German company**
**Filed Aug. 3, 1967, Ser. No. 658,189**
**Claims priority, application Germany, Aug. 12, 1966, R 43,905**
**Int. Cl. B65h** *29/58*
**U.S. Cl. 271—64** **11 Claims**



A sheet delivering device for a sheet processing machine such as a printing press has a first conveyor for delivering sheets to a first sheet stack table and a second conveyor for delivering sheets to a second sheet stack table. A selectively operably diverter serves to divert sheets travelling on the first conveyor to the second conveyor. The device also includes an auxiliary table associated with the first table for selectively feeding sheets to the auxiliary table via the first conveyor.

### 3,477,711
### APPARATUS AND METHOD FOR HANDLING LONG SHEETS

**Merton C. Lyman, Willimantic, Conn., assignor to Cameron Machine Company, Dover, N.J., a corporation of New York**
**Filed Apr. 25, 1967, Ser. No. 633,555**
**Int. Cl. B65h** *29/32*
**U.S. Cl. 271—74** **9 Claims**



The apparatus of this invention includes a vacuum box and a continuously traveling endless tape having a lower run coacting with the vacuum box to advance a sheet along a path with the assistance of suction, and a stop terminating the advance of the leading edge of the sheet coterminous with the application of suction to the sheet. A method of delivering sheets in accordance with this invention includes stopping each sheet successively in a suction application zone, disabling the suction application to each arrested sheet during continued feeding of the following sheets, and then releasing in turn each arrested sheet to permit it to fall away from the suction application zone under its own weight.

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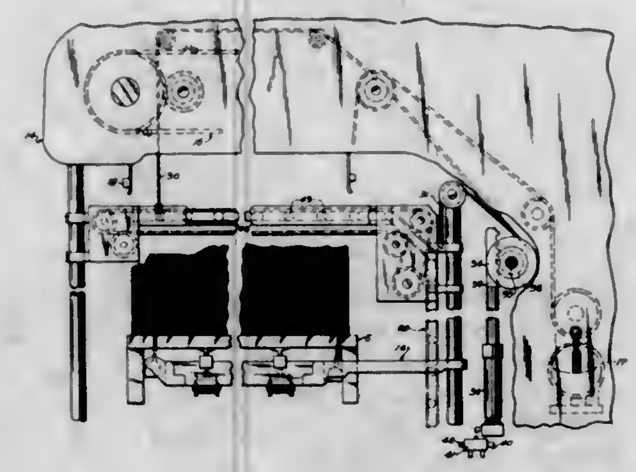
### 3,477,712
### SHEET HANDLING MACHINE WITH CONTINUOUS DELIVERY

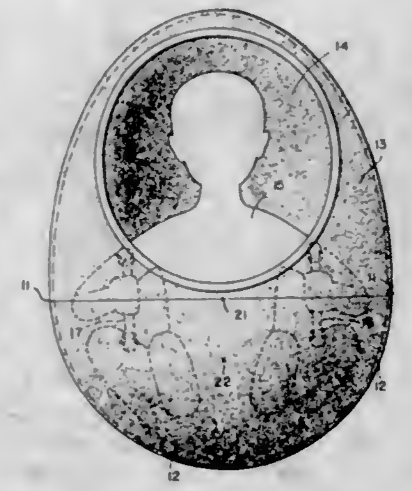
**Roger H. Stotzer, Parma, and Donald L. Southam, Cleveland Heights, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware**
**Filed Aug. 28, 1967, Ser. No. 663,762**
**Int. Cl. B65h** *7/14*
**U.S. Cl. 271—88** **14 Claims**



A sheet delivery mechanism for a sheet processing machine in which an auxiliary pile support platen on an auxiliary hoist is inserted by power over the top of the pile on the main hoist. The control for inserting the platen includes pile detecting means for assuring that there is a clear path for the platen and means for disabling the pile height detector for automatically lowering the hoist onto which sheets are being piled. The power means for inserting the platen is multi-speed and operates at a high rate at the start of the insertion and a slow rate as the platen approaches a fully inserted position to process sheets. The operation of the sheet processing machine is not stopped during insertion or withdrawal of the platen.

### 3,477,713
### ROCKING CAPSULE

**Patrick J. Cudmore, 12 Fainwood Circle,**
**Cambridge, Mass. 02139**
**Filed Jan. 12, 1967, Ser. No. 608,882**
**Int. Cl. A63g** *13/00*
**U.S. Cl. 272—33** **5 Claims**



The specific rocking capsule described is a hollow, egg-shaped thin shell structure with an upper opening that is normally generally vertically oriented allowing a user to get inside and, once positioned in a sitting or squat position, see out. A pair of handles are arranged on the inside wall of the structure just below the opening for convenient gripping by each hand of the user to aid the user in quickly changing his position within the structure and thereby take advantage of his momentum in changing the attitude of the structure to rock the capsule in any desired manner. The center of the radius of curvature of the bottom is above the center of gravity of the user so that the structure seeks a position where a horizontal plane tangent to the bottom of the structure is perpendicular to a radius line drawn through the center of gravity of the user.

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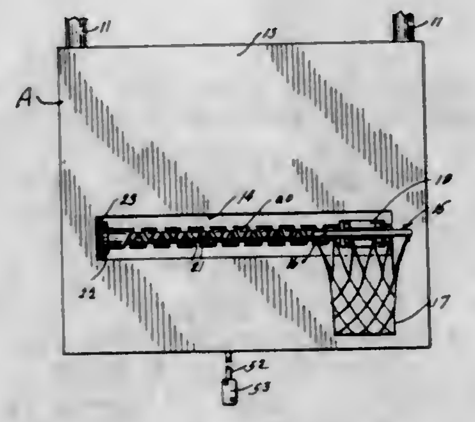
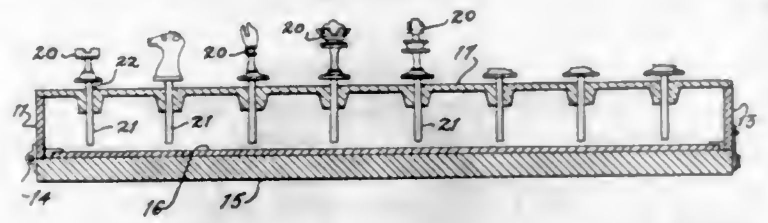
### 3,477,714
### BASKETBALL BACKBOARD AND HORIZONTALLY MOVABLE BASKET

**William M. Garlington, 1245 Ann Ave.,**
**Kansas City, Kans. 66102**
**Filed Oct. 15, 1965, Ser. No. 496,375**
**Int. Cl. A63b** *63/04*
**U.S. Cl. 273—1.5** **6 Claims**



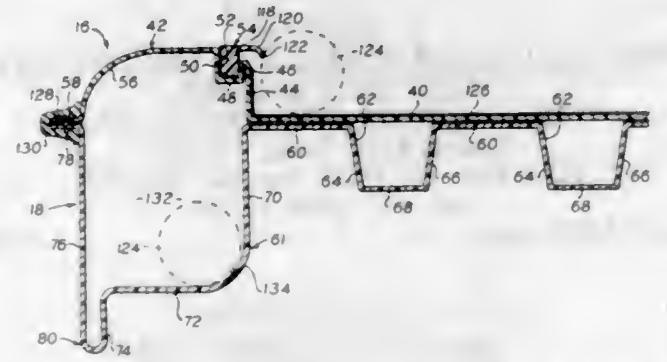
A game in which a conventional basketball game basket including a rigid hoop or ring is located in horizontal position and travels in a lineal path back and forth for the same distance in each direction and without vertical rocking or tilting motion for the purpose of rendering it more difficult for players to loop a basketball through the basket ring.

### 3,477,715
### GAME BOARD WITH PIECES HAVING RECORDING MEANS THEREON
**Armas H. Nekton, 32 Sunset Road,**
**Valley Stream, N.Y. 11580**
**Filed July 6, 1967, Ser. No. 651,421**
**Int. Cl. H63f** *3/02*
**U.S. Cl. 273—136** **7 Claims**



A chess board wherein the squares have vertical openings therethrough which receive the shafts of the playing pieces and an inked pad is placed below the openings and is engageable by the bottom ends of the shafts which bear identifying indicia. The playing pieces have reduced shanks received in openings having a corresponding diameter, the lead portions of the playing pieces being disposed above the board. Releasable means are provided for latching the playing piece in suspended position above the pad. In use the game pieces are pushed into contact with the pad and are then withdrawn from the vertical openings and are stamped on a specially designed printed record sheet to indicate each play as it is made. Means are also provided for supporting a record sheet above the inked pad.

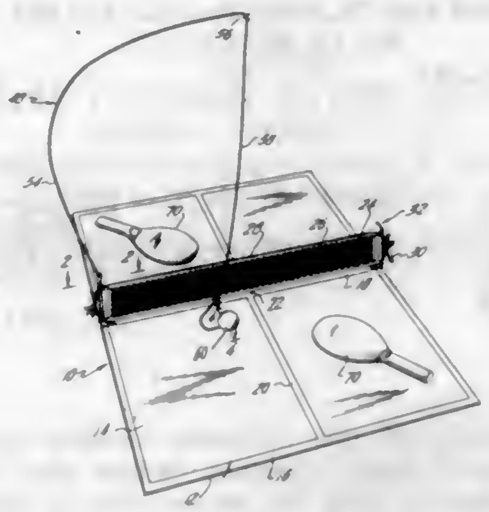
### 3,477,716
### CANTILEVERED BALL CUSHION
**Louis Bender, Plainfield, N.J., assignor to Standard Plastic Products, Inc., South Plainfield, N.J., a corporation of New Jersey**
**Original application Mar. 15, 1965, Ser. No. 439,901, now Patent No. 3,319,958, dated May 16, 1967. Divided and this application Mar. 22, 1967, Ser. No. 625,137**
**Int. Cl. A63d** *15/06*
**U.S. Cl. 273—9** **1 Claim**



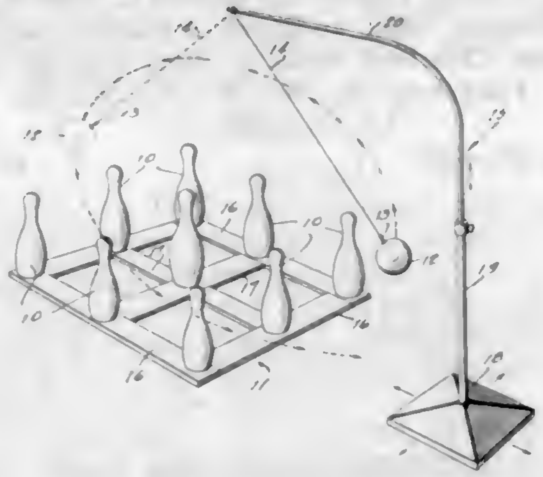
A resilient cushion for a pool table having a base of substantial cross-section which is press fittable in a groove surrounding the table playing area and a downwardly arcuately extending lip integral with said base and extending away therefrom over the edge of the playing area.

### 3,477,717
### MINIATURIZED TABLE TENNIS GAME WITH CAPTIVE BALL
**Theodore V. Clark, 10 Dorothy Drive,**
**Syosset, N.Y. 11791**
**Filed Apr. 3, 1967, Ser. No. 627,750**
**Int. Cl. A63b** *67/04, 67/10*
**U.S. Cl. 273—30** **11 Claims**

A table tennis game wherein the rectangular playing field is substantially smaller than a regulation playing field, for example, in the order of 24 x 32 inches, the net being reduced in like proportions. The game has a regulation table tennis ball which is connected by a tether to an elevated point high above the center of the playing field so as to permit the ball to be stroked back and forth across the net without the danger of losing control of the ball, thus enabling the game to be played by adults, invalids and children. The tether is elastic and is long enough, when unstretched, to allow the ball to reach any one of the four corners of the playing field so that the tether does not hamper free play, the play resembling play with an untethered ball while, at the same time, the ball is never permitted to escape from the immediate vicinity of the playing field.



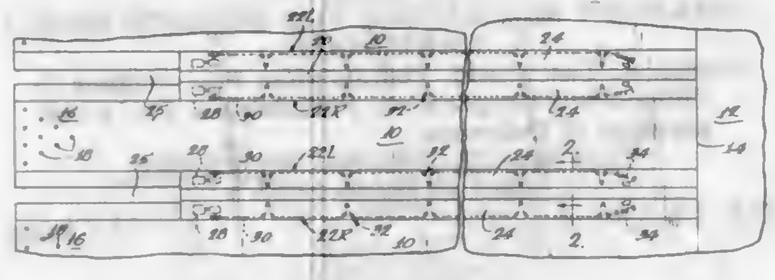
### 3,477,718
### PORTABLE GAME APPARATUS
**Frank Loncar, 629 N. Marsalis,**
**Dallas, Tex. 75203**
**Filed Mar. 20, 1968, Ser. No. 714,552**
**Int. Cl. A63d** *7/00*
**U.S. Cl. 273—40** **6 Claims**



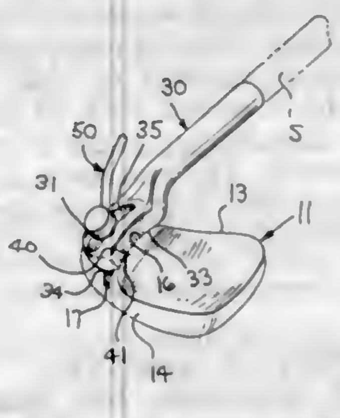
A simulated bowling game comprising a set of nine pins, one of which advantageously may be relatively larger than the others, a substantially planar platform providing a support for the pins, a weighted ball having one end of an elongated flexible link connected thereto, and a stand, freely movable relative to the platform, providing an elevated support having the end of the flexible link opposite the ball connected thereto, whereby the ball is suspended from the link for free swinging movement therewith relative to the pins.

### 3,477,719
### CONVERTIBLE BOWLING LANE
**Richard Szymanski, Muskegon, Mich., assignor to Brunswick Corporation, a corporation of Delaware**
**Filed June 6, 1967, Ser. No. 643,984**
**Int. Cl. A63d** *1/08, 1/04*
**U.S. Cl. 273—51** **10 Claims**

A convertible gymnasium type floor for use in either a bowling game or alternatively for other purposes requiring a substantially continuous surface, including means providing a planar playing surface, a pair of troughs on opposite sides of the playing surface located below the plane of the playing surface, and movable cover means for closing the troughs, the cover means having one position providing a planar surface in the plane of the playing surface, and another position exposing the troughs to catch missiles leaving the playing surface.



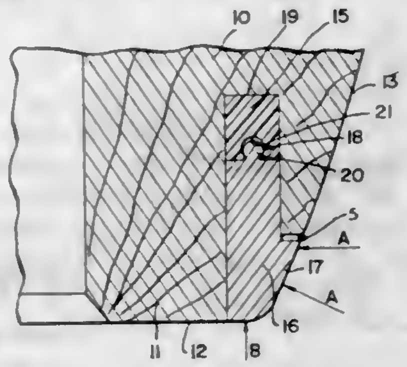
### 3,477,720
### ADJUSTABLE HEAD ASSEMBLY FOR GOLF CLUB
**Shafie Saba, also known as Joseph Saba, Toledo, Ohio, assignor to Frances S. Saba and Sophie Secor, both of Toledo, Ohio**
**Filed Oct. 11, 1965, Ser. No. 494,567**
**Int. Cl. A63b** *53/06*
**U.S. Cl. 273—79** **3 Claims**



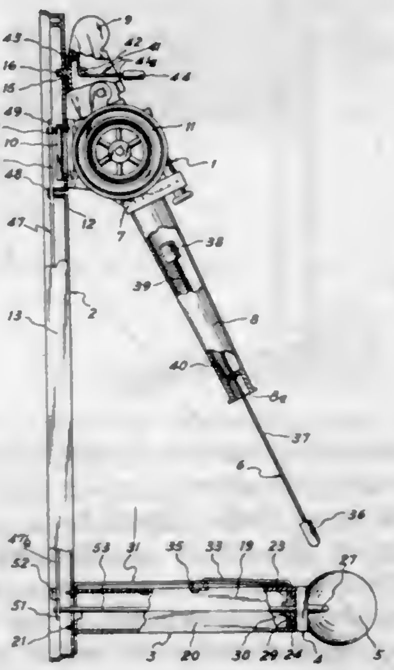
A golf club construction featuring a universally shiftable lower blade which in its shifting moves linearly with respect to the shaft and, as well, arcuately by reason of complementary concave and convex surfaces and tongue and groove registration means formed on the shaft and blade; the construction also including locking means to hold the blade securely in a given desired position.

### 3,477,721
### INTERLOCKED PIN BOTTOM
**Fred E. Satchell, Chesterfield, Mo., and Anton W. Rytina, Grand Haven, and Louis J. Trier, Muskegon, Mich., assignors to Brunswick Corporation, a corporation of Delaware**
**Continuation of application Ser. No. 520,974, Jan. 17, 1966. This application Oct. 9, 1968, Ser. No. 772,450**
**Int. Cl. A63d** *9/00*
**U.S. Cl. 273—82** **6 Claims**

A pin bottom for use in combination with a bowling pin which has a central reduced shank at its butt end formed by an undercut at the juncture of the bottom surface and side surface of the pin, with the undercut forming a downwardly facing annular groove. The pin bottom comprises a flexible upper base member which embraces the shank and is positioned entirely at the uppermost areas of the groove and bonded thereto. A wear-resistant lower base member extends at its upper end into the groove and terminates at its lower end in a shoulder which defines a continuation of the bottom and side surfaces of the bowling pin. The two base members are mechanically interlocked to form the pin bottom and to releasably secure the lower base member on the bowling pin.



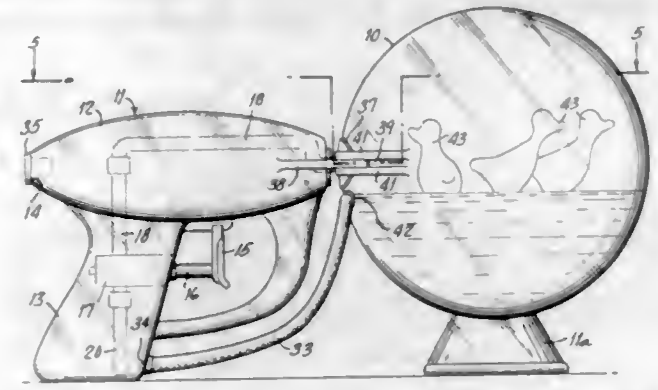
### 3,477,722
### SHOOTING GAME EMPLOYING MOVING TARGETS
**Luis Congost Horta, Iradier 6 bis, Barcelona, Spain**
**Filed Feb. 15, 1967, Ser. No. 616,404**
**Claims priority, application Spain, Feb. 21, 1966, 323,344**
**Int. Cl. A63b** *65/12;* **A63f** *9/02*
**U.S. Cl. 273—101** **9 Claims**



The invention concerns a shooting game of the type employing moving targets having a base, a firing device at one end of the base and a tower at the other end with an oscillating lever along which slides a target, the firing device having an angular movement and being provided with a spring-actuated projectile, articulated means being provided in the base to connect the firing device with the oscillating lever so that the target moves in the opposite direction to that of the firing device.

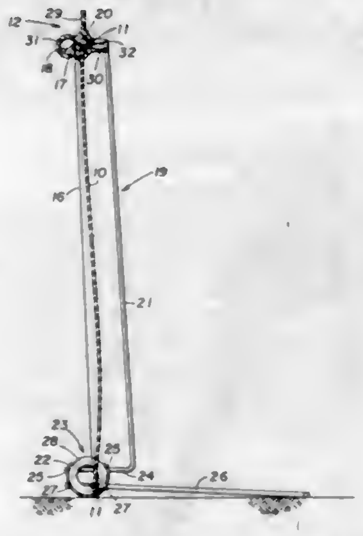
### 3,477,723
### COMBINED WATER PISTOL AND TARGET DEVICE
**Fouad H. Djedda, Riverdale, N.Y., assignor to Jedso Industries, Inc., New York, N.Y., a corporation of New York**
**Substituted for abandoned application Ser. No. 384,828, July 24, 1964. This application Dec. 4, 1967, Ser. No. 687,905**
**Int. Cl. A63h** *29/14, 33/00*
**U.S. Cl. 273—101** **11 Claims**

A water pistol is affixed by a water-tight connection to a transparent housing containing targets. The nozzle of the water pistol is fixed in a piston, or is aimable, so that the discharge from the nozzle impinges on the targets and moves them. A water return tube connects the housing with a reservoir of the water pistol, thereby providing an enclosed path for circulation of the water.



### 3,477,724
### PELLET TARGET

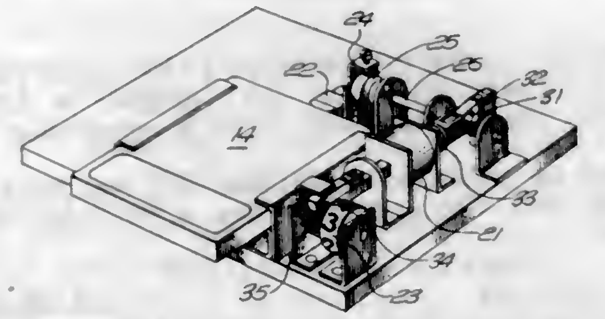
**Stanley W. Wilcox, Tulsa, Okla., assignor of one-half to Century Geophysical Corporation, Tulsa, Okla., a corporation of Delaware**
**Filed May 16, 1966, Ser. No. 550,313**
**Int. Cl. A63b** *71/00;* **A63f** *9/02*
**U.S. Cl. 273—102.4** **6 Claims**



A pellet target with rebound control includes a target sheet and an energy absorbing impact sheet which are supported at the upper ends thereof by a clip structure. A bracket includes legs which pass behind the impact sheet and support the clip structure over a pellet tray so that the freely hanging lower end of the impact sheet passes through an open mouth of the pellet tray to permit pellets stopped by the impact sheet to collect in the tray.

### 3,477,725
### RECORDING TRACK INDICATING WHEEL FOR MAGNETIC TAPE CARTRIDGE PLAYER

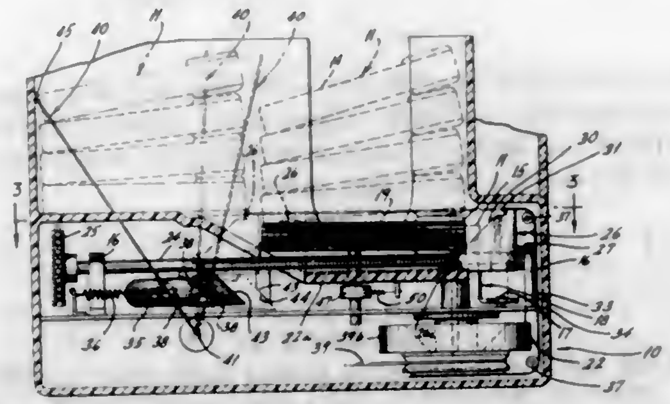
**Robert W. Housman, Winthrop, Mass., assignor to Radio Manufacturing Co., Inc., Melrose, Mass., a corporation of Massachusetts**
**Filed Aug. 22, 1966, Ser. No. 574,151**
**Int. Cl. G11b** *5/78*
**U.S. Cl. 274—4** **2 Claims**



In a cartridge tape player the particular channel being played is displayed through a window opposite a wheel that is advanced by the back stroke of a solenoid each time the solenoid changes, by means of its forward stroke, the head scanning position to scan the next channel.

### 3,477,726
### CHANGER MECHANISM FOR RECORD TAPE CARTRIDGE

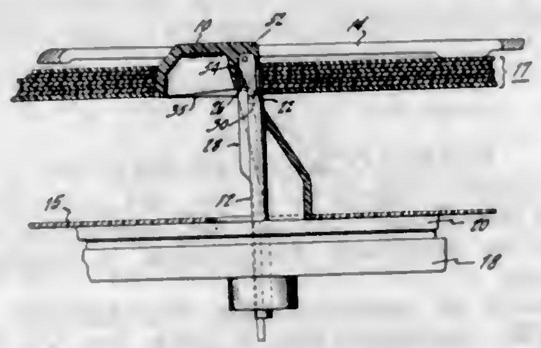
**Joseph E. Laschenski, Philadelphia, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware**
**Filed May 23, 1968, Ser. No. 731,502**
**Int. Cl. B65h** *1/00*
**U.S. Cl. 274—4** **13 Claims**



Magnetic tape cartridge changer mechanism for use in magnetic tape sound reproducing apparatus. A changer mechanism accepts a pair of stacks of tape cartridges and automatically moves them in recirculating sequence to provide a continuous record program. A first stack of cartridges is fed vertically for sequential presentation at a sound reproducing head. After the tape cartridge has been played the mechanism operates to slide the cartridge laterally and beneath a second stack of cartridges, and to feed a cartridge from the top of the second stack onto the top of the first stack. The lowermost cartridge in the first stack then drops and is presented for engagement with the sound reproducing head.

### 3,477,727
### SPINDLE ADAPTER

**Philip E. O'Connell, Indianapolis, Ind., assignor to RCA Corporation, a corporation of Delaware**
**Continuation of application Ser. No. 488,951, Sept. 21, 1965. This application Aug. 21, 1967, Ser. No. 671,520**
**Int. Cl. G11b** *17/16, 17/08*
**U.S. Cl. 274—10** **4 Claims**



A 45 r.p.m. spindle adaptor has a figure 7 configuration with an opening in one side through which the support shelf and record ejector means of the small diameter spindle extend to support and drop successive lowermost records to the turntable of the record player. The leg portion of the adapter extends toward the turntable and provides a single small area contact within the center hole of a record on the turntable which causes the record to be properly centered as the turntable is rotated.

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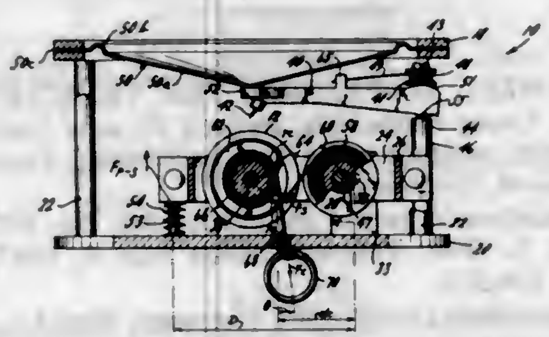
### 3,477,728
### CYLINDER-TYPE TALKING MECHANISM

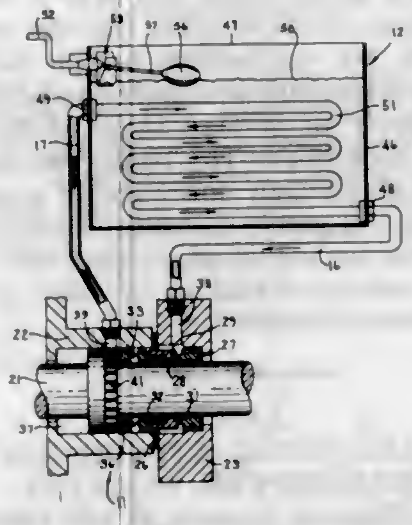
**Kenneth W. Lindsay, Great Neck, and Burt W. Ensmann, Jamaica, N.Y., assignors to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York**
**Filed Feb. 6, 1967, Ser. No. 614,126**
**Int. Cl. G11b** *15/40*
**U.S. Cl. 274—1.1** **9 Claims**



A cylinder-type talking mechanism for use in dolls and the like. A stylus engages interleaved grooves on a record cylinder to provide random playback of the corresponding sound sequences. Although the cylinder is biased against the stylus, between playing intervals the pull ring attached to the free end of the pull string bears against the doll body to pull the cylinder away from the stylus. This permits the stylus to return to its initial position, out of contact with the cylinder, at the termination of each playing interval. A constant speed governor is mounted on the same shaft with the record cylinder to permit a compact size. Also, a clutch is provided on the same shaft to prevent rotation of the record cylinder during wind-up. The clutch is included within the record cylinder to further reduce the size of the overall mechanism.

### 3,477,729
### COOLING SYSTEM FOR A STUFFING BOX SEAL

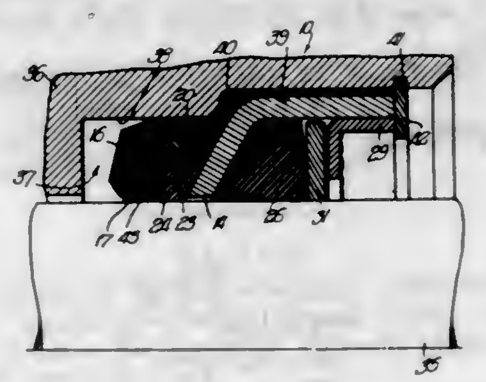
**Lowell E. Hershey, Portage, Mich., assignor to Durametallic Corporation, Kalamazoo, Mich., a corporation of Michigan**
**Filed May 19, 1967, Ser. No. 641,426**
**Int. Cl. F16j** *15/34, 15/54*
**U.S. Cl. 277—1** **8 Claims**



An improved method and apparatus for cooling a rotating shaft seal wherein said seal comprises a first annular ring fixed to said shaft and a second nonrotatable annular ring in sealing engagement therewith. The ring members and the shaft are surrounded by a stuffing box defining an annular chamber therearound. The annular chamber is connected with supply and discharge lines which in turn are interconnected to a coil located within a heat exchanger so as to define a closed system for circulation of a primary coolant for cooling the seal, the primary coolant being circulated by means of an impeller fixed to the shaft for rotation therewith. The heat exchanger is supplied with a secondary coolant in liquid form which surrounds the coil whereby heat is transferred from the primary coolant to the secondary coolant with the secondary coolant being heated and a portion thereof becoming vaporized, the vaporizing action withdrawing heat from the remaining coolant and maintaining same at a temperature not exceeding its vaporizing temperature. Thus, the primary coolant is cooled within the heat exchanger to approximately the vaporization temperature of the secondary coolant and is then recirculated through the chamber and the seal.

### 3,477,730
### SHAFT SEAL

**Peter Szcupak, Chicago, and Kare Andersen, Elgin, Ill., assignors to Chicago Rawhide Manufacturing Company, Chicago, Ill., a corporation of Illinois**
**Filed Mar. 26, 1965, Ser. No. 443,047**
**Int. Cl. F16j** *15/32, 15/54*
**U.S. Cl. 277—24** **10 Claims**

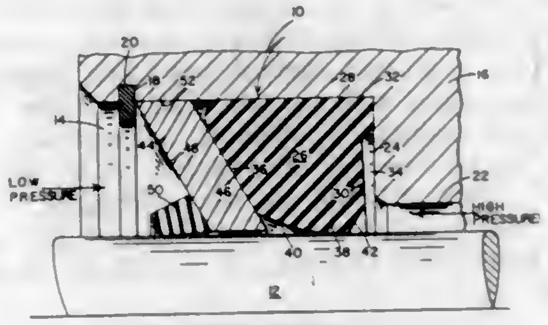


A shaft seal including an anti-extrusion means for sealing a reciprocable shaft in fluid-tight relation to an opening in a machine housing or the like. The seal casing includes an axially extending portion and a radially inwardly extending flange portion, and the anti-extrusion means is in the form of an element bonded to a portion of the flange and disposed between the flange and the primary seal. It is preferably surrounded on its outer periphery by a rigid support ring, so that fluid pressures directed axially through the primary sealing element to the anti-extrusion means force the anti-extrusion means radially inwardly and against the shaft to be sealed so that the seal can not be extruded axially of the casing inwardly thereof between it and the shaft. The seal itself abuts the anti-extrusion means and the two are of substantially the same inner diameter, which is slightly smaller than the inner diameter of the inner periphery of the casing flange.

### 3,477,731
### HIGH PRESSURE SEAL

**Woodrow Irwin Workman, Laconia, N.H., assignor to International Packings Corporation, Bristol, N.H., a corporation of New Hampshire**
**Filed Feb. 20, 1967, Ser. No. 617,108**
**Int. Cl. F16j** *15/32, 15/54*
**U.S. Cl. 277—58** **9 Claims**

A radial seal for shaft to bore sealing against a high pressure fluid medium including an annular resilient member having a first section for engaging the bore, and a second for engaging the shaft; a frusto-conical reinforcing member engages a third section of the resilient member. The external conical surface of the reinforcing member is in contact with the resilient member and the internal conical surface is facing away from the resilient member and the high pressure medium, the internal conical surface being in compression, and the external in tension for resisting deformation.



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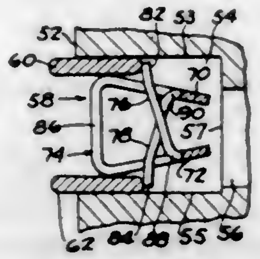
3,477,732

### SPACER-EXPANDER

**Frank G. Warrick, Muskegon, Mich., assignor to Sealed Power Corporation, Muskegon, Mich., a corporation of Michigan**
**Filed Apr. 14, 1965, Ser. No. 448,059**
**Int. Cl. F16j** *9/06, 15/56*
**U.S. Cl. 277—140** **30 Claims**



A non-bottoming type piston oil ring assembly for an internal combustion engine piston comprising at least one but preferably two split piston rings, usually in the form of oil scraping rails, and a novel one-piece spacer-expander. The spacer-expander has at least one annular substantially circumferentially incompressible band arranged generally concentric with the ring and extending substantially 360 degeres so that in the operative condition of the spacer-expander its circumferential dimension is fixed. The spacer-expander also has a plurality of ring supports circumferentially spaced along the band for locating the ring adjacent one side wall of the piston groove and which support the band in spaced relation with the side walls of the groove. A plurality of spring legs are circumferentially spaced along the band, each leg having a free end engaging the ring to bias the same radially outwardly and a connection between the other end of the leg and the band spaced axially from the ring between the ring and the other side wall of the groove.

In a preferred form of the ring assembly, the spring legs are arranged in two sets to act respectively on top and bottom rails of a dual rail oil ring assembly, the legs being distributed circumferentially and evenly around the ring to provide a multiplicity of substantially independently acting pressure points on the rails. The legs extend oppositely relative to one another from their free ends generally axially across the groove between the top and bottom walls thereof, and also extend generally radially to their connection with the band or bands of the spacer-expander. Hence the legs are each disposed coplanar with the axis of the ring assembly, and in addition are proportioned relative to the band and supports of the expander-spacer so that substantially all of the material in the spacer-expander is stress deflected to store energy for biasing the rails when the spring legs are deflected to their operative condition by the associated rails being contracted to operative diameter.

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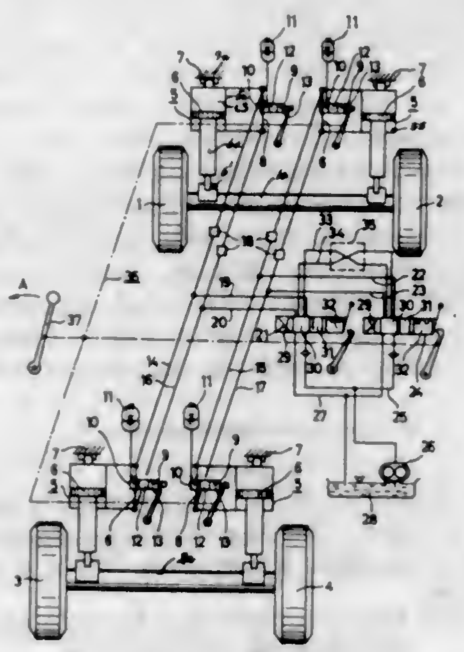
3,477,733

### WHEEL SUSPENSION FOR VEHICLES

**Heinrich Georg Gottschalk, Bullach 32, near Nuremberg, Germany, assignor to Karl Heinz Schmidt, Vorra, Kreis Hersbruck, Germany**
**Continuation-in-part of application Ser. No. 417,150, Dec. 9, 1964. This application May 5, 1967, Ser. No. 636,532**
**Claims priority, application Germany, May 13, 1966, Sch 38,988**
**Int. Cl. B62d** *37/00;* **B60g** *21/06*
**U.S. Cl. 280—6** **3 Claims**



A wheel suspension for vehicles in which a suspension element for each wheel includes a cylinder-piston unit operably related to the frame and axle. A conduit leads between the larger cylinder space and the smaller cylinder space with first and second branch conduit means groupwise interconnecting the larger and smaller cylinder spaces respectively of at least some of the suspension elements with each other. The larger and smaller cylinder spaces are respectively connected to a pressure fluid source and pressure supply container via the branch conduit means and an additional conduit means including valve means connects the larger cylinder spaces with a pneumatic pressure chamber.

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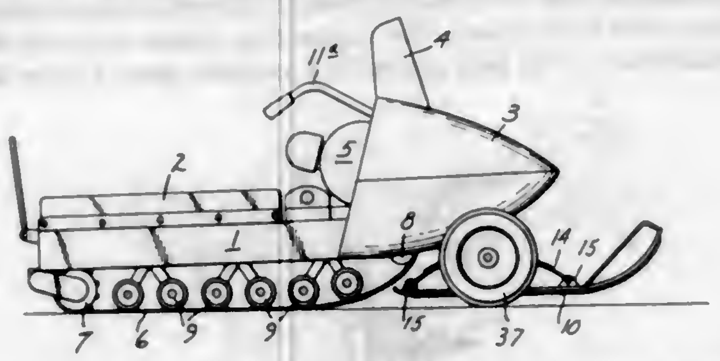
3,477,734

### WHEEL MOUNTING ATTACHMENT FOR SKI-EQUIPPED VEHICLES

**Robert V. Albertson, Navarre, R. Rte. Highway 19, Minneapolis, Minn. 55840**
**Filed Oct. 27, 1967, Ser. No. 678,608**
**Int. Cl. B62b** *19/00, 13/18*
**U.S. Cl. 280—11** **9 Claims**

A wheeled attachment for a ski-equipped land vehicle, including a bracket attached to the ski mount of the vehicle and a supporting wheel-equipped crank arm mounted on the bracket, for positioning the wheel selectively in an inoperative storage position above a ski for travel on snow or ice, and an operative position below the ski for travel on dry ground.



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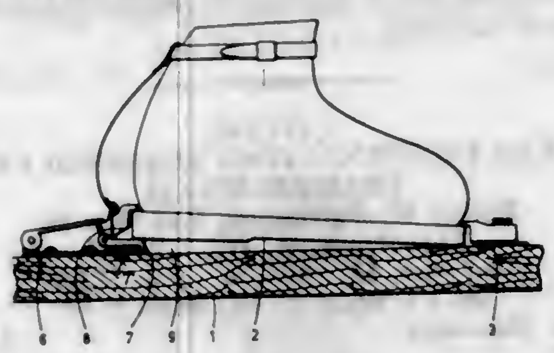
3,477,735

### SKI HARNESS HAVING A REAR SAFETY MEMBER OPERABLE BY A RESETTING PEDAL

**Georges P. J. Salomon, 34 Avenue de Loverchy, Annecy, Haute-Savoie, France**
**Filed Feb. 27, 1967, Ser. No. 618,881**
**Claims priority, application France, Mar. 23, 1966, 956**
**Int. Cl. A63c** *9/08;* **A63** *9/084*
**U.S. Cl. 280—11.35** **1 Claim**



A ski harness comprising a forward thrust member and a rearward safety boot holding assembly including a resetting pedal, the forward member and the rearward assembly being disposed to hold a ski boot therebetween. The resetting pedal, in holding position of the boot, projects forwardly toward the thrust member to lie between the boot of the heel and the ski in such a manner as to cause the heel to bear thereon. The top of the resetting pedal stands at a distance from the ski whereby to define a space between said heel and ski to avoid ill effects of snow and/or ice that may accumulate in the said space.

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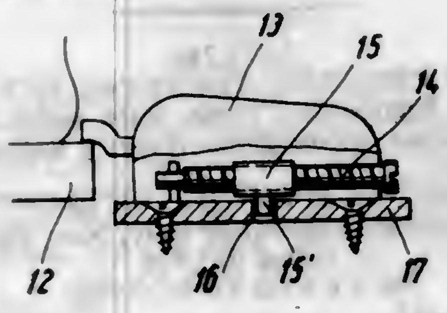
3,477,736

### SKI BINDING WITH DEVICE FOR THREADED ADJUSTING OF THE BINDING COMPONENT

**Paul Unger, 113, Bruckwiesenstrasse, 8501 Altenberg, near Nuremberg, Germany**
**Filed Aug. 23, 1967, Ser. No. 662,720**
**Claims priority, application Germany, Aug. 27, 1966, (utility model) K 55,351**
**K 55,351**
**Int. Cl. A63c** *9/20*
**U.S. Cl. 280—11.35** **4 Claims**



Ski binding adjustment means for the threaded adjusting of the position of a binding component relative to another, where a threaded spindle is journalled in one of the parts to be mutually adjusted in the longitudinal direction and where a nut threadedly mounted on the spindle has a catch that projects from this part and into a recess or opening of the counter part.

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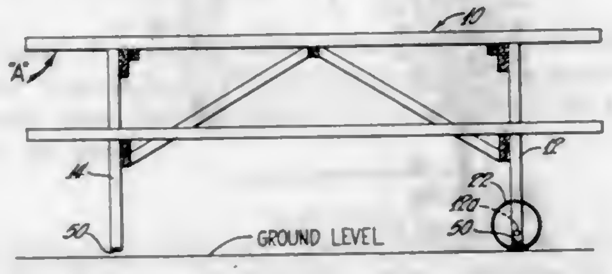
3,477,737

### SELECTIVELY MOBILE APPARATUS

**Joseph T. Podiak, 312 Indiana Ave., Maumee, Ohio 43537**
**Filed Dec. 2, 1968, Ser. No. 780,317**
**Int. Cl. B62b** *1/00;* **A47b** *31/00*
**U.S. Cl. 280—43** **12 Claims**



An apparatus for making furniture or other cumbersome devices, having at least two spaced legs, selectively mobile which includes one or more wheels, an axle of deformable spring material to carry the wheels and mounted between the legs to position the wheels in a nonsupporting position for the device, and detent means mountable upon the device to receive and retain the axle when the axle is deformed downwardly to place the wheels in a device-supporting position.

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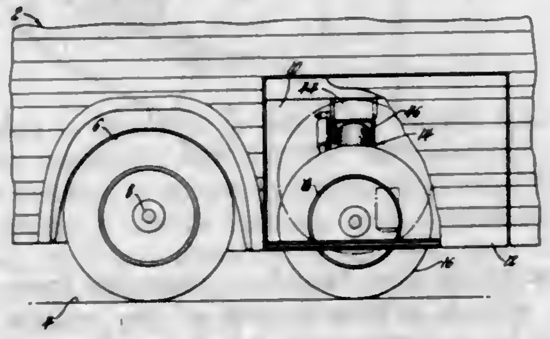
3,477,738

### AUXILIARY ROAD WHEEL ASSEMBLY

**Donald L. Manning, Orchard Lake, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Jan. 16, 1968, Ser. No. 698,225**
**Int. Cl. B62d** *61/12, 43/08*
**U.S. Cl. 280—124** **5 Claims**



A laterally extending parallelogram linkage auxiliary vehicle wheel suspension unit detachably mounted on a vehicle superstructure having a selectively energizable air spring unit operative to urge the wheel into road engagement under conditions of abnormal vehicle load or subnormal weight limits, and a selectively energizable fluid motor operative to retract the wheel during conditions of normal load and load limits.

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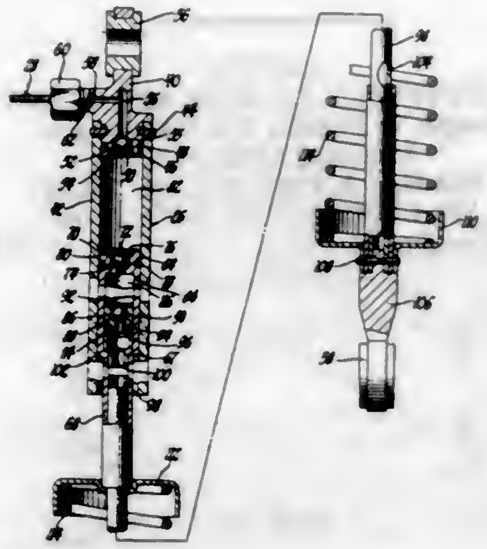
3,477,739

### AIR COMPRESSOR WITH PLURAL PISTONS

**Robert L. White, Frankenmuth, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Jan. 22, 1968, Ser. No. 699,651**
**Int. Cl. B60g** *11/46, 11/56;* **F04b** *25/00*
**U.S. Cl. 280—124** **4 Claims**

In preferred form, this disclosure concerns a plural piston air compressor supplying compressed air in response to normal road frequency movement between vehicle sprung and unsprung masses. The pistons are colinearly arranged so that successive pistons supply the compressed air as vehicle load varies.



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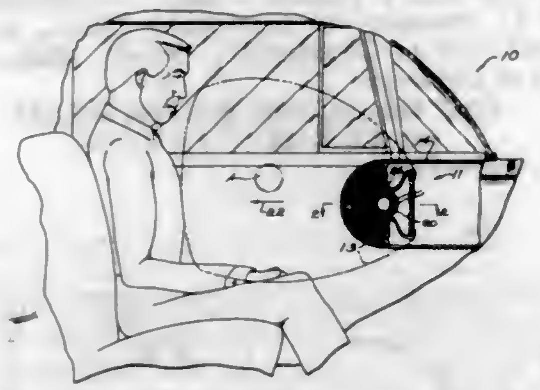
**3,477,740**

### VEHICLE SAFETY APPARATUS

**David P. Hass, Detroit, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Sept. 20, 1967, Ser. No. 669,074**
**Int. Cl. B60r** *11/00, 21/02, 21/04*
**U.S. Cl. 280—150** **13 Claims**



An occupant of a vehicle is protected from forceable impact with a structural part of the vehicle during a collision by a confinement which is inflated in response to the vehicle encountering a collision condition. The confinement is inflated in a manner such that it will act to initially move an occupant who is located so that the full force of inflation of the confinement would otherwise be applied against the occupant. The movement is such that the magnitude of the impact, if any, of the confinement on the occupant is minimized.

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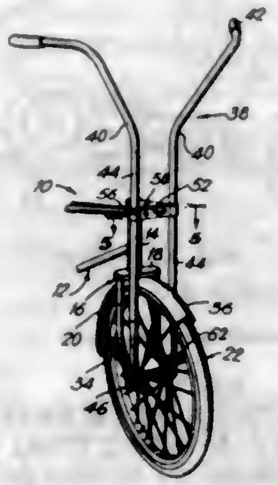
**3,477,741**

### HANDLEBAR ASSEMBLIES FOR BICYCLES

**Albert Ross, 7 Leonard Drive,**
**East Rockaway, N.Y. 11518**
**Filed Dec. 11, 1967, Ser. No. 689,442**
**Int. Cl. B62k** *21/12, 21/02*
**U.S. Cl. 280—279** **4 Claims**

A bicycle having a frame which supports at its front end a fork for swiveling movement with respect to the frame, this fork having a lower axle-engaging portion to be connected to the axle of a front wheel of the bicycle. High-rise type handlebars, providing the bicycle with motorcycle type of handlebars, are provided for steering the bicycle, and a connecting means connects these handlebars to the fork means. The connecting means connects the handlebars to the fork means at a location spaced from the axle-engaging portion thereof, and in addition the connecting means connects the individual handlebars to the fork means for separate adjustment with respect thereto, each handlebar being individually adjustable both angularly and in elevation.



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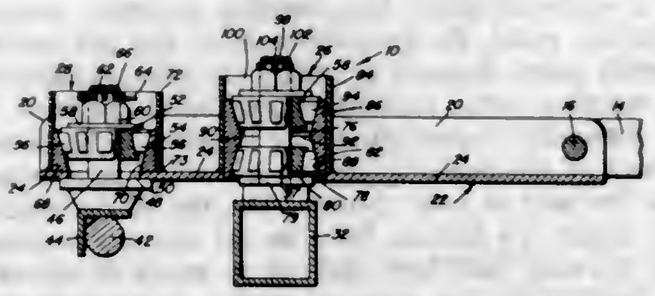
**3,477,742**

### WEAR COMPENSATING BEARINGS FOR TRAILER HITCH

**Robert W. Barrington, P.O. Box 34,**
**Throckmorton, Tex. 76083**
**Filed Mar. 13, 1968, Ser. No. 712,803**
**Int. Cl. B62d** *13/04;* **B60d** *1/14*
**U.S. Cl. 280—444** **3 Claims**



A trailer hitch used in combination with the axle and the steering tie rod for the wheels on the axle, wherein the trailer hitch draw bar is pivotally secured to both the axle and the trailer tie rod by adjustable tapered conical roller bearings that may be adjusted indefinitely for the life of the trailer vehicle, to compensate for wear, so as to maintain taut control of the tracking of the trailer, so that its tracking will truly follow that of the tractor vehicle and will avoid the reciprocating or weaving that is common with most trailer hitches as soon as some wear has taken place.

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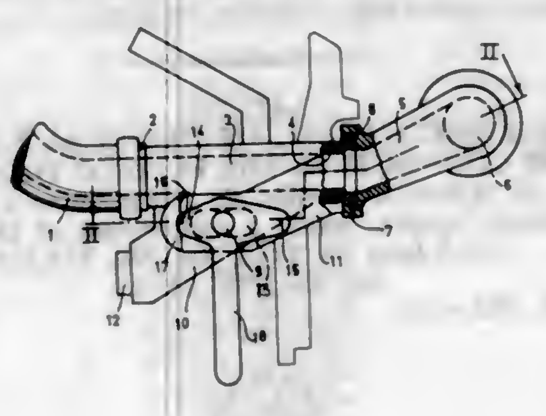
**3,477,743**

### FLUID PRESSURE COUPLING DEVICES

**Giacomo Di Bartolomeo, Turin, Italy, assignor to Compagnia Italiana Westinghouse Freni e Segnali, Boggio, Turin, Italy**
**Filed Nov. 3, 1967, Ser. No. 680,577**
**Claims priority, application Italy, Nov. 10, 1966, Patent 787,770**
**Int. Cl. F16l** *55/00, 25/00*
**U.S. Cl. 285—12** **6 Claims**

A coupling device for attachment to a railway vehicle brake line has a front connector for automatic coupling

of the line in conjunction with vehicle coupling. A lateral connector, for manual coupling, is provided on a head which is movable into an operative position in which it communicates with the front connector. When manual coupling is not desired the head is moved into an inoperative position in which it is clear of the front connector.



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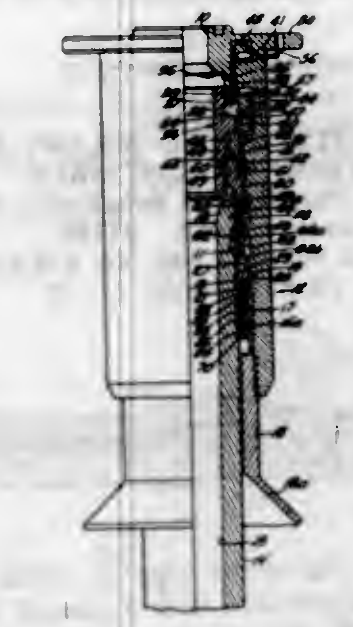
**3,477,744**

### REMOTE UNDERWATER CONNECTOR

**Cicero C. Brown, Houston, Tex., assignor to The Atlantic Refining Company, a corporation of Pennsylvania**
**Filed May 19, 1965, Ser. No. 456,969**
**Int. Cl. F16l** *37/08*
**U.S .Cl. 285—18** **11 Claims**



This invention relates to a latch for connecting a well tool, such as a blowout preventer or a riser pipe, to a member having an external latch groove. The latch is operable either hydraulically or mechanically and may be internally released mechanically by rotating a sleeve inside the tool which moves locking dogs out of locking engagement with the latch groove with a latch housing which is threadably movable when said sleeve is rotated.

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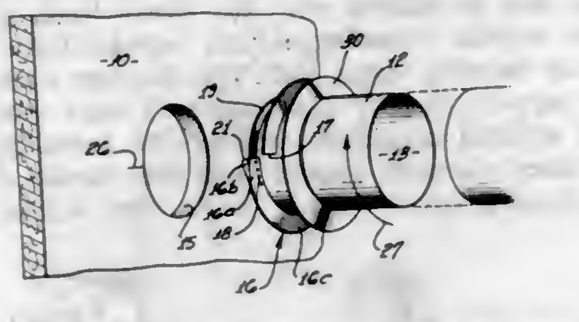
**3,477,745**

### QUICK CONNECTION OF PIPE TO DUCTING

**James W. Williams, Los Angeles, and Phillip K. Proctor, Anaheim, Calif., assignors to Allied Insulation Company, doing business as Permanent Pipe Products Co., Huntington Beach, Calif., a corporation of California**
**Filed Mar. 11, 1968, Ser. No. 712,222**
**Int. Cl. F16l** *15/00, 21/00*
**U.S. Cl. 285—40** **6 Claims**

The disclosure concerns rapid connection and sealing of take-off pipe to a duct panel that may be effected simply and rapidly in response to advancement of the pipe end toward the panel accompanied by rotation of the pipe. The rapid connection is formed by a cutter mounted on the pipe which cuts through the panel as the pipe is rotated. A helical retainer member having one end free of the pipe follows the cutter through the panel to the opposite side thereby preventing withdrawal of the pipe from the panel.



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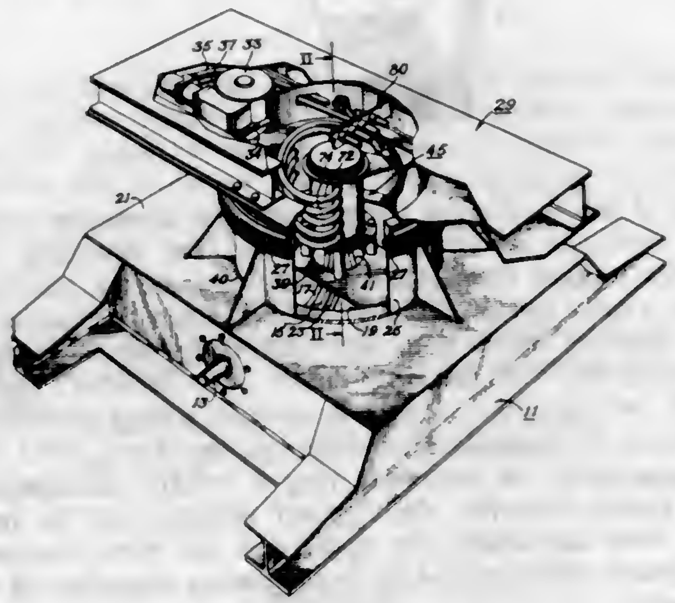
**3,477,746**

### MULTILINE SWIVEL AND MOUNTING SYSTEM

**John V. Watson, Fort Worth, Tex., assignor to Watson Manufacturing Company, Fort Worth, Tex.**
**Filed Oct. 3, 1967, Ser. No. 672,587**
**Int. Cl. F16l** *39/00, 5/00, 27/00, 4/00*
**U.S. Cl. 285—119** **2 Claims**



Following is disclosed a multiline swivel and mounting system especially suitable for earth working equipment and the like in which hydraulic fluid must be transmitted between a mobile carriage and a rotatable turret. The swivel, having a plurality of separate flow channels, is mounted on the platform with a flange and fasteners which secure a cylindrical core in a stationary position relative to the platform. A cylindrical sleeve rotatably surrounds the core, with its top surface terminating below the core, and a removable fastener such as a snap ring disposed in an annular groove in the core above the sleeve prevents upward movement of the sleeve. Flow channels in the core and the sleeve communicate with hydraulic lines in the platform and the turret. A torque rod extends between a torque arm on the rotatable sleeve and a rotatable turret.

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**3,477,747**

### SUPPORT MEANS FOR A FOOD WASTE DISPOSER

**Francis J. Clements, Anchorage, Ky., assignor to General Electric Company, a corporation of New York**
**Filed Nov. 3, 1967, Ser. No. 680,369**
**Int. Cl. F16l** *3/00*
**U.S. Cl. 285—158** **7 Claims**

Means for supporting a food waste disposer having a housing with an open upper end on a sink or the like basin. The support means include a sleeve supported by the sink and terminating in an open lower end, a support ring carried by the sleeve above its open lower end and a resilient annular boot surrounding the open upper end edge of the disposer housing. The boot has an inner surface that is slidable over the sleeve lower end and an outer surface extending radially outward from the outside of the housing upper end. The disposer is connected to the support ring by a substantially rigid mounting ring and suitable connector means. The mounting ring has an inner diameter greater than the outside diameter of the housing upper end and smaller than the outside diameter of the boot outer surface, and the connector means are arranged to align and connect the mounting ring to the support ring with the inner edge of the mounting ring wholly spaced radially outward from the outside of the housing upper end and underlying the boot outer surface, and with the rings' inner edges vertically spaced from one another to permit vertical sliding movement between the boot inner surface and the sleeve. With this arrangement, the mounting ring is solidly connected to the sleeve; however, the disposer housing and the resilient boot surrounding its upper end can move vertically to absorb vibrations which occur during operation of the disposer.

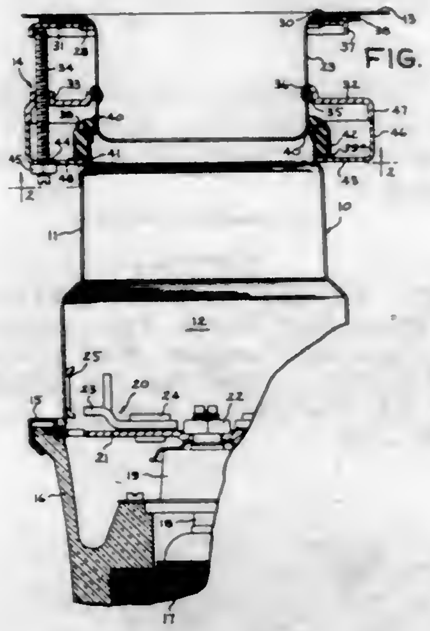
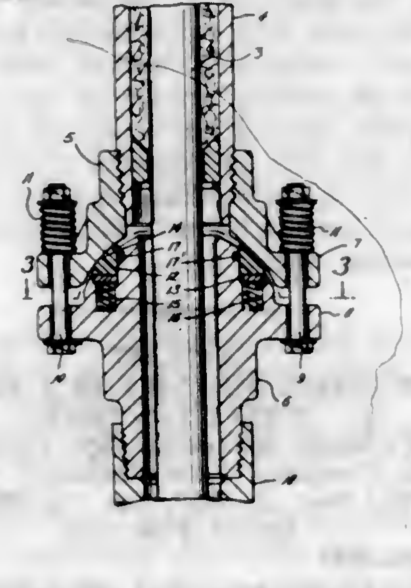


FIG. 1

### 3,477,748
### SWIVEL JOINT FOR WELLS BEING PUMPED

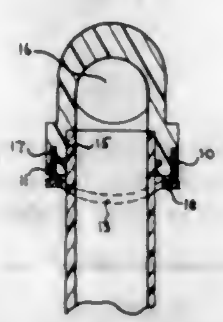
**William B. Tinsley, 1926 Colony Drive,**
**Irving, Tex. 75060**
**Filed Dec. 9, 1968, Ser. No. 782,099**
**Int. Cl. F16l** *27/04*
**U.S. Cl. 285—267** **1 Claim**



A swivel joint for use on wells having pumped production, said joint having a male and female member and being connected by yieldable means therebetween, to permit the female member a rocking motion with the reciprocation of the pumping jack, and having novel yieldably mounted means for sealing the male and female members against high pressure leakage.

### 3,477,749
### PIPE FITTING HAVING MECHANICAL FASTENER FOR CONNECTING THE FITTING TO A PIPE

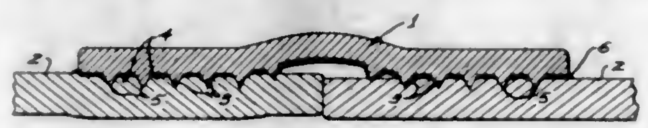
**Henry H. Albro, Louisville, Ky., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware**
**Filed June 13, 1968, Ser. No. 736,718**
**Int. Cl. F16l** *19/08*
**U.S. Cl. 285—340** **3 Claims**



A socket-type pipe fitting has permanently attached thereto an apertured deformable fastener through which the pipe end is moved in one direction during assembly of a pipe connection, but with the fastener resisting movement of the pipe end in the opposite direction. Coacting jaws of the fastener are located externally of the pipe fitting for ready manipulation when the pipe connection is to be disassembled.

### 3,477,750
### PIPE COUPLING AND MEANS AND METHOD OF ASSEMBLY

**Jonathan S. Powell, 1231 Brookmere Road,**
**Pasadena, Calif. 91105**
**Filed Oct. 30, 1967, Ser. No. 678,932**
**Int. Cl. F16l** *19/00, 21/02*
**U.S. Cl. 285—363** **8 Claims**

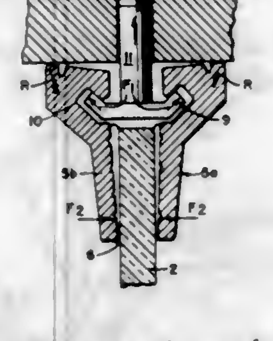


A pipe coupling for metal pipe in which a tubular coupling member is provided with hardened internal annular gripping teeth, the coupling being progressively acted upon by a pair of mutually approaching constricting collars so that the teeth are forced in succession into the confronting ends of a pair of pipe sections previously inserted in the coupling. Sealing means is provided in one or more of the channels between the teeth.

### 3,477,751
### PANEL CLAMPING DEVICE

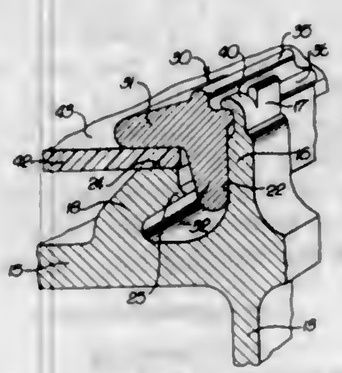
**Andre Gerard Bos, 64 Avenue de Lardenne,**
**Toulouse, Haute-Garonne, France**
**Filed Sept. 5, 1967, Ser. No. 665,565**
**Claims priority, application France, Sept. 27, 1966,**
**77,752**
**Int. Cl. F16b** *1/00, 3/00, 5/00*
**U.S. Cl. 287—189.36** **5 Claims**

The present invention relates to a panel clamping device and is directed more particularly to the use of two clamping jaws, one of which is placed on opposite sides of the panel to be clamped. The jaw members have undercut recesses which cooperate with clamp actuating means in the form of a threaded bolt, which is received through an opening in a support member intended to support the panel in which the bolt member has a head like projection which cooperates with the undercut portions of the two clamping jaw members to draw the two clamp members upward across the support. The top portion of each clamp member has support engaging members which are beveled to cause remote portions of the clamps which define clamping jaws to engage opposite sides of panel to be mounted in the support. In one embodiment the undercut portions in the upper portions of each clamp member are adjacent but spaced from one another. In another embodiment of the invention, the clamp actuating means is a bolt having a T-shaped head wherein a closed rectangular link which has the long sides of the rectangle bent to define an apex rests upon the T portion of the head and wherein the short sides of the rectangle engage the undercut portions in each clamp number 1 are directed outward of the panel to be clamped.



### 3,477,752
### STRUCTURAL JOINT

**Donald L. Richter, Harbor City, Calif., assignor to Temcor, Torrance, Calif., a corporation of California**
**Filed Oct. 30, 1968, Ser. No. 771,892**
**Int. Cl. F16b** *1/00, 5/00, 7/00*
**U.S. Cl. 287—189.36** **8 Claims**

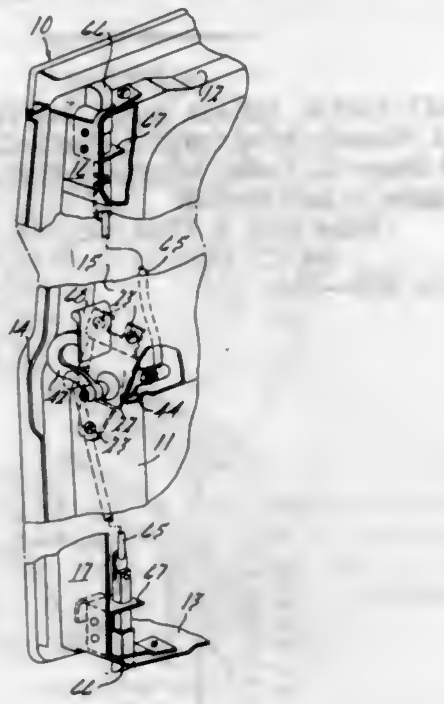


A structural joint for holding sheet material which consists of laterally spaced ribs forming a pocket between them into which a marginal flange of the sheet material extends. A wedge shaped leg of a locking member is forced into the pocket pressing the flange against a knife edge while another leg of the locking member presses the margin of the sheet material against the top of the leg. A thin web or extension of the higher rib has sections broken from it and bent over the locking member to hold it in position.

### 3,477,753
### LATCH MECHANISM

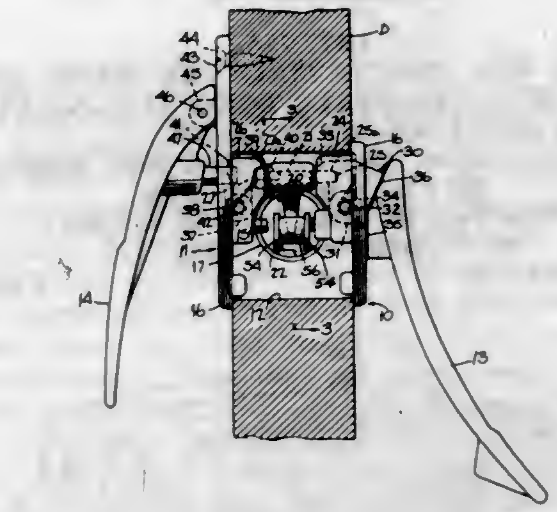
**William L. Schlichter, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware**
**Filed Apr. 13, 1967, Ser. No. 630,669**
**Int. Cl. E05c** *9/16, 1/12*
**U.S. Cl. 292—36** **6 Claims**

A latch mechanism for a vehicle body closure having a pivotally mounted retractor means coupled to a vertically extending bolt means. The bolt means normally projects beyond an edge wall of the door and the retractor means is movable in either of two directions. When the retractor means is moved in one direction, the bolt means is moved to a retracted or door unlatched position. When the retractor means is moved in the opposite direction, the bolt means is driven beyond its normal latched position into a deeper keeper device engaging position.



### 3,477,754
### PUSH-PULL LATCH

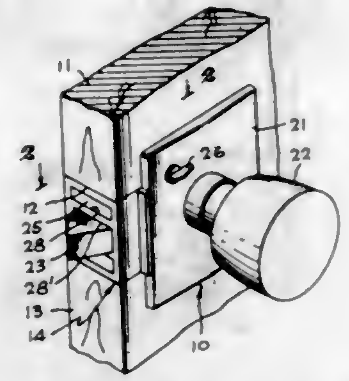
**Mathias M. Check, Greenwich, Conn., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Oct. 30, 1967, Ser. No. 679,145**
**Int. Cl. E05c** *1/12, 15/02;* **F05b** *15/10*
**U.S. Cl. 292—165** **10 Claims**



This latch includes inside and outside roses on which are pivoted a push handle and a pull handle, and which form parts on a control assembly that is adapted to be mounted in an opening formed through a door. The control assembly has a cam lever arranged within the door opening and pivoted substantially for movement in the axis of a latch tube assembly that is mounted in a bore formed through the edge of the door. Either handle will rotate the cam lever, one handle acting directly and the other handle through an intermediate lever on the control assembly. The cam lever engages a latchbolt retractor forming a part of the latch tube assembly, and will move the retractor so as to retract the latchbolt. The cam lever can be assembled in opposed positions relatively to the roses, and also there is a rotatable connection between the latchbolt and its retractor, enabling the latch to be assembled in reversed positions for changing its hand.

### 3,477,755
### UNIT LOCK DEAD BOLT ACTUATOR SLIDE

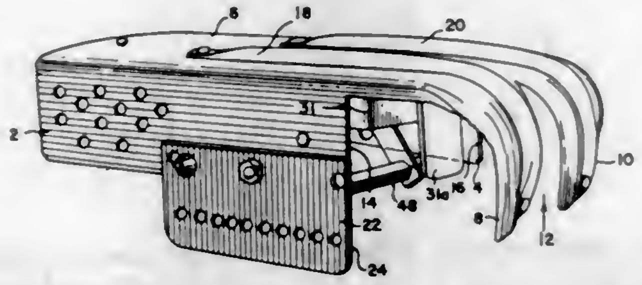
**Fred J. Russell, 8635 Otis St., South Gate, Calif. 90280, and Roger J. Nolin, Monterey Park, Calif.; said Nolin assignor to said Russell**
**Filed Dec. 8, 1966, Ser. No. 607,117**
**Int. Cl. E05c** *3/12, 9/16, 3/16*
**U.S. Cl. 292—229** **3 Claims**



A door lock containing both a latch bolt and a dead bolt reciprocatably mounted in the frame. There is a relatively flat slide reciprocatably mounted in a pair of parallel tracks in the frame, and a lever having a pivotal connection to the dead bolt at one end and to the slide at the other end serves to drive the dead bolt to extended position when the slide is moved outwardly by two simultaneously acting rotating cams in response to manipulation of a handle. The tracks are offset laterally with respect to the dead bolt, and the lever has opposite ends offset with respect to each other in interconnecting the slide with the dead bolt. There is a stop pin on the latch bolt which is engaged by the slide when the slide is in the position extending the dead bolt outwardly, thereby to deadlock the latch bolt by action of the slide.

### 3,477,756
### SHIELD FOR PROTECTING THE HAND AND HOLDING THE STALK DURING CANE CUTTING AND LIKE OPERATIONS

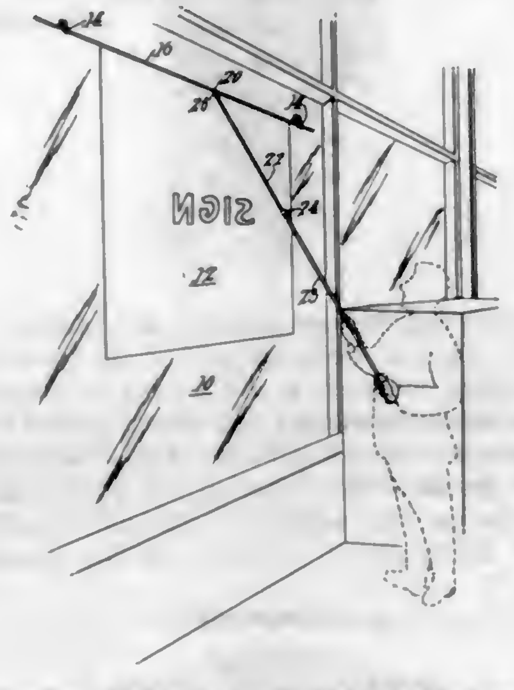
**Fernando J. Castro, San Juan, Puerto Rico, assignor to the People of Puerto Rico**
**Filed Feb. 19, 1968, Ser. No. 707,389**
**Int. Cl. B25b** *29/00;* **B65g** *7/12*
**U.S. Cl. 294—16** **2 Claims**



A shield for protecting the hand while cutting cane or the like with a swing instrument such as machete, having a rigid part protecting and covering the back of the hand and the thumb, the tip end of which curves inwardly toward the palm of the hand to surround a cane stalk. Within this protective part there is a transverse bar which is grasped by the hand to hold and support the shield, and forwardly of this there is a transverse lever bar which is grasped by the fingers and operated to push a bar forwardly toward the inwardly turned end part so that the stalk being cut may be held between the bar and the inwardly turned part to hold it in position while being cut.

### 3,477,757
### WINDOW SIGN HANGER

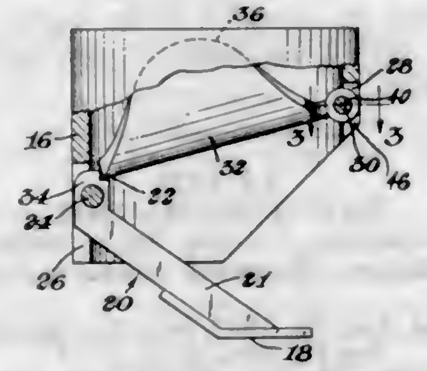
**William J. English, 16 Morningdale Ave., Boylston, Mass. 01505**
**Filed Oct. 31, 1967, Ser. No. 679,488**
**Int. Cl. A47f** *13/06;* **G09f** *7/18*
**U.S. Cl. 294—19** **2 Claims**



A device for placing signs in display windows at a relatively high elevation while the operator stands on the floor and comprising an extensible pole hanger with means forming a recess at an end thereof, a sign hanging rod to which the sign is attached, said rod having a central depending member receivable in said recess so that the rod rests on the extensible pole hanger transversely thereof and can be raised to the elevation desired, in combination with a pair of spaced hooks mounted on the display window at the interior side thereof and receiving the sign hanging rod thereon and supporting the same in easily removable condition, the hooks being generally permanently in place on the window and the sign itself having no connection or securing means with respect to the window other than the hanging rod and the hooks.

### 3,477,758
### BAILER DUMP BOTTOM

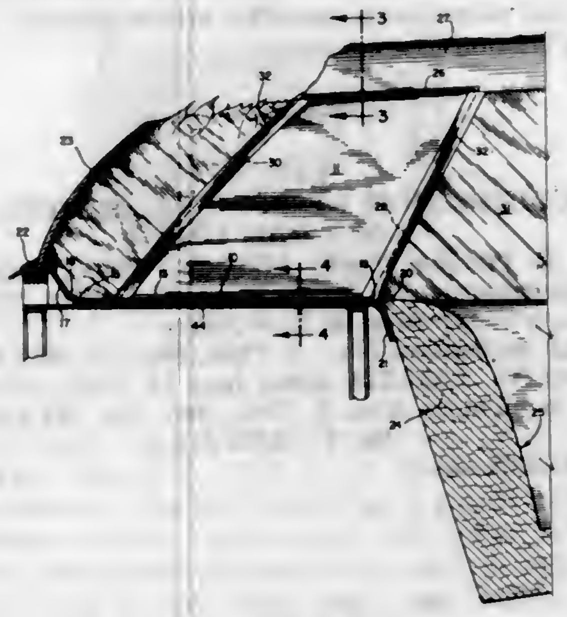
**Warren M. Zingg, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed Dec. 27, 1967, Ser. No. 693,812**
**Int. Cl. E21b** *43/04, 23/06*
**U.S. Cl. 294—69** **4 Claims**



The invention relates to dump bailers for use in earth wells. The bailers have a full opening trap at the bottom which is opened by pressing a downwardly extending trigger element against an obstruction across the bore hole, thus moving the trigger element and disengaging the trap from a sear on the trigger element. Thus, bagged goods in the baler may be discharged by withdrawing the bailer up the bore hole.

### 3,477,759
### INTERIOR PANEL MEMBER FOR AN AUTOMOBILE

**Donald A. Simpson, Indianapolis, Ind., and Richard L. Swift, Wilbraham, Mass., assignors to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania**
**Filed Oct. 2, 1967, Ser. No. 672,329**
**Int. Cl. B62d** *25/08*
**U.S. Cl. 296—28** **10 Claims**

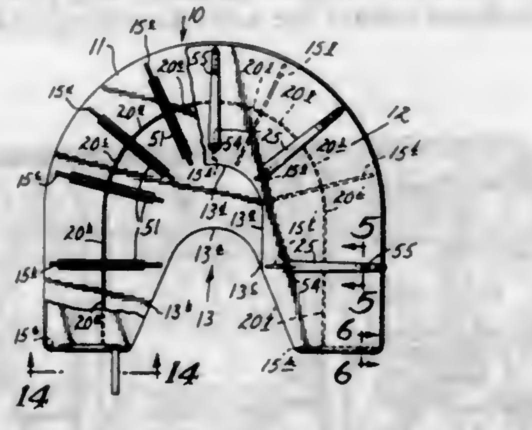


An interior trim panel member is disclosed for use in motor vehicles which incorporates in an integral piece of sheet material, an intermediate portion which serves as a package tray adapted for disposition substantially horizontally between the rear window and the back of the seat, and spaced-apart end portions forming rear upper quarter panels adapted to at least partially cover solid body portions between the side windows and the rear window. By fabricating the above trim member as an integral structure from a single piece of material, installation in an automobile is facilitated and unsightly junctures between the package tray and the rear upper quarter panels are eliminated. The panel member of the invention includes a plurality of closely spaced and parallel score lines dividing each end portion from the intermediate portion and allowing installation of the panel member into automobile bodies having varying dimensions. A method is also disclosed for forming rounded decorative edges on portions of the panel member which eliminate the need for interior garnish molding previously required to cover unfinished edges of panel members.

### 3,477,760
### MULTIPURPOSE TEACHING UNIT

**Richard C. Bue and Julian Gutierrez, Minneapolis, Minn., assignors to Sico Incorporated, Minneapolis, Minn., a corporation of Minnesota**
**Filed June 2, 1966, Ser. No. 554,878**
**Int. Cl. A47b** *83/02*
**U.S. Cl. 297—157** **15 Claims**

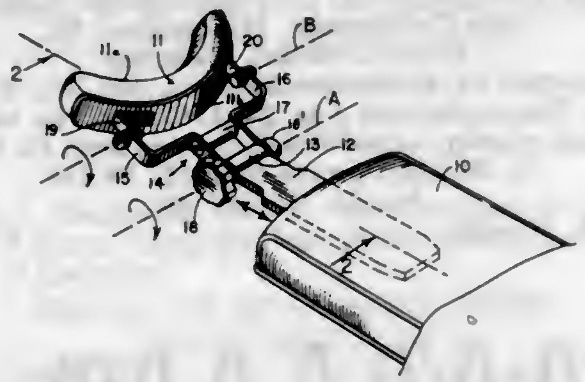
An integral teaching unit having a generally U-shaped table with an indentation formed in the flat end thereof for occupancy by a teacher, a plurality of chairs positioned around the periphery of the table to provide individual seating for a group of students and to provide support for the table, and a visual aid holder supported by a bifurcated floor engaging base portion and being pivotally attached to the table adjacent the indentation by a generally horizontally extending control bar. The periphery of the table is provided with individual storage spaces for the students. The chairs are arranged in pairs, each



chair having a vertical leg member, with a horizontal cross bar connecting each pair. Each pair is connected to the table by a support member having a first horizontally extending portion secured to the bottom of the table, a vertical portion, and a second horizontally extending portion secured to the cross bar at its mid point.

### 3,477,761
### DENTAL CHAIR HEADREST

**John Daniel Krantz, Inglewood, Calif., assignor to Coastal Dynamics Corporation, a corporation of California**
**Filed Mar. 6, 1968, Ser. No. 711,090**
**Int. Cl. A61g** *15/00;* **A47c** *7/38, 1/10*
**U.S. Cl. 297—409** **3 Claims**

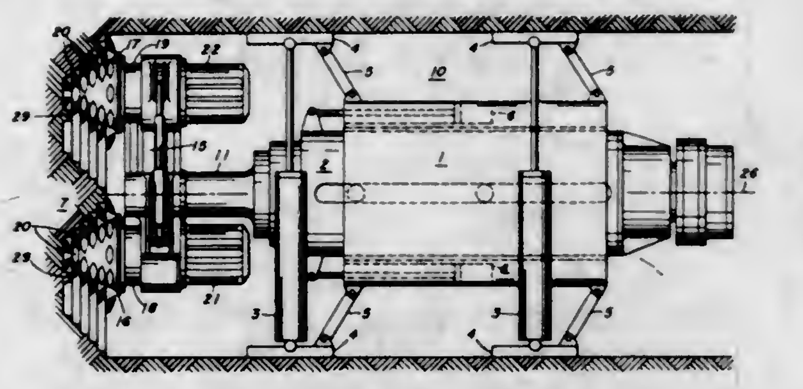


An improved headrest structure is provided for coupling to the upper end of the backrest of a reclining type dental chair. The headrest includes an elongated bar extending from the end of the dental chair backrest and terminating in a journal. A yoke assembly is pivoted to the journal at one end portion and serves to additionally pivot a headrest assembly at its other end portion. Dual pivotal action can thus take place about two parallel spaced horizontal axes, the configuration being such that no part of the bar, yoke assembly, or headrest will extend below the plane defined by the back surface of the dental chair backrest thereby eliminating obstructions to a dentist's legs when seated in a position to work on a patient when the backrest is inclined.

### 3,477,762
### MINING MACHINE AND METHOD

**Pal Frenyo and Heinz Klöttschen, Bochum, Germany, assignors to Gebr. Eickhoff Maschinenfabrik und Eisengiesserei m.b.H., Bochum, Germany, a corporation of Germany**
**Filed Aug. 28, 1967, Ser. No. 663,713**
**Int. Cl. E01g** *3/04;* **T21c** *25/06, 29/02*
**U.S. Cl. 299—10** **4 Claims**

This patent discloses a mining machine, and method of using it, for heading into hard rock or mineral. Satisfactory cutting of hard rock, with a minimum of pressure on the tool, is obtained by providing a mining machine of the kind with a frame, a tool carrier pivoted on the longitudinal axis of the passage to be cut, and a plurality of rings of cutter or roller bits mounted on the tool carrier, each at a different radial distance from the longitudinal axis of the passage and each pivoted about an axis inclined toward the axis. According to the invention, each ring has its bits spaced at a common distance, so as to cut a number of steps of equal height into the rock or mineral. This patent further discloses a method of operating such a machine, according to which the bit rings are rotated more rapidly than the tool carrier, and the tool carrier is advanced toward the face being cut at a rate sufficiently low that in a single complete rotation the cutter or roller bits on a bit ring cut away only a part of the step of coal with which they come into contact.



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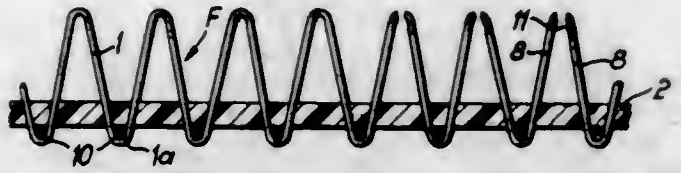
### 3,477,763
## BRUSH AND METHOD OF PRODUCING THE SAME

**Otto Greichgauer, Hauptstrasse 96, Herbede (Ruhr), Germany**
**Continuation of application Ser. No. 395,767, Sept. 11, 1964. This application Aug. 24, 1967, Ser. No. 663,169**
**Claims priority, application Germany, Sept. 12, 1963, G 28,600; Nov. 6, 1963, G 28,938**
**Int. Cl. A46b** *3/04*
**U.S. Cl. 300—21** **2 Claims**



A method of producing a bristly article comprises successively threading a comparatively stiff elastically deflectable synthetic plastic filament through a back support of solid flexible sheet material from one to the other side thereof. Thereby, first filament portions are removably supported and embedded in the material of the back support and second filament portions are integral with the first filament portions and extend beyond one side of the back support.

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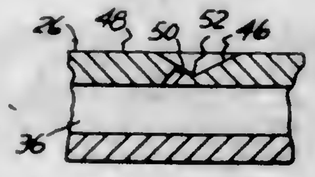
### 3,477,764
## AIR-PROPELLING CUSHIONING CONVEYOR

**Leon W. Smith, 75 Henderson St., Pontiac, Mich. 48053**
**Continuation-in-part of application Ser. No. 593,840, Nov. 14, 1966. This application Apr. 15, 1968, Ser. No. 721,265**
**Int. Cl. B65g** *53/06*
**U.S. Cl. 302—29** **3 Claims**

A hollow conveyor bed contains multiple spaced air expansion recesses disposed below the level of the top surface of the bed and provided near their rearward edges with upwardly and forwardly inclined air jet nozzle passageways for the discharge of compressed air at high speed in an upward and forward direction. This action initially produces an expansion in each recess which dislodges the article to be conveyed and then creates a forwardly-moving cushion of air which simultaneously supports and propels the conveyed article forward while reducing friction to a minimum.



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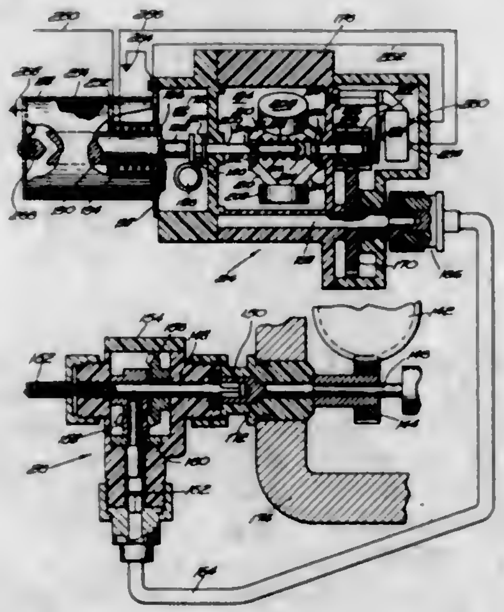
### 3,477,765
## ACCELERATION RESPONSIVE DEVICES FOR ANTI-SKID UNITS

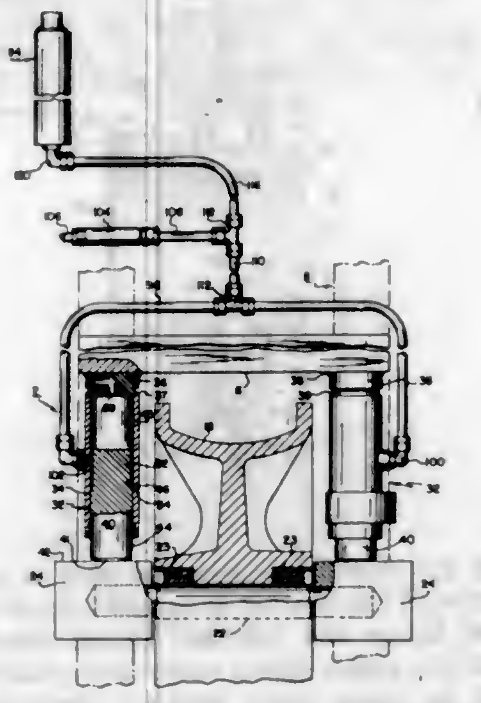
**Frank A. Perrino, North Attleboro, Mass., assignor, by mesne assignments, to The Singer Company, New York, N.Y., a corporation of New Jersey**
**Original application Nov. 2, 1964, Ser. No. 409,350, now Patent No. 3,325,226, dated June 13, 1967. Divided and this application Aug. 5, 1966, Ser. No. 581,676**
**Int. Cl. B60t** *8/24*
**U.S. Cl. 303—21** **4 Claims**



An anti-skid brake system in which a sensing means for sensing when a skid condition begins is caused to activate a wheel speed-sensitive device that takes over control of the brake pressure until the skid condition ends. The sensing means is an inertia-responsive means that senses a sudden change in the speed of rotation of a wheel at the commencement of skid conditions. The control of the brake pressure is taken over completely by a mechanical governor driven dependently with the wheel. The governor then controls the brake pressure in a hunting or modulating manner, for an extended period, until such control of the brakes is ended by a reset means that responds to slowing of the vehicle to a predetermined speed. Preferably, the reset means is a brake-pressure-sensitive device which senses reduction of brake pressure to a predetermined level which the governor can produce only when it slows to the predetermined speed.

### 3,477,766
## APPARATUS FOR TENSIONING A TRACK OR THE LIKE

**Michael Linsay, South Euclid, Ohio, assignor to The Cleveland Trencher Company, Cleveland, Ohio, a corporation of Ohio**
**Filed Aug. 15, 1967, Ser. No. 660,789**
**Int. Cl. B62d** *55/30;* **F16h** *7/10;* **F15b** *15/26*
**U.S. Cl. 305—10** **11 Claims**



An apparatus for adjusting the tension on a crawler track or the like of the type to be driven by a pair of sprocket wheels or the like comprising, a pair of reciprocal fluid pressure motor units disposed on either side of a respective one of the wheels and coupled in parallel to a fluid pressure source. Each motor unit includes a cylinder member and primary and secondary piston members connected together for telescopic, reciprocal movement in the cylinder member. A control valve device for automatically controlling the application of fluid pressure to the primary piston members for moving the respective wheel in a direction to tension the track. A reciprocal, gaseous fluid accumulator device coupled to the motor units for automatically controlling movement of the primary piston members when moved in a direction opposite to the tensioning movement thereof. Each secondary piston member includes a check valve device therein for the flow of fluid pressure therethrough for automatically controlling reciprocal movement of the primary piston members in a direction toward the secondary piston members.

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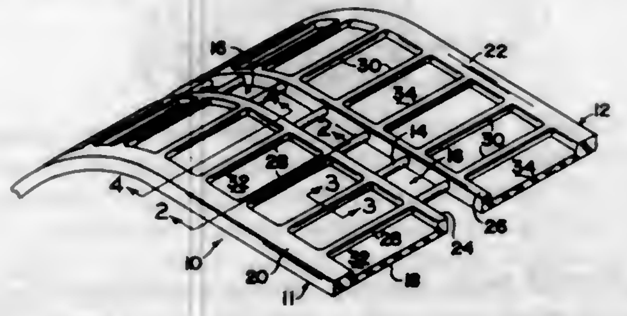
### 3,477,767
## SNOWMOBILE TRACK

**Gordon I. McNeil, 330 E. Perry St., Port Clinton, Ohio 43452**
**Filed Dec. 19, 1967, Ser. No. 691,797**
**Int. Cl. B61b** *7/00*
**U.S. Cl. 305—38** **7 Claims**



An endless belt or track of flexible material with rigid cross bars extending transverse of the track and flexible cables and fabric extending longitudinally of the track.

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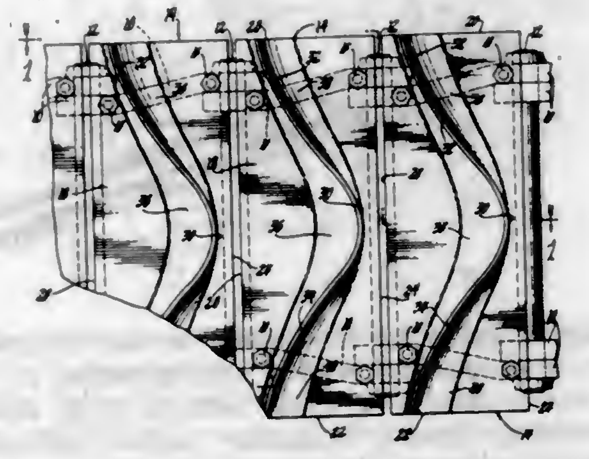
### 3,477,768
## TRACTOR TRACK SHOE

**Clyde C. Culver, Bay Village, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 22, 1967, Ser. No. 685,167**
**Int. Cl. B62d** *55/26*
**U.S. Cl. 305—54** **1 Claim**



A track shoe adapted to be secured to a pair of laterally spaced links of an endless track chain and having a substantially flat base plate from which a grouser projects outwardly therefrom. The grouser includes a central portion and a pair of laterally extending arms connected to the central portion. The central portion is located adjacent to the forward edge of the base plate and has a forwardly inclined ground-engaging surface. Each of the wings terminate adjacent to the rear edge of the plate and have a rearwardly inclined ground-engaging surface.

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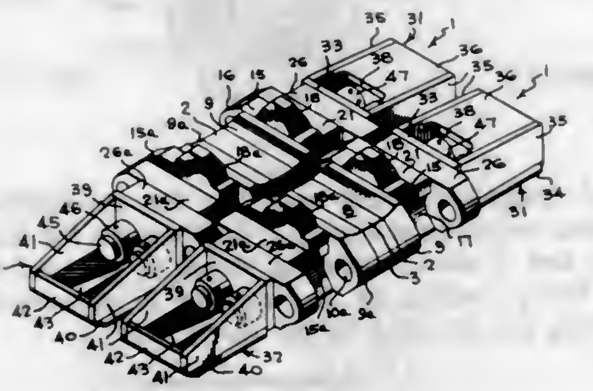
### 3,477,769
## CRAWLER SHOE

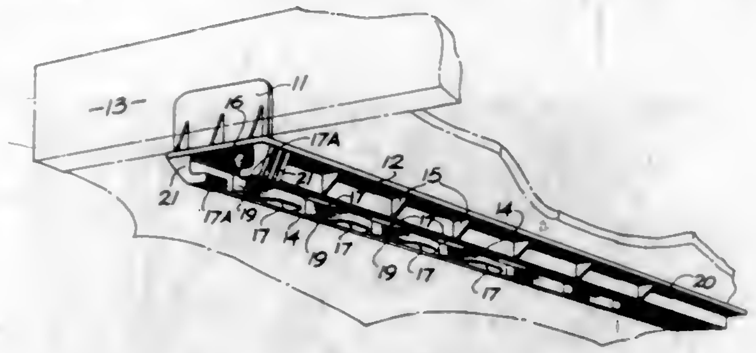
**George J. Thompson, Marion, Ohio, assignor to Marion Power Shovel Company, Inc., Marion, Ohio, a corporation of Delaware**
**Filed Oct. 25, 1967, Ser. No. 677,895**
**Int. Cl. B62d** *55/26*
**U.S. Cl. 305—57** **4 Claims**



A laminated crawler shoe composed of a plurality of transversely extending segments, some of which carry apertured link pin lugs and others driving lugs. Wing members are located at each end of the assembly and threaded tension rods extend through mounting openings in the back walls of the wing members and opening in the segments. Nuts, tightened on the threaded rods while the assembled segments are held under compression and the rods are held under tension, and bearing upon the back walls of the wing members tie the assembly together.

### 3,477,770
### DRAWER GUIDE

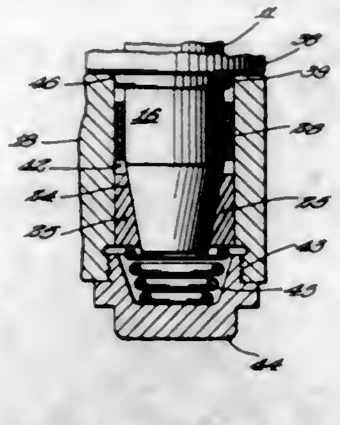
**Herbert W. Niemi, New Middletown, Ohio, assignor to Impex Corporation, North Lima, Ohio**
**Filed May 19, 1967, Ser. No. 639,750**
**Int. Cl. F16c** *29/00;* **A47b** *88/04*
**U.S. Cl. 308—3.6** **2 Claims**



A drawer guide for attachment to the bottom of a drawer for cooperation with a track mounted on a furniture frame, the drawer guide comprising an elongated body member having integrally formed substantially perpendicular transversely spaced flanges depending therefrom, with a plurality of longitudinally spaced inturned guiding fingers on said flanges with intermediate portions of said flanges rounded inwardly in oppositely disposed configurations partially separated from said flanges so as to yieldingly engage the sides of a track on which the drawer guide is slidably engaged.

### 3,477,771
### CONTROLLED TORQUE TWIN BEARING ASSEMBLY ADAPTED FOR KINGPIN-TYPE WHEEL SUSPENSIONS

**Edward J. Herbenar, Detroit, Mich., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Mar. 14, 1967, Ser. No. 623,093**
**Int. Cl. F16c** *25/00, 11/00;* **B60g** *1/00*
**U.S. Cl. 308—71** **10 Claims**

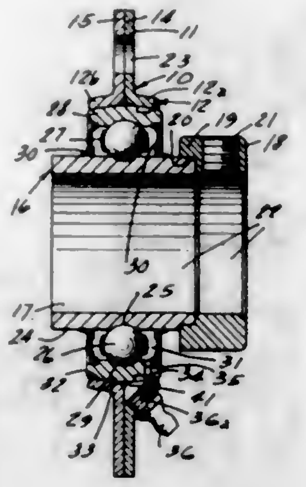


A kingpin bearing assembly for automotive steering wheel suspensions having a first bearing for normal loading and a second bearing which is engaged upon high or heavy loading on the assembly to support the kingpin during the duration of the heavy load.

### 3,477,772
### PRESSED METAL BEARING HOUSING

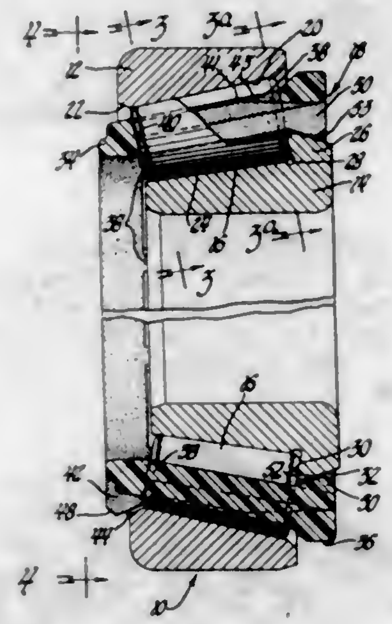
**Lawrence G. Anderson, Greenhurst, and Le Roy M. Anderson, Jamestown, N.Y., assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Nov. 24, 1967, Ser. No. 685,423**
**Int. Cl. F16c** *35/06, 41/02, 23/08*
**U.S. Cl. 308—187** **6 Claims**

A stamped or pressed metal bearing housing having an integral internally threaded lubricant fitting receiving hole of greater depth than the thickness of the metal and composed of metal displaced from the hole. The housing is a two plate flange mounting of the type used in agricultural machinery for mounting a sealed ball bearing unit and carries a threaded grease fitting for lubricating the bearing under pressure from a grease gun. The fitting is threaded in a hole formed in one plate at the junction or bight between the bearing enveloping lip of the mounting and the flange and sufficient thread length insuring retention of the grease fitting under high grease pressures is provided by metal upset during a piercing operation forming the hole which receives the fitting.



### 3,477,773
### MOLDED CAGE FOR NONSEPARABLE ASSEMBLY OF ROLLER BEARINGS

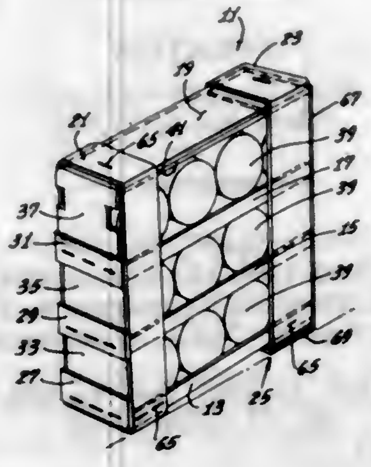
**Ralph Altson, deceased, late of Sandusky, Ohio, by John A. Altson, Port Jefferson, and George R. Altson, Rochester, N.Y., administrators, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Jan. 23, 1968, Ser. No. 699,877**
**Int. Cl. F16c** *33/00*
**U.S. Cl. 308—214** **5 Claims**



A tapered roller bearing having a nonshouldered outer race, an inner race with a shoulder at its large diameter end and a single-piece molded cage which has radial projections on its small diameter end ring which cooperate with the outer race and radial projections on its large end ring which cooperate with the shoulder on the inner race to provide a unit-handled assembly. The cage may be modified by removing either of the projections and incorporating suitable roller retainment to provide a unit-handled assembly of the cage, rollers, and one race.

### 3,477,774
### CAN DISPENSING AND TRANSPORTING UNIT

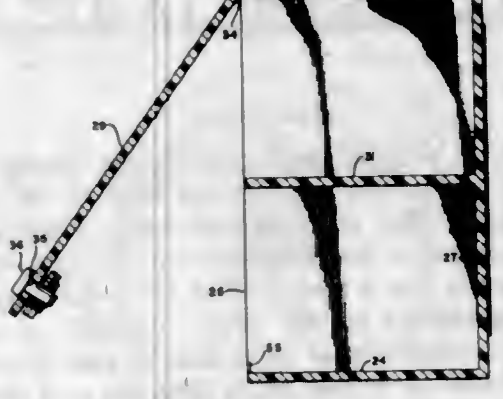
**Elmer G. Atwood, 1943 Floradale, South El Monte, Calif. 91733**
**Filed Feb. 12, 1968, Ser. No. 704,830**
**Int. Cl. B65g** *1/16;* **A47f** *1/00, 3/02*
**U.S. Cl. 312—45** **13 Claims**



The can dispensing unit includes a plurality of shelves or tiers each of which supports a layer of cans for rolling movement thereon. The shelves are inclined toward the forward ends thereof and stop members on each of the shelves prevent the cans from rolling off of the front ends of the shelves. A gate can be opened or removed to permit sequential withdrawal of the cans of the uppermost layer following which the cans of the layers therebelow may be sequentially removed.

### 3,477,775
### SAFETY CONTAINER FOR TOXIC SUBSTANCES

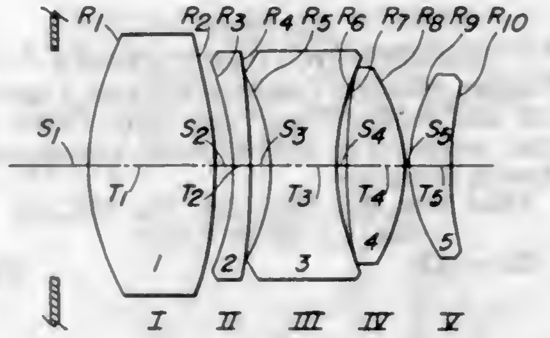
**John Scott Trent, P.O. Box 463, Atlanta, Ga. 30301**
**Filed July 21, 1967, Ser. No. 655,093**
**Int. Cl. A61b** *19/02;* **A61c** *19/02;* **E05b** *37/00*
**U.S. Cl. 312—209** **2 Claims**



A safety container for toxic substances, wherein the container is of unitary construction and includes a front wall pivotally connected along its upper edge to a top wall. A combination lock is supported in the pivotal front wall which cooperates with a protrusion supported by the bottom wall. The hinge between the front wall and the top wall is formed by a crease, or area of reduced thickness, which delineates the top wall from the front wall. The hinge is constructed so that the front wall is normally positioned in its open position unless locked in its closed position.

### 3,477,776
### ZOOM WIDE APERTURE LENS

**William H. Price, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**Filed July 1, 1966, Ser. No. 562,206**
**Int. Cl. G02b** *9/60*
**U.S. Cl. 350—184** **10 Claims**



A lens having at least four airspaced components comprising from front to rear a front biconvex positive component, a negative component and two positive components behind the negative component, wherein the adjacent surfaces of the rear two positive components comply with the following inequalities:

$$1<\frac{L}{R_9}<1+N_5$$

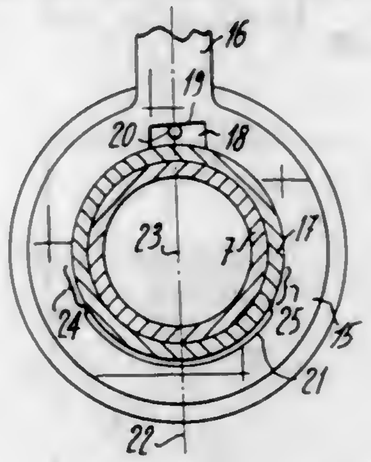
$$0.7<\frac{f_8}{f_9}<1.2$$

$$0.8F<f_8,f_9<1.3F$$

where L is the object distance to a surface from an axial original object, $R_9$ is the radius of curvature of the ninth surface, $N_5$ is the refractive index of the fifth element, $f_n$ is the focal length of the *n*th surface, and F is the focal length of the lens. In a preferred embodiment a negative meniscus component concave to the front is positioned between, and airspaced from, the front positive component and the negative component.

### 3,477,777
### LOCKING DEVICE FOR AN ADJUSTABLE OPTICAL ELEMENT

**Arnold Grosjean, Yverdon, Switzerland, assignor to Paillard S.A., Sainte-Croix, Vaud, Switzerland, a corporation of Switzerland**
**Filed Oct. 23, 1967, Ser. No. 677,345**
**Claims priority, application Switzerland, Nov. 3, 1966, 15,968/66**
**Int. Cl. G02b** *7/02*
**U.S. Cl. 350—255** **2 Claims**



A locking device for adjustable optical elements has a locking member in the form of an annular disc which can clamp the adjusting ring of the optical element against a wedging surface rigidly attached to the fixed part of the mounting, so as to retain it in a desired position of focusing. The adjusting ring has an outer bearing surface against which the disc can clamp by radial displacement, provided by means of a ramp on an edge of the disc arranged to wedge against the wedging surface. The clamping action of the disc may be exerted by two peripherally separated surfaces.

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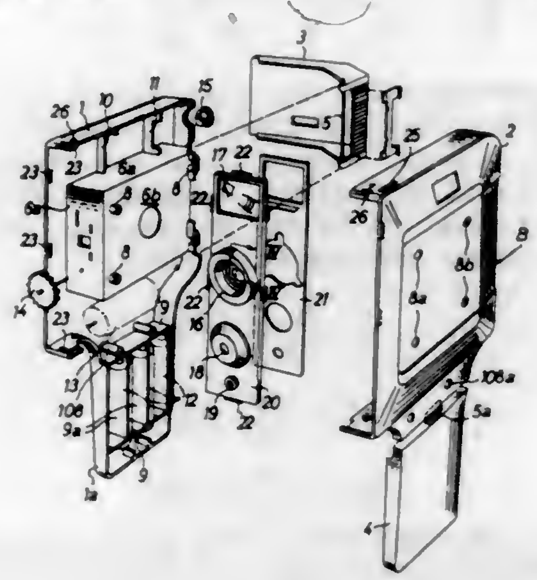
**3,477,778**
### MOTION PICTURE CAMERA
**Alfred Winkler, Munich, Friedrich Winkler, Unterhaching-Munich, and Anton Theer and Kurt Thate, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany**
**Filed Sept. 22, 1966, Ser. No. 581,348**
**Int. Cl. G03b** *17/02*
**U.S. Cl. 352—242** **22 Claims**



The flat box-shaped body of a motion picture camera for use with film cartridges consists mainly of two mirror symmetrical plastic shells, one of which is provided with a chamber for film cartridges, with a door for affording access to the interior of the chamber, and with internal compartments which receive the parts of the camera and are concealed by the other shell when the two shells are detachably secured to each other by threaded bolts. The shells are further provided with sections which define a grip handle and the shell define a tubular socket for the lens.

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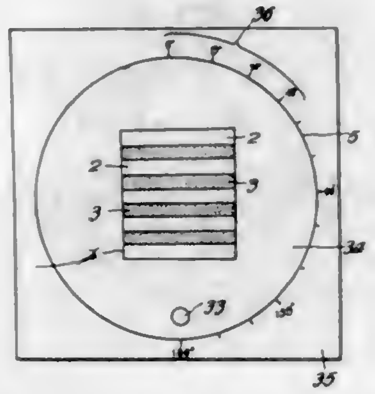
**3,477,779**
### VISUAL ACUITY TESTING EQUIPMENT
**Iwao Mitsuishi, 1-41 Kotake-cho, Nerima-ku, and Tadayoshi Akita, 436 Seijo-machi, Setagaya-ku, both of Tokyo, Japan**
**Filed Dec. 29, 1965, Ser. No. 517,368**
**Int. Cl. A61b** *3/02*
**U.S. Cl. 351—32** **4 Claims**



A method and apparatus are provided for measuring visual acuity by projecting a plurality of equal width light and dark parallel lines on a screen and varying the width of these lines to ascertain the minimum width line resolvable by the subject without changing the equality of width between the light and dark parallel lines. The apparatus for accomplishing this consists of a plurality of screen plates movably mounted to a set of rails with a second set of rails positioned above the first set, the screen plates also being mounted to the second set of rails via a plurality of rods, whereby when said second set of rails is moved away from said first set of rails, said screen plates are moved such that the width of light and dark parallel lines appearing on the screen is changed without changing the equality of width of the light and dark parallel lines.

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### ERRATUM

For Class 352—242 see:
Patent No. 3,477,778

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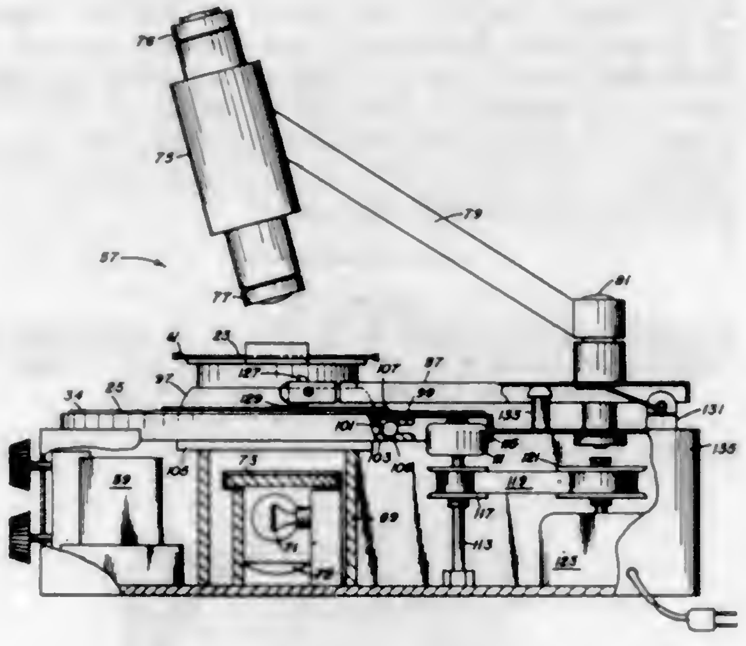
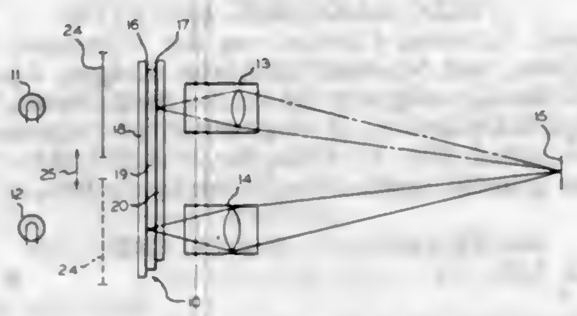
**3,477,780**
### AUDIO-VISUAL APPARATUS
**Morris Paull, Brighton, N.Y., assignor to Chemtrox Corporation, Rochester, N.Y., a corporation of New York**
**Filed Jan. 13, 1967, Ser. No. 609,122**
**Int. Cl. G03b** *31/06*
**U.S. Cl. 353—16** **14 Claims**



A separable slide-sound record device having magnets mounted in the record member for holding the slide and record together. The slide member has a visual area containing material to be observed visually and the sound record member has a sound track for producing audible information related to the visual material on the slide member. An audio-visual apparatus is also provided for viewing a scene on a slide while listening to a description of the scene. The audio-visual apparatus has a stationary stage, a turntable, a sound pick-up arm and optical and illumination components. The stationary stage provides a slide supporting surface and a window for the passage of light therethrough. The turntable has its axis coincident with the center of the window and rotates the record. The sound recorded on the record is reproduced by the pick-up arm and electrical apparatus. The illumination component is provided on one side of the stationary stage for passing light through the window. The optical component is provided on the other side of the stage for viewing a scene when a slide is in position on the stage.

**3,477,781**
### WEIGHING MACHINE WITH OPTICAL PROJECTION
**Pieter Jacob Six, Wassenaar, Netherlands, assignor to Maatschappij Van Berkel's Patent N.V., Rotterdam, Netherlands, a limited liability company of the Netherlands**
**Filed May 6, 1966, Ser. No. 548,180**
**Claims priority, application Germany, May 8, 1965, 1,272,015**
**Int. Cl. G03b** *21/14, 21/28, 23/02*
**U.S. Cl. 353—22** **10 Claims**



A weighing machine having an optical projection system which includes a readout device having a transparent scale with a plurality of superposed parallel spaced image planes of data through which illumination is projected. Objective lens apparatus projects data from the image planes onto a screen. A device coacts with the objective lens apparatus so that only one image is projected onto the screen at any one time while maintaining the distance between the transparent scale and objective lens apparatus fixed. In one embodiment, the device is a shutter, and in another embodiment the device is a plano-parallel glass plate.

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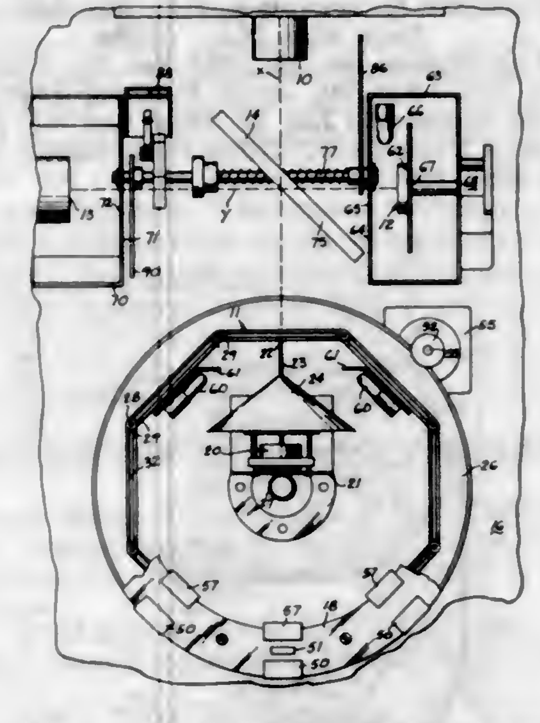
**3,477,782**
### INFORMATION DISPLAY APPARATUS
**Richard N. Sherwin, Coeur d'Alene, Idaho, assignor to Electronic Systems Development, Inc., a corporation of Washington.**
**Filed Feb. 21, 1967, Ser. No. 617,574**
**Int. Cl. G03b** *21/00, 21/26;* **G09f** *13/00*
**U.S. Cl. 353—40** **14 Claims**



An information display apparatus for a television circuit having an indicator, transparent indicator faces which are moved one at a time in front of the indicator and input monitoring circuits. Also provided is a control for selectively connecting the input monitoring circuits one at a time to the indicator and for moving the indicator faces in front of the indicator. Information may be displayed via a television camera on a closed circuit television network or by broadcasting. The information display exhibits several types of information fed sequentially to a single meter. As each type of information is directed to the meter, a transparent indicator face relating to the information is interposed between the camera and the meter. For alternate display, a timepiece or slides from a conventional projector can be displayed to the camera by a mirror surface.

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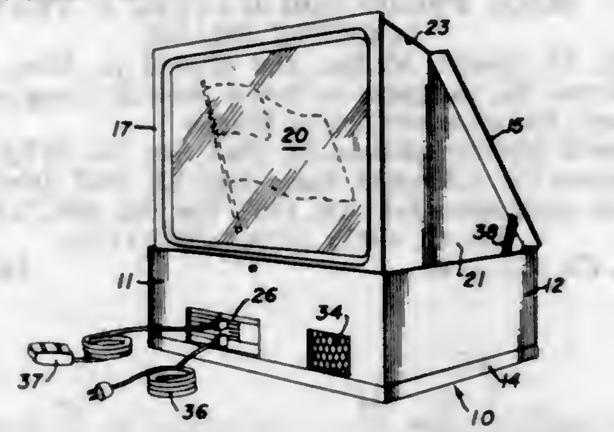
**3,477,783**
### PORTABLE SLIDE VIEWER
**Roy F. McCasland, 229 N. Maxwell at 3rd St., Tulia, Tex. 79088**
**Filed June 15, 1967, Ser. No. 646,374**
**Int. Cl. G03b** *21/28*
**U.S. Cl. 353—78** **2 Claims**



A picture viewer including a rectangular case, picture projector and translucent screen. The picture projector has a rearwardly directed lens which is positioned opposite an upwardly directed first mirror. A second larger mirror is provided on the inner surface of a hinged cover member. Projected images are reflected from the first and second mirrors onto the back of the screen. The screen is mounted in a hinged frame which is substantially equal to the width and length of the case. Hinged triangular side walls supports the hinged cover member when the case is in an open position. The hinged frame, sidewalls and cover member provide for quick and easy folding or expansion of the case. The folded case provides for easy carrying and storage.

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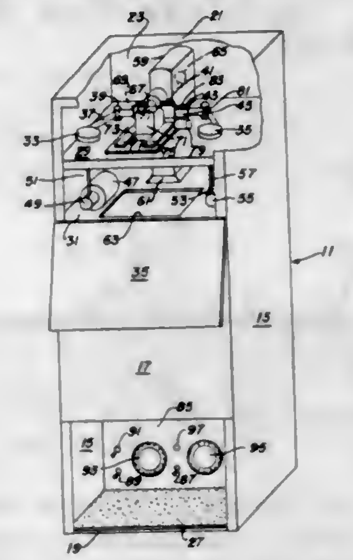
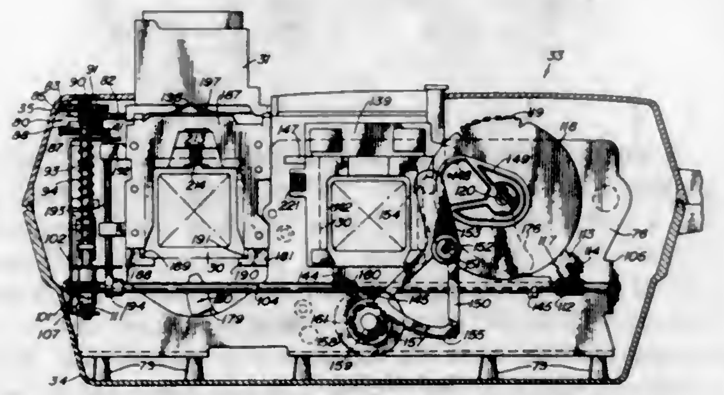
**3,477,784**
### RADIOGRAPHIC MICROFILM PROJECTION DEVICE
**Joseph R. Jones, Concord Mobile Home, Space 5, Galloway Drive, Concord, Calif. 94520**
**Filed Dec. 27, 1967, Ser. No. 693,980**
**Int. Cl. G03b** *21/28*
**U.S. Cl. 353—81** **5 Claims**



A radiographic microfilm projection device having a precision speed controlled film projector that utilizes rolled film. The rolled film passes through a film guide that accurately positions the film and provides an extremely smooth surface that minimizes film deterioration. A film contaminant remover is provided to remove contaminants from the film as it enters the film guide to prevent film deterioration and to minimize film viewing errors. The projection device provides for viewing on either a base screen or a front screen. Positioned behind the base screen are readily accessible electrical controls including means for compensating for varying microfilm densities. The projection device also includes tinting elements for simulating actual radiographs.

### 3,477,785
### SLIDE PROJECTOR HAVING A TRAY LOCKING FRAME

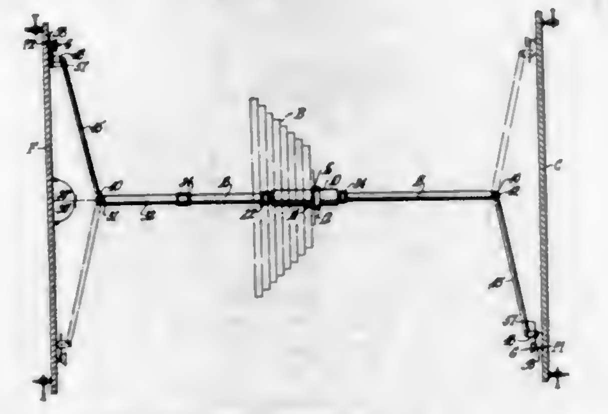
**Irwin M. Gould, Skokie, and Gerald A. Moe, Buffalo Grove, Ill., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois**
**Original application June 23, 1964, Ser. No. 377,232, now Patent No. 3,336,836, dated Aug. 22, 1967. Divided and this application June 16, 1967, Ser. No. 668,723**
**Int. Cl. G03b** *23/00;* **G09f** *11/30*
**U.S. Cl. 353—116** **15 Claims**



For a slide projector handling slides from an indexable slide tray, a tray locking frame arranged at the projection station and within the aperture opening is actuated in coordination with the indexing mechanism to locate and lock the tray after tray indexing. When a slide is in the projection station, the frame helps a slide presser device hold the slide during projection. The indexing mechanism, the frame, and the presser device are actuated in cyclical coordination.

### 3,477,786
### CAMERA ALIGNING INSTRUMENT

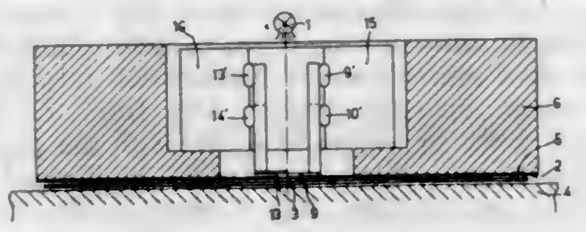
**Robert V. Howell, 9820 S. Main St.,**
**Los Angeles, Calif. 90003**
**Filed Mar. 21, 1967, Ser. No. 624,806**
**Int. Cl. G03b** *27/00, 27/52*
**U.S. Cl. 355—18** **10 Claims**



In order to align mutually parallel, the copy holder, film holder and lens of a reproducing camera, the lens is removed and an attachment collar inserted in its place. The collar carries a rotatable and axially adjustable telescopic boom with a radius arm hinged at each end and a tactile plunger gage or a stylus held by each radius arm in position to contact the respective copy holder and film holder surfaces so as to describe concentric circles thereon upon rotation of the boom. The angular dispositions of the two radius arms can be varied for various diametric circles or arcs, but preferably they are oppositely oriented, i.e., in the same axial plane.

### 3,477,787
### PIEZO ELECTRIC SHUTTER

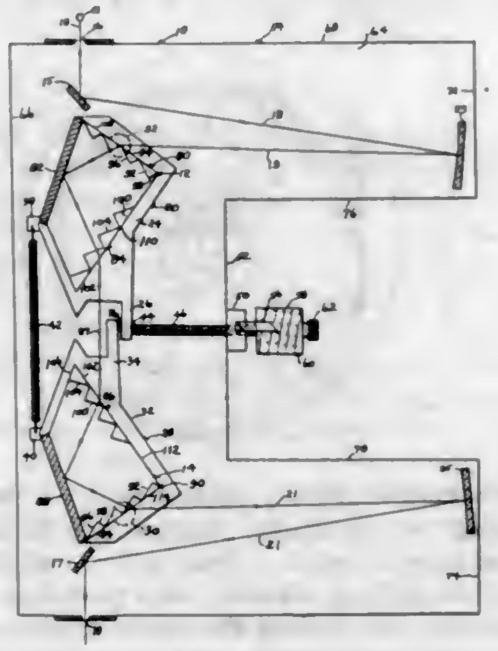
**Bernardus Antonius Carolus van der Wijngaart, Marius Quirijnen, and Marinus Gijsbertus Knigge, Apeldoorn, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, a corporation of Delaware**
**Filed May 27, 1966, Ser. No. 553,408**
**Claims priority, application Netherlands, June 4, 1965, 6507114**
**Int. Cl. G03b** *27/76, 9/02;* **G02f** *1/30*
**U.S. Cl. 355—71** **6 Claims**



An apparatus for illuminating a light-sensitive layer according to a given pattern. The pattern is produced by the controlled movement, in response to applied voltage, of piezo-electric elements having attached shutter members. The shutter members can be moved to various positions over an aperture thus forming an illumination pattern with the light passing through the aperture.

### 3,477,788
### QUADRUPLY-DISPERSIVE MONOCHROMATOR LIGHT-DISPERSING SYSTEM

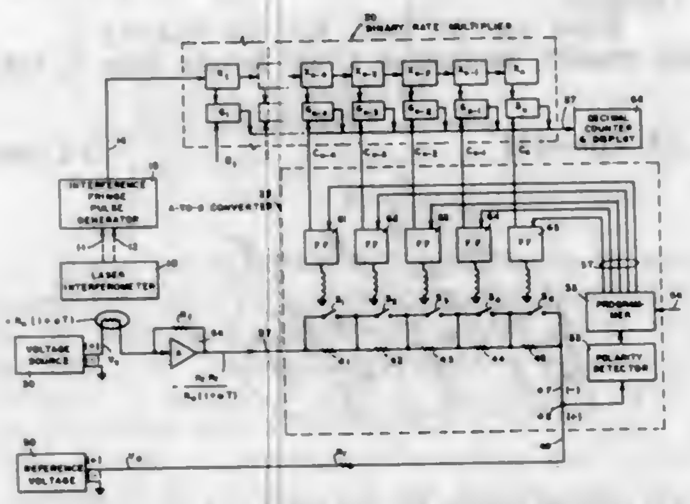
**Harry S. Newcomer, P.O. Box 340,**
**Cape May, N.J. 08204**
**Original application Jan. 20, 1964, Ser. No. 338,744, now Patent No. 3,428,391, dated Feb. 18, 1969. Divided and this application Jan. 22, 1968, Ser. No. 699,466**
**Int. Cl. G01j** *3/12;* **G02b** *5/04;* **G02f** *7/00*
**U.S. Cl. 356—100** **6 Claims**



This monochromator employs two paired prism-and-mirror array units **12** and **14** adjacent the entrance slit **16** and exit slit **18** respectively and effect quadruple dispersion of the incident light beam. Each such array is mounted on a rotary prism table pivoted upon a vertical pivot shaft. The two prism tables are adjusted simultaneously to rotate around their respective pivot shafts by means of a single micrometer adjusting screw. This invention dispenses with the need for the prior solid prisms known in the optical art as Pellin-Broca prisms and eliminates their long internal optical paths resulting in excessive light absorption, and also eliminates their massive forms with the correspondingly high cost of their prism material.

### 3,477,789
### TEMPERATURE-CONPENSATED GAUGING LASER INTERFEROMETER SYSTEM

**Charles J. Hubbard, Huntington, N.Y., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware**
**Filed Nov. 24, 1967, Ser. No. 685,559**
**Int. Cl. G01b** *9/02*
**U.S. Cl. 356—106** **7 Claims**

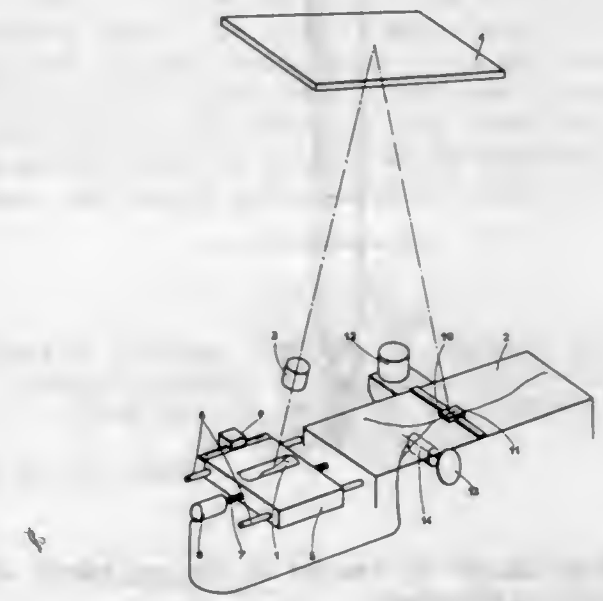


A direct-reading distance-measuring, or gauging, laser interferometer system having converter means responsive to a temperature-dependent analog voltage to automatically correct the distance read-out to account for the nonlinear change in wavelengh of the laser light that results from the change in temperature of the air in the light propagating path. The analog voltage is produced by temperature-dependent means which causes the voltage amplitude to change proportionally to the nonlinear change in wavelength of the laser light.

### 3,477,790
### APPARATUS FOR MEASURING COORDINATES OF POINTS

**Jean Pierre Baton, L'Hay-les-Roses, and Helenio Llop, Creteil, France, assignors to Societe d'Optique, Precision, Electronique et Mecanique, Paris, France, a company of France**
**Filed July 26, 1966, Ser. No. 568,004**
**Claims priority, application France, Aug. 5, 1965, 27,307**
**Int. Cl. G01b** *9/08*
**U.S. Cl. 356—164** **3 Claims**

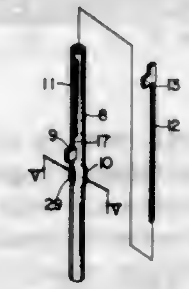
1. Apparatus for measuring the coordinates of points in a curve optically projected onto an elongated table, including a carriage movable in a straight line parallel to the length of the table and carrying the curve with the length of the curve parallel to the length of the table, means including a synchro-receiver receiving instructions from a synchro-transmitter situated beside the table controlling the movement of the carriage, an optical system projecting the curve onto the table at a fixed location whereby the projected curve traverses said fixed location as the carriage moves, a plate at said fixed location movable on the table in a direction perpendicular to the



movement of the projection of the curve during movements of the carriage, and means responsive to the movements of the carriage and plate for measuring said movements.

### 3,477,791
### MECHANICAL LEAD PENCIL

**Nagahiro Yamashita, Tokyo, Japan, assignor to Dai Nihon Bungu Kabushiki Kaisha (trading as The Japan Stationery Co., Ltd.), Tokyo, Japan, a corporate body of Japan**
**Filed Jan. 29, 1968, Ser. No. 701,434**
**Int. Cl. B43k** *21/10*
**U.S. Cl. 401—64** **1 Claim**

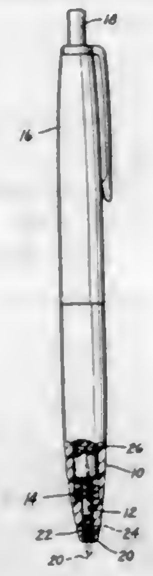


A mechanical lead pencil includes a device for entirely expelling the lead. It is capable of propelling a pushing rod which fits within a conveying pipe. Both the pushing rod and the conveying pipe are reciprocated by the rotation of a screw threaded pipe.

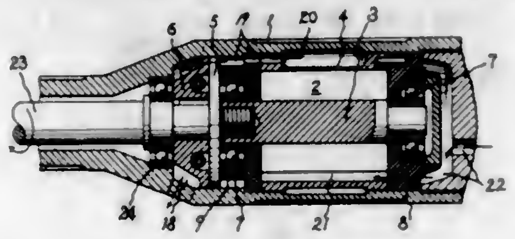
### 3,477,792
### RETRACTABLE MARKING PENS

**Sidney X. Shore, 29 Wren Drive,**
**Roslyn, N.Y. 11576**
**Filed Dec. 5, 1967, Ser. No. 688,162**
**Int. Cl. B43k** *5/16*
**U.S. Cl. 401—109** **6 Claims**

A retractable pen includes a cartridge having a bundle of filaments ending in a writing tuft. A tube contains the bundle of filaments. The tube is of one diameter where it is slidably guided in a bore at the writing end of the pen barrel. Adjacent the writing tuft, the tube has a reduced diameter portion whose length is several times its diameter. The construction accommodates spreading of writing fluid on the reduced-diameter portion of the tube without danger of transfer to the pen barrel when the writing tip is retracted.



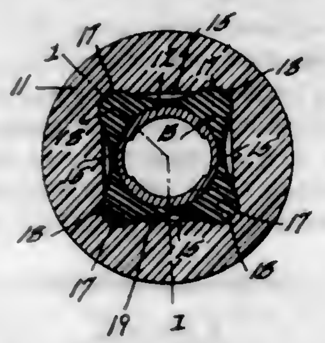
### 3,477,793
### PNEUMATIC ROTATIVE MACHINE
**Taisuke Kitagawa, 7–3 Fukatani-cho, Nishinomiya, Hyogo Prefecture, Japan**
**Continuation-in-part of application Ser. No. 562,565, July 5, 1966. This application Feb. 4, 1969, Ser. No. 805,087**
**Int. Cl. F01d** *15/06, 21/14, 21/12*
**U.S. Cl. 415—36** **7 Claims**



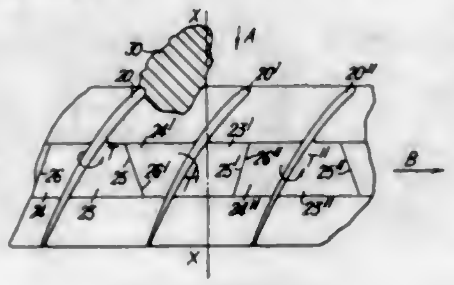
A pneumatically driven rotating machine, a rotor having blades thereon is rotatably positioned within a casing with the blades cooperating with the casing for rotation of the rotor when air is directed into the casing against the blades. A torque transmitting plate is mounted on a driving shaft extending from the rotor, and a torque receiving plate is mounted on a driven shaft adjacent the torque transmitting plate. Cutout portions are provided in the peripheries of said plates, and spring means couples the plate for transmitting torque between said plates. The cutouts are out of alignment when the torque transmitted is near zero and are in alignment when the torque transmitted is a maximum, so that the air passed through the machine is increased as the torque is increased and decreased as the torque is decreased.

### 3,477,794
### YIELDING BUSHING
**Douglas T. Abbott, Garden City, and William C. Thompson, Freeport, N.C., assignors to Columbian Bronze Corporation, Freeport, N.Y., a corporation of New York**
**Filed Feb. 14, 1967, Ser. No. 615,960**
**Int. Cl. B63h** *1/20;* **F16d** *3/14*
**U.S. Cl. 416—134** **6 Claims**

A yieldable bushing located between a drive shaft and a propeller hub surrounding the drive shaft and translating motion from the drive shaft to the hub. The bushing has arms that extend into the hub and spaces are provided between the arms so that sudden impacts on the propeller will result in momentary movement of the hub relative to the drive shaft until the spaces between the bushing arms have been filled.

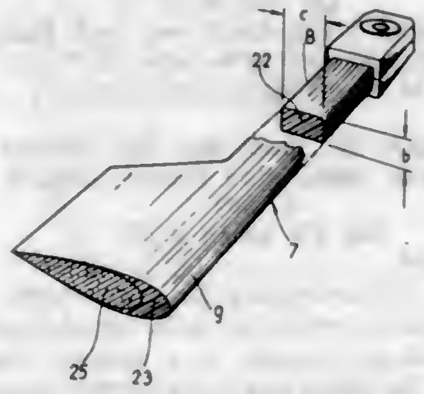


### 3,477,795
### BLADED ROTOR FOR A FLUID FLOW MACHINE
**Gilbert William Beesley, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company**
**Filed Apr. 25, 1968, Ser. No. 724,132**
**Claims priority, application Great Britain, May 1, 1967, 20,113/67**
**Int. Cl. F01d** *5/14*
**U.S. Cl. 416—191** **3 Claims**



A gas turbine engine bladed rotor has each blade provided intermediate its ends with two circumferentially projecting clapper portions which abut but which are not secured to respective clapper portions of the adjacent blades in planes which are inclined to the axis of rotation of the rotor in opposite senses.

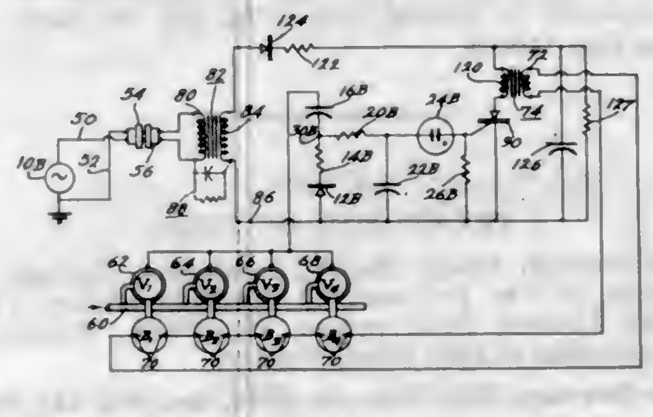
### 3,477,796
### HELICOPTER ROTOR CONSTRUCTION
**Emil Weiland, Hohenbrunn, near Munich, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, near Munich, Germany**
**Filed July 23, 1968, Ser. No. 746,871**
**Claims priority, application Germany, Sept. 14, 1967, 1,531,375**
**Int. Cl. B64c** *27/48, 27/76*
**U.S. Cl. 416—204** **8 Claims**



A helicopter rotor construction includes rotor blades which are secured to the rotor head in a manner permitting only pitch angle motion of the blades. The rotor head includes a plurality of radially extending sleeve members

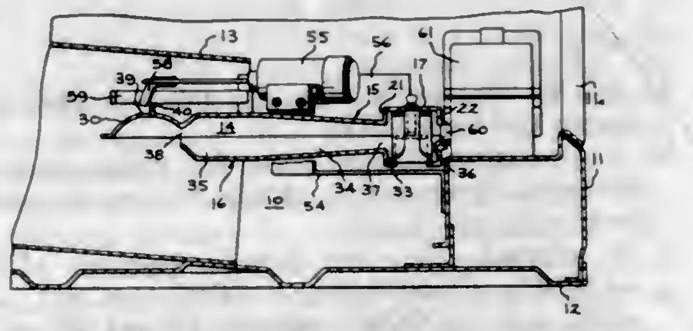
which form rigid rotatable supports for the blades and they are adjusted upwardly from the center of the rotor at a fixed cone angle. Each rotor blade is bending-soft in a swivel and in a shock direction and comprising a torsion-stiff neck section at its inner end of reduced dimension and a blade section of normal blade air foil configuration extending outwardly from the neck section. The blade section is formed with an interior core and a surrounding crescent-shaped support spar which is formed as a continuation of the material of the neck section.

### 3,477,797
### PROXIMITY-RESPONSIVE GAS BURNER IGNITER
**Robert J. Zielinski, Rochester, N.Y., and David P. Metzger, Berea, Ohio, assignors to American Gas Association, Inc., New York, N.Y., a corporation of New York**
**Filed Oct. 13, 1967, Ser. No. 675,120**
**Int. Cl. F23q** *7/12*
**U.S. Cl. 431—256** **3 Claims**



A system which responds to touching by an operator to generate pulses, for example to generate ignition pulses for gas burners. An alternating voltage source, such as the usual A.C. power line, having one output terminal grounded is connected with its ungrounded upper terminal in series with a rectifier and a "touch point" electrode. A series combination of a resistor and a capacitor is connected in parallel with the rectifier, and the glow lamp is connected in parallel with the capacitor. When an operator who is electrically connected to ground, as by standing on a floor or on the ground, touches the touch-point electrode, the circuit for the alternating voltage source is completed so that a series of rectified voltage pulses is produced across the rectifier. These successive voltage pulses cause the capacitor to charge up incrementally to a level at which the normally non-conductive glow lamp fires and discharges the capacitor. In this way repetitive current pulses are produced through the glow lamp at a rate lower than the frequency of the alternating source. The pulses through the glow lamp may be used to operate a spark igniter for a gas burner, and the touch point is preferably located on a manual gas-control valve for the burner, so that when an operator turns on the burner his touching of the valve control will generate the ignition sparks required to ignite the burner.

### 3,477,798
### GAS BURNER
**Clifford E. Erickson, Chicago, Ill., assignor to General Electric Company, a corporation of New York**
**Filed Oct. 30, 1967, Ser. No. 679,048**
**Int. Cl. F23q** *13/02*
**U.S. Cl. 431—263** **7 Claims**



A gas burner includes a flame spreader for expanding the flame. The spreader has a laterally disposed opening and a projection formed just upstream of the opening to create a low pressure area so a portion of the gas and air mixture flowing through the burner will flow through the lateral opening. An igniter is mounted to ignite the gas and air mixture by igniting the portion flowing through the opening. Also, a flame sensor or detector can be mounted to sense burning of the portion of the gas and air mixture flowing through the opening.

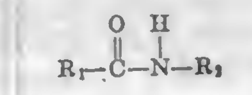
## CHEMICAL

### 3,477,799
### TREATMENT OF PLASTIC SURFACES
**Charles S. Garnett, Olean, N.Y., assignor of fifty percent to William Simmons, Hornell, N.Y.**
**No Drawing. Filed July 19, 1966, Ser. No. 566,224**
**Int. Cl. D06p** *5/00, 1/68*
**U.S. Cl. 8—4** **7 Claims**

A mixture of vinegar, aqueous ammonia, carbon tetrachloride and turpentine renders plastic surfaces dye-receptive.

### 3,477,800
### PROCESS FOR DYEING OR PRINTING OF POLYAMIDE FIBRES
**Donald Keighley Clough, Bolton, Bradford, England, assignor to Sandoz Ltd., also known as Sandoz A.G., Basel, Switzerland**
**No Drawing. Filed Oct. 7, 1965, Ser. No. 493,924**
**Claims priority, application Great Britain, Oct. 7, 1964, 40,889/64**
**Int. Cl. D06p** *1/38, 1/86, 3/24*
**U.S. Cl. 8—54** **11 Claims**

In dyeing polyamide fibers with acid dyes, an assistant of the formula



$$R_1-\overset{\overset{O}{\|}}{C}-\overset{\overset{H}{|}}{N}-R_2$$

is applied to the fibers before, during, or after contact in the dyebath.

### 3,477,801
### WATER SOLUBLE SYNTHETIC TANNING AGENT FOR PRODUCING SHRUNKEN GRAIN LEATHER
**Stanley A. Lipowski, Livingston, N.J., assignor to Diamond Shamrock Corporation, a corporation of Delaware**
**No Drawing. Original application Sept. 20, 1966, Ser. No. 580,616, now Patent No. 3,423,452, dated Jan. 21, 1969. Divided and this application Apr. 8, 1968, Ser. No. 729,858**
**Int. Cl. C14c** *3/18*
**U.S. Cl. 8—94.24** **4 Claims**

Shrunken grain leather is produced by introducing an aqueous solution of a water soluble synthetic tanning agent in substantially monomeric form obtained by reaction of a dihydroxy diphenyl sulfone, formaldehyde and naphthalene sulfonic acid in aqueous solution into a drum containing a skin and water, and thereafter drumming the skin with the tanning agent until the agent is exhausted into the skin. Animal skins, pickled skins, partially tanned skins, partially dechromed skins and dechromed skins can be used.

### 3,477,802

## MODIFICATION OF CELLULOSE, POLYVINYL ALCOHOL AND STARCH WITH COMPOUNDS CHARACTERIZED BY ETHYLENE RADICALS HAVING AN ELECTRON ATTRACTING GROUP WHICH STABILIZES CARBANIONS ON ONE CARBON ATOM THEREOF AND AN ALKOXY OR HYDROXY GROUP ON THE OTHER

**Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware**

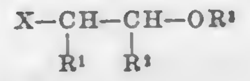
**No Drawing. Filed Mar. 19, 1963, Ser. No. 266,167**

**Int. Cl. D06m** *1/06*

**U.S. Cl. 8—115.5** **25 Claims**

1. A process for the chemical modification of polymers containing hydroxyl groups selected from the group consisting of cellulosic materials, polyvinyl alcohol and starch comprising treating said polymers with a reagent consisting essentially of a compound selected from the group consisting of

(a)



$$X-\underset{R^1}{\underset{|}{CH}}-\underset{R^3}{\underset{|}{CH}}-OR^2$$

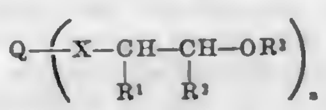
wherein:

R¹ and R³ are selected from the group consisting of hydrogen and lower alkyl,

R² is a member selected from the group consisting of hydrogen, lower alkyl, chloro or cyano, substituted lower alkyl and X, and

X is selected from the group consisting of —CN, $—CONH_2$, $CONHR^4R^5$, $—COR^6$, —CHO, $—NO_2$, $—CF_3$ and $—COOR^7$; wherein $R^4$ and $R^5$ are members selected from the group consisting of hydrogen and lower alkyl, $R^6$ is lower alkyl and $R^7$ is lower alkyl;

(b)



$$Q\!\left(X-\underset{R^1}{\underset{|}{CH}}-\underset{R^3}{\underset{|}{CH}}-OR^2\right)_n$$

wherein:

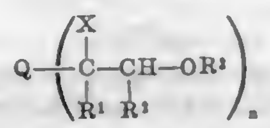
R¹, R² and R³ have the same meaning as above,

Q is a lower alkylene radical,

X is an electron-attracting group which stabilizes carbanions, and is linked to the remainder of the compound through a bond selected from the group consisting of carbon-carbon and carbon-nitrogen bonds, and

*n* is a whole number equal to the valence of Q and cyclic trimers thereof:

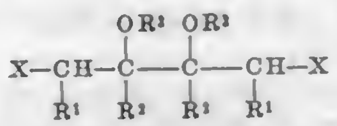
(c)



$$Q\!\left(\overset{X}{\overset{|}{\underset{R^1}{\underset{|}{C}}}}-\underset{R^3}{\underset{|}{CH}}-OR^2\right)_n$$

wherein:

Q, R¹, F², R³ and X and *n* have the same definition as in Formula (b) above; and



$$X-\underset{R^1}{\underset{|}{CH}}-\overset{OR^2}{\overset{|}{\underset{R^3}{\underset{|}{C}}}}-\overset{OR^2}{\overset{|}{\underset{R^3}{\underset{|}{C}}}}-\underset{R^1}{\underset{|}{CH}}-X$$

wherein:

R², R³ and X have the same definition as in Formula (b) above, and

R¹ is a member selected from the group consisting of hydrogen, lower alkyl, and X; and

heating said treated polymers in the presence of an alkaline catalyst to chemically modify said polymers.

### 3,477,803

## SHRINKPROOFING OF WOOL TOP BY USING PROCESS OF INTERFACIAL POLYMERIZATION

**Willie Fong, Richmond, William L. Wasley, Berkeley, Robert E. Whitfield, Pleasant Hill, and Lowell A. Miller, Walnut Creek, Calif., assignors to the United States of America as represented by the Secretary of Agriculture**

**Filed Aug. 11, 1964, Ser. No. 388,962**

**The portion of the term of the patent subsequent to Sept. 9, 1986, has been disclaimed**

**Int. Cl. D06m** *3/04, 3/10, 13/54*

**U.S. Cl. 8—127.6** **5 Claims**

Wool fibers in pre-yarn condition is subjected to interfacial polymerization process comprising treatment with a highly alkaline aqueous solution of a monomeric diamine followed by treatment with a water immiscible solution of a monomeric bifunctional organic compound capable of forming a polymer with the diamine. The fibers may subsequently be formed into yarns and the yarns converted into fabrics.

### 3,477,804

## TREATMENT OF WOOL

**Arno Rudolph Friedl, Hordle, Lymington, England, assignor to The International Synthetic Rubber Company Limited, Southampton, Hampshire, England, a corporation of the United Kingdom**

**No Drawing. Filed Apr. 26, 1966, Ser. No. 545,300**

**Int. Cl. D06m** *15/28*

**U.S. Cl. 8—128** **14 Claims**

A process for the treatment of wool to improve shrinking and felting characteristics comprising contacting the wool with a solution of a carboxylated rubbery polymer of a conjugated diene selected from the group consisting of butadiene, isoprene and dimethyl butadiene, to obtain a takeup not exceeding 5% of the weight of the dry wool, of carboxylated polymer, with the proviso that if less than 5% of the available double bonds of the polymer have been modified to give groupings containing carboxyl radicals, at least 0.1% by weight based on the weight of the polymer, of a dithiol is present in the solution.

### 3,477,805

## PROCESS FOR MODIFYING KERATIN FIBERS

**Dmitry M. Gagarine and Emile E. Habib, Spartanburg, and Kermit S. La Fleur, Clemson, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware**

**No Drawing. Continuation of application Ser. No. 111,447, May 22, 1961. This application Aug. 6, 1965, Ser. No. 477,958**

**Int. Cl. D06m** *3/06, 3/08, 3/12*

**U.S. Cl. 8—128** **12 Claims**

1. A process for modifying the characteristics of a fabric comprising keratin fibers including the steps of (1) treating said fabric with a reducing agent capable of rupturing the cystine disulfide linkages in the keratin fibers and from about 3 to about 50% by weight of a swelling agent; (2) drying said fabric at an elevated temperature to a moisture level of less than about 30% by weight, said swelling agent being substantially retained in said fabric; and (3) pressing said fabric at a moisture level of less than about 30% by weight, to set a configuration therein which is substantially durable to subsequent wear and wetting.

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### 3,477,806

## TREATMENT OF CELLULOSE TRIACETATE WITH SELECTED COMPOUNDS TO INTRODUCE STRETCH PROPERTIES

**William C. Sturkey, Charlotte, N.C., assignor to Celanese Corporation, a corporation of Delaware**

**No Drawing. Filed Oct. 15, 1965, Ser. No. 496,666**

**Int. Cl. D06m** *5/14*

**U.S. Cl. 8—131** **6 Claims**

Textile materials having improved stretch properties are produced by treating textile material comprising cellulose organic acid esters having less than 0.29 free hydroxyl groups per anhydroglucose unit with a compound selected from the group consisting of beta-butoxyethyl acetate, acetyl triethyl citrate and benzyl alcohol.

### 3,477,807

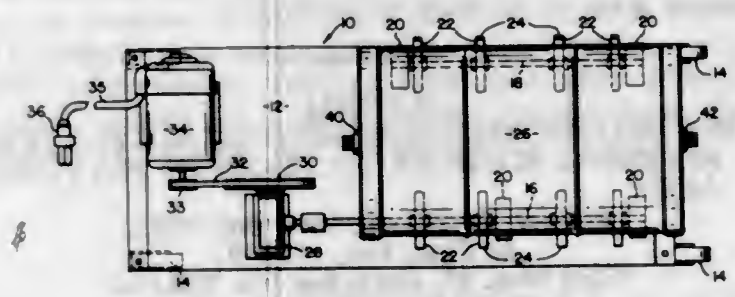
## METHOD AND APPARATUS FOR STERILIZING

**Robert R. Ernst, Rochester, N.Y., assignor to Sybron Corporation, a corporation of New York**

**Filed Mar. 14, 1967, Ser. No. 623,128**

**Int. Cl. A61l** *1/00, 9/00*

**U.S. Cl. 21—58** **13 Claims**



Particulate matter is subjected to gaseous sterilization while being tumbled in a rotating drum **26** inside of a sterilizing vessel (not shown). The drum **26** is rotatably mounted on a mobile carriage **10** which is adapted to be received in the sterilizer.

### 3,477,808

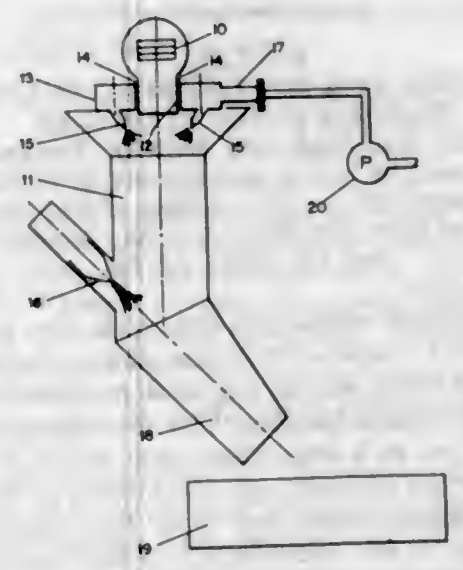
## PROCESS FOR THE PRODUCTION OF DENSE SODIUM CARBONATE FROM TRONA AND APPARATUS THEREFOR

**Henry D. Hellmers, Westend, Calif., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware**

**Filed Apr. 13, 1966, Ser. No. 542,394**

**Int. Cl. C01d** *1/22;* **C01b** *31/24*

**U.S. Cl. 23—63** **4 Claims**



Apparatus for monohydrating hot crude sodium carbonate having a delivery conduit for the delivery of hot crude sodium carbonate by gravity to a dissolver unit and a spray collar so constructed and positioned about the delivery conduit so as to form a small opening therebetween. The apparatus also has a plurality of spray nozzle circumferentially positioned on the underside of the spray collar and directed downwardly so as to spray a stream of hot crude sodium carbonate leaving the delivery conduit with a spray of aqueous solution of sodium carbonate. The solution of sodium carbonate is sprayed with sufficient force so that a down-draft of air is drawing through the opening thus prohibiting steam produced in the dissolution of hot crude sodium carbonate from contacting the delivery conduit. The process covers the delivering and spraying steps in the operation of the above apparatus.

### 3,477,809

## KAOLIN TREATMENT

**Wayne M. Bundy, Westfield, and Joseph P. Berberich, Rahway, N.J., assignors to Georgia Kaolin Company, Elizabeth, N.J.**

**No Drawing. Filed Dec. 30, 1966, Ser. No. 606,034**

**Int. Cl. C01b** *33/26*

**U.S. Cl. 23—110** **5 Claims**

A method is provided for improving the whiteness, brightness and printability of kaolinite by the steps of forming a slurry of degritted crude clay, bleaching the clay with hydrosulfite bleach, attrition grinding the bleached clay, fractionating the ground clay to recover a fraction having more than 90% below 2$\mu$ spherical dimeter, redispersing and selectively flocculating the recovered fraction at an alkaline pH, recovering the flocculated portion, treating the recovered flocculated portion with a peroxide bleaching agent at an elevated temperature, and drying the peroxide bleached fraction at an elevated temperature to provide a kaolinite product.

### 3,477,810

## SULFUR DEW POINT MEASUREMENT AND APPARATUS THEREFOR

**John W. Palm and Roscoe F. Vandaveer, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware**

**Filed Oct. 9, 1967, Ser. No. 673,668**

**Int. Cl. C01b** *17/06*

**U.S. Cl. 23—225** **5 Claims**

This invention provides a method and apparatus for maintaining the feed gas to a catalytic sulfur recovery unit near the sulfur dew point. The latter may be periodically or continuously measured by means of a device of novel design employing two temperature sensing means, one of which is entirely enclosed and out of contact with the flowing gases, whereas the temperature sensing portion of the other is in contact with the feed gas and is positioned a short distance below the body of the device. When sulfur dew point conditions are reached liquid sulfur bridges across from the bottom of the device to the end portion of the exterior temperature sensing means causing a sharp drop in recorded temperature denoting the sulfur dew point.

### 3,477,811

## METHOD OF CRUCIBLE-FREE ZONE MELTING CRYSTALLINE RODS, ESPECIALLY OF SEMICONDUCTIVE MATERIAL

**Wolfgang Keller, Pretzfeld, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany**

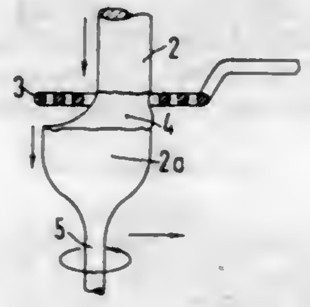
**Filed July 11, 1966, Ser. No. 564,118**

**Claims priority, application Germany, July 10, 1965, S 98,115**

**Int. Cl. B01j** *17/10, 17/20*

**U.S. Cl. 23—301** **5 Claims**

A method of zone melting a semiconductor rod wherein the rod is supported vertically by end holders located in the vertical axis of the rod, and a molten zone is formed in the rod by an annular heating device surrounding and spaced from the rod and being relatively displaced along the rod axis, whereby the molten zone is passed along the rod in the direction away from one of the end holders which one is meanwhile rotated, the end holders being relatively moved in an axial direction with respect to one another, includes reciprocating the one end holder transversely to the vertical axis of the rod and the annular heating device so as to alternately draw the molten zone toward the periphery of the rod portion located between the one end holder and the molten zone at most over a distance limited by the propensity of the molten material to drip from the molten zone, and withdraw the molten zone from the periphery of the rod portion.



### 3,477,812
### PROCESS FOR PREPARING METAL FLUORIDE SINGLE CRYSTALS

**James O. Huml and Gilbert S. Layne, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 507,974, Nov. 15, 1965. This application Apr. 27, 1967, Ser. No. 634,112**
**Int. Cl. C01f** *7/50*
**U.S. Cl. 23—88** **2 Claims**

A process for producing aluminum nitride and metal fluoride single crystals either separately or simultaneously. The process comprises contacting a subvalent aluminum compound, i.e., where Al exhibits a valence of less than 3, in a gaseous state with a nitriding agent in a gaseous state while providing an inert surface on which the crystals can form. To prepare metal fluoride crystals, a subvalent aluminum fluoride compound in a gaseous state is contacted with a metal in a gaseous state under an inert atmosphere and providing an inert surface on which the metal fluoride crystals can form. To form the two crystals simultaneously the latter procedure is modified by carrying out the reaction in a nitriding atmosphere.

### 3,477,813
### REMOVAL OF ALUMINUM FROM AN ALPHA OLEFIN PRODUCT STREAM

**Herbert B. Fernald, Glenshaw, and Eugene F. Lynch, Oakmont, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware**
**Filed June 22, 1967, Ser. No. 648,090**
**Int. Cl. C01f** *7/36, 7/02*
**U.S. Cl. 23—143** **12 Claims**

When ethylene is polymerized to alpha olefins in the presence of an organo-aluminum catalyst, the aluminum catalyst is present in the normally liquid alpha olefin product and must be removed prior to distillation of said product. This removal is accomplished in two zones. Aqueous caustic solution is added to the alpha olefin product containing organo-aluminum catalyst to produce an organic phase and an aqueous phase in a first zone. Although water alone would have reacted with the catalytic aluminum to readily precipitate aluminum hydroxide, said aluminum hydroxide is insoluble in both phases and would deposit in the first zone chamber and in conduits associated therewith. The use of aqueous caustic prevents precipitation by forming sodium aluminate which is soluble in the aqueous phase. However, since some of the aqueous phase in the first zone emulsifies with the organic phase therein, some sodium aluminate together with caustic enters the organic phase with the emulsified water. This sodium aluminate and caustic is washed from the organic phase by means of water in a second zone. Aqueous effluent streams are then withdrawn from said first and second zones and if said streams are mixed the soluble aluminum in the mixed aqueous effluent streams can be precipitated as aluminum hydroxide in a zone remote from said first and second zones by the addition of acid thereto. However, the settling rate of aluminum hydroxide from said mixed effluent streams is very slow. A remarkable and unexpected increase in the settling rate of the aluminum hydroxide is realized by admixing only a minor proportion of the aqueous effluent stream from the second zone with the entire aqueous effluent stream from the first zone prior to the acid neutralization step and then adding the remainder of the aqueous effluent stream from the second zone to the neutralized stream.

### 3,477,814
### PROCESS FOR THE TREATMENT OF ALKYLATION REFINING SLUDGES TO RECOVER SULFURIC ACID

**Harold W. Wilson, P.O. Box 9851,**
**El Paso, Tex. 79989**
**Filed Mar. 23, 1966, Ser. No. 536,866**
**Int. Cl. C01b** *17/90;* **C10g** *17/02*
**U.S. Cl. 23—173** **4 Claims**

A process for the recovery of substantially organic matter-free sulfuric acid from alkylation sludges resulting from the use of sulfuric acid in a hydrocarbon refining process which comprises heating the liquid sludge at atmospheric pressure to a temperature below a charring temperature, holding the sludge at such temperature until the liquid becomes "polymerized" with attendant production of a soft, solid gelatinous mass holding entrapped uncombined sulfuric acid therein, heating the gelatinous mass at a temperature generally above that utilized to bring about gelation to effect further polymerization of the organic matter present, diluting and mixing the so-treated gelatinous mass with water, separating the acid insoluble-acid unreactable portions of the aqueous system from the sulfuric acid and simultaneously concentrating and further purifying the recovered acid by heating in the presence of an oxidant.

### 3,477,815
### PROCESS FOR RECOVERING SULFUR DIOXIDE FROM FLUE GAS

**Leo A. Miller, Lakeland, and Jack D. Terrana, Tampa, Fla., assignors, by mesne assignments, to Wellman-Lord, Inc., Lakeland, Fla., a corporation of Florida**
**Filed Nov. 15, 1966, Ser. No. 594,432**
**Int. Cl. C01b** *17/56*
**U.S. Cl. 23—178** **11 Claims**

A sulfur dioxide-containing gas, such as a flue gas, is scrubbed with an aqueous solution of an alkali metal or alkaline earth metal sulfite, e.g. sodium sulfite, to absorb the $SO_2$ an form the bisulfite. The spent absorbing solution is conveyed to a desorption zone where it is heated to effect reversion of some, e.g. 50 to 70%, of the bisulfite back to the sulfite, water and $SO_2$. That portion of the bisulfite which is not decomposed in the heating step is reacted with the corresponding metal carbonate to yield more metal sulfite, water and carbon dioxide. The resulting metal sulfite solution is then recycled to the absorption zone.

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### 3,477,816
### METHOD AND APPARATUS FOR THE PRODUCTION OF CARBON BLACK

**Thomas L. Shepherd, Essex Fells, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed Oct. 24, 1965, Ser. No. 504,776**
**Int. Cl. C09c** *1/50*
**U.S. Cl. 23—209.4** **11 Claims**

This invention relates to an improved system for manufacturing carbon black in which a central nozzle, which emits a hydrocarbon spray, is surrounded by a plurality of auxiliary nozzles from which high velocity oxy-fuel flames are emitted.

### 3,477,817
### DIAGNOSTIC TEST FOR PRESENCE OF GALACTOSE

**Ralph J. De Falco, 297 Rolling Knolls Way,**
**Somerville, N.J. 08876**
**No Drawing. Filed Apr. 14 1966, Ser. No. 542,476**
**Int. Cl. G01n** *33/16*
**U.S. Cl. 23—230** **10 Claims**

Diagnostic aid, composition, and process for determining the presence of galactose and polysaccharides thereof by admixing an aqueous solution of the sample, a dispersed suspension of rabbit red blood cells, and a soybean extract, whereby the absence of agglutination shows the presence of galactose and polysaccharides thereof.

### 3,477,818
### METHOD FOR THE DETERMINATION OF THE BILIRUBIN CONTENT OF BODY LIQUIDS

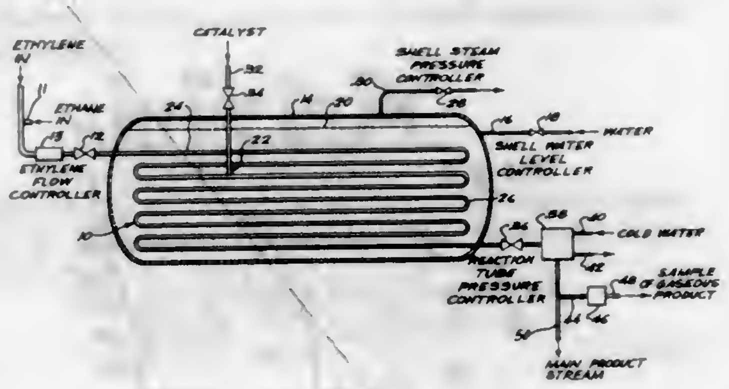
**Rudolf Fried, Grunwald, near Munich, and Joachim Hoeflmayr, Munich, Germany, assignors to Dr. Heinz Haury Chemische Fabrik, Munich, Germany**
**No Drawing. Filed Feb. 14, 1967, Ser. No. 615,933**
**Claims priority, application Germany, Mar. 31, 1966, H 58,983**
**Int. Cl. G01n** *31/22*
**U.S. Cl. 23—230** **3 Claims**

A new standard or comparison solution to be used in the photometric determination of the bilirubin content in body liquids such as serum and urine. According to the prior art, such standard solutions were extremely unstable while the standard solution of the present invention has a long life and is easily prepared. The standard or comparison solution to be used in the photometric determination of bilirubin is an aqueous solution of Evan's Blue of 0.2 to 1.0 mg. percent strength, the solution having a pH value of about between 5.5 to 7.5. The novel standard permits bilirubin determination in the more sensitive alkaline range.

### 3,477,819
### METHOD FOR MEASURING EXTENT OF CONVERSION IN A CHEMICAL PROCESS

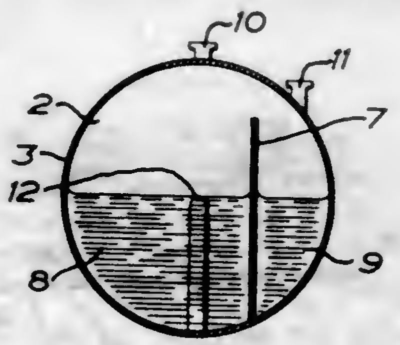
**Herbert B. Fernald and William Gall, Glenshaw, and Alfred N. Kresge, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware**
**Filed Nov. 9, 1966, Ser. No. 593,072**
**Int. Cl. G01n** *27/62, 31/08*
**U.S. Cl. 23—232** **22 Claims**

A method for determining the extent of conversion of a charge gaseous reactant stream to a product which is partially gaseous and partially liquid wherein the product contains unreacted reactant comprising employing a gaseous reactant stream containing an inert gaseous material which has substantially the same solubility in the liquid product as does the gaseous reactant and utilizing the ratio of gaseous reactant to said inert gaseous material in a sample of the gaseous phase of the effluent stream to determine extent of conversion of the gaseous reactant.



### 3,477,820
### MINIATURIZED REACTION VESSEL FOR MIXING SMALL QUANTITIES OF LIQUIDS WITH A MINIMUM AMOUNT OF THERMAL DISTURBANCE

**Bertil Ingemar Wadsö, Lund, Sweden, assignor to LKB-Produkter AB, Fredforsstigen, Mariehall, Sweden, a corporation of Sweden**
**Filed June 13, 1966, Ser. No. 557,091**
**Int. Cl. B01f** *9/00;* **G01k** *17/00*
**U.S. Cl. 23—253** **7 Claims**

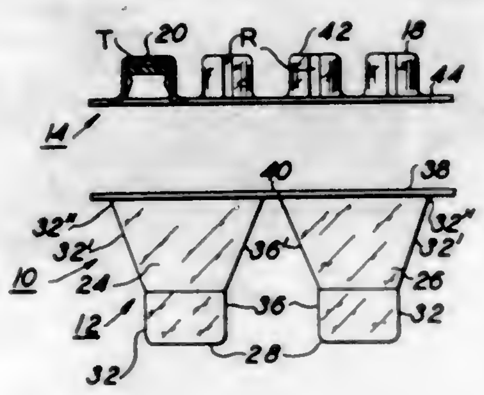


An apparatus for mixing a first fluid and a second fluid with a minimum amount of thermal disturbance has a vessel defined by two substantially flat side walls and a circumferential wall spacing and joining the side walls. The vessel is mounted for turning about a substantially horizontal axis perpendicular to the side walls. A partition is provided in the vessel for dividing the space within the vessel into a relatively large compartment initially containing the first fluid and a relatively small compartment initially containing the second fluid and acting as a bucket during the turning of the vessel in one direction for first pouring the second fluid into the first fluid, then dipping into the combined fluids to entrap air, and then permitting the air entrapped therein to escape therefrom by bubbling up through the combined fluids to mix them.

### 3,477,821
### CHEMICAL PACKAGE

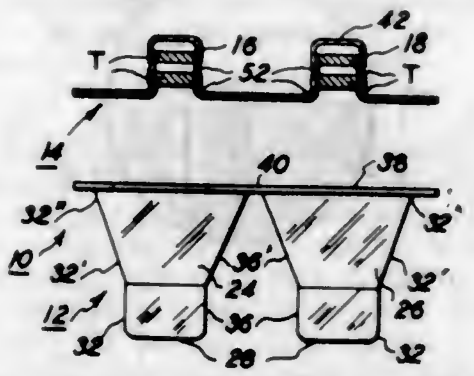
**Donald Arthur Hamilton, Pasadena, Calif., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**
**Filed Dec. 26, 1967, Ser. No. 693,400**
**Int. Cl. B01l** *3/00*
**U.S. Cl. 23—253** **21 Claims**

Disposable reaction container comprising a lower section having at least one compartment for the admixing of materials added thereto, an upper section securely mounted on said lower section and having a plurality of separate reagent storage chambers adjacent each of said admixing compartments, and restraining means to prevent the premature movement of prepackaged reagents from said plurality of storage chambers, said restraining means comprising at least one rib extending into each of said storage compartments and adapted to hold a reagent tablet securely in place therein.



### 3,477,822
### CHEMICAL PACKAGE

**Donald A. Hamilton, Pasadena, Calif., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**
**Filed Dec. 26, 1967, Ser. No. 693,629**
**Int. Cl. B01l** *3/00*
**U.S. Cl. 23—253** **21 Claims**

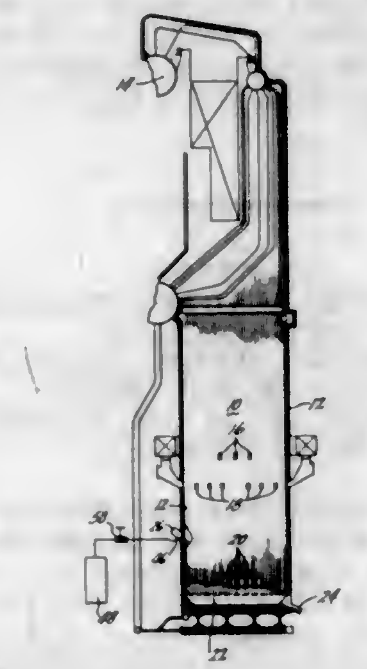


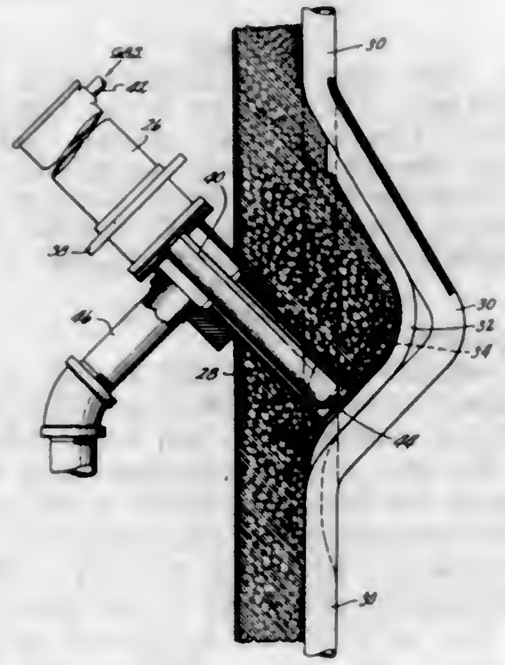
Disposable reaction container comprising a lower section having at least one compartment for the admixing of materials added thereto, an upper section securely mounted on said lower section and having a single reagent storage chamber adjacent each of said admixing compartments, and restraining means to prevent the premature movement of tableted reagents from each of said storage chambers, said restraining means comprising a plurality of ribs or detents which encircle each storage chamber and section each chamber into a plurality of storage zones, each zone adapted for the storage of at least one reagent tablet.

### 3,477,823
### CHEMICAL RECOVERY UNIT

**Jay H. Frelday, West Hartford, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware**
**Filed Dec. 30, 1964, Ser. No. 422,197**
**Int. Cl. B01j** *6/00;* **F27** *3/10*
**U.S. Cl. 23—277** **6 Claims**

**1.** A chemical recovery unit utilizing black liquor as a fuel and operating with a reducing atmosphere and including in combination a camera mounted in the wall of the unit close to the furnace hearth for viewing the smelt bed during operation of the unit, a passageway in said wall directed toward the smelt bed and with which said camera is associated, the region of the wall at the location of said passageway formed with a protrusion extending inwardly of the furnace which protrusion is provided with a region directed downwardly and outwardly toward the wall at the location of the inner end of said passageway, and means for introducing a non-combustion supporting gas through the passageway.

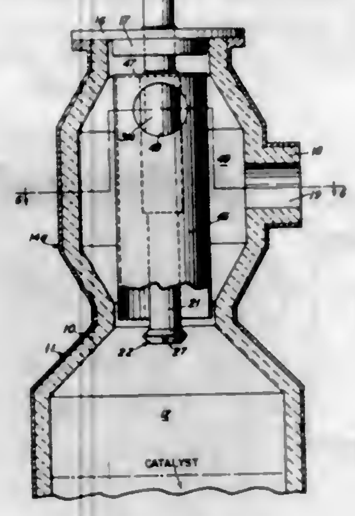




### 3,477,824
### BURNER AND APPARATUS FOR REFORMING HYDROCARBONS

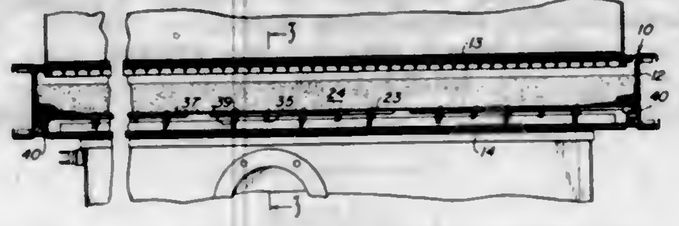
**Robert D. Reed, Tulsa, Okla., assignor to John Zink Company, Tulsa, Okla., a corporation of Delaware**
**Filed Dec. 15, 1966, Ser. No. 602,063**
**Int. Cl. B01j** *9/00;* **F23d** *15/00*
**U.S. Cl. 23—277** **3 Claims**

Apparatus for the reformation of the hydrocarbons wherein the effluent from a Primary Reformer is guided into impact engagement with structure which serves to protect a portion of the apparatus from the heat of the effluent and structure is provided for insuring quiescent flow of the effluent into the presence of the burner where additional hydrogen is produced.



### 3,477,825
### SUPPORT ASSEMBLY FOR A CATALYTIC GAS GENERATOR

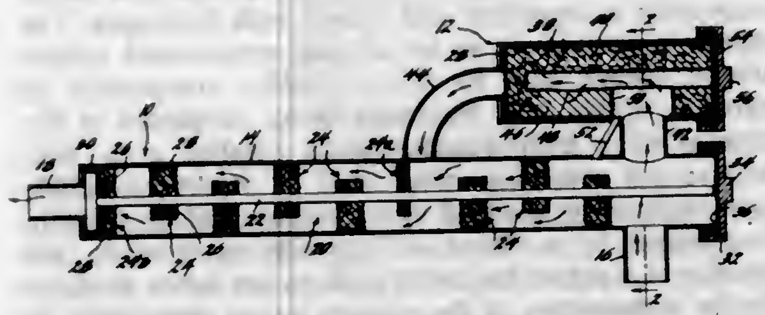
**James W. Lannert, St. Joseph, and James J. Anderson, Stevensville, Mich., assignors to Whirlpool Corporation, a corporation of Delaware**
**Filed Jan. 4, 1965, Ser. No. 422,973**
**Int. Cl. B01j** *7/00, 9/02*
**U.S. Cl. 23—281** **2 Claims**



A reactor for producing an atmosphere rich in carbon dioxide by the catalytic combustion of a fuel in which the catalyst is retained on a screen that is reinforced by stiffener rod members and with these rod members and the screen and the catalyst bed thereon being supported by spaced support rod members.

### 3,477,826
### ACOUSTIC AND PURIFYING EXHAUST MUFFLER

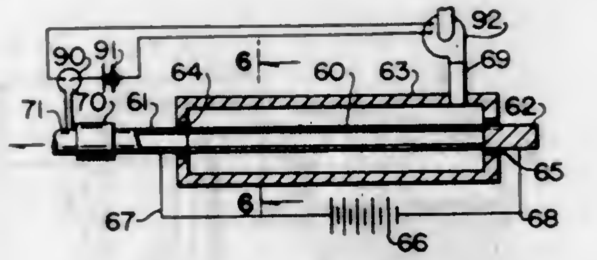
**Ralph H. Moyer, 2301 Huckleberry Lane, Abilene, Tex. 79603, and Grady E. Taylor, 4618 Don Juan, Abilene, Tex. 79605**
**Filed Jan. 28, 1966, Ser. No. 523,769**
**Int. Cl. B01j** *9/02;* **B01d** *19/00*
**U.S. Cl. 23—288** **8 Claims**



The invention disclosed is an acoustic and purifying engine exhaust muffler comprising a primary, side entry exhaust chamber with a plurality of removable filter elements mounted on a core, and a secondary chamber, having entry and exhaust ports communicating with the primary chamber, and packing therein, to absorb exhaust impurities. A relief line vent may be provided between the chambers to prevent creation of back pressure in the muffler assembly.

### 3,477,827
### CATALYTIC REACTION DEVICE

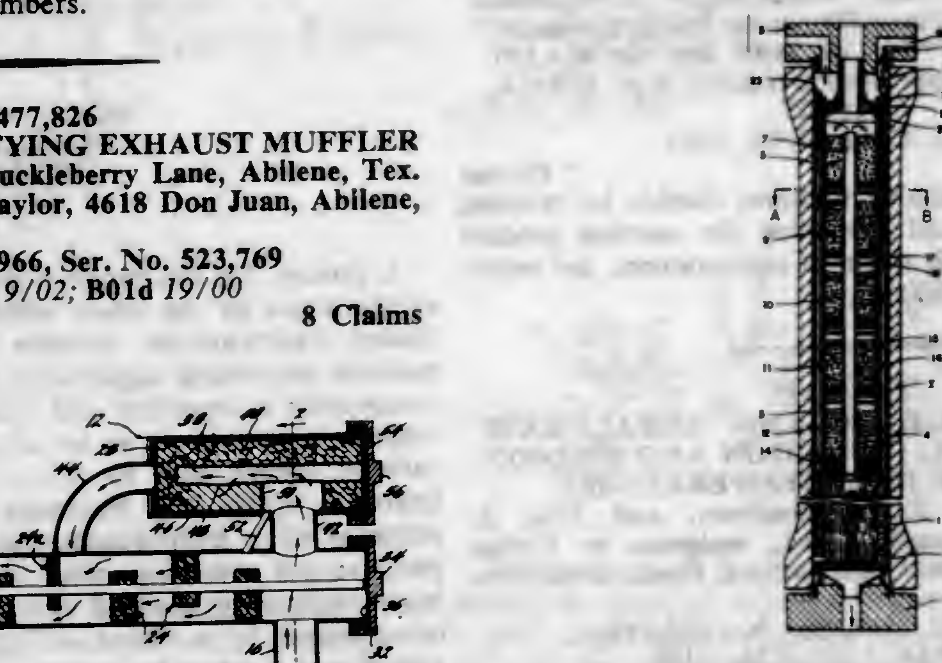
**Lambert H. Mott, Farmington, Conn. (℅ Mott Metallurgical Corp., 272 Huyshope Ave., Hartford, Conn. 06114)**
**Filed July 26, 1966, Ser. No. 567,999**
**Int. Cl. B01j** *7/00, 9/00*
**U.S. Cl. 23—288** **2 Claims**



A catalytic reaction device has a tubular porous resistance heating element with its ends connected to a current source, an electrically insulated jacket disposed about the tubular element, and means forcing a gas into the jacket to pass inward through the wall of the tubular heating element to flow out at least one end thereof, the tubular element containing an electrically insulated metallic catalyst.

### 3,477,828
### HIGH PRESSURE SYNTHESIS REACTOR FOR EXOTHERMIC GAS REACTIONS

**Guenther Schulze and Karl-Heinz Heck, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**
**Filed June 22, 1966, Ser. No. 559,526**
**Claims priority, application Germany, June 24, 1965, 1,442,594**
**Int. Cl. B01j** *9/04*
**U.S. Cl. 23—289** **3 Claims**



High pressure synthesis reactor embodying an elongated reactor tube surrounded by a double-walled jacket tube. The catalyst is supported in the reactor tube at longitudinally spaced intervals. The jacket tube is movable relative to the reactor tube in the longitudinal direction to compensate for thermal expansion and contraction. The jacket tube has longitudinal gas flow passages. The gas inlets to the reactor tube are sealed by annular stuffing box means comprising ring-shaped packings.

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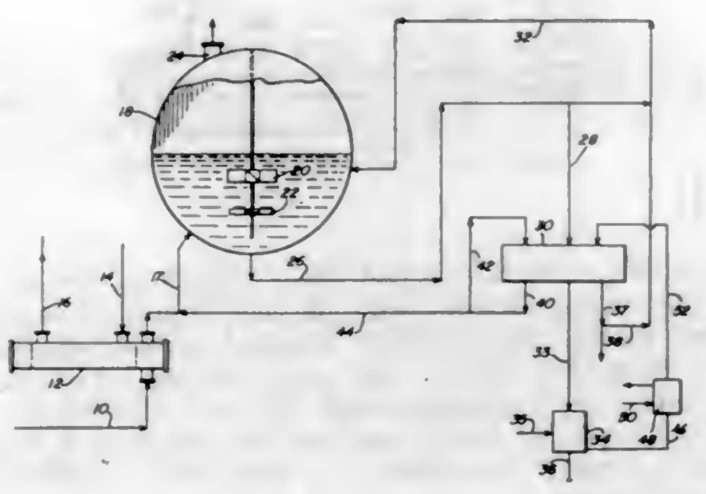
### 3,477,829

### SODIUM HYDROXIDE MONOHYDRATE CRYSTALLIZATION PROCESS

**Jay D. Dockendorff, Oak Brook Terrace, Anthony N. Chirico, Naperville, and Bruce P. Sanfilippo, Chicago, Ill., assignors to Chicago Bridge and Iron Company, Oak Brook, Ill., a corporation of Illinois**
**Filed Feb. 25, 1966, Ser. No. 530,070**
**Int. Cl. C01d** *1/30*
**U.S. Cl. 23—302** **3 Claims**



A method of purifying sodium hydroxide by adiabatically evaporating water from a solution of caustic under subatmospheric pressure at a temperature between 100 and 140° F. until the solution is supersaturated and crystallization of the purified sodium hydroxide monohydrate occurs.

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### 3,477,830

### PRODUCTION OF SINTERABLE URANIUM DIOXIDE

**Karl-Gerhard Hackstein, Hanau am Main, Hans Pirk, Dornigheim (Main), and Dieter Karl Maulbecker, Hanau am Main, Germany, assignors to Nukem Nuklear-Chemie und -Metallurgie Gesellschaft m.b.H., Wolfgang, near Hanau am Main, Germany**
**No Drawing. Filed Mar. 20, 1967, Ser. No. 624,187**
**Claims priority, application Germany, Apr. 2, 1966, N 28,327**
**Int. Cl. C01g** *43/02, 1/02*
**U.S. Cl. 23—355** **7 Claims**

Production of sinterable uranium dioxide by reacting $UF_6$ and $NH_3$ gas and subjecting the reaction product to pyrohydrolysis with steam at temperatures, for example, between 450 and 600° C.

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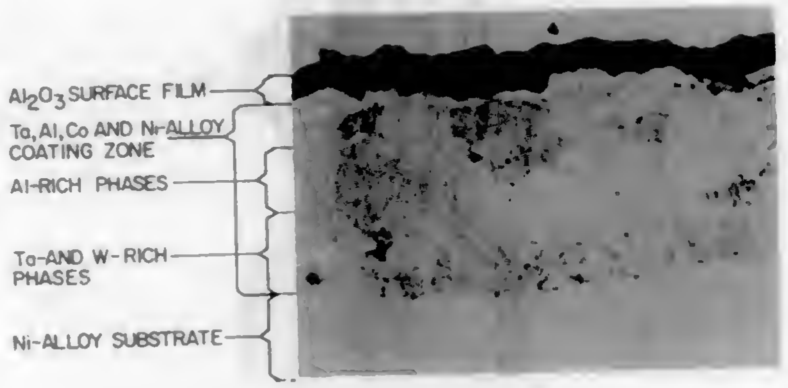
### 3,477,831

### COATED NICKEL-BASE AND COBALT-BASE ALLOYS HAVING OXIDATION AND EROSION RESISTANCE AT HIGH TEMPERATURES

**Frank P. Talboom, Jr., Glastonbury, and John A. Petrusha, Marlborough, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Jan. 27, 1966, Ser. No. 523,377**
**Int. Cl. B44c** *1/02;* **C23c** *3/04*
**U.S. Cl. 29—195** **9 Claims**

An oxidation and erosion resistant coating for high temperature nickel-base and cobalt-base alloys is provided by depositing tantalum on the substrate to form a surface zone, superimposing an aluminum-containing composition on the tantalum-containing layer, said aluminum composition preferably consisting essentially of aluminum and cobalt, and diffusing the aluminum-containing composition into the tantalum coated substrate to form a coating zone comprising a Ta-modified Co-Al-substrate metal coating zone. This coating zone forms an outer $Al_2O_3$ film on exposure to oxidizing atmospheres.



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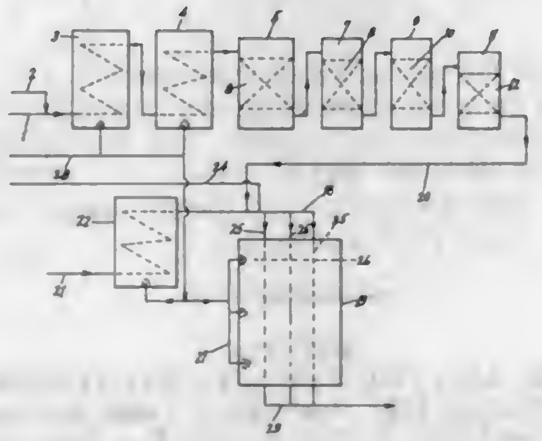
### 3,477,832

### PROCESS FOR THE CATALYTIC STEAM REFORMING OF NAPHTHA AND RELATED HYDROCARBONS

**Bertrand J. Mayland, Jeffersontown, and Carl Robert Trimarke, Richard L. Harvin, and Charles S. Brandon, Louisville, Ky., assignors to Girdler Corporation, Louisville, Ky., a corporation of Ohio**
**Filed June 5, 1964, Ser. No. 372,862**
**Int. Cl. C10k** *3/06*
**U.S. Cl. 48—213** **11 Claims**

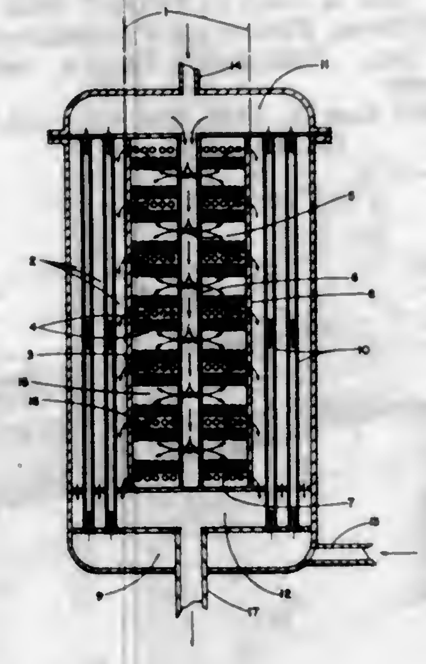


A process for the production of hydrogen and crude synthesis gas by the steam reformation of naphtha and related hydrocarbons, wherein the hydrocarbonaceous material containing unsaturated hydrocarbons and sulfur compounds is vaporized and mixed with hydrogen. The mixture is treated so as to saturate unsaturated hydrocarbons therein and to convert sulfur compounds to hydrogen sulfide, said treatment being conducted in the presence of a hydrodesulfurization catalyst at a temperature not exceeding about 650° F. Hydrogen sulfide is removed, steam is added to the mixture and the mixture is subjected to a steam reformation reaction in the presence of a reforming catalyst. Steps are taken to maintain the temperature of the mixture below about 650° F. until the reforming catalyst is reached, wherein steps are taken to raise the temperature of the mixture to reforming temperatures as rapidly as possible.

### 3,477,833

### PROCESS FOR THE PRODUCTION OF A NATURAL GAS SUBSTITUTE

**Edward Vincent McMullin, St. Louis County, and John Gerald Hofer, Florissant, Mo., assignors to Laclede Gas Company, St. Louis, Mo., a corporation of Missouri**
**Filed Jan. 6, 1965, Ser. No. 423,768**
**Int. Cl. C01b** *2/16*
**U.S. Cl. 48—214** **2 Claims**



A process for producing natural gas substitute from higher hydrocarbons, particularly propane and water, using thin bed (about 2″) pyrophoric nickel catalyst on sand as a "peak shaving device" at a high flow of at least 5000 standard cubic feet per hour of product gas per cubic foot of catalyst bed. The temperature is 300–450° C., the nickel is of a particle size of $10^{-5}$–$10^{-6}$ centimeters and the sand has a particle size passing 30 mesh.

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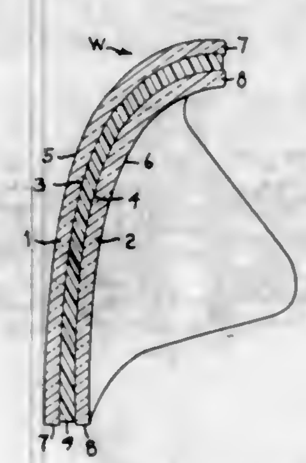
### 3,477,834

### METHOD FOR STRENGTHENING GLASS

**John W. Morris, Tarentum, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania**
**Continuation-in-part of application Ser. No. 557,594, May 19, 1966, which is a continuation-in-part of application Ser. No. 224,894, Sept. 17, 1962. This application May 17, 1968, Ser. No. 730,089**
**Int. Cl. C03c** *21/00*
**U.S. Cl. 65—30** **5 Claims**



This invention relates to a method of strengthening alkali metal containing glass articles by ion exchange of an alkali metal ion of larger atomic diameter from an external source for an alkali metal ion of smaller atomic diameter of the glass while maintaining said glass below its strain point. This invention especially relates to strengthening of soda glasses by exchange of potassium ions from a molten potassium salt while maintaining the concentration of sodium ions in said salt at a substantially constant concentration. More particularly, the invention relates to controlling within 5 percent by weight the concentration of sodium ions in potassium salt baths used for ion exchange strengthening of glass articles.

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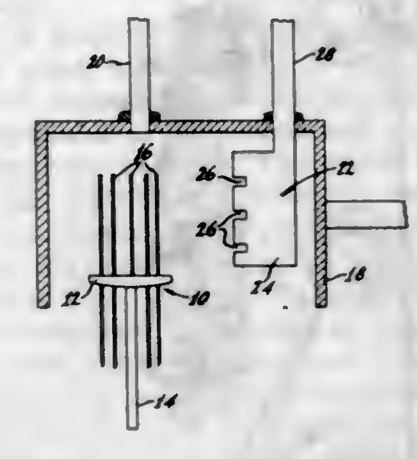
### 3,477,835

### METHOD OF CLEANING STEM LEADS FOR ELECTRON DEVICES

**Frederick W. Brill and Morris R. Weingarten, Lancaster, Pa., assignors to RCA Corporation, a corporation of Delaware**
**Filed Dec. 19, 1966, Ser. No. 602,668**
**Int. Cl. C03c** *27/02*
**U.S. Cl. 65—32** **3 Claims**



In the manufacture of stems for electron tubes, after the stem has been made by subjecting a mass of glass to successive operations in air for heating and forming a glass header around a plurality of metal leads, such as nickel, in which operations the leads become oxidized, the stem is inserted in a housing containing an atmosphere of a reducing gas, and oxygen is admitted to the housing to produce a reducing flame which very rapidly heats the leads and causes reduction of the oxides, without causing damage to the glass header. The amount of said reducing gas in the housing sufficiently exceeds the amount thereof required to consume all of the oxygen therein.

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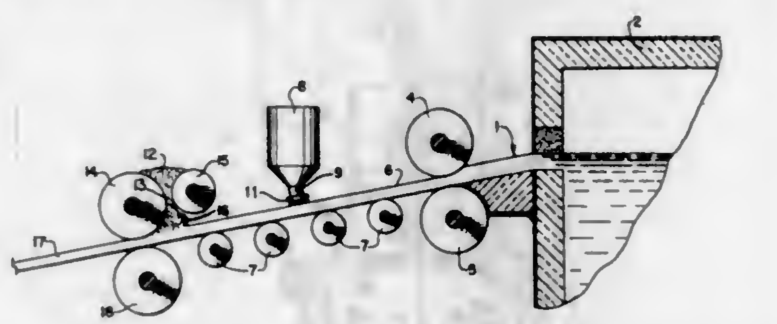
### 3,477,836

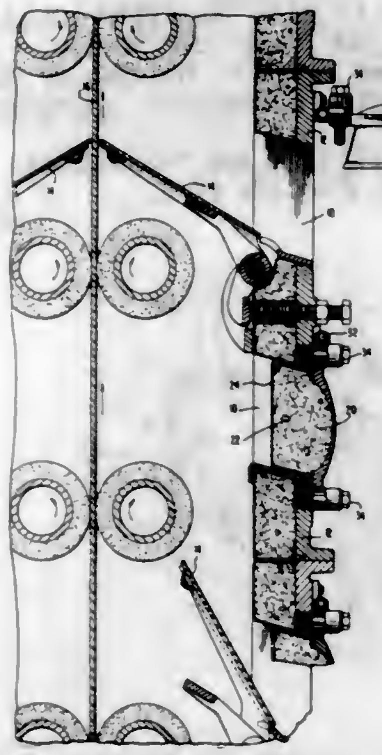
### PROCESS FOR PRODUCING DECORATIVE GLASS

**Theodore W. Glynn and Jack S. Storm, Jr., Kingsport, Tenn., assignors to American Saint Gobain Corporation, Kingsport, Tenn., a corporation of Delaware**
**Filed Nov. 18, 1965, Ser. No. 508,507**
**Int. Cl. C03b** *13/10, 17/02;* **B32b** *17/06*
**U.S. Cl. 65—121** **1 Claim**



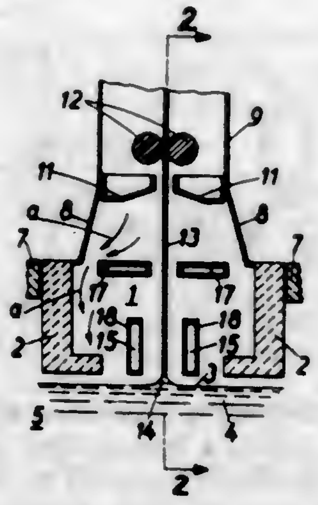
The method of forming a decorative flat glass comprising the steps of rolling a bottom sheet of glass along a path, applying a decorative material to the upper surface of the bottom sheet of glass, applying a body of glass to the upper surface of the bottom sheet of glass, incorporating the decorative material in the body of the glass, and rolling the body of glass and bottom sheet together to form a sandwiched flat glass.

### 3,477,837
## CLEAN-OUT DOORS FOR VERTICAL DRAW SHEET GLASS MAKING APPARATUS
**John Martin, Monterrey, Nuevo Leon, Mexico, assignor to Fabricacion de Mequinas, S.A., Monterrey, Mexico, a corporation of Mexico**
**Filed May 13, 1965, Ser. No. 455,370**
**Int. Cl. C03b** *15/02*
**U.S. Cl. 65—168** 1 Claim



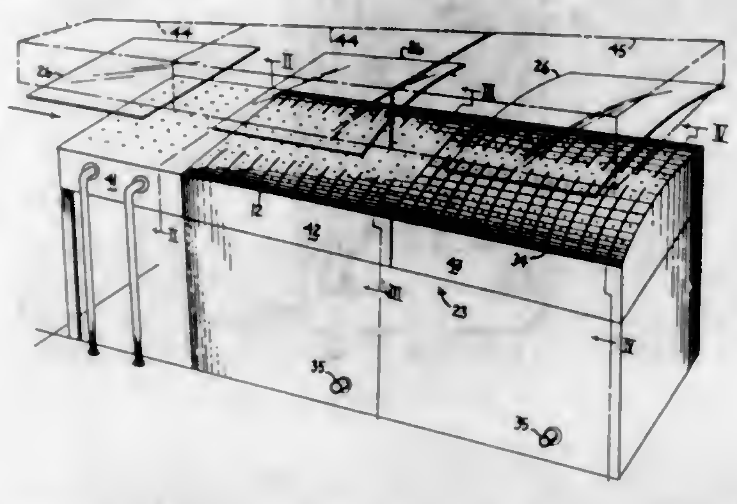
A vertical draw sheet glass forming machine is provided with a series of clean-out openings in the vertical side walls of the machine which parallel the glass sheet. Each opening is closed by a plurality of door members each of which is hermetically sealed to the side wall of the machine and each door member may be opened independently of the others and resealed to minimize cold drafts due to chimney effect in the machine.

### 3,477,838
## GLASS DRAWING APPARATUS WITH DEFLECTING COOLERS
**Georges Henry and Edgard Brichard, Jumet, Jean Marchand, Charleroi, and Albert Bauduin, Jumet, Belgium, assignors to Glaverbel S.A., Brussels, Belgium**
**Filed June 10, 1966, Ser. No. 556,711**
**Claims priority, application Luxembourg, July 22, 1965, 49,140**
**Int. Cl. C03b** *15/02*
**U.S. Cl. 65—204** 6 Claims



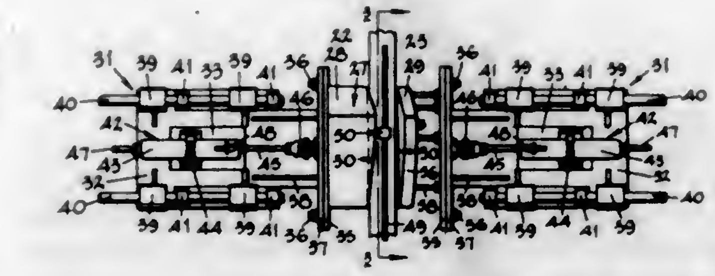
Process and apparatus in the drawing of sheet glass in which main coolers and auxiliary coolers are utilized. The auxiliary coolers are arranged so that descending currents of gas, which are thermally heterogeneous, are directed outwardly of the main coolers and away from the portion of the chamber between the main coolers and the drawn glass.

### 3,477,839
## APPARATUS FOR BENDING GLASS SHEETS ON A GAS SUPPORT BED
**George W. Misson, Pittsburgh, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed June 2, 1966, Ser. No. 554,707**
**Int. Cl. C03b** *23/02*
**U.S. Cl. 65—273** 5 Claims



An apparatus for bending glass sheets which are supported on gas wherein a plenum is provided with a flexible cover plate having gas support outlets, the cover plate being of progressively different flexibility and means are provided for adjusting the curvature at one portion of the cover plate which differs from that of another portion thereof.

### 3,477,840
## GLASS SHEET PRESS BENDING MOLD
**Waldemar W. Oelke, Rossford, Frank J. Carson, Toledo, Alfred E. Badger, Maumee, and Thomas B. O'Connell, Toledo, Ohio, assignors to Libbey-Owens-Ford Company, Toledo, Ohio, a corporation of Ohio**
**Filed June 15, 1966, Ser. No. 557,728**
**Int. Cl. C03b** *23/02*
**U.S. Cl. 65—287** 6 Claims



Apparatus for bending glass sheets including a hollow mold member having a porous shaping surface through which an aeriform fluid is allowed to pass to from a quiescent film of fluid in contact with the sheet while it is being bent. Means are provided for supporting the sheet in a vertical position and for guiding it along a path past the mold, said guide means including a notch to allow the sheet to fall away from the guide means and be deposited against the mold.

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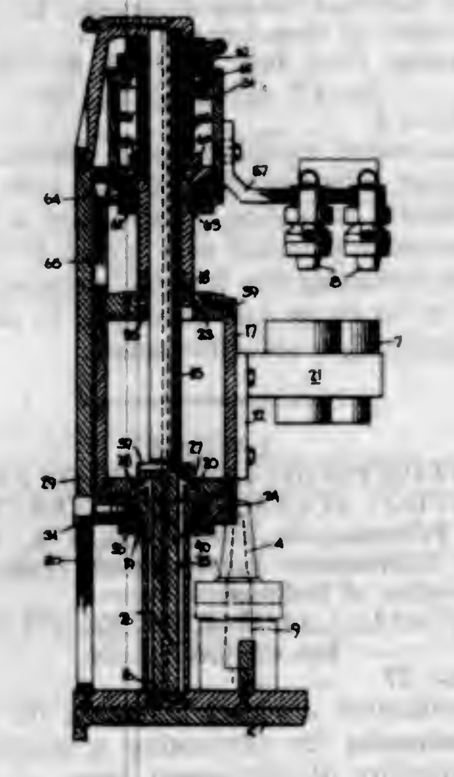
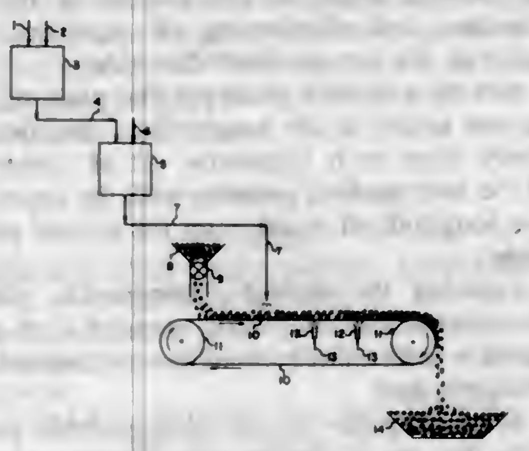
### 3,477,841
## MOLD SUPPORT FOR GLASSWARE FORMING MACHINE
**Frederick Z. Fouse, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware**
**Filed July 19, 1966, Ser. No. 566,305**
**Int. Cl. C03b** *11/16*
**U.S. Cl. 65—307** 6 Claims



A support means for moving a glass mold and cooperating mold baffle clear of a molded glass article in a glass forming machine. The mold is attached to a cylinder that is slidably moveable on a fixed rod and piston. An elongated cam and cam follower move the mold horizontially and as the cylinder moves vertically. The mold baffles are attached to a second moveable cylinder driven by a second piston mounted on the first cylinder. The second moveable cylinder has a cooperating cam and cam follower system for moving the baffles vertically and horizontally.

### 3,477,842
## MANUFACTURE OF FREE FLOWING FERTILIZER PRODUCT BY COATING GRANULES WITH UREA-FORMALDEHYDE FROM AN ALKALINE SOLUTION
**Lucien H. Cook, Port Washington, N.Y., and Sydney Atkin, Springfield, N.J., assignors to Chemical Construction Corporation, New York, N.Y., a corporation of Delaware**
**Filed Oct. 10, 1966, Ser. No. 585,633**
**Int. Cl. C05c** *9/02, 1/02, 7/00*
**U.S. Cl. 71—28** 6 Claims

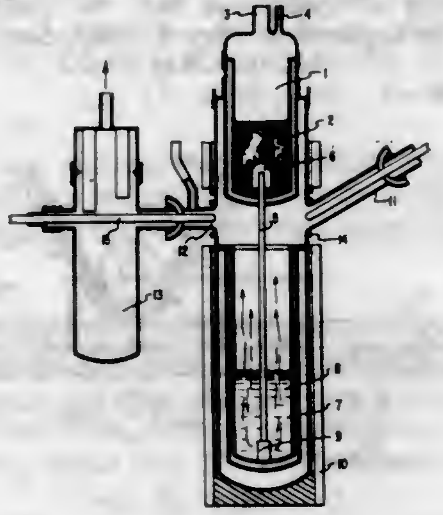


Solid fertilizer particles are coated with an alkaline urea-formaldehyde solution formed at a pH generally in the range of 7.5 to 10.0, and the solution coating is dried, to produce particles of fertilizer material which are substantially non-hygroscopic and resistant to agglomeration, due to the exterior formation of a hard solid layer of alkaline urea-formaldehyde condensation product on the surface of the fertilizer particles. The resulting improved fertilizer product is free flowing, non-caking, and capable of being stored for extended periods of time.

### 3,477,843
## METHOD OF PREPARING AMMONIATED NITRIC ACID-PHOSPHATE ROCK EXTRACTS
**Archie V. Slack, Sheffield, Ala., assignor to Tennessee Valley Authority, a corporation of the United States**
**Filed Jan. 16, 1967, Ser. No. 609,558**
**Int. Cl. C01b** *25/32*
**U.S. Cl. 71—39** 8 Claims

A method is described whereby the ammoniation characteristics of nitric acid extracts of phosphate rock are improved, such ammoniation characteristics being of considerable importance in connection with the manufacture of certain fertilizer materials. The salient feature of the invention is the addition of a relatively small proportion of one or more soluble acyclic polyphosphate compounds to the extract after ammoniation has been carried to partial completion (pH 1.9–2.5). Such addition effectively inhibits the formation of apatite, or other compounds more basic than dicalcium phosphate, during the subsequent completion of ammoniation to neutrality. With use of such inhibitor, in accordance with the methods specified, the final neutralized extract contains its phosphate values almost exclusively as dicalcium phosphate, a compound that is much more readily assimilable by growing plants than are the more basic phosphates.

### 3,477,844
## ALUMINUM REDUCTION OF BERYLLIUM HALIDE
**John Harry Jackson, Richmond, and Walther Schmidt, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware**
**Filed June 15, 1966, Ser. No. 557,647**
**Int. Cl. C22c** *21/00, 1/00*
**U.S. Cl. 75—63** 11 Claims



1. Method for the production of beryllium-aluminum alloys which comprises the steps of reacting beryllium halide with molten aluminum at a temperature above about 660° C. and sufficiently high to maintain the liberated beryllium in solution in the molten aluminum, to form a hypereutectic alloy of beryllium and aluminum, reducing the temperature to partially crystallize said alloy, and separating substantially the solid phase.

2. Method for the production of beryllium and beryllium-aluminum alloys which comprises the steps of reacting beryllium halide which molten aluminum at a temperature above about 660° C. to form a hypereutectic alloy of beryllium and aluminum in solution in the molten aluminum, continuing the reaction until the aluminum is supersaturated with beryllium at the reaction temperature, and beryllium in excess of its solubility in the aluminum forms a top layer on the surface of the aluminum enriched in beryllium crystals, and separating beryllium crystals from said top layer.

9. Method for concentrating beryllium metal content in hypereutectic beryllium-aluminum alloys which comprises the steps of melting said hypereutectic alloy, crystallizing out beryllium at a temperature above, but close to the eutectic temperature, and mechanically separating the mixture into two fractions, one containing substantially more beryllium in the form of solid crystals in admixture with a portion of the aluminum matrix, and the other comprising a substantially larger portion of the aluminum matrix and being virtually free from beryllium crystals.

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### 3,477,845
## SILVER BASE ALLOY FOR MAKING ELECTRICAL CONTACTS

**Kenneth R. Comey, Jr., Norwood, Mass., and George Durst, deceased, late of Attleboro, Mass., by John W. McIntyre and Edmund F. Henry, administrators, Attleboro, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**
**Filed Jan. 3, 1967, Ser. No. 607,081**
**Int. Cl. C22c** *5/00*
**U.S. Cl. 75—173** **4 Claims**

Improved alloys of cadmium oxide and silver are produced by incorporating therein between 0.001% and 0.5% by weight of mercury as an additive. Electrical contacts formed from such alloys exhibit less arc-erosion without substantial increase in contact resistance as compared with electrical contacts formed from cadmium oxide-silver alloys having cobalt incorporated therein as an additive.

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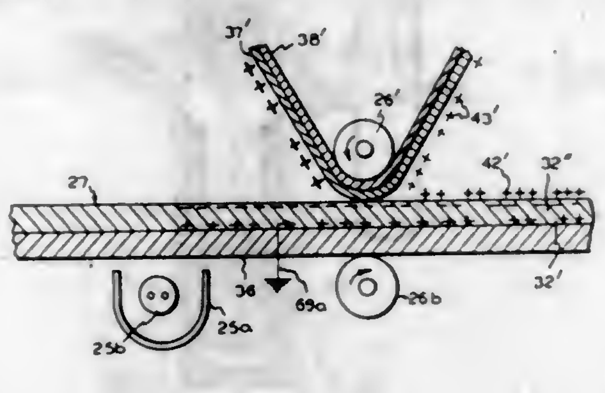
### 3,477,846
## XEROGRAPHIC CHARGE TRANSFER PROCESS

**John W. Weigl, West Webster, and Alan B. Amidon, Fairport, N.Y., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware**
**Continuation of application Ser. No. 247,903, Dec. 28, 1962. This application May 1, 1967, Ser. No. 635,266**
**Int. Cl. G03g** *13/22*
**U.S. Cl. 96—1** **6 Claims**



Process for electrostatic recording in which a receiving or transfer sheet having a normally insulating photoconductive layer on a non-conductive support, is subjected to irradiation so as to cause an inner stratum of the sheet consisting of at least part of the photoconductive layer to become temporarily conductive, contacting an insulating surface of the sheet with a record sheet bearing an electrostatic latent image and applying an overall charge of a polarity opposite to that of the latent image to the rear of the receiving sheet so as to transfer the latent image from the record sheet to the front surface of the receiving sheet.

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### 3,477,847
## PROCESS FOR AUTOELECTROLYTIC REPRODUCTION OF DOCUMENTS

**Georges Paul Marie Becquerel, Vincennes, France, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**No Drawing. Filed July 16, 1965, Ser. No. 472,699**
**Int. Cl. G03g** *5/04, 7/00*
**U.S. Cl. 96—1.8** **5 Claims**

A photosensitive autoelectrolytic element is disclosed which includes a backing sheet coated with a mixture of photo-conductive insulating material and a metal having negative electrode potential with respect to hydrogen dispersed in an insulating film forming material. The element is exposed to an image and developed by contact with a solution containing a reducible solute.

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### 3,477,848
## METHOD FOR PRODUCING SETS OF PHOTOMASK HAVING ACCURATE REGISTRATION

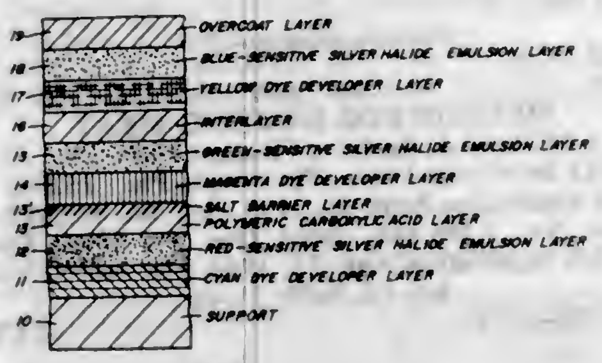
**John P. Pritchard, Jr., Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**
**Filed Dec. 14, 1964, Ser. No. 418,232**
**Int. Cl. G03c** *5/04*
**U.S. Cl. 96—27** **1 Claim**

This specification discloses a process for producing a set of photomasks for fabricating a multi-layer circuit having a plurality of component areas, at least one of which is repeated, disposed at predetermined relative positions within the circuit, characterized by the steps of:

(a) producing a basic pattern for each photomask, each basic pattern including all the different component areas in the circuit, the different component areas being oriented in order of occurrence in the circuit in both the transverse and the longitudinal directions with all repetitive component areas in both of the directions omitted;
(b) producing a first reticle including each of the basic patterns, the basic patterns being rigidly interconnected at spaced positions;
(c) moving a first photographic plate relative to the first reticle in the transverse direction to successively align each component area with the appropriate relative position on the first photographic plate;
(d) exposing the photographic plate through the appropriate component areas of each basic pattern at each of the successive transverse positions;
(e) developing the first photographic plate to produce a second reticle having an intermediate pattern for each photomask at rigidly interconnected, spaced positions, each intermediate pattern including all component areas of the circuit in the transverse direction and eliminating all repetitive component areas in the longitudinal direction;
(f) moving a second photographic plate relative to the second reticle in the longitudinal direction to successively align each transverse set of component areas of the intermediate patterns with the appropriate relative longitudinal position on the second photographic plate;
(g) exposing the second photographic plate through the appropriate component areas of each of the intermediate patterns at each of the successive longitudinal positions; and
(h) developing the second photographic plate to produce the set of photomasks whereby corresponding component areas of all the photomasks will have corresponding positional errors and will be precisely registrable.

### 3,477,849
## MULTI-COLOR DYE DEVELOPER SYSTEMS

**Richard W. Becker, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**Filed Dec. 27, 1966, Ser. No. 605,000**
**Int. Cl. G03c** *5/54, 1/42*
**U.S. Cl. 96—29** **22 Claims**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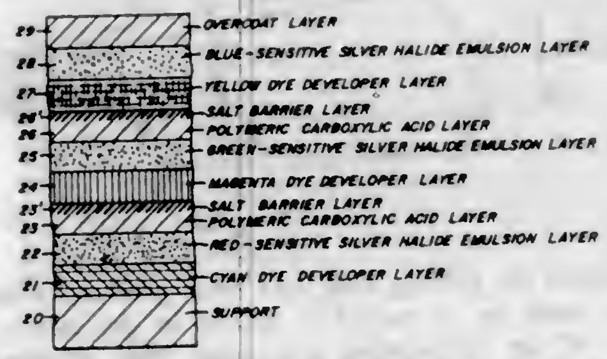
OVERCOAT LAYER
BLUE-SENSITIVE SILVER HALIDE EMULSION LAYER
YELLOW DYE DEVELOPER LAYER
INTERLAYER
GREEN-SENSITIVE SILVER HALIDE EMULSION LAYER
MAGENTA DYE DEVELOPER LAYER
SALT BARRIER LAYER
POLYMERIC CARBOXYLIC ACID LAYER
RED-SENSITIVE SILVER HALIDE EMULSION LAYER
CYAN DYE DEVELOPER LAYER
SUPPORT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OVERCOAT LAYER
BLUE-SENSITIVE SILVER HALIDE EMULSION LAYER
YELLOW DYE DEVELOPER LAYER
SALT BARRIER LAYER
POLYMERIC CARBOXYLIC ACID LAYER
GREEN-SENSITIVE SILVER HALIDE EMULSION LAYER
MAGENTA DYE DEVELOPER LAYER
SALT BARRIER LAYER
POLYMERIC CARBOXYLIC ACID LAYER
RED-SENSITIVE SILVER HALIDE EMULSION LAYER
CYAN DYE DEVELOPER LAYER
SUPPORT

Photographic elements comprising a support having coated thereon (1) at least two dye image-forming units composed of a light-sensitive silver halide emulsion and a dye developer contiguous to the silver halide of the emulsion, and (2) an alkali-permeable and water-insoluble stratum of a polyvalent metal salt of a film-forming, alkali-permeable, water-soluble polymeric carboxylic acid between at least two of the dye image-forming units are processed in the presence of a sequestering agent for the polyvalent metal moiety of the insoluble salt stratum. The sequestering agent can be present in the photographic element, the processing composition used to develop the photographic element, or the dye developer image-receiving element.

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### 3,477,850
## LIGHT SENSITIVE HEAT ERASABLE COPYING SYSTEM

**Elliot Berman, Braintree, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware**
**No Drawing. Filed July 8, 1965, Ser. No. 470,579**
**Int. Cl. G03c** *5/24*
**U.S. Cl. 96—48** **7 Claims**

A photographic process of recording an image pattern of activating radiation comprising exposing imagewise a copy medium comprising at least one member of the group consisting of the 6′,8′-dinitro and the 5-chloro-6′,8′-dinitro derivatives of 1,3,3-trimethyl-spiro[(2′H-1′-benzopyran)-2,2′-indoline] to form a visible image which is heat erasable.

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### 3,477,851
## PROCESS FOR PREPARING A FILLED FOOD PRODUCT

**John O. Benson, Mayer, and Peter Smirnow, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware**
**Filed Jan. 29, 1965, Ser. No. 429,170**
**Int. Cl. A23l** *1/18*
**U.S. Cl. 99—83** **7 Claims**

A tubular shell is formed of a cooked dough which is shaped, dried, and expanded by puffing; a filling material comprised of a body contributing ingredient and an edible fat is then injected into the tubular shell.

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### 3,477,852
## DIRECT-POSITIVE SILVER HALIDE EMULSION RESISTANT TO KINK-MARKING DESENSITIZATION

**Norman Allentoff and Henry Harrison Fogler, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**No Drawing. Filed Sept. 27, 1966, Ser. No. 582,262**
**Int. Cl. G03c** *1/08*
**U.S. Cl. 96—94** **17 Claims**

This invention relates to direct-positive photographic emulsions comprising fogged silver halide grains and processes for making the same wherein at least about 10 mole percent of said halide is chloride, less than about 5 mole percent of said halide is iodide and about 0.025 to about 0.5 mole of silver bromide, per mole of silver in said grains, forms a surface on said grains. In one aspect, direct-positive emulsions comprising fogged silver halide grains according to this invention provide a means for reducing desensitization due to kink-marking while improving sensitivity and maximum density upon imagewise exposure and chemical development.

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### 3,477,853
## PRODUCTION OF A SWEET CREAM BUTTERMILK FROM LIPOLYZED CREAM

**Maurice E. Hull, La Grange, Ill., and Ralph Willard Kline, Glen Ellyn, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed Nov. 7, 1966, Ser. No. 592,297**
**Int. Cl. A23c** *17/00*
**U.S. Cl. 99—63** **5 Claims**

Sweet cream buttermilk is prepared by the addition of cream, which has been lipolyzed by incubation with a pregastric enzyme, to non-fat milk solids and water, and mixing to form an emulsion. The resulting buttermilk emulsion may be dried to a powder.

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### 3,477,854
## PREPARATION OF TEA EXTRACT FROM UNFERMENTED TEA

**Luc Vuataz, Vevey, and André Giddey, La Tour-de-Peilz, Switzerland, assignors to Afico S.A., Lausanne, Switzerland, a Swiss company**
**No Drawing. Filed May 9, 1966, Ser. No. 548,427**
**Claims priority, application Switzerland, May 14, 1965, 6,736/65; Nov. 11, 1965, 15,582/65**
**Int. Cl. A23f** *3/00*
**U.S. Cl. 99—77** **10 Claims**

Improved tea extracts prepared from fresh leaf by stripping aromatics before extraction or maturing a suspension of fresh leaf, optionally after fermentation.

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### 3,477,855
## SORGHUM GRAIN DEGERMINATION PROCESS

**Jere E. Freeman, Hinsdale, Ill., assignor to Corn Products Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Dec. 27, 1966, Ser. No. 604,544**
**Int. Cl. A23l** *1/10*
**U.S. Cl. 99—80** **7 Claims**

Degerminating sorghum grains by compressing the grains with pressure sufficient to release the germ portion from the grain but insufficient to cause breakage of the germ and then separating the germ from the grains.

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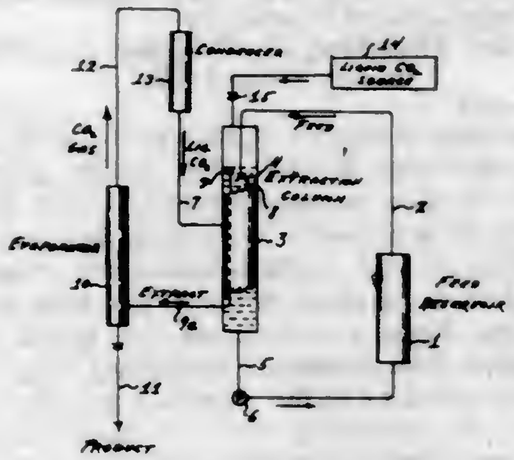
## ERRATUM

For Class 99—83 see:
Patent No. 3,477,848

### 3,477,856
### PROCESS FOR EXTRACTION OF FLAVORS

**William G. Schultz, Richmond, Calif., assignor to the United States of America as represented by the Secretary of Agriculture**
**Filed Nov. 10, 1965, Ser. No. 507,170**
**Int. Cl. A23l** *1/02*
**U.S. Cl. 99—105 6 Claims**



Process for isolating flavors from flavor-containing materials such as fruit juices, fruit essences, etc., which involves extracting the material with liquid carbon dioxide, separating the extract, and evaporating the $CO_2$ therefrom.

### 3,477,857
### MARGARINE COMPOSITION AND PREPARATION THEREOF

**Jay T. Colburn, Glen Ellyn, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed June 11, 1965, Ser. No. 463,370**
**Int. Cl. A23d** *3/02*
**U.S. Cl. 99—123 8 Claims**

A margarine product having an intensified butter flavor is blended with normal margarines or shortening materials to yield a product capable of imparting a butter flavor to baked goods.

This invention relates to a margarine composition and the preparation thereof, and more particularly to the preparation of a unique margarine product which is utilized by diluting it with normal margarine or other shortening materials in providing a desirable buttery flavor in cooked or prepared foods. The margarine is particularly useful in the bakery, confectionery, and frozen food fields where the prepared product is given a buttery flavor.

### 3,477,858
### PROCESS FOR COATING NUTS

**Phillip R. Wells, Somerville, and Daniel Melnick, West Englewood, N.J., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Sept. 12, 1966, Ser. No. 578,487**
**Int. Cl. A23b** *9/00*
**U.S. Cl. 99—126 11 Claims**

This application discloses a nut product which comprises a nut meat containing a coating comprising a blend of mannitol and sorbitol.

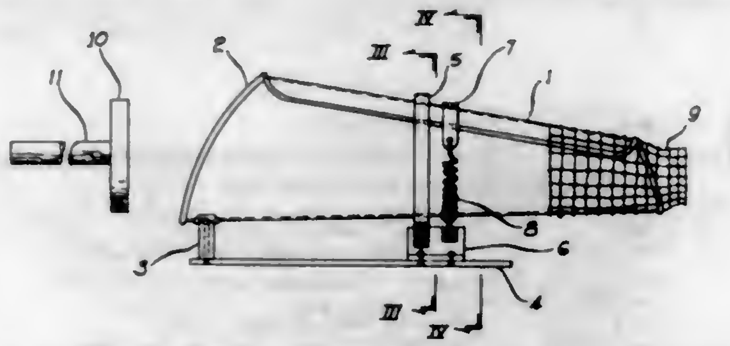
### 3,477,859
### PROCESS FOR IMPROVING THE COLOR OF COMMINUTED MEAT

**William Lewis Brown and Morton Lee Schmucker, Ottumwa, Iowa, assignors to John Morrell & Co., a corporation of Delaware**
**No Drawing. Continuation of application Ser. No. 506,605, Nov. 5, 1965. This application Sept. 1, 1967, Ser. No. 665,184**
**Int. Cl. A23b** *1/04*
**U.S. Cl. 99—159 3 Claims**

A method for accelerating coloring development during the curing of meat. The method comprises adding to ground meat prior to cooking and curing, a mixture of an ascorbate and a citrate in addition to the usual curing salts and flavoring agents and without further curing treatment, smoking the meat containing this mixture. The mixture is added in a concentration of from 0.03% to 0.07% by weight of the meat and contains from about 30% to about 80% of an ascorbate and about from 20% to 70% of a citrate.

### 3,477,860
### METHOD FOR NETTING MEAT

**Michael A. Sartore, Pleasant Hills, Pa.**
**(152 Broadway Drive, Pittsburgh, Pa. 15236)**
**Original application Sept. 15, 1965, Ser. No. 487,399, now Patent No. 3,290,841, dated Dec. 13, 1966. Divided and this application Aug. 15, 1966, Ser. No. 573,166**
**Int. Cl. B65b** *25/06*
**U.S. Cl. 99—174 4 Claims**



A method for netting meat and meat products wherein the said meat to be netted is placed in the larger end opening of an open-ended truncated cone adapted to resiliently expand radially, one end and substantially the entire length of a piece of tubular elastic netting of predetermined length and adapted to resiliently expand radially is drawn over the smaller end of the said truncated cone, relative axial movement is produced between the said meat and the said truncated cone disposing the said meat toward and through the said smaller end, circumferential engagement is caused to occur between the said meat and the portion of the said netting which overhangs the said smaller end, the said axial movement of the said meat is continued in circumferential engagement with the said netting withdrawing the said netting from the said smaller end into entire circumferential engagement with the said meat.

### 3,477,861
### METHOD FOR INHIBITING CORROSION OF FERROUS ALLOYS

**Herman Wissenberg, Munster, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana**
**No Drawing. Filed Dec. 14, 1966, Ser. No. 601,539**
**Int. Cl. C09k** *3/00;* **C23f** *11/00;* **C09d** *5/08*
**U.S. Cl. 106—14 3 Claims**

The corrosive activity of bromine-containing compounds normally present in benzoic acid is inhibited by adding water to the benzoic acid in an amount sufficient to substantially suppress said corrosive activity.

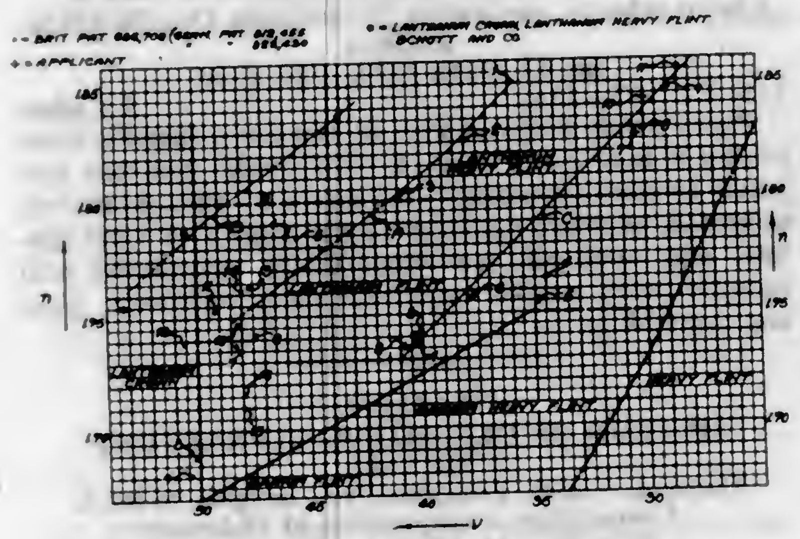
### 3,477,862
### MARKING MEDIUM

**William A. Forsyth, Jr., Meadowbrook, Pa., assignor to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware**
**No Drawing. Filed June 16, 1967, Ser. No. 646,476**
**Int. Cl. C09d** *11/00*
**U.S. Cl. 106—22 5 Claims**

An ink comprising a dyestuff, a solution of polyethylene oxide and glycerin for employment in a pen, nozzle or other ink applying means to insure the inscription of a clear continuous solid line on a chart on which the ink applying means is associated as the ink applying means traverses the chart in, for example, a stepped, sinusoidal or other manner at recording speeds up to and/or exceeding forty inches per second.

### 3,477,863
### HEAVY FLINT GLASSES

**Heinz Bromer, Hermannstein, and Norbert Meinert, Wetzlar (Lahn), Germany, assignors to Ernst Leitz, G.m.b.H., Wetzlar (Lahn), Germany**
**Continuation of application Ser. No. 197,849, May 28, 1962. This application Sept. 18, 1964, Ser. No. 397,529**
**Int. Cl. C03c** *3/10, 3/30*
**U.S. Cl. 106—54 6 Claims**



Optical glass having a refractive index of from approximately 1.735 to approximately 1.86 and an Abbe number of from approximately 41.1 to approximately 28. The glass consists essentially of in parts by weight from about 12% to about 20% silicon dioxide, from about 8% to about 20% boron oxide, the combined total of silicon dioxide and boron oxide being from about 26% to about 33%, from about 5% to about 20% zinc oxide, up to about 7.5% cadmium oxide, the total of zinc oxide and cadmium oxide being from about 6.5% to about 20% from about 10% to about 24% barium oxide, up to about 5% magnesium oxide, up to about 10% strontium oxide, up to about 25% calcium oxide, the total of the oxides of barium, magnesium, calcium and strontium being from about 14% to about 46%, from about 4.0% to about 7.5% zirconium oxide, and from about 6.5% to about 25% titanium dioxide, up to about 20% lanthanum oxide, and up to about 5% alkali oxides.

### 3,477,864
### PROCESS FOR COATING PHARMACEUTICAL PREPARATIONS WITH A HYDROXY PROPYL METHYL CELLULOSE-SEALING AGENT MOISTURE-PREVENTING FILM

**Yoji Tuji, Osaka, Japan, assignor to Sumitomo Chemical Co., Ltd., Osaka, Japan**
**No Drawing. Filed Apr. 25, 1966, Ser. No. 544,687**
**Claims priority, application Japan, May 7, 1965, 40/27,191**
**Int. Cl. C09d** *3/08, 3/18, 3/80*
**U.S. Cl. 106—151 2 Claims**

A composition useful for applying a moisture-preventing coating on tablets comprising hydroxypropylmethylcellulose, of which the viscosity in 2 weight percent aqueous solution is below 10 cps. at 20° C., dissolved in a mixture of at least one low boiling aliphatic halide and at least one other solvent, which may be an alcohol, mixtures of alcohol and a ketone or mixtures of water and an alcohol, and a sealing agent which may be a copolymer of butyl methacrylate and dimethylaminoethly methacrylate, shellac or a prolamin. The present disclosure also provides for a process of coating tablets with the above composition.

### 3,477,865
### ALUMINA TRIHYDRATE-FIBROUS MATRIX COMPOSITION AND METHOD OF FORMING SAME

**Bernard F. Armbrust, Jr., Benton, and Val G. Carithers, Little Rock, Ark., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 372,369, June 3, 1964. This application Sept. 27, 1967, Ser. No. 671,098**
**Int. Cl. C08h** *17/34;* **C08b** *23/00*
**U.S. Cl. 106—209 5 Claims**

An alumina-asbestos fiber sheet having a high degree of flexibility, and which is adapted to be shredded or ground, is prepared from finely divided alumina hydrate, asbestos and a vegetable gum binder, such as guar gum or a synthetic gum binder, with optional inclusion of a plasticizer. Other inorganic materials such as alkaline earth metal or magnesium oxide, hydroxide, or carbonates, or their hydrates may be substituted for the alumina. Ceramic or cellulosic fibers may be substituted for the asbestos. The product is useful for heat insulation and as a tobacco additive.

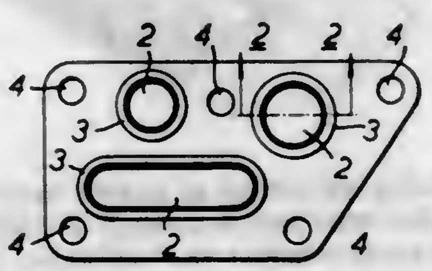
### 3,477,866
### PIGMENT COMPOSITION AND METHOD OF MANUFACTURE

**Robert K. Remer, Evanston, Ill., assignor to Inca Inks, Inc., Evanston, Ill., a corporation of Illinois**
**No Drawing. Filed Feb. 7, 1966, Ser. No. 525,384**
**Int. Cl. C09b** *63/00;* **C09c** *1/04*
**U.S. Cl. 106—289 23 Claims**

A pigment composition is made by precipitating a lake-forming hydrous metal oxide from an aqueous dispersion of a lignin and a dye selected from the group consisting of acid dyes and natural dyes. The pigment composition is a coprecipitate of a lake-forming hydrous metal oxide, a lignin and a dye selected from the group consisting of acid dyes and natural dyes.

### 3,477,867
### GASKET ASSEMBLIES

**Edward F. H. B. Hillier, Cheltenham, England, assignor to Dowty Seals Limited**
**Filed Aug. 25, 1965, Ser. No. 482,568**
**Claims priority, application Great Britain, Aug. 28, 1964, 35,300/64**
**Int. Cl. B41k** *3/68;* **B41m** *3/00*
**U.S. Cl. 117—4 14 Claims**



The invention is directed to a process of making gasket assemblies whereby annular layers of sealing material are deposited in such a manner that each layer surrounds an aperture in the support member. Multiple layers of sealing material may be deposited by screen printing a curable rubber resin, in situ, over the apertured area.

### 3,477,868
### METHOD OF MAKING A PROTECTIVE COATING AT THE SURFACE OF A SOLID BODY

**Friedrich Grundschober, Confignon, Geneva, and Joerg Sambeth, Carouge, Geneva, Switzerland, assignors to Battelle Memorial Institute, International Division, Carouge, Geneva, Switzerland, an American body corporate**
**No Drawing. Filed Oct. 10, 1966, Ser. No. 585,252**
**Claims priority, application Switzerland, Oct. 15, 1965, 14,259/65**
**Int. Cl. B44d** *1/097;* **B32b** *15/04;* **C23c** *11/06*
**U.S. Cl. 117—46** **11 Claims**

Materials are coated by applying layers of a solution of a polymer comprising a chain of boron and silicon atoms bonded by oxygen and further containing organic radicals. The layer of the polymer is pyrolyzed at 600–1300° C. to remove the organic radicals while leaving the chain of boron and silicon intact.

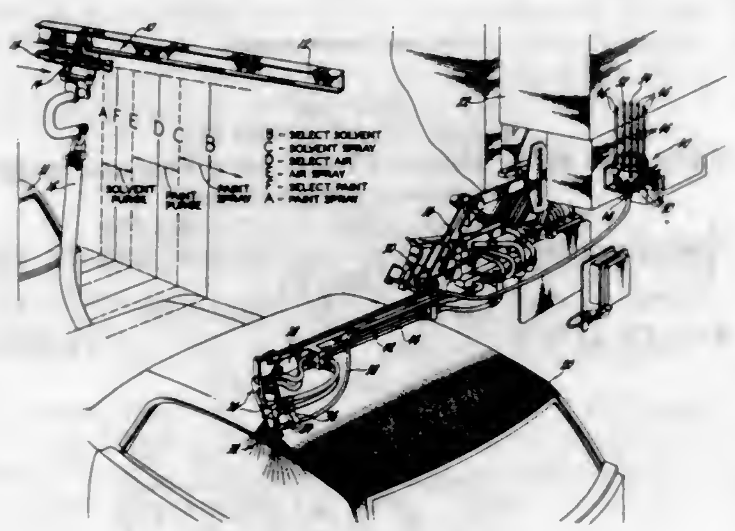
### 3,477,869
### PROTECTIVE COATING

**John Mann Butler, Dayton, and Clayton E. Hathaway, Jr., Kettering, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware**
**No Drawing. Filed Dec. 21, 1965, Ser. No. 515,466**
**Int. Cl. B44d** *1/34;* **C04d** *3/82, 3/84*
**U.S. Cl. 117—72** **10 Claims**

An in situ formed coating prepared by curing a mixture of a silicone polymer and titanium dioxide at 370–550° C. on a solid metallic substrate.

### 3,477,870
### METHOD OF SPRAY COATING A SERIES OF ARTICLES INCLUDING THE APPLICATION OF DIFFERENT COLORS TO DIFFERENT ARTICLES

**Napoleon P. Boretti, Bloomfield Hills, Wilson T. Bratton, Detroit, and Joseph R. Tolstyka, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Mar. 3, 1966, Ser. No. 531,445**
**Int. Cl. B05b** *13/04;* **B44d** *1/08;* **C23c** *7/00*
**U.S. Cl. 117—105.3** **2 Claims**



Method of spray coating of articles such as automobile vehicle bodies transported through a coating station at substantial speed wherein the successive vehicle bodies on the conveyor are to be coated with a selected one of any of a plurality of color coatings and including the steps of spraying of a selected color coating on a first vehicle body as it traverses the station, the cut-off of coating supply and selection of paint solvent for the coating in such timed relation to the passage of the vehicle body from the station that the coating contained within the coating application apparatus will be forced by the following body of solvent through the apparatus and onto the vehicle body rather than wasted. A subsequent purge of the solvent is accomplished by the selection of high pressure air into the spray apparatus and then the selection of the second color coating for the oncoming vehicle body for application thereto at the time the vehicle body enters the station.

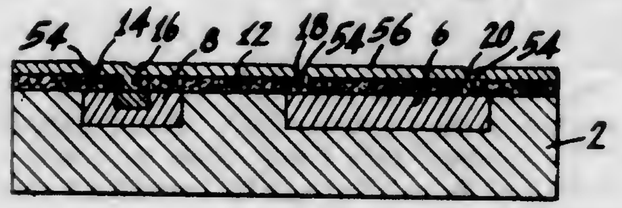
### 3,477,871
### PROCESS FOR COATING PAPER WITH A STARCH-VINYL ESTER TERPOLYMER LATEX BINDER

**William J. van Westrenen, Delft, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Oct. 6, 1966, Ser. No. 584,670**
**Claims priority, application Netherlands, Oct. 26, 1965, 6513811**
**Int. Cl. D21h** *1/22, 1/28, 1/34*
**U.S. Cl. 117—155** **5 Claims**

Paper which is coated with an aqueous dispersion comprising a filler (clay) and a vinyl binder polymer prepared by copolymerizing vinyl esters of alpha-branched, saturated, aliphatic monocarboxylic acids with vinyl acetate, and optionally an ethylenically unsaturated acid (acrylic acid) exhibit improved water resistance, gloss and printability.

### 3,477,872
### METHOD OF DEPOSITING REFRACTORY METALS

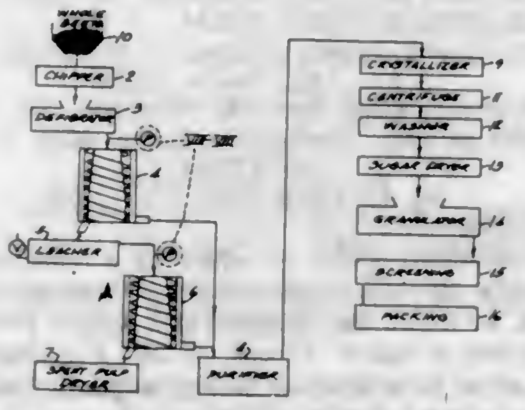
**James A. Amick, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware**
**Filed Sept. 21, 1966, Ser. No. 580,933**
**Int. Cl. C23c** *13/02;* **C03c** *21/00;* **B44d** *1/18*
**U.S. Cl. 117—212** **4 Claims**



A method of depositing a refractory metal on a semiconductor substrate oxide coating, comprising etching the oxide coating with the metallic hexafluoride, and then depositing the refractory metal on the oxide coating by reduction of the hexafluoride.

### 3,477,873
### SUGAR BEET PROCESSING

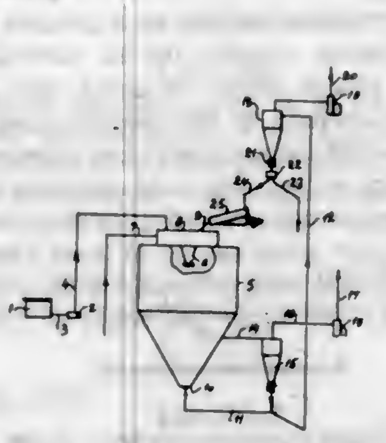
**Lester M. Koelsch, Pittsfield, Mass., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin**
**Filed Oct. 3, 1966, Ser. No. 583,638**
**Int. Cl. C13d** *1/08*
**U.S. Cl. 127—43** **5 Claims**



A process of treating whole sugar beets comprising chipping the beets into thin beet chips, defibering the chips into distinct beet fibrils, pressing the beet fibrils without the addition of foreign liquids to remove sugar-containing juices therefrom and removing granulated sugar from the sugar-containing beet juices.

### 3,477,874
### PROCESS FOR PREPARING A DRY FREE-FLOWING GLUCOSE PRODUCT FROM A SOLUTION THEREOF

**Inger Repsdorph, Hellerup, Karl Kristian Kobs Kroyer, Viby, and Jorgen Damgard-Iversen, Birkerod, Denmark, assignors to Karl Kristian Kobs Kroyer, Viby, and Aktieselskabet Niro Atomizer, Soborg, Denmark**
**Filed Apr. 15, 1965, Ser. No. 448,352**
**Claims priority, application Denmark, Apr. 17, 1964, 1,913/64**
**Int. Cl. C13k** *1/00, 1/10*
**U.S. Cl. 127—58** **5 Claims**



A process and apparatus for preparing a dry free-flowing glucose product of high DE-value from a solution wherein the solution is first subjected to spray drying to form solidified particles, subjecting the solidified particles to a flow of dry air, and thereafter recycling a portion of the dried solidified particles to the spray drying apparatus at a rate higher than the rate at which the solution is supplied to the same apparatus, the rate being calculated on the basis of dried glucose.

### 3,477,875
### BATTERY HAVING ELECTRODEPOSITED SEPARATOR ON THE PLATES AND METHOD OF MAKING SAME

**James M. McQuade, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York**
**No Drawing. Filed Sept. 21, 1965, Ser. No. 489,059**
**Int. Cl. H01m** *3/00, 35/00, 17/04*
**U.S. Cl. 136—6** **7 Claims**

A porous, insoluble inorganic hydroxide or hydrous oxide coating of a metal such as calcium, magnesium, nickel, cadmium, aluminum, or zirconium is deposited on at least one electrode of an alkaline electrolyte cell to act as a separator. Coatings onto such electrodes as nickel, cadmium, silver oxide, and zinc electrode plates is specifically disclosed. The coating may be formed by electrolysis of a water soluble compound of the metal sought to be included in the hydroxide.

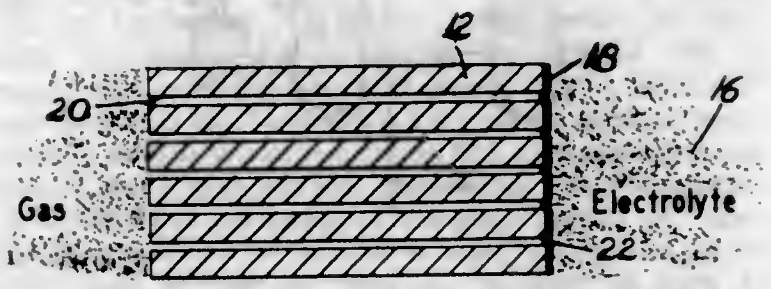
### 3,477,876
### GALVANIC CELL EMPLOYING IRON CATHODE AND METHOD OF PRODUCING GALVANIC CATHODE HAVING ACTIVATED IRON SURFACE

**Paul R. Juckniess and Robert D. Blue, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**No Drawing. Filed June 13, 1966, Ser. No. 556,857**
**Int. Cl. H01m** *15/04*
**U.S. Cl. 136—83** **10 Claims**

This invention relates to a method for producing an improved galvanic cathode having an activated iron surface. Such improved galvanic cathode is prepared by plating an activated form of iron onto a conductive substrate from an electrolyte containing ferrous ions at a temperature below about 150° C., at a current density of at least 0.25 amp/in.$^2$ of actual surface area and a pH of between about 0.5 and 3.5. The galvanic cathode of this invention finds particular utility as a cathode for a water depolarized magnesium battery.

### 3,477,877
### FUEL CELL

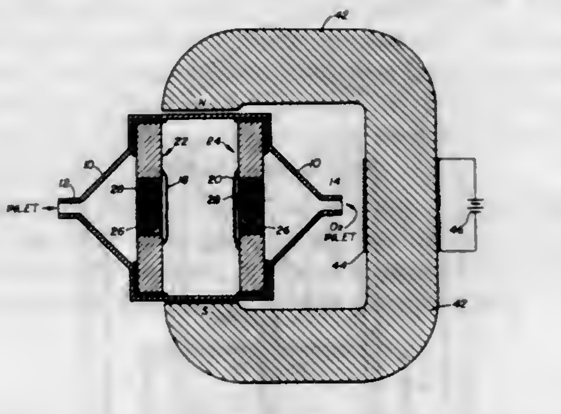
**Karl V. Kordesch, Lakewood, Ohio, assignor to Union Carbide Corporation, a corporation of New York**
**Continuation-in-part of applications Ser. No. 764,342 and Ser. No. 764,359, Sept. 30, 1958. This application July 30, 1962, Ser. No. 213,245**
**Int. Cl. H01m** *27/04*
**U.S. Cl. 136—86** **13 Claims**



1. In a fuel cell having a liquid electrolyte and at least two electrodes in contact therewith for electrochemically reacting a fuel and an oxidant, at least one such electrode comprising a gas-permeable electrolyte-repellent electrode for establishing a gas-electrolyte-electrode interface and having a layer of a material selected from the group consisting of sodium carboxymethyl cellulose, acetyl cellulose, polyvinylalcohol, and minutely porous rubber over substantially all the electrode surface in contact with said electrolyte.

### 3,477,878
### DEVICE FOR THE DIRECT CONVERSION OF THERMAL DYNAMIC FREE ENERGY IN FUEL GASES TO ELECTRICAL ENERGY

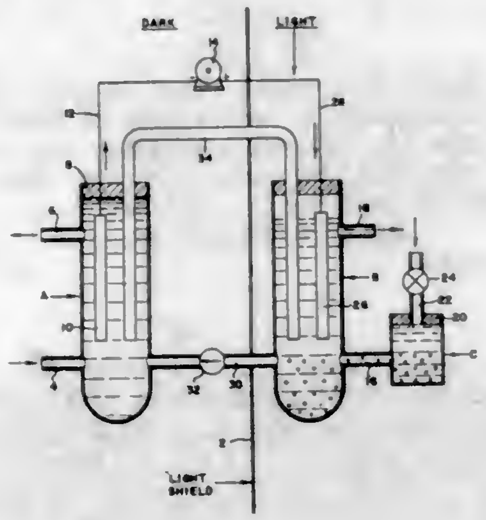
**William Lewis Hughes, Claude Menta Summers, and Hansell Jack Allison, Stillwater, Okla., assignors to Oklahoma State University of Agriculture & Applied Science, Stillwater, Okla., a corporation of Oklahoma**
**Filed Feb. 26, 1965, Ser. No. 435,461**
**Int. Cl. H01m** *27/04*
**U.S. Cl. 136—86** **9 Claims**



This invention relates to a device for the conversion of thermal dynamic free energy in fuel gases to electrical energy. More particularly, the invention relates to a device including a closed chamber with means of introducing a fuel gas in one inlet and an oxidant gas in another inlet, each through a separate electrode means, means of evacuating the chamber through an outlet opening, means of applying a magnetic field across a chamber to which the gases are subjected, and means of raising the energy level of the gases prior to the commingling thereof.

### 3,477,879
### BIOCHEMICAL FUEL CELL

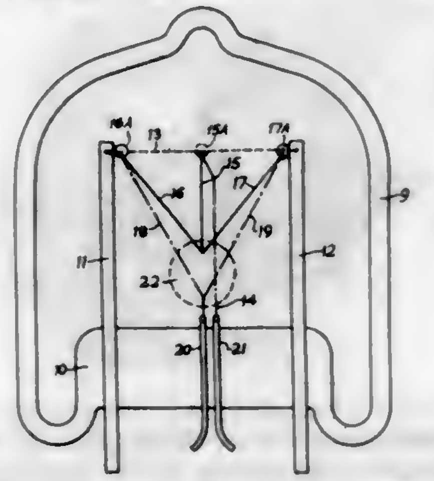
**Frederick D. Sisler, Bethesda, Md.**
**(5003 Wapakoneta Road, Washington, D.C. 20016)**
**Continuation-in-part of application Ser. No. 262,993, Mar. 5, 1963. This application Dec. 28, 1966, Ser. No. 605,378**
**Int. Cl. H01m** *27/24;* **C12b** *3/12;* **H02n** *11/00*
**U.S. Cl. 136—86** **3 Claims**



A biochemical fuel cell for producing electrical energy in an external circuit, having a positive chamber which is subjected to light and in which living photosynthetic microorganisms such as algae are grown in a liquid medium and from which the photosynthetic microorganisms, after death, are supplied as food for non-photosynthetic bacteria in a liquid medium in a negative chamber which is shielded from light, the liquid media in the chambers being kept from mixing and being separated by ion-diffusion material, a non-corrosive electrode in each chamber, respectively, being connected externally of the chambers to an electric load.

### 3,477,880
### THERMO-COUPLE DEVICE FOR CURRENT MEASUREMENT

**Frank Munro Gay, Felixstone, England, assignor to A. C. Cossor Limited, Harlow, Essex, England**
**Filed Feb. 14, 1966, Ser. No. 527,132**
**Claims priority, application Great Britain, Feb. 26, 1965, 8,473/65**
**Int. Cl. H01v** *1/30*
**U.S. Cl. 136—207** **5 Claims**



In a thermal ammeter a main thermo-couple is attached to the center of a heater wire carrying the current to be measured and two auxiliary thermo-couples are attached to the ends of the heater wire. The auxiliary thermocouples are connected in parallel with each other and in opposition to the main thermo-couple to render the voltage output dependent only on the relative temperatures of the junctions attached to the heater wire whereby a stable condition is reached more rapidly than in prior devices.

### 3,477,881
### PROCESS FOR THE FORMATION OF ELECTRIC INSULATING COATING ON ELECTRIC IRON SHEET

**Toshiya Wada, Kaneo Akanuma, and Toshihiko Takata, Kitakyushu, Japan, assignors to Yawata Iron & Steel Co., Ltd., Tokyo, Japan**
**Continuation-in-part of application Ser. No. 434,408, Feb. 23, 1965. This application Apr. 16, 1968, Ser. No. 733,203**
**Claims priority, application Japan, Feb. 24, 1964, 39/9,825**
**Int. Cl. C23f** *7/26*
**U.S. Cl. 148—6.2** **5 Claims**

The present invention relates to a process for forming an electric insulating coating on an electric iron sheet produced from silicon sheet or usual steel, comprising applying on the surface of the electric iron sheet a reducing solution containing hexavalent chromium ion, at least one bivalent metal ion, said solution having been added with at least a member selected from water-soluble saturated dicarboxyl acids having at least 4 carbon atoms and/or further added with phosphoric acid and/or boric acid and heating it for 10 to 180 hours at 150 to 500° C.

### 3,477,882
### METHOD OF AND COMPOSITION FOR PREVENTING "WHITE RUST" FORMATION

**William J. T. Coulman, Novelty, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio**
**No Drawing. Filed Dec. 13, 1965, Ser. No. 513,587**
**Int. Cl. C23f** *9/02, 7/26*
**U.S. Cl. 148—6.16** **6 Claims**

Aqueous solutions containing partially reduced chromic acid, a fluoride or fluorine-containing complex and phosphoric acid are effective for forming conversion coatings on metal surfaces, especially hot dip galvanized steel surfaces. The ingredients in these solutions are effective in very low concentrations.

### 3,477,883
### METHOD OF PRODUCING HIGH RECTANGULARITY, LOW COERCIVE FORCE MAGNETIC CORES

**Robert S. Sery, Silver Spring, and Daniel I. Gordon, Chevy Chase, Md., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Feb. 4, 1966, Ser. No. 525,812**
**Int. Cl. H01f** *1/02*
**U.S. Cl. 148—100** **2 Claims**

A method of producing magnetic cores having highly rectangular hysteresis loops and low coercive force by irradiating the core material in a low temperature environment, then magnetically annealing the material also at a low temperature.

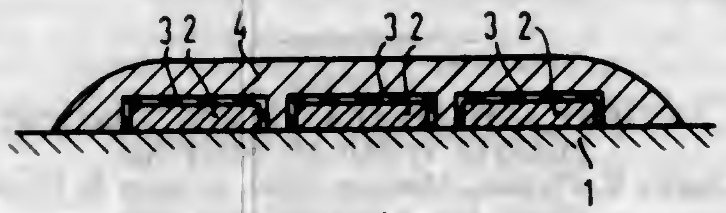
### 3,477,884
### METHOD OF INCREASING THE FATIGUE LIFE OF ROLLING CONTACT ELEMENTS AND THE RESULTING ARTICLES

**Hans Georg Schlicht, Schweinfurt, Germany, assignor to Kugelfischer Georg Schafer & Co., Schweinfurt, Germany, a corporation of Germany**
**Continuation-in-part of application Ser. No. 390,011, Aug. 17, 1964. This application July 17, 1967, Ser. No. 653,885**
**Claims priority, application Germany, July 29, 1964, K 53,604**
**Int. Cl. F16c** *33/12;* **C21d** *1/42, 1/10*
**U.S. Cl. 148—150** **8 Claims**

The useful fatigue life of rolling contact elements (such as antifriction bearing elements, gears and rollers in sheet metal rolling mills) is increased by imparting to at least one of the rolling elements, in the region thereof that is subjected to the main shearing stress under load, a residual compressive stress acting in opposition to and counteracting, said main shearing stress. This is accomplished by a combination of induction heating to selectively austenitize a surface zone adjacent the rolling contact surface, quenching to cause a selectively higher dilatation in the surface zone, and induction tempering of the quenched element so as to produce in the surface zone a volume contraction which differs from the dilatation of the underlying zones. The result is to impart an opposing residual compressive stress which initially increases with increasing distance inwardly from the surface, reaching a maximum approximately at the depth where maximum shearing stress is expected to occur and thereafter decreasing.

### 3,477,885
### METHOD FOR PRODUCING A STRUCTURE COMPOSED OF MUTUALLY INSULATED SEMICONDUCTOR REGIONS FOR INTEGRATED CIRCUITS

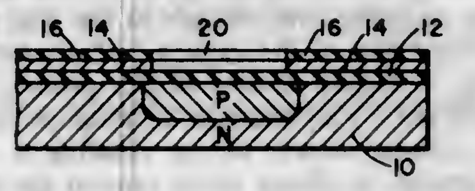
**Heinz Henker, Munich, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany**
**Filed Mar. 18, 1966, Ser. No. 535,588**
**Claims priority, application Germany, Mar. 26, 1965, S 96,207**
**Int. Cl. H01l** *1/18*
**U.S. Cl. 148—174** **16 Claims**



Method of producing a structure composed of mutually insulated semiconductor regions for integrated circuits, which comprises placing a plurality of semiconductor bodies besides one another in face-to-face contact upon a heat-resistant support, said bodies having an insulating coating at least on the entire surface not contacting the support; then depositing a crystalline material upon the semiconductor bodies and the support while preserving said insulating coating and thereby completely embedding said semiconductor bodies and bonding them together to a single integral structure; and thereafter separating said structure from said support.

### 3,477,886
### CONTROLLED DIFFUSIONS IN SEMICONDUCTIVE MATERIALS

**Gary G. Ehlenberger, Phoenix, Ariz, assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois**
**Continuation-in-part of application Ser. No. 416,229, Dec. 7, 1964. This application Feb. 27, 1967, Ser. No. 618,716**
**Int. Cl. H01l** *7/44*
**U.S. Cl. 148—187** **24 Claims**



A semiconductor region is formed by diffusing indium or gallium into a silicon substrate having a coating of silicon dioxide wherein the diffusants move laterally through the silicon dioxide layer when such layer has a thickness of at least about 500 A. for forming a relatively wide region in the substrate. Multiple diffusions forming greatly varying region widths are performed through a single aperture. A silicon dioxide layer having a thickness of 100 angstrom units does not facilitate lateral diffusions. The thicker the oxide layer, the greater the lateral diffusion. A metal or silicon nitride mask is used for masking the diffusions.

### 3,477,887
### GASEOUS DIFFUSION METHOD

**Gary G. Ehlenberger, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois**
**No Drawing. Filed July 1, 1966, Ser. No. 562,074**
**Int. Cl. H01l** *7/44*
**U.S. Cl. 148—189** **8 Claims**

In the fabrication of a semiconductor device, conductivity type-determining impurities are diffused into a monocrystalline semiconductor element by a series of steps including the formation of a gaseous mixture comprising a dopant source compound and a separate gaseous mixture comprising oxygen. The dopant source-comprising stream and the oxygen-comprising stream are separately passed to an oxidation zone maintained at a temperature of 800° to 1400° C. in order to form a wholly gas phase reaction product containing the dopant oxide. The reaction product mixture is then passed from the oxidation zone to a diffusion zone wherein the semiconductor crystal element is maintained at a temperature of about 800° to 1300° C.

### 3,477,888
### METHOD OF PRODUCING EXPLOSIVE WITH HIGH BRISANCE

**Takere Yanagisawa, Tokyo, Japan, assignor to Kabushiki-Kaisha Dokosha, Tokyo, Japan, a corporation of Japan**
**No Drawing. Filed July 30, 1968, Ser. No. 748,627**
**Int. Cl. C06b** *19/00*
**U.S. Cl. 149—18** **1 Claim**

This invention relates to a method of producing an explosive that has a high brisance. In order to increase the specific gravity of high explosives without the necessity of compression, one or more types of water soluble substances, such as sugar, glycerine, sodium chromate and the like are dissolved in water and a saturated solution is obtained.

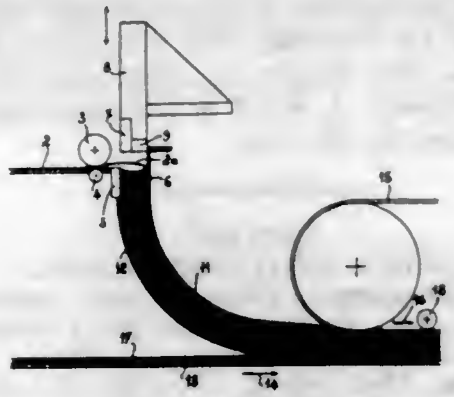
By dissolving one or more types of natural or synthetic water-dispersible polymers such as starch, for example powdered potato starch derived from the konnyaku potato, carboxymethylcellulose and the like, in this solution, a non-evaporative and non-crystallizing binder with a minimum specific gravity of 1.45 is obtained.

By employing this binder and adding an appropriate amount to one type or a mixture of two or more types of high explosives and mixing, a specific gravity of 1.45 and over can be readily produced without compressing.

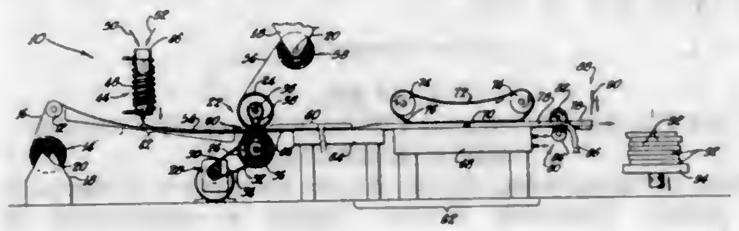
### 3,477,889
### METHOD AND APPARATUS FOR MAKING NONWOVEN PILE FABRICS

**Pierre Jean Marc Partensky, Lyon, France, assignor to B.T.B. Benoit-Le Tapis Brosse, Societe Anonyme, Lyon, France**
**Filed Mar. 18, 1966, Ser. No. 535,372**
**Claims priority, application France, Mar. 25, 1965, 45,808**
**Int. Cl. B32b** *31/10;* **D04h** *1/74*
**U.S. Cl. 156—72** **4 Claims**

Nonwoven pile fabrics are manufactured by embedding the pile in a plastic support or backing. A sheet of yarn is pushed against a wall at the mouth of a downwardly extending passage, and a blade shears the yarn against an edge of the passage, to cut the pile. The blade has a heel that presses the pile down the passage, from which it emerges between conveyor belts one of which supports the plastic layer and the other of which pushes the cut pile into the plastic layer.

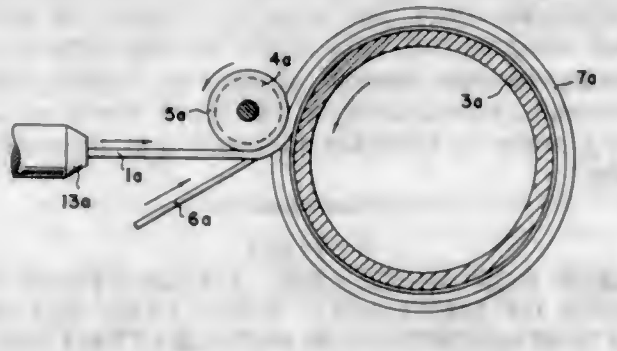


### 3,477,890
## FOAMED RESIN ARTICLES AND METHOD FOR PRODUCTION
**Walter Kitaj, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio**
**Continuation of application Ser. No. 358,223, Apr. 8, 1964. This application Jan. 19, 1968, Ser. No. 699,979**
**Int. Cl. B32b** *5/20, 31/06*
**U.S. Cl. 156—79** **4 Claims**



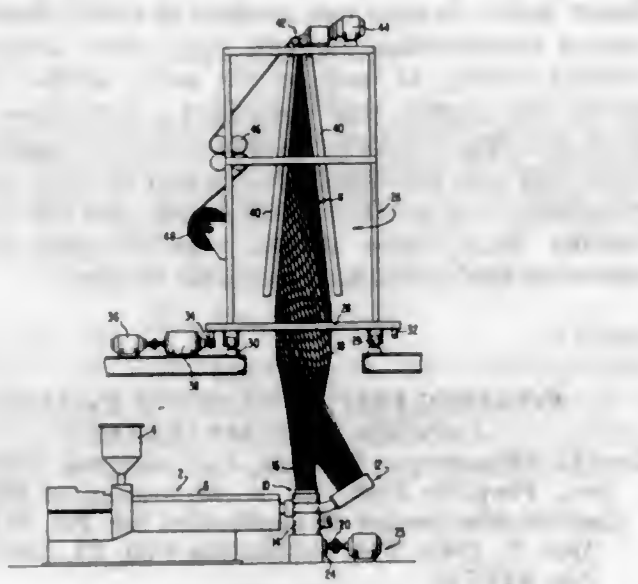
Rind-free foamed polyurethane structures of uniform density are formed by applying a foamable polyurethane material as a liquid layer onto a first porous fibrous sheet while the sheet and the liquid layer are maintained at about 70° F. The foamable polyurethane material is so formulated as to be capable of remaining in a liquid form prior to foaming for at least about 60 seconds from the time that the material is prepared. Thereafter, the liquid layer is covered with a second porous fibrous sheet such that the liquid layer is sandwiched between the two fibrous sheets whereupon sufficient pressure is then applied between the first and second fibrous sheets to uniformly spread out the liquid layer between the sheets and to impart a uniform thickness thereto. The liquid layer sandwiched between the two sheets is then maintained in liquid form without the addition of heat thereto for a sufficient period of time to stabilize the layer whereinafter autogenous foaming of the material is allowed to progress until substantially ultimate foamed thickness is achieved. The time during which the stabilization and autogenous foaming occurs is from 30 to 60 seconds. After this autogenous foaming, the outer surface of only one of the fibrous sheets is heated to a temperature of 150 to 300° F. to cure the foamed polyurethane by the heat passing through from the outer surface of the fibrous sheet. It has been found that heating only one of the fibrous sheets effects substantially higher edgewise compression strength than otherwise would be achieved if both of the fibrous sheets were heated. Sufficient pressure is applied to the outer surface of the nonheated fibrous sheet while the foam is being subjected to heat and is being cured, to smooth the fibrous sheet. However such pressure is insufficient to compress the polyurethane layer.

### 3,477,891
## METHOD OF MAKING CONTINUOUS CORRUGATED PLASTIC PIPE
**Manfred Hawerkamp, Altenrather Str. 47, Troisdorf, Germany**
**Filed Dec. 28, 1965, Ser. No. 516,839**
**Claims priority, application Germany, Dec. 3, 1964, H 54,730**
**Int. Cl. B31c** *3/00;* **B65h** *81/00;* **B32b** *31/00*
**U.S. Cl. 156—143** **6 Claims**



A method of making continuous corrugated plastic pipe wherein a continuous band of synthetic resin is wound simultaneously with a profiling core member whose width is a small fraction of the width of the band, upon a smooth-surface cylindrical mandrel so that adjoining turns of the band have their longitudinal edges in abutting relationship. The band is heated and compressed about the core member by a roller with a profiled periphery corresponding to the corrugations.

### 3,477,892
## METHOD AND APPARATUS FOR FORMING PLASTIC TUBULAR NETTING
**Charles E. Plymale, Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio**
**Filed Jan. 21, 1966, Ser. No. 522,209**
**Int. Cl. D04h** *3/16;* **B29d** *23/04*
**U.S. Cl. 156—167** **15 Claims**



Extruding a first group of plastic strands in a circular array, extruding a second group of plastic strands in a planar array crossing over strands in the first group, and rotating at least one of the groups to form tubular open mest netting. Rotation of one of the groups of strands may be achieved by a rotating mandrel position in the strands in circular array, or by rotating a die which forms the strands in planar array around the axis of the strands in circular array. After the netting is formed, a take-up mechanism advances it through a vertical guide mechanism to a supply roll. In one embodiment, the vertical guide mechanism is rotatable at the same speed and in the same direction as the rotating mandrel.

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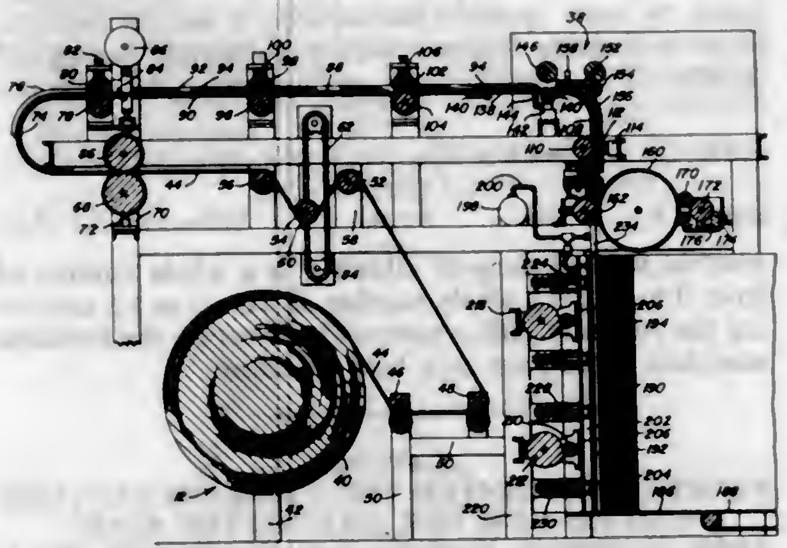
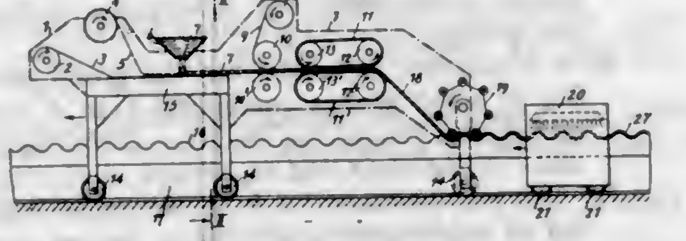
### 3,477,893
## METHOD AND APPARATUS FOR USE IN MAKING HONEYCOMB CORES
**Harry M. Brazener, Bay Harbor Island, and Robert W. Newman, Hialeah, Fla., assignors, by mesne assignments, to Inventions, Inc., a corporation of Florida**
**Filed June 27, 1967, Ser. No. 649,275**
**Int. Cl. B31d** *3/02*
**U.S. Cl. 156—197** **6 Claims**



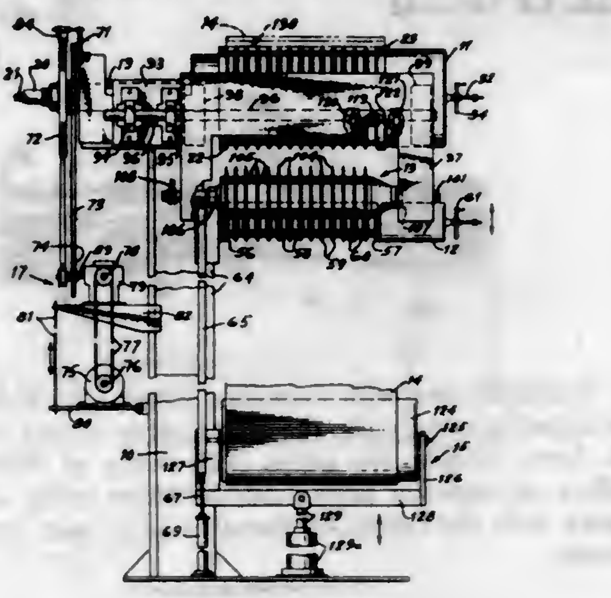
An apparatus for cutting a continuous strip of constant width into a plurality of strips of equal length, automatically removing any scrap pieces or pieces of unequal length, applying transverse lines of adhesive to the strip and depositing the strips into a press to bond the strips together along the strips of adhesive to enable subsequent expansion of the assembly to be employed with sandwich panels to form a honeycomb core. The method or sequence of operation as well as the apparatus includes a vacuum face plate employed in the press for enabling free fall of the strips into the press with the face plate slowing down the rate of descent of the strips. Also, the point of application of the adhesive areas to the strips will be varied to provide staggered areas of connection between the strips to enable expansion thereof to form the honeycomb core.

### 3,477,894
## APPARATUS FOR PRODUCING MOLDED PLASTIC GOODS
**Roderich Graff, Burgberg-Villingen, Karl Johann Reichl, Josef Butz, and Karl Pausch, Welden, Germany, assignors to Deutsche Tafelglas Aktiengesellschaft**
**Original application Dec. 8, 1961, Ser. No. 158,945. Divided and this application May 8, 1964, Ser. No. 368,761**
**Claims priority, application Germany, Dec. 10, 1960, D 34,922**
**Int. Cl. B31f** *1/22;* **B32b** *31/06*
**U.S. Cl. 156—459** **5 Claims**



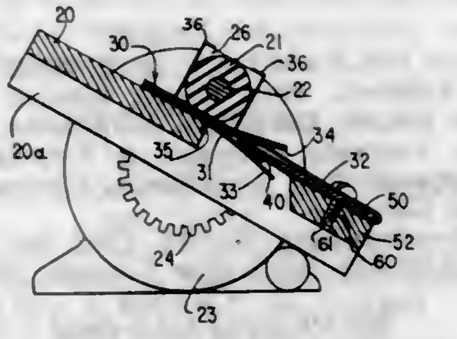
Apparatus for producing shaped parts from a laminate web including a film covered web of fiber-reinforced, hardened synthetic resin includes web preparation means and web conveying means mounted on a table or support which is movable relative to a mold surface. The conveying means comprises endless conveyors which deliver the prepared laminate web and lay this web onto the mold surface as the mold surface and the table are moved longitudinally relative to each other. The conveyors deliver the laminate web at a speed greater than the relative speed between the movable support or table and the mold surface, so that the laminate is deposited free from tensile stress.

### 3,477,895
## APPARATUS FOR MAKING RUBBER ARTICLES
**Herman C. Sauer, Ambler, Pa., assignor to Uniroyal Inc., a corporation of New Jersey**
**Filed Dec. 17, 1964, Ser. No. 419,092**
**Int. Cl. B32b** *31/26, 31/04*
**U.S. Cl. 156—511** **12 Claims**



An apparatus for forming and curing individual endless belts from an endless belt slab of moldable uncured rubber. The apparatus has a rotatable drum having a plurality of axially spaced, movable circumferential ribs forming variable sized belt-molding grooves, each of the ribs being tapered outwardly to form a sharp edge at its outermost circumference. The apparatus has a means for rotating the drum and a tension pulley spaced from the drum for rotatably supporting and tensioning the belt slab.

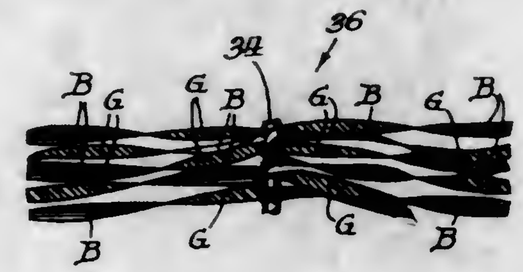
### 3,477,896
## METHOD AND APPARATUS FOR REMOVING BACKING SHEETS FROM THIN LAMINATES
**Edwin F. Townsend, Palos Hills, and Stanley C. Young, Oaklawn, Ill., assignors to Easco Leasing Corporation, Midlothian, Ill., a corporation of Illinois**
**Continuation-in-part of application Ser. No. 366,754, May 12, 1964. This application June 10, 1965, Ser. No. 467,180**
**Int. Cl. B05c** *11/04, 1/00*
**U.S. Cl. 156—584** **11 Claims**



A splitting machine for removing thin backing sheets from laminates having intermediate layers of adhesive. The machine includes a rigid reference plate which receives the laminates, and which cooperates with a resilient transport roller for advancing the laminates over the reference surface. A separating blade engages the laminate as it emerges from between the reference plate and the transport roller, and splits the backing sheet away from the laminate. A guide member directs the removed backing sheet away from the exposed adhesive coating on the remainder of the laminate, and an activating roller applies solvent to the exposed adhesive.

### 3,477,897
### ARTIFICIAL TREE

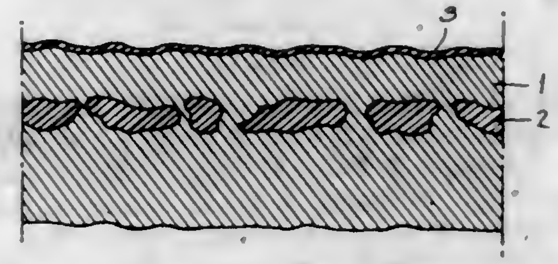
**Chester P. Hankus, Calumet Park, Ill.**
**(13210 S. Western Ave., Blue Island, Ill. 60406)**
**Filed Feb. 18, 1966, Ser. No. 528,466**
**Int. Cl. A47g** *33/06*
**U.S. Cl. 161—22 2 Claims**



Artificial tree with branches formed by colored strips wrapped around rods, the strips being slitted transversely to form needles, the strips each being of different color effect on opposite sides, and the strips being arranged in pairs with the colors of those of each pair mutually opposite.

### 3,477,898
### LEATHER SUBSTITUTE COMPOSITION

**Fred Buff, Paramus, Joseph Isadore Gross, Short Hills, and Lawrence William Healy, Glen Rock, N.J., assignors to Genset Corporation, Newark, N.J., a corporation of New Jersey**
**Filed Sept. 14, 1965, Ser. No. 487,301**
**Int. Cl. B32b** *3/26, 5/28, 27/40*
**U.S. Cl. 161—160 17 Claims**

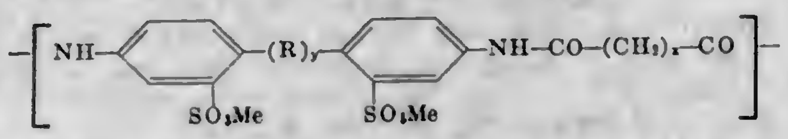


Leather substitute composition comprising a fibrous mat adjacent a polyurethane foam sheet with a number of the fibers of the mat penetrating the foam sheet and a thin, flexible polymer coating on the foam side of the composition.

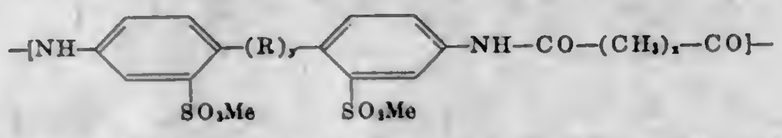
### 3,477,899
### BIFILAR POLYAMIDE YARNS AND FILAMENTS

**Harry Kubitzek, Otto Unger, Günter Nawrath, and Alfred Reichle, Dormagen, and Günther Nischk, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed May 18, 1965, Ser. No. 456,827**
**Claims priority, application Germany, June 25, 1964, F 43,260**
**Int. Cl. D01d** *5/10;* **D01f** *3/28*
**U.S. Cl. 161—173 6 Claims**

Polyamide bifilar yarns having a wool-like crimp comprising a simple synthetic linear polyamide component and a polyamide component containing 0.5 to 20% of the sulfonic acid moiety having the formula:



wherein R represents alkylene or alkene, $y$ is a whole number of from 0 to 3, $x$ is a whole number of from 2 to 12 and Me is hydrogen or an alkali metal; and a process of preparing such bifilar polyamide yarns having a wool-like crimp by melt spinning side-by-side, a simple synthetic linear polyamide together with a polyamide having 0.5 to 20% of the sulfonic acid moiety having the formula:



wherein R is alkylene or alkene, $y$ is a whole number of from 0 to 3, $x$ is a whole number of from 2 to 12, stretching the resulting bifilar yarn and subjecting the resultant stretched bifilar yarn to a heat treatment.

### 3,477,900
### PANELS FOR PRINTED CIRCUIT MANUFACTURE AND PROCESS FOR MAKING THE SAME

**Victor G. Soukup, Wyoming, and Raymond W. Horst, Cincinnati, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio**
**No Drawing. Filed July 29, 1966, Ser. No. 568,751**
**Int. Cl. B32b** *17/10;* **C08f** *21/00*
**U.S. Cl. 161—194 11 Claims**

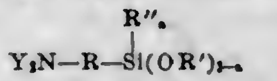
A copper-clad plastic panel comprising a copper sheet having a glass fiber reinforced plastic base molded thereto is disclosed. The plastic of the base consists of a copolymer of an alkyd resin and methyl methacrylate containing from 60–90% of the alkyd component.

### 3,477,901
### COMPOSITIONS AND PROCESSES FOR ADHERING POLYOLEFINS TO SURFACES

**Joseph W. Keil, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan**
**No Drawing. Filed May 10, 1963, Ser. No. 279,592**
**Int. Cl. B32b** *13/12;* **C09j** *3/00*
**U.S. Cl. 161—208 15 Claims**

14. An article of manufacture comprising at least one layer of a polyolefin bonded to a substrate, there being between the polyolefin and substrate a dried composition consisting essentially of

(1) a silane having the general formula



$$Y_2N-R-\overset{R''_a}{\overset{|}{Si}}(OR')_{3-a}$$

wherein:

R is a divalent hydrocarbon radical free of aliphatic unsaturation and containing at least 3 carbon atoms,

Y is a member selected from the group consisting of hydrogen atoms, amino-substituted monovalent hydrocarbon groups free of aliphatic unsaturation and monovalent hydrocarbon groups,

R′ is a member selected from the group consisting of alkyl groups containing 1 to 4 carbon atoms, and the $—CH_2CH_2OH$, $—CH_2CH_2OCH_3$ and $—CH_2CH_2OCH_2CH_3$ groups,

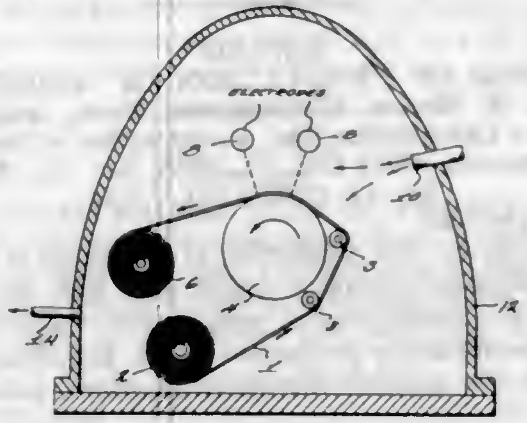
R″ is a member selected from the group consisting of monovalent hydrocarbon groups free of aliphatic unsaturation and fluorinated monovalent hydrocarbon groups free of aliphatic unsaturation in which all of the fluorine atoms are attached to at least the third carbon atom removed from the silicon atom,

$a$ is an integer from 0 to 2 inclusive, and the $Y_2N—$ group is attached to at least the third carbon atom removed from the silicon atom, and

(2) sodium monomethylsiliconate.

### 3,477,902
### PROCESS FOR MAKING TIRES BY EXPOSURE TO AN IONIZED GAS AND TREATMENT WITH RESORCINOL-FORMALDEHYDE/LATEX COMPOSITION AND THE PRODUCT

**Charles Tomasino, Greensboro, N.C., and Gerard K. Lake, New York, N.Y., assignors, by mesne assignments, to Radiation Research Corporation, a corporation of Delaware**
**Filed Oct. 14, 1965, Ser. No. 495,781**
**Int. Cl. B32b** *25/12*
**U.S. Cl. 161—241 5 Claims**



Process for improving the bonding affinity of material such as textiles and films by which the surface of the material is first modified by exposure to at least one ionized gas and preferably is then treated with a resorcinol-formaldehyde/latex composition.

### 3,477,903
### ADHESIVE LAMINATION OF CELLULOSIC SUBSTRATES

**Theodore S. Semegran, Piscataway, N.J., and Paul C. Trubiano, New York, N.Y., assignors to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Dec. 2, 1964, Ser. No. 415,511**
**Int. Cl. C09j** *3/06;* **B32b** *29/00*
**U.S. Cl. 161—266 3 Claims**

A laminate comprising at least two laminae, one of which is a cellulosic substrate selected from the group consisting of paper and paperboard; said laminae being bonded to one another by means of an adhesive composition characterized by its excellent water resistance and comprising a mixture, in an aqueous medium, of an amylose product containing at least 55%, by weight, of amylose and a peptizing agent selected from the group consisting of alkali metal hydroxides, alkali metal salts, salts of alkaline-earth metals, salts of transition elements, sodium salicylate and formaldehyde.

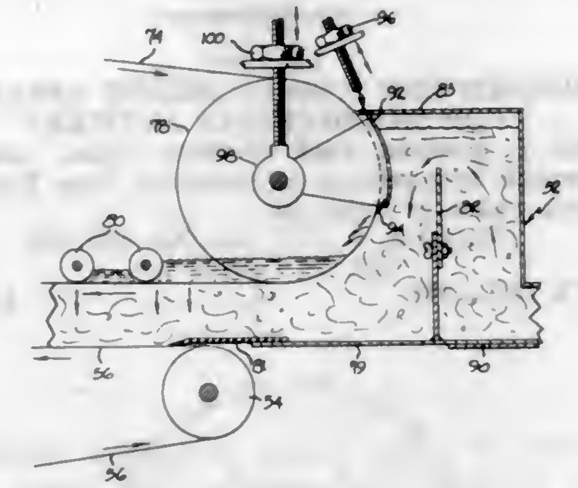
### 3,477,904
### HYDRAZIDES OF FATTY QUATERNARY AMMONIUM SALTS OF GLYCINE AS RETENTION AGENTS

**Charles L. Mehltretter, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture**
**No Drawing. Filed Sept. 30, 1966, Ser. No. 584,063**
**Int. Cl. D21h** *3/28*
**U.S. Cl. 162—175 6 Claims**

The invention comprises (1) a cationic composition of gelatinized starch and a suaternary ammonium hydrazide salt that contains one fatty aliphatic radical having from 8 to 18 carbon atoms, the gelatinized starch and hydrazide salt being linked through complex formation and (2) a process for using said composition to increase the retention of starch and clay in cellulosic fibers in papermaking by adding said composition to cellulosic pulp fibers in water to form an aqueous dispersion, adjusting the pH to about 4 with hydrochloric acid, stirring the resulting mixture, and filtering the mixture to remove the water and recover the fibers and retained starch.

### 3,477,905
### METHOD AND APPARATUS FOR MANUFACTURING FELTED FIBROUS PRODUCTS

**William M. Rogers, Jr., Ardsley, N.Y., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York**
**Filed Oct. 24, 1965, Ser. No. 504,513**
**Int. Cl. D21f** *11/02*
**U.S. Cl. 162—203 5 Claims**



In a two-wire Fourdrinier board forming process slurry water passing through the lower surface of the upper screen is permitted to drain back through the mat formed on the under surface of the screen, thus increasing the solids content of the mat and making its structure more uniform.

### 3,477,906
### SHRINKAGE OF WEB MATERIAL SUCH AS PAPER

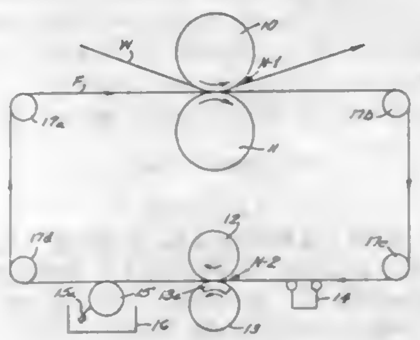
**Lars Rabstad, Moss, Norway, assignor to M. Peterson & Son A/S, Moss, Norway, a company of Norway**
**Filed Mar. 9, 1966, Ser. No. 532,839**
**Int. Cl. D21f** *11/00;* **D21h** *5/06, 5/24*
**U.S. Cl. 162—205 4 Claims**

In a press for shrinking web material, particularly paper, in order to acquire better extensibility, whereby the web material is passed through a press nip where an elastic layer consisting either of the surface of a roll or an endless belt is pressed against a hard surfce roll running at a slightly different speed, lubricant is supplied to those points where the elastic layer is not separated from the hard roll by the web material being treated but rather comes into direct contact with the hard roll. The preferred lubricants employed are polyvalent alcohols, for example glycerine.

### 3,477,907
### PRESS ARRANGEMENT FOR PAPERMAKING MACHINE

**Donald A. Ely, Sr., Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin**
**Filed Mar. 9, 1966, Ser. No. 533,077**
**Int. Cl. D21f** *3/04*
**U.S. Cl. 162—358 5 Claims**

A press arrangement in a papermaking machine wherein a stationary suction means (Uhle box) is associated with a press nip receiving a looped travelling felt with or without a moist travelling web carried thereon, so that the felt has an increased water capacity at the press nip by reason of its changed water profile effected by the stationary suction means.



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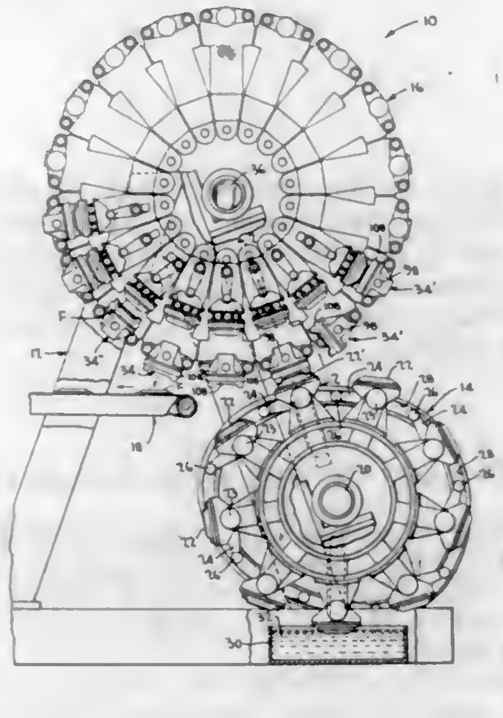
### 3,477,908
### COMBINED DRY AND FINISHING APPARATUS FOR MOLDED PULP ARTICLES
**Donald T. Daniele, East Meadow, Mass., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware**
**Filed Jan. 4, 1967, Ser. No. 607,192**
**Int. Cl. D21j** *3/00*
**U.S. Cl. 162—392 13 Claims**



A compound transfer pressing-heating die apparatus whereby wet pulp preforms are removed from a forming die, are both dried and finished into a condition for immediate use upon removal from the compound transfer pressing-heating die.

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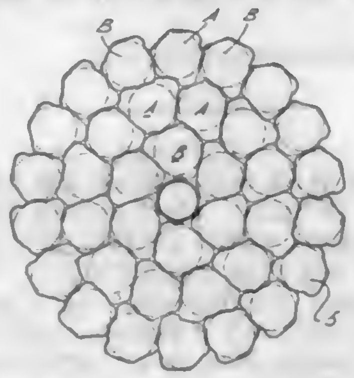
### 3,477,909
### NUCLEAR REACTOR FUEL ELEMENT ASSEMBLIES
**Alan Charles Anthony Saunders, Hale, England, assignor to United Kingdom Atomic Energy Authority, London, England**
**Filed Apr. 18, 1968, Ser. No. 722,347**
**Claims priority, application Great Britain, May 15, 1967, 22,531/67**
**Int. Cl. G21c** *3/30*
**U.S. Cl. 176—78 5 Claims**

A nuclear reactor fuel element assembly has a cluster of parallel fuel elements which are spaced apart by cellular grids. The cells of the grids are off-set from their nominal positions about the longitudinal axis of the cluster to ensure that each grid bears against each element. The cells are arranged in two groups off-set in opposite directions so that turning moments on the grid are balanced.



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### 3,477,910
### METHOD OF PRODUCTION OF UROKINASE
**Nathan H. Sloane, Germantown, Tenn., assignor to Century Laboratories, Inc., a corporation of Delaware**
**No Drawing. Filed Oct. 17, 1966, Ser. No. 586,968**
**Int. Cl. C07g** *7/02, 7/026*
**U.S. Cl. 195—66 6 Claims**

A method for the production of urokinase is disclosed which comprises admixing tannic acid with mammalian urine which results in the precipitation therefrom of a urokinase-containing precipitate which is collected, solubilized by the addition thereto of an alkali solution and purified.

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### 3,477,911
### METHOD OF PRODUCTION OF UROKINASE
**Nathan H. Sloane, Germantown, Tenn., assignor to Century Laboratories, Inc., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 586,968, Oct. 17, 1966. This application Mar. 22, 1967, Ser. No. 625,019**
**Int. Cl. C12d; C07g** *7/02*
**U.S. Cl. 195—66 6 Claims**

A crude urokinase precipitate is obtained by adding tannic acid to urine. This crude precipitate contains various proteinaceous materials, including the urokinase, It has now been found that the urokinase can be separated from the other proteinaceous materials by dissolving the crude precipitate in a alkaline solution, dialayzing and adding thereto cold butyl alcohol. The urokinase remains in solution whereas the other proteinaceous material precipitates out on the surface of the solution in the form of a gel (after shaking) which can then be readily separated out and discarded. A dilute acid is then added to the urokinase solution in order to precipitate the urokinase. This precipitated urokinase is then solubilized by adding cold ethyl alcohol thereto and permitting the resulting mixture to remain at about room temperature for a sufficient amount of time until the urokinase is substantially solubilized. This alcoholic solution of urokinase is then separated from any insoluble material present and then dialyzed to reprecipitate the urokinase in a highly purified form. This purified urokinase may then be dissolved in a dilute alkaline solution and dialyzed to produce a highly concentrated urokinase solution.

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### 3,477,912
### METHOD OF PRODUCTION OF UROKINASE
**Nathan H. Sloane, Germantown, Tenn., assignor to Century Laboratories, Inc., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 625,019, Mar. 22, 1967. This application July 7, 1967, Ser. No. 651,707**
**Int. Cl. C12d; C07g** *7/02*
**U.S. Cl. 195—66 6 Claims**

An aqueous solution of semi-purified urokinase which contains extraneous protein and coloring components is purified by treatment with controlled concentrations of versene (ethylene diamine tetra-acetic acid) and DEAE cellulose (diethylaminoethyl cellulose) at slightly alkaline pH values. At versene concentrations of about 0.005 M and above and at slightly alkaline pH values these extraneous materials will be adsorbed on the DEAE cellulose while the urokinase remains in solution. The extraneous materials, therefore, can be separated and discarded by removing the cellulose on which they are adsorbed while the purified urokinase solution is retained for further treatment by dialysis. In a similar manner a solution of urokinase in dilute versene solution below about 0.0025 M will be adsorbed onto the cellulose. As the versene concentration is increased by the addition thereof the urokinase is eluted from the cellulose, the various other contaminants remaining adsorbed on the cellulose. To stabilize the urokinase during dialysis and after its elution from the DEAE cellulose, glucose is added to a concentration of from 0.05 to 0.10 M.

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### 3,477,913
### METHOD OF PRODUCTION OF UROKINASE
**Nathan H. Sloane, Germantown, Tenn., assignor to Century Laboratories, Inc., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 651,707, July 7, 1967. This application Oct. 31, 1967, Ser. No. 679,552**
**Int. Cl. C07g** *7/026*
**U.S. Cl. 195—66 19 Claims**

Urokinase is extracted from human urine by its adsorption on a nucleoprotein-tennate complex, which is a precipitate resulting from the action of tannic acid on a nucleic acid. The adsorbed urokinase is solubilized by treating the urokinase-containing precipitate with cold alkali and purifying the urokinase solution by dialysis. The nucleoprotein-tennate complex is formed either in situ by the addition of tannic acid to urine or externally by the addition of tannnic acid to a nucleic acid such as microbiological or plant proteins or human serum proteins. Where the nucleoprotein-tennate complex is produced externally, the precipitate is either suspended in solution and added to human urine or packed into a column with supporting material through which the urine is passed, from which point in the process the procedure is the same as where it is formed in situ. Further purification of the urokinase is accomplished by a series of selective precipitation and solubilization steps.

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### 3,477,914
### TREATING METHOD OF STREPTOCOCCUS HEMOLYTICUS AND THE PREPARATION CONTAINING THE SAID MICROORGANISM
**Hajime Okamoto and Saburo Koshimura, Kanazawa-shi, Japan, assignors to Chugai Seiyaku Kabushiki Kaisha and Kyowa Hokko Kogyo Co., Ltd., both of Tokyo, Japan, and both corporations of Japan**
**No Drawing. Filed Mar. 6, 1967, Ser. No. 620,661**
**Claims priority, application Japan, Mar. 8, 1966, 41/13,784**
**Int. Cl. C12k** *1/10;* **A61k** *27/00*
**U.S. Cl. 195—96 11 Claims**

The present disclosure relates to the production of a potent anti-tumor agent which has inhibited the formation of cancer in mice and has no pathogenicity and no hemolytic activity. The anti-tumor agent is formed from the cells of *Streptococcus hemolyticus;* the microorganism is cultivated in a medium containing RNA or RNC without additional glucose, the cells are separated and suspended with penicillin at a concentration of greater than 25,000 units/ml., and the supension is incubated first at 30–38° C., preferably for 10–30 minutes, and then heated at 38–50° C., preferably for 20–60 minutes.

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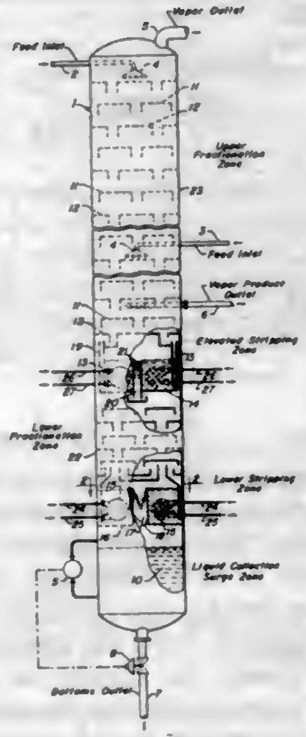
### 3,477,915
### FRACTIONATION COLUMN SYSTEM OPERATING WITH MULTIPLE LEVEL INTERNAL REBOILERS
**James E. Gantt, Elmwood Park, and William B. Borst, Jr., Mount Prospect, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**Filed Mar. 28, 1966, Ser. No. 537,894**
**Int. Cl. B01d** *3/14*
**U.S. Cl. 202—155 6 Claims**



A fractional distillation column having at least two vertically spaced apart reboilers, both preferably being internal submerged reboilers, one being in the lower or bottom portion of the column and the other being at an elevation substantially above the lower reboiler but below the feed inlet to the column. The reboilers may be positioned in respective liquid retaining wells designed to permit normal vapor upflow and liquid downflow through the wells.

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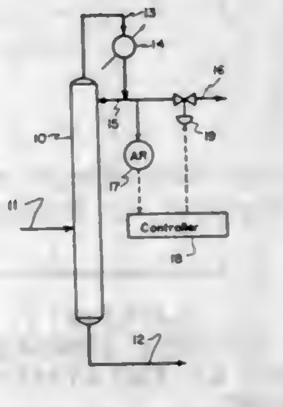
### 3,477,916
### METHOD OF CONTROLLING DISTILLATION OPERATION WITH ON-OFF CONTROL RESPONSE
**George A. McNeill, Alvin, and Jerry D. Sacks, Houston, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**Filed Jan. 4, 1967, Ser. No. 607,289**
**Int. Cl. B01d** *3/42*
**U.S. Cl. 203—3 4 Claims**



A process for separation of mixtures by distillation, liquid-liquid extraction, and the like. The process is controlled by manipulating the flow rate of a stream of the separation zone so as to always be at one of two predetermined values. The flow rate is changed from one predetermined value to the other predetermined value in response to deviations of the purity of a product stream from a desired purity without regard to the magnitude of the deviation.

**3,477,917**

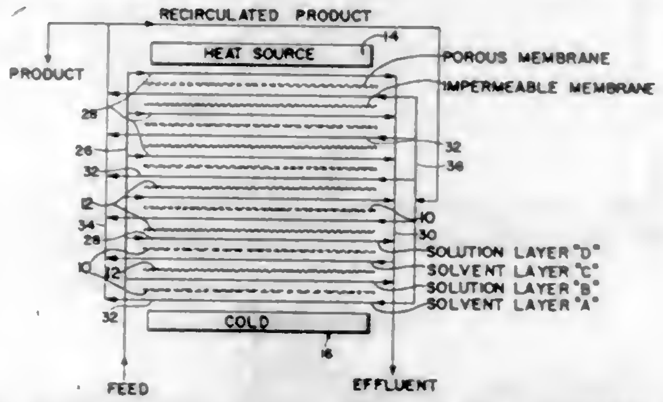
### MULTIPLE EFFECT DISTILLATION WITH MICROPOROUS MEMBRANES AND DISTILLATE RECIRCULATION

**Franklin A. Rodgers, Cambridge, Mass., assignor to Pactide Corporation, Cambridge, Mass., a corporation of Delaware**

**Continuation-in-part of application Ser. No. 531,463, Mar. 3, 1966. This application Aug. 28, 1968, Ser. No. 756,070**

**Int. Cl. C02b** *1/04;* **B01d** *3/14*

**U.S. Cl. 203—10** **18 Claims**



Distillation apparatus in which a liquid composition and a vaporizable liquid or distillate extracted from said liquid composition are counterflowed through channels on opposite sides of a microporous membrane, heat is transferred to the liquid composition to vaporize the liquid and heat is transferred from the distillate liquid to transfer the vapor through the membrane and condense the vapor. Internal heat exchange between effluent liquid composition and incoming liquid composition is achieved by recirculating through each distillate channel a portion of the distillate liquid withdrawn therefrom.

**3,477,918**

### HIGH PRESSURE VAPOR COMPRESSION DISTILLATION

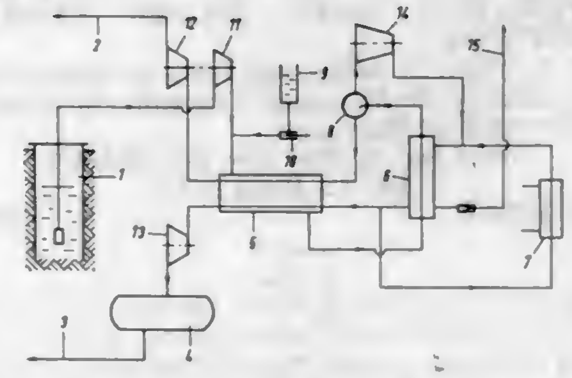
**Fritz Jakob, near Wolfratshausen, Germany, assignor to Linde Aktiengesellschaft, Wiesbaden, Germany**

**Filed Aug. 22, 1967, Ser. No. 662,372**

**Claims priority, application Germany, Aug. 22, 1966, L 54,369**

**Int. Cl. C02b** *1/06;* **B01d** *3/00*

**U.S. Cl. 203—11** **12 Claims**



Vapor compression distillation, at pressures of 80–200 atmospheres, is employed for desalination of sea water and the like.

**3,477,919**

### REMOVAL OF METHYL FORMATE FROM PROPYLENE OXIDE BY TREATMENT WITH CALCIUM HYDROXIDE

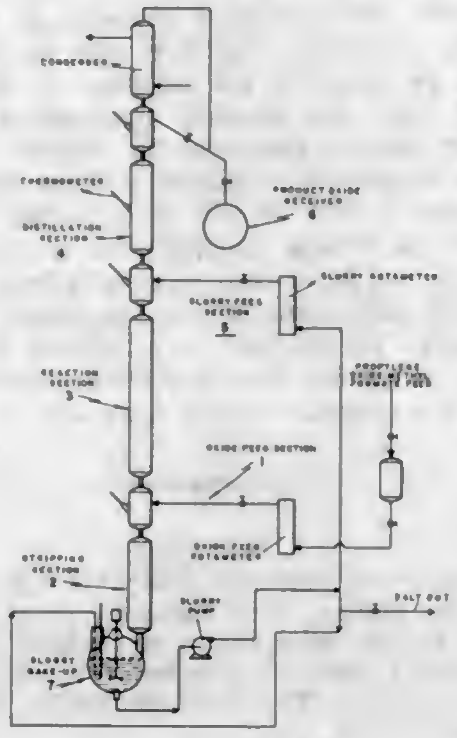
**Myrl Lichtenwalter and Simon Pierce Burns, Austin, Tex., assignors to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware**

**Continuation-in-part of application Ser. No. 655,771, July 25, 1967. This application July 11, 1968, Ser. No. 744,014**

**Int. Cl. B01d** *3/34*

**U.S. Cl. 203—36** **5 Claims**

Propylene oxide prepared by the oxidation of alkanes or olefins is contaminated with other oxidation products, including methyl formate which boils very near the boiling point of propylene oxide, making separation of the two by distillation impractical. The methyl formate impurity can be removed from the contaminated propylene oxide by reaction with an aqueous slurry of calcium hydroxide.



**3,477,920**

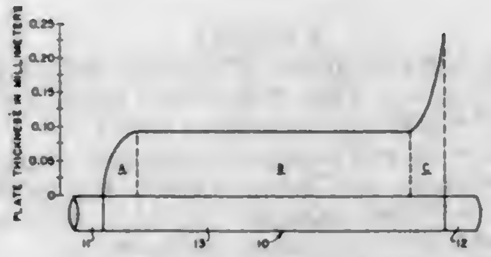
### METHOD OF TREATING ELECTRODES FOR USE IN ELECTROPLATING BATHS

**Ram Dev Bedi, Southfield, Mich., assignor to M&T Chemicals Inc., New York, N.Y., a corporation of Delaware**

**Continuation-in-part of application Ser. No. 291,917, July 1, 1963. This application Dec. 23, 1968, Ser. No. 786,040**

**Int. Cl. C23b** *5/48*

**U.S. Cl. 204—15** **15 Claims**



In accordance with certain of its aspects, this invention relates to the process for electroplating a plate from a bath onto a cathode having predetermined areas to be plated and selected areas to be stopped-off which comprises placing said selected areas in intimate electrical contact with a metal in low hydrogen overvoltage state having a hydrogen overvoltage lower than that of the cathode of from 0.015 to 0.25 volt selected from the group consisting of platinum, palladium, rhodium, iridium, and nickel, and subjecting said cathode including said selected areas to plating current density whereby said plate is deposited onto said predetermined areas and said selected areas remain stopped-off.

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**3,477,921**

### PROCESS FOR ANODIZING MAGNESIUM AND MAGNESIUM ALLOYS

**Terry Lee Sanford, Fullerton, Calif.**
**(419 N. Pauline St., Anaheim, Calif. 92805)**

**No Drawing. Filed Apr. 10, 1967, Ser. No. 635,289**

**Int. Cl. C23b** *9/06*

**U.S. Cl. 204—56** **12 Claims**

A process for applying improved corrosion and abrasion resistant coatings on magnesium and magnesium alloys by anodic oxidation in an aqueous solution of boron compounds and chlorides. Said coatings which contain the minerals boracite and enstatite are more dense and glassy than those produced heretofore.

**3,477,922**

### ELECTROCHEMICAL PROCESS

**Ernest Thomson Blues, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain**

**No Drawing. Filed Feb. 11, 1966, Ser. No. 526,689**

**Claims priority, application Great Britain, Feb. 19, 1965, 7,287/65; June 24, 1965, 26,821/65**

**Int. Cl. B01k** *1/00;* **C07c** *127/02*

**U.S. Cl. 204—59** **10 Claims**

There is provided a process for producing organic isocyanates, urethanes or ureas in an electrolytic cell by contacting an anode with a solution of a readily ionisable cyanate or isocyanate, an aromatic compound having at least one hydrogen atom or an olefinic compound. A current is passed through the cell and an isocyanate is produced, but when the solution also contains an alcohol, phenol, primary or secondary amine, a urethane or urea is produced.

**3,477,923**

### ELECTROCHEMICAL HYDRODIMERIZATION OF ACRYLONITRILE

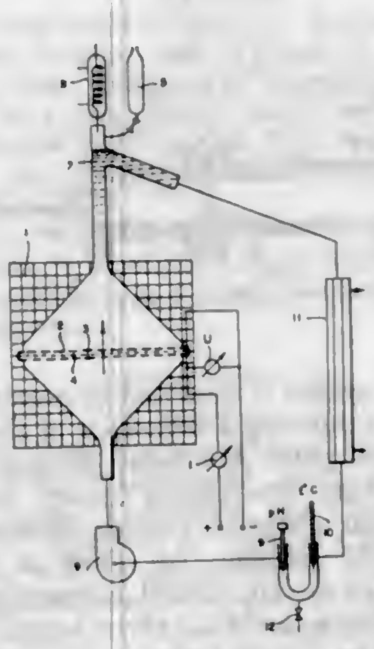
**Fritz Beck, Hans Leitner, and Karl Wintersberger, Ludwigshafen (Rhine), and Harald Guthke, Frankenthal, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Rhineland-Pfalz, Germany**

**Filed July 8, 1966, Ser. No. 563,793**

**Claims priority, application Germany, July 9, 1965, 1,518,570; Jan. 13, 1966, 1,571,720**

**Int. Cl. B01k** *1/00, 3/10*

**U.S. Cl. 204—73** **9 Claims**



An electrochemical hydrodimerization of acrylonitrile in which the aqueous reaction mixture containing acrylonitrile and a conducting salt is passed continuously in transverse direction through the macroscopic and liquid-permeable surface of at least one pair of electrodes consisting of anode and cathode members in adjacent parallel relationship and spaced at a distance of approximately 0.02 to 1 mm. The adiponitrile formed by the reaction is useful in the production of synthetic fibers.

**3,477,924**

### COATING PROCESS

**Razmic S. Gregorian, Silver Spring, and Richard W. Bush, Laurel, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut**

**No Drawing. Continuation-in-part of application Ser. No. 625,935, Mar. 27, 1967. This application Apr. 24, 1967, Ser. No. 632,945**

**Int. Cl. B01k** *1/00;* **C07b** *3/00*

**U.S. Cl. 204—78** **6 Claims**

A process for forming a polyarylene oxide by electropolymerization which comprises maintaining an electric potential between electrodes immersed in a basic aqueous solution of a hydroxylated aromatic compound. The polymer, if desired, can be recovered as a coating on the anode.

**3,477,925**

### METHOD OF ELECTROLYSING MANGANOUS CHLORIDE IN A DIAPHRAGM CELL

**Cornelis Marius Kooi, Oost-Voorne, and Antienus Louissen, Hengelo, Netherlands, assignors to N.V. Koninklijke Nederlandsche Zoutindustrie, Hengelo, Netherlands, a Dutch company**

**No Drawing. Filed Aug. 10, 1966, Ser. No. 571,392**

**Int. Cl. C22d** *3/18, 1/24;* **B01k** *3/10*

**U.S. Cl. 204—105** **7 Claims**

Metallic manganese and chlorine are produced in a diaphragm cell by electrolysis of an aqueous solution of $MnCl_2$ and $NH_4Cl$ as the catholytic and acidified $MnCl_2$, free from ammonium ions, as the analyte.

**3,477,926**

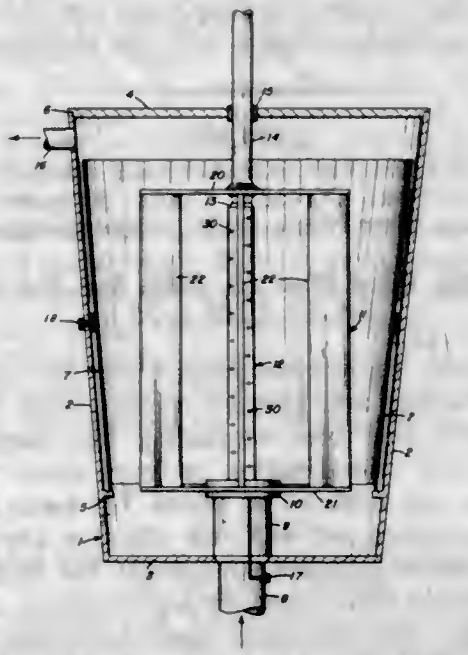
### ELECTROLYTIC PROCESS AND APPARATUS FOR RECOVERING METALS

**Richard W. Snow and Chester C. Wilt, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y,. a corporation of New Jersey**

**Filed May 24, 1965, Ser. No. 458,124**

**Int. Cl. C22d** *1/12;* **B01k** *3/04*

**U.S. Cl. 204—109** **12 Claims**



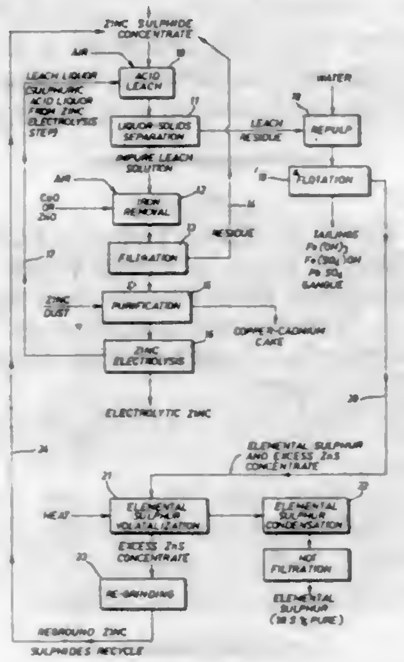
Apparatus for electrolytic recovery of silver incorporating a tubular cathode surrounding a tubular anode with an agitator disposed therebetween for rotation about the anode. The silver-containing solution may be introduced through the tubular anode.

### 3,477,927

### HYDROMETALLURGICAL PROCESS FOR TREATING SULPHIDES CONTAINING NON-FERROUS AND FERROUS METAL VALUES

**Herbert Veltman, Edmonton, Alberta, Patrick T. O'Kane, Fort Saskatchewan, Alberta, James W. Gulyas, Edmonton, Alberta, and William R. Middagh, Fort Saskatchewan, Alberta, Canada, assignors to Sherritt Gordon Mines Limited, Toronto, Ontario, Canada, a company of Ontario**

**Filed Sept. 9, 1966, Ser. No. 578,211**
**Claims priority, application Canada, Sept. 11, 1965, 940,343**
**Int. Cl. C22d** *1/22*
**U.S. Cl. 204—119** **8 Claims**



Zinc and iron bearing sulphides are reacted under oxidizing conditions with an aqueous sulphuric acid solution to produce elemental sulphur and a low iron, zinc bearing solution which is suitable for subsequent recovery of zinc by electrolysis. A rapid rate of reaction is obtained by conducting the reaction at a temperature above the melting point of sulphur and by adjusting the relative amounts of sulphides and acid available for the reaction therewith such that the amount of sulphides present is in excess of that required to supply the zinc values needed to combine stoichiometrically with the available acid.

### 3,477,928

### PROCESS FOR THE RECOVERY OF METALS

**Enzo L. Coltrinari, Arvada, Colo., assignor to Cerro Corporation, New York, N.Y., a corporation of New York**

**No Drawing. Filed Mar. 28, 1966, Ser. No. 537,722**
**Int. Cl. C22d** *1/26*
**U.S. Cl. 204—123** **7 Claims**

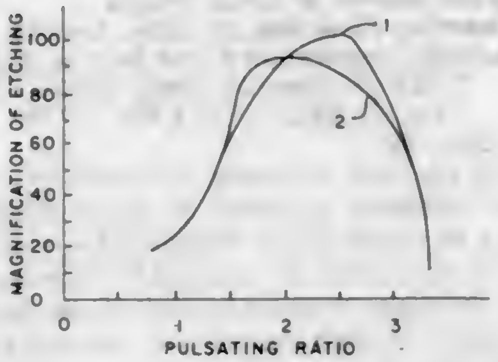
An improved, continuous process for the recovery of lead, silver, copper and bismuth metal values from low-grade, oxidized lead ores containing said metal values, which comprises comminuting at least about 50 to 70 percent of the ore material to minus 325 mesh size, mixing the comminuted ore with an effective amount of a chloridizing agent sufficient to convert the metal values into brine-soluble form, roasting the resulting admixture in a two-stage, nonvolatilizing roast operation, the first stage being conducted at a temperature between about 510° C. to about 660° C. under a neutral atmosphere to remove a substantial portion of any sulfur originally present in the ore, the second stage being conducted at a temperature between about 500° C. and about 540° C. under an oxidizing atmosphere to convert the metal values into brine-soluble form, leaching the resulting calcine in a brine solution with a pH between about 1.9 and about 2.5 to extract the metal values therefrom and subsequently recovering the metals by electrodeposition techniques.

### 3,477,929

### METHOD OF ETCHING ALUMINUM FOIL IN THE MANUFACTURING OF ALUMINUM ELECTROLYTIC CONDENSERS

**Takeshi Namikata and Kazuo Kubo, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan**

**Filed Apr. 14, 1967, Ser. No. 630,972**
**Claims priority, application Japan, Apr. 18, 1966, 41/24,542**
**Int. Cl. C23b** *3/02*
**U.S. Cl. 204—141** **8 Claims**



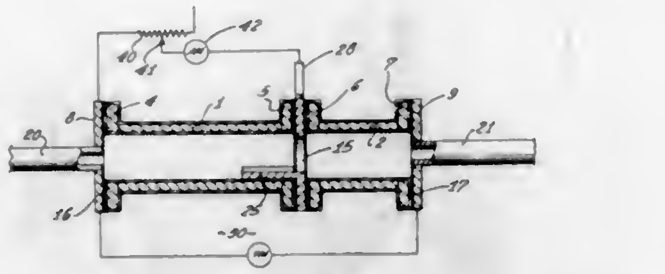
Method of etching an aluminum electrode required in the manufacturing process of the electrolytic condenser by applying a pulsating direct current to the aluminum electrode immersed in an aqueous solution made up essentially of $Cl^-$ of 0.02–0.2 mol/l. and $CrO_4^{--}$ of 0.02–0.1 mol/l.

### 3,477,930

### METHOD AND SYSTEM FOR PREVENTING ELECTROLYTIC CORROSION OF PIPES

**Virgil C. Crites, Los Angeles, Calif., assignor to Lucile Wells Crites, Los Angeles, Calif.**

**Filed Dec. 2, 1965, Ser. No. 511,077**
**Int. Cl. C23f** *13/00*
**U.S. Cl. 204—147** **31 Claims**



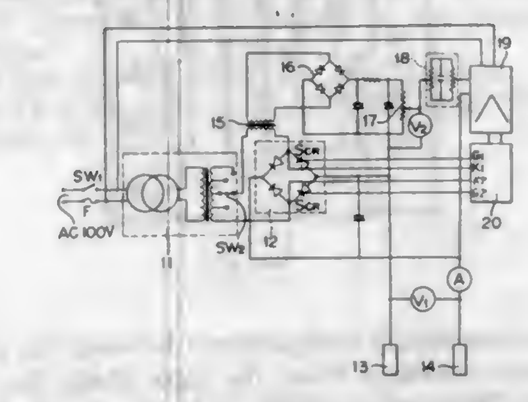
A method and system is disclosed to prevent corrosion in a pipe system exhibiting a difference in electric potential along the flow path. A tubular element is inserted into the pipe system, interrupting current flow through pipe at that location except for current through the liquid passing through the element. An anode is placed into the element and an electric circuit is completed for the anode which includes liquid at more negative potential than the anode. The circuit includes means to raise the potential above the potential imparted upon it by the liquid to obtain a bucking voltage in an environment insulated from the pipes except for liquid conduction. Raising of potential is attained either by selecting the anode material or by connecting an external voltage to the anode.

### 3,477,931

### METHOD AND APPARATUS FOR AUTOMATIC ELECTRIC CORROSION-PROOFING

**Kenji Ueda and Hiroshi Ogawa, Nagasaki-shi, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan**

**Filed Mar. 28, 1966, Ser. No. 537,845**
**Claims priority, application Japan, Mar. 30, 1965, 40/18,525; May 31, 1965, 40/32,093**
**Int. Cl. C23f** *13/00;* **B01k** *3/00*
**U.S. Cl. 204—147** **11 Claims**



In a method and apparatus for corrosion proofing metallic structures immersed in an electrolyte, such as sea water, the metallic structure is used as a cathode and an anode is placed in spaced relation thereto, the usual third or "standard" electrode being omitted. A potential is applied between the anode and the metallic structure to cause a relatively small current to flow from the anode to the metallic structure, the latter acting as a cathode. The current is maintained at a value such that the potential of the metallic structure or cathode is maintained at a value at which the metallic structure is corrosion-proof. The potential drop between the metallic structure and the anode, and the resistance drop through the electrolyte or sea water, between the anode and the metallic structure, are continuously measured and the difference between the two measured values is maintained at a constant value equal to the work potential necessary to corrosion-proof the work. In a variation, the current flow may be maintained within relatively small values either side of the required potential value for the metallic structure.

### 3,477,932

### LASER RADIATION-INDUCED POLYMERIZATION

**Leo P. Parts, Dayton, and William R. Feairheller, Jr., Kettering, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware**

**No Drawing. Filed Nov. 13, 1967, Ser. No. 682,581**
**Int. Cl. C08f** *1/16;* **C08d** *1/00*
**U.S. Cl. 204—159.23** **6 Claims**

Process for the polymerization of acrylamide or alkali metal acrylates by irradiation of an aqueous solution containing the monomer, a photosensitizer and a co-catalyst with an argon laser.

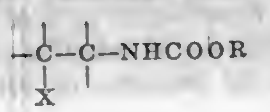
### 3,477,933

### PROCESS FOR PREPARING N-MONOSUBSTITUTED CARBAMIC ACID ESTERS

**Walter A. Stamm, Tarrytown, and Carl C. Greco, New York, N.Y., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 411,124, Nov. 13, 1964. This application June 6, 1966, Ser. No. 555,222**
**Int. Cl. B01j** *1/10;* **C07c** *3/24*
**U.S. Cl. 204—162** **20 Claims**

N-monosubstituted carbamic esters of the type



$$-\underset{X}{\overset{|}{\underset{|}{C}}}-\overset{|}{\underset{|}{C}}-NHCOOR$$

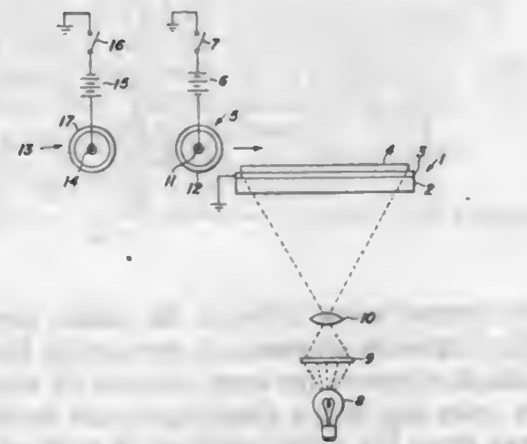
where X is a halogen and R is an alkyl or aryl group are prepared by reacting, in the presence of actinic radiation or a chemical agent for producing free radicals, an N-monohalocarbamic ester with an unsaturated organic compound having at least one nonaromatic carbon to carbon double bond.

### 3,477,934

### IMAGING PROCESS

**Leonard M. Carreira, Webster, and Vsevolod Tulagin, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York**

**Filed June 29, 1966, Ser. No. 561,587**
**Int. Cl. C23b** *13/00;* **B01k** *5/00*
**U.S. Cl. 204—181** **15 Claims**



An electrophoretic imaging process is disclosed in which an electrostatic charging step is performed with a corotron to leave a uniform charge on the surface of one of the electrodes.

### 3,477,935

### METHOD OF FORMING THIN FILM RESISTORS BY CATHODIC SPUTTERING

**John H. Hall, Santa Clara, Calif., assignor to Union Carbide Corporation, a corporation of New York**

**Filed June 7, 1966, Ser. No. 555,771**
**Int. Cl. C23c** *15/00*
**U.S. Cl. 204—192** **5 Claims**

A method of forming thin film resistors by cathodic sputtering of a silicon target wound thereabout with wires of a nickel-chromium alloy.

### 3,477,936

### SPUTTERING OF METALS IN AN ATMOSPHERE OF FLUORINE AND OXYGEN

**Frank H. Gillery, Allison Park, Jean P. Pressau, Evans City, and Charles W. Lewis, Pittsburgh, Pa., assignors to PPG Industries, Inc., a corporation of Pennsylvania**

**Filed June 29, 1967, Ser. No. 649,897**
**Int. Cl. C23c** *15/00;* **B01k** *1/00*
**U.S. Cl. 204—192** **10 Claims**

The instant invention relates to a method of cathodic sputtering of metal oxide films. It particularly relates to a cathodic sputtering process in vacuo for depositing electroconductive metal oxide films "doped" with fluorine. More specifically, this invention pertains to a method of depositing metal oxide films by sputtering from a metal cathode in the presence of a gaseous fluorine-containing compound.

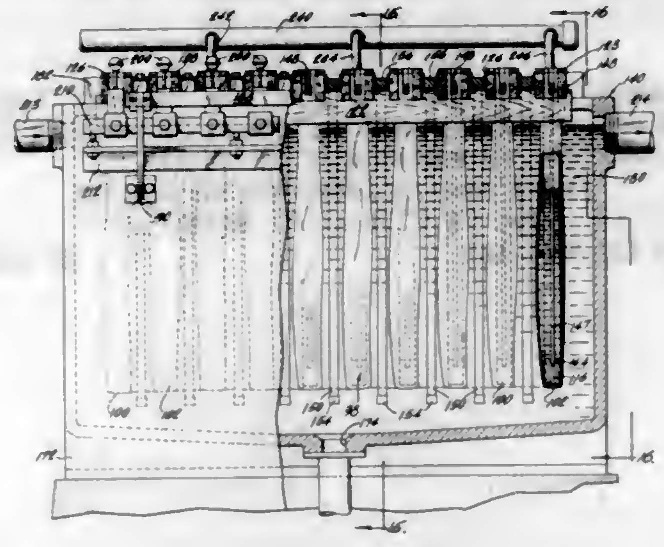
### 3,477,937

### APPARATUS FOR THE ELECTROWINNING OF MANGANESE

**David E. Gullett and Edmond F. Reynolds, Knoxville, Tenn., assignors to Foote Mineral Company, Exton, Pa., a corporation of Pennsylvania**

**Filed Mar. 11, 1966, Ser. No. 533,664**
**Int. Cl. B01k** *3/10;* **C22d** *1/24;* **C23b** *5/74*
**U.S. Cl. 204—263** **10 Claims**

Apparatus for the electrowinning of manganese employing a plurality of alternating cathode plates and anode elements in a manganese-plating bath, which apparatus utilizes an electrolyte-pervious diaphragm of woven textile material to form a single catholyte compartment which separates the cathode elements from the anode elements and which is spaced from the cathode elements to permit free circulation of electrolyte inside the catholyte compartment between the major surfaces of the different cathode elements. A supporting frame supports the cathode elements for easy removal by withdrawal through the open top of the diaphragm, and holds the diaphragm away from the major surfaces of each of the cathode elements to permit the desired free circulation of the catholyte electrolyte.



**3,477,938**

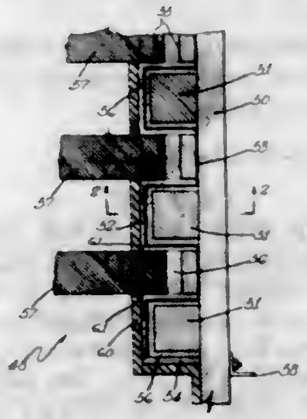
### ANODE STRUCTURE FOR ELECTROLYTIC CELL

**Morton S. Kircher, Vancouver, British Columbia, Canada, assignor to Dryden Chemicals Limited, Dryden, Ontario, Canada**

**Filed Oct. 6, 1967, Ser. No. 673,516**

**Int. Cl. B01k** *3/10;* **C22d** *1/02*

**U.S. Cl. 204—266** **7 Claims**



In a cell for the production of chlorine and alkali by electrolysis of alkali halide brine, a normally vertically extending wall structure is provided to which anodes have been attached by the method of covering the wall section with a layer of copper mesh arranged in corrugated fashion and providing a thin cast section of lead extending through the interstices of the copper mesh and transverse holes in the anodes.

**3,477,939**

### BIPOLAR ELECTROLYTIC CELL

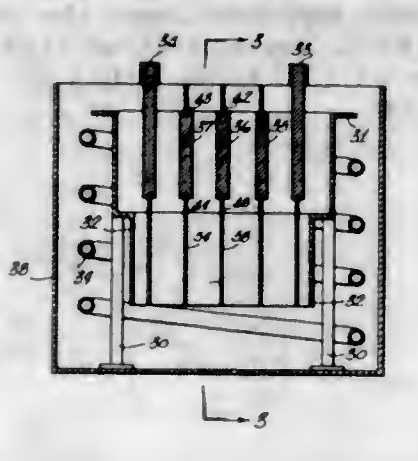
**Morton S. Kircher, Vancouver, British Columbia, Canada, assignor to Dryden Chemicals Limited, Dryden, Ontario, Canada**

**Filed Mar. 7, 1967, Ser. No. 621,198**

**Int. Cl. B01k** *3/00*

**U.S. Cl. 204—268** **4 Claims**

A bipolar cell is divided into non-communicating compartments by means of the electrodes and upper and lower insulating separators. The upper separators form a series of overflow channels one on either side of each compartment electrically isolated from one another. The tank containing the electrodes has a downwardly directed draft box divided by separators into a corresponding number of compartments. The electrolyte circulation follows a path upwards through a draft box compartment and a corresponding compartment between the electrodes and thence outwards from the tank along the overflow channels. This arrangement reduces electrical leakage between adjacent compartments to a low value and, at the same time, provides a relatively unobstructed path for the natural circulation of electrolyte caused by the gas evolved during electrolysis.



**3,477,940**

### BINDER CONTAINING ELECTRODE FOR ELECTROCHEMICAL PROCESSES

**Donald H. Grangaard, Appleton, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware**

**Filed Dec. 27, 1966, Ser. No. 605,014**

**Int. Cl. B01k** *3/08*

**U.S. Cl. 204—290** **5 Claims**

An electrode for use in alkaline electrolytes having a porous base and a porous coating of significant thickness adhered on the base such that the electrode is gas pervious to the extent required in the electrochemical reduction of oxygen. A process for preparing such an electrode by the inclusion of a blowing agent capable of evolving gas at a temperature at which the binder of the coating is at least in a plastic condition.

**3,477,941**

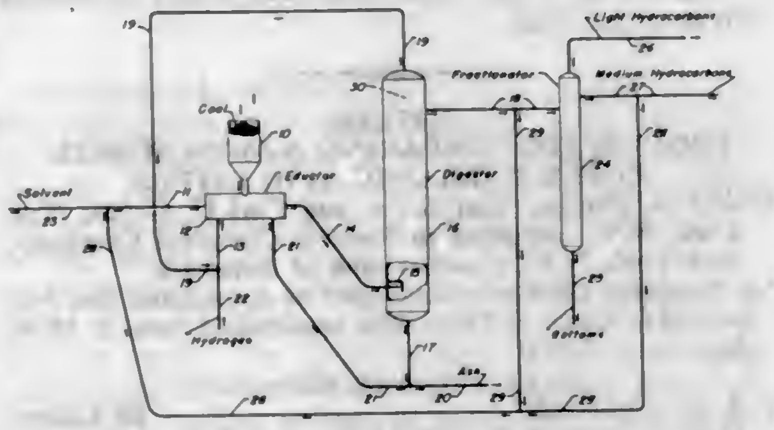
### METHOD OF TREATING COAL

**Edwin F. Nelson, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**

**Filed Jan. 25, 1968, Ser. No. 700,536**

**Int. Cl. C10g** *1/04*

**U.S. Cl. 208—8** **4 Claims**



Method for the liquefaction of coal via solvent extraction using a hydrogen-donor selective solvent. The method pulverizes coal in the presence of solvent utilizing high velocity impact means situated in a digestion zone which is maintained under coal liquefying conditions. Preferably, the method includes injecting hydrogen gas into the digestion zone thereby facilitating the conversion of solid coal into liquid coal products. Hydrocarbons useful as fuel and/or chemicals may be obtained from the liquid coal extract.

**3,477,942**

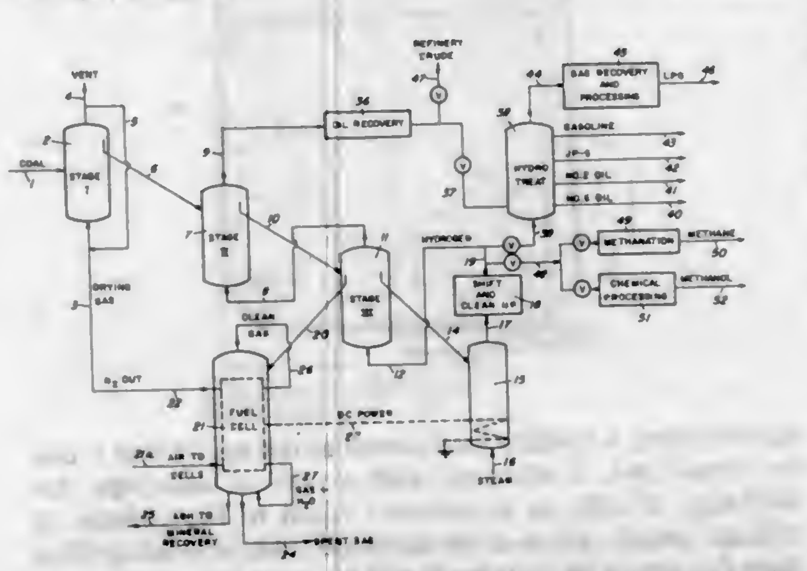
### HYDROCARBON FUELS FROM COAL OR ANY CARBONACEOUS MATERIAL

**Neal P. Cochran, Frederick, Md., assignor to the United States of America as represented by the Secretary of the Interior**

**Filed July 28, 1967, Ser. No. 656,954**

**Int. Cl. C10g** *1/06;* **C10j** *3/18;* **H01m** *27/30*

**U.S. Cl. 208—10** **6 Claims**



In the pyrolysis or hydrogasification of coal wherein the coal is converted to fluid products and hot solid char the improvement comprising passing a first portion of char to a fuel cell or magneto-hydrodynamic device to produce D.C. current and passing a second portion of char to an internal resistant reactor wherein the char is reacted with steam to form a producer gas containing hydrogen using a portion of the D.C. current produced to control the heat input to the reactor.

**3,477,943**

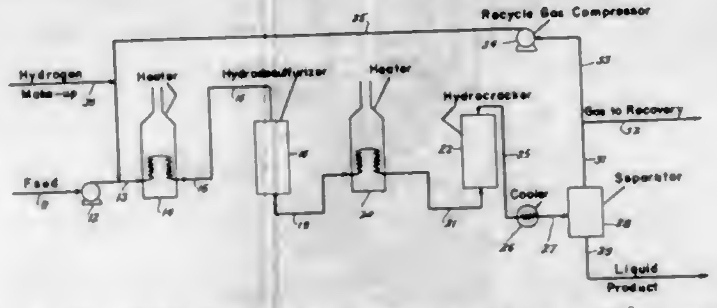
### TWO-STAGE TREATMENT OF HIGH SULFUR CONTENT PETROLEUM MATERIALS

**George P. Masologites, Broomall, and Harry E. Jacobs and Paul J. White, Media, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania**

**Filed Apr. 25, 1967, Ser. No. 633,580**

**Int. Cl. C10g** *37/00, 23/02, 13/04*

**U.S. Cl. 208—89** **5 Claims**



A two-stage process for treating a high sulfur content petroleum material in order to remove the sulfur contained therein and to produce a naphtha fraction suitable for use as an ethylene charge stock, a low sulfur content furnace oil, and a low sulfur content feed oil, comprising subjecting said petroleum material at a high temperature and high pressure to hydrodesulfurization in the presence of hydrogen and a highly active catalyst to produce a hydrodesulfurized product. Hydrocracking at a high temperature and high pressure in the presence of hydrogen and a specific low activity catalyst, and recovering the products thus produced. The highly active hydrodesulfurization catalyst comprises a member of the group consisting of oxides and sulfides of metals of the left-hand column of Group VI of the Periodic Table of Elements and of iron group metals composited with an activated alumina prepared by drying and calcining an aluminum hydroxide containing from 1.2 to 2.6 moles of water of hydration. The specific low activity hydrocracking catalyst is selected from the group consisting of oxides and sulfides of cobalt, molybdenum, nickel, tungsten and mixtures thereof, deposited on an amorphorus alumina support.

**3,477,944**

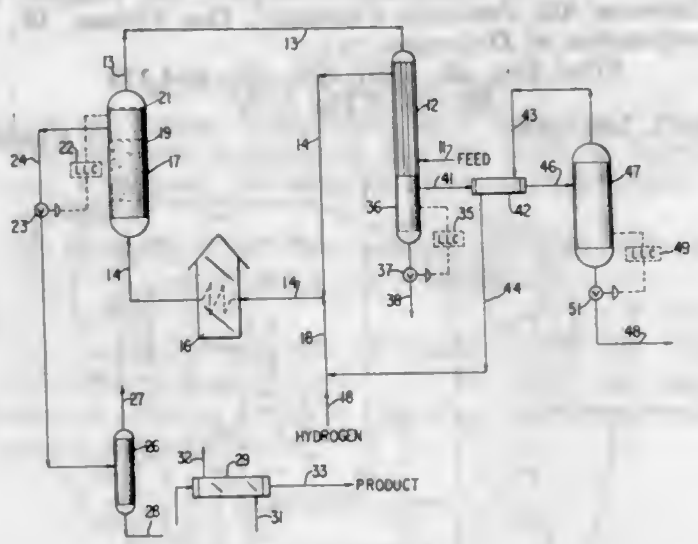
### MAINTENANCE OF FLUID FLOW IN HEAVY HYDROCARBON OIL HYDROGENATION

**Roger P. Van Driesen, Hopewell, N.J., assignor to Cities Service Research and Development Company, New York, N.Y., a corporation of Delaware**

**Filed Dec. 26, 1967, Ser. No. 693,534**

**Int. Cl. C10g** *13/02, 23/02*

**U.S. Cl. 208—143** **4 Claims**



Operating problems in the hydrogenation of heavy hydrocarbon oils are avoided by control of vapor to liquid ratios in high velocity, high pressure portions of the system so that wherever the linear velocity of fluid exceeds two feet per second, the ratio of vapor to liquid is maintained below about five to one or above about nine to one. Vapor to liquid ratios within the range of about 5:1 to about 9:1 have been found to cause excessive problems involving surging or slugging of fluid in the system.

**3,477,945**

### ADDUCT TYPE HYDROCARBON SEPARATION USING COMBINATION REACTOR AND DECOMPOSITION ZONE

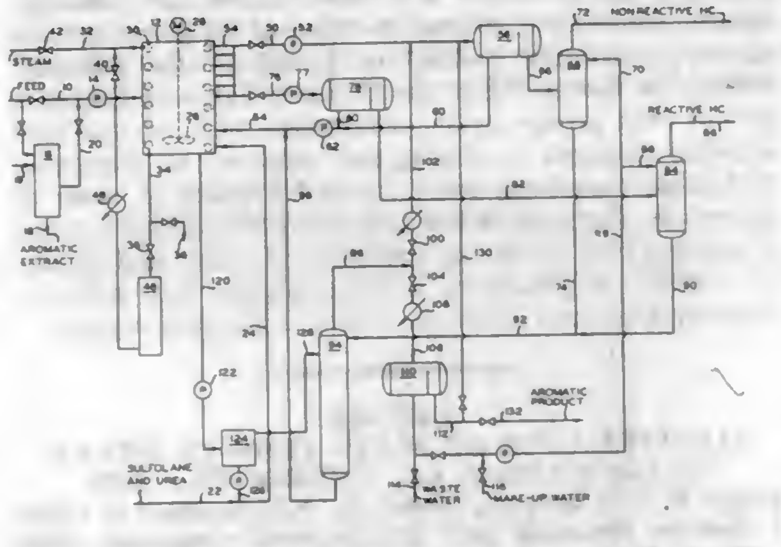
**Donald M. Little and George R. Hettick, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**Filed Dec. 18, 1967, Ser. No. 691,608**

**Int. Cl. C10g** *21/06*

**U.S. Cl. 208—308** **11 Claims**

An amide capable of selectively forming a crystalline hydrocarbon adduct, a sulfolane compound, and a mixed hydrocarbon feed are added to a reaction vessel and mixed to form the adduct. After mixing, these reactants stratify into an upper unreacted hydrocarbon phase and a lower sulfolane phase containing the adduct crystals. The unreacted hydrocarbon phase is withdrawn as a product. The remaining sulfolane phase containing adduct crystals is then heated while still within the reaction vessel so as to decompose the adduct, the reactive hydrocarbon thus released forming a separate phase from the sulfolane. This reactive hydrocarbon phase is then withdrawn as a second product of the process.



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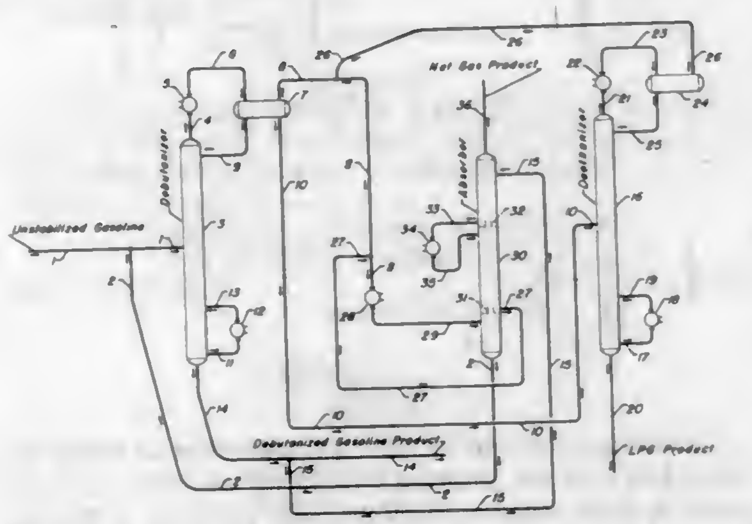
### 3,477,946
### ABSORPTION PROCESS

**William B. Borst, Jr., Mount Prospect, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**Filed Dec. 28, 1967, Ser. No. 694,279**
**Int. Cl. C10g** *5/04*
**U.S. Cl. 208—344** **9 Claims**



Process for recovery of desired vapor constituent from a vapor stream which comprises contacting the vapor stream with a first rich absorber oil in a contacting zone and passing the resulting mixture to a lower locus in an absorber column. The first rich absorber oil is withdrawn from the absorber column at a locus intermediate to the lean absorber oil inlet and the lower locus, while a second rich absorber oil is withdrawn from the bottom of the absorber for recovery of the desired vapor constituent. One preferred embodiment and application is found in the recovery of LPG and stabilized gasoline from an unstabilized gasoline fraction.

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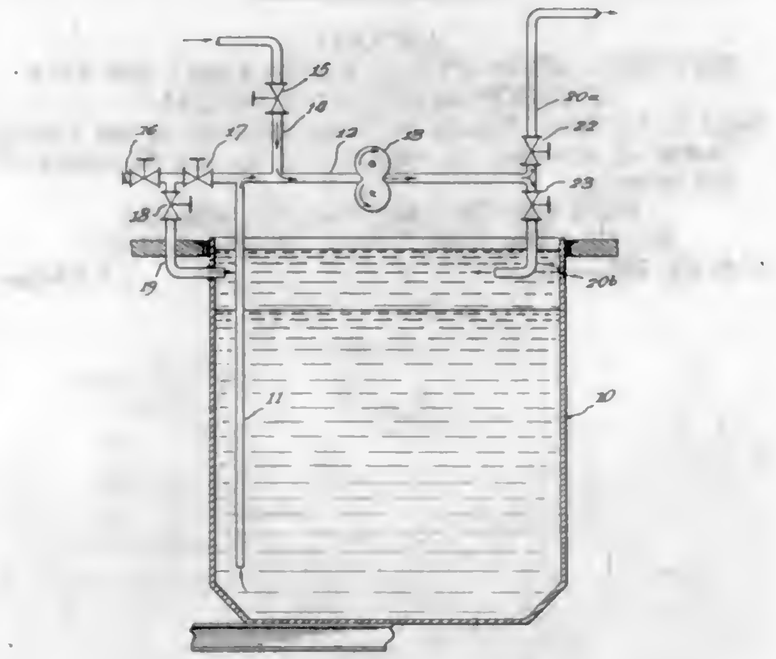
### 3,477,947
### METHOD AND APPARATUS FOR TREATING WASTE MATERIALS

**Stanley E. Kappe, Bethesda, Md., assignor to FMC Corporation, a corporation of Delaware**
**Continuation-in-part of application Ser. No. 510,091, Nov. 26, 1965. This application Feb. 11, 1969, Ser. No. 798,338**
**Int. Cl. C02c** *5/04*
**U.S. Cl. 210—3** **14 Claims**

The method of treating waste materials such as aqueous sewage involves withdrawing from a holding tank quantities of mixed liquor in excess of that required for wasting, enriching the excess of withdrawn mixed liquor with oxygen, under conditions creating superatmospheric pressure, prior to or subsequent to mixing said excess of mixed liquor with influent sewage and introducing said enriched mixture to said holding tank where further reaction occurs to reduce the B.O.D. In a preferred embodiment, a holding tank closed at the top so that it can be pressurized, is equipped with a vertical standpipe, for discharge of effluent in volumes equal to the volume of influent waste, of a cross-sectional size providing flow rates for upwardly moving liquid less than the setting rate of solids in the mixed liquor entering said standpipe.



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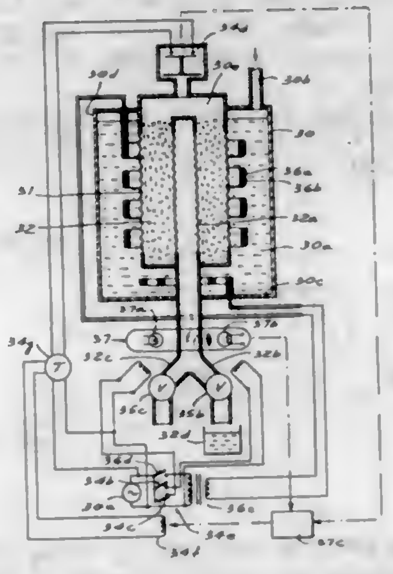
### 3,477,948
### MAGNETIC FILTER AND METHOD OF OPERATING SAME

**Kiyoshi Inoue, 182 3-chome, Tamagawayoga-machi, Setagaya-ku, Tokyo, Japan**
**Filed Dec. 1, 1966, Ser. No. 598,512**
**Claims priority, application Japan, Dec. 13, 1965, 40/76,842; July 13, 1966, 41/46,038**
**Int. Cl. B01d** *35/22, 33/00, 35/06*
**U.S. Cl. 210—19** **18 Claims**



Magnetic filter consisting of a multiplicity of magnetically permeable particles and magnetically constrictable for decreasing the flow cross-section of the filter passages therethrough, the passages being magnetically enlarged for dislodgement of particles. The magnetic passage restriction is effected by a magneto-attractive force between permanently magnetic particles or by the application of a D.C. field, while the magnetic enlargement of the passages is carried out by the application of a magnetic field, preferably of alternating character.

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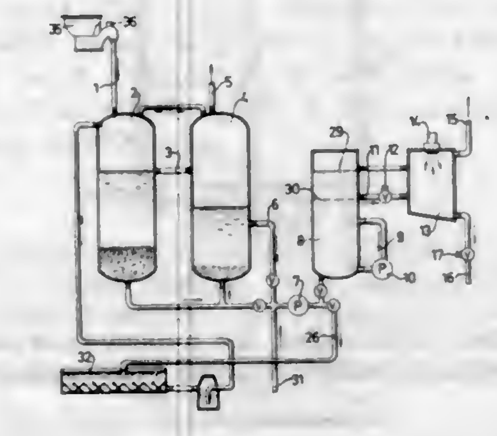
### 3,477,949
### METHOD OF PURIFYING WASTE LIQUID FROM WATER CLOSETS AND OTHER SANITARY INSTALLATIONS

**Sven Algot Joel Liljendahl, Frihetsvagen 12, Jakobsberg, Sweden**
**Filed Oct. 9, 1967, Ser. No. 673,745**
**Claims priority, application Sweden, Oct. 7, 1966, 13,562/66**
**Int. Cl. C02c** *1/40*
**U.S. Cl. 210—48** **8 Claims**



The waste liquid only from the water closets is sucked into an evacuated reception tank and thereafter transferred to a treatment tank where a basic material is added to bring the pH to a value exceeding 9.3 and then the treated waste liquid from the water closets is mixed with non-excretory waste liquids from sanitary installations other than water closets.

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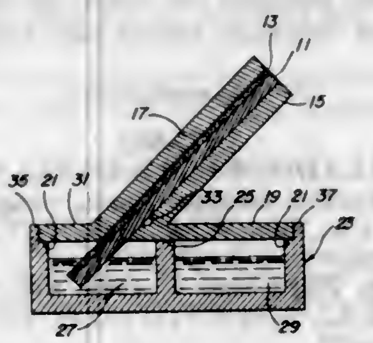
### 3,477,950
### DEVELOPING METHOD AND APPARATUS FOR THIN LAYER CHROMATOGRAPHY

**Pierre Clement, Jean-Marie Gombert, and René Petit, Vincennes, France, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**Filed Sept. 5, 1967, Ser. No. 665,474**
**Claims priority, application France, Nov. 14, 1966, 83,447**
**Int. Cl. B01d** *15/08*
**U.S. Cl. 210—31** **5 Claims**



Apparatus for developing a chromatographic sheet comprising a vessel for holding a solvent, and a cell resting on the rim of the vessel for enclosing the sheet.

The cell may be formed by a pair of matching plates which project upwardly from the vessel and which hold the sheet therebetween for thin layer chromatography.

The vessel desirably has two compartments for solvent with a partition separating them.

The cell also may be a cover carrying two electrodes which dip one into each compartment, for electrophoresis. In this embodiment the chromatographic sheet is bowed so that each end dips into a different compartment.

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### 3,477,951
### HAND CLEANING COMPOSITION

**Clarence John Malmer and Ferdinand O. Grassl, both of River Falls, Wis. 54022**
**No Drawing. Continuation of application Ser. No. 400,240, Sept. 29, 1964. This application Feb. 2, 1967, Ser. No. 613,683**
**Int. Cl. C11d** *3/48*
**U.S. Cl. 252—106** **3 Claims**

A hand-cleaning, skin-smoothing and chapped skin-relieving composition characterized by a high percentage of natural oils and fats, a much lower percentage of a basic salt, an inert material which may be mildly abrasive, and not more than 1.6 percent of bis (3,5,6-trichloro-2-hydroxy-phenyl) methane to give a bacteriostatic action. Perfume may be added.

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### 3,477,952
### AZEOTROPIC COMPOSITION

**Albert W. Bauer, Wilmington, and Robert A. Gorski, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**No Drawing. Filed July 1, 1966, Ser. No. 562,133**
**Int. Cl. C23g** *5/02;* **B01d** *3/36*
**U.S. Cl. 252—171** **4 Claims**

An azeotropic mixture of 98 to 96.5% by weight trichlorofluoromethane and 2% to 3.5% by weight methanol which is useful in removing contaminants from surfaces such as films.

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### 3,477,953
### SEQUESTRATION OF METAL IONS WITH HYDROXYALKYL PHOSPHINE OXIDES

**Ronald H. Carlson, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York**
**No Drawing. Filed Nov. 29, 1966, Ser. No. 597,542**
**Int. Cl. C02b** *5/06*
**U.S. Cl. 252—175** **6 Claims**

Metal ions, such as iron ions, are sequestered from aqueous solutions by treatment with hydroxyalkyl phosphine oxides. Tris(hydroxymethyl) phosphine oxide was found to be a superior sequestrant for iron.

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### 3,477,954
### PHOSPHONIUM IODIDE COMPLEXES OF THYROXINE, METHODS OF PREPARING SAME, AND METHODS OF PREPARING 3,5,3'-L-TRIIODOTHYRONINE THEREFROM

**Harold C. Reynolds, Kankakee, and Donald B. Olsen, Bonfield, Ill., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed June 29, 1966, Ser. No. 561,357**
**Int. Cl. C07c** *101/10;* **A61k** *27/00*
**U.S. Cl. 260—519** **10 Claims**

A method of preparing 3,5,3'-L-triiodothyronine comprising reacting thyroxine (free acid) with a tertiary phosphine in a dipolar aprotic solvent to form a phosphonium iodide complex and thereafter hydrolyzing said complex to form 3,5,3'-L-triiodothyronine.

### 3,477,955
### CARBON DIOXIDE GENERATING COMPOSITIONS

**Ralph H. Hiltz, Pittsburgh, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**No Drawing. Filed Jan. 16, 1967, Ser. No. 609,356**
**Int. Cl. A62d** *1/00;* **C01b** *31/20*
**U.S. Cl. 252—4** **10 Claims**

An autogenously combustible composition for producing carbon dioxide containing an alkali or alkaline earth metal peroxide or superoxide and an alkaline earth metal or aluminum carbide and, if desired, a thermally dissociable inorganic carbonate or boric oxide.

### 3,477,956
### HYDROXYAMINE PHOSPHATE ESTER SCALE INHIBITORS

**James R. Stanford and Paul G. Vogelsang, Jr., Houston, Tex., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed Dec. 9, 1966, Ser. No. 600,354**
**Int. Cl. C09k** *3/00;* **C02b** *5/06*
**U.S. Cl. 252—855** **13 Claims**

Phosphated hydroxy amines obtained by reacting polyphosphoric acid or phosphorus pentoxide with hydroxyamines, e.g., diethanolamine or triethanolamine, with or without neutralization, are used as scale inhibitors in brines, especially in oil wells, where calcium and barium salts are present.

### 3,477,957
### POLYMERIC POUR POINT DEPRESSANT COMPOSITIONS

**Luther A. R. Hall, Woodcliff Lake, N.J., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York**
**No Drawing. Continuation-in-part of application Ser. No. 621,417, Mar. 8, 1967. This application Apr. 24, 1968, Ser. No. 723,923**
**Int. Cl. C10m** *1/18, 1/08*
**U.S. Cl. 252—59** **11 Claims**

A synergistic relationship as to pour point depression is displayed by a combination of (a) a random copolymer of a first alpha olefin having 2–6 carbon atoms, and at least one other alpha olefin of higher molecular weight and (b) a polymer of one or more $C_8$–$C_{20}$ alpha olefins.

### 3,477,958
### ELECTROLYTE FOR SOLIONS

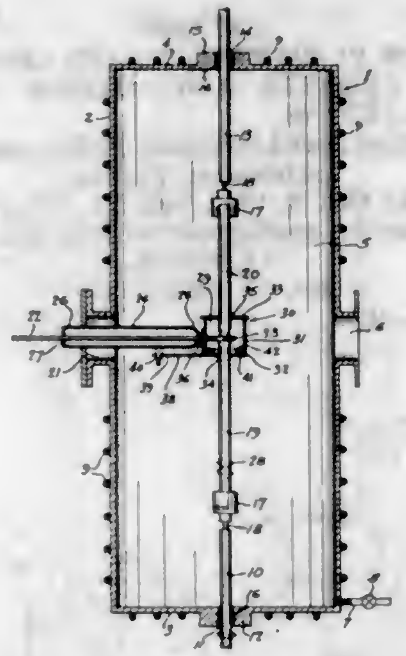
**Demetrios V. Louzos, Rocky River, Ohio, assignor to Union Carbide Corporation, a corporation of New York**
**Filed Apr. 22, 1959, Ser. No. 808,057**
**Int. Cl. H01g** *9/00*
**U.S. Cl. 252—62.2** **2 Claims**

1. An electrolyte composed of an aqueous solution of a reversible redox system consisting of iodine and lithium iodide as the supporting electrolyte.

### 3,477,959
### METHOD AND APPARATUS FOR PRODUCING DOPED, MONOCRYSTALLINE SEMICONDUCTOR MATERIALS

**Douglas Roy Colton, Sittsville, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada**
**Filed Apr. 24, 1967, Ser. No. 633,228**
**Int. Cl. H01l** *3/14;* **C04b** *35/14*
**U.S. Cl. 252—62.3** **4 Claims**

A method and apparatus for producing doped, monocrystalline semiconductor materials utilizing a zone-melting method for producing the monocrystalline semiconductor material. The gaseous dopant is produced in a confined space surrounding the molten zone created in the semiconductor material by the zone-melting method.



### 3,477,960
### PREPARATION OF LITHIUM-MANGANESE FERRITE

**Donald G. Wickham, Malibu, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California**
**No Drawing. Filed Aug. 23, 1967, Ser. No. 662,569**
**Int. Cl. C04b** *35/36, 35/64;* **H01f** *1/22*
**U.S. Cl. 252—62.6** **4 Claims**

In the manufacture of lithium-manganese ferrites, the compound $Li_2MnO_3$ is employed as the source of lithium and manganese and the starting materials are ground together in an aqueous medium.

### 3,477,961
### POLY-ALPHA-OLEFIN IRON-NICKEL ALLOY MIXTURES

**Eugene G. Castagna, Clark, N.J., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware**
**No Drawing. Filed Mar. 9, 1966, Ser. No. 532,833**
**Int. Cl. H01f** *1/26, 1/00*
**U.S. Cl. 252—62.54** **2 Claims**

An intimate mixture of crystalline poly-α-olefins and nickel-iron alloy particles are useful for magnetic induction bonding of thermally fusible poly-α-olefin articles to each other.

### 3,477,962
### PALLADIUM-LEAD CATALYSTS

**Joseph A. Kardys, Groton, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware**
**No Drawing. Filed May 6, 1966, Ser. No. 547,740**
**Int. Cl. B01t** *11/14, 11/12, 11/08*
**U.S. Cl. 252—412** **8 Claims**

An improvement is set forth in the process for the preparation of a lead-palladium hydrogenation catalyst having enhanced selectivity to catalyze the hydrogenation of an acetylenic bond to an olefinic bond only. The improvement comprises impregnating a support material with a palladium salt and a lead salt to provide an atomic ratio of lead to palladium of from about 1:1 to 5:1, and thereafter subjecting said impregnated support material

to a reducing step to provide a catalyst containing metallic palladium. The thus produced catalyst can be renenerated by intimately mixing it with sodium bicarbonate-hydrogen peroxide in aqueous solution.

### 3,477,963
### CARBON DISULFIDE SULFIDING OF CATALYSTS

**John J. van Venrooy, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey**
**No Drawing. Filed Dec. 20, 1966, Ser. No. 603,145**
**Int. Cl. B01j** *11/74;* **C10g** *23/02, 35/06*
**U.S. Cl. 252—439** **17 Claims**

A metal sulfiding technique for the preparation of metal sulfide catalysts such as Group VIII and Group VI–B metal sulfides exemplified by a nickel-molybdenum sulfide mixture using an organo sulfide such as $CS_2$ as the sulfiding agent. The organo sulfide is first passed over a pre-sulfided metal sulfide catalyst stock before passing over the metal composition to be sulfided at sulfiding conditions of about 350 to 650° F. and a pressure of about atmospheric to 300 p.s.i.g.

### 3,477,964
### METHOD OF CATALYST MANUFACTURE

**Norman A. Fishel, Lansing, Mich., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**No Drawing. Filed June 30, 1967, Ser. No. 650,198**
**Int. Cl. B01j** *11/64*
**U.S. Cl. 252—442** **10 Claims**

A crystalline aluminosilicate is combined with a metal subfluoride vapor and a catalytic composition of matter is obtained for use as a hydrocarbon conversion catalyst.

### 3,477,965
### METHOD OF CATALYST MANUFACTURE

**Norman A. Fishel, Lansing, Mich., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**No Drawing. Filed June 30, 1967, Ser. No. 650,207**
**Int. Cl. B01j** *11/64*
**U.S. Cl. 252—442** **10 Claims**

A crystalline aluminosilicate containing at least one metal from Group VIII of the Periodic Table is combined with a metal subfluoride vapor and a catalytic composition of matter is obtained for use as a hydrocarbon conversion catalyst.

### 3,477,966
### HIGH STRENGTH EPOXY RESINS PREPARED FROM EPICHLOROHYDRIN AND XYLYLENE GLYCOLS

**Richard C. Doss, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**No Drawing. Filed Nov. 23, 1966, Ser. No. 596,464**
**Int. Cl. C08g** *30/14, 30/02;* **C09j** *3/16*
**U.S. Cl. 260—2** **5 Claims**

A new epoxy resin prepared from epichlorohydrin and xylylene glycols, and cured products therefrom useful as adhesives.

### 3,477,967
### SYNTACTIC FOAM

**Israel Resnick, Bellerose, N.Y., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Mar. 28, 1966, Ser. No. 538,920**
**Int. Cl. C08f** *47/08;* **C08g** *53/08*
**U.S. Cl. 260—2.5** **3 Claims**

A buoyancy material for extreme undersea depths wherein a volume of contiguous granular glass filler is embedded in an otherwise unfilled essentialy void-free cured epoxy matrix of maximum compressive strength, of minimum viscosity in the uncured state, that does not volatilize during curing, and which is of minimum density.

### 3,477,968
### COLD SELF-VULCANIZING RUBBER COMPOSITIONS

**Jean-Marie Massoubre, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin, raisons sociale Michelin & Cie, Clermont-Ferrand, France**
**No Drawing. Filed June 10, 1965, Ser. No. 463,004**
**Claims priority, application France, June 12, 1964, 1,806**
**Int. Cl. C08c** *9/10, 11/54*
**U.S. Cl. 260—4** **4 Claims**

A cold self-vulcanizing rubber composition for repairing injured parts in rubber articles, particularly tires, which comprises an admixture prepared just before use of two and preferably three storable components each of which has a plasticity defined at 20° C. by a Williams number between about 2.5 and 5 and is substantially free of any volatile material; the first component comprising a mixture of a partially depolymerized natural rubber, sulfur and a fixed plasticizer; the second optional component comprising a mixture of a partially depolymerized natural rubber, a vulcanization activator and a fixed plasticizer; and the third component comprising a vulcanization ultra-accelerator admixed with either polyisobutylene and a fixed plasticizer or polyisobutylene and polyethylene.

### 3,477,969
### COATING COMPOSITION OF A METHACRYLATE POLYMER/CELLULOSE ACETATE BUTYRATE/SUCROSE BENZOATE

**Fred W. Parker, Flint, Mich., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**No Drawing. Filed Dec. 12, 1967, Ser. No. 689,770**
**Int. Cl. C09d** *3/80, 3/14;* **C08f** *15/04*
**U.S. Cl. 260—17** **11 Claims**

A coating composition in which the film-forming material comprises:

(a) 60–90% by weight of a methacrylate polymer that has pendent hydroxyl groups, pendent nitrile groups and pendent carboxyl groups;
(b) 20–40% by weight cellulose acetate butyrate;
(c) 2–10% by weight sucrose benzoate; and
(d) 0–10% of an organic plasticizer.

### 3,477,970
### PIGMENTED PAPER COATING AND ADHESIVE COMPOSITIONS CONTAINING A POLYVINYL ALCOHOL BINDER AND A MODIFIER THEREFOR

**Robert H. Beeman, Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**No Drawing. Filed Sept. 4, 1962, Ser. No. 221,315**
**Int. Cl. C09j** *3/14*
**U.S. Cl. 260—17** **14 Claims**

Compositions that are suitable for paper coatings and adhesives comprising a pigment and a pigment binder consisting of a water-soluble polyvinyl alcohol-water-soluble modifier combination are disclosed.

### 3,477,971
### RAPID CURING FLUIDIZED BED COATING COMPOSITION HAVING IMPROVED FLEXIBILITY

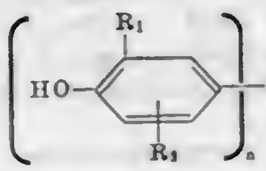
**Roy A. Allen, Iselin, and William L. Lantz, Metuchen, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Oct. 6, 1966, Ser. No. 584,669**
**Int. Cl. C08g** *30/12;* **B44d** *1/08*
**U.S. Cl. 260—18** **8 Claims**

Rapid-curing fluidizable polyepoxide coating compositions exhibiting improved flexibility and chemical resistance comprises (1) a polyepoxide, (2) a cyclic anhydride (trimellitic anhydride) and (3) a stannous salt of a monocarboxylic acid (stannous octoate).

### 3,477,972
### POLYISOBUTYLENE OXIDE STABILIZED WITH COMBINATIONS COMPRISING A PHENOL AND A METAL DITHIOCARBAMATE

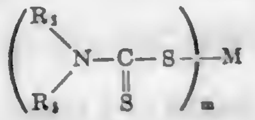
**Kosaku Kamio and Motoyuki Kuwana, Uozu-shi, Japan, assignors to Nippon Carbide Kogyo Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan**
**No Drawing. Filed Dec. 19, 1966, Ser. No. 602,496**
**Claims priority, application Japan, Dec. 22, 1965, 40/78,511**
**Int. Cl. C08g** *23/06, 51/62, 53/14*
**U.S. Cl. 260—18** **9 Claims**

A crystalline polyisobutylene oxide composition capable of being heated and melt-shaped at a temperature of 170–290° C. without substantial degradation comprising (a) a crystalline polyisobutylene oxide with a reduced specific viscosity of not less than 0.5 dl./g.; (b) at least one compound of the general Formula I



(I)

wherein $R_1$ represents a tertiary alkyl group of 4 or 5 carbon atoms; $R_2$ is selected from a hydrogen atom or an alkyl group of not more than 8 carbon atoms; *n* is a positive integer of 2 or 3; and X is a sulphur atom or a hydrocarbon radical of the valence of *n* with not more than 15 carbon atoms; and (c) at least one compound of the Formula II



$$\left(\begin{matrix}R_3\\R_4\end{matrix}\!>\!N-\underset{\underset{S}{\|}}{C}-S-\right)_m M \qquad \text{(II)}$$

wherein $R_3$ and $R_4$ are the same or different groups of not more than 12 carbon atoms and selected from alkyl, cycloalkyl, aryl and aralkyl groups, with the proviso that $R_3$ and $R_4$ may show an alkylene or oxydialkylene bond with not more than 6 carbon atoms ring-closed via or not via an oxygen atom when $R_3$ and $R_4$ are an alkyl group; M represents a metal selected from alkali metals with an atomic number of 3, 11 and 19, alkaline earth metals with an atomic number of 4, 12 and 20, zinc, cadmium and bismuth; and *m* is the valence of said metal, the combined amount of (b) and (c) in said composition being from 0.05–10% by weight, based on the weight of (a).

Such a composition containing a synergistic combination of stabilizers may also contain a lubricant comprising a higher aliphatic acid or metal salt thereof and/or a light stabilizing compound. Additionally, such a composition may contain at least one compound as an anti-coloring agent.

### 3,477,973
### ROOM TEMPERATURE CURING ORGANOPOLYSILOXANES

**Guenther Fritz Lengnick, Manitou Beach, Mich., and Anthony Enrico Pepe, Sylvania, Ohio, assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Dec. 6, 1967, Ser. No. 688,303**
**Int. Cl. C08g** *31/32*
**U.S. Cl. 260—18** **9 Claims**

The invention relates to room temperature curing organopolysiloxane compositions which comprise organopolysiloxanes and acyloxy terminated disilaorganic crosslinkers in which the acyloxy groups are bonded to a single silicon atom and a metallic salt of an organic acid. These compositions cure in the presence of ambient moisture to form elastomeric materials.

### 3,477,974
### PROCESS FOR THE PREPARATION OF ESTER RESINS

**Albert W. de Ruyter van Steveninck and Johannes Beevendorp, Delft, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Feb. 21, 1967, Ser. No. 617,514**
**Claims priority, application Netherlands, Feb. 22, 1966, 6602241**
**Int. Cl. C08g** *23/22;* **C07c** *67/00*
**U.S. Cl. 260—18** **5 Claims**

Epoxy resin esters are prepared by esterification of glycidyl polyethers of polyhydric phenols with monocarboxylic acids (fatty acids, branched acids) in the presence of a catalyst of the group consisting of organic phosphines, arsines, and stibines (e.g., triphenyl phosphine).

### 3,477,975
### PIGMENT DISPERSION COMPRISING AN IRON-CONTAINING PIGMENT OR A NICKEL-CONTAINING PIGMENT DISPERSED IN A LIQUID

**Thomas P. Concannon, Drexel Hill, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**No Drawing. Filed Aug. 29, 1966, Ser. No. 575,902**
**Int. Cl. C09c** *3/02;* **C09d** *7/08*
**U.S. Cl. 260—22** **14 Claims**

There is disclosed a pigment dispersion adapted for use in coloring a film-forming vehicle; the dispersion comprises an iron-containing pigment or nickel-containing pigment dispersed in a liquid; attached to the pigment particles in specified proportions are a certain kind of tertiary amine compound and a polymer having less affinity than said compound for said particles; the weight ratio of said amine compound to said polymer is preferably about 50:1 to 200:1.

### 3,477,976
### POLYESTER RESINS FROM METHY-CYCLOHEXENE TRICARBOXYLIC ACID, METHYLCYCLOHEXANE TRICARBOXYLIC ACID OR ANHYDRIDE THEREOF AND PROCESS OF MAKING THE SAME

**Susumu Nakamuro, Itami-shi, and Tadashi Shibazaki, Hirakata-shi, Japan, assignors to Nippon Gohsei Kagaku Kogyo Kabushiki Kaisha, Osaka-shi, Japan, a corporation of Japan**
**No Drawing. Filed Mar. 20, 1968, Ser. No. 720,752**
**Claims priority, application Japan, Apr. 2, 1967, 42/20,868**
**Int. Cl. C08g** *17/04, 17/16*
**U.S. Cl. 260—22** **19 Claims**

A thermosetting polyester resin having improved properties of impact strength, gloss, whiteness and crash resistance making it suitable for coating use if prepared by a process consisting in reacting methyl-cyclohexene-tricarboxylic acid, methyl-cyclohexane-tricarboxylic acid or anhydride thereof with a polyhydric alcohol.

### 3,477,977
### AQUEOUS LACQUERS

**Hermann Schnell, Krefeld-Uerdingen, and Rolf Dhein and Karl Raichle, Krefeld-Bockum, and Herbert Gebnauer, Krefeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed May 12, 1967, Ser. No. 637,906**
**Claims priority, application Germany, May 27, 1966, F 49,309**
**Int. Cl. C08g** *22/04*
**U.S. Cl. 260—22** **6 Claims**

Aqueous lacquer comprising an ammonium salt of a urethane-group-containing partial ester of maleic oils and lacquer films obtained from the same having improved resistance to water and weather and greater hardness. Lacquers suitable for electrodeposition are disclosed.

### 3,477,978
### HEAT MOLDABLE POLYCARBONATE COMPOSITION

**Fred F. Holub, Scotia, N.Y., John J. Keane, Pittsfield, Mass., and James K. S. Kim, Woonsocket, R.I., assignors to General Electric Company, a corporation of New York**
**No Drawing. Filed Jan. 4, 1967, Ser. No. 607,170**
**Int. Cl. C08g** *39/10*
**U.S. Cl. 260—23.7** **3 Claims**

A composition comprising an aromatic polycarbonate resin, a polymer of an olefin of 2–3 carbon atoms which may be either polyethylene or polypropylene, epoxidized polybutadiene and a metal salt of a carboxylic acid such as zinc stearate. In addition, this invention is also directed to a process for preparing the above composition and to a molded article employing the above composition wherein a mixture of the above materials is fed to an extruder at a temperature of at least 250° C., the extrudate is then transferred to an injection molding machine which is at a temperature of at least 250° C. and then injection molding the article.

### 3,477,979
### EPOXY CONTAINING CONCRETE

**Martin J. Hillyer, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Nov. 26, 1965, Ser. No. 509,933**
**Int. Cl. C04b** *13/24*
**U.S. Cl. 260—29.2** **5 Claims**

Concrete compositions are disclosed. These compositions comprise cement, aggregate and an epoxy resin composition which contains a polyepoxide, an epoxy curing agent and a petroleum hydrocarbon fraction containing over 55% by weight aromatics.

### 3,477,980
### EMULSION POLYMERIZATION OF VINYL ACETATE WITH VINYL ALKYL ETHERS

**Wiley E. Daniels, Easton, Pa., assignor to GAF Corporation, a corporation of Delaware**
**No Drawing. Filed Oct. 22, 1965, Ser. No. 502,291**
**Int. Cl. C08f** *1/13, 15/16*
**U.S. Cl. 260—29.6** **17 Claims**

The emulsion copolymerization of vinyl acetate with a vinyl alkyl ether, such as isobutyl vinyl ether, by adding separate aqueous solutions of the monomeric components and the catalyst to an aqueous emulsion medium simultaneously, at a rate approximating that of the polymerization reaction.

### 3,477,981
### INHIBITION OF CRYSTALLIZATION OF DIGLYCIDYL ETHER OF BISPHENOL A

**Ronald L. De Hoff, Maplewood, and George D. Grieco, Ridgefield, N.J., assignors to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York**
**No Drawing. Filed May 9, 1967, Ser. No. 637,063**
**Int. Cl. C08g** *45/00, 30/14*
**U.S. Cl. 260—31.2** **10 Claims**

The crystallization of the diglycidyl ether of bisphenol A at ambient temperature is inhibited by combining therewith a small but effective amount of tris(hydroxymethyl) aminomethane. Uniform distribution of the small amount of the tris amino compound throughout the diglycidyl ether is facilitated by preparing a prepolymer of the diglycidyl ether with a relatively large amount of the tris amino compound and using said prepolymer to introduce the desired level of the tris amino compound into the final resin.

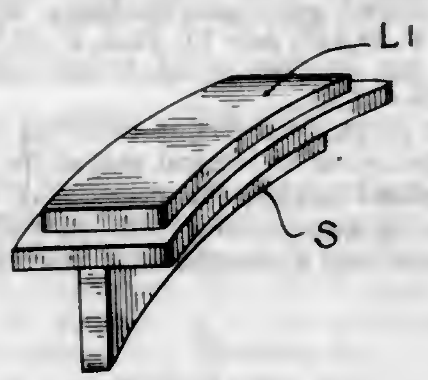
### 3,477,982
### PROCESS FOR FLAME PROOFING POLYEPOXIDE AND RESULTING PRODUCTS

**Tette J. Dijkstra, Delft, Netherlands, and Edward J. W. Vogelzang, Esher, Surrey, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Apr. 14, 1967, Ser. No. 630,833**
**Claims priority, application Great Britain, Jan. 13, 1967, 1,967/67**
**Int. Cl. C09k** *3/28;* **C08g** *45/00, 51/56*
**U.S. Cl. 260—37** **16 Claims**

A process for rendering polyepoxide flame proof by the addition of finely divided red phosphorous is disclosed. Lists of polyepoxides that can be used and methods for incorporating the red phosphorous are set out. Curing of the polyepoxide red phosphorous compositions with conventional curing agents and the use of the said compositions for making castings, molded articles, coatings and glass fiber laminates are also discussed.

### 3,477,983
### FRICTION ELEMENTS

**Emil C. Keller, Mahwah, N.J., assignor to Abex Corporation, New York, N.Y., a corporation of Delaware**
**Filed June 23, 1966, Ser. No. 559,877**
**Int. Cl. C09k** *3/14;* **F16d** *69/02*
**U.S. Cl. 260—38** **2 Claims**



1. An automotive brake lining comprising a heat resistant organic binder and inorganic fillers incorporated therein, and containing cupric sulfide in an amount sufficient to improve the recovery properties and frictional characteristics of the composition.

### 3,477,984
### INSULATING MATERIAL

**Edward B. Bahnsen, Jr., Los Gatos, Calif., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware**
**Filed Sept. 12, 1966, Ser. No. 578,832**
**Int. Cl. C08g** *51/10*
**U.S. Cl. 260—38** **4 Claims**

Improvement in the method for producing glass fiber products which involves heating loosely intermeshed glass fibers and a binder comprising a phenolic resole and an emulsion of a polysiloxane, and where the fibers contain a sufficiently high proportion of alkali metal oxide that cations thereof preferentially occur at the fiber surfaces: the improvement involves using a polysiloxane emulsion containing an amount at least substantially equivalent to the alkali metal cations on the fiber surfaces, a hydrochloride or hydrobromide of an amine having the general formula

$$R-NH-CH_2-CH_2-CH_2-NH_2$$

where R represents unbranched alkyl groups having from 8 to 20 carbon atoms.

3,477,985

### VULCANIZABLE COMPOSITIONS

**Giovanni Bucci, Ferrara, Tonino Simonazzi, Bologna, and Giuliano Ballini and Augusto Portolani, Ferrara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy**

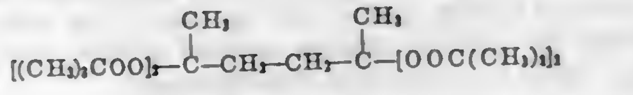
**No Drawing. Filed July 22, 1963, Ser. No. 296,469**

**Claims priority, application Italy, July 23, 1962, 14,722/62**

**Int. Cl. C08f** *27/00, 27/22*

**U.S. Cl. 260—41** **13 Claims**

1. Vulcanizable compositions containing polymers selected from the group consisting of olefinic homopolymers, saturated copolymers of ethylene with an alpha-olefin and mixtures thereof with a reinforcing filler and, as a vulcanization agent, the tetraperoxide, 2,2,5,5-tetra-(tert.butylperoxy)hexane, having the formula



$$[(CH_3)_3COO]_2-\overset{CH_3}{\overset{|}{C}}-CH_2-CH_2-\overset{CH_3}{\overset{|}{C}}-[OOC(CH_3)_3]_2$$

3,477,986

### POLYAMIDES STABILIZED WITH COMBINATION OF A COPPER COMPOUND AND A PHOSPHONIUM HALIDE

**Karl Heinz Hermann and Hans Rudolph, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

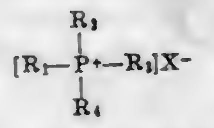
**No Drawing. Filed Apr. 20, 1967, Ser. No. 632,176**

**Claims priority, application Germany, Apr. 28, 1966, F 49,037; July 21, 1966, F 49,749**

**Int. Cl. C08g** *41/02, 51/62, 51/58*

**U.S. Cl. 260—45.75** **8 Claims**

Synthetic polyamides, having recurring interlinear carbonamide groups as an integral part of the main polymer chain, stabilized against the degradative effect of heat and oxygen by incorporating with the polyamide a copper compound and a phosphonium halide of the formula



$$[R_2-\overset{R_1}{\underset{R_4}{P^+}}-R_3]X^-$$

wherein $R_1$ is hydrogen or an alkyl, cyloalkyl, aryl or aralkyl radical; $R_2$, $R_3$ and $R_4$ are the same or different alkyl, cycloalkyl, aryl or aralkyl radicals; and X is chlorine, bromine or iodine.

3,477,987

### PROTECTION OF OLEFINIC POLYMERS

**Byron A. Hunter, Woodbridge, Conn., assignor to Uniroyal, Inc., a corporation of New Jersey**

**No Drawing. Original application Nov. 13, 1963, Ser. No. 323,251. Divided and this application Nov. 6, 1967, Ser. No. 680,957**

**Int. Cl. C08f** *45/58*

**U.S. Cl. 260—45.85** **5 Claims**

The invention is the use of 2,6-dicyclooctyl-p-cresol (preparation of which by the alkylation of p-cresol with cyclooctene is disclosed) as an antioxidant for organic materials normally subject to oxidative deterioration, such as rubbers, plastics such as polypropylene, gum plastics, etc., petroleum products such as gasoline and oils, and vegetable and animal fats and oils. Use of this antioxidant in conjunction with a dialkyl ester of 3,3′-thiodipropionic acid such as dilauryl 3,3′-thiodipropionate is shown to be particularly effective for protecting solid polypropylene.

3,477,988

### PREPARATION OF ORGANOPOLYSILOXANES BY SILOXANE REARRANGEMENT

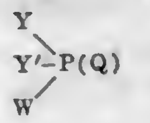
**Robert L. Ostrozynski, Lewiston, N.Y., assignor to Union Carbide Corporation, a corporation of New York**

**No Drawing. Filed Apr. 5, 1967, Ser. No. 628,557**

**Int. Cl. C08g** *31/40;* **B01j** *11/82*

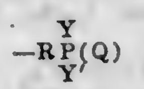
**U.S. Cl. 260—46.5** **66 Claims**

Base-catalyzed rearrangements are promoted by organophosphorus compounds of the formula:



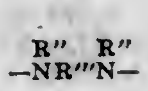
$$\begin{matrix}Y\\Y'-P(Q)\\W\end{matrix}$$

wherein Q is oxygen, sulfur or selenium, Y and Y′ when taken together comprise an alkylene group and when taken separately are monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups substituted with alkoxy, nitro, nitrile, nitroso, diarylamino or dialkylamino substituents, alkoxy groups, substituted alkoxy groups substituted with alkoxy, nitro, nitrile, nitroso, diarylamino or dialkylamino substituents, dialkylamino groups, diarylamino groups, substituted dialkylamino groups substituted with alkoxy, nitro, nitrile, nitroso, diarylamino or dialkylamino substituents, or substituted diarylamino groups substituted with alkoxy, nitro, nitrile, nitroso, diarylamino or dialkylamino substituents, W is selected from the class from which Y and Y′ when taken separately are selected or is a group of the formula



$$-R\overset{Y}{\underset{Y'}{P}}(Q)$$

wherein Y, Y′ and Q are as defined above and R is divalent oxygen, a divalent hydrocarbon group, a divalent substituted hydrocarbon group substituted with alkoxy, nitro, nitrile, nitroso, diarylamino or dialkylamino substituents, a divalent polyoxyalkylene group, a divalent alkylene oxide group —R′O—, wherein R′ is alkylene, or a divalent group of the formula



$$-\overset{R''}{N}R'''\overset{R''}{N}-$$

wherein R″ is a monovalent hydrocarbon group or a substituted monovalent hydrocarbon group as defined above and R‴ is a divalent hydrocarbon group or a divalent substituted hydrocarbon group as defined above and when R contains carbon the phosphorus atoms of said organophosphorus compound are joined through at least two carbon atoms; pyridine N-oxide; or $C_1$ to $C_4$ alkyl substituted pyridine N-oxides.

Typical promoters are hexamethylphosphoramide, phenyl-dimethylphosphine oxide, 1-ethyl-phospholane-1-oxide, cyclobutyl diethylphosphine oxide, bis-1,6-(dimethylphosphinyl) - hexane, 4 - (di-ethoxyphosphinoxy) butyl diethyl phosphate, butyl-N,N,N′,N′-tetraethylphosphoramidate, butyl P-phenyl-dimethylphosphoramidate, n-octyl-dimethylthiophosphate, triphenyl phosphine selenide, di(n-butyl)-0-ethyl phosphinate, ethyl-0,0-di(n-butyl)phosphonate, triethyl phosphate, etc.

Cyclic and other low molecular weight polysiloxanes can be rearranged with or without end-blocking units, e.g., alkoxysilyl, trialkylsilyl, etc., to higher molecular weight polymers including gumstocks with or without olefinic or vinyl groups.

High molecular weight polysiloxanes, such as hydrolyzates, gums, or rubbers, can be arranged to lower polymers.

Alkoxy or aryloxysilanes can be present during rearrangement to provide alkoxy or aryloxy end-blocking groups.

Water present during rearrangement provides silanol groups. Alkanol present during rearrangement provides silicon-bonded alkoxy goups.

Fillers such as silica can be present without preventing rearrangement.

Certain promoters, e.g., those containing phosphorus-bonded alkoxy or aryloxy groups, are transient and permit thermal stabilization and control of degree of rearrangement.

Certain other promoters, e.g., phosphoramides and phosphine oxides, permit the use of barium and strontium bases as rearrangement catalysts.

3,477,989

### COPOLYESTERS OF 2,5-DIHYDROXY-TEREPHTHALIC ACID

**Hermann Zorn, Vienna, and Josef Hrach and Winfried Zeschmar, Schaftenau, Austria, assignors to Sandoz A.G. (also known as Sandoz Ltd.), Basel, Switzerland**

**No Drawing. Filed June 30, 1965, Ser. No. 468,634**

**Claims priority, application Austria, July 1, 1964, A 5,649/64**

**Int. Cl. C08g** *17/08*

**U.S. Cl. 260—47** **7 Claims**

Condensates of (1) aromatic dicarboxylic acid, (2) a glycol, (3) 2,5-dihydroxyterephthalic acid and (4) an aromatic diol are polyesters useful for the preparation of fibers, films and molded goods.

3,477,990

### PROCESS FOR REACTING A PHENOL WITH AN EPOXY COMPOUND AND RESULTING PRODUCTS

**Mark F. Dante, Madison, and Harvey L. Parry, Summit, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Dec. 7, 1967, Ser. No. 688,673**

**Int. Cl. C08g** *23/10, 23/14*

**U.S. Cl. 260—47** **13 Claims**

A process for reacting a phenol with an epoxy-containing compound is disclosed. This process comprises reacting an epoxide having more than one 1,2-epoxide group with a phenol in the presence of a phosphonium halide catalyst. The products resulting from this process are also disclosed.

3,477,991

### ALKENYL HINDERED PHENOL AND A COPOLYMER OF AN ALKENYL PHENOL AND A MONOOLEFIN

**Tad L. Patton and Joseph T. Horeczy, Baytown, Tex., and Delos E. Bown, White Plains, N.Y., assignors to Esso Research and Engineering Company**

**No Drawing. Continuation-in-part of application Ser. No. 540,849, Apr. 7, 1966. This application June 5, 1968, Ser. No. 734,552**

**Int. Cl. C08f** *15/10, 1/32*

**U.S. Cl. 260—47** **10 Claims**

Novel alkenyl hindered phenols having tertiary alkyls-ortho of the hydroxyl group and an omega-alkenyl para to the hydroxyl group are effective monomers to polymerize with alpha-olefins in the presence of an organo-metal-transition metal catalyst (a Ziegler-type catalyst) to produce new and useful copolymers.

3,477,992

### POLYOXYMETHYLENE COPOLYMERS

**Ernst-Ulrich Köcher, Kuno Wagner, and Wolfgang von der Emden, Leverkusen, and Gerhard Dankert, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation**

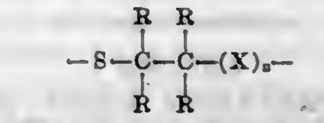
**No Drawing. Continuation-in-part of application Ser. No. 293,856, July 9, 1963. This application Apr. 29, 1964, Ser. No. 363,602**

**Claims priority, application Germany Aug. 3, 1962**

**Int. Cl. C08g** *23/00, 1/12*

**U.S. Cl. 260—67** **13 Claims**

Copolymers of high thermal stability whose recurring units include —O—$CH_2$— groups and



$$-S-\overset{R}{\underset{R}{C}}-\overset{R}{\underset{R}{C}}-(X)_n-$$

wherein R is hydrogen, lower alkyl or halo lower alkyl, X is —$CH_2$—, —O—$CH_2$— and —S—$CH_2$— and *n* is an integer from 1 to 3.

3,477,993

### VAPOR-PHASE BASE CLEAN-UP OF POLYOXYMETHYLENE

**Richard Glenn Alsup and Glenn Frederick Leverett, Vienna, W. Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Apr. 1, 1966, Ser. No. 539,269**

**Int. Cl. C08g** *1/22*

**U.S. Cl. 260—67** **10 Claims**

A process for stabilizing polyoxymethylene by removing a base-unstable fraction which consists of heating polyoxymethylene in the presence of guanidine base, e.g. guanidine, at a temperature from 20° C. below the melting point of the polymer up to, but not including, the melting point wherein the guanidine base is carried to the polymer by a non-acidic vapor medium, e.g. water vapor or ammonia.

3,477,994

### MODIFIED POLYOXYMETHYLENE

**Carl Earle Schweitzer and Robert Alton Setterquist, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 442,545, Mar. 24, 1965. This application Aug. 2, 1966, Ser. No. 574,273**

**The portion of the term of the patent subsequent to Apr. 8, 1986, has been disclaimed**

**Int. Cl. C08g** *1/22, 37/00*

**U.S. Cl. 260—67** **6 Claims**

A process for modifying a high molecular weight polyoxymethylene by the addition of units different from polyoxymethylene either at the ends of the polymer chain and/or within the polymer chain which consists of contacting the polyoxymethylene with dioxolane, polydioxolane, or selected substituted formals, e.g. 5-phenol-1,3-dioxane in the presence of a Lewis acid, e.g. boron trifluoride etherate and at a temperature in the range 0–200° C. optionally in the presence of a diluent, e.g. toluene.

### 3,477,995

### POLYVINYL ACETAL DIALKYLAMINO ACETATE AND POLYVINYL PYRANYLETHER DIALKYLAMINO ACETATE

**Harutada Negoro, Etsuo Awada, Yoshihiko Ikegami, Saburo Akagi, and Katsuaki Matsui, Tokyo, Japan, assignors to Sankyo Company, Limited, Tokyo, Japan**

**Continuation-in-part of application Ser. No. 184,889, Apr. 3, 1962. This application Oct. 21, 1965, Ser. No. 499,748**

**Claims priority, application Japan, Apr. 6, 1961, 36/11,974**

**Int. Cl. C08f** *27/08*

**U.S. Cl. 260—73** **6 Claims**

Novel polyvinyl dialkylamino acetate derivatives. The novel compounds form water-insoluble acid-soluble pharmaceutical coating compositions.

### 3,477,996

### POLYESTERS PREPARED FROM TRIS - (2-HYDROXYALKYL) ISOCYANURATES AND ETHYLENICALLY UNSATURATED DICARBOXYLIC ACID ANHYDRIDES

**Robert L. Formaini, Petersburg, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York**

**No Drawing. Filed Mar. 29, 1965, Ser. No. 443,655**

**Int. Cl. C08g** *17/04, 17/10*

**U.S. Cl. 260—75** **4 Claims**

A polyester which results as the reaction product of a tris-(2-hydroxyalkyl) isocyanurate wherein each 2-hydroxyalkyl group contains between 2 and 4 carbon atoms and a di- or tricarboxylic acid.

### 3,477,997

### PROCESS FOR PREPARING COPOLYMERS OF AZETIDINONES-(2) AND LACTONES

**Albert Gustav Martin Gumboldt, Frankfurt am Main, and Siegfried Noetzel, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany**

**No Drawing. Filed Mar. 17, 1967, Ser. No. 623,849**

**Claims priority, application Germany, Mar. 25, 1968, F 48,772**

**Int. Cl. C08g** *20/30*

**U.S. Cl. 260—78** **2 Claims**

A process for preparing copolymers from azetidinones-(2) substituted at the carbon atom, with lactones in the presence of organometallic compounds of zinc or aluminum as polymerization catalysts, which copolymers can be molded from the melt, for example into filaments by the melt spinning process.

### 3,477,998

### PRODUCTION OF POLYESTERS FROM LACTONES

**Masataka Nakahara, Takatsuki, Yasuhiro Ogawa, Tarumi, Suita, Yasuhiro Iizuka, Toyonaka, and Yoshihiro Osada, Osaka-fu, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha, a corporation of Japan**

**Filed July 14, 1966, Ser. No. 565,169**

**Claims priority, application Japan, July 24, 1965, 40/45,005; Mar. 25, 1966, 41/18,831**

**Int. Cl. C08g** *17/017, 17/02*

**U.S. Cl. 260—78.3** **4 Claims**

$\alpha,\alpha$-Disubstituted-$\beta$-lactone is polymerized in the presence of an organic boron compound to form high molecular polyesters.

### 3,477,999

### METHOD FOR POLYMERIZATION OF VINYL COMPOUNDS

**Saburo Takeda, 29–24 Mitsuzawashimocho, Hiromi Higashi, and Ryokichi Tarao, 44 Otsutomocho, Mikio Mizuno and Kazuyuki Watabe, 303 Termaecho, all of Kanazawa-ku Yokohamashi, Kanagawa-ken, Japan, Michiaki Saito, 1938 Ookacho, Minami-ku, Yokohamashi, Kanagawa-ken, Japan, Shigeo Namikawa, 44 Otsutomocho, Kanazawa-ku, Yokohama-shi, Kanagawa-ken, Japan, and Takao Tsunoda, 28–15, 3-chome, Sataemachi, Tsurumi-ku, Yokohama-shi, Kanagawa-ken, Japan**

**No Drawing. Filed Apr. 11, 1967, Ser. No. 629,916**

**Claims priority, application Japan, Apr. 11, 1966, 41/22,794; Sept. 30, 1966, 41/64,536; Oct. 13, 1966, 41/67,080; Oct. 22, 1966, 41/69,624; Dec. 29, 1966, 42/323; Jan. 10, 1967, 42/1,908**

**Int. Cl. C08g** *1/56;* **B01j** *11/84*

**U.S. Cl. 260—78.5** **12 Claims**

A method for polymerizing or copolymerizing vinyl chloride or vinylidene chloride which comprises polymerizing or copolymerizing said compound by the use of a modified Ziegler type catalyst consisting of a transition metal compound, an organoaluminum compound and a lower aliphatic alcohol possessing, as a substituent, an amino radical, nitrile radical or a halogen atom, the catalyst preferably consisting of a transition metal compound and an isolated reaction product between an organoaluminum compound and a lower alkanolamine.

### 3,478,000

### RECOVERY OF POLY(ARYLENE SULFIDES)

**William E. Saunders and William L. Stalder, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed Nov. 20, 1967, Ser. No. 684,472**

**Int. Cl. C08g** *23/00*

**U.S. Cl. 260—79.1** **6 Claims**

Recovery of poly(arylene sulfide) substantially free of impurities by evaporating organic polar diluent from a slurry of poly(arylene sulfide) solid polymer particles in the diluent which also contains by-product alkali metal halide and other impurities prior to washing and filtering or centrifuging to obtain processable polymer particles.

### 3,478,001

### ACRYLONITRILE COPOLYMERS WITH UNSATURATED SULFOBETAINES AND PROCESS FOR PREPARING SAME

**Jeno Szita, Dormagen, Ulrich Bahr, Leverkusen, and Horst Wieden and Herbert Marzolph, Dormagen, and Gunther Nischk, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

**No Drawing. Filed Jan. 25, 1965, Ser. No. 427,915**

**Claims priority, application Germany, Feb. 6, 1964, F 41,927**

**Int. Cl. C08f** *15/38, 47/12*

**U.S. Cl. 260—79.3** **12 Claims**

Dye-receptive amphoteric copolymer produced by copolymerizing at least about 80% by weight acrylonitrile and a polymerizable unsaturated sulfobetaine.

### 3,478,002

### COPOLYMERS OF SUBSTITUTED NORBORNENES AND OLEFINS AND PROCESS FOR PRODUCING THE SAME

**Kohei Nakaguchi, Osaka, Shohachi Kawasumi, Niihamashi, Masaaki Hirooka, Ibaraki-shi, and Toshimichi Fujita, Niihama-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Higashi-ku, Osaka, Japan**

**No Drawing. Filed May 11, 1966, Ser. No. 549,138**

**Claims priority, application Japan, May 13, 1965, 40/28,340; May 18, 1965, 40/29,186**

**Int. Cl. C08f** *1/34, 15/02*

**U.S. Cl. 260—79.5** **9 Claims**

Sulfur-curable terpolymers of a 5 or 6 position substituted norbornene, ethylene, and an $\alpha$-olefin of from 3–20 carbon atoms are prepared by reacting a mixture of the monomers in the presence of a catalyst system including an alkylaluminum compound and a vanadium compound. Preferred catalyst components include as the aluminum compound, diethylaluminum chloride, ethylaluminum sesquichloride or ethylaluminum dichloride, and, as the vanadium component, vanadium halide, vanadium oxyhalide, vanadium halo-ortho-vanadate, vanadium acetylacetonate or vanadium haloacetylacetonate.

### 3,478,003

### CATIONIC POLYACRYLAMIDE TERPOLYMERS

**Jack C. McClendon, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Filed May 13, 1968, Ser. No. 728,747**

**Int. Cl. C08f** *27/08*

**U.S. Cl. 260—80.73** **9 Claims**

Water-soluble cationic polyacrylamides useful as flocculants are prepared by chemical modification of a polyacrylamide (1) by transamidation with a diamine of Formula 2 or 3:

$$NH_2-\left(C_aH_{2a}\right)-NR_1R_2 \qquad (2)$$

$$NH_2-\left(C_aH_{2a}\right)-\overset{+}{N}R_1R_2R_3X^- \qquad (3$$

where $R_1$, $R_2$ and $R_3$ are alkyl or hydroxyalkyl groups, $a$ is 2–5 and X is a counteranion. The transamidation is carried out in a glycol and a portion of the glycol is incorporated in the cationic product as an ester.

### 3,478,004

### CROSSLINKING POLYOLEFINS WITH SELECTED DIOXIME DIESTERS

**Clifton L. Kehr, Silver Spring, and James L. Guthrie, Ashton, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut**

**No Drawing. Continuation-in-part of application Ser. No. 553,300, May 27, 1966. This application Apr. 26, 1967, Ser. No. 634,009**

**Int. Cl. C08f** *27/08*

**U.S. Cl. 260—80.78** **18 Claims**

The method of crosslinking polymers derived from $\alpha$-olefins which comprises admixing said polymers with a curing agent consisting of non-quinonoid diesters of dioximes.

### 3,478,005

### TERPENE COPOLYMERS

**Harvey B. Wheeler, Pittsburgh, Pa., assignor to Neville Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Apr. 27, 1966, Ser. No. 545,569**

**Int. Cl. C08f** *15/40, 15/04*

**U.S. Cl. 260—80.7** **6 Claims**

A light colored resin, made by polymerizing a mixture of hydrocarbon monomers containing principally alphapinene and a conjugated aliphatic $C_5$ diolefin and also from about 2 to not more than about 20 weight percent (based on total polymerizables) of cyclopentadiene, is an excellent tackifier for rubbery elastomers and useful in the formulation of pressure sensitive adhesives.

### 3,478,006

### ELECTRICAL CONDUCTING PROPERTIES OF ACRYLIC SUBSTRATES BY INCORPORATION THEREIN OF A TRIAZINE COMPOUND

**Brian Pilling, Decatur, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**

**No Drawing. Filed Aug. 3, 1966, Ser. No. 569,821**

**Int. Cl. C08f** *15/38, 17/00, 37/18*

**U.S. Cl. 260—85.5** **16 Claims**

Electrical conducting properties of acrylic substrates are improved by mixing with the acrylonitrile copolymer from about 2% to about 8% of a triazine compound.

### 3,478,007

### POLYMERIZING UNSATURATED CYCLIC HYDROCARBONS USING AS CATALYSTS $AlCl_3+R_3SiX$

**Lloyd B. Barkley, Pittsburgh, and Anargiros P. Patellis, Belle Vernon, Pa., assignors to Pennnsylvania Industrial Chemical Corporation, Clairton, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Jan. 17, 1966, Ser. No. 520,918**

**Int. Cl. C08f** *5/00, 7/02, 1/28*

**U.S. Cl. 260—88.2** **12 Claims**

An unsaturated cyclic hydrocarbon of the group alpha pinene, beta pinene, turpentine, dipentene and vinyl cyclohexene dissolved in an inert solvent in a closed container is polymerized by adding the hydrocarbon incrementally and with stirring to a solution of trialkyl silicon halide and aluminum chloride while controlling the temperature in the liquid body to about minus 15° C. to 40° C., continuing to stir for a period after the addition of said hydrocarbon, hydrolyzing the catalyst, separating the resultant hydrocarbon phase and heating it to drive off solvent, and then steam distilling the residue and recovering solid polymer of said hydrocarbon. Initially, the hydrocarbon and the solvent are dried to contain not more than about fifty parts per million of water, and the reaction is conducted in an inert gaseous atmosphere.

### 3,478,008

### PREPARATION OF PROPYLENE HAVING INTERMEDIATE CRYSTALLINITY WITH A CATALYST COMPRISING (1) $TiCl_4$-METAL HYDRIDE-ALKYL ALUMINUM HALIDE AND (2) ALUMINUM TRIALKYL

**Harvey D. Ledbetter, Walnut Creek, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Filed July 12, 1965, Ser. No. 471,474**

**Int. Cl. C08f** *1/52, 1/48;* **B01j** *11/84*

**U.S. Cl. 260—93.7** **5 Claims**

High molecular weight polypropylene having intermediate crystallinity is prepared by polymerizing propylene in the presence of a catalyst composition which is a reaction product obtained by reacting together titanium tetrachloride, a metal hydride, an alkylaluminum halide activator, and an alkyl aluminum compound.

### 3,478,009

### ADSORBENT REFINING OF ORGANIC COMPOUNDS

**Colin A. Genge, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed July 29, 1966, Ser. No. 568,755**

**Int. Cl. C09f** *1/02;* **C07c** *127/10;* **B01j** *11/78*

**U.S. Cl. 260—97.7** **4 Claims**

1. A process for purifying liquid characterized by being at least relatively inert to the composited mixture hereinafter recited, of a type that does not tend to cause decomposition of said composited mixture, fluid enough to flow about said composited mixture when at a temperature in the following recited temperature range, and containing at least one impurity selected from the group consisting of sulfur compounds and chlorine compounds, which comprises contacting said liquid in a temperature range from about —35 to about 150° centigrade with a composited mixture consisting essentially of (1) material selected from the group consisting of silver nitrate, silver fluoride, silver tetrafluoroborate, silver hexafluorosilicate, silver hexafluorophosphate, silver hexafluoroantimonate and silver-silver oxide mixture and (2) basic alumina, the acid equivalency of which is in the range from about $8\times10^{-8}$ to about $5\times10^{-5}$% of $H_2SO_4$.

### 3,478,010

### AZO DYESTUFFS OF THE ACRIDONE SERIES

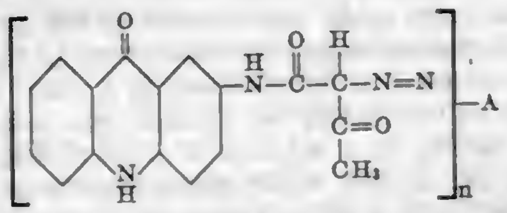
**Hermann Hoffmann and Heidi Zeitler, East Greenwich, R.I., assignors, by mesne assignments, to Farbwerke Hoechst AG, vormals Meister Lucius & Bruning, Frankfurt am Main, Germany**

**No Drawing. Filed Apr. 6, 1966, Ser. No. 540,492**

**Int. Cl. C09b** *31/14, 29/36*

**U.S. Cl. 260—152** **8 Claims**

Dyestuffs of the acridone series having the formula



wherein A is an acridone, benzene, or diphenyl radical, or a benzene or diphenyl radical having substituents not imparting water solubility to said dyestuff and selected from the group consisting of lower alkyl, lower alkoxy, chlorine, nitro, nitrilo, carboxylic acid lower alkyl ester, carboxylic acid amide, carboxylic acid lower alkyl amide, carboxylic acid phenyl amide, sulfonic acid amide, sulfonic acid lower alkyl amide, sulfonic acid lower dialkyl amide, lower alkyl sulfone, benzyl sulfone, phenyl sulfone, lower alkyl amino, phenyl amino, acetyl amino, and benzoyl amino, and wherein $n$ is 1 except if A is a diphenyl radical or a substituted diphenyl radical, in which case $n$ is 2.

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### 3,478,011

### WATER-INSOLUBLE MONOAZO DYESTUFFS

**Klaus Artz, Muttenz, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland**

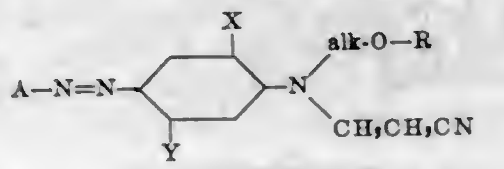
**No Drawing. Filed Oct. 24, 1966, Ser. No. 588,717**

**Claims priority, application Switzerland, Nov. 9, 1965, 15,402/65**

**Int. Cl. C09b** *29/08;* **C07c** *107/06*

**U.S. Cl. 260—205** **6 Claims**

Water-insoluble monoazo dyestuffs of the formula



in which A represents the residue of a diazo component free from sulphonic acid and alkylsulphonyl groups, R represents an alkyl or aralkyl group, "alk" represents an alkylene group, X represents a hydrogen atom or an alkyl or alkoxy group and Y represents a hydrogen atom, a halogen atom, an alkyl group, an alkoxy group or an acylamino group are eminently suitable for dyeing synthetic fibres, especially fibres made from aromatic polyesters, and produce deep, orange to blue dyeings possessing a good fastness to light and to sublimation.

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### 3,478,012

### LEVOGLUCOSAN PRODUCTION BY PYROLYSIS OF PRETREATED STARCHES

**Ivan A. Wolff and David W. Olds, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture**

**No Drawing. Filed Mar. 21, 1968, Ser. No. 714,802**

**Int. Cl. C08b** *25/02*

**U.S. Cl. 260—209** **1 Claim**

Yields of levoglucosan from the pyrolysis of dried waxy corn starch, arrowroot starch, or tapioca starch are greatly increased where the waxy starch first has been treated with an $SO_2$ steep and where the arrowroot or tapioca starches has been steeped in a dilute solution of a calcium salt such as calcium chloride or calcium acetate. The treatments are beneficial only when applied to the specific starch species, and ordinary pearl corn starch is unaffected.

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### 3,478,013

### CARBOHYDRATE DERIVATIVES OF ERYTHROMYCIN

**Peter H. Jones, Lake Forest, Ill., and Elizabeth A. Rowley, Green Lake, Wis., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois**

**No Drawing. Filed Aug. 22, 1966, Ser. No. 573,849**

**Int. Cl. C07c** *47/18;* **C07d** *7/04;* **A61k** *21/00*

**U.S. Cl. 260—210** **14 Claims**

The invention encompasses carbohydrate derivatives of acidic esters of erythromycin such as the oxalate, malonate, succinate, glutarate, adipate, phthalate, maleate, or fumarate, or any ester which has a free acidic group to which may be bonded a carbohydrate moiety; the carbohydrate including monosaccharides such as glucose or fructose; disaccharides such as maltose, lactose, or sucrose; or any of the oligosaccharides. These derivatives are biologically active against bacteria normally sensitive to erythromycin.

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### 3,478,014

### ERYTROMYCIN OXIME AND 9-AMINO-3-O-CLANDINOSYL - 5 - O - DESOSAMINYL - 6,11,12 - TRIHYDROXY - 2,4,6,8,10,12 - HEXAMETHYL - PENTADECANE-OLIDE

**Slobodan Djokic and Zrinka Tamburasov, Zagreb, Yugoslavia, assignors to PLIVA, Pharmaceutical and Chemical Works, Zagreb, Yugoslavia, a corporation of Yugoslavia**

**No Drawing. Filed Aug. 16, 1967, Ser. No. 660,895**

**Int. Cl. C07c** *47/18;* **A61k** *21/00*

**U.S. Cl. 260—210** **4 Claims**

The present invention relates to the preparation of erythromycin oxime and 9-amino-3-O-cladinosyl-5-O-desosaminyl - 6,11,12 - trihydroxy - 2,4,6,8,10,12 - hexamethylpentadecane - 13 - olide erythromycylamine therefrom, which are new antibiotic compounds.

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### 3,478,015

### PROCESS FOR REACTING AMINO ACID AND AN ACTIVE CARBONYL SUGAR IN A POLYHYDRIC ALCOHOL

**Isao Onishi, Tokyo, Akira Nishi, Saitama-ken, and Tadao Kakizawa, Tokyo, Japan, assignors to Yuki Gosei Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan**

**No Drawing. Filed Nov. 14, 1966, Ser. No. 593,633**

**Int. Cl. C07c** *47/18;* **A23l** *1/26*

**U.S. Cl. 260—211** **7 Claims**

A method for manufacturing novel aromatics, comprising causing a reaction between an amino acid and a sugar by heating them in the presence of a polyhydric alcohol, thereby obtaining the reaction product which contains no unreacted amino acid and which can therefore be used as a flavoring.

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### 3,478,016

### PREPARATION OF CELLULOSE ESTER AND ETHER SULFATES WITH LOW INORGANIC SALT CONTENT

**Martin E. Rowley, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Continuation-in-part of application Ser. No. 479,668, Aug. 13, 1965, which is a continuation-in-part of application Ser. No. 128,976, Aug. 3, 1961, which in turn is a continuation-in-part of application Ser. No. 56,347, Sept. 16, 1960. This application July 26, 1967, Ser. No. 656,068**

**Int. Cl. C08b** *5/14, 11/02;* **C09j** *3/04*

**U.S. Cl. 260—215** **8 Claims**

A method of recovering cellulose ether or ester sulfates from their reaction media substantially free of inorganic

salt has been developed. The method involves the precipitation of the product in isopropanol. It was discovered that by adding substantially anhydrous isporopanôl at the outset of the precipitation step, in an amount at least equimolar to the amount of alkali metal salt of acyl sulfuric acid present at that time in the reaction medium (provided that the reaction medium is anhydrous during this addition of anhydrous isopropanol), a product substantially free of inorganic salt can be obtained.

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### 3,478,017

### N-FLUORINATED SUBSTITUTED AZIRIDINES

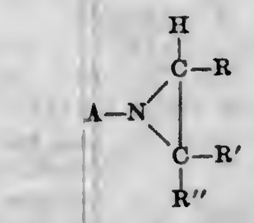
**Carl C. Thurman, Jr., Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Filed May 11, 1962, Ser. No. 194,187**

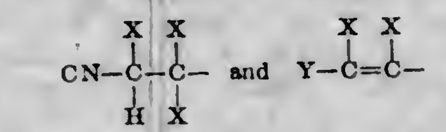
**Int. Cl. C07d** *23/06*

**U.S. Cl. 260—239** **6 Claims**

1. A compound of the formula



wherein R and R′ are selected from the group consisting of hydrogen and methyl, R″ is selected from the group consisting of hydrogen and alkyl radicals containing from one to four carbon atoms, and A is a radical selected from the group consisting of



wherein each X is selected from the group consisting of fluorine and perfluorinated alkyl containing from one to four carbon atoms, and Y is selected from the group consisting of hydrogen, halogen, cyano, and perfluorinated alkyl containing from one to four carbon atoms.

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### 3,478,018

### PROCESS FOR PRODUCING α-AMINO PENICILLINS

**Charles A. Robinson and John J. Nescio, West Chester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Oct. 2, 1967, Ser. No. 671,951**

**Int. Cl. C07d** *99/20;* **A61k** *21/00*

**U.S. Cl. 260—239.1** **8 Claims**

A method for preparing silylated α-amino penicillins comprising preparation of an amine base salt of 6-aminopenicillanic acid by reacting the latter with a strong amine in an organic solvent devoid of hydroxyl groups; adding to the resulting mixture of the amine base salt of 6-aminopenicillanic acid, which has had added thereto a weak amine base, a silylating agent; and then adding to the last resulting mixture, the chloride hydrochloride of a suitable α-amino acid to form, by acylation, the silylated hydrochloride of the desired α-amino penicillin. The resulting silylated penicillin hydrochloride is useful for conversion into the corresponding α-amino penicillin having potent antibiotic activity, as by simple hydrolysis or alcoholysis, followed either by transformation of the resulting penicillin hydrochloride into an aryl sulfonic acid salt thereof which may be neutralized to the penicillin per se by addition of a suitable base, or by the raising of the pH of the reaction mixture to the iso-electric point to cause precipitation of the desired penicillin.

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### 3,478,019

### HALOGENATED CYCLOPROPYL, CYCLOPROPENYL AND OXOCYCLOPROPENYL-1-HYDROXY ESTRATRIENES AND DERIVATIVES THEREOF

**John A. Edwards, Los Altos, Calif., assignor to Syntex Corporation, Panama, Panama, a corporation of Panama**

**No Drawing. Filed Sept. 15, 1967, Ser. No. 668,197**

**Int. Cl. C07c** *169/06, 169/10;* **A61k** *27/00*

**U.S. Cl. 260—239.55** **13 Claims**

17α-dihalocyclopropyl-, dihalocyclopropenyl-, and oxocyclopropenyl-1-hydroxy-estratrienes useful as estragenic agents.

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### 3,478,020

### BENZENEDIACETONITRILES

**Ferdinand B. Zienty, Warson Woods, and Myron J. Holm, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**

**No Drawing. Filed Nov. 9, 1966, Ser. No. 592,984**

**Int. Cl. C09b** *23/00, 23/10*

**U.S. Cl. 260—240** **10 Claims**

Condensation products of thiophene aldehydes with benzenediacetonitriles, dithenylidenebenzenediacetontriles are of particular value as thermally stable antioxidants for high temperature fluids and lubricants.

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### 3,478,021

### 3,3-SPIROPIPERIDINE DERIVATIVES OF BENZOTHIODIAZINE 1,1-DIOXIDES AND PROCESSES FOR THEIR PREPARATION

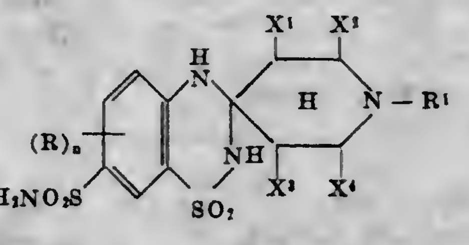
**James M. Sprague, Gwynedd Valley, and Edward J. Cragoe, Jr., Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**No Drawing. Continuation-in-part of application Ser. No. 108,274, May 8, 1961. This application Nov. 24, 1964, Ser. No. 413,598**

**Int. Cl. C07d** *99/32, 99/34*

**U.S. Cl. 260—243** **10 Claims**

1. A compound having the structure



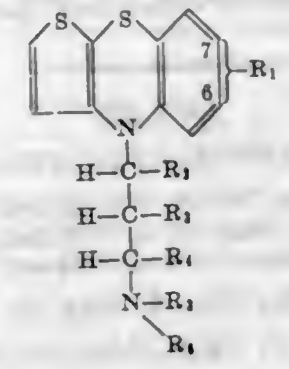
and the physiologically acceptable salts and quaternary ammonium derivatives thereof wherein

- R is attached to one of the positions 5, 6, and 5 and 6 and is selected from the group consisting of hydrogen, halogen, lower alkyl, halo-lower alkyl, lower alkoxy, nitro and amino;
- $n$ is one of the numerals 1 and 2;
- $R^1$ is selected from the group consisting of alkyl of from 1 to about 15 carbons, lower alkenyl, lower alkynyl and cycloalkyl of 3 to 6 carbon atoms;
- $X^1$, $X^2$, $X^3$, and $X^4$ individually are selected from the group consisting of hydrogen and lower alkyl and $X^2$ and $X^4$ taken together alkylene of two carbon atoms.

### 3,478,022
### 4-SUBSTITUTED AMINOPROPYL-4H-THIENO [2,3-b][1,4]BENZOTHIAZINES

**Jany Renz, Basel, Jean-Pierre Bourquin, Magden, Aargau, Hans Winkler, Basel, Pierre Gagnaux, Allschwil, Simon Guldimann and Leo Ruesch, Basel, and Gustav Schwarb, Allschwil, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland**
**No Drawing. Continuation-in-part of application Ser. No. 493,257, Oct. 5, 1965. This application Oct. 18, 1967, Ser. No. 676,087**
**Claims priority, application Switzerland, Oct. 9, 1964, 13,165/64; Oct. 29, 1964, 14,021/64; Dec. 23, 1964, 16,632/64; Apr. 1, 1965, 4,498/65; Aug. 19, 1965, 11,699/65**
**Int. Cl. C07d** *99/10, 93/12;* **A61k** *27/00*
**U.S. Cl. 260—243** **7 Claims**

The present invention provides thieno-benzothiazine derivatives of formula:



wherein either

- $R_1$ is hydrogen, chlorine, bromine, alkoxy of 1 to 4 carbon atoms, alkylmercapto of 1 to 4 carbon atoms, alkylsulphonyl of 1 to 4 carbon atoms, alkylsulphinyl of 1 to 4 carbon atoms, alkanoyl of 2 to 4 carbon atoms, trifluoromethyl, or cyano,
- $R_2$ is hydrogen,
- $R_3$ and $R_4$ are each hydrogen or methyl, and
- $R_5$ and $R_6$ together with the nitrogen atom signify 4-hydrory-piperidine, or piperazine substituted on the second nitrogen atom by 2-hydroxy-ethyl,

and pharmaceutically acceptable acid addition salts and esters thereof. The compounds show pharmacological properties typical of a sedative-neuroleptic agent.

### 3,478,023
### PYRIMIDO THIADIAZINES

**Robert E. Manning, Mountain Lake, N.J., assignor to Sandoz, Inc., Hanover, N.J.**
**No Drawing. Filed Nov. 30, 1967, Ser. No. 686,828**
**Int. Cl. C07d** *93/22, 51/36;* **A61k** *27/00*
**U.S. Cl. 260—243** **3 Claims**

This disclosure relates to novel pyrimido[4,5-e]thiadiazines, e.g. 3,5,7 - trimethylpyrimido[4,5-e] - 1,2,4-thiadiazine - 6,8(5H,7H) - dione-1,1-dioxide. These compounds are useful as hypotensives.

### 3,478,024
### DI-(HYDROXYNAPHTHYL)-TRIAZINES

**Hans Altermatt, Reinach, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland**
**No Drawing. Filed Jan. 25, 1967, Ser. No. 611,568**
**Claims priority, application Switzerland, Feb. 1, 1966, 1,398/66; Dec. 19, 1966, 18,126/66**
**Int. Cl. C07d** *55/50;* **C08k** *1/52;* **C09b** *17/04*
**U.S. Cl. 260—248** **4 Claims**

The present invention concerns dyestuffs which are characterized by a 1,3,5-triazine ring which is substituted in 2-position by an alkyl, cycloalkyl, aralkyl, heterocyclic or aryl residue which, in so far as it is a benzene or a naphthalene residue, must not contain a hydroxyl group in para-position to the triazine residue, which triazine ring is substituted in each of the 4- and 6-positions by a β-hydroxynaphthylene radical bound in α-position to the triazine radical. The new dyes are useful for the melt-coloration in fast yellow shades of spinnable, high-molecular products, for example polyolefines, polyesters, and especially polyamides.

### 3,478,025
### POLYMERIZATION OF LACTAMS

**John M. Kolyer, Convent, and Albert A. Kviglis, Clifton, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York**
**No Drawing. Original application May 19, 1965, Ser. No. 457,173. Divided and this application Oct. 16, 1968, Ser. No. 782,782**
**Int. Cl. C07d** *55/50;* **C08g** *33/08*
**U.S. Cl. 260—248** **4 Claims**

Process for anionic polymerization of lactams such as epsilon-caprolactam utilizing a metal catalyst and a (p-substituted phenylthio)-s-triazine promoter such as tris-(p-chlorophenylthio)-s-triazine, tris-(p-tertiarybutylphenylthio)-s-triazine, tris-(p-cresylthio)-s-triazine, or tris-(p-bromophenylthio)-s-triazine.

### 3,478,026
### 6 - CYCLOALKYLGUANAMINES, PREPARATIONS AND METHODS FOR TREATING INFLAMMATORY CONDITIONS THEREWITH

**Takashi Enkoji, Park Forest, Ill., and Edward M. Levine, Buffalo, N.Y., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed Aug. 16, 1967, Ser. No. 660,919**
**Int. Cl. C07d** *55/20;* **A61k** *27/00*
**U.S. Cl. 260—249.9** **4 Claims**

6-cycloalkylguanamines are disclosed wherein the cycloalkyl radical contains from 3 to 10 carbon atoms. The compounds are of the class of 6-(substituted)guanamines, also called 2,4-diamino-s-triazines, and are useful in forming preparations for the therapeutic treatment of inflammatory conditions. Exemplary of the compounds disclosed is 6-cyclopropylguanamine. The non-toxic acid addition salts of the compounds are also therapeutically useful.

### 3,478,027
### N-TRIHALOMETHYLTHIO-SULPHONIC ACID AMIDES

**Wilfried Paulus, Krefeld-Gartenstadt, Engelbert Kuhle, Bergisch Gladbach, Otto Pauli, Krefeld, Klaus Sasse, Cologne-Stammheim, and Erich Klauke, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed Jan. 23, 1967, Ser. No. 610,823**
**Claims priority, application Germany, Feb. 12, 1966, F 48,415**
**Int. Cl. C07d** *51/78*
**U.S. Cl. 260—250** **5 Claims**

N-trihalomethylthio-sulfonic acid amide of 2,3-dichloroquinoxaline and a process for the production thereof by contacting a corresponding 2,3-dichloro-quinoxaline sulfonic acid amide with trihalomethane-sulfenic acid chloride at a temperature of about 20–40° C. and in the presence of an acid binding agent.

### 3,478,028
### 4-SUBSTITUTED-1-HYDROXYLAMINOPHTHALAZINES

**David Gordon Parsons, Hertford, and Alan Frederick Turner, Worthing, England, assignors to Vantorex Limited, Loughborough, England, a British company**
**No Drawing. Continuation-in-part of application Ser. No. 561,037, June 28, 1966. This application May 10, 1967, Ser. No. 637,347**
**Claims priority, application Great Britain, July 12, 1965, 29,426/65; Feb. 8, 1966, 5,514/66**
**Int. Cl. C07d** *51/06;* **A61k** *25/00*
**U.S. Cl. 260—250** **20 Claims**

This invention is directed to 1-hydroxylamino-, 1-lower alkoxyamino-, and 1-(N-lower alkyl)hydroxylaminophthalazines, to substituted equivalents thereof wherein a lower alkyl, lower alkoxy, di-lower alkylamino-lower alkoxy, phenyl, phenyl-lower alkyl, pyridyl-lower alkyl, carbo-lower alkoxy-lower alkyl, carboxy-lower alkyl, carbo-hydrazino-lower alkyl, carbamyl-lower alkyl, anilino, lower alkoxy-lower alkyl, phenoxy, hydroxy-lower alkoxy, lower alkoxy-substituted lower alkoxy, amino-lower alkyl or cycloalkyleneimino group replaces the hydrogen atom at the 4-position, and to derivatives thereof wherein the hydroxyl moiety of the hydroxylamine group has been converted into an ester, an amide or a hydrazide. The compounds of this invention have significant pharmacological activity primarily as bronchodilator agents.

### 3,478,029
### O-PYRAZOLO-(1,5-A)-PYRIMIDYL-PHOSPHORUS ACID ESTERS

**Hans Gerd Schicke, deceased, late of Bochum, Germany, by Emil Schicke and Helene Schicke, heirs, Bochum, and Ingeborg Hammann, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed May 31, 1966, Ser.No. 554,204**
**Claims priority, application Germany, June 2, 1965, F 46,221**
**Int. Cl. C07f** *9/16*
**U.S. Cl. 260—256.5** **10 Claims**

0-[6-halo- and 6-mercapto- substituted pyrazolo-(1,5-a)-pyrimidyl]-phosphorus acid esters which possess biocidal, especially pesticidal, properties and which may be produced by conventional methods.

### 3,478,030
### BENZAMIDE SUBSTITUTED ANILINO AMINOPYRIMIDINES

**James Harold Short, Lake Forest, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois**
**No Drawing. Filed June 27, 1966, Ser. No. 560,830**
**Int. Cl. C07d** *51/42, 51/44;* **A61k** *27/00*
**U.S. Cl. 260—256.4** **3 Claims**

Benzamide substituted anilino aminopyrimidines useful to increase the coronary blood flow in warm-blooded animals.

### 3,478,031
### FURO[2,3-h]THIACHROMINE

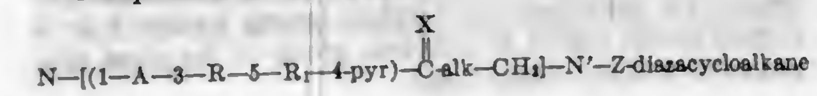
**Akira Takamizawa, Ibaraki-shi, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan**
**No Drawing. Filed May 1, 1967, Ser. No. 634,869**
**Claims priority, application Japan, May 7, 1966, 41/28,968**
**Int. Cl. C07d** *99/10;* **A61k** *27/00*
**U.S. Cl. 260—256.5** **1 Claim**

Dl - 6a,9a - cis - 2,6a - dimethyl - 6a,8,9,9a,10a,11-hexahydro-5H-furo[2,3-h]thiachromine having vitamin $B_1$, lipid shifting, antipyretic and anti-inflammatory activities, and a method for its production which comprises neutralizing a thiamine salt or a thiol-type thiamine salt.

### 3,478,032
### N-SUBSTITUTED-N'-ARYL DIAZACYCLOALKANES

**Vishwa Prakash Arya, Bombay, India, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland**
**No Drawing. Continuation-in-part of application Ser. No. 452,877, May 3, 1965. This application Jan. 3, 1968, Ser. No. 695,344**
**Claims priority, application Switzerland, May 4, 1964, 5,798/64; Mar. 2, 1965, 2,873/65**
**Int. Cl. C07d** *51/72, 49/18;* **A61k** *27/00*
**U.S. Cl. 260—268** **15 Claims**

Compounds of the formula



$$\text{N—[(1—A—3—R—5—R}_1\text{—4-pyr)—}\overset{\overset{\text{X}}{\|}}{\text{C}}\text{-alk—CH}_2\text{]—N'—Z-diazacycloalkane}$$

in which diazacycloalkane has 6 to 8 ring members, 4-pyr is a 4-pyrazolyl residue, A is hydrogen, optionally substituted alkyl or optionally substituted phenyl, phenyl-lower alkyl or pyridyl, R is hydrogen or lower alkyl, $R_1$ is lower alkyl, X represents oxo or hydrogen together with hydroxy, lower alkoxy or lower alkanoyloxy, alk is lower alkylidene and Z is optionally substituted phenyl or pyridyl, or salts thereof have antihypertensive and psychotropic, e.g. tranquilizing and sedative properties.

### 3,478,033
### PREPARATION OF 1,1,4,4-TETRAETHYL-PIPERAZINIUM DICHLORIDE

**Donald M. Soignet, Metairie, and John B. McKelvey, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture**
**No Drawing. Filed May 25, 1967, Ser. No. 641,124**
**Int. Cl. C07d** *51/70, 1/16;* **C07c** *87/10*
**U.S. Cl. 260—268** **2 Claims**

This invention relates to a novel process for the preparation of 1,1,4,4-tetraethylpiperazinium dichloride. More particularly, this invention relates to the preparation of 1,1,4,4-tetraethylpiperazinium dichloride in large quantities by a reaction between β-chloroethyldiethyl amine hydrochloride and some mono, di, or polyepoxide.

### 3,478,034
### MANUFACTURE OF PYRIDINE

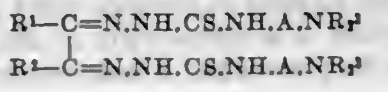
**Alastair Campbell and Hugh Leithead Roberts, Runcorn, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain**
**No Drawing. Continuation of application Ser. No. 485,067, Sept. 3, 1965. This application Dec. 2, 1968, Ser. No. 781,706**
**Claims priority, application Great Britain, Sept. 10, 1964, 37,115/64**
**Int. Cl. C07d** *31/10, 31/08*
**U.S. Cl. 260—290** **11 Claims**

There is provided a process for preparing pyridine wherein substituted or unsubstituted glutaraldehydes or precursors thereof are reacted in the liquid phase with ammonium ions in the presence of molecular oxygen and metal ions selected from cupric and ferric ions and preferably further in the presence of palladium and/or platinum. The metal ions may be in a concentration of from 0.001 to 1.0 molar and the reaction temperature is up to 150° C. with a partial pressure of oxygen of at least 0.5 atmospheres.

### 3,478,035
### DITHIOSEMICARBAZONES

**Paul Anthony Barrett, London, England, assignor to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York**
**No Drawing. Filed July 21, 1965, Ser. No. 473,867**
**Claims priority, application Great Britain, July 23, 1964, 29,671/64; May 25, 1965, 22,006/65**
**Int. Cl. C07d** *27/04;* **C07c** *159/00;* **A61k** *27/00*
**U.S. Cl. 260—293.4** **8 Claims**

The invention is related to α-dithiosemicarbazones having activity against coccidiosis and anaplasmosis. The compounds of the invention are of the formula



$$\begin{array}{l}\text{R}^1\text{—C=N.NH.CS.NH.A.NR}_2^3\\ \quad\ \ |\\ \text{R}^2\text{—C=N.NH.CS.NH.A.NR}_2^3\end{array}$$

where $R^1$ is selected from the class consisting of hydrogen, lower alkoxy, lower alkyl, acetoxymethyl and phenyl, where $R^2$ is selected from the class consisting of hydrogen, lower alkyl atoms, benzyl lower alkyl, cyclohexyl, benzyl and phenyl, A is selected from the class of a straight and branched chain alkylene having 1 to 8 carbon atoms and $NR_2^3$ is selected from the class consisting of lower dialkylamino, pyrrolidino, piperidino and morpholino.

### 3,478,036
### BIS-THIOSEMICARBAZONES

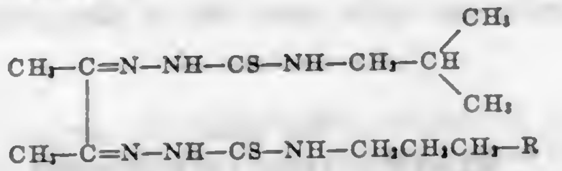
**Erhardt Winkelmann, Kelkheim, Taunus, and Wolf-Helmut Wagner, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany**

**No Drawing. Filed May 1, 1967, Ser. No. 634,837**

**Claims priority, application Germany, May 14, 1966, F 49,208**

**Int. Cl. C07c** *159/00;* **C07d** *27/04;* **A61k** *21/00*
**U.S. Cl. 260—293.4** **5 Claims**

Bis-thiosemicarbazones, active against coccidiosis, having the formula



wherein R is dimethylamino, diethylamino, pyrrolidino, or piperidino. Methods for making these compounds.

### 3,478,037
### CERTAIN TRICHLORO-PYRIDYL-2-THIONO-PHOSPHONIC ACID ESTERS

**Christa Fest, Wuppertal-Elberfeld, Ingeborg Hammann, Cologne, Wilhelm Stendel, Wnppertal-Vohwinkel, and Winfried Flucke, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

**No Drawing. Filed Mar. 7, 1968, Ser. No. 711,220**

**Claims priority, application Germany, Mar. 30, 1967, F 51,974**

**Int. Cl. C07d** *31/50;* **A01n** *9/22*
**U.S. Cl. 260—294.8** **6 Claims**

Alkyl(phenyl) - O - alkyl-O-(3,5,6-trichloropyrid-2-yl)-thionophosphonic acid esters which possess pesticidal, especially acaricidal and insecticidal, properties and which may be produced by reacting the corresponding alkyl-O-alkyl-thionophosphonic acid ester halide with 2-hydroxy-3,5,6-trichloropyridine.

### 3,478,038
### CERTAIN 2(4-PYRIDYL-α,α-DIPHENYLCYCLO-PROPANEMETHANOLS AND INTERMEDIATES THEREFOR

**Allan Poe Gray and Harold Kraus, Decatur, Ill., assignors, by mesne assignments, to Mallinckrodt Chemical Works, St. Louis, Mo., a corporation of Missouri**

**No Drawing. Continuation of application Ser. No. 337,729, Jan. 15, 1964. This application Sept. 6, 1968, Ser. No. 770,882**

**Int. Cl. C07d** *31/02;* **A61k** *27/00*
**U.S. Cl. 260—294.8** **3 Claims**

1. The process which comprises reacting picolyl chloride with ethyl acrylate to produce ethyl pyridylcyclopropane carboxylate, at a temperature of about 0–50 degrees centigrade in the presence of a basic reagent, selected from the group consisting of alkoxides, hydrides and amides of alkali metals.

### 3,478,039
### CERTAIN 2-, 4-, 5-, 6- OR 7-AZAINDOLYL-LOWER-ALKYLAMIDOXIMES, -AMIDINES AND -GUANIDINES

**Malcolm Rice Bell, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 345,846, Feb. 19, 1964. This application Jan. 10, 1966, Ser. No. 519,458**

**Int. Cl. C07d** *39/00 27/54*
**U.S. Cl. 260—295** **16 Claims**

2-, 4-, 5-, 6- or 7-azaindolyl - lower - alkylamidoximes, -amidines, and -guanidines.

### 3,478,040
### GLYCERYL 2-(x,y,z-SUBSTITUTED ANILINO) NICOTINATES

**Margaret H. Sherlock, Bloomfield, N.J., assignor to Sehering Corporation, Bloomfield, N.J., a corporation of New Jersey**

**No Drawing. Filed Apr. 10, 1967, Ser. No. 629,383**

**Int. Cl. C07d** *31/42, 31/34;* **A61k** *27/00*
**U.S. Cl. 260—295.5** **9 Claims**

The invention relates to glyceryl esters of substituted 2-anilinonicotinic acids, to their use as analgesic anti-inflammatory agents, and to the intermediates useful in the preparation thereof. Illustrative of the preparation of those compounds is the formation of glyceryl-2-(2-methyl-3-chloroanilino) nicotinate, as follows: Reflux a mixture containing 2-(2-methyl-3-chloroanilino) nicotinic acid, chloroacetonitrile in the presence of triethylamine to produce cyanomethyl-2-(2-methyl-3-chloroanilino) nicotinate which, by heating with 2,2-dimethyl-1,3-dioxolane-4-methanol in the presence of potassium carbonate, produces β,γ-isopropylidenedioxypropyl-2-(2-methyl-3-chloroanilino) nicotinate. Hydrolysis of the β-isopropylidenedioxypropyl - 2(2 - methyl-3-chloroanilino) nicotinate with 0.5 N hydrochloric acid yields glyceryl-2-(2-methyl-3-chloroanilino) nicotinate. Alternate methods for the preparation of the glyceryl esters of the substituted 2-anilinonicotinic acids are also described.

### 3,478,041
### SALTS OF NICOTINIC ACID

**Alfons Soder, Frankfurt am Main-Schwanheim, and Gerhard Busing, Wiesbaden, Germany, assignors to Chemische Werke Albert, Wiesbaden-Biebrich, Germany, a corporation of Germany**

**No Drawing. Filed Apr. 19, 1967, Ser. No. 631,895**

**Claims priority, application Germany, Apr. 23, 1966, C 38,854**

**Int. Cl. C07d** *31/36;* **A61k** *27/00*
**US. Cl. 260—295.5** **7 Claims**

Non-hygroscopic, water soluble and physiologically compatible salts of nicotinic acid and tris-(hydroxyalkyl)-aminoalkanes, especially of tris-(hydroxymethyl)-aminomethane, and their preparation from nicotinic acid, or a salt respectively a salt forming functional derivative thereof and the corresponding tris-(hydroxyalkyl)-aminoalkane of the formula $(HO—alk—)_3C—A—NR^1R^2$, in which $R^1$ and $R^2$ represent lower alkyl groups or hydrogen atoms, alk represents an alkylene group having 1 to 4 carbon atoms and A an alkylene group of the same definition or a direct single bond.

### 3,478,042
### PRODUCTION OF N:N-DISUBSTITUTED TETRAHYDRO-4:4′-BIPYRIDYL WITH THE USE OF A WATER IMMISCIBLE SOLVENT IN A REDUCTION PROCESS

**John Edward Colchester and John Hubert Entwisle, Runcorn, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain**

**No Drawing. Filed Apr. 11, 1966, Ser. No. 541,505**

**Int. Cl. C07d** *31/40*
**U.S. Cl. 260—296** **9 Claims**

There is provided a process for the manufacture of a N:N′-disubstituted tetrahydro-4:4′-bipyridyl which comprises reducing the corresponding N-substituted pyridinium salt in an aqueous medium. The improvement resides in carrying out the reduction in the presence of an immiscible organic solvent for the tetrahydrobipyridyl product. With the use of such a solvent the product is removed from the reduction zone and increases the yield of the reduction. Examples of such solvents are diethyl ether, tetrahydrofuran and benzene.

### 3,478,043
### 3-OXA-TRICYCLO[4.2.1.0$^{2,5}$]NONANES

**Donald R. Arnold, Lincolndale, N.Y., and Anthony A. Sousa, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York**

**No Drawing. Continuation-in-part of application Ser. No. 324,183, Nov. 18, 1963. This application Mar. 23, 1966, Ser. No. 536,662**

**Int. Cl. C07d** *31/32;* **A01n** *9/22*
**U.S. Cl. 260—297** **13 Claims**

Novel oxetanes having a norbornyl moiety in the molecule are prepared by the photocatalyzed reaction of norborene and a ketone, e.g., meta-benzoylpyridine to form the oxetane. An illustrative oxetane is 4-(meta-pyridyl)-4-phenyl-3-oxatricyclo[4.21.0$^{2,5}$]nonane.

### 3,478,044
### HERBICIDAL BENZOTHIADIAZOLES AND OXYGEN AND SELENIUM ANALOGUES

**Robert S. Slott, Berkeley, Edward R. Bell, Walnut Creek, and Kurt H. G. Pilgram, Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Dec. 9, 1966, Ser. No. 600,371**

**Int. Cl. C07d** *99/00*
**U.S. Cl. 260—298** **6 Claims**

Novel herbicidal 2,1,3 benzothiadiazoles substituted by at least one of cyano and thiocarbamoyl, and their oxygen and selenium analogues.

### 3,478,045
### PRODUCTION OF 5-MERCAPTO-1,2,4-THIODIAZOLE DERIVATIVES

**Erwin Hahn, Viernheim, Hesse, and Matthias Seefelder, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**

**No Drawing. Filed Apr. 5, 1967, Ser. No. 628,540**

**Claims priority, application Germany, Apr. 9, 1966, 1,670,068**

**Int. Cl. C07d** *91/60*
**U.S. Cl. 260—302** **7 Claims**

This invention concerns a process for the production of 5-mercapto-1,2,4-thiodiazole derivatives which contain aryl radicals in the 3-position and are valuable intermediates for example for dyes by reaction of amidines or isothiourea salt derivatives with sulfur and with carbon disulfide.

### 3,478,046
### 5-(OR 6)-HALO(OR AMINO)BENZAZOLES AND METHODS FOR PREPARING SAME

**Lewis H. Sarett, Princeton, and Horace D. Brown, Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**No Drawing. Continuation-in-part of application Ser. No. 332,940, Dec. 23, 1963. This application Apr. 10, 1967, Ser. No. 629,396**

**Int. Cl. C07d** *95/00, 99/10, 99/06*
**U.S. Cl. 260—302** **8 Claims**

Anthelmintic 5- (or 6)-halo or amino substituted benzimidazoles, benzoxazoles, and benzothiazoles substituted at the 2-position with a 5- (or 6) membered heteromonocyclic radical having 1–3 hetero atoms selected from the group consisting of nitrogen, oxygen and sulfur, with optional substitution at the 1-position, are prepared by processes including treatment of an appropriately substituted o-phenylenediamine, o-aminophenol or o-aminothiophenol with a heterocyclic carboxylic acid or derivative thereof. It is contemplated that dosage units containing these benzazoles as the essential active ingrediant will be administered to animals in the treatment and control of anthelmintic infestations.

### 3,478,047
### PROCESS FOR MAKING dl-2,3,5,6-TETRAHYDRO-6-PHENYLIMIDAZO[2,1-b]THIAZOLE

**Peter Doyle and Alastair Graham Wylie, Macclesfield, England, assignors to Imperial Chemical Industries Limited, Millbank, London, England, a corporation of Great Britain**

**No Drawing. Filed Nov. 10, 1966, Ser. No. 593,313**

**Claims priority, application Great Britain, Dec. 10, 1965, 52,526/65**

**Int. Cl. C07d** *91/42;* **A01n** *9/22*
**U.S. Cl. 260—306.7** **1 Claim**

Process for the manufacture of dl-2,3,5,6-tetrahydro-6-phenylimidazo[2,1-b]thiazole, which comprises reacting 2-imino - 3-(2-hydroxy - 2 - phenylethyl)thiazolidinium p-toluenesulphonate or the appropriate related p-toluenesulfonate with sulphuric acid.

### 3,478,048
### 2,3;3a,12b - TETRAHYDRO - 8H - DIBENZO [3,4;6,7]CYCLOHEPT[1,2-d]OXAZOLES AND DERIVATIVES

**Albrecht Edenhofer, Riehen, and Hans Spiegelberg, Basel, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey**

**No Drawing. Filed Jan. 3, 1966, Ser. No. 517,893**

**Claims priority, application Switzerland, Jan. 8, 1965, 232/65; Jan. 14, 1965, 525/65; Dec. 17, 1965, 525/65**

**Int. Cl. C07d** *85/06;* **C07c** *131/00, 119/00*
**U.S. Cl. 260—307** **7 Claims**

2,3;3a,12b-tetrahydro - 8H - dibenzo[3,4;6,7]cyclohept-[1,2-d]oxazoles and dibenzo[a,d]cyclohept[1,4]dienes bearing, for example, substituents at the 10- and 11-positions, are prepared, inter alia, from the corresponding dibenzocycloheptatrienones. The products are useful as antidepressants.

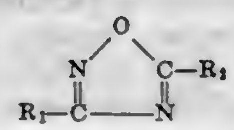
### 3,478,049
### NITROFURYL SUBSTITUTED OXADIAZOLES

**Anne Mary Von Esch, North Chicago, and Aldo J. Crovetti, Lake Forest, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois**

**No Drawing. Continuation-in-part of applications Ser. No. 314,863 and Ser. No. 314,891, Oct. 9, 1963. This application Mar. 28, 1966, Ser. No. 537,707**

**Int. Cl. C07d** *85/06;* **A01n** *9/22*
**U.S. Cl. 260—307** **10 Claims**

Compounds of the formula:



wherein when one of $R_1$ and $R_2$ is 5-nitro-2-furyl, the other represents hydrogen, alkyl, haloalkyl, halophenyl, loweralkylphenyl, haloloweralkylphenyl, aryloxyloweralkyl, hydroxyphenyl, aminophenyl, nitrophenyl, loweralkoxyphenyl, mercaptophenyl, acetylthiomethyl, loweralkylthiophenyl, halosulfonamidophenyl, sulfonamidophenyl, aralkyl, haloaralkyl, alkoxyaralkyl, pyridyl, pyridylloweralkyl, halopyridyl, carboxamido, carboalkoxy, carboalkoxyloweralkyl, carboalkoxyvinyl, loweralkenyl, furyl, furylalkenyl, thienyl, thienylalkenyl, pyridylalkenyl, pyrimidyl, halopyrimidyl, halofuryl, halothienyl, furylloweralkyl, thienylloweralkyl, oxazyl, isoxazyl, quinolyl, isoquinolyl, pyrazyl, imidazyl, pyrazinyl, or thiazyl, which are useful as antibacterial and antifungal agents.

### 3,478,050

### 1-(3′,4′-METHYLENEDIOXY-PHENYL)-2-PYRROLIDINO-ALKANONES-(1)

**Herbert Köppe, Ingelheim (Rhine), Gerhard Ludwig, Wedel, Holstein, and Karl Zeile, Ingelheim (Rhine), Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany**

**No Drawing. Filed Apr. 29, 1966, Ser. No. 546,197**

**Claims priority, application Germany, May 28, 1965, B 82,155**

**Int. Cl. C07d** *95/00, 27/04;* **A61k** *27/00*

**U.S. Cl. 260—326.5 6 Claims**

The compounds are 1-(3′,4′-methylenedioxy-phenyl)-2-heterocyclic amino-alkanones-(1) and non-toxic acid addition salts thereof, useful as central nervous system stimulants in warm-blooded animals.

### 3,478,051

### AZECINO- AND AZONINO[5,4-b]INDOLES

**William J. Houlihan, Mountain Lakes, and Robert E. Manning, Parsippany, N.J., assignors to Sandoz Inc., Hanover, N.J.**

**No Drawing. Filed Mar. 17, 1967, Ser. No. 623,801**

**Int. Cl. C07d** *99/02;* **A61k** *27/00*

**U.S. Cl. 260—326.12 13 Claims**

Azonino and azecino[5,4-b]indoles are CNS-active compounds which are useful as antidepressants and also as anti-inflammatories. They are prepared from a tryptamine and an ω-acyl-substituted-propionic or butyric acid. Tetracyclic intermediates are also useful in view of their CNS-stimulant activity.

### 3,478,052

### IMIDO PERHALOALKYL DISULFIDES

**Bob L. McCaskey, San Pablo, Gustave K. Kohn, Berkeley, and Joseph E. Moore, Richmond, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware**

**No Drawing. Original application Jan. 6, 1965, Ser. No. 423,819, now Patent No. 3,356,572, dated Dec. 5, 1967. Divided and this application Apr. 20, 1967, Ser. No. 642,275**

**Int. Cl. C07d** *27/52;* **A61k** *27/00*

**U.S. Cl. 260—326 8 Claims**

Imidoperhaloalkyl disulfides in which the alkyl group is methyl or ethyl, the halogens are chlorine or bromine and the imido group may be phthalimido or tetrahydrophthalimido. An exemplary disulfide is phthalimido perchloroethyl disulfide. These disulfides are useful for tranquilizing laboratory animals such as rodents.

### 3,478,053

### 2,3 BIS(ALKOXYPHENYL)-1-PYRROLINE

**Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware**

**No Drawing. Original application Apr. 25, 1966, Ser. No. 544,847. Divided and this application Mar. 3, 1969, Ser. No. 804,014**

**Int. Cl. C07d** *27/22;* **A61k** *27/00;* **A61l** *23/00*

**U.S. Cl. 260—326.5 2 Claims**

Disclosed are bis(alkoxyphenyl)pyrroles and pyrrolines useful as central nervous system depressants in animals and as sun-screening agents.

### 3,478,054

### 1-SUBSTITUTED-2-ALKYL-3-(2-DIALKYLAMINO-ETHYL)INDOLES

**Thomas W. Pattison, King of Prussia, and David R. Herbst, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Feb. 20, 1967, Ser. No. 617,079**

**Int. Cl. C07d** *27/56*

**U.S. Cl. 260—326.12 13 Claims**

1-alkanoyl-, cycloalkylcarbonyl-, aralkyl- and arylsulfonyl derivatives (I) of 2-alkyl-3-[(2-dialkylamino) ethyl]indloes (II) are prepared by treating said indoles first with an alkali metal hydride or amide, then with an alkanoyl-, cycloalkylcarbonyl-, aralkyl- or arylsulfonyl halide. Compounds (I) have antibacterial, anti-inflammatory and hypotensive activity.

### 3,478,055

### PRODUCTION OF OPTICALLY ACTIVE N-ACYLPROLINES AND PROLINES

**Toshio Shirakura, Hiroshi Yoshikawa, Masataka Shibasaki, and Chikara Hongo, Osaka-fu, Japan, assignors to Tanabe Seiyaku Co., Ltd., Osaka, Japan**

**No Drawing. Filed June 14, 1967, Ser. No. 645,882**

**Claims priority, application Japan, June 15, 1966, 41/39,000**

**Int. Cl. C07d** *27/04*

**U.S. Cl. 260—326.3 6 Claims**

Process for the preparation of an optically active N-acylproline of which the acyl moiety is monochloroacetyl, n-butyryl or isobutyryl which comprises cooling a supersaturated solution of the optically active N-acylproline containing its optical antipode and collecting the optically active N-acylpyroline selectively crystallized, when desired, followed by hydrolysis of the collected optically active N-acylproline to the corresponding optically active proline.

### 3,478,056

### 11-AMINOALKYLATED DIBENZ[b,f] - 1,4-OXAZEPINES AND DIBENZO-[b,f]-1,4-THIAZEPINES

**Jean Schmutz, Bern, Fritz Hunziker, Muri, near Bern, and Franz Martin Kunzle and Jeff Hamish Russel, Bern, Switzerland, assignors to Dr. A. Wander S.A., Bern Switzerland, a corporation of Switzerland**

**No Drawing. Filed Dec. 6, 1966, Ser. No. 599,377**

**Claims priority, application Switzerland, Dec. 30, 1965, 18,174/65; Jan. 19, 1966, 694/66; Mar. 28, 1966, 4,464/66; July 29, 1966, 11,033/66**

**Int. Cl. C07d** *93/42, 87/54;* **A61k** *27/00*

**U.S. Cl. 260—327 4 Claims**

The compounds are of the class of dibenz[b,f]-1,4-oxazepines and dibenz[b,f]-1,4-thiazepines which are substituted at the 11-position with an aminoalkyl substituent, e.g., 11-dimethylaminomethyl-dibenz[b,f]-1,4 - oxazepine and 11-(γ-dimethylamino)-propyl-dibenzo[b,f] - 1,4 - thiazepine, and are prepared by several procedures, e.g., by ring closure through intramolecular condensation of an alkanoylamino diphenyl sulfide; such compounds are useful as neuroplegics, neuroleptics, tranquilizers, analgesics and antidepressants.

### 3,478,057

### THIOPHENE-SULPHONYL-PHOSPHOROTHIOATES

**Asbjorn Baklien, Kingsbury, Victoria, Jocelyn M. Gregory, Croydon, Victoria, and Klaus Kling, Ascot Vale, Victoria, Australia, assignors to Imperial Chemical Industries of Australia and New Zealand Limited, Melbourne, Victoria, Australia, a company**

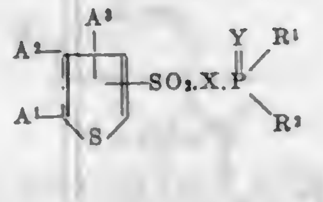
**No Drawing. Filed Sept. 2, 1966, Ser. No. 576,812**

**Claims priority, application Australia, Sept. 22, 1965, 64,365/65**

**Int. Cl. C07f** *9/16, 9/40;* **A01n** *9/36*

**U.S. Cl. 260—329 5 Claims**

There are provided organic phosphorous compounds which are useful as insecticides and which have the formula:



wherein:

X is 0 or S
Y is 0 or S
$R^1$ is $OR^3$, $SR^3$, alkyl 1–4 C, chloromethyl or phenyl;
$R^2$ is $OR^3$ or $SR^3$;
$R^3$ is alkyl 1–4 C;
$A^1$ is hydrogen, alkyl 1–8 C, alkenyl 2–3 C, chlorine, bromine, nitro, lower acyl 2–4 C, acyloxy 2–4 C, $SO_2NR^4R^5$ or $SO_2OR^6$;
$A^2$ is hydrogen, chlorine, bromine, nitro or methyl;
$A^3$ is hydrogen, chlorine, bromine or methyl;
$R^4$ is hydrogen or methyl;
$R^5$ is hydrogen, methyl or ethyl; and
$R^6$ is alkyl 1–3 C

and wherein the abbreviations 1–3 C, 1–4 C, 1–8 C, 2–3 C or 2–4 C means that said radical has 1 to 3 inclusive, 1 to 4 inclusive, 1 to 8 inclusive, 2 to 3 inclusive or 2 to 4 inclusive carbon atoms respectively and where acyl stands for a carboxylic acid residue. Representative of compounds of the formulae are O,O-diethyl S-(5-nitrothiophene-2-sulphonyl)phosphorodithioate; O,O-diethyl S-(4-nitrothiophene-2-sulphonyl)phosphorodithioate; O,O-diethyl S-(5-chlorothiophene - 2 - sulphonyl)phosphorodithioate; O,O-diethyl S-(4-bromothiophene-2-sulphonyl) phosphorodithioate; and O,O-diethyl S-(5-bromothiophene-2-sulphonyl)phosphorodithioate.

### 3,478,058

### 1,4-BENZODIOXAN-2-YL AMINO ACIDS

**John T. Suh, Mequon, and Joseph A. Skorcz, Milwaukee, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Apr. 15, 1968, Ser. No. 721,162**

**Int. Cl. C07d** *15/18;* **A61k** *27/00*

**U.S. Cl. 260—340.3 7 Claims**

The compounds are 2-(1,4-benzodioxan - 2-yl) amino acids which are useful as antihypertensive agents and chelating agents for heavy metal ions. A species disclosed is 2-(1,4-benzodioxan-2-yl)-alanine.

### 3,478,059

### 1,4-BENZODIOXAN-6-YL AMINO ACIDS

**John T. Suh, Mequon, and Joseph A. Skorcz, Milwaukee, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Apr. 15, 1968, Ser. No. 721,167**

**Int. Cl. C07d** *15/18;* **A61k** *27/00*

**U.S. Cl. 260—340.4 8 Claims**

The compounds are 2-alkyl-3-(1,4-benzodioxan-6-yl)-alanines which are useful as chelating agents for heavy metal ions and as central nervous system stimulants. A species disclosed is 2-methyl-3-(1,4-benzodioxan-6-yl)-alanine.

### 3,478,060

### PRODUCTION OF ACETALS OF METHYLGLYOXAL

**Artur Maschke and Heinrich Pasedach, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**

**No Drawing. Filed Feb. 9, 1967, Ser. No. 614,814**

**Claims priority, application Germany, Feb. 15, 1966, B 85,812**

**Int. Cl. C07d** *13/04;* **C07c** *43/30*

**U.S. Cl. 260—340.9 4 Claims**

A process for the production of acetals of methylglyoxal by reacting acetone with an alcohol and a nitrosating agent in the presence of acid catalysts.

### 3,478,061

### METHOD OF PRODUCING 3,4-BENZOCOUMARINS

**William H. Starnes, Jr., Baytown, Tex., assignor to Esso Research and Engineering Company**

**No Drawing. Continuation-in-part of application Ser. No. 573,851, Aug. 22, 1966. This application Feb. 13, 1967, Ser. No. 615,357**

**Int. Cl. C07d** *7/28, 7/24*

**U.S. Cl. 260—343.2 6 Claims**

Aroyloxy and aryl free radicals are continuously generated from biphenyl-2-carboxylic acid by continuous or incremental addition of a free-radical initiator into the reaction mass. The aroyloxy free radicals form 3,4-benzocoumarins by intramolecular cyclization, and aryl free radicals form terphenyls by reaction with the reaction solvent. A novel terphenyl compound, isomeric dichlorotriphenyl, is useful as a heat-transfer agent, particularly in nuclear reactors.

### 3,478,062

### CERTAIN TETRAHYDROINDANE DERIVATIVES

**Gaston Amiard, Thorigny, Gerard Nomine, Noisy-le-Sec, and Vesperto Torelli, Maisons Alfort, France, assignors to Roussel-Uclaf, Paris, France, a corporation of France**

**No Drawing. Application July 27, 1966, Ser. No. 569,792, which is a continuation-in-part of application Ser. No. 413,979, Nov. 25, 1964. Divided and this application Feb. 3, 1969, Ser. No. 796,194**

**Claims priority, application France, Nov. 29, 1963, 955,529**

**Int. Cl. C07d** *5/32;* **C07c** *167/02, 49/54*

**U.S. Cl. 260—343.3 11 Claims**

A process for the preparation of novel 1,5-dioxo-4-(carboxymethyl) - 7a-methyl - 5,6,7,7a-tetrahydro-indane, which is a useful intermediate for the total synthesis of steroids and to novel intermediates.

### 3,478,063

### PRODUCTION OF MALEIC ANHYDRIDE BY CATALYTIC OXIDATION OF OLEFINICALLY UNSATURATED $C_4$-HYDROCARBONS

**Wilhelm Friedrichsen and Guenter Poehler, Ludwigshafen (Rhine), and Otto Goehre, Wilhelmsfeld, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**

**No Drawing. Filed Oct. 4, 1966, Ser. No. 584,105**

**Claims priority, application Germany, Oct. 9, 1965, 1,518,603**

**Int. Cl. C07c** *57/14*

**U.S. Cl. 260—346.8 9 Claims**

Process for the production of maleic anhydride by oxidation of an olefinically unsaturated hydrocarbon in the gas phase at 300–500° C. with an oxygen-containing gas while using as the essential oxidation catalyst in contact with the gaseous reaction mixture a specific vanadium oxide/phosphoric acid catalyst containing at least one other oxide of chromium, iron, cobalt or nickel, preferably on an inert carrier such as titanium dioxide, the molar amount of $P_2O_5$ being at least equal to twice that of the $V_2O_5$ and equal to once or more than that of the other oxide.

### 3,478,064

### 1,5-BIS-(SUBSTITUTED ALKYLAMINO)-ANTHRAQUINONES

**Warren E. Solodar and Basil M. Kyriakakis, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York**

**No Drawing. Filed June 28, 1965, Ser. No. 468,192**

**Int. Cl. C07d** *31/24;* **C07c** *49/68;* **C09b** *1/32*
**U.S. Cl. 260—378** **2 Claims**

1. 1,5 - bis - (3′ - methoxypropylamino) - anthraquinone.

2. 1,5 - bis - [2′ - (p - nitrophenyl) - ethylamino]-anthraquinone.

### 3,478,065

### STEROID A-RING MODIFICATION

**Andor Fürst and André Furlenmeier, Basel, and Albert Langemann, Binningen, and Guy Waldvogel, Riehen, Switzerland, and Peter Hocks, Ulrich Kerb, and Rudolf Wiechert, Berlin, Germany, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey**

**No Drawing. Continuation-in-part of application Ser. No. 571,187, Aug. 9, 1966. This application Aug. 22, 1967, Ser. No. 662,303**

**Claims priority, application Switzerland, Aug. 13, 1965, 11,430/65; Oct. 8, 1965, 13,907/65; Jan. 28, 1966, 1,231/66; Mar. 24, 1966, 4,336/66; Aug. 23, 1966, 12,135/66; Germany, Sept. 24, 1965, Sch 37,774; Oct. 15, 1965, Sch 37,892; Jan. 27, 1966, Sch 38,384; Jan. 29, 1966, Sch 38,399**

**Int. Cl. C07c** *169/62, 167/14, 167/28*
**U.S. Cl. 260—397.2** **10 Claims**

5β-H-6-ketosteroids are prepared via isomerization of 5α-H-6-ketosteroids, by conversion of a 5α-H-6-keto-$\Delta^7$ steroid to a 14α-hydroxy-5β-H-6-keto-$\Delta^7$-steroid or by conversion of a 3,6-dioxo- or 5,6-oxidosteroid to a 5β-H-6-ketosteroid. Also 6-ketosteroids bearing hydroxy and/or acyloxy moieties in the 2- and 3-positions are prepared by different reaction routes. Steroids containing a carboxy function at the 20-position are converted to the corresponding aldehyde and the so-obtained 20-formyl-6-ketosteroid is converted to a 20-(1-hydroxyhydrocarbyl)-6-ketosteroid.

### 3,478,066

### 16α,17α-DIFLUOROMETHYLENE DERIVATIVES OF THE PREGNANE SERIES

**Colin C. Beard, Boulder, Colo., and Alexander D. Cross, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama**

**No Drawing. Continuation-in-part of application Ser. No. 571,428, Sept. 23, 1966. This application July 21, 1967, Ser. No. 655,001**

**Int. Cl. C07c** *169/30, 169/34;* **A61k** *27/00*
**U.S. Cl. 260—397.3** **20 Claims**

16α,17α-difluoromethylene pregnanes and 19-nor pregnanes substituted at C–3 with a keto group, a hydroxy group or an ester thereof, optionally substituted at C–6 with a fluoro, chloro or methyl group, at C–16 with methyl and at C–21 with fluoro, and optionally unsaturated between C–1,2 and/or C–6,7 are progestational agents.

### 3,478,067

### PROCESS FOR THE PREPARATION OF UNSATURATED 19-NOR STEROIDS

**Daniel Bertin, Montrouge, and Andre Pierdet, Noisy-le-Sec, France, assignors to Roussel UCLAF, Paris, France, a corporation of France**

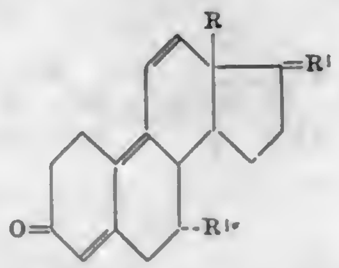
**No Drawing. Filed Mar. 10, 1967, Ser. No. 622,105**

**Claims priority, application France, Mar. 15, 1966, 53,487**

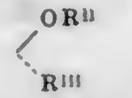
**The portion of the term of the patent subsequent to Nov. 1, 1983, has been disclaimed**

**Int. Cl. C07c** *167/14, 169/10*
**U.S. Cl. 260—397.3** **9 Claims**

This invention relates to a process for the production of $\Delta^{4,9,11}$-gonatriene-3-ones of the formula



wherein R is lower alkyl; R$^{\text{I}}$ is selected from the group consisting of oxygen and



R$^{\text{II}}$ is selected from the group consisting of hydrogen and an acyl radical of an organic carboxylic acid having from 1 to 18 carbon atoms; R$^{\text{III}}$ is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, lower alkynyl, substituted lower alkyl, substituted lower alkenyl and substituted lower alkynyl; and R$^{\text{Iv}}$ is selected from the group consisting of hydrogen and methyl; which comprises subjecting the corresponding $\Delta^{4,9}$-gonadiene-11β-ol-3-one to the action of a strong acid in the presence of a nucleophilic agent selected from the group consisting of alkali metal cyanides, lower aliphatic carboxylic acid nitriles and trihaloacetamides and in the presence of an aprotic solvent and recovering said $\Delta^{4,9,11}$-gonatriene-3-ones.

### 3,478,068

### 4α,10α;2β,1′ - BICYCLO - 5β - METHYL - 19 - NOR-STEROIDS AND THEIR PREPARATION

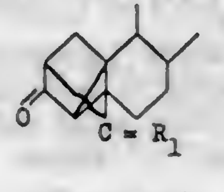
**Oskar Jeger, Zollikerberg, Zurich, Kurt Schaffner, Zurich, and Hans Ueli Wehrli, Schaffhausen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware**

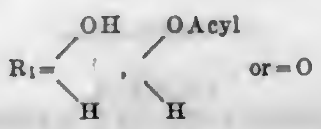
**No Drawing. Filed Jan. 23, 1967, Ser. No. 610,741**

**Claims priority, application Switzerland, Feb. 4, 1966, 1,605/66**

**Int. Cl. C07c** *169/34, 169/10;* **A61k** *27/00*
**U.S. Cl. 260—397.4** **7 Claims**

New 19-nor-steroids of the partial formula





$$R_1=\overset{OH}{\underset{H}{C}},\quad \overset{OAcyl}{\underset{H}{C}}\quad \text{or}=O$$

for example: 3-oxo-1′-hydroxy-17β-acetoxy-1′,2β;4α,10α-bicyclo-19-nor-5β-methyl-(1′)-androstane, its 1′-acetate or the 1′-oxo-analogue.

Use: For treating circulatory diseases and hypotension and the process of preparing same by heating a 3-oxo-5β-formyl-4α,10α-cyclo-19-nor-steroid or by treating it with an acidic or preferably basic agent.

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### 3,478,069

### 4-OXO-Δ⁵-STEROIDS AND ENOL ESTERS THEREOF

**Bernard Ellis, Vladimir Petrow, and David Neil Stanway, London, England, assignors to The British Drug House Limited**

**No Drawing. Filed Jan. 31, 1967, Ser. No. 612,833**

**Claims priority, application Great Britain, Feb. 17, 1966, 6,971/66**

**Int. Cl. C07c** *169/34, 169/36, 167/32*
**U.S. Cl. 260—397.4** **9 Claims**

Novel 4-oxo-$\Delta^5$-steroids, including the hormonally active compound 17α-acetoxy-16-methylenepregn-5-ene-4, 20-dione, and their corresponding 4-enol esters and process for making same are disclosed.

### 3,478,070

### PROCESS FOR SELECTIVELY ACYLATING THE 3-OL GROUP IN POLYHYDROXY 13-ALKYL GONA-(AND 8 - ISOGONA) - 1,3,5 - (10) - TRIENES AND DELTA - 7 -, DELTA - 8(9), DELTA - 9(11) -, AND DELTA - 8(9),14(15) - DEHYDRO DERIVATIVES THEREOF

**Reinhardt P. Stein, Conshohocken, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Dec. 26, 1967, Ser. No. 693,112**

**Int. Cl. C07c** *167/28, 169/08;* **A61k** *27/00*
**U.S. Cl. 260—397.5** **11 Claims**

Polyhydroxy 13-alkylgona-(and 8-isogona)-1,3,5(10)-triene 3-ols and $\Delta^7$-, $\Delta^{8(9)}$-, $\Delta^{9(11)}$- and $\Delta^{8(9),14(15)}$- dehydro analogs thereof are selectively acylated in the 3-position by reaction with alkali metal alkoxide in a lower alkanol, displacement of the lower alkanol with a polar inert solvent and acylation in said solvent. The products of the process are hormonally active, especially estrogenically and anti-lipemically active and also are useful as intermediates in the preparation of hormonally active steroids, such as 17α-ethynylestradiol.

### 3,478,071

### REACTION PRODUCTS OF ORGANOTIN MERCAPTO ACID DERIVATIVES AND ORGANOTIN OXIDE, HYDROCARBYL STANNOIC ACIDS (ESTERS)

**Lewis B. Weisfeld, Highland Park, N.J., assignor to Carlisle Chemical Works, Inc., Reading Ohio**

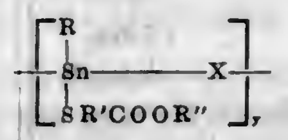
**No Drawing. Filed June 3, 1966, Ser. No. 554,965**

**Int. Cl. C07f** *7/22;* **C08f** *45/62*
**U.S. Cl. 260—429.7** **6 Claims**

A new composition of matter is prepared by reacting an organotin mercapto acid derivative selected from the group consisting of

$$R_nSn(SR'COOR'')_{4-n},\ [RSn(SR'COOR'')_2]_2X$$

and



$$\left[\begin{array}{c} R \\ | \\ -Sn\text{———}X- \\ | \\ SR'COOR'' \end{array}\right]_y,$$

wherein R and R″ are alkyl radicals having up to 12 carbon atoms, R′ is an alkylene group of at least 2 methylene groups, X is oxygen or sulfur, *n* is an integer from 1 to 3 and *y* designates the degree of polymerization with an organotin oxide, hydrocarbyl stannoic acid or ester and is useful as a heat and light stabilizer for halogen-containing resins.

### 3,478,072

### PREPARATION OF TETRAMETHYLETHYL LEADS

**Jerry M. Barton, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**Filed Aug. 8, 1967, Ser. No. 659,184**

**Int. Cl. C07f** *7/26*
**U.S. Cl. 260—437** **5 Claims**

Rapid single vessel preparation of redistributed tetramethylethyl lead compositions by contacting sodium lead alloy, methyl chloride and tetraethyl lead in the presence of a catalyst under carefully controlled time-temperature conditions.

### 3,478,073

### PREPARATION OF ANHYDROUS FERROUS FUMARATE

**Thore Oskar Verner Rydh, Sodertalje, Sweden, assignor to Aktiebolaget Astra, Sodertalje, Sweden**

**No Drawing. Filed Apr. 25, 1967, Ser. No. 633,424**

**Claims priority, application Sweden, May 6, 1966, 6,263/66**

**Int. Cl. C07f** *15/02*
**U.S. Cl. 260—439** **1 Claim**

A method for the preparation of crystalline anhydrous ferrous fumarate which possesses the physical properties of uniform particle size substantially below 5μ, solubility in acid medium and low hydroscopicity and moisture content wherein an air-free suspension of ferrous hydroxide is reacted with a slight excess of fumaric acid in an aqueous medium at a temperature exceeding about 70° C., and crystalline anhydrous ferrous fumarate is directly formed and separated from the aqueous medium.

### 3,478,074

### PREPARATION OF ORGANOSILICON COMPOUNDS FROM HYDROSILICON COMPOUNDS

**George M. Omietanski, Tonawanda, and Thomas C. Williams, Lancaster, N.Y., assignors to Union Carbide Corporation, a corporation of New York**

**No Drawing. Filed Dec. 29, 1964, Ser. No. 422,008**

**Int. Cl. C07f** *7/08*
**U.S. Cl. 260—448.2** **20 Claims**

A process for preparing organosilicon compounds comprising reacting a hydrosilicon compound with a positive halogen compound is disclosed.

### 3,478,075

### TERPOLYMERS CONTAINING POLYSILOXANE, POLYOXYALKYLENE, AND POLYVINYL ESTER BLOCKS

**James Jack, Troon, Ronald Sangster Stuart, Saltcoats, and John Beckett Plumb, West Kilbride, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain**

**No Drawing. Filed Dec. 20, 1965, Ser. No. 515,212**

**Claims priority, application Great Britain, Dec. 29, 1964, 52,652/64**

**Int. Cl. C07f** *7/08;* **C08g** *47/02;* **B01f** *17/00*
**U.S. Cl. 260—448.2** **39 Claims**

A new and useful class of terpolymers which comprises at least one polysiloxane block, at least one polyoxyalkylene block and at least one block selected from polyvinyl ester and, partially and wholly hydrolysed polyvinyl esters. The novel terpolymers are useful as surfactants or cell control agents in polyurethane foam systems.

### 3,478,076
## FUNCTIONAL PERFLUOROALKYLENE ORGANOSILICON COMPOUNDS

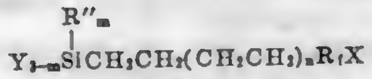
**Yung Ki Kim and Ogden R. Pierce, Midland, Mich., assignors to Dow Corning Corporation, Midland, Mich., a corporation of Michigan**

**No Drawing. Filed Dec. 2, 1966, Ser. No. 598,613**

**Int. Cl. C07f** *7/18;* **C11c** *3/00*

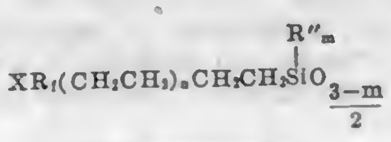
**U.S. Cl. 260—448.2** **4 Claims**

Organosilanes and silanols of the formula

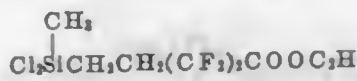


$$Y_{3-m}\overset{R''_m}{\overset{|}{Si}}CH_2CH_2(CH_2CH_2)_nR_fX$$

and siloxanes containing at least one unit of the formula

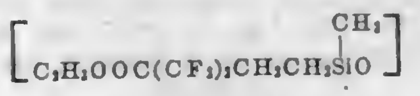


$$XR_f(CH_2CH_2)_nCH_2CH_2\overset{R''_m}{\overset{|}{Si}}O_{\frac{3-m}{2}}$$



$$Cl_2\overset{CH_3}{\overset{|}{Si}}CH_2CH_2(CF_2)_3COOC_2H_5$$

and



$$\left[C_2H_5OOC(CF_2)_3CH_2CH_2\overset{CH_3}{\overset{|}{Si}}O\right]$$

are examples of such compounds. These silanes and siloxanes are useful as lubricants, laminating resins, elastomers and surface active agents.

### 3,478,077
## SULFONE-CONTAINING ORGANOHALOGENOSILANES AND METHOD OF FORMING

**Tse C. Wu, Waterford, N.Y., assignor to General Electric Company, a corporation of New York**

**No Drawing. Filed Dec. 15, 1966, Ser. No. 601,876**

**Int. Cl. C07f** *7/12, 7/18;* **C08f** *11/04*

**U.S. Cl. 260—448.2** **7 Claims**

This invention relates to sulfone-containing organohalogenosilanes of formula:

(1) $(RSO_2CH_2CH_2)_aSiX_bR'_{4-(a+b)}$

where R is selected from the class consisting of methyl, ethyl, phenyl, and tolyl; R' is selected from the class consisting of lower alkyl, phenyl, and tolyl; X is selected from the class consisting of chlorine, fluorine, bromine, and lower alkoxy; *a* is from 1 to 2, *b* is from 1 to 3, and the sum of *a* and *b* is no more than 4. Further, this invention relates to a method for forming the material of Formula 1 by oxidation of the corresponding mercapto-containing fluorosilane, with appropriate steps for later converting the X group, when required. Preferably, X is fluorine or chlorine. The novel compounds are used to form sulfone containing organocyclotrisiloxanes which can be formed into high molecular weight elastomeric organopolysiloxanes by homopolymerization or by copolymerization with other cyclopolysiloxanes.

### 3,478,078
## THERMOLYSIS OF ALKOXY DISILANES IN THE PRESENCE OF ALCOHOLS TO PROVIDE HYDROGEN-SUBSTITUTED ALKOXYMONOSILANES

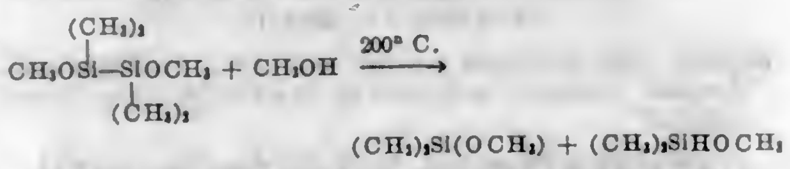
**William H. Atwell, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan**

**No Drawing. Filed Sept. 18, 1967, Ser. No. 668,652**

**Int. Cl. C07f** *7/18;* **C09k** *3/18*

**U.S. Cl. 260—448.8** **5 Claims**

Hydrogen-substituted alkoxymonosilanes are produced by heating alkoxy-containing disilanes at a preferred temperature of from 175° C. to 225° C. under neutral conditions and in the presence of an alcohol. Illustrative of the above process is the following:



$$CH_3O\overset{(CH_3)_2}{\overset{|}{Si}}-\underset{\underset{(CH_3)_2}{|}}{Si}OCH_3 + CH_3OH \xrightarrow{200^\circ C.} (CH_3)_2Si(OCH_3) + (CH_3)_2SiHOCH_3$$

The resulting alkoxymonosilanes, and particularly the hydrogen-substituted alkoxymonosilane, are useful as water repellents and can be employed as precursors in the production of other useful materials.

### 3,478,079
## NOVEL DIALKOXYMETHYL(TRIALKOXY) SILANES AND A METHOD FOR THEIR PREPARATION

**William H. Atwell, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan**

**No Drawing. Filed Nov. 14, 1967, Ser. No. 682,995**

**Int. Cl. C07f** *7/18;* **C07c** *43/04*

**U.S. Cl. 260—448.8** **8 Claims**

Novel dialkoxymethyl(trialkoxy)silanes which are useful as methylene transfer reagents for the production of other useful compounds. Illustrative of a dialkoxymethyl (trialkoxy)silane of this invention is a compound of the formula $(CH_3O)_3SiCH(OCH_3)_2$. Illustrative of its preparation is the following:

$$Si_2Cl_6 + HC(OCH_3)_3 \xrightarrow{CH_3OH} (CH_3O)_3SiCH(OCH_3)_2$$

### 3,478,080
## PEROXY THIOLCARBONATES

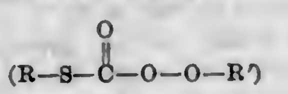
**Richard Anthony Bafford, Tonawanda, and Orville Leonard Magell, Buffalo, N.Y., assignors to Pennwalt Corporation, a corporation of Pennsylvania**

**No Drawing. Filed July 12, 1966, Ser. No. 564,549**

**Int. Cl. C07c** *154/00;* **C08f** *3/00*

**U.S. Cl. 260—455** **6 Claims**

Organic peroxythiolcarbonates



$$(R-S-\overset{\overset{O}{\|}}{C}-O-O-R')$$

where R is alkyl, benzyl, phenyl or chlorophenyl and R' is alkyl, hydroxyl alkyl, cumyl or p-methyl; i.e., S-methyl t-butylperoxy thiolcarbonate. The compounds are useful as low temperature vinyl polymerization initiators.

### 3,478,081
## CYANOETHYLATED CYCLOHEXANE-BIS-ALKYL AMINES

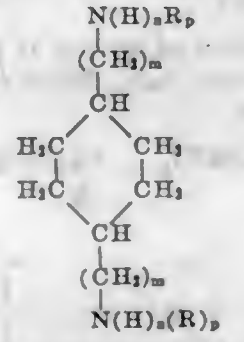
**Stuart A. Harrison, Minneapolis, and John E. Wicklatz, Wayzata, Minn., assignors to General Mills, Inc., a corporation of Delaware**

**No Drawing. Filed Sept. 10, 1964, Ser. No. 395,609**

**Int. Cl. C07c** *121/46, 87/02;* **C08f** *7/12*

**U.S. Cl. 260—464** **2 Claims**

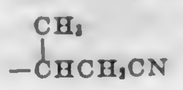
Compounds having the following formula:



where the R groups are the same and are

$$-CH_2CH_2CN$$

or



$$-\overset{CH_3}{\overset{|}{C}}HCH_2CN$$

*m* is 1 or 2, *n* is 0 or 1, *p* is 1 or 2 and the sum of *n* plus *p*=2. The compounds are particularly useful as epoxy curing agents.

### 3,478,082
## PROCESS FOR THE PRODUCTION OF ACRYLONITRILE OR METHACRYLONITRILE

**Derk Th. A. Huibers, Berkeley Heights, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware**

**Filed Oct. 29, 1965, Ser. No. 505,649**

**Int. Cl. C07c** *121/04*

**U.S. Cl. 260—465.3** **7 Claims**

A process for producing methacrylonitrile and acrylonitrile by contacting isobutylene or propylene with ammonia in the absence of oxygen and in the presence of an oxide ammoxidation catalyst; such as, a mixture of molybdenum oxide and ferric oxide, molybdenum oxide and bismuth oxide, iron oxide and arsenic oxide, stannic oxide and vanadia, stannic oxide and molybdena, bismuth oxide and phosphomolybdic acid, bismuth oxide and silicomolybic acid, or a vanadia molybdena catalyst at a temperature of 400 to 500° C., with a contact time of 0.01–30 seconds and a catalyst-on-stream time of less than 30 minutes.

### 3,478,083
## NOR-ANDROSTENE STEROID DERIVATIVES

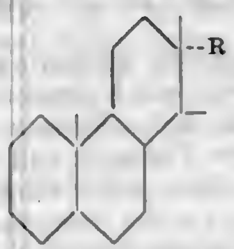
**Leslie A. Freiberg, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois**

**No Drawing. Filed Feb. 1, 1966, Ser. No. 523,912**

**Int. Cl. C07c** *171/07, 69/74;* **A61k** *27/00*

**U.S. Cl. 260—468.5** **7 Claims**

Steroid analogs of the formula



carrying an oxygen function in the 3 - position with R being carboxy, carbalkoxy, acetyl, hydroxymethyl or 2-hydroxy - 2 - propyl are provided through a new process. The new compounds are effective anti-androgens.

### 3,478,084
## LOWER ALKYL α-CARBOALKOXY-β-(3,4-DISUBSTITUTED ANILINO) ACRYLATES

**Edward F. Rogers, Middletown, Robert L. Clark, Woodbridge, and Arthur A. Patchett, Cranford, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**No Drawing. Continuation of application Ser. No. 572,225, Aug. 15, 1966. This application Aug. 19, 1966, Ser. No. 573,469**

**Int. Cl. C07d** *33/52;* **A01n** *9/22*

**U.S. Cl. 260—471** **3 Claims**

Novel lower alkyl 4-hydroxy-quinoline-3-carboxylates having a diloweralkylamino radical at the 6-position, and a diloweralkylamino, lower alkyl, alkoxy or haloalkoxy radical at the 7-position are obtained from a 3,4-disubstituted aniline by reacting said aniline with diloweralkyl loweralkoxy methylene malonate and heating the resulting product. These novel quinolates have anticoccidial properties.

### 3,478,085
## PREPARATION OF [4-(2-METHYLENEALKANOYL)PHENOXY] ALKANOIC ACIDS

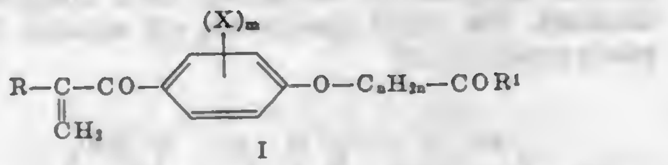
**Edward J. Cragoe, Jr., Lansdale, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**No Drawing. Filed Nov. 2, 1966, Ser. No. 591,431**

**Int. Cl. C07c** *65/02;* **C07d** *7/10;* **A61k** *27/00*

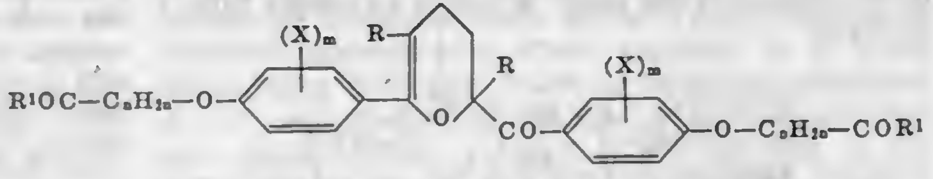
**U.S. Cl. 260—473** **13 Claims**

1. A process for preparing a compound having the formula:



I

wherein R is hydrogen, alkyl, trifluoromethyl substituted lower alkyl or cycloalkyl; R¹ is hydroxy or an alkali metal salt of the resulting acid, lower alkoxy, amino or lower alkylamino; the X radicals are similar or dissimilar members selected from hydrogen, halogen, lower alkyl, lower alkoxy or, taken together, two X radicals on adjacent carbon atoms of the benzene ring may be joined to form an hydrocarbylene chain containing from 3–4 carbon atoms between their points of attachment; *m* is an integer having a value of 1–2 and *n* is an integer having a value of 1–4; which comprises heating a compound of the formula:



wherein R, R¹, X, *m* and *n* are defined above, at temperatures sufficient to decompose the said starting material to the corresponding [4-(2-methylenealkanoyl)phenoxy]alkanoic acid product (I).

### 3,478,086
## SEPARATION OF TETRACHLOROTEREPHTHALIC ACID DERIVATIVES

**Alexis J. Rudnitzki and David I. Templer, Chicago, Ill., assignors to Velsicol Chemical Corporation, a corporation of Delaware**

**No Drawing. Filed Aug. 6, 1965, Ser. No. 477,936**

**Int. Cl. C07c** *69/82, 67/06*

**U.S. Cl. 260—475** **8 Claims**

A process for separating a monoalkyl tetrachloroterephthalate from a mixture containing tetrachloroterephthalic acid which comprises forming an aqueous solution of water soluble salts of the acids and lowering the pH of the solution to at least about 1.5.

### 3,478,087
## HALOALKYL ESTERS OF BENZOPHENONE TETRACARBOXYLIC ACID

**Joseph J. McGrath, Monroeville, and Chester S. Tempalski, McKees Rocks, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware**

**No Drawing. Filed June 2, 1966, Ser. No. 554,689**

**Int. Cl. C07c** *69/78*

**U.S. Cl. 260—475** **5 Claims**

Haloalkyl esters of benzophenone 3,4,3',4'-tetracarboxylic acid, particularly the tetra($C_3$ to $C_7$ fluoroalkyl) esters of benzophenone tetracarboxylic acid are liquid at normal atmospheric conditions and are useful lubricants at temperatures of 500° to 600° F. The tetra($C_9$ to $C_{13}$ fluoroalkyl) esters of benzophenone tetracarboxylic acid are solid at normal atmospheric conditions and are useful additives to lubricating oils and motor fuels.

**3,478,088**

### METAL FLUOROCARBYL PHOSPHATES

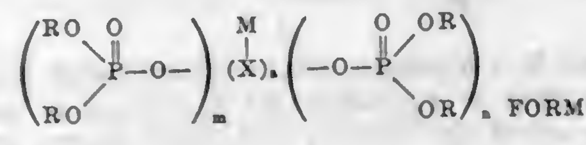
**Anthony J. Revukas, Cranford, N.J., assignor to Cities Service Oil Company, Bartlesvile, Okla., a corporation of Delaware**

**No Drawing. Filed July 18, 1966, Ser. No. 565,756**

**Int. Cl. C07f** *9/06, 7/28;* **C07d** *109/00*

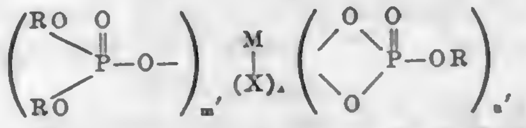
**U.S. Cl. 260—429.5** **14 Claims**

Novel metal fluorocarbyl phosphate compounds and gasoline compositions containing these compounds are disclosed. The novel compounds are selected from the group consisting of



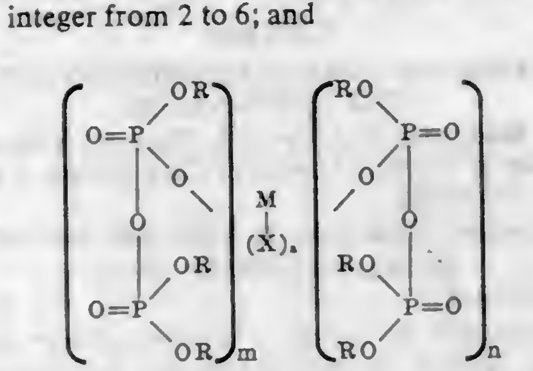
FORMULA I

wherein M is a metal having a valence of from 2 to 6, each R is a radical separately selected from the group consisting of fluorocarbyl, hydrocarbyl and hydride radicals, X is a radical selected from the group consisting of halogen radicals, hydride and hydrocarbyl radicals, *m* is an integer from 0 to 4, *n* is an integer from 1 to 4, *a* is an integer from 0 to 2 and is 0 when the valence of said metal M is 2, the sum of *m* plus *n* plus *a* is equal to the valence of the metal M and is an integer from 2 to 6; and



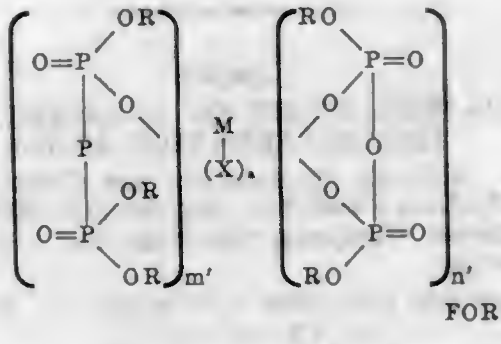
FORMULA II

wherein R, M, X and *a* are as defined above, *m′* is an integer from 0 to 2, *n′* is from 1 to 2 and the sum of *m′* plus 2*n′* plus *a* is equal to the valence of the metal and is an integer from 2 to 6; and



FORMULA III

wherein M, R, X, *m*, *n* and *a* are as defined above; and



FORMULA IV

wherein M, R, X *m′*, *n′* and *a* are as defined above.

At least one of the R radicals in each of the aforementioned compounds is a fluorocarbyl radical. Furthermore, according to a preferred embodiment of the invention, at least one R group in the compound is a hydride radical, whereby the compounds may be reacted with amines to form adducts characterized by exceptional solubility in gasoline compositions.

**3,478,089**

### LIQUID CARBOXYLIC ACID SALTS OF DIAMINES AS CURING AGENTS

**Junji Ogura, Minoo, Noritoshi Mise, Ikeda, Makoto Yokoo, Toyonaka, and Yoshihiro Hatanaka, Osaka, Japan, assignors to Takeda Chemical Industries, Ltd., Higashi-ku, Osaka, Japan**

**No Drawing. Filed May 1, 1967, Ser. No. 634,883**

**Claims priority, application Japan, May 6, 1966, 41/28,816**

**Int. Cl. C07c** *87/58;* **C08g** *51/84*

**U.S. Cl. 260—501.2** **1 Claim**

Isocyanate component is cured at room temperature by using, as a curing agent, di-lactate of 4,4′-methylene-bis-(2-chloroaniline).

**3,478,090**

### PREPARATION OF CARBAMOYLSULFONATES

**Dietrich H. Heinert, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Filed Oct. 26, 1966, Ser. No. 589,528**

**Int. Cl. C07c** *143/86;* **C08g** *53/08*

**U.S. Cl. 260—502.6** **5 Claims**

The corresponding salt of carbamoylsulfonic acid is prepared by contacting sulfur dioxide and a cyanate salt in the presence of water at about ambient temperature. The carbamoylsulfonate salt is useful as a chemical intermediate in reactions where it constitutes a form of cyanic acid to make carbamates and substituted ureas. Ammonium carbamoylsulfonate is a thermally decomposable blowing agent for making foamed plastics.

**3,478,091**

### 2-AMIDO-2-ALKENESULFONATES

**Donald L. Murfin, Mayfield Heights, and Leonard E. Miller, Chagrin Falls, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio**

**No Drawing. Filed Apr. 24, 1968, Ser. No. 723,894**

**Int. Cl. C07c** *143/16;* **C08f** *3/84*

**U.S. Cl. 260—513** **6 Claims**

2-amido-2-alkenesulfonic acids are prepared by reacting a ketone having at least one hydrogen atom in each alpha position with a nitrile and sulfuric acid, the nitrile being present in large excess. The acids and their salts are useful as detergents, surfactants and (where the nitrile is unsaturated) monomers for the formation of homopolymers and interpolymers. The copolymers with acrylonitrile have improved affinity for basic dyes as compared with acrylonitrile homopolymers.

### ERRATUM

For Class 260—519 see:
Patent No. 3,477,954

**3,478,092**

### METHOD OF IMPROVING THE COLOR AND COLOR STABILITY OF BENZOIC ACID

**Raymond W. Ingwalson, William F. Smith, and James O. Wright, Chattanooga, Tenn., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois**

**No Drawing. Continuation-in-part of application Ser. No. 287,217, June 12, 1963. This application Apr. 6, 1966, Ser. No. 540,519**

**Int. Cl. C07c** *51/44*

**U.S. Cl. 260—525** **9 Claims**

Process for purifying benzoic acid by adding to molten benzoic acid a manganese compound and heating the mixture.

**3,478,093**

### SEPARATION OF METHACRYLIC ACID AND ACRYLIC ACID

**Helmut Nonnenmacher, Ludwigshafen (Rhine), Hans-Martin Weitz, Frankenthal, Pfalz, and Carl-Heinz Willersinn, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**

**No Drawing. Filed Feb. 9, 1967, Ser. No. 614,829**

**Claims priority, application Germany, Feb. 19, 1966, 1,568,081**

**Int. Cl. C07c** *51/48, 57/04*

**U.S. Cl. 260—526** **3 Claims**

A process for separating methacrylic acid and/or acrylic acid from liquid or vaporous mixtures containing at least one of these acids by extraction with a lactam having 4 to 7 ring members and bearing a hydrocarbon radical as substitutent on the nitrogen atom.

**3,478,094**

### THERMAL STABILIZATION OF ALIPHATIC SULPHONYL HALIDES

**Jennings P. Blackwell, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Original application Oct. 1, 1962, Ser. No. 227,598, now Patent No. 3,238,255, dated Mar. 1, 1966. Divided and this application Oct. 18, 1965, Ser. No. 513,880**

**Int. Cl. C07c** *143/70*

**U.S. Cl. 260—543** **11 Claims**

Hydrocarbon sulphonyl halides having up to 18 carbon atoms are thermally stabilized by the addition thereto of a compound selected from the group consisting of phenylhydroquinone, p-tert-butyl catechol, nitrobenzene, anthraquinone, dinitrocresol, dinitromesitylene, Rose Bengal and sodium sulfite.

**3,478,095**

### PREPARATION OF PHOSPHONAMIDES

**Henri Marie Normant, Paris, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate**

**No Drawing. Filed Dec. 15, 1966, Ser. No. 601,867**

**Claims priority, application France, Dec. 17, 1965, 42,857**

**Int. Cl. C07c** *9/44;* **A01n** *9/36*

**U.S. Cl. 260—551** **5 Claims**

The invention provides a process for making phosphonamides by contacting a reactive organic ester with a cooled aged solution of an alkali metal in a triaminophosphine oxide.

**3,478,096**

### SEC.-ALKYL- OR CYCLOALKYL-ALKOXY-ALKYLAMINES

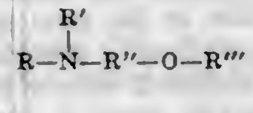
**Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**

**No Drawing. Filed Apr. 18, 1966, Ser. No. 543,008**

**Int. Cl. C07c** *91/06, 93/12, 93/04*

**U.S. Cl. 260—563** **5 Claims**

N-substituted alkoxylalkylamines having the formula



$$R-\overset{R'}{\overset{|}{N}}-R''-O-R'''$$

where R is sec-alkyl or cycloalkyl, R′ is hydrogen, sec-alkyl or cycloalkyl, R″ is alkylene, and R‴ is alkyl or hydroxyalkyl. The compounds are useful as additives for hydrocarbon oils and plastics.

**3,478,097**

### POLYHALOGENATED SALICYLIDENE ANILINES

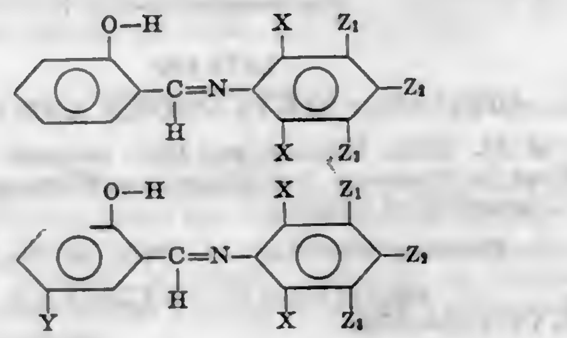
**Una L. Hart, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**

**Filed Apr. 29, 1966, Ser. No. 546,413**

**Int. Cl. C07c** *119/10, 87/50*

**U.S. Cl. 260—566** **14 Claims**

The present invention relates to novel polyhalogenated salicylidene anilines having the structural formulae:



In these formulae X and Y represent one of the class consisting of the halogen atoms and $Z_1$, $Z_2$, and $Z_3$ represent one of the class consisting of the halogen and hydrogen atoms. The halogen group as used herein includes fluorine, chlorine, bromine and iodine, with the lower molecular weight materials being generally preferred. These compounds are crystalline solids and have been found to be reversibly photochromic. These materials as a group change color from pale yellow or yellow to orange-red or red upon irradiation with near ultraviolet (350–400 mμ) electromagnetic radiation. Upon exposure of the compounds in the red state to electromagnetic radiation of longer wavelength such as present in visible light, such as about 450–600 mμ, they revert to the yellow state.

**3,478,098**

### ACIDS AND SALTS OF $B_9H_9CH^-$ AND $B_{11}H_{11}CH^-$ AND PROCESSES FOR PREPARING THEM

**Walter H. Knoth, Jr., Mendenhall, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed May 3, 1966, Ser. No. 547,151**

**Int. Cl. C07f** *5/02;* **C23f** *15/00;* **H01c** *13/00*

**U.S. Cl. 260—567.6** **10 Claims**

When alkali metal salts of $B_{10}H_{12}CH^-$ are heated in an aliphatic ether at a temperature of 200 to 500° C. a mixture containing the anions $B_9H_9CH^-$ and $B_{11}H_{11}CH^-$ is formed. The $B_{11}H_{11}CH^-$ ion can also be formed by the reaction of $B_{10}H_{12}CH^-$ anions with an amine-borane. Salts of $B_9H_9CH^-$ and $B_{11}H_{11}CH^-$ with hydrogen, alkali metal, an equivalent of an alkaline earth metal, ammonium, substituted ammonium and substituted sulfonium cations are described. The acids are useful as rust removers. All of the compounds can be used to prepare resistors.

**3,478,099**

### PROCESS FOR PRODUCING METHYLENE-DIAMILINES

**Richard J. Ross, Walnut Creek, and George M. Fohlen, Millbrae, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware**

**Continuation of application Ser. No. 348,103, Feb. 28, 1964. This application Sept. 9, 1966, Ser. No. 594,954**

**Int. Cl. C07c** *87/50*

**U.S. Cl. 260—570** **9 Claims**

A continuous process for producing poly primary aromatic amines from aniline and formaldehyde comprising admixing a strong mineral acid such as hydrochloric acid and aniline, to neutralize the aniline (at least about 20% thereof) to form the corresponding aniline-acid salt, continuously violently mixing the aniline-acid admixture with the aldehyde at a temperature not over the boiling point of any of the constituents for a short time, withdrawing the resultant reaction mixture to a second reaction zone and maintaining it there with gentle agitation at from about 80° to 105° C. until the aniline is substantially all reacted, withdrawing from the second reaction zone and neutralizing with an alkali metal hydroxide to form the alkali metal salt of the acid and to recover a water-immiscible organic phase containing the amine condensation product.

**3,478,100**

### α,α-DIFLUORO-ALKYLAMINES AND PROCESS

**David M. Gale, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Oct. 22, 1965, Ser. No. 502,612**

**Int. Cl. C07c** *87/22;* **C23g** *5/02*

**U.S. Cl. 260—570.5** **10 Claims**

Fluoroalkylideneimines can be added to terminally unsaturated olefins having at least three carbon atoms in the presence of Friedel-Crafts catalysts to yield α,α-di(fluoroalkyl)amines. The α,α-di-(fluoroalkyl)amines are useful as metal degreasing agents.

**3,478,101**

### METHOD OF RESOLVING dl-EPHEDRINE INTO ITS OPTICALLY ACTIVE COMPONENTS

**Masanori Tsuruga and Shogo Murakami, Himi-shi, and Katsutoshi Kondo, Shunei Akabane, Kenji Washikita, and Tameo Koshino, Takaoka-shi, Japan, assignors to Fuji Chemical Industries, Ltd., Takaoka-shi, Toyama-ken, Japan**

**No Drawing. Filed Sept. 9, 1966, Ser. No. 578,125**

**Claims priority, application Japan, Sept. 16, 1965, 40/56,374**

**Int. Cl. C07c** *91/22;* **A61k** *27/00*

**U.S. Cl. 260—570.6** **7 Claims**

A method for producing d-ephedrine and l-ephedrine of high purity and in high yields by resolving dl-ephedrine with D-arabonic acid. The present invention also provides for the production of the intermediate compounds d-ephedrine-D-arabonate and l-ephedrine-D-arabonate by the reaction of dl-ephedrine with the D-arabonic acid.

**3,478,102**

### HEXAMETHYLENE DIAMINE MANUFACTURE

**Friedrich Bende, Bergen-Enkheim, Horst Corsepius, Frankfurt am Main, and Werner Hansel, Bergen-Enkheim, Germany, assignors to Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen, Frankfurt am Main, Germany, a corporation of Germany**

**Filed June 14, 1966, Ser. No. 561,311**

**Int. Cl. C07c** *87/14, 85/12*

**U.S. Cl. 260—583** **6 Claims**

A process for completely hydrogenating adiponitrile to hexamethylenediamine in high yield, comprising contacting liquid adiponitrile at a pressure greater than about 150 atmospheres and a temperature of about 60 to 135° C. with hydrogen and ammonia in an elongated reaction zone containing a solid hydrogenation catalyst. At least about 0.4 moles $H_2$ per mole adiponitrile multipled by diameter of reaction zone in millimeters is fed as a mixture containing about 5–20% by volume as measured in the gas phase. Adiponitrile is fed to the reaction zone at a rate in kilograms per hour no greater than about the length of the reaction zone expressed in meters and divided by 18.

**3,478,103**

### PREPARATION OF HEXAMETHYLENE DIAMINE

**Paul D. Hann, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**

**Filed Dec. 19, 1966, Ser. No. 602,621**

**Int. Cl. C07c** *87/14*

**U.S. Cl. 260—583** **2 Claims**

In catalytically hydrogenating an unsaturated organic compound in liquid phase using a slurry of particulate catalyst, a liquid level is maintained in the reaction effluent with a hydrogen vapor phase thereabove, withdrawal of liquid effluent is controlled to maintain the desired liquid level, the major portion of exothermic heat is removed by indirect heat exchange thru the wall of the reactor, and close temperature control of the reaction is effected by cooling a portion of the hydrogenated product and recycling same to the reactor, the rate of recycle being controlled in response to the sensed temperature of the reaction effluent.

**3,478,104**

### NOVEL DIKETO COLORING AGENT

**Joseph Donald Surmatis, West Caldwell, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey**

**No Drawing. Filed June 23, 1967, Ser. No. 648,196**

**Int. Cl. C07c** *49/54;* **A23l** *1/27*

**U.S. Cl. 260—586** **1 Claim**

1 - (2,6,6 -trimethyl - 1 - cyclohexenyl) - 18 - (2,6,6-trimethyl-3-oxo-1-cyclohexenyl) - 3,7,12,16 - tetramethyloctadeca - 2,5,7,9,11,13,15,17 - octaen - 4 - one has been prepared. The novel compound has utility as a yellow coloring and pigmenting agent for foodstuffs and the like.

**3,478,105**

### AMIDES

**Jerome G. Kuderna, Jr., and Richard D. Skiles, Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Oct. 16, 1967, Ser. No. 675,344**

**Int. Cl. C07c** *103/30;* **A01n** *9/20*

**U.S. Cl. 260—558** **16 Claims**

Novel ring-substituted atropamides, such as β,2,4-trichloroatropamide, which have biological activity and are precursors to biologically active compounds.

**3,478,106**

### PREPARATION OF 13-ALKYLGONA-1,3,5(10),8,14-PENTAENES

**Gordon Alan Hughes, Haverford, Pa., and Herchel Smith, 500 Chestnut Lane, Wayne, Pa. 19087; said Hughes assignor to said Smith**

**Original application Sept. 27, 1967, Ser. No. 670,982. Divided and this application Nov. 18, 1968, Ser. No. 776,600**

**Int. Cl. C07c** *171/07, 167/02*

**U.S. Cl. 260—590** **7 Claims**

13-alkylgona-1,3,5(10),8,14-pentaen-17-ones which are useful as intermediates in the total synthesis of 19-norsteroids are prepared from 1-tetralone in three steps. Reaction of a vinyl Grignard reagent with the 1-tetralone gives a 1-vinyl-1-tetralol which is condensed with a 1-alkyl-1,3-cyclopentanedione under Michael condensation conditions to obtain a 13-alkyl-8,14-secogona-1,3,5(10),-9(11)-tetraene-14,17-dione, which is in turn cyclodehydrated to give the 13-alkylgona-1,3,5(10),8,14-pentaen-17-ones.

**3,478,107**

### BRANCHED CHAIN BUTYL FORMALDEHYDE MERCAPTALS

**Billy Dale Vineyard, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**

**No Drawing. Filed Feb. 6, 1967, Ser. No. 614,038**

**Int. Cl. C07c** *149/10;* **C10m** *1/38*

**U.S. Cl. 260—609** **2 Claims**

Branched-chain alkyl formaldehyde mercaptals which are useful as antiwear additives in lubricating oils.

**3,478,108**

### ISOBUTANE OXIDATION

**Henry R. Grane, Springfield, Pa., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Feb. 21, 1966, Ser. No. 528,832**

**Int. Cl. C07c** *73/06, 31/12, 27/12*

**U.S. Cl. 260—610** **3 Claims**

An improved method of obtaining tert-butyl hydroperoxide and tert-butyl alcohol through mixed phase oxidation of isobutane with water added to the reaction mixture whereby conversion and selectivity may be controlled with consistently higher yields of the desired products.

**3,478,109**

### SOLVENT EXTRACTION OF POLYMERIC GLYCOLS USING METHANOL

**Wayne V. McConnell, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed July 28, 1967, Ser. No. 656,643**

**Int. Cl. C07c** *41/12, 43/04*

**U.S. Cl. 260—611** **6 Claims**

Polymeric glycol having a number average molecular weight of 1,500–12,000 such as poly(tetramethylene ether) glycol is dissolved in cyclohexane and/or toluene or similar hydrocarbon solvent and this solution is then extracted one or more times or on a continuous basis with methanol (when treating polymeric glycol in the upper range of number average molecular weights) or with a mixture of methanol and water (when treating in the lower range of molecular weight) whereby the lower molecular weight species of polymeric molecules are removed and the remaining polymeric glycol has an increased number average molecular weight.

**3,478,110**

### HOMOPOLYMERIZATION OF POLY-HALOGENOUS ALKYLENE OXIDES

**Pauls Davis, Gibraltar, and Herwart C. Vogt, Grosse Ile, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan**

**No Drawing. Filed Sept. 26, 1966, Ser. No. 581,765**

**Int. Cl. C08g** *23/14*

**U.S. Cl. 260—615** **7 Claims**

Polyhalogenous alkylene oxides are homopolymerized in the presence of a solvent and a catalyst. The solvents which may be used include difluorodichloromethane and 1,2-dichloro-1,1,2,2-tetrafluoroethane. The catalysts which may be used include Lewis acid catalysts with boron trifluoride being preferred.

**3,478,111**

### METHOD AND APPARATUS FOR CONTINUOUSLY MONITORING THE PROGRESS OF CERTAIN REACTIONS

**Ronald G. Bruce, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware**

**Continuation of application Ser. No. 531,084, Mar. 2, 1966. This application Sept. 25, 1967, Ser. No. 684,578**

**Int. Cl. C07b** *27/00;* **G01b** *15/00*

**U.S. Cl. 260—615** **2 Claims**

Method and apparatus for determining the progress of a reaction between reactants which produce a product whose miscibility in a solvent is related to the extent of reaction. As the reaction proceeds, part of the reaction product is continually mixed with a solvent and flowed through a translucent cell mounted between a light source and a photoelectric cell. The temperature of the sample in the cell is either maintained constant during the reaction or is maintained at the changing miscibility temperature during the reaction by signals from the photoelectric cell transmitted to a temperature controller. Is particularly adapted to the oxyalkylation of aliphatic alcohols, alkylphenols, and fatty acids.

**3,478,112**

### PRODUCTION OF ALCOHOLS BY CATALYTIC HYDROGENATION OF CARBOXYLIC ACIDS

**Karl Adam, Erich Haarer, and Konrad Dorfner, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**

**No Drawing. Filed Mar. 12, 1965, Ser. No. 439,439**

**Claims priority, application Germany, Mar. 17, 1964, B 75,933**

**Int. Cl. C07b** *1/00;* **C07c** *29/00*

**U.S. Cl. 260—617** **1 Claim**

Production of alcohols by hydrogenation of carboxylic acids in the presence of cobalt-copper, manganese and/or chromium catalysts optionally containing inorganic acids and/or salts thereof.

**3,478,113**

### HYDROCARBON HYDRAULIC OIL

**Ulric B. Bray, Pasadena, and Morton Z. Fainman, Los Angeles, Calif., assignors to Bray Oil Company, Los Angeles, Calif., a limited partnership of California**

**No Drawing. Filed Sept. 7, 1965, Ser. No. 485,548**

**Int. Cl. C07c** *3/56, 3/54, 3/52*

**U.S. Cl. 260—671** **7 Claims**

A hydrocarbon hydraulic oil having a pour point below —40° F. coupled with stability at high temperature and a flash point above 430° F., suitable for use over the wide range of temperatures encountered in high altitude aviation service, comprised of linear paraffin hydrocarbon chains of 20 to 30 carbon atoms interrupted by a phenylene group positioned at least six atoms from the end of the chain.

**3,478,114**

### PROCESS FOR MAKING α-SANTALOL

**Ronald G. Lewis and William F. Erman, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio**

**No Drawing. Filed May 13, 1966, Ser. No. 549,795**

**Int. Cl. C07c** *35/22*

**U.S. Cl. 260—631.5** **8 Claims**

A process for the preparation of α-santalol, and certain novel α-santalate esters, in which tricycloekasantalal is used as the starting material are disclosed. α-Santalol and the α-santalate esters are useful in perfume compositions.

**3,478,115**

### METHOD OF MAKING POLYMETHYLOLALKANE MIXTURES

**Jesse B. Bronstein, Jr., South Whitehall Township, Pa., assignor, by mesne assignments, to Commercial Solvents Corporation, a corporation of Maryland**

**No Drawing. Filed May 5, 1967, Ser. No. 636,279**

**Int. Cl. C07c** *31/18*

**U.S. Cl. 260—635** **18 Claims**

A first alkyl aldehyde is reacted with a substantial excess of formaldehyde to form the corresponding polymethylolalkane following which a second alkyl aldehyde, having at least one more carbon atom than the first, is reacted with the remaining formaldehyde, in the presence of the first-formed polymethylolalkane, to form the corresponding trimethylolalkane.

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### 3,478,116
### FLUORINATED ALCOHOLS

**Kenneth C. Smeltz, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**No Drawing. Filed July 26, 1967, Ser. No. 656,076**
**Int. Cl. C07c** *31/20, 29/00;* **D06m** *15/48*
**U.S. Cl. 260—633** **3 Claims**

Prefluoroalkyl-terminated alkyl malonic acids and esters of the formula $(R_f—R')_aCH_{2-a}(COOR)_2$ prepared from the corresponding malonic acid ester and $R_f—R'—Z$.

Perfluoroalkyl-terminated alkyl-1,3-propanediols of the formula $(R_f—R')_aCH_{2-a}(CH_2OH)_2$ prepared by reduction of the malonic acid or ester described above.

Polyesters prepared by the condensation of the above-described propanediols with complementary dibasic acids including the above-described malonic acids and, optionally, other diols; and polyesters prepared from the malonic acids and other diols.

Polyurethanes prepared by the condensation of the propanediols described above and complementary diisocyanates, and optionally, other diols.

The polymers are in general useful as fabric coatings to impart oil- and water-repellency thereto.

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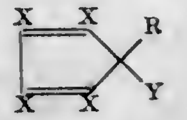
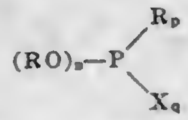
### 3,478,117
### CYCLOPENTADIENES

**Victor Mark, Olivette, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**No Drawing. Filed July 25, 1960, Ser. No. 44,890**
**Int. Cl. C07c** *17/26, 43/18*
**U.S. Cl. 260—648** **4 Claims**

1. The method of preparing a compound of the structure



wherein X is selected from the class consisting of chlorine and bromine; wherein Y is selected from the class consisting of X and R; and wherein R is selected from the class consisting of alkyl having up to 8 carbon atoms, 2-chloroethyl, 2-methoxyethyl, allyl and cyclohexyl; which comprises combining under reactive conditions a hexahalocyclopentadiene of the formula $C_5X_6$ and an ester of a phosphorus acid having the structure



$$(RO)_n—P\begin{matrix}\diagup R_p\\ \diagdown X_q\end{matrix}$$

wherein *n* is an integer from one to three; wherein *p* and *q* are each integers from zero to two, provided that the sum of *n*, *p* and *q* is three; mixing the reaction product with sufficient water to completely hydrolyze the phosphorus compounds, separating the phosphorus-free organic layer, and separating the desired product therefrom by fractional distillation.

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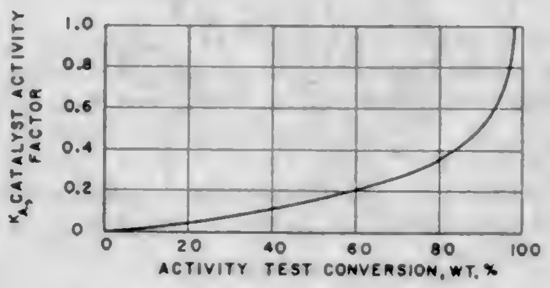
### 3,478,118
### METHOD FOR THE PRODUCTION OF MONOALKYLBENZENES

**Harold A. Sorgenti, Drexel Hill, Pa., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed May 8, 1968, Ser. No. 727,415**
**Int. Cl. C07c** *3/56*
**U.S. Cl. 260—671** **5 Claims**

Production of monoalkylbenzenes from a chloroparaffin fraction having a high ratio of polychloroparaffins to monochloroparaffins by utilizing an aluminum chloride catalyst of controlled severity.



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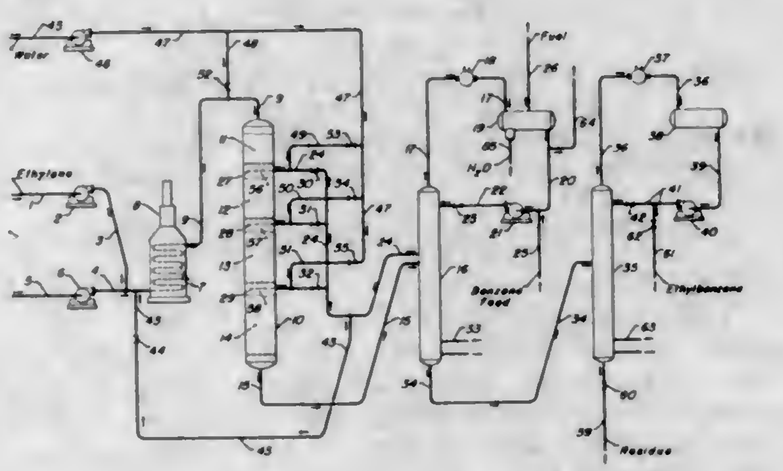
### 3,478,119
### MANUFACTURE OF ETHYLBENZENE

**William H. Maier, Rosemont, and Dennis J. Ward, Lombard, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**Filed May 16, 1968. Ser. No. 729,637**
**Int. Cl. C07c** *3/54*
**U.S. Cl. 260—671** **3 Claims**



Method for producing ethylbenzene by alkylating substantially anhydrous benzene with high purity ethylene over a solid phosphoric acid catalyst. A water-containing benzene feed is first introduced into a fractionation zone with the ethylbenzene-containing reaction products and substantially anhydrous benzene is recovered therefrom and passed with ethylene to an alkylation zone. Water, as necessary to maintain catalyst activity, is introduced into the alkylation zone.

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### 3,478,120
### DEALKYLATION PROCESS AND CATALYST

**John W. Myers and Marvin M. Johnson, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**
**No Drawing. Filed Apr. 9, 1968, Ser. No. 719,850**
**Int. Cl. C07c** *3/58;* **B01j** *11/22*
**U.S. Cl. 260—672** **5 Claims**

Dealkylation of hydrocarbons by contacting with a catalyst comprising iron group metals and calcium aluminate.

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### 3,478,121
### METHOD OF PURIFYING CUMENE FOR PREPARING PHENOL

**Giancarlo Aglietti and Roberto Canavesi, Milan, Italy, assignors to Società Italiana Resine S.p.A., Milan, Italy**
**No Drawing. Filed Feb. 27, 1967, Ser. No. 619,023**
**Claims priority, application Italy, Mar. 9, 1966, 5,339/66**
**Int. Cl. C07c** *7/00, 5/14*
**U.S. Cl. 260—674** **13 Claims**

Method of freeing cumene from unsaturated and oxygenated impurities in one operation by carrying out a hydrogenation reaction on the impure cumene in the presence of nickel or molybdenum supported on alumina as catalyst. The cumene may have been produced in the impure form by the known process of forming phenol from cumene hydroperoxide. Impure cumene also results from this process. The main impurities are compounds such as alphamethylstyrene, methylisobutylketone and mesityl oxide. Stationary catalytic beds through which impure cumene and hydrogen are flowed may suitably be employed and the reaction may be carried out at temperatures between 250 and 300° C.

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### 3,478,122
### NOVEL PROCESS FOR THE PREPARATION OF OLEFINIC COMPOUNDS AND DERIVATIVES THEREOF

**Andre J. Hubert, Brussels, Belgium, assignor to Union Carbide Corporation, a corporation of New York**
**No Drawing. Original application Sept. 15, 1964, Ser. No. 396,738, now Patent No. 3,347,943, dated Sept. 19, 1967. Divided and this application June 20, 1967, Ser. No. 647,339**
**Int. Cl. C07c** *5/00, 5/08*
**U.S. Cl. 260—677** **4 Claims**

Unsaturated compounds containing at least one olefinic double bond are prepared by heating a mixture of a disubstituted acetylenic compound and a trihydrocarbylborane having at least one beta-hydrogen atom.

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### 3,478,123
### PARTIAL HYDROGENATION OF CONJUGATED DIOLEFINIC HYDROCARBONS

**John F. Brennan, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**No Drawing. Filed Oct. 13, 1967, Ser. No. 675,052**
**The portion of the term of the patent subsequent to May 20, 1986, has been disclaimed**
**Int. Cl. C07c** *11/16, 5/16*
**U.S. Cl. 260—677** **6 Claims**

Diolefinic hydrocarbons are partially hydrogenated by treatment with hydrogen in the presence of a ruthenium chloride catalyst whereby a mono-olefinic hydrocarbon is produced, said partial hydrogenation being accomplished without a concurrent isomerization whereby the double-bond is shifted to a more central location.

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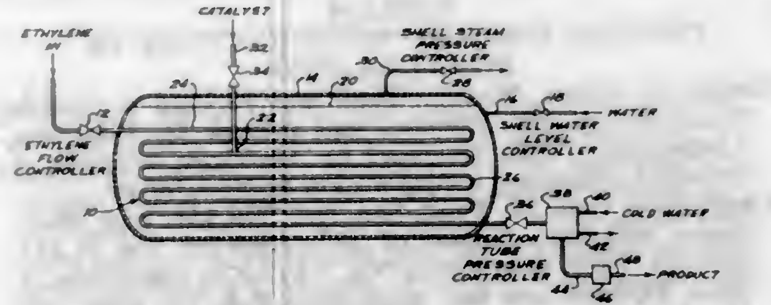
### 3,478,124
### METHOD FOR CONVERTING ETHYLENE TO ALPHA OLEFINS IN THE PRESENCE OF DIPHENYLAMINE

**Herbert B. Fernald and William Gall, Glenshaw, and Harold E. Swift, Gibsonia, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware**
**Filed Nov. 9, 1966, Ser. No. 593,156**
**Int. Cl. C07c** *3/10*
**U.S. Cl. 260—683.15** **5 Claims**



A method for reducing solid polymer formation and increasing catalyst efficiency in a process for the conversion of ethylene to liquid alpha olefins with an organometallic catalyst comprising performing said process in the presence of diphenylamine.

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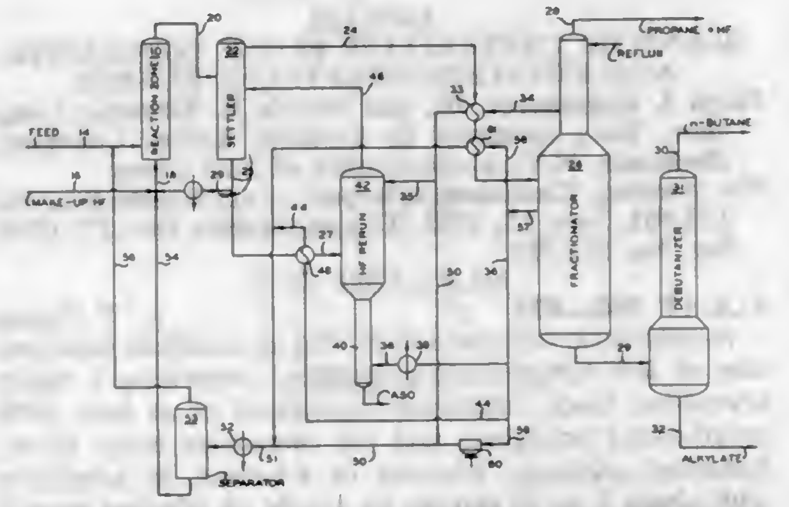
### 3,478,125
### HF ALKYLATION ACID RERUN SYSTEM

**Charles C. Chapman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed May 22, 1967, Ser. No. 640,172**
**Int. Cl. C07c** *3/52, 3/54*
**U.S. Cl. 260—683.48** **6 Claims**



In an HF alkylation system comprising a reaction zone, a settling zone, an acid rerun column, and a fractionation zone, isoparaffin is taken off the fractionation zone in two streams, a liquid stream and a vapor stream. This vapor stream is used to indirectly heat a portion of HF mixture from the settling zone prior to introduction into the HF rerun column; the isoparaffin from this heat exchange is added to the liquid stream, this combined stream is cooled, and HF present is separated from the hydrocarbon phase, the HF and isobutane then being returned separately to the reaction zone. A second portion of the vapor stream is introduced into the lower portion of the acid rerun column to act as a stripping medium.

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### 3,478,126
### URETHANE MODIFIED EPOXY ESTER RESIN COMPOSITIONS AND PRODUCTS

**Edward Thomas Turpin, Oakville, Ontario, Canada, assignor, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York**
**No Drawing. Filed May 26, 1967, Ser. No. 641,497**
**Int. Cl. C08g** *39/10, 45/14*
**U.S. Cl. 260—835** **9 Claims**

Novel, urethane modified resin compositions comprising the reaction product of (1) a hydroxy diester of a linear diepoxide and an $\alpha,\beta$-ethylenically unsaturated monocarboxylic acid, and (2) an organic diisocyanate have been prepared and are described.

Compositions comprising the aforementioned reaction product and a copolymerizable monomer are also described. Cured films or castings obtained from the copolymerization of the urethane modified resin compositions and polymerizable monomer are further described.

Resin compositions comprising blends of the urethane modified epoxy resin compositions and conventional polyester resins and polymerizable monomers as well as the cured products of these compositions are shown.

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### 3,478,127
### ADHESIVE COMPRISING POLYCHLOROPRENE, ALKYLATED p-PHENOL HAVING 2 to 6 CARBON ATOMS AND p-CRESOL CONDENSED WITH FORMALDEHYDE

**Kenneth C. Petersen, Scotia, N.Y., assignor to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York**
**No Drawing. Filed Dec. 2, 1966, Ser. No. 598,639**
**Int. Cl. C08d** *9/10;* **C08g** *37/20;* **C09j** *3/16*
**U.S. Cl. 260—845** **10 Claims**

Phase resistance and heat resistance are incorporated into adhesives from neoprene and a resin made from formaldehyde and a hydrocarbyl phenol having at least 2 carbon atoms in the hydrocarbyl group, e.g. p-tert butyl phenol, by including a minor amount of cresol with the hydrocarbyl phenol. Preferably bisphenol A is included in a small amount with the other phenols to improve heat resistance. The phenolic resin has a molecular weight of 900 to 1800.

### 3,478,128
### BLEND OF CRYSTALLINE BLOCK COPOLYMER AND ETHYLENE-PROPYLENE RUBBER

**Hugh J. Hagemeyer, Jr., and Marvin B. Edwards, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**No Drawing. Continuation-in-part of application Ser. No. 152,001, Nov. 13, 1961. This application Dec. 27, 1965, Ser. No. 516,783**
**Int. Cl. C08f** *29/12*
**U.S. Cl. 260—876** **7 Claims**

A polymeric composition having an excellent combination of low temperature properties, comprising a highly crystalline block copolymer comprised of at least 90% polymerized propylene and the remainoer being of polymerized ethylene, 1-butene or 1-hexene, in admixture with about 5 to 30 percent by weight of ethylene-propylene rubber.

### 3,478,129
### STYRENE/1-OLEFIN BLOCK COPOLYMERS

**Roland J. Kern, Chesterfield, and Robert J. McManimie, Glendale, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 114,633, June 5, 1961. This application Oct. 7, 1966, Ser. No. 585,107**
**Int. Cl. C08f** *19/04*
**U.S. Cl. 260—878** **6 Claims**

Block copolymers of styrene and ethylene are prepared by maintaining a continuous presence of one of the reactants in the reaction zone and intermittently adding the second reactant.

### 3,478,130
### POLYPROPYLENE BLOCK COPOLYMER AND PROCESS

**Donald E. Hostetler, Monroeville, Pa., assignor to Dart Industries Inc., Los Angeles, Calif., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 187,959, Apr. 16, 1962. This application May 4, 1967, Ser. No. 636,034**
**Int. Cl. C08f** *15/04*
**U.S. Cl. 260—878** **6 Claims**

Profound changes in tensile impact strength for crystalline polypropylene compositions are obtained by a combination block copolymer composed of intermittent ethylene-propylene block copolymer segments along the length of a polypropolene chain followed by a linear polyethylene chain segment, the amount of ethylene in the intermittent block segments ranging from 1 to 2 percent by weight.

### 3,478,131
### POLYOLEFIN BLEND HAVING HOT TACK STRENGTH

**Willard H. Wharton and Barry A. Cooper, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**No Drawing. Filed May 29, 1967, Ser. No. 642,173**
**Int. Cl. C08f** *29/12;* **C09j** *3/14;* **B32b** *27/10*
**U.S. Cl. 260—897** **15 Claims**

A homogeneous blend of solid olefin polymers having various densities and melt indexes useful to heat seal cellulosic containers. A ternary blend of a high density polyethylene or isotatic polypropylene with two low density polyethylenes having different melt indexes was found to give superior hot tack.

### 3,478,132
### GOLF BALL COMPRISING AN ELASTOMER DISPERSION OF HIGH MOLECULAR WEIGHT POLYETHYLENE

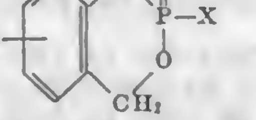
**Clarence L. Randolph, Ashland, Ohio, assignor to Eagle Rubber Co., Inc., Ashland, Ohio, a corporation of Delaware**
**Filed Feb. 23, 1967, Ser. No. 618,098**
**Int. Cl. C08d** *9/10;* **A63b** *37/00*
**U.S. Cl. 260—889** **2 Claims**

This invention relates to molded golf balls which contain particles of a high-molecular-weight polyolefin, preferably polyethylene, dispersed in the rubber as an impact modifier which increases the impact resistance of the golf balls and improves its cut resistance and click.

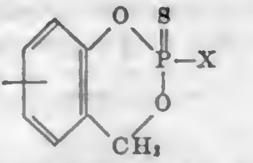
### 3,478,133
### CYCLIC PHOSPHATE ESTERS AND PROCESS FOR PRODUCING SAME

**Yasuyoshi Oshima and Morifusa Eto, Fukuoka-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan**
**No Drawing. Filed Oct. 21, 1966, Ser. No. 588,340**
**Claims priority, application Japan, Oct. 29, 1965, 40/66,559**
**Int. Cl. C07d** *105/04*
**U.S. Cl. 260—937** **14 Claims**

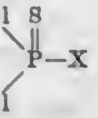
Cyclic thionophosphate esters represented by the formula



wherein X is methoxy, alkylthio having 1 to 4 carbon atoms, allylthio, phenylthio, mono-lower alkyl-substituted amino or di-lower alkyl-substituted amino, and R is hydrogen, chlorine or methyl, are produced in high yield by reacting an o-hydroxybenzyl alcohol represented by the formula



wherein R has the same meaning as defined above, with mono-substituted thiophosphoryl chloride represented by the formula



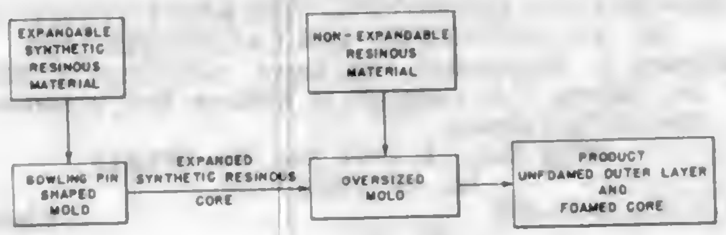
$$\mathrm{Cl_2P(=S)-X}$$

wherein X has the same meanings as defined above, in a sodium or potassium hydroxide aqueous solution. These new compounds have excellent insecticidal properties.

### 3,478,134
### PROCESS FOR THE MANUFACTURE OF BOWLING PINS

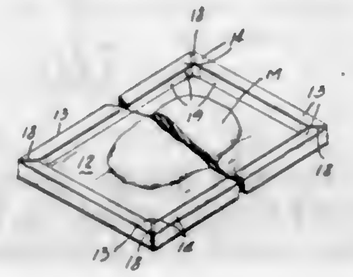
**George A. Gruss, Shelby, Ohio, and Richard A. Smith, Cornwall on the Hudson, and Joseph R. Infantino, Chappaqua, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey**
**Application June 19, 1964, Ser. No. 396,451, now abandoned, which is a division of application Ser. No. 31,161, May 23, 1960, now Patent No. 3,147,975, dated Sept. 8, 1964. Divided and this application Feb. 11, 1966, Ser. No. 538,886**
**Int. Cl. B29h** *7/20;* **B29f** *1/10*
**U.S. Cl. 264—45** **7 Claims**

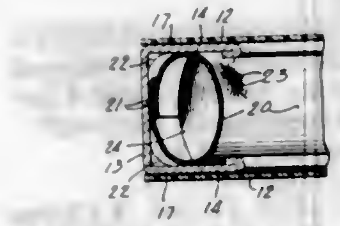
The present invention relates to a method for the manufacture of bowling pins wherein an expanded, undersized, foamed core having the contour of a bowling pin and which is of suitable expandable resinous composition is formed in a mold, the core is then introduced and centered into another mold which is larger than the core and the space between the core and the mold walls is filled with a non-expandable resin after which the cellular structure of the core is cured, thereby forming a bowling pin having a shell of solid synthetic resin and a foamed resinous core.

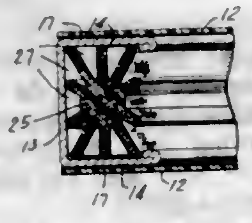

EXPANDABLE SYNTHETIC RESINOUS MATERIAL
NON-EXPANDABLE RESINOUS MATERIAL
BOWLING PIN SHAPED MOLD
EXPANDED SYNTHETIC RESINOUS CORE
OVERSIZED MOLD
PRODUCT UNFOAMED OUTER LAYER AND FOAMED CORE

### 3,478,135
### MOLDING METHOD AND MEANS AND STRUCTURES PRODUCED THEREBY

**Frank E. Randall, 5610 Woodland Court, Peoria, Ill. 61614**
**Filed May 5, 1966, Ser. No. 547,952**
**Int. Cl. B29h** *7/20;* **B29f** *3/03*
**U.S. Cl. 264—45** **4 Claims**





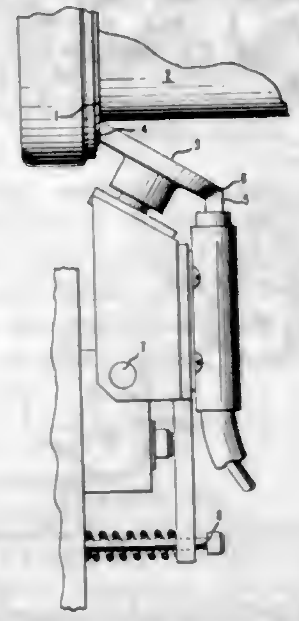


A method of molding within a closed cavity, and a structure, wherein a member having air passages is placed along a wall within the cavity and thereby provides an air escape route to a vent, the cavity is filled with a moldable material mass which displaces the air from the cavity by way of the member and moves into engagement with the member. The passageway-providing member extends as a barrier across the vent to which the passages lead. The air displacement member is desirably porous and collapsible. Especially suitable for a panel in which the cavity is defined by a pair of spaced facing sheets and edging strips bonded to the margins of the facing sheets and the moldable material comprises a lightweight polyurethane foam core which thrusts the passageway member into collaped condition against the wall.

### 3,478,136
### PROCESS FOR ROLL-COMPACTING OF METAL POWDER WITH FLANGE LUBRICATION

**Kalman E. Buchovecky, Wheeling, W. Va., and Wilbur L. Patton, Silver Spring, Md.; said Patton assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware, and said Buchovecky assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed May 25, 1967, Ser. No. 641,361**
**Int. Cl. B22f** *3/02*
**U.S. Cl. 264—111** **1 Claim**

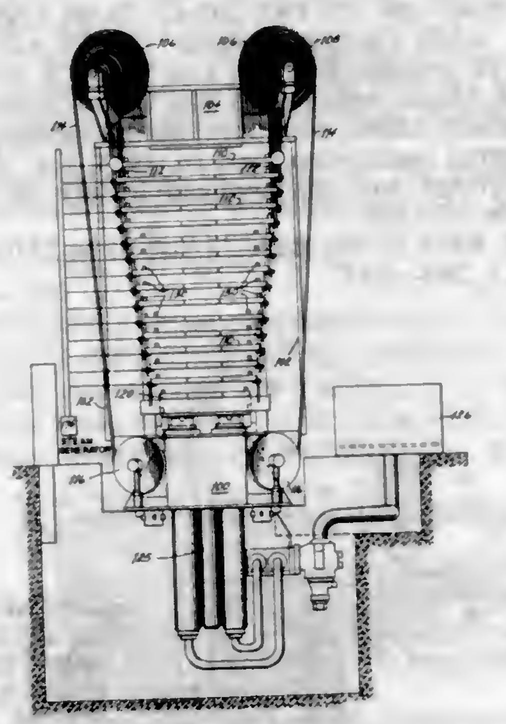
When metal powders are roll-compacted to form a strip between a pair of mating rolls, one of which has flanges at its ends enclosing the ends of the other roll at close clearance, the metal powder tends to weld to such



roll ends and flanges. This is avoided by continuously coating the inside face of each flange with a lubricant by means of a transfer wheel turning in contact with the flange and a source of lubricant.

### 3,478,137
### METHOD OF MAKING A RIGID PANEL OF MINERAL FIBERS AND DISCRETE PARTICLES WITH RESIN BINDER

**Gustave Barshefsky, Chicago, and Eugene E. Goldstein, Evanston, Ill., assignors, by mesne assignments, to The Celotex Corporation, a corporation of Delaware**
**Original application Sept. 16, 1963, Ser. No. 309,204. Divided and this application May 10, 1967, Ser. No. 637,495**
**Int. Cl. D04h** *1/00;* **B32b** *5/16*
**U.S. Cl. 264—118** **2 Claims**

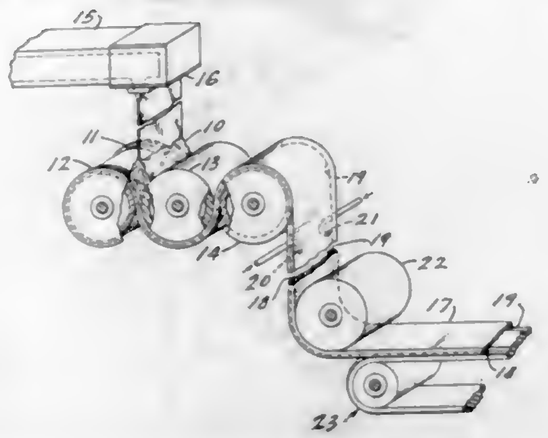


This invention relates to a novel method of manufacturing a rigid panel of mineral fibers by uniformly depositing a mixture of mineral wool fibers, resin binder and shot particles to form a mat, precompressing the said mat, cutting the mat into smaller portions of appropriate size and applying heat with pressure simultaneously to a number of said portions to cure the resin and form a plurality of rigid, flat panels simultaneously.

**3,478,138**

### METHOD OF MAKING THERMOPLASTIC ARTICLES HAVING NON-PLANAR SURFACE CONTOURS

**Charles E. Friesner, 6535 Kemner Road, R.F.D. 1,
Pemberville, Ohio 43450
Filed Dec. 1, 1966, Ser. No. 598,476
Int. Cl. B29d** *7/14*
**U.S. Cl. 264—145** **12 Claims**

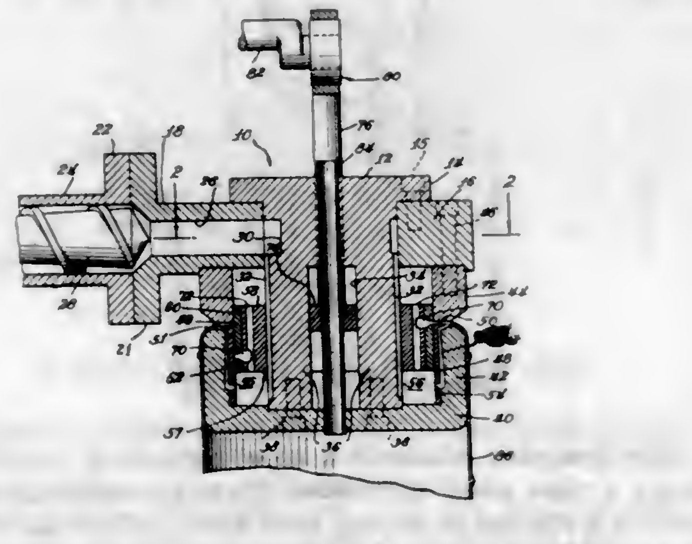


A method of manufacturing thermoplastic articles having at least one non-planar surface contour which involves the steps of extruding or otherwise depositing a mass of workable thermoplastic material into the nip between two driven counter rotating rolls, one of which has a contour which is the complementarily shaped negative of the desired end product contour, and pulling said material through the nip to form a continuous strip of material having the desired surface contour. Preferably the strip thus formed is pulled through the nip between one of the first two and a third roll to set the contour. While the material is being pulled through the series of rolls, it is simultaneously allowed to cool from a temperature above its temperature of total fusion* to one below its glass transition temperature*. Thereafter individual articles are cut to the desired length from the continuous strip thus formed.

**3,478,139**

### METHOD OF EXTRUDING TUBULAR WEBBING AND CROSS-RIBBED TUBULAR FILM

**Allan D. Martin, Sanford, and Irving S. Houvener, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Original application Mar. 16, 1964, Ser. No. 353,315. Divided and this application July 27, 1967, Ser. No. 677,810
Int. Cl. B32b** *31/00;* **B29c** *17/04;* **B29d** *23/04;* **D01d** *5/00*
**U.S. Cl. 264—167** **2 Claims**

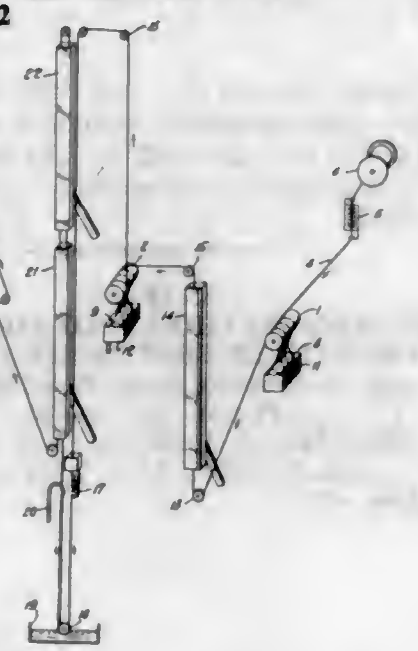


A method for extruding plastic tubular webbing and also film having a cross-ribbed surface which involves extruding ribbons of plastic, and also a sheet, if film with a cross-ribbed surface is desired, through an annular slot, and uniting said ribbons in cross-rib manner, and adhering the resultant cross-ribbed ribbons to said film.

**3,478,140**

### PROCESS FOR IMPROVING THE KNOT STRENGTH OF AN EXTRUDED COLLAGEN STRAND

**Richard L. Kronenthal, Fair Lawn, and Ernest J. Rich, Jr., Edison, N.J., assignors to Ethicon, Inc., a corporation of New Jersey
Filed Aug. 11, 1964, Ser. No. 388,813
Int. Cl. D01f** *9/04*
**U.S. Cl. 264—202** **3 Claims**

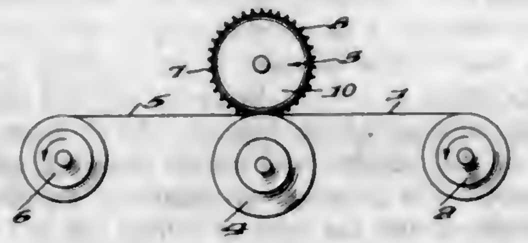


The knot strength and fray characteristics of an extruded collagen strand are improved by treating the collagen strand with dehydrated castor oil.

**3,478,141**

### PROCESS FOR TREATING FILM-FIBRIL SHEETS

**James Joseph Dempsey and Chi-Chang Lee, Richmond, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 29, 1966, Ser. No. 575,843
Int. Cl. B29c** *17/02*
**U.S. Cl. 264—284** **3 Claims**



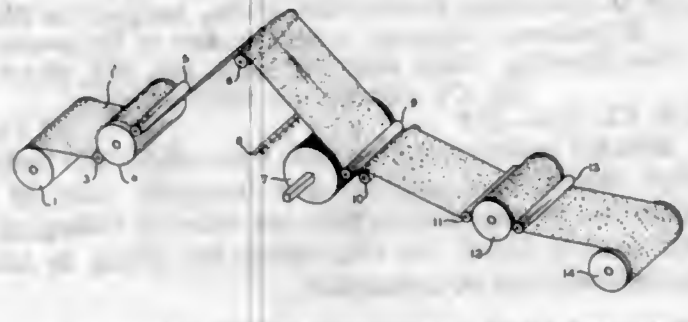
A process for embossing film-fibril sheets by exposing them to heat and pressure between a pair of rolls, one of the rolls having a heat conductive surface of a specified number of bosses extending from the surface of the roll and the other roll having a resilient surface. Sufficient heat and pressure is provided by the rolls to form translucent windows directly beneath the bosses while at the same time lightly bonding the film-fibrils in the remaining areas of the sheet without fusing them.

**3,478,142**

### METHOD OF PLEATING AND STRETCHING PLASTIC FILM

**Max E. Greene, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Sept. 7, 1965, Ser. No. 485,172
Int. Cl. B29d** *7/24*
**U.S. Cl. 264—288** **2 Claims**

A process is provided for stretching plastic film which comprises decreasing the width of said film by bowing and passing the bowed film directly into contact with a fixed frictional surface without any additional pleating operation to produce longitudinal pleats, and subsequently stretching the pleated film.



**3,478,143**

### METHOD OF PRODUCING A YARN WITH RANDOM DENIER FLUCTUATIONS

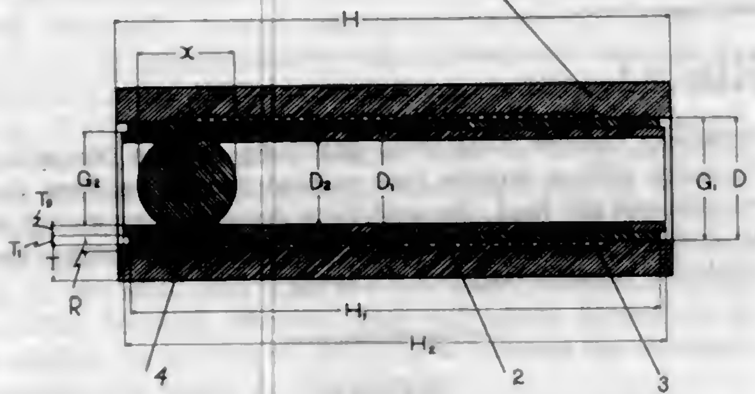
**Helmut Werner, Elsenfeld, and Hans Stapp, Momlingen, Germany, assignors to Glanzstoff AG, Wuppertal, Germany
No Drawing. Filed Apr. 14, 1967, Ser. No. 630,819
Claims priority, application Germany, Apr. 27, 1966, V 18,921, V 30,940
Int. Cl. D01d** *5/20;* **D02j** *1/22*
**U.S. Cl. 264—290** **7 Claims**

A method of producing novel polyester yarns, threads or fabrics in which a previously unstretched melt-spun yarn such as polyethylene terephthalate is stretched upon a stationary heated stretching pin of a diameter of 15–60 mm. and a pin temperature of 60–105° C., the yarn being drawn at a stretching ratio of 60–80% of the normal ratio while placing the yarn under a thread tension after the pin of 0.2 to 1.1 grams/denier with a ratio of thread tension after the pin to that before the pin of 1:1.5 to 1:4.

**3,478,144**

### METHOD OF FORMING ENGRAVINGS ON THE CIRCUMFERENTIAL SURFACE OF SYNTHETIC RESIN TUBES

**Isao Sato, 20–50 Ban, Yamate-cho, Osaka Prefecture, Hiraoka, Japan
Filed Oct. 12, 1966, Ser. No. 586,123
Int. Cl. B29c** *1/12, 1/14;* **B29g** *1/00*
**U.S. Cl. 264—313** **1 Claim**



A method of forming engravings over the surface of a synthetic resin tube, which comprises the steps of inserting a synthetic resin cylinder into a molding member having a rugged surface on its inner circumference and inserting a removable resilient tube into the synthetic resin cylinder. A spherical body of a diameter slightly larger than that of the inner diameter of the resilient tube is forced to move in an axial direction within and successively along the inner circumference of the resilient tube, causing radial pressure to the synthetic resin cylinder and forcibly engaging the rugged surface of the molding member to form a rugged surface complementary to the rugged surface of the molding member to the outer circumference of the synthetic resin cylinder.

**3,478,145**

### CHROMATOGRAPHIC PURIFICATION OF VIRUS WITH BRUSHITE MODIFIED BY AUTOCLAVING

**Milton Lapidus, Rosemont, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Original application Sept. 15, 1964, Ser. No. 396,736, now Patent No. 3,368,867. Divided and this application Dec. 18, 1967, Ser. No. 691,184
Int. Cl. A61k** *23/00*
**U.S. Cl. 424—89** **7 Claims**

Influenza viruses, including B strains, are recovered from impure solutions by chromatographic adsorption on brushite which has been modified by autoclaving, followed by elution under controlled conditions of pH and molarity. After desorption the purified viruses can be killed then formulated into vaccines useful to prevent influenza.

**3,478,146**

### WOUND-HEALING CARTILAGE POWDER EXTRACTING PROCESS

**Leslie L. Balassa, Blooming Grove, N.Y. 10914
No Drawing. Original application Feb. 26, 1965, Ser. No. 435,693, now Patent No. 3,400,199, dated Sept. 3, 1968. Divided and this application Jan. 17, 1968, Ser. No. 698,387
Int. Cl. A61k** *17/00, 27/80*
**U.S. Cl. 424—95** **10 Claims**

A method for extracting an active wound-healing composition from cartilage powder. The method comprises contacting cartilage powder finely ground with an aqueous solution of an extraction aid such as ammonia, urea, ammonium carbonate, disodium or trisodium phosphate, sodium citrate, sodium formate, and/or mixtures of any of these. The pH of the extracts is preferably maintained between about 5.0 and 8.0 at the concentrations employed in preparing the extracts.

**3,478,147**

### PHARMACOLOGICALLY EFFECTIVE SUBSTANCE AND PROCESS FOR PREPARING IT FROM *RAVENSARA AROMATICA*

**Alfred Groebel, Kelkheim, Taunus, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Sept. 19, 1966, Ser. No. 580,208
Claims priority, application Germany, Sept. 22, 1965, F 47,259
Int. Cl. A61k** *27/14*
**U.S. Cl. 424—195** **6 Claims**

A pharmacologically active substance isolated from the bark of *Ravensara aromatica* by steam distillation of the bark and solvent extraction of the distillate, or by solvent extraction of the bark, followed by isolation of the active substance from the extract by distillation or chromatography.

**3,478,148**

### THIO-, SULFINYL-, AND SULFONYLPYRIDYL PROSPHORATES AND PHOSPHOROTHIOATES, COMPOSITIONS THEREOF, AND METHODS FOR PARASITE CONTROL

**Raymond H. Rigterink, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Original application Apr. 25, 1966, Ser. No. 544,826, now Patent No. 3,385,859. Divided and this application Dec. 28, 1967, Ser. No. 716,250
Int. Cl. A61k** *9/36, 9/22*
**U.S. Cl. 424—200** **7 Claims**

Thio-, sulfinyl-, and sulfonylpyridyl phosphorates and phosphorothioates, compositions incorporating them, and methods for their use as parasiticides are disclosed.

### 3,478,149

### THERAPEUTIC COMPOSITIONS AND METHODS EMPLOYING SULFONAMIDOPHENETHANOLAMINES

**Aubrey A. Larsen and Robert H. Uloth, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana**

**No Drawing. Original application Mar. 11, 1965, Ser. No. 439,086, now Patent No. 3,341,581. Divided and this application Mar. 9, 1967, Ser. No. 642,263**

**Int. Cl. A61k** *27/00*

**U.S. Cl. 424—228** **18 Claims**

Sulfonamidophenethanolamines displaying a wide range of adrenergic, adrenergic blocking and papaverane-like smooth muscle depressant activity.

### 3,478,150

### 3 - OXYGENATED - 5 - OXYMETHYL-5α-ANDROSTENE DERIVATIVES AND PREPARATION THEREOF

**Masayuki Narisada, Kyoto Prefecture, Japan, assignor to Shionogi & Co., Ltd., Osaka, Japan**

**No Drawing. Filed July 19, 1965, Ser. No. 473,181**

**Claims priority, application Japan, July 22, 1964, 39/41,866**

**Int. Cl. A61k** *17/06;* **C07c** *169/22, 169/14*

**U.S. Cl. 424—241** **18 Claims**

5 - oxymethyl-3-oxo-5α-androst-9(11)-ene derivatives, including 5α,3α-intramolecular hemiketal derivatives, which may be prepared by metal-ammonia reduction of the thiolactones of 5α-carboxy-9α-mercapto-5α-androstane products, and suitable further conversions, are gonadotropin secretion promoting agents.

### 3,478,151

### COMPOSITIONS OF PERPHENAZINE AND PROTRIPTYLINE FOR TREATING MENTAL DISORDERS

**Carl Edward Nelson, Doylestown, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**No Drawing. Filed Oct. 23, 1967, Ser. No. 677,084**

**Int. Cl. A01n** *27/00*

**U.S. Cl. 424—247** **4 Claims**

A pharmaceutical composition for the treatment of mental disorders consists of protriptyline and perphenazine. The protriptyline offsets the extrapyramidal side reactions of the perphenazine.

### 3,478,152

### CADMIUM CONTAINING COMPOUNDS AS INSECT CONTROL AGENTS

**Lyle D. Goodhue, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed July 11, 1966, Ser. No. 563,977**

**Int. Cl. A01n** *9/12;* **C07f** *3/08*

**U.S. Cl. 424—287** **2 Claims**

Selected cadmium compounds from alkyl- and hydroxyalkyl mercaptides, organic and inorganic salts of cadmium and pinanyl mercaptides are effective biological system control agents for arthropods for killing in inhibiting reproduction of arthropods.

### 3,478,153

### METHOD OF PROTECTING SHEEP FROM BLOWFLY LARVAE

**James Fraser and Ian Robert Harrison, Nottingham, England, assignors to Boots Pure Drug Company Limited, Nottingham, England, a British company**

**No Drawing. Original application Jan. 13, 1964, Ser. No. 337,156. Divided and this application June 22, 1967, Ser. No. 658,970**

**Claims priority, application Great Britain, Jan. 29, 1963, 3,650/63**

**Int. Cl. A01n** *9/20;* **C07c** *127/18*

**U.S. Cl. 424—300** **1 Claim**

3,5-di-t-butylphenyl N-methylcarbamate is applied externally to sheep to protect them from larvae of sheep blowfly. Such compound exhibits low mammalian toxicity and at the same time long persistence on the fleece of sheep.

### 3,478,154

### FUNGICIDAL (N-SUBSTITUTED CARBAMOYLMETHYL) SULFONIUM CHLORIDES

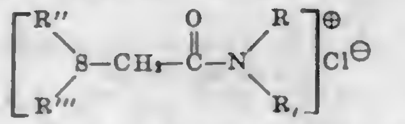
**Kenneth Wayne Ratts, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**

**No Drawing. Filed June 28, 1965, Ser. No. 467,750**

**Int. Cl. A01n** *9/12;* **C07c** *103/10*

**U.S. Cl. 424—320** **3 Claims**

Fungicidal sulfonium chlorides of the formula



$$\left[\begin{matrix} R'' \\ \quad \diagdown \\ \quad\; S{-}CH_2{-}\overset{\overset{\displaystyle O}{\|}}{C}{-}N \\ \quad \diagup \\ R''' \end{matrix}\begin{matrix} R \\ \diagup \\ \\ \diagdown \\ R_1 \end{matrix}\right]^{\oplus} Cl^{\ominus}$$

wherein R″ and R‴ are methyl or ethyl and wherein R and R′ are like lower n-alkyl or like lower n-alkenyl.

## ELECTRICAL

### 3,478,155

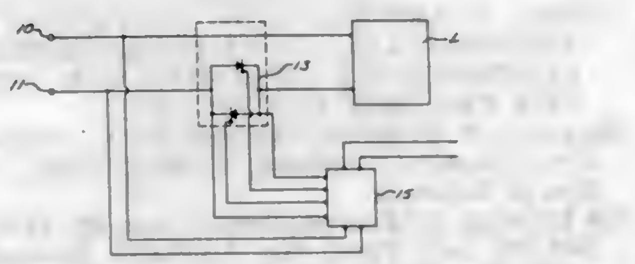
### INDUCTION HEATING

**Robert Sidney Segsworth, Warren, Ohio, assignor to Ajax Magnethermic Corporation, Warren, Ohio, a corporation of Ohio**

**Filed July 11, 1966, Ser. No. 564,281**

**Int. Cl. H05b** *5/00, 1/06*

**U.S. Cl. 13—26** **9 Claims**



In induction heating and melting furnaces wherein the load is variable, a polyphase source of low frequency alternating current, electronic switching devices connected in series with a supply line and interposed between the supply and the load, the switching devices being switched to control the power delivered to the load to match the changing characteristics of the load.

### 3,478,156

### POLYPHASE STIRRING OF MOLTEN METAL

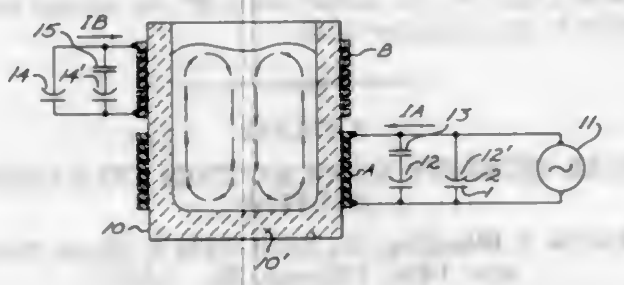
**Robert Sidney Segsworth, Toronto, Ontario, Canada, assignor to Ajax Magnethermic Corporation, Warren, Ohio, a corporation of Ohio**

**Filed Feb. 15, 1968, Ser. No. 705,848**

**Int. Cl. H05b** *5/12, 5/00, 9/06*

**U.S. Cl. 13—27** **9 Claims**

Resonant polyphase stirring of molten metal from a single-phase source comprising the combination of a plural-section coil surrounding a molten metal container, each of said coil sections surrounding different portions of said container and being coaxial and axially adjacent each other, a single phase power supply being connected to and energizing a first of said sections and a second of said sections being serially connected to capacitance and unconnected to said power supply, the current in said second unconnected section displaced in phase from the current in said first section:



### 3,478,157

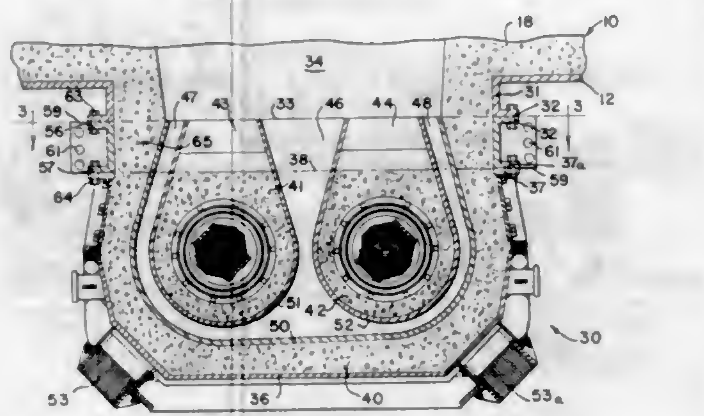
### INDUCTOR MOUNTING MEANS FOR AN INDUCTION FURNACE

**John M. Larkin, Evergreen Park, Ill., assignor to Whiting Corporation, a corporation of Illinois**

**Filed Nov. 20, 1967, Ser. No. 684,393**

**Int. Cl. H05b** *5/14*

**U.S. Cl. 13—29** **2 Claims**



The inductor assembly which is mounted to the furnace shell exteriorly thereof includes a continuous flange in confronting spaced relation with a flange on the shell. A continuous ring assembly includes a plurality of sections each of channel-shaped cross-section with the flanges of the latter in coextensive contact with the flanges on the shell and housing, respectively. The ring assembly may be completely removed thereby exposing the continuous refractory formation which is fused with the refractory lining in the shell and with the refractory material in the inductor housing, whereby such refractory formation is accessible for sawing or chipping to remove the inductor assembly for repair or replacement.

### 3,478,158

### TONE CONTROL MEANS FOR ELECTRIC GUITARS AND THE LIKE

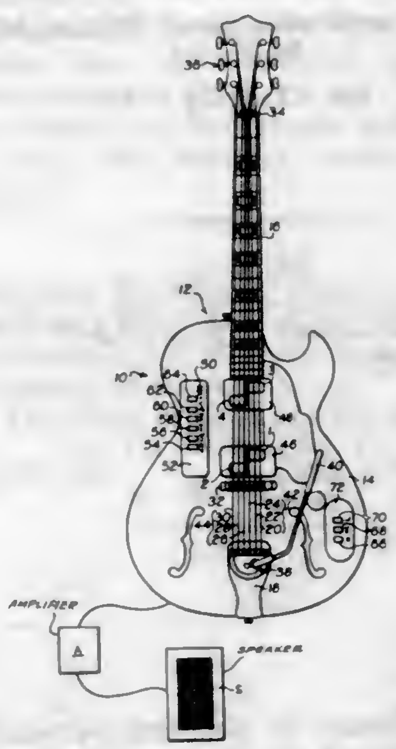
**Charles C. Trainor, Bronx, N.Y., assignor, by mesne assignments, to Avnet, Inc., a corporation of New York**

**Filed May 19, 1966, Ser. No. 551,438**

**Int. Cl. G10h** *3/00*

**U.S. Cl. 84—1.16** **10 Claims**

Tone control means for electric guitars including first and second transducers near the bridge for responding respectively to treble and base, and third and fourth transducers remote from the bridge for respectively transducing treble and base. Switching means are included for selectively connecting to the amplifier at least one treble and one base pickup.



### 3,478,159

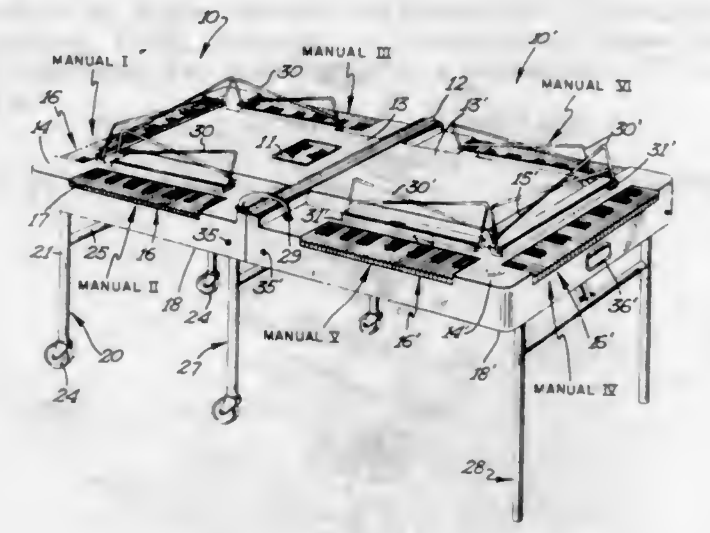
### COLLAPSIBLE KEYBOARD TEACHING AND EMPLOYING EARPHONE SETS AND PLURAL KEYBOARDS

**Percy D. Olson, Rte. 4, Oakview Drive,**
**Owatonna, Minn. 55060**

**Filed Mar. 29, 1967, Ser. No. 626,894**

**Int. Cl. G10h** *3/06, 3/00;* **G10c** *1/00*

**U.S. Cl. 84—1.17** **12 Claims**



A transportable multiple keyboard teaching aid wherein each of the keyboards is connected to an electronic sound producing system which may either produce sounds from all of the keyboards through a single speaker system or through individual earphone sets. The teaching aid has six individual keyboards and all the electronics in two hinged sections adapted to be supported on various leg structures and folded for transporting from place to place.

### 3,478,160
## VIBRATION ABSORBERS

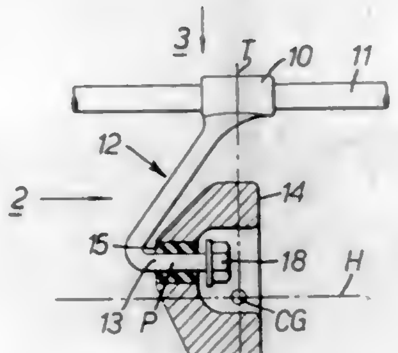
**Alun John Reed, Leicester, England, assignor to Metalastik Limited, Leicester, England, a British company**

**Filed June 23, 1967, Ser. No. 648,497**

**Claims priority, application Great Britain, July 6, 1966, 30,252/66**

**Int. Cl. H02g** *7/14*

**U.S. Cl. 174—42** **10 Claims**



A vibration absorber for electrical overhead transmission line conductors of the kind comprising an absorber mass to be attached to a conductor by spring means has the center of gravity of the absorber mass offset from the effective center of suspension afforded to it by the spring means whereby the mass has at least two coupled modes of vibration at distinct frequencies.

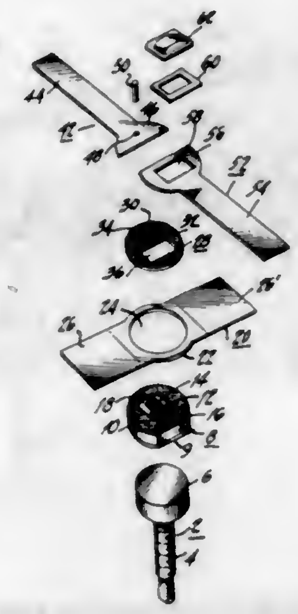
### 3,478,161
## STRIP-LINE POWER TRANSISTOR PACKAGE

**Donald R. Carley, Somerville, N.J., assignor to RCA Corporation, a corporation of Delaware**

**Filed Mar. 13, 1968, Ser. No. 712,736**

**Int. Cl. H05k** *5/06*

**U.S. Cl. 174—52** **6 Claims**



A hermetically-sealed, radial-lead strip-line package for transistors operating in the VHF and UHF bands. The package includes a ceramic header with one metallized portion to which the collector electrode of the transistor is soldered. A ribbon-type emitter lead is brazed to another metallized portion of the header. A second ceramic member separates the emitter lead from the base and collector leads which are brazed to the top of the ceramic member. The collector current path extends from the metallized area on the header through the second ceramic member to the collector lead.

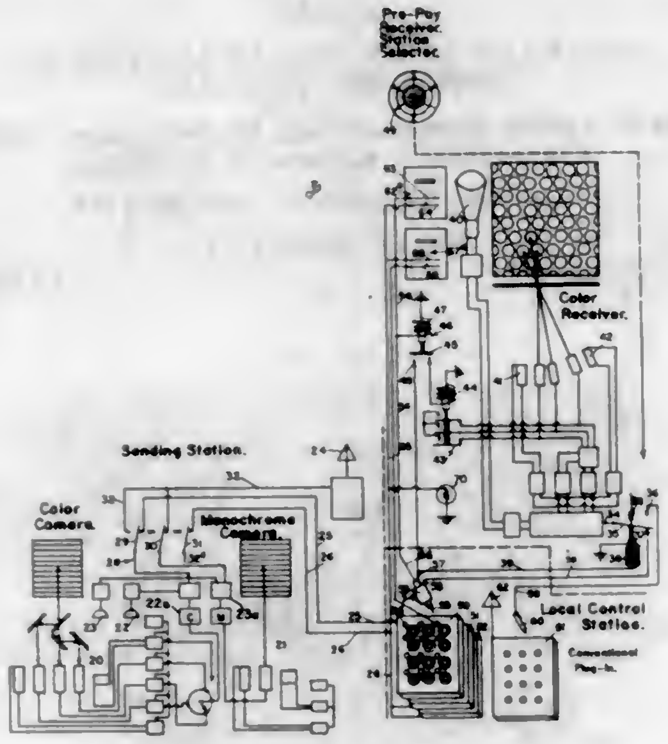
### 3,478,162
## DUAL QUALITY SUBSCRIPTION TELEVISION SYSTEM

**Thomas A. Banning, Jr., 5500–5520 S. Shore Drive, Apt. 1408, Chicago, Ill. 60637**

**Continuation-in-part of application Ser. No. 459,399, May 27, 1965. This application Sept. 27, 1965, Ser. No. 490,402**

**Int. Cl. H04m** *7/06*

**U.S. Cl. 178—5.6** **39 Claims**



This case discloses a television system adapted to use in highly congested areas, where wired operations may be economically installed, e.g., large hotels, and similar installations. Various signalling provisions are provided for informing the attendant controlling the operations, as to the desires of the operator of each receiver; with provision for reception of broadcast renditions of the program, free; the broadcast renditions being of the inferior aesthetic quality—the wired transmission renditions being of superior aesthetic quality, requiring pay or subscription.

### 3,478,163
## REDUCED TIME TRANSMISSION SYSTEM

**André Edouard Joseph Chatelon, Montrouge, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware**

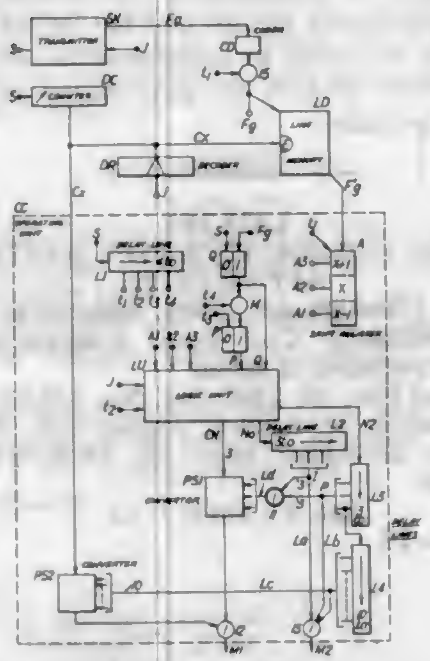
**Filed May 17, 1966, Ser. No. 550,767**

**Claims priority, application France, June 23, 1965, 21,885**

**Int. Cl. H04n** *7/12*

**U.S. Cl. 178—6** **9 Claims**

A coding process for a reduced-time transmission system wherein an address code is transmitted at each transition from white to black followed by repetition codes which are sent as long as the scanned dots are black. Before effecting the transition coding, the shade of the corresponding dot of the preceding scanned line and of the two adjacent dots on said line are examined, and if



one of these three dots is black, there is transmitted only a particular repetition code which brings a substantial reduction of transmitted data.

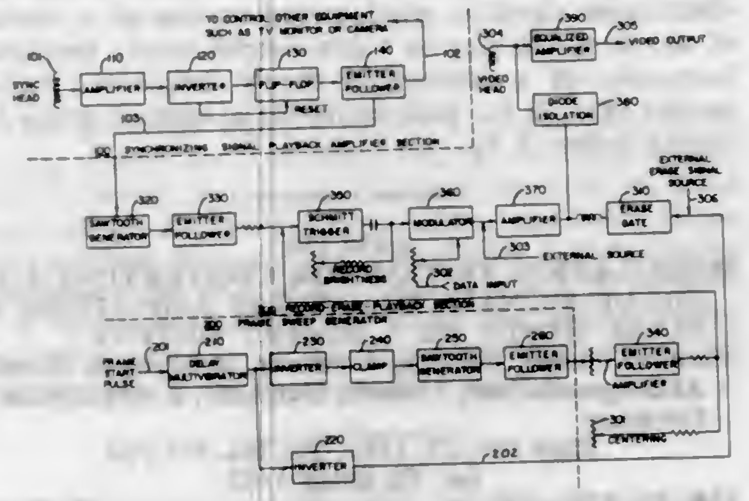
### 3,478,164
## SCAN CONVERTER AND TELEVISION SCAN CONVERTER SYSTEM

**Glen R. Southworth, Boulder, Colo., assignor to Colorado Video Incorporated, Boulder, Colo., a corporation of Colorado**

**Filed Dec. 23, 1966, Ser. No. 604,232**

**Int. Cl. H04n** *5/76*

**U.S. Cl. 178—6.6** **9 Claims**



1. Apparatus for conversion of signals to a standard television rate from any received rate comprising
  signal generating means to transmit video signals;
  signal conversion means receiving said video signals through operative connection to said signal generating means;
  viewing means operatively connected to said signal conversion means to receive video signals therefrom;
  synchronizing means to lock together the operation of said signal generating means and said signal conversion means through operative connections to each of said means;
  and video memory means for storing information operatively connected to said signal conversion means;
said signal conversion means including
  recording circuit means to form timed modulated pulses operatively connected to said video memory means,
  synchronizing signal means connected to said recording circuit means to supply a synchronizing signal thereto,
  sweep generator means to provide a low frequency time base connected to said recording circuit means,
  and playback amplifier means operatively connecting said video memory means to said viewing means.

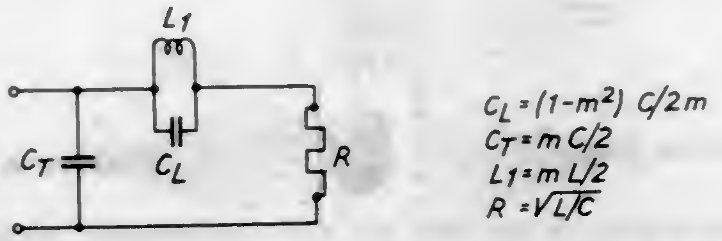
### 3,478,165
## BALANCING NETWORK FOR LOADED LINE

**Eric Waldelius, Bromma, Sweden, assignor to Telefonaktiebolaget LM Ericsson, Stockholm, Sweden, a corporation of Sweden**

**Filed Sept. 6, 1967, Ser. No. 665,905**

**Int. Cl. H01b** *11/14, 11/16*

**U.S. Cl. 178—45** **2 Claims**



A balancing network is provided for a loaded line having a plurality of loaded line sections with a distributed capacitance C and a loading coil with inductance L. The balancing network comprises a series impedance consisting of an inductor and a capacitor connected in parallel, and a shunt capacitor connected to one side of the series impedance. The values of the elements are chosen according to formulae which are dependent on the distributed capacitances of the line sections adjacent to the balancing network.

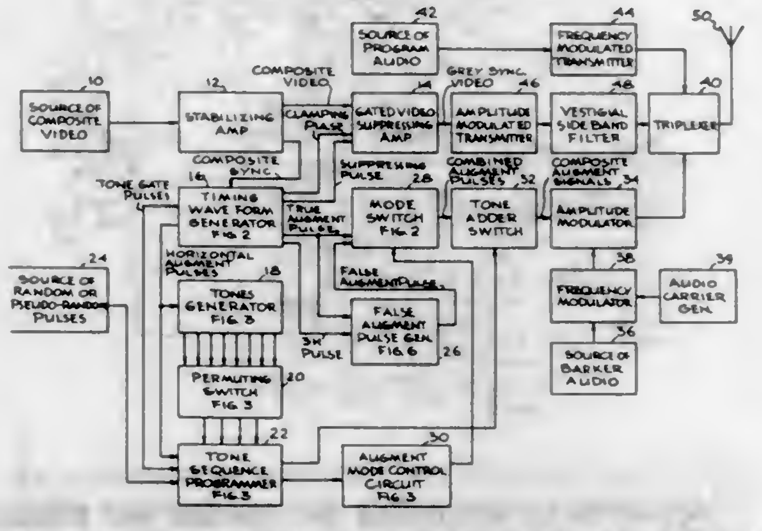
### 3,478,166
## CRYPTOGRAPHIC SUBSCRIPTION TELEVISION SYSTEM WITH GREY SYNC AND DUAL MODE AUGMENTING SIGNALS

**Abraham M. Reiter, Reseda, and Patrick R. J. Court, Los Angeles, Calif., assignors to International Telemeter Corporation, Los Angeles, Calif., a corporation of New York**

**Filed Sept. 9, 1963, Ser. No. 307,639**

**Int. Cl. H04n** *1/44*

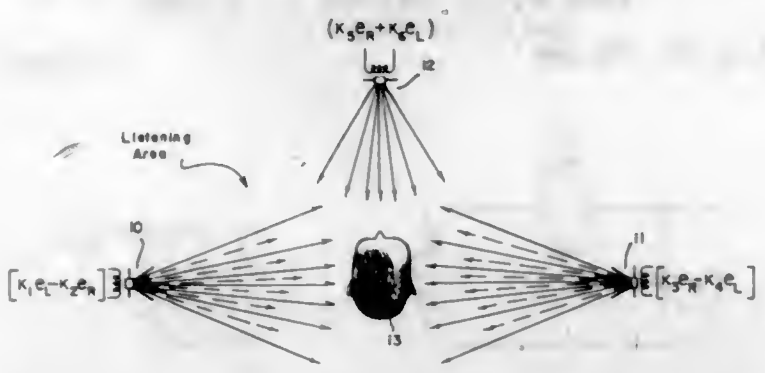
**U.S. Cl. 178—5.1** **37 Claims**



A transmitter produces composite video signals with the sync component reduced in amplitude to grey level, also program audio and barker audio signals. Sync signal augmenting pulses are generated in two modes, one true and one false, which are randomly interchangeably transmitted over two transmission channels as determined by a control signal, which is transmitted to enable decoding. A receiving attachment enables an ordinary television receiver, by use of the control signal, to select the proper channel for true augmenting pulses which restore the grey sync pulses to their normal amplitude. Barker audio is provided to the receiver until the program is properly decoded.

### 3,478,167
### THREE SPEAKER STEREOPHONIC AUDIO SYSTEM

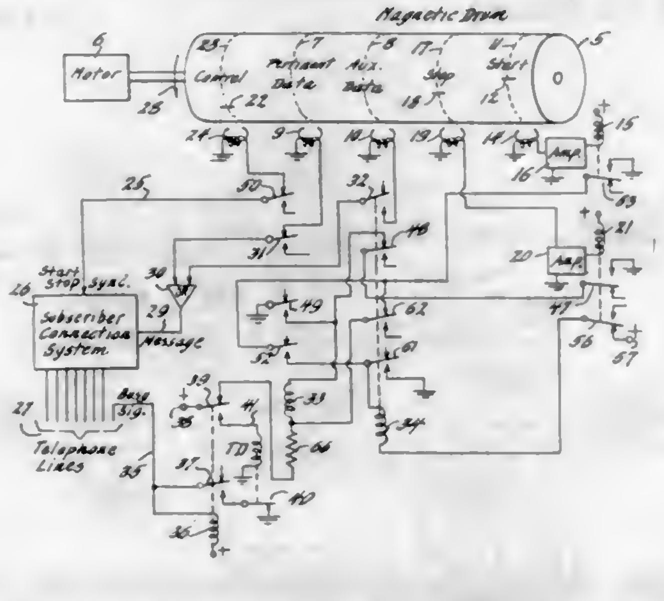
**Morris Sorkin, 362 19th St., Santa Monica, Calif. 90402**
**Filed July 12, 1965, Ser. No. 471,106**
**Int. Cl. H03f** *3/68*
**U.S. Cl. 179—1** **5 Claims**



A stereophonic audio system is described using three speakers located in a triangular arrangement. Sound from two opposing speakers is directed into a listening area in such a manner that opposite phased identical signals are cancelled. Mixing of the signals feeding the speakers or mixing the sound in the listening area is possible. The third speaker directs sound derived equally from each of said opposing speakers into said listening area.

### 3,478,168
### TELEPHONE ANNOUNCEMENT CONTROL TO SELECT MESSAGE CONTENT FOR NORMAL AND OVERLOAD SUBSCRIBER CONDITIONS

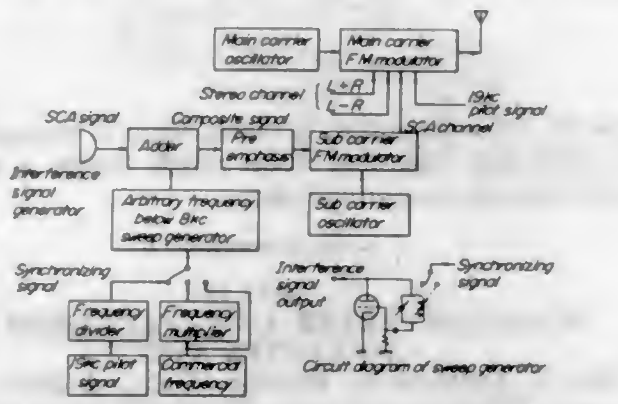
**Ellis H. Bryant, Jr., Atlanta, Ga., assignor to The Audichron Company, Atlanta, Ga., a corporation of Georgia**
**Filed Oct. 1, 1965, Ser. No. 491,912**
**Int. Cl. H04n** *7/02*
**U.S. Cl. 179—6** **6 Claims**



Apparatus for controlling the selection and transmission of recorded information from two information groups containing data of the same data intervals to a receiver wherein relays are actuated by cyclic timing signals to select information from one or both of the information groups to reduce or increase the information transmitted in a reproduction cycle in accordance with the monitored operating load of the receiver whereby the number of data transmissions is increased during the periods of receiver overloads by transmitting information from only one of the information groups and the length of the data transmission is increased to accommodate successive data transmission from each of the information groups during non-overload periods.

### 3,478,169
### SECRET SCA COMMUNICATION SYSTEMS AND APPARATUS

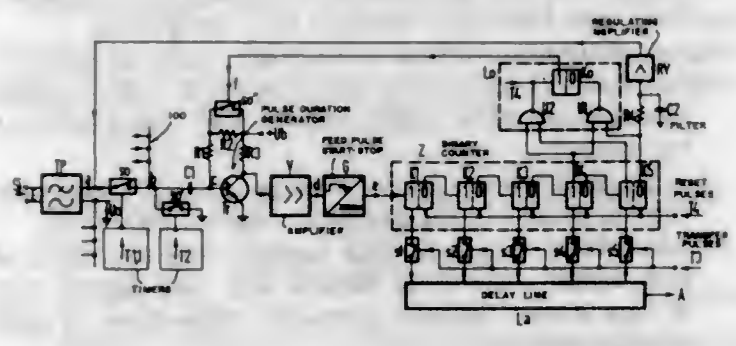
**Hisashi Saito, Hirakata-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka, Japan, a corporation of Japan**
**Filed Feb. 19, 1965, Ser. No. 434,038**
**Claims priority, application Japan, Feb. 24, 1964, 39/9,883, 39/9,884; May 12, 1964, 39/27,025, 39/27,026**
**Int. Cl. H04j** *1/02*
**U.S. Cl. 179—15** **8 Claims**



A subsidiary communication authorization communication system including a transmitting and receiving side is disclosed. The system includes a means for inserting a disturbance signal at the transmitting side, and for removing the disturbance signal at said receiver side. The disturbance signal is synchronized by one of a number of signals which may be a commercial supply frequency, harmonics of a commercial supply frequency, subharmonics of a 19 kc. pilot carrier or a selected audio frequency below 8 kc.

### 3,478,170
### MODULATION SYSTEM FOR CONVERTING ANALOGUE SIGNALS TO A PULSE AMPLITUDE TO PULSE WIDTH TO A BINARY OUTPUT

**Manfred Hanni, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany**
**Filed Oct. 22, 1965, Ser. No. 501,754**
**Int. Cl. H04b** *1/02*
**U.S. Cl. 179—15** **7 Claims**

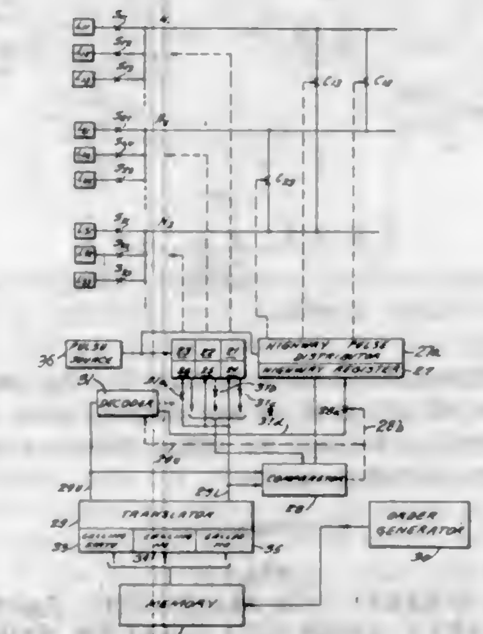


A modulation and compandor circuit for transmitting and processing intelligence and comprising a switching means for converting an analog signal into a plurality of

amplitude modulated pulses and a switching circuit receiving the amplitude modulated pulses to convert them into pulse length modulated pulses which circuit includes a charging circuit with variable time constant, a pulse generator keyed by the variable length pulses to emit the number of pulses corresponding to the length of the pulses, a binary counter receiving the output of the pulse generator and providing an output back to the amplitude to pulse length converter to vary the time constant of the charging circuit.

### 3,478,171
### TIME-DIVISION TELEPHONE EXCHANGE SYSTEM HAVING A VARIABLY SPACED REPETITIVE SAMPLING RATE

**Nobuhiko Shimasaki and Jiro Okuda, Tokyo, Japan, assignors to Nippon Electric Company, Ltd., Tokyo, Japan**
**Continuation of application Ser. No. 441,980, Mar. 23, 1965. This application Jan. 10, 1969, Ser. No. 797,325**
**Int. Cl. H04j** *3/12*
**U.S. Cl. 179—15** **6 Claims**

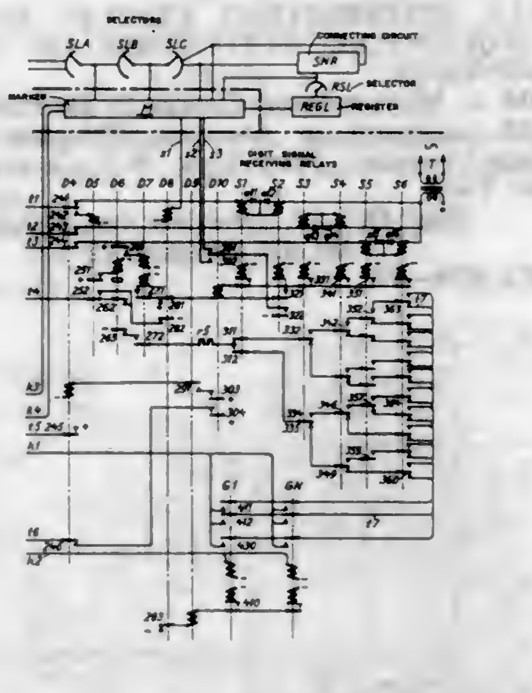


This disclosure broadly teaches a time-division multiplexing system for connecting calling and called parties within a switching network in which the available paths and available time slots between calling and called parties are examined for each time slot during a time interval commonly referred to as the guard time with the flexibility of the system enabling the connection between calling and called party to occupy time slots which are spaced from one another by non-constant intervals.

### 3,478,172
### AUTOMATIC TELEPHONE EXCHANGE FOR SUBSCRIBER'S INSTRUMENTS WITH PUSH BUTTON KEYSENDING

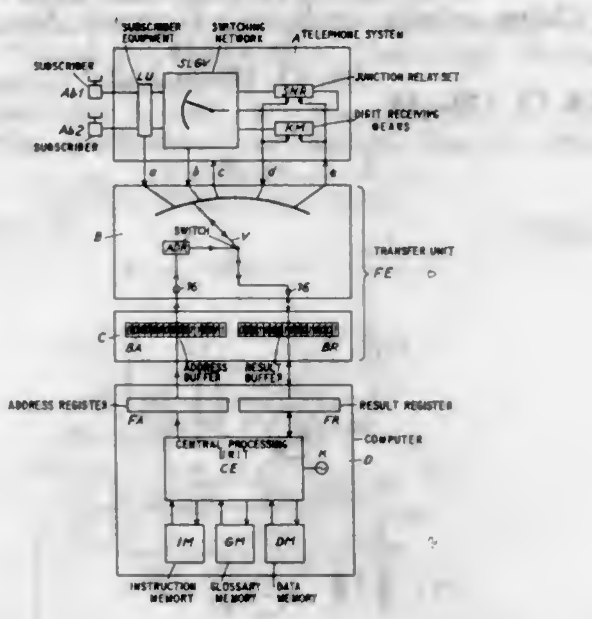
**Harold John Carl Björk, Hagersten, and Sven Gustav Ingemar Kilander, Stuvsta, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden**
**Filed June 3, 1965, Ser. No. 460,961**
**Claims priority, application Sweden, June 9, 1964, 7,005/64**
**Int. Cl. H04m** *3/62*
**U.S. Cl. 179—18** **1 Claim**

A telephone system includes an exchange and a plurality of subscriber's instruments, each connected via a separate subscriber's line to the exchange. Some of the instruments have digit signalling push buttons, and the exchange has a subscriber's line equipment for each of these instruments. An identifier in the exchange is provided with digit signal receiving relays. Contacts in the line equipment of a calling instrument connect the associated subscriber's line to the digit signal receiving relays when the calling instrument is identified by the identifier. Contact means actuated by the digit signal receiving relays operate cooperatively with the identifier in accordance with its calling line subscriber's line identification, via an intermediate connection, to indicate the called subscriber's line identification. The called subscriber's identification is transmitted directly to a marker for establishing a connection, via selectors, between the calling and called subscriber's lines.



### 3,478,173
### ELECTRONICALLY CONTROLLED TELECOMMUNICATION SYSTEM

**Vilnis Lapsevskis and Ake Svensson, Hagersten, Sweden, assignors to Telefonaktiebolaget LM Ericsson, Stockholm, Sweden, a corporation of Sweden**
**Filed June 21, 1966, Ser. No. 559,202**
**Claims priority, application Sweden, June 30, 1965, 8,620/65**
**Int. Cl. H04m** *3/42*
**U.S. Cl. 179—18** **3 Claims**



An electronically controlled telecommunication system includes electronic control means which operate via binary numbers representing voltage relay units. These units in turn, operate connections for cross bar switches each including a plurality of contact bridges. The indicating contacts of the bridges coact with potential dividers to set up coded combinations of voltage representing a binary number indicating the state of the bridges of a selected cross bar switch. Reading circuits transmit the combinations of voltage to the electronic control means.

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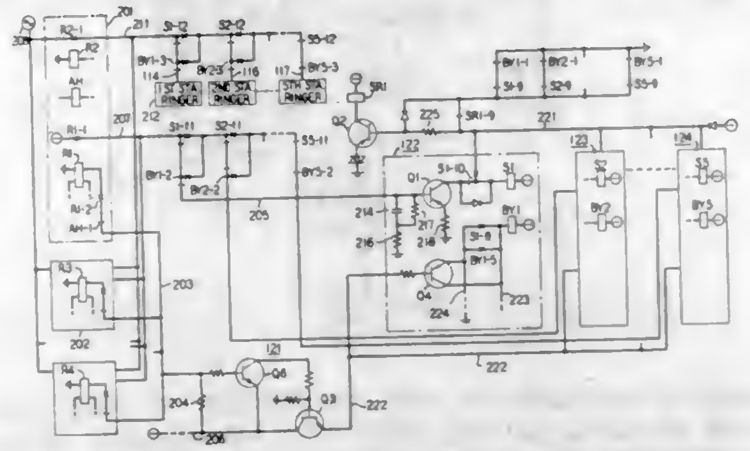
## 3,478,174
## CALL DISTRIBUTING CIRCUIT UTILIZING SEQUENTIAL ACTIVATION OF STATION RINGERS

**Donald A. MacLeod and George P. Maddock, Oakland, Calif., assignors to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York**

**Filed Oct. 17, 1966, Ser. No. 587,305**

**Int. Cl. H04m** *3/42*

**U.S. Cl. 179—18** **10 Claims**



We disclose an arrangement for distributing calls among a group of telephone stations by the sequential enablement of the ringers at those stations. An incoming call causes the line lamps at all stations to flash but only one ringer is activated indicating the station to which the call should be distributed. After answering the call at a given station, that station's ringer is bypassed so that the next call causes the subsequent station ringer to be activated. In the event of simultaneous calls, one call is automatically advanced to cause ringing of a second station.

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## 3,478,175
## DIRECT CURRENT SIGNAL RECEIVER

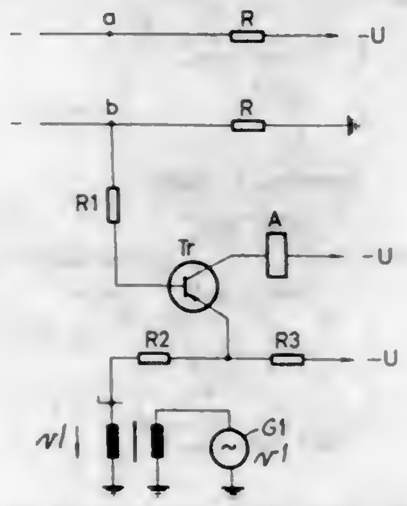
**Eberhard Herter, Stuttgart, Germany, assignor to International Standard Electric Corporation**

**Filed Nov. 3, 1966, Ser. No. 591,731**

**Claims priority, application Germany, Nov. 9, 1965, St 24,616**

**Int. Cl. H04m** *3/20*

**U.S. Cl. 179—18** **7 Claims**



A stable control AC voltage is coupled into the control circuit of a transistor switching stage which controls the power to a succeeding relay. The transistor is subject to control from a DC source and in its quiescent state cannot be caused to operate by the AC voltage alone. Similarly, when operating fully in accordance with design, the AC voltage alone will not interfere with continued operation of the transistor. If unusual interference signals are encountered, however, the AC signal will prevent power excursions which could damage the transistor and also will produce anomalous outputs from the transistor which can be used to signal failure of the system.

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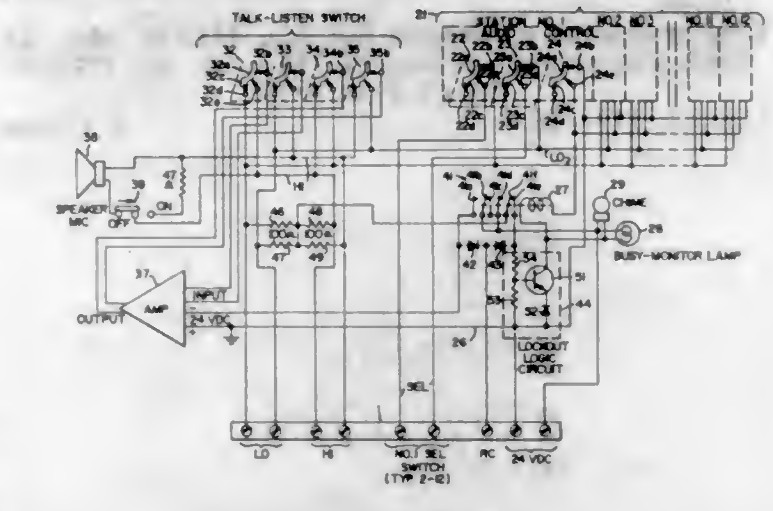
## 3,478,176
## INTERCOMMUNICATIONS SYSTEM

**David Pugatch, Lafayette, Calif., assignor to Fisher Berkeley Corporation, Emeryville, Calif., a corporation of California**

**Filed July 11, 1966, Ser. No. 564,193**

**Int. Cl. H04m** *1/70*

**U.S. Cl. 179—39** **5 Claims**



An intercommunications system having master and staff stations in which a voltage derived from a simplex circuit is used for locking out other stations not involved in the present communication.

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## 3,478,177
## ERASING SYSTEM FOR MAGNETIC TAPES WITH ANGULARLY DISPOSED TRACKS THEREON

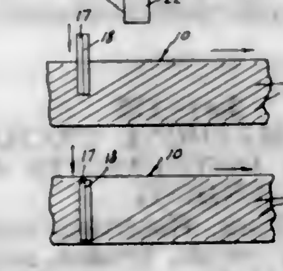
**Tsuneo Morita, Tokyo, Japan, assignor to Sony Corporation, Shinagawa-ku, Tokyo, Japan**

**Filed Nov. 3, 1966, Ser. No. 591,775**

**Claims priority, application Japan, Nov. 4, 1965, 40/67,633, 40/67,634**

**Int. Cl. G11b** *5/02*

**U.S. Cl. 179—100.2** **7 Claims**



This invention deals with an erasing system for magnetic tapes which have angularly disposed tracks recorded thereon which permits complete erasing of the recorded tracks in a direction parallel to the direction of the tracks. This is achieved by either moving an erase head having a gap perpendicular to the line of movement of the tape in a direction perpendicular to the longitudinal axis of the tape while controlling the tape speed and speed of erase head movement so that the effective direction of erasing is parallel to the direction in which the tracks were recorded, or by using a stationary erase head disposed within a slotted rotatable casing, and correlating the speed of rotation of the casing with the speed of tape travel so that the tape is erased by incremental contact with the head along the line of recording.

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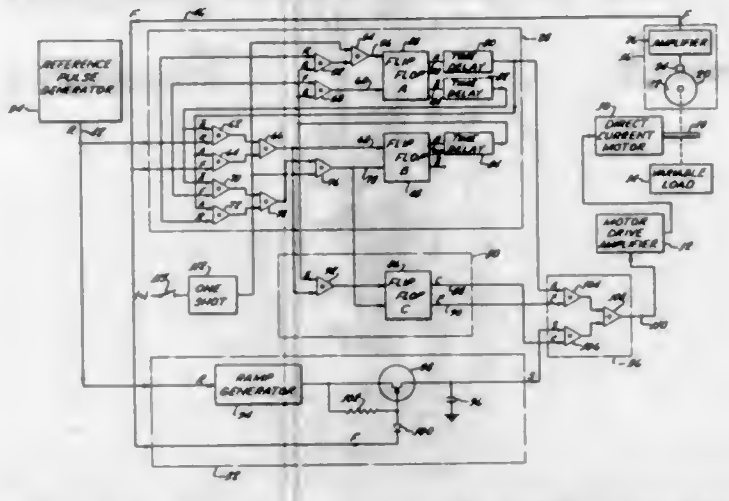
## 3,478,178
## SWITCHED FREQUENCY AND PHASE COMPARATOR

**Alan G. Grace, San Carlos, Calif., assignor, by mesne assignments, to Alan R. Fowler, Orange, Calif., trustee**

**Filed Mar. 24, 1967, Ser. No. 625,788**

**Int. Cl. H02k** *27/20*

**U.S. Cl. 179—100.2** **4 Claims**



A digital frequency comparator generates square waves responsive to reference and feedback signals in a servo loop such that the square wave is always up when the feedback pulse frequency is too low, down when the feedback pulse frequency is too high and alternating with variable pulse widths when the feedback pulse frequency is synchronized with the reference pulse frequency. Synchronization is detected, and a control signal for the servo loop is provided through a switching means which selects the output of the digital frequency comparator when the feedback frequency is higher or lower than the reference frequency and the output of a sample and hold phase comparator when the reference and feedback pulses are in synchronization.

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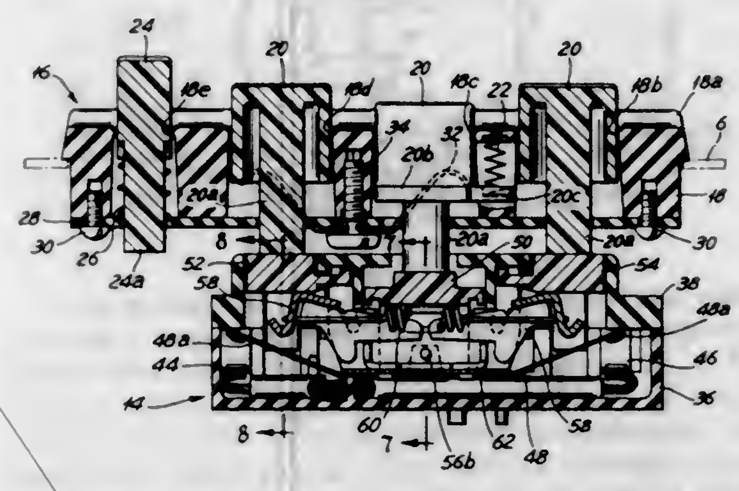
## 3,478,179
## MULTIPOSITION SELECTOR SWITCH FOR AN ENCLOSED ELECTRICAL CONTROL STATION

**James R. Hanson, Brookfield, and Arthur F. Kolb, Mequon, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware**

**Filed Apr. 30, 1968, Ser. No. 725,436**

**Int. Cl. H01h** *9/26*

**U.S. Cl. 200—5** **4 Claims**



A snap action pushbutton switch mounted within an enclosure is externally operated by pushbutton operators mounted on and extending through a removable cover of the enclosure. The external operators are biased to follow the positions of the switch buttons. A pair of pivotable levers are connected through an overcenter spring to individually actuate cooperating contact sets upon respective button depression while a slide-bar interlock prevents simultaneous actuation of more than one contact set. A separate button is depressible to open any closed contact set.

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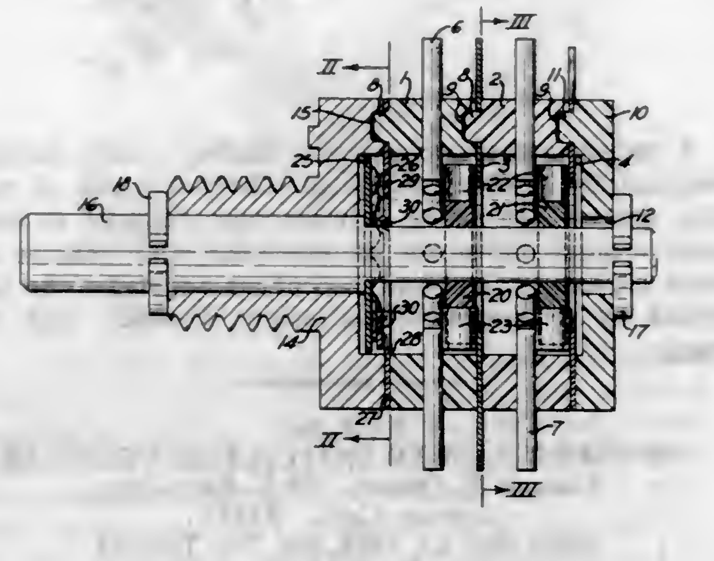
## 3,478,180
## ROTARY ELECTRIC SWITCH

**Mogens W. Bang, Ridgway, Pa., assignor to Stockpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania**

**Filed May 14, 1968, Ser. No. 735,488**

**Int. Cl. H01h** *19/58, 21/78*

**U.S. Cl. 200—11** **11 Claims**



Spaced metal contact pins, rigidly mounted in a stator ring of insulating material radially thereof, project inwardly and outwardly from the ring. A rotor within the ring carries one or more electric contacts for engaging each pin in succession when the rotor is turned. A metal collector may be seated against the stator ring and overlie the pins for continuous engagement by the rotor contacts.

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## 3,478,181
## ELECTRIC CIRCUIT CONTROLLERS INCORPORATING TIME-SWITCHES

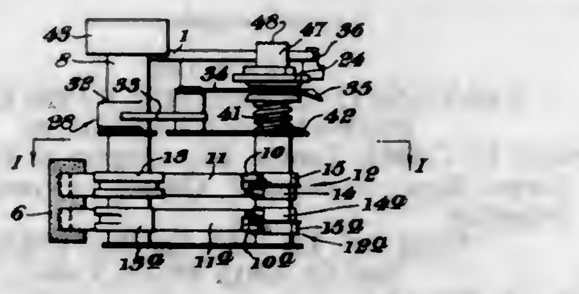
**Edward Thomas Buckerridge, Alan Victor Jones, and William Clifford Rayward, all of Newbridge Works, Bath, Somerset, England**

**Filed Mar. 1, 1967, Ser. No. 619,700**

**Claims priority, application Great Britain, Mar. 10, 1966, 10,538/66**

**Int. Cl. H01h** *7/08, 43/10*

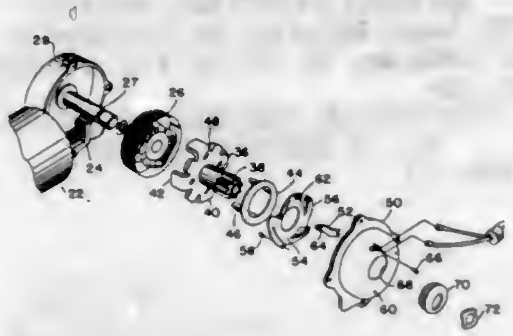
**U.S. Cl. 200—38** **2 Claims**



Electric circuit controller with clock mechanism which changes a circuit including an adjustable cam acting on a contact carrier of a switch of the controller to provide an over-riding condition where the switch is independent of the clock mechanism.

### 3,478,182
### ROTARY DRIVE MECHANISM INCLUDING TORQUE RESPONSIVE SWITCH

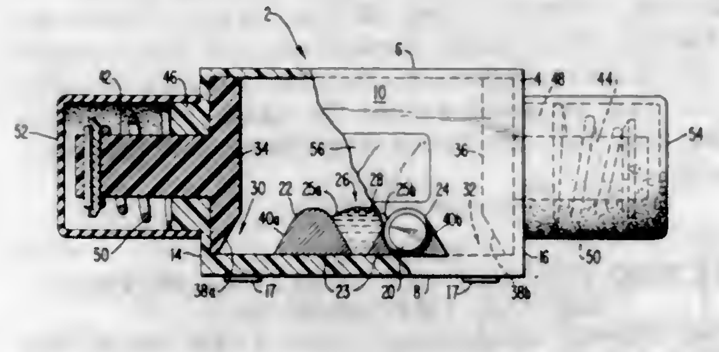
**Joseph C. Littmann, Grosse Pointe Woods, Mich., assignor to Ferro Manufacturing Corporation, Detroit, Mich., a corporation of Michigan**
**Original application May 1, 1967, Ser. No. 634,949. Divided and this application Aug. 28, 1967, Ser. No. 663,717**
**Int. Cl. H01h** *35/00, 35/02, 35/06*
**U.S. Cl. 200—61.46** **7 Claims**



A torque responsive switch including rotary elements designed for relative movement about the axis of rotation, cam means acting between said elements to effect relative axial movement therebetween upon relative angular movement, and switch contacts adapted to be controlled by relative axial movement between said elements.

### 3,478,183
### MERCURY SAFETY SWITCH FOR VEHICLES

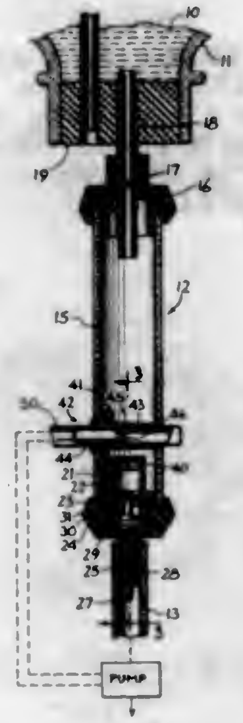
**Emmett H. Osteen, 700 E. Parmenter, Lamar, Colo. 81052**
**Filed Oct. 23, 1968, Ser. No. 769,864**
**Int. Cl. H01h** *35/02, 35/14*
**U.S. Cl. 200—61.47** **6 Claims**



A pool of mercury is confined in a trough between two spaced electrodes so as normally to bridge the electrodes. Pockets on opposite sides of the trough trap the mercury when the latter is dislodged from the trough by impact, tilting or inversion of the switch. Plungers actuated by push buttons are provided for pushing dislodged mercury from the pockets back into the trough to reset the switch.

### 3,478,184
### VALVE-SWITCH ASSEMBLY FOR USE IN INTRAVENOUS FEEDING

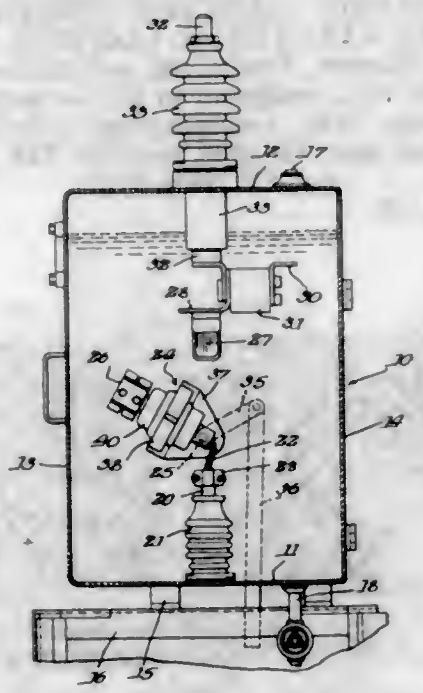
**Robert D. Cofoid, Tonica, Ill., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware**
**Filed Oct. 12, 1967, Ser. No. 674,923**
**Int. Cl. H01h** *35/18, 9/00*
**U.S. Cl. 200—84** **6 Claims**



A magnetic float valve and switch assembly for use in the intravenous administration of liquids. A housing defines a valve chamber having an inlet at the top, an exit at the bottom, and containing a float valve element cooperating with a valve seat at the bottom of the valve chamber. A liquid tight switch casing is disposed within the valve chamber above the float valve element for receiving a removable switch which is actuated by a magnetic portion on the float valve element. The switch is closed to actuate a feed pump when the float valve element is displaced upwardly off the valve seat, and is opened to deactuate the pump when the float valve element is seated. The float valve element is designed to be displaced upwardly off its valve seat only when liquid is present in the valve chamber and the switch is inserted in the switch casing, so that the valve cannot be opened without closing the pump switch at the same time. Conversely, the pump switch cannot be opened without closing the valve at the same time.

### 3,478,185
### SWITCH AND CONTACT ARRANGEMENT

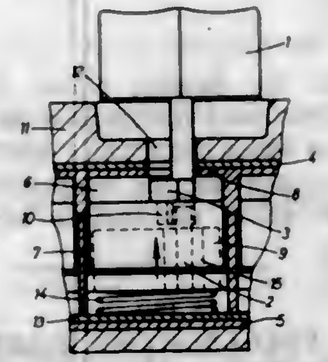
**Gordon O. Perkins, Flossmoor, and Howard E. Swanson, Chicago, Ill., assignors to G & W Electric Specialty Company, Blue Island, Ill., a corporation of Illinois**
**Filed Oct. 31, 1967, Ser. No. 679,335**
**Int. Cl. H01h** *3/00, 9/00*
**U.S. Cl. 200—166** **6 Claims**



The improved switch structure and contact arrangement is capable of controlling currents of high amperage. Flexible conductors are employed between the stationary current supply terminal and the movable switch terminals. The contact shoes carried by the movable switch terminals respectively, are yieldingly biased in a direction for good contact with the stationary contact member and an arrangement including gap plates and pregap plates is employed for controlling the spread of the shoes when in and out of contact with the stationary contact member.

### 3,478,186
### PUSHBUTTON ASSEMBLY INCORPORATING SELF-FASTENING ELEMENTS

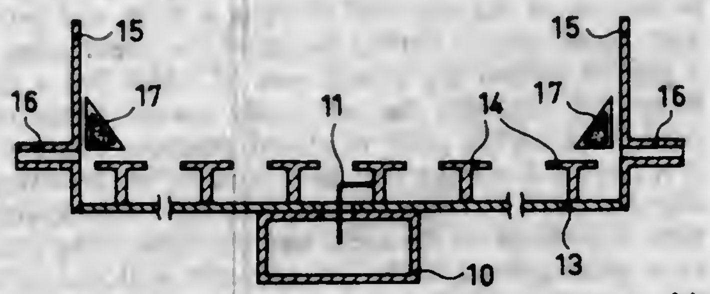
**Ludwig Bauer, Stuttgart-Stammheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware**
**Filed May 2, 1968, Ser. No. 726,036**
**Claims priority, application Germany, May 11, 1967, St 26,860**
**Int. Cl. H01h** *3/02, 3/12*
**U.S. Cl. 200—172** **10 Claims**



A pushbutton assembly having self-locking elements is provided. The shaft of a pushbutton is provided with a stud which is inserted through a keyhole in a housing. The stud pushes against a spring-biased magnet, is turned to fit into a recess in the spring-biased magnet, and is locked in the recess when the spring restores the magnet to its original position. The pushbutton is not removable by further pushing due to interaction of the spring, the stud and the recess. However, the stud can be dislodged from the recess by a pin inserted through a suitable hole which is hidden by a locked cover.

### 3,478,187
### HEATING ARRANGEMENT UTILIZING MICROWAVES

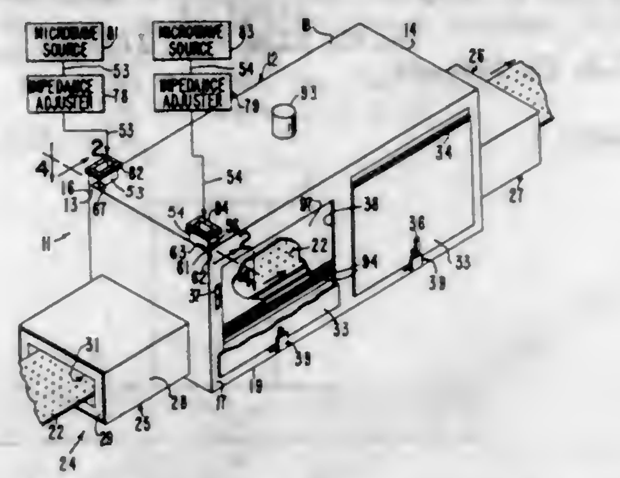
**Nils Bertil Agdur, Danderyd, and Per Olof Gunnar Hedvall, Akersberga, Sweden, assignors to Skandinaviska Processinstrument AB, Stockholm, Sweden, a company of Sweden**
**Filed Oct. 6, 1967, Ser. No. 673,506**
**Claims priority, application Sweden, Oct. 19, 1966, 14,242/66**
**Int. Cl. H05b** *9/06*
**U.S. Cl. 219—10.55** **12 Claims**



There is disclosed a microwave heating apparatus which includes a source of microwave power which generates microwaves having a given operating wavelength. A microwave structure is connected to the source of microwave power. The structure includes a conductive base plate from which extend a plurality of T-shaped cross-section microwave elements disposed in regular array. The elements are spaced from each other by a distance which is so much smaller than the free-space operating wavelength of the microwaves that the microwaves propagate along the structure with a phase velocity which is less than the free-space velocity of the microwaves.

### 3,478,188
### MULTIMODE CAVITY RESONATOR WITH TWO COUPLING HOLES AT WALL CORNERS

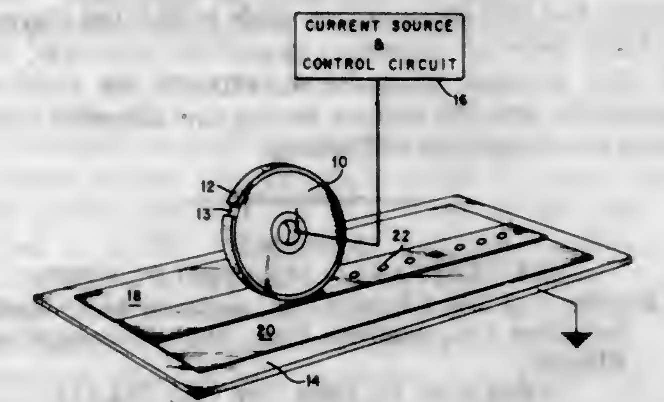
**Jerome R. White. San Carlos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California**
**Filed Oct. 13, 1967, Ser. No. 675,172**
**Int. Cl. H05b** *9/06, 5/00;* **H01p** *1/00*
**U.S. Cl. 219—10.55** **10 Claims**



A rectangular multimode cavity resonator is excited by microwave energy introduced into the resonator through two coupling holes located at different corners of one of the boundary walls forming the rectangular cavity resonator. Each of two dominant mode TE waveguides couple the cavity resonator at its two coupling holes to a microwave energy source. The waveguides are oriented relative to each other so that the electric field component of the electromagnetic field propagated by one of the waveguides is in a direction transverse to that of the field propagated by the other waveguide in the plane of the wall defining the coupling holes. Mechanical mode stirrers are mounted within the cavity resonator and coupled to a suitable drive motor located exteriorly of the cavity resonator. Supporting structure is provided within the cavity resonator to support the material being heated at a distance of about 2½λ from the nearest boundary wall.

### 3,478,189
### WHEEL-TYPE ELECTRODE FOR WELDING BERYLLIUM METAL

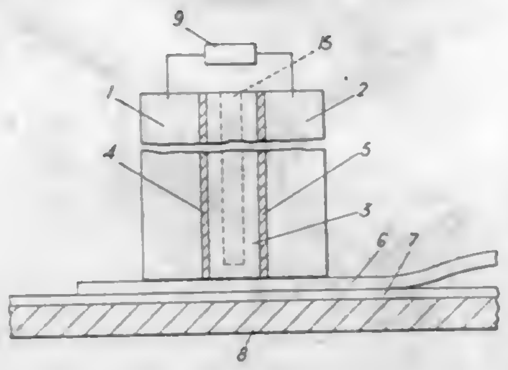
**Chester L. Estes, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Oct. 19, 1967, Ser. No. 677,009**
**Int. Cl. B23k** *11/06, 9/24*
**U.S. Cl. 219—81** **3 Claims**



In the art of resistance spot welding, a wheel-type electrode for welding beryllium metal is provided with a coating of beryllium-containing metal on the working face thereof to enhance the welding characteristics of the wheel and improve the properties of the weld. Electrode "sticking" and deposition of electrode material in the weldment are virtually eliminated by employing this coated electrode.

### 3,478,190
### PARALLEL-GAP WELDING ELECTRODE WITH INTERPOSED HEAT SINKS

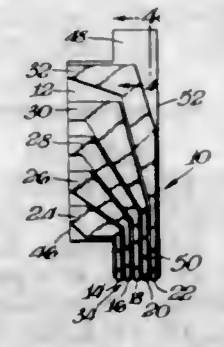
**Christopher J. Dawes, Abington Hall, Cambridge, England, assignor to British Welding Research Association, London, England, a body corporation of Great Britain**
**Filed June 27, 1966, Ser. No. 560,445**
**Claims priority, application Great Britain, June 29, 1965, 27,561/65**
**Int. Cl. B23k** *9/28, 11/10*
**U.S. Cl. 219—86** **5 Claims**



An electrode assembly for parallel-gap welding is disclosed in which the electrodes are separated by a heat sink member positioned to contact the workpieces together with the electrodes.

### 3,478,191
### THERMAL PRINT HEAD

**Theodore W. Johnson, Charles G. Kalt, and Jacob H. Martin, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts**
**Filed Jan. 23, 1967, Ser. No. 611,151**
**Int. Cl. H05b** *1/00, 11/00, 3/16*
**U.S. Cl. 219—216** **4 Claims**

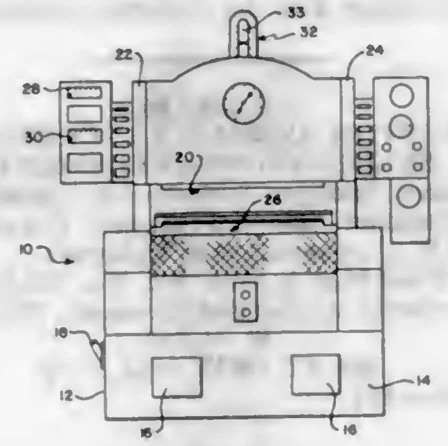


A thin underlayer member interposed between a substrate and electrical heating element provides high efficiency and fast thermal rise while permitting thermal dissipation between pulses. A protective overlayer, capable of high thermal transmission, protects the element and provides a printing surface having low adhesion capability and a low coefficient of friction.

### 3,478,192
### ELECTRICALLY HEATED PLATEN

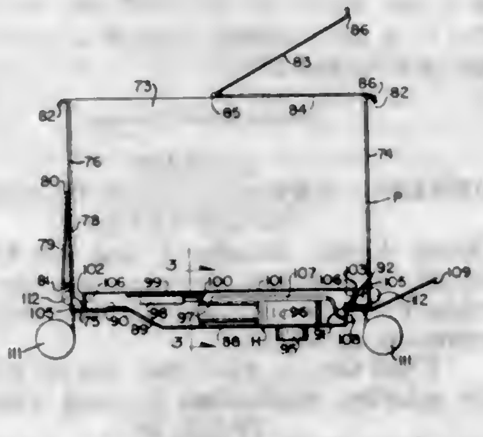
**Robert C. Fink, Chicago, Ill., assignor to Ostrander-Seymour Co., Melrose Park, Ill., a corporation of Illinois**
**Filed Apr. 25, 1968, Ser. No. 724,123**
**Int. Cl. H05b** *1/00, 3/02;* **F28d** *15/00*
**U.S. Cl. 219—243** **2 Claims**

Heating plates having a number of circulating convoluted openings therein in an off-center relationship with heating elements which are affixed to the heating plates to electrically heat them. A closed circulating system including an expansion chamber and a small capacity pump is employed to circulate the oil through the convoluted openings within the heating plates. The oil circulated through the convoluted openings is heated by the same heating elements which electrically heat the heating plates, and functions to equalize the temperature of the heating plates, over the entire top surface area thereof.



### 3,478,193
### FOOD SERVICE CARTS

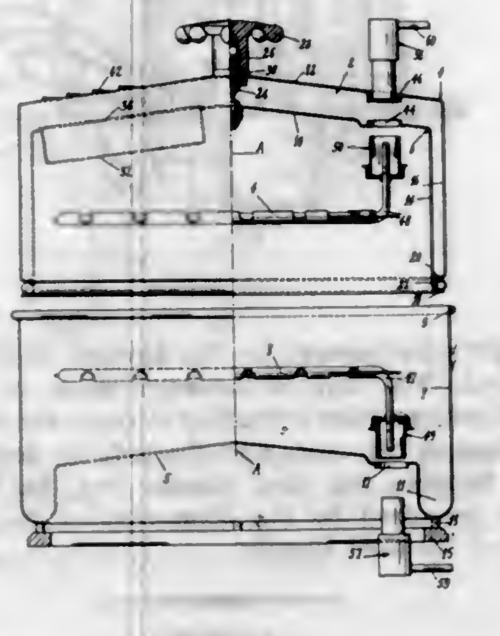
**Victor D. Molitor, 2829 S. Santa Fe Drive, Englewood, Colo. 80110**
**Original application Feb. 7, 1966, Ser. No. 533,114, now Patent No. 3,340,380, dated Sept. 5, 1967. Divided and this application July 17, 1967, Ser. No. 653,960**
**Int. Cl. F27d** *1/18;* **F24d** *5/04*
**U.S. Cl. 219—386** **3 Claims**



Food service carts useful in a food service system for serving a large group of people, such as at a banquet. One cart is a hot storage cart having a panel pivoted to the top of the side wall to form a door, and provided with an outwardly curved flange at the upper edge, with a pair of hinged top panels, one of which has a curved flange for engaging the outwardly curved flange of the door, to hold the door in closed position. Another cart is a hot food storage cart having racks for receiving the edges of pans of heated foods, with clips for holding the pans in position on the racks and the racks being attached to a panel spaced inside the adjacent wall and holes in the panel for circulating heated air across and between the pans. Each of the carts has a false bottom mounted over a heater unit and having opposite edges spaced from opposite walls, with a partition dividing the space below the false bottom into a blower area and a heater area. An electrically driven motor is mounted in the lower area and has its outlet in the partition, while an elongated electric heating element is mounted in the heater portion, so that air drawn from within the cart at one edge of the false bottom wall be moved by the blower along the heating element for discharge of the heated air at the opposite edge of the false bottom.

### 3,478,194
### ELECTRIC GRILL FOR FOODS

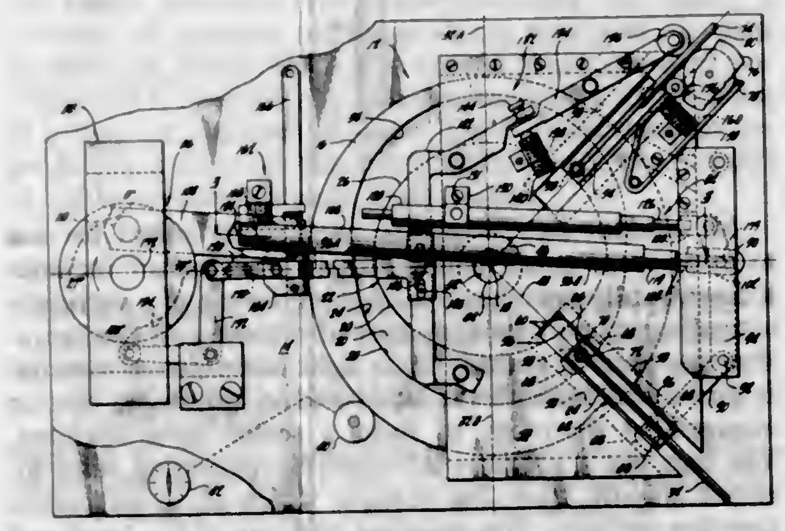
**Henri Lescure, Selongey, France**
**Filed July 27, 1967, Ser. No. 656,371**
**Claims priority, application France, May 18, 1967, 106,740**
**Int. Cl. F27d** *11/00;* **A21b** *1/22;* **H05b** *3/06*
**U.S. Cl. 219—402** **6 Claims**



An electric grill for cooking different foods such as meat, fish, bread and the like, characterized in that it comprises two shells which can be mounted one over the other, each shell being adapted to contain an electric heating resistor of the shielded type with spaced arms. The two shells are mounted in interengaged relation, one of said shells being fitted with clamping members for the purpose of adjusting the relative positions of the two shells and consequently of the heating resistors which are carried by said shells.

### 3,478,195
### DEAD RECKONING INSTRUMENT

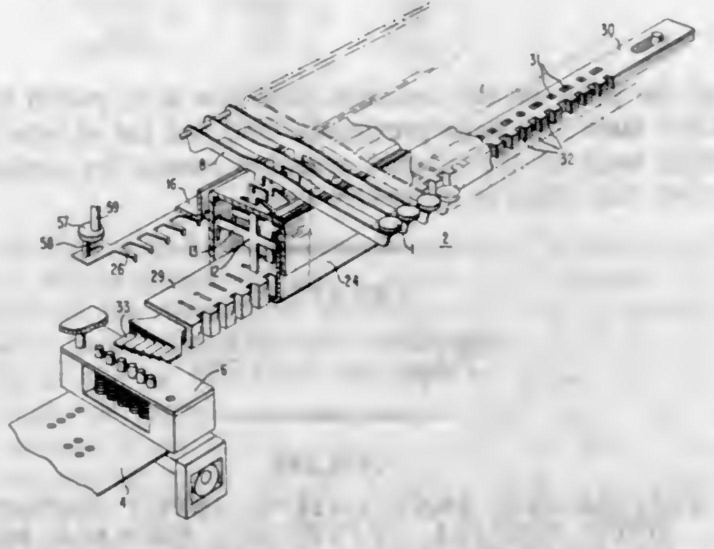
**Walter W. Mayne, 1241 N. East St., Anaheim, Calif. 92805**
**Filed Jan. 2, 1968, Ser. No. 695,264**
**Int. Cl. G06c** *1/00;* **G06g** *7/78;* **G06f** *15/50*
**U.S. Cl. 235—61** **21 Claims**



A dead reckoning instrument which is rotatable about a center and has radially inner and outer spaced apart walls. The walls are arranged to define sine and cosine functions of a unitary maximum spacing between the walls on a pair of perpendicular radiants. A pair of feelers reciprocate in a radial direction on a pair of perpendicular radiants. They actuate respective registers for recording components of the unitary lengths in coordinate directions of a compass. Means are provided to actuate the cam followers periodically in response to a predetermined travel of a vehicle in which the instrument is installed.

### 3,478,196
### DATA ENCODER

**John O. Schaefer, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Oct. 11, 1965, Ser. No. 494,453**
**Int. Cl. G06k** *1/00, 3/00*
**U.S. Cl. 235—61.6** **9 Claims**



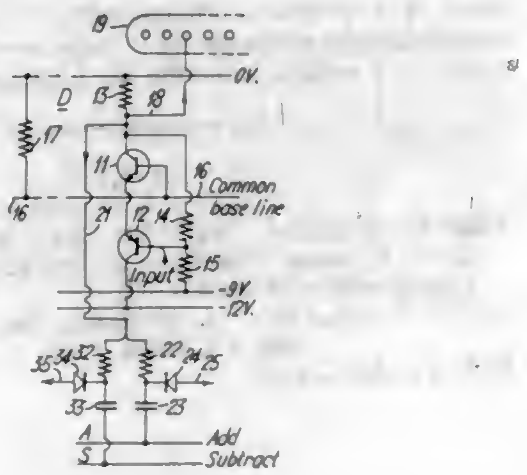
This invention relates to a data encoder activated by a keyboard and having a plurality of coding strips responsive to the keyboard and generating coding representations for a depressed key on the keyboard. The coding strips are engaged by a interposer which in combination with the engaging holes in the coding strips allows the interposer to positively displace selected ones of the coding strips while not displacing unselected coding strips are held firmly by a stop member.

### 3,478,197
### ELECTRONIC COUNTERS

**Ronald Robert McLaren, Edinburgh, Scotland, assignor to Ferranti, Limited, Hollinwood, Lancashire, England, a company of the United Kingdom of Great Britain and Northern Ireland**
**Filed Sept. 20, 1966, Ser. No. 580,704**
**Claims priority, application Great Britain, Sept. 24, 1965, 40,842/65**
**Int. Cl. G06f** *7/38;* **G06g** *7/00*
**U.S. Cl. 235—92** **10 Claims**

1. An electric counter of electrical pulses including for each power a base line common to all the digit stages of that power, and for each digit stage of the power a first and a second transistor of opposite conductivity types connected in series with their emitters commoned and their collectors connected to sources of appropriate relative polarity, the base of the first transistor being connected to the common base line, means for biasing the base of the second transistor in dependence on the conductivity condition of the first transistor, the circuit parameters being such that in operation the stage is either in an ON state in which both transistors are conducting or in an OFF state in which both are non-conducting,

and a switching input point so located that the application of a pulse to that input point when the stage is in its OFF stage switches the stage to its ON state, the circuit parameters being also such that the transient effect



of the pulse on the common base line is to switch to its OFF state any stage previously ON, and for at least one digit stage of the counter response means for actuation when that stage is in its ON state.

## ERRATUM

For Class 235—153 see:
Patent No. 3,478,286

### 3,478,198

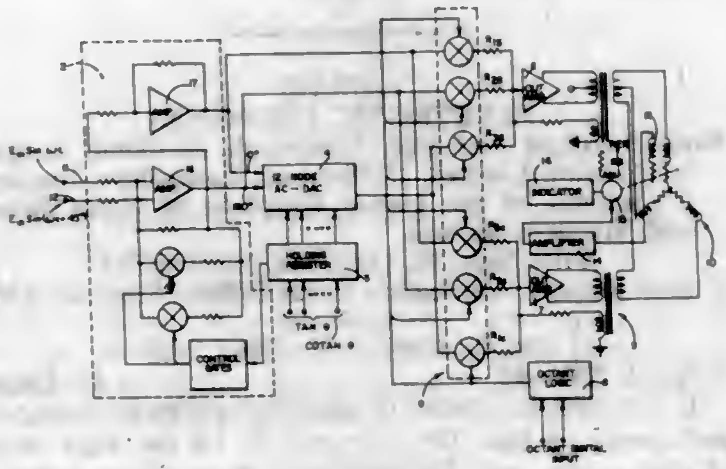
## SYSTEM FOR MODULATING INPUT SIGNALS WITH DIGITAL REFERENCE SIGNALS FOR GENERATING RESOLVER DRIVE SIGNALS

**Harold F. Lewis, Villa Park, and Monson H. Hayes, Jr., Pacific Palisades, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware**

**Filed June 6, 1967, Ser. No. 643,959**

**Int. Cl. G06g** *7/22, 7/26*

**U.S. Cl. 235—186** **7 Claims**



A binary digital storage register having tangent $\theta$ and cotangent $\theta$ inputs (depending on the quadrant of an input signal) for modulating an input signal varying according to sine $wt$ and cosine $wt$. The modulated signals provide signals varying according to the sine and cosine of angle $\theta$ as inputs to a Scott T transformer network for driving the stator windings of a synchro. The position of the rotor is equivalent to the input angle $\theta$.

### 3,478,199

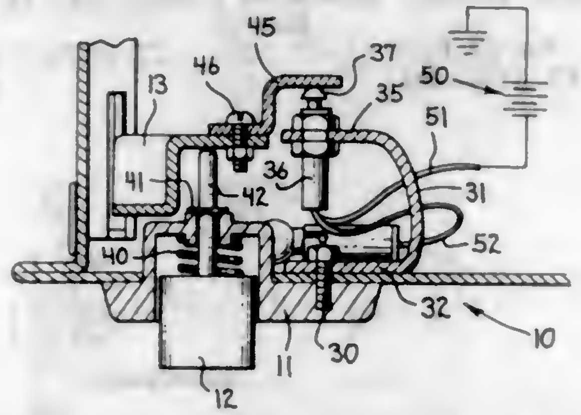
## DOOR LOCK LIGHT

**Randall D. Brock, Kokomo, Ind., assignor of one-third each to Welby Vitatoe and Glen W. Williams, both of Kokomo, Ind.**

**Filed Mar. 9, 1967, Ser. No. 621,883**

**Int. Cl. E05b** *17/10*

**U.S. Cl. 240—2.13** **3 Claims**



A light arrangement for the keyhole of an automobile door lock. The light is mounted inside of the door to shine through a tube extending through the door and having a lens at the outer end thereof, the lens being positioned between the door handle and the keyhole. The light is energized by the depressing of the thumb push button of the door handle.

### 3,478,200

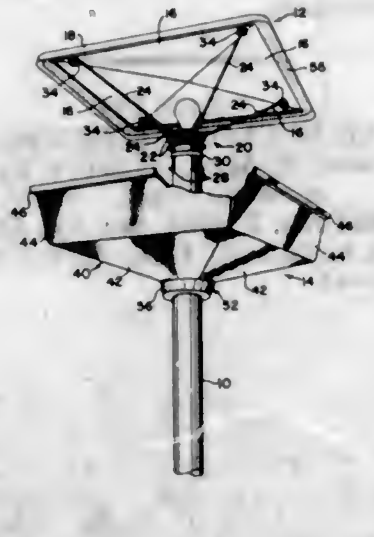
## COMBINED STREET LIGHT AND IDENTIFICATION SIGN STRUCTURE

**Clifford Bruce Hewson, Brampton, Ontario, Canada, assignor to E. W. Bliss Company of Canada Ltd., Georgetown, Ontario, Canada**

**Filed Apr. 4, 1967, Ser. No. 628,488**

**Int. Cl. F21s** *1/10, 3/10, 13/10*

**U.S. Cl. 240—25** **8 Claims**



An outdoor light structure particularly suited for use as a combined street light and sign. The structure includes a downwardly open hood carried on the top of a vertically extending support pole. A lens of dish-shaped configuration and formed entirely from light transmissive material is positioned beneath the hood and in releasable mating engagement therewith to form a sealed light chamber. The lens has a plurality of upwardly extending sides inclined slightly from the vertical which serve as indicia carrying surfaces. The engaging portions of the hood and lens are related so as to prevent misalignment of the lens and its indicia relative to the item identified after the structure has been originally put in position.

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### 3,478,201

## ELECTROPNEUMATIC VIGILANCE CONTROL SYSTEM

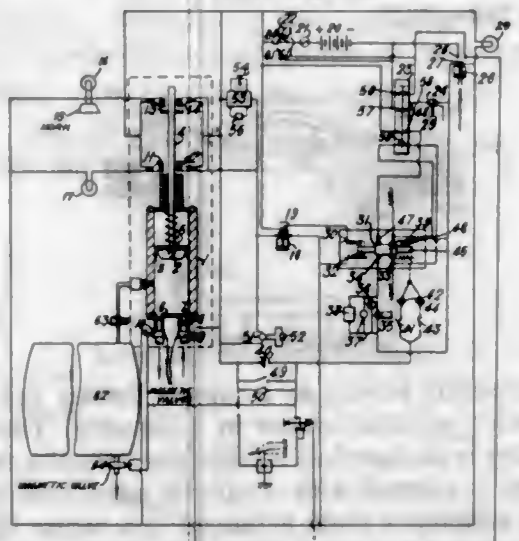
**Inder Kumar Puri, Deputy Director Mechanical Engineering, Railway Board, Rail Bhavan, New Delhi, India**

**Filed May 10, 1966, Ser. No. 548,949**

**Claims priority, application Great Britain, Nov. 23, 1965, 49,643/65**

**Int. Cl. B61l** *5/12, 5/20*

**U.S. Cl. 246—1** **9 Claims**



A vigilance control device wherein the driver has to periodically operate a switch to remain alert. If the switch is not operated, then the power supply to the engine is cut off and brakes are applied.

### 3,478,202

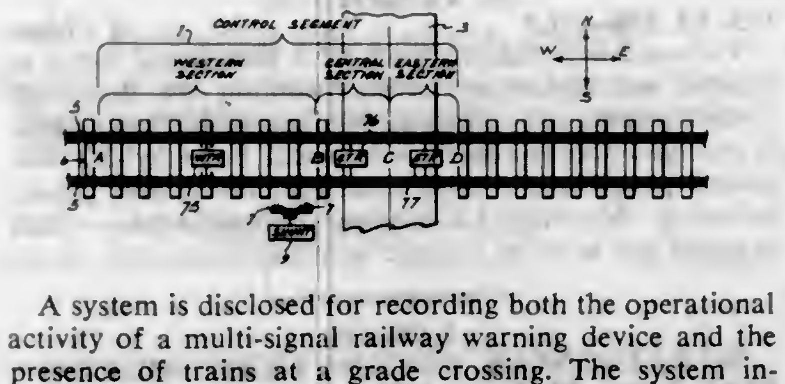
## RECORDING SYSTEM

**James D. Snodgrass, 739 Agate St., San Diego, Calif. 92109**

**Continuation of application Ser. No. 505,931, Nov. 1, 1965. This application Mar. 18, 1968, Ser. No. 714,110**

**Int. Cl. B61l** *27/00, 25/00, 29/00*

**U.S. Cl. 246—107** **6 Claims**



A system is disclosed for recording both the operational activity of a multi-signal railway warning device and the presence of trains at a grade crossing. The system includes an intermittently operative chart recorder, a timing signal generator for time-referencing the chart, a plurality of position reference signal generators located at different points along the control track segment for producing a trace on the chart indicative of the position of a train on the control track, and a signal monitor for producing a trace on the chart indicative of the number of lights operative at any given instant.

### 3,478,203

## LINEAR SCAN READOUT FOR QUANTITIES WHICH VARY IN PROPORTION TO THE SECOND OR HIGHER POWERS OF APPLIED SCAN FIELD AND MASS SPECTROMETERS USING SAME

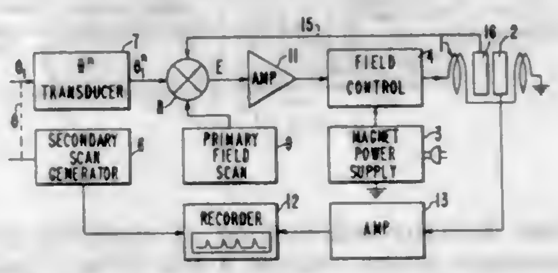
**Harmon W. Brown, Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California**

**Filed Feb. 21, 1966, Ser. No. 538,126**

**Int. Cl. B01d** *59/44*

**U.S. Cl. 250—41.9** **8 Claims**

A magnetic field scan apparatus is disclosed. The magnetic field scan apparatus is arranged for producing a linear scan on a magnetic field intensity to a power higher than the first power. The magnetic field scan system includes a magnetic field controller for controlling the intensity of the magnetic field in response to a scanned input quantity. A scan generator generates a linearly scanned output quantity, which is fed to the input of a transducer for transducing the input quantity to an output quantity, which is proportional to the input quantity taken to a power higher than the first power. The output of the transducer forms the linear scanned input quantity to the controller for linear scanning of the magnetic field intensity in proportion to a power of the magnetic field higher than the first. In a preferred embodiment, the transducer includes a series connection of a first and second Hall device disposed in the magnetic field. The output



of the Hall transducer will be proportional to the second power of the magnetic field in which it is disposed. The output of the transducer is compared with a linearly scanned input signal in an error detector and the error signal is fed to the field controller to cause the field to track the linearly scanned input signal according to the second power of the magnetic field. The linear scan of the second power of the magnetic field is especially useful for scanning the magnetic field of a magnetically focused mass spectrometer in which the output, in mass units, is proportional to the second power of the magnetic field. Thus, when the detected mass output signals of the magnetically scanned spectrometer are recorded as a function of the linear scan input, the readout is linear in terms of mass units.

### 3,478,204

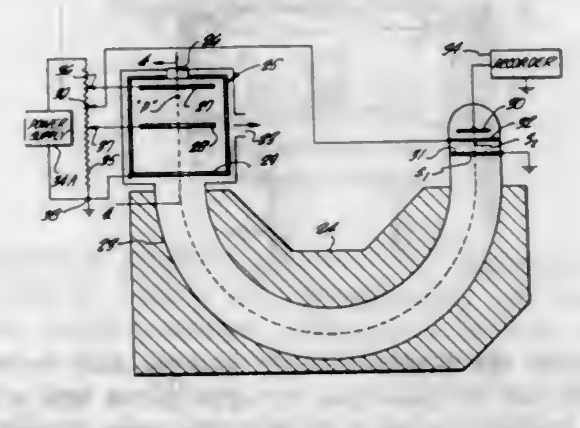
## MASS SPECTROMETER ION SOURCE HAVING A LASER TO CAUSE AUTOIONIZATION OF GAS

**Wilson M. Brubaker, Arcadia, Calif., and Clifford E. Berry, deceased, late of Altadena, Calif., by Jean R. Berry, executrix, Altadena, Calif., assignors, by mesne assignments, to Bell & Howell Company, Chicago, Ill., a corporation of Illinois**

**Filed Aug. 24, 1964, Ser. No. 392,080**

**Int. Cl. H01j** *39/34;* **B01d** *59/44*

**U.S. Cl. 250—41.9** **6 Claims**



A mass spectrometer having as a gas ion source a laser having a field strength intensity sufficient to cause autoionization of the gas.

## 3,478,205

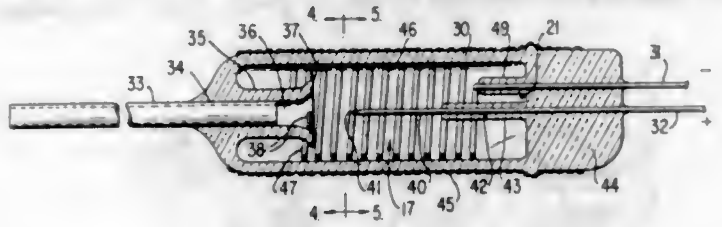
## IONIZATION DETECTOR ELECTRODE ASSEMBLY AND METHOD OF ANALYZING GAS AND VAPOR SUBSTANCES

**Karel F. Sporek, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio**

**Continuation-in-part of application Ser. No. 375,517, June 16, 1964. This application July 29, 1965, Ser. No. 477,084**

**Int. Cl. G01n** *21/26;* **G21h** *5/00*

**U.S. Cl. 250—43.5** **24 Claims**



Ionization detector and method of analyzing gas and vapor substances which utilizes a low power source of ionizing radiations, eliminating heavy shielding; an improved detector electrode assembly in a glass or other non-conductive body, the detector having an inlet at one end and an outlet at the other end with a central ion collecting electrode with a low level radioactive source (promethium 147) adjacent the inlet and away from the electrode assembly to subject the gas to be examined to radiation. Argon and helium gases are examples of noble carrier gases disclosed, and in the case of helium gas the detector operates as an electron capture detector. Consult the specification for other features and details.

## 3,478,206

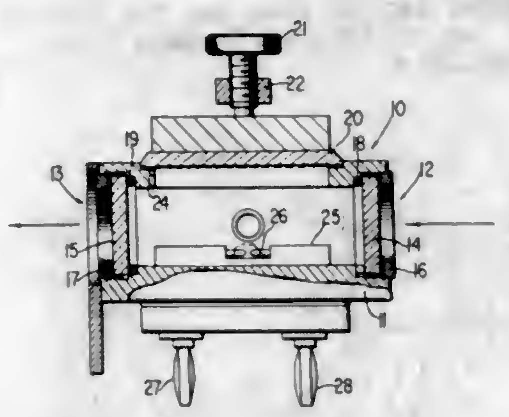
## MULTIPURPOSE SAMPLE CELL FOR CONVENTIONAL AND ATTENUATED TOTAL REFLECTION ABSORPTION SPECTROSCOPY OF GASEOUS AND SOLID SAMPLES

**John P. Gaglione, Stratford, Conn., assignor to Wilks Scientific Corporation, South Norwalk, Conn., a corporation of Connecticut**

**Filed Nov. 13, 1967, Ser. No. 682,224**

**Int. Cl. G01n** *23/12*

**U.S. Cl. 250—43.5** **2 Claims**



A unitary spectrophotometric sample cell in which a material can be placed in a vapor phase and a solid phase by heating and decomposing the same in said unitary cell, the same cell being placeable in spectrophotometric devices for determining the characteristics of both the vapor phase and solid phase.

## 3,478,207

## SAMPLE CARRIER FOR X-RAY SPECTROMETERS AND THE LIKE

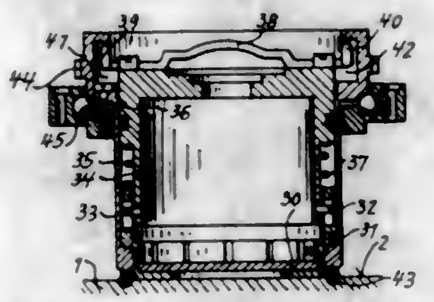
**Rolf Goerke, Langensteinbach, and Helmut Bisch and Kurt Tögel, Karlsruhe, and Werner Speck, Bietighelm, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany**

**Filed Aug. 15, 1966, Ser. No. 572,289**

**Claims priority, application Germany, Sept. 16, 1965, S 99,455**

**Int. Cl. H01j** *37/20*

**U.S. Cl. 250—51.5** **2 Claims**



The invention relates to a sample carrier for an X-ray spectrometer accommodated in a housing. The cover of the housing is designed as a table top whereby the surface of the top is aligned with a sample adherence surface of a sample adherence plate arranged in a recess in the table top. Sample holders for solid and/or pulverulent and/or liquid samples are fastened to the support surface of the sample adherence plate. Each of the sample holders is provided with a cup-like part to hold the sample which is pressed against the adherence surface of the sample adherence plate, the bottom of the cup-like part being as thin as possible.

## 3,478,208

## 2-ARYL INDOLES AND METHODS FOR THEIR USE

**Donald L. Horrocks, Naperville, and Hermann O. Wirth, Argonne, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission**

**Filed Jan. 4, 1967, Ser. No. 607,610**

**Int. Cl. G01t** *1/20*

**U.S. Cl. 250—71.5** **2 Claims**

Various 2-aryl indoles which have been found useful as organic scintillators in toluene solution are described. These include, for example, N-n-butyl-2-biphenylindole, N-methyl-2-phenyl-3-methyindole and N-methyl-3,2′-ethylene-2-phenylindole. Also described are several glasses including N-n-butyl-3,2′-ethylene-2-phenylindole—which is useful per se as an organic scintillator.

## 3,478,209

## SELF-LUMINOUS TRITIUM LIGHT SOURCES

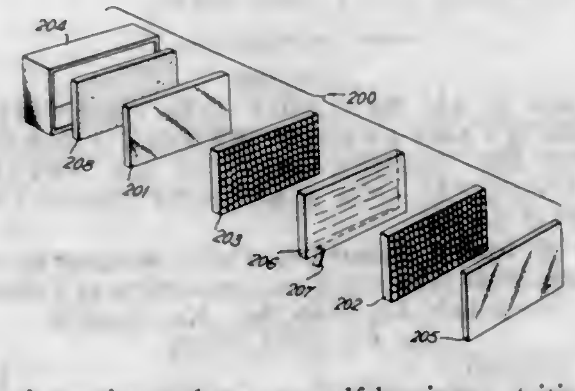
**Irving Feuer, Elmhurst, N.Y., assignor to Canrad Precision Industries, Inc., New York, N.Y., a corporation of New York**

**Filed July 22, 1965, Ser. No. 475,322**

**The portion of the term of the patent subsequent to July 12, 1983, has been disclaimed**

**Int. Cl. H01j** *1/62, 37/10*

**U.S. Cl. 250—77** **4 Claims**



This invention relates to self-luminous tritium light sources with improved light output and improved longevity wherein the loss of tritium in the tritiated light source is minimized by preventing exchange of tritium with hydrogen in water vapor which may become present in the tritium-activated lamp.

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## 3,478,210

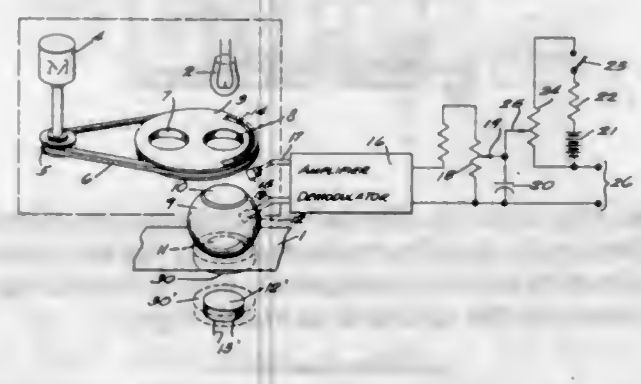
## EXTENDED RANGE INFRARED MOISTURE GAGE STANDARDS

**Jerry C. Janacek, Milwaukee, Wis., assignor to General Electric Company, a corporation of New York**

**Filed Aug. 23, 1967, Ser. No. 662,660**

**Int. Cl. H01j** *39/00;* **G01t** *1/16*

**U.S. Cl. 250—83** **4 Claims**



A standard is provided for calibrating gages that measure water content in paper by sensing variations in reflected or transmitted infrared radiation. The standard simulates paper with high water content and is made by mixing certain hydrated salts in a silicone compound and molding the mixture into a pellet. Thin pellets are sealed between glass windows and used as transmission gage standards and thicker pellets are used with reflection gages.

## 3,478,211

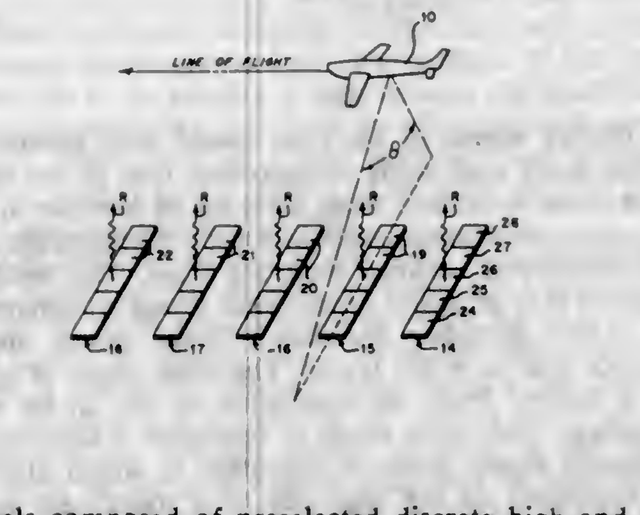
## INFRARED GRAY SCALE ARRAY

**Paul M. Moser, Abington, Pa., assignor to the United States of America as represented by the Secretary of the Navy**

**Filed Dec. 15, 1967, Ser. No. 690,810**

**Int. Cl. G01j** *1/08, 1/14*

**U.S. Cl. 250—83** **7 Claims**



Panels composed of preselected discrete high and low emissivity areas such that the average emissivity per panel differs in accordance with a predetermined functional relationship are positioned in abutting contact with one another to provide a gray scale array for evaluating the fidelity with which airbourne infrared imaging devices translate various target radiances into corresponding shades of gray.

## 3,478,212

## AIMING SYSTEM FOR THE REMOTE GUIDANCE OF SELF-PROPELLED MISSILES TOWARD A TARGET

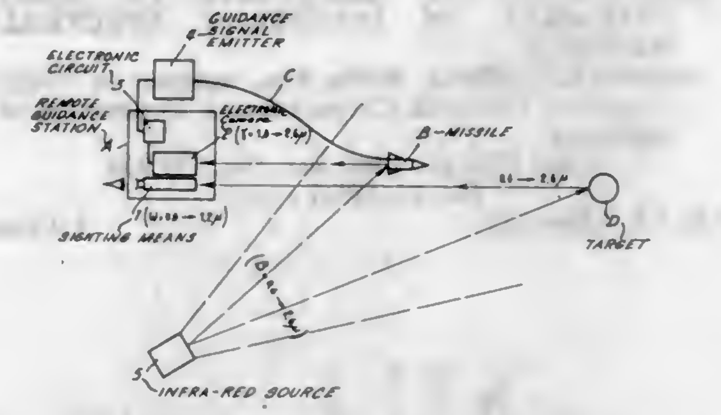
**Jean Paul Turck, Paris, France, assignor to Societe Anonyme de Telecommunications, Paris, France, a French company**

**Filed Jan. 4, 1967, Ser. No. 607,201**

**Claims priority, application France, Jan. 27, 1966, 47,424**

**Int. Cl. G01t** *1/16*

**U.S. Cl. 250—83.3** **9 Claims**



Remote guidance for self-propelled missiles towards a target, having an orientable sighting instrument and an orientable electronic camera directionally associated with said instrument adapted for emitting control signals for the said missile and having a range of infra-red spectral sensitivity different from that of the sighting instrument, the target and the missile both being exposed to infra-red radiations which embrace both ranges of sensitivity, whereas the missile has reflecting-filtering means able to substantially absorb the infra-red range corresponding to the spectral sensitivity of the sighting means.

## 3,478,213

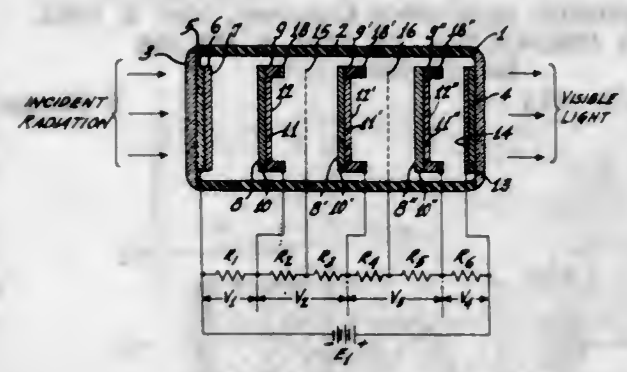
## PHOTOMULTIPLIER OR IMAGE AMPLIFIER WITH SECONDARY EMISSION TRANSMISSION TYPE DYNODES MADE OF SEMICONDUCTIVE MATERIAL WITH LOW WORK FUNCTION MATERIAL DISPOSED THEREON

**Ralph E. Simon, Trenton, Brown F. Willliams, Princeton, and Ralph Wasserman, Trenton, N.J., assignors to RCA Corporation, a corporation of Delaware**

**Filed Sept. 5, 1967, Ser. No. 665,511**

**Int. Cl. H01j** *39/12*

**U.S. Cl. 250—207** **9 Claims**



A secondary emission device of the transmission type which may be used as a photomultiplier, light amplifier, or X-ray image intensifier. The device achieves amplification of an electron image by causing the electrons to impinge upon a thin film of semiconductor material at high velocity, thus generating a large number of secondary electrons for each incident (primary) electron. The secondary electrons diffuse through the semiconductive film and are emitted from the opposite surface of the film which is coated with a monomolecular layer of cesium to reduce the work function at the emitting surface.

The secondary emission semiconductive film consists of highly doped P type gallium phosphide. The energy levels in the film structure are such that electrons in the conduction band can reach the emitting surface with a residual energy above that of the vacuum energy level, so that electrons are emitted from the cesium-coated surface without the necessity of supplying additional energy.

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### 3,478,214

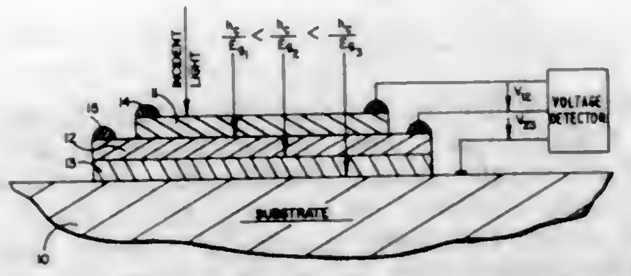
## PHOTODETECTOR RESPONSIVE TO LIGHT INTENSITY IN DIFFERENT SPECTRAL BANDS

**Norman G. Dillman, Rolla, Mo., assignor to North American Rockwell Corporation, a corporation of Delaware**

**Filed Feb. 16, 1966, Ser. No. 527,839**

**Int. Cl. H01j** *39/12*

**U.S. Cl. 250—211** **9 Claims**



A photodetector device is provided comprising a plurality of successive layers of semiconductor material having a band gap energy greater than the preceding layer. A plurality of electrical ohmic contacts corresponding in number to the plurality of semiconductor layers are connected one to each layer so as to provide for the pickoff of signals.

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### 3,478,215

## OPTICAL-ELECTRONIC SEMICONDUCTOR UNITARY DEVICE COMPRISING LIGHT TRANSMITTER, LIGHT RECEIVER, AND CONNECTING LIGHT CONDUCTOR OF CHROMIUM DOPED GALLIUM ARSENIDE

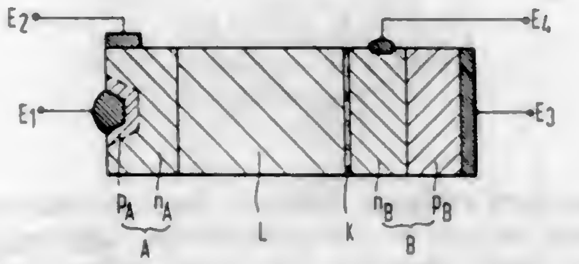
**Gunter Winstel, Klaus Mettler, Karl-Heinz Zschauer, and Horst Pelka, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany**

**Filed Oct. 31, 1966, Ser. No. 590,706**

**Claims priority, application Germany, Nov. 4, 1965, S 100,363; Sept. 30, 1966, S 106,286**

**Int. Cl. H01j** *31/50*

**U.S. Cl. 250—211** **5 Claims**



A light transmitter comprising a tin-zinc alloyed gallium arsenide luminescence diode and a light receiver comprising a silicon photodiode are optically and mechanically connected by a light conductor comprising a chromium doped semi-insulated gallium arsenide crystal.

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### 3,478,216

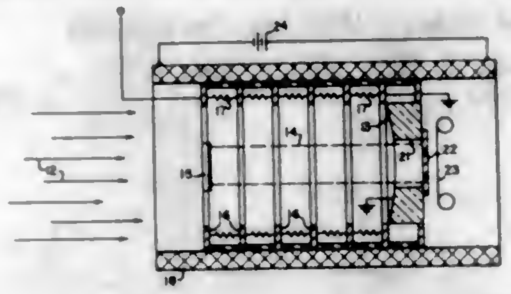
## IMAGE CONVERTER FOR DETECTING ELECTROMAGNETIC RADIATION ESPECIALLY IN SHORT WAVE LENGTHS

**George R. Carruthers, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy**

**Filed July 27, 1966, Ser. No. 568,360**

**Int. Cl. H01j** *31/50*

**U.S. Cl. 250—213** **5 Claims**



This disclosure is directed to a system for detecting radiation in the far ultra-violet region by use of a windowless tube with a solid photocathode and an internal mirror for converting the radiation to visible light.

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### 3,478,217

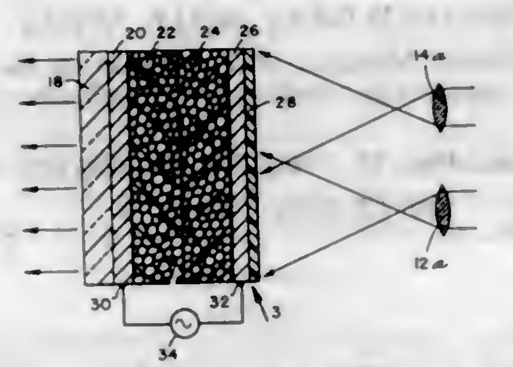
## STORED IMPEDANCE IMAGE-TRANSLUCENT SCREEN

**Richard A. Martel, Sylmar, William R. Davis, Glendale, and Carl E. Sutton, Los Angeles, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**

**Filed Jan. 4, 1968, Ser. No. 695,614**

**Int. Cl. H01j** *31/50, 39/12*

**U.S. Cl. 250—213** **3 Claims**



A display screen of the type coated with luminescent laminae has a dual mode of operation. One of the modes of operation is derived from a lay-up of laminae of predetermined photoluminescent and electroluminescent qualities sandwiched between electrode films. This mode of operation is to present a luminescent image corresponding to a latent phosphor impedance image stored upon a phosphor lamina in the lay-up. The other mode of operation is derived from the adaptation of the lay-up to be translucent. This latter mode of operation is the common translucent screen mode of operation in which illumination impinging on the rear side of a translucent screen produces an image on its front side. The capability of the dual mode screen to do the latter is enhanced by a special construction on the backside of the lay-up as follows. The electrode film which is normally the backside element of the lay-up is made of gold film and a sheet of clear and transparent plastic is intimately bonded to the face of the gold film.

### 3,478,218

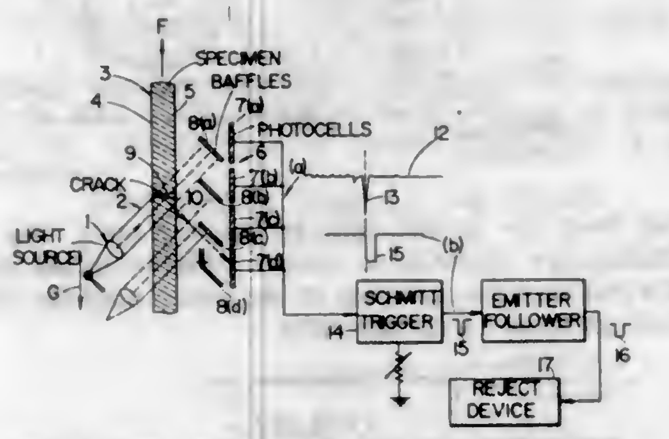
## APPARATUS AND METHOD FOR DETECTING FLAWS IN ARTICLES OF GLASS AND THE LIKE

**Louis E. Wuellner, Jack L. Stark, and James D. Crawford, Fort Wayne, Ind., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware**

**Filed Dec. 15, 1965, Ser. No. 524,958**

**Int. Cl. G01n** *21/30*

**U.S. Cl. 250—219** **9 Claims**



A light beam is directed at an angle to a glass surface for detection of cracks therein by a sensor positioned out of the direct beam path. A light controlling device adjacent the sensor is positioned in the beam path to prevent direct impingement of light on the sensor while providing a passage for light reflected at a predetermined angle by a crack to impinge the sensor.

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### 3,478,219

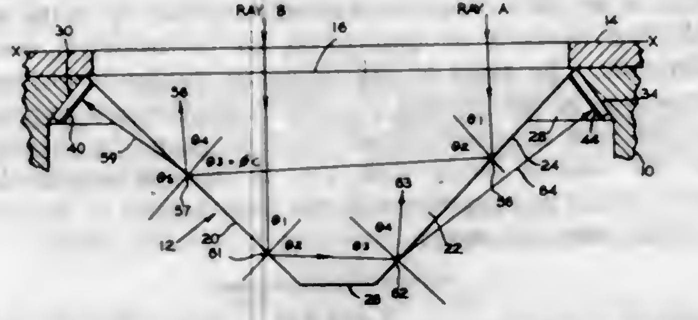
## OPTICAL PRISM WITH MULTIPLE PHOTOCELLS

**George Kaspar Nutz, Hasbrouck Heights, N.J., assignor to The Bendix Corporation, a corporation of Delaware**

**Filed Jan. 17, 1968, Ser. No. 698,527**

**Int. Cl. H01j** *39/12*

**U.S. Cl. 250—220** **11 Claims**



A two-axis solid state optical pyramid prism sun sensor of high resolution including photovoltaic cells positioned adjacent the respective four side surfaces of the pyramid prism so as to provide a light sensing cell quadrant network of increased sensitivity to effect two-axis electrical signal information of a high accuracy and to eliminate errors created by sun sensors of the prior art type utilizing two separate one-axis systems.

The two-axis systems of the solid state pyramid prism sun sensor of the present invention are both dependent upon the same optical prism in which the base angles of the prism are greater than the critical angle so that the light is internally reflected from the first side surface to the opposite side surface at the critical angle so that in such two-axis systems greater freedom in the size and location of the photovoltaic cells may be provided with somewhat less criticality while providing greater protection from the effects of stray light.

In a modified form of the solid state pyramid prism sun sensor, there may be additionally mounted on a flat rear surface face of a frustum of the pyramidal prism a light detector or quad light sensitive cell arrangement in combination with a suitable masking on the flat front surface face of the prism so as to effect a wide range of coarse angle electrical signal information, as well as the fine angle sensing electrical signal information effected by the voltaic cells placed adjacent the four side surfaces of the prism.

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### 3,478,220

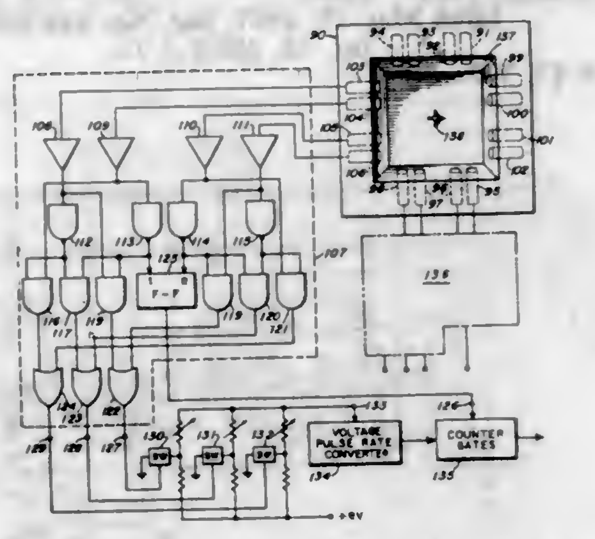
## ELECTRO-OPTIC CURSOR MANIPULATOR WITH ASSOCIATED LOGIC CIRCUITRY

**Warren E. Milroy, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy**

**Filed May 11, 1966, Ser. No. 550,091**

**Int. Cl. H01j** *39/12*

**U.S. Cl. 250—221** **4 Claims**



An arrangement for automatically positioning a cursor on the screen of a cathode ray tube in response to the position of a human limb, such as a finger, on a control grid. The grid comprises an array of radiant energy sources and sensors arranged to detect the position of the finger by measurement of energy flow interrupted between various aligned pairs of sources and sensors. The device produces an output signal indicative of the finger position which can then be used to similarly position a cursor on the CRT screen.

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### 3,478,221

## APPARATUS FOR DETECTING DIRT IN TRANSPARENT BOTTLES

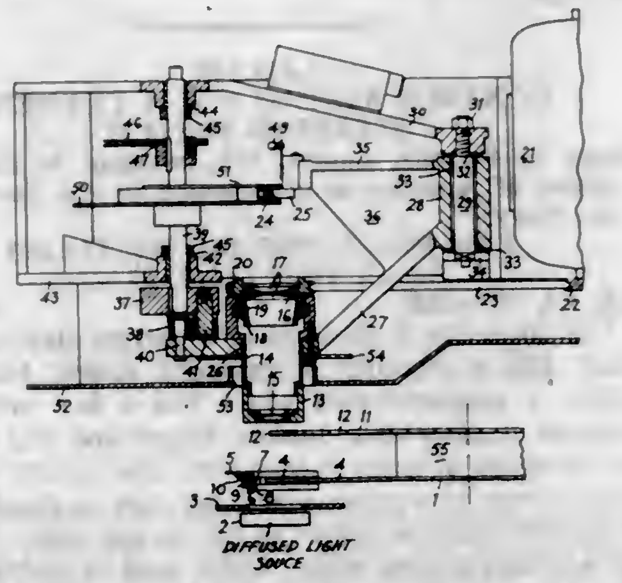
**Jeffrey J. Sainsbury, Kempston, Bedford, England, assignor to Fords (Finsbury) Limited, Kempston, Bedford, England, a British company**

**Filed June 22, 1967, Ser. No. 648,116**

**Claims priority, application Great Britain, June 24, 1966, 28,565/66**

**Int. Cl. H01j** *39/12*

**U.S. Cl. 250—223** **9 Claims**



This invention relates to apparatus for optically scanning a transparent bottle to detect dirt or foreign bodies in the bottle. Particularly, the invention relates to apparatus for scanning the base of the bottle, in which the bottle is held so that its base is completely clear of obstruction whilst the base is illuminated from below by a diffused light source and optical means disposed above the bottle mouth produces an image of the illuminated base, which image is scanned by a rotating scanning device arranged in front of a photocell.

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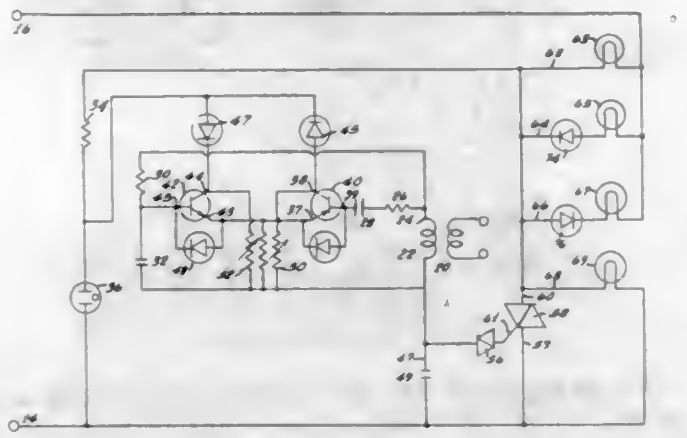
### 3,478,222
### CONTROL CIRCUIT

**Lee V. Gassaway, 2316 E. Santa Fe, Apt. 8, Fullerton, Calif. 92631, and Michael L. Erdkamp, 299 S. Lime, Orange, Calif. 92668**
**Filed May 22, 1967, Ser. No. 640,296**
**Int. Cl. H02j** *3/14*
**U.S. Cl. 307—38** **6 Claims**



A power control circuit for supplying rectified pulsating power to up to four load circuits in polarity and of duration that is responsive to the frequency and intensity of an input signal which comprises at least two parallel load circuits containing opposite half wave rectifiers, a triac switch between said load circuits and the alternating current supply and a triac triggering circuit which is responsive to an input signal such as an audio or musical signal. The triggering circuit has at least two channels with a frequency dividing network which splits the input signal into discrete high and low frequency signals. Opposite half phase, rectified current is supplied to the channels each of which contains one of a pair of complementary transistors with common output electrodes. The transistors amplify the discrete input signals which are applied to their base electrodes. The amplified output of the triggering circuit charges a capacitor, thereby controlling the duration of the conduction mode of the triac.

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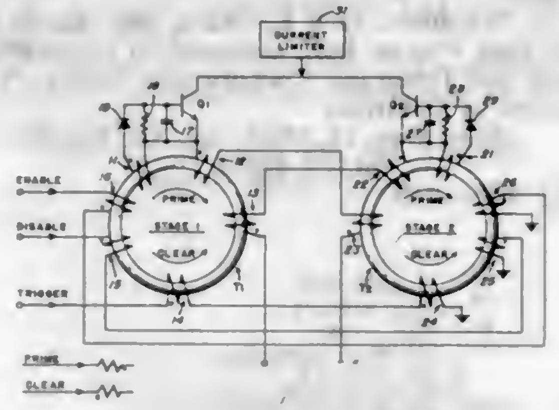
### 3,478,223
### CONTROL SYSTEM FOR A CURRENT STEERING SWITCH

**James A. Perschy, Laurel, Md., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Dec. 1, 1965, Ser. No. 511,298**
**Int. Cl. H01f** *27/42, 29/02*
**U.S. Cl. 307—88** **5 Claims**

This invention is directed to a current steering switch which has a plurality of cascaded stages. Each stage utilizes a magnetic core which has a first and second magnetic stability state. Initiate, trigger and stop windings are connected in series to each core. The initiate windings, upon receipt of a pulse, place one core in the first state of stability and the others in the second state. The trigger windings receive pulses which tend to shift the state of a core which is in the one state. Responsive means utilizing two further windings and a transistor are coupled to each core. It operates with the trigger pulses to complete the change of state of a core in the first state and to change the state of the core in the next succeeding state from the second state to the first state. The stop windings are operative to change all cores to the second state and stop the operation of the switch until the initiate windings receive a further pulse.



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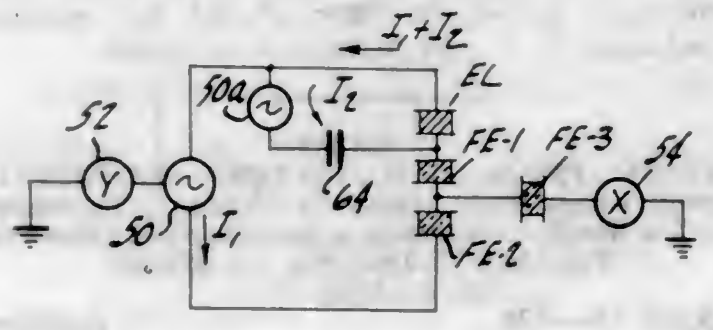
### 3,478,224
### FERROELECTRIC CONTROL CIRCUITS

**Bernard J. Lechner, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware**
**Filed Nov. 5, 1964, Ser. No. 409,096**
**Int. Cl. H03k** *17/02*
**U.S. Cl. 307—88** **9 Claims**



Circuits in which the current passing through a load, such as an electroluminescent cell, depends upon the state, whether blocked or unblocked, of ferroelectric control elements. The ratio of maximum to minimum current is improved in the present circuits by continuously applying to the load a current which is of the same frequency as, is 180° out of phase with, and is close in amplitude to the current passing through the load in one of the states of the control elements.

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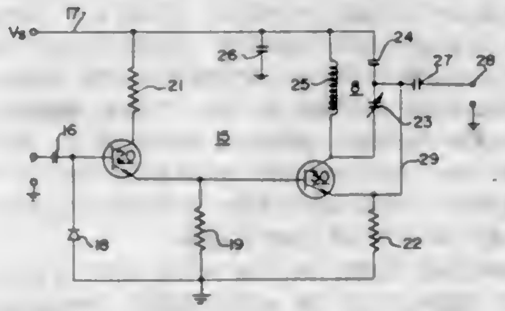
### 3,478,225
### FREQUENCY DIVIDING SYSTEM INCLUDING TRANSISTOR OSCILLATOR ENERGIZED BY PULSES DERIVED FROM WAVE TO BE DIVIDED

**Harold D. Bryant, Glendale Heights, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois**
**Filed Oct. 24, 1965, Ser. No. 504,347**
**Int. Cl. H03k** *23/08, 23/22, 23/36*
**U.S. Cl. 307—220** **7 Claims**



Frequency dividing system including transistor oscillator with frequency determining circuit for providing the desired quotient frequency. The transistor oscillator is selectively energized through a transistor switch which connects on half cycles of one polarity of the signal to be divided. The oscillator includes a feedback circuit operative to complete a cycle, with each cycle being synchronized with the incoming signal. Failure of the incoming signal will terminate the output of the divider.

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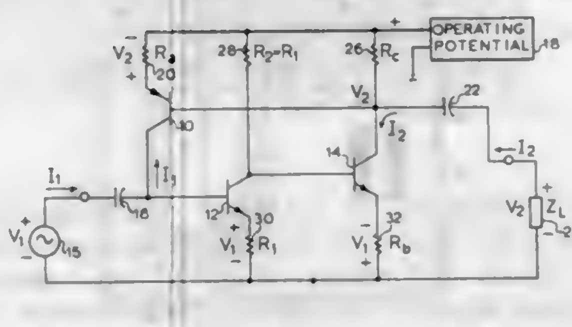
### 3,478,226
### NON-RECIPROCAL WAVE TRANSLATING NETWORK

**William New, Durham, N.C., and Robert W. Newcomb, Palo Alto, Calif., assignors to The Board of Trustees of the Leland Stanford Junior University, a body corporate**
**Filed Nov. 30, 1966, Ser. No. 597,993**
**Int. Cl. G06g** *7/12*
**U.S. Cl. 307—229** **7 Claims**



A gyrator circuit is provided comprised of three transistors which are arranged so that a first and third of these operate as voltage to current converters and a second is a voltage inverter. An input signal is applied to the voltage inverter. The output of the voltage inverter is applied to a voltage to current converter. A load is connected to the output of this voltage to current converter and its output is also fed back to the other voltage to current converter whose output in turn is connected to the input of the voltage inverter.

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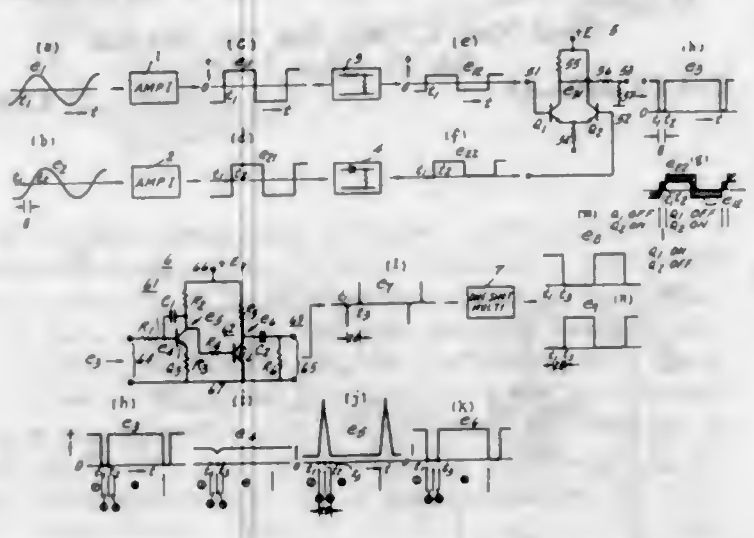
### 3,478,227
### PHASE SHIFTING CIRCUIT

**Haruo Ito, Tokyo, Japan, assignor to Yokogawa-Hewlett-Packard, Ltd., Tokyo, Japan, a corporation of Japan**
**Filed Oct. 7, 1966, Ser. No. 585,114**
**Claims priority, application Japan, Oct. 30, 1965, 40/66,576**
**Int. Cl. H03k** *5/20*
**U.S. Cl. 307—232** **2 Claims**



A phase-shifting circuit produces a signal having an $n\theta$ phase angle from a signal having a phase angle $\theta$ in relation to a signal of standard phase. This is accomplished by selectively switching a trigger circuit on the slope of the output wave of an integrator which is activated between two integrating conditions in response to a pulse signal having a pulse width representative of the phase delay $\theta$.

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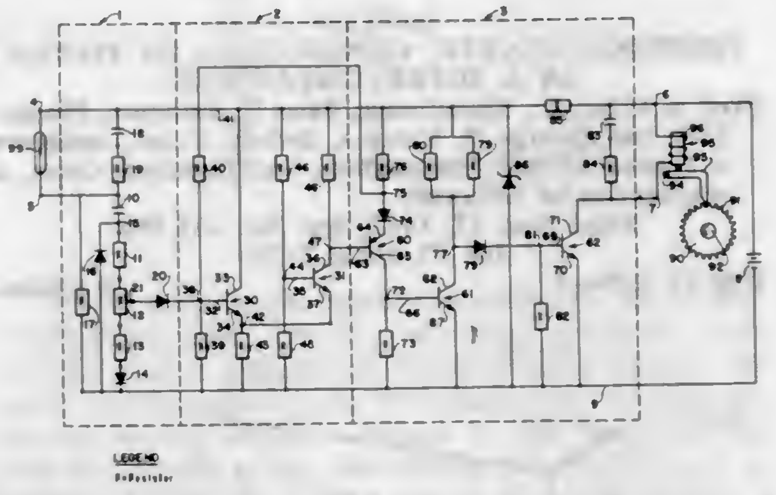
### 3,478,228
### ELECTRICAL CIRCUIT TO PROVIDE PULSE SIGNALS HAVING PRECISE TIME DURATION

**Odo J. Struger, Milwaukee, and Joseph R. Moser, Brookfield, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin**
**Filed Oct. 21, 1965, Ser. No. 499,924**
**Int. Cl. H03k** *1/14*
**U.S. Cl. 307—265** **6 Claims**



A circuit for providing pulse signals having a precise "on" time duration utilizing an RC timing network in which the timed signal to which the trigger network responds is the decreasing voltage across a resistor as the capacitor is charged. The trigger network responds only to a predetermined trigger level provided by the timing network.

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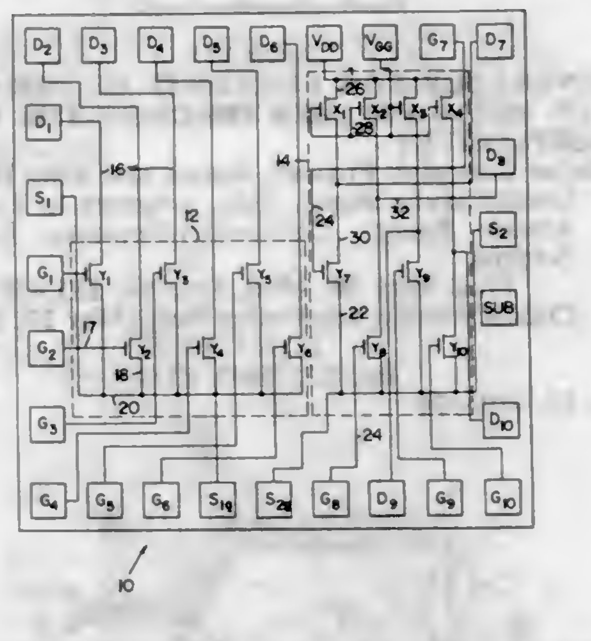
### 3,478,229
### MULTIFUNCTION CIRCUIT DEVICE

**George E. Avery, Sunnyvale, Calif., assignor to American Micro-Systems, Inc., Santa Clara, Calif., a corporation of California**
**Filed Apr. 29, 1968, Ser. No. 724,827**
**Int. Cl. H03k** *3/26, 19/08, 23/22*
**U.S. Cl. 307—303** **6 Claims**



A multifunction circuit device for use as a building block in electronic apparatus, comprising on a single integrated circuit chip, a first series of transistors each having drain, source and gate terminals. The source terminals for said first transistors are all connected to at least one external source bonding pad, and the drain terminals and the gate terminals for each of said transistors are connected to separate external bonding pads. A plurality of physically and electrically isolated inverter stages on the chip including a series of inverting transistors and a like number of load transistors. The drain terminals of the load transistors are connected to a common drain bonding pad and their gate terminals are similarly connected to a common gate bonding pad. The source terminals of the load transistors are connected with the drain terminals of the inverting transistors, which are also connected to separate bonding pads, and the source terminals of all the inverting transistors are connected to a common external source bonding pad. The bonding pads for the device are spaced apart along the sides of the chip.

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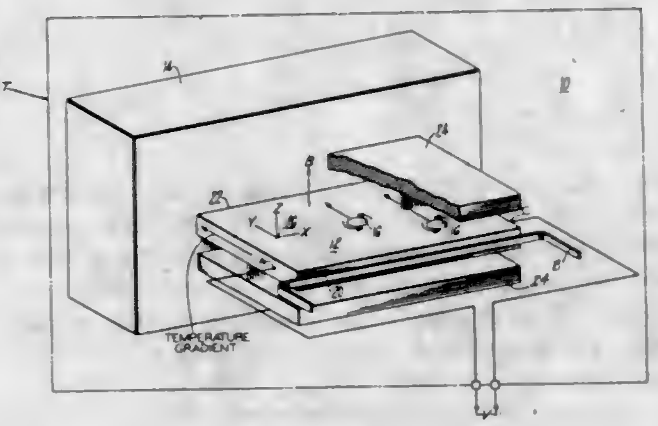
### 3,478,230
### THERMOMAGNETIC GENERATION OF POWER IN A SUPERCONDUCTOR

**Fred A. Otter, Jr., Manchester, Peter R. Solomon, Bloomfield, and George B. Yntema, Bolton, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Apr. 17, 1967, Ser. No. 631,399**
**Int. Cl. H02n** *7/00*
**U.S. Cl. 310—4** **10 Claims**



A voltage is generated across a superconductor by means of moving vortices formed therein when the superconductor is placed in a magnetic field and a thermal gradient is established along the superconductor in a direction perpendicular to the magnetic field thereby exerting a force on the vortices in the same direction as the thermal gradient.

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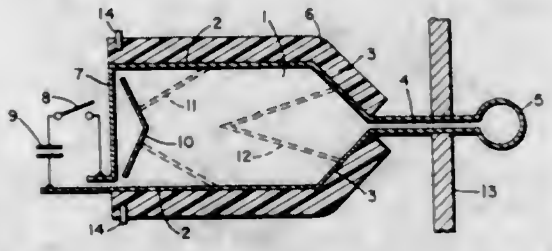
### 3,478,231
### GENERATOR FOR CURRENTS IN THE ORDER OF MEGA-AMPERES THROUGH THE USE OF EXPLOSIVES

**Heinz Knoepfel, Frascati, Rome, and Fritz Herlach, Grottaferrata, Rome, Italy, assignors to European Atomic Energy Community-Euratom, Brussels, Belgium**
**Filed May 20, 1966, Ser. No. 551,655**
**Claims priority, application Italy, May 22, 1965, 11,312/65**
**Int. Cl. H02k** *45/00*
**U.S. Cl. 310—10** **6 Claims**



A device for generating intense electrical currents through explosive compression of magnetic flux, comprising a conductor shaped to form a compression chamber, load transmission lines, a wall separating the load from the compression chamber, whereby an explosion of said chamber reduces the inductance of the system.

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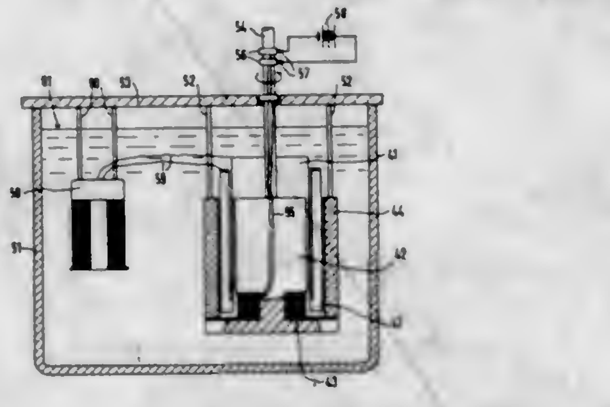
### 3,478,232
### SUPERCONDUCTIVE GENERATORS

**Franz X. Eder, Munich, and Hans Voigt, Erlangen-Bruck, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany**
**Filed Aug. 19, 1966, Ser. No. 573,623**
**Claims priority, application Germany, Aug. 21, 1965, S 98,972**
**Int. Cl. H02k** *1/00, 3/00*
**U.S. Cl. 310—10** **5 Claims**



A superconductive generator has a superconductive sheet and a magnetic member coacting with the sheet for moving through the latter a region of normal electrical conductivity through which magnetic flux flows. A superconductive return conductor is located adjacent the sheet and coacts therewith during the operation of the generator for receiving a current which flows in a direction orientated oppositely to the direction of flow of current in the sheet so that transverse magnetic fields produced by the respective currents substantially cancel each other. A ferromagnetic member is situated in the vicinity of the return conductor for guiding the magnetic flux and for maintaining the magnetic flux at the location of the return conductor smaller than at the region of normal electrical conductivity of the superconductive sheet.

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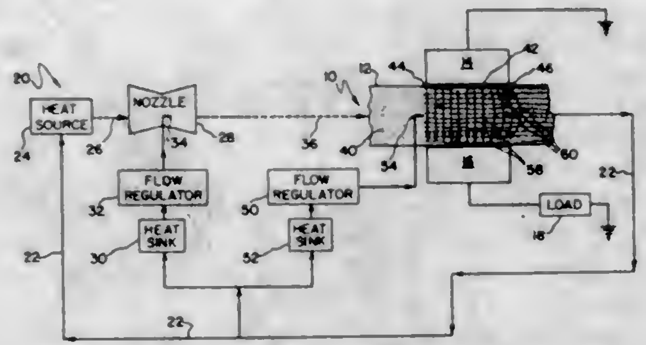
### 3,478,233
### MAGNETOHYDRODYNAMIC GENERATOR

**Lawrence L. Prem, Tarzana, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware**
**Filed Nov. 4, 1965, Ser. No. 506,324**
**Int. Cl. G21d** *7/02*
**U.S. Cl. 310—11** **12 Claims**



A method of and apparatus for controlling the electrical conductivity of a working fluid having liquid and vapor phases in a magnetohydrodynamic (MHD) generator by decreasing the vapor volume of the working fluid in the magnetic field region of the MHD generator so that end losses are reduced.

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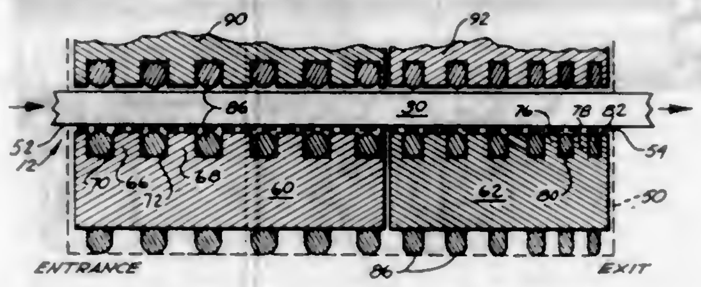
### 3,478,234
### ALTERNATING CURRENT MAGNETOHYDRODYNAMIC GENERATOR

**Lawrence L. Prem, Tarzana, and Tsih-Chang Wang, Santa Monica, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware**
**Filed Apr. 10, 1967, Ser. No. 629,661**
**Int. Cl. H02k** *45/00*
**U.S. Cl. 310—11** **5 Claims**



An improved stator region for an alternating current magnetohydrodynamic generator that develops a travelling magnetic wave having a velocity that continuously decreases asymmetrically from the entrance region to the downstream exit region of the generator and corresponds to the velocity profile of a working fluid passing through the generator so that substantially constant pressure is developed in the working fluid.

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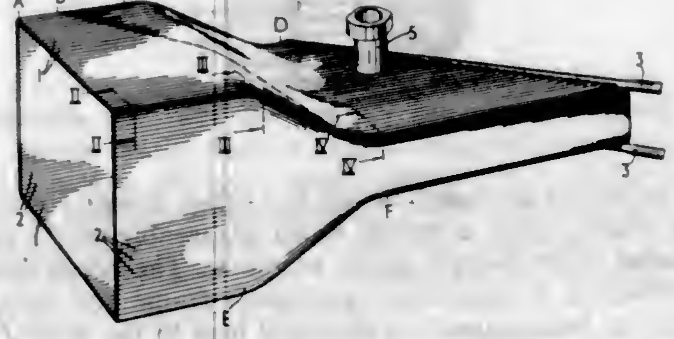
### 3,478,235
### TUBULAR COMBUSTION CHAMBER FOR AN MHD GENERATOR

**Albert Ralph Tyrrell, 6, The Hiron, Coventry, Warwickshire, England**
**Filed Aug. 7, 1967, Ser. No. 658,686**
**Claims priority, application Great Britain, Aug. 6, 1966, 35,294/66**
**Int. Cl. H02k** *45/00;* **G21d** *7/02*
**U.S. Cl. 310—11** **10 Claims**



A tubular combustion chamber, particularly for a magnetohydrodynamic electrical generator, constructed from a plurality of flat-sided tubes extending longitudinally of the chamber and sealingly secured together side-by-side throughout their lengths. The combustion chamber has an upstream end perpendicular to the longitudinal axis of the chamber and a downstream end oblique to said longitudinal axis and the tubes are shaped to define the longitudinal profile of the combustion chamber, the cross-sectional shape of the flow path of the combustion chamber throughout its length and also to have cross-sectional shapes and flow areas differing along the lengths thereof to produce substantially the same pressure at the outlet ends of all the tubes of coolant passed therethrough.

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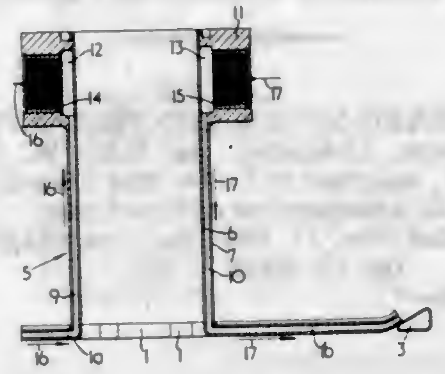
### 3,478,236
### TUBULAR COMBUSTION CHAMBER FOR AN MHD GENERATOR

**Albert Ralph Tyrrell, 6, The Hiron, Coventry, Warwickshire, England**
**Filed Aug. 7, 1967, Ser. No. 658,688**
**Claims priority, application Great Britain, Aug. 6, 1966, 35,293/66**
**Int. Cl. H02k** *45/00;* **G21d** *7/02*
**U.S. Cl. 310—11** **3 Claims**



Tubular combustion chamber, particularly for a magnetohydrodynamic (MHD) electrical generator, constructed from a plurality of flat-sided tubes sealingly secured together side-by-side throughout their lengths and through which coolant is passed. A pipe communicates with the interior of the combustion chamber through an aperture formed in at least one of the tubes defining a wall of the combustion chamber and extending transversely through said tube or tubes from the outside to the inside of said wall. The pipe may be used for introducing fluid to or extracting fluid from the combustion chamber, for permitting a probe to be inserted into the combustion chamber or to house an inspection port. The pipe is itself provided with coolant passages through which coolant is extracted from the upstream portion of the or each tube interrupted by the aperture and through which fresh coolant is introduced into the downstream portion of the or each of said interrupted tubes, thereby to provide cooling in the or each interrupted tube at substantially the same rate as in the uninterrupted tubes.

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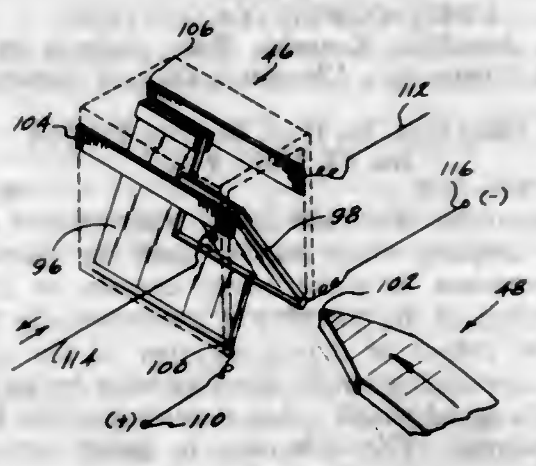
### 3,478,237
### ELECTROMAGNETIC ATTRACTING AND REPELLING MOTOR

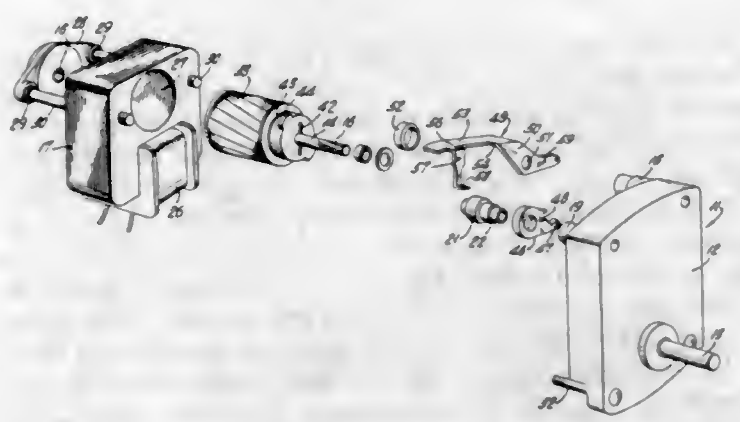
**Charles Edward Faxon, Los Angeles, Calif. (15232 Dittmar Drive, Whittier, Calif. 90603)**
**Filed Aug. 17, 1967, Ser. No. 661,449**
**Int. Cl. H02k** *11/00, 1/06*
**U.S. Cl. 310—68** **6 Claims**



Disclosure is an electromagnetic motor apparatus wherein a shaft is rotatively supported in stationary structures (stators) which also support a plurality of electromagnets that are disposed in a circular array. A rotor is provided on the shaft for operation with each stator or stationary unit and also carries electromagnets fixed in a circular pattern coinciding to that for the electromagnetis in the stator. A switching apparatus is included between the stator and the rotor to accomplish alternate driving currents through the electromagnets in the rotor, in synchronism with the rotation of the rotor so that the individual electromagnets in the rotor are alternately attracted and repelled by individual magnets in the stator whereby to accomplish efficient rotary power.

## 3,478,238
## INDEXED MOTOR CONTROL DEVICE

**David Herman, Livingston, and Sollie W. Small, Short Hills, N.J., assignors to Coffee-Mat Corporation, Kenilworth, N.J., a corporation of New Jersey**
**Filed Nov. 17, 1967, Ser. No. 683,886**
**Int. Cl. H02k** *7/102, 7/106*
**U.S. Cl. 310—77** **6 Claims**

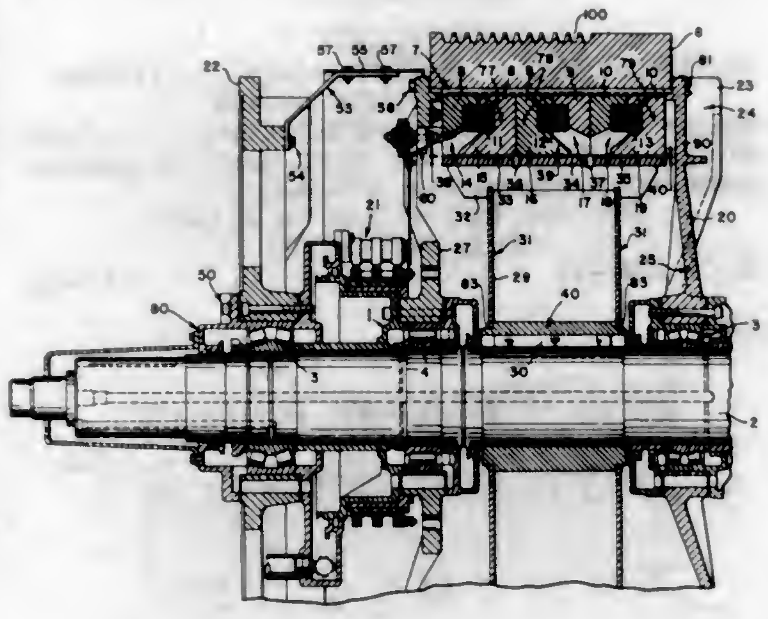


An electric motor includes a rotor rotatably mounted on a drive shaft and coupled thereto by a slip clutch actuated by a spring housed in an enlarged coaxial bore in the rotor. A member including radial indexing shoulders is affixed to the drive shaft and a stop lever pivoted to the motor is spring-urged into the path of the shoulders and is retractable by a rockable armature lever magnetically actuated by the energized motor stator. Upon deenergization of the motor, the armature is released to permit the spring advance of the stop lever to stop the drive shaft while the rotor continues rotation and upon energization of the motor the movement of the armature effects the striking and retraction of the stop lever to release the drive shaft.

## 3,478,239
## EDDY-CURRENT COUPLING

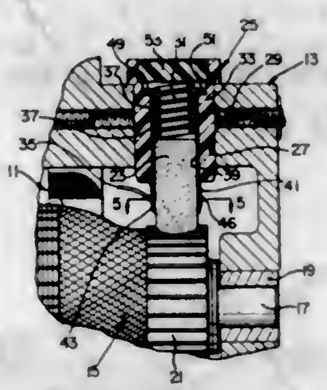
**Ralph L. Jaeschke, Kenosha, Wis., assignor to Eaton, Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Sept. 26, 1967, Ser. No. 670,554**
**Int. Cl. H02k** *49/02*
**U.S. Cl. 310—105** **10 Claims**

The apparatus disclosed is an eddy-current electromagnetic coupling which may be used for power transmission purposes. A prime mover operates to drive the input member of the coupling at a substantially uniform speed. The output or driven member of the coupling, which is separated from the input member by an air gap, rotates at a speed which is less than that of the input or driving member. The difference in speed between the input and output members of the coupling is converted into thermal energy, i.e. heat. In the apparatus disclosed the temperature difference between the input and output members is maintained substantially uniform throughout the axial length of the air gap of the coupling. As a result, the heat dissipation capability of the coupling is improved resulting in an increase horsepower rating and thermal efficiency of the coupling.



## 3,478,240
## BRUSH HOLDER AND INSERT AND METHOD OF ASSEMBLY

**Robert Dennis Harris, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland**
**Filed Jan. 24, 1968, Ser. No. 700,207**
**Int. Cl. H02k** *5/14*
**U.S. Cl. 310—247** **9 Claims**



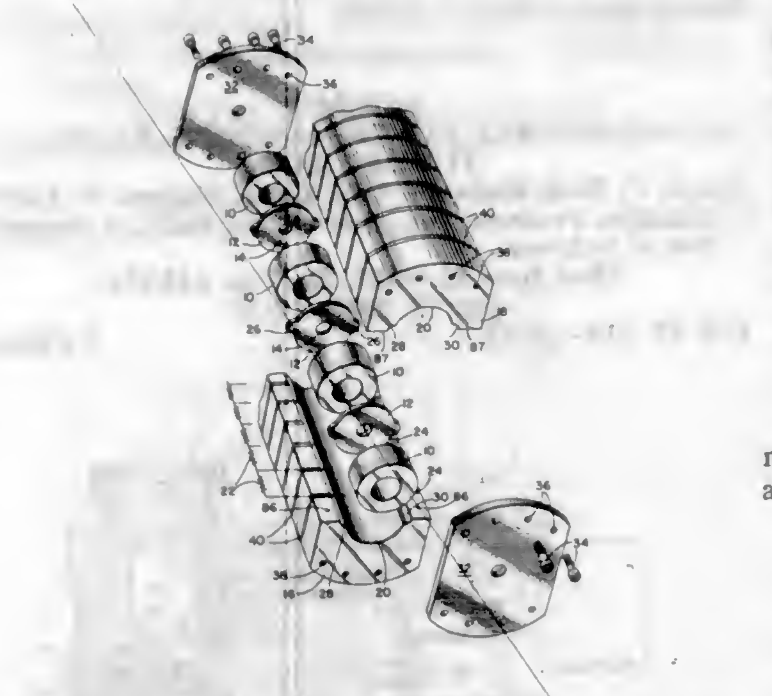
The device disclosed herein is a brush holder construction which carries a carbon brush engageable with a commutator of an electric motor armature. The brush holder construction is supported by a motor frame and includes means to interconnect an electrical lead to the brush.

This invention relates generally to electric motors, and particularly to an improved brush holder construction and to the method of assembly thereof.

## 3,478,241
## HIGH VOLTAGE ACCELERATION TUBE STRUCTURE

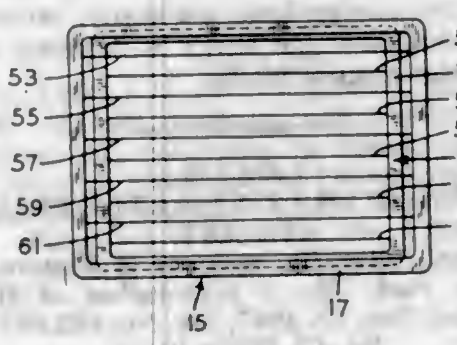
**Emmanuel E. Bliamptis, Lexington, and Hubert R. Quinn, Peabody, Mass., assignors to High Voltage Engineering Corporation, Burlington, Mass., a corporation of Massachusetts**
**Filed Apr. 13, 1967, Ser. No. 630,564**
**Int. Cl. H05h** *5/02;* **H01j** *1/52, 19/40*
**U.S. Cl. 313—63** **4 Claims**

A novel acceleration tube structure composed of alternating insulating rings and conductive electrodes for use in high voltage accelerators which can be mechanically held in compression without the use of adhesives by a surrounding insulating shell such that it can be more easily and cheaply assembled and can be readily disassembled for cleaning, inspection or repair.



## 3,478,242
## CATHODE RAY TUBE HAVING IMAGE-FORMING ELEMENTS IN DISPLACED, PARALLEL PLANES

**Domenick Ciccotto, 527 Ovington Ave., Brooklyn, N.Y. 11209**
**Filed May 13, 1966, Ser. No. 549,897**
**Int. Cl. H01j** *29/18*
**U.S. Cl. 313—92** **2 Claims**

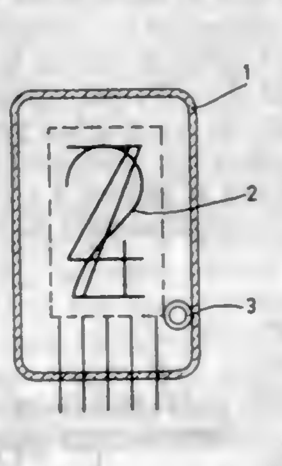


A cathode ray tube for the purpose of three-dimensional image display has a target comprising a frame around which a phosphor-coated conductor is helically wound, so that two image-forming planes, displaced from each other along the tube axis, with the elements of one plane being interlaced with the elements of the other, may both be scanned by a cathode ray.

## 3,478,243
## MERCURY DISPENSING DEVICE FOR AN ELECTRIC DISCHARGE TUBE

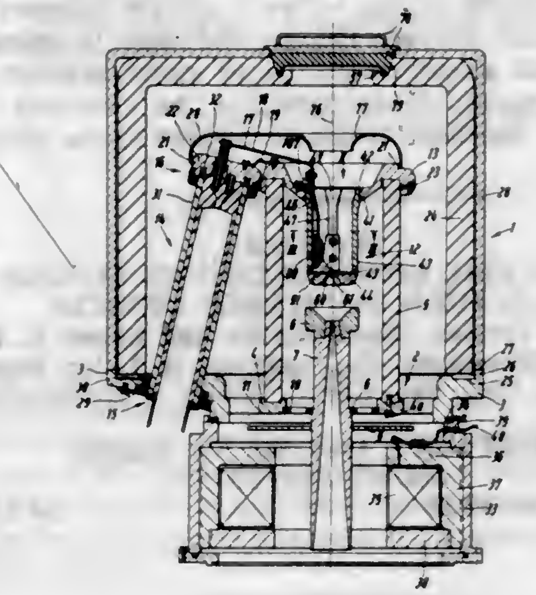
**Martinus Antonius Maria Bakker, Maria Antonius Alphonsus Andreas Collaris, and Johannes Christiaan Duran, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware**
**Continuation of application Ser. No. 589,876, Oct. 27, 1966. This application Jan. 27, 1969, Ser. No. 797,356**
**Claims priority, application Netherlands, Nov. 16, 1965, 6514835**
**Int. Cl. H01j** *19/68, 19/70;* **H01k** *1/52*
**U.S. Cl. 313—174** **5 Claims**

A device for dispensing an accurately determined quantity of mercury into an electric discharge tube is disclosed in which the mercury amalgam is carried on a support and is covered by a layer which forms no amalgam with mercury so that when heated, the mercury is released and not reabsorbed when cooled.



## 3,478,244
## REPLACEABLE CATHODE FOR ELECTRON BEAM GENERATING SYSTEM

**Edgar Meyer, Gilching, and Wilhelm Scheffels, Germering, Germany, assignors to Steigerwald Strahltechnik GmbH, Munich, Germany, a firm of Germany**
**Filed Dec. 13, 1966, Ser. No. 601,513**
**Claims priority, application Germany, Dec. 14, 1965, St 24,761**
**Int. Cl. H01j** *1/02, 313/38*
**U.S. Cl. 313—237** **39 Claims**

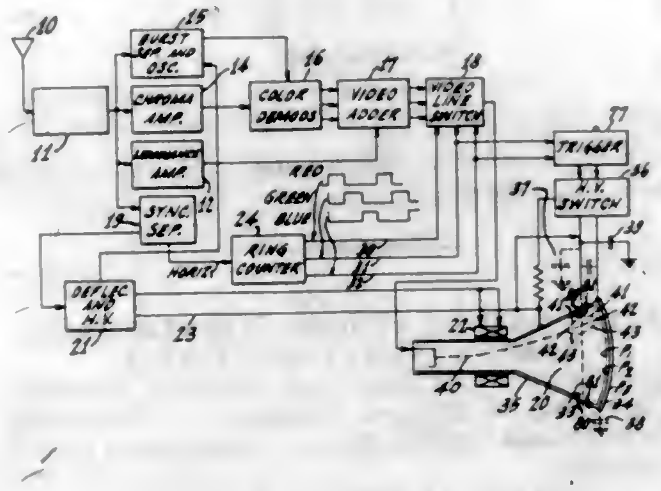


In an electron beam generating system having a replaceable cathode, the Wehnelt cylinder, the anode and the electron optical system are arranged in the housing of the system in fixed positions relative to one another and to the housing. The cathode holder and cathode may be replaced through an opening provided by means of a detachable housing portion, and the cathode holder and cathode are insertable in a mounting which is fixedly located with respect to the Wehnelt electrode and has locating means to impart to the cathode holder and cathode a predetermined operating position relative to the Wehnelt electrode.

## 3,478,245
## PENETRATION COLOR DISPLAYS

**William H. Barkow, Pennsauken, N.J., assignor to RCA Corporation, a corporation of Delaware**
**Filed Sept. 20, 1968, Ser. No. 761,038**
**Int. Cl. H01j** *29/50, 31/20*
**U.S. Cl. 315—13** **12 Claims**

A penetration type kinescope has a screen with a plurality of phosphors, each capable of being excited by a different velocity electron beam. An electron beam, generated by a single gun, is focussed on the screen and the beam velocity is controlled by switching the screen between a plurality of different voltage levels corresponding to the excitation of the different phosphors. Registration is provided, in part, by an electron permeable mesh, insulated from the screen and interposed between the screen and the gun, to which is applied a switching signal of a relative magnitude complementary to that of the screen.



A conductive coating or funnel coating, insulated from both the screen and the mesh and located on the inside surface of a vacuum confining envelope surrounding the electron gun assembly, is biased at a fixed high voltage level. The biased coating serves to sharply focus or collimate the beam between the gun and mesh to maintain a desired beam shape irrespective of stray magnetic fields and those electric fields caused by the switching waveshapes and associated transients applied to the mesh and screen.

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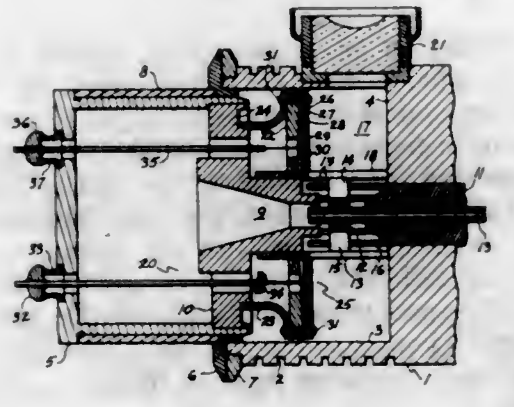
### 3,478,246
### PIEZOELECTRIC BIMORPH DRIVEN TUNERS FOR ELECTRON DISCHARGE DEVICES

**William H. Perkins, Montoursville, and Robert E. Klotz, South Williamsport, Pa., assignors to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware**
**Filed May 5, 1967, Ser. No. 636,540**
**Int. Cl. H01j** *25/50*
**U.S. Cl. 315—39.55** **14 Claims**



A piezoelectric bimorph is utilized to position a movable cavity wall. The bimorph is capable of positioning the cavity wall as a function of the magnitude of a control voltage applied across the bimorph. In one example the microwave cavity is a resonant cavity found within an electron discharge device, and the cavity, including the positionable wall, forms the microwave turner therefore for tuning the electron discharge device and especially for sweep tuning thereof. Further, the bimorph is capable of generating a position representative tracking voltage for representing the instantaneous frequency to which the microwave cavity is tuned.

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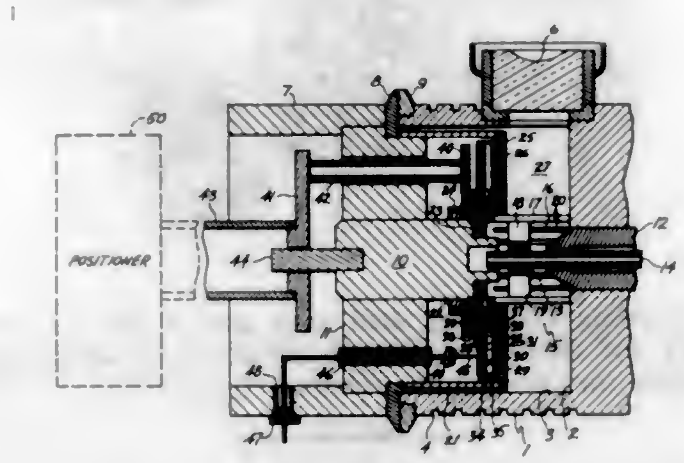
### 3,478,247
### MICROWAVE TUNER HAVING A RAPID TUNING RATE

**Joseph F. Hull, Redwood City, Calif., assignor to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware**
**Filed June 12, 1967, Ser. No. 645,175**
**Int. Cl. H01j** *25/50*
**U.S. Cl. 315—39.55** **8 Claims**



A tunable microwave cavity is provided having a movable wall for changing the resonant frequency of a cavity. The microwave cavity includes a dielectric window which is sealed to portions of the cavity to form a chamber, while the movable cavity wall is positioned outside of this chamber confronting the dielectric window. Input and or output couplings are provided to introduce or extract microwave energy from the cavity. Moreover, in a preferred embodiment the cavity is designed to support a $TE_{011}$ circular electric mode.

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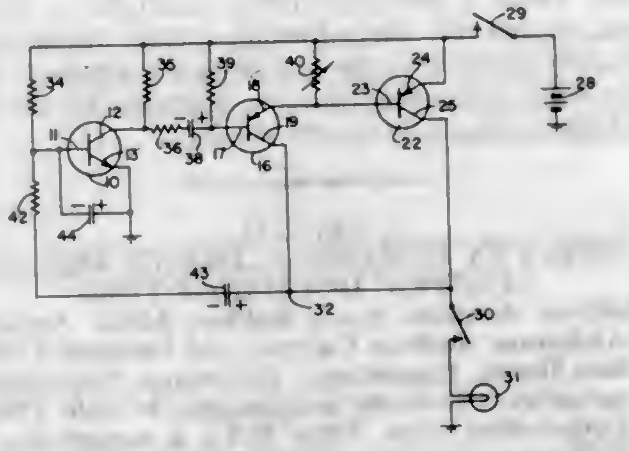
### 3,478,248
### TRANSISTOR MULTIVIBRATOR FLASHER CIRCUIT

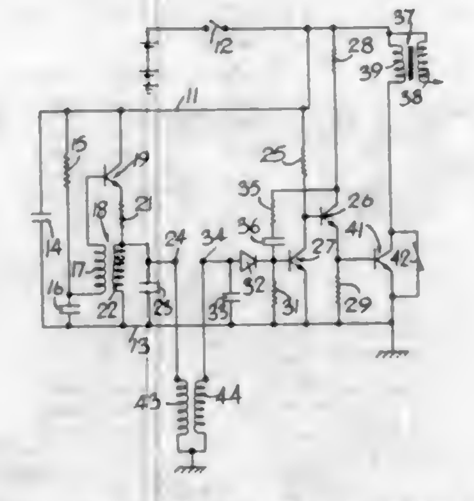
**Martin Ivec, Joliet, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois**
**Filed Nov. 13, 1967, Ser. No. 682,055**
**Int. Cl. H05b** *39/09*
**U.S. Cl. 315—205** **2 Claims**



A flasher circuit incorporating a multivibrator circuit for timing and in which one of the multivibrator transistors is the driver for an output transistor. The energizing currents for the driver as well as the output transistor are supplied through the flasher lamp so that disconnection of the lamp prevents operation of the multivibrator and output transistor.

### 3,478,249
### SPARK IGNITION APPARATUS FOR INTERNAL COMBUSTION ENGINES

**Norman Alfred Jukes, Walsall, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England**
**Filed Feb. 2, 1967, Ser. No. 613,518**
**Claims priority, application Great Britain, Feb. 16, 1966, 6,749/66**
**Int. Cl. H05b** *37/02, 39/04, 41/36*
**U.S. Cl. 315—209** **6 Claims**



The spark ignition apparatus comprises a spark generating circuit for supplying sparks to the plugs of the engine in turn, a trigger circuit which when biased by an input permits the spark generating circuit to produce a spark, a continuously running oscillator for providing the biasing input to the trigger circuit, and magnetic means driven by the engine for coupling the oscillator to the trigger circuit when a spark is required, the design of the trigger circuit being such that irrespective of engine speed only one spark is produced each time the oscillator is coupled to the trigger circuit.

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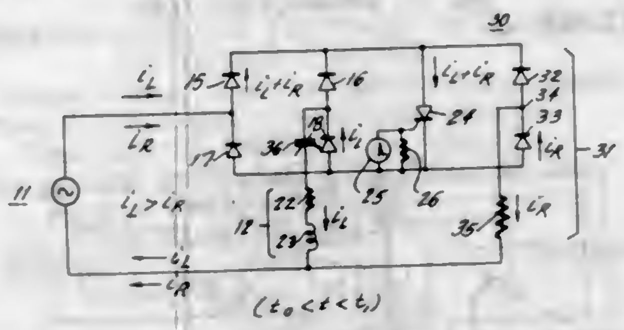
### 3,478,250
### STATIC A.C. SWITCHING CIRCUIT

**Stanley E. Zocholl, Holland, and Richard R. Conrad, Flourtown, Pa., assignors, by mesne assignments, to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware**
**Filed Oct. 9, 1967, Ser. No. 673,583**
**Int. Cl. H02h** *7/00;* **H01h** *47/32*
**U.S. Cl. 317—33** **9 Claims**



This invention teaches a solid state A.C. switching circuit provided for the purpose of switching ON or switching OFF a reactive load through the application of a diode bridge network in combination with a semiconductor device such as, for example, a silicon controlled rectifier. In one application, let it be assumed that the inductive load is normally OFF. The inductive load is coupled in series with a parallel-connected diode bridge network and silicon controlled rectifier. An A.C. source is coupled in series with the reactive load and the parallel connected SCR and diode bridge network. Suitable means is provided for triggering the SCR to conduct. In order to sustain conduction of the SCR beyond one half-cycle of the A.C. source which generates a sinusoidal voltage, a second diode bridge network is coupled in parallel with the first parallel-connected circuit, and a resistor is coupled between its common terminal and the source to place the resistive circuit in parallel with the reactive circuit. This causes the supply current to divide itself so as to pass through both the resistive and the reactive branches of the circuit once a trigger pulse is applied to the SCR gate electrode. Since the currents through the resistive and reactive networks are always out of phase with one another, the current passing through the SCR will always be positive and greater than zero, so that the SCR will be retained in its conductive state. By providing normally closed switch means in either the resistive or the reactive network, the conduction of the SCR may be interrupted simply by opening the normally closed switch, thus providing accurate control over the number of half-cycles during which the SCR will be retained in its conductive state.

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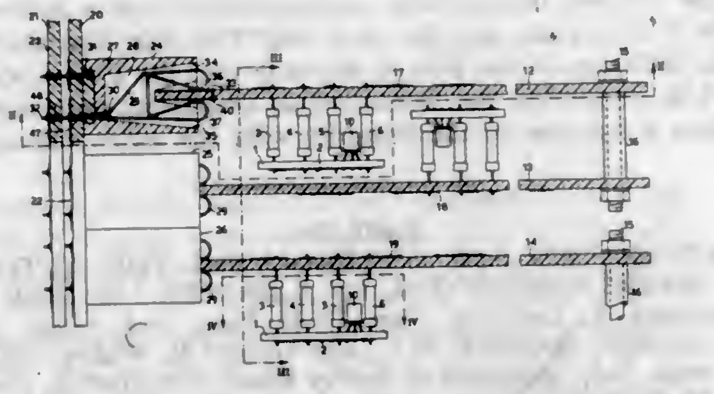
### 3,478,251
### MODULAR ELECTRONIC CIRCUIT ASSEMBLY WITH IMPROVED SUBCOMPONENT PACKAGING ASSEMBLIES

**Pier Giorgio Perotto, Turin, and Edoardo Ecclesia, Ivrea, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy**
**Continuation of application Ser. No. 505,147, Oct. 25, 1965. This application Oct. 23, 1968, Ser. No. 770,896**
**Claims priority, application Italy, Oct. 30, 1964, 23,675/64**
**Int. Cl. H02b** *1/04*
**U.S. Cl. 317—101** **2 Claims**



An electronic circuit module comprises a small plate of insulating material, bearing on one side a printed circuit, electronic components packaged and interconnected by means of said printed circuit, and terminals formed by free terminals of said components perpendicularly arranged with respect to said plate for connection to printed circuit boards.

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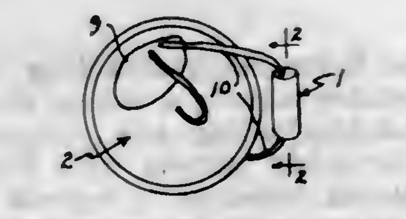
### 3,478,252
### SERIES RECTIFIER STACK AND CAPACITOR IN SHUNT

**John Hambor, Long Branch, N.J., assignor to Atlantic Semiconductor, Division of Aerological Research, Inc., Asbury Park, N.J., a corporation of Delaware**
**Filed Nov. 6, 1967, Ser. No. 680,661**
**Int. Cl. H01g** *9/16;* **H01l** *3/00, 5/00*
**U.S. Cl. 317—233** **6 Claims**



A compensated high voltage silicon rectifier comprising silicon p-n junctions and capacitors in which the p-n junction elements are in stacked configuration and the compensating capacitors are in parallel across the stacked element.

## 3,478,253

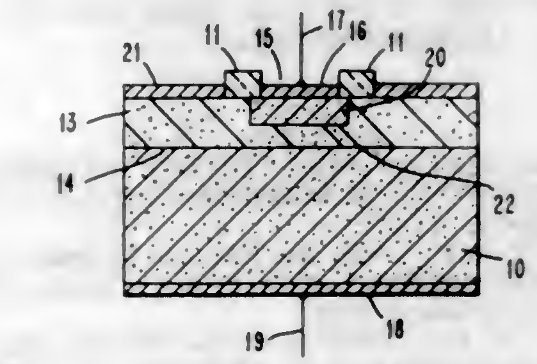
## INTERMETALLIC SEMICONDUCTOR BODY AND METHOD OF DIFFUSING AN N-TYPE IMPURITY THEREINTO

**Tsu-Hsing Yeh, Poughkeepsie, and Robert M. De Fries, Hyde Park, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York**

**Original application Mar. 28, 1963, Ser. No. 268,667, now Patent No. 3,313,663, dated Apr. 11, 1967. Divided and this application Mar. 13, 1967, Ser. No. 622,657**

**Int. Cl. H01l** *3/00, 5/00*

**U.S. Cl. 317—234** **10 Claims**



An intermetallic semiconductor structure composed of a P-type body of an intermetallic semiconductor, a thin coherent film of silicon monoxide thereover and an N-type diffused intermetallic semiconductor region between the P-type body and the thin film. The thin film allows the diffusion of the N-type impurity into the P-type body while preventing the formation of undesired compounds from a reaction of the impurity with the semiconductor.

## 3,478,254

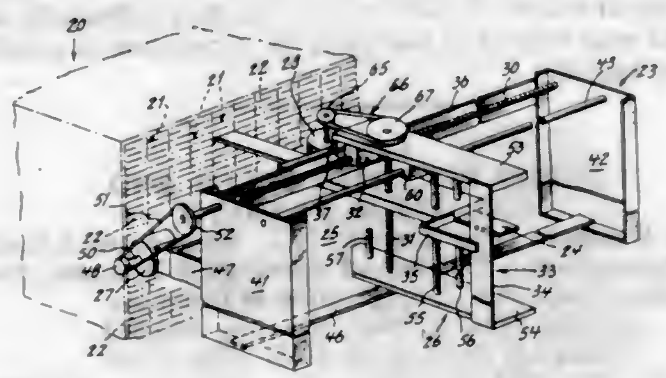
## APPARATUS FOR CONTROLLING THE AUTOMATIC POSITIONING OF A DRIVEN MEMBER

**Leonard A. Lofrisco, New Hyde Park, and Attilio A. De Meo, Brooklyn, N.Y., and Gerard O. Walter, Skillman, N.J., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**

**Filed June 1, 1966, Ser. No. 554,560**

**Int. Cl. G05b** *19/32;* **H02p** *1/54*

**U.S. Cl. 318—18** **10 Claims**



A system for automatically controlling the translation of a driven member adjacent a storage device having a plurality of individual storage cells. A transport mechanism carries the driven member from a random position to a preselected destination in response to input data corresponding to any particular storage cell. Appropriate means are employed to transfer the selected stored article to the transport mechanism which then returns to a work station for appropriate action, e.g., the article is removed, modified, replaced, etc., after which article storage may be effected in the reverse manner.

## 3,478,255

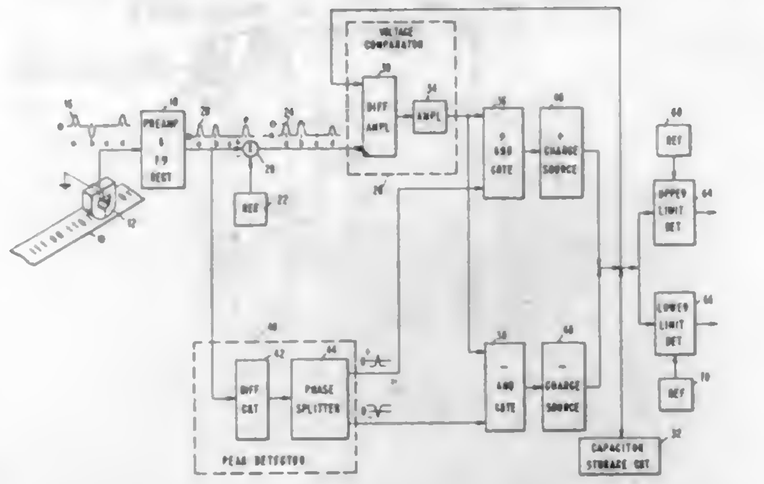
## PULSE AMPLITUDE DETECTION CIRCUIT

**Gerald R. Parker, Longmont, Colo., and Ambrose A. Verdibello, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Sept. 6, 1966, Ser. No. 577,210**

**Int. Cl. G11b** *5/46*

**U.S. Cl. 320—1** **6 Claims**



This specification discloses apparatus for measuring the magnitudes of pulses such as those produced by a tape head reading information stored on a tape. The apparatus first compares the amplitude of the pulses with that of a desired reference level and then in a second comparison compares the result of the first comparison with the level of charge stored on a capacitor. Depending on the result of this second comparison the charge on the capacitor is either increased or decreased so that the potential across the capacitor is indicative of how the amplitudes of the pulses vary from the desired amplitude level.

## 3,478,256

## CAPACITOR POTENTIOMETER

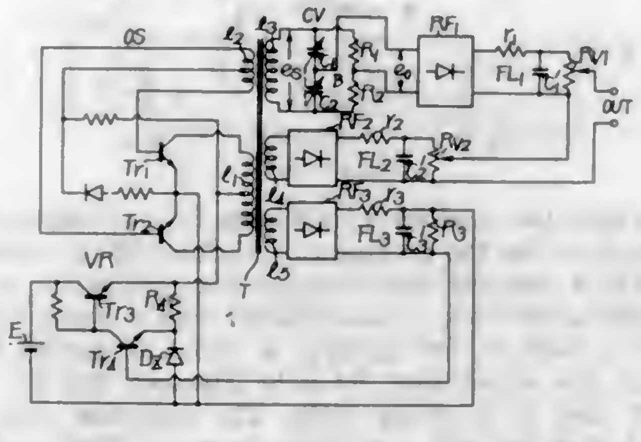
**Miyaji Tomota, Tokyo, Japan, assignor to Kabushikikaisha Yokogawa Denki Seisakusho, Tokyo, Japan**

**Filed Oct. 18, 1967, Ser. No. 676,317**

**Claims priority, application Japan, Nov. 15, 1966, 41/75,072**

**Int. Cl. H02m** *3/22, 5/40*

**U.S. Cl. 321—2** **4 Claims**



A capacitor potentiometer having a transistor DC-AC converter for converting a DC-voltage into an AC signal having a certain amplitude, an impedance circuit including two variable capacitors connected differentially with each other for changing mechanical motion into an electrical signal and a rectifier circuit for rectifying an output voltage of the impedance circuit.

## 3,478,257

## CONTROL CIRCUIT FOR MULTIPHASE RECTIFIERS BY SENSING OF THYRISTOR'S CONTROL ELECTRODE VOLTAGE

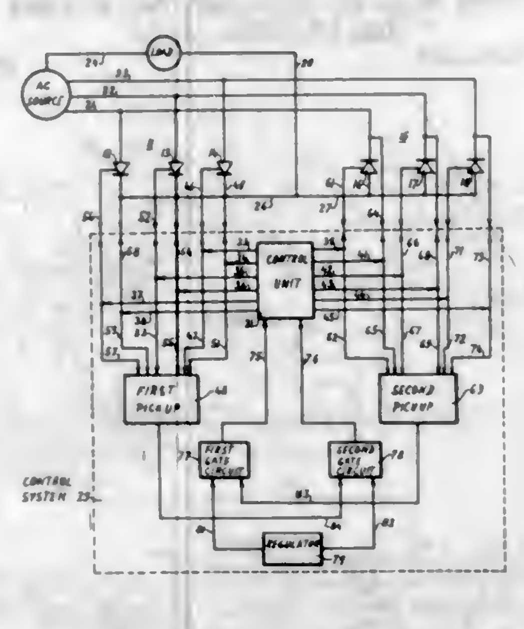
**Ladislav Kýr, Plumlov, and Jiří Voleník and František Raba, Plzen, Czechoslovakia, assignors to Skoda oborovy podnik, Plzen, Czechoslovakia**

**Filed May 3, 1967, Ser. No. 635,819**

**Claims priority, application Czechoslovakia, May 7, 1966, 3,081/66**

**Int. Cl. H02m** *1/18*

**U.S. Cl. 321—11** **2 Claims**



The thyristors of a selected one of first and second pluralities of rectifying branches are switched by control signals supplied to the control electrodes thereof to their conductive conditions and the thyristors of the other of the first and second pluralities of rectifying branches are simultaneously prevented from switching to their conductive conditions by a thyristor firing control circuit having inputs coupled to the control electrodes and the anode-cathode conducting paths of the thyristors and outputs connected to the control electrodes and the anode-cathode conducting paths of the thyristors. The thyristor firing control circuit controls the conductive condition of the thyristors by the control electrode current of the thyristors combined with the control signals.

## 3,478,258

## TRANSFORMERLESS VOLTAGE REDUCING RECTIFIER CIRCUIT

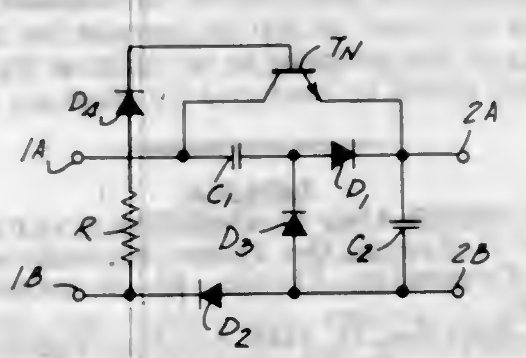
**Tamiji Nagai, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan**

**Filed May 20, 1968, Ser. No. 730,435**

**Claims priority, application Japan, May 24, 1967, 42/43,793**

**Int. Cl. H02m** *1/08, 7/02*

**U.S. Cl. 321—15** **10 Claims**



A power supply circuit for converting alternating current voltage to direct current voltage which includes a plurality of capacitors connected in series with a pair of input terminals and wherein the input terminals are arranged for connection with an AC voltage source. Rectifier means are also connected in series with the capacitors to provide a unidirectional current flow through the capacitors to charge the capacitors in such a manner as to divide the voltage between the capacitors. One of the capacitors of the series of capacitors is connected across a pair of output terminals to provide a DC voltage at the output terminals. A current control device is connected in circuit with the series of capacitors to cause the current charge from the remaining capacitors to be delivered to the capacitor connected across the output terminals.

## 3,478,259

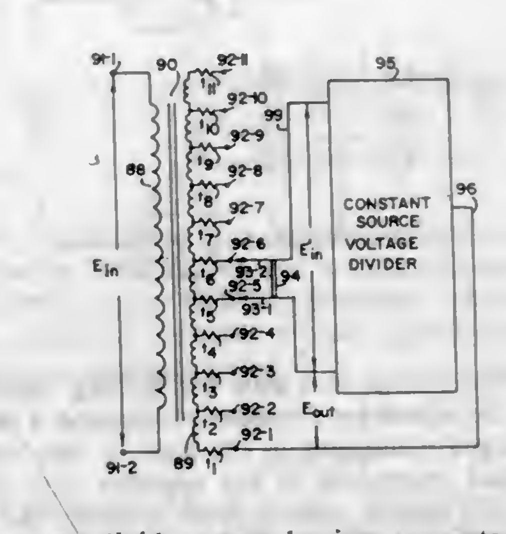
## VOLTAGE DIVIDER WITH CONSTANT SOURCE IMPEDANCE STAGES

**Frank R. Bradley, 9 Dash Place, New York, N.Y. 10003**

**Filed July 6, 1967, Ser. No. 651,424**

**Int. Cl. H02p** *13/06*

**U.S. Cl. 323—43.5** **19 Claims**



A voltage divider stage having a constant source impedance. The stage consists of a series of impedance elements with compensating impedances connected to each junction. If the total impedance of the series is $k$ and if $x$ is the impedance between each compensating impedance and one end of the series, then the magnitudes of the compensating impedances are related by the formula $(2x-k)^2/4k$. By combining various stages together it is possible to derive multirange dividers with constant source impedances.

## 3,478,260

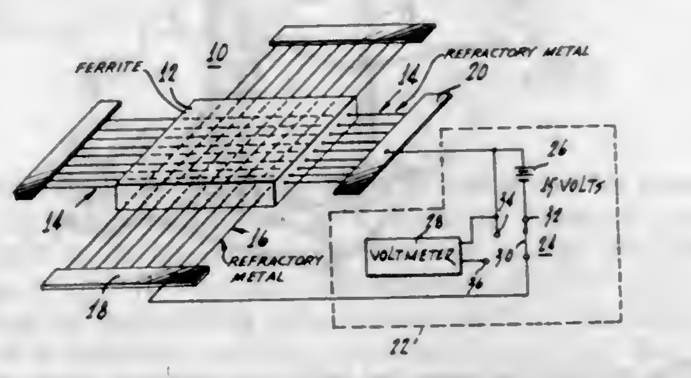
## TESTING FOR THE PRESENCE OF A CONTAMINANT IN AN INSULATING OR SEMICONDUCTING MEDIUM

**Louis Pensak, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware**

**Filed Aug. 19, 1966, Ser. No. 573,711**

**Int. Cl. G01r** *11/44*

**U.S. Cl. 324—30** **2 Claims**



The substance being tested is located between spaced conductors and a voltage is applied across the conductors. The conductors are then shorted for a fixed interval and then the initial amplitude of any residual voltage which remains between the two conductors is measured. This instantaneous amplitude is found to be indicative of the amount of contaminant such as water present in the substance.

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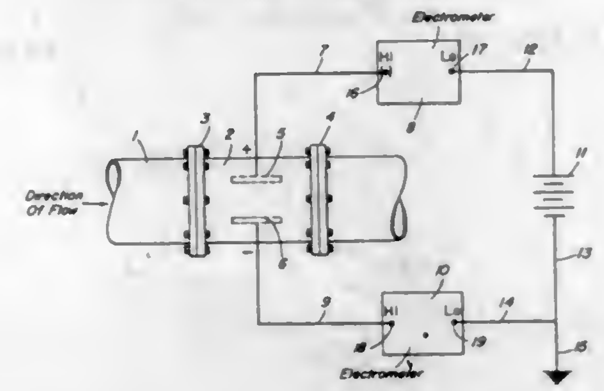
### 3,478,261
## PROCESS FOR MEASURING STATIC CHARGE IN A LIQUID HYDROCARBON STREAM

**Eric O. Forster, Scotch Plains, and Edward Effron, Springfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**
**Continuation-in-part of application Ser. No. 480,269, Aug. 17, 1965. This application Dec. 31, 1968, Ser. No. 788,173**
**Int. Cl. G01r** *5/28*
**U.S. Cl. 324—32** **4 Claims**



Static electrical charge in a pipe for flowing liquid hydrocarbons is measured by a system comprising a pair of oppositely charged electrodes in the pipe, a bias voltage source, a ground connected to the negative side of the bias voltage and a pair of electrometers between the electrodes and the ground. The algebraic sum of the currents flowing from the two electrodes to the ground, as shown by the two electrometers, indicates the amount of static charge.

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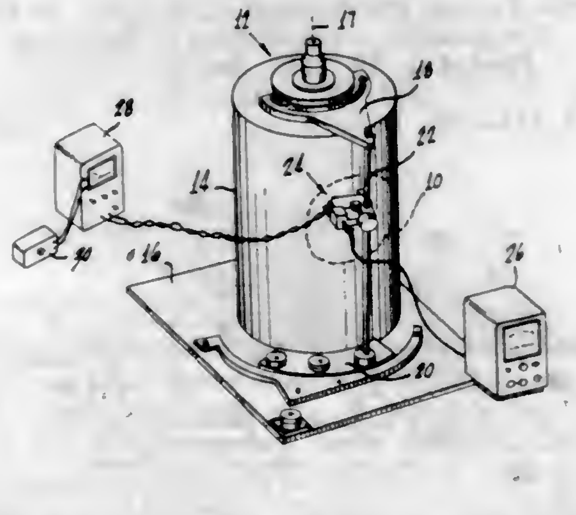
### 3,478,262
## METHOD OF SPACING A PLURALITY OF MAGNETIC HEADS FROM THE SURFACE OF A MAGNETIC DRUM

**David A. Vigil, Woodland Hills, Calif., assignor to RCA Corporation, a corporation of Delaware**
**Filed June 30, 1967, Ser. No. 650,402**
**Int. Cl. G01r** *33/00;* **G11b** *5/00*
**U.S. Cl. 324—34** **2 Claims**



The spacing between an inductive element, such as a magnetic head, and a surface, such as that of a magnetic drum, is adjusted by measuring an inductively related parameter, such as inductive reactance, of the element. A set of graphs is first prepared using reference heads having different values of free space inductance. Then the free space inductance of the particular head it is desired to adjust relative to the drum is determined and the prepared graph corresponding to that free space inductance is used in adjusting the head.

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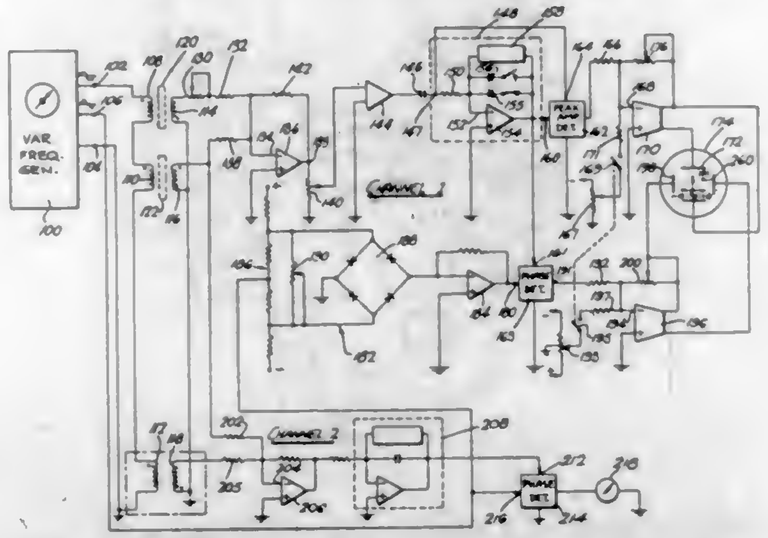
### 3,478,263
## WIDE FREQUENCY RANGE EDDY CURRENT TESTING INSTRUMENT

**Rudolf G. Hentschel, 2010 Medford, Ann Arbor, Mich. 48104**
**Filed Sept. 27, 1967, Ser. No. 670,868**
**Int. Cl. G01r** *33/14*
**U.S. Cl. 324—40** **29 Claims**



A test signal is applied to a pair of primary-secondary test coils designed to operate at low Q connected in a differential circuit arrangement for comparison of a test specimen against a standard specimen. A differential test signal from the two secondary coils is integrated. The peak amplitude of the integrated differential test signal is then detected by a zero-crossing detector whose sampling input is derived from the input to the integrator. The phase of the integrated differential test signal is detected by sampling a triangular waveform reference signal from the generator in accordance with zero-crossings of the integrated differential test signal. The output of the phase and amplitude detectors are displayed on an oscilloscope. Either horizontal or vertical deflection gain can be adjusted independently of the other to improve separation in the display of various characteristics of the specimens, such as conductivity or diameter. Provision is also made for shaping the sampled triangular waveform in the phase detection circuit to provide a dead zone which can be used to optimize separation of different effects in the display on the oscilloscope. A separate phase detection channel compares the phase of the test signal at one coil pair against the phase of the original signal from the generator and the detected phase difference is displayed on an indicator. This indicator is calibrated so that an operator can adjust the frequency of the generator to an optimum frequency at which tests should be conducted for given test problems.

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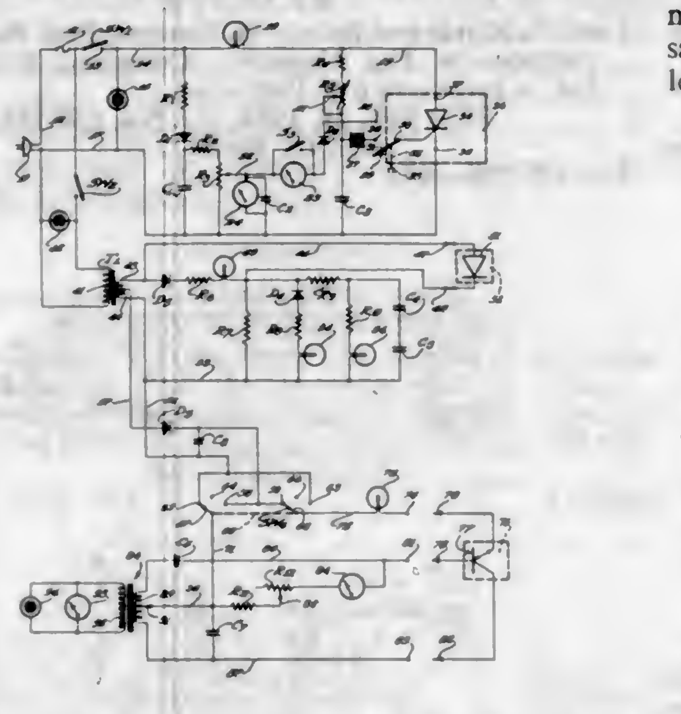
### 3,478,264
## SCR, DIODE AND TRANSISTOR ANALYZER

**Athanase N. Tsergas, Des Plaines, Ill., assignor to Ram Tool Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Jan. 31, 1968, Ser. No. 701,939**
**Int. Cl. G01r** *15/12*
**U.S. Cl. 324—73** **8 Claims**

A testing device for testing various components such as SCRs, diodes and transistors and which is capable of performing a number of different tests on each component. Selector switches allow various tests to be performed on the various components, including tests on SCRs for shorts, opens and general operating condition;



tests on diodes for shorts or opens; and tests on transistors operated as an audio oscillator.

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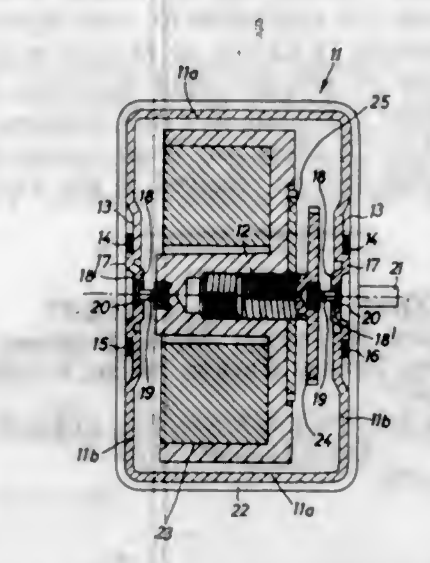
### 3,478,265
## FRAME FOR A MOVING COIL INSTRUMENT

**Alfred Sauser, Solothurn, Switzerland, assignor to Sauser AG, Solothurn, Switzerland**
**Filed Sept. 24, 1965, Ser. No. 489,950**
**Claims priority, application Switzerland, Sept. 29, 1964, 12,621/64**
**Int. Cl. G01r** *1/10*
**U.S. Cl. 324—155** **13 Claims**



A frame for a moving coil instrument includes two pairs of opposed walls. The outwardly directed faces of one pair of walls are each provided with a centrally located annular recess in which a bearing member may be positioned, and another annular recess concentric with the first one and in which an auxiliary member may be at least partly received.

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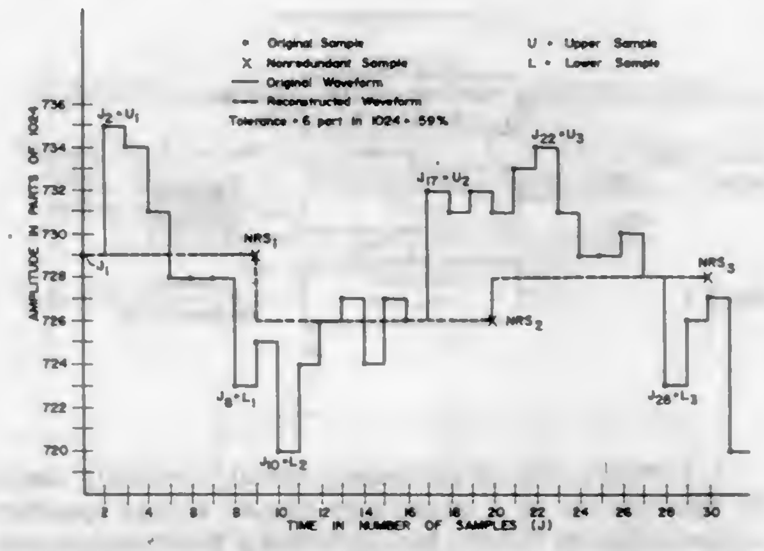
### 3,478,266
## DIGITAL DATA REDUNDANCY REDUCTION METHODS AND APPARATUS

**Lawrence W. Gardenhire, Eau Gallie, Fla., and Ashby M. Woolf, Ann Arbor, Mich., assignors to Radiation Incorporated, Melbourne, Fla., a corporation of Florida**
**Filed Nov. 22, 1966, Ser. No. 596,263**
**Int. Cl. H04b** *1/04, 7/02*
**U.S. Cl. 325—38** **11 Claims**

A method of reducing the amount of redundant digital data transmitted from sampled values of an observed parameter is performed by storing the highest and the lowest of the sampled values obtained since the transmission of the last non-redundant sample, comparing each sampled value with limits consisting of the highest and lowest values presently stored, and if those limits are ex-



ceeded, transmitting as a non-redundant sample a value between the limits when the sample presently under observation is greater than the presently stored lowest value or less than the presently stored highest value by a predetermined tolerance value.

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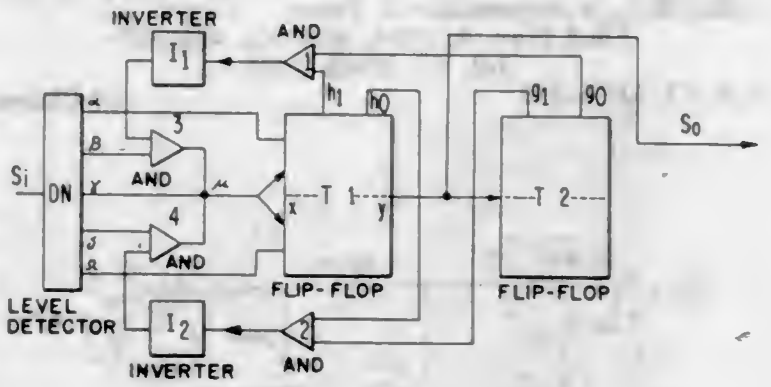
### 3,478,267
## RECEPTION OF PULSES TRANSMITTED AT N TIMES THE NYQUIST RATE

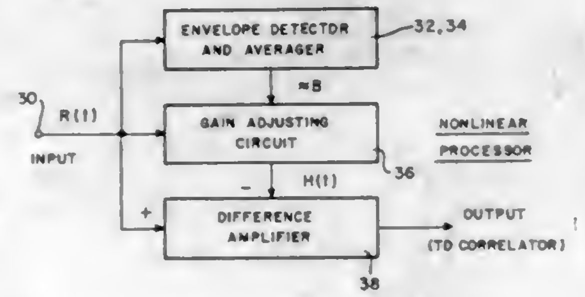
**Constantin Michael Melas, Antibes, France, assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Sept. 9, 1965, Ser. No. 486,084**
**Claims priority, application France, Sept. 10, 1964, 7,464**
**Int. Cl. H04b** *1/10*
**U.S. Cl. 325—42** **6 Claims**



This invention relates to a method and means for transmitting pulse information in a restricted bandpass data channel at an integer rate, 2 times or greater than the Nyquist symbol rate for said channel. This is accomplished by transmitting pulse data at such a rate, resulting in a naturally occurring multi-level waveform due to intersymbol interference of the data. This waveform is then detected at the receiver by detecting means utilizing an N position shift register, when N is the integer number (2 or greater) times the Nyquist symbol rate at which the pulse information was transmitted.

### 3,478,268
## SUPPRESSION OF STRONG INTERFERING SIGNALS IN A RADIO RECEIVER

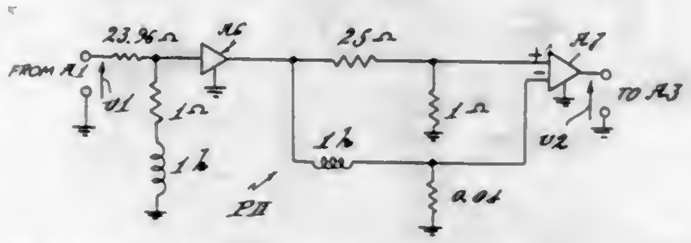
**Gino J. Coviello, Buffalo, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware**
**Filed June 16, 1967, Ser. No. 646,572**
**Int. Cl. H04b** *1/10*
**U.S. Cl. 325—65** **16 Claims**



A nonlinear signal processing circuit, especially useful in the receiver of a quaternary phased spread spectrum communication system, for suppressing interfering signals that are stronger than the desired signal and which have waveform envelopes that are relatively constant. The nonlinear processor includes an envelope detector and averager for deriving, from the combined interfering and desired signal input, a control voltage which approximates the amplitude of the interfering signal, a gain adjusting circuit operative in response to the composite received signal and the control voltage to generate a close approximation of the interfering signal waveform, and a difference amplifier in which this approximation of the interfering waveform is subtracted from the composite received waveform to achieve cancellation of the interfering signal. The receiver further includes a decision circuit for bypassing the nonlinear processor when the desired signal is stronger than the interfering signals.

### 3,478,269
## DIRECTIONAL ANTENNA SIGNAL COMBINING ARRANGEMENT AND PHASE SHIFTERS THEREFOR

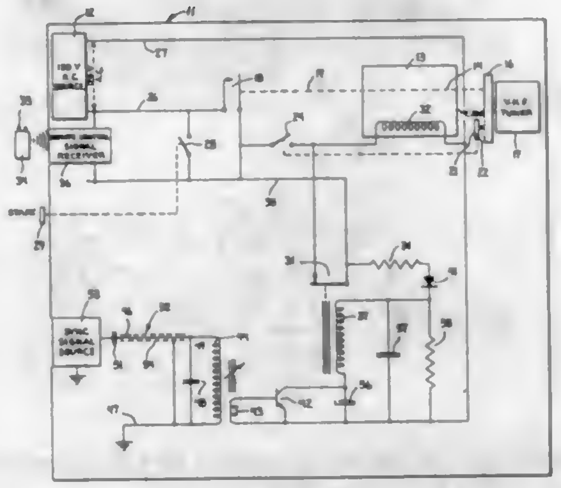
**Robert B. Enemark, Weymouth, and Carson K. H. Tsao, Braintree, Mass., assignors, by mesne assignments, to Continental Electronics Manufacturing Company, Dallas, Tex., a corporation of Texas**
**Filed Nov. 4, 1964, Ser. No. 408,907**
**Int. Cl. H04b** *1/06*
**U.S. Cl. 325—369** **14 Claims**



Signals from directional antennas are combined by phase shifting one signal an angle corresponding to the spatial agle of the antennas, and summing it with the other signal. The phase shift network produces, through specific transfer functions, optimalized system performance. It is formed with a balanced symmetrical lattice network using only passive impedance elements, and terminated by a resistance, or with an unbalanced network employing amplifiers.

### 3,478,270
## AUTOMATIC PROGRAMMING FOR DETENT-TYPE TV TUNER

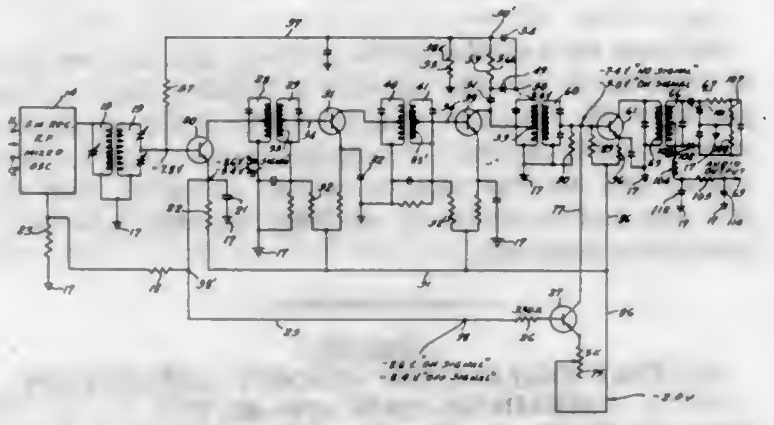
**Louis F. Mayle and Robert W. Sanders, Fort Wayne, Ind., assignors to The Magnavox Company, Fort Wayne, Ind., a corporation of Delaware**
**Filed Feb. 25, 1966, Ser. No. 530,108**
**Int. Cl. H04b** *1/32*
**U.S. Cl. 325—470** **14 Claims**



A television tuner of the detented type is provided with a power tuning motor which is operable in response to a manual button or remote control signal. A cam-operated, or detent-operated motor circuit switch keeps the motor energized as the tuner is driven between each detent position and the next. An automatic control circuit is associated with motor hold circuitry to keep the latter closed even at a tuner detent position, unless a suitable station can be tuned. Variations of the control circuit are responsive to: sync signals, (FIGS. 1, 2); AGC current, (FIG. 3); or IF picture carrier current, with means to provide rapid discharge of the I-F AGC voltage filter capacitor to avoid skipping weak stations (FIGS. 4,5) in transition from strong stations, if satisfactory signals can be received at the weak stations.

### 3,478,271
## NOISE CONTROL CIRCUIT

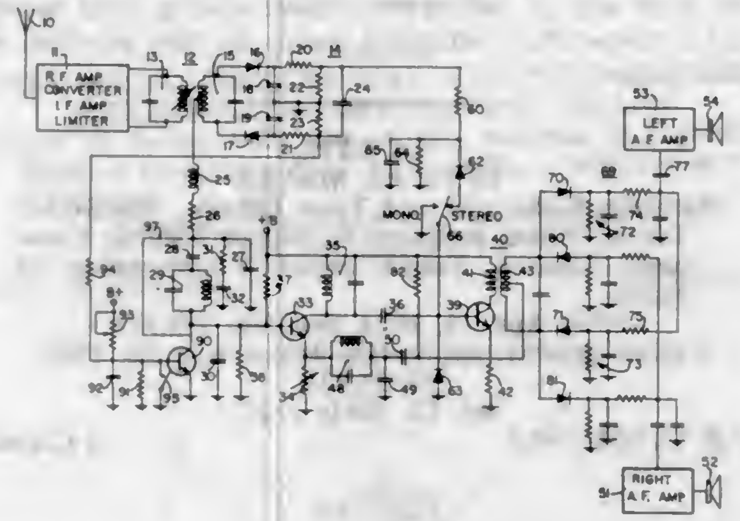
**Robert C. Ison, St. Joseph, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan**
**Filed Jan. 19, 1967, Ser. No. 610,433**
**Int. Cl. H04b** *1/10*
**U.S. Cl. 325—478** **6 Claims**



The invention relates to circuitry to obtain substantial noise immunity in FM receivers during periods when reception is changed between different incoming signal sources. An automatic gain control voltage is derived in an intermediate frequency amplifier stage subsequent to the first. The derived signal is used to control receiver gain and also to establish the operational periods of a triggering device that is connected to shunt an amplifying stage subsequent to that which the automatic gain control voltage is derived. Conductivity through the triggering device is limited to time periods when there is an absence of incoming carrier signals. At such times the conductive trigger short-circuits the amplifier and cuts off the receiver. During other time periods the triggering device is inoperative and normal receiver operation with automatic gain control is provided.

### 3,478,272
## SQUELCH CONTROL CIRCUIT

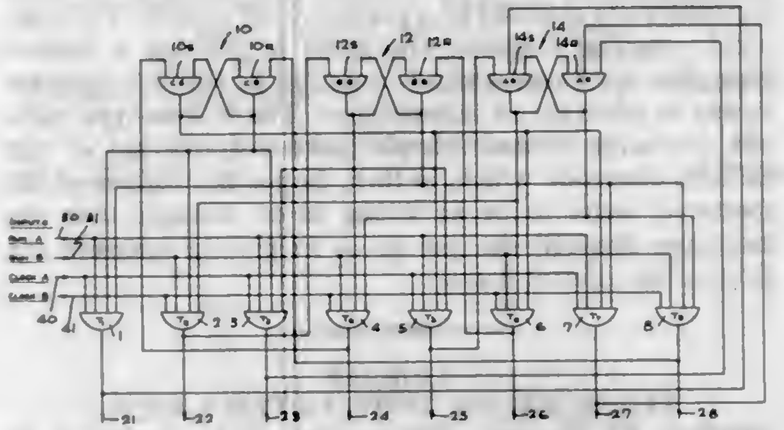
**Max W. Rogers, Melrose Park, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois**
**Continuation of application Ser. No. 581,998, Sept. 26, 1966. This application Dec. 13, 1968, Ser. No. 785,052**
**Int. Cl. H04b** *1/10*
**U.S. Cl. 325—478** **4 Claims**



A squelch control circuit in which a transistor conducts during the absence of an FM signal, thus DC and AC shunting the input signals to the circuit being squelched, and provides isolation of the control circuit from the circuit being squelched during reception of radio signals.

### 3,478,273
## TIME SLOT GENERATOR

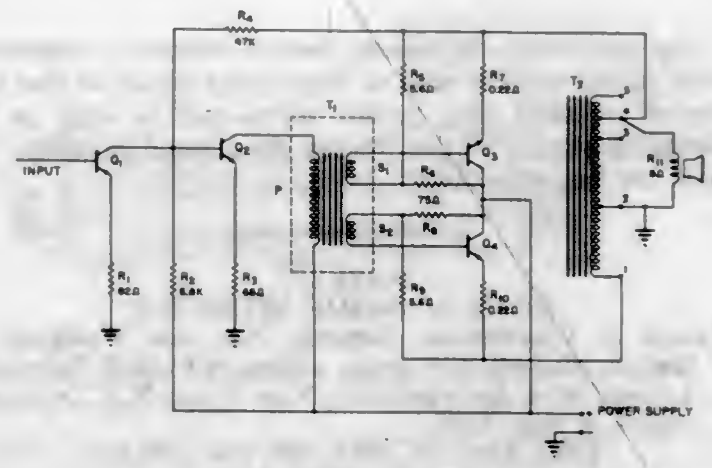
**Glen R. Duncan and William H. Wertz, Canoga Park, Los Angeles, Calif., assignors to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland**
**Filed Feb. 1, 1966, Ser. No. 524,269**
**Int. Cl. H03k** *3/04*
**U.S. Cl. 328—63** **11 Claims**



A time slot generator comprising N flip-flops and $2^N$ inverting gates interconnected such that the inverting gates sequentially provide $2^N$ distinct output pulses, while the combination of states of the flip-flops sequence in accordance with a unit distance code. A pair of clock signal input circuits, connectable to a two phase clock, are coupled to selected ones of said plurality of inverting gates; thereby to apply in operation clock signals for controlling the stepping of the inverting gates. Further, two, separate, control signal input terminals, connectable to a source of control signals, are coupled to the inverting gates so that, in operation, the control signals allow the gates selectively to free run, to step one step at a time, or to stop.

### 3,478,274
## PUSH-PULL AMPLIFIER WITH ASYMMETRICAL DRIVE AND LOAD

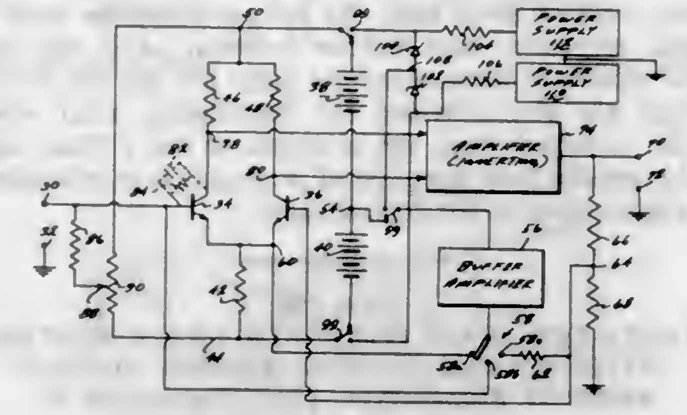
**Harold J. Laurent and Lubomyr J. Iwaskiw, Baltimore, Md., assignors to The Bendix Corporation, a corporation of Delaware**
**Filed Sept. 11, 1967, Ser. No. 666,643**
**Int. Cl. H03f** *3/04, 3/26*
**U.S. Cl. 330—14** **1 Claim**



An arrangement to permit the economical use of NPN transistors in an audio power amplifier with the grounded negative power supply and grounded loudspeaker common in automobiles.

### 3,478,275
## AMPLIFIER SYSTEM WITH POWER SUPPLY CONTROL FOR A BALANCED POWER

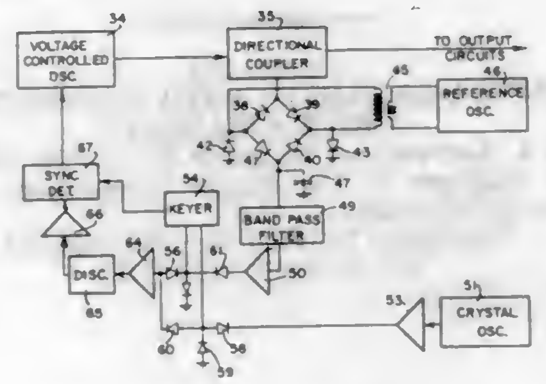
**Norman C. Walker, Newport Beach, Calif., assignor to Dana Laboratories, Inc., Irvine, Calif., a corporation of California**
**Filed Jan. 21, 1966, Ser. No. 522,208**
**Int. Cl. H03f** *3/04, 3/68*
**U.S. Cl. 330—22** **10 Claims**



An amplifier (including a pair of interconnected transistor devices) is connected to receive an input signal and applied power from a power supply. An isolation circuit senses the operating level of the amplifier and accordingly adjusts the power supply without ohmic connection. Specifically, as disclosed, the middle or center of the power supply is varied to a level in accordance with the operating level of the amplifier.

### 3,478,276
### AUTOMATIC PHASE CONTROL CIRCUIT

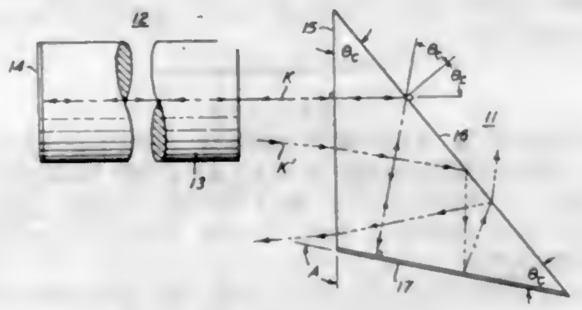
**Elwood C. Reichart, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois**
**Filed Jan. 10, 1968, Ser. No. 696,826**
**Int. Cl. H03b** *3/04*
**U.S. Cl. 331—11** **10 Claims**



An automatic frequency control circuit is responsive only to the trailing edge of a sampling signal so that sine waves or other long period waves can be used as the sampling signal. In this system short pulse sampling signals are not required.

### 3,478,277
### OPTICAL MODE SELECTOR

**Joseph A. Giordmaine, Summit, N.J., and Wolfgang K. Kaiser, Munich, Germany, assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed June 24, 1964, Ser. No. 377,546**
**Int. Cl. H01s** *3/05*
**U.S. Cl. 331—94.5** **11 Claims**

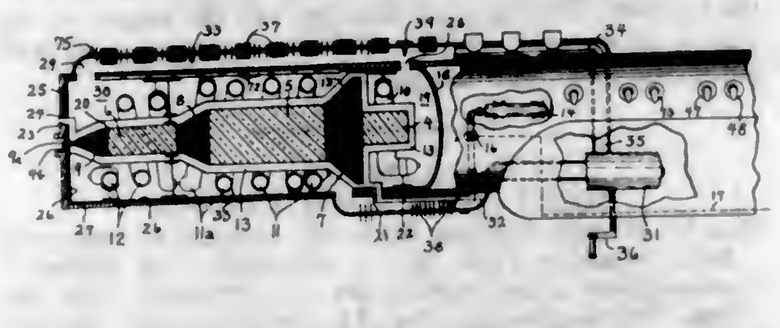


An optical mode selector comprises an interface between regions of high and low refractive index which when inclined at or near the critical angle for total internal reflection discriminates between axial and nonaxial modes by attenuating the latter but not the former. Means are also provided for intercepting axial modes totally reflected from the interface at the critical angle and reversing their direction of propagation to reincidence on the interface at the critical angle.

### 3,478,278
### DIRECTED-BEAM PORTABLE LASER SYSTEM WITH SELF-CHARGING POWER SUPPLY

**Arthur M. Muncheryan, 1735 Morningside St., Orange, Calif. 92667**
**Filed July 6, 1965, Ser. No. 469,560**
**Int. Cl. H01s** *3/04*
**U.S. Cl. 331—94.5** **11 Claims**

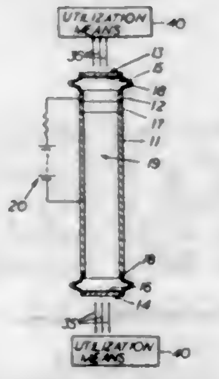
A directed-beam portable system with a self-charging power supply is described. The system comprises a rifle-configurated housing containing a plurality of solid-state laser rods individually activated by flashtubes therein receiving high-voltage pulsed current from a bank of capacitors energized by said power supply through a step-up transformer. The power supply comprises doped silicon solar cells activated radioactively fluorescing material therebetween. Three series-connected switches provided in the power supply trigger the capacitor bank to discharge through the flashtubes to activate the laser rods.



Fiber optics cones interposed contiguously in the axial relations of said laser rods concentrate the laser radiation and form a parallel beam for projection thereof from the front end of said system. Laser cooling fluid means and a temperature indicating means are also provided in said system.

### 3,478,279
### OPTICAL MASER

**Haruhiro Kobayashi and Taizo Oikado, Minato-ku, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan**
**Filed Apr. 13, 1964, Ser. No. 359,374**
**Claims priority, application Japan, Apr. 26, 1963, 38/21,835**
**Int. Cl. H01s** *3/22*
**U.S. Cl. 331—94.5** **11 Claims**

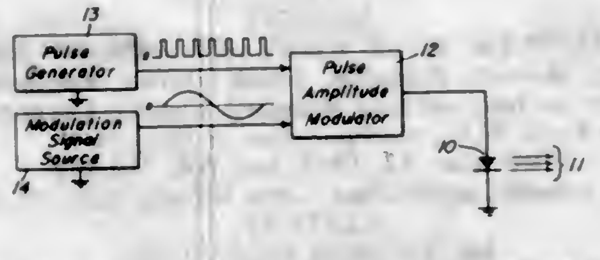


A hollow type glow discharge optical maser having cylindrical-shaped anode and cathode electrodes arranged in coaxial fashion. The electrodes are spaced from one another along their common longitudinal axis and are coupled to an energy source to provide a potential difference therebetween. The internal surfaces of the tubular electrodes are exposed to a gas provided therein. The electrical potential activates the gases to provide a hollow type glow discharge which is reflected by suitable reflector means to generate an intense glow. The hollow-type cathode discharge causes intense cathode sputtering of the cathode electrode which, in turn, causes the vapour of the sputtered metal to be as strong as or stronger than the discharge through the gas so as to greatly intensify the glow of the optical maser.

### 3,478,280
### PULSE WIDTH MODULATED LASER

**Gunther E. Fenner, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Oct. 14, 1966, Ser. No. 586,687**
**Int. Cl. G01s** *3/10*
**U.S. Cl. 332—7.51** **7 Claims**

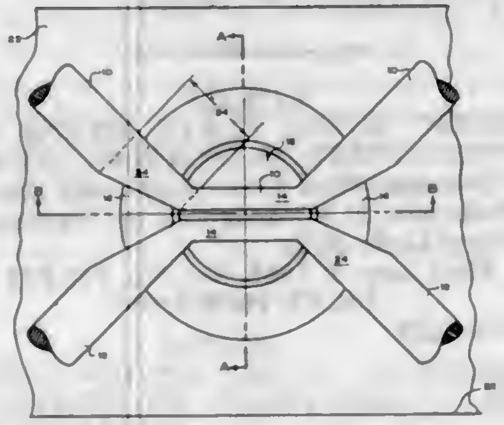
An apparatus for producing pulse width modulated coherent optical output pulses from a semiconductor junction laser in which the pulse width modulation is achieved by adjusting the turn-on delay of the semiconductor junction laser; in one embodiment this is achieved by applying amplitude modulated pulses of constant width to the semiconductor junction laser and



in another embodiment by applying modulation and bias currents to the semiconductor junction laser below the threshold of lasing and exceeding the threshold of lasing by the application of constant amplitude and width pulses.

### 3,478,281
### TEM MODE DIRECTIONAL COUPLER HAVING DIELECTRIC COMPENSATING MEANS

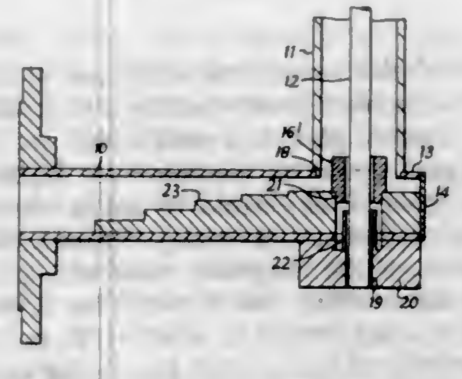
**David H. Jeong, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California**
**Filed July 25, 1968, Ser. No. 747,585**
**Int. Cl. H01p** *5/14*
**U.S. Cl. 333—10** **10 Claims**



Annular dielectric elements support the coupling elements of a TEM mode directional coupler in a desired coupling relationship while providing the coupler with more uniform transmission line impedance and higher directivity over a broad frequency range.

### 3,478,282
### COUPLINGS BETWEEN WAVEGUIDES AND COAXIAL LINES

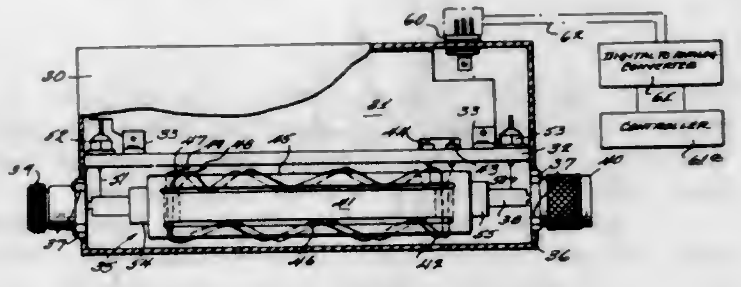
**Charles Arthur Smith, Harlow, England, assignor to A. C. Cossor Limited, Harlow, England**
**Filed Apr. 4, 1966, Ser. No. 539,801**
**Claims priority, application Great Britain, Apr. 15, 1965, 16,351/65**
**Int. Cl. H01p** *1/16, 5/08*
**U.S. Cl. 333—21** **3 Claims**



In coaxial line to waveguide couplings in which the inner coaxial conductor extends across the interior of the waveguide to terminate on one broad wall of the waveguide, it is known to provide the inner conductor with an enlarged terminal portion to reduce the possibility of voltage breakdown and/or to assist in impedance tapering. The present invention provides for the enlarged portion to be longer than the width of the waveguide and thus to extend into the coaxial line outside the waveguide, giving considerably increased band width.

### 3,478,283
### RECIPROCAL MICROWAVE PHASE SHIFTER HAVING TWO MAGNETIZING CONDUCTORS AND ONE RESET CONDUCTOR

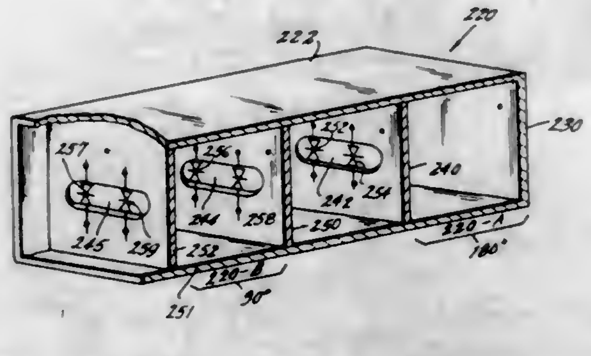
**Joseph William Simon, Doraville, and William Keith Alverson, Chamblee, Ga., assignors to Scientific-Atlanta, Inc., Atlanta, Ga., a corporation of Georgia**
**Filed Apr. 21, 1967, Ser. No. 632,723**
**Int. Cl. H03h** *7/30, 7/18*
**U.S. Cl. 333—31** **14 Claims**



A reciprocal microwave phase shifter in the form of a strip transmission line having a ferrite element in the shape of a double toroid longitudinally disposed between the ground planes and magnetizing conductors associated with the ferrite element. Control circuitry associated with said magnetizing conductors for selectively switching said ferrite element between two orthogonal states of remanent magnetization, one of said states being parallel to the direction of propagation through the transmission line, said control circuitry being effective to control the degree of phase shift by selectively varying the magnitude of remanent magnetization parallel to the direction of propagation.

### 3,478,284
### MICROWAVE PHASE SHIFTER INCLUDING ADJUSTABLE TUNED REACTANCE MEANS

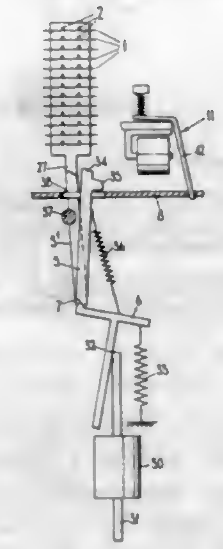
**Judd Blass, Englewood, N.J., and Joseph Charles Ranghelli, Brooklyn, N.Y., assignors to Blass Antenna Electronics Corporation, Long Island City, N.Y., a corporation of Delaware**
**Filed Dec. 12, 1966, Ser. No. 600,808**
**Int. Cl. H01p** *1/18*
**U.S. Cl. 333—98** **14 Claims**



An electrically switchable microwave phase shifter is described which utilizes an adjustable tuned reactance means to adjustably vary the phase condition of the associated microwave signal. This adjustable tuned reactance is provided by a planar iris means (which is shown as one or more individual iris members in the various illustrative embodiment) including slotted openings having an electrically actuable switching means. The switching means is shown as diode elements positioned in the slotted openings, which are changed between their blocking and conducting states to alter the reactance magnitudes offered by the iris means. Linearly polarized and dual polarized embodiments are described.

### 3,478,285
### ELECTRIC CROSSBAR SWITCHES

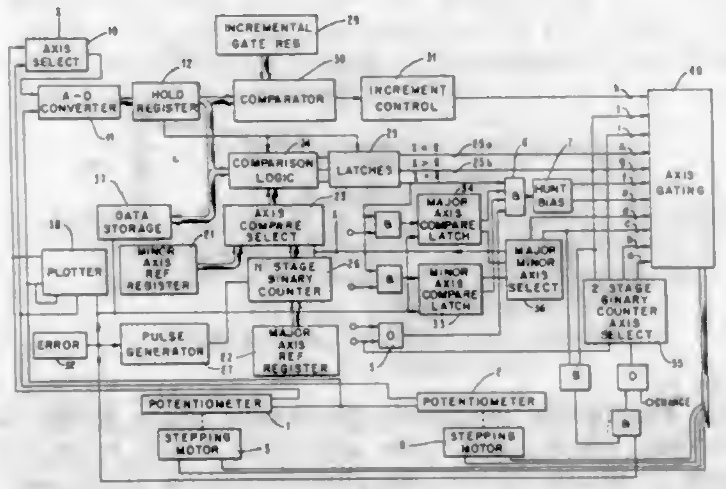
**Ernest Martin Haines, Pinner, and Henry Bastian Taylor, Coventry, England, assignors to The General Electric Company Limited, London, England, a British company**
**Filed Dec. 20, 1967, Ser. No. 692,074**
**Claims priority, application Great Britain, Dec. 22, 1966, 57,555/66**
**Int. Cl. H01h** *67/14*
**U.S. Cl. 335—112** **25 Claims**



A crossbar switch comprises an array of contact sets in rows and columns, each contact set having multiple contacts operated in unison by movement, transverse to the matrix, of a contact driving member which must first be pivoted parallel to the plane of the array to attain an effective driving position, the two movements being imposed by respective coordinate members.

### 3,478,286
### SYSTEM FOR AUTOMATICALLY TESTING COMPUTER MEMORIES

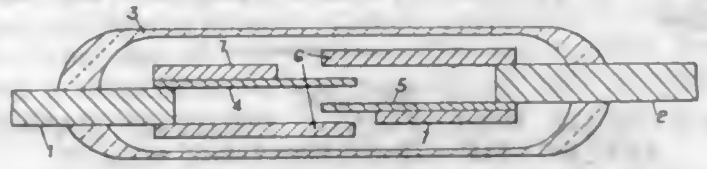
**James T. Dervan III, Pleasant Valley, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed July 1, 1965, Ser. No. 468,782**
**Int. Cl. G06f** *11/00;* **G01r** *15/12*
**U.S. Cl. 235—153** **9 Claims**



Core memories are tested by varying the X–Y drive line bias and the sense-inhibit line bias over the operating range of a memory and detecting errors as data is transferred to or from the memory. The bias conditions at which errors occur are plotted to form a "Schmoo" curve representing the operating biases for which the memory is reliable.

### 3,478,287
### MAGNETIC REED CONTACT ASSEMBLIES

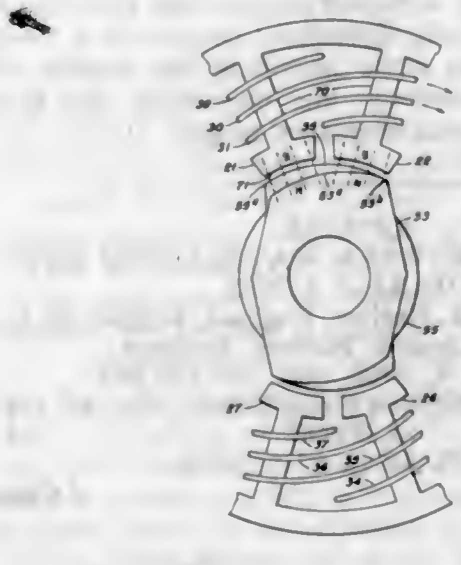
**Thomas Harrett, Paignton, South Devon, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware**
**Filed Mar. 12, 1968, Ser. No. 712,454**
**Claims priority, application Great Britain, Mar. 17, 1967, 12,677/67**
**Int. Cl. H01h** *51/28, 1/66*
**U.S. Cl. 335—154** **5 Claims**



In a magnetic reed contact assembly the maximum stable voltage is increased and the amplitude of oscillation reduced by adding an electrostatic counterbalancing electrode for each reed to balance out the electrostatic forces on a reed in its normal position.

### 3,478,288
### ASYMMETRIC ROTOR PLATE MEANS FOR AN ELECTROMAGNETIC INDICATING APPARATUS

**Alvin J. Silverman, West Massapequa, and Stanley Steinberg, Plainview, N.Y., assignors to Vernitron Corporation, New York, N.Y.**
**Filed Aug. 5, 1968, Ser. No. 750,071**
**Int. Cl. H01f** *7/08*
**U.S. Cl. 335—229** **6 Claims**



An improved electromagnetic indicator wherein at least one magnetizable plate is attached to a two pole magnetic rotor. The magnetic plate has ends which are asymmetric with the magnetic axis of the rotor for insuring motion of the rotor when it is desired to rotate the rotor 180° from a fixed position by reversing the magnetic field between one pole of the magnetic rotor and a salient pole on a stator surrounding the rotor. The improved indicator also has a non-magnetic member, in the air gap between the rotor and stator, for generating currents in a secondary field which substantially reduces oscillation of the rotor when it is moved from one position to another.

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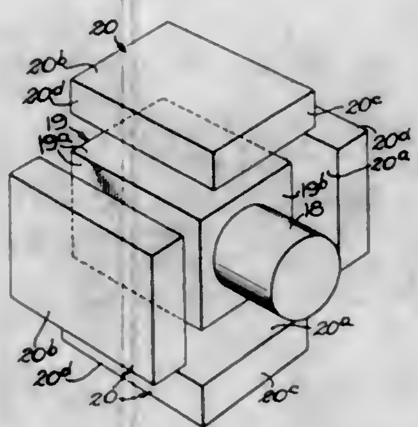
### 3,478,289
### PERMANENT MAGNET ASSEMBLY FOR A LOUDSPEAKER ASSEMBLY

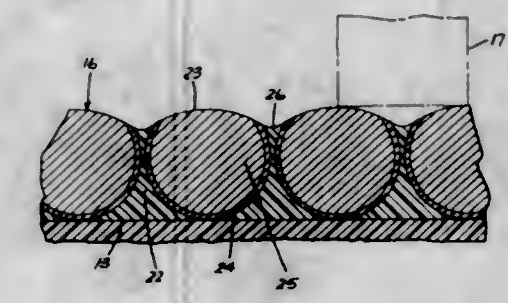
**Robert A. Parnell, 648 W. Washington St., Marengo, Ill. 60152**
**Filed Feb. 12, 1968, Ser. No. 704,624**
**Int. Cl. H01f** *7/02*
**U.S. Cl. 335—231** **22 Claims**



A permanent magnet assembly for use in a loudspeaker assembly having a cone diaphragm with a speaker coil disposed in an air gap in the magnet assembly. The latter comprises a cubical block with a cylindrical pole piece bonded to one end to form the core structure, and with four ceramic wafers having like poles disposed against the sides of the block and partially overhanging the pole piece. Four rectangular side plates are disposed against and bonded to the opposite poles to form a case, and a front plate defining the air gap abuts against the front edges of the side plates. The magnets have side edge portions in partially overlapping relation around the block to leave spaces in the four corners of the assembly.

### 3,478,290
### ADJUSTABLE SLIDING BRUSH TRANSFORMER AND METHOD OF PRODUCING A BRUSH TRACK THEREFOR

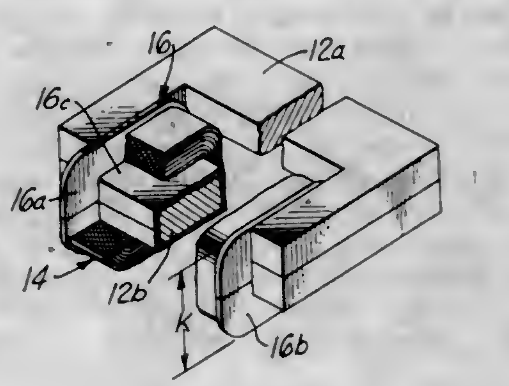
**Harry J. Proxmire, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York**
**Filed Nov. 16, 1967, Ser. No. 683,627**
**Int. Cl. H01f** *29/06, 27/30*
**U.S. Cl. 336—149** **2 Claims**



An adjustable sliding brush transformer with a relief-polished brush track. The brush track is formed of a series of convex contact surfaces on successively disposed adjacent wire turns. The series of convex contact surfaces is underspanned by a series of concave surfaces of resin insulating material along the brush track. Electrical contact between the brush and the winding is achieved by sliding movement of the brush along the convex contact surfaces. The concave-convex brush track is produced by relief polishing a preselected portion of the winding. A polishing disc consisting of a mat of glass fibers or fibers of thermoplastic polyamide impregnated with silicon-carbide grit may be used.

### 3,478,291
### MAGNETIC CORE AND COIL ARRANGEMENT

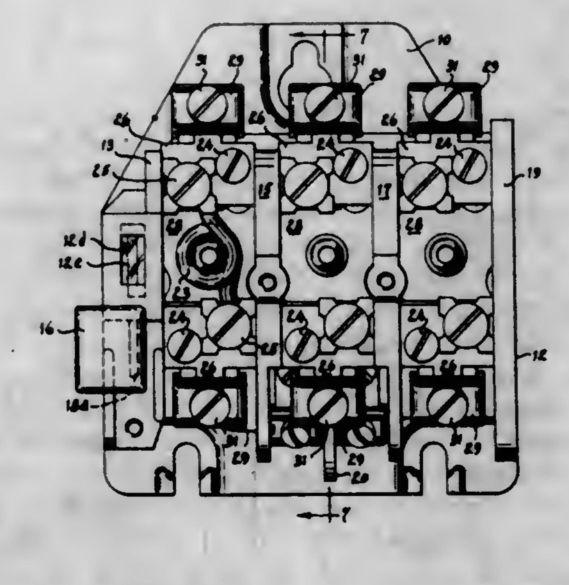
**Leo K. Lugten, Riverside, Calif., assignor to Bourns, Inc., a corporation of California**
**Filed Aug. 8, 1968, Ser. No. 751,157**
**Int. Cl. H01f** *27/24*
**U.S. Cl. 336—216** **3 Claims**



An inductive device, such as an inductance or transformer, especially suitable in high frequency electric pulse signal operations and replacing toroidal-core inductive devices, characterized by low elevational profile, high efficiency, ease of providing electrostatic shielding of core from winding, and inexpensive construction, the core providing an efficient complete magnetic flux circuit and the core being comprised of two substantially identical U-cores of uniform thickness and superimposed to form a core of rectangular plan form and whose sides and ends are of like cross-sectional area and one end of which core bears a flat winding of rectangular configuration wound thereon of thickness not in excess of the thickness of either leg of either U-core, whereby the inductive device is of thickness not in excess of about three times the thickness of said flat winding.

### 3,478,292
### ELECTRICAL CIRCUIT OVERLOAD PROTECTIVE DEVICE

**Uriel F. Carter, deceased, late of Wauwatosa, Wis., by Ruth Carter, administratrix, Wauwatosa, Arthur F. Kolb, Mequon, and Elmer M. Kunath, Milwaukee, Wis., assignors to Cutler-Hammer Inc., Milwaukee, Wis., a corporation of Delaware**
**Filed Jan. 19, 1968, Ser. No. 699,270**
**Int. Cl. H01h** *71/20, 73/22*
**U.S. Cl. 337—151** **7 Claims**



A manually resettable electrical circuit overload protective device of the solder film detent type. Solder film, ratchet wheel detents for one or more circuit branches are mounted in spaced relation in an insulating housing. Pawl ended levers for each detent are mounted on a common shaft within the base and have limited lost motion rotation on the shaft. The levers normally engage their associated ratchet wheel and are individually biased to independently rotate the shaft upon release of the associated ratchet wheel in response to an overload condition. A switch operating lever mounted in the housing is biased to operate one or more switches from their normal operating conditions. A third lever secured to the common shaft moves the switch operating lever against its bias to permit the switches to return to the normal conditions when said common shaft is driven by a pawl lever, and moves an indicator plate to a position affording visual indication of overload trip operation of the device. A pushbutton reset lever when depressed inwardly of the housing following an overload trip effects opposite rotation of the pawl lever shaft to effect reset of any released pawl lever on its ratchet wheel while holding the switch operating lever in tripped position.

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3,478,293

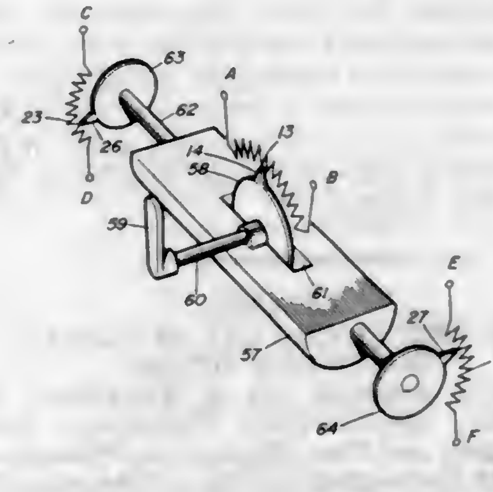
## TWO DIRECTIONAL SWITCH

**Basil P. Hooten, Jr., Baltimore, Md., assignor to The Bendix Corporation, a corporation of Delaware**

**Filed Jan. 2, 1968, Ser. No. 695,068**

**Int. Cl. H01c** *5/06*

**U.S. Cl. 338—128 10 Claims**



This invention describes a system for simultaneously balancing the two individual channels of a stereophonic system and also equalizing, or changing, the desired outputs from several speakers contained within each of the individual channels. The device is constructed such that one motion, for example rotary motion, will change the balance between the two channels of the stereo system. A second motion, for example a lateral motion, will change the acoustical output of the speakers contained within the individual channels. The second function is accomplished in a manner such that the speakers within both channels are simultaneously changed to insure an equalized output in the stereophonic system. The device is quite useful in automobile radios or tape systems wherein two channels, ordinarily identified as right and left channels, each contain front and rear speakers. In such systems it is necessary to be able to balance the right and left channels such that the acoustical output from both channels is substantially equal in order to insure pleasant listening. Such systems should also be constructed such that the operator can select an output from either the front or rear speakers or a combination of both. The instant invention is directed toward a device by which a rotary motion will enable the operator to balance the right and left channels and a lateral motion will enable the operator to selectively fade the front or rear speakers.

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3,478,294

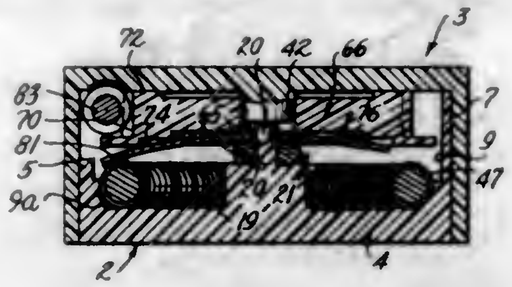
## VARIABLE RESISTORS

**William D. Kirkendall, Dalton, Pa., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware**

**Filed Dec. 1, 1966, Ser. No. 598,416**

**Int. Cl. H01c** *5/02*

**U.S. Cl. 338—174 13 Claims**



A rotary potentiometer wherein a rotary drive member, a rotary contact member, an arcuate resistance element, and conductive return means are so disposed in a housing that a body portion of the contact member is resiliently distorted between the drive member and the return means to maintain the contact member in operative engagement with the drive member.

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3,478,295

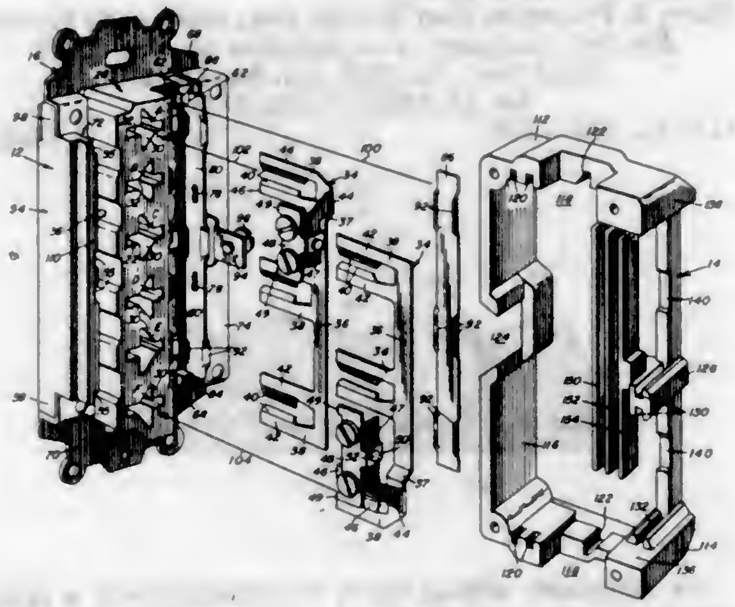
## MULTIPLEX GROUNDING OUTLET

**Gunther S. Grieshaber, Camillus, N.Y., assignor to Pass & Seymour, Inc., Syracuse, N.Y., a corporation of New York**

**Filed Aug. 3, 1967, Ser. No. 658,234**

**Int. Cl. H01r** *3/06, 21/00*

**U.S. Cl. 339—14 6 Claims**



This invention relates to electrical outlets and more particularly to multiplex grounding outlets comprising a housing having an upper and lower body with a mounting strap carried therebetween. The front face of the upper body is provided with multiple grounding plug accommodating units, each unit including a pair of spaced slots adapted to receive the plug prongs and an opening laterally spaced from the two slots adapted to accept the grounding prong.

3,478,296

## HERMAPHRODITE ELECTRICAL CONTACT

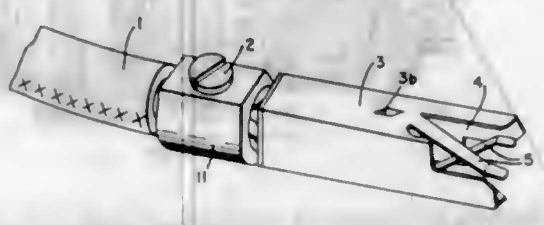
**Karl-Friedrich Schmitt, Neckarsulm, Germany, assignor, by mesne assignments, to The Bunker-Ramo Corporation, Oak Brook, Ill., a corporation of Delaware**

**Filed Jan. 16, 1967, Ser. No. 609,544**

**Claims priority, application Germany, Feb. 19, 1966, T 30,491**

**Int. Cl. H01r** *25/02*

**U.S. Cl. 339—47 7 Claims**



An hermaphrodite electrical contact having an elongated housing with two flat contact-making springs extending out of the housing and diagonally into the interior of the housing. The ends of the contact-making springs are bent in the longitudinal direction of the housing and, in one embodiment, the ends of the contact-making springs are slit in the longitudinal direction for better contact.

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3,478,297

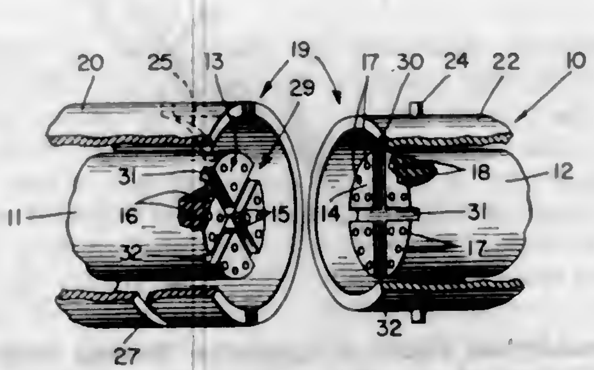
## FLUIDPROOF ELECTRICAL CONNECTOR

**Donald J. Gimpel, Santa Monica, and Arthur L. Nelson, La Jolla, Calif., assignors, by mesne assignments, to Electro Oceanics, Inc., a corporation of California**

**Filed Nov. 13, 1967, Ser. No. 682,449**

**Int. Cl. H01r** *15/32*

**U.S. Cl. 339—60 8 Claims**



This disclosure relates to an electrical connector for use in a fluid medium, such as water. The connector comprises a pair of resilient body members or cables made from a non-wetting, electrically insulating material and which have metal contacts embedded therein. The contacts have exposed surfaces flush with an adjacent flat end face of the body members and the body members are provided with one or more channels extending inwardly from the end faces thereof. The end faces are initially urged together with the metal contacts and channels out of alignment wtih respect to each other and then the body members are relatively rotated to bring the contacts into alignment with each other to effect an electrical connection therebetween and to effect by wiping action removal of water on the contacts into the channels. A connector means is provided to hold the end faces in tight abutting engagement with each other when the electrical connection is effected.

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3,478,298

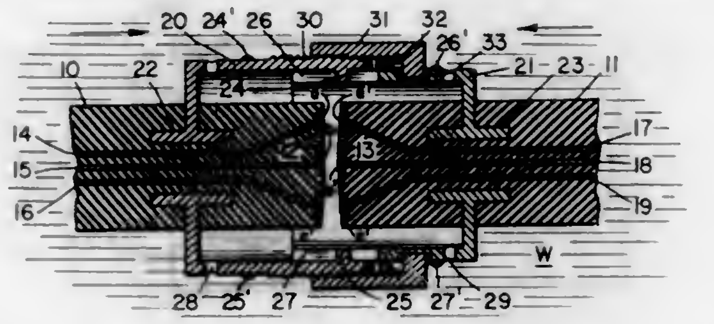
## FLUIDPROOF END CONNECTOR

**Arthur L. Nelson, La Jolla, Calif., assignor, by mesne assignments, to Electro Oceanics, Inc., a corporation of California**

**Filed Nov. 13, 1967, Ser. No. 682,265**

**Int. Cl. H01r** *13/24, 13/52, 21/18*

**U.S. Cl. 339—61 7 Claims**



An underwater connector includes first and second resilient bodies formed of neoprene or other resilient material with end faces for engagement with each other. In the respective end faces, there are imbedded contacts. The end faces may differ slightly from a flat configuration such that when they are urged into pressing engagement with each other, their central portions will first engage and there will be an increasing surface engagement in a radially outward direction as further pressure is provided. The contacts may be disposed at central and intermediate radial positions on the end faces such that they will progressively engage as the end faces progressively engage. Suitable locking means are coupled to the members to hold the end faces in full surface engagement. The progressive engagement of the end faces urges water from between the end faces so that the resulting electrical connections between the contacts are kept dry and fully insulated from the surrounding water.

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3,478,299

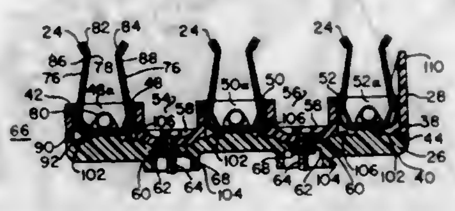
## ELECTRICAL CONNECTOR ASSEMBLY FOR THE VERTICAL BUS BARS IN A CONTROL CENTER CABINET SECTION

**Fred J. Cinatl, and Lewis M. Lehman, Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan**

**Filed Jan. 29, 1968, Ser. No. 701,329**

**Int. Cl. H01r** *9/22, 11/22, 13/70*

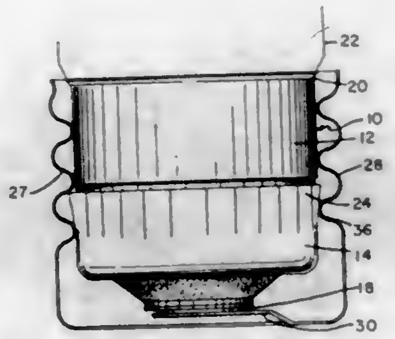
**U.S. Cl. 339—64 8 Claims**



An electrical connector assembly for the vertical bus bars in an electric control center cabinet section that includes a pair of molded insulating parts which are arranged to position the jaw-like connectors of the assembly so the jaw-like connectors will have a limited rocking or tilting movement on one of the pair of parts when the connector is attached to the bus bars and the forces required to detach the connector from the bus bars are exerted against the other of the pair of parts by the wire connecting portion of the jaw-like connectors.

### 3,478,300
### TREADLESS LAMP AND BASE

**Robert M. Griffin, South Hamilton, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware**
**Filed Mar. 20, 1967, Ser. No. 624,295**
**Int. Cl. H01r** *33/02, 33/20*
**U.S. Cl. 339—72** **5 Claims**



An incandescent lamp including a base in which a plurality of outwardly extending resilient fingers are disposed about the periphery thereof. The fingers are cut parallel to the axis of the symmetry of the lamp and twisted to form an overall extended diameter that is slightly larger than the internal root diameter of the socket into which it will fit. This threadless base is inserted into a conventional socket with a straight line push and can be released from a socket with a twist and pull motion.

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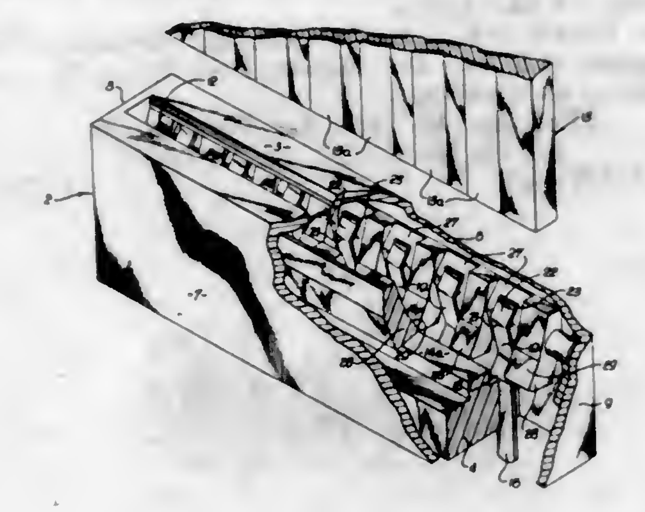
### 3,478,301
### LOW INSERTION FORCE CAM-ACTUATED PRINTED CIRCUIT BOARD CONNECTOR

**Thomas Wesley Conrad, Altadena, and William McIver, Garden Grove, Calif., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland**
**Filed Apr. 6, 1967, Ser. No. 628,854**
**Int. Cl. H01r** *13/62;* **H05k** *1/07*
**U.S. Cl. 339—75** **7 Claims**



A printed circuit board electrical connector is provided in which insertion of the printed circuit board into the receptacle formed by the connector body automatically actuates cam members within the receptacle to displace the resilient contact members into electrical engagement with the associated printed circuit board terminals. Such engagement is effected after partial insertion but prior to complete insertion of the printed circuit board so as to provide a wiping action between each printed circuit board terminal and an associated resilient contact.

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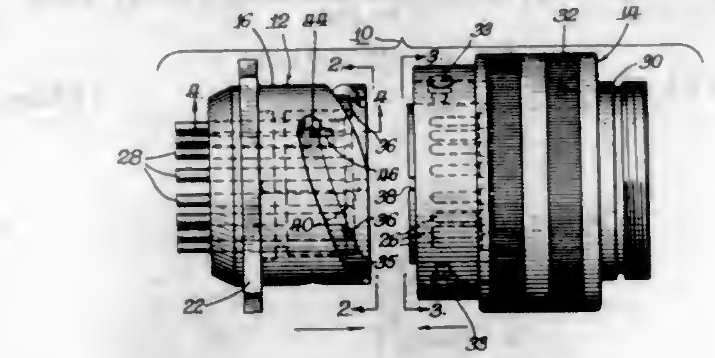
### 3,478,302
### ELECTRICAL CONNECTOR

**Joseph F. Chirumbolo, Bellwood, Ill., assignor to The Bunker-Ramo Corporation, a corporation of Delaware**
**Filed Mar. 18, 1968, Ser. No. 713,673**
**Int. Cl. H01r** *7/32, 33/46;* **F16l** *25/00*
**U.S. Cl. 339—90** **8 Claims**



An improved electrical connector wherein mating plug and receptacle parts are separably fastened to each other by means of a bayonet-type lock comprised of a plurality of bayonet pins on the plug part and a like number of bayonet slots on the receptacle part. The receptacle part is of one-piece aluminum construction and has stainless steel studs or rods positioned to withstand wear and provide positive locking near the inner ends of the bayonet slots so that the bayonet pins lock behind the stainless steel studs when fully inserted in the bayonet slots.

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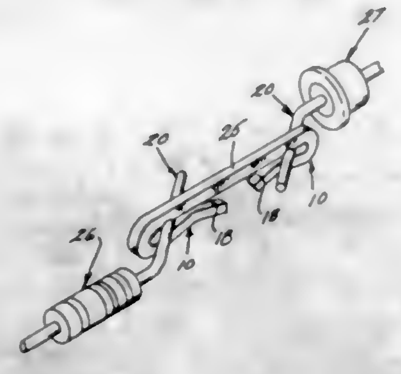
### 3,478,303
### ELECTRICAL CONNECTOR

**William C. Dauser, 458 Melody Lane, North Muskegon, Mich. 49445**
**Filed Dec. 9, 1966, Ser. No. 600,408**
**Int. Cl. H01r** *11/08, 11/22*
**U.S. Cl. 339—95** **17 Claims**



A solderless electrical connector formed from an integral length of wire-like, resilient stock of constant cross section. The connector includes a pair of co-extending conductor embracing members interconnected by means of a generally U-shaped junction section.

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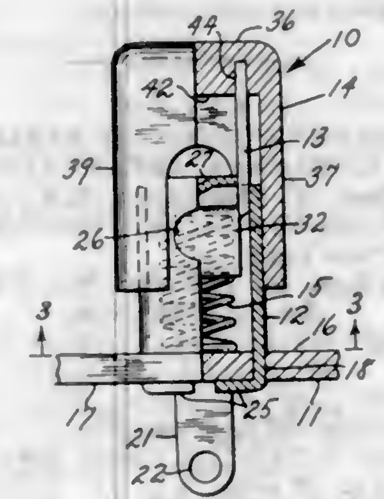
### 3,478,304
### RESILIENT PUSHBUTTON TERMINAL

**Louis J. Valle, Ardsley-on-Hudson, N.Y., assignor to National Tel-Tronics Corporation, Yonkers, N.Y., a corporation of New York**
**Filed Sept. 12, 1967, Ser. No. 667,221**
**Int. Cl. H01r** *13/24*
**U.S. Cl. 339—203** **2 Claims**

A resilient pushbutton terminal for electrical connectors, including an insulative planar base member, a first relatively fixed member formed as a sheet metal stamping and interconnected to the base member, a second relatively moveable element also formed as a sheet metal stamping and positioned in sliding relation with respect to the first element, a portion of the second element projecting through a longitudinally aligned opening in the first element, and engaging an insulative member disposed externally of the first element and sliding therewith, and resilient means for clamping an electrical conductor between portions of said first and second elements.



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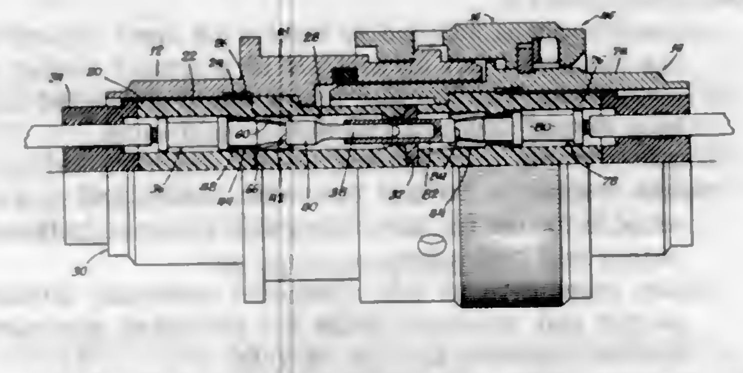
### 3,478,305
### ELECTRICAL CONNECTOR

**Joseph F. Chirumbolo, Bellwood, Ill., assignor to The Bunker-Ramo Corporation, a corporation of Delaware**
**Filed Sept. 26, 1966, Ser. No. 581,903**
**Int. Cl. H01r** *9/12, 13/24*
**U.S. Cl. 339—217** **1 Claim**



An electrical connector having removable contacts, and a removable, snap-in contact mounting assembly. The mounting assembly includes a tubular insert made of a substantially rigid dielectric material, and a contact retention ring or clip removably mounted in the tubular insert. The retention ring comprises a tubular sleeve with an annular groove spaced from the rear end thereof to form an annular collar, and a gradually tapered front portion with the forward end thereof smaller than the rearward end thereof. The sleeve is further provided with slotted portions extending from the forward end into the area of the annular groove and terminating at a location adjacent to the rearward collar. The slotted portions of the sleeve allow it to be compressed as the retention ring, with its tapered portion, is inserted into the bore of the tubular insert and against a circumferential rib provided in the bore for locking the retention ring in place.

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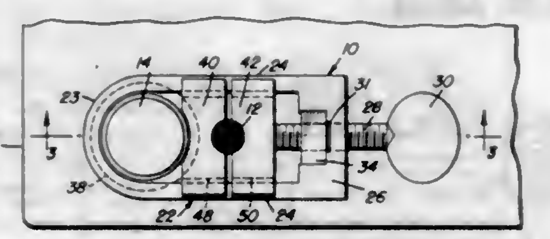
### 3,478,306
### READILY ENGAGEABLE AND READILY RELEASABLE BATTERY TERMINAL AND BATTERY CABLE CLAMP ASSEMBLY

**Thomas Q. McCray, 4575 S. 12th Ave., Tucson, Ariz. 85714**
**Filed Mar. 15, 1967, Ser. No. 623,353**
**Int. Cl. H01r** *11/26*
**U.S. Cl. 339—237** **1 Claim**

This invention is a readily engageable and readily releasable battery terminal and battery cable clamp assembly wherein there are a pair of generally H-shaped clamp members having their H legs sliding on opposite surfaces of a U-shaped body with a closing cross bar at the end opposite the U bight, the U bight being rounded and complementary to a battery terminal, the adjacent face of the near clamp member being similarly complementary to the battery terminal to clamp or release the battery terminal therebetween the other face of this clamp member and the juxtaposed face of the other clamp member being complementary to the end of a battery cable, and the other face of this other clamp member being contacted by the end of a thumb bolt threaded through the cross bar, the threads in the cross bar being either directly in the cross bar or in a nut removably held in a slot intercepting the bolt aperture through the bar, so that, when the bolt is tightened, the clamp members readily slide to clamping position, and when the bolt is released, the clamp members readily slide to releasing position. Thus, the clamp members are not bent or distorted into clamping position and do not need any bending or distortion to release the terminal and cable, as in conventional battery connectors or clamps.



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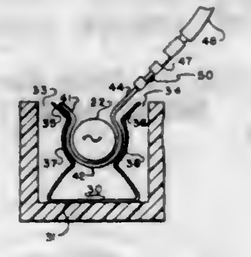
### 3,478,307
### METHOD AND APPARATUS FOR PROVIDING AN EXTERNAL CONNECTION TO AN ELECTRICAL COMPONENT

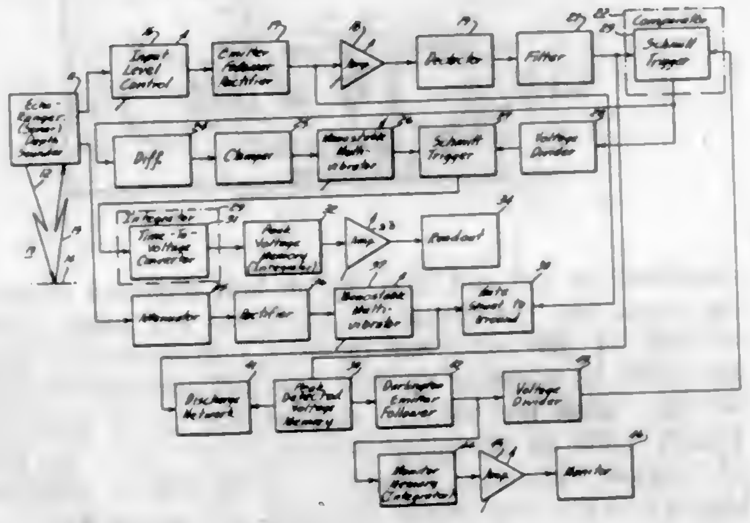
**Henry Raymond Testo, 3416 W. 60th St., Cleveland, Ohio 44102**
**Filed July 5, 1967, Ser. No. 651,197**
**Int. Cl. H01r** *13/24*
**U.S. Cl. 339—244** **1 Claim**



The method and apparatus for providing an external connection to an electrical component are disclosed. A terminal clip is described as including an integral length of conductive resilient metal strip having a circumferential segmental portion sized to envelop the terminal end of an elongated component, such as a cylindrical type fuse, and to be positioned between the terminal end of the component and its conductive retainer clamp in a conductive relationship. An extending portion leads from the circumferential segmental portion and includes a terminal or lug portion suitably adapted for attachment to a conductor. The method according to the disclosure comprises the procedural combination of steps of orienting a component having a terminal end and a conductive retainer clamp into spaced relationship for lateral movement of the terminal end toward the clamp, positioning a piece of conductive resilient metal strip intermediate the terminal end and the clamp, and inserting the component terminal into its conductive retainer clamp to position the conducting member in a conductive relationship therebetween.

## 3,478,308
## SEA BOTTOM CLASSIFIER

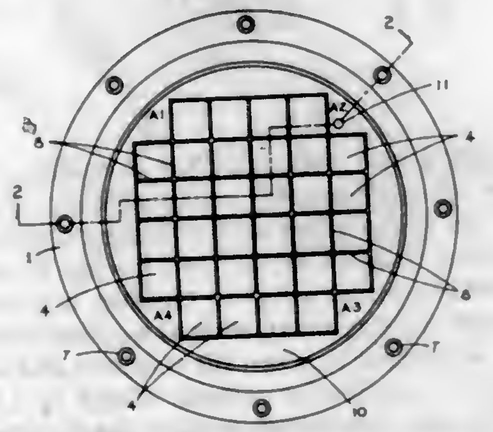
**William C. Stanley, Panama City, William G. Harris, Jr., Titusville, and Edward G. McLeroy, Jr., Panama City, Fla., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Dec. 16, 1968, Ser. No. 783,898**
**Int. Cl. G01s** *9/66;* **G10k** *11/00;* **G01n** *9/24*
**U.S. Cl. 340—3** **14 Claims**



An acoustical sea floor analyzer system is herewith disclosed which uses a depth sounder to actively broadcast sonic pulses toward a sea floor and to receive the echoes therefrom which, in turn, constitute data signals that represent physical characteristics thereof. Said data signals are then processed to ascertain the extent to which they were elongated relative to a predetermined reference parameter by their impact on and volume reflection from the sea floor being sensed, and the measured elongation thereof is read out in terms of floor softness.

## 3,478,309
## ELECTROACOUSTIC TRANSDUCER WITH MULTIPLE BEAM CHARACTERISTICS

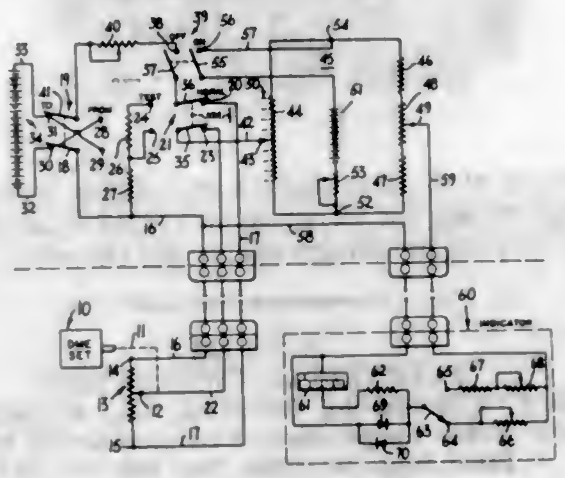
**Frank Massa, Jr., Cohasset, Mass., assignor to Dynamics Corporation of America, Massa Division, Hingham, Mass.**
**Filed Apr. 10, 1968, Ser. No. 720,175**
**Int. Cl. H04b** *13/00*
**U.S. Cl. 340—9** **11 Claims**



A number of novel underwater transducer elements are arranged in a field symmetrically disposed about horizontal and vertical axes. Transformers, individually associated with the four quadrants formed by the axes, are individually coupled to peripherally and centrally located transducer elements. In addition, each transformer is also coupled to the centrally located transducer elements in one adjacent quadrant. By selecting the number of turns on the various transformers, the central transducer elements may be driven at one amplitude and the peripheral transducer elements at another amplitude. The resulting structure provides direction and steering information with respect to the source of sonic energy.

## 3,478,310
## AIRCRAFT COMMAND ALTITUDE GUIDANCE APPARATUS

**Howard M. Cone, Jr., Douglaston, N.Y., assignor to Pan American World Airways, Inc., New York, N.Y., a corporation of New York**
**Filed Sept. 14, 1966, Ser. No. 579,288**
**Int. Cl. G08g** *5/00*
**U.S. Cl. 340—27** **11 Claims**



1. In command altitude guidance apparatus for aircraft, the combination of

converter means adapted to receive an input representing distance from an aircraft to a remote station at a reference location and to provide a command altitude output that is a function of said input,

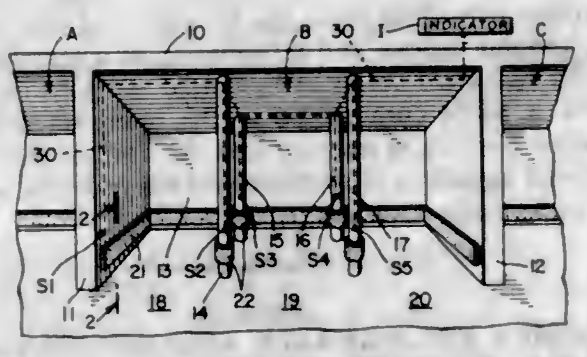
means settable to a predetermined reference value,

means responsive to said converter means and to said settable means for combining said command altitude output and said reference value, and

means responsive to said combined command altitude output and reference value for providing command altitude guidance for the aircraft.

## 3,478,311
## AUTOMOBILE PARKING ACCIDENT ALARM SYSTEM

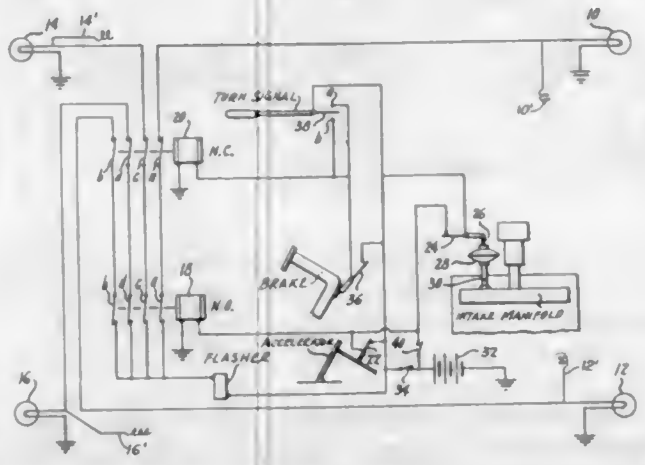
**Janos Czingula, Pacific Palisades, Calif.**
**(1532 Olympic Blvd., Santa Monica, Calif. 90404)**
**Filed Nov. 22, 1967, Ser. No. 685,158**
**Int. Cl. G08g** *1/14*
**U.S. Cl. 340—51** **4 Claims**



One or more strips of sponge rubber incorporating first and second electrical conductors in spaced opposed relationship to each other are secured to the rear wall and vertical columns or other vertical structure defining garage areas. The sponge rubber is sufficiently resilient that should an automobile bumper or other portion of an automobile engage the strip, the conductors will make electrical contact with each other. A source of electrical energy and a suitable indicating means such as an alarm are connected in series to the conductors in the sponge rubber such that short circuiting of the conductors as a result of an automobile engaging the sponge rubber completes a circuit through the indicating means to sound an alarm. Individual indicating means may be provided for individual strips of sponge rubber in adjacent garage areas so that an alarm by a particular indicating means will indicate the particular garage in which an accident occurred. In addition, a time clock may be incorporated in the circuit to automatically record the time of such accident.

## 3,478,312
## AUTOMOTIVE DECELERATION SIGNAL SYSTEM

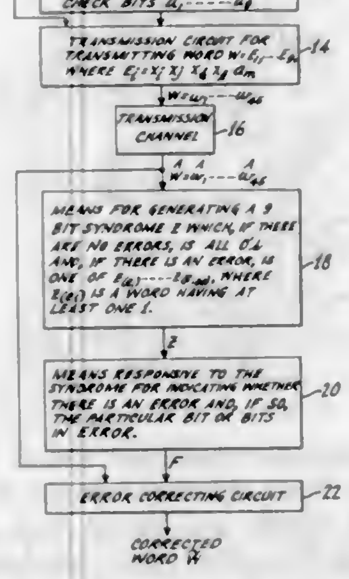
**Lloyd T. Lee, Holmen, Wis.**
**(818 S. 3rd St., La Crosse, Wis. 54601)**
**Filed Nov. 25, 1966, Ser. No. 596,868**
**Int. Cl. B60q** *1/00, 1/26, 1/46*
**U.S. Cl. 340—67** **10 Claims**



An automobile safety light flasher system for flashing front and rear signal lamps to indicate that the automobile is decelerating and having means for overriding the flasher energizing circuit to permit operator selected signalling using the front and rear signal lamps.

## 3,478,313
## SYSTEM FOR AUTOMATIC CORRECTION OF BURST-ERRORS

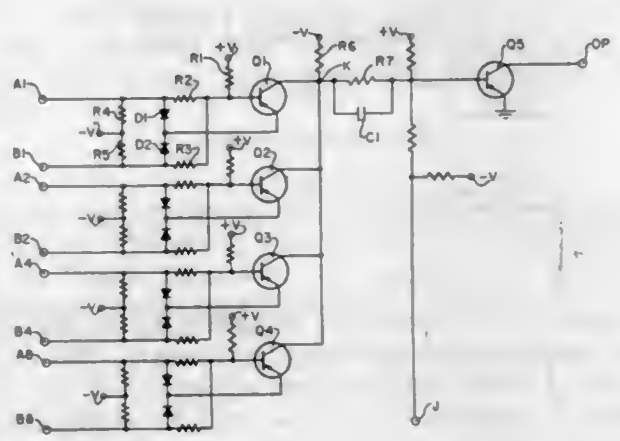
**Chitoor V. Srinivasan, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware**
**Filed Jan. 20, 1966, Ser. No. 521,910**
**Int. Cl. G08b** *29/00;* **G06f** *11/00*
**U.S. Cl. 340—146.1** **5 Claims**


REGISTER STORING X1----X36
10
CIRCUIT FOR GENERATING CHECK BITS a1----a9
12
TRANSMISSION CIRCUIT FOR TRANSMITTING WORD W
14
TRANSMISSION CHANNEL
16
MEANS FOR GENERATING A 9 BIT SYNDROME Σ WHICH, IF THERE ARE NO ERRORS, IS ALL 0'S AND, IF THERE IS AN ERROR, IS ONE OF Σ----Σ, WHERE Σ IS A WORD HAVING AT LEAST ONE 1.
18
Σ
MEANS RESPONSIVE TO THE SYNDROME FOR INDICATING WHETHER THERE IS AN ERROR AND, IF SO, THE PARTICULAR BIT OR BITS IN ERROR.
20
F
ERROR CORRECTING CIRCUIT
22
CORRECTED WORD W

Information bits are arranged in subsets and a check bit is generated for each subset. These bits are then transmitted in segments, each segment consisting of a group of information bits chosen from different subsets and a check bit chosen from yet another subset. At the receiving end of the system a "syndrome" is generated which indicates whether any errors have occurred and if so the particular bit or bits which are in error. This syndrome is employed automatically to correct the received word.

## 3,478,314
## TRANSISTORIZED EXCLUSIVE-OR COMPARATOR

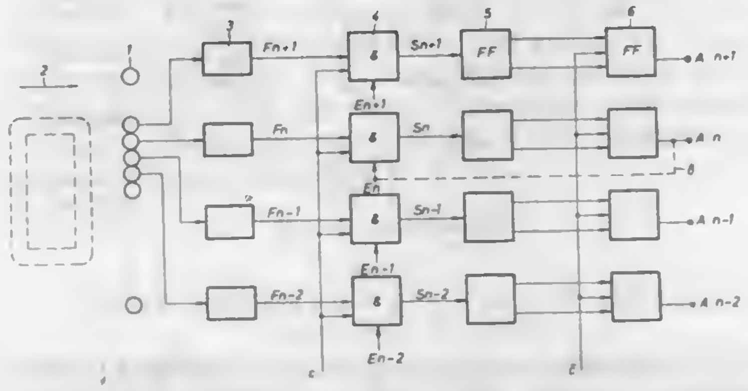
**William R. Wedmore, Glen Ellyn, Ill., assignor to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware**
**Filed Apr. 26, 1966, Ser. No. 545,387**
**Int. Cl. G06f** *7/02*
**U.S. Cl. 340—146.2** **1 Claim**



An exclusive-OR comparator circuit utilizing a group of four two-input exclusive-OR gates, each having their outputs connected into a single NOR gate. Each exclusive-OR gate includes a single transistor and a pair of diodes, while the NOR gate uses a single transistor. An additional input is also connected to the NOR gate, to disable it, when the function of this circuit is not required.

## 3,478,315
## AUTOMATIC CHARACTER RECOGNITION ARRANGEMENT

**Walter Dietrich, Ditzingen, Leonberg, Herdweg, Germany, and Winfried Schrempp, Washington, D.C., assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware**
**Filed Nov. 3, 1965, Ser. No. 514,161**
**Claims priority, application Germany, Nov. 5, 1964, St 22,906**
**Int. Cl. G06k** *9/02*
**U.S. Cl. 340—146.3** **1 Claim**



An improved scanning arrangement is provided for reducing the scanning signals to be stored two successive scanning columns in a character recognition arrangement, wherein a column-wise scanning of a character field is accomplished by plurality of discrete scanning elements, in which the vertical and horizontal line portions of the character can be evaluated, and the characters being stylized so that a column with a vertical line portion is followed by at least one column without a vertical line portion.

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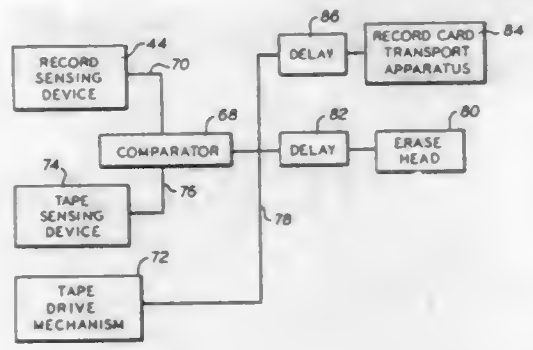
### 3,478,316
### INVENTORY CONTROL SYSTEM

**Charles Block, 1129 Albert Road, North Bellmore, N.Y. 11710, and Leon J. Mintz, 7 Valley Road, Syosset, N.Y. 11791**

**Filed Dec. 23, 1965, Ser. No. 515,953**
**Int. Cl. H04q** *1/00, 3/00, 9/00*
**U.S. Cl. 340—147** **5 Claims**



A method for controlling inventory by maintaining a current master record of items in inventory and an identification of each separate item of inventory so that as each item is removed from inventory the separate record is scanned and its corresponding identification on the master record is treated in some manner, as by effacement, so as to leave the master record with the corresponding identifications of which items should and should not remain in inventory.

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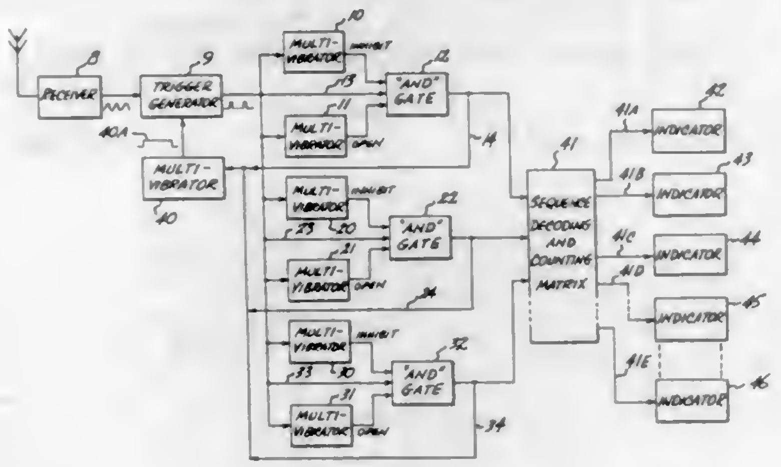
### 3,478,317
### SIGNAL DETECTION SYSTEM HAVING PLURAL OUTPUT CHANNELS

**Pryce N. Hales, Centerville, Utah, assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware**

**Filed Sept. 8, 1966, Ser. No. 578,085**
**Int. Cl. H04q** *1/00, 3/00*
**U.S. Cl. 340—147** **8 Claims**



1. A frequency determining system comprising in combination: a trigger signal circuit responsive to received signals for providing successive output trigger signals spaced in time proportional to a cycle of the received signal; a plurality of gate circuits each coupled with said trigger circuit; gate circuit control means coupled with said trigger circuit and with said gate circuits and responsive to a first trigger signal to cause sequential opening of said gate circuits for mutually exclusive time intervals; and trigger circuit control means coupled with the output of each gate circuit and with said trigger circuit and inhibiting output trigger signals from said trigger circuit for a predetermined time in response to an output signal from a gate circuit.

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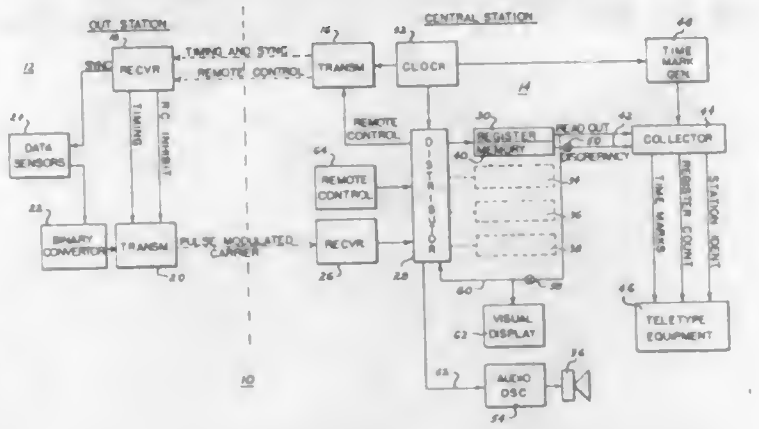
### 3,478,318
### SLOW DATA RATE TELEMETERING AND DATA LOGGING SYSTEM HAVING AURAL ALARM MEANS

**Bjørn A. Rørholt, Slemdal, Oslo, Norway, assignor to Tele-Data, Inc., Boston, Mass., a corporation of Massachusetts**

**Filed Oct. 19, 1965, Ser. No. 498,015**
**Claims priority, application Norway, Dec. 18, 1964, 156,040**
**Int. Cl. H04q** *1/00, 3/00, 5/00*
**U.S. Cl. 340—150** **11 Claims**



A time division, multiplexed, telemetering and data logging system employing teletype control, reporting and data logging signals. The data recording function is operative only when the received teletype reporting signal differs from a predetermined binary pattern programmed into the central station equipment. Provision is made for an aural reproduction of the incoming binary teletype signal.

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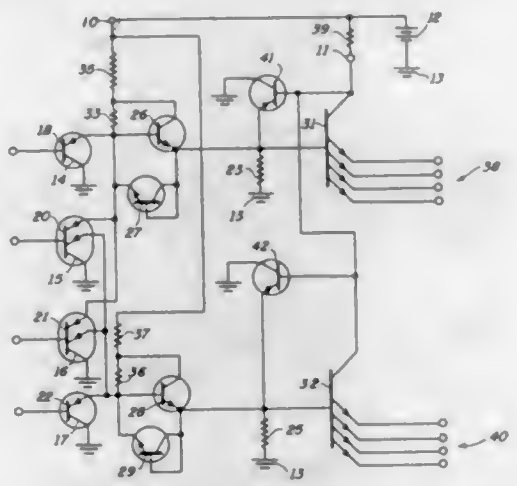
### 3,478,319
### MULTIEMITTER-FOLLOWER CIRCUITS

**William F. Jordan, Jr., Wellesley, Mass., assignor, by mesne assignments, to Honeywell Inc., a corporation of Delaware**

**Filed Jan. 4, 1966, Ser. No. 518,585**
**Int. Cl. H03k** *19/08, 23/08, 23/22*
**U.S. Cl. 340—166** **12 Claims**



A digital computer transistor circuit is disclosed that includes logical input circuitry capable of accepting a plurality of input signals and has at least one multiemitter transistor whose base electrode is connected to the logical input circuitry and whose plurality of emitter electrodes are each connected to a separate output circuit. Another embodiment discloses a plurality of such multiemitter transistors connected in a matrix configuration.

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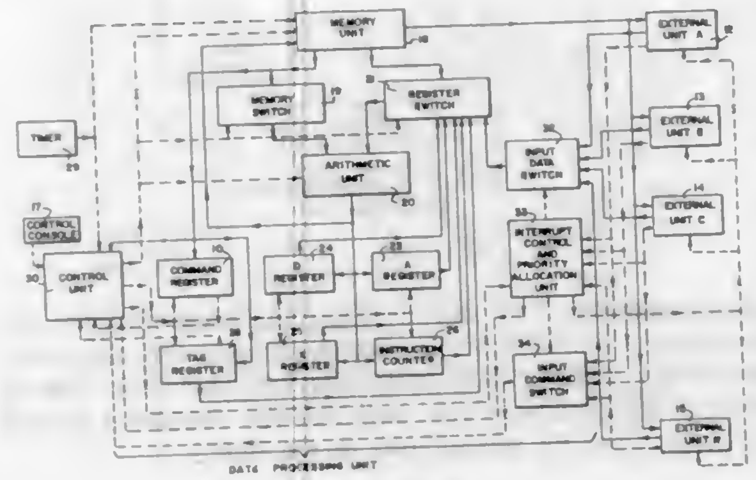
### 3,478,320
### DATA PROCESSING UNIT FOR PROVIDING COMMAND SELECTION BY EXTERNAL APPARATUS

**John F. Couleur, Philip F. Gudenschwager, and William A. Shelly, Phoenix, Ariz., and David L. Bahrs, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York**

**Filed May 4, 1964, Ser. No. 364,404**
**Int. Cl. G06f** *1/00, 7/00, 15/00*
**U.S. Cl. 340—172.5** **9 Claims**



Apparatus for enabling a peripheral unit to control a data processing unit to execute any operation for which it is adapted; wherein each peripheral unit, upon requiring the services of the data processing unit, supplies an interrupt signal and an address; and wherein when a particular peripheral unit is recognized, sequential execution of the instructions of the current program is halted, an instruction stored in the memory location identified by the respective address supplied has the command portion thereof transmitted to the command register, and the instruction is executed by the data processing unit.

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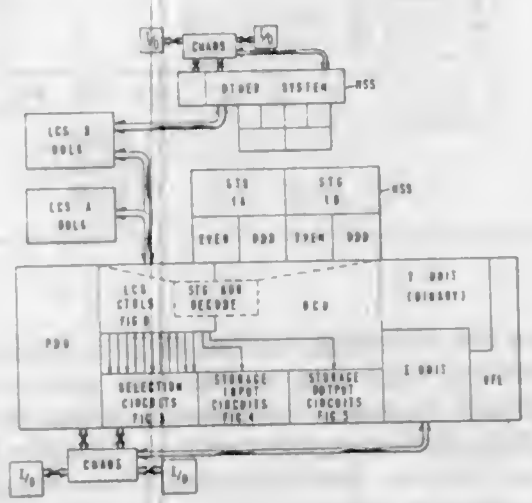
### 3,478,321
### VARIABLE PRIORITY STORAGE ACCESSING CONTROL

**James C. Cooper, Atlanta, Ga., Lewis E. King, Highland, and Olin L. MacSorley, Lake Katrine, N.Y., and William P. Wissick, Sunnyvale, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Nov. 10, 1966, Ser. No. 593,425**
**Int. Cl. G11b** *13/00*
**U.S. Cl. 340—172.5** **5 Claims**



Disclosed is a variable priority storage accessing control for use in a data processing system having a plurality of requesting units and a plurality of requested units. The requesting units, by way of example, may include a plurality of channels (e.g., servicing I/O devices) and the requested units may include a plurality of storage devices. In one example, only one requesting unit at a time may have its request honored and therefore a priority control is provided for establishing which one of a plurality of the requesting units making requests will in fact have its request honored. When a requesting unit, although having highest priority, is unable to have its request honored because (1) the requested unit is in a busy condition or (2) the unit accessing control for accessing the requested unit is busy, the priority circuit is altered to remove the highest priority requesting unit from priority consideration. The removal (inhibit) remains until such time as the requested unit and the unit accessing control become unbusy thereby allowing the priority circuit in the intervening time to award priority to the next-highest priority requesting unit which is making a request. When the busy requested unit is a low-speed device, for example, and the next-highest priority requesting unit is requesting a high-speed requested unit, several requests to that high-speed requested unit may be honored during the time that would otherwise be wasted waiting for the busy slow-speed requested unit to become unbusy.

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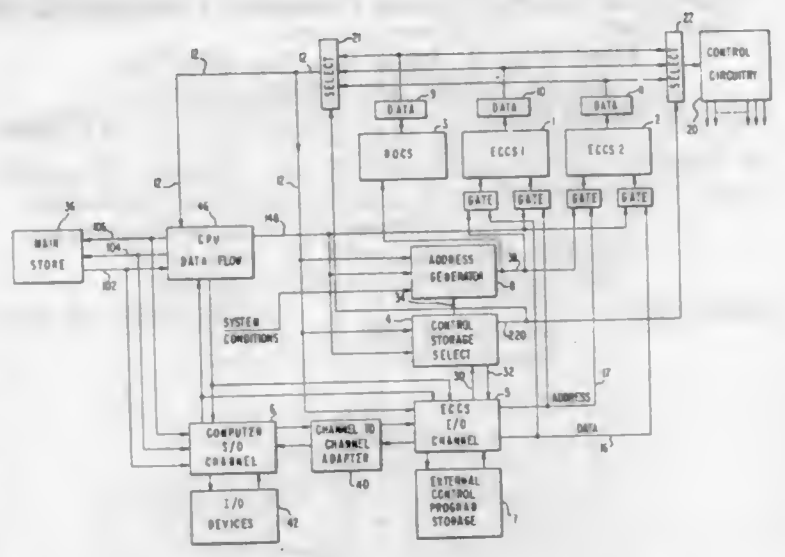
### 3,478,322
### DATA PROCESSOR EMPLOYING ELECTRONICALLY CHANGEABLE CONTROL STORAGE

**Bob O. Evans, Bethesda, Md., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed May 23, 1967, Ser. No. 640,652**
**Int. Cl. G11b** *13/00*
**U.S. Cl. 340—172.5** **23 Claims**



A digital computer, having a control element comprising read/write control storage means loadable with precoded microinstructions from storage external to said computer to allow direct execution of macro instructions without compiling machine language; said control element also being loadable from main storage or from data register means within the computer to allow said computer to construct its own gating patterns, and rendering said computer restructurable.

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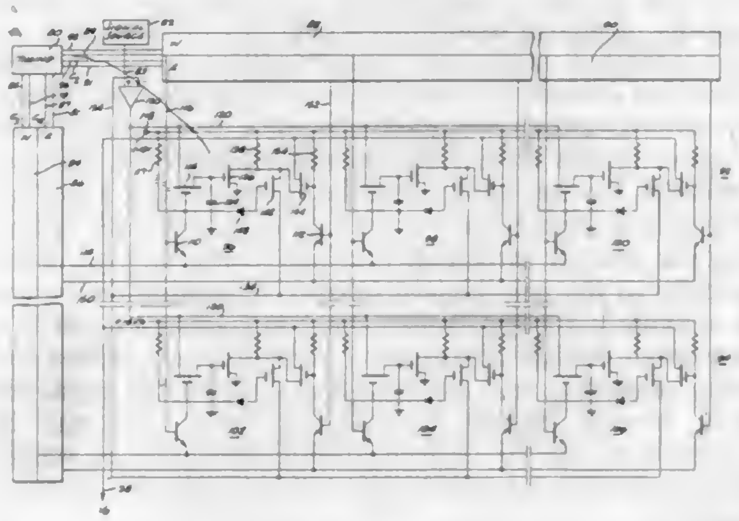
### 3,478,323
### SHIFT REGISTER CONTROLLED ANALOG MEMORY SYSTEM

**John A. Rado, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**

**Filed Nov. 14, 1966, Ser. No. 594,121**
**Int. Cl. G11b** *9/00*
**U.S. Cl. 340—173** **8 Claims**

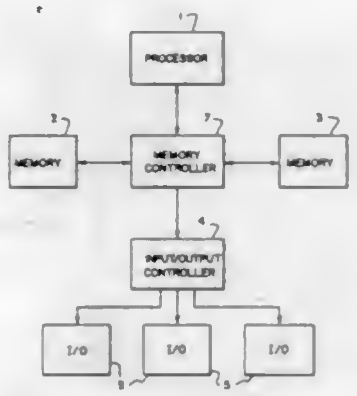
A scan converter system wherein analog data signals are stored and read from a matrix of capacitive, FET type, storage elements or circuits. FET type gates are associated in the matrix with each storage element and are responsive to column and row shift registers or delay devices to allow selection of individual elements for scanning in any desired sequence. A feedback network is coupled to each element and the analog signal source.



The system is capable of writing and reading, either sequentially or concurrently, at the same or different scanning rates, and with the same or with geometrically different angular relationships.

### 3,478,324
### DATA PROCESSING SYSTEM INCLUDING MEANS FOR DETECTING ILLEGAL ACTIONS AND GENERATING CODES IN RESPONSE THERETO

**John F. Couleur and Richard L. Ruth, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York**
**Filed Aug. 2, 1966, Ser. No. 569,750**
**Int. Cl. G11b** *13/00;* **G08b** *29/00*
**U.S. Cl. 340—172.5** **4 Claims**

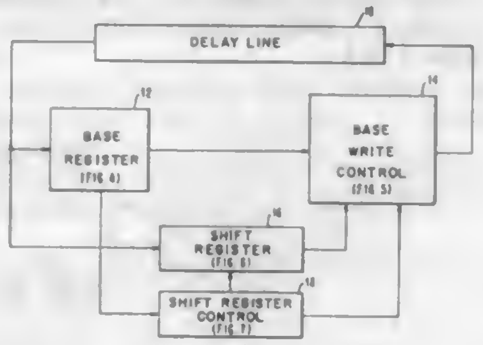


A data processing system including a plurality of subsystems, each connected exclusively to a memory controller. The subsystems include a data processor and a memory. The subsystems communicate exclusively through the memory controller which includes a monitoring system for detecting errors in the coded information being transmitted. Upon detection of an error, the memory controller generates an illegal action code indicative of the type of error occurring and transmits the code to all connected subsystems. The memory controller also generates an illegal action pulse which is transmitted only to the subsystem sending the information with the error.

### 3,478,325
### DELAY LINE DATA TRANSFER APPARATUS

**Harold R. Oeters and Andrew W. Maholick, Raleigh, N.C., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Jan. 16, 1967, Ser. No. 609,507**
**Int. Cl. G11b** *13/00*
**U.S. Cl. 340—172.5** **11 Claims**

A serial by bit data storage device, e.g. magnetostrictive delay line, with a read-write circuit for receiving data from the delay line and rerecording this same data into the delay line with a shift register connected in parallel to the read-write circuit to receive data from the delay line and selectively staticize portions of the same to effect a transfer of a plurality of data bits from the register simultaneously. The shift register includes circuitry for accepting a plurality of bits simultaneously and means for selectively shifting these data bits into the delay line in correct time relation with data already contained therein as determined by control bits in the data.



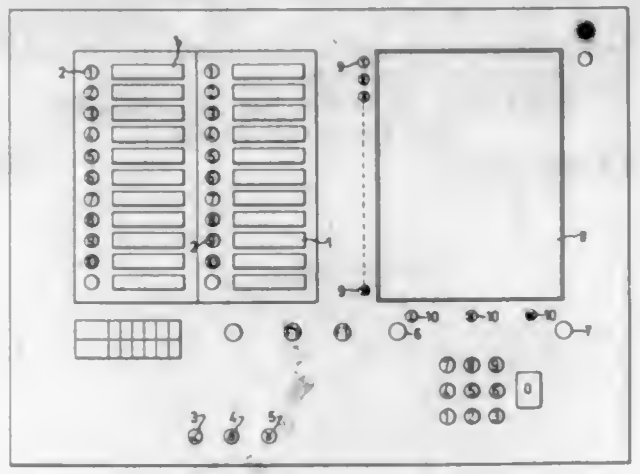
### 3,478,326
### DEVICES FOR ASSEMBLING IN AN INSTRUCTION MEMORY AN INSTRUCTION WORD TO BE SUPPLIED TO AN APPARATUS CONTROLLED BY LOGIC-CIRCUITS

**Sven Erik Bourghardt, Askim, Sweden, assignor to Saab Aktiebolag, Linkoping, Sweden**

**Continuation-in-part of application Ser. No. 387,102, Aug. 3, 1964. This application Sept. 20, 1967, Ser. No. 677,820**

**Claims priority, application Sweden, Aug. 8, 1963, 8,698/63**

**Int. Cl. G11b** *13/00*
**U.S. Cl. 340—172.5** **5 Claims**



A device for generating sections of an instruction word and assembling these into a complete word in an instruction word memory. Addressable tables in a table changing and displaying apparatus are displayed one at a time to an operator. Guided by symbols on the displayed table the operator adjusts signal generating means for obtaining primary code signals, and code notations individually associated with the table generate secondary code signals. Said primary and secondary code signals are used for generating a word section and an address for displaying another table for forming a new word section.

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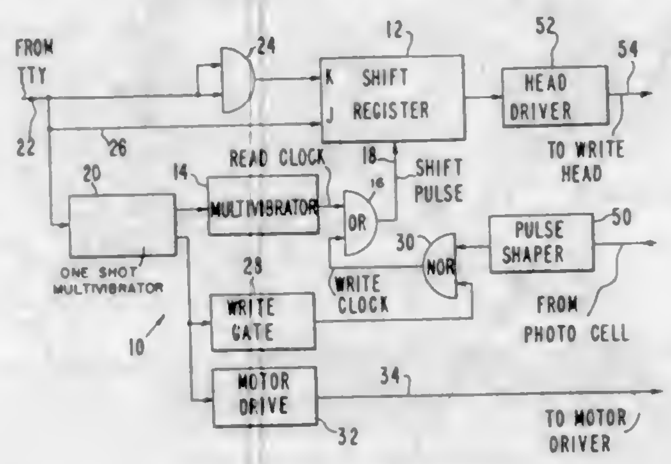
### 3,478,327
### DIGITAL RECORDING APPARATUS AND METHOD

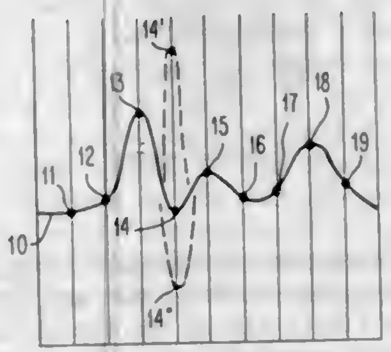
**Moghazi F. Barkouki, Palo Alto, Calif., assignor to Mobark Instruments, Mountain View, Calif., a limited partnership**
**Filed June 19, 1968, Ser. No. 738,289**
**Int. Cl. G11b** *13/00*
**U.S. Cl. 340—172.5** **15 Claims**



Apparatus and method for recording data bits of information wherein a data storage or memory unit is coupled to a movable recording medium so that data bits initially read into the memory unit can subsequently be read out therefrom and onto the recording medium as the latter moves relative to a predetermined reference. In this way, multiple bit characters can be recorded on the recording medium. Means is provided to correlate the movement of the recording medium with the generation of the readout of the data bits from the memory unit. The apparatus can be constructed to include a pair of memory units so that information from one memory unit can be read out as information from the other memory unit can be read in.

### 3,478,328
### CONTINUOUS AVERAGING SYSTEM

**Walter E. Schillinger, Brooklyn, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Continuation of application Ser. No. 516,387, Dec. 27, 1965. This application July 5, 1968, Ser. No. 746,697**
**Int. Cl. G11b** *13/00;* **G06f** *1/00*
**U.S. Cl. 340—172.5** **6 Claims**



A system for performing continuous averaging on the point or points of a continuously generated waveform. The system makes use of the relationship

$$A_n = A_{n-1} + \frac{1}{n}(S_n - A_{n-1})$$

where $A_n$ is the average value for the first $n$ samples on a given point of the waveform and $S_n$ is the value of the $n$th sample of the point. The system includes storage means for storing the value $A_{n-1}$, a subtracter for performing the operations $S_n - A_{n-1}$, a divider for dividing the output of the subtracter by $n$ and finally an adder for adding the output of the divider to the currently stored $A_{n-1}$ in the storage means. The output of the adder is returned to the storage means upon the termination of the operation.

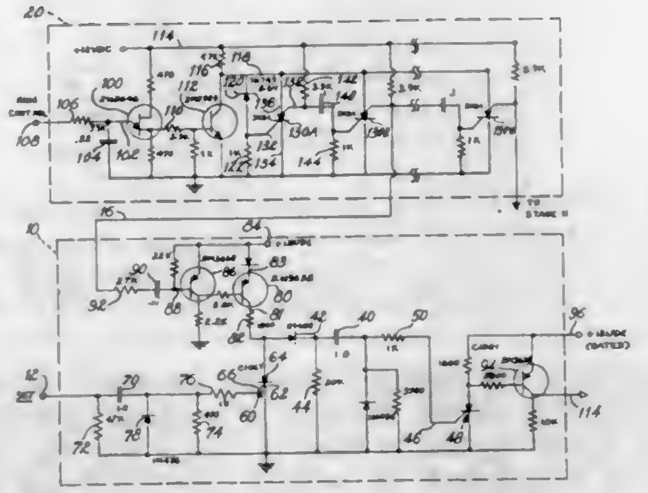
### 3,478,329
### PROCESS FOR THE RECORDING AND REPRODUCING OF INFORMATION DATA ON RECORDING CARRIERS, AND RECORDING CARRIER THEREFOR

**André Etienne de Rudnay, Chateau de Valency CH1000, Lausanne, Switzerland**
**No Drawing. Filed Oct. 13, 1965, Ser. No. 495,676**
**Int. Cl. G11c** *7/00, 13/02*
**U.S. Cl. 340—173** **7 Claims**

A high density relatively permanent information recording carrier consisting essentially of a thin-layered solid body member having a surface of inorganic material (selected from the group consisting of Ti, Al, Pd, Pt, a high-melting rectifying-like metal and a material capable of adsorbing hydrogen and retaining it at room temperature), with selected regions thereof, chemically distinct from other regions thereof, the selective regions being ordered and arranged in accordance with the information and the selected regions differentially having predetermined chemical structure in relation to other intervening regions of the recorder surface and being capable of reliably differentially altering impinging electromagnetic radiation in a predetermined manner so that the entire surface can be systematically electromagnetically scanned to retrieve the stored information at the successive selected regions.

### 3,478,330
### DATA STORAGE CIRCUIT UTILIZING A CONTROLLED RECTIFIER

**Irving B. Cooper, Jr., Marblehead, Mass., assignor to Industrial Instrumentations, Inc., Marblehead, Mass., a corporation of Massachusetts**
**Filed June 21, 1966, Ser. No. 559,330**
**Int. Cl. G11b** *31/00;* **H03k** *17/00*
**U.S. Cl. 340—173** **10 Claims**



A data storage circuit includes a controlled rectifier that has a main circuit and a control electrode. Input circuitry coupled to the control electrode includes a pulse shaping network having a coupling capacitor connected in series with the control electrode for generating a pulse of predetermined effective time duration. A sampling circuit coupled to the main circuit applies a sampling signal of substantially shorter time duration than the data storage signal for releasing the main circuit from conducting condition in a data readout operation. An output circuit includes a capacitor, a charging circuit including a diode connected between the main circuit and the capacitor, and a discharging circuit which controls the rate of discharge of the capacitor. The output circuit produces a voltage transition if the main circuit of the controlled rectifier remains released from conducting condition after termination of the sampling signal.

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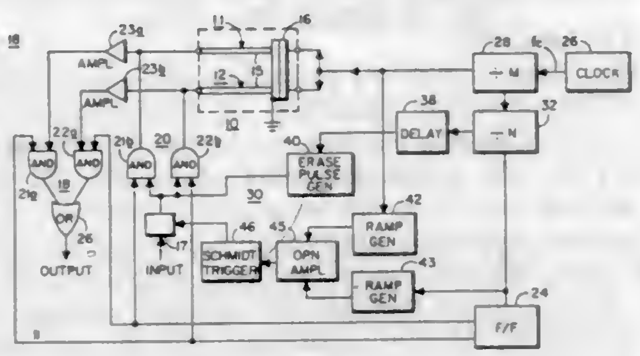
### 3,478,331
### FREQUENCY MULTIPLICATION APPARATUS

**Joseph W. Gratian, Rochester, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware**
**Filed Jan. 3, 1967, Ser. No. 606,739**
**Int. Cl. G11b *9/00;* H03h *3/00***
**U.S. Cl. 340—173** **10 Claims**



A frequency multiplication apparatus employing a ferroacoustic memory storage device and logic means which permit samples to be taken at a first rate and stored in the ferroacoustic device, and thereafter read out from the device at a higher second rate.

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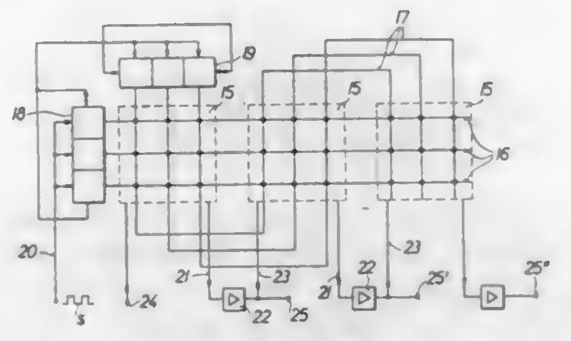
### 3,478,332
### APPARATUS FOR THE RETARDATION OF IMPULSE SEQUENCES

**Hans Heymann, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany**
**Filed Mar. 30, 1964, Ser. No. 355,671**
**Claims priority, application Germany, Apr. 4, 1963, O 9,331**
**Int. Cl. G11b *5/00***
**U.S. Cl. 340—174** **4 Claims**



Apparatus for retarding impulse sequences, in which the individual storage segments of a matrix have coincidence signals applied to them in such a way that all or some of the segments are selected successively and cyclically, with each such segment being read out during the first part of a selection period and being thereafter written into during the last part of the select period.

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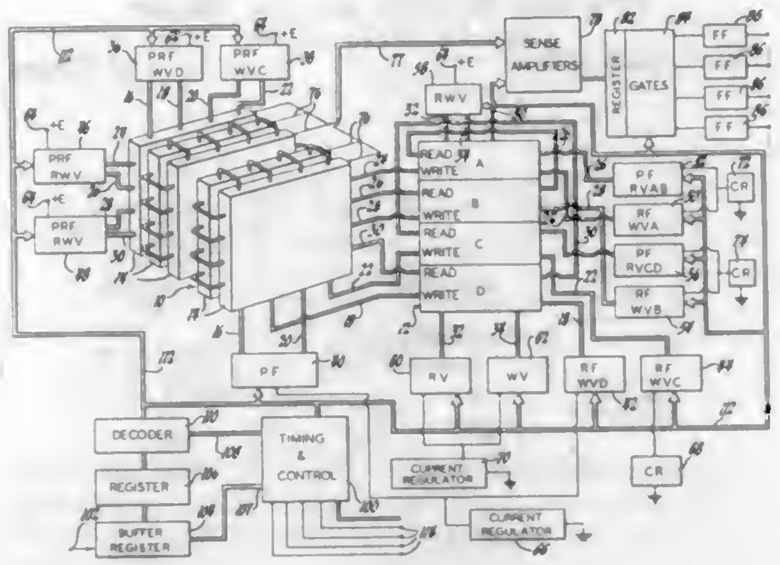
### 3,478,333
### MAGNETIC MEMORY SYSTEM

**Alfred H. Faulkner, Redondo Beach, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Feb. 24, 1964, Ser. No. 346,707**
**Int. Cl. G11b *5/12***
**U.S. Cl. 340—174** **10 Claims**

Memory for digital computers including destructive and nondestructive readout portions sharing certain selection lines. Destructive readout portion is implemented with toroidal cores using coincident-current selection for read and write. Nondestructive readout portion employs multiaperture devices also using coincident current selection for prime and read. One set of selection lines is common to both portions, but performs a distinct function in each to permit discrete selection operation.



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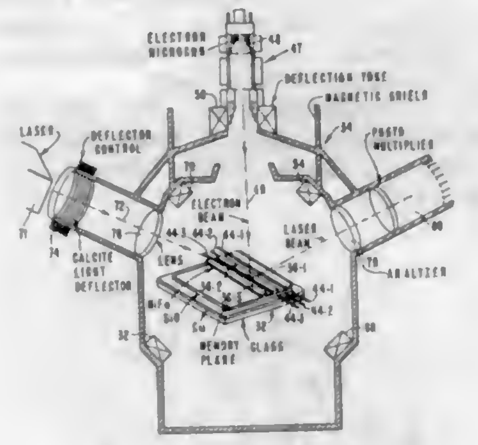
### 3,478,334
### LOW THRESHOLD MAGNETIC FILM MEMORY

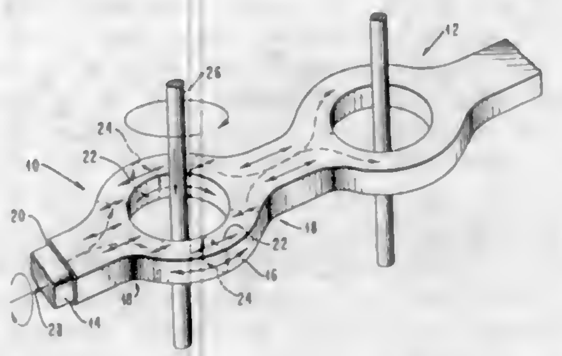
**Herbert J. Kump Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed June 29, 1964, Ser. No. 378,806**
**Int. Cl. G11b *5/02***
**U.S. Cl. 340—174** **16 Claims**



A uniaxial anisotropic magnetic film storage device operating in the dispersion locked mode and unlocked from remanence along a hard axis by the application of a magnetic field directed generally opposite to the remanent magnetization along the hard axis. A first bias field directed generallly opposite to the remanent magnetization along the hard axis of a strength insufficient to unlock the device may be employed so that, when unlocking is desired, an additional low amplitude magnetic field, such as that generated by an electron beam, may be applied in the same direction as the first bias field to unlock the device from remanence along the hard axis. A second bias field applied along the easy axis may be utilized to provide remanence in one of two opposite directions along the easy axis following unlocking from hard axis remanence.

### 3,478,335
### CHAIN MAGNETIC MEMORY ELEMENT

**Hans-Otto G. Leilich and Arnold F. Schmeckenbecher, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York**
**Filed June 23, 1964, Ser. No. 377,308**
**Int. Cl. G11b *5/00***
**U.S. Cl. 340—174** **4 Claims**



An elongated chain store element having an apertured link which the link is magnetically oriented longitudinally around everywhere around apertures thereof. The longitudinal orientation is provided by a magnetic field parallel to the chain during deposition of magnetic material on the element.

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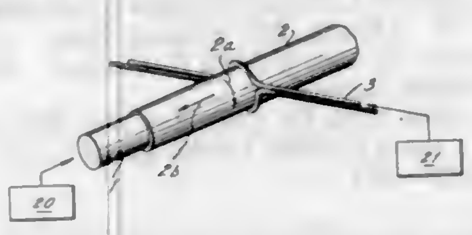
### 3,478,336
### METHOD AND APPARATUS FOR WRITING INFORMATION INTO PLATED WIRE MAGNETIC FILM MEMORIES

**Etsuo Kashiwagi and Hiroshi Murakami, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan**
**Filed Aug. 16, 1966, Ser. No. 572,722**
**Claims priority, application Japan, Aug. 31, 1965, 40/53,194**
**Int. Cl. G11b *5/74***
**U.S. Cl. 340—174** **5 Claims**



A memory system employing cylindrical shaped memory elements comprised of a rod-shaped conductor having a ferromagnetic coating upon its outer surface. A single turn winding is disposed about the cylindrical shaped memory element. Pulses of opposite polarity are applied to the winding and substantially simultaneously therewith an information pulse is applied to the rod shaped conductor timed so as to be initiated prior to the termination of the first pulse applied to the winding and so as to terminate subsequent to the second pulse of opposite polarity applied to the winding so as to enable a reduction in the level of information current amplitude utilized to drive such elements while maintaining suitable margins of operation.

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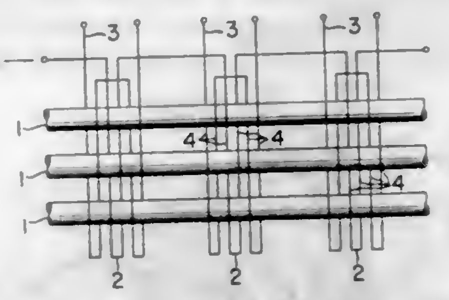
### 3,478,337
### WOVEN-TYPE, FIXED MEMORY

**Katsuro Nakamura and Shigetoshi Watanabe, Tokyo-to, Japan, assignors to Toko Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan**
**Filed Aug. 29, 1966, Ser. No. 575,893**
**Claims priority, application Japan, Sept. 1, 1965, 40/53,779**
**Int. Cl. G11b *5/00***
**U.S. Cl. 340—174** **2 Claims**

A fixed memory device of the woven type has a large number of magnetic weft word drive line wires crossing conductor warp wires; memory points are formed along each magnetic wire; the warp members consist of direct current bias lines wound around the memory points and connected to a bias current source, and output lines are wound around the memory points in the vicinity of the direct current bias lines, the winding directions of the direct bias lines are made to be of one type with respect to the axial direction of the magnetic wires, while the winding directions of the output lines are being made to be of another type with respect to the axial direction of the magnetic wires.



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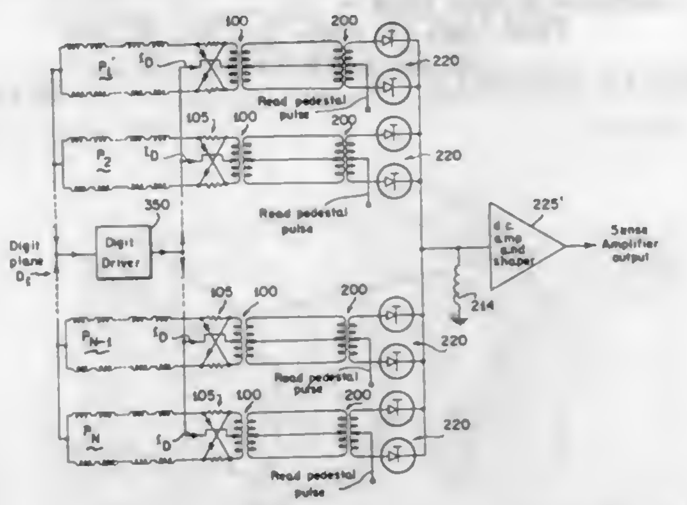
### 3,478,338
### SENSING MEANS FOR A MAGNETIC MEMORY SYSTEM

**Donal A. Meier, Inglewood, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**
**Original application Mar. 26, 1963, Ser. No. 268,145, now Patent No. 3,341,829, dated Sept. 12, 1967. Divided and this application May 25, 1967, Ser. No. 641,372**
**Int. Cl. G11b *5/00***
**U.S. Cl. 340—174** **16 Claims**



A bistable magnetic memory system connected in a common mode read-out sensing arrangement and including a sense amplifier input circuit having a diode bridge circuit for overcoming unbalancing because of different information patterns of the stored data. The sense amplifier input circuit also includes inductively restored, pedestal-gated, tunnel rectifier discriminating elements providing high stability for sensing, while preventing sense amplifier overloading during writing, and permitting a high degree of partitioning of the sense-digit lines coupling the magnetic elements of the system.

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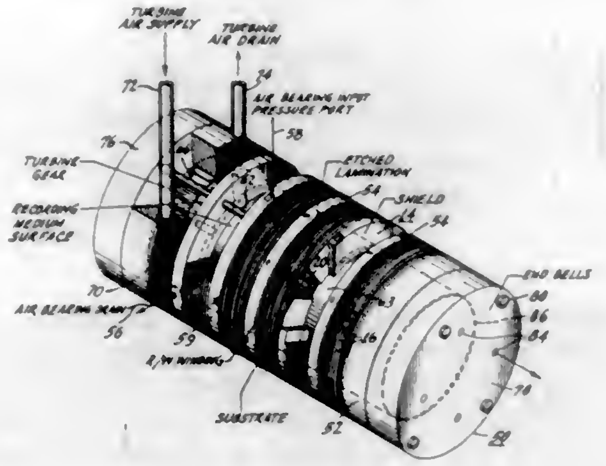
### 3,478,339
### DATA STORAGE APPARATUS INCLUDING LAMINATED ANNULI TRANSDUCER SUPPORTS CONCENTRIC WITH THE DATA STORAGE MEANS

**Abraham Lichowsky, Los Angeles, Calif., assignor to RCA Corporation, a corporation of Delaware**
**Filed Nov. 12, 1965, Ser. No. 507,351**
**Int. Cl. G11b *5/00***
**U.S. Cl. 340—174.1** **11 Claims**

Data storage apparatus includes a plurality of laminations with each formed in the shape of an annulus. A horseshoe shaped transducer is formed on each lamination and the laminations are joined together to form a unitary member. A data storage device having polarizable material thereon is juxtaposed concentric with the unitary member so that the transducers on the unitary member cooperate with the polarizable material contained on the data storage device.



### 3,478,340

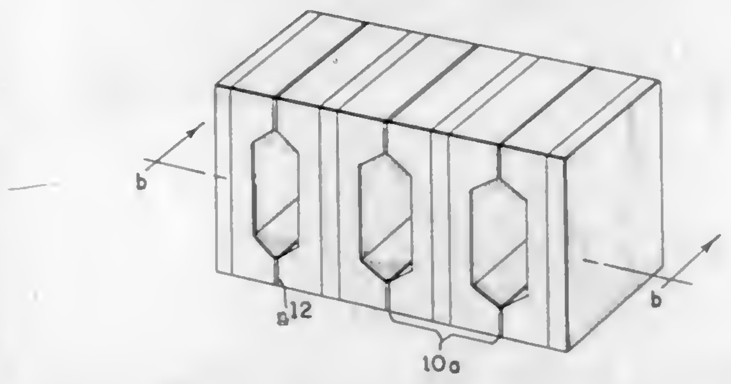
### UNITIZED MAGNETIC ASSEMBLY

**Bernard Schwartz, Poughkeepsie, and Harold L. Turk, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Mar. 11, 1966, Ser. No. 533,565**

**Int. Cl. G11b** *5/00, 5/42*

**U.S. Cl. 340—174.1 10 Claims**



A magnetic transducer of unitized structure having a plurality of layers of magnetic material which are spaced and isolated from each other by integral intermediate layers of non-magnetic material integrally bonded to the magnetic material.

### 3,478,341

### RANDOM ACCESS MAGNETIC DISC STORAGE DEVICE WITH PERIPHERAL BEARING MEANS

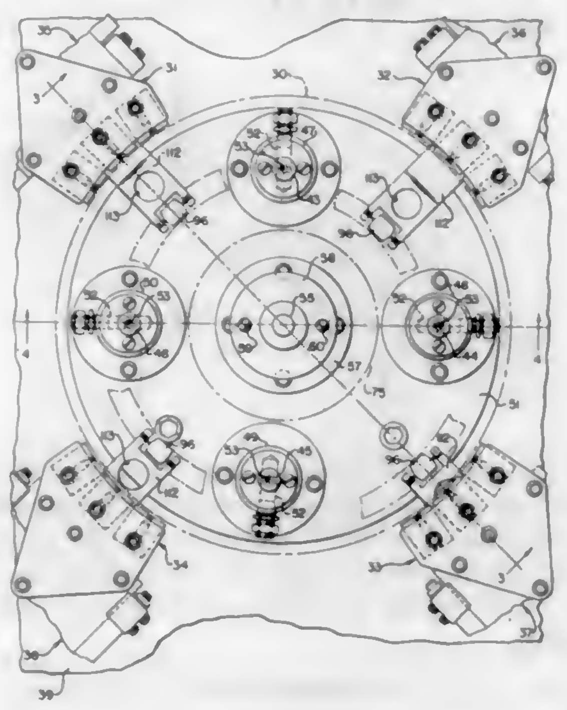
**Cebern B. Trimble, Centerville, Frank S. C. Mo, Kettering, and Ollah Combs, Morrow, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**

**Filed July 11, 1966, Ser. No. 564,334**

**Int. Cl. G11b** *5/82*

**U.S. Cl. 340—174.1 17 Claims**

A random access high-density information storage device employing an interchangeable rotatable disc cooperating with a plurality of reading and recording elements. The disc is driven by flexible means to permit its precise positioning by a plurality of frames on which are mounted arcuate members arranged to engage the periphery of the disc. Certain of these frames are rigid to provide reference locations, while the remaining frames are flexible so that their arcuate members urge the disc into the proper position as determined by the arcuate members associated with the rigid frames. Indexing means are mounted on the frames so that the associated reading and recording head units may be set to perform reading or recording operations on a predetermined track on the disc, and may be shifted from one track to another. Air bearings are employed to minimize friction.



### 3,478,342

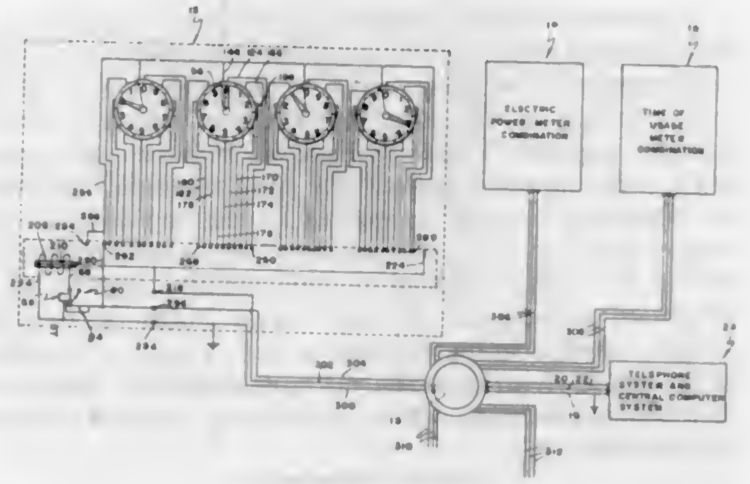
### METER READING MEANS AND METHOD

**Donald H. Alldritt, 918 Central Bldg. 67202, and Theodore E. Beam, 3333 E. Central 67218, both of Wichita, Kans.**

**Filed Aug. 24, 1965, Ser. No. 482,164**

**Int. Cl. G08c** *19/00;* **G01d** *13/26*

**U.S. Cl. 340—194 7 Claims**


ELECTRIC POWER METER COMBINATION
TIME OF USAGE METER COMBINATION
TELEPHONE SYSTEM AND CENTRAL COMPUTER SYSTEM
170
172
174
176

The invention comprises the method of and apparatus for signaling the multi-digit numerical reading of a meter by producing a series of electrical signal pulses with the time position of a pulse in the series of pulses indicating the magnitude of the digit represented or indicated thereby. The method and apparatus is particularly applicable to the remote reading of utility meters, and in this application, each digit indicator (units, tens, etc.) has a normally open switch associated with each possible value to which such digit is susceptible. All such switches of each digit indicator are connected in parallel between a power source and a series of spaced stationary contacts of a master selector switch. The series of stationary contacts of the units indicator are sequentially in series with corresponding contacts of indicators of tens, hundreds, etc. The selector switch includes a movable contact connected to the power source and means is provided to sequentially contact the movable contact with all of the stationary contacts in a timed order. Means is provided for closing with respect to each digit indicator the switch thereof corresponding to the particular digit value indicated, whereby a circuit is completed and a pulse is produced as the movable contact contacts stationary contacts associated with a closed switch, whereby a single pulse is produced to indicate by its time position the value of the digit and also as to whether its multiplier is 10, 100, etc. Additional stationary contacts can be provided for contact by the movable contact to establish by pulses a time reference scale.

### 3,478,343

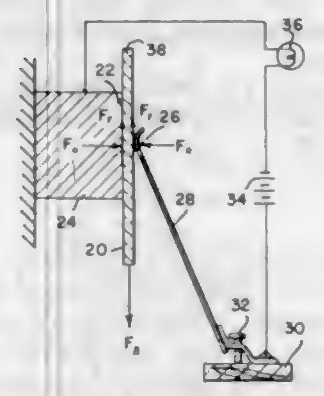
### VIBRATION INTEGRATING ALARM

**Clarence L. Wallace, Jr., San Diego, Calif., assignor, by mesne assignments, to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware**

**Filed Dec. 27, 1965, Ser. No. 516,420**

**Int. Cl. G08b** *21/00;* **H01h** *27/04, 35/02*

**U.S. Cl. 340—261 9 Claims**



Apparatus for detecting and signalling the presence of vibratory energy in excess of a predetermined value includes a receiver portion for receiving vibrations, an elongated transmitter member for transmitting the vibrations from the receiver to an interposer means such as a plate, disk or cylinder which is normally frictionally held between the elongated member and a support against movement by a resilient biasing means. When the vibration of the elongated member in the same direction as the biasing force applied to the interposer means is sufficiently strong to change the force between the elongated member and the interposer means from a static to a dynamic one, the biasing means will cause the interposer means to move and actuate a signal.

### 3,478,344

### BEHAVIORAL SUPERVISION SYSTEM WITH WRIST CARRIED TRANSCEIVER

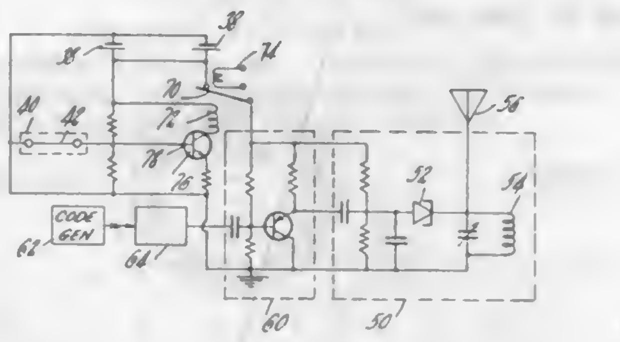
**Ralph K. Schwitzgebel, 257 Beacon St., Somerville, Mass. 02180, and William Sprech Hurd, 60 Kirkland St., Cambridge, Mass. 02138**

**Filed June 21, 1965, Ser. No. 465,306**

**Int. Cl. G08b** *27/00, 23/00;* **H04m** *11/02*

**U.S. Cl. 340—312 5 Claims**

A system for analyzing and/or supervising the behavior of selected individuals includes a central station that has two directional receiving antennas, an omni receiving antenna and an omni transmitting antenna; a display; a recorder; supervisory control; and reinforcement and alarm circuits. Each selected individual carries a wrist unit and a transceiver unit. Each wrist unit includes a modulated oscillator and two battery compartments; while each transceiver includes an antenna, a transmit-receive magnetic latched switch; a receiver having a high frequency response section and a lower frequency response section; and a transmitter. The central station interrogates each transceiver in sequence and in response to a coded interrogating signal from the central station a particular transceiver transmits a response for location and identifying purposes automatically. If an emergency or unusual condition arises, a higher power signal is transmitted by a transceiver to actuate an alarm at the central station where it is recorded and displayed.



### 3,478,345

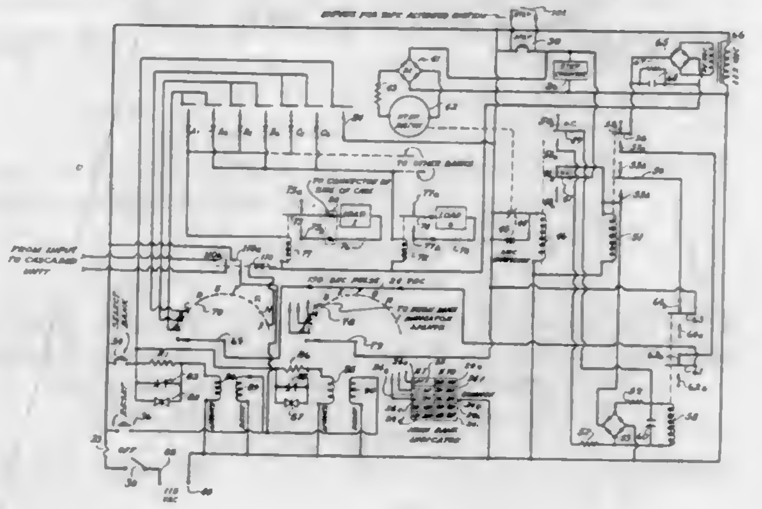
### AUDIO VISUAL PROGRAMMER

**William Greenwald, 77 Beverly Place, Levittown, N.Y. 11756**

**Filed June 20, 1967, Ser. No. 647,399**

**Int. Cl. G09b** *13/00*

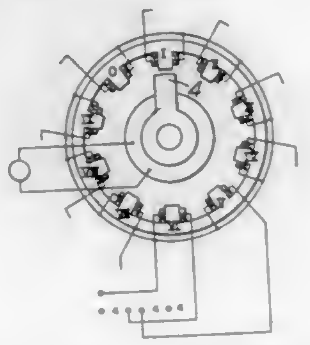
**U.S. Cl. 340—338 2 Claims**



A device for controlling the operation of a plurality of electrical apparatus in accordance with a prearranged cueing schedule by placing contacting cam pins in slots on a rotating drum switch wherever an instruction is to be given. A row of individual switches, each of which is connected to one of the electrical apparatus, are placed in physical contact to the cam pins. At the arrival of a subsequent cue, the drum switch rotates to the next slot contacting specifically preset cams with specific individual switches completing their electric circuits. A pulse is automatically sent through the system and places through those completed circuits energizing the apparatus. The individual switches are grouped into separate sections to permit commencing operation at any desired section. The drum can be rotated manually without initiating any pulses so the program can begin in the middle of a section.

### 3,478,346
### NONAMBIGUOUS READING SYSTEM FOR ANALOG TO DIGITAL CONVERTERS

**Yasumasa Narukiyo, Nagoya, Japan, assignor to Okuma Machinery Works Ltd., Nagoya, Japan, a corporation of Japan**
**Filed June 22, 1964, Ser. No. 376,689**
**Claims priority, application Japan, June 24, 1963, 38/33,318**
**Int. Cl. H03k** *13/02*
**U.S. Cl. 340—347** **4 Claims**



Reading system free from ambiguity of reading at the boundary of two digits in which two n-digits code disks representing higher order digits and lower order digits are employed and three successive signals from said higher order code disk which generates signals, adjacent two signals of which partially overlap each other, and two signals generated from said lower order disk respectively representing any digits in the higher half and lower half of n-digits are fed to a logical circuit performing a particular logical operation.

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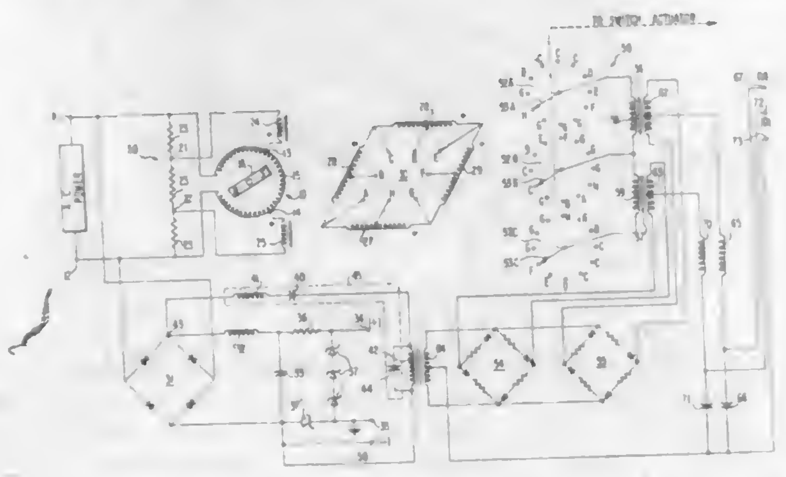
### 3,478,347
### CONVERTER FOR CONVERTING AN ANGULAR SHAFT POSITION TO A DIGITAL PULSE TRAIN

**Clarence W. Hewlett, Jr., Hampton, N.H., assignor to General Electric Company, a corporation of New York**
**Filed June 27, 1966, Ser. No. 560,763**
**Int. Cl. H04l** *3/00;* **H03k** *13/00*
**U.S. Cl. 340—347** **23 Claims**



A converter which converts output signals from a shaft position indicating means to a plurality of voltage pairs having fixed spaced phase relationships. A particular voltage pair is derived from this plurality of pairs and is converted to produce a pulse train which indicates the shaft position.

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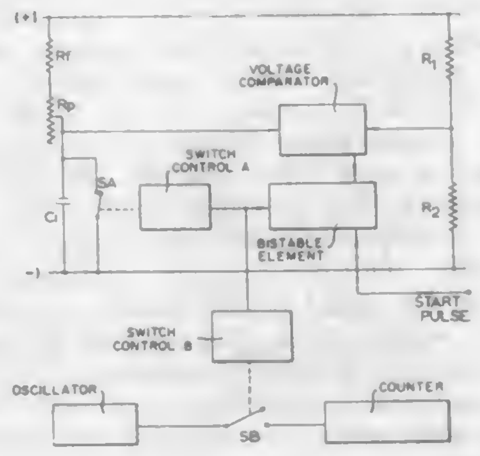
### 3,478,348
### ANALOGUE TO DIGITAL CONVERTER

**Lindsay Molyneux, 4 Leazes Crescent, Newcastle-upon-Tyne 1, England**
**Filed May 2, 1966, Ser. No. 546,888**
**Int. Cl. H03k** *13/02*
**U.S. Cl. 340—347** **7 Claims**

The resistance value to digital converter disclosed consists of a resistor, which is variable in accordance with some function to be digitized, in series with a capacitor. There is also a tapped preset potentiometer, and a voltage comparator between the potentiometer and the junction of the capacitor and the variable resistor. When switched on, a counter starts counting at a fixed rate and is stopped by the comparator when the capacitor voltage equals that of the center tap of the potentiometer. The counter reading is a direct measurement of the value of the variable resistor to a linear scale.



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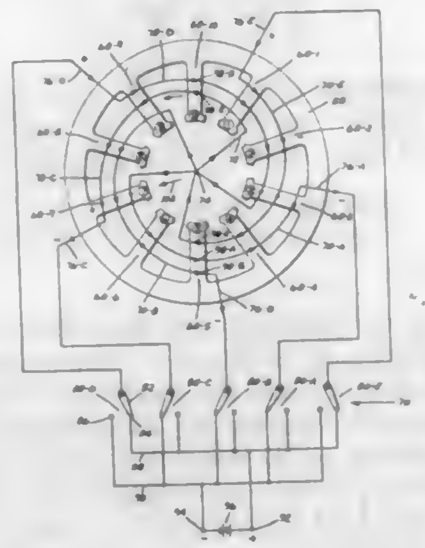
### 3,478,349
### STATOR ASSEMBLY FOR ELECTROMAGNETIC INDICATING APPARATUS

**Frederick A. Buuck, Phillip L. Harden, and Samuel M. Thomas, Jr., Fort Wayne, Ind., assignors to Bowmar Instrument Corporation, Fort Wayne, Ind., a corporation of Indiana**
**Filed Apr. 12, 1968, Ser. No. 720,878**
**Int. Cl. H04l** *3/00;* **G08b** *5/00;* **H03k** *13/00*
**U.S. Cl. 340—347** **17 Claims**



Electromagnetic indicating apparatus for displaying a predetermined even number of discrete indicia in response to the characters of a prearranged code having a magnetic stator core structure and a radially polarized permanent magnet rotor member. The stator structure comprises a yoke portion having at least the same number of polar projections or teeth extending radially inwardly, the projections being equally angularly spaced around the yoke portion and having radially inner ends which define a bore for receiving the permanent magnet rotor member which is mounted for rotation on an axis concentric with the bore. A plurality of substantially identical field winding sections are provided equal in number to one-half the same even number, the winding sections being positioned on the core structure in angularly displaced relationship and having first ends which are interconnected. A pair of electrical leads are provided for connection respectively to the opposite polarity sides of a source of direct current potential. Switching means is provided having the same even number of positions for selectively coupling in each of its positions the other ends of at least two predetermined different ones of the winding sections to one of the leads and the other ends of the remaining winding sections to the other of the leads for simultaneous energization of all of the winding sections with polarities in accordance with the code, there being at least two of the remaining winding sections in each position of the switching means. Thus, the predetermined different two of the winding sections have current flow therein in one predetermined direction and generate MMF's of one predetermined polarity in the core structure, and the remaining winding sections have current flow therein in the opposite direction and generate MMF's of the opposite polarity in the core structure in each position of the switching means thereby providing equal MMF values of opposite polarity in a different pair of diametrically opposite polar projections in each of the switching means positions so as to provide the same even number of discrete magnetic orientations for the rotor member.

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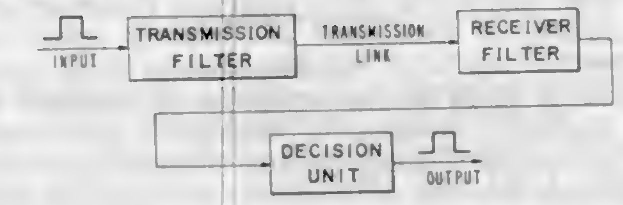
### 3,478,350
### FREQUENCY CODE CONCEPT ALPHABET SYNTHESIZING

**Etienne P. Gorog, Scarsdale, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Nov. 30, 1967, Ser. No. 686,895**
**Int. Cl. G08b** *1/00;* **H04l** *3/00;* **H03k** *13/00*
**U.S. Cl. 340—351** **11 Claims**



A method for transfer of data from a transmitter to a receiver over a transmission link having frequency constraints by generating sequences of electrical signals which by their contributions of bits inherently possess the required spectral distribution to satisfy these constraints and applying these signal sequences to the transmission link.

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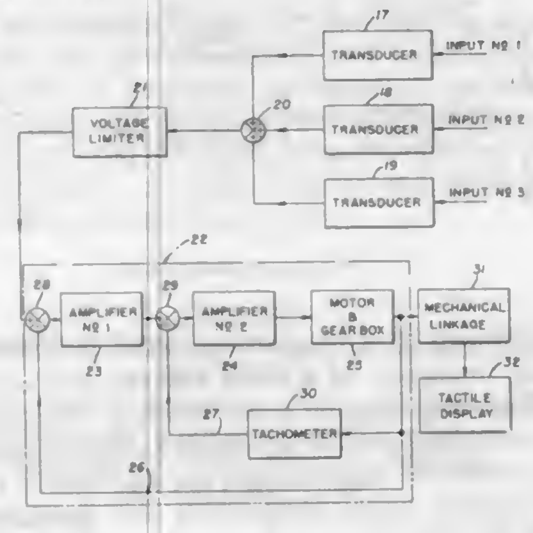
### 3,478,351
### TACTILE DISPLAY SYSTEM FOR AIDING AN OPERATOR IN VEHICULAR CONTROL

**Robert E. Fenton, Columbus, Ohio, assignor to The Ohio State University, Columbus, Ohio, an institution of higher learning of Ohio**
**Filed Jan. 13, 1967, Ser. No. 609,098**
**Int. Cl. G08b**
**U.S. Cl. 340—407** **4 Claims**



Information related to vehicular operation is presented to the operator by a kinesthetic-tactile display device incorporated in actuating means for the vehicle's control mechanism with the information thus presented utilized by the operator in determining subsequent operation of the actuating means to effect control over the vehicle. An electromechanical system controls the tactile display device in accordance with the system's determination of a parameter or parameters related to the vehicle's operation.

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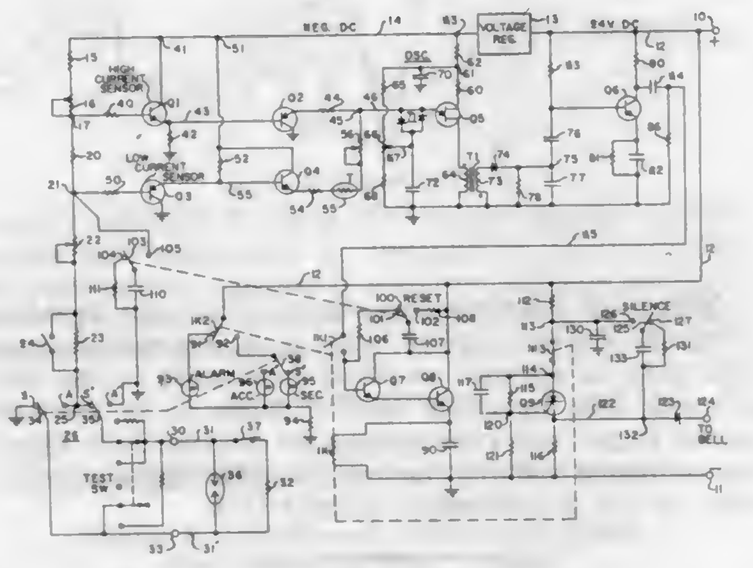
### 3,478,352
### ALARM APPARATUS

**Harold Eisenberg, Chicago, Ill., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**
**Filed Mar. 10, 1967, Ser. No. 622,118**
**Int. Cl. G08b** *29/00*
**U.S. Cl. 340—409** **6 Claims**



A security monitor alarm apparatus to provide an alarm indication when the current in a supervised line either increases or decreases by a set amount. The security monitor supervises the remote lines to alarm switching means which may be installed across the line to provide an increase in current when the device is operated or in series with the line to provide a decrease in current when the device is operated. An alarm condition is indicated both visually and audibly. A normally operating oscillatory circuit in the apparatus aids in self-checking the apparatus for operability.

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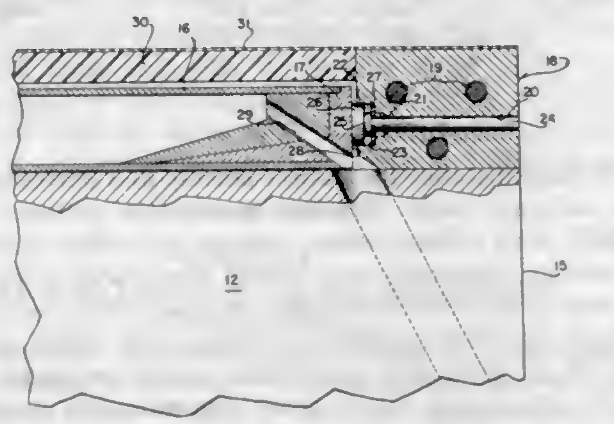
### 3,478,353
### ROTOR BLADE ANTENNA INSPECTION DEVICE

**Victor J. Adams, Jr., Parsippany, N.J., assignor to Lockheed Aircraft Corporation, Burbank, Calif.**
**Filed Mar. 15, 1967, Ser. No. 623,311**
**Int. Cl. H01q** *1/28*
**U.S. Cl. 343—708** **6 Claims**



A rotor blade construction having a waveguide antenna mounted therein adjacent an end plug spaced from the antenna wherein the end plug carries a pin held by a shear disk so as to engage the antenna and detect movement thereof relative to the end plug.

### 3,478,354

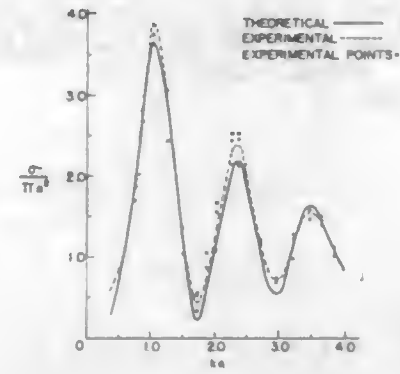
## RADAR METHOD USING MIE REGION ANALYSIS

**George Michael Foster, 1422 Mount Hope Ave., Rochester, N.Y. 14620, and Louis Vincent Surgent, Jr., 323 Adair Court, Joppa Towne, Md. 21085**

**Continuation-in-part of application Ser. No. 549,626, May 12, 1966. This application Dec. 6, 1967, Ser. No. 688,538**

**Int. Cl. G01s** *9/02*

**U.S. Cl. 343—5** **3 Claims**



Method of discriminating among radar echo signals to recognize signals received from a predetermined target. The radar is operated at plural frequencies in the characteristic Mie frequency spectral range of the predetermined target, and variations in the detected echo signals are compared with the characteristic Mie frequency variations of the predetermined target.

### 3,478,355

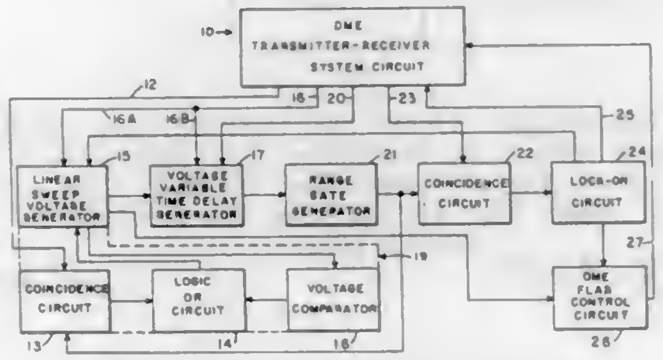
## ECHO FALSE DISTANCE INDICATION PREVENTION CIRCUIT FOR AIRCRAFT DME AND TACAN

**Michael W. Lundgreen, Edward G. Tuthill, and John B. Majerus, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa**

**Filed Sept. 5, 1968, Ser. No. 757,585**

**Int. Cl. G01s** *9/02*

**U.S. Cl. 343—7.3** **13 Claims**



A false distance indication sensing and correction circuit for aircraft radio distance measuring systems, such as DME, with a linear sweep voltage generator starting from a voltage (generally zero volts) equivalent to substantially zero range when the DME switches from search to track subject to being disabled whenever the DME is again in search. It is an echo protection circuit sweeping outward in an increasing range direction, normally to the DME range gate, to then be recycled back for repeated outward sweeps, except when the DME range gate is locked-on an echo return in which case the echo protection circuit upon encountering a DME return signal for more than a predetermined approximately one second interval initiates slew return of the DME back to zero range and search.

### 3,478,356

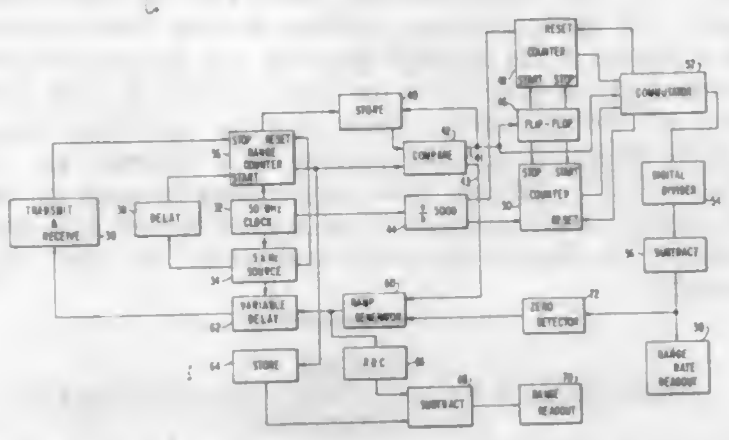
## RANGE RATE RADAR

**Dwight Divine III, Wheaton, Md., assignor to International Business Machines Corporation, a corporation of New York**

**Filed July 10, 1968, Ser. No. 743,680**

**Int. Cl. G01s** *9/44*

**U.S. Cl. 343—8** **7 Claims**



A radar range rate measuring system that measures the time it takes a target to travel between fixed range markers, represented by generated marker pulses. A relatively high transmitted pulse repetition frequency results in a plurality of transmitted and received pulses during movement of the target between adjacent range markers. The times at which the received pulses come closest to the range markers is detected by detecting a changeover in the range marker readout. A time measurement between changeovers provides an accurate measurement of time per fixed distance, or inversely, of range rate.

### 3,478,357

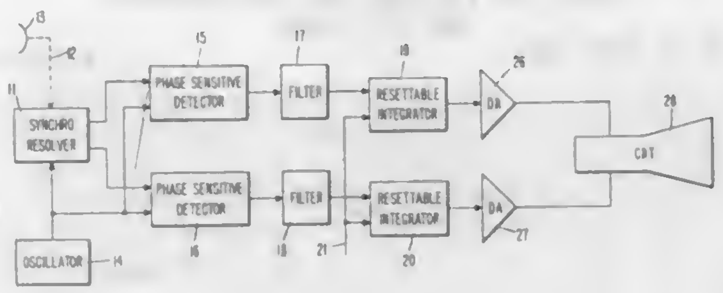
## SWEEP GENERATOR FOR PPI RADAR DISPLAY

**James R. Bacon, Philadelphia, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**

**Continuation of application Ser. No. 588,067, Oct. 20, 1966. This application May 7, 1968, Ser. No. 727,383**

**Int. Cl. G01s** *9/04*

**U.S. Cl. 343—10** **9 Claims**



The primary of a synchro resolver is rotated at the rotational frequency of a radar antenna and excited by a higher frequency square wave voltage. The positive and negative portions of the modulated square wave output voltages from the secondaries are alternately eliminated and the square wave components are filtered out. The resultant sine waves are then integrated a plurality of times during each cycle and the ramp voltage outputs of the integrator are used to drive the deflection circuits of a CRT.

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### 3,478,358

## ELECTRONIC SCANNING ANTENNAS

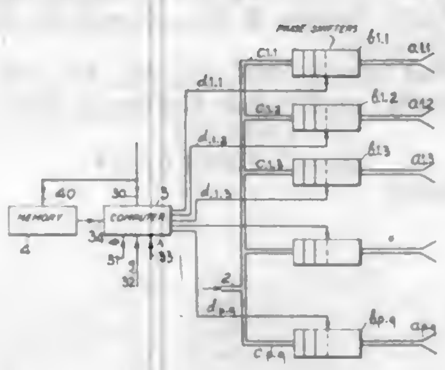
**Roland Trigon, Paris, France, assignor to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France**

**Filed Nov. 29, 1966, Ser. No. 597,801**

**Claims priority, application France, Nov. 30, 1965, 40,294**

**Int. Cl. H04b** *7/02*

**U.S. Cl. 343—100** **1 Claim**



In order to overcome the drawbacks due to the quantization of the phase-shifts in electronic scanning antennas, the rounding-off of the phase-shift values is carried out according to a predetermined code, i.e., the chosen quantized value is greater or smaller that the theoretical computed phase-shift value according to whether the corresponding value of the code is +1 or −1, the values of the code being chosen randomly.

### 3,478,359

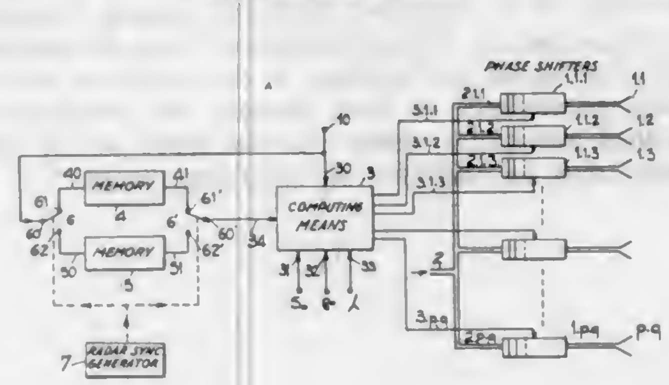
## ELECTRONIC SCANNING ANTENNAS USED IN ELECTROMAGNETIC DETECTION

**Jacques A. Salmon, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France**

**Filed Dec. 20, 1966, Ser. No. 603,711**

**Claims priority, application France, Dec. 22, 1965, 43,365**

**Int. Cl. H04b** *7/02*



In order to minimize, in pulse radar systems, the drawbacks due to the rounding-off of the respective phase-shift values of the radiating elements of an electronic scanning antenna, the code of the rounding-off, i.e. the function "direction of the phase error" is different for any two adjacent pulses corresponding to the same desired direction of the radiated beam axis.

### 3,478,360

## CONVERTER FOR VHF-OMNIRANGE (VOR) RECEIVER

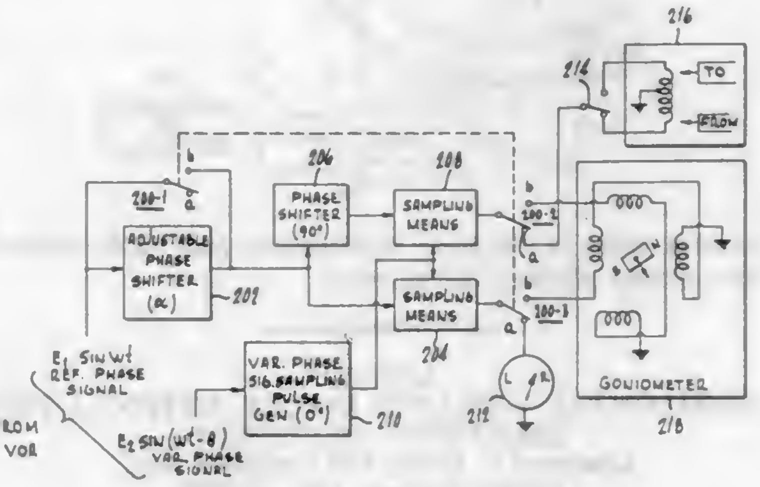
**Charles J. Hirsch, Princeton, N.J., assignor to RCA Corporation, a corporation of Delaware**

**Filed July 22, 1968, Ser. No. 746,551**

**Int. Cl. G01s** *1/44*

**U.S. Cl. 343—106** **13 Claims**

By utilizing the phase of one of the two 30 hertz outputs of a VOR to control the time of sampling of 30 hertz signals derived from the other output of the VOR, DC signals having a fixed magnitude and polarity between successive samplings are obtained which manifest the relative phase information between the VOR output signals, while eliminating the sinusoidal time-varying property exhibited by these VOR output signals. Aircraft bearing information may be presented to the pilot either by applying these samples to a course deviation indicator and a "TO-FROM" polarity indicator and/or by applying these samples to a goniometer.


216
214
TO
FROM
206
208
b
200-1
a
PHASE SHIFTER (90°)
SAMPLING MEANS
200-2
ADJUSTABLE PHASE SHIFTER (α)
202
SAMPLING MEANS
200-3
204
$E_1 \sin \omega t$ REF. PHASE SIGNAL
FROM VOR
VAR. PHASE SIG. SAMPLING PULSE GEN (0°)
210
212
$E_2 \sin(\omega t - \theta)$ VAR. PHASE SIGNAL
L
R
GONIOMETER
218

### 3,478,361

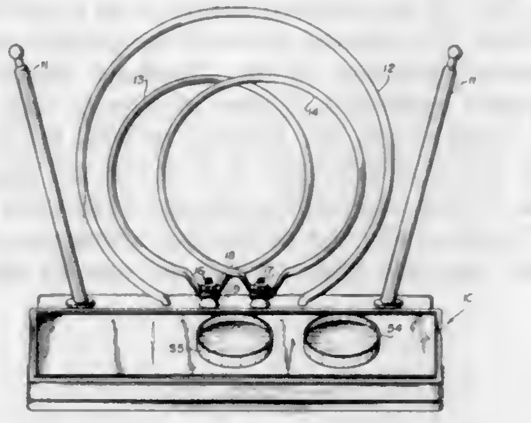
## INDOOR TELEVISION ANTENNA WITH ROTATABLE RINGS

**Marvin P. Middlemark, 96 Storehill Road, Old Westbury, N.Y. 11568**

**Filed Oct. 9, 1968, Ser. No. 766,268**

**Int. Cl. H01q** *1/00*

**U.S. Cl. 343—730** **10 Claims**



An indoor television antenna system having a larger, fixed outer ring for VHF reception in conjunction with rabbit ear elements extending from each end of the outer ring, and a pair of smaller, vertical rings disposed within said outer ring, said pair of smaller rings being mutually overlapping and intergeared, and being rotatable on a vertical axis so as to vary the degree of overlap. The pair of smaller rings serves the higher UHF range.

### 3,478,362

## PLATE ANTENNA WITH POLARIZATION ADJUSTMENT

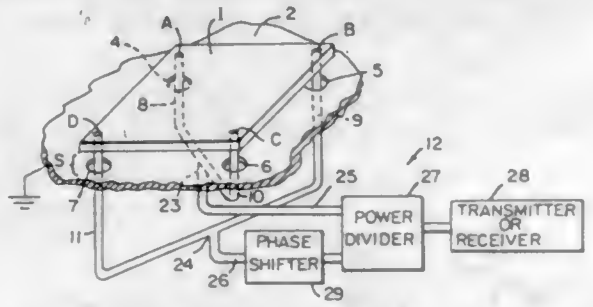
**Leon J. Ricardi, Wellesley, and Milton L. Rosenthal, Natick, Mass., assignors to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts**

**Continuation of application Ser. No. 519,178, Jan. 6, 1966. This application Dec. 31, 1968, Ser. No. 800,316**

**Int. Cl. H01q** *13/12*

**U.S. Cl. 343—769** **20 Claims**

A low profile antenna is disclosed comprising a plate uniformly spaced from a ground plane. The plate is fed RF energy at selected opposed points to produce separate



current paths in the plate. Polarization may be controlled by suitably phasing the currents.

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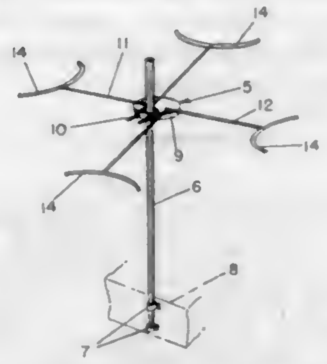
### 3,478,363
### HORIZONTAL V-SHAPED DIPOLE ANTENNA FOR TELEVISION RECEPTION

**Laurence C. Wells, 805 Crestfield Ave.,**
**Tarpon Springs, Fla. 33589**
**Filed Mar. 7, 1968, Ser. No. 711,322**
**Int. Cl. H01q** *9/16*
**U.S. Cl. 343—802** **5 Claims**



This invention consists of a vertically disposed support that has its lower end clamped to a chimney of a house or the like by any desired means, and a horizontally disposed disk of insulated material is suitably secured in an off-centered position to the aforesaid support. Two diametrically opposed L-shaped aluminum rods, whose legs are of equal length, are suitably secured to the upper surface of the aforesaid disk in a horizontal plane. An aluminum convex end loading element is secured to the outer end of each of the legs of the two aforesaid rods. A lead-in wire has one end secured to one of the aforesaid L-shaped rods and an alike lead-in wire is likewise secured to the other one of the L-shaped rods. The entire antenna is secured by clamps to a chimney, as one can see by examination of FIGURE 1 of the accompanying drawing.

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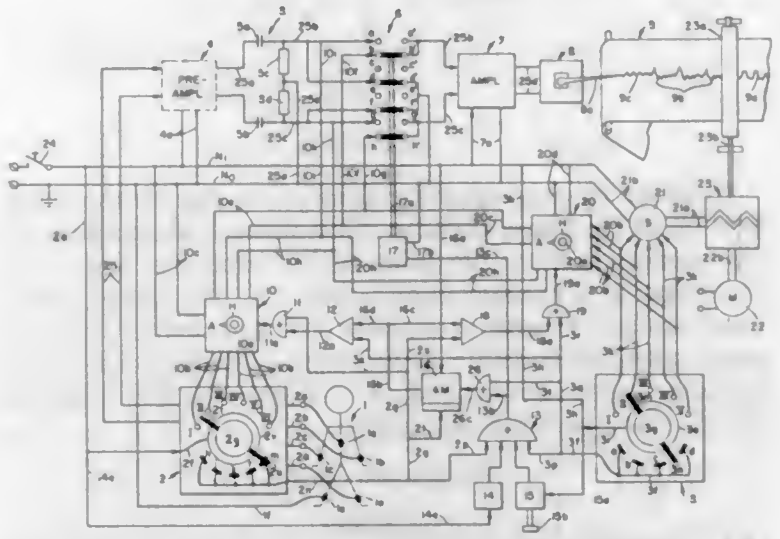
### 3,478,364
### RECORDER HAVING DISTINGUISHABLE RECORDS

**Manfred H. Frank, Freiburg im Breisgau, Germany, assignor to Fritz Hellige & Co., G.m.b.H., Freiburg im Breisgau, Germany**
**Filed July 2, 1968, Ser. No. 741,936**
**Claims priority, application Germany, July 2, 1967, 1,623,717**
**Int. Cl. G01d** *9/34*
**U.S. Cl. 346—62** **6 Claims**



A device for visual display of amplified measuring signals having gating circuitry for displaying marking pulses. When changing from one source of measuring signals to another or from one recording speed to another, the measuring signals are blocked from entering the final amplifier via short-circuiting an alternating current coupling means to ground. Marking means are utilized to identify parameters of the amplified measuring signals. The marking means operate during the period when the amplified measuring signals are blocked so that either of two important parameters, or both, namely, the source of the amplified measuring signals and the speed of the visual display, may be displayed on recording means.

# DESIGNS

## NOVEMBER 11, 1969

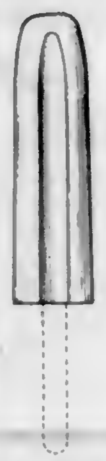
**215,917**

### FROZEN CONFECTION

**David L. Hendrick, Oakland, N.J., assignor to Consolidated Foods Corporation, Chicago, Ill., a corporation of Maryland**

**Filed Jan. 6, 1967, Ser. No. 5,335**
**Term of patent 14 years**
**Int. Cl. D1—*02***

**U.S. Cl. D1—22**



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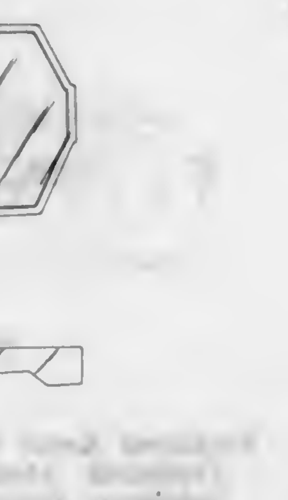
**215,918**

### FASHION SHIELD

**Richard L. Huggins, Lima, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York**

**Filed Oct. 1, 1968, Ser. No. 13,802**
**Term of patent 14 years**
**Int. Cl. D2—*03;* D16—*08***

**U.S. Cl. D2—234**



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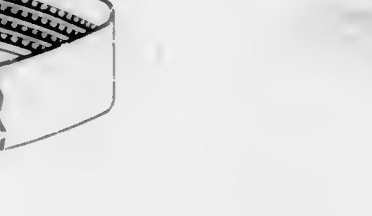
**215,919**

### ELASTIC BAND

**Oliver N. Seelig, Wyomissing Hills, Pa., assignor to Wyomissing Corporation, Reading, Pa., a corporation of Pennsylvania**

**Filed May 29, 1968, Ser. No. 12,123**
**Term of patent 14 years**
**Int. Cl. D5—*99***

**U.S. Cl. D3—32**



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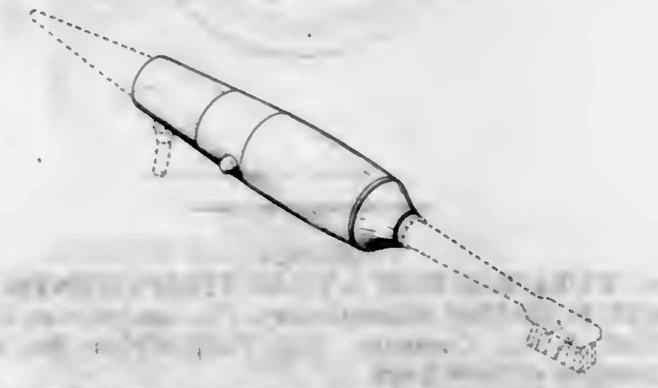
**215,920**

### POWER UNIT FOR MOTOR DRIVEN TOOTHBRUSH OR THE LIKE

**Donald McCarty, Long Beach, Allan B. Johnson, Tarzana, and Michael A. Cammack, North Hollywood, Calif., and John W. Mattingly, John M. Trenary, and Homer A. Jeffers, Jr., Fort Collins, Colo., assignors to Aqua Tec Corporation, Denver, Colo., a corporation of California**

**Filed Sept. 3, 1968, Ser. No. 13,357**
**Term of patent 14 years**
**Int. Cl. D4—*02***

**U.S. Cl. D4—15**



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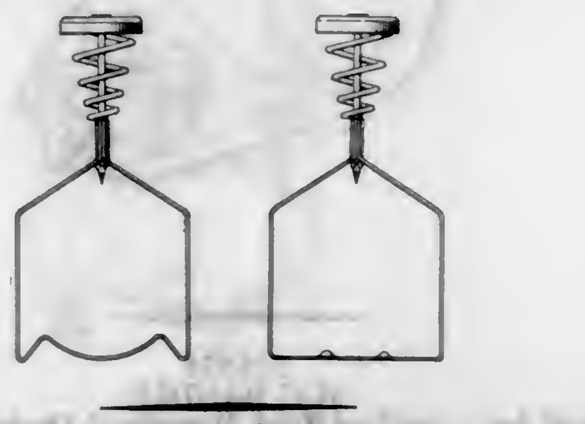
**215,921**

### CAN PUNCTURER

**Jon R. Beeson, Cincinnati, Ohio, assignor to Jaybee Manufacturing, Incorporated, Cincinnati, Ohio, a corporation of Ohio**

**Filed Oct. 11, 1968, Ser. No. 13,944**
**Term of patent 14 years**
**Int. Cl. D8—*02***

**U.S. Cl. D8—33**



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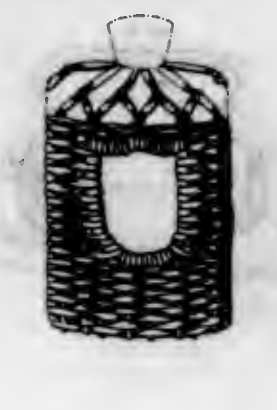
**215,922**

### BOTTLE COVERING

**David M. Marsh, 14 Capri Drive, Roslyn, N.Y. 11576**

**Filed Sept. 26, 1968, Ser. No. 13,726**
**Term of patent 14 years**
**Int. Cl. D9—*06***

**U.S. Cl. D9—250**

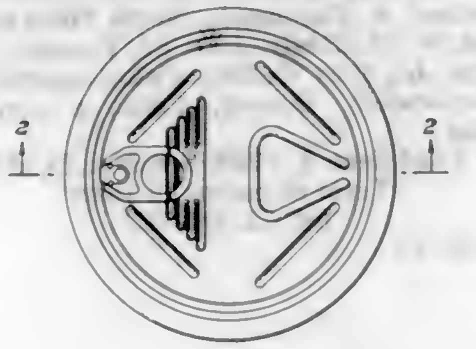


## 215,923
## END CLOSURE FOR A CONTAINER

Arthur Philip Zundel, Cary, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Aug. 14, 1968, Ser. No. 13,138
Term of patent 14 years
Int. Cl. D9—*02*

U.S. Cl. D9—255

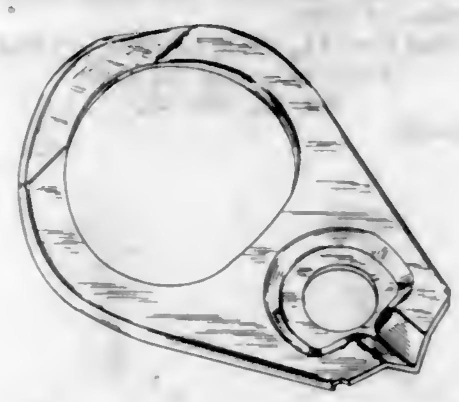


## 215,924
## PULL TAB FOR A TEAR STRIP OPENER

Joseph P. Rodden, Montgomery, Pa., assignor to Crown Cork & Seal Company, Inc., Philadelphia, Pa., a corporation of New York

Filed Feb. 12, 1968, Ser. No. 10,528
Term of patent 14 years
Int. Cl. D9—*02*

U.S. Cl. D9—256

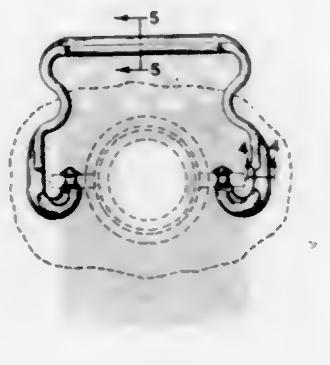


## 215,925
## JUG HANDLE

David Asch, Stratford Road, Hampstead, Quebec, Canada, and Robert D. Asch, 32 Crestwood Road, Montreal West, Quebec, Canada

Filed May 10, 1968, Ser. No. 11,885
Claims priority, application Canada Nov. 10, 1967
Term of patent 14 years
Int. Cl. D9—*99*

U.S. Cl. D9—291

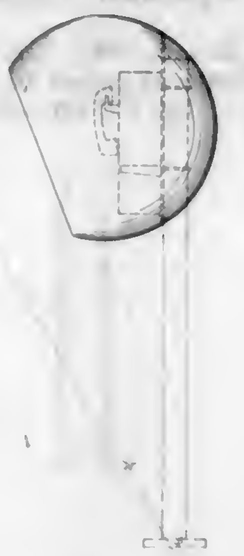


## 215,926
## TELEPHONE ENCLOSURE

Rollie B. Nawman, Piedmont, Calif., assignor to Benner-Nawman, Inc., Oakland, Calif., a corporation of California

Filed Mar. 27, 1969, Ser. No. 16,481
Term of patent 14 years
Int. Cl. D25—*99*

U.S. Cl. D13—1

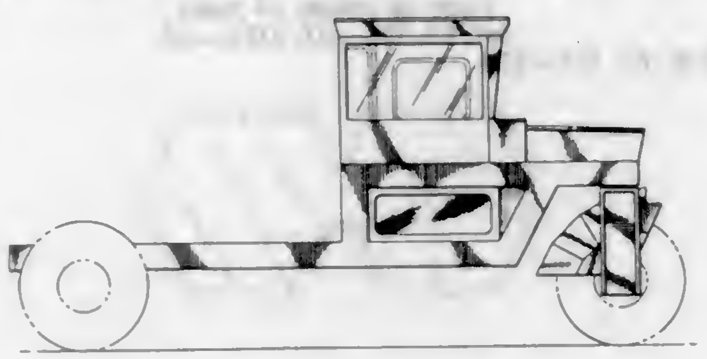


## 215,927
## COMBINATION VEHICLE CHASSIS AND CAB

Russell E. Jones, 621 Adena Road,
Chillicothe, Ohio 45601

Filed Aug. 15, 1968, Ser. No. 13,149
Term of patent 14 years
Int. Cl. D12—*09*

U.S. Cl. D14—3

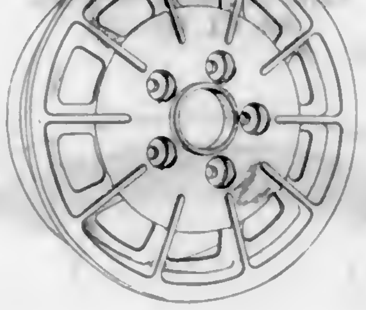


## 215,928
## WHEEL

Ferdinand Anton Ernst Porsche, Stuttgart-Nord, and Ferdinand Alexander Porsche, Doffingen, Kreis Boblingen, Germany, assignors to Dr. Ing. h.c.F. Porsche K.G., Stuttgart-Zuffenhausen, Germany

Filed Feb. 26, 1969, Ser. No. 15,934
Claims priority, application Germany Sept. 11, 1968
Term of patent 14 years
Int. Cl. D12—*14*

U.S. Cl. D14—30



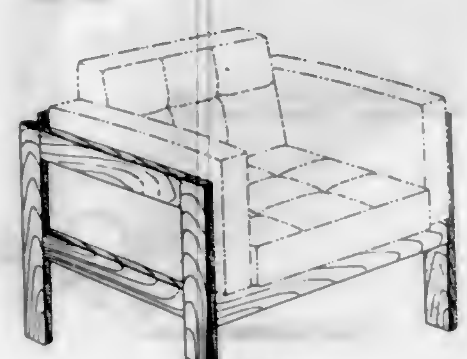
## 215,929
## CHAIR

Jacques S. Guillon, 501 Lansdown, Westmount, Quebec, Canada

Continuation-in-part of design application Ser. No. 4,198, Oct. 7, 1966. This application Aug. 19, 1968, Ser. No. 13,176

Claims priority, application Canada Apr. 9, 1966
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—1

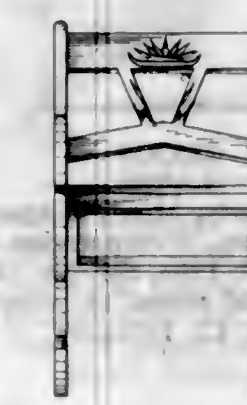


## 215,930
## ROCKING CHAIR

Ralph Mondragon, P.O. Box 199, Ranchos de, Taos, N. Mex. 87571

Filed Nov. 29, 1968, Ser. No. 14,713
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—6

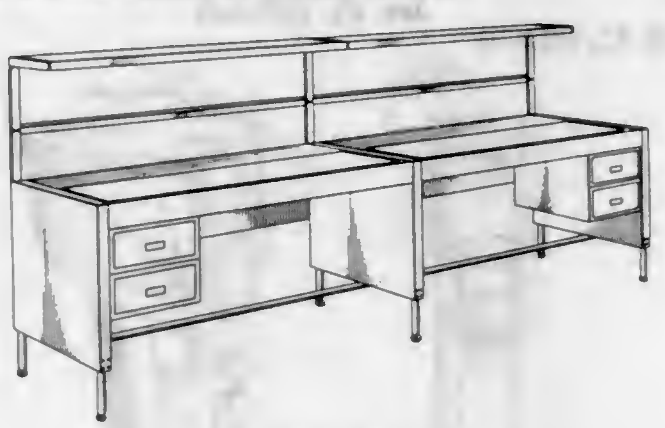


## 215,931
## WORK BENCH

Douglas M. Sandefur, Los Angeles, Calif., assignor to Sandefur Engineering Co., Inc., Lawndale, Calif., a corporation of California

Filed July 17, 1968, Ser. No. 12,802
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D16—2

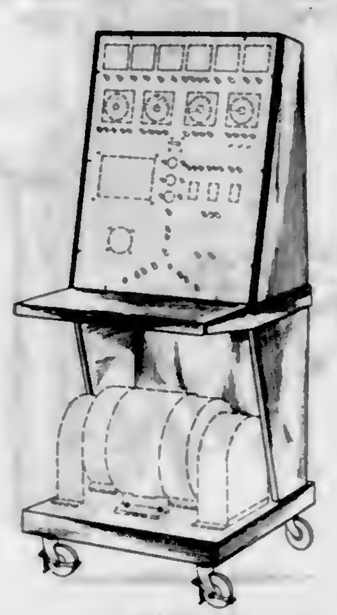


## 215,932
## MOBILE LABORATORY UNIT

Lars E. Jarl and Edward G. Taylor, Owen Sound, Ontario, Canada, assignors to General Signal of Canada Limited, Owen Sound, Ontario, Canada

Filed July 31, 1968, Ser. No. 12,969
Claims priority, application Canada Mar. 12, 1968
Term of patent 14 years
Int. Cl. D24—*99*

U.S. Cl. D16—2

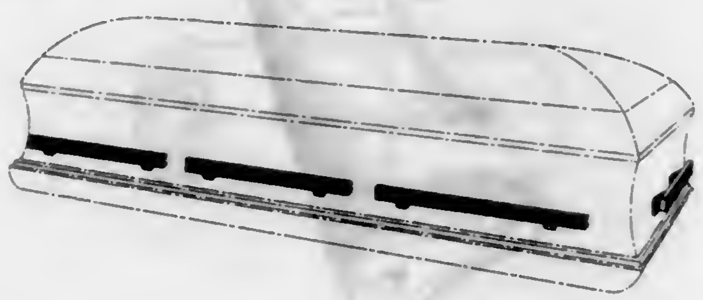


## 215,933
## CASKET OR THE LIKE

Joseph E. Peter, Cincinnati, Ohio, assignor to The Crane & Breed Casket Company, Cincinnati, Ohio, a corporation of Ohio

Filed July 21, 1967, Ser. No. 7,921
Term of patent 14 years
Int. Cl. D31

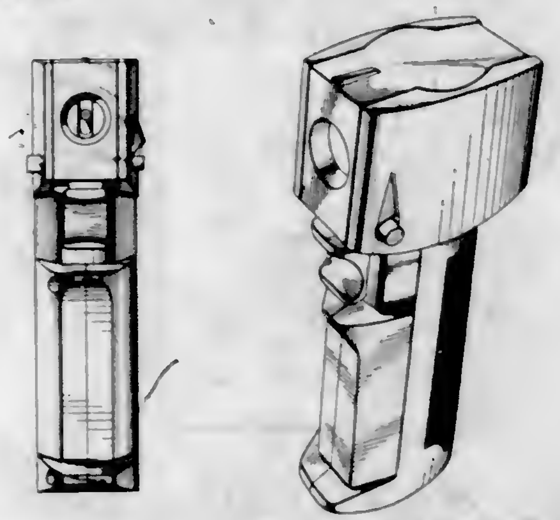
U.S. Cl. D19—1



### 215,934
### NON-LETHAL WEAPON PRODUCING A LIQUID SPRAY

Alan L. Litman, Pittsburgh, Pa., and Dennis K. Hackbarth, Lima, Ohio, assignor to Bangor Punta Operations, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 8, 1969, Ser. No. 16,623
Term of patent 14 years
Int. Cl. D22—*02*

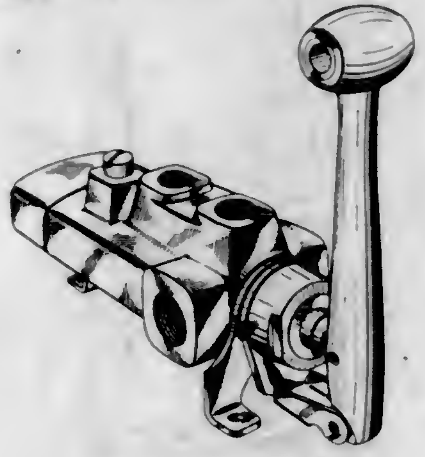
U.S. Cl. D22—3



### 215,935
### DIRECTIONAL CONTROL VALVE

Jerald H. Gens, Minnetonka, Minn., assignor to Char-Lynn Company, Eden Prairie, Minn., a corporation of Minnesota
Filed Aug. 29, 1968, Ser. No. 13,322
Term of patent 14 years
Int. Cl. D23—*01*

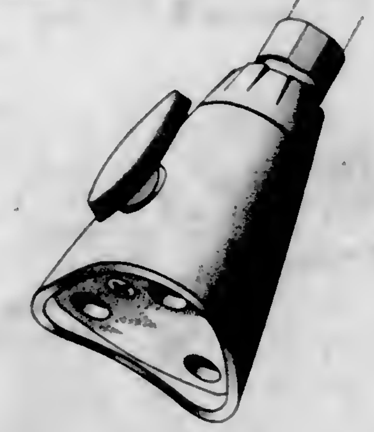
U.S. Cl. D23—19



### 215,936
### SHOWER HEAD

Andrew Lee Contreras, Jenison, Mich., assignor to Wolverine Brass Works, a division of Wolverine Industries, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Dec. 13, 1968, Ser. No. 14,962
Term of patent 14 years
Int. Cl. D23—*01*

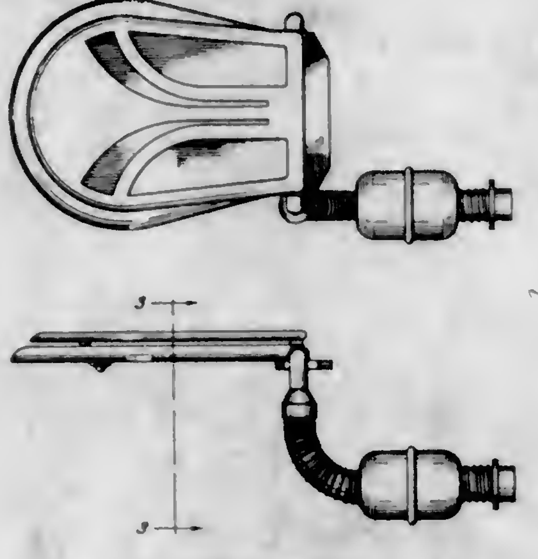
U.S. Cl. D23—35



### 215,937
### COMBINATION TOILET SEAT AND VENTILATOR

Gustave Meyer, 956 Santa Fe Drive,
Denver, Colo. 80204
Filed Apr. 11, 1968, Ser. No. 11,420
Term of patent 14 years
Int. Cl. D23—*02*

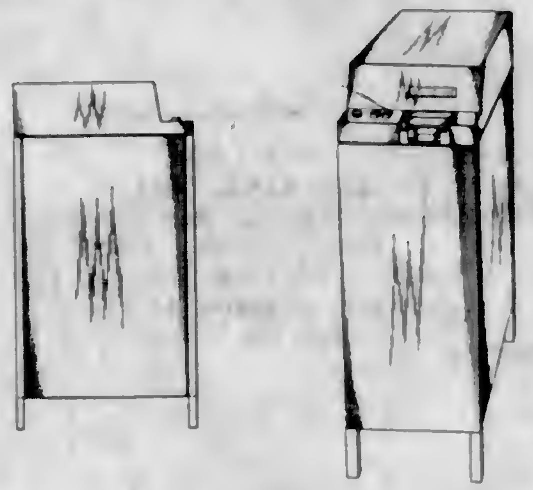
U.S. Cl. D23—71



### 215,938
### CONTROL CONSOLE

Eliot F. Noyes, New Canaan, Conn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 16, 1968, Ser. No. 15,002
Term of patent 14 years
Int. Cl. D14—*02*

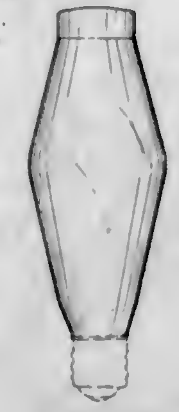
U.S. Cl. D26—5



### 215,939
### LAMP

John J. Vetere, Beverly, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 7, 1968, Ser. No. 10,882
Term of patent 14 years
Int. Cl. D26—*01*

U.S. Cl. D26—8



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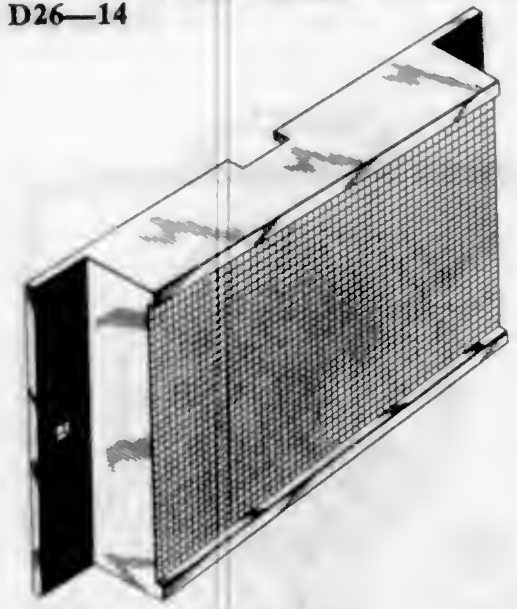
### 215,940
### TELEVISION ANTENNA COUPLER

Robert D. Kahn, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York
Filed Apr. 25, 1969, Ser. No. 16,907
Term of patent 14 years
Int. Cl. D14—*03*

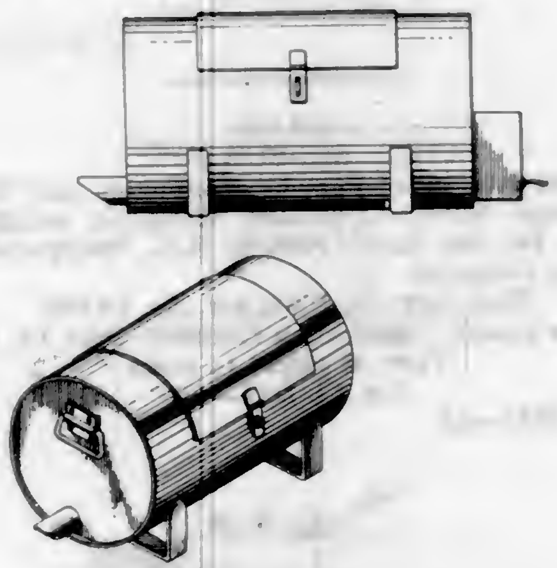
U.S. Cl. D26—14



### 215,941
### AUTOMATIC WILDLIFE FEEDING APPARATUS

Leslie Edward Gallup, Box 57,
Morrisville, N.C. 27560
Filed Oct. 28, 1968, Ser. No. 14,189
Term of patent 14 years
Int. Cl. D30—*02*

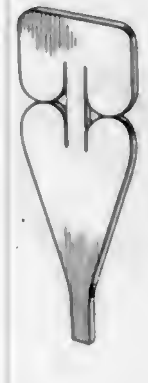
U.S. Cl. D30—13



### 215,942
### ANIMAL EAR TAG

Carlton W. Jacobson, Coteau, N. Dak. 58728
Filed Oct. 29, 1968, Ser. No. 14,216
Term of patent 14 years
Int. Cl. D30—*99*

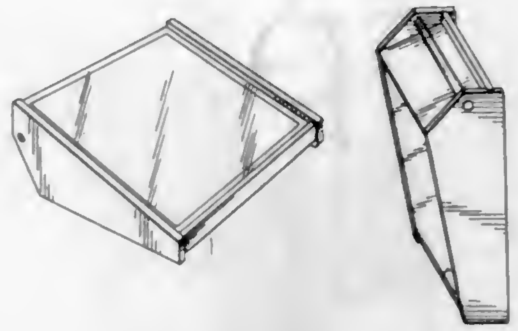
U.S. Cl. D30—43



### 215,943
### PORTABLE DESK

Emmett J. Grainer, 1332 Biloxi Drive,
Cincinnati, Ohio 45231
Filed Aug. 8, 1968, Ser. No. 13,066
Term of patent 14 years
Int. Cl. D6—*01*

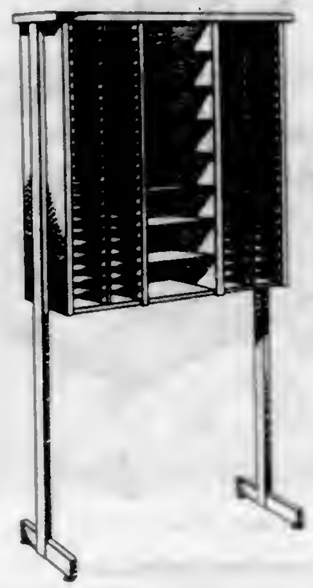
U.S. Cl. D33—7



### 215,944
### TAPE RECORDER CABINET

Chester J. Barecki, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Mar. 26, 1968, Ser. No. 11,143
Term of patent 14 years
Int. Cl. D6—*01*

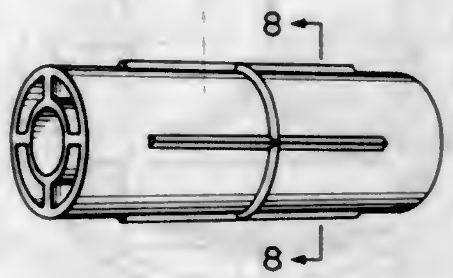
U.S. Cl. D33—19



### 215,945
### CORE FOR ROLL PAPER PRODUCTS

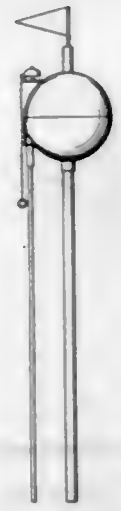
James S. La Fara, Warson Woods, Mo., assignor to Graham Paper Company, St. Louis, Mo., a corporation of Missouri
Filed Oct. 4, 1968, Ser. No. 13,842
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D33—31



**215,946**
**PLAYGROUND CLIMBER**
Robert S. Wormser, Hillsdale, Mich., assignor to Game Time, Inc., Litchfield, Mich., a corporation of Michigan
Filed Nov. 26, 1968, Ser. No. 14,678
Term of patent 14 years
Int. Cl. D21—*04*

U.S. Cl. D34—5



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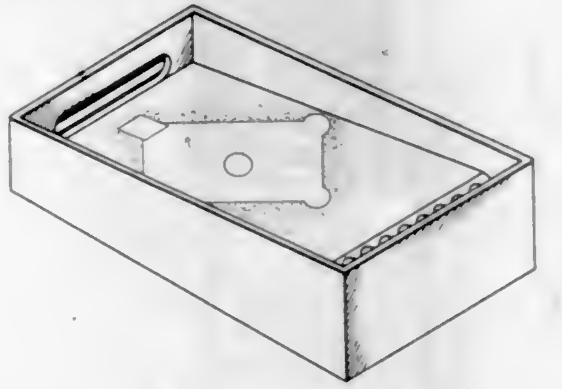
**215,947**
**BASEBALL GAME DEVICE**
Harry Ganger, 186 S. Maryland Ave., Atlantic City, N.J. 08401
Filed Oct. 18, 1968, Ser. No. 14,060
Term of patent 14 years
Int. Cl. D21—*01*

U.S. Cl. D34—5



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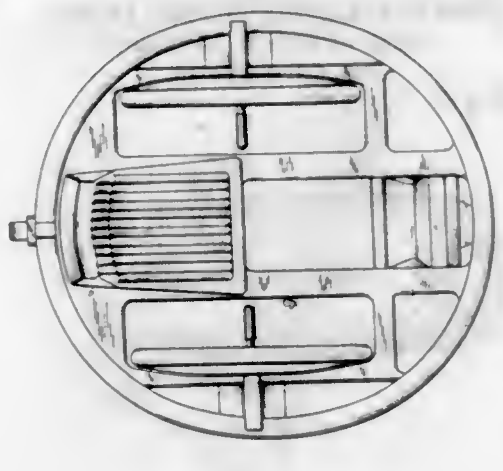
**215,948**
**HAND DRIVEN TOY WHEELED VEHICLE**
Calvin C. Cook, Erie, Pa., assignor to Louis Marx & Company Inc., a corporation of New York
Filed Apr. 30, 1968, Ser. No. 11,717
Term of patent 14 years
Int. Cl. D21—*02*

U.S. Cl. D34—15



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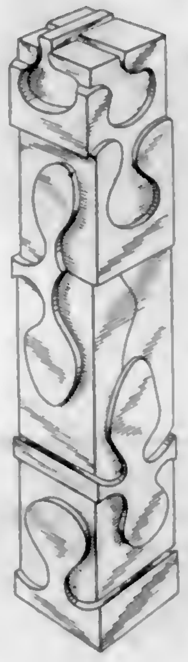
**215,949**
**THREE-DIMENSIONAL PUZZLE**
Thomas R. Markusen, % N.Y. State University, Brockport, N.Y. 14420
Filed Sept. 30, 1968, Ser. No. 13,784
Term of patent 14 years
Int. Cl. D21—*04*

U.S. Cl. D34—15



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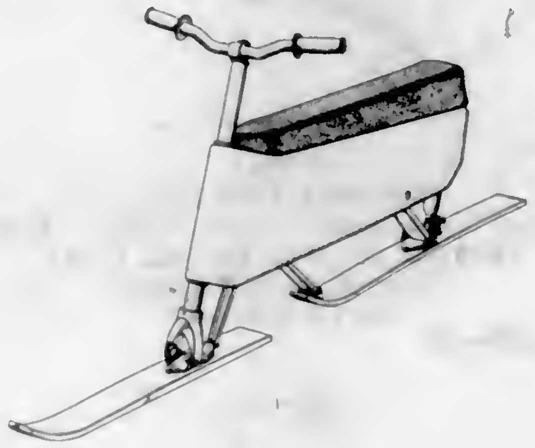
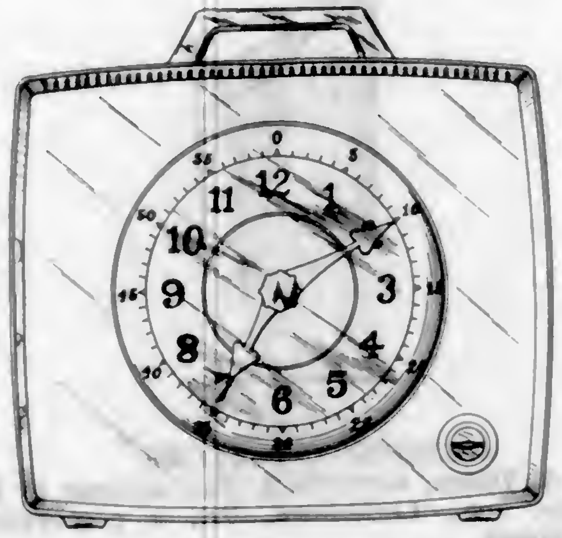
**215,950**
**SKI-BOB**
Ferdinand Alexander Porsche, Doffingen, and Theodor Frodewin Bauer, Leinfelden, Germany, assignors to Firma Dr. Ing. h.c.F. Porsche K.G., Stuttgart-Zuffenhausen, Germany
Filed Nov. 25, 1968, Ser. No. 14,609
Claims priority, application Germany June 14, 1968
Term of patent 14 years
Int. Cl. D21—*03*

U.S. Cl. D34—15



**215,951**
**TALKING-TEACHING CLOCK TOY**
Paul T. Arato, Los Angeles, and Andrew M. Holland, Venice, Calif., assignors to Mattel, Inc., Hawthorne, Calif., a corporation of Delaware
Filed Jan. 8, 1969, Ser. No. 15,258
Term of patent 14 years
Int. Cl. D21—*02*

U.S. Cl. D34—15



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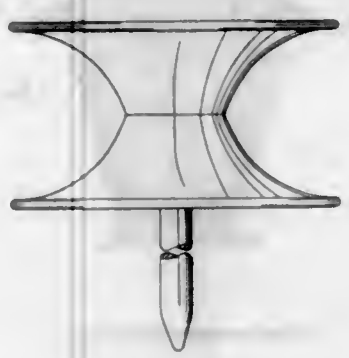
**215,952**
**HOSE GUIDE FOR PREVENTING DAMAGE TO FLOWER BEDS AND THE LIKE**
William H. Michaels, 3568 Independence Road, Cleveland, Ohio 44105
Filed Jan. 23, 1968, Ser. No. 10,271
Term of patent 14 years
Int. Cl. D31; D8—*03*

U.S. Cl. D35—1



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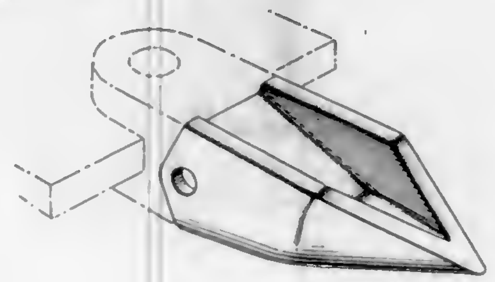
**215,953**
**TOOTH FOR A POWER DIGGER**
Gerald D. Edwards, 207 SW. Murphy, Burleson, Tex. 76028, and Floyd B. Edwards, Rte. 3, Box 245, Canton, N.C. 28716
Filed Aug. 30, 1968, Ser. No. 13,334
Term of patent 14 years
Int. Cl. D15—*03, 04*

U.S. Cl. D39—1



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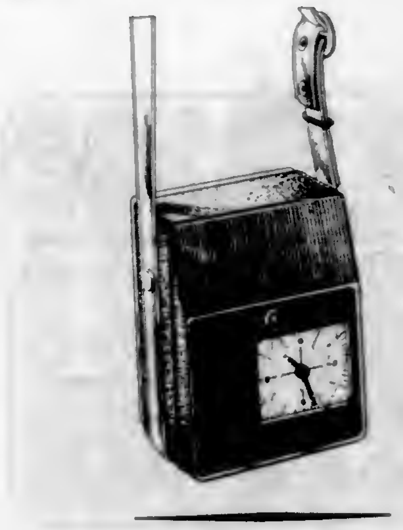
**215,954**
**WATCHMAN'S CLOCK**
Erich Slany, Esslingen, Germany, assignor to Simplex Time Recorder Company, Gardner, Mass., a corporation of Massachusetts
Filed Oct. 17, 1968, Ser. No. 14,042
Term of patent 14 years
Int. Cl. D10—*04*

U.S. Cl. D42—7



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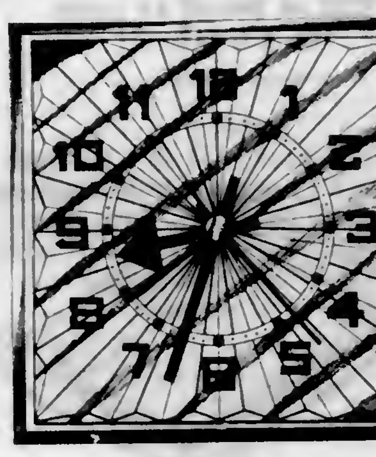
**215,955**
**CLOCK**
Giacinto C. D'Ercoli, Forest Park, Ill., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Nov. 13, 1968, Ser. No. 14,421
Term of patent 14 years
Int. Cl. D10—*01*

U.S. Cl. D42—7



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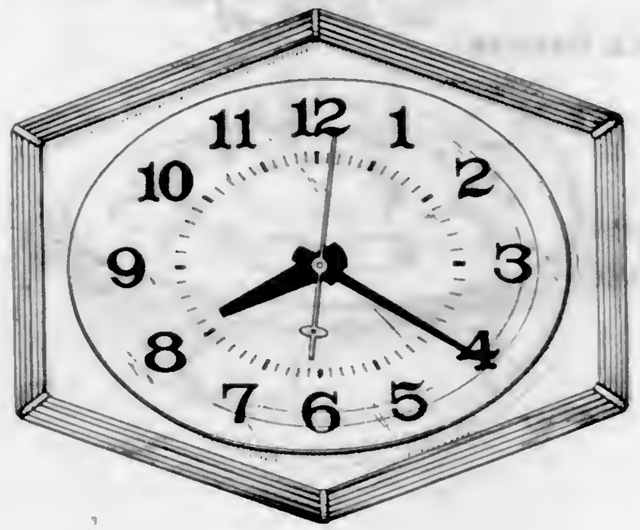
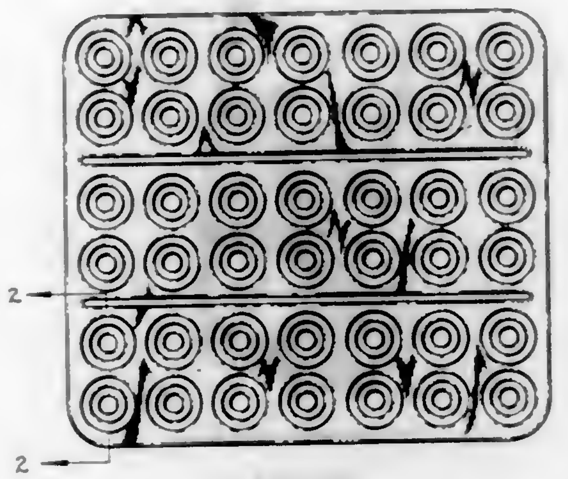
**215,956**
**CLOCK OR SIMILAR ARTICLE**
Carl N. Johnson, Stratford, Conn., assignor to General Electric Company, a corporation of New York
Filed Nov. 21, 1968, Ser. No. 14,559
Term of patent 3½ years
Int. Cl. D10—*01*

U.S. Cl. D42—7



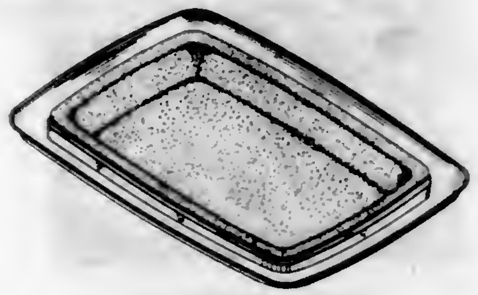
**215,957**
**COOKIE BAKING SHEET**
**Elizabeth De Palmo, 48 S. Portland St.,**
**Youngstown, Ohio 44509**
**Continuation-in-part of design application Ser. No. 12,747, July 15, 1968. This application Feb. 5, 1969, Ser. No. 15,654**
**Term of patent 14 years**
**Int. Cl. D7—*02***

**U.S. Cl. D44—1**



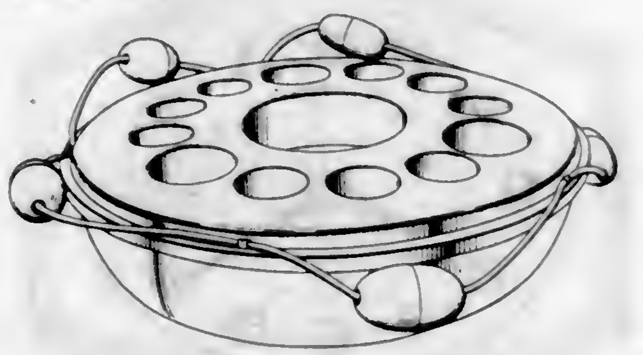
**215,958**
**BUTTER TRAY OR THE LIKE**
**Robert Daenen, Erembodegem, Belgium, assignor to Dart Industries Inc., a corporation of Delaware**
**Filed Mar. 18, 1969, Ser. No. 16,305**
**Term of patent 14 years**
**Int. Cl. D7—*01***

**U.S. Cl. D44—5**



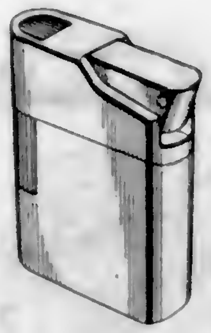
**215,959**
**FLOATING BAR**
**Rai B. Kelso, P.O. Box 659, Galveston, Tex. 77550, and Larry F. Herndon, Jr., 3601 Oak Grove, Dallas, Tex. 75204**
**Filed June 10, 1968, Ser. No. 12,288**
**Term of patent 14 years**
**Int. Cl. D7—*99***

**U.S. Cl. D44—10**



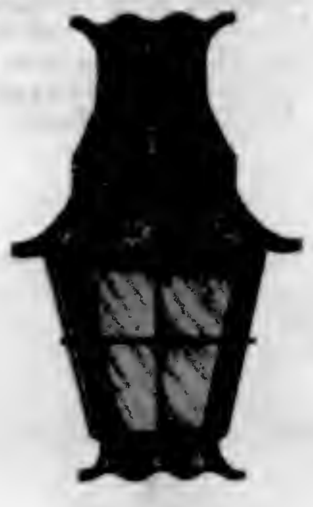
**215,960**
**CIGARETTE LIGHTER OR SIMILAR ARTICLE**
**Sadao Yoshinaga, Tokyo, Japan, assignor to Yoshinaga Prince Co., Ltd., Tokyo, Japan, a corporation of Japan**
**Filed May 21, 1969, Ser. No. 17,259**
**Term of patent 14 years**
**Int. Cl. D27—*05***

**U.S. Cl. D48—27**



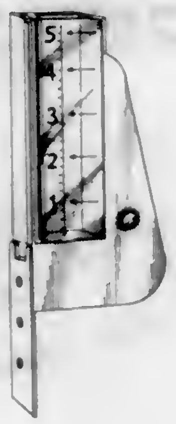
**215,961**
**LIGHTING FIXTURE**
**Howard A. Daum, Gettysburg, Pa., assignor to Hadco Products, Inc., Littlestown, Pa., a corporation of Pennsylvania**
**Filed Jan. 30, 1968, Ser. No. 10,372**
**Term of patent 14 years**
**Int. Cl. D26—*03***

**U.S. Cl. D48—31**



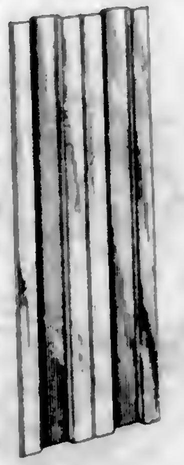
**215,962**
**RAIN GAUGE**
**Cecil B. Woofter, Newton, Iowa, assignor to The Vernon Company**
**Filed Nov. 18, 1968, Ser. No. 14,505**
**Term of patent 14 years**
**Int. Cl. D10—*08***

**U.S. Cl. D52—6**



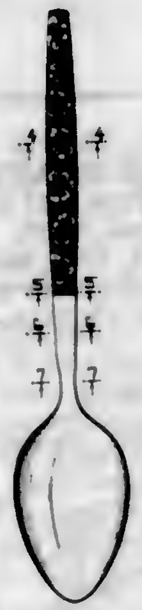
**215,963**
**BUILDING PANEL**
**Charles T. Flachbarth and Laurence H. Ostrye, Parkersburg, W. Va., assignors to Textron Inc., Providence, R.I., a corporation of Delaware**
**Filed Apr. 5, 1968, Ser. No. 11,332**
**Term of patent 14 years**
**Int. Cl. D25—*01***

**U.S. Cl. D54—2**



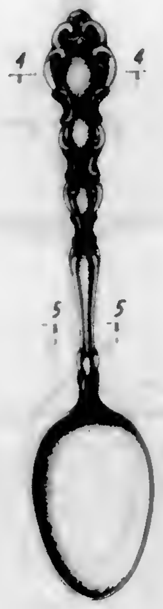
**215,964**
**SPOON OR SIMILAR ARTICLE**
**Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York**
**Filed Mar. 19, 1969, Ser. No. 16,329**
**Term of patent 14 years**
**Int. Cl. D7—*03***

**U.S. Cl. D54—12**



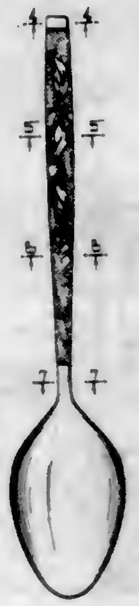
**215,965**
**SPOON OR SIMILAR ARTICLE**
**Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York**
**Filed Apr. 11, 1969, Ser. No. 16,696**
**Term of patent 14 years**
**Int. Cl. D7—*03***

**U.S. Cl. D54—12**



**215,966**
**SPOON OR SIMILAR ARTICLE**
**Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York**
**Filed Mar. 18, 1969, Ser. No. 16,303**
**Term of patent 14 years**
**Int. Cl. D7—*03***

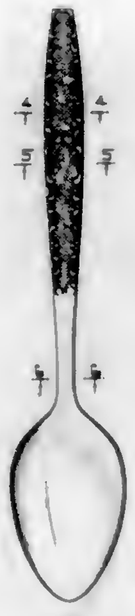
**U.S. Cl. D54—12**



### 215,967
### SPOON OR SIMILAR ARTICLE

Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Mar. 18, 1969, Ser. No. 16,304
Term of patent 14 years
Int. Cl. D7—*03*

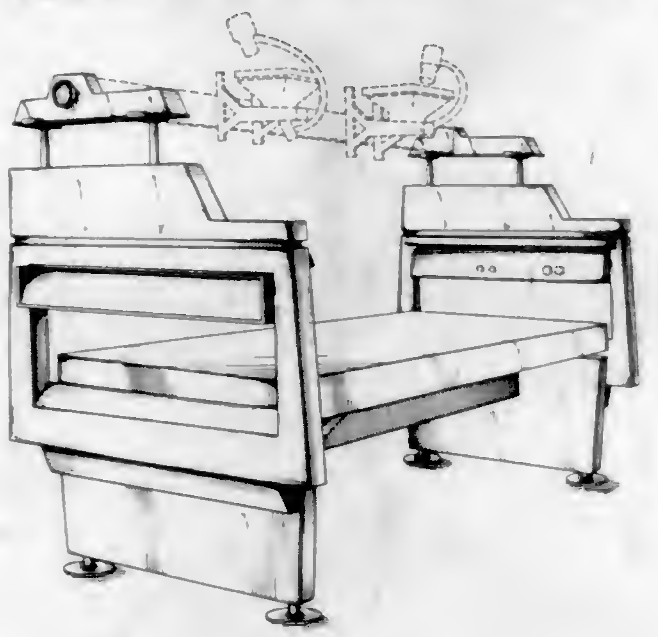
U.S. Cl. D54—12



### 215,968
### STEREOPLOTTER

John F. Henshaw, San Francisco, and Victor H. Henshaw, Alamo, Calif., assignors to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey
Filed June 18, 1968, Ser. No. 12,422
Term of patent 14 years
Int. Cl. D16—*08*

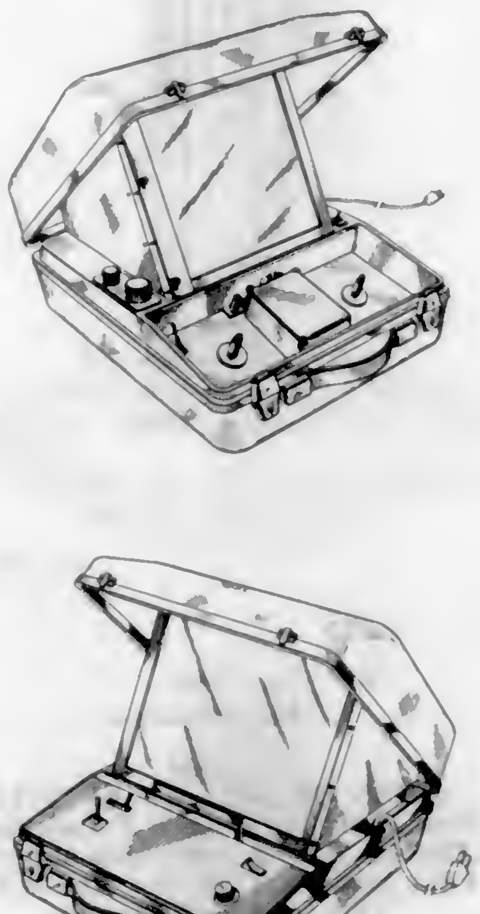
U.S. Cl. D57—7



### 215,969
### PORTABLE VIEWER FOR MICROFILM OR THE LIKE

Kermit V. Anderson, Delano, Minn., assignor to Washington Scientific Industries, Inc., Minnetonka, Minn., a corporation of Minnesota
Continuation of design applications Ser. No. 7,485 and Ser. No. 7,486, June 15, 1967. This application Aug. 7, 1968, Ser. No. 14,684
Term of patent 14 years
Int. Cl. D16—*04*

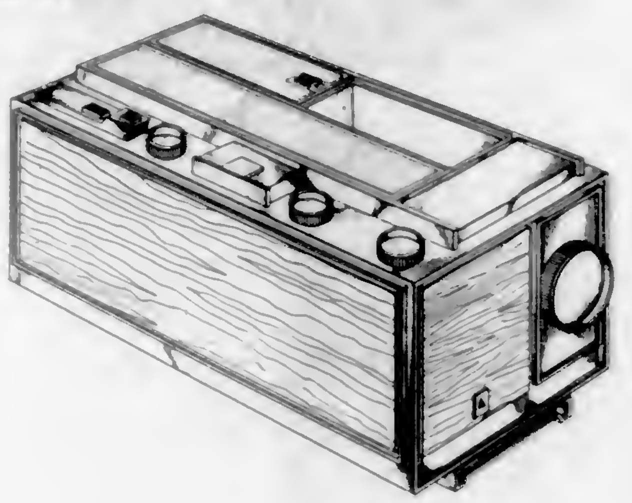
U.S. Cl. D61—1



### 215,970
### SLIDE PROJECTOR

Gerald J. Frey, 745 E. Union St., Pasadena, Calif. 91101
Filed Jan. 22, 1969, Ser. No. 15,441
Term of patent 14 years
Int. Cl. D16—*03*

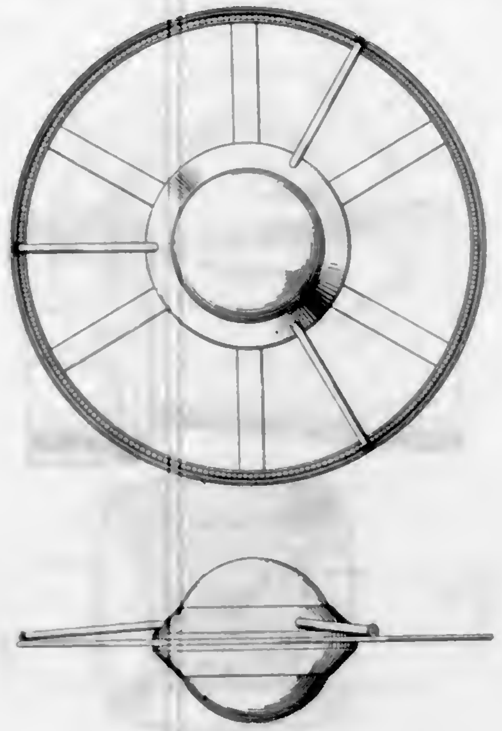
U.S. Cl. D61—1



### 215,971
### VERTICAL LIFT AIRCRAFT

William N. Rosta, Fort Worth, Tex., assignor to The VLM Corporation, Fort Worth, Tex., a corporation of Delaware
Filed Mar. 4, 1969, Ser. No. 16,030
Term of patent 14 years
Int. Cl. D12—*07*

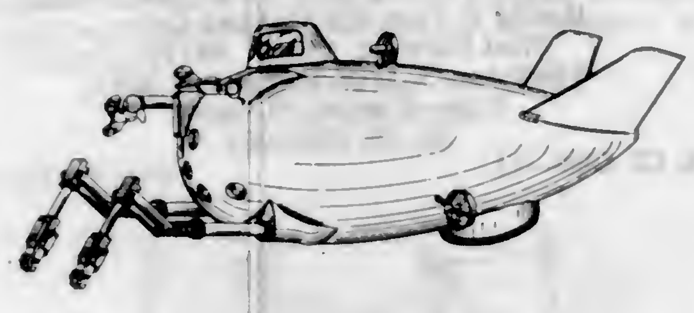
U.S. Cl. D71—1



### 215,972
### SUBMERSIBLE VEHICLE

Charles E. Bodey, Los Angeles, Calif., assignor to North American Rockwell Corporation
Filed Sept. 30, 1968, Ser. No. 13,795
Term of patent 14 years
Int. Cl. D12—*06*

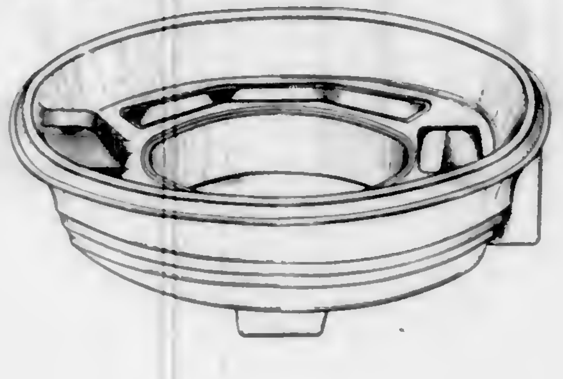
U.S. Cl. D71—1



### 215,973
### AMPHIBIOUS SEATING RING

Donald F. Haskin and Max Becker, North Hollywood, Calif., assignors to Resort Products, Inc., North Hollywood, Calif., a corporation of California
Filed Mar. 5, 1969, Ser. No. 16,059
Term of patent 14 years
Int. Cl. D12—*06*

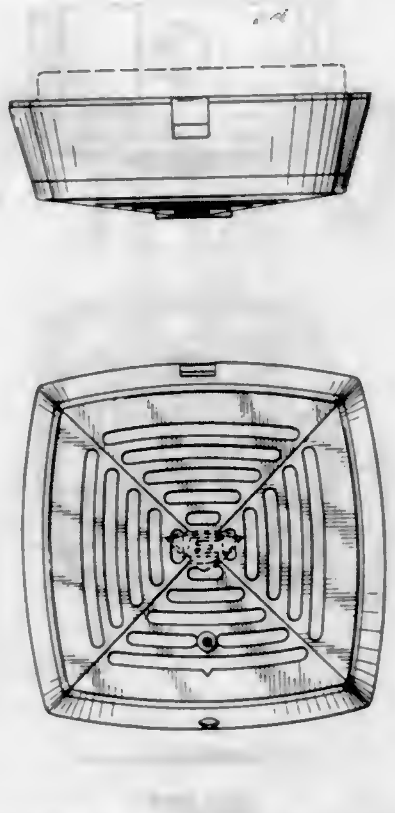
U.S. Cl. D71—1



### 215,974
### HORN OR SIMILAR ARTICLE

Charles Berns, Brookfield, Conn., assignor to Edwards Company, Inc., Norwalk, Conn., a corporation of Connecticut
Filed Nov. 14, 1968, Ser. No. 14,447
Term of patent 14 years
Int. Cl. D29—*99*

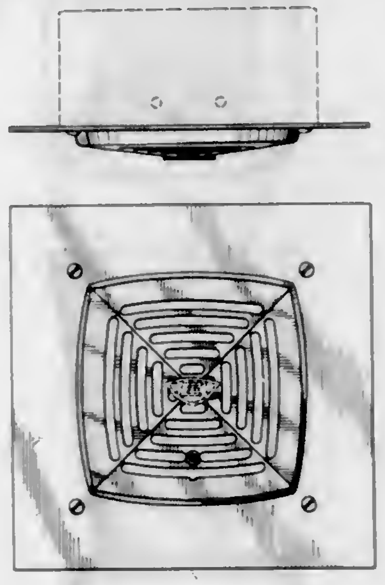
U.S. Cl. D72—1



### 215,975
### HORN OR SIMILAR ARTICLE

Charles Berns, Brookfield, Conn., assignor to Edwards Company, Inc., Norwalk, Conn., a corporation of Connecticut
Filed Nov. 14, 1968, Ser. No. 14,448
Term of patent 14 years
Int. Cl. D29—*99*

U.S. Cl. D72—1



### 215,976
### HORN OR SIMILAR ARTICLE

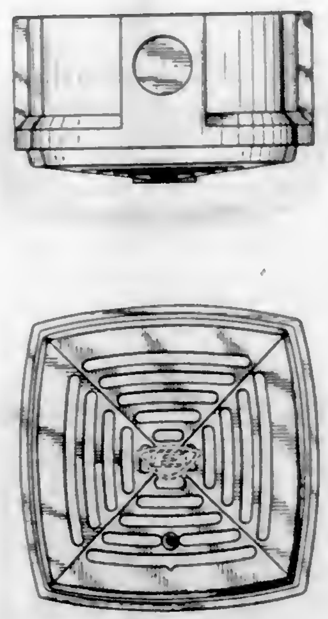
Charles Berns, Brookfield, Conn., assignor to Edwards Company, Inc., Norwalk, Conn., a corporation of Connecticut

Filed Nov. 14, 1968, Ser. No. 14,449

Term of patent 14 years

Int. Cl. D29—*99*

U.S. Cl. D72—1



### 215,977
### HORN OR SIMILAR ARTICLE

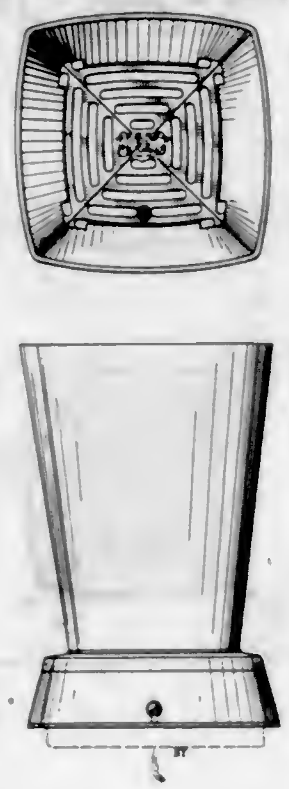
Charles Berns, Brookfield, Conn., assignor to Edwards Company, Inc., Norwalk, Conn., a corporation of Connecticut

Filed Nov. 14, 1968, Ser. No. 14,460

Term of patent 14 years

Int. Cl. D29—*99*

U.S. Cl. D72—1



### 215,978
### HORN OR SIMILAR ARTICLE

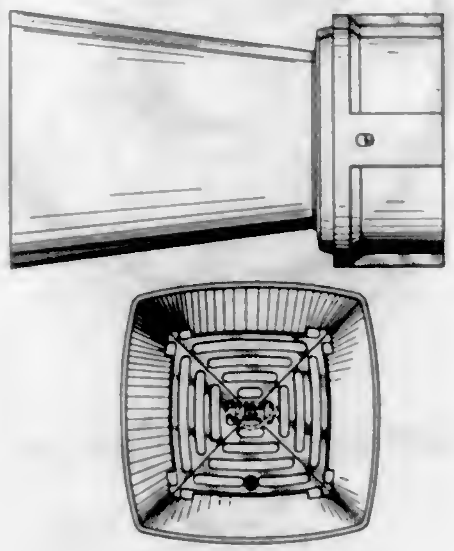
Charles Berns, Brookfield, Conn., assignor to Edwards Company, Inc., Norwalk, Conn., a corporation of Connecticut

Filed Nov. 14, 1968, Ser. No. 14,461

Term of patent 14 years

Int. Cl. D29—*99*

U.S. Cl. D72—1



### 215,979
### DISPLAY CABINET FOR MERCHANDISE

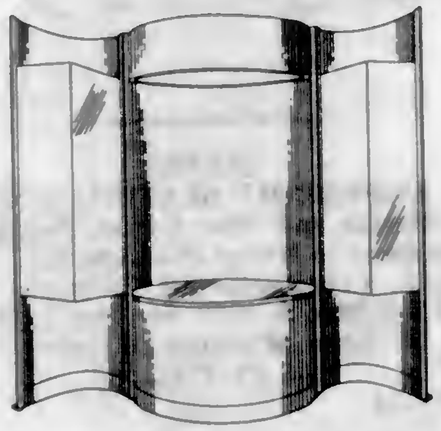
Harold P. Post, 119 Mohawk Drive, West Hartford, Conn. 06117

Filed Apr. 3, 1968, Ser. No. 11,283

Term of patent 14 years

Int. Cl. D6—*01*

U.S. Cl. D80—11



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### 215,980
### BED PAN

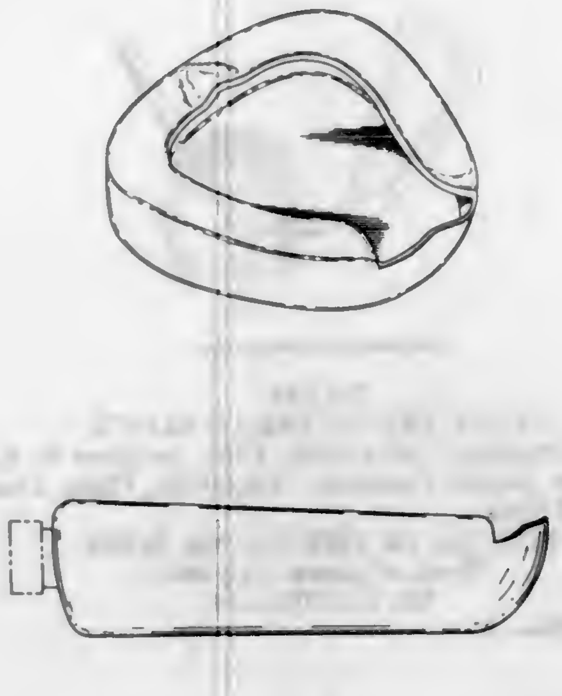
Herbert A. Segal, Huntingdon Valley, Pa., assignor to Samson Plastics, Inc., Cherry Hill, N.J., a corporation of New Jersey

Filed May 15, 1968, Ser. No. 11,941

Term of patent 14 years

Int. Cl. D24—*99*; D28—*01*

U.S. Cl. D83—1



### 215,981
### MOBILE X-RAY APPARATUS

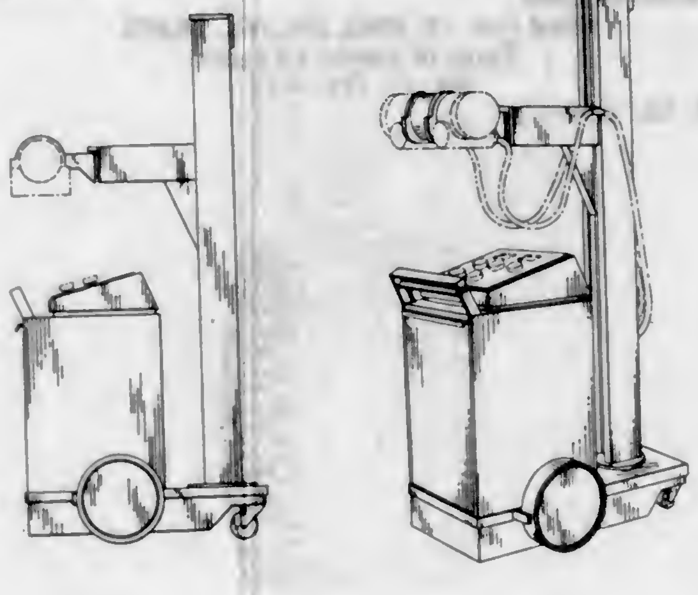
Ralph E. Schubert, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, a corporation of Pennsylvania

Filed Sept. 26, 1968, Ser. No. 13,737

Term of patent 14 years

Int. Cl. D24—*02*

U.S. Cl. D83—1



### 215,982
### DISPOSABLE ANESTHETIST'S KIT

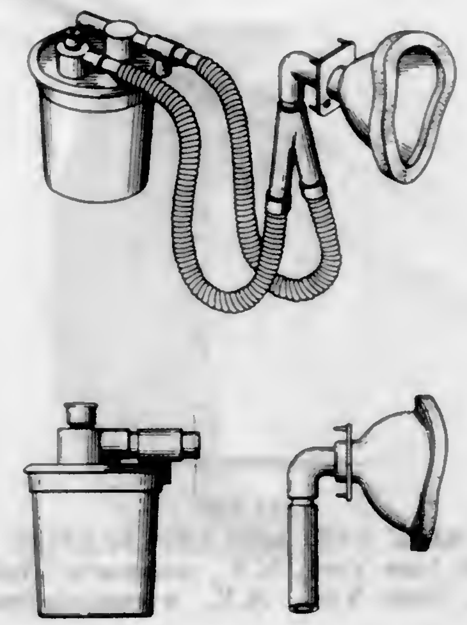
Lewis Abraham Wise and John E. Grimm, both of 509 17th St., Santa Monica, Calif. 90402

Continuation-in-part of design application Ser. No. 14,323, Nov. 5, 1968. This application Apr. 29, 1969, Ser. No. 16,946

Term of patent 14 years

Int. Cl. D24—*02*

U.S. Cl. D83—1



### 215,983
### SPHYGMOMANOMETER

Gui Bonsiepe, Ulm (Danube), Germany, assignor to Firma Patinvest Patent und Investment A.G., Chur, Switzerland, a corporation of Switzerland

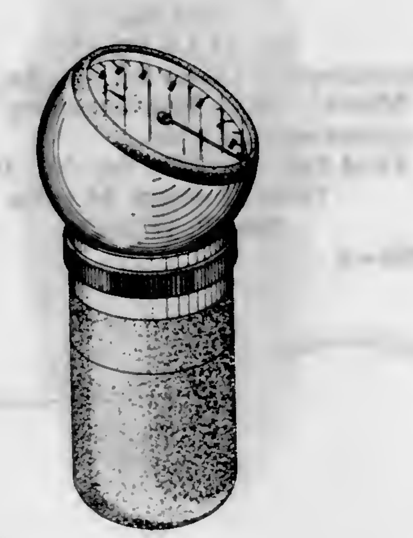
Filed Sept. 20, 1968, Ser. No. 13,624

Term of patent 14 years

Claims priority, application Germany Mar. 22, 1968

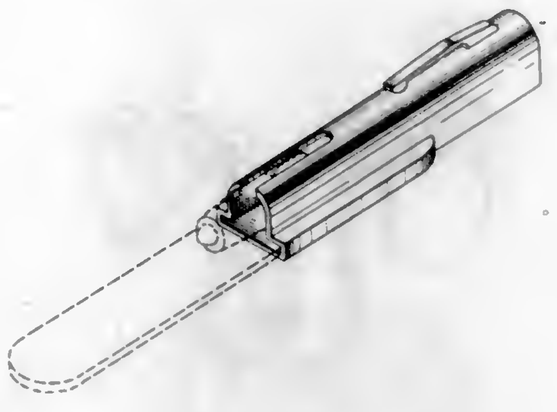
Int. Cl. D24—*02*

U.S. Cl. D83—12



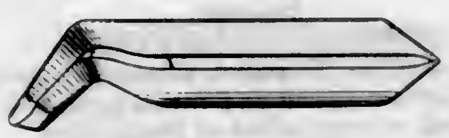
### 215,984
### COMBINED PENLIGHT AND TONGUE DEPRESSOR HOLDER

Lazzaro A. Fattori, Woodcliff Lake, N.J., assignor to William F. Blake, Inc., Summit, N.J., a corporation of New Jersey
Filed Dec. 18, 1968, Ser. No. 15,047
Term of patent 14 years
Int. Cl. D24—*03;* D26—*04*
U.S. Cl. D83—12



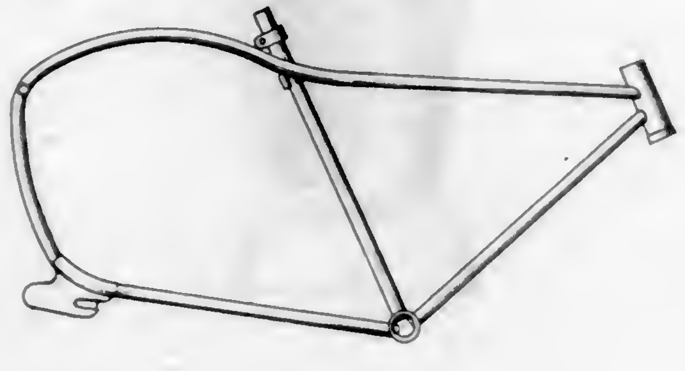
### 215,985
### FALSE EYELASH APPLICATOR

Victor Silson, New York, N.Y., assignor to Helen Rubinstein Inc., New York, N.Y., a corporation of New York
Filed Mar. 24, 1969, Ser. No. 16,386
Term of patent 14 years
Int. Cl. D28—*03*
U.S. Cl. D86—10



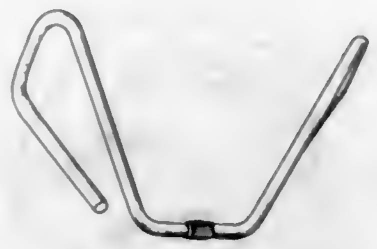
### 215,986
### BICYCLE FRAME

Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Filed Jan. 29, 1969, Ser. No. 15,554
Term of patent 14 years
Int. Cl. D12—*11*
U.S. Cl. D90—8



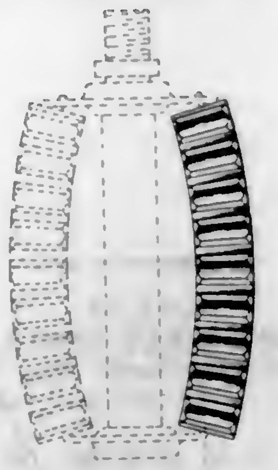
### 215,987
### BICYCLE HANDLEBAR

Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,909
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—11



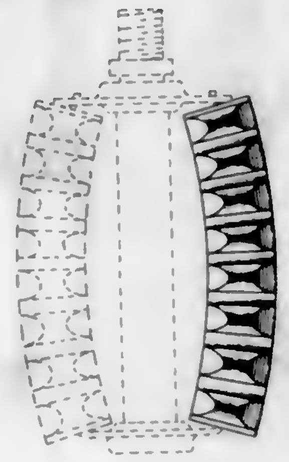
### 215,988
### CYCLE PEDAL TREAD BLOCK

Hugh T. Greenlee, Gates Mills, Ohio, assignor to Ashtabula Bow Socket Company, Ashtabula, Ohio, a corporation of Ohio
Filed Oct. 18, 1968, Ser. No. 14,068
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—14



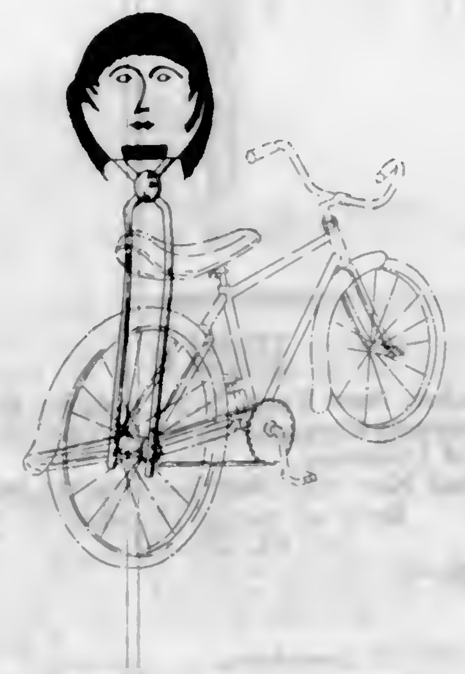
### 215,989
### CYCLE PEDAL TREAD BLOCK

Hugh T. Greenlee, Gates Mills, Ohio, assignor to Ashtabula Bow Socket Company, Ashtabula, Ohio, a corporation of Ohio
Filed Oct. 18, 1968, Ser. No. 14,072
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—14



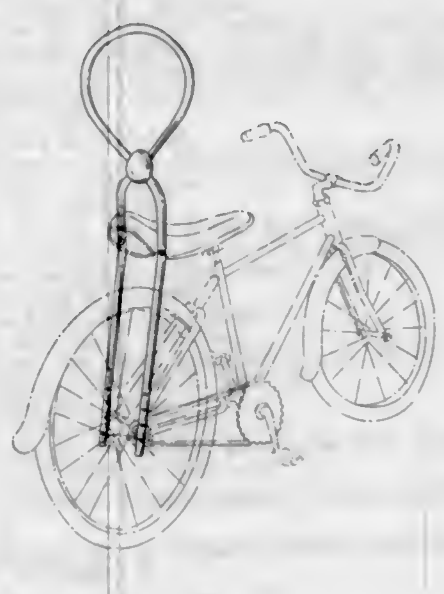
### 215,990
### DECORATIVE SEAT BRACE

Roland A. Faulhaber, Memphis, Tenn., assignor to Troxel Manufacturing Company, Moscow, Tenn.
Filed Apr. 2, 1968, Ser. No. 11,268
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—15



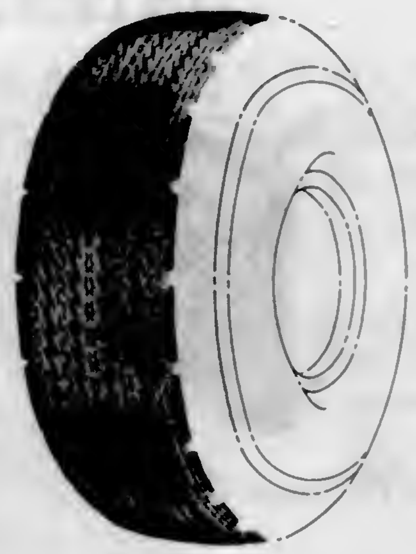
### 215,991
### DECORATIVE SEAT BRACE

Roland A. Faulhaber, Memphis, Tenn., assignor to Troxel Manufacturing Company, Moscow, Tenn.
Term of patent 14 years
Filed Apr. 2, 1968, Ser. No. 11,267
Int. Cl. D12—*14*
U.S. Cl. D90—15



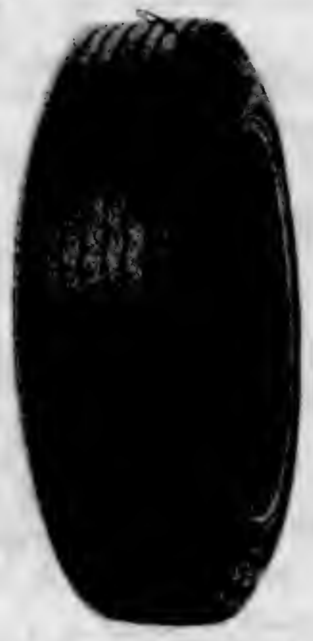
### 215,992
### TIRE

Glen L. Wittenmyer, Sterling, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed July 1, 1968, Ser. No. 12,569
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



### 215,993
### TIRE

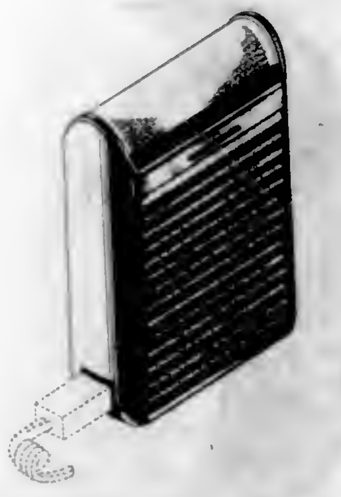
Gilbert J. Hoke, Kenmore, N.Y., assignor to Dunlop Tire and Rubber Corporation, Buffalo, N.Y., a corporation of New York
Filed Aug. 1, 1968, Ser. No. 12,988
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



### 215,994
### ELECTRIC DRY SHAVER

**Kazuhiko Kubo and Taro Kasagi, Ibaraki-shi, Japan, assignors to Hitachi Maxell, Ltd., Osaku-fu, Japan**
**Filed Mar. 13, 1968, Ser. No. 10,948**
**Term of patent 7 years**
**Int. Cl. D28—*03***

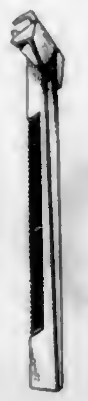
U.S. Cl. D95—3



### 215,995
### HOLDER FOR A COMBINED SAFETY RAZOR AND MOUNT

**Irving Harper, Rye, N.Y., assignor to Wilkinson Sword Limited, London, England, a British company**
**Filed Oct. 16, 1968, Ser. No. 14,022**
**Claims priority, application Great Britain Apr. 24, 1968**
**Term of patent 14 years**
**Int. Cl. D28—*03***

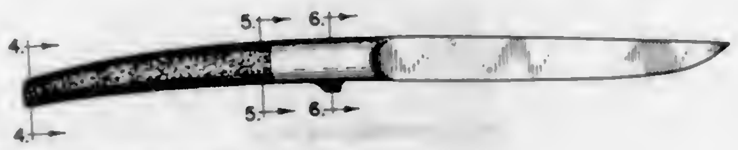
U.S. Cl. D95—3



### 215,996
### KNIFE

**Marion Weeber, New York, N.Y., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware**
**Filed Nov. 12, 1968, Ser. No. 14,392**
**Term of patent 14 years**
**Int. Cl. D7—*03***

U.S. Cl. D95—3



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# LIST OF PLANT PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 11TH DAY OF NOVEMBER, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Kerrigan, Howard. Azalea plant. 2,939, 11–11–69, Cl. 57.
- McFeely, George R. Plum tree. 2,938, 11–11–69, Cl. 38.
- Reedley Nursery, Inc.: *See*—
  - Wileman, Leonard K. 2,937.
- Wileman, Leonard K., to Reedley Nursery, Inc. Nectarine tree. 2,937, 11–11–69, Cl. 41.

# LIST OF DESIGN PATENTEES

- American Can Co.: *See*—
  - Zundel, Arthur P. 215,923.
- American Home Products Corp.: *See*—
  - Weeber, Marion. 215,996.
- American Seating Co.: *See*—
  - Barecki, Chester J. 215,944.
- Anderson, Kermit V., to Washington Scientific Industries, Inc. Portable viewer for microfilm or the like. 215,969, 11–11–69, Cl. D61—1.
- Aqua Tec Corp.: *See*—
  - McCarty, Donald, Johnson, Cammack, Mattingly, Trenary, and Jeffers. 215,920.
- Arato, Paul T., and A. M. Holland, to Mattel, Inc. Talking-teaching clock toy. 215,951, 11–11–69, Cl. D34—15.
- Asch, Robert D.: *See*—
  - Asch, David and R. D. 215,925.
- Asch, David and R. D. Jug handle. 215,925, 11–11–69, Cl. D9—291.
- Ashtabula Bow Socket Co.: *See*—
  - Greenlee, Hugh T. 215,988.
  - Greenlee, Hugh T. 215,989.
- Bangor Punta Operations, Inc.: *See*—
  - Litman, Alan L., and Hackbarth. 215,934.
- Barecki, Chester J., to American Seating Co. Tape recorder cabinet. 215,944, 11–11–69, Cl. D33—19.
- Bauer, Theodor F.: *See*—
  - Porsche, Ferdinand A., and Bauer. 215,950.
- Bausch & Lomb Inc.: *See*—
  - Huggins, Richard L. 215,918.
- Becker, Max: *See*—
  - Haskin, Donald F., and Becker. 215,973.
- Beeson, Jon R., to Jaybee Mfg., Inc. Can puncturer. 215,921, 11–11–69, Cl. D8—83.
- Benner-Nawman, Inc.: *See*—
  - Nawman, Rollie B. 215,926.
- Berns, Charles, to Edwards Co., Inc. Horn or similar article. 215,974, 11–11–69, Cl. D72—1.
- Berns, Charles, to Edwards Co., Inc. Horn or similar article. 215,975, 11–11–69, Cl. D72—1.
- Berns, Charles, to Edwards Co., Inc. Horn or similar article. 215,976, 11–11–69, Cl. D72—1.
- Berns, Charles, to Edwards Co., Inc. Horn or similar article. 215,977, 11–11–69, Cl. D72—1.
- Berns, Charles, to Edwards Co., Inc. Horn or similar article. 215,978, 11–11–69, Cl. D72—1.
- Blake, William F., Inc.: *See*—
  - Fattori, Lazzaro A. 215,984.
- Bodey, Charles E., to North American Rockwell Corp. Submersible vehicle. 215,972, 11–11–69, Cl. D71—1.
- Bonsiepe, Gui, to Patinvest Patent und Investment A.G. Sphygmomanometer. 215,983, 11–11–69, Cl. D83—12.
- Char-Lynn Co.: *See*—
  - Gens, Jerald H. 215,935.
- Contreras, Andrew L., to Wolverine Brass Works, a division of Wolverine Industries, Inc. Shower head. 215,936, 11–11–69, Cl. D23—35.
- Cook, Calvin C., to Louis Marx & Co. Inc. Hand driven toy wheeled vehicle. 215,948, 11–11–69, Cl. D34—15.
- Crane & Breed Casket Co., The: *See*—
  - Peter, Joseph E. 215,933.
- Crown Cork & Seal Co., Inc.: *See*—
  - Rodden, Joseph P. 215,924.
- Daenen, Robert, to Dart Industries Inc. Butter tray or the like. 215,958, 11–11–69, Cl. D44—5.
- Dart Industries Inc.: *See*—
  - Daenen, Robert. 215,958.
- Daum, Howard A., to Hadco Products, Inc. Lighting fixture. 215,961, 11–11–69, Cl. D48—31.
- De Palmo, Elizabeth. Cookie baking sheet. 215,957, 11–11–69, Cl. D44—1.
- D'Ercoli, Giacinto C., to General Time Corp. Clock. 215,955, 11–11–69, Cl. D42—7.
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  - Hoke, Gilbert J. 215,993.
- Edwards Co., Inc.: *See*—
  - Berns, Charles. 215,974.
  - Berns, Charles. 215,975.
  - Berns, Charles. 215,976.
  - Berns, Charles. 215,977.
  - Berns, Charles. 215,978.
- Edwards, Floyd B.: *See*—
  - Edwards, Gerald D. and F. B. 215,953.
- Edwards, Gerald D. and F. B. Tooth for a power digger. 215,953, 11–11–69, Cl. D39—1.
- Fattori, Lazzaro A., to William F. Blake, Inc. Combined penlight and tongue depressor holder. 215,984, 11–11–69, Cl. D83—12.
- Faulhaber, Roland A., to Troxel Mfg. Co. Decorative seat brace. 215,990, 11–11–69, Cl. D90—15.
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- Fedtro, Inc.: *See*—
  - Kahn, Robert D. 215,940.
- Flachbarth, Charles T., and L. H. Ostrye, to Textron Inc. Building panel. 215,963, 11–11–69, Cl. D54—2.
- Frey, Gerald J. Slide projector. 215,970, 11–11–69, Cl. D61—1.
- Gallup, Leslie E. Automatic wildlife feeding apparatus. 215,941, 11–11–69, Cl. D30—13.
- Game Time, Inc.: *See*—
  - Wormser, Robert S. 215,946.
- Ganger, Harry. Baseball game device. 215,947, 11–11–69, Cl. D34—5.
- General Electric Co.: *See*—
  - Johnson, Carl N. 215,956.
- General Signal of Canada Ltd.: *See*—
  - Jarl, Lars E., and Taylor. 215,932.
- General Time Corp.: *See*—
  - D'Ercoli, Giacinto C. 215,955.
- Gens, Jerald H., to Char-Lynn Co. Directional control valve. 215,935, 11–11–69, Cl. D23—19.
- Goodrich, B. F., Co. The: *See*—
  - Wittenmyer, Glen L. 215,992.
- Graham Paper Co.: *See*—
  - La Fara, James S. 215,945.
- Grainer, Emmett J. Portable desk. 215,943, 11–11–69, Cl. D33—7.
- Greenlee, Hugh T., to Ashtabula Bow Socket Co. Cycle pedal tread block. 215,988, 11–11–69, Cl. D90—14.
- Greenlee, Hugh T., to Ashtabula Bow Socket Co. Cycle pedal tread block. 215,989, 11–11–69, Cl. D90—14.
- Grimm, John E.: *See*—
  - Wise, Lewis A., and Grimm. 215,982.
- Guillon, Jacques S. Chair. 215,929, 11–11–69, Cl. D15—1.
- Hackbarth, Dennis K.: *See*—
  - Litman, Alan L., and Hackbarth. 215,934.
- Hadco Products, Inc.: *See*—
  - Daum, Howard A. 215,961.
- Harper, Irving, to Wilkinson Sword Ltd. Holder for a combined safety razor and mount. 215,995, 11–11–69, Cl. D95—3.
- Haskin, Donald F., and M. Becker, to Resort Products, Inc. Amphibious seating ring. 215,973, 11–11–69, Cl. D71—1.
- Hendrick, David L. Frozen confection. 215,917, 11–11–69, Cl. D1—22.
- Henshaw, John F. and V. H., to Keuffel & Esser Co. Stereoplotter. 215,968, 11–11–69, Cl. D57—7.
- Henshaw, Victor H.: *See*—
  - Henshaw, John F. and V. H. 215,968.
- Herndon, Larry F., Jr.: *See*—
  - Kelso, Rai B., and Herndon. 215,959.
- Hitachi Maxell, Ltd.: *See*—
  - Kubo, Kazuhiko, and Kasagi. 215,994.
- Hoke, Gilbert J., to Dunlop Tire and Rubber Corp. Tire. 215,993, 11–11–69, Cl. D90—20.
- Holland, Andrew M.: *See*—
  - Arato, Paul T., and Holland. 215,951.
- Huggins, Richard L., to Bausch & Lomb Inc. Fashion shield. 215,918, 11–11–69, Cl. D2—234.
- International Business Machines Corp.: *See*—
  - Noyes, Eliot F. 215,938.
- Jacobson, Carlton W. Animal ear tag. 215,942, 11–11–69, Cl. D30—43.
- Jarl, Lars E., and E. G. Taylor, to General Signal of Canada Ltd. Mobile laboratory unit. 215,932, 11–11–69, Cl. D16—2.
- Jaybee Mfg., Inc.: *See*—
  - Beeson, Jon R. 215,921.
- Johnson, Allan B.: *See*—
  - McCarty, Donald, Johnson, Cammack, Mattingly, Trenary, and Jeffers. 215,920.
- Johnson, Carl N., to General Electric Co. Clock or similar article. 215,956, 11–11–69, Cl. D42—7.
- Jones, Russell E. Combination vehicle chassis and cab. 215,927, 11–11–69, Cl. D14—3.

- Kahn, Robert D., to Fedtro, Inc. Television antenna coupler. 215,940, 11–11–69, Cl. D26—14.
- Kasagi, Taro: *See*—
  - Kubo, Kazuhiko, and Kasagi. 215,994.
- Kelso, Rai B., and L. F. Herndon, Jr. Floating bar. 215,959, 11–11–69, Cl. D44—10.
- Keuffel & Esser Co.: *See*—
  - Henshaw, John F. and V. H. 215,968.
- Kubo, Kazuhiko, and T. Kasagi, to Hitachi Maxell, Ltd. Electric dry shaver. 215,994, 11–11–69, Cl. D95—3.
- La Fara, James S., to Graham Paper Co. Core for roll paper products. 215,945, 11–11–69, Cl. D33—31.
- Litman, Alan L., and D. K. Hackbarth, to Bangor Punta Operations, Inc. Non-lethal weapon producing a liquid spray. 215,934, 11–11–69, Cl. D22—3.
- Manderfield, Ellen B., to Oneida Ltd. Spoon or similar article. 215,964, 11–11–69, Cl. D54—12.
- Manderfield, Ellen B., to Oneida Ltd. Spoon or similar article. 215,965, 11–11–69, Cl. D54—12.
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- Markusen, Thomas R. Three dimensional puzzle. 215,949, 11–11–69, Cl. D34—15.
- Marsh, David M. Bottle covering. 215,922, 11–11–69, Cl. D9—250.
- Marx, Louis, & Co. Inc.: *See*—
  - Cook, Calvin C. 215,948.
- Mattel, Inc.: *See*—
  - Arato, Paul T., and Holland. 215,951.
- McCarty, Donald, A. B. Johnson, M. A. Cammack, J. W. Mattingly, J. M. Trenary, and H. A. Jeffers, Jr., to Aqua Tec Corp. Power unit for motor driven toothbrush. 215,920, 11–11–69, Cl. D4—15.
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- Michaels, William H. Hose guide for preventing damage to flower beds and the like. 215,952, 11–11–69, Cl. D35—1.
- Mondragon, Ralph. Rocking chair. 215,930, 11–11–69, Cl. D15—6.
- Murray Ohio Mfg. Co., The: *See*—
  - Schreckengost, Viktor. 215,986.
  - Schreckengost, Viktor. 215,987.
- Nawman, Rollie B., to Benner-Nawman, Inc. Telephone enclosure. 215,926, 11–11–69, Cl. D13—1.
- North American Rockwell Corp.: *See*—
  - Bodey, Charles E. 215,972.
- Noyes, Eliot F., to International Business Machines Corp. Control console. 215,938, 11–11–69, Cl. D26—5.
- Oneida Ltd.: *See*—
  - Manderfield, Ellen B. 215,964.
  - Manderfield, Ellen B. 215,965.
  - Manderfield, Ellen B. 215,966.
  - Manderfield, Ellen B. 215,967.
- Ostrye, Laurence H.: *See*—
  - Flachbarth, Charles T., and Ostrye. 215,963.
- Patinvest Patent und Investment A.G.: *See*—
  - Bonsiepe, Gui. 215,983.
- Peter, Joseph E., to The Crane & Breed Casket Co. Casket or the like. 215,933, 11–11–69, Cl. D19—1.
- Porsche, Ferdinand A. E., and F. A., to Dr. Ing. Porsche, h.c.F., K.G. Wheel. 215,928, 11–11–69, Cl. D14—30.
- Porsche, Dr. Ing., h.c.F., K.G.: *See*—
  - Porsche, Ferdinand A. E., and F. A. 215,928.
  - Porsche, Ferdinand A., and Bauer. 215,950.
- Porsche, Ferdinand A.: *See*—
  - Porsche, Ferdinand A. E., and F. A. 215,928.
- Porsche, Ferdinand A., and T. F. Bauer, to Dr. Ing. Porsche, h.c.F., K.G. Ski-bob. 215,950, 11–11–69, Cl. D34—15.
- Post, Harold P. Display cabinet for merchandise. 215,979, 11–11–69, Cl. D80—11.
- Resort Products, Inc.: *See*—
  - Haskin, Donald F., and Becker. 215,973.
- Rodden, Joseph P., to Crown Cork & Seal Co., Inc. Pull tab for a tear strip opener. 215,924, 11–11–69, Cl. D9—256.
- Rosta, William N., to VLM Corp. Vertical lift aircraft. 215,971, 11–11–69, Cl. D71—1.
- Rubinstein, Helena, Inc.: *See*—
  - Silson, Victor. 215,985.
- Samson Plastics, Inc.: *See*—
  - Segal, Herbert A. 215,980.
- Sandefur, Douglas M., to Sandefur Engineering Co., Inc. Work bench. 215,931, 11–11–69, Cl. D16—2.
- Sandefur Engineering Co., Inc.: *See*—
  - Sandefur, Douglas M. 215,931.
- Schreckengost, Viktor, to The Murray Ohio Mfg. Co. Bicycle frame. 215,986, 11–11–69, Cl. D90—8.
- Schreckengost, Viktor, to The Murray Ohio Mfg. Co. Bicycle handlebar. 215,987, 11–11–69, Cl. D90—11.
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- Seelig, Oliver N., to Wyomissing Corp. Elastic band. 215,919, 11–11–69, Cl. D3—32.
- Segal, Herbert A., to Samson Plastics, Inc. Bed pan. 215,980, 11–11–69, Cl. D83—1.
- Silson, Victor, to Helena Rubinstein, Inc. False eyelash applicator. 215,985, 11–11–69, Cl. D86—10.
- Simplex Time Recorder Co.: *See*—
  - Slany, Erich. 215,954.
- Slany, Erich, to Simplex Time Recorder Co. Watchman's clock. 215,954, 11–11–69, Cl. D42—7.
- Sylvania Electric Products Inc.: *See*—
  - Vetere, John J. 215,939.
- Taylor, Edward G.: *See*—
  - Jarl, Lars E., and Taylor. 215,932.
- Textron Inc.: *See*—
  - Flachbarth, Charles T., and Ostrye. 215,963.
- Troxel Mfg. Co.: *See*—
  - Faulhaber, Roland A. 215,990.
  - Faulhaber, Roland A. 215,991.
- VLM Corp.: *See*—
  - Rosta, William N. 215,971.
- Vernon Co., The: *See*—
  - Woofter, Cecil B. 215,962.
- Vetere, John J., to Sylvania Electric Products Inc. Lamp. 215,939, 11–11–69, Cl. D26—8.
- Washington Scientific Industries, Inc.: *See*—
  - Anderson, Kermit V. 215,969.
- Weeber, Marion, to American Home Products Corp. Knife. 215,996, 11–11–69, Cl. D95—3.
- Westinghouse Electric Corp.: *See*—
  - Schubert, Ralph E. 215,981.
- Wilkinson Sword Ltd.: *See*—
  - Harper, Irving. 215,995.
- Wise, Lewis A., and J. E. Grimm. Disposable anesthetist's kit. 215,982, 11–11–69, Cl. D83—1.
- Wittenmyer, Glen L., to The B. F. Goodrich Co. Tire. 215,992, 11–11–69, Cl. D90—20.
- Wolverine Brass Works: *See*—
  - Contreras, Andrew L. 215,936.
- Woofter, Cecil B., to The Vernon Co. Rain gauge. 215,962, 11–11–69, Cl. D52—6.
- Wormser, Robert S., to Game Time, Inc. Playground climber. 215,946, 11–11–69, Cl. D34—5.
- Wyomissing Corp.: *See*—
  - Seelig, Oliver N. 215,919.
- Yoshinaga, Sadao, to Yoshinaga Prince Co., Ltd. Cigarette lighter or similar article. 215,960, 11–11–9, Cl. D48—27.
- Yoshinaga Prince Co., Ltd.: *See*—
  - Yoshinaga, Sadao. 215,960.
- Zundel, Arthur P., to American Can Co. End closure for a container. 215,923, 11–11–69, Cl. D9—255.

# LIST OF PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 11TH DAY OF NOVEMBER, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- AAI Corporation: *See*—
  - Barr, Irwin R., 3,477,374.
  - Barr, Irwin R., 3,477,375.
- Aaron, Jack, to Erlich, Ralph R. Fine, Michael N. DeVito, Charles P., and DeVito, Albert P., as trustees, mesne. Method of and means for coupling sheet-like members. 3,477,089, Cl. 016-016.
- AB Bonnierforetagen: *See*—
  - Andersson, Anders Ingvar, 3,477,591.
- Abbott, Douglas T., and Thompson, William C., to Columbian Bronze Corporation. Yielding bushing. 3,477,794, Cl. 416-134.
- Abbott Laboratories: *See*—
  - Fields, Mack R., 3,477,454.
  - Freiberg, Leslie A., 3,478,083.
  - Jones, Peter H., and Rowley, Elizabeth A., 3,478,013.
  - Short, James Harold, 3,478,030.
  - Von Esch, Anne Mary, and Crovetti, Aldo J., 3,478,049.
  - Walecka, Leonard Edward, 3,477,431.
- Abex Corporation: *See*—
  - Keller, Emil C., 3,477,983.
- Abraham, Garnett. Retractable clothesline. 3,477,660, Cl. 242-100.1
- Accum-Matic Systems, Inc.: *See*—
  - Broser, Richard, 3,477,560.
- Ach, Rene. Figure shaped blocks with integral connectors. 3,477,167, Cl. 046-022.
- Acme Quilting Company, Inc.: *See*—
  - Goldman, Herbert S., 3,477,552.
- Adam, Karl, Haarer, Erich, and Dorfner, Konrad, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of alcohols by catalytic hydrogenation of carboxylic acids. 3,478,112, Cl. 260-617.
- Adams, Elizabeth F., and DuPont, Anthony W., Jr. Combined cigarette receiver, extinguisher and discarder. 3,477,444, Cl. 131-235.
- Adams, Katharen B. Rack for electrical cords. 3,477,585, Cl. 211-060.
- Adams, Victor J., Jr., to Lockheed Aircraft Corporation. Rotor blade antenna inspection device. 3,478,353, Cl. 343-708.
- Adamson, Robert G., Angell, Charles H., Roote, Jay C., Hutchison, Joel F., and Coberley, Daniel A., to Hurletron Incorporated. Electrostatically assisted intaglio printing. 3,477,369, Cl. 101-153.
- Aerological Research, Inc.: *See*—
  - Hambor, John, 3,478,252.
- Afico S.A.: *See*—
  - Vuataz, Luc, and Giddey, Andre, 3,477,854.
- Agdur, Nils Bertil, and Hedvall, Per Olof Gunnar, to Skandinaviska Processinstrument AB. Heating arrangement utilizing microwaves. 3,478,187, Cl. 219-010.55
- Agfa-Gevaert Aktiengesellschaft: *See*—
  - Winkler, Alfred, Winkler, Friedrich, Theer, Anton, and Thate, Kurt, 3,477,778.
- Aglietti, Giancarlo, and Canavesi, Roberto, to Societa Italiana Resine S.p.A. Method of purifying cumene for preparing phenol. 3,478,121, Cl. 260-674.
- Agrusa, Peter. Stands for supporting flat-irons. 3,477,672, Cl. 248-117.2
- Aileon, Jackson A., to Gentex Corporation, mesne. Ear cup with spring supported resilient seal. 3,477,067, Cl. 002-209.
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  - Shepherd, Thomas L., 3,477,816.
- Aizawa, Tadashi. Automatic veneer cutting apparatus. 3,477,327, Cl. 083-371.
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  - Segsworth, Robert Sidney, 3,478,155.
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- Akabane, Shunei: *See*—
  - Tsuruga, Masanori, Murakami, Shogo, Kondo, Katsutoshi, Akabane, Shunei, Washikita, Kenji, and Koshino, Tameo 3,478,101.
- Akagi, Saburo: *See*—
  - Negoro, Harutada, Awada, Etsuo, Ikegami, Yoshihiko, Akagi, Saburo, and Matsui, Katsuaki 3,477,995.
- Akanuma, Kaneo: *See*—
  - Wada, Toshiya, Akanuma, Kaneo, and Takata, Toshihiko 3,477,881.
- Akita, Tadayoshi: *See*—
  - Mitsuishi, Iwao, and Akita, Tadayoshi 3,477,779.
- Aktiebolaget Astra: *See*—
  - Rydh, Thore Oskar Verner, 3,478,073.
- Aktiebolaget Bofors: *See*—
  - Lundin, Lars Olof, and Salomonsson, Hans Manne Alvar, 3,477,339.
  - Thunholm, Carl Harje Gustav, 3,477,541.
- Aktiebolaget Skane-Emballage: *See*—
  - Zetterberg, Einar, 3,477,202.
- Aktieselskabet Niro Atomizer: *See*—
  - Repsdorph, Inger, Kroyer, Karl Kristian Kobs, and Damgard-Iversen, Jorgen, 3,477,874.
- Albermarle Paper Company: *See*—
  - Watters, Charles K., 3,477,348.
- Albertson, Robert V. Wheel mounting attachment for ski-equipped vehicles. 3,477,734, Cl. 280-011.
- Albro, Henry H., to Cabot Corporation. Pipe fitting having mechanical fastener for connecting the fitting to a pipe. 3,477,749, Cl. 285-340.
- Alexandrowicz, Alvin W.: *See*—
  - Houston, David R., Howes, Benjamin T., Warrick, James E., and Alexandrowicz, Alvin W. 3,477,306.
- Alldritt, Donald H., and Beam, Theodore E. Meter reading means and method. 3,478,342, Cl. 340-194.
- Allegheny Ludlum Steel Corporation: *See*—
  - Shupe, Kay M., 3,477,682.
- Allen-Bradley Company: *See*—
  - Struger, Odo J., and Moser, Joseph R., 3,478,228.
- Allen, Dwight L., and Grable, Glenn H. Catheter having one-way inflations valve. 3,477,438, Cl. 128-349.
- Allen, Edward M., Dye, Cloyde G., and Smrdel, Joseph A., to PPG Industries, Inc. Package of compacted material. 3,477,562, Cl. 206-046.
- Allen, Roy A., and Lantz, William L., to Shell Oil Company. Rapid curing fluidized bed coating composition having improved flexibility. 3,477,971, Cl. 260-018.
- Allentoff, Norman, and Fogler, Henry Harrison, to Eastman Kodak Company. Direct positive silver halide emulsion resistant to kink-marking desensitization. 3,477,852, Cl. 096-094.
- Allied Chemical Corporation: *See*—
  - Bell, Charles C., and Jobin, Alvin H., 3,477,217.
  - Formaini, Robert L., 3,477,996.
  - Kolyer, John M., and Kvlglis, Albert A., 3,478,025.
- Allied Insulation Company: *See*—
  - Williams, James W., and Proctor, Phillip K., 3,477,745.
- Allison, Hansell Jack: *See*—
  - Hughes, William Lewis, Summers, Claude Menta, and Allison, Hansell Jack 3,477,878.
- Alsup, Richard Glenn, and Leverett, Glenn Frederick, to Du Pont de Nemours, E. I., and Company. Vapor-phase base clean-up of polyoxymethylene. 3,477,993, Cl. 260-067.
- Altermatt, Hans, to Ciba Limited. Di-(hydroxynaphthyl)-triazines. 3,478,024, Cl. 260-248.
- Altson, George R.: *See*—
  - Altson, Ralph 3,477,773.
- Altson, John A.: *See*—
  - Altson, Ralph 3,477,773.
- Altson, Ralph, deceased (by Altson, John A. Altson, George R., administrators), to General Motors Corporation. Molded cage for non-separable assembly of roller bearings. 3,477,773, Cl. 308-214.
- Aluminum Company of America: *See*—
  - Buchovecky, Kalman E., and Patton, Wilbur L., 3,478,136.
  - Burkart, Alan R., and Mudge, John H., 3,477,494.
  - Terrill, James R., 3,477,118.
  - Wood, Charles L., Jr., 3,477,190.
- Alverson, William Keith: *See*—
  - Simon, Joseph William, and Alverson, William Keith 3,478,283.
- AMBAC Industries, Incorporated: *See*—
  - Howe, Edwin W., 3,477,297.
  - Howe, Edwin W., 3,477,298.
- American Caduceus Industries, Inc.: *See*—
  - Burnhill, Michael Seth, 3,477,430.
- American Chain & Cable Company, Inc.: *See*—
  - Dolding, Walter R., 3,477,390.
  - Klamp, Paul, 3,477,388.
  - Mesler, Lilburn L., 3,477,474.
- American Cyanamid Company: *See*—
  - Brown, Michael, and Dickie, Donald Landrine, 3,477,192.
  - Siegele, Frederick Herman, 3,477,512.
  - Tonnies, Frank Nicholas, 3,477,654.
- American Flange & Manufacturing Co., Inc.: *See*—
  - Koll, Stanley J., 3,477,603.
- American Gas Association, Inc.: *See*—
  - Zielinski, Robert J., and Metzger, David P., 3,477,797.
- American Home Products Corporation: *See*—
  - Lapidus, Milton, 3,478,145.
  - Pattison, Thomas W., and Herbst, David R., 3,478,054.
  - Robinson, Charles A., and Nescio, John J., 3,478,018.
  - Stein, Reinhardt P., and Smith, Herchel, 3,478,070.
- American Hospital Supply Corporation: *See*—
  - Goldberg, Allan M., 3,477,437.

- American Institutes for Research: *See—*
  - Tallmadge, Guy Kasten, 3,477,145.
- American Machine & Foundry Company: *See—*
  - Gruss, George A., Smith, Richard A., and Infantino, Joseph R., 3,478,134.
  - Hooper, Harry Allison, 3,477,442.
- American Micro-Systems, Inc.: *See—*
  - Avery, George E., 3,478,229.
- American Saint Gobain Corporation: *See—*
  - Glynn, Theodore W., and Storm, Jack S., Jr., 3,477,836.
- American Standard, Inc.: *See—*
  - Rodely, Alan E., 3,477,275.
- American Telephone and Telegraph Company: *See—*
  - Mac Leod, Donald A., and Maddock, George P., 3,478,174.
- Ametek, Inc.: *See—*
  - Henry, Frank B., and Windmiller, Harvey L., 3,477,708.
  - Krynski, John E., and Engwall, Richard E., 3,477,583.
- Amiard, Gaston, Nomine, Gerard, and Torelli, Vesperto, to Roussel-UCLAF. Certain tetrahydroindane derivatives. 3,478,062, Cl. 260-343.3
- Amick, James A., to RCA Corporation. Method of depositing refractory metals. 3,477,872, Cl. 117-212.
- Amidon, Alan B.: *See—*
  - Weigl, John W., and Amidon, Alan B. 3,477,846.
- Ampex Corporation: *See—*
  - Wickham, Donald G., 3,477,960.
- Anchor Hocking Corporation: *See—*
  - Fouse, Frederick Z., 3,477,841.
- Andersen, Kare: *See—*
  - Szcupak, Peter, and Andersen, Kare 3,477,730.
- Andersen, Per F. Wave machine installations. 3,477,233, Cl. 061-001.
- Anderson Bros. Mfg. Co.: *See—*
  - Keas, Carl F., 3,477,199.
- Anderson, Greenwood & Co.: *See—*
  - Powell, Walter W., 3,477,456.
- Anderson, James J.: *See—*
  - Lannert, James W., and Anderson, James J. 3,477,825.
- Anderson, Johnny W. Apparatus for moving molten metal. 3,477,615, Cl. 222-193.
- Anderson, Lawrence G., and Anderson, Le Roy M., to TRW Inc. Pressed metal bearing housing. 3,477,772, Cl. 308-187.
- Anderson, Le Roy M.: *See—*
  - Anderson, Lawrence G., and Anderson, Le Roy M. 3,477,772.
- Anderson, Lyle V., to Blaw-Knox Company. Reel drum lateral movement control. 3,477,655, Cl. 242-057.1
- Anderson, Philip N., to TRW Inc. Pneumatic tube deployment means, and solar cell therewith. 3,477,662, Cl. 244-001.
- Anderson, Spangler & Wymore: *See—*
  - Murphy, Harry E., 3,477,645.
- Andersson, Anders Ingvar, to AB Bonnierforetagen. Means for separating and stacking newspapers and the like. 3,477,591, Cl. 214-006.5
- Andersson, Hugo. Apparatus for screening bulk material. 3,477,573, Cl. 209-260.
- Ando, Ryo, Shimotsuma, Teruo, and Chihara, Kanichiro, to Nippon Kokan Kabushiki Kaisha. Hot-blast stoves. 3,477,701, Cl. 263-019.
- Andrews, Barry G., and Harriman, Allen C., to Kamborian, Jacob S. End clamp for a shoe assembly. 3,477,078, Cl. 012-014.4
- Andrews, Lawrence F. Method and appartus for improved orthodontic bracket and arch wire technique. 3,477,128, Cl. 032-014.
- Angell, Charles H.: *See—*
  - Adamson, Robert G., Angell, Charles H., Roote, Jay C., Hutchison, Joel F., and Coberley, Daniel A. 3,477,369.
- Anthes Imperial Limited: *See—*
  - Merson, Karol J.W., 3,477,189.
- Appelt, Edna. Glove drying devices. 3,477,622, Cl. 223-078.
- Aqua-Chem, Inc.: *See—*
  - Gething, Frank, 3,477,411.
- Aquariums Incorporated: *See—*
  - Willinger, Allan H., 3,477,580.
- Aquatic Controls Corporation: *See—*
  - Just, Jerome O., and Stern, Howard W., 3,477,213.
- Aquino, Victor D. Submergible housing device. 3,477,234, Cl. 061-069.
- Archer, William E., Coe, Everett L., Jr., and Reed, Leo O., to Joy Manufacturing Company. Method of making an electrical rapper. 3,477,124, Cl. 029-592.
- Arendt, Harry S., to Esso Research and Engineering Company. Underground storage for LNG. 3,477,509, Cl. 166-252.
- Armato, Ben N. Musical instrument reed measuring device and method for adjusting reeds. 3,477,133, Cl. 033-147.
- Armbrust, Bernard F., Jr., and Carithers, Val G., to Reynolds Metals Company. Alumina trihydrate-fibrous matrix composition and method of forming same. 3,477,865, Cl. 106-209.
- Armour and Company: *See—*
  - Benner, Lloyd Robert, Sr., 3,477,597.
  - Colburn, Jay T., 3,477,857.
  - Hull, Maurice E., and Kline, Ralph Willard, 3,477,853.
- Armour Pharmaceutical Company: *See—*
  - Enkoji, Takashi, and Levine, Edward M., 3,478,026.
  - Reynolds, Harold C., and Olsen, Donald B., 3,477,954.
- Arnold, Donald R., and Sousa, Anthony A., to Union Carbide Corporation. 3-Oxa-tricyclo[4.2.1.$0^{2,5}$]nonanes. 3,478,043, Cl. 260-297.
- Aro Corporation, The: *See—*
  - Kiester, George S., and Short, R Stanford, 3,477,521.
- Artelli, Mario. Tongue cleaner. 3,477,435, Cl. 128-304.
- Artz, Klaus, to Ciba Limited. Water-insoluble monoazo dyestuffs. 3,478,011, Cl. 260-205.
- Arya, Vishwa Prakash, to Ciba Limited. N-substituted-N'-aryl diazacycloalkanes. 3,478,032, Cl. 260-268.
- Ashley, Carlyle M., to Carrier Corporation. System for rendering a saline solution potable. 3,477,241, Cl. 062-124.
- Ask, Henry R., to United Aircraft Corporation. Control of earth moving machinery. 3,477,152, Cl. 037-129.
- Astro Dynamics, Inc.: *See—*
  - Katz, Leonhard, 3,477,502.
- Atkin, Sydney: *See—*
  - Cook, Lucien H., and Atkin, Sydney 3,477,842.
- Atlantic Products Corporation: *See—*
  - Kish, Michael, Jr., 3,477,553.
- Atlantic Refining Company, The: *See—*
  - Brown, Cicero C., 3,477,744.
- Atlantic Richfield Company: *See—*
  - Grane, Henry R., 3,478,108.
  - Masologites, George P., Jacobs, Harry E., and White, Paul J., 3,477,943.
  - Sorgenti, Harold A., 3,478,118.
- Atlantic Semiconductor: *See—*
  - Hambor, John, 3,478,252.
- Atwell, William H., to Dow Corning Corporation. Thermolysis of alkoxy disilanes in the presence of alcohols to provide hydrogen-substituted alkoxymonosilanes. 3,478,078, Cl. 260-448.8
- Atwell, William H., to Dow Corning Corporation. Novel dialkoxymethyl(trialkoxy)silanes and a method for their preparation. 3,478,079, Cl. 260-448.8
- Atwood, Elmer G. Can dispensing and transporting unit. 3,477,774, Cl. 312-045.
- Audichron Company, The: *See—*
  - Bryant, Ellis H., Jr., 3,478,168.
- Auger, Frank Pawley, to BP Chemicals (U.K.) Limited. Gas chromatography apparatus and valves suitable for use therein. 3,477,207, Cl. 055-197.
- Aumann, Robert E. Electrical teaching system. 3,477,143, Cl. 035-009.
- Australian Iron & Steel Pty. Limited: *See—*
  - Burn, Patrick Marion, and Nevison, Ronald Arthur, 3,477,529.
- Autenrieth, Hans, and Wirries, Heinrich, to Kali Forschung Anstalt GmbH. Process for the electrostatic separation of the sylvite (KC1) component of a mineral. 3,477,566, Cl. 209-009.
- Auto Research Corporation: *See—*
  - Durnan, William E., 3,477,545.
- Automated Packaging Corporation: *See—*
  - Lerner, Bernard, 3,477,196.
- Automatic Electric Laboratories, Inc.: *See—*
  - Wedmore, William R., 3,478,314.
- Automatic Radio Mfg. Co., Inc.: *See—*
  - Johnson, Randall W., 3,477,637.
- Automobiles Peugeot, and Regie Nationale des Usines Renault: *See—*
  - Moulin, Jean, 3,477,417.
- Avery, George E., to American Micro-Systems, Inc. Multifunction circuit device. 3,478,229, Cl. 307-303.
- Avnet, Inc.: *See—*
  - Trainor, Charles C., 3,478,158.
- Awada, Etsuo: *See—*
  - Negoro, Harutada, Awada, Etsuo, Ikegami, Yoshihiko, Akagi, Saburo, and Matsui, Katsuaki 3,477,995.
- Axelson, Hans A.: *See—*
  - Thoren, Olle G., and Axelson, Hans A. 3,477,240.
- B. T. B. Benoit-Le Tapis Brosse, Societe Anonyme: *See—*
  - Partensky, Pierre Jean Marc, 3,477,889.
- Babcock & Wilcox Company, The: *See—*
  - Rickenborde, Gary H., 3,477,341.
- Bablouzian, Leon M., Castonguay, Roger A., and Wenckus, Joseph F., to Little, Arthur D., Inc. Liquid fuel burner. 3,477,644, Cl. 239-135.
- Babunovic, Momir, and Goessman, John C., to Barry-Wehmiller Company. Container moving and metering apparatus. 3,477,557, Cl. 198-022.
- Bacon, James R., to Burroughs Corporation. Sweep generator for PPI radar display. 3,478,357, Cl. 343-010.
- Badessa, Rosario S.: *See—*
  - Kent, Robert L., Badessa, Rosario S., Barus, Carl, Dunn, Joseph M., Glaser, Raymond Arthur, and Johnson, Leonard B. 3,477,666.
- Badger, Alfred E.: *See—*
  - Oelke, Waldemar W., Carson, Frank J., Badger, Alfred E., and O'-Connell, Thomas B. 3,477,840.
- Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See—*
  - Adam, Karl, Haarer, Erich, and Dorfner, Konrad, 3,478,112.
  - Beck, Fritz, Leitner, Hans, Wintersberger, Karl, and Guthke, Harald, 3,477,923.
  - Friedrichsen, Wilhelm, Poehler, Guenter, and Goehre, Otto, 3,478,063.
  - Hahn, Erwin, and Seefelder, Matthias, 3,478,045.
  - Maahs, Paul, Matthies, Hans-Georg, and Wenger, Friedrich, 3,477,094.
  - Maschke, Artur, and Pasedach, Heinrich, 3,478,060.
  - Nonnenmacher, Helmut, Weitz, Hans-Martin, and Willersinn, Carl-Heinz, 3,478,093.
  - Schulze, Guenther, and Heck, Karl-Heinz, 3,477,828.

- Bafford, Richard Anthony, and Mageli, Orville Leonard, to Pennwalt Corporation. Peroxy thiolcarbonates. 3,478,080, Cl. 260-455.
- Baggett, Frank A.: *See—*
  - Emerson, Paul D., Engelman, Fred H., Baggett, Frank A., and Oatfield, John C. 3,477,661.
- Bahnsen, Edward B., Jr., to Owens-Corning Fiberglas Corporation. Insulating material. 3,477,984, Cl. 260-038.
- Bahr, Albert. Dry bed installation for drying sludge in sewage clearing plants. 3,477,578, Cl. 210-138.
- Bahr, Ulrich: *See—*
  - Szita, Jeno, Bahr, Ulrich, Wieden, Horst, Marzolph, Herbert, and Nischk, Gunther 3,478,001.
- Bahrs, David L.: *See—*
  - Couleur, John F., Gudenschwager, Philip F., Shelly, William A., and Bahrs, David L. 3,478,320.
- Baird and Tatlock (London) Limited: *See—*
  - Robertson, Gavin W. E., and Dyson, Cyril W. C., 3,477,478.
- Baker, Bernard Stuart, to Courtaulds Limited. Peak load detectors. 3,477,286, Cl. 073-095.
- Bakker, Martinus Antonius Maria, Collaris, Maria Antonius Alphonsus Andreas, and Duran, Johannes Christiaan, to U.S. Philips Corporation, mesne. Mercury dispensing device for an electric discharge tube. 3,478,243, Cl. 313-174.
- Baklien, Asbjorn, Gregory, Jocelyn M., and Kling, Klaus, to Imperial Chemical Industries of Australia and New Zealand Limited. Thiophene-sulphonyl-phosphorothioates. 3,478,057, Cl. 260-329.
- Balassa, Leslie L. Wound-healing cartilage powder extracting process. 3,478,146, Cl. 424-095.
- Balducci, Walter O., and Welch, Nicholas A., to Emhart Corporation. Emergency exit lock. 3,477,260, Cl. 070-092.
- Baldwin, Beecher B., to Universal Filtration Inc. Grid structure for filters. 3,477,582, Cl. 210-232.
- Baldwin, D. H., Company: *See—*
  - Conklin, Harold A., Jr., 3,477,331.
- Ballini, Giuliano: *See—*
  - Bucci, Giovanni, Simonazzi, Tonino, Ballini, Giuliano, and Portolani, Augusto 3,477,985.
- Bang, Mogens W., to Stockpole Carbon Company. Rotary electric switch. 3,478,180, Cl. 200-011.
- Bank, William. Sign letter mounts. 3,477,159, Cl. 040-140.
- Banks, Charles T., to Kimberly-Clark Corporation. Papermaking method and apparatus. 3,477,658, Cl. 242-056.
- Banning, Thomas A., Jr. Dual quality subscription television system. 3,478,162, Cl. 178-005.6
- Barbee, Gail G.: *See—*
  - Gardner, Charles W., and Barbee, Gail G. 3,477,601.
- Barkley, Lloyd B., and Patellis, Anargiros P., to Pennsylvania Industrial Chemical Corporation. Polymerizing unsaturated cyclic hydrocarbons using as catalyst AlCl$_3$ R$_3$SiX. 3,478,007, Cl. 260-088.2
- Barkouki, Moghazi F., to Mobark Instruments. Digital recording apparatus and method. 3,478,327, Cl. 340-172.5
- Barkow, William H., to RCA Corporation. Penetration color displays. 3,478,245, Cl. 315-013.
- Barnish, Philip, and Barrett, Colin, to U.S. Philips Corporation. Domestic washing machines. 3,477,259, Cl. 068-023.1
- Barr, Irwin R., to AAI Corporation. Fixed primer set-back cartridge. 3,477,374, Cl. 102-045.
- Barr, Irwin R., to AAI Corporation. Piston-primer cartridge. 3,477,375, Cl. 102-045.
- Barrett, Colin: *See—*
  - Barnish, Philip, and Barrett, Colin 3,477,259.
- Barrett, Paul Anthony, to Burroughs Wellcome & Co. (U. S. A.) Inc. Dithiosemicarbazones. 3,478,035, Cl. 260-293.4
- Barrington, Robert W. Wear compensating bearings for trailer hitch. 3,477,742, Cl. 280-444.
- Barry-Wehmiller Company: *See—*
  - Babunovic, Momir, and Goessman, John C., 3,477,557.
- Barshefsky, Gustave, and Goldstein, Eugene E., to Celotex Corporation, The, mesne. Method of making a rigid panel of mineral fibers and discrete particles with resin binder. 3,478,137, Cl. 264-118.
- Barson, Fred, and Kuiper, Lubertus L., to International Business Machines Corporation. Masking technique for area reduction of planar transistors. 3,477,123, Cl. 029-578.
- Barton, David W., to Ford Motor Company. Dual automotive brake system. 3,477,549, Cl. 188-152.
- Barton, Jerry M., to Du Pont de Nemours, E. I., and Company. Preparation of tetramethylethyl leads. 3,478,072, Cl. 260-437.
- Barus, Carl: *See—*
  - Kent, Robert L., Badessa, Rosario S., Barus, Carl, Dunn, Joseph M., Glaser, Raymond Arthur, and Johnson, Leonard B. 3,477,666.
- Baton, Jean Pierre, and Llop, Helenio, to Societe d'Optique, Precision, Electronique et Mecanique. Apparatus for measuring coordinates of points. 3,477,790, Cl. 356-164.
- Battelle Memorial Institute, International Division: *See—*
  - Grundschober, Friedrich, and Sambeth, Joerg, 3,477,868.
- Batten, Ronald W., to Hi-Shear Corporation. Offset driver for threaded fasteners. 3,477,318, Cl. 081-057.
- Bau-Stahlgewebe GmbH: *See—*
  - Webers, Heinz, 3,477,627.
- Bauduin, Albert: *See—*
  - Henry, Georges, Brichard, Edgard, Marchand, Jean, and Bauduin, Albert 3,477,838.
- Bauer, Albert W., and Gorski, Robert A., to Du Pont de Nemours, E. I., and Company. Azeotropic composition. 3,477,952, Cl. 252-171.
- Bauer, Ludwig, to International Standard Electric Corporation. Pushbutton assembly incorporating self-fastening elements. 3,478,186, Cl. 200-172.
- Bauer, Myron J., Neuman, Milton C., and Wiethoff, Roger H., to United States of America, Navy. Blast door for missile launching system. 3,477,338, Cl. 089-001.805
- Bauer, William. Shoe covering and gaiter. 3,477,147, Cl. 036-002.
- Bauger, Louis Jules, and Lacroix, Armand Jean Baptiste, to Societe National d'Etude et de Construction de Moteurs d'Aviation. Turbojet engines and other jet engines of the dual- flow type. 3,477,230, Cl. 060-224.
- Baugh, Benton F.: *See—*
  - Jones, Marvin R., and Baugh, Benton F. 3,477,526.
- Baxter Laboratories, Inc.: *See—*
  - Griffith, Lionell K., 3,477,423.
- Beam, Theodore E.: *See—*
  - Alldritt, Donald H., and Beam, Theodore E. 3,478,342.
- Beard, Colin C., and Cross, Alexander D., to Syntex Corporation. 16$\alpha$,17$\alpha$-Difluoromethylene derivatives of the pregnane series. 3,478,066, Cl. 260-397.3
- Becht, Carl T., to Senco Products, Incorporated. Pneumatic fastener applying device. 3,477,629, Cl. 227-130.
- Beck, Fritz, Leitner, Hans, Wintersberger, Karl, and Guthke, Harald, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Electrochemical hydrodimerization of acrylonitrile. 3,477,923, Cl. 204-073.
- Becker, Ernst, and Notz, Karl, to Quick-Rotan Becker & Co. Switching device for a sewing machine. 3,477,399, Cl. 112-219.
- Becker, Richard W., to Eastman Kodak Company. Multi-color dye developer systems. 3,477,849, Cl. 096-029.
- Becker, Rudolf, to Linde Aktiengesellschaft. Regenerator. 3,477,496, Cl. 165-010.
- Becker, Willi, to Pfeiffer, Arthur, Hochvakuumtechnik G.m.b.H. Turbo-molecular pump. 3,477,381, Cl. 103-084.
- Becquerel, Georges Paul Marie, to Eastman Kodak Company. Process for autoelectrolytic reproduction of documents. 3,477,847, Cl. 096-001.8
- Bedi, Ram Dev, to M & T Chemicals, Inc. Method of treating electrodes for use in electroplating baths. 3,477,920, Cl. 204-015.
- Beeman, Robert H., to Du Pont de Nemours, E. I., and Company. Pigmented paper coating and adhesive compositions containing a polyvinyl alcohol binder and a modifier therefor. 3,477,970, Cl. 260-017.
- Beesley, Gilbert William, to Rolls-Royce Limited. Bladed rotor for a fluid flow machine. 3,477,795, Cl. 416-191.
- Beevendorp, Johannes: *See—*
  - de Ruyter van Steveninck, Albert W., and Beevendorp, Johannes 3,477,974.
- Bell, Charles C., and Jobin, Alvin H., to Allied Chemical Corporation, mesne. Automatic yarn splicer. 3,477,217, Cl. 057-022.
- Bell, Edward R.: *See—*
  - Slott, Robert S., Bell, Edward R., and Pilgram, Kurt H. G. 3,478,044.
- Bell & Howell Company: *See—*
  - Brubaker, Wilson M., and Berry, Clifford E., 3,478,204.
  - Davidson, Richard M., 3,477,141.
  - Gould, Irwin M., and Moe, Gerald A., 3,477,563.
  - Gould, Irwin M., and Moe, Gerald A., 3,477,785.
- Bell, Kenneth, and Grossen, Harry W., to National Dairy Products Corporation. Variegator for ice cream and the like. 3,477,393, Cl. 107-001.
- Bell, Malcolm Rice, to Sterling Drug Inc. Certain 2-,4-,5-,6- or 7-azaindolyl-lower-alkyl- amidoximes, -amidines and -guanidines. 3,478,039, Cl. 260-295.
- Bell Telephone Laboratories, Incorporated: *See—*
  - Giordmaine, Joseph A., and Kaiser, Wolfgang K., 3,478,277.
  - Jackson, Jesse M., 3,477,204.
- Bellavance, Inc.: *See—*
  - Nadeau, Clarence S., 3,477,107.
- Beller, Hans: *See—*
  - Beuchle, Friedrich, Hahm, Heinz, Klein, Christof Hans, and Beller, Hans 3,477,551.
- Beloit Corporation: *See—*
  - Ely, Donald A., Sr., 3,477,907.
  - Koelsch, Lester M., 3,477,873.
- Bende, Friedrich, Corsepius, Horst, and Hansel, Werner, to Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen. Hexamethylene diamine manufacture. 3,478,102, Cl. 260-583.
- Bender, Louis, to Standard Plastic Products, Inc. Cantilevered ball cushion. 3,477,716, Cl. 273-009.
- Bendix Corporation, The: *See—*
  - Brandau, William, 3,477,294.
  - Hooten, Basil P., Jr., 3,478,293.
  - Laurent, Harold J., and Iwaskiw, Lubomyr J., 3,478,274.
  - Nutz, George Kaspar, 3,478,219.
  - Slavin, Michael, Emery, Raymen F., and Carp, Ralph W., 3,477,346.
- Benner, Lloyd Robert, Sr., to Armour and Company. Apparatus and method for opening cans with tear strips. 3,477,597, Cl. 214-304.
- Benson, John O., and Smirnow, Peter, to General Mills, Inc. Process for preparing a filled food product. 3,477,851, Cl. 099-083.

Berardi, Lloyd F., and Panetta, Michael A., to Xerox Corporation. Brush reclaiming. 3,477,450, Cl. 134-001.

Berberich, Joseph P.: *See—*
Bundy, Wayne M., and Berberich, Joseph P. 3,477,809.

Bereday, Sigmund. Leaning device to reduce fatigue. 3,477,673, Cl. 248-121.

Bergen, Henry J.: *See—*
Kiemele, Melvin, and Bergen, Henry J. 3,477,515.

Bergeron, Normand, Harriman, Allen C., and Sitko, Antoni L., to Kamborian, Jacob S. Upper pulling over and shifting mechanism and method. 3,477,079, Cl. 012-142.

Berghoefer, Hans. Pipe coupling containing a valve. 3,477,689, Cl. 251-149.9

Berman, Elliot, to Itek Corporation. Light sensitive heat erasable copying system. 3,477,850, Cl. 096-048.

Berney, Joseph C. Automatic case assembling apparatus. 3,477,349, Cl. 093-053.

Berry, Clifford E.: *See—*
Brubaker, Wilson M., and Berry, Clifford E. 3,478,204.

Berry, Foster W.: *See—*
Satchell, Fred E., and Berry, Foster W. 3,477,364.

Berry, Jean R.: *See—*
Brubaker, Wilson M., and Berry, Clifford E. 3,478,204.

Bert, Paul A., to Conn, C. G., Ltd. Laminated soundboard for a string instrument. 3,477,330, Cl. 084-193.

Bertin, Daniel, and Pierdet, Andre, to Roussel UCLAF. Process for the preparation of unsaturated 19-nor steroids. 3,478,067, Cl. 260-397.3

Bettega, Bruno, and Stevens, George R. Anti-air pollution device for internal combustion engines. 3,477,227, Cl. 060-030.

Beuchle, Friedrich, Hahm, Heinz, Klein, Christof Hans, and Beller, Hans, to Teves, Alfred, G.m.b.H. Brakeshoe construction for disk brakes. 3,477,551, Cl. 188-250.

Bexton, Eugen: *See—*
Walker, Dennis W., and Bexton, Eugen 3,477,518.

Bezanis, Perry S. Anti-shark safety device. 3,477,074, Cl. 009-011.315

Bezanis, Perry S. Cam operated fluid valve. 3,477,693, Cl. 251-251.

Bielak, Sigmund H.: *See—*
Jepson, Ivar, Dokos, Sophocles J., and Bielak, Sigmund H. 3,477,263.

Bing, Alan John, to Hovercraft Development Limited. Load-supporting apparatus. 3,477,387, Cl. 104-023.

Bird, Frank W.: *See—*
Krafft, Joseph M., and Bird, Frank W. 3,477,285.

Birum, Herbert L., Jr. Ceiling channel assembly for movable partitions. 3,477,186, Cl. 052-242.

Bisch, Helmut: *See—*
Goerke, Rolf, Bisch, Helmut, Togel, Kurt, and Speck, Werner 3,478,207.

Bjork, Harold John Carl, and Kilander, Sven Gustav Ingemar, to Telefonaktiegolaget LM Ericsson. Automatic telephone exchange for subscriber's instruments with push button keysending. 3,478,172, Cl. 179-018.

Bjorksten, Johan: *See—*
Paquette, Elmer G., 3,477,157.

Black and Decker Manufacturing Company, The: *See—*
Harris, Robert Dennis, 3,478,240.

Black Clawson Company, The: *See—*
Swickard, James L., and Koppehele, Paul H., 3,477,098.

Blackmer, Harold D. Multipoint vibration detector. 3,477,280, Cl. 073-071.4

Blackwell, Jennings P., to Phillips Petroleum Company. Thermal stabilization of aliphatic sulphonyl halides. 3,478,094, Cl. 260-543.

Blass Antenna Electronics Corporation: *See—*
Blass, Judd, and Ranghelli, Joseph Charles, 3,478,284.

Blass, Judd, and Ranghelli, Joseph Charles, to Blass Antenna Electronics Corporation. Microwave phase shifter including adjustable tuned reactance means. 3,478,284, Cl. 333-098.

Blatt, Milton D.: *See—*
Nelson, Harry A., Oeland, Ernest N., Jr., Miller, Howard A., and Blatt, Milton D. 3,477,376.

Blaw-Knox Company: *See—*
Anderson, Lyle V., 3,477,655.

Bliamptis, Emmanuel E., and Quinn, Hubert R., to High Voltage Engineering Corporation. High voltage acceleration tube structure. 3,478,241, Cl. 313-063.

Bliss, E. W., Company of Canada Ltd.: *See—*
Hewson, Clifford Bruce, 3,478,200.

Block, Charles, and Mintz, Leon J. Inventory control system. 3,478,316, Cl. 340-147.

Blount, Charles, Jr., and Niepraschk, Arno, to United Piece Dye Works. Method and apparatus for high-temperature dyeing or finishing of a fabric material. 3,477,073, Cl. 008-149.1

Blue, Robert D.: *See—*
Juckniess, Paul R., and Blue, Robert D. 3,477,876.

Blues, Ernest Thomson, to Imperial Chemical Industries Limited. Electrochemical process. 3,477,922, Cl. 204-059.

Blyakher, Lev Abramovich: *See—*
Bolotin, Evgeny Moiseevich, Blyakher, Lev Abramovich, Ierusalimsky, Boris Nikolaevich, Saveliev, Leonid Ivanovich, Razemerov, Vladimir Ivanovich, and Khaidurov, Leonid Konstantinovich 3,477,301.

Boehringer Ingelheim G.m.b.H.: *See—*
Koppe, Herbert, Ludwig, Gerhard, and Zeile, Karl, 3,478,050.

Boeing Company, The: *See—*
Hales, Pryce N., 3,478,317.
Schwallie, Cletus R., and Riegner, Earl I., 3,477,284.

Boivin, Claude: *See—*
Malfroy, Remy, 3,477,574.

Bolkow Gesellschaft mit beschrankter Haftung: *See—*
Sohlemann, Just, 3,477,264.
Weiland, Emil, 3,477,796.

Bolotin, Evgeny Moiseevich, Blyakher, Lev Abramovich, Ierusalimsky, Boris Nikolaevich, Saveliev, Leonid Ivanovich, Razemerov, Vladimir Ivanovich, and Khaidurov, Leonid Konstantinovich. Device for driving a working member of rotary type in a mechanized drifting shield. 3,477,301, Cl. 074-129.

Bon-Aire Industries, Inc.: *See—*
Robinson, Glen, 3,477,087.

Bonanno, Joseph L., to Topper Corporation. Toy having shaft-mounted rotatable and pivotable appendage. 3,477,171, Cl. 046-161.

Boots Pure Drug Company Limited: *See—*
Fraser, James, and Harrison, Ian Robert, 3,478,153.

Boretti, Napoleon P., Bratton, Wilson T., and Tolstyka, Joseph R., to General Motors Corporation. Method of spray coating a series of articles including the application of different colors to different articles. 3,477,870, Cl. 117-105.3

Borst, William B., Jr.: *See—*
Gantt, James E., and Borst, William B., Jr. 3,477,915.

Borst, William B., Jr., to Universal Oil Products Company. Absorption process. 3,477,946, Cl. 208-344.

Bos, Andre Gerard. Panel clamping device. 3,477,751, Cl. 287-189.36

Bosch, Robert, G.m.b.H.: *See—*
Staudt, Heinrich, 3,477,386.

Bourghardt, Sven Erik, to Saab Aktiebolag. Devices for assembling in an instruction memory an instruction word to be supplied to an apparatus controlled by logic-circuits. 3,478,326, Cl. 340-172.5

Bourns, Inc.: *See—*
Lugten, Leo K., 3,478,291.

Bourquin, Jean-Pierre: *See—*
Renz, Jany, Bourquin, Jean-Pierre, Winkler, Hans, Gagnaux, Pierre, Guldimann, Simon, Ruesch, Leo, and Schwarb, Gustav 3,478,022.

Bowles, Arnold G., and Manelick, James M., to National Forge Company. Self-closing vacuum port for dry bag isostatic moulding press. 3,477,096, Cl. 018-005.

Bowmar Instrument Corporation: *See—*
Buuck, Frederick A., Harden, Phillip L., and Thomas, Samuel M., Jr., 3,478,349.

Bown, Delos E.: *See—*
Patton, Tad L., Horeczy, Joseph T., and Bown, Delos E. 3,477,991.

Boxboard Research and Development Association: *See—*
Snow, Richard H., 3,477,138.

Boyd, Thomas R., Cosenza, Frank J., and Yamamoto, Albert K., to Tridair Industries, mesne. Releasable fastening device. 3,477,333, Cl. 085-005.

Boyer, James H., Jr., to North American Rockwell Corporation, mesne. Pattern chain control means for knitting. 3,477,253, Cl. 066-040.

BP Chemicals (U.K.) Limited: *See—*
Auger, Frank Pawley, 3,477,207.

Bradley, Frank R. Voltage divider with constant source impedance stages. 3,478,259, Cl. 323-043.5

Bradshaw, Wright D. Deep fat fryer filtering system. 3,477,361, Cl. 099-408.

Braeuninger, Karl F., and Glaza, Gordon K., to Dow Chemical Company, The. Composite structural section. 3,477,350, Cl. 094-013.

Brancato, Kenneth Y. Live-bait carrier. 3,477,165, Cl. 043-055.

Brandau, William, to Bendix Corporation, The. Sensor hysteresis compensating system. 3,477,294, Cl. 073-386.

Brandon, Charles S.: *See—*
Mayland, Bertrand J., Trimarke, Carl Robert, Harvin, Richard L., and Brandon, Charles S. 3,477,832.

Brandt, Herbert. Heating of stone for a rotary kiln. 3,477,702, Cl. 263-032.

Brandus, Liviu: *See—*
Potop, Petre, and Brandus, Liviu 3,477,205.

Branham, Donald R., Selfe, Richard J., and Hester, Ray W., Jr., to Crestwave Offshore Services, Inc. Cantilevered offshore structure. 3,477,235, Cl. 061-046.5

Branyon, James Curtis, Harshbarger, Allen L., and Martin, Maxie, to Reynolds Metals Company. Dispensing carton for web material and blanks for making same. 3,477,624, Cl. 225-043.

Bratton, Wilson T.: *See—*
Boretti, Napoleon P., Bratton, Wilson T., and Tolstyka, Joseph R. 3,477,870.

Braun Aktiengesellschaft: *See—*
Michaelis, Manfred, 3,477,489.

Braun, Wolfgang: *See—*
Luge, Karlheinz E., and Braun, Wolfgang 3,477,203.

Bray Oil Company: *See—*
Bray, Ulric B., and Fainman, Morton Z., 3,478,113.

Bray, Ulric B., and Fainman, Morton Z., to Bray Oil Company. Hydrocarbon hydraulic oil. 3,478,113, Cl. 260-671.

Brazener, Harry M., and Newman, Robert W., to Inventions, Inc., mesne. Method and apparatus for use in making honeycomb cores. 3,477,893, Cl. 156-197.

Brede, Ernst, to Continental Elektroindustrie A.G. Apparatus for measuring terrestrial gravity from a moving vehicle. 3,477,293, Cl. 073-382.

Breen, Henry D.: *See—*
Loomis, Russell M., and Breen, Henry D. 3,477,392.

Brennan, John F., to Universal Oil Products Company. Partial hydrogenation of conjugated diolefinic hydrocarbons. 3,478,123, Cl. 260-677.

Brichard, Edgard: *See—*
Henry, Georges, Brichard, Edgard, Marchand, Jean, and Bauduin, Albert 3,477,838.

Brilando, Frank P., to Schwinn Bicycle Company. Double plateau sprocket assembly. 3,477,303, Cl. 074-243.

Brill, Frederick W., and Weingarten, Morris R., to RCA Corporation. Method of cleaning stem leads for electron devices. 3,477,835, Cl. 065-032.

British Aircraft Corporation (Operating) Limited: *See—*
Lock, Stanley Anthony, 3,477,667.

British Drug House Limited, The: *See—*
Ellis, Bernard, Petrow, Vladimir, and Stanway, David Neil, 3,478,069.

British Welding Research Association: *See—*
Dawes, Christopher J., 3,478,190.

Brock, Randall D., 1/3 to Vitatoe, Welby, and 1/2 to Williams, Glen W. Door lock light. 3,478,199, Cl. 240-002.13

Bromer, Heinz, and Meinert, Norbert, to Leitz, Ernst, G.m.b.H. Heavy flint glasses. 3,477,863, Cl. 106-054.

Bronstein, Jesse B., Jr., to Commercial Solvents Corporation, mesne. Method of making polymethylolalkane mixtures. 3,478,115, Cl. 260-635.

Broser, Richard, to Accum-Matic Systems, Inc. Automatic accumulating down elevator. 3,477,560, Cl. 198-218.

Brouwer, Charles W., and Richter, Hans H., to Leesona Corporation. Storage device. 3,477,476, Cl. 139-122.

Brown, Cicero C., to Atlantic Refining Company, The. Remote underwater connector. 3,477,744, Cl. 285-018.

Brown, Harmon W., to Varian Associates. Linear scan readout for quantities which vary in proportion to the second or higher powers of applied scan field and mass spectrometers using same. 3,478,203, Cl. 250-041.9

Brown, Horace D.: *See—*
Sarett, Lewis H., and Brown, Horace D. 3,478,046.

Brown, Michael, and Dickie, Donald Landrine, to American Cyanamid Company. Container filling process. 3,477,192, Cl. 053-022.

Brown, Philip H., and Ellson, Lloyd W., to Inland Container Corporation. Pallet leg structure. 3,477,395, Cl. 108-051.

Brown, William Lewis, and Schmucker, Morton Lee, to Morrell, John, & Co. Process for improving the color of comminuted meat. 3,477,859, Cl. 099-159.

Brubaker, Wilson M., and Berry, Clifford E., deceased (by Berry, Jean R., executrix), to Bell & Howell Company, mesne. Mass spectrometer ion source having a laser to cause autoionization of gas. 3,478,204, Cl. 250-041.9

Bruce, Ronald G., to Continental Oil Company. Method and apparatus for continuously monitoring the progress of certain reactions. 3,478,111, Cl. 260-615.

Bruninga, Kenneth J., to Nelson, L. R., Mfg. Co., Inc. Sprinkler irrigation device with improved hose handling means and method of deploying the same preparatory to a sprinkler irrigation cycle. 3,477,643, Cl. 239-001.

Brunswick Corporation: *See—*
Satchell, Fred E., and Berry, Foster W., 3,477,364.
Satchell, Fred E., Rytina, Anton W., and Trier, Louis J., 3,477,721.
Szymanski, Richard, 3,477,719.

Bryant, Ellis H., Jr., to Audichron Company, The. Telephone announcement control to select message content for normal and overload subscriber conditions. 3,478,168, Cl. 179-006.

Bryant, Harold D., and Motorola, Inc. Frequency dividing system including transistor oscillator energized by pulses derived from wave to be divided. 3,478,225, Cl. 307-220.

Bucci, Giovanni, Simonazzi, Tonino, Ballini, Giuliano, and Portolani, Augusto, to Montecatini Edison S.p.A. Vulcanizable compositions. 3,477,985, Cl. 260-041.

Buchovecky, Kalman E., and Patton, Wilbur L., said Patton assor. to Du Pont de Nemours, E. I., and Company, and said Buchovecky assor. to Aluminum Company of America. Process for roll-compacting of metal powder with flange lubrication. 3,478,136, Cl. 264-111.

Buckerridge, Edward Thomas, Jones, Alan Victor, and Rayward, William Clifford. Electric circuit controllers incorporation time-switches. 3,478,181, Cl. 200-038.

Bucyrus-Erie Company: *See—*
Reischl, Karl E., 3,477,588.

Budz, Edward R., to Continental Can Company, Inc. Device for monitoring the operation of a jar capping machine. 3,477,197, Cl. 053-053.

Bue, Richard C., and Gutierrez, Julian, to Sico Incorporated. Multipurpose teaching unit. 3,477,760, Cl. 297-157.

Buensod-Stacey Corporation: *See—*
Warren, Robert M., Jr., 3,477,497.

Buff, Fred, Gross, Joseph Idadore, and Healy, Lawrence William, to Genset Corporation. Leather substitute composition. 3,477,898, Cl. 161-160.

Bundy, Wayne M., and Berberich, Joseph P., to Georgia Kaolin Company. Kaolin treatment. 3,477,809, Cl. 023-110.

Bunker-Ramo Corporation, The: *See—*
Chirumbolo, Joseph F., 3,478,302.
Chirumbolo, Joseph F., 3,478,305.
Schmitt, Karl-Friedrich, 3,478,296.
Smith, Charles W., 3,477,119.

Burdick Corporation, The: *See—*
Partridge, Leslie W., 3,477,421.

Burkart, Alan R., and Mudge, John H., to Aluminum Company of America. Continuous casting molten metal feed device. 3,477,494, Cl. 164-281.

Burlington Industries, Inc.: *See—*
Fillmore, Leland A., and Jenkins, Jack J., 3,477,256.

Burn, Patrick Marion, and Nevison, Ronald Arthur, to Australian Iron & Steel Pty. Limited. Simplified automatic charging system for blast furnaces. 3,477,529, Cl. 177-050.

Burnett, Henry J. Apparatus for heating fluid. 3,477,359, Cl. 099-252.

Burnhill, Michael Seth, to American Caduceus Industries, Inc., mesne. Intrauterine device, inserting mechanism therefor and method of inserting same. 3,477,430, Cl. 128-130.

Burns, Simon Pierce: *See—*
Lichtenwalter, Myrl, and Burns, Simon Pierce 3,477,919.

Burroughs Corporation: *See—*
Bacon, James R., 3,478,357.

Burroughs Wellcome & Co. (U. S. A.) Inc.: *See—*
Barrett, Paul Anthony, 3,478,035.

Burrows, Gregory John. Apparatus for cutting and delivering silage from stacks. 3,477,488, Cl. 146-070.

Burrus, Bill S., to Combustion Engineering, Inc. Surface to subsea guidance system. 3,477,236, Cl. 061-046.5

Bush, Richard W.: *See—*
Gregorian, Razmic S., and Bush, Richard W. 3,477,924.

Busing, Gerhard: *See—*
Soder, Alfons, and Busing, Gerhard 3,478,041.

Butler, John Mann, and Hathaway, Clayton E., Jr., to Monsanto Research Corporation. Protective coating. 3,477,869, Cl. 117-072.

Butz, Josef: *See—*
Graff, Roderich, Reichl, Karl Johann, Butz, Josef, and Pausch, Karl 3,477,894.

Buuck, Frederick A., Harden, Phillip L., and Thomas, Samuel M., Jr., to Bowmar Instrument Corporation. Stator assembly for electromagnetic indicating apparatus. 3,478,349, Cl. 340-347.

Cabot Corporation: *See—*
Albro, Henry H., 3,477,749.

Caetano, Edward. Balling gun for animals. 3,477,419, Cl. 124-027.

Caldwell, Roland B., to Ranco Incorporated. Liquid flow control valve mechanism. 3,477,498, Cl. 165-038.

Calton, Marion R., Oberle, Theodore L., and Weiss, Carl D., to Caterpillar Tractor Company. Welding of dispersion strengthened alloys. 3,477,117, Cl. 029-470.3

Calton, Marion R., and Weiss, Carl D., to Caterpillar Tractor Company. Welding high heat conductive materials. 3,477,116, Cl. 029-470.3

Calvano, Ferruccio C., to Mainar S.A. Industrial. Metering device. 3,477,616, Cl. 222-197.

Cameron Iron Works, Inc.: *See—*
Jones, Marvin R., and Baugh, Benton F., 3,477,526.

Cameron Machine Company: *See—*
Lyman, Merton C., 3,477,711.

Campbell, Alastair, and Roberts, Hugh Leithead, to Imperial Chemical Industries Limited. Manufacture of pyridine. 3,478,034, Cl. 260-290.

Campbell, David H., to Lockheed Aircraft Corporation. Supersonic inlet for jet engines. 3,477,455, Cl. 137-015.1

Campbell, Sidney Glenroy: *See—*
Harding, John, Placzek, Peter, and Campbell, Sidney Glenroy 3,477,352.

Canadian Ingersoll-Rand Company Limited: *See—*
Trollope, William G. A., 3,477,548.

Canavesi, Roberto: *See—*
Aglietti, Giancarlo, and Canavesi, Roberto 3,478,121.

Canrad Precision Industries, Inc.: *See—*
Feuer, Irving, 3,478,209.

Capvac Industries, Inc.: *See—*
Hulbert, Clarence E., Jr., 3,477,178.

Carini, Eugene P., to Energy Systems, Inc. Electric drive system. 3,477,536, Cl. 180-065.

Carithers, Val G.: *See—*
Armbrust, Bernard F., Jr., and Carithers, Val G. 3,477,865.

Carley, Donald R., to RCA Corporation. Strip-line power transistor package. 3,478,161, Cl. 174-052.

Carlisle Chemical Works, Inc.: *See—*
Weisfeld, Lewis B., 3,478,071.

Carlson, Ronald H., to Hooker Chemical Corporation. Sequestration of metal ions with hydroxyalkyl phosphine oxides. 3,477,953, Cl. 252-175.

Carlstedt, Ragnar L., to Kennametal Inc. Tire stud. 3,477,490, Cl. 152-210.

- Carp, Ralph W.: *See—*
  - Slavin, Michael, Emery, Raymen F., and Carp, Ralph W. 3,477,346.
- Carreira, Leonard M., and Tulagin, Vsevolod, to Xerox Corporation. Imaging process. 3,477,934, Cl. 204-181.
- Carrier Corporation: *See—*
  - Ashley, Carlyle M., 3,477,241.
- Carruthers, George R., to United States of America, Navy. Image converter for detecting electro- magnetic radiation especially in short wave lengths. 3,478,216, Cl. 250-213.
- Carson, Frank J.: *See—*
  - Oelke, Waldemar W., Carson, Frank J., Badger, Alfred E., and O'-Connell, Thomas B. 3,477,840.
- Carter, Ruth: *See—*
  - Carter, Uriel F., Kolb, Arthur F., and Kunath, Elmer M. 3,478,292.
- Carter, Uriel F., deceased (by Carter, Ruth, administratrix), Kolb, Arthur F., and Kunath, Elmer M., to Cutler-Hammer, Inc. Electrical circuit overload protective device. 3,478,292, Cl. 337-151.
- Case, J. I., Company: *See—*
  - Wyatt, Harold M., 3,477,535.
- Castagna, Eugene G., to Chevron Research Company. Poly-alpha-olefin iron-nickel alloy mixtures. 3,477,961, Cl. 252-062.54
- Castonguay, Roger A.: *See—*
  - Bablouzian, Leon M., Castonguay, Roger A., and Wenckus, Joseph F. 3,477,644.
- Castro, Fernando J., to People of Puerto Rico, The. Shield for protecting the hand and holding the stalk during cane cutting and like operations. 3,477,756, Cl. 294-016.
- Caterpillar Tractor Company: *See—*
  - Calton, Marion R., and Weiss, Carl D., 3,477,116.
  - Calton, Marion R., Oberle, Theodore L., and Weiss, Carl D., 3,477,117.
  - Cryder, John R., Haak, Willard J., Hufeld, John L., Kinney, Lionel L., Lohbauer, Kenneth R., Marsden, Howard A., Matthews, Ralph W., Norick, William B., Stewart, Glen E., Vanzandt, Rollin P., and Winters, Frank H., 3,477,225.
  - Fuzzell, Joe E., Thompson, John C., and Johnson, John L., Jr., 3,477,607.
  - Gardner, Charles W., and Barbee, Gail G., 3,477,601.
  - Kress, Ralph H., and Kostas, James M., 3,477,547.
  - Martin, Eugene R., and Morton, David I., 3,477,115.
  - McMichael, James W., Jr., 3,477,342.
  - Peterson, Robert A., 3,477,602.
- Cecil, Tom A., Gerstenmier, Harold J., Hamill, Herbert R., and Puskar, Victor, to Engelhard Minerals & Chemicals Corporation. Method for the simultaneous concentration of constituents of solid mixtures in liquid suspension. 3,477,565, Cl. 209-005.
- Celanese Corporation: *See—*
  - Price, Billy Ray, St. Pierre, Richard Ernest, and Lloyd, Neil E., 3,477,445.
  - Sturkey, William C., 3,477,806.
- Celotex Corporation, The: *See—*
  - Barshefsky, Gustave, and Goldstein, Eugene E., 3,478,137.
- Century Geophysical Corporation: *See—*
  - Wilcox, Stanley W., 3,477,724.
- Century Laboratories, Inc.: *See—*
  - Sloane, Nathan H., 3,477,910.
  - Sloane, Nathan H., 3,477,911.
  - Sloane, Nathan H., 3,477,912.
  - Sloane, Nathan H., 3,477,913.
- Cerro Corporation: *See—*
  - Coltrinari, Enzo L., 3,477,928.
- Chadwick-Helmuth Electronics, Inc.: *See—*
  - Helmuth, James G., 3,477,281.
- Chamberlain, George: *See—*
  - Tetzlaff, Clarence C., and Chamberlain, George 3,477,106.
- Chambers, Charles D., to Valve Corporation of America. Method of pressurizing a dispensing container. 3,477,195, Cl. 053-037.
- Chandos, Laurence R. Display banners. 3,477,158, Cl. 040-128.
- Chang, Richard Shih-Teng: *See—*
  - Ryan, John W., Echterling, Eugene J., Golden, Michael E., Goetz, John H., and Chang, Richard Shih-Teng 3,477,140.
- Chapman, Charles C., to Phillips Petroleum Company. HF alkylation acid rerun system. 3,478,125, Cl. 260-683.48
- Charman, Walter M., Jr., and Middaugh, George J., Jr., to Olglebay Norton Company. Method of making a refractory hot top panel insert. 3,477,493, Cl. 164-007.
- Chatelon, Andre Edouard Joseph, to International Standard Electric Corporation. Reduced time transmission system. 3,478,163, Cl. 178-006.
- Check, Mathias M., to Eaton Yale & Towne, Inc. Push-pull latch. 3,477,754, Cl. 292-165.
- Chemical Construction Corporation: *See—*
  - Cook, Lucien H., and Atkin, Sydney, 3,477,842.
- Chemische Werke Albert: *See—*
  - Soder, Alfons, and Busing, Gerhard, 3,478,041.
- Chemtrox Corporation: *See—*
  - Paull, Morris, 3,477,780.
- Chepos Zavody Chemickeho a Potrovinarskeho Strojirenstvi, Oborovy Podnik: *See—*
  - Pech, Vaclav, Vebr, Jan, and Spura, Richard, 3,477,100.
- Chevron Research Company: *See—*
  - Castagna, Eugene G., 3,477,961.
  - McCaskey, Bob L., Kohn, Gustave K., and Moore, Joseph E., 3,478,052.
  - Walstrom, John E., 3,477,696.
- Chicago Bridge and Iron Company: *See—*
  - Dockendorff, Jay D., Chirico, Anthony N., and Sanfilippo, Bruce P., 3,477,829.
- Chicago Rawhide Manufacturing Company: *See—*
  - Szcupak, Peter, and Andersen, Kare, 3,477,730.
- Chihara, Kanichiro: *See—*
  - Ando, Ryo, Shimotsuma, Teruo, and Chihara, Kanichiro 3,477,701.
- Chirico, Anthony N.: *See—*
  - Dockendorff, Jay D., Chirico, Anthony N., and Sanfilippo, Bruce P. 3,477,829.
- Chirumbolo, Joseph F., to Bunker-Ramo Corporation, The. Electrical connector. 3,478,302, Cl. 339-090.
- Chirumbolo, Joseph F., to Bunker-Ramo Corporation, The. Electrical connector. 3,478,305, Cl. 339-217.
- Chugai Seiyaku Kabushiki Kaisha and Kyowa Hokko Co. Ltd.: *See—*
  - Okamoto, Hajime, and Koshimura, Saburo, 3,477,914.
- Ciba Corporation: *See—*
  - Jeger, Oskar, Schaffner, Kurt, and Wehrli, Hans Ueli, 3,478,068.
- Ciba Limited: *See—*
  - Altermatt, Hans, 3,478,024.
  - Artz, Klaus, 3,478,011.
  - Arya, Vishwa Prakash, 3,478,032.
- Ciccotto, Domenick. Cathode ray tube having image-forming elements in displaced, parallel planes. 3,478,242, Cl. 313-092.
- Cinatl, Fred J., and Lehman, Lewis M., to Square D Company. Electrical connector assembly for the vertical bus bars in a control center cabinet section. 3,478,299, Cl. 339-064.
- Cincinnati Milling-Machine Co., The: *See—*
  - Soukup, Victor G., and Horst, Raymond W., 3,477,900.
- Cities Service Oil Company: *See—*
  - Revukas, Anthony J., 3,478,088.
- Cities Service Research and Development Company: *See—*
  - Van Driesen, Roger P., 3,477,944.
- Clark Equipment Company: *See—*
  - De Pung, Gary L., and Haddock, Louis A., Jr., 3,477,539.
- Clark, Ralph J.: *See—*
  - Johnston, Raymond, Moran, Edwin G., and Clark, Ralph J. 3,477,413.
- Clark, Robert L.: *See—*
  - Rogers, Edward F., Clark, Robert L., and Patchett, Arthur A. 3,478,084.
- Clark, Theodore V. Miniaturized table tennis game with captive ball. 3,477,717, Cl. 273-030.
- Clark, Thomas C. Slide binder. 3,477,160, Cl. 040-152.
- Clayson N.V.: *See—*
  - DeCoene, Frans J., 3,477,599.
- Clayton, Colin G., and Spackman, Ramon. Radioisotope injection device for measurement of fluid flow. 3,477,461, Cl. 137-599.1
- Clement, Pierre, Gombert, Jean-Marie, and Petit, Rene, to Eastman Kodak Company. Developing method and apparatus for thin layer chromatography. 3,477,950, Cl. 210-031.
- Clements, Francis J., to General Electric Company. Support means for a food waste disposer. 3,477,747, Cl. 285-158.
- Clemson Industries, Inc.: *See—*
  - Mobley, George A., 3,477,193.
- Cleveland Trencher Company, The: *See—*
  - Linsay, Michael, 3,477,766.
- Clough, Donald Keighley, to Sandoz Ltd., also known as Sandoz A.G. Process for dyeing or printing of polyamide fibres. 3,477,800, Cl. 008-054.
- Coastal Dynamics Corporation: *See—*
  - Krantz, John Daniel, 3,477,761.
- Coberley, Daniel A.: *See—*
  - Adamson, Robert G., Angell, Charles H., Roote, Jay C., Hutchison, Joel F., and Coberley, Daniel A. 3,477,369.
- Cochran, Neal P., to United States of America, Interior. Hydrocarbon fuels from coal or any carbonaceous material. 3,477,942, Cl. 208-010.
- Coe, Everett L., Jr.: *See—*
  - Archer, William E., Coe, Everett L., Jr., and Reed, Leo O. 3,477,124.
- Coffee-Mat Corporation: *See—*
  - Herman, David, and Small, Sollie W., 3,478,238.
- Coffman, Leroy. Fertilizer spreader attachment for rotary power mower. 3,477,212, Cl. 056-025.4
- Cofoid, Robert D., to General Time Corporation. Valve-switch assembly for use in intravenous feeding. 3,478,184, Cl. 200-084.
- Colburn, Jay T., to Armour and Company. Margarine composition and preparation thereof. 3,477,857, Cl. 099-123.
- Colchester, John Edward, and Entwisle, John Hubert, to Imperial Chemical Industries Limited. Production of N:N-disubstituted tetrahydro- 4:4'-bipyridyl with the use of a water immiscible solvent in a reduction process. 3,478,042, Cl. 260-296.
- Colgate-Palmolive Company: *See—*
  - Suh, John T., and Skorcz, Joseph A., 3,478,058.
  - Suh, John T., and Skorcz, Joseph A., 3,478,059.
- Collaris, Maria Antonius Alphonsus Andreas: *See—*
  - Bakker, Martinus Antonius Maria, Collaris, Maria Antonius Alphonsus Andreas, and Duran, Johannes Christiaan 3,478,243.

- Collins Radio Company: *See—*
  - Lundgreen, Michael W., Tuthill, Edward G., and Majerus, John B., 3,478,355.
- Colorado Video Incorporated: *See—*
  - Southworth, Glen R., 3,478,164.
- Colton, Douglas Roy, to Northern Electric Company Limited. Method and apparatus for producing doped, monocrystalline semiconductor materials. 3,477,959, Cl. 252-062.3
- Coltrinari, Enzo L., to Cerro Corporation. Process for the recovery of metals. 3,477,928, Cl. 204-123.
- Columbian Bronze Corporation: *See—*
  - Abbott, Douglas T., and Thompson, William C., 3,477,794.
- Colyer, Duard B., and Fleming, Robert B., to General Electric Company. Porous metal and plastic heat exchanger. 3,477,504, Cl. 165-164.
- Comas, Jorge Rectoret. Pattern control apparatus for a knitting machine. 3,477,254, Cl. 066-069.
- Combs, Ollah: *See—*
  - Trimble, Cebern B., Mo, Frank S. C., and Combs, Ollah 3,478,341.
- Combustion Engineering, Inc.: *See—*
  - Burrus, Bill S., 3,477,236.
  - Freiday, Jay H., 3,477,823.
- Comey, Kenneth R., Jr., and Durst, George, deceased (by Mc Intyre, John W. Henry, Edmund F., administrators), to Texas Instruments, Incorporated. Silver base alloy for making electrical contacts. 3,477,845, Cl. 075-173.
- Commercial Solvents Corporation: *See—*
  - Bronstein, Jesse B., Jr., 3,478,115.
- Compagnia Italiana Westinghouse Freni E Segnali: *See—*
  - Di Bartolomeo, Giacomo, 3,477,743.
- Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie: *See—*
  - Massoubre, Jean-Marie, 3,477,968.
- Concannon, Thomas P., to Du Pont de Nemours, E. I., and Company. Pigment dispersion comprising an iron-containing pigment or a nickel-containing pigment dispersed in a liquid. 3,477,975, Cl. 260-022.
- Conch International Methane Limited: *See—*
  - Schwendtner, Alfred H., 3,477,606.
- Cone, Howard M., Jr., to Pan American World Airways, Inc. Aircraft command altitude guidance apparatus. 3,478,310, Cl. 340-027.
- Conklin, Harold A., Jr., to Baldwin, D. H., Company. Forward termination means for the speaking length of piano strings and the like. 3,477,331, Cl. 084-215.
- Conn, C. G., Ltd.: *See—*
  - Bert, Paul A., 3,477,330.
- Conrad, Richard R.: *See—*
  - Zocholl, Stanley E., and Conrad, Richard R. 3,478,250.
- Conrad, Thomas Wesley, and Mclver, William, to International Telephone and Telegraph Corporation. Low insertion force cam-actuated printed circuit board connector. 3,478,301, Cl. 339-075.
- Continental Can Company, Inc.: *See—*
  - Budz, Edward R., 3,477,197.
- Continental Electronics Manufacturing Company: *See—*
  - Enemark, Robert B., and Tsao, Carson K. H., 3,478,269.
- Continental Elektroindustrie A.G.: *See—*
  - Brede, Ernst, 3,477,293.
- Continental Motors Corporation: *See—*
  - Johnston, Raymond, Moran, Edwin G., and Clark, Ralph J., 3,477,413.
- Continental Oil Company: *See—*
  - Bruce, Ronald G., 3,478,111.
- Controls Company of America: *See—*
  - Fairley, Richard K., and McCarty, Lourdes V., 3,477,641.
- Converse, Keith C. Depth control apparatus. 3,477,519, Cl. 172-315.
- Cook, Lucien H., and Atkin, Sydney, to Chemical Construction Corporation. Manufacture of free flowing fertilizer product by coating granules with urea- formaldehyde from an alkaline solution. 3,477,842, Cl. 071-028.
- Cooper, Barry A.: *See—*
  - Wharton, Willard H., and Cooper, Barry A. 3,478,131.
- Cooper, Irving B., Jr., to Industrial Instrumentations, Inc. Data storage circuit utilizing a controlled rectifier. 3,478,330, Cl. 340-173.
- Cooper, Jamexs, King, Lewis E., and MacSorley, Olin L., to International Business Machines Corporation. Variable priority storage accessing control. 3,478,321, Cl. 340-172.5
- Corby, Peter J. S., to Rondel Limited. Trousers press. 3,477,154, Cl. 038-071.
- Corn Products Company: *See—*
  - Freeman, Jere E., 3,477,855.
  - Wells, Phillip R., and Melnick, Daniel, 3,477,858.
- Cornell, Dudley E., III, and O'Connell, Robert A., to Teaching Machines, Inc. Multiple choice teaching device. 3,477,142, Cl. 035-009.
- Corrsin, Lester, to U.S. Plywood-Champion Papers Inc. Heat sealed thermoplastic package. 3,477,194, Cl. 053-033.
- Corsepius, Horst: *See—*
  - Bende, Friedrich, Corsepius, Horst, and Hansel, Werner 3,478,102.
- Cosenza, Frank J.: *See—*
  - Boyd, Thomas R., Cosenza, Frank J., and Yamamoto, Albert K. 3,477,333.
- Cossor, A. C., Limited: *See—*
  - Gay, Frank Munro, 3,477,880.
  - Smith, Charles Arthur, 3,478,282.
- Costanzo, Kathryn N. Animal deodorizing collar attachment. 3,477,409, Cl. 119-106.
- Couleur, John F., Gudenschwager, Philip F., Shelly, William A., and Bahrs, David L., to General Electric Company. Data processing unit for providing command selection by externals apparatus. 3,478,320, Cl. 340-172.5
- Couleur, John F., and Ruth, Richard L., to General Electric Company. Data processing system including means for detecting illegal actions and generating codes in response thereto. 3,478,324, Cl. 340-172.5
- Coulman, William J. T., to Lubrizol Corporation, The. Method of and composition for preventing 'white rust' formation. 3,477,882, Cl. 148-006.16
- Court, Patrick R. J.: *See—*
  - Reiter, Abraham M., and Court, Patrick R. J. 3,478,166.
- Courtaulds Limited: *See—*
  - Baker, Bernard Stuart, 3,477,286.
  - Hawtin, Selwyn George, Smith, David Roger, and Field, Dennis Ronald, 3,477,218.
- Coviello, Gino J., to Sylvania Electric Products, Inc. Suppression of strong interfering signals in a radio receiver. 3,478,268, Cl. 325-065.
- Cox, Allan: *See—*
  - Smith, Lloyd B.,, Guinn, John T., Jr., and Cox, Allan 3,477,111.
- Crabtree, Kenneth L., to Keyes Fibre Company. Molded container positioner. 3,477,564, Cl. 206-065.
- Cragoe, Edward J., Jr.: *See—*
  - Sprague, James M., and Cragoe, Edward J., Jr. 3,478,021.
- Cragoe, Edward J., Jr., to Merck & Co., Inc.Preparation of [4-(2-methylenealkanoyl)- phenoxy]alkanoic acids. 3,478,085, Cl. 260-473.
- Cranage, Bidwell Chapman, to Stile-Craft Manufactures, Inc. Coupler assembly. 3,477,105, Cl. 024-230.
- Crawford, James D.: *See—*
  - Wuellner, Louis E., Stark, Jack L., and Crawford, James D. 3,478,218.
- Crestwave Offshore Services, Inc.: *See—*
  - Branham, Donald R., Selfe, Richard J., and Hester, Ray W., Jr., 3,477,235.
- Crites, Lucile Wells: *See—*
  - Crites, Virgil C., 3,477,930.
- Crites, Virgil C., to Crites, Lucile Wells. Method and system for preventing electrolytic corrosion of pipes. 3,477,930, Cl. 204-147.
- Cross, Alexander D.: *See—*
  - Beard, Colin C., and Cross, Alexander D. 3,478,066.
- Crovetti, Aldo J.: *See—*
  - Von Esch, Anne Mary, and Crovetti, Aldo J. 3,478,049.
- Crowley, Francis X. Tank banding apparatus. 3,477,652, Cl. 242-007.21
- Crumley, Harold W. Method and apparatus for making balls from rod stock. 3,477,267, Cl. 072-185.
- Cruse, Lee H., to Foster Manufacturing Co., Inc. Fluid line coupling. 3,477,688, Cl. 251-149.9
- Cryder, John R., Haak, Willard J., Hufeld, John L., Kinney, Lionel L., Lohbauer, Kenneth R., Marsden, Howard A., Matthews, Ralph W., Norick, William B., Stewart, Glen E., Vanzandt, Rollin P., and Winters, Frank H., to Caterpillar Tractor Company. Hydrostatic transmission control system. 3,477,225, Cl. 060-019.8
- CSF-Compagnie Generale de Telegraphie Sans Fil: *See—*
  - Salmon, Jacques A., 3,478,359.
  - Trigon, Roland, 3,478,358.
- CTP Industries Inc.: *See—*
  - Kamins, Seymour, and Rosenberg, Norman, 3,477,634.
- Cudmore, Patrick J. Rocking capsule. 3,477,713, Cl. 272-033.
- Culver, Clyde C., to General Motors Corporation. Tractor track shoe. 3,477,768, Cl. 305-054.
- Culver, Irven H., to Southwestern Industries, Inc. Constant velocity universal joint. 3,477,249, Cl. 064-021.
- Curren, John L. Domestic hot water generator. 3,477,503, Cl. 165-154.
- Curtis Manufacturing Company: *See—*
  - Dayson, Arthur, 3,477,343.
- Cutler-Hammer, Inc.: *See—*
  - Carter, Uriel F., Kolb, Arthur F., and Kunath, Elmer M., 3,478,292.
  - Hanson, James R., and Kolb, Arthur F., 3,478,179.
  - Hubbard, Charles J., 3,477,789.
  - Hyer, Frank S., and Tolan, Peter J., 3,477,533.
- CVI Corporation: *See—*
  - Hood, Charles B., Jr., and Simons, Ira W., 3,477,434.
- Cyba, Henryk A., to Universal Oil Products Company. Sec.-alkyl- or cycloalkyl-alkoxyalkylamines. 3,478,096, Cl. 260-563.
- Czerniewicz, John F. Driven cutting tool. 3,477,481, Cl. 144-144.
- Czingula, Janos. Automobile parking accident alarm system. 3,478,311, Cl. 340-051.
- Dachtler, Emil. Power operated clothes press. 3,477,153, Cl. 038-041.
- Dagiel, Richard T., to Symons Mfg. Company. Concrete form panel with snap-in facing. 3,477,684, Cl. 249-189.
- Dahl, Ernest A., Jr. File container assembly. 3,477,567, Cl. 209-111.8
- Dai Nihon Bungu Kabushiki Kaisha: *See—*
  - Yamashita, Nagahiro, 3,477,791.
- Dalberg, Herbert: *See—*
  - Dalberg, Le Roy E., and Dalberg, Herbert 3,477,649.

- Dalberg, Le Roy E., and Dalberg, Herbert. Solid waste reclaiming method and system. 3,477,649, Cl. 241-024.
- Dale, Thomas L. Method and apparatus for renewing used or worn windshield wiper blades. 3,477,179, Cl. 051-034.
- Damgard-Iversen, Jorgen: *See—*
  - Repsdorph, Inger, Kroyer, Karl Kristian Kobs, and Damgard-Iversen, Jorgen 3,477,874.
- Dana Laboratories, Inc.: *See—*
  - Walker, Norman C., 3,478,275.
- Danico, Henry F., and Wilhelmi, Julius B., to United-Carr Incorporated, mesne. Retractable caster glide. 3,477,090, Cl. 016-044.
- Daniele, Donald T., to Diamond International Corporation. Combined dry and finishing apparatus for molded pulp articles. 3,477,908, Cl. 162-392.
- Daniels, Wiley E., to GAF Corporation. Emulsion polymerization of vinyl acetate with vinyl alkyl ethers. 3,477,980, Cl. 260-029.6
- Dankert, Gerhard: *See—*
  - Kocher, Ernst-Ulrich, Wagner, Kuno, Von Der Emden, Wolfgang, and Dankert, Gerhard 3,477,992.
- Dante, Mark F., and Parry, Harvey L., to Shell Oil Company. Process for reacting a phenol with an epoxy compound and resulting products. 3,477,990, Cl. 260-047.
- Dart Industries Inc.: *See—*
  - Hostetler, Donald E., 3,478,130.
  - Mangel, John J., 3,477,613.
- Dauser, William C. Electrical connector. 3,478,303, Cl. 339-095.
- Davidson, Arthur R.: *See—*
  - Lamb, Frank G., and Davidson, Arthur R. 3,477,242.
- Davidson, Richard M., to Bell & Howell Company. Notched card for teaching machine. 3,477,141, Cl. 035-009.
- Davis, Allan C., to Meyercord Co., The. Packer assembly. 3,477,198, Cl. 053-055.
- Davis, Harry E., and Pfeiffer, Fred B. Method and apparatus for packaging drinking straws. 3,477,191, Cl. 053-014.
- Davis, Pauls, and Vogt, Herwart C., to Wyandotte Chemicals Corporation. Homopolymerization of poly-halogenous alkylene oxides. 3,478,110, Cl. 260-615.
- Davis, William R.: *See—*
  - Martel, Richard A., Davis, William R., and Sutton, Carl E. 3,478,217.
- Dawes, Christopher J., to British Welding Research Association. Parallel-gap welding electrode with interposed heat sinks. 3,478,190, Cl. 219-086.
- Dayson, Arthur, to Curtis Manufacturing Company. Lift mechanism. 3,477,343, Cl. 091-004.
- Dayton Sure-Grip and Shore Company, The: *See—*
  - Smith, Lloyd B.,, Guinn, John T., Jr., and Cox, Allan, 3,477,111.
- Decker, Hanns, Stockmann, Helmut, and Hurtmanns, Heinz, to Klockner-Humboldt-Deutz A.G. Gyratory or cone crusher with a crusher cone including a core and a mantle. 3,477,651, Cl. 241-293.
- DeCoene, Frans J., to Clayson N.V. Unloading device for combines. 3,477,599, Cl. 214-519.
- Deering Milliken Research Corporation: *See—*
  - Gagarine, Dmitry M., Habib, Emile E., and La Fleur, Kermit S., 3,477,805.
- De Falco, Ralph J. Diagnostic test for presence of galactose. 3,477,817, Cl. 023-230.
- De Fries, Robert M.: *See—*
  - Yeh, Tsu-Hsing, and De Fries, Robert M. 3,478,253.
- De Hoff, Ronald L., and Grieco, George D., to Vanderbilt, R. T., Company, Inc. Inhibition of crystallization of digylcidyl ether of bisphenol A. 3,477,981, Cl. 260-031.2
- de Meo, Attilio A.: *See—*
  - Lofrisco, Leonard A., de Meo, Attilio A., and Walter, Gerard O. 3,478,254.
- Dempsey, James Joseph, and Lee, Chi-Chang, to Du Pont de Nemours, E. I., and Company. Process for treating film-fibril sheets. 3,478,141, Cl. 264-284.
- Dempster Industries, Inc.: *See—*
  - Hlinka, Edward A., 3,477,384.
  - Tangeman, Lawrence N., and Williams, Warren W., 3,477,385.
- Densen, Paul: *See—*
  - Greene, Abbot, and Densen, Paul 3,477,633.
- De Pung, Gary L., and Haddock, Louis A., Jr., to Clark Equipment Company. Safety device for a vehicle. 3,477,539, Cl. 180-091.
- De Rudnay, Andre. Process for the recording and reproducing of information data on recording carriers, and recording carrier therefor. 3,478,329, Cl. 340-173.
- de Ruyter van Steveninck, Albert W., and Beevendorp, Johannes, to Shell Oil Company. Process for the preparation of ester resins. 3,477,974, Cl. 260-018.
- Dervan, James T., III, to International Business Machines Corporation. System for automatically testing computer memories. 3,478,286, Cl. 235-153.
- Deutsche Tafelglas Aktiengesellschaft: *See—*
  - Graff, Roderich, Reichl, Karl Johann, Butz, Josef, and Pausch, Karl, 3,477,894.
- DeVito, Albert P.: *See—*
  - Aaron, Jack, 3,477,089.
- DeVito, Charles P.: *See—*
  - Aaron, Jack, 3,477,089.
- Dhein, Rolf: *See—*
  - Schnell, Hermann, Dhein, Rolf, Raichle, Karl, and Gebnauer, Herbert 3,477,977.
- Diamond International Corporation: *See—*
  - Daniele, Donald T., 3,477,908.
- Diamond Shamrock Corporation: *See—*
  - Lipowski, Stanley A., 3,477,801.
- Di Bartolomeo, Giacomo, to Compagnia Italiana Westinghouse Freni E Segnali. Fluid pressure coupling devices. 3,477,743, Cl. 285-012.
- Di Cicco, Peter A. Vehicle loading bin. 3,477,594, Cl. 214-041.
- Dickie, Donald Landrine: *See—*
  - Brown, Michael, and Dickie, Donald Landrine 3,477,192.
- Dietrich, Walter, and Schrempp, Winfried, to International Standard Electric Corporation. Automatic character recognition arrangement. 3,478,315, Cl. 340-146.3
- Dijkstra, Tette J., and Vogelzang, Edward J. W., to Shell Oil Company. Process for flame proofing polyepoxide and resulting products. 3,477,982, Cl. 260-027.
- Dillman, Norman G., to North American Rockwell Corporation. Photodetector responsive to light intensity in different spectral bands. 3,478,214, Cl. 250-211.
- Dillon, Rosemary A. Sanitary napkin. 3,477,433, Cl. 128-290.
- Dinerman, David. Vehicle repair device. 3,477,269, Cl. 072-292.
- Divine, Dwight, III, to International Business Machines Corporation. Range rate radar. 3,478,356, Cl. 343-008.
- Dix, Willard A.: *See—*
  - Odermann, Charles R., and Dix, Willard A. 3,477,082.
- Djedda, Fouad H., to Jedso Industries, Inc. Combined water pistol and target device. 3,477,723, Cl. 273-101.
- Djokic, Slobodan, and Tamburasov, Zrinka, to PLIUA, Pharmaceutical and Chemical Works. Erytromycin oxime and 9-amino-3-0-clandinosyl-5- 0-desosaminyl-6,11,12-trihydroxy-2,4,6,8,10,12- hexamethyl-pentadecane-olide. 3,478,014, Cl. 260-210.
- Dobbs, Lowernze D.: *See—*
  - Hassell, Clark E., and Dobbs, Lowernze D. 3,477,598.
- Dockendorff, Jay D., Chirico, Anthony N., and Sanfilippo, Bruce P., to Chicago Bridge and Iron Company. Sodium hydroxide monohydrate crystallization process. 3,477,829, Cl. 023-302.
- Dokos, Sophocles J.: *See—*
  - Jepson, Ivar, Dokos, Sophocles J., and Bielak, Sigmund H. 3,477,263.
- Dolding, Walter R., to American Chain & Cable Company, Inc., mesne. Accumulating conveyor system. 3,477,390, Cl. 104-172.
- Domin, Bernhard, to Plate, Dr., GmbH Chemische Fabrik. Sieve for paper-making machines. 3,477,477, Cl. 139-383.
- Domtar Limited: *See—*
  - Lapointe, Joseph Andrew, 3,477,483.
  - Lapointe, Joseph Andrew, 3,477,484.
- Donahue, Gary M., to Reynolds Metals Company. Dispensing container means and blanks for making same. 3,477,632, Cl. 229-017.
- Donald, Harold J.: *See—*
  - Lee, Robert E., and Donald, Harold J. 3,477,099.
- Donnelley, Reuben H., Corporation, The: *See—*
  - Schmollinger, Richard G., 3,477,528.
- Dorfner, Konrad: *See—*
  - Adam, Karl, Haarer, Erich, and Dorfner, Konrad 3,478,112.
- Doss, Richard C., to Phillips Petroleum Company. High strength epoxy resins prepared from epichlorohydrin and xylylene glycols. 3,477,966, Cl. 260-002.
- Dotto, Gianni A., to Mallory, P. R., & Co., Inc. Fluid level control system. 3,477,460, Cl. 137-392.
- Doty, Myrle M. Saw blade. 3,477,479, Cl. 143-131.
- Doutt, Kingsley A. Valve. 3,477,687, Cl. 251-100.
- Dow Chemical Company, The: *See—*
  - Braeuninger, Karl F., and Glaza, Gordon K., 3,477,350.
  - Heinert, Dietrich H., 3,478,090.
  - Huml, James O., and Layne, Gilbert S., 3,477,812.
  - Juckniess, Paul R., and Blue, Robert D., 3,477,876.
  - Ledbetter, Harvey D., 3,478,008.
  - Lee, Robert E., and Donald, Harold J., 3,477,099.
  - Majewski, Theodore E., 3,477,451.
  - Martin, Allan D., and Houvener, Irving S., 3,478,139.
  - McClendon, Jack C., 3,478,003.
  - Rigterink, Raymond H., 3,478,148.
  - Sewell, Sewood, and Katzer, Melvin F., 3,477,467.
  - Smith, Vernon J., and Webster, Charles R., 3,477,698.
  - Thurman, Carl C., Jr., 3,478,017.
  - Wharton, Willard H., and Cooper, Barry A., 3,478,131.
  - Zingg, Warren M., 3,477,758.
- Dow Corning Corporation: *See—*
  - Atwell, William H., 3,478,078.
  - Atwell, William H., 3,478,079.
  - Keil, Joseph W., 3,477,901.
  - Kim, Yung Ki, and Pierce, Ogden R., 3,478,076.
- Dowty Seals Limited: *See—*
  - Hillier, Edward F. H. B., 3,477,867.
- Doyle, Peter, and Wylie, Alastair Graham, to Imperial Chemical Industries Limited. Process for making dl-2,3,5,6-tetrahydro-6- phenylimidazo[2,1-β]thiazole. 3,478,047, Cl. 260-306.7
- Dravo Corporation: *See—*
  - Mobley, Loreley Spencer, 3,477,705.
- Drayer, William L., to General Motors Corporation. Metering means. 3,477,699, Cl. 261-036.
- Drexler, Raymon S. Flag holder. 3,477,161, Cl. 040-218.
- Dryden Chemicals Limited: *See—*
  - Kircher, Morton S., 3,477,938.
  - Kircher, Morton S., 3,477,939.

- Dubach, Paul, to Heberlein & Co. AG. Apparatus for testing burst resistance and dome elasticity of sheet material. 3,477,287, Cl. 073-102.
- Duer, Morris J., to General Motors Corporation. Limited slip differential with antichatter clutch. 3,477,312, Cl. 074-711.
- Dulait, Jean Eugene Julien. Soot blowing devices. 3,477,085, Cl. 015-317.
- D'Ulisse, Lucille:*See—*
  - D'Ulisse, William, and D'Ulisse, Lucille 3,477,453.
- D'Ulisse, William, and D'Ulisse, Lucille. Net adaptor for converting umbrella to shelter from insects. 3,477,453, Cl. 135-002.
- Duncan, Glen R., and Wertz, William H., to Litton Systems, Inc. Time slot generator. 3,478,273, Cl. 328-063.
- Dunlap, Charles K., Jr., Johnson, Walter E., and Harper, William M., to Sonoco Products Company. Combination pallet and container. 3,477,631, Cl. 229-014.
- Dunn, Joseph M.: *See—*
  - Kent, Robert L., Badessa, Rosario S., Barus, Carl, Dunn, Joseph M., Glaser, Raymond Arthur, and Johnson, Leonard B. 3,477,666.
- DuPont, Anthony W., Jr.: *See—*
  - Adams, Elizabeth F., and DuPont, Anthony W., Jr. 3,477,444.
- Du Pont de Nemours, E. I., and Company: *See—*
  - Alsup, Richard Glenn, and Leverett, Glenn Frederick, 3,477,993.
  - Barton, Jerry M., 3,478,072.
  - Bauer, Albert W., and Gorski, Robert A., 3,477,952.
  - Beeman, Robert H., 3,477,970.
  - Concannon, Thomas P., 3,477,975.
  - Dempsey, James Joseph, and Lee, Chi-Chang, 3,478,141.
  - Gale, David M., 3,478,100.
  - Knoth, Walter H., Jr., 3,478,098.
  - Parker, Fred W., 3,477,969.
  - Schweitzer, Carl Earle, and Setterquist, Robert Alton, 3,477,994.
  - Smeltz, Kenneth C., 3,478,116.
  - Troth, Henry Mc Cardell, Jr., 3,477,103.
  - Buchovecky, Kalman E., and Patton, Wilbur L., 3,478,136.
- Dura Corporation: *See—*
  - Shelhart, Robert E., 3,477,378.
- Durametallic Corporation: *See—*
  - Hershey, Lowell E., 3,477,729.
- Duran, Johannes Christiaan: *See—*
  - Bakker, Martinus Antonius Maria, Collaris, Maria Antonius Alphonsus Andreas, and Duran, Johannes Christiaan 3,478,243.
- Durnan, William E., to Auto Research Corporation. Lubricant distribution system. 3,477,545, Cl. 184-006.
- Durst, George: *See—*
  - Comey, Kenneth R., Jr., and Durst, George 3,477,845.
- Dyckerhoff & Widmann Kommanditgesellschaft: *See—*
  - Finsterwalder, Ulrich, and Finsterwalder, Klemens, 3,477,080.
- Dye, Cloyde G.: *See—*
  - Allen, Edward M., Dye, Cloyde G., and Smrdel, Joseph A. 3,477,562.
- Dyna-Med, Inc.: *See—*
  - Hare, Glenn F., 3,477,428.
- Dynamics Corporation of America: *See—*
  - Massa, Frank, Jr., 3,478,309.
- Dyson, Cyril W. C.: *See—*
  - Robertson, Gavin W. E., and Dyson, Cyril W. C. 3,477,478.
- E-Z Mills Inc.: *See—*
  - Towslee, Harold E., Jr., 3,477,257.
- Eagle Rubber Co., Inc.: *See—*
  - Randolph, Clarence L., 3,478,132.
- Easco Leasing Corporation: *See—*
  - Townsend, Edwin F., and Young, Stanley C., 3,477,896.
- Eastman Kodak Company: *See—*
  - Allentoff, Norman, and Fogler, Henry Harrison, 3,477,852.
  - Becker, Richard W., 3,477,849.
  - Becquerel, Georges Paul Marie, 3,477,847.
  - Clement, Pierre, Gombert, Jean-Marie, and Petit, Rene, 3,477,950.
  - Hagemeyer, Hugh J., Jr., and Edwards, Marvin B., 3,478,128.
  - McConnell, Wayne V., 3,478,109.
  - Price, William H., 3,477,776.
  - Rowley, Martin E., 3,478,016.
  - Snow, Richard W., and Wilt, Chester C., 3,477,926.
- Eaton Yale & Towne, Inc.: *See—*
  - Check, Mathias M., 3,477,754.
  - Gruber, Thomas J., and Lyth, William W., 3,477,546.
  - Hass, David P., 3,477,740.
  - Jaeschke, Ralph L., 3,478,239.
  - Line, Gerald D., 3,477,416.
- Ecclesia, Edoardo: *See—*
  - Perotto, Pier Giorgio, and Ecclesia, Edoardo 3,478,251.
- Echterling, Eugene J.: *See—*
  - Ryan, John W., Echterling, Eugene J., Golden, Michael E., Goetz, John H., and Chang, Richard Shih-Teng 3,477,140.
- Edenhofer, Albrecht, and Spiegelberg, Hans, to Hoffmann-La Roche Inc.2,3;3a,12β-Tetrahydro-8H-dibenzo[3,4;6,7] cyclohept[1,2-d]oxazoles and derivatives. 3,478,048, Cl. 260-307.
- Eder, Franz X., and Voigt, Hans, to Siemens Aktiengesellschaft. Superconductive generators. 3,478,232, Cl. 310-010.
- Edwards, John A., to Syntex Corporation. Halogenated cyclopropyl, cyclopropenyl and oxo- cyclopropenyl-1-hydroxy estratrienes and derivatives thereof. 3,478,019, Cl. 260-239.55
- Edwards, Marvin B.: *See—*
  - Hagemeyer, Hugh J., Jr., and Edwards, Marvin B. 3,478,128.
- Effron, Edward: *See—*
  - Forster, Eric O., and Effron, Edward 3,478,261.
- Egan, Thomas F. Bowsight. 3,477,130, Cl. 033-046.4
- Eggert, Thomas F., and Robinson, James M., to Whirlpool Corporation. Floor scrubber shaft seal. 3,477,088, Cl. 015-353.
- Ehlenberger, Gary G., to Motorola, Inc. Controlled diffusions in semiconductive materials. 3,477,886, Cl. 148-187.
- Ehlenberger, Gary G., to Motorola, Inc. Gaseous diffusion method. 3,477,887, Cl. 148-189.
- Eisenberg, Harold, to Honeywell Inc. Alarm apparatus. 3,478,352, Cl. 340-409.
- Eizo Komiyama: *See—*
  - Naito, Masashi, 3,477,156.
- Eldredge, Gladys C., 1/3 each to Eldredge, Glenn S. Eldredge, Vernon D., and Eldredge, Joseph U. Applicator for hair tinting liquids and the like. 3,477,447, Cl. 132-009.
- Eldredge, Glenn S.: *See—*
  - Eldredge, Gladys C., 3,477,447.
- Eldredge, Joseph U.: *See—*
  - Eldredge, Gladys C., 3,477,447.
- Eldredge, Vernon D.: *See—*
  - Eldredge, Gladys C., 3,477,447.
- Electro Oceanics, Inc.: *See—*
  - Gimpel, Donald J., and Nelson, Arthur L., 3,478,297.
  - Nelson, Arthur L., 3,478,298.
- Electronic Systems Development, Inc.: *See—*
  - Sherwin, Richard N., 3,477,782.
- Ellis, Bernard, Petrow, Vladimir, and Stanway, David Neil, to British Drug House Limited, The. 4-Oxo-$\Delta^5$-steroids and enol esters thereof. 3,478,069, Cl. 260-397.4
- Ellson, Lloyd W.: *See—*
  - Brown, Philip H., and Ellson, Lloyd W. 3,477,395.
- Ely, Donald A., Sr., to Beloit Corporation. Press arrangement for papermaking machine. 3,477,907, Cl. 162-358.
- Emerson, John H. Device for automatically shifting the body of a patient. 3,477,071, Cl. 005-061.
- Emerson, Paul D., Engelman, Fred H., Baggett, Frank A., and Oatfield, John C., to Monsanto Company. Warp yarn creel for weaving. 3,477,661, Cl. 242-131.
- Emery, Raymen F.: *See—*
  - Slavin, Michael, Emery, Raymen F., and Carp, Ralph W. 3,477,346.
- Emhart Corporation: *See—*
  - Balducci, Walter O., and Welch, Nicholas A., 3,477,260.
- Enemark, Robert B., and Tsao, Carson K. H., to Continental Electronics Manufacturing Company, mesne. Directional antenna signal combining arrangement and phase shifters therefor. 3,478,269, Cl. 325-369.
- Energy Systems, Inc.: *See—*
  - Carini, Eugene P., 3,477,536.
- Engelhard Minerals & Chemicals Corporation: *See—*
  - Cecil, Tom A., Gerstenmier, Harold J., Hamill, Herbert R., and Puskar, Victor, 3,477,565.
- Engelman, Fred H.: *See—*
  - Emerson, Paul D., Engelman, Fred H., Baggett, Frank A., and Oatfield, John C. 3,477,661.
- Engelsher, Harvey J., and McKirby, Robert W., to Horizon Industries, Ltd., mesne. Adjustable shut-off valve. 3,477,686, Cl. 251-010.
- English Electric Company Limited, The: *See—*
  - Rawson, Peter John, and Shaw, Michael Kevin, 3,477,383.
- English Electric Valve Company Limited: *See—*
  - Honeyball, Walter John, 3,477,110.
- English, William J. Window sign hanger. 3,477,757, Cl. 294-019.
- Englund, Gosta R., to Svenska Dataregister AB. Apparatus for the checking of multidigit numbers. 3,477,639, Cl. 235-061.
- Engwall, Richard E.: *See—*
  - Krynski, John E., and Engwall, Richard E. 3,477,583.
- Enkoji, Takashi, and Levine, Edward M., to Armour Pharmaceutical Company. 6-Cycloalkylguanamines, preparations and methods for treating inflammatory conditions therewith. 3,478,026, Cl. 260-249.9
- Ensmann, Burt W.: *See—*
  - Lindsay, Kenneth W., and Ensmann, Burt W. 3,477,728.
- Entwisle, John Hubert: *See—*
  - Colchester, John Edward, and Entwisle, John Hubert 3,478,042.
- Erdkamp, Michael L.: *See—*
  - Gassaway, Lee V., and Erdkamp, Michael L. 3,478,222.
- Erickson, Clifford E., to General Electric Company. Gas burner. 3,477,798, Cl. 431-263.
- Erlich, Ralph R.: *See—*
  - Aaron, Jack, 3,477,089.
- Erman, William F.: *See—*
  - Lewis, Ronald G., and Erman, William F. 3,478,114.
- Ernst, Robert R., to Sybron Corporation. Method and apparatus for sterilizing. 3,477,807, Cl. 021-058.
- Espinal, Martin. Recording pill dispenser. 3,477,561, Cl. 206-042.
- Esso Production Research Company: *See—*
  - Spillette, Arthur G., 3,477,510.
- Esso Research and Engineering Company: *See—*
  - Arendt, Harry S., 3,477,509.
  - Forster, Eric O., and Effron, Edward, 3,478,261.

  - Patton, Tad L., Horeczy, Joseph T., and Bown, Delos E., 3,477,991.
  - Starnes, William H., Jr., 3,478,061.
- Estabrooks, Roger S., to International Shoe Machine Corporation. Fluid pressure control means. 3,477,470, Cl. 137-612.1
- Estes, Chester L., to United States of America, Atomic Energy Commission. Wheel-type electrode for welding beryllium metal. 3,478,189, Cl. 219-081.
- Ethicon, Inc.: *See—*
  - Kronenthal, Richard L., and Rich, Ernest J., Jr., 3,478,140.
- Eto, Morifusa: *See—*
  - Oshima, Yasuyoshi, and Eto, Morifusa 3,478,133.
- Etz, Herbert. Method of manufacturing tampons. 3,477,102, Cl. 019-144.5
- European Atomic Energy Community: *See—*
  - Knoepfel, Heinz, and Herlach, Fritz, 3,478,231.
- Evans, Bob O., to International Business Machines Corporation. Data processor employing electronically changeable control storage. 3,478,322, Cl. 340-172.5
- Fabricacion de Mequinas, S.A.: *See—*
  - Martin, John, 3,477,837.
- Fainman, Morton Z.: *See—*
  - Bray, Ulric B., and Fainman, Morton Z. 3,478,113.
- Fairley, Richard K., and McCarty, Lourdes V., to Controls Company of America. Flow interrupter type gas safety control operated by rotary knob for pilot, on and off in any rotary position of knob. 3,477,641, Cl. 236-001.
- Falterman, Charles W., and Griffith, William J., to United States of America, Navy. Underwater demolition package. 3,477,373, Cl. 102-024.
- Farbenfabriken Bayer Aktiengesellschaft: *See—*
  - Fest, Christa, Hammann, Ingeborg, Stendel, Wilhelm, and Flucke, Winfried, 3,478,037.
  - Hermann, Karl Heinz, and Rudolph, Hans, 3,477,986.
  - Kocher, Ernst-Ulrich, Wagner, Kuno, Von Der Emden, Wolfgang, and Dankert, Gerhard, 3,477,992.
  - Kubitzek, Harry, Unger, Otto, Nawrath, Gunter, Reichle, Alfred, and Nischk, Gunther, 3,477,899.
  - Paulus, Wilfried, Kuhle, Engelbert, Pauli, Otto, Sasse, Klaus, and Klauke, Erich, 3,478,027.
  - Schicke, Hans Gerd, and Hamman, Ingeborg, 3,478,029.
  - Schnell, Hermann, Dhein, Rolf, Raichle, Karl, and Gebnauer, Herbert, 3,477,977.
  - Szita, Jeno, Bahr, Ulrich, Wieden, Horst, Marzolph, Herbert, and Nischk, Gunther, 3,478,001.
- Farbwerke Hoechst AG: *See—*
  - Hoffmann, Hermann, and Zeitler, Heidi, 3,478,010.
- Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See—*
  - Groebel, Alfred, 3,478,147.
  - Gumboldt, Albert Gustav Martin, and Noetzel, Siegfried, 3,477,997.
  - Winkelmann, Erhardt, and Wagner, Wolf-Helmut, 3,478,036.
- Farrell, Thomas P., and Taylor, Jason H., to United States of America, Navy, mesne. Hard sediment gun corer. 3,477,525, Cl. 175-004.
- Faugli, Ivar Odd: *See—*
  - Faugli, Per Ragnar, Faugli, Ivar Odd, and Hegsvold, Oivind 3,477,340.
- Faugli, Per Ragnar, Faugli, Ivar Odd, and Hegsvold, Oivind. Milling cutter holder. 3,477,340, Cl. 090-011.
- Faulkner, Alfred H., to General Motors Corporation. Magnetic memory system. 3,478,333, Cl. 340-174.
- Faxon, Charles Edward. Electromagnetic attracting and repelling motor. 3,478,237, Cl. 310-068.
- Fay, Thomas W.: *See—*
  - Glucksman, Dov Zeev, and Fay, Thomas W. 3,477,635.
- Feairheller, William R., Jr.: *See—*
  - Parts, Leo P., and Feairheller, William R., Jr. 3,477,932.
- Feld, George J.: *See—*
  - Feld, Nellie Ancona, and Feld, George J. 3,477,155.
- Feld, Nellie Ancona, and Feld, George J. Textile stretching and drying device. 3,477,155, Cl. 038-102.9
- Fenner, Gunther E., to General Electric Company. Pulse width modulated laser. 3,478,280, Cl. 332-007.51
- Fenton, Robert E., to Ohio State University, The. Tactile display system for aiding an operator in vehicular control. 3,478,351, Cl. 340-407.
- Ferguson, Harry, Research Limited: *See—*
  - Webb, Oswald, 3,477,302.
- Ferguson, James D., to Petro Well Service, Inc. Well cleaning with mixed liquefied propane and butane solvent. 3,477,513, Cl. 166-304.
- Fernald, Herbert B., Gall, William, and Kresge, Alfred N., to Gulf Research & Development Company. Method for measuring extent of conversion in a chemical process. 3,477,819, Cl. 023-232.
- Fernald, Herbert B., Gall, William, and Swift, Harold E., to Gulf Research & Development Company. Method for converting ethylene to alpha olefins in the presence of diphenylamine. 3,478,124, Cl. 260-683.15
- Fernald, Herbert B., and Lynch, Eugene F., to Gulf Research & Development Company. Removal of aluminum from an alpha olefin product stream. 3,477,813, Cl. 023-143.
- Ferranti, Limited: *See—*
  - McLaren, Ronald Robert, 3,478,197.
- Ferro Manufacturing Corporation: *See—*
  - Littmann, Joseph C., 3,478,182.
- Fesco, John J., to Studley Paper Company, Inc. Filter bag. 3,477,209, Cl. 055-367.
- Fest, Christa, Hammann, Ingeborg, Stendel, Wilhelm, and Flucke, Winfried, to Farbenfabriken Bayer Aktiengesellschaft. Certain trichloro-pyridyl-2-thionophosphonic acid esters. 3,478,037, Cl. 260-294.8
- Feuer, Irving, to Canrad Precision Industries, Inc. Self-luminous tritium light sources. 3,478,209, Cl. 250-077.
- Field, Dennis Ronald: *See—*
  - Hawtin, Selwyn George, Smith, David Roger, and Field, Dennis Ronald 3,477,218.
- Fields, Mack R., to Abbott Laboratories. Flow control device. 3,477,454, Cl. 137-001.
- Fillmore, Leland A., and Jenkins, Jack J., to Burlington Industries, Inc. Stocking and method of making same. 3,477,256, Cl. 066-172.
- Findley, Howard J., to Textron Inc. Toolholder apparatus and turning method. 3,477,320, Cl. 082-036.
- Fine, Michael N.: *See—*
  - Aaron, Jack, 3,477,089.
- Fink, Robert C., to Ostrander-Seymour Co. Electrically heated platen. 3,478,192, Cl. 219-243.
- Finsterwalder, Klemens: *See—*
  - Finsterwalder, Ulrich, and Finsterwalder, Klemens 3,477,080.
- Finsterwalder, Kurt, to Schuler, L., GmbH. Coin press. 3,477,270, Cl. 072-359.
- Finsterwalder, Ulrich, and Finsterwalder, Klemens, to Dyckerhoff & Widmann Kommanditgesellschaft. Elevated highway structures of prestressed concrete. 3,477,080, Cl. 014-016.
- Fischer, Armin O., to Litton Business Systems, Inc. Actuator holding means. 3,477,638, Cl. 235-060.
- Fischer, Hermann, to Maschinenfabrik Augsburg-Nurnberg AG. Register maintaining device for multi-color sheet-fed rotary printing presses. 3,477,370, Cl. 101-183.
- Fishel, Norman A., to Universal Oil Product Company. Method of catalyst manufacture. 3,477,964, Cl. 252-442.
- Fishel, Norman A., to Universal Oil Products Company. Method of catalyst manufacture. 3,477,965, Cl. 252-442.
- Fisher Berkely Corporation: *See—*
  - Pugatch, David, 3,478,176.
- Fisher, George A., to United Aircraft Corporation. Fluid mechanical hysteretic device. 3,477,344, Cl. 091-052.
- Flavin, Theodore F., to International Business Machines Corporation. Slip clutch. 3,477,252, Cl. 064-030.
- Fleischauer, Fred J. Air lift and vacuum conveyors and foraminous belt means therefor. 3,477,558, Cl. 198-184.
- Fleming, Robert B.: *See—*
  - Colyer, Duard B., and Fleming, Robert B. 3,477,504.
- Fliger, Josephine: *See—*
  - Fliger, Louis R., Jr. 3,477,680.
- Fliger, Louis R., Jr., deceased (by Fliger, Josephine Fox, Marnell, administrators). Device for preventing a cake from slipping on a plate. 3,477,680, Cl. 248-346.
- Florkowski, John Anthony, to Juskevic, John A. Control device for alternately operating dual liquid filters. 3,477,577, Cl. 210-108.
- Flucke, Winfried: *See—*
  - Fest, Christa, Hammann, Ingeborg, Stendel, Wilhelm, and Flucke, Winfried 3,478,037.
- Fluid Dynamics (Proprietary) Limited: *See—*
  - Turner, Lawrence Alexander, 3,477,579.
- FMC Corporation: *See—*
  - Kappe, Stanley E., 3,477,947.
- Fogler, Henry Harrison: *See—*
  - Allentoff, Norman, and Fogler, Henry Harrison 3,477,852.
- Fohlen, George M.: *See—*
  - Ross, Richard J., and Fohlen, George M. 3,478,099.
- Fong, Willie, Wasley, William L., Whitfield, Robert E., and Miller, Lowell A., to United States of America, Agriculture. Shrinkproofing of wool top by using process of interfacial polymerization. 3,477,803, Cl. 008-127.6
- Foote Mineral Company: *See—*
  - Gullett, David E., and Reynolds, Edmond F., 3,477,937.
- Ford Motor Company: *See—*
  - Barton, David W., 3,477,549.
  - Gregorich, Henry L., Jones, Clevoe D., and Phelps, Marion E., 3,477,250.
  - Hall, Leslie, and Lynes, Arthur E., 3,477,538.
  - Houston, David R., Howes, Benjamin T., Warrick, James E., and Alexandrowicz, Alvin W., 3,477,306.
  - Jensen, William G., 3,477,405.
  - Maddox, Charles F., 3,477,307.
  - Niles, Harold T., 3,477,611.
  - Ringe, Frederick A., 3,477,313.
  - Scheider, Robert C., 3,477,273.
  - Schlichter, William L., 3,477,753.
  - Shachter, Moses, 3,477,247.
  - Shachter, Moses, 3,477,248.
- Fords (Finsbury) Limited: *See—*
  - Sainsbury, Jeffrey J., 3,478,221.
- Formaini, Robert L., to Allied Chemical Corporation. Polyesters prepared from tris-(2-hydroxyalkyl) isocyanurates and ethylenically unsaturated dicarboxylic acid anhydrides. 3,477,996, Cl. 260-075.

- Fornataro, Augustine A., to Voss Engineering Company. Roller leveler. 3,477,266, Cl. 072-165.
- Forse, Harry D. Method and apparatus for shaping and finishing a garment. 3,477,621, Cl. 223-057.
- Forslund, Charles F. Screen printing squeegee and flood bar apparatus. 3,477,366, Cl. 101-123.
- Forster, Eric O., and Effron, Edward, to Esso Research and Engineering Company. Process for measuring static charge in a liquid hydrocarbon stream. 3,478,261, Cl. 324-032.
- Forsyth, William A., Jr., to Honeywell Inc. Marking medium. 3,477,862, Cl. 106-022.
- Fortier, Andre Louis. Differential pneumatic measuring or servo devices. 3,477,276, Cl. 073-037.5
- Foster, George Michael, and Surgent, Louis Vincent, Jr. Radar method using Mie region analysis. 3,478,354, Cl. 343-005.
- Foster Manufacturing Co., Inc.: *See—*
  - Cruse, Lee H., 3,477,688.
- Fouse, Frederick Z., to Anchor Hocking Corporation. Mold support for glassware forming machine. 3,477,841, Cl. 065-307.
- Fowler, Alan R.: *See—*
  - Grace, Alan G., 3,478,178.
- Fox, Marnell: *See—*
  - Fliger, Louis R., Jr. 3,477,680.
- Frandee Corporation: *See—*
  - Hoover, Dorothy H., 3,477,065.
- Frank, Manfred H., to Hellige, Fritz, & Co., G.m.b.H. Recorder having distinguishable records. 3,478,364, Cl. 346-062.
- Fraser, James, and Harrison, Ian Robert, to Boots Pure Drug Company Limited. Method of protecting sheep from blowfly larvae. 3,478,153, Cl. 424-300.
- Fraze, Ermal C. Easy-opening can end having vent means. 3,477,608, Cl. 220-054.
- Frederick, Henry E.: *See—*
  - Zebarth, Ralph S., and Frederick, Henry E. 3,477,093.
- Freeman, Jere E., to Corn Products Company. Sorghum grain degermination process. 3,477,855, Cl. 099-080.
- Freiberg, Leslie A., to Abbott Laboratories. Nor-androstene steroid derivatives. 3,478,083, Cl. 260-468.5
- Freiday, Jay H., to Combustion Engineering, Inc. Chemical recovery unit. 3,477,823, Cl. 023-277.
- Frenyo, Pal, and Klottschen, Heinz, to Gebr. Eickhoff, Maschinenfabrik und Eisengiesserei m.b.H. Mining machine and method. 3,477,762, Cl. 299-010.
- Fried, Rudolf, and Hoeflmayr, Joachim, to Haury, Heinz, Dr., Chemische Fabrik. Method for the determination of the bilirubin content of body liquids. 3,477,818, Cl. 023-230.
- Friedl, Arno Rudolph, to International Synthetic Rubber Company Limited, The. Treatment of wool. 3,477,804, Cl. 008-128.
- Friedrichsen, Wilhelm, Poehler, Guenter, and Goehre, Otto, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of maleic anhydride by catalytic oxidation of olefinically unsaturated $C_4$- hydrocarbons. 3,478,063, Cl. 260-346.8
- Friesner, Charles E. Method of making thermoplastic articles having non-planar surface contours. 3,478,138, Cl. 264-145.
- Fritsch, Rudolf Paul, to Werner & Pfleiderer. Apparatus for shaping raw rubber bodies. 3,477,101, Cl. 018-030.
- Frost, James Dahle. Energy absorbing mattress. 3,477,072, Cl. 005-348.
- Fruman, Albert A. Wallboard mounting channel. 3,477,187, Cl. 052-346.
- Fuji Chemical Industries, Ltd.: *See—*
  - Tsuruga, Masanori, Murakami, Shogo, Kondo, Katsutoshi, Akabane, Shunei, Washikita, Kenji, and Koshino, Tameo, 3,478,101.
- Fujinaga, Motosaku, to Marifarms, Incorporated, mesne. Method of cultivation of penaeid shrimp. 3,477,406, Cl. 119-002.
- Fujita, Toshimichi: *See—*
  - Nakaguchi, Kohei, Kawasumi, Shohachi, Hirooka, Masaaki, and Fujita, Toshimichi 3,478,002.
- Fujitsu Limited: *See—*
  - Namikata, Takeshi, and Kubo, Kazuo, 3,477,929.
- Fulton, Fred D., to Kimton, Inc. Display case cornerpost. 3,477,182, Cl. 052-028.
- Funk, Floyd S., Roundtree, Grover L., and West, Joe E. Bar tying machine. 3,477,351, Cl. 094-039.
- Furlenmeier, Andre: *See—*
  - Furst, Andor, Furlenmeier, Andre, Langemann, Albert, Waldvogel, Guy, Hocks, Peter, Kerb, Ulrich, and Wiechert, Rudolf 3,478,065.
- Furst, Andor, Furlenmeier, Andre, Langemann, Albert, Waldvogel, Guy, Hocks, Peter, Kerb, Ulrich, and Wiechert, Rudolf, to Hoffmann-La Roche Inc. Steroid a-ring modification. 3,478,065, Cl. 260-397.2
- Fuzzell, Joe E., Thompson, John C., and Johnson, John L., Jr., to Caterpillar Tractor Company. Lockable spout closure cap. 3,477,607, Cl. 220-039.
- G & W Electric Specialty Company: *See—*
  - Perkins, Gordon O., and Swanson, Howard E., 3,478,185.
- GAF Corporation: *See—*
  - Daniels, Wiley E., 3,477,980.
  - Weigl, John W., and Amidon, Alan B., 3,477,846.
- Gagarine, Dmitry M., Habib, Emile E., and La Fleur, Kermit S., to Deering Milliken Research Corporation. Process for modifying keratin fibers. 3,477,805, Cl. 008-128.
- Gaglione, John P., to Wilks Scientific Corporation. Multipurpose sample cell for conventional and attenuated total reflection absorption spectroscopy of gaseous and solid samples. 3,478,206, Cl. 250-043.5
- Gagnaux, Pierre: *See—*
  - Renz, Jany, Bourquin, Jean-Pierre, Winkler, Hans, Gagnaux, Pierre, Guldimann, Simon, Ruesch, Leo, and Schwarb, Gustav 3,478,022.
- Gale, David M., to Du Pont de Nemours, E. I., and Company. $\alpha$, $\alpha$-Difluoro-alkyl amines and process. 3,478,100, Cl. 260-570.5
- Gall, William: *See—*
  - Fernald, Herbert B., Gall, William, and Kresge, Alfred N. 3,477,819.
  - Fernald, Herbert B., Gall, William, and Swift, Harold E. 3,478,124.
- Gantt, James E., and Borst, William B., Jr., to Universal Oil Products Company. Fractionation column system operating with multiple level internal reboilers. 3,477,915, Cl. 202-155.
- Garcia, Salvador A. Dual driver controls of the cable type for vehicles with automatic or standard transmissions. 3,477,310, Cl. 074-562.5
- Gardel, Robert, and Gorsky, Egon, to Lettam, Inc. Doll sound producing mechanism with head movement. 3,477,169, Cl. 046-118.
- Gardenhire, Lawrence W., and Woolf, Ashby M., to Radiation Incorporated. Digital data redundancy reduction methods and apparatus. 3,478,266, Cl. 325-038.
- Gardner, Charles W., and Barbee, Gail G., to Caterpillar Tractor Company. Material handling fork. 3,477,601, Cl. 214-767.
- Garland, Charles, to Sun Shipbuilding & Dry Dock Company. High-pressure facility. 3,477,605, Cl. 220-003.
- Garlington, William M. Basketball backboard and horizontally movable basket. 3,477,714, Cl. 273-001.5
- Garnett, Charles S., 50% to Simmons, William. Treatment of plastic surfaces. 3,477,799, Cl. 008-004.
- Garnett, Donald W., to Olofsson Corporation, The. Container supply mechanism for weighing apparatus. 3,477,530, Cl. 177-055.
- Gasner, William L., to McCulloch Corporation. Stabilized cutting tip for chain saw cutter link. 3,477,480, Cl. 143-135.
- Gassaway, Lee V., and Erdkamp, Michael L. Control circuit. 3,478,222, Cl. 307-038.
- Gay, Frank Munro, to Cossor, A. C., Limited. Thermo-couple device for current measurement. 3,477,880, Cl. 136-207.
- Gebnauer, Herbert: *See—*
  - Schnell, Hermann, Dhein, Rolf, Raichle, Karl, and Gebnauer, Herbert 3,477,977.
- Gebr. Eickhoff, Maschinenfabrik und Eisengiesserei m.b.H.: *See—*
  - Frenyo, Pal, and Klottschen, Heinz, 3,477,762.
- Gebr. Stork & Co's Apparatenfabriek N.V.: *See—*
  - van Es, Machiel, 3,477,501.
- Geigy Chemical Corporation: *See—*
  - Hall, Luther A. R., 3,477,957.
- General Dynamics Corporation: *See—*
  - Gratian, Joseph W., 3,478,331.
  - Winkler, David W., Jr., 3,477,609.
- General Electric Company: *See—*
  - Clements, Francis J., 3,477,747.
  - Colyer, Duard B., and Fleming, Robert B., 3,477,504.
  - Couleur, John F., Gudenschwager, Philip F., Shelly, William A., and Bahrs, David L., 3,478,320.
  - Couleur, John F., and Ruth, Richard L., 3,478,324.
  - Erickson, Clifford E., 3,477,798.
  - Fenner, Gunther E., 3,478,280.
  - Gessner, Robert L., 3,477,636.
  - Hewlett, Clarence W., Jr., 3,478,347.
  - Holub, Fred F., Keane, John J., and Kim, James K. S., 3,477,978.
  - Janacek, Jerry C., 3,478,210.
  - Lewis, Ernest Eber, 3,477,523.
  - McQuade, James M., 3,477,875.
  - Paulson, Elmir E., 3,477,231.
  - Pietsch, Joseph A., 3,477,211.
  - Proxmire, Harry J., 3,478,290.
  - Wu, Tse C., 3,478,077.
  - Haines, Ernest Martin, and Taylor, Henry Bastian, 3,478,285.
- General Mills, Inc.: *See—*
  - Benson, John O., and Smirnow, Peter, 3,477,851.
  - Harrison, Stuart A., and Wicklatz, John E., 3,478,081.
- General Motors Corporation: *See—*
  - Altson, Ralph, 3,477,773.
  - Boretti, Napoleon P., Bratton, Wilson T., and Tolstyka, Joseph R., 3,477,870.
  - Culver, Clyde C., 3,477,768.
  - Drayer, William L., 3,477,699.
  - Duer, Morris J., 3,477,312.
  - Faulkner, Alfred H., 3,478,333.
  - Grundman, Richard G., and Sharpe, Cecil H., 3,477,647.
  - Johnson, Douglas, 3,477,228.
  - Manning, Donald L., 3,477,738.
  - Mc Greary, Charles H., 3,477,311.
  - Moorman, Cletus L., 3,477,681.
  - Percival, Worth H., 3,477,226.
  - Sprecher, Raymond G., 3,477,309.
  - White, Robert L., 3,477,739.
- General Signal Corporation: *See—*
  - Rice, Orval L., 3,477,347.
- General Time Corporation: *See—*
  - Cofoid, Robert D., 3,478,184.

Genge, Colin A., to Hercules Incorporated. Adsorbent refining of organic compounds. 3,478,009, Cl. 260-097.7
Genset Corporation: *See*—
Buff, Fred, Gross, Joseph Idadore, and Healy, Lawrence William, 3,477,898.
Gentex Corporation: *See*—
Aileon, Jackson A., 3,477,067.
Georgia Kaolin Company: *See*—
Bundy, Wayne M., and Berberich, Joseph P., 3,477,809.
Gerber, Heinz Joseph, and Pavone, Robert J., to Gerber Scientific Instrument Company, The. Device for cutting sheet material. 3,477,322, Cl. 083-071.
Gerber Scientific Instrument Company, The: *See*—
Gerber, Heinz Joseph, and Pavone, Robert J., 3,477,322.
Gerstenmier, Harold J.: *See*—
Cecil, Tom A., Gerstenmier, Harold J., Hamill, Herbert R., and Puskar, Victor 3,477,565.
Gessner, Robert L., to General Electric Company. Balancing of gas pressure forces in multi-stage regenerative compressors. 3,477,636, Cl. 230-129.
Gething, Frank, to Aqua-Chem, Inc. Heat recovery boiler with bypass. 3,477,411, Cl. 122-007.
Giddey, Andre: *See*—
Vuataz, Luc, and Giddey, Andre 3,477,854.
Gillery, Frank H., Pressau, Jean P., and Lewis, Charles W., to PPG Industries, Inc. Sputtering of metals in an atmosphere of fluorine and oxygen. 3,477,936, Cl. 204-192.
Gimpel, Donald J., and Nelson, Arthur L., to Electro Oceanics, Inc., mesne. Fluidproof electrical connector. 3,478,297, Cl. 339-060.
Giordmaine, Joseph A., and Kaiser, Wolfgang K., to Bell Telephone Laboratories, Incorporated. Optical mode selector. 3,478,277, Cl. 331-094.5
Girdler Corporation: *See*—
Mayland, Bertrand J., Trimarke, Carl Robert, Harvin, Richard L., and Brandon, Charles S., 3,477,832.
Glanzstoff AG: *See*—
Herwig, Hans Ulrich, 3,477,221.
Werner, Helmut, and Stapp, Hans, 3,478,143.
Glaser, Raymond Arthur: *See*—
Kent, Robert L., Badessa, Rosario S., Barus, Carl, Dunn, Joseph M., Glaser, Raymond Arthur, and Johnson, Leonard B. 3,477,666.
Glaverbel S.A.: *See*—
Henry, Georges, Brichard, Edgard, Marchand, Jean, and Bauduin, Albert, 3,477,838.
Glaza, Gordon K.: *See*—
Braeuninger, Karl F., and Glaza, Gordon K. 3,477,350.
Global Marine, Inc.: *See*—
Koot, Nick, 3,477,527.
Glucksman, Dov Zeev, and Fay, Thomas W., to Torin Corporation. Low noise ninety degree transverse flow blower with improved housing and vortex control member. 3,477,635, Cl. 230-125.
Glynn, Theodore W., and Storm, Jack S., Jr., to American Saint Gobain Corporation. Process for producing decorative glass. 3,477,836, Cl. 065-121.
Goehre, Otto: *See*—
Friedrichsen, Wilhelm, Poehler, Guenter, and Goehre, Otto 3,478,063.
Goerke, Rolf, Bisch, Helmut, Togel, Kurt, and Speck, Werner, to Siemens Aktiengesellschaft. Sample carrier for X-ray spectrometers and the like. 3,478,207, Cl. 250-051.5
Goessman, John C.: *See*—
Babunovic, Momir, and Goessman, John C. 3,477,557.
Goetz, Edward E. Rotatable thermal transfer units. 3,477,499, Cl. 165-086.
Goetz, John H.: *See*—
Ryan, John W., Echterling, Eugene J., Golden, Michael E., Goetz, John H., and Chang, Richard Shih-Teng 3,477,140.
Gold, Harold, and Macks, Fred. High strength stud or insert. 3,477,335, Cl. 085-062.
Goldberg, Allan M., to American Hospital Supply Corporation, mesne. Thoracentesis apparatus. 3,477,437, Cl. 128-347.
Golden, Michael E.: *See*—
Ryan, John W., Echterling, Eugene J., Golden, Michael E., Goetz, John H., and Chang, Richard Shih-Teng 3,477,140.
Goldman, Herbert S., to Acme Quilting Company, Inc. Combination mat and tote bag. 3,477,552, Cl. 190-002.
Goldstein, Eugene E.: *See*—
Barshefsky, Gustave, and Goldstein, Eugene E. 3,478,137.
Gombert, Jean-Marie: *See*—
Clement, Pierre, Gombert, Jean-Marie, and Petit, Rene 3,477,950.
Goodhue, Lyle D., to Phillips Petroleum Company. Cadmium containing compounds as insect control agents. 3,478,152, Cl. 424-287.
Goodrich, B. F., Company, The: *See*—
Kuts, Mathew, 3,477,134.
Goodridge, Walter R., to Mr. Christmas, Inc. Support stand fixture. 3,477,671, Cl. 248-044.
Gootschalk, Heinrich Georg, to Schmidt, Karl Heinz. Wheel suspension for vehicles. 3,477,733, Cl. 280-006.
Gordon, Alfred J., to Great Lakes Aluminum Fabricators, Inc. Invisible hinge. 3,477,091, Cl. 016-180.
Gordon, Daniel I.: *See*—
Sery, Robert S., and Gordon, Daniel I. 3,477,883.
Gordon, Sherritt, Mines Limited: *See*—
Veltman, Herbert, O'Kane, Patrick T., Gulyas, James W., and Middagh, William R., 3,477,927.
Gorog, Etienne P., to International Business Machines Corporation. Frequency code concept alphabet synthesizing. 3,478,350, Cl. 340-351.
Gorski, Robert A.: *See*—
Bauer, Albert W., and Gorski, Robert A. 3,477,952.
Gorsky, Egon: *See*—
Gardel, Robert, and Gorsky, Egon 3,477,169.
Goss Gas, Inc.: *See*—
Yerkins, Stephen J., 3,477,112.
Gould, Irwin M., and Moe, Gerald A., to Bell & Howell Company. Slide projector. 3,477,563, Cl. 206-062.
Gould, Irwin M., and Moe, Gerald A., to Bell & Howell Company. Slide projector having a tray locking frame. 3,477,785, Cl. 353-116.
Grable, Glenn H.: *See*—
Allen, Dwight L., and Grable, Glenn H. 3,477,438.
Grace, Alan G., to Fowler, Alan R., mesne. Switched frequency and phase comparator. 3,478,178, Cl. 179-100.2
Grace, W. R., & Co.: *See*—
Gregorian, Razmic S., and Bush, Richard W., 3,477,924.
Kehr, Clifton L., and Guthrie, James L., 3,478,004.
Graff, Roderich, Reichl, Karl Johann, Butz, Josef, and Pausch, Karl, to Deutsche Tafelglas Aktiengesellschaft. Apparatus for producing molded plastic goods. 3,477,894, Cl. 156-459.
Graham, David R. Low profile rigid frame metal building. 3,477,183, Cl. 052-073.
Grane, Henry R., to Atlantic Richfield Company. Isobutane oxidation. 3,478,108, Cl. 260-610.
Grangaard, Donald H., to Kimberly-Clark Corporation. Binder containing electrode for electrochemical processes. 3,477,940, Cl. 204-290.
Grassl, Ferdinand O.: *See*—
Malmer, Clarence John, and Grassl, Ferdinand O. 3,477,951.
Grassl, Simmon. Support collar. 3,477,425, Cl. 128-075.
Gratian, Joseph W., to General Dynamics Corporation. Frequency multiplication apparatus. 3,478,331, Cl. 340-173.
Gray, Alexander: *See*—
Horwood, Norman, and Gray, Alexander 3,477,296.
Gray, Allan Poe, and Kraus, Harold, to Mallinckrodt Chemical Works, mesne. Certain 2(4-pyridyl-α,α-diphenylcyclopropane- methanols and intermediates therefor. 3,478,038, Cl. 260-294.8
Gray Horwood Engineering Limited: *See*—
Horwood, Norman, and Gray, Alexander, 3,477,296.
Gray, James J. Quickly detachable scraper blades. 3,477,520, Cl. 172-719.
Great Lakes Aluminum Fabricators, Inc.: *See*—
Gordon, Alfred J., 3,477,091.
Greater Iowa Corporation, The: *See*—
Whitfield, Joseph E., 3,477,595.
Greco, Carl C.: *See*—
Stamm, Walter A., and Greco, Carl C. 3,477,933.
Greene, Abbot, and Densen, Paul. Box construction. 3,477,633, Cl. 229-034.
Greene, Max E., to Phillips Petroleum Company. Method of pleating and stretching plastic film. 3,478,142, Cl. 264-288.
Greenwald, William. Audio visual programmer. 3,478,345, Cl. 340-338.
Gregorian, Razmic S., and Bush, Richard W., to Grace, W. R., & Co. Coating process. 3,477,924, Cl. 204-078.
Gregorich, Henry L., Jones, Clevoe D., and Phelps, Marion E., to Ford Motor Company. Anchor tooth spline for rotating gear mechanisms. 3,477,250, Cl. 064-023.
Gregory, Jocelyn M.: *See*—
Baklien, Asbjorn, Gregory, Jocelyn M., and Kling, Klaus 3,478,057.
Greichgauer, Otto. Brush and method of producing the same. 3,477,763, Cl. 300-021.
Grieco, George D.: *See*—
De Hoff, Ronald L., and Grieco, George D. 3,477,981.
Grieshaber, Gunther S., to Pass & Seymour, Inc. Multiplex grounding outlet. 3,478,295, Cl. 339-014.
Griffin, Robert M., to Sylvania Electric Products, Inc. Threadless lamp and base. 3,478,300, Cl. 339-072.
Griffith, Lionell K., to Baxter Laboratories, Inc. Biopsy instrument. 3,477,423, Cl. 128-002.
Griffith, William J.: *See*—
Falterman, Charles W., and Griffith, William J. 3,477,373.
Grinnell Corporation: *See*—
Milligan, Gordon H., 3,477,694.
Griswold, Owen H., and Hitchcock, Richard E. Spherical plug valve. 3,477,691, Cl. 251-172.
Groebel, Alfred, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Pharmacologically effective substance and process for preparing it from ravensara aromatica. 3,478,147, Cl. 424-195.
Grosjean, Arnold, to Paillard S.A. Locking device for an adjustable optical element. 3,477,777, Cl. 350-255.
Gross, Joseph Idadore: *See*—
Buff, Fred, Gross, Joseph Idadore, and Healy, Lawrence William 3,477,898.
Grossen, Harry W.: *See*—
Bell, Kenneth, and Grossen, Harry W. 3,477,393.

Gruber, Heinz: *See*—
Puhringer, Othmar, and Gruber, Heinz 3,477,706.
Gruber, Thomas J., and Lyth, William W., to Eaton Yale & Towne, Inc. Lubricating oil pumping station and master control center for positive displacement type metering valves. 3,477,546, Cl. 184-007.
Grundman, Richard G., and Sharpe, Cecil H., to General Motors Corporation. Fuel spray nozzle. 3,477,647, Cl. 239-468.
Grundschober, Friedrich, and Sambeth, Joerg, to Battelle Memorial Institute, International Division. Method of making a protective coating at the surface of a solid body. 3,477,868, Cl. 117-046.
Gruss, George A., Smith, Richard A., and Infantino, Joseph R., to American Machine & Foundry Company. Process for the manufacture of bowling pins. 3,478,134, Cl. 264-045.
Gudenschwager, Philip F.: *See*—
Couleur, John F., Gudenschwager, Philip F., Shelly, William A., and Bahrs, David L. 3,478,320.
Guinn, John T., Jr.: *See*—
Smith, Lloyd B.,, Guinn, John T., Jr., and Cox, Allan 3,477,111.
Guldimann, Simon: *See*—
Renz, Jany, Bourquin, Jean-Pierre, Winkler, Hans, Gagnaux, Pierre, Guldimann, Simon, Ruesch, Leo, and Schwarb, Gustav 3,478,022.
Gulf Research & Development Company: *See*—
Fernald, Herbert B., and Lynch, Eugene F., 3,477,813.
Fernald, Herbert B., Gall, William, and Kresge, Alfred N., 3,477,819.
Fernald, Herbert B., Gall, William, and Swift, Harold E., 3,478,124.
McGrath, Joseph J., and Tempalski, Chester S., 3,478,087.
Gullett, David E., and Reynolds, Edmond F., to Foote Mineral Company. Apparatus for the electrowinning of manganese. 3,477,937, Cl. 204-263.
Gulyas, James W.: *See*—
Veltman, Herbert, O'Kane, Patrick T., Gulyas, James W., and Middagh, William R. 3,477,927.
Gumboldt, Albert Gustav Martin, and Noetzel, Siegfried, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for preparing copolymers of azetidinones-(2) and lactones. 3,477,997, Cl. 260-078.
Guthke, Harald: *See*—
Beck, Fritz, Leitner, Hans, Wintersberger, Karl, and Guthke, Harald 3,477,923.
Guthrie, James L.: *See*—
Kehr, Clifton L., and Guthrie, James L. 3,478,004.
Gutierrez, Julian: *See*—
Bue, Richard C., and Gutierrez, Julian 3,477,760.
H. & R. Development Company, Inc.: *See*—
Ryan, John J., 3,477,464.
Haak, Willard J.: *See*—
Cryder, John R., Haak, Willard J., Hufeld, John L., Kinney, Lionel L., Lohbauer, Kenneth R., Marsden, Howard A., Matthews, Ralph W., Norick, William B., Stewart, Glen E., Vanzandt, Rollin P., and Winters, Frank H. 3,477,225.
Haapala, Ray. Cake decorator's gauge. 3,477,135, Cl. 033-174.
Haarer, Erich: *See*—
Adam, Karl, Haarer, Erich, and Dorfner, Konrad 3,478,112.
Habib, Emile E.: *See*—
Gagarine, Dmitry M., Habib, Emile E., and La Fleur, Kermit S. 3,477,805.
Hackstein, Karl-Gerhard, Pirk, Hans, and Maulbecker, Dieter Karl, to Nukem Nuklear-Chemie und -Metallurgie Gesellschaft mbH. Production of sinterable uranium dioxide. 3,477,830, Cl. 023-355.
Haddock, Louis A., Jr.: *See*—
De Pung, Gary L., and Haddock, Louis A., Jr. 3,477,539.
Haeusser, Harry C.: *See*—
Schuller, James T., Haeusser, Harry C., and Smith, Barry L. 3,477,556.
Hagemeyer, Hugh J., Jr., and Edwards, Marvin B., to Eastman Kodak Company. Blend of crystalline block copolymer and ethylene-propylene rubber. 3,478,128, Cl. 260-876.
Hahm, Heinz: *See*—
Beuchle, Friedrich, Hahm, Heinz, Klein, Christof Hans, and Beller, Hans 3,477,551.
Hahn, Erwin, and Seefelder, Matthias, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of 5-mercapto-1,2,4-thiodiazole derivatives. 3,478,045, Cl. 260-302.
Haines, Ernest Martin, and Taylor, Henry Bastian, to General Electric Company, Limited, The. Electric crossbar switches. 3,478,285, Cl. 335-112.
Hales, Pryce N., to Boeing Company, The. Signal detection system having plural output channels. 3,478,317, Cl. 340-147.
Hall, John H., to Union Carbide Corporation. Method of forming thin film resistors by cathodic sputtering. 3,477,935, Cl. 204-192.
Hall, Leslie, and Lynes, Arthur E., to Ford Motor Company. Electric propulsion motor vehicle. 3,477,538, Cl. 180-065.
Hall, Luther A. R., to Geigy Chemical Corporation. Polymeric pour point depressant compositions. 3,477,957, Cl. 252-059.
Haluska, Lawrence. Portable gun rack. 3,477,586, Cl. 211-064.
Hambor, John, to Atlantic Semiconductor, div of Aerological Research, Inc. Series rectifier stock and capacitor in shunt. 3,478,252, Cl. 317-233.
Hamill, Herbert R.: *See*—
Cecil, Tom A., Gerstenmier, Harold J., Hamill, Herbert R., and Puskar, Victor 3,477,565.
Hamilton, Donald A., to Xerox Corporation. Chemical package. 3,477,822, Cl. 023-253.
Hamilton, Donald Arthur, to Xerox Corporation. Chemical package. 3,477,821, Cl. 023-253.
Hamman, Ingeborg: *See*—
Schicke, Hans Gerd, and Hamman, Ingeborg 3,478,029.
Hammann, Ingeborg: *See*—
Fest, Christa, Hammann, Ingeborg, Stendel, Wilhelm, and Flucke, Winfried 3,478,037.
Hamouz, George J., and Zurek, James W., to International Harvester Company. Riding mower with forward and reverse belt drive. 3,477,439, Cl. 180-070.
Hamrick, Donald James, to Syndyne Corporation. Method of making thermocouple probe. 3,477,122, Cl. 029-573.
Hankus, Chester P. Artificial tree. 3,477,897, Cl. 161-022.
Hann, Paul D., to Phillips Petroleum Company Hoffmann-La Roche Inc. Preparation of hexamethylene diamine. 3,478,103, Cl.
Hanni, Manfred, to Siemens Aktiengesellschaft. Modulation system for converting analogue signals to a pulse amplitude to pulse width to a binary output. 3,478,170, Cl. 179-015.
Hansel, Werner: *See*—
Bende, Friedrich, Corsepius, Horst, and Hansel, Werner 3,478,102.
Hansen, Clayton C. Tank liner assembly. 3,477,610, Cl. 220-063.
Hansen, William S.: *See*—
Wiebe, Donald, 3,477,289.
Hanson, James R., and Kolb, Arthur F., to Cutler-Hammer, Inc. Multiposition selector switch for an enclosed electrical control station. 3,478,179, Cl. 200-005.
Hard af Segerstad, Carl-Gustaf. Variable speed transmission. 3,477,300, Cl. 074-112.
Harden, Phillip L.: *See*—
Buuck, Frederick A., Harden, Phillip L., and Thomas, Samuel M., Jr. 3,478,349.
Harding, John, Placzek, Peter, and Campbell, Sidney Glenroy, to Universal Highway (Contracting) Limited. Self-propelled apparatus for applying markings to roads and the like. 3,477,352, Cl. 094-044.
Hare, Glenn F., to Dyna-Med, Inc., mesne. Combined splint and traction device. 3,477,428, Cl. 128-085.
Harper, William M.: *See*—
Dunlap, Charles K., Jr., Johnson, Walter E., and Harper, William M. 3,477,631.
Harrett, Thomas, to International Standard Electric Corporation. Magnetic reed contact assemblies. 3,478,287, Cl. 335-154.
Harriman, Allen C.: *See*—
Andrews, Barry G., and Harriman, Allen C. 3,477,078.
Bergeron, Normand, Harriman, Allen C., and Sitko, Antoni L. 3,477,079.
Harris-Intertype Corporation: *See*—
Richards, Alan W., 3,477,367.
Stotzer, Roger H., and Southam, Donald L., 3,477,712.
Harris, Robert Dennis, to Black and Decker Manufacturing Company, The. Brush holder and insert and method of assembly. 3,478,240, Cl. 310-247.
Harris, William G., Jr.: *See*—
Stanley, William C., Harris, William G., Jr., and McLeroy, Edward G., Jr. 3,478,308.
Harrison, Ian Robert: *See*—
Fraser, James, and Harrison, Ian Robert 3,478,153.
Harrison, Stuart A., and Wicklatz, John E., to General Mills, Inc. Cyanoethylated cyclohexane-bis-alkyl amines. 3,478,081, Cl. 260-464.
Harshbarger, Allen L.: *See*—
Branyon, James Curtis, Harshbarger, Allen L., and Martin, Maxie 3,477,624.
Hart, Raymond V., to San Angelo Die Casting and Manufacturing Co., Inc. Gun rack. 3,477,587, Cl. 211-064.
Hart, Una L., to Sperry Rand Corporation. Polyhalogenated salicylidene anilines. 3,478,097, Cl. 260-566.
Hartman, Robert B., to Remington Arms Company. Oxyluminescent control apparatus. 3,477,403, Cl. 116-114.
Harvin, Richard L.: *See*—
Mayland, Bertrand J., Trimarke, Carl Robert, Harvin, Richard L., and Brandon, Charles S. 3,477,832.
Hass, David P., to Eaton Yale & Towne, Inc. Vehicle safety apparatus. 3,477,740, Cl. 280-150.
Hassell, Clark E., and Dobbs, Lowernze D. Log handling device. 3,477,598, Cl. 214-379.
Hatanaka, Yoshihiro: *See*—
Ogura, Junji, Mise, Noritoshi, Yokoo, Makoto, and Hatanaka, Yoshihiro 3,478,089.
Hathaway, Clayton E., Jr.: *See*—
Butler, John Mann, and Hathaway, Clayton E., Jr. 3,477,869.
Haury, Heinz, Dr., Chemische Fabrik: *See*—
Fried, Rudolf, and Hoeflmayr, Joachim, 3,477,818.
Hawerkamp, Manfred. Method of making continuous corrugated plastic pipe. 3,477,891, Cl. 156-143.
Hawley, George F., to Wagner Research Corporation. Flat article processing apparatus having a common blank supply feeding a plurality of worklines. 3,477,397, Cl. 112-002.
Hawtin, Selwyn George, Smith, David Roger, and Field, Dennis Ronald, to Courtaulds Limited. Apparatus and method for producing crimped filamentary materials. 3,477,218, Cl. 057-034.
Hayama, Akio. Oil tanker. 3,477,401, Cl. 114-074.

Hayes, Monson H., Jr.: *See—*
  Lewis, Harold F., and Hayes, Monson H., Jr. 3,478,198.
Hazard, Robert E., to Polytop Corporation. Dispensing closure. 3,477,618, Cl. 222-534.
Hazzard, Harry I., to McCulloch Corporation. Centrifugal friction clutch. 3,477,555, Cl. 192-105.
Healy, Lawrence William: *See—*
  Buff, Fred, Gross, Joseph Idadore, and Healy, Lawrence William 3,477,898.
Heberlein & Co. AG: *See—*
  Dubach, Paul, 3,477,287.
Heck, Karl-Heinz: *See—*
  Schulze, Guenther, and Heck, Karl-Heinz 3,477,828.
Hedvall, Per Olof Gunnar: *See—*
  Agdur, Nils Bertil, and Hedvall, Per Olof Gunnar 3,478,187.
Hegsvold, Oivind: *See—*
  Faugli, Per Ragnar, Faugli, Ivar Odd, and Hegsvold, Oivind 3,477,340.
Heilig, Alfred, and Zerrer, Gerhard, to Jackle, Otto, mesne. Device for debarking tree trunks. 3,477,482, Cl. 144-208.
Heinert, Dietrich H., to Dow Chemical Company, The. Preparation of carbamoylsulfonates. 3,478,090, Cl. 260-502.6
Hellige, Fritz, & Co., G.m.b.H.: *See—*
  Frank, Manfred H., 3,478,364.
Hellmers, Henry D., to Stauffer Chemical Company. Process for the production of dense sodium carbonate from trona and apparatus therefor. 3,477,808, Cl. 023-063.
Helmuth, James G., to Chadwick-Helmuth Electronics, Inc. Multiple shaker control system. 3,477,281, Cl. 073-071.6
Henes, Martin E., to Litton Business Systems, Inc. Division terminating mechanism. 3,477,640, Cl. 235-063.
Henkel, Ferdinand J., to Lamina, Inc. Composite fluid pressure pump or motor casing body and method of making the same. 3,477,379, Cl. 103-216.
Henker, Heinz, to Siemens Aktiengesellschaft. Method for producing a structure composed of mutually insulated semiconductor regions for integrated circuits. 3,477,885, Cl. 148-174.
Henry-Biabaud, Edmond, to Societe Anonyme Andre Citroen. Diaphragm-type hydraulic accumulators. 3,477,473, Cl. 138-030.
Henry, Edmund F.: *See—*
  Comey, Kenneth R., Jr., and Durst, George 3,477,845.
Henry, Frank B., and Windmiller, Harvey L., to Ametek, Inc. Laundry folding machine to produce various types of folds. 3,477,708, Cl. 270-069.
Henry, Georges, Brichard, Edgard, Marchand, Jean, and Bauduin, Albert, to Glaverbel S.A. Glass drawing apparatus with deflecting coolers. 3,477,838, Cl. 065-204.
Hentschel, Rudolf G. Wide frequency range eddy current testing instrument. 3,478,263, Cl. 324-040.
Herbenar, Edward J. Controlled torque twin bearing assembly adapted for kingpin-type wheel suspensions. 3,477,771, Cl. 308-071.
Herbst, Benjamin T. Combined crop shaker and harvester. 3,477,215, Cl. 056-328.
Herbst, David R.: *See—*
  Pattison, Thomas W., and Herbst, David R. 3,478,054.
Hercules Incorporated: *See—*
  Genge, Colin A., 3,478,009.
Herlach, Fritz: *See—*
  Knoepfel, Heinz, and Herlach, Fritz 3,478,231.
Herman, David, and Small, Sollie W., to Coffee-Mat Corporation. Indexed motor control device. 3,478,238, Cl. 310-077.
Hermann, Karl Heinz, and Rudolph, Hans, to Farbenfabriken Bayer Aktiengesellschaft. Polyamides stabilized with combination of a copper compound and a phosphonium halide. 3,477,986, Cl. 260-045.75
Hershey, Lowell E., to Durametallic Corporation. Cooling system for a stuffing box seal. 3,477,729, Cl. 277-001.
Herter, Eberhard, to International Standard Electric Corporation. Direct current signal receiver. 3,478,175, Cl. 179-018.
Hervert, George L., to Universal Oil Products Company. Hydrocarbon vapor control means for use with engine carburetor. 3,477,210, Cl. 055-387.
Herwig, Hans Ulrich, to Glanzstoff AG. Process for improving the uniformity of the modulus of elasticity in a draw twist wound thread cop. 3,477,221, Cl. 057-157.
Hester, Ray W., Jr.: *See—*
  Branham, Donald R., Selfe, Richard J., and Hester, Ray W., Jr. 3,477,235.
Hettick, George R.: *See—*
  Little, Donald M., and Hettick, George R. 3,477,945.
Hewlett, Clarence W., Jr., to General Electric Company. Converter for converting an angular shaft position to a digital pulse train. 3,478,347, Cl. 340-347.
Hewlett-Packard Company: *See—*
  Jeong, David H., 3,478,281.
Hewson, Clifford Bruce, to Bliss, E. W., Company of Canada Ltd. Combined street light and identification sign structure. 3,478,200, Cl. 240-025.
Heymann, Hans, to Olympia Werke AG. Apparatus for the retardation of impulse sequences. 3,478,332, Cl. 340-174.
Hi-Shear Corporation: *See—*
  Batten, Ronald W., 3,477,318.
Higashi, Hiromi: *See—*
  Takeda, Saburo, Higashi, Hiromi, Tarao, Ryokichi, Mizuno, Mikio, Watabe, Kazuyuki, Saito, Michiaki, Namikawa, Shigeo, and Tsunoda, Takao 3,477,999.
High Voltage Engineering Corporation: *See—*
  Bliamptis, Emmanuel E., and Quinn, Hubert R., 3,478,241.
Hildebrand, Robert. Drying chamber for drying lumber. 3,477,139, Cl. 034-191.
Hillier, Edward F. H. B., to Dowty Seals Limited. Gasket assemblies. 3,477,867, Cl. 117-004.
Hillyer, Martin J., to Shell Oil Company. Epoxy containing concrete. 3,477,979, Cl. 260-029.2
Hiltz, Ralph H., to Mine Safety Appliances Company. Carbon dioxide generating compositions. 3,477,955, Cl. 252-004.
Hindley, James W. Catch for perforated board attachments. 3,477,677, Cl. 248-220.5
Hipert, Fritz, to International Business Machines Corporation. Paper feed device. 3,477,626, Cl. 226-009.
Hirooka, Masaaki: *See—*
  Nakaguchi, Kohei, Kawasumi, Shohachi, Hirooka, Masaaki, and Fujita, Toshimichi 3,478,002.
Hirsch, Charles J., to RCA Corporation. Converter for VHF-omnirange (VOR) receiver. 3,478,360, Cl. 343-106.
Hitchcock, Richard E.: *See—*
  Griswold, Owen H., and Hitchcock, Richard E. 3,477,691.
Hlinka, Edward A., to Dempster Industries, Inc. Submersible multistage diffuser type pump. 3,477,384, Cl. 103-102.
Hobam, Inc.: *See—*
  Schaller, Harold E., 3,477,674.
Hocks, Peter: *See—*
  Furst, Andor, Furlenmeier, Andre, Langemann, Albert, Waldvogel, Guy, Hocks, Peter, Kerb, Ulrich, and Wiechert, Rudolf 3,478,065.
Hoeflmayr, Joachim: *See—*
  Fried, Rudolf, and Hoeflmayr, Joachim 3,477,818.
Hofer, John Gerald: *See—*
  McMullin, Edward Vincent, and Hofer, John Gerald 3,477,833.
Hoff, Don G. Dispenser for hollow truncated articles. 3,477,612, Cl. 221-040.
Hoffman-La Roche Inc.: *See—*
  Surmatis, Joseph Donald, 3,478,104.
Hoffmann, Alfred: *See—*
  Klein, Heinrich, Weber, Eduard, Pieper, Rudolf, and Hoffmann, Alfred 3,477,569.
Hoffmann, Hermann, and Zeitler, Heidi, to Farbwerke Hoechst AG, mesne. Azo dyestuffs of the acridone series. 3,478,010, Cl. 260-152.
Hoffmann-La Roche Inc.: *See—*
  Edenhofer, Albrecht, and Spiegelberg, Hans, 3,478,048.
  Furst, Andor, Furlenmeier, Andre, Langemann, Albert, Waldvogel, Guy, Hocks, Peter, Kerb, Ulrich, and Wiechert, Rudolf, 3,478,065.
  Hann, Paul D., 3,478,103.
Holland-Rantos Company, Inc.: *See—*
  Weinberger, Royal I., and Lusch, Nicholas, 3,477,200.
Holm, Myron J.: *See—*
  Zienty, Ferdinand B., and Holm, Myron J. 3,478,020.
Holt, Sherman H. Apparatus for applying pressure. 3,477,487, Cl. 146-016.
Holub, Fred F., Keane, John J., and Kim, James K. S., to General Electric Company. Heat moldable polycarbonate composition. 3,477,978, Cl. 260-023.7
Honeyball, Walter John, to English Electric Valve Company Limited. Method of making electron discharge device cathodes. 3,477,110, Cl. 029-025.14
Honeycomb Systems, Inc.: *See—*
  Thorpe, Foster B., 3,477,336.
Honeywell Inc.: *See—*
  Eisenberg, Harold, 3,478,352.
  Forsyth, William A., Jr., 3,477,862.
  Jordan, William F., Jr., 3,478,319.
  Luck, James R., and Mills, Frank S., 3,477,576.
Hongo, Chikara: *See—*
  Shirakura, Toshio, Yoshikawa, Hiroshi, Shibasaki, Masataka, and Hongo, Chikara 3,478,055.
Hood, Charles B., Jr., and Simons, Ira W., to CVI Corporation. Cryosurgical apparatus. 3,477,434, Cl. 128-303.1
Hooker Chemical Corporation: *See—*
  Carlson, Ronald H., 3,477,953.
Hooper, Harry Allison, to American Machine & Foundry Company. High speed cigar bunch machine. 3,477,442, Cl. 131-061.
Hooten, Basil P., Jr., to Bendix Corporation, The. Two directional switch. 3,478,293, Cl. 338-128.
Hoover, Dorothy H., to Frandee Corporation. Baby wrapping blanket and hood. 3,477,065, Cl. 002-069.5
Hopfeld, Henry. Rung for a ladder and method of making the same. 3,477,544, Cl. 182-228.
Horeczy, Joseph T.: *See—*
  Patton, Tad L., Horeczy, Joseph T., and Bown, Delos E. 3,477,991.
Horizon Industries, Ltd.: *See—*
  Engelsher, Harvey J., and McKirby, Robert W., 3,477,686.
Horrocks, Donald L., and Wirth, Hermann O., to United States of America, Atomic Energy Commission. 2-Aryl indoles and methods for their use. 3,478,208, Cl. 250-071.5

Horst, Raymond W.: *See—*
  Soukup, Victor G., and Horst, Raymond W. 3,477,900.
Horta, Luis Congost. Shooting game employing moving targets. 3,477,722, Cl. 273-101.
Horwood, Norman, and Gray, Alexander, to Gray Horwood Engineering Limited. Instruments. 3,477,296, Cl. 073-406.
Hostetler, Donald E., to Dart Industries Inc. Polypropylene block copolymer and process. 3,478,130, Cl. 260-878.
Houlihan, William J., and Manning, Robert E., to Sandoz Inc.Azecino- and azonino [5,4-$\beta$] indoles. 3,478,051, Cl. 260-326.12
Housman, Robert W., to Radio Manufacturing Co., Inc. Recording track indicating wheel for magnetic tape cartridge player. 3,477,725, Cl. 274-004.
Houston, David R., Howes, Benjamin T., Warrick, James E., and Alexandrowicz, Alvin W., to Ford Motor Company. Manually operable gearshift lever assembly for an automotive vehicle. 3,477,306, Cl. 074-485.
Houvener, Irving S.: *See—*
  Martin, Allan D., and Houvener, Irving S. 3,478,139.
Hovercraft Development Limited: *See—*
  Bing, Alan John, 3,477,387.
Howard, Ben O. Inspirator ventilator. 3,477,358, Cl. 098-064.
Howe, Edwin W., to AMBAC Industries, Incorporated. Caging apparatus and sensor stabilization system employing same. 3,477,297, Cl. 074-005.1
Howe, Edwin W., to AMBAC Industries, Incorporated. Gyroscopic apparatus and systems. 3,477,298, Cl. 074-005.34
Howell, Robert V. Camera aligning instrument. 3,477,786, Cl. 355-018.
Howes, Benjamin T.: *See—*
  Houston, David R., Howes, Benjamin T., Warrick, James E., and Alexandrowicz, Alvin W. 3,477,306.
Hrach, Josef: *See—*
  Zorn, Hermann, Hrach, Josef, and Zeschmar, Winfried 3,477,989.
Hubbard, Charles J., to Cutler-Hammer, Inc. Temperature-compensated gauging laser interferometer system. 3,477,789, Cl. 356-106.
Hubert, Andre, to Union Carbide Corporation. Novel process for the preparation of olefinic compounds and derivatives thereof. 3,478,122, Cl. 260-677.
Hubert, Robert L.: *See—*
  Langford, Thomas S., and Hubert, Robert L. 3,477,391.
Huck, Nelton D.: *See—*
  Schroeder, Adolph C., and Huck, Nelton D. 3,477,243.
Hufeld, John L.: *See—*
  Cryder, John R., Haak, Willard J., Hufeld, John L., Kinney, Lionel L., Lohbauer, Kenneth R., Marsden, Howard A., Matthews, Ralph W., Norick, William B., Stewart, Glen E., Vanzandt, Rollin P., and Winters, Frank H. 3,477,225.
Hughes Aircraft Company: *See—*
  Rado, John A., 3,478,323.
Hughes, Gordon Alan, and Smith, Herchel. Preparation of 13-alkylgona-1,3,5(10),8,14- pentaenes. 3,478,106, Cl. 260-590.
Hughes, William Lewis, Summers, Claude Menta, and Allison, Hansell Jack, to Oklahoma State University of Agriculture & Applied Science. Device for the direct conversion of thermal dynamic free energy in fuel gases to electrical energy. 3,477,878, Cl. 136-086.
Huibers, Derk Th. A., to Lummus Company, The. Process for the production of acrylonitrile or methacrylonitrile. 3,478,082, Cl. 260-465.3
Hulbert, Clarence E., Jr., to Capvac Industries, Inc. Cylinder treater apparatus. 3,477,178, Cl. 051-008.
Hull, Joseph F., to Litton Precision Products, Inc. Microwave tuner having a rapid tuning rate. 3,478,247, Cl. 315-039.55
Hull, Maurice E., and Kline, Ralph Willard, to Armour and Company. Production of a sweet cream buttermilk from lipolyzed cream. 3,477,853, Cl. 099-063.
Huml, James O., and Layne, Gilbert S., to Dow Chemical Company, The. Process for preparing metal fluoride single crystals. 3,477,812, Cl. 023-088.
Hunter, Byron A., to Uniroyal, Inc. Protection of olefinic polymers. 3,477,987, Cl. 260-045.85
Hunter, Travis L. Crimping tool. 3,477,272, Cl. 072-445.
Hunziker, Fritz: *See—*
  Schmutz, Jean, Hunziker, Fritz, Kunzle, Franz Martin, and Russel, Jeff Hamish 3,478,056.
Hurd, Billy G., to Mobil Oil Corporation. Method of maximizing efficacy of surfactant in flooding water. 3,477,508, Cl. 166-250.
Hurd, William Sprech: *See—*
  Schwitzgebel, Ralph K., and Hurd, William Sprech 3,478,344.
Hurletron Incorporated: *See—*
  Adamson, Robert G., Angell, Charles H., Roote, Jay C., Hutchison, Joel F., and Coberley, Daniel A., 3,477,369.
Hurtmanns, Heinz: *See—*
  Decker, Hanns, Stockmann, Helmut, and Hurtmanns, Heinz 3,477,651.
Hutchison, Joel F.: *See—*
  Adamson, Robert G., Angell, Charles H., Roote, Jay C., Hutchison, Joel F., and Coberley, Daniel A. 3,477,369.
Hyer, Frank S., and Tolan, Peter J., to Cutler-Hammer, Inc. Weighing scale mechanism. 3,477,533, Cl. 177-220.
Hygrodynamics, Inc.: *See—*
  Ohlheiser, Carlton Edward, 3,477,282.
  Perlaky, Leopold, 3,477,279.
Hypro, Inc.: *See—*
  Sadler, Harry J., 3,477,377.

I-T-E Imperial Corporation: *See—*
  Zocholl, Stanley E., and Conrad, Richard R., 3,478,250.
Icke, William M., and Veryser, Harry C. Universal vehicle sun visor mount. 3,477,678, Cl. 248-288.
Icore, Industries: *See—*
  Wilder, Leslie N., 3,477,532.
Ideal Toy Corporation: *See—*
  Lindsay, Kenneth W., and Ensmann, Burt W., 3,477,728.
Ierusalimsky, Boris Nikolaevich: *See—*
  Bolotin, Evgeny Moiseevich, Blyakher, Lev Abramovich, Ierusalimsky, Boris Nikolaevich, Saveliev, Leonid Ivanovich, Razemerov, Vladimir Ivanovich, and Khaidurov, Leonid Konstantinovich 3,477,301.
Iizuka, Yasuhiro: *See—*
  Nakahara, Masataka, Ogawa, Yasuhiro, Iizuka, Yasuhiro, and Osada, Yoshihiro 3,477,998.
Ikegami, Yoshihiko: *See—*
  Negoro, Harutada, Awada, Etsuo, Ikegami, Yoshihiko, Akagi, Saburo, and Matsui, Katsuaki 3,477,995.
Illinois Tool Works Inc.: *See—*
  Wallace, Clarence L., Jr., 3,478,343.
Imperial Chemical Industries Limited: *See—*
  Blues, Ernest Thomson, 3,477,922.
  Campbell, Alastair, and Roberts, Hugh Leithead, 3,478,034.
  Colchester, John Edward, and Entwisle, John Hubert, 3,478,042.
  Doyle, Peter, and Wylie, Alastair Graham, 3,478,047.
  Jack, James, Stuart, Ronald Sangster, and Plumb, John Beckett, 3,478,075.
  Williams, Roy Alan, 3,477,219.
Imperial Chemical Industries of Australia and New Zealand Limited: *See—*
  Baklien, Asbjorn, Gregory, Jocelyn M., and Kling, Klaus, 3,478,057.
Impex Corporation: *See—*
  Niemi, Herbert W., 3,477,770.
Inca Inks, Inc.: *See—*
  Remer, Robert K., 3,477,866.
Industrial Instrumentations, Inc.: *See—*
  Cooper, Irving B., Jr., 3,478,330.
Infantino, Joseph R.: *See—*
  Gruss, George A., Smith, Richard A., and Infantino, Joseph R. 3,478,134.
Ing. C., Olivetti, & C., S.p.A.: *See—*
  Perotto, Pier Giorgio, and Ecclesia, Edoardo, 3,478,251.
Ingwalson, Raymond W., Smith, William F., and Wright, James O., to Velsicol Chemical Corporation. Method of improving the color and color stability of benzoic acid. 3,478,092, Cl. 260-525.
Inland Container Corporation: *See—*
  Brown, Philip H., and Ellson, Lloyd W., 3,477,395.
Inoue, Kiyoshi. Magnetic filter and method of operating same. 3,477,948, Cl. 210-019.
Insul Company Incorporated: *See—*
  LaBate, Michael E., 3,477,683.
International Business Machines Corporation: *See—*
  Barson, Fred, and Kuiper, Lubertus L., 3,477,123.
  Cooper, Jamexs, King, Lewis E., and MacSorley, Olin L., 3,478,321.
  Dervan, James T., III, 3,478,286.
  Divine, Dwight, III, 3,478,356.
  Evans, Bob O., 3,478,322.
  Flavin, Theodore F., 3,477,252.
  Gorog, Etienne P., 3,478,350.
  Hipert, Fritz, 3,477,626.
  Kump, Herbert J., 3,478,334.
  Leilich, Hans-Otto G., and Schmeckenbecher, Arnold F., 3,478,335.
  Liander, Leonard E., 3,477,317.
  Melas, Constantin Michael, 3,478,267.
  Oeters, Harold R., and Maholick, Andrew W., 3,478,325.
  Parker, Gerald R., and Verdibello, Ambrose A., 3,478,255.
  Schaefer, John O., 3,478,196.
  Schillinger, Walter E., 3,478,328.
  Schwartz, Bernard, and Turk, Harold L., 3,478,340.
  Yeh, Tsu-Hsing, and De Fries, Robert M., 3,478,253.
International Harvester Company: *See—*
  Hamouz, George J., and Zurek, James W., 3,477,439.
  Maddalozzo, Raymond J., 3,477,458.
  Walker, Dennis W., and Bexton, Eugen, 3,477,518.
International Packings Corporation: *See—*
  Workman, Woodrow Irwin, 3,477,731.
International Shoe Machine Corporation: *See—*
  Estabrooks, Roger S., 3,477,470.
International Standard Electric Corporation: *See—*
  Bauer, Ludwig, 3,478,186.
  Chatelon, Andre Edouard Joseph, 3,478,163.
  Dietrich, Walter, and Schrempp, Winfried, 3,478,315.
  Harrett, Thomas, 3,478,287.
  Herter, Eberhard, 3,478,175.
International Synthetic Rubber Company Limited, The: *See—*
  Friedl, Arno Rudolph, 3,477,804.
International Telemeter Corporation: *See—*
  Reiter, Abraham M., and Court, Patrick R. J., 3,478,166.
International Telephone and Telegraph Corporation: *See—*
  Conrad, Thomas Wesley, and McIver, William, 3,478,301.
  Ray, William A., 3,477,462.

  Spaulding, David B., 3,477,368.
  Wuellner, Louis E., Stark, Jack L., and Crawford, James D., 3,478,218.
Inventions, Inc.: *See—*
  Brazener, Harry M., and Newman, Robert W., 3,477,893.
Iowa State University Research Foundation, Inc.: *See—*
  Lalor, William F., 3,477,174.
Ison, Robert C., to V-M Corporation. Noise control circuit. 3,478,271, Cl. 325-478.
Itek Corporation: *See—*
  Berman, Elliot, 3,477,850.
Ito, Haruo, to Yokogawa-Hewlett-Packard, Ltd. Phase shifting circuit. 3,478,227, Cl. 307-232.
Ivec, Martin, to Motorola, Inc. Transistor multivibrator flasher circuit. 3,478,248, Cl. 315-205.
Iwaskiw, Lubomyr J.: *See—*
  Laurent, Harold J., and Iwaskiw, Lubomyr J. 3,478,274.
Jack, James, Stuart, Ronald Sangster, and Plumb, John Beckett, to Imperial Chemical Industries Limited. Terpolymers containing polysiloxane, polyoxyalkylane, and polyvinyl ester blocks. 3,478,075, Cl. 260-448.2
Jackle, Otto: *See—*
  Heilig, Alfred, and Zerrer, Gerhard, 3,477,482.
Jackson, Carl Thomas, to True Temper Corporation, mesne. Railway rail fastener device. 3,477,642, Cl. 238-349.
Jackson, Jesse M., to Bell Telephone Laboratories, Incorporated. Air drying system. 3,477,204, Cl. 055-033.
Jackson, John Harry, and Schmidt, Walther, to Reynolds Metals Company. Aluminum reduction of beryllium halide. 3,477,844, Cl. 075-063.
Jacobs, Harry E.: *See—*
  Masologites, George P., Jacobs, Harry E., and White, Paul J. 3,477,943.
Jaeger Machine Company, The: *See—*
  Johanson, Frederic R., and Smith, Meredith E., Jr., 3,477,380.
Jaeschke, Ralph L., to Eaton Yale & Towne, Inc. Eddy-current coupling. 3,478,239, Cl. 310-105.
Jagenberg-Werke AG: *See—*
  Schonmeier, Herbert, and Mohle, Horst, 3,477,328.
Jakob, Fritz, to Linde Aktiengesellschaft. High pressure vapor compression distillation. 3,477,918, Cl. 203-011.
Janacek, Jerry C., to General Electric Company. Extended range infrared moisture gage standards. 3,478,210, Cl. 250-083.
Japan Exlan Company Limited: *See—*
  Oonishi, Yasuo, Okazaki, Takeshi, and Kubo, Masashi, 3,477,109.
Japan Stationery Co., Ltd., the: *See—*
  Yamashita, Nagahiro, 3,477,791.
Jedso Industries, Inc.: *See—*
  Djedda, Fouad H., 3,477,723.
Jefferson Chemical Company, Inc.: *See—*
  Lichtenwalter, Myrl, and Burns, Simon Pierce, 3,477,919.
Jeger, Oskar, Schaffner, Kurt, and Wehrli, Hans Ueli, to Ciba Corporation. 4α,10α; 2β,1′-Bicyclo-5β-methyl-19 norsteroids and their preparation. 3,478,068, Cl. 260-397.4
Jenkins, Jack J.: *See—*
  Fillmore, Leland A., and Jenkins, Jack J. 3,477,256.
Jensen, William G., to Ford Motor Company. Adjustable frequency horn. 3,477,405, Cl. 116-137.
Jeong, David H., to Hewlett-Packard Company. TEM mode directional coupler having dielectric compensating means. 3,478,281, Cl. 333-010.
Jepson, Ivar, Dokos, Sophocles J., and Bielak, Sigmund H., to Sunbeam Corporation. Can opener. 3,477,263, Cl. 072-071.
Jobin, Alvin H.: *See—*
  Bell, Charles C., and Jobin, Alvin H. 3,477,217.
Johanson, Frederic R., and Smith, Meredith E., Jr., to Jaeger Machine Company, The. Electric control circuit and hydraulic system for concrete pumping apparatus. 3,477,380, Cl. 103-049.
John E. Smith's Sons Co.:*See—*
  Schaller, Harold E., 3,477,674.
Johns-Manville Corporation: *See—*
  Rogers, William M., Jr., 3,477,905.
Johnson, Don E., to Thermodynamic Systems, Inc. Reciprocating engine, pump or motor. 3,477,345, Cl. 091-207.
Johnson, Douglas, to General Motors Corporation. Gas turbine power plant. 3,477,228, Cl. 060-036.
Johnson, Gordon, Company: *See—*
  Zebarth, Ralph S., and Frederick, Henry E., 3,477,093.
Johnson, John L., Jr.: *See—*
  Fuzzell, Joe E., Thompson, John C., and Johnson, John L., Jr. 3,477,607.
Johnson, Leonard B.: *See—*
  Kent, Robert L., Badessa, Rosario S., Barus, Carl, Dunn, Joseph M., Glaser, Raymond Arthur, and Johnson, Leonard B. 3,477,666.
Johnson, Lowell C. Dimensional gage with equalized spring pressure. 3,477,136, Cl. 033-178.
Johnson, Marvin M.: *See—*
  Myers, John W., and Johnson, Marvin M. 3,478,120.
Johnson, Randall W., to Automatic Radio Mfg. Co., Inc. Mobile refrigeration unit having shaft in common with compressor, fan drive means and selectable hydraulic or electric motor. 3,477,637, Cl. 230-214.
Johnson, Theodore W., Kalt, Charles G., and Martin, Jacob H., to Sprague Electric Company. Thermal print head. 3,478,191, Cl. 219-216.
Johnson, Theodore W., and Siivola, Ralph. Educational playhouse. 3,477,184, Cl. 052-105.
Johnson, Walter E.: *See—*
  Dunlap, Charles K., Jr., Johnson, Walter E., and Harper, William M. 3,477,631.
Johnston, Raymond, Moran, Edwin G., and Clark, Ralph J., to Continental Motors Corporation. Crankcase breather system and structure. 3,477,413, Cl. 123-001.
Jones, Alan Victor: *See—*
  Buckerridge, Edward Thomas, Jones, Alan Victor, and Rayward, William Clifford 3,478,181.
Jones, Clevoe D.: *See—*
  Gregorich, Henry L., Jones, Clevoe D., and Phelps, Marion E. 3,477,250.
Jones, Edward B. Flutter wing for a sailplane. 3,477,664, Cl. 244-016.
Jones, Joseph R. Radiographic microfilm projection device. 3,477,784, Cl. 353-081.
Jones, Marvin R., and Baugh, Benton F., to Cameron Iron Works, Inc. Apparatus for controlling the pressure in a well. 3,477,526, Cl. 175-025.
Jones, Peter H., and Rowley, Elizabeth A., to Abbott Laboratories. Carbohydrate derivatives of erythromycin. 3,478,013, Cl. 260-210.
Jones, Stanley C., Sanders, Laurence R., Jr., Tosch, William C., and Wenger, Charles B., to Marathon Oil Company. Process for the recovery of petroleum using soluble oils. 3,477,511, Cl. 166-274.
Jordan, William F., Jr., to Honeywell Inc., mesne. Multiemitter-follower circuits. 3,478,319, Cl. 340-166.
Joy Manufacturing Company: *See—*
  Archer, William E., Coe, Everett L., Jr., and Reed, Leo O., 3,477,124.
Juckniess, Paul R., and Blue, Robert D., to Dow Chemical Company, The. Galvanic cell employing iron cathode and method of producing galvanic cathode having activated iron surface. 3,477,876, Cl. 136-083.
Jukes, Norman Alfred, to Lucas, Joseph, (Industries) Limited. Spark ignition apparatus for internal combustion engines. 3,478,249, Cl. 315-209.
Jurist, John M., Jr., and Selle, Wilbur A. Vibratory bone density determination method and apparatus. 3,477,422, Cl. 128-002.
Juskevic, John A.: *See—*
  Florkowski, John Anthony, 3,477,577.
Just, Jerome O., and Stern, Howard W., to Aquatic Controls Corporation. Aquatic pickup and unloading apparatus. 3,477,213, Cl. 056-009.
Kabushiki-Kaisha Dokosha: *See—*
  Yanagisawa, Takere, 3,477,888.
Kabushikikaisha Yokogawa Denki: *See—*
  Tomota, Miyaji, 3,478,256.
Kaiser Aluminum & Chemical Corporation: *See—*
  Ross, Richard J., and Fohlen, George M., 3,478,099.
Kaiser, Wolfgang K.: *See—*
  Giordmaine, Joseph A., and Kaiser, Wolfgang K. 3,478,277.
Kakizawa, Tadao: *See—*
  Onishi, Isao, Nishi, Akira, and Kakizawa, Tadao 3,478,015.
Kali Forschung Anstalt GmbH: *See—*
  Autenrieth, Hans, and Wirries, Heinrich, 3,477,566.
Kalt, Charles G.: *See—*
  Johnson, Theodore W., Kalt, Charles G., and Martin, Jacob H. 3,478,191.
Kamborian, Jacob S.: *See—*
  Andrews, Barry G., and Harriman, Allen C., 3,477,078.
  Bergeron, Normand, Harriman, Allen C., and Sitko, Antoni L., 3,477,079.
Kamins, Seymour, and Rosenberg, Norman, to CTP Industries Inc. Bag and closure means therefor. 3,477,634, Cl. 229-054.
Kamio, Kosaku, and Kuwana, Motoyuki, to Nippon Carbide Kogyo Kabushiki Kaisha. Polyisobutylene oxide stabilized with combinations comprising a phenol and a metal dithiocarbamate. 3,477,972, Cl. 260-018.
Kanegafuchi Boseki Kabushiki Kaisha: *See—*
  Nakahara, Masataka, Ogawa, Yasuhiro, Iizuka, Yasuhiro, and Osada, Yoshihiro, 3,477,998.
Kappe, Stanley E., to FMC Corporation. Method and apparatus for treating waste materials. 3,477,947, Cl. 210-003.
Kardys, Joseph A., to Pfizer, Chas., & Co., Inc. Palladium-lead catalysts. 3,477,962, Cl. 252-412.
Kashiwagi, Etsuo, and Murakami, Hiroshi, to Nippon Electric Company Limited. Method and apparatus for writing information into plated wire magnetic film memories. 3,478,336, Cl. 340-174.
Kaspar, Jan: *See—*
  Nemec, Jindrich, Kaspar, Jan, and Soudek, Josef 3,477,575.
Katko, Daniel A., to Lombard Corporation. Hydraulic cylinder arrangement. 3,477,229, Cl. 060-052.
Katz, Leonhard, to Astro Dynamics, Inc. Heat-exchanging fluid circulating apparatus. 3,477,502, Cl. 165-122.
Katzer, Melvin F.: *See—*
  Sewell, Sewood, and Katzer, Melvin F. 3,477,467.
Kaufmann, Albert R., to Whittaker Corporation. Method and apparatus for edge-bonding metallic sheets. 3,477,114, Cl. 029-470.1

Kawachi, Yoshinori: *See—*
  Suzuki, Kensei, Tamura, Shigeo, Kawachi, Yoshinori, and Nagafuji, Naohiro 3,477,550.
Kawasumi, Shohachi: *See—*
  Nakaguchi, Kohei, Kawasumi, Shohachi, Hirooka, Masaaki, and Fujita, Toshimichi 3,478,002.
Kayser Roth Corporation: *See—*
  Weigert, Karl, 3,477,398.
Keane, John J.: *See—*
  Holub, Fred F., Keane, John J., and Kim, James K. S. 3,477,978.
Kearney & Trecker Corporation: *See—*
  Martin, John L., 3,477,121.
Keas, Carl F., to Anderson Bros. Mfg. Co. Cover feeding apparatus. 3,477,199, Cl. 053-067.
Kehr, Clifton L., and Guthrie, James L., to Grace, W. R., & Co. Crosslinking polyolefins with selected dioxime diesters. 3,478,004, Cl. 260-080.78
Keil, Joseph W., to Dow Corning Corporation. Compositions and processes for adhering polyolefins to surfaces. 3,477,901, Cl. 161-208.
Keller, Ben R., Sr. Shielded liquid zone gas-liquid separator. 3,477,208, Cl. 055-218.
Keller, Emil C., to Abex Corporation. Friction elements. 3,477,983, Cl. 260-038.
Keller, Wolfgang, to Siemens Aktiengesellschaft. Method of crucible-free zone melting crystal-line rods, especially of semiconductive material. 3,477,811, Cl. 023-301.
Kendall Company, The: *See—*
  Marshall, Preston F., 3,477,220.
Kennametal Inc.: *See—*
  Carlstedt, Ragnar L., 3,477,490.
Kennecott Copper Corporation: *See—*
  Whitham, Latham E., 3,477,593.
Kenner Products Company: *See—*
  Polewski, Robert E., 3,477,172.
Kent, Robert L., Badessa, Rosario S., Barus, Carl, Dunn, Joseph M., Glaser, Raymond Arthur, and Johnson, Leonard B., to United States of America, Navy, mesne. Guidance system. 3,477,666, Cl. 244-003.19
Kerb, Ulrich: *See—*
  Furst, Andor, Furlenmeier, Andre, Langemann, Albert, Waldvogel, Guy, Hocks, Peter, Kerb, Ulrich, and Wiechert, Rudolf 3,478,065.
Kern, Roland J., and McManimie, Robert J., to Monsanto Company. Styrene/1-olefin block copolymers. 3,478,129, Cl. 260-878.
Keyes Fibre Company: *See—*
  Crabtree, Kenneth L., 3,477,564.
Khaidurov, Leonid Konstantinovich: *See—*
  Bolotin, Evgeny Moiseevich, Blyakher, Lev Abramovich, Ierusalimsky, Boris Nikolaevich, Saveliev, Leonid Ivanovich, Razemerov, Vladimir Ivanovich, and Khaidurov, Leonid Konstantinovich 3,477,301.
Kiemele, Melvin, and Bergen, Henry J. Spring-loaded hoe. 3,477,515, Cl. 172-096.
Kienzle Uhrenfabriken G.m.b.H.: *See—*
  Siefert, Roland, 3,477,224.
Kiester, George S., and Short, R Stanford, to Aro Corporation, The. Automatic power tool. 3,477,521, Cl. 173-012.
Kilander, Sven Gustav Ingemar: *See—*
  Bjork, Harold John Carl, and Kilander, Sven Gustav Ingemar 3,478,172.
Kim, James K. S.: *See—*
  Holub, Fred F., Keane, John J., and Kim, James K. S. 3,477,978.
Kim, Yung Ki, and Pierce, Ogden R., to Dow Corning Corporation. Functional perfluoroalkylene organosilicon compounds. 3,478,076, Cl. 260-448.2
Kimber, Diane W. Toilet lid lock. 3,477,070, Cl. 004-253.
Kimberly-Clark Corporation: *See—*
  Banks, Charles T., 3,477,658.
  Grangaard, Donald H., 3,477,940.
  Thomas, Gordon D., 3,477,084.
Kimton, Inc.: *See—*
  Fulton, Fred D., 3,477,182.
Kinder, Gotthard, to Voigtlander, A.G. Automatic film speed setting for cameras. 3,477,355, Cl. 095-031.
King, Lewis E.: *See—*
  Cooper, Jamexs, King, Lewis E., and MacSorley, Olin L. 3,478,321.
Kinney, Lionel L.: *See—*
  Cryder, John R., Haak, Willard J., Hufeld, John L., Kinney, Lionel L., Lohbauer, Kenneth R., Marsden, Howard A., Matthews, Ralph W., Norick, William B., Stewart, Glen E., Vanzandt, Rollin P., and Winters, Frank H. 3,477,225.
Kinslow, William G., Jr., to Phillips Petroleum Company. Parison heating and transfer. 3,477,700, Cl. 263-008.
Kircher, Morton S., to Dryden Chemicals Limited. Anode structure for electrolytic cell. 3,477,938, Cl. 204-266.
Kircher, Morton S., to Dryden Chemicals Limited. Bipolar electrolytic cell. 3,477,939, Cl. 204-268.
Kirkendall, William D., to Weston Instruments, Inc. Variable resistors. 3,478,294, Cl. 338-174.
Kish, Michael, Jr., to Atlantic Products Corporation, mesne. Luggage having a zipper closure. 3,477,553, Cl. 190-041.
Kitagawa, Taisuke. Pneumatic rotative machine. 3,477,793, Cl. 415-036.
Kitaj, Walter, to Owens-Illinois, Inc. Foamed resin articles and method for production. 3,477,890, Cl. 156-079.
Kitchen, Leland G., and Rhea, Keith G., to Phillips Petroleum Company. Prevention of liquid backflow into gas compressor. 3,477,457, Cl. 137-209.
Kitrilakis, Sotiris, to Thermo Electron Corporation. Vapor engine boiler. 3,477,412, Cl. 122-033.
Klamp, Paul, to American Chain & Cable Company, Inc., mesne. Entrance switch for power and free conveyors. 3,477,388, Cl. 104-096.
Klauke, Erich: *See—*
  Paulus, Wilfried, Kuhle, Engelbert, Pauli, Otto, Sasse, Klaus, and Klauke, Erich 3,478,027.
Klein, Christof Hans: *See—*
  Beuchle, Friedrich, Hahm, Heinz, Klein, Christof Hans, and Beller, Hans 3,477,551.
Klein, Heinrich, Weber, Eduard, Pieper, Rudolf, and Hoffmann, Alfred, to Siemens Aktiengesellschaft. Vortex type separator and collector system. 3,477,569, Cl. 209-144.
Kline, Ralph Willard: *See—*
  Hull, Maurice E., and Kline, Ralph Willard 3,477,853.
Kling, Klaus: *See—*
  Baklien, Asbjorn, Gregory, Jocelyn M., and Kling, Klaus 3,478,057.
Klink, John, to Standard Gage Company, Inc. Support for gaging probe. 3,477,675, Cl. 248-124.
Klockner-Humboldt-Deutz A.G.: *See—*
  Decker, Hanns, Stockmann, Helmut, and Hurtmanns, Heinz, 3,477,651.
Klottschen, Heinz: *See—*
  Frenyo, Pal, and Klottschen, Heinz 3,477,762.
Klotz, Robert E.: *See—*
  Perkins, William H., and Klotz, Robert E. 3,478,246.
Knigge, Marinus Gijsbertus: *See—*
  van der Wijngaart, Bernardus Antonius Carolus, Quirijnen, Marius, and Knigge, Marinus Gijsbertus 3,477,787.
Knoepfel, Heinz, and Herlach, Fritz, to European Atomic Energy Community. Generator for currents in the order of mega- amperes through the use of explosives. 3,478,231, Cl. 310-010.
Knoth, Walter H., Jr., to Du Pont de Nemours, E. I., and Company. Acids and salts of $B_9H_9$CH. and $B_{11}H_{11}$CH. and processes for preparing them. 3,478,098, Cl. 260-567.6
Kobayashi, Haruhiro, and Oikado, Taizo, to Nippon Electric Company, Limited. Optical maser. 3,478,279, Cl. 331-094.5
Koch, Werner, and Preuss, Friedrich, to Roland Offsetmaschinenfabrik Faber & Schleicher AG. Sheet delivery mechanism for sheet-processing machines, particularly printing presses. 3,477,710, Cl. 271-064.
Kocher, Ernst-Ulrich, Wagner, Kuno, Von Der Emden, Wolfgang, and Dankert, Gerhard, to Farbenfabriken Bayer Aktiengesellschaft. Polyoxymethylene copolymers. 3,477,992, Cl. 260-067.
Koelsch, Lester M., to Beloit Corporation. Sugar beet processing. 3,477,873, Cl. 127-043.
Kohn, Gustave K.: *See—*
  McCaskey, Bob L., Kohn, Gustave K., and Moore, Joseph E. 3,478,052.
Koland, David G., to Whirlpool Corporation. Floor scrubber and polisher apparatus. 3,477,086, Cl. 015-320.
Kolb, Arthur F.: *See—*
  Hanson, James R., and Kolb, Arthur F. 3,478,179.
  Carter, Uriel F., Kolb, Arthur F., and Kunath, Elmer M. 3,478,292.
Koll, Stanley J., to American Flange & Manufacturing Co., Inc. Feeding bottle having integral opening means. 3,477,603, Cl. 215-011.
Kollmann, Wilfried: *See—*
  Laurien, Gunter, 3,477,132.
Kolyer, John M., and Kvlglis, Albert A., to Allied Chemical Corporation. Polymerization of lactams. 3,478,025, Cl. 260-248.
Komoda, Hayashi: *See—*
  Yamada, Masakazu, and Komoda, Hayashi 3,477,443.
Kondo, Katsutoshi: *See—*
  Tsuruga, Masanori, Murakami, Shogo, Kondo, Katsutoshi, Akabane, Shunei, Washikita, Kenji, and Koshino, Tameo 3,478,101.
Kondo, Masayuki: *See—*
  Osawa, Hideo, Sakamoto, Yosio, and Kondo, Masayuki 3,477,291.
Kooi, Cornelis Marius, and Louissen, Antienus, to N.V. Koninklijke Nederlandsche Zontindustrie. Method of electrolysing manganous chloride in a diaphragm cell. 3,477,925, Cl. 204-105.
Koot, Nick, to Global Marine, Inc. Kelly and drill pipe spinner-stabber. 3,477,527, Cl. 175-085.
Kopaska, Larry A. Coupling device. 3,477,468, Cl. 137-614.05
Koppe, Herbert, Ludwig, Gerhard, and Zeile, Karl, to Boehringer Ingelheim G.m.b.H.1-(3′,4′-Methylenedioxy-phenyl)-2-pyrrolidinoalkanones-(1). 3,478,050, Cl. 260-326.5
Koppehele, Paul H.: *See—*
  Swickard, James L., and Koppehele, Paul H. 3,477,098.
Koppelmann, Eldo K., to Madison Industries, Inc. Recessing tool. 3,477,319, Cl. 082-001.
Kordesch, Karl V., to Union Carbide Corporation. Fuel cell. 3,477,877, Cl. 136-086.

Koshimura, Saburo: *See—*
Okamoto, Hajime, and Koshimura, Saburo 3,477,914.
Koshino, Tameo: *See—*
Tsuruga, Masanori, Murakami, Shogo, Kondo, Katsutoshi, Akabane, Shunei, Washikita, Kenji, and Koshino, Tameo 3,478,101.
Kostas, James M.: *See—*
Kress, Ralph H., and Kostas, James M. 3,477,547.
Kostick, John M., to Omniversal Design. Modular structure. 3,477,188, Cl. 052-637.
Kracht, Gerhard, and Svihra, Paul M., to Swedish Crucible Steel Company. Apparatus for producing foam plastic sheet stacks. 3,477,325, Cl. 083-171.
Krafft, Joseph M., and Bird, Frank W. Four-lobed diametral-strain gage. 3,477,285, Cl. 073-088.5
Krantz, John Daniel, to Coastal Dynamics Corporation. Dental chair headrest. 3,477,761, Cl. 297-409.
Kraus, Harold: *See—*
Gray, Allan Poe, and Kraus, Harold 3,478,038.
Krcal, Zdenek, Muck, Eduard, and Krcmar, Jaroslav, to Statni Vyzkumny Ustav Kozedelny. Testing apparatus and method for sheet material. 3,477,288, Cl. 073-159.
Krcmar, Jaroslav: *See—*
Krcal, Zdenek, Muck, Eduard, and Krcmar, Jaroslav 3,477,288.
Kreiss, Hulda E. Percussion instrument with vertically stepped scale. 3,477,332, Cl. 084-403.
Kresge, Alfred N.: *See—*
Fernald, Herbert B., Gall, William, and Kresge, Alfred N. 3,477,819.
Kress, Ralph H., and Kostas, James M., to Caterpillar Tractor Company. Lubrication means for a planetary final drive assembly. 3,477,547, Cl. 184-063.
Kridle, Charles E. Demountable containers and bases and panel joints thereof. 3,477,604, Cl. 217-012.
Kronenthal, Richard L., and Rich, Ernest J., Jr., to Ethicon, Inc. Process for improving the knot strength of an extruded collagen strand. 3,478,140, Cl. 264-202.
Kroyer, Karl Kristian Kobs: *See—*
Repsdorph, Inger, Kroyer, Karl Kristian Kobs, and Damgard-Iversen, Jorgen 3,477,874.
Kroyer, Karl Kristian Kobs: *See—*
Repsdorph, Inger, Kroyer, Karl Kristian Kobs, and Damgard-Iversen, Jorgen, 3,477,874.
Krynski, John E., and Engwall, Richard E., to Ametek, Inc. Horizontal travelling belt filter. 3,477,583, Cl. 210-401.
Kubitzek, Harry, Unger, Otto, Nawrath, Gunter, Reichle, Alfred, and Nischk, Gunther, to Farbenfabriken Bayer Aktiengesellschaft. Bifilar polyamide yarns and filaments. 3,477,899, Cl. 161-173.
Kubo, Kazuo: *See—*
Namikata, Takeshi, and Kubo, Kazuo 3,477,929.
Kubo, Masashi: *See—*
Oonishi, Yasuo, Okazaki, Takeshi, and Kubo, Masashi 3,477,109.
Kuderna, Jerome G., Jr., and Skiles, Richard D., to Shell Oil Company. Amides. 3,478,105, Cl. 260-558.
Kuhle, Engelbert: *See—*
Paulus, Wilfried, Kuhle, Engelbert, Pauli, Otto, Sasse, Klaus, and Klauke, Erich 3,478,027.
Kuhlman, Roy M., to Packaging Corporation of America. Denester. 3,477,592, Cl. 214-008.5
Kuhnle, Ernst. Scale. 3,477,531, Cl. 177-171.
Kuiper, Lubertus L.: *See—*
Barson, Fred, and Kuiper, Lubertus L. 3,477,123.
Kump, Herbert J., to International Business Machines Corporation. Low threshold magnetic film memory. 3,478,334, Cl. 340-174.
Kunath, Elmer M.: *See—*
Carter, Uriel F., Kolb, Arthur F., and Kunath, Elmer M. 3,478,292.
Kunzle, Franz Martin: *See—*
Schmutz, Jean, Hunziker, Fritz, Kunzle, Franz Martin, and Russel, Jeff Hamish 3,478,056.
Kuts, Mathew, to Goodrich, B. F., Company, The. Hose testing apparatus. 3,477,134, Cl. 033-174.
Kuwana, Motoyuki: *See—*
Kamio, Kosaku, and Kuwana, Motoyuki 3,477,972.
Kvlglis, Albert A.: *See—*
Kolyer, John M., and Kvlglis, Albert A. 3,478,025.
Kyr, Ladislav, Volenik, Jiri, and Raba, Frantisek, to Skoda, oborovy podnik. Control circuit for multiphase rectifiers by sensing of thyristors's control electrode voltage. 3,478,257, Cl. 321-011.
Kyriakakis, Basil M.: *See—*
Solodar, Warren E., and Kyriakakis, Basil M. 3,478,064.
LaBate, Michael E., to Insul Company Incorporated. Bottle top cap for ingot molds. 3,477,683, Cl. 249-134.
Laclede Gas Company: *See—*
McMullin, Edward Vincent, and Hofer, John Gerald, 3,477,833.
Lacroix, Armand Jean Baptiste: *See—*
Bauger, Louis Jules, and Lacroix, Armand Jean Baptiste 3,477,230.
Ladwig, William A., Jr. Two tractor side-by-side hookup. 3,477,534, Cl. 180-014.
La Fleur, Kermit S.: *See—*
Gagarine, Dmitry M., Habib, Emile E., and La Fleur, Kermit S. 3,477,805.
Lake, Gerard K.: *See—*
Tomasino, Charles, and Lake, Gerard K. 3,477,902.
Lalor, William F., to Iowa State University Research Foundation, Inc. Method and apparatus for flame cultivating row crops. 3,477,174, Cl. 047-001.44
Lamb, Frank G., and Davidson, Arthur R., to Lamb-Weston, Inc. Fluid bed apparatus for treating food products. 3,477,242, Cl. 062-283.
Lamb-Weston, Inc.: *See—*
Lamb, Frank G., and Davidson, Arthur R., 3,477,242.
Lamina, Inc.: *See—*
Henkel, Ferdinand J., 3,477,379.
Langemann, Albert: *See—*
Furst, Andor, Furlenmeier, Andre, Langemann, Albert, Waldvogel, Guy, Hocks, Peter, Kerb, Ulrich, and Wiechert, Rudolf 3,478,065.
Langford, Thomas S., and Hubert, Robert L. Track guided model boat. 3,477,391, Cl. 104-073.
Lannert, James W., and Anderson, James J., to Whirlpool Corporation. Support assembly for a catalytic gas generator. 3,477,825, Cl. 023-281.
Lantz, William L.: *See—*
Allen, Roy A., and Lantz, William L. 3,477,971.
Lapidus, Milton, to American Home Products Corporation. Chromatographic purification of virus with brushite modified by autoclaving. 3,478,145, Cl. 424-089.
Lapidus, Roy. Cast cooler. 3,477,427, Cl. 128-082.1
Lapointe, Joseph Andrew, to Domtar Limited. Knife clamp. 3,477,483, Cl. 144-218.
Lapointe, Joseph Andrew, to Domtar Limited. Wood wafering. 3,477,484, Cl. 144-326.
Lapsevskis, Vilnis, and Svensson, Oake, to Telefonaktiebolaget LM Ericsson. Electronically controlled telecommunication system. 3,478,173, Cl. 179-018.
Larkin, John M., to Whiting Corporation. Inductor mounting means for an induction furnace. 3,478,157, Cl. 013-029.
Larsen, Aubrey A., and Uloth, Robert H., to Mead Johnson & Company. Therapeutic compositions and methods employing sulfonaidophenethanolamines. 3,478,149, Cl. 424-228.
Laschenski, Joseph E., to Philco-Ford Corporation. Changer mechanism for record tape cartridge. 3,477,726, Cl. 274-004.
LaTendresse, Philip E.: *See—*
Michaelson, Reynold R., and LaTendresse, Philip E. 3,477,596.
Laurent, Harold J., and Iwaskiw, Lubomyr J., to Bendix Corporation, The. Push-pull amplifier with asymmetrical drive and load. 3,478,274, Cl. 330-014.
Laurien, Gunter, to Kollmann, Wilfried. Depth measuring device. 3,477,132, Cl. 033-126.6
Layne, Gilbert S.: *See—*
Huml, James O., and Layne, Gilbert S. 3,477,812.
Lebrecht Tigges: *See—*
Tigges, Gerhard, 3,477,113.
Lechner, Bernard J., to RCA Corporation. Ferroelectric control circuits. 3,478,224, Cl. 307-088.
Le Compte, Frank M., to Tingley Rubber Corporation. Attachment for the spreader of a sail boat mast. 3,477,402, Cl. 114-102.
Ledbetter, Harvey D., to Dow Chemical Company, The. Preparation of polypropylene having intermediate crystallinity with a catalyst comprising (1) TiCl$_4$- metal hydride-alkyl aluminum halide and (2) aluminum trialkyl. 3,478,008, Cl. 260-093.7
Lee, Chi-Chang: *See—*
Dempsey, James Joseph, and Lee, Chi-Chang 3,478,141.
Lee, Lloyd T. Automotive deceleration signal system. 3,478,312, Cl. 340-067.
Lee, Robert E., and Donald, Harold J., to Dow Chemical Company, The. Extrusion apparatus. 3,477,099, Cl. 018-013.
Lee, Wing J. Automatic shirt folding machine. 3,477,619, Cl. 223-037.
Leesona Corporation: *See—*
Brouwer, Charles W., and Richter, Hans H., 3,477,476.
Legrand, Louis Francois Georges, to Sud-Aviation Societe Nationale de Constructions Aeronautiques. Vibration attenuating method and electrohydraulic attenuator for rotary-wing aircraft. 3,477,665, Cl. 244-017.27
Lehman, Lewis M.: *See—*
Cinatl, Fred J., and Lehman, Lewis M. 3,478,299.
Leilich, Hans-Otto G., and Schmeckenbecher, Arnold F., to International Business Machines Corporation. Chain magnetic memory element. 3,478,335, Cl. 340-174.
Leitner, Hans: *See—*
Beck, Fritz, Leitner, Hans, Wintersberger, Karl, and Guthke, Harald 3,477,923.
Leitz, Ernst, G.m.b.H.: *See—*
Bromer, Heinz, and Meinert, Norbert, 3,477,863.
Leland Stanford Junior University, the board of trustees of the: *See—*
New, William, and Newcomb, Robert W., 3,478,226.
Lengnick, Guenther Fritz, and Pepe, Anthony Enrico, to Stauffer Chemical Company. Room temperature curing organopolysiloxanes. 3,477,973, Cl. 260-018.
Lensky, Albert, to Swingline Inc. Apparatus for molding and assembling a container. 3,477,095, Cl. 018-002.
Lerner, Bernard, to Automated Packaging Corporation. Mechanism for automatically feeding, loading, and sealing bags. 3,477,196, Cl. 053-044.
Lerner, Julius, to Sun Oil Company. Probe assembly for measuring liquid level. 3,477,290, Cl. 073-292.

Lescure, Henri. Electric grill for foods. 3,478,194, Cl. 219-402.
Lettam, Inc.: *See—*
Gardel, Robert, and Gorsky, Egon; 3,477,169.
Letticri, Gerard L. Readily removable portable retractable leash for small animals. 3,477,410, Cl. 119-109.
Leung, Lau Chi: *See—*
Leung, Lau Chun, and Leung, Lau Chi 3,477,222.
Leung, Lau Chun, and Leung, Lau Chi. Calendar clock device. 3,477,222, Cl. 058-004.
Leverett, Glenn Frederick: *See—*
Alsup, Richard Glenn, and Leverett, Glenn Frederick 3,477,993.
Levine, Edward M.: *See—*
Enkoji, Takashi, and Levine, Edward M. 3,478,026.
Lewis, Charles W.: *See—*
Gillery, Frank H., Pressau, Jean P., and Lewis, Charles W. 3,477,936.
Lewis, Dean F. Cargo strap clip. 3,477,104, Cl. 024-201.
Lewis, Ernest Eber, to General Electric Company. Hydraulically operated tool for operating under nonatmospheric pressures. 3,477,523, Cl. 173-163.
Lewis, Harold F., and Hayes, Monson H., Jr., to North American Rockwell Corporation. System for modulating input signals with digital reference signals for generating resolver drive signals. 3,478,198, Cl. 235-186.
Lewis, Ronald G., and Erman, William F., to Procter & Gamble Company, The. Process for making α-santalol. 3,478,114, Cl. 260-631.5
Liander, Leonard E., to International Business Machines Corporation. Method for producing an improved die for use with a multi-element punch. 3,477,317, Cl. 076-107.
Libbey-Owens-Ford Company: *See—*
Oelke, Waldemar W., Carson, Frank J., Badger, Alfred E., and O'-Connell, Thomas B., 3,477,840.
Lichowsby, Abraham, to RCA Corporation. Data storage apparatus including laminated annuli transducer supports concentric with the data storage means. 3,478,339, Cl. 340-174.1
Lichtenwalter, Myrl, and Burns, Simon Pierce, to Jefferson Chemical Company, Inc. Removal of methyl formate from propylene oxide by treatment with calcium hydroxide. 3,477,919, Cl. 203-036.
Licis, Osvalds F., to Philip Morris Incorporated. Reconstituted tobacco sheet. 3,477,440, Cl. 131-014.
Lilienstern, Vera D. Retractable hair doll. 3,477,170, Cl. 046-135.
Liljendahl, Sven Algot Joel. Method of purifying waste liquid from water closets and other sanitary installations. 3,477,949, Cl. 210-048.
Linde Aktiengesellschaft: *See—*
Becker, Rudolf, 3,477,496.
Jakob, Fritz, 3,477,918.
Lindsay, Kenneth W., and Ensmann, Burt W., to Ideal Toy Corporation. Cylinder-type talking mechanism. 3,477,728, Cl. 274-001.
Line, Gerald D., to Eaton Yale & Towne, Inc. Hydraulic lifter. 3,477,416, Cl. 123-090.
Linsay, Michael, to Cleveland Trencher Company, The. Apparatus for tensioning a track or the like. 3,477,766, Cl. 305-010.
Linton, Charles J., deceased, and Linton, Marilyn J., executrix, to New Linwood Pool Corporation. Swimming pool support construction. 3,477,185, Cl. 052-169.
Linton, Marilyn J.: *See—*
Linton, Charles J., deceased, and Linton, Marilyn J., executrix 3,477,185.
Lipowski, Stanley A., to Diamond Shamrock Corporation. Water soluble synthetic tanning agents for producing shrunken grain leather. 3,477,801, Cl. 008-094.24
Little, Arthur D., Inc.: *See—*
Bablouzian, Leon M., Castonguay, Roger A., and Wenckus, Joseph F., 3,477,644.
Little, Donald M., and Hettick, George R., to Phillips Petroleum Company. Adduct type hydrocarbon separation using combination reactor and decomposition zone. 3,477,945, Cl. 208-308.
Littmann, Joseph C., to Ferro Manufacturing Corporation. Rotary drive mechanism including torque responsive switch. 3,478,182, Cl. 200-061.46
Litton Business Systems, Inc.: *See—*
Fischer, Armin O., 3,477,638.
Henes, Martin E., 3,477,640.
Litton Precision Products, Inc.: *See—*
Hull, Joseph F., 3,478,247.
Perkins, William H., and Klotz, Robert E., 3,478,246.
Litton Systems, Inc.: *See—*
Duncan, Glen R., and Wertz, William H., 3,478,273.
LKB-Produkter AB: *See—*
Wadso, Bertil Ingemar, 3,477,820.
Llop, Helenio: *See—*
Baton, Jean Pierre, and Llop, Helenio 3,477,790.
Lloyd, Neil E.: *See—*
Price, Billy Ray, St. Pierre, Richard Ernest, and Lloyd, Neil E. 3,477,445.
Lock, Stanley Anthony, to British Aircraft Corporation (Operating) Limited. Windshield for supersonic aircraft. 3,477,667, Cl. 244-121.
Lockheed Aircraft Corporation: *See—*
Adams, Victor J., Jr., 3,478,353.
Campbell, David H., 3,477,455.
Lofrisco, Leonard A., de Meo, Attilio A., and Walter, Gerard O., to Sperry Rand Corporation. Apparatus for controlling the automatic positioning of a driven member. 3,478,254, Cl. 318-018.
Lohbauer, Kenneth R.: *See—*
Cryder, John R., Haak, Willard J., Hufeld, John L., Kinney, Lionel L., Lohbauer, Kenneth R., Marsden, Howard A., Matthews, Ralph W., Norick, William B., Stewart, Glen E., Vanzandt, Rollin P., and Winters, Frank H. 3,477,225.
Lombard Corporation: *See—*
Katko, Daniel A., 3,477,229.
Lombardi, Victor J. Apparatus for knitting loop fabric. 3,477,255, Cl. 066-091.
Loncar, Frank. Portable game apparatus. 3,477,718, Cl. 273-040.
Loomis, Russell M., and Breen, Henry D., to Unarco Industries, Inc. Lading separating means. 3,477,392, Cl. 105-376.
Loudon, Percy O. Fish feeding device. 3,477,407, Cl. 119-051.
Louissen, Antienus: *See—*
Kooi, Cornelis Marius, and Louissen, Antienus 3,477,925.
Louzos, Demetrios V., to Union Carbide Corporation. Electrolyte for solions. 3,477,958, Cl. 252-062.2
Lovitz, David D., to Sternco Industries, Inc. Hanger device for supporting an article on a wall member. 3,477,679, Cl. 248-309.
Lubrizol Corporation, The: *See—*
Coulman, William J. T., 3,477,882.
Murfin, Donald L., and Miller, Leonard E., 3,478,091.
Lucas, Joseph, (Industries) Limited: *See—*
Jukes, Norman Alfred, 3,478,249.
Luck, James R., and Mills, Frank S., to Honeywell Inc. Water softener control. 3,477,576, Cl. 210-096.
Luding, Gustave. Means for securing prefabricated reinforced concrete bunker sections. 3,477,396, Cl. 109-001.
Ludwig, Gerhard: *See—*
Koppe, Herbert, Ludwig, Gerhard, and Zeile, Karl 3,478,050.
Luge, Karlheinz E., and Braun, Wolfgang, to Metallgesellschaft Aktiengesellschaft. Method for cooling the combustion gases of refuse incinerators. 3,477,203, Cl. 055-009.
Lugten, Leo K., to Bourns, Inc. Magnetic core and coil arrangement. 3,478,291, Cl. 336-216.
Lummus Company, The: *See—*
Huibers, Derk Th. A., 3,478,082.
Tucker, William, 3,477,495.
Lundgreen, Michael W., Tuthill, Edward G., and Majerus, John B., to Collins Radio Company. Echo false distance indication prevention circuit for aircraft DME and TACAN. 3,478,355, Cl. 343-007.3
Lundin, Lars Olof, and Salomonsson, Hans Manne Alvar, to Aktiebolaget Bofors. Track-laying vehicle which may vary in elevation while track tension remains constant. 3,477,339, Cl. 089-040.
Lusch, Nicholas: *See—*
Weinberger, Royal I., and Lusch, Nicholas 3,477,200.
Lyman, Merton C., to Cameron Machine Company. Apparatus and method for handling long sheets. 3,477,711, Cl. 271-074.
Lynch, Eugene F.: *See—*
Fernald, Herbert B., and Lynch, Eugene F. 3,477,813.
Lynes, Arthur E.: *See—*
Hall, Leslie, and Lynes, Arthur E. 3,477,538.
Lynes, Inc.: *See—*
Malone, Billy C., 3,477,506.
Lynnworth, Lawrence C., to Parametrics, Inc. Ultrasonic measurement. 3,477,278, Cl. 073-053.
Lyth, William W.: *See—*
Gruber, Thomas J., and Lyth, William W. 3,477,546.
Lytle, Thomas J., to Union Carbide Corporation. Scarfing unit. 3,477,646, Cl. 239-433.
M & T Chemicals, Inc.: *See—*
Bedi, Ram Dev, 3,477,920.
Maag, Gustav A., to Procter & Gamble Company, The. Apparatus and method for screening fibrous slurries. 3,477,571, Cl. 209-250.
Maahs, Paul, Matthies, Hans-Georg, and Wenger, Friedrich, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Apparatus for the continuous removal of volatile constituents from polyamides. 3,477,094, Cl. 018-002.
Maatschappij Van Berkel's Patent N.V.: *See—*
Six, Pieter Jacob, 3,477,781.
Mabeg Maschinenbau GmbH: *See—*
Schwebel, Adolf, 3,477,324.
Mabuchi, Takaichi, to Tokyo Kagaku Kabushikikaisha. Motor-driven screw propeller device. 3,477,173, Cl. 046-243.
MacEachron, Lendrum A. Convertible stapler. 3,477,628, Cl. 227-110.
Mac Henry, Carl, Weaver, John A., and Towell, Gordon D., to Shell Oil Company. Wiped-film evaporator. 3,477,491, Cl. 159-006.
Macks, Elmer Fred. Dynamoelectric device with speed change mechanism. 3,477,315, Cl. 074-798.
Macks, Fred: *See—*
Gold, Harold, and Macks, Fred 3,477,335.
Mac Leod, Donald A., and Maddock, George P., to American Telephone and Telegraph Company. Call distributing circuit utilizing sequential activation of station ringers. 3,478,174, Cl. 179-018.
MacSorley, Olin L.: *See—*
Cooper, Jamexs, King, Lewis E., and MacSorley, Olin L. 3,478,321.
Maddalozzo, Raymond J., to International Harvester Company. Fuel delivery valve assembly and method. 3,477,458, Cl. 137-327.
Maddock, George P.: *See—*
Mac Leod, Donald A., and Maddock, George P. 3,478,174.
Maddox, Charles F., to Ford Motor Company. Collapsible steering column. 3,477,307, Cl. 074-492.

- Madison Industries, Inc.: *See—*
  - Koppelmann, Eldo K., 3,477,319.
- Madrid, Robert W., to Xerox Corporation. Electrostatic separation of round and nonround particles. 3,477,568, Cl. 209-127.
- Mageli, Orville Leonard: *See—*
  - Bafford, Richard Anthony, and Mageli, Orville Leonard 3,478,080.
- Magnavox Company, The: *See—*
  - Mayle, Louis F., and Sanders, Robert W., 3,478,270.
- Maholick, Andrew W.: *See—*
  - Oeters, Harold R., and Maholick, Andrew W. 3,478,325.
- Maier, William H., and Ward, Dennis J., to Universal Oil Products Company. Manufacture of ethylbenzene. 3,478,119, Cl. 260-671.
- Mainar S.A. Industrial: *See—*
  - Calvano, Ferruccio C., 3,477,616.
- Majerus, John B.: *See—*
  - Lundgreen, Michael W., Tuthill, Edward G., and Majerus, John B. 3,478,355.
- Majewski, Theodore E., to Dow Chemical Company, The. Removal of deposits from process vessels. 3,477,451, Cl. 134-022.
- Malfroy, Remy, to Boivin, Claude. Screen. 3,477,574, Cl. 209-403.
- Mallinckrodt Chemical Works: *See—*
  - Gray, Allan Poe, and Kraus, Harold, 3,478,038.
- Mallinson, Ronald I. Valves for controlling the supply of drinking water to poultry or other livestock. 3,477,471, Cl. 137-614.18
- Mallory, P. R., & Co., Inc.: *See—*
  - Dotto, Gianni A., 3,477,460.
- Malmer, Clarence John, and Grassl, Ferdinand O. Hand cleaning composition. 3,477,951, Cl. 252-106.
- Malone, Billy C., to Lynes, Inc. Apparatus relating to fabrication and installation of expanded members. 3,477,506, Cl. 166-207.
- Manelick, James M.: *See—*
  - Bowles, Arnold G., and Manelick, James M. 3,477,096.
- Mangel, John J., to Dart Industries Inc. Aerosol dispenser actuated by propellant pressure. 3,477,613, Cl. 222-070.
- Manning, Donald L., to General Motors Corporation. Auxiliary road wheel assembly. 3,477,738, Cl. 280-124.
- Manning, Robert E.: *See—*
  - Houlihan, William J., and Manning, Robert E. 3,478,051.
- Manning, Robert E., to Sandoz Inc. Pyrimido thiadiazines. 3,478,023, Cl. 260-243.
- Marathon Oil Company: *See—*
  - Jones, Stanley C., Sanders, Laurence R., Jr., Tosch, William C., and Wenger, Charles B., 3,477,511.
- Marchand, Jean: *See—*
  - Henry, Georges, Brichard, Edgard, Marchand, Jean, and Bauduin, Albert 3,477,838.
- Marifarms, Incorporated: *See—*
  - Fujinaga, Motosaku, 3,477,406.
- Marin A., Alvaro. Rotary fluid-handling mechanism. 3,477,414, Cl. 123-013.
- Marion Power Shovel Company: *See—*
  - Thompson, George J., 3,477,769.
- Mark, Victor, to Monsanto Company. Cyclopentadienes. 3,478,117, Cl. 260-648.
- Marks, Alfred R., Jr. Full bore directional drilling tool. 3,477,524, Cl. 175-082.
- Marotta Valve Corporation: *See—*
  - Worden, Donald A., 3,477,463.
- Marsden, Howard A.: *See—*
  - Cryder, John R., Haak, Willard J., Hufeld, John L., Kinney, Lionel L., Lohbauer, Kenneth R., Marsden, Howard A., Matthews, Ralph W., Norick, William B., Stewart, Glen E., Vanzandt, Rollin P., and Winters, Frank H. 3,477,225.
- Marshall, Preston F., to Kendall Company, The. Draftable novelty yarns and process therefor. 3,477,220, Cl. 057-140.
- Martel, Richard A., Davis, William R., and Sutton, Carl E., to United States of America, Navy. Stored impedance image-translucent screen. 3,478,217, Cl. 250-213.
- Martin, Allan D., and Houvener, Irving S., to Dow Chemical Company, The. Method of extruding tubular webbing and cross-ribbed tubular film. 3,478,139, Cl. 264-167.
- Martin, Eugene R., and Morton, David I., to Caterpillar Tractor Company. Method of fastening parts by friction welding. 3,477,115, Cl. 029-470.3
- Martin, Jack L. Suspension shock absorber for tree shaking devices. 3,477,216, Cl. 056-328.
- Martin, Jacob H.: *See—*
  - Johnson, Theodore W., Kalt, Charles G., and Martin, Jacob H. 3,478,191.
- Martin, John L., to Kearney & Trecker Corporation. Machining center with dual function tool operator. 3,477,121, Cl. 029-568.
- Martin, John, to Fabricacion de Mequinas, S.A. Clean-out doors for vertical draw sheet glass making apparatus. 3,477,837, Cl. 065-168.
- Martin, Jon W., to Shell Oil Company. Footwear having improved block copolymer foxing adhesion. 3,477,148, Cl. 036-002.5
- Martin, Maxie: *See—*
  - Branyon, James Curtis, Harshbarger, Allen L., and Martin, Maxie 3,477,624.
- Martin, William E. Flexible coupling device. 3,477,245, Cl. 064-011.
- Martin, William E. Shaft coupling. 3,477,246, Cl. 064-011.
- Martin, William E. Shaft coupling device. 3,477,251, Cl. 064-027.
- Marzolph, Herbert: *See—*
  - Szita, Jeno, Bahr, Ulrich, Wieden, Horst, Marzolph, Herbert, and Nischk, Gunther 3,478,001.
- Masakazu Yamada & Hayashi Komoda: *See—*
  - Yamada, Masakazu, and Komoda, Hayashi, 3,477,443.
- Maschinenfabrik Augsburg-Nurnberg AG: *See—*
  - Fischer, Hermann, 3,477,370.
- Maschke, Artur, and Pasedach, Heinrich, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of acetals of methylglyoxal. 3,478,060, Cl. 260-340.9
- Maslow, Arthur L.: *See—*
  - Maslow, Ralph, and Maslow, Arthur L. 3,477,584.
- Maslow, Ralph, and Maslow, Arthur L. Reel carriage. 3,477,584, Cl. 211-040.
- Masologites, George P., Jacobs, Harry E., and White, Paul J., to Atlantic Richfield Company. Two-stage treatment of high sulfur content petroleum materials. 3,477,943, Cl. 208-089.
- Massa, Frank, Jr., to Dynamics Corporation of America. Electroacoustic transducer with multiple beam characteristics. 3,478,309, Cl. 340-009.
- Massachusetts Institute of Technology: *See—*
  - Ricardi, Leon J., and Rosenthal, Milton L., 3,478,362.
- Massey-Ferguson Inc.: *See—*
  - Richey, Clarence B., 3,477,517.
  - Rutkowski, Gerald L., 3,477,314.
- Massoubre, Jean-Marie, to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie. Cold self-vulcanizing rubber compositions. 3,477,968, Cl. 260-004.
- Matsui, Katsuaki: *See—*
  - Negoro, Harutada, Awada, Etsuo, Ikegami, Yoshihiko, Akagi, Saburo, and Matsui, Katsuaki 3,477,995.
- Matsushita Electric Industrial Co., Ltd.: *See—*
  - Saito, Hisashi, 3,478,169.
- Mattel, Inc.: *See—*
  - Ryan, John W., Echterling, Eugene J., Golden, Michael E., Goetz, John H., and Chang, Richard Shih-Teng, 3,477,140.
- Matthews, Ralph W.: *See—*
  - Cryder, John R., Haak, Willard J., Hufeld, John L., Kinney, Lionel L., Lohbauer, Kenneth R., Marsden, Howard A., Matthews, Ralph W., Norick, William B., Stewart, Glen E., Vanzandt, Rollin P., and Winters, Frank H. 3,477,225.
- Matthies, Hans-Georg: *See—*
  - Maahs, Paul, Matthies, Hans-Georg, and Wenger, Friedrich 3,477,094.
- Maulbecker, Dieter Karl: *See—*
  - Hackstein, Karl-Gerhard, Pirk, Hans, and Maulbecker, Dieter Karl 3,477,830.
- Mayland, Bertrand J., Trimarke, Carl Robert, Harvin, Richard L., and Brandon, Charles S., to Girdler Corporation. Process for the catalytic steam reforming of naphtha and related hydrocarbons. 3,477,832, Cl. 048-213.
- Mayle, Louis F., and Sanders, Robert W., to Magnavox Company, The. Automatic programming for detent-type TV tuner. 3,478,270, Cl. 325-470.
- Mayne, Walter W. Dead reckoning instrument. 3,478,195, Cl. 235-061.
- McArthur, Colin S., to Reynolds, R. J., Tobacco Company. Air actuated apparatus for controlling the diameter of a cigarette rod. 3,477,441, Cl. 131-021.
- McCartin, Joseph P. Spherical worm and pin gear indexing apparatus. 3,477,305, Cl. 074-426.
- McCarty, Lourdes V.: *See—*
  - Fairley, Richard K., and McCarty, Lourdes V. 3,477,641.
- McCaskey, Bob L., Kohn, Gustave K., and Moore, Joseph E., to Chevron Research Company. Imido perhaloalkyl disulfides. 3,478,052, Cl. 260-326.
- McCasland, Roy F. Portable slide viewer. 3,477,783, Cl. 353-078.
- McClendon, Jack C., to Dow Chemical Company, The. Cationic polyacrylamide terpolymers. 3,478,003, Cl. 260-080.73
- McConnell, Wayne V., to Eastman Kodak Company. Solvent extraction of polymeric glycols using methanol. 3,478,109, Cl. 260-611.
- McCray, Thomas Q. Readily engageable and readily releasable battery terminal and battery cable clamp assembly. 3,478,306, Cl. 339-237.
- McCulloch Corporation: *See—*
  - Gasner, William L., 3,477,480.
  - Hazzard, Harry I., 3,477,555.
- McFerrin, William D., and Nelson, Harve P. Directional charge explosive device. 3,477,372, Cl. 102-024.
- McGann, Rodney, to Texaco Inc., mesne. Heat exchanger. 3,477,505, Cl. 165-164.
- McGrath, Joseph J., and Tempalski, Chester S., to Gulf Research & Development Company. Haloalkyl esters of benzophenone tetracarboxylic acid. 3,478,087, Cl. 260-475.
- Mc Greary, Charles H., to General Motors Corporation. Torsional vibration damper. 3,477,311, Cl. 074-574.
- Mc Intyre, John W.: *See—*
  - Comey, Kenneth R., Jr., and Durst, George 3,477,845.
- McIver, William: *See—*
  - Conrad, Thomas Wesley, and McIver, William 3,478,301.
- McKelvey, John B.: *See—*
  - Soignet, Donald M., and McKelvey, John B. 3,478,033.
- McKibben, Richard K., to SWECO, Inc. Vibratory separator. 3,477,572, Cl. 209-255.
- McKirby, Robert W.: *See—*
  - Engelsher, Harvey J., and McKirby, Robert W. 3,477,686.
- McLaren, Ronald Robert, to Ferranti, Limited. Electronic counters. 3,478,197, Cl. 235-092.

- McLeroy, Edward G., Jr.: *See—*
  - Stanley, William C., Harris, William G., Jr., and McLeroy, Edward G., Jr. 3,478,308.
- McManimie, Robert J.: *See—*
  - Kern, Roland J., and McManimie, Robert J. 3,478,129.
- McMichael, James W., Jr., to Caterpillar Tractor Company. Pin peeler. 3,477,342, Cl. 090-024.
- McMullin, Edward Vincent, and Hofer, John Gerald, to Laclede Gas Company. Process for the production of a natural gas substitute. 3,477,833, Cl. 048-214.
- McNeil, Gordon I. Snowmobile track. 3,477,767, Cl. 305-038.
- McNeill, George A., and Sacks, Jerry D., to Monsanto Company. Method of controlling distillation operation with on-off control response. 3,477,916, Cl. 203-003.
- McNenny, Wilbur J. Fruit picking device. 3,477,542, Cl. 182-049.
- McQuade, James M., to General Electric Company. Battery having electrodeposited separator on the plates and method of making same. 3,477,875, Cl. 136-006.
- Mead Johnson & Company: *See—*
  - Larsen, Aubrey A., and Uloth, Robert H., 3,478,149.
- Mehltretter, Charles L., to United States of America, Agriculture. Hydrazides of fatty quaternary ammonium salts of glycine as retention agents. 3,477,904, Cl. 162-175.
- Meier, Donal A., to National Cash Register Company, The. Sensing means for a magnetic memory system. 3,478,338, Cl. 340-174.
- Meinert, Norbert: *See—*
  - Bromer, Heinz, and Meinert, Norbert 3,477,863.
- Melas, Constantin Michael, to International Business Machines Corporation. Reception of pulses transmitted at N times the Nyquist rate. 3,478,267, Cl. 325-042.
- Melnick, Daniel: *See—*
  - Wells, Phillip R., and Melnick, Daniel 3,477,858.
- Mercier, Jean. Servocontrol valve and system. 3,477,472, Cl. 137-625.62
- Merck & Co., Inc.: *See—*
  - Cragoe, Edward J., Jr., 3,478,085.
  - Nelson, Carl Edward, 3,478,151.
  - Rogers, Edward F., Clark, Robert L., and Patchett, Arthur A., 3,478,084.
  - Sarett, Lewis H., and Brown, Horace D., 3,478,046.
  - Sprague, James M., and Cragoe, Edward J., Jr., 3,478,021.
- Merson, Karol J.W., to Anthes Imperial Limited. Load supporting structure. 3,477,189, Cl. 052-648.
- Mesler, Lilburn L., to American Chain & Cable Company, Inc. Wire reinforced conduit. 3,477,474, Cl. 138-133.
- Messer Griesheim GmbH: *See—*
  - Rische, Ernst A., 3,477,239.
- Metalastik Limited: *See—*
  - Reed, Alun John, 3,478,160.
- Metallgesellschaft Aktiengesellschaft: *See—*
  - Luge, Karlheinz E., and Braun, Wolfgang, 3,477,203.
- Mettler, Klaus: *See—*
  - Winstel, Gunter, Mettler, Klaus, Zschauer, Karl-Heinz, and Pelka, Horst 3,478,215.
- Metzger, David P.: *See—*
  - Zielinski, Robert J., and Metzger, David P. 3,477,797.
- Meyer, Edgar, and Scheffels, Wilhelm, to Steigerwald Strahltechnik GmbH. Replaceable cathode for electron beam generating system. 3,478,244, Cl. 313-237.
- Meyercord Co., The: *See—*
  - Davis, Allan C., 3,477,198.
- Michaelis, Manfred, to Braun Aktiengesellschaft. Shredder. 3,477,489, Cl. 146-076.
- Michaelson, Reynold R., and LaTendresse, Philip E., to Pettibone Mulliken Corporation. Log skidder with cab-controlled cable binder. 3,477,596, Cl. 214-092.
- Middagh, William R.: *See—*
  - Veltman, Herbert, O'Kane, Patrick T., Gulyas, James W., and Middagh, William R. 3,477,927.
- Middaugh, George J., Jr.: *See—*
  - Charman, Walter M., Jr., and Middaugh, George J., Jr. 3,477,493.
- Middlemark, Marvin P. Indoor television antenna with rotatable rings. 3,478,361, Cl. 343-730.
- Milette, Kenneth A., and Samhammer, Clair A., to Samsonite Corporation. Hanger for coats and the like. 3,477,623, Cl. 223-088.
- Miller, Howard A.: *See—*
  - Nelson, Harry A., Oeland, Ernest N., Jr., Miller, Howard A., and Blatt, Milton D. 3,477,376.
- Miller, Leo A., and Terrana, Jack D., to Wellman-Lord, Inc., mesne. Process for recovering sulfur dioxide from flue gas. 3,477,815, Cl. 023-178.
- Miller, Leonard E.: *See—*
  - Murfin, Donald L., and Miller, Leonard E. 3,478,091.
- Miller, Lowell A.: *See—*
  - Fong, Willie, Wasley, William L., Whitfield, Robert E., and Miller, Lowell A. 3,477,803.
- Miller Printing Machinery Co.: *See—*
  - Young, William G., 3,477,304.
- Milligan, Gordon H., to Grinnell Corporation. Bar stock valve and method of making the same. 3,477,694, Cl. 251-367.
- Mills, Frank S.: *See—*
  - Luck, James R., and Mills, Frank S. 3,477,576.
- Milroy, Warren E., to United States of America, Navy. Electrooptic cursor manipulator with associated logic circuitry. 3,478,220, Cl. 250-221.
- Mine Safety Appliances Company: *See—*
  - Hiltz, Ralph H., 3,477,955.
- Ministerul Industriei Chimice: *See—*
  - Potop, Petre, and Brandus, Liviu, 3,477,205.
- Mintz, Leon J.: *See—*
  - Block, Charles, and Mintz, Leon J. 3,478,316.
- Mise, Noritoshi: *See—*
  - Ogura, Junji, Mise, Noritoshi, Yokoo, Makoto, and Hatanaka, Yoshihiro 3,478,089.
- Misson, George W., to PPG Industries, Inc. Apparatus for bending glass sheets on a gas support bed. 3,477,839, Cl. 065-273.
- Mitsubish Jukogyo Kabushiki Kaisha: *See—*
  - Ueda, Kenji, and Ogawa, Hiroshi, 3,477,931.
- Mitsuishi, Iwao, and Akita, Tadayoshi. Visual acuity testing equipment. 3,477,779, Cl. 351-032.
- Mizuno, Mikio: *See—*
  - Takeda, Saburo, Higashi, Hiromi, Tarao, Ryokichi, Mizuno, Mikio, Watabe, Kazuyuki, Saito, Michiaki, Namikawa, Shigeo, and Tsunoda, Takao 3,477,999.
- Mo, Frank S. C.: *See—*
  - Trimble, Cebern B., Mo, Frank S. C., and Combs, Ollah 3,478,341.
- Mobark Instruments: *See—*
  - Barkouki, Moghazi F., 3,478,327.
- Mobil Oil Corporation: *See—*
  - Hurd, Billy G., 3,477,508.
- Mobley, George A., to Clemson Industries, Inc. Air dryer. 3,477,193, Cl. 053-022.
- Mobley, Loreley Spencer, to Dravo Corporation. Steel making apparatus. 3,477,705, Cl. 266-013.
- Modrey, Henry J. Ratchet-action tool holder. 3,477,486, Cl. 145-050.
- Moe, Gerald A.: *See—*
  - Gould, Irwin M., and Moe, Gerald A. 3,477,563.
  - Gould, Irwin M., and Moe, Gerald A. 3,477,785.
- Mohamed, Ahmed. Apparatus for circulating heated cleaning solvent through engines. 3,477,452, Cl. 134-057.
- Mohawk Data Sciences Corporation: *See—*
  - Nyman, Alexander, 3,477,365.
- Mohle, Horst: *See—*
  - Schonmeier, Herbert, and Mohle, Horst 3,477,328.
- Molitor, Victor D. Food service carts. 3,478,193, Cl. 219-386.
- Molyneux, Lindsay. Analogue to digital converter. 3,478,348, Cl. 340-347.
- Monsanto Company: *See—*
  - Emerson, Paul D., Engelman, Fred H., Baggett, Frank A., and Oatfield, John C., 3,477,661.
  - Kern, Roland J., and McManimie, Robert J., 3,478,129.
  - Mark, Victor, 3,478,117.
  - McNeill, George A., and Sacks, Jerry D., 3,477,916.
  - Pilling, Brian, 3,478,006.
  - Ratts, Kenneth Wayne, 3,478,154.
  - Vineyard, Billy Dale, 3,478,107.
  - Zienty, Ferdinand B., and Holm, Myron J., 3,478,020.
- Monsanto Research Corporation: *See—*
  - Butler, John Mann, and Hathaway, Clayton E., Jr., 3,477,869.
  - Parts, Leo P., and Feairheller, William R., Jr., 3,477,932.
- Montecatini Edison S.p.A.: *See—*
  - Bucci, Giovanni, Simonazzi, Tonino, Ballini, Giuliano, and Portolani, Augusto, 3,477,985.
- Moore, Clarence C. Antenna support structure. 3,477,676, Cl. 248-201.
- Moore, Joseph E.: *See—*
  - McCaskey, Bob L., Kohn, Gustave K., and Moore, Joseph E. 3,478,052.
- Moorman, Cletus L., to General Motors Corporation. Grid and handle with interconnected pin and slot actuator. 3,477,681, Cl. 249-072.
- Moran, Edwin G.: *See—*
  - Johnston, Raymond, Moran, Edwin G., and Clark, Ralph J. 3,477,413.
- Morita, Tsuneo, to Sony Corporation. Erasing system for magnetic tapes with angularly disposed tracks thereon. 3,478,177, Cl. 179-100.2
- Morrell, John, & Co.: *See—*
  - Brown, William Lewis, and Schmucker, Morton Lee, 3,477,859.
- Morris, John W., to PPG Industries, Inc. Method for strenghtening glass. 3,477,834, Cl. 065-030.
- Morritt, K. P., Limited: *See—*
  - Morritt, Kenneth Patrick, 3,477,659.
- Morritt, Kenneth Patrick, to Morritt, K. P., Limited. Rotatable spool fishing reel. 3,477,659, Cl. 242-084.52
- Morse, Charles H., to Remington Arms Company, Inc. Extractor system with a single spring exerting unequal forces upon two firearm extractors. 3,477,162, Cl. 042-025.
- Morton, David I.: *See—*
  - Martin, Eugene R., and Morton, David I. 3,477,115.
- Moser, Joseph R.: *See—*
  - Struger, Odo J., and Moser, Joseph R. 3,478,228.
- Moser, Paul M., to United States of America, Navy. Infrared gray scale array. 3,478,211, Cl. 250-083.
- Motorola, Inc.: *See—*
  - Bryant, Harold D., and Motorola, Inc. 3,478,225.

- Motorola, Inc.: *See—*
  - Ehlenberger, Gary G., 3,477,886.
  - Ehlenberger, Gary G., 3,477,887.
  - Ivec, Martin, 3,478,248.
  - Race, Richard T., 3,477,238.
  - Reichart, Elwood C., 3,478,276.
  - Rogers, Max W., 3,478,272.
- Mott, Lambert H. Catalytic reaction device. 3,477,827, Cl. 023-288.
- Moulin, Jean, to Automobiles Peugeot, and Regie Nationale des Usines Renault. Cam shaft in a heat engine or compressor and the machine resulting therefrom. 3,477,417, Cl. 123-090.
- Moyer, Ralph H., and Taylor, Grady E. Acoustic and purifying exhaust muffler. 3,477,826, Cl. 023-288.
- Mr. Christmas, Inc.: *See—*
  - Goodridge, Walter R., 3,477,671.
- Muck, Eduard: *See—*
  - Krcal, Zdenek, Muck, Eduard, and Kremar, Jaroslav 3,477,288.
- Mudge, John H.: *See—*
  - Burkart, Alan R., and Mudge, John H. 3,477,494.
- Mull, Leonard E. Portable automatic animal waterer with quick discharge mechanism. 3,477,408, Cl. 119-078.
- Muller, Bert. Paper roll dispenser. 3,477,656, Cl. 242-055.2
- Muncheryan, Arthur M. Directed-beam portable laser system with self-charging power supply. 3,478,278, Cl. 331-094.5
- Murakami, Hiroshi: *See—*
  - Kashiwagi, Etsuo, and Murakami, Hiroshi 3,478,336.
- Murakami, Shogo: *See—*
  - Tsuruga, Masanori, Murakami, Shogo, Kondo, Katsutoshi, Akabane, Shunei, Washikita, Kenji, and Koshino, Tameo 3,478,101.
- Murfin, Donald L., and Miller, Leonard E., to Lubrizol Corporation, The. 2-Amido-2-alkenesulfonates. 3,478,091, Cl. 260-513.
- Murota, Shozaburo, and Yoshida, Masaharu, to Nippon Chuzo Kabushiki Kaisha. Stem-cranked, cam-adjusted butterfly valve assemblies. 3,477,690, Cl. 251-163.
- Murphy, Harry E., 1/2 to Spangler, Edwin L., Jr., and Wymore, Max L., d/b/a Anderson, Spangler & Wymore. Portable steam-cleaning apparatus. 3,477,645, Cl. 239-136.
- Myers, John W., and Johnson, Marvin M., to Phillips Petroleum Company. Dealkylation process and catalyst. 3,478,120, Cl. 260-672.
- N.V. Koninklijke Nederlandsche Zontindustrie: *See—*
  - Kooi, Cornelis Marius, and Louissen, Antienus, 3,477,925.
- Nachf. Hachf. Hense & Pleienes GmbH & Co.: *See—*
  - Schwebel, Adolf, 3,477,324.
- Nadeau, Clarence S., to Bellavance, Inc. Adjustable end connector. 3,477,107, Cl. 024-265.
- Nagafuji, Naohiro: *See—*
  - Suzuki, Kensei, Tamura, Shigeo, Kawachi, Yoshinori, and Nagafuji, Naohiro 3,477,550.
- Nagai, Tamiji, to Sony Corporation. Transformerless voltage reducing rectifier circuit. 3,478,258, Cl. 321-015.
- Naito, Masashi, to Eizo Komiyama, mesne. Identification system. 3,477,156, Cl. 040-002.2
- Nakaguchi, Kohei, Kawasumi, Shohachi, Hirooka, Masaaki, and Fujita, Toshimichi, to Sumitomo Chemical Company, Ltd. Copolymers of substituted norbornenes and olefins and process for producing the same. 3,478,002, Cl. 260-079.5
- Nakahara, Masataka, Ogawa, Yasuhiro, Iizuka, Yasuhiro, and Osada, Yoshihiro, to Kanegafuchi Boseki Kabushiki Kaisha. Production of polyesters from lactones. 3,477,998, Cl. 260-078.3
- Nakamura, Katsuro, and Watanabe, Shigetoshi, to Toko Kabushiki Kaisha. Woven-type, fixed memory. 3,478,337, Cl. 340-174.
- Nakamura, Susumu, and Shibazaki, Tadashi, to Nippon Gohsei Kagaku Kogyo Kabushiki Kaisha. Polyester resins from methy-cyclohexene tricarboxylic acid, methy-cyclohexane tricarboxylic acid or anhydride thereof and process of making the same. 3,477,976, Cl. 260-022.
- Nalco Chemical Company: *See—*
  - Stanford, James R., and Vogelsang, Paul G., Jr., 3,477,956.
- Namikata, Takeshi, and Kubo, Kazuo, to Fujitsu Limited. Method of etching aluminum foil in the manufacturing of aluminum electrolytic condensers. 3,477,929, Cl. 204-141.
- Namikawa, Shigeo: *See—*
  - Takeda, Saburo, Higashi, Hiromi, Tarao, Ryokichi, Mizuno, Mikio, Watabe, Kazuyuki, Saito, Michiaki, Namikawa, Shigeo, and Tsunoda, Takao 3,477,999.
- Narisada, Masayuki, to Shinogi & Co., Ltd.3-Oxygenated-5-oxymethyl-5α-androstene derivatives and preparation thereof. 3,478,150, Cl. 424-241.
- Narukiyo, Yasumasa, to Okuma Machinery Works Ltd. Nonambiguous reading system for analog to digital converters. 3,478,346, Cl. 340-347.
- National Cash Register Company, The: *See—*
  - Meier, Donal A., 3,478,338.
  - Trimble, Cebern B., Mo, Frank S. C., and Combs, Ollah, 3,478,341.
- National Dairy Products Corporation: *See—*
  - Bell, Kenneth, and Grossen, Harry W., 3,477,393.
  - Runge, Heinz F., 3,477,614.
- National Forge Company: *See—*
  - Bowles, Arnold G., and Manelick, James M., 3,477,096.
- National Starch and Chemical Corporation: *See—*
  - Semegran, Theodore S., and Trubiano, Paul C., 3,477,903.
- National Tel-Tronics Corporation: *See—*
  - Valle, Louis J., 3,478,304.
- Nawrath, Gunter: *See—*
  - Kubitzek, Harry, Unger, Otto, Nawrath, Gunter, Reichle, Alfred, and Nischk, Gunther 3,477,899.
- Neal, Frank, and Snyder, Robert A., to Wood Industries, Inc. Folding cylinder having adjustable band construction. 3,477,709, Cl. 270-071.
- Nedschroef Octrooi Maatschappij N.V.: *See—*
  - van de Meerendonk, Gerardus Cornelis, 3,477,077.
- Negoro, Harutada, Awada, Etsuo, Ikegami, Yoshihiko, Akagi, Saburo, and Matsui, Katsuaki, to Sankyo Company, Limited. Polyvinyl acetal dialkylamino acetate and polyvinyl pyranylether dialkylamino acetate. 3,477,995, Cl. 260-073.
- Nekton, Armas H. Game board with pieces having recording means thereon. 3,477,715, Cl. 273-136.
- Nelson, Arthur L.: *See—*
  - Gimpel, Donald J., and Nelson, Arthur L. 3,478,297.
- Nelson, Arthur L., to Electro Oceanics, Inc., mesne. Fluidproof end connector. 3,478,298, Cl. 339-061.
- Nelson, Carl Edward, to Merck & Co., Inc. Compositions of perphenazine and protriptyline for treating mental disorders. 3,478,151, Cl. 424-247.
- Nelson, Edwin F., to Universal Oil Products Company. Method of treating coal. 3,477,941, Cl. 208-008.
- Nelson, Harry A., Ocland, Ernest N., Jr., Miller, Howard A., and Blatt, Milton D., to United States of America, Navy. Missile nose cap. 3,477,376, Cl. 102-054.
- Nelson, Harve P.: *See—*
  - McFerrin, William D., and Nelson, Harve P. 3,477,372.
- Nelson, L. R., Mfg. Co., Inc.: *See—*
  - Bruninga, Kenneth J., 3,477,643.
- Nemec, Jindrich, Kaspar, Jan, and Soudek, Josef, to Vyzkumny ustav Organickych syntex. Method of continuous dynamic filtration and an apparatus for carrying out the same. 3,477,575, Cl. 210-067.
- Nescio, John J.: *See—*
  - Robinson, Charles A., and Nescio, John J. 3,478,018.
- Neuman, Milton C.: *See—*
  - Bauer, Myron J., Neuman, Milton C., and Wiethoff, Roger H. 3,477,338.
- Neville Chemical Company: *See—*
  - Wheeler, Harvey B., 3,478,005.
- Nevison, Ronald Arthur: *See—*
  - Burn, Patrick Marion, and Nevison, Ronald Arthur 3,477,529.
- New Linwood Pool Corporation: *See—*
  - Linton, Charles J., deceased, and Linton, Marilyn J., executrix, 3,477,185.
- New, William, and Newcomb, Robert W., to Leland Stanford Junior University, the board of trustees of the. Non-reciprocal wave translating network. 3,478,226, Cl. 307-229.
- Newcomb, Robert W.: *See—*
  - New, William, and Newcomb, Robert W. 3,478,226.
- Newcomer, Harry S. Quadruply-dispersive monochromator light-dispersing system. 3,477,788, Cl. 356-100.
- Newman, Robert W.: *See—*
  - Brazener, Harry M., and Newman, Robert W. 3,477,893.
- Niemi, Herbert W., to Impex Corporation. Drawer guide. 3,477,770, Cl. 308-003.6
- Niepraschk, Arno: *See—*
  - Blount, Charles, Jr., and Niepraschk, Arno 3,477,073.
- Niles, Harold T., to Ford Motor Company. Fuel tank having reduced fuel vapor emission. 3,477,611, Cl. 220-086.
- Nippon Carbide Kogyo Kabushiki Kaisha: *See—*
  - Kamio, Kosaku, and Kuwana, Motoyuki, 3,477,972.
- Nippon Chuzo Kabushiki Kaisha: *See—*
  - Murota, Shozaburo, and Yoshida, Masaharu, 3,477,690.
- Nippon Electric Company Limited: *See—*
  - Kashiwagi, Etsuo, and Murakami, Hiroshi, 3,478,336.
  - Kobayashi, Haruhiro, and Oikado, Taizo, 3,478,279.
  - Shimasaki, Nobuhiko, and Okuda, Jiro, 3,478,171.
- Nippon Gohsei Kagaku Kogyo Kabushiki Kaisha: *See—*
  - Nakamura, Susumu, and Shibazaki, Tadashi, 3,477,976.
- Nippon Kokan Kabushiki Kaisha: *See—*
  - Ando, Ryo, Shimotsuma, Teruo, and Chihara, Kanichiro, 3,477,701.
- Nischk, Gunther: *See—*
  - Kubitzek, Harry, Unger, Otto, Nawrath, Gunter, Reichle, Alfred, and Nischk, Gunther 3,477,899.
  - Szita, Jeno, Bahr, Ulrich, Wieden, Horst, Marzolph, Herbert, and Nischk, Gunther 3,478,001.
- Nishi, Akira: *See—*
  - Onishi, Isao, Nishi, Akira, and Kakizawa, Tadao 3,478,015.
- Nisshin Sangyo Kabushiki Kaisha: *See—*
  - Yamada, Masakazu, and Komoda, Hayashi, 3,477,443.
- Noetzel, Siegfried: *See—*
  - Gumboldt, Albert Gustav Martin, and Noetzel, Siegfried 3,477,997.
- Nolin, Roger J.: *See—*
  - Russell, Fred J., and Nolin, Roger J. 3,477,755.
- Noly, Jean, to Societe Potain S.A. Lifting winches. 3,477,695, Cl. 254-150.
- Nomine, Gerard: *See—*
  - Amiard, Gaston, Nomine, Gerard, and Torelli, Vesperto 3,478,062.
- Nonnenmacher, Helmut, Weitz, Hans-Martin, and Willersinn, Carl-Heinz, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Separation of methacrylic acid and acrylic acid. 3,478,093, Cl. 260-526.

- Norbisrath, Max, to Spezial-Papiermaschinenfabrik August Alfred Krupp. Apparatus for measuring and winding a given length of ribbon onto a spool. 3,477,657, Cl. 242-056.
- Norick, William B.: *See—*
  - Cryder, John R., Haak, Willard J., Hufeld, John L., Kinney, Lionel L., Lohbauer, Kenneth R., Marsden, Howard A., Matthews, Ralph W., Norick, William B., Stewart, Glen E., Vanzandt, Rollin P., and Winters, Frank H. 3,477,225.
- Normant, Henri Marie, to Rhone-Poulenc S.A. Preparation of phosphonamides. 3,478,095, Cl. 260-551.
- North American Rockwell Corporation: *See—*
  - Boyer, James H., Jr., 3,477,253.
  - Dillman, Norman G., 3,478,214.
  - Lewis, Harold F., and Hayes, Monson H., Jr., 3,478,198.
  - Prem, Lawrence L., 3,478,233.
  - Prem, Lawrence L., and Wang, Tsih-Chang, 3,478,234.
  - Trent, Lamartine C., 3,477,389.
- Northern Electric Company Limited: *See—*
  - Colton, Douglas Roy, 3,477,959.
- Northwestern National Bank of Sioux Falls: *See—*
  - Rink, Richard H., 3,477,354.
- Norton Company: *See—*
  - Robertson, John, Jr., 3,477,180.
- Notz, Karl: *See—*
  - Becker, Ernst, and Notz, Karl 3,477,399.
- Novak, Phillip J. Artificial dry fly fishing lure. 3,477,164, Cl. 043-042.09.
- Nukem Nuklear-Chemie und -Metallurgie Gesellschaft mbH: *See—*
  - Hackstein, Karl-Gerhard, Pirk, Hans, and Maulbecker, Dieter Karl, 3,477,830.
- Nutz, George Kaspar, to Bendix Corporation, The. Optical prism with multiple photocells. 3,478,219, Cl. 250-220.
- Nyman, Alexander, to Mohawk Data Sciences Corporation, mesne. Hysteresis drive for high speed print hammers. 3,477,365, Cl. 101-093.
- Oatfield, John C.: *See—*
  - Emerson, Paul D., Engelman, Fred H., Baggett, Frank A., and Oatfield, John C. 3,477,661.
- Oberle, Theodore L.: *See—*
  - Calton, Marion R., Oberle, Theodore L., and Weiss, Carl D. 3,477,117.
- O'Connell, Edward D., and O'Connell, Kathryn M. Fishing gaff. 3,477,163, Cl. 043-005.
- O'Connell, Kathryn M.:*See—*
  - O'Connell, Edward D., and O'Connell, Kathryn M. 3,477,163.
- O'Connell, Philip E., to RCA Corporation. Spindle adapter. 3,477,727, Cl. 274-010.
- O'Connell, Robert A.:*See—*
  - Cornell, Dudley E., III, and O'Connell, Robert A. 3,477,142.
- O'Connell, Thomas B.:*See—*
  - Oelke, Waldemar W., Carson, Frank J., Badger, Alfred E., and O'Connell, Thomas B. 3,477,840.
- Odermann, Charles R., and Dix, Willard A., to Singer Company, The. Combined scrubbing and shampooing means. 3,477,082, Cl. 015-098.
- Ocland, Ernest N., Jr.: *See—*
  - Nelson, Harry A., Ocland, Ernest N., Jr., Miller, Howard A., and Blatt, Milton D. 3,477,376.
- Oelke, Waldemar W., Carson, Frank J., Badger, Alfred E., and O'Connell, Thomas B., to Libbey-Owens-Ford Company. Glass sheet press bending mold. 3,477,840, Cl. 065-287.
- Oeters, Harold R., and Maholick, Andrew W., to International Business Machines Corporation. Delay line data transfer apparatus. 3,478,325, Cl. 340-172.5
- Ogawa, Hiroshi: *See—*
  - Ueda, Kenji, and Ogawa, Hiroshi 3,477,931.
- Ogawa, Yasuhiro: *See—*
  - Nakahara, Masataka, Ogawa, Yasuhiro, Iizuka, Yasuhiro, and Osada, Yoshihiro 3,477,998.
- Ogura, Junji, Mise, Noritoshi, Yokoo, Makoto, and Hatanaka, Yoshihiro, to Takeda Chemical Industries, Ltd. Liquid carboxylic acid salts of diamines as curing agents. 3,478,089, Cl. 260-501.2
- Ohio State University, The: *See—*
  - Fenton, Robert E., 3,478,351.
- Ohlheiser, Carlton Edward, to Hygrodynamics, Inc. Ground moisture measuring apparatus. 3,477,282, Cl. 073-076.
- Oikado, Taizo: *See—*
  - Kobayashi, Haruhiro, and Oikado, Taizo 3,478,279.
- Okamoto, Hajime, and Koshimura, Saburo, to Chugai Seiyaku Kabushiki Kaisha and Kyowa Hokko Co. Ltd. Treating method of streptococcus hemolyticus and the preparation containing the said microorganism. 3,477,914, Cl. 195-096.
- O'Kane, Patrick T.:*See—*
  - Veltman, Herbert, O'Kane, Patrick T., Gulyas, James W., and Middagh, William R. 3,477,927.
- Okazaki, Takeshi: *See—*
  - Oonishi, Yasuo, Okazaki, Takeshi, and Kubo, Masashi 3,477,109.
- Oklahoma State University of Agriculture & Applied Science: *See—*
  - Hughes, William Lewis, Summers, Claude Menta, and Allison, Hansell Jack, 3,477,878.
- Okuda, Jiro: *See—*
  - Shimasaki, Nobuhiko, and Okuda, Jiro 3,478,171.
- Okuma Machinery Works Ltd.: *See—*
  - Narukiyo, Yasumasa, 3,478,346.
- Olds, David W.: *See—*
  - Wolff, Ivan A., and Olds, David W. 3,478,012.
- Olglebay Norton Company: *See—*
  - Charman, Walter M., Jr., and Middaugh, George J., Jr., 3,477,493.
- Olofsson Corporation, The: *See—*
  - Garnett, Donald W., 3,477,530.
- Olsen, Donald B.: *See—*
  - Reynolds, Harold C., and Olsen, Donald B. 3,477,954.
- Olson, Percy D. Collapsible keyboard teaching aid employing earphone sets and plural keyboards. 3,478,159, Cl. 084-001.17
- Olympia Werke AG: *See—*
  - Heymann, Hans, 3,478,332.
- Omietanski, George M., and Williams, Thomas C., to Union Carbide Corporation. Preparation of organosilicon compounds from hydrosilicon compounds. 3,478,074, Cl. 260-448.2
- Omniversal Design: *See—*
  - Kostick, John M., 3,477,188.
- Onishi, Isao, Nishi, Akira, and Kakizawa, Tadao, to Yuki Gosei Kogyo Co., Ltd. Process for reacting amino acid and an active carbonyl sugar in a polyhydric alcohol. 3,478,015, Cl. 260-211.
- Oonishi, Yasuo, Okazaki, Takeshi, and Kubo, Masashi, to Japan Exlan Company Limited. Method of manufacturing simulated fur of acrylic composite fiber. 3,477,109, Cl. 026-002.
- Orazi, Paolo. Aircraft or towed gliders. 3,477,663, Cl. 244-008.
- Orkney, John C. Method of vibrating a member to drive it in a resistive medium. 3,477,237, Cl. 061-053.5
- Osada, Yoshihiro: *See—*
  - Nakahara, Masataka, Ogawa, Yasuhiro, Iizuka, Yasuhiro, and Osada, Yoshihiro 3,477,998.
- Osawa, Hideo, Sakamoto, Yosio, and Kondo, Masayuki, to Tokyo Shibaura Electric Co., Ltd. Radiation thermometers. 3,477,291, Cl. 073-355.
- Osborn, Howard, to Wiggins Teape Research & Development Limited. Sheet stacking apparatus. 3,477,323, Cl. 083-079.
- Oshima, Yasuyoshi, and Eto, Morifusa, to Sumitomo Chemical Company, Ltd. Cyclic phosphate esters and process for producing same. 3,478,133, Cl. 260-937.
- Osteen, Emmett H. Mercury safety switch for vehicles. 3,478,183, Cl. 200-061.47
- Ostrander-Seymour Co.: *See—*
  - Fink, Robert C., 3,478,192.
- Ostrozynski, Robert L., to Union Carbide Corporation. Preparation of organopolysiloxanes by siloxane rearrangement. 3,477,988, Cl. 260-046.5
- Otis Elevator Company: *See—*
  - Tucker, Benjamin Whitehead, Jr., 3,477,177.
- Otter, Fred A., Jr., Solomon, Peter R., and Yntema, George B., to United Aircraft Corporation. Thermomagnetic generation of power in a superconductor. 3,478,230, Cl. 310-004.
- Owens-Corning Fiberglas Corporation: *See—*
  - Bahnsen, Edward B., Jr., 3,477,984.
- Owens-Illinois Glass Company: *See—*
  - Plymale, Charles E., 3,477,097.
- Owens-Illinois, Inc.: *See—*
  - Kitaj, Walter, 3,477,890.
  - Plymale, Charles E., 3,477,892.
  - Sporck, Karel F., 3,478,205.
- Packaging Corporation of America: *See—*
  - Kuhlman, Roy M., 3,477,592.
- Pactide Corporation: *See—*
  - Rodgers, Franklin A., 3,477,917.
- Page, John S., Jr. Well safety valve. 3,477,507, Cl. 166-224.
- Paillard S.A.: *See—*
  - Grosjean, Arnold, 3,477,777.
- Paley, Hyman W. Manifold assembly. 3,477,469, Cl. 137-608.
- Palm, John W., and Vandaveer, Roscoe F., to Pan American Petroleum Corporation. Sulfur dew point measurement and apparatus therefor. 3,477,810, Cl. 023-225.
- Pan American Petroleum Corporation: *See—*
  - Palm, John W., and Vandaveer, Roscoe F., 3,477,810.
- Pan American World Airways, Inc.: *See—*
  - Cone, Howard M., Jr., 3,478,310.
- Panetta, Michael A.: *See—*
  - Berardi, Lloyd F., and Panetta, Michael A. 3,477,450.
- Paquette, Elmer G., to Bjorksten, Johan. Advertising display. 3,477,157, Cl. 040-126.
- Parametrics, Inc.: *See—*
  - Lynnworth, Lawrence C., 3,477,278.
- Park, Donald S. Typeface cleaner. 3,477,083, Cl. 015-104.
- Parker, Fred W., to Du Pont de Nemours, E. I., and Company. Coating composition of a methacrylate polymer/cellulose acetate butyrate/sucrose benzoate. 3,477,969, Cl. 260-017.
- Parker, Gerald R., and Verdibello, Ambrose A., to International Business Machines Corporation. Pulse amplitude detection circuit. 3,478,255, Cl. 320-001.
- Parnell, Robert A. Permanent magnet assembly for a loudspeaker assembly. 3,478,289, Cl. 335-231.
- Parry, Harvey L.: *See—*
  - Dante, Mark F., and Parry, Harvey L. 3,477,990.
- Parsons, David Gordon, and Turner, Alan Frederick, to Vantorex Limited. 4-Substituted-1-hydroxylaminophthalazines. 3,478,028, Cl. 260-250.

- Partensky, Pierre Jean Marc, to B. T. B. Benoit-Le Tapis Brosse, Societe Anonyme. Method and apparatus for making nonwoven pile fabrics. 3,477,889, Cl. 156-072.
- Partridge, Leslie W., to Burdick Corporation, The. Cardiac amplifier system with fast switching. 3,477,421, Cl. 128-002.06
- Parts, Leo P., and Feairheller, William R., Jr., to Monsanto Research Corporation. Laser radiation-induced polymerization. 3,477,932, Cl. 204-159.23
- Pasedach, Heinrich: *See—*
  - Maschke, Artur, and Pasedach, Heinrich 3,478,060.
- Pass & Seymour, Inc.: *See—*
  - Grieshaber, Gunther S., 3,478,295.
- Patchett, Arthur A.: *See—*
  - Rogers, Edward F., Clark, Robert L., and Patchett, Arthur A. 3,478,084.
- Patellis, Anargiros P.: *See—*
  - Barkley, Lloyd B., and Patellis, Anargiros P. 3,478,007.
- Pattison, Thomas W., and Herbst, David R., to American Home Products Corporation. 1-Substituted-2-alkyl-3-(2-dialkylaminoethyl)indoles. 3,478,054, Cl. 260-326.12
- Patton, Tad L., Horeczy, Joseph T., and Bown, Delos E., to Esso Research and Engineering Company. Alkenyl hindered phenol and a copolymer of an alkenyl phenol and a monoolefin. 3,477,991, Cl. 260-047.
- Patton, Wilbur L.: *See—*
  - Buchovecky, Kalman E., and Patton, Wilbur L. 3,478,136.
- Pauli, Otto: *See—*
  - Paulus, Wilfried, Kuhle, Engelbert, Pauli, Otto, Sasse, Klaus, and Klauke, Erich 3,478,027.
- Paull, Morris, to Chemtrox Corporation. Audio-visual apparatus. 3,477,780, Cl. 353-016.
- Paulson, Elmir E., to General Electric Company. Noise reduction. 3,477,231, Cl. 060-269.
- Paulus, Wilfried, Kuhle, Engelbert, Pauli, Otto, Sasse, Klaus, and Klauke, Erich, to Farbenfabriken Bayer Aktiengesellschaft. N-Trihalomethylthio-sulphonic acid amides. 3,478,027, Cl. 260-250.
- Pausch, Karl: *See—*
  - Graff, Roderich, Reichl, Karl Johann, Butz, Josef, and Pausch, Karl 3,477,894.
- Pavone, Robert J.: *See—*
  - Gerber, Heinz Joseph, and Pavone, Robert J. 3,477,322.
- Pech, Vaclav, Vebr, Jan, and Spura, Richard, to Chepos Zavody Chemickeho a Potrovinarskeho Strojirenstvi, Oborovy Podnik. Vulcanizing presses. 3,477,100, Cl. 018-017.
- Peebles, David Meade. Radiant heat cooking apparatus. 3,477,362, Cl. 099-441.
- Peene, Guido J., to Trefileries Leon Bekaert, P.V.B.A. Method and means for winding of strand material. 3,477,653, Cl. 242-025.
- Peerless Photo Products, Inc.: *See—*
  - Ray, Ford P., and Slingsby, Thomas W., 3,477,356.
- Peham, Engelbert J. Coolie-type hat. 3,477,066, Cl. 002-177.
- Pelka, Horst: *See—*
  - Winstel, Gunter, Mettler, Klaus, Zschauer, Karl-Heinz, and Pelka, Horst 3,478,215.
- Pennsylvania Industrial Chemical Corporation: *See—*
  - Barkley, Lloyd B., and Patellis, Anargiros P., 3,478,007.
- Pennwalt Corporation: *See—*
  - Bafford, Richard Anthony, and Mageli, Orville Leonard, 3,478,080.
- Pensak, Louis, to RCA Corporation. Testing for the presence of a contaminant in an insulating or semiconducting medium. 3,478,260, Cl. 324-030.
- People of Puerto Rico, The: *See—*
  - Castro, Fernando J., 3,477,756.
- Pepe, Anthony Enrico: *See—*
  - Lengnick, Guenther Fritz, and Pepe, Anthony Enrico 3,477,973.
- Percival, Worth H., to General Motors Corporation. Heat pump heat rejection system for a closed cycle hot gas engine. 3,477,226, Cl. 060-024.
- Perkins, Gordon O., and Swanson, Howard E., to G & W Electric Specialty Company. Switch and contact arrangement. 3,478,185, Cl. 200-166.
- Perkins, William H., and Klotz, Robert E., to Litton Precision Products, Inc. Piezoelectric bimorph driven tuners for electron discharge devices. 3,478,246, Cl. 315-039.55
- Perlaky, Leopold, to Hygrodynamics, Inc. Fluid hygrometric sampling device. 3,477,279, Cl. 073-061.1
- Permanent Pipe Products Co.: *See—*
  - Williams, James W., and Proctor, Phillip K., 3,477,745.
- Perotto, Pier Giorgio, and Ecclesia, Edoardo, to Ing. C., Olivetti, & C., S.p.A. Modular electronic circuit assembly with improved subcomponent packaging assemblies. 3,478,251, Cl. 317-101.
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- Peruski, Gerald C. Device for cleaning and setting a hairpiece. 3,477,448, Cl. 132-009.
- Petersen, Alfred A., to Universal Oil Products Company. Adjustable particle collection apparatus. 3,477,570, Cl. 209-144.
- Petersen, Kenneth C., to Schenectady Chemicals, Inc.Adhesive comprising polychloroprene, alkylated *p*- phenol having 2 to 6 carbon atoms and *p*-cresol condensed with formaldehyde. 3,478,127, Cl. 260-845.
- Peterson, M., & Son A/S: *See—*
  - Rabstad, Lars, 3,477,906.
- Peterson, Robert A., to Caterpillar Tractor Company. Bucket arrangement with articulated gathering cover. 3,477,602, Cl. 214-767.
- Petit, Rene: *See—*
  - Clement, Pierre, Gombert, Jean-Marie, and Petit, Rene 3,477,950.
- Petro Well Service, Inc.: *See—*
  - Ferguson, James D., 3,477,513.
- Petrow, Vladimir: *See—*
  - Ellis, Bernard, Petrow, Vladimir, and Stanway, David Neil 3,478,069.
- Petrusha, John A.: *See—*
  - Talboom, Frank P., Jr., and Petrusha, John A. 3,477,831.
- Pettibone Mulliken Corporation: *See—*
  - Michaelson, Reynold R., and LaTendresse, Philip E., 3,477,596.
- Pfeffer, David. Jeweler's vise. 3,477,707, Cl. 269-219.
- Pfeiffer, Arthur, Hochvakuumtechnik G.m.b.H.: *See—*
  - Becker, Willi, 3,477,381.
- Pfeiffer, Fred B.: *See—*
  - Davis, Harry E., and Pfeiffer, Fred B. 3,477,191.
- Pfizer, Chas., & Co., Inc.: *See—*
  - Kardys, Joseph A., 3,477,962.
- Phelps, Marion E.: *See—*
  - Gregorich, Henry L., Jones, Clevoe D., and Phelps, Marion E. 3,477,250.
- Philco-Ford Corporation: *See—*
  - Laschenski, Joseph E., 3,477,726.
- Philip Morris Incorporated: *See—*
  - Licis, Osvalds F., 3,477,440.
- Phillips Petroleum Company: *See—*
  - Blackwell, Jennings P., 3,478,094.
  - Chapman, Charles C., 3,478,125.
  - Doss, Richard C., 3,477,966.
  - Goodhue, Lyle D., 3,478,152.
  - Greene, Max E., 3,478,142.
  - Hann, Paul D., 3,478,103.
  - Kinslow, William G., Jr., 3,477,700.
  - Kitchen, Leland G., and Rhea, Keith G., 3,477,457.
  - Little, Donald M., and Hettick, George R., 3,477,945.
  - Myers, John W., and Johnson, Marvin M., 3,478,120.
  - Saunders, William E., and Stalder, William L., 3,478,000.
- Picker Corporation: *See—*
  - Snarr, James L., 3,477,357.
- Pieper, Rudolf: *See—*
  - Klein, Heinrich, Weber, Eduard, Pieper, Rudolf, and Hoffmann, Alfred 3,477,569.
- Pierce, Ogden R.: *See—*
  - Kim, Yung Ki, and Pierce, Ogden R. 3,478,076.
- Pierdet, Andre: *See—*
  - Bertin, Daniel, and Pierdet, Andre 3,478,067.
- Pietsch, Joseph A., to General Electric Company. Air conditioner including vent control means. 3,477,211, Cl. 055-418.
- Pilgram, Kurt H. G.: *See—*
  - Slott, Robert S., Bell, Edward R., and Pilgram, Kurt H. G. 3,478,044.
- Pillich, Wojciech. Metal structure tensioning system for crane devices and rope arrangement therefor. 3,477,590, Cl. 212-063.
- Pilling, Brian, to Monsanto Company. Electrical conducting properties of acrylic substrates by incorporation therein of a triazine compound. 3,478,006, Cl. 260-085.5
- Pirk, Hans: *See—*
  - Hackstein, Karl-Gerhard, Pirk, Hans, and Maulbecker, Dieter Karl 3,477,830.
- Placzek, Peter: *See—*
  - Harding, John, Placzek, Peter, and Campbell, Sidney Glenroy 3,477,352.
- Plate, Dr., GmbH Chemische Fabrik: *See—*
  - Domin, Bernhard, 3,477,477.
- Plishner, Paul J. Electric motor-driven automobile. 3,477,537, Cl. 180-065.
- PLIUA, Pharmaceutical and Chemical Works: *See—*
  - Djokic, Slobodan, and Tamburasov, Zrinka, 3,478,014.
- Plumb, John Beckett: *See—*
  - Jack, James, Stuart, Ronald Sangster, and Plumb, John Beckett 3,478,075.
- Plymale, Charles E., to Owens-Illinois Glass Company. System for dispensing material accurately through multiple orifices. 3,477,097, Cl. 018-012.
- Plymale, Charles E., to Owens-Illinois, Inc. Method and apparatus for forming plastic tubular netting. 3,477,892, Cl. 156-167.
- Podiak, Joseph T. Selectively mobile apparatus. 3,477,737, Cl. 280-043.
- Poehler, Guenter: *See—*
  - Friedrichsen, Wilhelm, Poehler, Guenter, and Goehre, Otto 3,478,063.
- Polewski, Robert E., to Kenner Products Company, mesne. Mechanical toy. 3,477,172, Cl. 046-243.
- Polhemus, Frederick C., Jr.: *See—*
  - Schmidtke, Richard A., and Polhemus, Frederick C., Jr. 3,477,262.
- Polytop Corporation: *See—*
  - Hazard, Robert E., 3,477,618.
- Porter, Gilbert E. Brake arrester. 3,477,232, Cl. 060-054.5

- Portolani, Augusto: *See—*
  - Bucci, Giovanni, Simonazzi, Tonino, Ballini, Giuliano, and Portolani, Augusto 3,477,985.
- Potlatch Forests, Inc.: *See—*
  - Talbott, John W., 3,477,485.
- Potop, Petre, and Brandus, Liviu, to Ministerul Industriei Chimice. Process for the separation of a gas dissolved in a liquid. 3,477,205, Cl. 055-053.
- Powell, Jonathan S. Pipe coupling and means and method of assembly. 3,477,750, Cl. 285-363.
- Powell, Walter W., to Anderson, Greenwood & Co. Valve. 3,477,456, Cl. 137-171.
- PPG Industries, Inc.: *See—*
  - Allen, Edward M., Dye, Cloyde G., and Smrdel, Joseph A., 3,477,562.
  - Gillery, Frank H., Pressau, Jean P., and Lewis, Charles W., 3,477,936.
  - Misson, George W., 3,477,839.
  - Morris, John W., 3,477,834.
- Prem, Lawrence L., to North American Rockwell Corporation. Magnetohydrodynamic generator. 3,478,233, Cl. 310-011.
- Prem, Lawrence L., and Wang, Tsih-Chang, to North American Rockwell Corporation. Alternating current magnetohydrodynamic generator. 3,478,234, Cl. 310-011.
- Pressau, Jean P.: *See—*
  - Gillery, Frank H., Pressau, Jean P., and Lewis, Charles W. 3,477,936.
- Preuss, Friedrich: *See—*
  - Koch, Werner, and Preuss, Friedrich 3,477,710.
- Price, Billy Ray, St. Pierre, Richard Ernest, and Lloyd, Neil E., to Celanese Corporation. Non-woven cigarette filter rod. 3,477,445, Cl. 131-267.
- Price, Herbert K., to Reynolds Metals Company. Method of making strip conductor material. 3,477,126, Cl. 029-605.
- Price, William H., to Eastman Kodak Company. Zoom wide aperture lens. 3,477,776, Cl. 350-184.
- Pritchard, John P., Jr., to Texas Instruments, Incorporated. Method for producting sets of photomask having accurate registration. 3,477,848, Cl. 096-027.
- Procter & Gamble Company, The: *See—*
  - Lewis, Ronald G., and Erman, William F., 3,478,114.
  - Maag, Gustav A., 3,477,571.
- Proctor, Phillip K.: *See—*
  - Williams, James W., and Proctor, Phillip K. 3,477,745.
- Proxmire, Harry J., to General Electric Company. Adjustable sliding brush transformer and method of producing a brush track therefor. 3,478,290, Cl. 336-149.
- Pugatch, David, to Fisher Berkely Corporation. Intercommunications system. 3,478,176, Cl. 179-039.
- Puhringer, Othmar, and Gruber, Heinz, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Metallurgical vessel, such as a crucible or converter. 3,477,706, Cl. 266-036.
- Puro, Inder Kumar. Electropneumatic vigilance control system. 3,478,201, Cl. 246-001.
- Puskar, Victor: *See—*
  - Cecil, Tom A., Gerstenmier, Harold J., Hamill, Herbert R., and Puskar, Victor 3,477,565.
- Putetti, Anthony M., to Textron Inc. Method of making set screws. 3,477,075, Cl. 010-010.
- Quick-Rotan Becker & Co.: *See—*
  - Becker, Ernst, and Notz, Karl, 3,477,399.
- Quinn, Hubert R.: *See—*
  - Bliamptis, Emmanuel E., and Quinn, Hubert R. 3,478,241.
- Quirijnen, Marius: *See—*
  - van der Wijngaart, Bernardus Antonius Carolus, Quirijnen, Marius, and Knigge, Marinus Gijsbertus 3,477,787.
- Raasch, Hans, to Reiners, Walter. Pick-up device for conveying individual textile coils out of storage. 3,477,559, Cl. 198-198.
- Raba, Frantisek: *See—*
  - Kyr, Ladislav, Volenik, Jiri, and Raba, Frantisek 3,478,257.
- Rabstad, Lars, to Peterson, M., & Son A/S. Shrinkage of web material such as paper. 3,477,906, Cl. 162-205.
- Race, Richard T., to Motorola, Inc. Thermoelectric antiperculator device for the fuel system of an internal combustion engine. 3,477,238, Cl. 062-003.
- Racki, John A. Universal internal thread fastener assembly. 3,477,337, Cl. 085-073.
- Radiation Incorporated: *See—*
  - Gardenhire, Lawrence W., and Woolf, Ashby M., 3,478,266.
- Radiation Research Corporation: *See—*
  - Tomasino, Charles, and Lake, Gerard K., 3,477,902.
- Radio Manufacturing Co., Inc.: *See—*
  - Housman, Robert W., 3,477,725.
- Rado, John A., to Hughes Aircraft Company. Shift register controlled analog memory system. 3,478,323, Cl. 340-173.
- Raichle, Karl: *See—*
  - Schnell, Hermann, Dhein, Rolf, Raichle, Karl, and Gebnauer, Herbert 3,477,977.
- Rainey, Walton, to Thomas & Betts Corporation. High speed wire cutoff machine. 3,477,326, Cl. 083-296.
- Ram Tool Corporation: *See—*
  - Tsergas, Athanase N., 3,478,264.
- Ranco Incorporated: *See—*
  - Caldwell, Roland B., 3,477,498.
- Randall, Frank E. Molding method and means and structures produced thereby. 3,478,135, Cl. 264-045.
- Randolph, Clarence L., to Eagle Rubber Co., Inc. Golf ball comprising an elastomer dispersion of high molecular weight polyethylene. 3,478,132, Cl. 260-889.
- Raney, William H. Portable outdoor food cooking apparatus. 3,477,360, Cl. 099-339.
- Ranghelli, Joseph Charles: *See—*
  - Blass, Judd, and Ranghelli, Joseph Charles 3,478,284.
- Ratts, Kenneth Wayne, to Monsanto Company. Fungicidal (N-substituted carbamoylmethyl) sulfonium chlorides. 3,478,154, Cl. 424-320.
- Raulston, James Leonard, and Rogers, Stephen L., Jr. High closet range hood. 3,477,420, Cl. 126-299.
- Rawson, Peter John, and Shaw, Michael Kevin, to English Electric Company Limited, The. Centrifugal pumps. 3,477,383, Cl. 103-099.
- Ray, Ford P., and Slingsby, Thomas W., to Peerless Photo Products, Inc. Photographic processing mechanism. 3,477,356, Cl. 095-094.
- Ray, William A., to International Telephone and Telegraph Corporation. High capacity pressure regulated gas diaphragm valve. 3,477,462, Cl. 137-489.
- Rayward, William Clifford: *See—*
  - Buckerridge, Edward Thomas, Jones, Alan Victor, and Rayward, William Clifford 3,478,181.
- Razemerov, Vladimir Ivanovich: *See—*
  - Bolotin, Evgeny Moiseevich, Blyakher, Lev Abramovich, Ierusalimsky, Boris Nikolaevich, Saveliev, Leonid Ivanovich, Razemerov, Vladimir Ivanovich, and Khaidurov, Leonid Konstantinovich 3,477,301.
- RCA Corporation: *See—*
  - Amick, James A., 3,477,872.
  - Barkow, William H., 3,478,245.
  - Brill, Frederick W., and Weingarten, Morris R., 3,477,835.
  - Carley, Donald R., 3,478,161.
  - Hirsch, Charles J., 3,478,360.
  - Lechner, Bernard J., 3,478,224.
  - Lichowsby, Abraham, 3,478,339.
  - O'Connell, Philip E., 3,477,727.
  - Pensak, Louis, 3,478,260.
  - Simon, Ralph E., Williams, Brown F., and Wasserman, Ralph, 3,478,213.
  - Speer, Walter F., and Simmons, James M., 3,477,299.
  - Srinivasan, Chitoor V., 3,478,313.
  - Vigil, David A., 3,478,262.
- Rebechini, Peter G., to Skil Corporation. Blade tilting mechanism for power trowel. 3,477,353, Cl. 094-045.
- Rebiscoul, Gerard Jean. Garment-treating machine. 3,477,620, Cl. 223-051.
- Reed, Alun John, to Metalastik Limited. Vibration absorbers. 3,478,160, Cl. 174-042.
- Reed, Leo O.: *See—*
  - Archer, William E., Coe, Everett L., Jr., and Reed, Leo O. 3,477,124.
- Reed, Robert D., to Zink, John, Company. Burner and apparatus for reforming hydrocarbons. 3,477,824, Cl. 023-277.
- Refrigeration System AB: *See—*
  - Thoren, Olle G., and Axelson, Hans A., 3,477,240.
- Regan, Malachy J. Emollient applicator for attachment to an electric shaver. 3,477,127, Cl. 030-041.
- Reichart, Elwood C., to Motorola, Inc. Automatic phase control circuit. 3,478,276, Cl. 331-011.
- Reichl, Karl Johann: *See—*
  - Graff, Roderich, Reichl, Karl Johann, Butz, Josef, and Pausch, Karl 3,477,894.
- Reichle, Alfred: *See—*
  - Kubitzek, Harry, Unger, Otto, Nawrath, Gunter, Reichle, Alfred, and Nischk, Gunther 3,477,899.
- Reiner, Kenneth. Hair rollers. 3,477,449, Cl. 132-040.
- Reiners, Walter: *See—*
  - Raasch, Hans, 3,477,559.
- Reischl, Karl E., to Bucyrus-Erie Company. Crane jib. 3,477,588, Cl. 212-055.
- Reiter, Abraham M., and Court, Patrick R. J., to International Telemeter Corporation. Cryptographic subscription television system with grey sync and dual mode augmenting signals. 3,478,166, Cl. 178-005.1
- Remer, Robert K., to Inca Inks, Inc. Pigment composition and method of manufacture. 3,477,866, Cl. 106-289.
- Remington Arms Company: *See—*
  - Hartman, Robert B., 3,477,403.
  - Morse, Charles H., 3,477,162.
- Renz, Jany, Bourquin, Jean-Pierre, Winkler, Hans, Gagnaux, Pierre, Guldimann, Simon, Ruesch, Leo, and Schwarb, Gustav, to Sandoz Ltd., also known as Sandoz A.G.4-Substituted aminopropyl-4H-thieno[2,3-$\beta$] [1,4]benzothiazines. 3,478,022, Cl. 260-243.
- Repsdorph, Inger, Kroyer, Karl Kristian Kobs, and Damgard-Iversen, Jorgen, to Kroyer, Karl Kristian Kobs, and Aktieselskabet Niro Atomizer. Process for preparing a dry free-flowing glucose product from a solution thereof. 3,477,874, Cl. 127-058.
- Research Corporation: *See—*
  - Sawyer, Philip N., 3,477,436.
- Resnick, Israel, to United States of America, Navy. Syntactic foam. 3,477,967, Cl. 260-002.5

- Revukas, Anthony J., to Cities Service Oil Company. Metal fluorocarbyl phosphates. 3,478,088, Cl. 260-429.5
- Reynolds, Edmond F.: *See—*
  - Gullett, David E., and Reynolds, Edmond F. 3,477,937.
- Reynolds, Harold C., and Olsen, Donald B., to Armour Pharmaceutical Company. Phosphonium iodide complexes of thyroxine, methods of preparing same, and methods of preparing 3,5,3,'- triiodothyronine therefrom. 3,477,954, Cl. 260-519.
- Reynolds Metals Company: *See—*
  - Armbrust, Bernard F., Jr., and Carithers, Val G., 3,477,865.
  - Branyon, James Curtis, Harshbarger, Allen L., and Martin, Maxie, 3,477,624.
  - Donahue, Gary M., 3,477,632.
  - Jackson, John Harry, and Schmidt, Walther, 3,477,844.
  - Price, Herbert K., 3,477,126.
- Reynolds, R. J., Tobacco Company: *See—*
  - McArthur, Colin S., 3,477,441.
- Rhea, Keith G.: *See—*
  - Kitchen, Leland G., and Rhea, Keith G. 3,477,457.
- Rhone-Poulenc S.A.: *See—*
  - Normant, Henri Marie, 3,478,095.
- Ricardi, Leon J., and Rosenthal, Milton L., to Massachusetts Institute of Technology. Plate antenna with polarization adjustment. 3,478,362, Cl. 343-769.
- Rice, Orval L.., to General Signal Corporation. Hydraulic power circuit affording parallel regeneration paths. 3,477,347, Cl. 091-438.
- Rich, Ernest J., Jr.: *See—*
  - Kronenthal, Richard L., and Rich, Ernest J., Jr. 3,478,140.
- Richards, Alan W., to Harris-Intertype Corporation. Printing press. 3,477,367, Cl. 101-137.
- Richey, Clarence B., to Massey-Ferguson Inc. Semi-mounted plow. 3,477,517, Cl. 172-212.
- Richter, Donald L., to Temcor. Structural joint. 3,477,752, Cl. 287-189.36
- Richter, Hans H.: *See—*
  - Brouwer, Charles W., and Richter, Hans H. 3,477,476.
- Rickenborde, Gary H., to Babcock & Wilcox Company, The. Portable machine. 3,477,341, Cl. 090-012.
- Riegner, Earl I.: *See—*
  - Schwallie, Cletus R., and Riegner, Earl I. 3,477,284.
- Rigterink, Raymond H., to Dow Chemical Company, The. Thio-, sulfinyl-, and sulfonylpyridyl phosphorates and phosphorothioates, compositions therof, and methods for parasite control. 3,478,148, Cl. 424-200.
- Ring, Roger D. Pattern tracing instrument. 3,477,685, Cl. 251-003.
- Ring, Roger D. Spool valve. 3,477,692, Cl. 251-205.
- Ringe, Frederick A., to Ford Motor Company. Auxiliary overdrive gear unit for use with an automotive vehicle power transmission mechanism. 3,477,313, Cl. 074-740.
- Ringholz, Robert C., to Valometer Sales Co. Validating meter apparatus. 3,477,371, Cl. 101-283.
- Rink, Richard H., to Northwestern National Bank of Sioux Falls, mesne. Slip form paver. 3,477,354, Cl. 094-046.
- Rische, Ernst A., to Messer Griesheim GmbH. Multistage compression drive in gas separation. 3,477,239, Cl. 062-038.
- Rizo-Patron R., Alfonso. Speaker system. 3,477,540, Cl. 181-031.
- Rizzo, Angelo. Pocket guard. 3,477,068, Cl. 002-252.
- Robbins & Myers, Inc.: *See—*
  - Schwartz, Christian J., 3,477,125.
- Roberts, Hugh Leithead: *See—*
  - Campbell, Alastair, and Roberts, Hugh Leithead 3,478,034.
- Robertson, Gavin W. E., and Dyson, Cyril W. C., to Baird and Tatlock (London) Limited. Material dispensing device. 3,477,478, Cl. 141-284.
- Robertson, John, Jr., to Norton Company. Reinforced grinding wheels and reinforcement network therefor. 3,477,180, Cl. 051-206.
- Robinson, Charles A., and Nescio, John J., to American Home Products Corporation. Process for producing α-amino peniclllins. 3,478,018, Cl. 260-239.1
- Robinson, Clifford C., to Springer Industries, Inc. Call board. 3,477,404, Cl. 116-133.
- Robinson, Glen, to Bon-Aire Industries, Inc. Vacuum cleaner. 3,477,087, Cl. 015-344.
- Robinson, James M.: *See—*
  - Eggert, Thomas F., and Robinson, James M. 3,477,088.
- Robison Corporation: *See—*
  - Robison, William H., 3,477,181.
- Robison, William H., to Robison Corporation. Tombstone frames. 3,477,181, Cl. 052-027.
- Rodely, Alan E., to American Standard, Inc. Densitometer. 3,477,275, Cl. 073-032.
- Rodgers, Franklin A., to Pactide Corporation. Multiple effect distillation with microporous membranes and distillate recirculation. 3,477,917, Cl. 203-010.
- Rogers, Edward F., Clark, Robert L., and Patchett, Arthur A., to Merck & Co., Inc.Lower alkyl α-carboalkoxy-β-(3,4-disubstituted anilino) acrylates. 3,478,084, Cl. 260-471.
- Rogers, John Harlan, to Standard Engineering Company, The. Rotor assembly for a shredder implement. 3,477,214, Cl. 056-295.
- Rogers, Max W., to Motorola, Inc. Squelch control circuit. 3,478,272, Cl. 325-478.
- Rogers, Stephen L., Jr.: *See—*
  - Raulston, James Leonard, and Rogers, Stephen L., Jr. 3,477,420.
- Rogers, William M., Jr., to Johns-Manville Corporation. Method and apparatus for manufacturing felted fibrous products. 3,477,905, Cl. 162-203.
- Roland Offsetmaschinenfabrik Faber & Schleicher AG: *See—*
  - Koch, Werner, and Preuss, Friedrich, 3,477,710.
- Rolls-Royce Limited: *See—*
  - Beesley, Gilbert William, 3,477,795.
- Rondel Limited: *See—*
  - Corby, Peter J. S., 3,477,154.
- Roosa, Vernon D. Fuel supply system. 3,477,418, Cl. 123-140.
- Roosa, Vernon D. Fuel injection nozzle. 3,477,648, Cl. 239-533.
- Roote, Jay C.: *See—*
  - Adamson, Robert G., Angell, Charles H., Roote, Jay C., Hutchison, Joel F., and Coberley, Daniel A. 3,477,369.
- Rorholt, Bjorn A., to Tele-Data, Inc. Slow data rate telemetering and data logging system having pural alarm means. 3,478,318, Cl. 340-150.
- Rosenberg, Norman: *See—*
  - Kamins, Seymour, and Rosenberg, Norman 3,477,634.
- Rosenthal, Milton L.: *See—*
  - Ricardi, Leon J., and Rosenthal, Milton L. 3,478,362.
- Ross, Albert. Handlebar assemblies for bicycles. 3,477,741, Cl. 280-279.
- Ross, Richard J., and Fohlen, George M., to Kaiser Aluminum & Chemical Corporation. Process for producing methylenediamilines. 3,478,099, Cl. 260-570.
- Rossmann, Rudolf H., and Strauss, Edgar, 1/2 to Ruti Machinery Works Ltd., and 1/2 to U.T.L. Incorporated, mesne. Weaving loom. 3,477,475, Cl. 139-012.
- Roundtree, Grover L.: *See—*
  - Funk, Floyd S., Roundtree, Grover L., and West, Joe E. 3,477,351.
- Roussel-UCLAF: *See—*
  - Amiard, Gaston, Nomine, Gerard, and Torelli, Vesperto, 3,478,062.
  - Bertin, Daniel, and Pierdet, Andre, 3,478,067.
- Rowley, Elizabeth A.: *See—*
  - Jones, Peter H., and Rowley, Elizabeth A. 3,478,013.
- Rowley, Martin E., to Eastman Kodak Company. Preparation of cellulose ester and ether sulfates with low inorganic salt content. 3,478,016, Cl. 260-215.
- Rubin, James M. Orthodontic apparatus. 3,477,129, Cl. 032-014.
- Rudnitzki, Alexis J., and Templer, David I., to Velsicol Chemical Corporation. Separation of tetrachloroterephthalic acid derivatives. 3,478,086, Cl. 260-475.
- Rudolph, Hans: *See—*
  - Hermann, Karl Heinz, and Rudolph, Hans 3,477,986.
- Ruesch, Leo: *See—*
  - Renz, Jany, Bourquin, Jean-Pierre, Winkler, Hans, Gagnaux, Pierre, Guldimann, Simon, Ruesch, Leo, and Schwarb, Gustav 3,478,022.
- Runge, Heinz F., to National Dairy Products Corporation. Dispenser. 3,477,614, Cl. 222-107.
- Russel, Jeff Hamish: *See—*
  - Schmutz, Jean, Hunziker, Fritz, Kunzle, Franz Martin, and Russel, Jeff Hamish 3,478,056.
- Russell Engineering Corporation: *See—*
  - Russell, George F., 3,477,206.
- Russell, Fred J., and Nolin, Roger J. Unit lock dead bolt actuator slide. 3,477,755, Cl. 292-229.
- Russell, George F., to Russell Engineering Corporation. Gas treatment by adsorption. 3,477,206, Cl. 055-062.
- Ruth, Richard L.: *See—*
  - Couleur, John F., and Ruth, Richard L. 3,478,324.
- Ruti Machinery Works Ltd.: *See—*
  - Rossmann, Rudolf H., and Strauss, Edgar, 3,477,475.
- Rutkowski, Gerald L., to Massey-Ferguson Inc. Change speed planetary transmission. 3,477,314, Cl. 074-750.
- Ryan, John J., to H. & R. Development Company, Inc. Surge cut-off device for pressure sensing units. 3,477,464, Cl. 137-517.
- Ryan, John W., Echterling, Eugene J., Golden, Michael E., Goetz, John H., and Chang, Richard Shih-Teng, to Mattel, Inc. Sound reproducing means and linking sound carrier means toy combination. 3,477,140, Cl. 035-008.
- Rydh, Thore Oskar Verner, to Aktiebolaget Astra. Preparation of anhydrous ferrous fumarate. 3,478,073, Cl. 260-439.
- Rytina, Anton W.: *See—*
  - Satchell, Fred E., Rytina, Anton W., and Trier, Louis J. 3,477,721.
- Saab Aktiebolag: *See—*
  - Bourghardt, Sven Erik, 3,478,326.
- Saba, Frances S.: *See—*
  - Saba, Shafic a/k/a Saba, Joseph, 3,477,720.
- Saba, Shafic a/k/a Saba, Joseph, to Saba, Frances S., and Secor, Sophie. Adjustable head assembly for golf club. 3,477,720, Cl. 273-079.
- Sacks, Jerry D.: *See—*
  - McNeill, George A., and Sacks, Jerry D. 3,477,916.
- Sadler, Harry J., to Hypro, Inc. Roller pump. 3,477,377, Cl. 103-136.
- Sainsbury, Jeffrey J., to Fords (Finsbury) Limited. Apparatus for detecting dirt in transparent bottles. 3,478,221, Cl. 250-223.
- Saito, Hisashi, to Matsushita Electric Industrial Co., Ltd. Secret SCA communication systems and apparatus. 3,478,169, Cl. 179-015.

- Saito, Michiaki: *See—*
  - Takeda, Saburo, Higashi, Hiromi, Tarao, Ryokichi, Mizuno, Mikio, Watabe, Kazuyuki, Saito, Michiaki, Namikawa, Shigeo, and Tsunoda, Takao 3,477,999.
- Sakamoto, Mitchell T. Separable vase assembly. 3,477,175, Cl. 047-041.13
- Sakamoto, Yosio: *See—*
  - Osawa, Hideo, Sakamoto, Yosio, and Kondo, Masayuki 3,477,291.
- Salmon, Jacques A., to CSF-Compagnie Generale de Telegraphie Sans Fil. Electronic scanning antennas used in electromagnetic detection. 3,478,359, Cl. 343-100.
- Salomon, Georges P. J. Ski harness having a rear safety member operable by a resetting pedal. 3,477,735, Cl. 280-011.35
- Salomonsson, Hans Manne Alvar: *See—*
  - Lundin, Lars Olof, and Salomonsson, Hans Manne Alvar 3,477,339.
- Sambeth, Joerg: *See—*
  - Grundschober, Friedrich, and Sambeth, Joerg 3,477,868.
- Samhammer, Clair A.: *See—*
  - Milette, Kenneth A., and Samhammer, Clair A. 3,477,623.
- Sampson, Arnold, to Sampson Corporation, The. Extra-cortical clamp with detachable tensioning tool for internal fixation of bone fractures. 3,477,429, Cl. 128-092.
- Sampson Corporation, The: *See—*
  - Sampson, Arnold, 3,477,429.
- Samsonite Corporation: *See—*
  - Milette, Kenneth A., and Samhammer, Clair A., 3,477,623.
- San Angelo Die Casting and Manufacturing Co., Inc.: *See—*
  - Hart, Raymond V., 3,477,587.
- Sanders, Laurence R., Jr.: *See—*
  - Jones, Stanley C., Sanders, Laurence R., Jr., Tosch, William C., and Wenger, Charles B. 3,477,511.
- Sanders, Robert W.: *See—*
  - Mayle, Louis F., and Sanders, Robert W. 3,478,270.
- Sandoz A.G.: *See—*
  - Clough, Donald Keighley, 3,477,800.
  - Renz, Jany, Bourquin, Jean-Pierre, Winkler, Hans, Gagnaux, Pierre, Guldimann, Simon, Ruesch, Leo, and Schwarb, Gustav, 3,478,022.
  - Zorn, Hermann, Hrach, Josef, and Zeschmar, Winfried, 3,477,989.
- Sandoz Inc.: *See—*
  - Houlihan, William J., and Manning, Robert E., 3,478,051.
  - Manning, Robert E., 3,478,023.
- Sandoz Ltd.: *See—*
  - Zorn, Hermann, Hrach, Josef, and Zeschmar, Winfried, 3,477,989.
  - Clough, Donald Keighley, 3,477,800.
  - Renz, Jany, Bourquin, Jean-Pierre, Winkler, Hans, Gagnaux, Pierre, Guldimann, Simon, Ruesch, Leo, and Schwarb, Gustav, 3,478,022.
- Sanfilippo, Bruce P.: *See—*
  - Dockendorff, Jay D., Chirico, Anthony N., and Sanfilippo, Bruce P. 3,477,829.
- Sanford, Terry Lee. Process for anodizing magnesium and magnesium alloys. 3,477,921, Cl. 204-056.
- Sankyo Company, Limited: *See—*
  - Negoro, Harutada, Awada, Etsuo, Ikegami, Yoshihiko, Akagi, Saburo, and Matsui, Katsuaki, 3,477,995.
- Sarett, Lewis H., and Brown, Horace D., to Merck & Co., Inc. 5-(or 6)-Halo(or amino)benzazoles and methods for preparing same. 3,478,046, Cl. 260-302.
- Sartore, Michael A. Method for netting meat. 3,477,860, Cl. 099-174.
- Sasse, Klaus: *See—*
  - Paulus, Wilfried, Kuhle, Engelhert, Pauli, Otto, Sasse, Klaus, and Klauke, Erich 3,478,027.
- Satchell, Fred E., and Berry, Foster W., to Brunswick Corporation. Apparatus for densifying wood bowling pin cores and other articles. 3,477,364, Cl. 100-093.
- Satchell, Fred E., Rytina, Anton W., and Trier, Louis J., to Brunswick Corporation. Interlocked pin bottom. 3,477,721, Cl. 273-082.
- Sato, Isao. Method of forming engravings on the circumferential surface of synthetic resin tubes. 3,478,144, Cl. 264-313.
- Sauer, Herman C., to Uniroyal, Inc. Apparatus for making rubber articles. 3,477,895, Cl. 156-511.
- Saunders, Alan Charles Anthony, to United Kingdom Atomic Energy Authority. Nuclear reactor fuel element assemblies. 3,477,909, Cl. 176-078.
- Saunders, William E., and Stalder, William L., to Phillips Petroleum Company. Recovery of poly(arylene sulfides). 3,478,000, Cl. 260-079.1
- Sauser AG: *See—*
  - Sauser, Alfred, 3,478,265.
- Sauser, Alfred, to Sauser AG. Frame for a moving coil instrument. 3,478,265, Cl. 324-155.
- Saveliev, Leonid Ivanovich: *See—*
  - Bolotin, Evgeny Moiseevich, Blyakher, Lev Abramovich, Ierusalimsky, Boris Nikolaevich, Saveliev, Leonid Ivanovich, Razemerov, Vladimir Ivanovich, and Khaidurov, Leonid Konstantinovich 3,477,301.
- Sawyer, Edward C. Hinged fork for fork-lift trucks. 3,477,600, Cl. 214-700.
- Sawyer, Philip N., to Research Corporation, mesne. Method of accelerating wound healing by use of interacting metallic sutures. 3,477,436, Cl. 128-335.5
- Schaefer, John O., to International Business Machines Corporation. Data encoder. 3,478,196, Cl. 235-061.6
- Schafer, Georg, Kugelfischer, & Co.: *See—*
  - Schlicht, Hans Georg, 3,477,884.
- Schaffner, Kurt: *See—*
  - Jeger, Oskar, Schaffner, Kurt, and Wehrli, Hans Ueli 3,478,068.
- Schaller, Harold E., to John E. Smith's Sons Co., div. of Hobam, Inc. Vibration damping pad. 3,477,674, Cl. 248-024.
- Scheffels, Wilhelm: *See—*
  - Meyer, Edgar, and Scheffels, Wilhelm 3,478,244.
- Scheider, Robert C., to Ford Motor Company. Shock absorber evaluation method. 3,477,273, Cl. 073-011.
- Schenectady Chemicals, Inc.: *See—*
  - Petersen, Kenneth C., 3,478,127.
- Schering Corporation: *See—*
  - Sherlock, Margaret H., 3,478,040.
- Schicke, Emil: *See—*
  - Schicke, Hans Gerd, and Hamman, Ingeborg 3,478,029.
- Schicke, Hans Gerd, deceased (by Schicke, Emil Schicke, Helene, heirs), and Hamman, Ingeborg, to Farbenfabriken Bayer Aktiengesellschaft. O-Pyrazolo-(1,5-A)-pyrimidyl-phosphorus acid esters. 3,478,029, Cl. 260-256.5
- Schicke, Helene: *See—*
  - Schicke, Hans Gerd, and Hamman, Ingeborg 3,478,029.
- Schiffer, Walter. Temperature controlled friction clutch. 3,477,554, Cl. 192-081.
- Schillinger, Walter E., to International Business Machines Corporation. Continuous averaging system. 3,478,328, Cl. 340-172.5
- Schlicht, Hans Georg, to Schafer, Georg, Kugelfischer, & Co. Method of increasing the fatigue life of rolling contact elements and the resulting articles. 3,477,884, Cl. 148-150.
- Schlichter, William L., to Ford Motor Company. Latch mechanism. 3,477,753, Cl. 292-036.
- Schmeckenbecher, Arnold F.: *See—*
  - Leilich, Hans-Otto G., and Schmeckenbecher, Arnold F. 3,478,335.
- Schmidt, Don J. Air powered grooming machine for cables and the like. 3,477,081, Cl. 015-088.
- Schmidt, Karl Heinz: *See—*
  - Gootschalk, Heinrich Georg, 3,477,733.
- Schmidt, Walther: *See—*
  - Jackson, John Harry, and Schmidt, Walther 3,477,844.
- Schmidtke, Richard A., and Polhemus, Frederick C., Jr., to United Aircraft Corporation. Explosive joining device. 3,477,262, Cl. 072-056.
- Schmitt, Karl-Friedrich, to Bunker-Ramo Corporation, The, mesne. Hermaphrodite electrical contact. 3,478,296, Cl. 339-047.
- Schmollinger, Richard G., to Donnelley, Reuben H., Corporation, The. Automatic weighing and metering control device. 3,477,528, Cl. 177-003.
- Schmucker, Morton Lee: *See—*
  - Brown, William Lewis, and Schmucker, Morton Lee 3,477,859.
- Schmutz, Jean, Hunziker, Fritz, Kunzle, Franz Martin, and Russel, Jeff Hamish, to Wander, A., Dr., S.A.11-Aminoalkylated dibenz[$\beta$,f]-1,4-oxazepines and debenzo-[$\beta$,f]-1,4-thiazepines. 3,478,056, Cl. 260-327.
- Schneider, Fred J., to Western Electric Company, Incorporated. Apparatus for assembling articles. 3,477,630, Cl. 228-006.
- Schnell, Hermann, Dhein, Rolf, Raichle, Karl, and Gebnauer, Herbert, to Farbenfabriken Bayer Aktiengesellschaft. Aqueous lacquers. 3,477,977, Cl. 260-022.
- Schoffmann, Rudolf, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Device for shaping metal bars. 3,477,268, Cl. 072-234.
- Schonmeier, Herbert, and Mohle, Horst, to Jagenberg-Werke AG. Cross cutting assemblage for use in cutting paper, cardboard and similar materials. 3,477,328, Cl. 083-677.
- Schossow, George W. Vehicle crankcase drain plug with remote operator. 3,477,459, Cl. 137-351.
- Schreier, Bernard Dov. Winches. 3,477,697, Cl. 254-184.
- Schrempp, Winfried: *See—*
  - Dietrich, Walter, and Schrempp, Winfried 3,478,315.
- Schroeder, Adolph C., and Huck, Nelton D. Refrigerating system. 3,477,243, Cl. 062-298.
- Schuler, L., GmbH: *See—*
  - Finsterwalder, Kurt, 3,477,270.
- Schuller, James T., Haeusser, Harry C., and Smith, Barry L., to UMC Industries, Inc. Control and change maker for a vendor. 3,477,556, Cl. 194-017.
- Schultz, William G., to United States of America, Agriculture. Process for extraction of flavors. 3,477,856, Cl. 099-105.
- Schulze, Guenther, and Heck, Karl-Heinz, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. High pressure synthesis reactor for exothermic gas reactions. 3,477,828, Cl. 023-289.
- Schwallie, Cletus R., and Riegner, Earl I., to Boeing Company, The. Technique for deformation analysis. 3,477,284, Cl. 073-088.
- Schwarb, Gustav: *See—*
  - Renz, Jany, Bourquin, Jean-Pierre, Winkler, Hans, Gagnaux, Pierre, Guldimann, Simon, Ruesch, Leo, and Schwarb, Gustav 3,478,022.

- Schwartz, Bernard, and Turk, Harold L., to International Business Machines Corporation. Unitized magnetic assembly. 3,478,340, Cl. 340-174.1
- Schwartz, Christian J., to Robbins & Myers, Inc. Method of making a double insulated armature. 3,477,125, Cl. 029-596.
- Schwebel, Adolf, to Mabeg Maschinenbau GmbH, and Nachf. Hachf. Hense & Pleienes GmbH & Co. Device for continually withdrawing single sheets from a stack of sheets. 3,477,324, Cl. 083-079.
- Schweitzer, Carl Earle, and Setterquist, Robert Alton, to Du Pont de Nemours, E. I., and Company. Modified polyoxymethylene. 3,477,994, Cl. 260-067.
- Schwendtner, Alfred H., to Conch International Methane Limited, mesne. Membrane tank structures. 3,477,606, Cl. 220-009.
- Schwinn Bicycle Company: *See—*
  - Brilando, Frank P., 3,477,303.
- Schwitzgebel, Ralph K., and Hurd, William Sprech. Behavioral supervision system with wrist carried transceiver. 3,478,344, Cl. 340-312.
- Scientific-Atlanta Inc.: *See—*
  - Simon, Joseph William, and Alverson, William Keith, 3,478,283.
- SCM Corporation: *See—*
  - Turpin, Edward Thomas, 3,478,126.
- Scoggins, Cecil W. Slush ice carbonation machine. 3,477,244, Cl. 062-306.
- Scott Paper Company: *See—*
  - Simpson, Donald A., and Swift, Richard L., 3,477,759.
- Sealed Power Corporation: *See—*
  - Warrick, Frank G., 3,477,732.
- Sear, Stuart B. Apparatus for high-speed treatment of continuously moving material. 3,477,500, Cl. 165-089.
- Secor, Sophie: *See—*
  - Saba, Shafic a/k/a Saba, Joseph, 3,477,720.
- Seefelder, Matthias: *See—*
  - Hahn, Erwin, and Seefelder, Matthias 3,478,045.
- Segsworth, Robert Sidney, to Ajax Magnethermic Corporation. Induction heating. 3,478,155, Cl. 013-026.
- Segsworth, Robert Sidney, to Ajax Magnethermic Corporation. Polyphase stirring of molten metal. 3,478,156, Cl. 013-027.
- Selfe, Richard J.: *See—*
  - Branham, Donald R., Selfe, Richard J., and Hester, Ray W., Jr. 3,477,235.
- Selle, Wilbur A.: *See—*
  - Jurist, John M., Jr., and Selle, Wilbur A. 3,477,422.
- Semegran, Theodore S., and Trubiano, Paul C., to National Starch and Chemical Corporation. Adhesive lamination of cellulosic substrates. 3,477,903, Cl. 161-266.
- Senco Products, Incorporated: *See—*
  - Becht, Carl T., 3,477,629.
- Sery, Robert S., and Gordon, Daniel I., to United States of America, Navy. Method of producing high rectangularity, low coercive force magnetic cores. 3,477,883, Cl. 148-100.
- Setterquist, Robert Alton: *See—*
  - Schweitzer, Carl Earle, and Setterquist, Robert Alton 3,477,994.
- Sewell, Sewood, and Katzer, Melvin F., to Dow Chemical Company, The. Adjustable pressure reducing valve. 3,477,467, Cl. 137-599.
- Shachter, Moses, to Ford Motor Company. Differential gear constant velocity joint. 3,477,247, Cl. 064-021.
- Shachter, Moses, to Ford Motor Company. Differential screw constant velocity joint. 3,477,248, Cl. 064-021.
- Sharpe, Cecil H.: *See—*
  - Grundman, Richard G., and Sharpe, Cecil H. 3,477,647.
- Shaw, Joseph Denman. Combination mixing and injecting medical syringe. 3,477,432, Cl. 128-218.
- Shaw, Michael Kevin: *See—*
  - Rawson, Peter John, and Shaw, Michael Kevin 3,477,383.
- Shelhart, Robert E., to Dura Corporation. Hydraulic power unit with disc motor. 3,477,378, Cl. 103-118.
- Shell Oil Company: *See—*
  - Allen, Roy A., and Lantz, William L., 3,477,971.
  - Dante, Mark F., and Parry, Harvey L., 3,477,990.
  - de Ruyter van Steveninck, Albert W., and Beevendorp, Johannes, 3,477,974.
  - Dijkstra, Tette J., and Vogelzang, Edward J. W., 3,477,982.
  - Hillyer, Martin J., 3,477,979.
  - Kuderna, Jerome G., Jr., and Skiles, Richard D., 3,478,105.
  - Mac Henry, Carl, Weaver, John A., and Towell, Gordon D., 3,477,491.
  - Martin, Jon W., 3,477,148.
  - Slott, Robert S., Bell, Edward R., and Pilgram, Kurt H. G., 3,478,044.
  - van Westrenen, William J., 3,477,871.
- Shelly, William A.: *See—*
  - Couleur, John F., Gudenschwager, Philip F., Shelly, William A., and Bahrs, David L. 3,478,320.
- Shepherd, Henry. Controlled rotation heel for footwear. 3,477,150, Cl. 036-039.
- Shepherd, Thomas L., to Air Reduction Company, Incorporated. Method and apparatus for the production of carbon black. 3,477,816, Cl. 023-209.4
- Sherlock, Margaret H., to Schering Corporation. Glyceryl 2-(X,Y,Z-substituted anilino) nicotinates. 3,478,040, Cl. 260-295.5
- Sherwin, Richard N., to Electronic Systems Development, Inc. Information display apparatus. 3,477,782, Cl. 353-040.
- Sherwood, William Lyon. Connection apparatus for sections of a rotary furnace. 3,477,704, Cl. 266-011.
- Shibasaki, Masataka: *See—*
  - Shirakura, Toshio, Yoshikawa, Hiroshi, Shibasaki, Masataka, and Hongo, Chikara 3,478,055.
- Shibazaki, Tadashi: *See—*
  - Nakamura, Susumu, and Shibazaki, Tadashi 3,477,976.
- Shimasaki, Nobuhiko, and Okuda, Jiro, to Nippon Electric Company, Limited. Time-division telephone exchange system having a variably spaced repetitive sampling rate. 3,478,171, Cl. 179-015.
- Shimotsuma, Teruo: *See—*
  - Ando, Ryo, Shimotsuma, Teruo, and Chihara, Kanichiro 3,477,701.
- Shinogi & Co., Ltd.: *See—*
  - Narisada, Masayuki, 3,478,150.
- Shionogi & Co., Ltd.: *See—*
  - Takamizawa, Akira, 3,478,031.
- Shirakura, Toshio, Yoshikawa, Hiroshi, Shibasaki, Masataka, and Hongo, Chikara, to Tanabe Seiyaku Co., Ltd. Production of optically active N-acylprolines and prolines. 3,478,055, Cl. 260-326.3
- Shore, Sidney X. Retractable marking pens. 3,477,792, Cl. 401-109.
- Short, James Harold, to Abbott Laboratories. Benzamide substituted anilino aminopyrimidines. 3,478,030, Cl. 260-256.4
- Short, R Stanford: *See—*
  - Kiester, George S., and Short, R Stanford 3,477,521.
- Shupe, Kay M., to Allegheny Ludlum Steel Corporation. Ingot mold with hot top and refractory lining for inducing progressive axial solidification. 3,477,682, Cl. 249-106.
- Siana, Robert. Apparatus for preventing access to a lock mechanism. 3,477,261, Cl. 070-427.
- Sico Incorporated: *See—*
  - Bue, Richard C., and Gutierrez, Julian, 3,477,760.
- Siefert, Roland, to Kienzle Uhrenfabriken G.m.b.H. Clock case. 3,477,224, Cl. 058-053.
- Siegele, Frederick Herman, to American Cyanamid Company. Oil well fracturing method using wax emulsions. 3,477,512, Cl. 166-283.
- Siemens Aktiengesellschaft: *See—*
  - Eder, Franz X., and Voigt, Hans, 3,478,232.
  - Goerke, Rolf, Bisch, Helmut, Togel, Kurt, and Speck, Werner, 3,478,207.
  - Hanni, Manfred, 3,478,170.
  - Henker, Heinz, 3,477,885.
  - Keller, Wolfgang, 3,477,811.
  - Klein, Heinrich, Weber, Eduard, Pieper, Rudolf, and Hoffmann, Alfred, 3,477,569.
  - Winstel, Gunter, Mettler, Klaus, Zschauer, Karl-Heinz, and Pelka, Horst, 3,478,215.
- Siivola, Ralph: *See—*
  - Johnson, Theodore W., and Siivola, Ralph 3,477,184.
- Silverman, Alvin J., and Steinberg, Stanley, to Vernitron Corporation. Asymmetric rotor plate means for an electromagnetic indicating apparatus. 3,478,288, Cl. 335-229.
- Simmons, James M.: *See—*
  - Speer, Walter F., and Simmons, James M. 3,477,299.
- Simmons, Lacy W. Fowl killing machine and method. 3,477,092, Cl. 017-011.
- Simmons, William: *See—*
  - Garnett, Charles S., 3,477,799.
- Simon, Joseph William, and Alverson, William Keith, to Scientific-Atlanta Inc. Reciprocal microwave phase shifter having two magnetizing conductors and one reset conductor. 3,478,283, Cl. 333-031.
- Simon, Ralph E., Williams, Brown F., and Wasserman, Ralph, to RCA Corporation. Photomultiplier or image amplifier with secondary emission transmission type dynodes made of semiconductive material with low work function material disposed thereon. 3,478,213, Cl. 250-207.
- Simonazzi, Tonino: *See—*
  - Bucci, Giovanni, Simonazzi, Tonino, Ballini, Giuliano, and Portolani, Augusto 3,477,985.
- Simons, Ira W.: *See—*
  - Hood, Charles B., Jr., and Simons, Ira W. 3,477,434.
- Simpson, Donald A., and Swift, Richard L., to Scott Paper Company. Interior panel member for an automobile. 3,477,759, Cl. 296-028.
- Sinclair Research, Inc.: *See—*
  - Wostl, Wolfgang J., 3,477,277.
- Singer Company, The: *See—*
  - Odermann, Charles R., and Dix, Willard A., 3,477,082.
  - Perrino, Frank A., 3,477,765.
- Sisler, Frederick D. Biochemical fuel cell. 3,477,879, Cl. 136-086.
- Sitko, Antoni L.: *See—*
  - Bergeron, Normand, Harriman, Allen C., and Sitko, Antoni L. 3,477,079.
- Six, Pieter Jacob, to Maatschappij Van Berkel's Patent N.V. Weighing machine with optical projection. 3,477,781, Cl. 353-022.
- Skandinaviska Processinstrument AB: *See—*
  - Agdur, Nils Bertil, and Hedvall, Per Olof Gunnar, 3,478,187.
- Skil Corporation: *See—*
  - Rebechini, Peter G., 3,477,353.
- Skiles, Richard D.: *See—*
  - Kuderna, Jerome G., Jr., and Skiles, Richard D. 3,478,105.
- Skoda, oborovy podnik: *See—*
  - Kyr, Ladislav, Volenik, Jiri, and Raba, Frantisek, 3,478,257.
- Skorcz, Joseph A.: *See—*
  - Suh, John T., and Skorcz, Joseph A. 3,478,058.
  - Suh, John T., and Skorcz, Joseph A. 3,478,059.

- Slack, Archie V., to Tennessee Valley Authority. Method of preparing ammoniated nitric acid-phosphate rock extracts. 3,477,843, Cl. 071-039.
- Slavin, Michael, Emery, Raymen F., and Carp, Ralph W., to Bendix Corporation, The. Integrated vacuum modulator and actuator. 3,477,346, Cl. 091-361.
- Slingsby, Thomas W.: *See—*
  - Ray, Ford P., and Slingsby, Thomas W. 3,477,356.
- Sloane, Nathan H., to Century Laboratories, Inc. Method of production of urokinase. 3,477,910, Cl. 195-066.
- Sloane, Nathan H., to Century Laboratories, Inc. Method of production of urokinase. 3,477,911, Cl. 195-066.
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- Slott, Robert S., Bell, Edward R., and Pilgram, Kurt H. G., to Shell Oil Company. Herbicidal benzothiadiazoles and oxygen and selenium analogues. 3,478,044, Cl. 260-298.
- Sloyan, Jerome J. Hinged support for motors and other machinery. 3,477,670, Cl. 248-023.
- Small, Guy W. Packaging machine for slat-like articles. 3,477,201, Cl. 053-161.
- Small, Sollie W.: *See—*
  - Herman, David, and Small, Sollie W. 3,478,238.
- Smeets, Gerard Gaston Frans. Punch and die holder. 3,477,329, Cl. 083-685.
- Smeltz, Kenneth C., to Du Pont de Nemours, E. I., and Company. Fluorinated alcohols. 3,478,116, Cl. 260-633.
- Smirnow, Peter: *See—*
  - Benson, John O., and Smirnow, Peter 3,477,851.
- Smith, Barry L.: *See—*
  - Schuller, James T., Haeusser, Harry C., and Smith, Barry L. 3,477,556.
- Smith, Charles Arthur, to Cossor, A. C., Limited. Couplings between waveguides and coaxial lines. 3,478,282, Cl. 333-021.
- Smith, Charles W., to Bunker-Ramo Corporation, The. Method and apparatus for forming an electric bond between two metallic members. 3,477,119, Cl. 029-497.
- Smith, David Roger: *See—*
  - Hawtin, Selwyn George, Smith, David Roger, and Field, Dennis Ronald 3,477,218.
- Smith, Herchel: *See—*
  - Stein, Reinhardt P., and Smith, Herchel 3,478,070.
  - Hughes, Gordon Alan, and Smith, Herchel 3,478,106.
- Smith, Leon W. Air-propelling cushioning conveyor. 3,477,764, Cl. 302-029.
- Smith, Lloyd B.,, Guinn, John T., Jr., and Cox, Allan, to Dayton Sure-Grip and Shore Company, The. Process and apparatus for manufacturing concrete form ties. 3,477,111, Cl. 029-155.
- Smith, Meredith E., Jr.: *See—*
  - Johanson, Frederic R., and Smith, Meredith E., Jr. 3,477,380.
- Smith, Richard A.: *See—*
  - Gruss, George A., Smith, Richard A., and Infantino, Joseph R. 3,478,134.
- Smith, Vernon J., and Webster, Charles R., to Dow Chemical Company, The. Method and apparatus for additive feeding. 3,477,698, Cl. 259-025.
- Smith, William F.: *See—*
  - Ingwalson, Raymond W., Smith, William F., and Wright, James O. 3,478,092.
- Smrdel, Joseph A.: *See—*
  - Allen, Edward M., Dye, Cloyde G., and Smrdel, Joseph A. 3,477,562.
- Snarr, James L., to Picker Corporation. Processor. 3,477,357, Cl. 095-094.
- Snodgrass, James D. Recording system. 3,478,202, Cl. 246-107.
- Snow, Richard H., to Boxboard Research and Development Association. Method and apparatus for web drying. 3,477,138, Cl. 034-023.
- Snow, Richard W., and Wilt, Chester C., to Eastman Kodak Company. Electrolytic process and apparatus for recovering metals. 3,477,926, Cl. 204-109.
- Snyder, Robert A.: *See—*
  - Neal, Frank, and Snyder, Robert A. 3,477,709.
- Societa Italiana Resine S.p.A.: *See—*
  - Aglietti, Giancarlo, and Canavesi, Roberto, 3,478,121.
- Societe Anonyme Andre Citroen: *See—*
  - Henry-Biabaud, Edmond, 3,477,473.
- Societe Anonyme de Telecommunications: *See—*
  - Turck, Jean Paul, 3,478,212.
- Societe Anonyme Heurtey: *See—*
  - Tamalet, Michel, 3,477,703.
- Societe d'Optique, Precision, Electronique et Mecanique: *See—*
  - Baton, Jean Pierre, and Llop, Helenio, 3,477,790.
- Societe National d'Etude et de Construction de Moteurs d'Aviation: *See—*
  - Bauger, Louis Jules, and Lacroix, Armand Jean Baptiste, 3,477,230.
- Societe Potain S.A.: *See—*
  - Noly, Jean, 3,477,695.
- Soder, Alfons, and Busing, Gerhard, to Chemische Werke Albert. Salts of nicotinic acid. 3,478,041, Cl. 260-295.5
- Sohlemann, Just, to Bolkow Gesellschaft mit beschrankter Haftung. Duplicating machine tool. 3,477,264, Cl. 072-081.
- Soignet, Donald M., and McKelvey, John B., to United States of America, Agriculture. Preparation of 1,1,4,4-tetraethylpiperazinium dichloride. 3,478,033, Cl. 260-268.
- Solodar, Warren E., and Kyriakakis, Basil M., to Xerox Corporation. 1,5-Bis-(substituted alkylamino)-anthraquinones. 3,478,064, Cl. 260-378.
- Solomon, Peter R.: *See—*
  - Otter, Fred A., Jr., Solomon, Peter R., and Yntema, George B. 3,478,230.
- Sonoco Products Company: *See—*
  - Dunlap, Charles K., Jr., Johnson, Walter E., and Harper, William M., 3,477,631.
- Sony Corporation: *See—*
  - Morita, Tsuneo, 3,478,177.
  - Nagai, Tamiji, 3,478,258.
- Sorgenti, Harold A., to Atlantic Richfield Company. Method for the production of monoalkylbenzenes. 3,478,118, Cl. 260-671.
- Sorkin, Morris. Three speaker stereophonic audio system. 3,478,167, Cl. 179-001.
- Soudek, Josef: *See—*
  - Nemec, Jindrich, Kaspar, Jan, and Soudek, Josef 3,477,575.
- Soukup, Victor G., and Horst, Raymond W., to Cincinnati Milling-Machine Co., The. Panels for printed circuit manufacture and process for making the same. 3,477,900, Cl. 161-194.
- Sousa, Anthony A.: *See—*
  - Arnold, Donald R., and Sousa, Anthony A. 3,478,043.
- Southam, Donald L.: *See—*
  - Stotzer, Roger H., and Southam, Donald L. 3,477,712.
- Southwestern Industries, Inc.: *See—*
  - Culver, Irven H., 3,477,249.
- Southworth, Glen R., to Colorado Video Incorporated. Scan converter and television scan converter system. 3,478,164, Cl. 178-006.6
- Spackman, Ramon: *See—*
  - Clayton, Colin G., and Spackman, Ramon 3,477,461.
- Spangler, Edwin L., Jr.: *See—*
  - Murphy, Harry E., 3,477,645.
- Spaulding, David B., to International Telephone and Telegraph Corporation. Printing apparatus employing magnetic transfer band in which image impressions can be made. 3,477,368, Cl. 101-150.
- Speck, Werner: *See—*
  - Goerke, Rolf, Bisch, Helmut, Togel, Kurt,. and Speck, Werner 3,478,207.
- Speer, Walter F., and Simmons, James M., to RCA Corporation. Detent system. 3,477,299, Cl. 074-010.41
- Sperry Rand Corporation: *See—*
  - Hart, Una L., 3,478,097.
  - Lofrisco, Leonard A., de Meo, Attilio A., and Walter, Gerard O., 3,478,254.
  - Wagstaff, Robert A., 3,477,308.
- Spezial-Papiermaschinenfabrik August Alfred Krupp: *See—*
  - Norbisrath, Max, 3,477,657.
- Spiegelberg, Hans: *See—*
  - Edenhofer, Albrecht, and Spiegelberg, Hans 3,478,048.
- Spillette, Arthur G., to Esso Production Research Company. Alternate steam-cold water injection for the recovery of viscous crude. 3,477,510, Cl. 166-272.
- Sporek, Karel F., to Owens-Illinois, Inc. Ionization detector electrode assembly and method of analyzing gas and vapor substances. 3,478,205, Cl. 250-043.5
- Sprague Electric Company: *See—*
  - Johnson, Theodore W., Kalt, Charles G., and Martin, Jacob H., 3,478,191.
- Sprague, James M., and Cragoe, Edward J., Jr., to Merck & Co., Inc. 3,3-Spiropiperidine derivatives of benzothiodiazine 1,1-dioxides and processes for their preparation. 3,478,021, Cl. 260-243.
- Sprecher, Raymond G., to General Motors Corporation. Window regulator handle assembly. 3,477,309, Cl. 074-547.
- Springer Industries, Inc.: *See—*
  - Robinson, Clifford C., 3,477,404.
- Spura, Richard: *See—*
  - Pech, Vaclav, Vebr, Jan, and Spura, Richard 3,477,100.
- Square D Company: *See—*
  - Cinatl, Fred J., and Lehman, Lewis M., 3,478,299.
- Srinivasan, Chitoor V., to RCA Corporation. System for automatic correction of burst-errors. 3,478,313, Cl. 340-146.1
- St. Pierre, Richard Ernest: *See—*
  - Price, Billy Ray, St. Pierre, Richard Ernest, and Lloyd, Neil E. 3,477,445.
- Stalder, William L.: *See—*
  - Saunders, William E., and Stalder, William L. 3,478,000.
- Stamm, Walter A., and Greco, Carl C., to Stauffer Chemical Company. Process for preparing N-monosubstituted carbamic acid esters. 3,477,933, Cl. 204-162.
- Standard Engineering Company, The: *See—*
  - Rogers, John Harlan, 3,477,214.
- Standard Gage Company, Inc.: *See—*
  - Klink, John, 3,477,675.
- Standard Oil Company (Indiana): *See—*
  - Wissenberg, Herman, 3,477,861.
- Standard Plastic Products, Inc.: *See—*
  - Bender, Louis, 3,477,716.
- Stanford, James R., and Vogelsang, Paul G., Jr., to Nalco Chemical Company. Hydroxyamine phosphate ester scale inhibitors. 3,477,956, Cl. 252-008.55

- Stanley, William C., Harris, William G., Jr., and McLeroy, Edward G., Jr., to United States of America, Navy. Sea bottom classifier. 3,478,308, Cl. 340-003.
- Stanway, David Neil: *See—*
  - Ellis, Bernard, Petrow, Vladimir, and Stanway, David Neil 3,478,069.
- Stapp, Hans: *See—*
  - Werner, Helmut, and Stapp, Hans 3,478,143.
- Stark, Jack L.: *See—*
  - Wuellner, Louis E., Stark, Jack L., and Crawford, James D. 3,478,218.
- Starnes, William H., Jr., to Esso Research and Engineering Company. Method of producing 3,4-benzocoumarins. 3,478,061, Cl. 260-343.2
- Statni Vyzkumny Ustav Kozedelny: *See—*
  - Krcal, Zdenek, Muck, Eduard, and Kremar, Jaroslav, 3,477,288.
- Staudt, Heinrich, to Bosch, Robert, G.m.b.H. Fuel injection pump. 3,477,386, Cl. 103-154.
- Stauffer Chemical Company: *See—*
  - Hellmers, Henry D., 3,477,808.
  - Lengnick, Guenther Fritz, and Pepe, Anthony Enrico, 3,477,973.
  - Stamm, Walter A., and Greco, Carl C., 3,477,933.
- Stearns, Donald M. Sewage disposal system. 3,477,581, Cl. 210-195.
- Steigerwald Strahltechnik GmbH: *See—*
  - Meyer, Edgar, and Scheffels, Wilhelm, 3,478,244.
- Stein, Reinhardt P., and Smith, Herchel, to American Home Products Corporation. Process for selectively acylating the 3-ol group in polyhydroxy 13-alkyl gona- (and 8-isognoa)-1,3,5- (10)-trienes and delta-7-, delta-8(9), delta-9(11)-, and delta-8(9),14(15)-dehydro derivatives thereof. 3,478,070, Cl. 260-397.5
- Steinberg, Stanley: *See—*
  - Silverman, Alvin J., and Steinberg, Stanley 3,478,288.
- Stendel, Wilhelm: *See—*
  - Fest, Christa, Hammann, Ingeborg, Stendel, Wilhelm, and Flucke, Winfried 3,478,037.
- Sterling Drug Inc.: *See—*
  - Bell, Malcolm Rice, 3,478,039.
- Stern, Howard W.: *See—*
  - Just, Jerome O., and Stern, Howard W. 3,477,213.
- Sternco Industries, Inc.: *See—*
  - Lovitz, David D., 3,477,679.
- Stevens, George R.: *See—*
  - Bettega, Bruno, and Stevens, George R. 3,477,227.
- Stevens, J. P., & Co., Inc.: *See—*
  - Tesoro, Giuliana C., 3,477,802.
- Stewart, Glen E.: *See—*
  - Cryder, John R., Haak, Willard J., Hufeld, John L., Kinney, Lionel L., Lohbauer, Kenneth R., Marsden, Howard A., Matthews, Ralph W., Norick, William B., Stewart, Glen E., Vanzandt, Rollin P., and Winters, Frank H. 3,477,225.
- Stiger, Bryan E. Bathtub with vertical movable platform for hospitals and nursing homes. 3,477,069, Cl. 004-185.
- Stile-Craft Manufactures, Inc.: *See—*
  - Cranage, Bidwell Chapman, 3,477,105.
- Stillit, Gerald Barry. Apparatus for teaching knowledge. 3,477,144, Cl. 035-009.
- Stockmann, Helmut: *See—*
  - Decker, Hanns, Stockmann, Helmut, and Hurtmanns, Heinz 3,477,651.
- Stockpole Carbon Company: *See—*
  - Bang, Mogens W., 3,478,180.
- Stoddard, Paul M.: *See—*
  - Thompson, George C., and Stoddard, Paul M. 3,477,669.
- Stokes, John F. House prefabricating machine. 3,477,108, Cl. 025-041.
- Stone, Michael F.: *See—*
  - Stone, Phillip D., and Stone, Michael F. 3,477,334.
- Stone, Phillip D., and Stone, Michael F. Nail. 3,477,334, Cl. 085-021.
- Storm, Jack S., Jr.: *See—*
  - Glynn, Theodore W., and Storm, Jack S., Jr. 3,477,836.
- Stotzer, Roger H., and Southam, Donald L., to Harris-Intertype Corporation. Sheet handling machine with continuous delivery. 3,477,712, Cl. 271-088.
- Strauss, Edgar: *See—*
  - Rossmann, Rudolf H., and Strauss, Edgar 3,477,475.
- Strickland, Royce M., to United-Greenfield Corporation. Chaser-positioning device for thread-cutting die heads. 3,477,076, Cl. 010-104.
- Struger, Odo J., and Moser, Joseph R., to Allen-Bradley Company. Electrical circuit to provide pulse signals having precise time duration. 3,478,228, Cl. 307-265.
- Stuart, Ronald Sangster: *See—*
  - Jack, James, Stuart, Ronald Sangster, and Plumb, John Beckett 3,478,075.
- Stucki, A., Company: *See—*
  - Wiebe, Donald, 3,477,289.
- Studley Paper Company, Inc.: *See—*
  - Fesco, John J., 3,477,209.
- Sturkey, William C., to Celanese Corporation. Treatment of cellulose triacetate with selected compounds to introduce stretch properties. 3,477,806, Cl. 008-131.
- Sturm, Lewis D. Elevator fluid control valve mechanism. 3,477,466, Cl. 137-599.
- Sud-Aviation Societe Nationale de Constructions Aeronautiques: *See—*
  - Legrand, Louis Francois Georges, 3,477,665.
- Suess, Edmund V. Folding guard screen assembly. 3,477,492, Cl. 160-135.
- Suh, John T., and Skorcz, Joseph A., to Colgate-Palmolive Company. 1,4-Benzodioxan-2-yl amino acids. 3,478,058, Cl. 260-340.3
- Suh, John T., and Skorcz, Joseph A., to Colgate-Palmolive Company. 1,4-Benzodioxan-6-yl amino acids. 3,478,059, Cl. 260-340.3
- Sulecki, Richard Paul: *See—*
  - Werner, Richard L., and Sulecki, Richard Paul 3,477,120.
- Sumitomo Chemical Company, Ltd.: *See—*
  - Nakaguchi, Kohei, Kawasumi, Shohachi, Hirooka, Masaaki, and Fujita, Toshimichi, 3,478,002.
  - Oshima, Yasuyoshi, and Eto, Morifusa, 3,478,133.
  - Tuji, Yoji, 3,477,864.
- Summers, Claude Menta: *See—*
  - Hughes, William Lewis, Summers, Claude Menta, and Allison, Hansell Jack 3,477,878.
- Sumpter, Rudolph H., to United States of America, Navy, mesne. Pressure transducer. 3,477,295, Cl. 073-398.
- Sun-Freeze, Inc.: *See—*
  - van Gelder, Arthur, 3,477,137.
- Sun Oil Company: *See—*
  - Lerner, Julius, 3,477,290.
  - van Venrooy, John J., 3,477,963.
- Sun Shipbuilding & Dry Dock Company: *See—*
  - Garland, Charles, 3,477,605.
- Sunbeam Corporation: *See—*
  - Jepson, Ivar, Dokos, Sophocles J., and Bielak, Sigmund H., 3,477,263.
- Surgent, Louis Vincent, Jr.: *See—*
  - Foster, George Michael, and Surgent, Louis Vincent, Jr. 3,478,354.
- Surmatis, Joseph Donald, to Hoffman-La Roche Inc. Novel diketo coloring agent. 3,478,104, Cl. 260-586.
- Sutton, Carl E.: *See—*
  - Martel, Richard A., Davis, William R., and Sutton, Carl E. 3,478,217.
- Suzuki, Kensei, Tamura, Shigeo, Kawachi, Yoshinori, and Nagafuji, Naohiro. Hydraulic lock device. 3,477,550, Cl. 188-096.
- Svenska Dataregister AB: *See—*
  - Englund, Gosta R., 3,477,639.
- Svensson, Oake: *See—*
  - Lapsevskis, Vilnis, and Svensson, Oake 3,478,173.
- Svihra, Paul M.: *See—*
  - Kracht, Gerhard, and Svihra, Paul M. 3,477,325.
- Swanson, Howard E.: *See—*
  - Perkins, Gordon O., and Swanson, Howard E. 3,478,185.
- SWECO, Inc.: *See—*
  - McKibben, Richard K., 3,477,572.
- Swedish Crucible Steel Company: *See—*
  - Kracht, Gerhard, and Svihra, Paul M., 3,477,325.
- Sweet, Ralph W. Adjustable stabilizing disc assembly for disc cultivators and the like. 3,477,516, Cl. 172-184.
- Swickard, James L., and Koppehele, Paul H., to Black Clawson Company, The. Apparatus for producing dry plastic pellets. 3,477,098, Cl. 018-012.
- Swift, Harold E.: *See—*
  - Fernald, Herbert B., Gall, William, and Swift, Harold E. 3,478,124.
- Swift, Richard L.: *See—*
  - Simpson, Donald A., and Swift, Richard L. 3,477,759.
- Swingline Inc.: *See—*
  - Lensky, Albert, 3,477,095.
- Sybron Corporation: *See—*
  - Ernst, Robert R., 3,477,807.
- Sylvania Electric Products, Inc.: *See—*
  - Coviello, Gino J., 3,478,268.
  - Griffin, Robert M., 3,478,300.
- Symons Mfg. Company: *See—*
  - Dagiel, Richard T., 3,477,684.
- Syndyne Corporation: *See—*
  - Hamrick, Donald James, 3,477,122.
- Syntex Corporation: *See—*
  - Beard, Colin C., and Cross, Alexander D., 3,478,066.
  - Edwards, John A., 3,478,019.
- Szcupak, Peter, and Andersen, Kare, to Chicago Rawhide Manufacturing Company. Shaft seal. 3,477,730, Cl. 277-024.
- Szita, Jeno, Bahr, Ulrich, Wieden, Horst, Marzolph, Herbert, and Nischk, Gunther, to Farbenfabriken Bayer Aktiengesellschaft. Acrylonitrile copolymers with unsaturated sulfobetaines and process for preparing same. 3,478,001, Cl. 260-079.3
- Szitar, John E., Jr., to Teledyne, Inc. Tube flaring machine. 3,477,265, Cl. 072-117.
- Szmuszkovicz, Jacob, to Upjohn Company, The. 2,3 Bis(alkoxyphenyl)-1-pyrroline. 3,478,053, Cl. 260-326.5
- Szymanski, Richard, to Brunswick Corporation. Convertible bowling lane. 3,477,719, Cl. 273-037.
- Takamizawa, Akira, to Shionogi & Co., Ltd.Furo [2,3-h] thiachromine. 3,478,031, Cl. 260-256.5
- Takata, Toshihiko: *See—*
  - Wada, Toshiya, Akanuma, Kaneo, and Takata, Toshihiko 3,477,881.
- Takeda Chemical Industries, Ltd.: *See—*
  - Ogura, Junji, Mise, Noritoshi, Yokoo, Makoto, and Hatanaka, Yoshihiro, 3,478,089.

- Takeda, Saburo, Higashi, Hiromi, Tarao, Ryokichi, Mizuno, Mikio, Watabe, Kazuyuki, Saito, Michiaki, Namikawa, Shigeo, and Tsunoda, Takao. Method for polymerization of vinyl compounds. 3,477,999, Cl. 260-078.5
- Talboom, Frank P., Jr., and Petrusha, John A., to United Aircraft Corporation. Coated nickel-base and cobalt-base alloys having oxidation and erosion resistance at high temperatures. 3,477,831, Cl. 029-195.
- Talbott, John W., to Potlatch Forests, Inc. Method for assembling wooden T and I beams. 3,477,485, Cl. 144-319.
- Tallmadge, Guy Kasten, to American Institutes for Research. Teaching device. 3,477,145, Cl. 035-019.
- Tamalet, Michel, to Societe Anonyme Heurtey. Sand circulation oven for ball-shaped products. 3,477,703, Cl. 263-040.
- Tamburasov, Zrinka: *See—*
  - Djokic, Slohodan, and Tamburasov, Zrinka 3,478,014.
- Tamura, Shigeo: *See—*
  - Suzuki, Kensei, Tamura, Shigeo, Kawachi, Yoshinori, and Nagafuji, Naohiro 3,477,550.
- Tanabe Seiyaku Co., Ltd.: *See—*
  - Shirakura, Toshio, Yoshikawa, Hiroshi, Shibasaki, Masataka, and Hongo, Chikara, 3,478,055.
- Tangeman, Lawrence N., and Williams, Warren W., to Dempster Industries, Inc. Centrifugal pump sealing system for viscous abrasive liquids. 3,477,385, Cl. 103-111.
- Tansley, Henry W. Magnetic door holder. 3,477,176, Cl. 049-007.
- Tarao, Ryokichi: *See—*
  - Takeda, Saburo, Higashi, Hiromi, Tarao, Ryokichi, Mizuno, Mikio, Watabe, Kazuyuki, Saito, Michiaki, Namikawa, Shigeo, and Tsunoda, Takao 3,477,999.
- Taylor, Grady E.: *See—*
  - Moyer, Ralph H., and Taylor, Grady E. 3,477,826.
- Taylor, Henry Bastian: *See—*
  - Haines, Ernest Martin, and Taylor, Henry Bastian 3,478,285.
- Taylor, Jason H.: *See—*
  - Farrell, Thomas P., and Taylor, Jason H. 3,477,525.
- Teaching Machines, Inc.: *See—*
  - Cornell, Dudley E., III, and O'Connell, Robert A., 3,477,142.
- Techtmann, Herbert F. Indexing type of filling machine with bottom flap valve. 3,477,617, Cl. 222-370.
- Tele-Data, Inc.: *See—*
  - Rorholt, Bjorn A., 3,478,318.
- Teledyne, Inc.: *See—*
  - Szitar, John E., Jr., 3,477,265.
- Telefonaktiebolaget LM Ericsson: *See—*
  - Lapsevskis, Vilnis, and Svensson, Oake, 3,478,173.
  - Waldelius, Eric, 3,478,165.
- Telefonaktiegolaget LM Ericsson: *See—*
  - Bjork, Harold John Carl, and Kilander, Sven Gustav Ingemar, 3,478,172.
- Temcor: *See—*
  - Richter, Donald L., 3,477,752.
- Tempalski, Chester S.: *See—*
  - McGrath, Joseph J., and Tempalski, Chester S. 3,478,087.
- Templer, David I.: *See—*
  - Rudnitzki, Alexis J., and Templer, David I. 3,478,086.
- Templeton, John B. Boom and bracing. 3,477,522, Cl. 173-043.
- Tennessee Valley Authority: *See—*
  - Slack, Archie V., 3,477,843.
- Terrana, Jack D.: *See—*
  - Miller, Leo A., and Terrana, Jack D. 3,477,815.
- Terrenzio, Gabriel J., and Westbrook, Margaret. Hair-treating method and apparatus. 3,477,446, Cl. 132-007.
- Terrill, James R., to Aluminum Company of America. Glass bead bonding to aluminous metal. 3,477,118, Cl. 029-471.1
- Terry, Cyrl W., to United States of America, Navy. Ground surface hardness tester. 3,477,283, Cl. 073-084.
- Tesoro, Giuliana C., to Stevens, J. P., & Co., Inc. Modification of cellulose, polyvinyl alcohol and starch with compounds characterized by ethylene radicals having an electron attracting group which stabilizes carbanions on one carbon atom thereof and an alkoxy or hydroxy group on the other. 3,477,802, Cl. 008-115.5
- Testo, Henry Raymond. Method and apparatus for providing an external connection to an electrical component. 3,478,307, Cl. 339-244.
- Tetzlaff, Clarence C., and Chamberlain, George, to Wittek Manufacturing Co. Hose clamp with hose attaching means. 3,477,106, Cl. 024-279.
- Teves, Alfred, G.m.b.H.: *See—*
  - Beuchle, Friedrich, Hahm, Heinz, Klein, Christof Hans, and Beller, Hans, 3,477,551.
- Texaco Inc.: *See—*
  - McGann, Rodney, 3,477,505.
- Texas Instruments, Incorporated: *See—*
  - Comey, Kenneth R., Jr., and Durst, George, 3,477,845.
  - Pritchard, John P., Jr., 3,477,848.
- Textron Inc.: *See—*
  - Findley, Howard J., 3,477,320.
  - Putetti, Anthony M., 3,477,075.
- Thalin, Gunnar E.E. Crane booms, particularly mobile crane booms. 3,477,589, Cl. 212-059.
- Thate, Kurt: *See—*
  - Winkler, Alfred, Winkler, Friedrich, Theer, Anton, and Thate, Kurt 3,477,778.
- Theer, Anton: *See—*
  - Winkler, Alfred, Winkler, Friedrich, Theer, Anton, and Thate, Kurt 3,477,778.

- Thermo Electron Corporation: *See—*
  - Kitrilakis, Sotiris, 3,477,412.
- Thermodynamic Systems, Inc.: *See—*
  - Johnson, Don E., 3,477,345.
- Thomas & Betts Corporation: *See—*
  - Rainey, Walton, 3,477,326.
- Thomas, Gordon D., to Kimberly-Clark Corporation. Oil impregnated creped wadding-synthetic fiber wipe. 3,477,084, Cl. 015-104.93
- Thomas, Samuel M., Jr.: *See—*
  - Buuck, Frederick A., Harden, Phillip L., and Thomas, Samuel M., Jr. 3,478,349.
- Thompson, George C., and Stoddard, Paul M. Display means for floral sprays. 3,477,669, Cl. 248-027.8
- Thompson, George J., to Marion Power Shovel Company. Crawler shoe. 3,477,769, Cl. 305-057.
- Thompson, John C.: *See—*
  - Fuzzell, Joe E., Thompson, John C., and Johnson, John L., Jr. 3,477,607.
- Thompson, William C.: *See—*
  - Abbott, Douglas T., and Thompson, William C. 3,477,794.
- Thoren, Olle G., and Axelson, Hans A., to Refrigeration System AB. Refrigerating method and system for maintaining substantially constant temperature. 3,477,240, Cl. 062-115.
- Thornton, William E. Digitized clinical thermometer. 3,477,292, Cl. 073-362.
- Thorpe, Foster B., to Honeycomb Systems, Inc. Method of and rivet assembly for joining metal panels. 3,477,336, Cl. 085-068.
- Thunholm, Carl Harje Gustav, to Aktiebolaget Bofors. Device for reducing acoustic oscillations originat- ing from the rotation of a prismatic member in a cylindrical casing. 3,477,541, Cl. 181-033.
- Thurman, Carl C., Jr., to Dow Chemical Company, The. N-fluorinated substituted aziridines. 3,478,017, Cl. 260-239.
- Tichy, Oscar A. W.: *See—*
  - Walker, Douglas J., and Tichy, Oscar A. W. 3,477,258.
- Tidwell, Thomas T. Method for making candy with gum inside. 3,477,394, Cl. 107-054.
- Tigges, Gerhard, to Lebrecht Tigges. Apparatus for ejection and insertion of a warp cheese carrier into the axial opening of yarn spools or the like. 3,477,113, Cl. 029-211.
- Tilse, Wilhelm, and Weise, Rolf, to United States Time Corporation, The. Frequency standard. 3,477,223, Cl. 058-023.
- Tingley Rubber Corporation: *See—*
  - Le Compte, Frank M., 3,477,402.
- Tinsley, William B. Swivel joint for wells being pumped. 3,477,748, Cl. 285-267.
- Tippmann Engineering, Inc.: *See—*
  - Tippmann, Joseph R., 3,477,668.
- Tippmann, Joseph R., to Tippmann Engineering, Inc. Supporting base for industrial refigeration apparatus. 3,477,668, Cl. 248-019.
- Togel, Kurt: *See—*
  - Goerke, Rolf, Bisch, Helmut, Togel, Kurt, and Speck, Werner 3,478,207.
- Toko Kabushiki Kaisha: *See—*
  - Nakamura, Katsuro, and Watanabe, Shigetoshi, 3,478,337.
- Tokyo Kagaku Kabushikikaisha: *See—*
  - Mabuchi, Takaichi, 3,477,173.
- Tokyo Shibaura Electric Co., Ltd.: *See—*
  - Osawa, Hideo, Sakamoto, Yosio, and Kondo, Masayuki, 3,477,291.
- Tolan, Peter J.: *See—*
  - Hyer, Frank S., and Tolan, Peter J. 3,477,533.
- Tolstyka, Joseph R.: *See—*
  - Boretti, Napoleon P., Bratton, Wilson T., and Tolstyka, Joseph R. 3,477,870.
- Tomasino, Charles, and Lake, Gerard K., to Radiation Research Corporation, mesne. Process for making tires by exposure to an ionized gas and treatment with resorcinol-formaldehyde/latex composition and the product. 3,477,902, Cl. 161-241.
- Tomota, Miyaji, to Kabushikikaisha Yokogawa Denki. Capacitor potentiometer. 3,478,256, Cl. 321-002.
- Tonnies, Frank Nicholas, to American Cyanamid Company. Selectively variable winding pattern control apparatus for thread winders. 3,477,654, Cl. 242-026.1
- Topper Corporation: *See—*
  - Bonanno, Joseph L., 3,477,171.
- Torelli, Vesperto: *See—*
  - Amiard, Gaston, Nomine, Gerard, and Torelli, Vesperto 3,478,062.
- Torginol of America, Inc.: *See—*
  - Wiest, Lee Johnston, 3,477,625.
- Torin Corporation: *See—*
  - Glucksman, Dov Zeev, and Fay, Thomas W., 3,477,635.
- Tosch, William C.: *See—*
  - Jones, Stanley C., Sanders, Laurence R., Jr., Tosch, William C., and Wenger, Charles B. 3,477,511.
- Towell, Gordon D.: *See—*
  - Mac Henry, Carl, Weaver, John A., and Towell, Gordon D. 3,477,491.
- Town, Frank, to W. E. & F. Dobson Limited. Pilot-operable hydraulic valve. 3,477,465, Cl. 137-596.18
- Townsend, Edwin F., and Young, Stanley C., to Easco Leasing Corporation. Method and apparatus for removing backing sheets from thin laminates. 3,477,896, Cl. 156-584.
- Towslee, Harold E., Jr., to E-Z Mills Inc. Elastic weft knitted rib fabric. 3,477,257, Cl. 066-200.

Tracy, Thomas H. Mobile hydrotherapy equipment. 3,477,424, Cl. 128-066.
Trainor, Charles C., to Avnet, Inc., mesne. Tone control means for electric guitars and the like. 3,478,158, Cl. 084-001.16
Trefileries Leon Bekaert, P.V.B.A.: *See—*
Peene, Guido J., 3,477,653.
Trent, John Scott. Safety container for toxic substances. 3,477,775, Cl. 312-209.
Trent, Lamartine C., to North American Rockwell Corporation. Rapid transit system. 3,477,389, Cl. 104-118.
Tridair Industries: *See—*
Boyd, Thomas R., Cosenza, Frank J., and Yamamoto, Albert K., 3,477,333.
Trier, Louis J.: *See—*
Satchell, Fred E., Rytina, Anton W., and Trier, Louis J. 3,477,721.
Trigon, Roland, to CSF-Compagnie Generale de Telegraphie Sans Fil. Electronic scanning antennas. 3,478,358, Cl. 343-100.
Trimarke, Carl Robert: *See—*
Mayland, Bertrand J., Trimarke, Carl Robert, Harvin, Richard L., and Brandon, Charles S. 3,477,832.
Trimble, Cebern B., Mo, Frank S. C., and Combs, Ollah, to National Cash Register Company, The. Random access magnetic disc storage device with peripheral bearing means. 3,478,341, Cl. 340-174.1
Trodglen, James E., Jr. Internal combustion engine powered flying toys. 3,477,168, Cl. 046-075.
Trollope, William G. A., to Canadian Ingersoll-Rand Company Limited. Current limit chairing system. 3,477,548, Cl. 187-029.
Troth, Henry Mc Cardell, Jr., to Du Pont de Nemours, E. I., and Company. Preparation of nonwoven web structure. 3,477,103, Cl. 019-163.
Trubiano, Paul C.: *See—*
Semegran, Theodore S., and Trubiano, Paul C. 3,477,903.
True Temper Corporation: *See—*
Jackson, Carl Thomas, 3,477,642.
Trumbo, Cecil Dale, to Winn Engineering Company. Wire tie device. 3,477,363, Cl. 100-034.
TRW Inc.: *See—*
Anderson, Lawrence G., and Anderson, Le Roy M., 3,477,772.
Anderson, Philip N., 3,477,662.
Tsao, Carson K. H.: *See—*
Enemark, Robert B., and Tsao, Carson K. H. 3,478,269.
Tsergas, Athanase N., to Ram Tool Corporation. SCR, diode and transistor analyzer. 3,478,264, Cl. 324-073.
Tsunoda, Takao: *See—*
Takeda, Saburo, Higashi, Hiromi, Tarao, Ryokichi, Mizuno, Mikio, Watabe, Kazuyuki, Saito, Michiaki, Namikawa, Shigeo, and Tsunoda, Takao 3,477,999.
Tsuruga, Masanori, Murakami, Shogo, Kondo, Katsutoshi, Akabane, Shunei, Washikita, Kenji, and Koshino, Tameo, to Fuji Chemical Industries, Ltd. Method of resolving dl-ephedrine into its optically active components. 3,478,101, Cl. 260-570.6
Tucker, Benjamin Whitehead, Jr., to Otis Elevator Company. Hydraulically actuated door operator. 3,477,177, Cl. 049-138.
Tucker, William, to Lummus Company, The. Inlet cone device and method. 3,477,495, Cl. 165-001.
Tuji, Yoji, to Sumitomo Chemical Company, Ltd. Process for coating pharmaceutical preparations with a hydroxy propyl methyl cellulose-sealing agent moisture-preventing film. 3,477,864, Cl. 106-151.
Tulagin, Vsevolod: *See—*
Carreira, Leonard M., and Tulagin, Vsevolod 3,477,934.
Turck, Jean Paul, to Societe Anonyme de Telecommunications. Aiming system for the remote guidance of self- propelled missiles toward a target. 3,478,212, Cl. 250-083.3
Turk, Harold L.: *See—*
Schwartz, Bernard, and Turk, Harold L. 3,478,340.
Turner, Alan Frederick: *See—*
Parsons, David Gordon, and Turner, Alan Frederick 3,478,028.
Turner, Lawrence Alexander, to Fluid Dynamics (Proprietary) Limited. Self-clearing screening apparatus for use in irrigation and like projects. 3,477,579, Cl. 210-156.
Turpin, Edward Thomas, to SCM Corporation, mesne. Urethane modified epoxy ester resin compositions and products. 3,478,126, Cl. 260-835.
Tuthill, Edward G.: *See—*
Lundgreen, Michael W., Tuthill, Edward G., and Majerus, John B. 3,478,355.
Tyrrell, Albert Ralph. Tubular combustion chamber for an MHD generator. 3,478,235, Cl. 310-011.
Tyrrell, Albert Ralph. Tubular combustion chamber for an MHD generator. 3,478,236, Cl. 310-011.
U.S. Philips Corporation: *See—*
Bakker, Martinus Antonius Maria, Collaris, Maria Antonius Alphonsus Andreas, and Duran, Johannes Christiaan, 3,478,243.
Barnish, Philip, and Barrett, Colin, 3,477,259.
van der Wijngaart, Bernardus Antonius Carolus, Quirijnen, Marius, and Knigge, Marinus Gijsbertus, 3,477,787.
U.S. Plywood-Champion Papers Inc.: *See—*
Corrsin, Lester, 3,477,194.
U.T.L. Incorporated: *See—*
Rossmann, Rudolf H., and Strauss, Edgar, 3,477,475.
Ueda, Kenji, and Ogawa, Hiroshi, to Mitsubish Jukogyo Kabushiki Kaisha. Method and apparatus for automatic electric corrosion proofing. 3,477,931, Cl. 204-147.

Uloth, Robert H.: *See—*
Larsen, Aubrey A., and Uloth, Robert H. 3,478,149.
UMC Industries, Inc.: *See—*
Schuller, James T., Haeusser, Harry C., and Smith, Barry L., 3,477,556.
Unarco Industries, Inc.: *See—*
Loomis, Russell M., and Breen, Henry D., 3,477,392.
Unger, Otto: *See—*
Kubitzek, Harry, Unger, Otto, Nawrath, Gunter, Reichle, Alfred, and Nischk, Gunther 3,477,899.
Unger, Paul. Ski bonding with device for threaded adjusting of the binding component. 3,477,736, Cl. 280-011.35
Union Carbide Corporation: *See—*
Arnold, Donald R., and Sousa, Anthony A., 3,478,043.
Hall, John H., 3,477,935.
Hubert, Andre, 3,478,122.
Kordesch, Karl V., 3,477,877.
Louzos, Demetrios V., 3,477,958.
Lytle, Thomas J., 3,477,646.
Omietanski, George M., and Williams, Thomas C., 3,478,074.
Ostrozynski, Robert L., 3,477,988.
Uniroyal, Inc.: *See—*
Hunter, Byron A., 3,477,987.
Sauer, Herman C., 3,477,895.
United Aircraft Corporation: *See—*
Ask, Henry R., 3,477,152.
Fisher, George A., 3,477,344.
Otter, Fred A., Jr., Solomon, Peter R., and Yntema, George B., 3,478,230.
Schmidtke, Richard A., and Polhemus, Frederick C., Jr., 3,477,262.
Talboom, Frank P., Jr., and Petrusha, John A., 3,477,831.
United-Carr Incorporated: *See—*
Danico, Henry F., and Wilhelmi, Julius B., 3,477,090.
United-Greenfield Corporation: *See—*
Strickland, Royce M., 3,477,076.
United Kingdom Atomic Energy Authority: *See—*
Saunders, Alan Charles Anthony, 3,477,909.
United Piece Dye Works: *See—*
Blount, Charles, Jr., and Niepraschk, Arno, 3,477,073.
United States of America
Agriculture: *See—*
Fong, Willie, Wasley, William L., Whitfield, Robert E., and Miller, Lowell A., 3,477,803.
Mehltretter, Charles L., 3,477,904.
Schultz, William G., 3,477,856.
Soignet, Donald M., and McKelvey, John B., 3,478,033.
Wolff, Ivan A., and Olds, David W., 3,478,012.
Atomic Energy Commission: *See—*
Estes, Chester L., 3,478,189.
Horrocks, Donald L., and Wirth, Hermann O., 3,478,208.
Interior: *See—*
Cochran, Neal P., 3,477,942.
Navy: *See—*
Bauer, Myron J., Neuman, Milton C., and Wiethoff, Roger H., 3,477,338.
Carruthers, George R., 3,478,216.
Falterman, Charles W., and Griffith, William J., 3,477,373.
Farrell, Thomas P., and Taylor, Jason H., 3,477,525.
Kent, Robert L., Badessa, Rosario S., Barus, Carl, Dunn, Joseph M., Glaser, Raymond Arthur, and Johnson, Leonard B., 3,477,666.
Martel, Richard A., Davis, William R., and Sutton, Carl E., 3,478,217.
Milroy, Warren E., 3,478,220.
Moser, Paul M., 3,478,211.
Nelson, Harry A., Ocland, Ernest N., Jr., Miller, Howard A., and Blatt, Milton D., 3,477,376.
Perschy, James A., 3,478,223.
Resnick, Israel, 3,477,967.
Sery, Robert S., and Gordon, Daniel I., 3,477,883.
Stanley, William C., Harris, William G., Jr., and McLeroy, Edward G., Jr., 3,478,308.
Sumpter, Rudolph H., 3,477,295.
Terry, Cyrl W., 3,477,283.
United States Time Corporation, The: *See—*
Tilse, Wilhelm, and Weise, Rolf, 3,477,223.
Universal Filtration Inc.: *See—*
Baldwin, Beecher B., 3,477,582.
Universal Highway (Contracting) Limited: *See—*
Harding, John, Placzek, Peter, and Campbell, Sidney Glenroy, 3,477,352.
Universal Oil Product Company: *See—*
Fishel, Norman A., 3,477,964.
Universal Oil Products Company: *See—*
Borst, William B., Jr., 3,477,946.
Brennan, John F., 3,478,123.
Cyba, Henryk A., 3,478,096.
Fishel, Norman A., 3,477,965.
Gantt, James E., and Borst, William B., Jr., 3,477,915.
Hervert, George L., 3,477,210.
Maier, William H., and Ward, Dennis J., 3,478,119.
Nelson, Edwin F., 3,477,941.
Petersen, Alfred A., 3,477,570.

Upjohn Company, The: *See—*
Szmuszkovicz, Jacob, 3,478,053.
V-M Corporation: *See—*
Ison, Robert C., 3,478,271.
Valle, Louis J., to National Tel-Tronics Corporation. Resilient push button terminal. 3,478,304, Cl. 339-203.
Valometer Sales Co.: *See—*
Ringholz, Robert C., 3,477,371.
Valve Corporation of America: *See—*
Chambers, Charles D., 3,477,195.
Valyi, Emery I. Method for reducing edge cracking during rolling of metal shapes. 3,477,271, Cl. 072-365.
Vandaveer, Roscoe F.: *See—*
Palm, John W., and Vandaveer, Roscoe F. 3,477,810.
van de Meerendonk, Gerardus Cornelis, to Nedschroef Octrooi Maatschappij N.V. Machine for cutting internal thread in perforated objects. 3,477,077, Cl. 010-139.
van der Wijngaart, Bernardus Antonius Carolus, Quirijnen, Marius, and Knigge, Marinus Gijsbertus, to U.S. Philips Corporation, mesne. Piezo-electric shutter. 3,477,787, Cl. 355-071.
Vanderbilt, R. T., Company, Inc.: *See—*
De Hoff, Ronald L., and Grieco, George D., 3,477,981.
Van Driesen, Roger P., to Cities Service Research and Development Company. Maintenance of fluid flow in heavy hydrocarbon oil hydrogenation. 3,477,944, Cl. 208-143.
van Es, Machiel, to Gebr. Stork & Co's Apparalenfabrick N.V. Heat exchanger. 3,477,501, Cl. 165-103.
van Gelder, Arthur, to Sun-Freeze, Inc. Quick freezing of liquids for dehydration. 3,477,137, Cl. 034-005.
Vantorex Limited: *See—*
Parsons, David Gordon, and Turner, Alan Frederick, 3,478,028.
van Venrooy, John J., to Sun Oil Company. Carbon disulfide sulfiding of catalysts. 3,477,963, Cl. 252-439.
van Westrenen, William J., to Shell Oil Company. Process for coating paper with a starch-vinyl ester terpolymer latex binder. 3,477,871, Cl. 117-155.
Vanzandt, Rollin P.: *See—*
Cryder, John R., Haak, Willard J., Hufeld, John L., Kinney, Lionel L., Lohbauer, Kenneth R., Marsden, Howard A., Matthews, Ralph W., Norick, William B., Stewart, Glen E., Vanzandt, Rollin P., and Winters, Frank H. 3,477,225.
Varian Associates: *See—*
Brown, Harmon W., 3,478,203.
White, Jerome R., 3,478,188.
Vebr, Jan: *See—*
Pech, Vaclav, Vebr, Jan, and Spura, Richard 3,477,100.
Velsicol Chemical Corporation: *See—*
Ingwalson, Raymond W., Smith, William F., and Wright, James O., 3,478,092.
Rudnitzki, Alexis J., and Templer, David I., 3,478,086.
Veltman, Herbert, O'Kane, Patrick T., Gulyas, James W., and Middagh, William R., to Gordon, Sherritt, Mines Limited. Hydrometallurgical process for treating sulphides containing non-ferrous and ferrous metal values. 3,477,927, Cl. 204-119.
Verdibello, Ambrose A.: *See—*
Parker, Gerald R., and Verdibello, Ambrose A. 3,478,255.
Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft: *See—*
Puhringer, Othmar, and Gruber, Heinz, 3,477,706.
Schoffmann, Rudolf, 3,477,268.
Vernitron Corporation: *See—*
Silverman, Alvin J., and Steinberg, Stanley, 3,478,288.
Veryser, Harry C.: *See—*
Icke, William M., and Veryser, Harry C. 3,477,678.
Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen: *See—*
Bende, Friedrich, Corsepius, Horst, and Hansel, Werner, 3,478,102.
Vigil, David A., to RCA Corporation. Method of spacing a plurality of magnetic heads from the surface of a magnetic drum. 3,478,262, Cl. 324-034.
Vigluicci, Kenneth J. Concealed bedroom fire exit. 3,477,543, Cl. 182-076.
Vineyard, Billy Dale, to Monsanto Company. Branched chain butyl formaldehyde mercaptals. 3,478,107, Cl. 260-609.
Vitatoe, Welby: *See—*
Brock, Randall D., 3,478,199.
Vogelsang, Paul G., Jr.: *See—*
Stanford, James R., and Vogelsang, Paul G., Jr. 3,477,956.
Vogelzang, Edward J. W.: *See—*
Dijkstra, Tette J., and Vogelzang, Edward J. W. 3,477,982.
Vogt, Herwart C.: *See—*
Davis, Pauls, and Vogt, Herwart C. 3,478,110.
Voigt, Hans: *See—*
Eder, Franz X., and Voigt, Hans 3,478,232.
Voigtlander, A.G.: *See—*
Kinder, Gotthard, 3,477,355.
Volenik, Jiri: *See—*
Kyr, Ladislav, Volenik, Jiri, and Raba, Frantisek 3,478,257.
Von Der Emden, Wolfgang: *See—*
Kocher, Ernst-Ulrich, Wagner, Kuno, Von Der Emden, Wolfgang, and Dankert, Gerhard 3,477,992.
Von Esch, Anne Mary, and Crovetti, Aldo J., to Abbott Laboratories. Nitrofuryl substituted oxadiazoles. 3,478,049, Cl. 260-307.

Voss Engineering Company: *See—*
Fornataro, Augustine A., 3,477,266.
Vuataz, Luc, and Giddey, Andre, to Afico S.A. Preparation of tea extract from unfermented tea. 3,477,854, Cl. 099-0777.
Vyzkumny ustav Organickych syntex: *See—*
Nemec, Jindrich, Kaspar, Jan, and Soudek, Josef, 3,477,575.
W. E. & F. Dobson Limited: *See—*
Town, Frank, 3,477,465.
Wada, Toshiya, Akanuma, Kaneo, and Takata, Toshihiko, to Yawata Iron & Steel Co., Ltd. Process for the formation of electric insulating coating on electric iron sheet. 3,477,881, Cl. 148-006.2
Wadso, Bertil Ingemar, to LKB-Produkter AB. Miniaturized reaction vessel for mixing small quantities of liquids with a minimum amount of thermal disturbance. 3,477,820, Cl. 023-253.
Wagner, Charles H. Snow plow moldboard with resilient scraping blade. 3,477,149, Cl. 037-050.
Wagner, Kuno: *See—*
Kocher, Ernst-Ulrich, Wagner, Kuno, Von Der Emden, Wolfgang, and Dankert, Gerhard 3,477,992.
Wagner Research Corporation: *See—*
Hawley, George F., 3,477,397.
Wagner, Wolf-Helmut: *See—*
Winkelmann, Erhardt, and Wagner, Wolf-Helmut 3,478,036.
Wagstaff, Robert A., to Sperry Rand Corporation. Lever mounting. 3,477,308, Cl. 074-504.
Wald, Stephen A., and Winding, Charles C. Differential thermal analysis method and means employing high frequency heating. 3,477,274, Cl. 073-015.
Waldelius, Eric, to Telefonaktiebolaget LM Ericsson. Balancing network for loaded line. 3,478,165, Cl. 178-045.
Waldvogel, Guy: *See—*
Furst, Andor, Furlenmeier, Andre, Langemann, Albert, Waldvogel, Guy, Hocks, Peter, Kerb, Ulrich, and Wiechert, Rudolf 3,478,065.
Walecka, Leonard Edward, to Abbott Laboratories. Combined mixing syringe and container. 3,477,431, Cl. 128-218.
Walker, Dennis W., and Bexton, Eugen, to International Harvester Company. Agricultural implement. 3,477,518, Cl. 172-311.
Walker, Douglas J., and Tichy, Oscar A. W., to Whirlpool Corporation. Total sensing automatic washer. 3,477,258, Cl. 068-012.
Walker, Hamilton. Hydrofoil craft. 3,477,400, Cl. 114-066.5
Walker, Norman C., to Dana Laboratories, Inc. Amplifier system with power supply control for balanced power. 3,478,275, Cl. 330-022.
Wallace, Clarence L., Jr., to Illinois Tool Works Inc, Vibration integrating alarm. 3,478,343, Cl. 340-261.
Walstrom, John E., to Chevron Research Company. Offshore seismic cable stress sensing system. 3,477,696, Cl. 254-173.
Walter, Gerard O.: *See—*
Lofrisco, Leonard A., de Meo, Attilio A., and Walter, Gerard O. 3,478,254.
Wander, A., Dr., S.A.: *See—*
Schmutz, Jean, Hunziker, Fritz, Kunzle, Franz Martin, and Russel, Jeff Hamish, 3,478,056.
Wang, Tsih-Chang: *See—*
Prem, Lawrence L., and Wang, Tsih-Chang 3,478,234.
Ward, Dennis J.: *See—*
Maier, William H., and Ward, Dennis J. 3,478,119.
Warneke, Richard J. Teaching device. 3,477,146, Cl. 035-075.
Warren, Robert M., Jr., to Buensod-Stacey Corporation. Air conditioning. 3,477,497, Cl. 165-022.
Warrick, Frank G., to Sealed Power Corporation. Spacer-expander. 3,477,732, Cl. 277-140.
Warrick, James E.: *See—*
Houston, David R., Howes, Benjamin T., Warrick, James E., and Alexandrowicz, Alvin W. 3,477,306.
Warth, Alfred W.: *See—*
Warth, William C., and Warth, Alfred W. 3,477,131.
Warth, William C., and Warth, Alfred W. Position fixing instrument. 3,477,131, Cl. 033-066.
Washikita, Kenji: *See—*
Tsuruga, Masanori, Murakami, Shogo, Kondo, Katsutoshi, Akabane, Shunei, Washikita, Kenji, and Koshino, Tameo 3,478,101.
Wasley, William L.: *See—*
Fong, Willie, Wasley, William L., Whitfield, Robert E., and Miller, Lowell A. 3,477,803.
Wasserman, Ralph: *See—*
Simon, Ralph E., Williams, Brown F., and Wasserman, Ralph 3,478,213.
Watabe, Kazuyuki: *See—*
Takeda, Saburo, Higashi, Hiromi, Tarao, Ryokichi, Mizuno, Mikio, Watabe, Kazuyuki, Saito, Michiaki, Namikawa, Shigeo, and Tsunoda, Takao 3,477,999.
Watanabe, Shigetoshi: *See—*
Nakamura, Katsuro, and Watanabe, Shigetoshi 3,478,337.
Watson, John V., to Watson Manufacturing Company. Multiline swivel and mounting system. 3,477,746, Cl. 285-119.
Watson Manufacturing Company: *See—*
Watson, John V., 3,477,746.
Watson, Ralph M. Way for axial flow impeller. 3,477,382, Cl. 103-089.
Watters, Charles K., to Albermarle Paper Company. Method of making a decomposition resistant bag. 3,477,348, Cl. 093-035.

Weaver, John A.: *See—*
  Mac Henry, Carl, Weaver, John A., and Towell, Gordon D. 3,477,491.

Webb, Oswald, to Ferguson, Harry, Research Limited. Clutches. 3,477,302, Cl. 074-142.

Weber, Eduard: *See—*
  Klein, Heinrich, Weber, Eduard, Pieper, Rudolf, and Hoffmann, Alfred 3,477,569.

Webers, Heinz, to Bau-Stahlgewebe GmbH. Synchronized reciprocating feed devices. 3,477,627, Cl. 226-054.

Webster, Charles R.: *See—*
  Smith, Vernon J., and Webster, Charles R. 3,477,698.

Wedmore, William R., to Automatic Electric Laboratories, Inc. Transistorized exclusive-or comparator. 3,478,314, Cl. 340-146.2

Wehrli, Hans Ueli: *See—*
  Jeger, Oskar, Schaffner, Kurt, and Wehrli, Hans Ueli 3,478,068.

Weigert, Karl, to Kayser Roth Corporation. Attachment and process for sewing tabs to garments. 3,477,398, Cl. 112-104.

Weigl, John W., and Amidon, Alan B., to GAF Corporation. Xerographic charge transfer process. 3,477,846, Cl. 096-001.

Weiland, Emil, to Bolkow Gesellschaft mit beschrankter Haftung. Helicopter rotor construction. 3,477,796, Cl. 416-204.

Weinberger, Royal I., and Lusch, Nicholas, to Holland-Rantos Company, Inc. Flexible packaging equipment. 3,477,200, Cl. 053-120.

Weingarten, Morris R.: *See—*
  Brill, Frederick W., and Weingarten, Morris R. 3,477,835.

Weise, Rolf: *See—*
  Tilse, Wilhelm, and Weise, Rolf 3,477,223.

Weisfeld, Lewis B., to Carlisle Chemical Works, Inc. Reaction products of organotin mercapto acid derivatives and organotin oxide, hydrocarbyl stannoic acids (esters). 3,478,071, Cl. 260-429.7

Weiss, Carl D.: *See—*
  Calton, Marion R., and Weiss, Carl D. 3,477,116.
  Calton, Marion R., Oberle, Theodore L., and Weiss, Carl D. 3,477,117.

Weitz, Hans-Martin: *See—*
  Nonnenmacher, Helmut, Weitz, Hans-Martin, and Willersinn, Carl-Heinz 3,478,093.

Welch, Nicholas A.: *See—*
  Balducci, Walter O., and Welch, Nicholas A. 3,477,260.

Wellman-Lord, Inc.: *See—*
  Miller, Leo A., and Terrana, Jack D., 3,477,815.

Wells, Laurence C. Horizontal V-shaped dipole antenna for television reception. 3,478,363, Cl. 343-802.

Wells, Phillip R., and Melnick, Daniel, to Corn Products Company. Process for coating nuts. 3,477,858, Cl. 099-126.

Wenckus, Joseph F.: *See—*
  Bablouzian, Leon M., Castonguay, Roger A., and Wenckus, Joseph F. 3,477,644.

Wenger, Charles B.: *See—*
  Jones, Stanley C., Sanders, Laurence R., Jr., Tosch, William C., and Wenger, Charles B. 3,477,511.

Wenger, Friedrich: *See—*
  Maahs, Paul, Matthies, Hans-Georg, and Wenger, Friedrich 3,477,094.

Werner, Helmut, and Stapp, Hans, to Glanzstoff AG. Method of producing a yarn with random denier fluctuations. 3,478,143, Cl. 264-290.

Werner & Pfleiderer: *See—*
  Fritsch, Rudolf Paul, 3,477,101.

Werner, R. D., Co., Inc.: *See—*
  Werner, Richard L., and Sulecki, Richard Paul, 3,477,120.

Werner, Richard L., and Sulecki, Richard Paul, to Werner, R. D., Co., Inc. Method of making ladder joint. 3,477,120, Cl. 029-509.

Wertz, William H.: *See—*
  Duncan, Glen R., and Wertz, William H. 3,478,273.

West, Joe E.: *See—*
  Funk, Floyd S., Roundtree, Grover L., and West, Joe E. 3,477,351.

Westbrook, Margaret: *See—*
  Terrenzio, Gabriel J., and Westbrook, Margaret 3,477,446.

Western Electric Company, Incorporated: *See—*
  Schneider, Fred J., 3,477,630.

Weston Instruments, Inc.: *See—*
  Kirkendall, William D., 3,478,294.

Wharton, Willard H., and Cooper, Barry A., to Dow Chemical Company, The. Polyolefin blend having hot tack strength. 3,478,131, Cl. 260-897.

Wheeler, Harvey B., to Neville Chemical Company. Terpene copolymers. 3,478,005, Cl. 260-080.7

Whirlpool Corporation: *See—*
  Eggert, Thomas F., and Robinson, James M., 3,477,088.
  Koland, David G., 3,477,086.
  Lannert, James W., and Anderson, James J., 3,477,825.
  Walker, Douglas J., and Tichy, Oscar A. W., 3,477,258.

White, Jerome R., to Varian Associates. Multimode cavity resonator with two coupling holes at wall corners. 3,478,188, Cl. 219-010.55

White, Paul J.: *See—*
  Masologites, George P., Jacobs, Harry E., and White, Paul J. 3,477,943.

White, Robert L., to General Motors Corporation. Air compressor with plural pistons. 3,477,739, Cl. 280-124.

Whitfield, Joseph E., to Greater Iowa Corporation, The, mesne. Carriage mechanism for a load handling device. 3,477,595, Cl. 214-075.

Whitfield, Robert E.: *See—*
  Fong, Willie, Wasley, William L., Whitfield, Robert E., and Miller, Lowell A. 3,477,803.

Whitham, Latham E., to Kennecott Copper Corporation. Automatic remote tripper control. 3,477,593, Cl. 214-016.

Whiting Corporation: *See—*
  Larkin, John M., 3,478,157.

Whittaker Corporation: *See—*
  Kaufmann, Albert R., 3,477,114.

Wickham, Donald G., to Ampex Corporation. Preparation of lithium-manganese ferrite. 3,477,960, Cl. 252-062.6

Wicklatz, John E.: *See—*
  Harrison, Stuart A., and Wicklatz, John E. 3,478,081.

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Willersinn, Carl-Heinz: *See—*
  Nonnenmacher, Helmut, Weitz, Hans-Martin, and Willersinn, Carl-Heinz 3,478,093.

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  Simon, Ralph E., Williams, Brown F., and Wasserman, Ralph 3,478,213.

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Winkler, Hans: *See—*
  Renz, Jany, Bourquin, Jean-Pierre, Winkler, Hans, Gagnaux, Pierre, Guldimann, Simon, Ruesch, Leo, and Schwarb, Gustav 3,478,022.

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  Trumbo, Cecil Dale, 3,477,363.

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Wintersberger, Karl: *See—*
  Beck, Fritz, Leitner, Hans, Wintersberger, Karl, and Guthke, Harald 3,477,923.

Wirries, Heinrich: *See—*
  Autenrieth, Hans, and Wirries, Heinrich 3,477,566.

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  Hamilton, Donald A., 3,477,822.
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  Madrid, Robert W., 3,477,568.
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  Otter, Fred A., Jr., Solomon, Peter R., and Yntema, George B. 3,478,230.

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  Ito, Haruo, 3,478,227.

Yokoo, Makoto: *See—*
  Ogura, Junji, Mise, Noritoshi, Yokoo, Makoto, and Hatanaka, Yoshihiro 3,478,089.

Yoshida, Masaharu: *See—*
  Murota, Shozaburo, and Yoshida, Masaharu 3,477,690.

Yoshikawa, Hiroshi: *See—*
  Shirakura, Toshio, Yoshikawa, Hiroshi, Shibasaki, Masataka, and Hongo, Chikara 3,478,055.

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  Hoffmann, Hermann, and Zeitler, Heidi 3,478,010.

Zerrer, Gerhard: *See—*
  Heilig, Alfred, and Zerrer, Gerhard 3,477,482.

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  Winstel, Gunter, Mettler, Klaus, Zschauer, Karl-Heinz, and Pelka, Horst 3,478,215.

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  Hamouz, George J., and Zurek, James W

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177 : 3,477,066
209 : 3,477,067
252 : 3,477,068
4–185 : 3,477,069
253 : 3,477,070
5– 61 : 3,477,071
348 : 3,477,072
8– 4 : 3,477,799
54 : 3,477,800
94.24: 3,477,801
115.5 : 3,477,802
127.6 : 3,477,803
128 : 3,477,804
3,477,805
131 : 3,477,806
149.1 : 3,477,073
9– 11 : 3,477,074
10– 10 : 3,477,075
104 : 3,477,076
139 : 3,477,077
12– 14.4 : 3,477,078
142 : 3,477,079
13– 26 : 3,478,155
27 : 3,478,156
29 : 3,478,157
14– 16 : 3,477,080
15– 88 : 3,477,081
98 : 3,477,082
104 : 3,477,083
.93: 3,477,084
317 : 3,477,085
320 : 3,477,086
344 : 3,477,087
353 : 3,477,088
16– 16 : 3,477,089
44 : 3,477,090
180 : 3,477,091
17– 11 : 3,477,092
.1 : 3,477,093
18– 2 : 3,477,094
3,477,095
5 : 3,477,096
12 : 3,477,097
3,477,098
13 : 3,477,099
17 : 3,477,100
30 : 3,477,101
19–144.5 : 3,477,102
163 : 3,477,103
21– 58 : 3,477,807
23– 63 : 3,477,808
88 : 3,477,812
110 : 3,477,809
143 : 3,477,813
173 : 3,477,814
178 : 3,477,815
209.4 : 3,477,816
225 : 3,477,810
230 : 3,477,817
3,477,818
232 : 3,477,819
253 : 3,477,820
3,477,821
3,477,822
277 : 3,477,823
3,477,824
281 : 3,477,825
288 : 3,477,826
3,477,827
289 : 3,477,828
301 : 3,477,811
302 : 3,477,829
355 : 3,477,830
24–201 : 3,477,104
230 : 3,477,105
265 : 3,477,107
279 : 3,477,106
25– 41 : 3,477,108
26– 2 : 3,477,109
29– 25.14: 3,477,110
155 : 3,477,111
157 : 3,477,112
195 : 3,477,831
211 : 3,477,113
470.1 : 3,477,114
.3 : 3,477,115
3,477,116
3,477,117
471.1 : 3,477,118

29–497 : 3,477,119
509 : 3,477,120
568 : 3,477,121
573 : 3,477,122
578 : 3,477,123
592 : 3,477,124
596 : 3,477,125
605 : 3,477,126
30– 41 : 3,477,127
32– 14 : 3,477,128
3,477,129
33– 46 : 3,477,130
66 : 3,477,131
126.6 : 3,477,132
147 : 3,477,133
174 : 3,477,134
3,477,135
178 : 3,477,136
34– 5 : 3,477,137
23 : 3,477,138
191 : 3,477,139
35– 8 : 3,477,140
9 : 3,477,141
3,477,142
3,477,143
3,477,144
19 : 3,477,145
75 : 3,477,146
36– 2 : 3,477,147
.5 : 3,477,148
39 : 3,477,150
37– 42 : 3,477,151
50 : 3,477,149
129 : 3,477,152
38– 41 : 3,477,153
71 : 3,477,154
102.9 : 3,477,155
40– 2.2 : 3,477,156
126 : 3,477,157
128 : 3,477,158
140 : 3,477,159
152 : 3,477,160
218 : 3,477,161
42– 25 : 3,477,162
43– 5 : 3,477,163
42.09: 3,477,164
55 : 3,477,165
46– 1 : 3,477,166
22 : 3,477,167
75 : 3,477,168
118 : 3,477,169
135 : 3,477,170
161 : 3,477,171
243 : 3,477,172
3,477,173
47– 1.44: 3,477,174
41.13: 3,477,175
48–213 : 3,477,832
214 : 3,477,833
49– 7 : 3,477,176
138 : 3,477,177
51– 8 : 3,477,178
34 : 3,477,179
206 : 3,477,180
52– 27 : 3,477,181
28 : 3,477,182
73 : 3,477,183
105 : 3,477,184
169 : 3,477,185
242 : 3,477,186
346 : 3,477,187
637 : 3,477,188
648 : 3,477,189
718 : 3,477,190
53– 14 : 3,477,191
22 : 3,477,192
3,477,193
33 : 3,477,194
37 : 3,477,195
44 : 3,477,196
53 : 3,477,197
55 : 3,477,198
67 : 3,477,199
120 : 3,477,200
161 : 3,477,201
315 : 3,477,202
55– 9 : 3,477,203
33 : 3,477,204
53 : 3,477,205
62 : 3,477,206

55–197 : 3,477,207
218 : 3,477,208
367 : 3,477,209
387 : 3,477,210
418 : 3,477,211
56– 9 : 3,477,213
25.4 : 3,477,212
295 : 3,477,214
328 : 3,477,215
3,477,216
57– 22 : 3,477,217
34 : 3,477,218
59 : 3,477,219
140 : 3,477,220
157 : 3,477,221
58– 4 : 3,477,222
23 : 3,477,223
53 : 3,477,224
60– 19 : 3,477,225
24 : 3,477,226
30 : 3,477,227
36 : 3,477,228
52 : 3,477,229
54.5 : 3,477,232
224 : 3,477,230
269 : 3,477,231
61– 1 : 3,477,233
46.5 : 3,477,235
3,477,236
53.5 : 3,477,237
69 : 3,477,234
62– 3 : 3,477,238
38 : 3,477,239
115 : 3,477,240
124 : 3,477,241
283 : 3,477,242
298 : 3,477,243
306 : 3,477,244
64– 11 : 3,477,245
3,477,246
21 : 3,477,247
3,477,248
3,477,249
23 : 3,477,250
27 : 3,477,251
30 : 3,477,252
65– 30 : 3,477,834
32 : 3,477,835
121 : 3,477,836
168 : 3,477,837
204 : 3,477,838
273 : 3,477,839
287 : 3,477,840
307 : 3,477,841
66– 40 : 3,477,253
69 : 3,477,254
91 : 3,477,255
172 : 3,477,256
200 : 3,477,257
68– 12 : 3,477,258
23.1 : 3,477,259
70– 92 : 3,477,260
427 : 3,477,261
71– 28 : 3,477,842
39 : 3,477,843
72– 56 : 3,477,262
71 : 3,477,263
81 : 3,477,264
117 : 3,477,265
165 : 3,477,266
185 : 3,477,267
234 : 3,477,268
292 : 3,477,269
359 : 3,477,270
365 : 3,477,271
445 : 3,477,272
73– 11 : 3,477,273
15 : 3,477,274
32 : 3,477,275
37.5 : 3,477,276
53 : 3,477,277
3,477,278
61.1 : 3,477,279
71.4 : 3,477,280
.6 : 3,477,281
76 : 3,477,282
84 : 3,477,283
88 : 3,477,284
.5 : 3,477,285
95 : 3,477,286

73–102 : 3,477,287
159 : 3,477,288
198 : 3,477,289
292 : 3,477,290
355 : 3,477,291
362 : 3,477,292
382 ; 3,477,293
386 : 3,477,294
398 : 3,477,295
406 : 3,477,296
74– 5.1 : 3,477,297
.34: 3,477,298
10.41: 3,477,299
112 : 3,477,300
129 : 3,477,301
142 : 3,477,302
243 : 3,477,303
409 : 3,477,304
426 : 3,477,305
485 : 3,477,306
492 : 3,477,307
504 : 3,477,308
547 : 3,477,309
562.5 : 3,477,310
574 : 3,477,311
711 : 3,477,312
740 : 3,477,313
750 : 3,477,314
798 : 3,477,315
805 : 3,477,316
75– 63 : 3,477,844
173 : 3,477,845
76–107 : 3,477,317
81– 57 : 3,477,318
82– 1 : 3,477,319
34 : 3,477,321
36 : 3,477,320
83– 71 : 3,477,322
79 : 3,477,323
3,477,324
171 : 3,477,325
296 : 3,477,326
371 : 3,477,327
677 : 3,477,328
685 : 3,477,329
84– 1.16: 3,478,158
.17: 3,478,159
193 : 3,477,330
215 : 3,477,331
403 : 3,477,332
85– 5 : 3,477,333
21 : 3,477,334
62 : 3,477,335
68 : 3,477,336
73 : 3,477,337
89– 1.805 3,477,338
40 : 3,477,339
90– 11 : 3,477,340
12 : 3,477,341
24 : 3,477,342
91– 4 : 3,477,343
52 : 3,477,344
207 : 3,477,345
361 : 3,477,346
438 : 3,477,347
93– 35 : 3,477,348
53 : 3,477,349
94– 13 : 3,477,350
39 : 3,477,351
44 : 3,477,352
45 : 3,477,353
46 : 3,477,354
95– 31 : 3,477,355
94 : 3,477,356
3,477,357
96– 1 : 3,477,846
.8 : 3,477,847
27 : 3,477,848
29 : 3,477,849
48 : 3,477,850
94 : 3,477,852
98– 64 : 3,477,358
99– 63 : 3,477,853
77 : 3,477,854
80 : 3,477,855
83 : 3,477,851
105 : 3,477,856
123 : 3,477,857
126 : 3,477,858
159 : 3,477,859

99–174 : 3,477,860
252 : 3,477,359
339 : 3,477,360
408 : 3,477,361
441 : 3,477,362
100– 34 : 3,477,363
93 : 3,477,364
101– 93 : 3,477,365
123 : 3,477,366
137 : 3,477,367
150 : 3,477,368
153 : 3,477,369
183 : 3,477,370
283 : 3,477,371
102– 24 : 3,477,372
3,477,373
45 : 3,477,374
3,477,375
54 : 3,477,376
103– 49 : 3,477,380
84 : 3,477,381
89 : 3,477,382
99 : 3,477,383
102 : 3,477,384
111 : 3,477,385
118 : 3,477,378
136 : 3,477,377
154 : 3,477,386
216 : 3,477,379
104– 23 : 3,477,387
73 : 3,477,391
96 : 3,477,388
118 : 3,477,389
172 : 3,477,390
105–376 : 3,477,392
106– 14 : 3,477,861
22 : 3,477,862
54 : 3,477,863
151 : 3,477,864
209 : 3,477,865
289 : 3,477,866
107– 1 : 3,477,393
54 : 3,477,394
108– 51 : 3,477,395
109– 1 : 3,477,396
112– 2 : 3,477,397
104 : 3,477,398
219 : 3,477,399
114– 66.5 : 3,477,400
74 : 3,477,401
102 : 3,477,402
116–114 : 3,477,403
133 : 3,477,404
137 : 3,477,405
117– 4 : 3,477,867
46 : 3,477,868
72 : 3,477,869
105.3 : 3,477,870
155 : 3,477,871
212 : 3,477,872
119– 2 : 3,477,406
51 : 3,477,407
78 : 3,477,408
106 : 3,477,409
109 : 3,477,410
122– 7 : 3,477,411
33 : 3,477,412
123– 1 : 3,477,413
13 : 3,477,414
44 : 3,477,415
90 : 3,477,416
3,477,417
140 : 3,477,418
124– 27 : 3,477,419
126–299 : 3,477,420
127– 43 : 3,477,873
58 : 3,477,874
128– 2 : 3,477,422
3,477,423
.06: 3,477,421
66 : 3,477,424
75 : 3,477,425
80 : 3,477,426
82.1 : 3,477,427
85 : 3,477,428
92 : 3,477,429
130 : 3,477,430
218 : 3,477,431
3,477,432
290 : 3,477,433

128–303.1 : 3,477,434
304 : 3,477,435
335.5 : 3,477,436
347 : 3,477,437
349 : 3,477,438
131– 14 : 3,477,440
21 : 3,477,441
61 : 3,477,442
144 : 3,477,443
235 : 3,477,444
267 : 3,477,445
132– 7 : 3,477,446
9 : 3,477,447
3,477,448
40 : 3,477,449
134– 1 : 3,477,450
22 : 3,477,451
57 : 3,477,452
135– 2 : 3,477,453
136– 6 : 3,477,875
83 : 3,477,876
86 : 3,477,877
3,477,878
3,477,879
207 : 3,477,880
137– 1 : 3,477,454
15.1 : 3,477,455
171 : 3,477,456
209 : 3,477,457
327 : 3,477,458
351 : 3,477,459
392 : 3,477,460
489 : 3,477,462
495 : 3,477,463
517 : 3,477,464
596.18: 3,477,465
599 : 3,477,466
3,477,467
.1 : 3,477,461
608 : 3,477,469
612.1 : 3,477,470
614.05: 3,477,468
.18: 3,477,471
625.62: 3,477,472
138– 30 : 3,477,473
133 : 3,477,474
139– 12 : 3,477,475
122 : 3,477,476
383 : 3,477,477
141–284 : 3,477,478
143–133 : 3,477,479
135 : 3,477,480
144–144 : 3,477,481
208 : 3,477,482
218 : 3,477,483
319 : 3,477,485
326 : 3,477,484
145– 50 : 3,477,486
146– 16 : 3,477,487
70 : 3,477,488
76 : 3,477,489
148– 6.16: 3,477,882
.2 : 3,477,881
100 : 3,477,883
150 : 3,477,884
174 : 3,477,885
187 : 3,477,886
189 : 3,477,887
149– 18 : 3,477,888
152–210 : 3,477,490
156– 72 : 3,477,889
79 : 3,477,890
143 : 3,477,891
167 : 3,477,892
197 : 3,477,893
459 : 3,477,894
511 : 3,477,895
584 : 3,477,896
159– 6 : 3,477,491
160–135 : 3,477,492
161– 22 : 3,477,897
160 : 3,477,898
173 : 3,477,899
194 : 3,477,900
208 : 3,477,901
241 : 3,477,902
266 : 3,477,903
162–175 : 3,477,904
203 : 3,477,905
205 : 3,477,906

162–358 : 3,477,907
392 : 3,477,908
164– 7 : 3,477,493
281 : 3,477,494
165– 1 : 3,477,495
10 : 3,477,496
22 : 3,477,497
38 : 3,477,498
86 : 3,477,499
89 : 3,477,500
103 : 3,477,501
122 : 3,477,502
154 : 3,477,503
164 : 3,477,504
3,477,505
166–207 : 3,477,506
224 : 3,477,507
250 : 3,477,508
252 : 3,477,509
272 : 3,477,510
274 : 3,477,511
283 : 3,477,512
304 : 3,477,513
172– 42 : 3,477,514
96 : 3,477,515
184 : 3,477,516
212 : 3,477,517
311 : 3,477,518
315 : 3,477,519
719 : 3,477,520
173– 12 : 3,477,521
43 : 3,477,522
163 : 3,477,523
174– 42 : 3,478,160
52 : 3,478,161
175– 4 : 3,477,525
25 : 3,477,526
82 : 3,477,524
85 : 3,477,527
176– 78 : 3,477,909
177– 3 : 3,477,528
50 : 3,477,529
55 : 3,477,530
171 : 3,477,531
211 : 3,477,532
220 : 3,477,533
178– 5.1 : 3,478,166
.6 : 3,478,162
6 : 3,478,163
.6 : 3,478,164
45 : 3,478,165
179– 1 : 3,478,167
6 : 3,478,168
15 : 3,478,169
3,478,170
3,478,171
18 : 3,478,172
3,478,173
3,478,174
3,478,175
39 : 3,478,176
100.2 : 3,478,177
3,478,178
180– 14 : 3,477,534
20 : 3,477,535
65 : 3,477,536
3,477,537
3,477,538
70 : 3,477,439
91 : 3,477,539
181– 31 : 3,477,540
33 : 3,477,541
182– 49 : 3,477,542
76 : 3,477,543
228 : 3,477,544
184– 6 : 3,477,545
7 : 3,477,546
63 : 3,477,547
187– 29 : 3,477,548
188– 96 : 3,477,550
152 : 3,477,549
250 : 3,477,551
190– 2 : 3,477,552
41 : 3,477,553
192– 81 : 3,477,554
105 : 3,477,555
194– 17 : 3,477,556
195– 66 : 3,477,910
3,477,911
3,477,912
3,477,913
96 : 3,477,914
198– 22 : 3,477,557
184 : 3,477,558
198 : 3,477,559
218 : 3,477,560
200– 5 : 3,478,179
11 : 3,478,180
38 : 3,478,181
61.46: 3,478,182
.47: 3,478,183
84 : 3,478,184
166 : 3,478,185
172 : 3,478,186
202–155 : 3,477,915
203– 3 : 3,477,916

203– 10 : 3,477,917
11 : 3,477,918
36 : 3,477,919
204– 15 : 3,477,920
56 : 3,477,921
59 : 3,477,922
73 : 3,477,923
78 : 3,477,924
105 : 3,477,925
109 : 3,477,926
119 : 3,477,927
123 : 3,477,928
141 : 3,477,929
147 : 3,477,930
3,477,931
159.23: 3,477,932
162 : 3,477,933
181 : 3,477,934
192 : 3,477,935
3,477,936
263 : 3,477,937
266 : 3,477,938
268 : 3,477,939
290 : 3,477,940
206– 42 : 3,477,561
46 : 3,477,562
62 : 3,477,563
65 : 3,477,564
208– 8 : 3,477,941
10 : 3,477,942
89 : 3,477,943
143 : 3,477,944
308 : 3,477,945
344 : 3,477,946
209– 5 : 3,477,565
9 : 3,477,566
111.8 : 3,477,567
127 : 3,477,568
144 : 3,477,569
3,477,570
250 : 3,477,571
255 : 3,477,572
260 : 3,477,573
403 : 3,477,574
210– 3 : 3,477,947
19 : 3,477,948
31 : 3,477,950
48 : 3,477,949
67 : 3,477,575
96 : 3,477,576
108 : 3,477,577
138 : 3,477,578
156 : 3,477,579
169 : 3,477,580
195 : 3,477,581
232 : 3,477,582
401 : 3,477,583
211– 40 : 3,477,584
60 : 3,477,585
64 : 3,477,586
3,477,587
212– 55 : 3,477,588
59 : 3,477,589
63 : 3,477,590
214– 6.5 : 3,477,591
8.5 : 3,477,592
16 : 3,477,593
41 : 3,477,594
75 : 3,477,595
92 : 3,477,596
304 : 3,477,597
379 : 3,477,598
519 : 3,477,599
700 : 3,477,600
767 : 3,477,601
3,477,602
215– 11 : 3,477,603
217– 12 : 3,477,604
219– 10.55: 3,478,187
3,478,188
81 : 3,478,189
86 : 3,478,190
216 : 3,478,191
243 : 3,478,192
386 : 3,478,193
402 : 3,478,194
220– 3 : 3,477,605
9 : 3,477,606
39 : 3,477,607
54 : 3,477,608
60 : 3,477,609
63 : 3,477,610
86 : 3,477,611
221– 40 : 3,477,612
222– 70 : 3,477,613
107 : 3,477,614
193 : 3,477,615
197 : 3,477,616
370 : 3,477,617
534 : 3,477,618
223– 37 : 3,477,619
51 : 3,477,620
57 : 3,477,621
78 : 3,477,622
88 : 3,477,623
225– 43 : 3,477,624

225– 96 : 3,477,625
226– 9 : 3,477,626
54 : 3,477,627
227–110 : 3,477,628
130 : 3,477,629
228– 6 : 3,477,630
229– 14 : 3,477,631
17 : 3,477,632
34 : 3,477,633
54 : 3,477,634
230–125 : 3,477,635
129 : 3,477,636
214 : 3,477,637
235– 60 : 3,477,638
61 : 3,477,639
3,478,195
.6 : 3,478,196
63 : 3,477,640
92 : 3,478,197
153 : 3,478,286
186 : 3,478,198
236– 1 : 3,477,641
238–349 : 3,477,642
239– 1 : 3,477,643
135 : 3,477,644
136 : 3,477,645
433 : 3,477,646
468 : 3,477,647
533 : 3,477,648
240– 2.13: 3,478,199
25 : 3,478,200
241– 24 : 3,477,649
47 : 3,477,650
293 : 3,477,651
242– 7.21: 3,477,652
25 : 3,477,653
26.1 : 3,477,654
55.2 : 3,477,656
56 : 3,477,657
3,477,658
57.1 : 3,477,655
84.52: 3,477,659
100.1 : 3,477,660
131 : 3,477,661
244– 1 : 3,477,662
3.19: 3,477,666
8 : 3,477,663
16 : 3,477,664
17.25: 3,477,665
121 : 3,477,667
246– 1 : 3,478,201
107 : 3,478,202
248– 19 : 3,477,668
23 : 3,477,670
24 : 3,477,674
27.8 : 3,477,669
44 : 3,477,671
117.2 : 3,477,672
121 : 3,477,673
124 : 3,477,675
201 : 3,477,676
220.5 : 3,477,677
288 : 3,477,678
309 : 3,477,679
346 : 3,477,680
249– 72 : 3,477,681
106 : 3,477,682
134 : 3,477,683
189 : 3,477,684
250– 41.9 : 3,478,203
3,478,204
43.5 : 3,478,205
3,478,206
51.5 : 3,478,207
71.5 : 3,478,208
77 : 3,478,209
83 : 3,478,210
3,478,211
.3 : 3,478,212
207 : 3,478,213
211 : 3,478,214
3,478,215
213 : 3,478,216
3,478,217
219 : 3,478,218
220 : 3,478,219
221 : 3,478,220
223 : 3,478,221
251– 3 : 3,477,685
10 : 3,477,686
100 : 3,477,687
149.9 : 3,477,688
3,477,689
163 : 3,477,690
172 : 3,477,691
205 : 3,477,692
251 : 3,477,693
367 : 3,477,694
252– 4 : 3,477,955
8.55: 3,477,956
59 : 3,477,957
62.2 : 3,477,958
.3 : 3,477,959
.54: 3,477,961
.6 : 3,477,960
106 : 3,477,951

252–171 : 3,477,952
175 : 3,477,953
412 : 3,477,962
439 : 3,477,963
442 : 3,477,964
3,477,965
254–150 : 3,477,695
173 : 3,477,696
184 : 3,477,697
259– 25 : 3,477,698
260– 2 : 3,477,966
.5 : 3,477,967
4 : 3,477,968
17 : 3,477,969
3,477,970
18 : 3,477,971
3,477,972
3,477,973
3,477,974
22 : 3,477,975
3,477,976
3,477,977
23.7 : 3,477,978
29.2 : 3,477,979
.6 : 3,477,980
31.2 : 3,477,981
37 : 3,477,982
38 : 3,477,983
3,477,984
41 : 3,477,985
45.75: 3,477,986
.85: 3,477,987
46.5 : 3,477,988
47 : 3,477,989
3,477,990
3,477,991
67 : 3,477,992
3,477,993
3,477,994
73 : 3,477,995
75 : 3,477,996
78 : 3,477,997
.3 : 3,477,998
.5 : 3,477,999
79.1 : 3,478,000
.3 : 3,478,001
.5 : 3,478,002
80.7 : 3,478,005
.73: 3,478,003
.78: 3,478,004
85.5 : 3,478,006
88.2 : 3,478,007
93.7 : 3,478,008
97.7 : 3,478,009
152 : 3,478,010
205 : 3,478,011
209 : 3,478,012
210 : 3,478,013
3,478,014
211 : 3,478,015
215 : 3,478,016
239 : 3,478,017
.1 : 3,478,018
.55: 3,478,019
240 : 3,478,020
243 : 3,478,021
3,478,022
3,478,023
248 : 3,478,024
3,478,025
249.9 : 3,478,026
250 : 3,478,027
3,478,028
256.4 : 3,478,030
.5 : 3,478,029
3,478,031
268 : 3,478,032
3,478,033
290 : 3,478,034
293.4 : 3,478,035
3,478,036
294.8 : 3,478,037
3,478,038
295 : 3,478,039
.5 : 3,478,040
3,478,041
296 : 3,478,042
297 : 3,478,043
298 : 3,478,044
302 : 3,478,045
3,478,046
306.7 : 3,478,047
307 : 3,478,048
3,478,049
326 : 3,478,052
.12: 3,478,051
3,478,054
.3 : 3,478,055
.5 : 3,478,050
3,478,053
327 : 3,478,056
329 : 3,478,057
340.3 : 3,478,058
3,478,059
.9 : 3,478,060
343.2 : 3,478,061

260–343.3 : 3,478,062
346.8 : 3,478,063
378 : 3,478,064
397.2 : 3,478,065
.3 : 3,478,066
3,478,067
.4 : 3,478,068
3,478,069
.5 : 3,478,070
429.5 : 3,478,088
.7 : 3,478,071
437 : 3,478,072
439 : 3,478,073
448.2 : 3,478,074
3,478,075
3,478,076
3,478,077
.8 : 3,478,078
3,478,079
455 : 3,478,080
464 : 3,478,081
465.3 : 3,478,082
468.5 : 3,478,083
471 : 3,478,084
473 : 3,478,085
475 : 3,478,086
3,478,087
501.2 : 3,478,089
502.6 : 3,478,090
513 : 3,478,091
519 : 3,477,954
525 : 3,478,092
526 : 3,478,093
543 : 3,478,094
551 : 3,478,095
558 : 3,478,105
563 : 3,478,096
566 : 3,478,097
567.6 : 3,478,098
570 : 3,478,099
.5 : 3,478,100
.6 : 3,478,101
583 : 3,478,102
3,478,103
586 : 3,478,104
590 : 3,478,106
609 : 3,478,107
610 : 3,478,108
611 : 3,478,109
615 : 3,478,110
3,478,111
617 : 3,478,112
631.5 : 3,478,114
633 : 3,478,116
635 : 3,478,115
648 : 3,478,117
671 : 3,478,113
3,478,118
3,478,119
672 : 3,478,120
674 : 3,478,121
677 : 3,478,122
3,478,123
683.15: 3,478,124
.48: 3,478,125
835 : 3,478,126
845 : 3,478,127
876 : 3,478,128
878 : 3,478,129
3,478,130
889 : 3,478,132
897 : 3,478,131
937 : 3,478,133
261– 36 : 3,477,699
263– 8 : 3,477,700
19 : 3,477,701
32 : 3,477,702
40 : 3,477,703
264– 45 : 3,478,134
3,478,135
111 : 3,478,136
118 : 3,478,137
145 : 3,478,138
167 : 3,478,139
202 : 3,478,140
284 : 3,478,141
288 : 3,478,142
290 : 3,478,143
313 : 3,478,144
266– 11 : 3,477,704
13 : 3,477,705
36 : 3,477,706
269–219 : 3,477,707
270– 69 : 3,477,708
71 : 3,477,709
271– 64 : 3,477,710
74 : 3,477,711
88 : 3,477,712
272– 33 : 3,477,713
273– 1.5 : 3,477,714
9 : 3,477,716
30 : 3,477,717
40 : 3,477,718
51 : 3,477,719
79 : 3,477,720
82 : 3,477,721

273–101 : 3,477,722
3,477,723
102.4 : 3,477,724
136 : 3,477,715
274– 1 : 3,477,728
4 : 3,477,725
3,477,726
10 : 3,477,727
277– 1 : 3,477,729
24 : 3,477,730
58 : 3,477,731
140 : 3,477,732
280– 6 : 3,477,733
11 : 3,477,734
.35: 3,477,735
3,477,736
43 : 3,477,737
124 : 3,477,738
3,477,739
150 : 3,477,740
279 : 3,477,741
444 : 3,477,742
285– 12 : 3,477,743
18 : 3,477,744
40 : 3,477,745
119 : 3,477,746
158 : 3,477,747
267 : 3,477,748
340 : 3,477,749
363 : 3,477,750
287–189.36: 3,477,751
3,477,752
292– 36 : 3,477,753
165 : 3,477,754
229 : 3,477,755
294– 16 : 3,477,756
19 : 3,477,757
69 : 3,477,758
296– 28 : 3,477,759
297–157 : 3,477,760
409 : 3,477,761
299– 10 : 3,477,762
300– 21 : 3,477,763
302– 29 : 3,477,764
303– 21 : 3,477,765
305– 10 : 3,477,766
38 : 3,477,767
54 : 3,477,768
57 : 3,477,769
307– 38 : 3,478,222
88 : 3,478,223
3,478,224
220 : 3,478,225
229 : 3,478,226
232 : 3,478,227
265 : 3,478,228
303 : 3,478,229
308– 3.6 : 3,477,770
71 : 3,477,771
187 : 3,477,772
214 : 3,477,773
310– 4 : 3,478,230
10 : 3,478,231
3,478,232
11 : 3,478,233
3,478,234
3,478,235
3,478,236
68 : 3,478,237
77 : 3,478,238
105 : 3,478,239
247 : 3,478,240
312– 45 : 3,477,774
209 : 3,477,775
313– 63 : 3,478,241
92 : 3,478,242
174 : 3,478,243
237 : 3,478,244
315– 13 : 3,478,245
39.55: 3,478,246
3,478,247
205 : 3,478,248
209 : 3,478,249
317– 33 : 3,478,250
101 : 3,478,251
233 : 3,478,252
234 : 3,478,253
318– 18 : 3,478,254
320– 1 : 3,478,255
321– 2 : 3,478,256
11 : 3,478,257
15 : 3,478,258
323– 43.5 : 3,478,259
324– 30 : 3,478,260
32 : 3,478,261
34 : 3,478,262
40 : 3,478,263
73 : 3,478,264
155 : 3,478,265
325– 38 : 3,478,266
42 : 3,478,267
65 : 3,478,268
369 : 3,478,269
470 : 3,478,270
478 : 3,478,271
3,478,272

328– 63 : 3,478,273
330– 14 : 3,478,274
22 : 3,478,275
331– 11 : 3,478,276
94.5 : 3,478,277
3,478,278
3,478,279
332– 7.51: 3,478,280
333– 10 : 3,478,281
21 : 3,478,282
31 : 3,478,283
98 : 3,478,284
335–112 : 3,478,285
154 : 3,478,287
229 : 3,478,288
231 : 3,478,289
336–149 : 3,478,290
216 : 3,478,291
337–151 : 3,478,292
338–128 : 3,478,293
174 : 3,478,294

339– 14 : 3,478,295
47 : 3,478,296
60 : 3,478,297
61 : 3,478,298
64 : 3,478,299
72 : 3,478,300
75 : 3,478,301
90 : 3,478,302
95 : 3,478,303
203 : 3,478,304
217 : 3,478,305
237 : 3,478,306
244 : 3,478,307
340– 3 : 3,478,308
9 : 3,478,309
27 : 3,478,310
51 : 3,478,311
67 : 3,478,312
146.1 : 3,478,313
.2 : 3,478,314
.3 : 3,478,315

340–147 : 3,478,316
3,478,317
150 : 3,478,318
166 : 3,478,319
172.5 : 3,478,320
3,478,321
3,478,322
3,478,324
3,478,325
3,478,326
3,478,327
3,478,328
173 : 3,478,323
3,478,329
3,478,330
3,478,331
174 : 3,478,332
3,478,333
3,478,334
3,478,335
3,478,336

340–174 : 3,478,337
3,478,338
.1 : 3,478,339
3,478,340
3,478,341
194 : 3,478,342
261 : 3,478,343
312 : 3,478,344
338 : 3,478,345
347 : 3,478,346
3,478,347
3,478,348
3,478,349
351 : 3,478,350
407 : 3,478,351
409 : 3,478,352
343– 5 : 3,478,354
7.3 : 3,478,355
8 : 3,478,356
10 : 3,478,357
100 : 3,478,358

343–100 : 3,478,359
106 : 3,478,360
708 : 3,478,353
730 : 3,478,361
769 : 3,478,362
802 : 3,478,363
346– 62 : 3,478,364
350–184 : 3,477,776
255 : 3,477,777
351– 32 : 3,477,779
352–242 : 3,477,778
353– 16 : 3,477,780
22 : 3,477,781
40 : 3,477,782
78 : 3,477,783
81 : 3,477,784
116 : 3,477,785
355– 18 : 3,477,786
71 : 3,477,787
356–100 : 3,477,788

356–106 : 3,477,789
164 : 3,477,790
401– 64 : 3,477,791
109 : 3,477,792
415– 36 : 3,477,793
416–134 : 3,477,794
191 : 3,477,795
204 : 3,477,796
424– 89 : 3,478,145
95 : 3,478,146
195 : 3,478,147
200 : 3,478,148
228 : 3,478,149
241 : 3,478,150
247 : 3,478,151
287 : 3,478,152
300 : 3,478,153
320 : 3,478,154
431–256 : 3,477,797
263 : 3,477,798

## Classification of Designs

D 1– 22 : 215,917
D 2–234 : 215,918
D 3– 32 : 215,919
D 4– 15 : 215,920
D 8– 33 : 215,921
D 9–250 : 215,922
255 : 215,923
256 : 215,924
291 : 215,925
D13– 1 : 215,926
D14– 3 : 215,927
30 : 215,928
D15– 1 : 215,929
6 : 215,930

D16– 2 : 215,931
215,932
D19– 1 : 215,933
D22– 3 : 215,934
D23– 19 : 215,935
35 : 215,936
71 : 215,937
D26– 5 : 215,938
8 : 215,939
14 : 215,940
D30– 13 : 215,941
43 : 215,942
D33– 7 : 215,943
19 : 215,944

D33– 31 : 215,945
D34– 5 : 215,946
215,947
15 : 215,948
215,949
215,950
215,951
D35– 1 : 215,952
D39– 1 : 215,953
D42– 7 : 215,954
215,955
215,956
D44– 1 : 215,957

D44– 5 : 215,958
10 : 215,959
D48– 27 : 215,960
31 : 215,961
D52– 6 : 215,962
D54– 2 : 215,963
12 : 215,964
215,965
215,966
215,967
D57– 7 : 215,968
D61– 1 : 215,969
215,970

D71– 1 : 215,971
215,972
215,973
D72– 1 : 215,974
215,975
215,976
215,977
215,978
D80– 11 : 215,979
D83– 1 : 215,980
215,981
215,982
12 : 215,983

D83– 12 : 215,984
D86– 10 : 215,985
D90– 8 : 215,986
11 : 215,987
14 : 215,988
215,989
15 : 215,990
215,991
20 : 215,992
215,993
D95– 3 : 215,994
215,995
215,996

## Classification of Plants

P. – 38 : 2,938
P. – 41 : 2,937
P. – 57 : 2,939

# GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

| | |
|---|---|
| Alabama | 1 |
| Alaska | 2 |
| American Samoa | 3 |
| Arizona | 4 |
| Arkansas | 5 |
| California | 6 |
| Canal Zone | 7 |
| Colorado | 8 |
| Connecticut | 9 |
| Delaware | 10 |
| District of Columbia | 11 |
| Florida | 12 |
| Georgia | 13 |
| Guam | 14 |
| Hawaii | 15 |
| Idaho | 16 |
| Illinois | 17 |
| Indiana | 18 |
| Iowa | 19 |
| Kansas | 20 |
| Kentucky | 21 |
| Louisiana | 22 |
| Maine | 23 |
| Maryland | 24 |
| Massachusetts | 25 |
| Michigan | 26 |
| Minnesota | 27 |
| Mississippi | 28 |
| Missouri | 29 |
| Montana | 30 |
| Nebraska | 31 |
| Nevada | 32 |
| New Hampshire | 33 |
| New Jersey | 34 |
| New Mexico | 35 |
| New York | 36 |
| North Carolina | 37 |
| North Dakota | 38 |
| Ohio | 39 |
| Oklahoma | 40 |
| Oregon | 41 |
| Pennsylvania | 42 |
| Puerto Rico | 43 |
| Rhode Island | 44 |
| South Carolina | 45 |
| South Dakota | 46 |
| Tennessee | 47 |
| Texas | 48 |
| Utah | 49 |
| Vermont | 50 |
| Virginia | 51 |
| Virgin Islands | 52 |
| Washington | 53 |
| West Virginia | 54 |
| Wisconsin | 55 |
| Wyoming | 56 |
| U.S. Air Force | 57 |
| U.S. Army | 58 |
| U.S. Navy | 59 |

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

## PATENTS

1 : 3,477,111
3,477,843
3,478,006
4 : 3,477,345
3,477,886
3,477,887
3,478,306
3,478,320
3,478,324
5 : 3,477,865
6 : 3,477,070
3,477,072
3,477,074
3,477,083
3,477,087
3,477,089
3,477,104
3,477,119
3,477,124
3,477,128
3,477,137
3,477,140
3,477,145
3,477,148
3,477,150
3,477,160
3,477,182
3,477,201
3,477,215
3,477,216
3,477,232
3,477,249
3,477,272
3,477,281
3,477,283
3,477,295
3,477,318
3,477,332
3,477,333
3,477,349
3,477,358
3,477,363
3,477,366
3,477,371
3,477,373
3,477,376
3,477,389
3,477,391
3,477,419
3,477,422

6 : 3,477,428
3,477,437
3,477,449
3,477,452
3,477,455
3,477,462
3,477,467
3,477,469
3,477,480
3,477,492
3,477,507
3,477,517
3,477,527
3,477,544
3,477,555
3,477,561
3,477,572
3,477,582
3,477,586
3,477,602
3,477,604
3,477,612
3,477,613
3,477,623
3,477,656
3,477,662
3,477,685
3,477,692
3,477,693
3,477,696
3,477,745
3,477,750
3,477,752
3,477,755
3,477,761
3,477,774
3,477,784
3,477,786
3,477,803
3,477,808
3,477,821
3,477,822
3,477,856
3,477,921
3,477,930
3,477,935
3,477,960
3,477,979
3,477,984
3,478,008

6 : 3,478,019
3,478,044
3,478,052
3,478,099
3,478,105
3,478,113
3,478,166
3,478,167
3,478,174
3,478,176
3,478,178
3,478,188
3,478,195
3,478,198
3,478,202
3,478,203
3,478,204
3,478,217
3,478,220
3,478,222
3,478,229
3,478,233
3,478,234
3,478,237
3,478,247
3,478,262
3,478,273
3,478,275
3,478,278
3,478,281
3,478,291
3,478,297
3,478,298
3,478,301
3,478,311
3,478,323
3,478,327
3,478,333
3,478,338
3,478,339
3,478,343
8 : 3,477,511
3,477,585
3,477,649
3,477,669
3,477,928
3,478,066
3,478,164
3,478,183
3,478,193

8 : 3,478,255
9 : 3,477,073
3,477,075
3,477,076
3,477,136
3,477,152
3,477,195
3,477,260
3,477,322
3,477,337
3,477,359
3,477,403
3,477,406
3,477,418
3,477,486
3,477,509
3,477,512
3,477,536
3,477,537
3,477,570
3,477,609
3,477,648
3,477,711
3,477,754
3,477,823
3,477,827
3,477,831
3,477,962
3,477,987
3,478,206
3,478,230
10 : 3,477,284
3,477,503
3,477,952
3,477,994
3,478,009
3,478,072
3,478,100
3,478,116
11 : 3,478,216
12 : 3,477,161
3,477,168
3,477,262
3,477,336
3,477,360
3,477,361
3,477,445
3,477,454
3,477,542
3,477,815

12 : 3,477,893
3,478,266
3,478,308
3,478,363
13 : 3,477,092
3,477,244
3,477,257
3,477,269
3,477,394
3,477,775
3,478,168
3,478,283
3,478,321
15 : 3,477,175
3,477,234
16 : 3,477,485
3,477,597
3,477,782
17 : 3,477,106
3,477,115
3,477,116
3,477,117
3,477,138
3,477,141
3,477,146
3,477,158
3,477,197
3,477,199
3,477,210
3,477,225
3,477,238
3,477,245
3,477,246
3,477,251
3,477,277
3,477,299
3,477,303
3,477,311
3,477,342
3,477,353
3,477,369
3,477,384
3,477,392
3,477,393
3,477,423
3,477,431
3,477,439
3,477,458
3,477,479
3,477,547

17 : 3,477,563
3,477,567
3,477,583
3,477,601
3,477,607
3,477,610
3,477,614
3,477,615
3,477,641
3,477,643
3,477,645
3,477,684
3,477,708
3,477,730
3,477,785
3,477,798
3,477,829
3,477,853
3,477,855
3,477,857
3,477,866
3,477,896
3,477,897
3,477,904
3,477,915
3,477,941
3,477,946
3,477,954
3,478,012
3,478,013
3,478,026
3,478,030
3,478,038
3,478,049
3,478,083
3,478,086
3,478,096
3,478,119
3,478,123
3,478,135
3,478,137
3,478,157
3,478,162
3,478,184
3,478,185
3,478,192
3,478,208
3,478,225
3,478,248
3,478,264

---

17 : 3,478,272
3,478,276
3,478,289
3,478,302
3,478,305
3,478,314
3,478,352
18 : 3,477,228
3,477,330
3,477,395
3,477,592
3,477,621
3,477,668
3,477,676
3,477,727
3,477,759
3,477,861
3,477,875
3,478,149
3,478,199
3,478,218
3,478,270
3,478,290
3,478,349
19 : 3,477,174
3,477,214
3,477,468
3,477,535
3,477,680
3,477,859
3,478,355
20 : 3,477,433
3,477,519
3,477,714
3,478,342
21 : 3,477,211
3,477,571
3,477,624
3,477,747
3,477,749
3,477,832
3,478,196
22 : 3,478,033
23 : 3,477,564
24 : 3,477,198
3,477,279
3,477,282
3,477,346
3,477,362
3,477,374
3,477,375
3,477,426
3,477,625
3,477,664
3,477,879
3,477,883
3,477,924
3,477,942
3,477,947
3,478,004
3,478,223
3,478,240
3,478,274
3,478,293
3,478,322
3,478,356
25 : 3,477,071
3,477,078
3,477,090
3,477,107
3,477,114
3,477,151
3,477,166
3,477,180
3,477,188
3,477,220
3,477,231
3,477,278
3,477,334
3,477,365
3,477,368
3,477,412
3,477,424
3,477,427
3,477,470
3,477,494
3,477,502
3,477,523
3,477,533
3,477,594
3,477,635
3,477,637
3,477,644
3,477,652
3,477,666
3,477,713
3,477,725
3,477,757
3,477,765
3,477,845
3,477,850
3,477,873
3,477,908
3,477,917
3,478,191
3,478,241

25 : 3,478,269
3,478,300
3,478,309
3,478,319
3,478,330
3,478,344
3,478,362
26 : 3,477,091
3,477,099
3,477,184
3,477,187
3,477,226
3,477,247
3,477,248
3,477,250
3,477,258
3,477,263
3,477,306
3,477,307
3,477,309
3,477,310
3,477,312
3,477,313
3,477,314
3,477,325
3,477,347
3,477,378
3,477,379
3,477,388
3,477,390
3,477,405
3,477,413
3,477,416
3,477,448
3,477,451
3,477,474
3,477,499
3,477,530
3,477,539
3,477,549
3,477,560
3,477,577
3,477,581
3,477,596
3,477,600
3,477,611
3,477,647
3,477,678
3,477,687
3,477,699
3,477,719
3,477,729
3,477,732
3,477,738
3,477,739
3,477,740
3,477,753
3,477,764
3,477,771
3,477,812
3,477,825
3,477,870
3,477,876
3,477,901
3,477,920
3,477,964
3,477,965
3,477,969
3,477,973
3,478,053
3,478,076
3,478,078
3,478,079
3,478,090
3,478,110
3,478,139
3,478,148
3,478,182
3,478,263
3,478,271
3,478,303
27 : 3,477,066
3,477,086
3,477,088
3,477,135
3,477,149
3,477,338
3,477,377
3,477,459
3,477,576
3,477,628
3,477,734
3,477,760
3,477,851
3,478,081
3,478,097
3,478,159
29 : 3,477,093
3,477,105
3,477,350
3,477,404
3,477,556
3,477,557
3,477,650
3,477,688
3,477,700

29 : 3,477,721
3,477,833
3,478,020
3,478,107
3,478,117
3,478,129
3,478,154
3,478,214
31 : 3,477,385
32 : 3,477,372
33 : 3,477,731
3,478,347
34 : 3,477,068
3,477,082
3,477,130
3,477,171
3,477,177
3,477,186
3,477,204
3,477,227
3,477,229
3,477,275
3,477,294
3,477,397
3,477,402
3,477,410
3,477,463
3,477,472
3,477,528
3,477,543
3,477,545
3,477,552
3,477,553
3,477,565
3,477,603
3,477,633
3,477,638
3,477,640
3,477,646
3,477,670
3,477,679
3,477,691
3,477,709
3,477,716
3,477,788
3,477,801
3,477,809
3,477,816
3,477,817
3,477,858
3,477,872
3,477,898
3,477,903
3,477,944
3,477,957
3,477,961
3,477,971
3,477,981
3,477,983
3,477,990
3,478,023
3,478,025
3,478,040
3,478,046
3,478,051
3,478,071
3,478,082
3,478,084
3,478,088
3,478,104
3,478,140
3,478,161
3,478,213
3,478,219
3,478,224
3,478,238
3,478,252
3,478,260
3,478,261
3,478,284
3,478,313
3,478,353
3,478,360
35 : 3,477,593
36 : 3,477,095
3,477,123
3,477,127
3,477,129
3,477,133
3,477,155
3,477,159
3,477,162
3,477,169
3,477,170
3,477,192
3,477,194
3,477,200
3,477,209
3,477,241
3,477,252
3,477,261
3,477,271
3,477,297
3,477,298
3,477,305
3,477,316

36 : 3,477,317
3,477,356
3,477,382
3,477,398
3,477,409
3,477,425
3,477,430
3,477,436
3,477,442
3,477,450
3,477,464
3,477,481
3,477,491
3,477,495
3,477,497
3,477,504
3,477,505
3,477,525
3,477,532
3,477,568
3,477,580
3,477,584
3,477,606
3,477,619
3,477,634
3,477,636
3,477,654
3,477,660
3,477,674
3,477,675
3,477,682
3,477,686
3,477,707
3,477,715
3,477,717
3,477,723
3,477,728
3,477,741
3,477,772
3,477,776
3,477,780
3,477,789
3,477,792
3,477,794
3,477,797
3,477,799
3,477,802
3,477,807
3,477,842
3,477,846
3,477,849
3,477,852
3,477,905
3,477,926
3,477,933
3,477,934
3,477,953
3,477,967
3,477,978
3,477,988
3,478,016
3,478,039
3,478,043
3,478,064
3,478,074
3,478,077
3,478,080
3,478,127
3,478,146
3,478,158
3,478,209
3,478,242
3,478,245
3,478,253
3,478,254
3,478,259
3,478,268
3,478,280
3,478,286
3,478,288
3,478,295
3,478,304
3,478,310
3,478,316
3,478,328
3,478,331
3,478,334
3,478,335
3,478,340
3,478,345
3,478,350
3,478,354
3,478,361
37 : 3,477,255
3,477,441
3,477,500
3,477,661
3,477,806
3,477,902
3,478,226
3,478,325
39 : 3,477,065
3,477,097
3,477,098
3,477,125
3,477,134

39 : 3,477,172
3,477,179
3,477,185
3,477,191
3,477,196
3,477,265
3,477,273
3,477,304
3,477,315
3,477,320
3,477,321
3,477,331
3,477,335
3,477,341
3,477,343
3,477,348
3,477,357
3,477,364
3,477,367
3,477,380
3,477,432
3,477,434
3,477,438
3,477,460
3,477,493
3,477,498
3,477,521
3,477,546
3,477,562
3,477,608
3,477,629
3,477,642
3,477,681
3,477,705
3,477,712
3,477,720
3,477,737
3,477,766
3,477,767
3,477,768
3,477,769
3,477,770
3,477,773
3,477,840
3,477,841
3,477,869
3,477,877
3,477,882
3,477,890
3,477,892
3,477,900
3,477,932
3,477,958
3,478,091
3,478,114
3,478,132
3,478,134
3,478,138
3,478,155
3,478,205
3,478,307
3,478,341
3,478,351
40 : 3,477,069
3,477,183
3,477,236
3,477,457
3,477,487
3,477,598
3,477,724
3,477,758
3,477,810
3,477,824
3,477,878
3,477,966
3,478,000
3,478,094
3,478,103
3,478,111
3,478,120
3,478,125
3,478,142
3,478,152
41 : 3,477,153
3,477,242
3,477,280
3,477,466
42 : 3,477,067
3,477,096
3,477,112
3,477,118
3,477,120
3,477,163
3,477,165
3,477,181
3,477,190
3,477,253
3,477,266
3,477,274
3,477,289
3,477,290
3,477,308
3,477,326
3,477,429
3,477,446
3,477,453

42 : 3,477,490
3,477,558
3,477,595
3,477,605
3,477,630
3,477,655
3,477,683
3,477,726
3,477,813
3,477,819
3,477,834
3,477,835
3,477,839
3,477,860
3,477,862
3,477,895
3,477,936
3,477,943
3,477,955
3,477,963
3,477,970
3,477,975
3,478,005
3,478,007
3,478,018
3,478,021
3,478,054
3,478,070
3,478,085
3,478,087
3,478,098
3,478,106
3,478,108
3,478,115
3,478,118
3,478,124
3,478,130
3,478,145
3,478,151
3,478,180
3,478,211
3,478,246
3,478,250
3,478,294
3,478,357
43 : 3,477,673
3,477,756
44 : 3,477,217
3,477,319
3,477,444
3,477,476
3,477,618
3,477,671
3,477,677
3,477,694
3,478,010
45 : 3,477,193
3,477,408
3,477,631
3,477,805
46 : 3,477,354
47 : 3,477,103
3,477,256
3,477,267
3,477,420
3,477,836
3,477,910
3,477,911
3,477,912
3,477,913
3,477,937
3,478,092
3,478,109
3,478,189
48 : 3,477,147
3,477,178
3,477,206
3,477,208
3,477,212
3,477,235
3,477,243
3,477,292
3,477,351
3,477,456
3,477,506
3,477,508
3,477,510
3,477,513
3,477,522
3,477,524
3,477,526
3,477,587
3,477,698
3,477,718
3,477,742
3,477,744
3,477,746
3,477,748
3,477,783
3,477,814
3,477,826
3,477,848
3,477,916
3,477,919
3,477,945
3,477,956

48 : 3,477,991
3,478,003
3,478,017
3,478,061
3,478,128
3,478,131
49 : 3,477,164
3,478,317
50 : 3,477,447
51 : 3,477,126
3,477,440
3,477,632
3,477,844
3,477,996
3,478,141
52 : 3,477,980
53 : 3,477,081
53 : 3,477,108
3,477,122
3,477,407
3,478,239
54 : 3,477,993
3,478,136
55 : 3,477,084
3,477,121
55 : 3,477,131
3,477,143
3,477,157
3,477,213
3,477,411
3,477,421
3,477,588
3,477,617
55 : 3,477,622
3,477,658
3,477,672
3,477,907
3,477,940
3,477,951
3,478,058
3,478,059
55 : 3, 78,179
3,478,210
3,478,228
3,478,292
3,478,299
3,478,312
56 : 3,477,534
57 : 3,477,285

## Design Patents

6 : 215,920
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54 : 215,963

## Plant Patents

6 : 2,937
6 : 2,938
6 : 2,939

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# U.S. DEPARTMENT OF COMMERCE

# OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

November 11, 1969 Volume 868 Number 2

# TRADEMARKS

## NOTICES

### Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

**Reg. No. 49,211.** (See Reg. No. 138,483.)

**Reg. No. 83,915** (ARMCO), The International Metal Products Co., Bars, billets, castings, forgings, ingots, plates, shapes, sheets, tubes, and wire of pure iron; **Reg. No. 104,245,** same, The American Rolling Mill Co., same; **Reg. No. 139,474,** same, Bars, billets, castings, forgings, ingots, plates, shapes, plain and formed, coated and uncoated sheets, rods, and wire, all of pure iron, of steel, and of alloys of iron; **Reg. No. 148,346** (ARMCO AND DESIGN), Armco Steel Corporation, Bars, billets, castings, forgings, ingots, plates; shapes, plain and formed, coated and uncoated, sheets, rods, rivet material, and wire of pure iron; **Reg. No. 381,498** (ARMCO "HEL-COR PIPE" AND DESIGN), The American Rolling Mill Company, Helical, lock-seam, corrugated metallic pipe; **Reg. No. 437,605** (ARMCO), same, Hot and cold rolled sheets, galvanized sheets, sheets coated with aluminum by the hot bonding process and surface impregnated and coated ferrous metal sheets, steel and alloys of iron and steel; **Reg. No. 500,503,** same, Armco Steel Corporation, Ferrous metals and ferrous metal castings and forgings; **Reg. No. 500,739,** same, Trade and technical publications published from time to time; **Reg. No. 530,247** (ARMCO CHRONOLOY), same, Steel for watch springs; **Reg. No. 534,852** (ARMCO), same, Specially prepared ferrous metal products, not capable of general use—namely, sheets, strip, commercial coils, plates, commercial shapes, rods, wire and commercial fabricated parts, for use in building, transportation and drainage construction and particularly for use in the assembly of trailer body sides and roofs, pullman cars, freight cars, hopper cars, aircraft parts, aircraft fire walls, exhaust ducts, carburetor rings, marine hulls and hardware, straight seam pipe, spiral pipe, culverts, reinforcements for concrete walls, tunnel liners, arches for drainage conduits, tanks for chemical storage refining and oil processing containers, deck plates, boilers, liquid and pressure vessels, bridge decking, farm fences, reinforcing bars and light wire for concrete forms; **Reg. No. 537,313** ("ARMCO" THROUGH TRIANGLE), same, Ferrous metals and ferrous metal castings and forgings; **Reg. No. 543,646** (ARMCO ORTHONIK), same, Electrical steel; **Reg. No. 547,485** (ARMCO THROUGH A DOUBLE TRIANGLE DESIGN), The Armco International Corporation, Steel and alloys of iron and steel, ferrous metal products generally, such as bars, billets, castings, forgings, ingots, plates; rods and wire; hot and cold rolled sheets, galvanized sheets, aluminum coated sheets, surface coated, and impregnated sheets; **Reg. No. 560,251** (ARMCO), Armco Steel Corporation, Services rendered by way of consultation with and advice to customers or prospective customers in relation to their engineering and development problems encountered in the fabrication of various products made from stainless steel; **Reg. No. 563,516,** same, Ferrous metal pipe and ferrous metal pipe fittings; ferrous metal conduits for conveying liquids and gases and ferrous metal conduit fittings and parts; **Reg. No. 572,267** (ASBESTOS BONDED ARMCO), same, Surface impregnated and coated ferrous metal sheets; **Reg. No. 621,462** (ARMCO), same, Construction services, as, jacking, tunneling, threading, open trench installation of all drainage products, subdrainage and the erection of steel buildings; **Reg. No. 701,181** (UNION WIRE

## CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] 14,986
Date of oldest new application November 18, 1968
Date of oldest amended application (filing date) August 5, 1965

| **C. M. WENDT, Director, Trademark Examining Operation**<br>**TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION** | Oldest Application | |
|---|---|---|
| | New | Amended |
| (I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B | 3-17-69 | 10-6 -66 |
| (II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200 | 12-23-68 | 8-5 -65 |
| (III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36 | 12-17-68 | 2-17-67 |
| (IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107 | 11-18-68 | 8-22-66 |
| **Renewals** (All Classes) | 8-13-69 | -------- |
| **Sec. 12(c) Publications** (All Classes) | 8- 8-69 | -------- |

Applications filed during the month of September 1969—2,715

Registrations Issued 424—No. 880,265 to No. 880,688
Renewals Issued 150

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

**PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.**

ROPE AND DESIGN), same, Wire rope; **Reg. No. 727,157** (ARMCO AND DESIGN), same, Specially prepared ferrous metal products, not capable of general use—namely, sheets, strip, commercial coils, plates, commercial shapes, rods, wire and commercial fabricated parts, for use in building, transportation and drainage construction and particularly for use in assembly of trailer body sides and roofs, pullman cars, freight cars, hopper cars, aircraft parts, aircraft fire walls, exhaust ducts, carburetor rings, marine hulls and hardware, straight seam pipe, spiral seam pipe, culverts, corrugated pipe, arches, pipe arches, tunnel liners, guardrails, retaining walls, water control gates, piling buildings, tanks for storage and chemical processing, reinforcements for concrete walls, boilers, liquid and pressure vessels, deck plates, bridge decking, fences, reinforcing bars and light wire for concrete forms, steel joists and structural bolts; **Reg. No. 727,405**, same, Ferrous metal pipe and ferrous metal pipe fittings; ferrous metal conduits for conveying liquids and gases; ferrous metal conduit fittings and parts, and ferrous metal bolt products; **Reg. No. 745,743** (ARMCO THROUGH A TRIANGLE DESIGN), same, Electrical conduit; **Reg. No. 776,557** (ARMCO AND DESIGN), same, Oil and water deep well drilling, producing and servicing systems sold as complete systems and parts thereof; **Reg. No. 813,743**, same, Grinding balls and grinding rods (Class 4); Cables, stands, wire and wire rope products of all kinds, and fittings therefor (Class 7); ferrous metal tubular products and pipe arches—namely, both corrugated and uncorrugated, lined and unlined, coated and uncoated, seamless, welded, lock-seamed, bolted and riveted, perforated and unperforated, for use in drainage, irrigation, tunneling, tiling and allied fields; steel buildings and elements thereof; tanks for storage and chemical processing; fabrications for use in highway construction and the like—namely, guard rails, retaining walls, area walls, snow fences, poster panels, bridge rail and bridge plank; water control gates; panels used in railroad car construction; conveyor covers, and structural shapes and joists (Class 12); ferrous metal pipe and ferrous metal pipe fittings; ferrous metal conduit and ferrous metal conduit fittings and parts; and ferrous metal fastening devices—namely, nails, screws, brads, tacks, staples, nuts and bolts, rivets, track spikes and rail ties (Class 13); steel and alloys of iron and steel; ferrous metal products generally, such as ingots, blooms, bars, billets, castings, forgings, plates; rods and wires; hot and cold rolled sheets, coil and strip, weather coated, uncoated and impregnated (Class 14); **Reg. No. 813,744** (ARMCO), same, **filed** July 26, 1969, D.C.N.J. (Newark), Doc. 874–69, *Armco Steel Corporation* v. *Armco Auto Center and Allen Raimo and James Pomponio, doing business as Armco Auto Center, Armco Body Shop and Armco Reconditioning.*

**Reg. No. 101,245.** (See Reg. No. 83,915.)

**Reg. No. 138,483** (BURLINGTON), Burlington Industries, Inc., Hosiery; **Reg. No. 49,211**, same, Cotton piece goods; **Reg. No. 504,046**, same, Piece goods of wool, cotton, synthetic fibers, and combinations thereof, bedspreads, draperies, tablecloths and napkins; **Reg. No. 504,523**, same, Yarns; **Reg. No. 830,240**, (BURLINGTON AND DESIGN), same; **Reg. No. 829,848**, same, Greige and finished fabrics in the piece of all types for use in men's, women's, and children's apparel, in home furnishings, carpets and rugs, and in the industrial field; **Reg. No. 829,832**, same, Men's, women's, and children's hosiery, **filed** May 1, 1969, D.C., M.D. Fla. (Orlando), Doc. 69–84 Orl. C., *Burlington Industries, Inc.* v. *Burlington Rugs and Carpets. Inc.*

**Reg. No. 139,474.** (See Reg. No. 83,915.)

**Reg. No. 148,346.** (See Reg. No. 83,915.)

**Reg. No. 381,498.** (See Reg. No. 83,915.)

**Reg. No. 437,605.** (See Reg. No. 83,915.)

**Reg. No. 500,503.** (See Reg. No. 83,915.)

**Reg. No. 500,739.** (See Reg. No. 83,915.)

**Reg. No. 504,046.** (See Reg. No. 138,483.)

**Reg. No. 504,523.** (See Reg. No. 138,483.)

**Reg. No. 530,247.** (See Reg. No. 83,915.)

**Reg. No. 534,852.** (See Reg. No. 83,915.)

**Reg. No. 537,313.** (See Reg. No. 83,915.)

**Reg. No. 543,646.** (See Reg. No. 83,915.)

**Reg. No. 547,485.** (See Reg. No. 83,915.)

**Reg. No. 560,251.** (See Reg. No. 83,915.)

**Reg. No. 563,516.** (See Reg. No. 83,915.)

**Reg. No. 572,267.** (See Reg. No. 83,915.)

**Reg. No. 621,462.** (See Reg. No. 83,915.)

**Reg. No. 701,181.** (See Reg. No. 83,915.)

**Reg. No. 727,157.** (See Reg. No. 83,915.)

**Reg. No. 727,405.** (See Reg. No. 83,915.)

**Reg. No. 745,743.** (See Reg. No. 83,915.)

**Reg. No. 776,557.** (See Reg. No. 83,915.)

**Reg. No. 813,743.** (See Reg. No. 83,915.)

**Reg. No. 813,744.** (See Reg. No. 83,915.)

**Reg. No. 829,832.** (See Reg. No. 138,483.)

**Reg. No. 829,848.** (See Reg. No. 138,483.)

**Reg. No. 830,240.** (See Reg. No. 138,483.)

# MARKS PUBLISHED FOR OPPOSITION

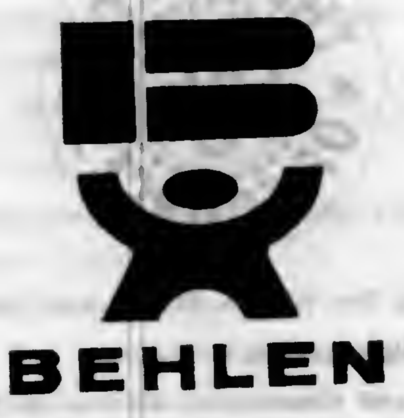
## SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[**NOTE:** For publication of marks presented in applications for registration in one class, see section 2.]

SN 269,246. Behlen Manufacturing Company, Inc., Columbus, Nebr. Filed Apr. 17, 1967.



**Class 12—Construction Materials**

For Metal Building Structures and Structural Metal Parts Thereof (Int. Cl. 6).
First use on or about July 1, 1962.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Material Handling Bucket Conveyor Equipment, Hydraulic Presses and Power Steering Devices for Farm and Earth Moving Equipment (Int. Cl. 7).
First use on or about Aug. 1, 1964.

**Class 34—Heating, Lighting, and Ventilating Apparatus**

For Unit Blowers and Grain Dryers (Int. Cl. 11).
First use on or about Oct. 22, 1962.

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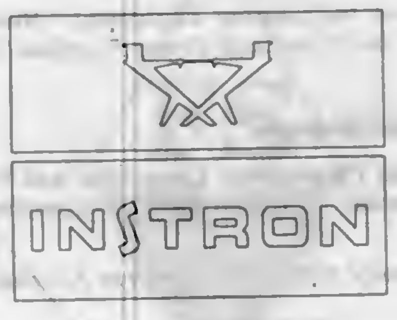
SN 277,241. Instron Corporation, Canton, Mass. Filed Aug. 1, 1967.



Owner of Reg. Nos. 651,726, 652,070, and 710,592.

**Class 26—Measuring and Scientific Appliances**

For Stress: Strain Materials Testing Equipment—Namely, Universal Testing Instruments for Testing Tension, Compression, and Shear; Stress: Strain Sensors; Stress: Strain Environmental Test Chambers; and Stress: Strain Grips (Int. Cl. 9).
First use June 1964.

**Class 37—Paper and Stationery**

For Chart Paper (Int. Cl. 16).
First use May 1965.

SN 278,118. Malmo Mekaniska Tricotfabriks Aktiebolag, Malmo, Sweden. Filed Aug. 11, 1967.

## KATJA OF SWEDEN

Priority claimed under Sec. 44(d) on Swedish application filed June 19, 1967; Reg. No. 124,693, dated Aug. 30, 1968. Applicant disclaims the words "of Sweden" apart from the mark as shown. "Katja" identifies "Mrs. Katja Geiger," a living individual whose consent is of record. Owner of Swedish Reg. No. 119,822, dated May 26, 1967.

**Class 39—Clothing**

For Beachwear, Fur Garments, Headwear, Foundation Garments, Neckwear, Rainwear, Swimwear, Ski Clothes, Sleepwear, Underwear, Dresses, Coats, Scarves, Hosiery, Pants, Shirts, Shorts, and Skirts (Int. Cl. 25).

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Cotton, Woolen, Real-Silk, Linen Piece Goods or Synthetic Fiber Piece Goods or Blends Thereof (Int. Cl. 24).

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SN 286,681. Institute for University Studies, Inc., Fort Lee, N.J. Filed Dec. 11, 1967.

## IUS

**Class 36—Musical Instruments and Supplies**

For Phonographs, Phonograph Records, and Phonograph Record Sets Consisting of Multiple Related Records (Int. Cl. 9).

**Class 38—Prints and Publications**

For Home Study Course Materials—Namely, Books and Pamphlets (Int. Cl. 16).

**Class 107—Education and Entertainment**

For Tutorial Services at the College Level by the Use of Home Study Courses (Int. Cl. 41).

First use January 1963.

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SN 287,279. Craig Corporation, Los Angeles, Calif. Filed Dec. 20, 1967.

## CRAIG

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Portable and Home Black and White Television Receivers, Portable and Home Color Television Receivers, Home Stereo AM/FM Radios, Home Stereo AM/FM Radios and Record Players, Portable AM/FM Radios, AM Radios, Portable AM/FM Short-Wave Radios, Portable AM Police Band Radios, Mobile AM/FM Radios, Mobile AM/Marine Band Radios, Home Clock AM/FM Radios, Home AM/FM Radios, Mobile CB Transceiver Radios, Home CB Transceiver Radios With Bases, Walkie-Talkie CB Transceiver Radios, Black and White Video Tape Recorders, Color Video Tape Recorders, Closed Circuit Television Cameras, Automatic Individual Reading Improvement Machines and the Following Accessories to the Black and White and Color Video Tape Recorders: Video Camera Lenses, Remote Stop-Start Kits, Blank

Video Tapes, Non-Directional Dynamic Microphones, Uni-Directional Dynamic Microphones, RF Modulators, Dummy Cameras, Adapters From UHF to Monitor, Heavy Duty Equipment Dollies, Connector Cables, VTR to Monitor Cables, Video Cables and Microphone Extension Cables (Int. Cl. 9).
First use December 1960.

**Class 26—Measuring and Scientific Appliances**

For Closed Circuit Television Monitors, Color Television Monitors (Int. Cl. 9).
First use April 1967.

**Class 36—Musical Instruments and Supplies**

For Portable Reel to Reel Tape Recorders, Portable Reel to Reel Stereo Tape Recorders, Portable Cassette-Type Tape Recorders, Home Reel to Reel Tape Recorders, Home Cartridge Tape Stereo Recorders, Home Cartridge Tape Stereo Players, Mobile Cartridge Tape Stereo Players and the Following Accessories to the Above Items: Uni-Directional Microphones, A.C. Adapters, Voice Actuated Microphones, Foot Switches, Stethoscope Head Sets, Earplug Head Sets, Telephone Pickups, Radio Recording Cords, Auxiliary Recording Cords, Connecting Cords, Blank Reel to Reel Tapes, Blank Cassette-type Cartridges (Int. Cl. 9).
First use August 1960.

SN 290,137. Mister Kelly's, Inc., Chicago, Ill. Filed Feb. 2, 1968.

## MISTER KELLY'S

**Class 100—Miscellaneous**

For Restaurant and Night Club Operations (Int. Cl. 42).

**Class 107—Education and Entertainment**

For Selection, Promotion and Presentation of Night Club Entertainment Featuring Comedians, Vocalists, Musicians, and the Like (Int. Cl. 41).

First use on or about Nov. 24, 1953.

SN 291,138. David W. Lupton, New York, N.Y., assignee of Contact Marketing Inc., New York, N.Y. Filed Feb. 15, 1968.

## PIT STOP

**Class 100—Miscellaneous**

For Restaurant Services (Int. Cl. 42).

**Class 101—Advertising and Business**

For Establishing and Rendering Assistance in the Operation of Restaurants, Drive-In Restaurants, Automotive Service Stations and Retail Outlets Engaged in the Sale of Goods/or Services (Int. Cl. 35).

**Class 103—Construction and Repair**

For Automotive Service Station Services (Int. Cl. 37).

First use Jan. 5, 1968.

SN 295,281. Amax Industries, Inc., Elgin, Ill. Filed Apr. 10, 1968.

## CARRERA

"Carrera" is a Spanish word which can be translated as "races in a hurry" or "career" or "advancement in the sense of carrying forward."

**Class 15—Oils and Greases**

For Racing Fuel for Internal Combustion Engines (Int. Cl. 4).
First use on or about Mar. 30, 1964.

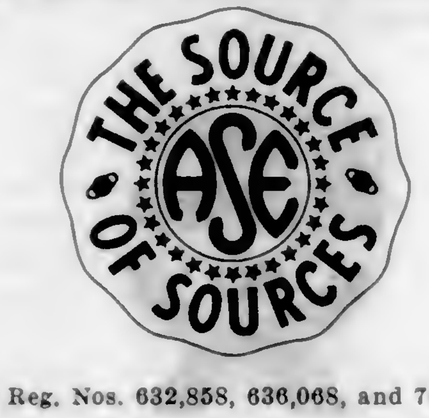
**Class 19—Vehicles**

For Lift Kits (Int. Cl. 12).
First use on or about Jan. 1, 1967.

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Fuel Injector Apparatus and Carburetor Parts, All for Internal Combustion Engines (Int. Cl. 7).
First use on or about Mar. 30, 1964.

SN 295,606. American Safeguard Engineers, New York, N.Y. Filed Apr. 15, 1968.



Owner of Reg. Nos. 632,858, 636,068, and 740,658.

**Class 100—Miscellaneous**

For Advice and Consultation Services in Establishment and/or Operation of Machinery and Manufacturing Companies for Others (Int. Cl. 42).

**Class 101—Advertising and Business**

For Manufacturers' Representative in the Field of Production Plant Construction and in the Field of Machinery Construction (Int. Cl. 35).

**Class 103—Construction and Repair**

For Inspection of Plants and Manufactured Products To Insure Adherence to Established Criteria (Int. Cl. 37).

First use Apr. 7, 1965.

SN 298,986. Barringer Research Limited, Rexdale, Ontario, Canada. Filed May 24, 1968.

## INPUT

Owner of Canadian Reg. No. 145,738, dated June 10, 1966.

**Class 26—Measuring and Scientific Appliances**

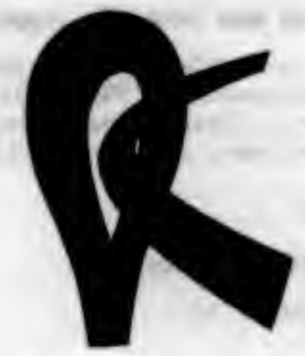
For Geophysical Prospecting Equipment—Namely, Pulsers, Pulser Controls, Receivers, and Power Supplies Therefor (Int. Cl. 9).

**Class 100—Miscellaneous**

For Geophysical Prospecting, Consulting and Interpretation Services, and Rental of Geophysical Prospecting Equipment (Int. Cl. 42).

First use January 1961; in commerce November 1964.

SN 299,057. Kellwood Company, St. Louis, Mo. Filed May 27, 1968.



**Class 22—Games, Toys, and Sporting Goods**

For Camping and Sporting Equipment—Namely, Tents, Sleeping Bags, Ski Belts, and Life Jackets (Int. Cls. 9, 20, and 22).

**Class 39—Clothing**

For Wearing Apparel—Namely, Women's Lingerie, Dresses, Uniforms, Foundation Garments, Robes, Blouses, Slacks, Skirts, Shorts, Hosiery, Leotards, Girdles, Brassieres, Sweaters, Coats and Jackets; Men's Sport Shirts, Swimwear, Jackets, Coats, Sweaters, Work Trousers and Slacks; Boys' Jackets, Coats, Trousers, Shorts and Sweaters; Girls' Jackets, Coats, Sweaters, Lingerie, Slacks, Skirts, Leotards and Blouses; Infants' and Children's Panties, Pants, Jackets, Coats, Snowsuits and Leotards; and Men's, Women's and Children's Two Piece Insulated Underwear Sets (Int. Cl. 25).

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Home Furnishings—Namely, Bedspreads, Draperies, Dust Ruffles, Covers and Quilts, Mattress Pads and Pillow Covers (Int. Cl. 24).

**Class 50—Merchandise Not Otherwise Classified**

For Tarpaulins (Int. Cl. 22).

First use Jan. 15, 1966.

SN 301,579. Monsanto Biodize Systems, Inc., College Point, N.Y. Filed June 28, 1968.

## BIODIZE

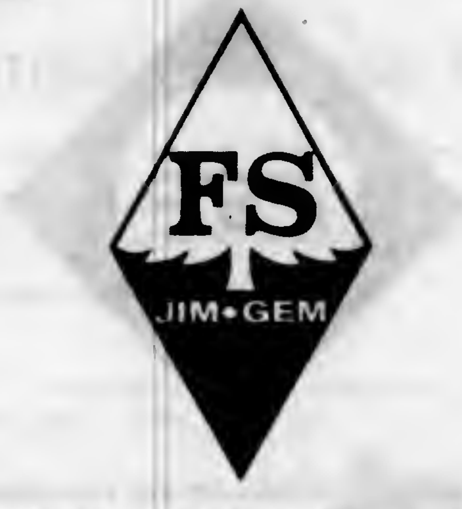
**Class 100—Miscellaneous**

For Water Pollution, Air Polution and Waste Materials Investigative Testing and Analytical Services, and Advisory and Engineering Services for the Abatement and Control Thereof (Int. Cl. 42).
First use Jan. 26, 1968.

**Class 103—Construction and Repair**

For Construction, Installation and Maintenance of Plants and Apparatus for the Control and Abatement of Water Pollution, Air Pollution and Waste Materials (Int. Cl. 37).
First use Mar. 10, 1968.

SN 304,908. Forestry Suppliers, Inc., Jackson, Miss. Filed Aug. 12, 1968.



**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Tree Injector for Use in Injecting Herbicides Into Trees, Bushes, and the Like, for Destroying the Same (Int. Cl. 8).

**Class 26—Measuring and Scientific Appliances**

For Prisms for Use in Obtaining the Cubic Volume of a Tree, Fiberglass Leveling Rod, and Pulpwood Scale Stick (Int. Cl. 9).

**Class 34—Heating, Lighting, and Ventilating Apparatus**

For Petroleum Torch for Use in Burning Brush, Weeds, and the Like (Int. Cl. 11).

First use Aug. 15, 1965.

SN 308,841. Gingiss Formalwear, Inc., Chicago, Ill. Filed Oct. 4, 1968.

## GINGISS

**Class 28—Jewelry and Precious-Metal Ware**

For Cufflinks and Shirt Studs (Int. Cl. 14).

**Class 39—Clothing**

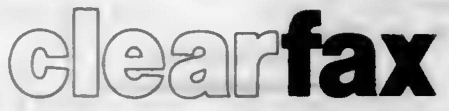
For Tuxedos, Tuxedo Trousers, Dinner Jackets, Cutaways, Strollers, Full Dress Suits, Dress Suits, Business Suits, Blazers, Topcoats, Slacks, Formal Shirts and Business Shirts, Formal Ties and Business Ties, Cummerbunds, Suspenders, Vests, Hats, Tophats, Derbys, Capes, Shoes, Men's Hose, Scarves, and Gloves (Int. Cl. 25).

**Class 41—Canes, Parasols, and Umbrellas**

For Canes and Umbrellas (Int. Cl. 18).

First use in 1936.

SN 308,866. Buhl Projector Company, Inc., Farmingdale, N.Y. Filed Oct. 4, 1968.



**Class 26—Measuring and Scientific Appliances**

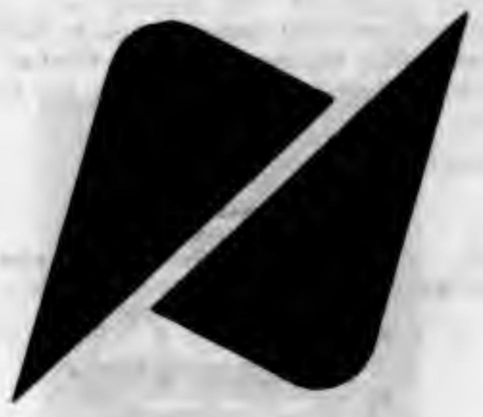
For Projection Transparencies (Int. Cl. 9).

**Class 37—Paper and Stationery**

For Duplicating and Projection Materials—Namely, Spirit Masters (Int. Cl. 16).

First use May 10, 1968.

SN 309,417. Nalco Chemical Company, Chicago, Ill. Filed Oct. 11, 1968.



The mark consists of a fanciful design of the letter "N."

**Class 6—Chemicals and Chemical Compositions**

For Algaecides; Antifoams; Antifouling Additives; Asphalt Additives; Boiler Water Treatment Chemicals; Coagulants; Corrosion Inhibitors; Emulsion Breakers; Microorganism Control Chemicals; Organic Amines; Organic Quaternary Salts; Scale Control Chemicals; Silica or Silicates in Aqueous Colloids or Solutions; Chemical Solutions for Use in Titrating and/or for Use as Indicators in Tests for Determining Properties of Water Samples, Such as Alkalinity and Hardness; Water Clarifying, Purifying, or Softening Compounds; and Weed Killer (Int. Cl. 1).
First use May 14, 1968.

**Class 12—Construction Materials**

For Furnace and Kiln Lining Cement (Int. Cl. 19).
First use July 11, 1968.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Ball, Siphon, and Tube Feeders (Int. Cl. 6).
First use June 1968.

**Class 15—Oils and Greases**

For Fuel Oil Additives for Use in Preventing Color Degradation, Corrosion and/or Sludge Formation; and Lubricating Oils (Int. Cl. 4).
First use July 11, 1968.

**Class 26—Measuring and Scientific Appliances**

For Polymer Testers for Predicting Machine Response to a Chemical Retention or Drainage Program (Int. Cl. 9).
First use August 1968.

**Class 38—Prints and Publications**

For Article Reprints, Data Summaries, and Newsletters (Int. Cl. 16).
First use June 1968.

**Class 52—Detergents and Soaps**

For Metal Cleaning Compounds (Int. Cl. 3).
First use July 11, 1968.

**Class 100—Miscellaneous**

For Solids/Water Separation Analysis, Consulting and Advisory Services (Int. Cl. 40).
First use March 1968.

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SN 316,452. Miller Harness Company, Inc., New York, N.Y. Filed Jan. 13, 1969.

**MILLER'S**

**Class 39—Clothing**

For Riding Clothes for Men, Women, and Children—Namely, Coats, Riding Breeches, and Suits (Int. Cl. 25).

**Class 101—Advertising and Business**

For Retail Store and Mail Order Services in Connection With Saddlery and Riding Equipment, Riding Clothes, Polo Equipment, Grooming Supplies, and Products for the Horseman (Int. Cl. 35).

First use at least as early as 1937.

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SN 320,895. National Independent Distributor Associates, Inc., Minneapolis, Minn. Filed Mar. 6, 1969.

**VISTA**

Owner of Reg. No. 861,305.

**Class 16—Protective and Decorative Coatings**

For Paint (Int. Cl. 2).
First use as early as May 1, 1968.

**Class 19—Vehicles**

For Bicycles and Replacement Parts (Int. Cl. 12).
First use as early as Apr. 2, 1968.

**Class 22—Games, Toys, and Sporting Goods**

For Junior Wheel Goods—Namely, Tricycles and Two-Wheel Sidewalk Bicycles for Children, and Accessories Therefor (Int. Cl. 12).
First use as early as Sept. 19, 1968.

**Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires**

For Tubes for Vehicle Tires (Int. Cl. 12).
First use as early as June 25, 1968.

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SN 323,199. Majestic Drug Co., Inc., Bronx, N.Y. Filed Apr. 1, 1969.

**SU MAJESTAD**

The English translation of the mark is "his majesty."

**Class 51—Cosmetics and Toilet Preparations**

For Baby Skin Oil and Lotion and Baby Powder (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Baby Hair Shampoo (Int. Cl. 3).

First use Feb. 18, 1969.

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SN 324,954. Textron Inc., Providence, R.I. Filed Apr. 21, 1969.

**SPEIDEL**

Owner of Reg. Nos. 509,070 and 861,961.

**Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks**

For Wallets and Key Cases (Int. Cl. 18).
First use Apr. 2, 1969.

**Class 28—Jewelry and Precious-Metal Ware**

For Bracelets, Including Watch Bracelets, Chains by the Foot, and Watch Straps (Int. Cl. 14).
First use Apr. 1, 1932.

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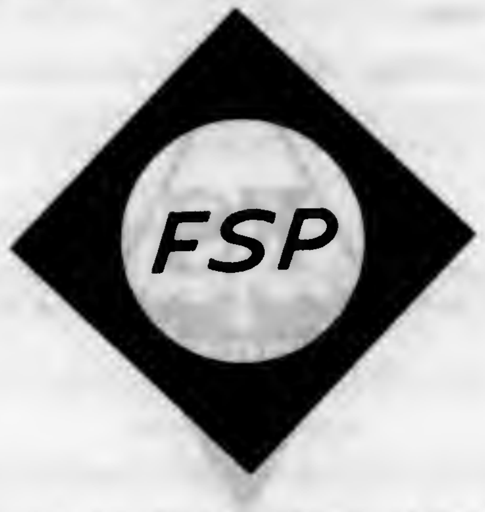
SN 325,429. Whirlpool Corporation, Benton Harbor, Mich. Filed Apr. 24, 1969.



Owner of Reg. Nos. 670,935, 736,428, and others.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Parts for Radios, Television Receivers, Speakers, and Amplifiers (Int. Cl. 9).

**Class 36—Musical Instruments and Supplies**

For Parts for Tape Recorders, Phonographs, Record Changers, Reed Organs, Electric Organs, Guitars, and Speakers and Amplifiers Therefor (Int. Cls. 9 and 15).

First use on or prior to June 10, 1968.

SN 328,137. Grandpa Pidgeon's of Missouri, Inc., Bridgeton, Mo. Filed May 23, 1969.

**GRANDPA**

Owner of Reg. Nos. 812,359 and 825,465.

**Class 22—Games, Toys, and Sporting Goods**

For Fishing Lures (Int. Cl. 28).
First use July 1963.

**Class 39—Clothing**

For Hosiery (Int. Cl. 25).
First use January 1961.

SN 329,927. Helene Curtis Industries, Inc., Chicago, Ill. Filed June 13, 1969.

**SUAVE**

Owner of Reg. Nos. 613,664 and 816,266.

**Class 51—Cosmetics and Toilet Preparations**

For Hair Spray and Creme Rinse (Int. Cl. 3).
First use in or about January 1962.

**Class 52—Detergents and Soaps**

For Hair Shampoo (Int. Cl. 3).
First use in or about August 1964.

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## SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

### Class 1—Raw or Partly Prepared Materials

SN 295,946. Pel-Freez Biologicals, Inc., Rogers, Ark. Filed Apr. 18, 1968.

**PEL-FREEZ**

For Biological Supplies, viz, Tissues, Organs and Fluids of Rabbits, Guinea Pigs, Hamsters, Mice, Rats, Chickens, Dogs, Monkeys, Turtles, Frogs, Kine, Sheep, Swine, and Horses (Int. Cl. 5).
First use April 1961.
Subj. to Intf. with SN 295,947.

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SN 295,947. Pel-Freez Farms, Inc., Rogers, Ark. Filed Apr. 18, 1968.

**PEL-FREEZ**

For Live Rabbits and Baby Chicks, Sold for Biological Specimens (Int. Cl. 31).
First use January 1968.
Subj. to Intf. with SN 295,946.

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SN 297,783. Howmet Corporation, New York, N.Y. Filed May 9, 1968.

**POUR-A-COUNTER KIT**

Applicant disclaims the term "Kit" apart from the mark as shown.
For Resin, Base Material, and the Like, for Use in Producing a Plastic Embossing Die for Making Impressions on Paper (Int. Cl. 1).
First use Mar. 18, 1968.

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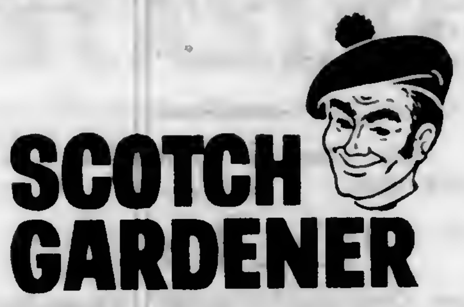
SN 297,795. Occidental Petroleum Corporation, Los Angeles, Calif. Filed May 9, 1968.



For Decorative Wood Bark for Use in Planting and Lawn Areas (Int. Cl. 1).
First use on or about Mar. 6, 1968.

SN 303,937. The Thibaut & Walker Co., Inc., Newark, N.J. Filed July 30, 1968.

**ParCryl**

For Vinyl-Acrylic Copolymer for Use in the Manufacture of Decorative and Protective Coatings (Int. Cl. 1).
First use Feb. 19, 1968.

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SN 307,046. Ruhrchemie Aktiengesellschaft, Oberhausen-Holten, Germany. Filed Sept. 10, 1968.

**EPARZIT**

Owner of German Reg. No. 801,762, dated Mar. 16, 1965.
For Synthetic Resins as Raw Materials for Use in Industry, Especially in Powder Form or Liquid Form, Uncured Synthetic Resins, and Synthetic Resins as Semi-Finished Products in the Form of Blocks, Rods, Sheets, Flakes, Films, Filaments, Tapes, Hollow and Solid Rods and Tubes (Int. Cls. 1 and 17).

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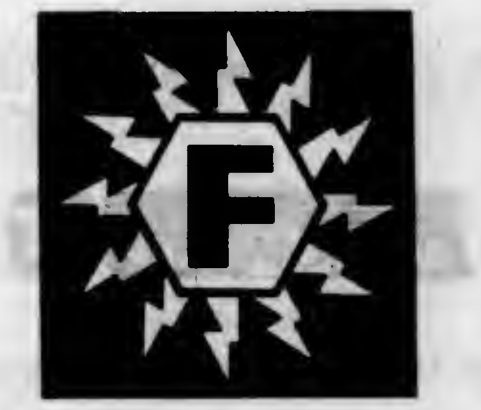
SN 310,519. Fosfatbolaget AB, Stockholm, Sweden. Filed Oct. 25, 1968.



Owner of Swedish Reg. No. 120,409, dated July 14, 1967.
For Synthetic Resins for Use in the Industrial Arts (Int. Cl. 1).

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SN 311,370. Hughes Hybrids, Inc., Woodstock, Ill. Filed Nov. 5, 1968.

**BIG FOUR**

For Hybrid Seed Corn (Int. Cl. 31).
First use Mar. 1, 1967.

SN 312,296. House of Welsey, Inc., Bloomington, Ill. Filed Nov. 15, 1968.

**MYSTERIA**

For Plant Bulbs (Int. Cl. 31).
First use July 8, 1951.

SN 328,787. United States Steel Corporation, Pittsburgh, Pa. Filed June 2, 1969.

**LAKELITE**

For Masonry Aggregates (Int. Cl. 19).
First use Mar. 25, 1969.

## Class 2 — Receptacles

SN 290,891. George M. Sawyer, d.b.a. New Tomorrow Scientific Co., Inglewood, Calif. Filed Feb. 12, 1968.

**MAGIC PLANTS**

The word "Plants" is disclaimed apart from the mark as shown.

For Containers for Sprouting Seeds and Bulbs, and for Growing Plants Either With or Without Fertilizer (Int. Cl. 21).
First use Jan. 8, 1968.

SN 307,192. Chicago Transparent, Inc., Chicago, Ill. Filed Sept. 12, 1968.

**FIRE-TARD**

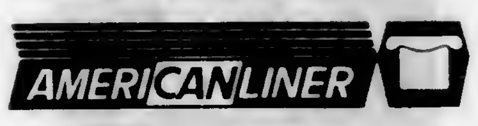
For Bags Having Fire Retardant Properties (Int. Cl. 20).
First use Jan. 8, 1967.

SN 307,866. Scott Paper Company, Philadelphia, Pa. Filed Sept. 20, 1963.

**BEL AIR**

For Drinking Cups Made of Paper (Int. Cl. 21).
First use Jan. 9, 1968.

SN 312,552. American Transparents Plastic Corporation, Brooklyn, N.Y. Filed Nov. 19, 1968.



For Plastic Liners for Garbage Cans and Waste Baskets (Int. Cl. 20).
First use Oct. 1, 1968.

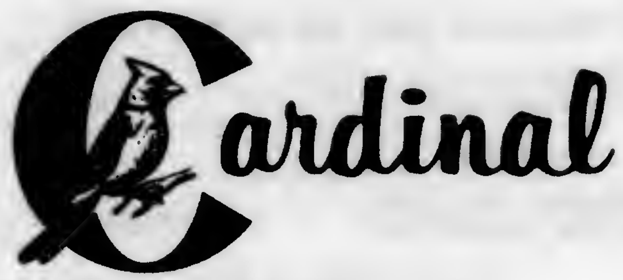
SN 319,708. Haskon, Inc., Warsaw, Ind. Filed Feb. 20, 1969.

**HAS-PAK**

For Blown Plastic Containers, Specifically Plastic Bottles for Packing Liquid and Semi-Solid Foods (Int. Cl. 21).
First use Sept. 30, 1966.

## Class 4 — Abrasives and Polishing Materials

SN 303,137. Cardinal Engineering Corporation, Conshohocken, Pa. Filed July 19, 1968.



Owner of Reg. No. 587,098.

For Abrasive and Diamond Blades for Cleaning, Cutting, Grinding, Polishing, and Smoothing Block, Brick, Ceramic, Concrete, Refractory, Stone, Tile, Vitreous, and Masonry Materials Generally (Int. Cl. 7).
First use spring of 1968.

SN 306,745. Armour-Dial, Inc., Chicago, Ill. Filed Sept. 6, 1968.

**MIRAGE**

For Self-Polishing Floor Wax (Int. Cl. 3).
First use on or prior to July 30, 1968.

## Class 5 — Adhesives

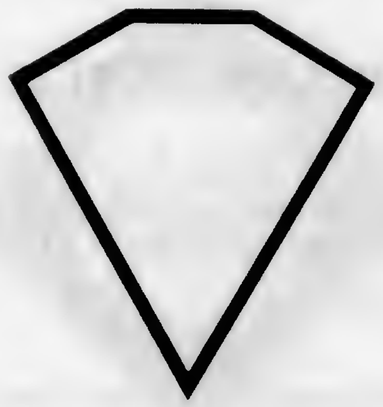
SN 328,111. Fedtro, Inc., Rockville Centre, N.Y. Filed May 26, 1969.

**COLORAMA**

For Decorative and Mending Tapes (Int. Cl. 17).
First use Apr. 7, 1969.

## Class 6 — Chemicals and Chemical Compositions

SN 286,203. The Superior Oil Company, Houston, Tex. Filed Dec. 4, 1967.



For Methane, Ethane, Butane, Propane, Natural Gas Cycle Condensates (Int. Cl. 1).
First use at least as early as 1932.

SN 301,601. Allied Chemical Corporation, New York, N.Y. Filed June 28, 1968.

**CAL-BAR**

For Nitrogen Compounds—Namely, Ammonium Polyphosphate, Ammonium Sulfate, and Ammonium Chloride (Int. Cl. 1).
First use May 25, 1966.

SN 308,777. FMC Corporation, New York, N.Y. Filed Oct. 3, 1968.

**AVIAMIDE**

For Microcrystalline Nylon (Int. Cl. 1).
First use Sept. 27, 1968.

SN 312,517. Union Carbide Corporation, New York, N.Y. Filed Nov. 18, 1968.

**PROPASOL**

Owner of Reg. No. 442,019.
For Glycol Ethers (Int. Cl. 1).
First use on or about May 17, 1967.

SN 313,267. Coulter Diagnostics, Inc., Miami Springs, Fla. Filed Nov. 29, 1968.

**4C**

For Whole Blood Hemotology Control Solution for Accurate Calibration in Electronic Particle Laboratory Analysis (Int. Cl. 5).
First use Aug. 16, 1968.

SN 314,391. Denver Chemical Manufacturing Company, d.b.a. Wampole Laboratories, Stamford, Conn. Filed Dec. 13, 1968.

**MIP-TEST**

For Laboratory Reagent Mare Immunological Pregnancy Test (Int. Cl. 1).
First use Oct. 14, 1968.

SN 317,073. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Jan. 21, 1969.

**SCINTILLAR**

Owner of Reg. Nos. 594,056, 857,739, and others.
For High Purity Solvents for Use in Instruments for Detecting Radiation (Int. Cl. 1).
First use Dec. 26, 1968.

SN 318,380. American Cyanamid Company, Wayne, N.J. Filed Feb. 5, 1969.

**MOTS**

For Accelerator for the Vulcanization of Rubber (Int. Cl. 1).
First use Sept. 17, 1968.

SN 318,462. Seaboard Industries, Hawthorne, N.J. Filed Feb. 5, 1969.

**BLAST/IT**

For Chemical Composition To Melt Ice (Int. Cl. 1).
First use Oct. 2, 1968.

SN 319,024. Bison Corporation, Canton, Ohio. Filed Feb. 13, 1969.

**ASTROZINC**

For Zinc Brightener (Int. Cl. 1).
First use on or about Sept. 26, 1968.

SN 319,025. Bison Corporation, Canton, Ohio. Filed Feb. 13, 1969.

**ASTROWET**

For Wetting Agent for Zinc Plating (Int. Cl. 1).
First use on or about Sept. 26, 1968.

SN 319,026. Bison Corporation, Canton, Ohio. Filed Feb. 13, 1969.

**ASTRONICKEL**

For Nickel Brightener (Int. Cl. 1).
First use on or about Sept. 26, 1968.

SN 319,027. Bison Corporation, Canton, Ohio. Filed Feb. 13, 1969.

**ASTROPURE**

For Zinc Solution Purifier (Int. Cl. 1).
First use on or about Sept. 26, 1968.

SN 319,028. Bison Corporation, Canton, Ohio. Filed Feb. 13, 1969.

**ASTROCOP**

For Brightener for Copper Plating Solutions (Int. Cl. 1).
First use on or about Sept. 26, 1968.

SN 319,029. Bison Corporation, Canton, Ohio. Filed Feb. 13, 1969.

**ASTROCAD**

For Cadmium Brightener (Int. Cl. 1).
First use on or about Sept. 26, 1968.

SN 321,029. Atlas Supply Company, Springfield, N.J. Filed Mar. 7, 1969.

**ATLAS**

Owner of Reg. Nos. 295,699, 705,130, and others.
For Cooling System Protector, Being a Rust Inhibitor, for Use in Internal Combustion Engines (Int. Cl. 2).
First use Dec. 16, 1968.

SN 321,130. Purex Corporation, Ltd., Lakewood, Calif. Filed Mar. 10, 1969.

**PINOSAN**

For Disinfectant (Int. Cl. 5).
First use Nov. 8, 1961.

SN 321,835. Teledyne, Inc., Los Angeles, Calif. Filed Mar. 14, 1969.

**TELEDYNE**

Owner of Reg. No. 637,429.
For Zirconium and Hafnium Oxides and Tetrachlorides; Tantalum and Columbium Oxides; and Magnesium Chloride (Int. Cl. 1).
First use May 1967.

## Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 318,067. Lorillard Corporation, New York, N.Y. Filed Jan. 31, 1969.

### ERIK

Owner of Reg. Nos. 784,299 and 803,635.
For Cigarette Lighters (Int. Cl. 34).
First use Dec. 16, 1968.

## Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 290,154. Bauer Ordnance Company, Warren, Mich. Filed Feb. 2, 1968.

### bauer Ordnance

The word "Ordnance" is disclaimed apart from the mark as a whole.
For Armored Land Vehicles and Watercraft—Namely, Military Armored Cars and Tanks, Police Armored Cars, Armored Money and Valuable Carriers, Small Armored Motor Boats, Army Battle Tanks, Gun Turret and Cupolas for Armored Vehicles, Turret, Cupola and Gun Control Mechanisms (Int. Cl. 13).
First use Nov. 3, 1967.

SN 308,619. Kusan, Inc., Nashville, Tenn. Filed Oct. 1, 1968.
Owner of Reg. No. 503,502.

### HALCO

For Toy Pistol Caps (Int. Cl. 28).
First use Mar. 25, 1962.

## Class 10 — Fertilizers

SN 319,140. Culloden Nursery & Landscaping Service, Culloden, W. Va. Filed Feb. 14, 1969.

### ANTIQUE REDSTONE MULCH

Applicant disclaims the words "Redstone" and "Mulch" apart from the mark as shown.
For Mulch (Int. Cl. 1).
First use Aug. 30, 1968.

## Class 12 — Construction Materials

SN 295,686. The Upco Company, Portland, Maine. Filed Apr. 15, 1968.

### OPALITE

For Heavy Duty Resurfacing Coatings or Topping Compositions for Old or New Concrete Floors (Int. Cl. 19).
First use Jan. 18, 1968.

SN 300,628. The Soundcoat Company, Inc., New York, N.Y. Filed June 17, 1968.

### SOUNDFOAM

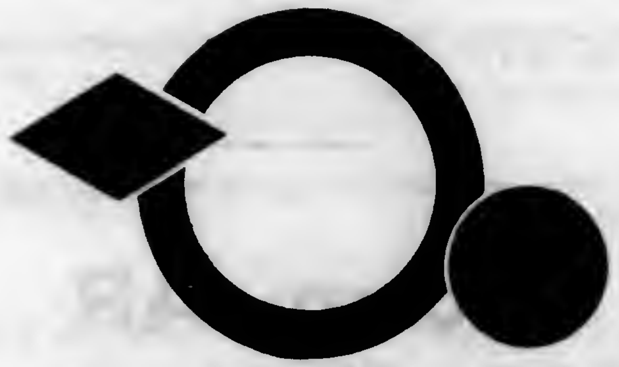
For Noise Control Materials—Namely, Open Celled Plastic Absorption Foams, With or Without Surface Treatments, To Improve High and Low Frequency Absorption (Int. Cl. 17).
First use Apr. 30, 1968.

SN 300,629. The Soundcoat Company, Inc., New York, N.Y. Filed June 17, 1968.

### SOUNDCOAT

For Materials for Reducing Vibration and Airborne Noise in Machinery, Mechanical and Electrical Equipment, and Appliances—Namely, Damping Compound in Paste, Sheet and Tile Form, Sound Absorption Foam Sheets, and Sound Barrier Materials (Int. Cl. 17).
First use Apr. 2, 1963.

SN 303,428. Missouri Portland Cement Company, Clayton, Mo. Filed July 23, 1968.



Owner of Reg. Nos. 331,003, 760,892, and others.
For Portland Cement (Int. Cl. 19).
First use January 1963.

SN 305,806. British Columbia Forest Products Limited, Vancouver, British Columbia, Canada. Filed Aug. 23, 1968.

### KEYSTONE

For Cedar Siding, Forest Siding and Shingles (Int. Cl. 19).
First use during March 1957 on cedar siding; in commerce during March 1957.

SN 306,001. Valley Metal Products Company, Plainwell, Mich. Filed Aug. 26, 1968.

### VAMPCO

For Steel, Aluminum, and Other Metal Window Frames, Sashes and Screens for Domestic and Industrial Use (Int. Cl. 6).
First use Apr. 11, 1946.

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SN 307,016. The Flintkote Company, White Plains, N.Y. Filed Sept. 10, 1968.

### FIRE-HALT

Owner of Reg. No. 662,979.
For Roof Shingles (Int. Cl. 19).
First use Dec. 28, 1967.

SN 312,233. Southwestern Sash & Door Co., Joplin, Mo. Filed Nov. 14, 1968.

### SOUTHWESTERN QUALITYCRAFT

The term "Qualitycraft" is disclaimed apart from the mark as shown.
For Millwork, Prehung Door Units, Prehung Window Units, Garage Doors, Wood Moldings, and Unfinished and Prefinished Plywood Materials (Int. Cl. 19).
First use Sept. 30, 1968.

SN 312,877. The Crawford Door Company, Ecorse, Mich. Filed Nov. 22, 1968.

### ASTRO-LITE

For Garage Doors (Int. Cl. 19).
First use Apr. 17, 1968.

SN 315,907. W. R. Grace & Co., Cambridge, Mass. Filed Jan. 6, 1969.

### MONASTITE

For Cementitious Waterproof Coating Material for Masonry (Int. Cl. 19).
First use Jan. 10, 1966.

SN 316,718. Dow Corning Corporation, Midland, Mich. Filed Jan. 16, 1969.

### DOW CORNING 780

For Silicone Building Joint Sealant (Int. Cl. 19).
First use Mar. 1, 1962.

SN 319,420. Acme Brick Company, Fort Worth, Tex. Filed Feb. 18, 1969.

### ACME-PERLA

Owner of Reg. No. 794,655.
For Brick and Fire Brick (Int. Cl. 19).
First use Oct. 20, 1922.

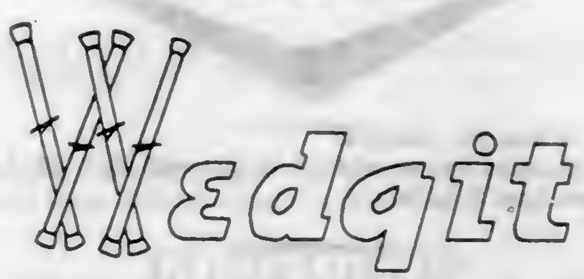
SN 320,403. Reichhold Chemicals, Inc., White Plains, N.Y. Filed Mar. 3, 1969.

### DECOBEAM

For Decorative Wall Columns and Ceiling Beams Made Principally of Polyurethane Resin (Int. Cl. 19).
First use Jan. 17, 1969.

## Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 282,141. Harvey G. Senseney, Jr., Florence, S.C. Filed Oct. 9, 1967.



For Quick-Adjustable Temporary Props or Supports Having Telescoping Sections and a Canted Locking Ring (Int. Cl. 6).
First use Sept. 19, 1967.

SN 299,981. Greiner Scientific Corp., New York, N.Y. Filed June 7, 1968.

### MAN MAN-O-LOK LOK

Applicant disclaims the representation of the goods apart from the mark as shown.
For Heat Shrink Fittings for Making Connections in Glass Tubing (Int. Cl. 20).
First use at least as early as Apr. 5, 1968.

SN 316,959. Alco Standard Corporation, Valley Forge, Pa. Filed Jan. 21, 1969.

### McDowell

For Fluid Couplings, Valves and Mobile Pipe Line Equipment Used for Irrigation and for Transporting Water, Oil, Chemicals, and Mine Slurries, and for Thread Protectors for Pipe Members (Int. Cl. 6).
First use Jan. 12, 1967.

SN 318,019. The American Granby Company, Milford, Conn. Filed Jan. 31, 1969.

### HARVARD

Owner of Reg. No. 779,730.
For Plumbing and Water Well Supplies—Namely, Water Tanks, Metallic and Plastic Fittings for Piping, Valves, Sanitary Well Seals, Flow Controls, Pressure Switches and Gages (Int. Cls. 6 and 21).
First use June 1, 1962, on water tanks.

SN 318,762. Dana Corporation, Toledo, Ohio. Filed Feb. 10, 1969.

**DANA**

Owner of Reg. No. 856,983.
For Hydraulic Valves and Parts Thereof (Int. Cl. 7).
First use Aug. 5, 1968.

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SN 318,975. Theo Puschkarski, Vienna, Austria. Filed Feb. 12, 1969.

**kl-m**

For Clamp (Int. Cl. 6).
First use Nov. 1, 1967; in commerce Oct. 1, 1968.

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SN 324,057. Eisen- und Drahtwerk Erlau Aktiengesellschaft, Aalen, Germany. Filed Apr. 9, 1969.

**ERLAU**

For Tire Protective Chains, Mud and Cross-Country Chains, and Snow Chains (Int. Cl. 12).
First use in or about July 1936; in commerce in or about September 1964.

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SN 325,856. Empire Abrasive Equipment Corporation, Philadelphia, Pa. Filed Apr. 29, 1969.

**DI-CARB**

For Nozzles for Sand Blasting (Int. Cl. 6).
First use in or about August 1968.

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SN 326,345. Cherne Stormguard, Inc., Hopkins, Minn. Filed May 5, 1969.

**STORM GUARD**

Owner of Reg. No. 763,322.
For Automatic Hydraulic Sewer Valves (Int. Cl. 11).
First use August 1968; Mar. 15, 1956, in another form.

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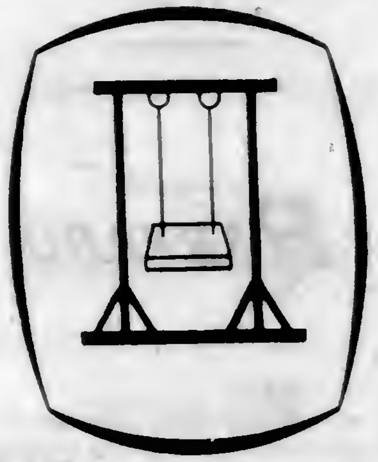
SN 326,706. The Worcester Brass Co. Limited, Birmingham, England. Filed May 7, 1969.



For Hinges (Int. Cl. 6).
First use on or about Nov. 8, 1921; in commerce January 1967.

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SN 326,729. AMP Incorporated, Harrisburg, Pa. Filed May 8, 1969.

**AMP FAS-N-FAST**

Owner of Reg. Nos. 405,714, 812,073, and others.
For Mechanical Fastening Devices (Int. Cl. 6).
First use Apr. 28, 1969.

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SN 327,054. Revere Copper and Brass Incorporated, New York, N.Y. Filed May 12, 1969.

**18 01**
**REVERE**

Owner of Reg. Nos. 535,788, 698,000, and others.
For Nonferrous Metal Pipe and Tube (Int. Cl. 6).
First use Apr. 1, 1969.

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## Class 15 — Oils and Greases

SN 283,913. Miller & Holmes, Inc., St. Paul, Minn. Filed Nov. 1, 1967.

**M&H**

The drawing is lined for the color red.
For Gasoline, Motor Oil, and Fuel Oil (Int. Cl. 4).
First use Jan. 31, 1931.

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SN 311,015. Candle World, Inc., Phoenix, Ariz. Filed Oct. 31, 1968.

**Candle World**
SAY IT WITH CANDLES

Applicant disclaims the wording "Say It With Candles" and the design of the candles, apart from the mark as shown.
For Decorative Candles (Int. Cl. 4).
First use Sept. 3, 1968.

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SN 311,723. Pioneer Products, Inc., Ocala, Fla. Filed Oct. 7, 1968.

**EL DORADO**

For Candles (Int. Cl. 4).
First use Sept. 23, 1968.

SN 312,333. The Rutherford Co., Inc., Houston, Tex. Filed Nov. 15, 1968.

**SLICK-STUF**

For Lubricating and Combination Lubricating, Sealing and Packing Compounds (Int. Cl. 4).
First use at least as early as Oct. 18, 1968.

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SN 312,690. Penn Petroleum Products Co., Inc., d.b.a. Pennsylvania Petroleum Products Co., Philadelphia, Pa. Filed Nov. 20, 1968.

**RUGBY**

For Motor Oil (Int. Cl. 4).
First use at least as early as 1946.

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## Class 16 — Protective and Decorative Coatings

SN 298,577. Coatings Engineering Corporation, South Natick, Mass. Filed May 20, 1968.

**CECOFLEX**

For Plastisol Coating Compounds (Int. Cl. 2).
First use July 12, 1966.

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SN 316,776. The Dexter Corporation, Windsor Locks, Conn. Filed Jan. 16, 1969.

**POLYDEX**

For Polyurethane Based Coating Compositions for Flexible Substrates (Int. Cl. 2).
First use Jan. 4, 1967.

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SN 318,685. Talens & Son, Inc., Union, N.J. Filed Feb. 7, 1969.

**Talens**

Owner of Reg. Nos. 200,741, 528,926, and 840,772.
For Artists' Pastels, Mediums and Varnishes (Int. Cls. 2 and 16).
First use April 1966; January 1900 as to "Talens."

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SN 324,372. Sapolin Paints Inc., New York, N.Y. Filed Apr. 14, 1969.

**HYDRAPOSIT**

For Base Coat or Primer for Use Prior to Application of House Paint (Int. Cl. 2).
First use Mar. 19, 1969.

## Class 17 — Tobacco Products

SN 294,328. Turmac Tobacco Company N.V., Amsterdam, Netherlands. Filed Mar. 27, 1968.

**HAVILLAND**

Owner of Dutch Reg. No. 115,619, dated June 12, 1953.
For Cigarettes (Int. Cl. 34).

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SN 308,454. Bayuk Cigars Incorporated, d.b.a. E. Regensburg & Sons, Philadelphia, Pa. Filed Sept. 30, 1968.

**COMFORTIP**

For Cigars (Int. Cl. 34).
First use March 1963.

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## Class 18 — Medicines and Pharmaceutical Preparations

SN 299,875. Sea & Ski Corporation, San Francisco, Calif. Filed June 6, 1968.

**SEA & SKI**

Owner of Reg. Nos. 586,288, 841,768, and others.
For Medicated Lip Balm (Int. Cl. 5).
First use Aug. 27, 1965.

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SN 310,762. Farmers Union Grain Terminal Association, St. Paul, Minn. Filed Oct. 29, 1968.

**RUM-LIQ**

For Medicated Liquid Feed Supplement for Cattle (Int. Cl. 5).
First use July 26, 1968.

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SN 316,471. Sandoz, Inc., Hanover, N.J. Filed Jan. 13, 1969.

**NEO-CAF**

Owner of Reg. Nos. 723,514 and 820,209.
For Medicinal Preparation for Vascular Headache (Int. Cl. 5).
First use Dec. 26, 1967.

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SN 316,764. Block Drug Company, Inc., Jersey City, N.J. Filed Jan. 16, 1969.

**NEW DAY**

For Medicinal Preparations—Namely, Stimulants and Analgesics (Int. Cl. 5).
First use on or about Dec. 5, 1968.

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SN 316,766. Block Drug Company, Inc., Jersey City, N.J. Filed Jan. 16, 1969.

**OXYGEL**

For Medicinal Preparations—Namely, Oral Antiseptic Cleansers and Preparations for Treatment of Inflammation of Gums and Mouth (Int. Cl. 5).
First use on or about Jan. 8, 1969.

SN 321,877. Richardson-Merrell Inc., New York, N.Y. Filed Mar. 17, 1969.

### SILENCIUM

Owner of Reg. No. 698,473.
For Cough Mixture (Int. Cl. 5).
First use Feb. 19, 1969.

SN 324,571. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Apr. 15, 1969.

### CENDRAX

For Immunological Agent (Int. Cl. 5).
First use Mar. 18, 1969.

SN 324,661. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Apr. 16, 1969.

### GERVAX

For Immunological Agent (Int. Cl. 5).
First use Mar. 18, 1969.

SN 324,868. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Apr. 18, 1969.

### CENDACCINE

For Immunological Agent (Int. Cl. 5).
First use Mar. 20, 1969.

SN 326,281. American Home Products Corporation, New York, N.Y. Filed May 5, 1969.

### EVANOR

For Progestational Agent (Int. Cl. 5).
First use Apr. 23, 1969.

SN 326,283. American Home Products Corporation, New York, N.Y. Filed May 5, 1969.

### NORDIOL

For Progestational Agent (Int. Cl. 5).
First use Apr. 23, 1969.

SN 326,830. Parke, Davis & Company, Detroit, Mich. Filed May 9, 1969.

### DENTALONE

For Analgesic and Antiseptic Dental Preparation (Int. Cl. 5).
First use on or before Jan. 29, 1904.

## Class 19—Vehicles

SN 301,866. Uniroyal, Inc., New York, N.Y. Filed July 2, 1968.

### UNIROYAL

Owner of Reg. Nos. 693,859, 759,471, and others.
For Shock Absorbers for Vehicles (Int. Cl. 12).
First use at least as early as May 1967.

SN 304,454. Ford Motor Company Limited, London, England. Filed Aug. 6, 1968.

### ESCORT

Owner of British Reg. No. 909,790, dated May 23, 1967.
For Automobiles and Parts Thereof (Int. Cl. 12).

SN 310,734. Merchants Buying Syndicate, Inc., New York, N.Y. Filed Oct. 29, 1968.

'ORANGE PEEL'

For Bicycles (Int. Cl. 12).
First use Oct. 3, 1968.

SN 312,251. Winnebago Industries, Inc., Forest City, Iowa. Filed Nov. 14, 1968.

W

Owner of Reg. No. 777,541.
For Vehicles and Components of Completed Vehicles—Namely, Motor Homes, Travel Trailers, House Trailers, Camper Coaches, Pick-Up Coaches, Pick-Up Campers, Fitted Pick-Up Covers, Mobile Offices, Tent Trailers, Houseboats, Pontoon Boats, and Vehicle Component Panels (Int. Cl. 12).
First use April 1959.

SN 312,947. Airheart Products, Inc., Van Nuys, Calif. Filed Nov. 25, 1968.

### AIRHEART

Owner of Reg. No. 754,808.
For Fluid Actuated Brakes for Vehicles, Mechanically Actuated Brakes for Vehicles, Anti-Skid Braking Systems, and Parts Therefor (Int. Cl. 12).
First use May 21, 1959.

SN 316,697. Tradewind Industries, Inc., Liberal, Kans. Filed Jan. 15, 1969.

TW *Kwik-Kart*

For Hand Carts Used for the Bulk Handling of Food Products in Grocery Stores (Int. Cl. 12).
First use on or about Apr. 4, 1968.

SN 318,617. Argenta, Inc., Dearborn Heights, Mich. Filed Feb. 7, 1969.

### BANDIDO

The English translation of "Bandido" is "bandit."
For Vehicle Body Kit Which Includes All the Body Parts for Assembly Onto an Existing Chassis (Int. Cl. 12).
First use Dec. 5, 1968.

SN 320,602. The Hesse Corporation, Kansas City, Mo. Filed Mar. 3, 1969.

### KEG MASTER

For Beverage Bodies for Trucks (Int. Cl. 12).
First use Jan. 8, 1969.

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SN 320,967. Palmetto Homes of Laurens, Inc., Laurens, S.C. Filed Mar. 6, 1969.

### PRINCETON

For Mobile Homes (Int. Cl. 12).
First use Feb. 1, 1969.

SN 328,103. American Marine Ltd., Newport Beach, Calif. Filed May 26, 1969.

### ALASKAN

For Sea-Going Pleasure Boats (Int. Cl. 12).
First use April 1967.

SN 328,104. American Marine Ltd., Newport Beach, Calif. Filed May 26, 1969.

### GRAND BANKS

For Sea-Going Pleasure Boats (Int. Cl. 12).
First use June 1958.

SN 328,533. Conwed Corporation, St. Paul, Minn. Filed May 28, 1969.

### CONWED

For Truck Mounted Campers (Int. Cl. 12).
First use on about Dec. 6, 1968.

## Class 20—Linoleum and Oiled Cloth

SN 322,043. Congoleum Industries, Inc., Kearny, N.J. Filed Mar. 18, 1969.

### BRENTWOOD

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops and the Like, in the Form of Rolls, Rugs and Tiles (Int. Cls. 19 and 27).
First use Feb. 7, 1969.

SN 322,046. Congoleum Industries, Inc., Kearny, N.J. Filed Mar. 18, 1969.

### PARIAN MARBLE

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs and Tiles (Int. Cls. 19 and 27).
First use Jan. 6, 1969.

## Class 21—Electrical Apparatus, Machines, and Supplies

SN 281,874. Doray Lamp Co., Inc., Chicago, Ill. Filed Oct. 5, 1967.

### WEATHER-ALL

For Automotive Accessories—Namely, Lamps and Lamp Systems (Int. Cl. 11).
First use October 1961.

SN 282,931. Scientific-Atlanta, Inc., Atlanta, Ga. Filed Oct. 19, 1967.

SA

For Antenna and Microwave Instruments and Systems and Parts Thereof, Comprising, Electronic Recording Instruments for Producing a Written Record of Electrical Signals, Radiation Distribution Printers for Producing Typewritten Readouts of Radiation Signal Strength as a Function of Position of Radiation Detecting Antennas, Punched Paper Tape Recorders for Producing Binary Coded Punched Tape, Tape Recorders for Reading Binary Coded Punched Tape, Antenna Pattern Integrators, Electronic Test Sets for Evaluating the Performance of Graphic Recorders, Radio and Microwave Signal Receivers, Electronic Signal Sources, Cavity Oscillators, Antenna Positioners, Antenna Tower Carts, Positioner Controls, Antenna Reflectors, Antenna Feeds, Coax to Waveguide Adapters, D.C. Blocking RF Couplings, Microwave Standard Gain Horns, Standard Gain Dipoles, Log Periodic Antennas, Antenna Pattern Display, Fourier Integral Computer, Electronic Instrument Enclosures, and Servo-Controlled Radar Tracking Systems (Int. Cl. 9).
First use at least as early as Dec. 31, 1960.

SN 289,027. Manger Electric Co., Inc., Stamford, Conn. Filed Jan. 17, 1968.

### MANELCO

For Electrical Wire, Cable Leads, Conductors and Terminals (Int. Cl. 9).
First use October 1953.

SN 296,546. Lafayette Electronics International, Inc., Syosset, N.Y. Filed Apr. 25, 1968.

IC SILENCER

For Communications Equipment—Namely, Citizens Band Transceivers (Int. Cl. 9).
First use Mar. 18, 1968.

SN 300,057. Borg-Warner Corporation, Chicago, Ill. Filed June 10, 1968.

### CADET

For Speed Control Unit for Electric Motors, and Parts Thereof for Replacement and Repair (Int. Cl. 9).
First use on or prior to Jan. 30, 1967.

SN 300,365. National Beryllia Corp., Haskell, N.J. Filed June 13, 1968.

### HEXPAK

For Integrated Circuit Formed With an Insulating Base or the Insulating Supports or Bases for Such Circuits (Int. Cl. 9).
First use Mar. 15, 1968.

SN 303,278. Co-Polymer Chemicals, Inc., Livonia, Mich. Filed July 22, 1968.

## SUEDE-TRON

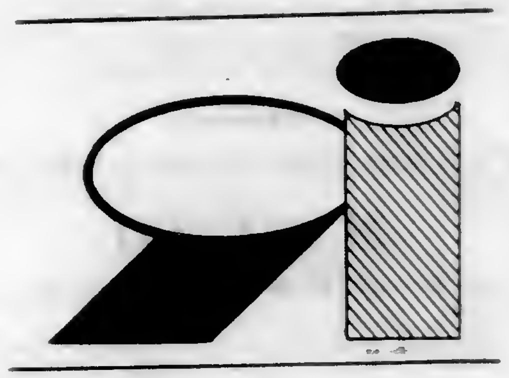
For Electrical Apparatus for Applying Electrostatically Charged Fibers to an Adhesive Covered Object or Surface (Int. Cl. 9).
First use on or about May 5, 1968.

SN 304,819. Singer Products Company Incorporated, New York, N.Y. Filed Aug. 9, 1968.

## Sin Par

Owner of Reg. No. 612,549.
For Automotive Ignition and Electrical Parts—Namely, Contact Point Sets, Brushes, Bushings, Distributor Caps, Coils, Condensers, Horn Relays, Resistors, Rotors, Solenoids, Starter Buttons, Switches, Voltages Regulators, Armatures, Alternators, and Generators (Int. Cls. 9 and 12).
First use August 1956.

SN 313,442. Radiarc, Inc., Monterey Park, Calif. Filed Dec. 2, 1968.



The drawing is lined for the color green, although the color forms no part of the mark.
For Electric Lighting Equipment—Namely, Stadium Lamps (Int. Cl. 11).
First use Oct. 16, 1968.

SN 316,416. Dollinger Corporation, Rochester, N.Y. Filed Jan. 13, 1969.

## ELECTRO-STAYNEW

Owner of Reg. No. 167,664.
For Electrostatic Air Cleaners (Int. Cl. 11).
First use Oct. 29, 1952.

SN 316,999. Dr. Aubrey I. Copelan, Inglewood, Calif. Filed Jan. 21, 1969.

## BURGLE-BUNGLE

For Electronic Anti-Theft Ignition System Lock for Automobiles (Int. Cl. 12).
First use Dec. 4, 1968.

SN 320,282. Piezo Technology, Inc., Orlando, Fla. Filed Feb. 27, 1969.

## COMLINE

For Electrical Filters, Particularly Ultra and High Frequency Electromechanical Band Pass Filters (Int. Cl. 9).
First use Sept. 17, 1968.

SN 320,374. The Positive Safety Manufacturing Company, Cleveland, Ohio. Filed Feb. 28, 1969.

## TOUCH-O-MATIC

For Electrically Operated Solenoid Safety Device for Machine Tools, Welding Apparatus, and the Like (Int. Cl. 9).
First use on or about Dec. 2, 1968.

SN 320,427. Cabot Corporation, Boston, Mass. Filed Mar. 3, 1969.

## CAB-O-FILM

For Electrical Conducting Plastic Film (Int. Cl. 17).
First use Jan. 8, 1969.

SN 321,487. Flo-Tronics, Inc., d.b.a. Electro-Line Products Company, Minneapolis, Minn. Filed Mar. 12, 1969.

## Cobra

For Electric Fence Chargers (Int. Cl. 9).
First use June 5, 1968.

SN 324,721. The Intergalactic Corporation, Los Altos, Calif. Filed Apr. 16, 1969.

For Vacuum Tubes (Int. Cl. 9).
First use Mar. 23, 1969.

SN 326,905. Raytheon Company, Lexington, Mass. Filed May 9, 1969.

## CRUISE/AIDER

For Radiotelephones (Int. Cl. 9).
First use Jan. 14, 1968.

SN 327,713. Bernard Burlingame, d.b.a. Greenbriar Antenna Company, Parma Heights, Ohio. Filed May 8, 1969.

## SKYMASTER

For Antennas (Int. Cl. 9).
First use Jan. 3, 1968.

SN 327,785. Sprague Electric Company, North Adams, Mass. Filed May 20, 1969.

## DST

For Pulse Transformers (Int. Cl. 9).
First use Mar. 18, 1968.

SN 327,833. New Product Engineering, Inc., Wabash, Ind. Filed May 21, 1969.

For Electrical Apparatus and Components—Namely, Switches, Relays and Turns Analyzers (Int. Cl. 9).
First use at least as early as Jan. 1, 1969.

SN 327,889. Global Imports, Inc., New York, N.Y. Filed May 21, 1969.

For Batteries (Int. Cl. 9).
First use Apr. 2, 1969.

SN 328,067. Motorola, Inc., Franklin Park, Ill. Filed May 22, 1969.

## MINIPONDER

For Radar Transponders (Int. Cl. 9).
First use May 7, 1969.

SN 328,394. South River Metal Products Co., Inc., South River, N.J. Filed May 27, 1969.

## COLORFOAM

For Television and Radio Antenna Wire (Int. Cl. 9).
First use Apr. 11, 1969.

# Class 22 — Games, Toys, and Sporting Goods

SN 297,457. Uneeda Doll Co., Inc., Brooklyn, N.Y. Filed May 6, 1968.

## NEEDLES THE RAG DOLL

No claim of exclusive right is made to "The Rag Doll" for the goods recited.
For Dolls and Doll Accessories (Int. Cl. 28).
First use in or about August 1967.

SN 303,589. Atlantic Lures, Inc., Providence, R.I. Filed July 25, 1968.

## MINI-MOUSE

For Fishing Lures (Int. Cl. 28).
First use Aug. 10, 1956.

SN 305,248. Royal London, Ltd., New York, N.Y. Filed Aug. 15, 1968.

## ROYAL LONDON

Owner of Reg. Nos. 130,314, 633,228, and others.
For Checker Sets, Chess Sets, and Domino Sets (Int. Cl. 28).
First use September 1964.

SN 309,483. SW Industries, Inc., Newton, Mass. Filed Oct. 11, 1968.

## MICRO BALANCED

For Bowling Balls (Int. Cl. 28).
First use Apr. 5, 1968.

SN 310,321. Giant Plastics Corp., Bronx, N.Y. Filed Oct. 23, 1968.

## MITEY-MITES

For Miniature Toy Molded Vehicles (Int. Cl. 28).
First use Feb. 20, 1968.

SN 310,498. Remco Industries, Inc., Harrison, N.J. Filed Oct. 24, 1968.

## TIPPY TUMBLES

For Dolls (Int. Cl. 28).
First use June 1, 1968.

SN 310,776. David Nunnenkamp, d.b.a. Handy Andy Broom Company, Lindsay, Okla. Filed Oct. 29, 1968.

## RIDE'M COWBOY

For Stick Horses (Int. Cl. 28).
First use Sept. 16, 1968.

SN 311,509. Louis Marx & Co., Inc., New York, N.Y. Filed Nov. 6, 1968.

## POWER BIRD

For Electrically Operated Toy Riding Vehicle (Int. Cl. 28).
First use Sept. 3, 1968.

SN 311,925. Products of the Behavioral Sciences, Inc., San Jose, Calif. Filed Nov. 12, 1968.

## BALI-BUTTONS

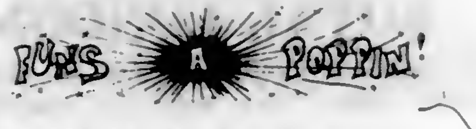
For Puzzles (Int. Cl. 28).
First use Oct. 24, 1968.

SN 311,977. Eldon Industries, Inc., Hawthorne, Calif. Filed Oct. 16, 1968.

## BILLY

For Toy Mechanical Figurine, Sold as a Part of a Toy Kit (Int. Cl. 28).
First use Apr. 3, 1968.

SN 313,141. Turco Manufacturing Company, Du Quoin, Ill. Filed Nov. 26, 1968.



For Playground Swing Sets (Int. Cl. 28).
First use Oct. 21, 1968.

SN 313,449. George H. Schmidtke, d.b.a. Family Golf Enterprises, Chicago, Ill. Filed Dec. 2, 1968.

### WEDGE IT C. C.

For Golf Practice Curtains Having Separate Numbered Impact Areas Reproduced Thereon for Use in Practicing Golf (Int. Cl. 28).
First use June 3, 1968.

SN 314,232. Kenner Products Company, Cincinnati, Ohio. Filed Dec. 11, 1968.

### SAY IT! PLAY IT!

For Tape Recorder Toys (Int. Cl. 28).
First use Sept. 9, 1968.

SN 315,283. Wham-O Mfg. Co., San Gabriel, Calif. Filed Dec. 26, 1968.

### SUPER SWOOPER

Owner of Reg. Nos. 811,650, 842,631, and others.
For Flying Saucer Toy (Int. Cl. 28).
First use at least as early as Dec. 11, 1968.

SN 318,775. Golden State Distributors, Inc., Los Angeles, Calif. Filed Feb. 10, 1969.

### CUSTOM BUILT

For Golf Balls (Int. Cl. 28).
First use Jan. 15, 1969.

SN 318,832. Scientific Anglers, Inc., Midland, Mich. Filed Feb. 10, 1969.

### SYSTEM

For Fly Fishing Equipment, Specifically, Rods, Reels, and Lines (Int. Cl. 28).
First use Aug. 28, 1968.

SN 318,871. Camp Trails, Phoenix, Ariz. Filed Dec. 12, 1968.

### FREIGHTER

For Backpacking Frames and Bags (Camping Equipment) (Int. Cl. 18).
First use Sept. 27, 1968.

SN 319,778. Mattel, Inc., Hawthorne, Calif. Filed Feb. 24, 1969.

### DURA-HYDE

Owner of Reg. No. 711,169.
For Toy Holsters (Int. Cl. 28).
First use April 1961.

SN 320,188. Stebco Industries, Inc., Chicago, Ill. Filed Feb. 26, 1969.

### MATCHMAKER

Owner of Reg. No. 721,568.
For Golf Bags (Int. Cl. 28).
First use June 1968.

SN 320,636. Milton Bradley Company, Springfield, Mass. Filed Mar. 3, 1969.

### "THE SEASONS"

For Jigsaw Puzzles (Int. Cl. 28).
First use Dec. 15, 1968.

SN 320,670. Edward L. Wright, d.b.a. Sunset Surfboards, Encinitas, Calif. Filed Mar. 3, 1969.

### SUNSET

For Surfboards (Int. Cl. 28).
First use Nov. 16, 1968.

SN 321,725. Parker Brothers, Inc., Salem, Mass. Filed Mar. 14, 1969.

### LOOP A LOT

For Equipment for Playing a Coin Balance Game (Int. Cl. 28).
First use October 1967.

SN 321,993. Sifo Company, Minneapolis, Minn. Filed Mar. 17, 1969.

### BLOCKRAFT

For Toy Construction Blocks (Int. Cl. 28).
First use in or about March 1965.

SN 324,985. Mattel, Inc., Hawthorne, Calif. Filed Apr. 21, 1969.

### TEENIETALK

Owner of Reg. No. 850,531.
For Toy Telephone (Int. Cl. 28).
First use Aug. 22, 1968.

SN 328,769. Healthways, Los Angeles, Calif. Filed June 2, 1969.

### AIRFLO

For Skin Diving Equipment—Namely, Regulator Assemblies Adapted To Be Connected to a Pressurized Source of Breathable Gases (Int. Cl. 28).
First use May 21, 1969.

SN 330,673. Mattel, Inc., Hawthorne, Calif. Filed June 23, 1969.

### BLAZIN' "8"

For Toy Miniature Automobiles and Accessories Therefor (Int. Cl. 28).
First use May 13, 1969.

SN 331,283. Mattel, Inc., Los Angeles, Calif. Filed June 30, 1969.

### SMARTIPIG

For Phonographic and Educational Toy Comprising a Talking Bank (Int. Cl. 28).
First use Dec. 3, 1968.

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## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 275,742. Champion Corporation, Hammond, Ind. Filed July 11, 1967.

### OK Champion

For Potato Harvesters, Potato Diggers, Sewer Rodders and Sewer Cleaning Machines (Int. Cl. 7).
First use 1898.

SN 294,411. William L. Riggs, d.b.a. William L. Riggs Co., Tulsa, Okla. Filed Mar. 28, 1968.

### SAFETY BOY

The word "Safety" is disclaimed apart from the mark as a whole.
For Flange Spreader Tools and Safety Tools—Namely, Threaded Nut Removing Tools (Int. Cl. 8).
First use June 30, 1958.

SN 295,417. Besser Company, Alpena, Mich. Filed Apr. 11, 1968.

### POSAPAC

For Vibrating Shafts for Cement Block Machines (Int. Cl. 7).
First use Mar. 5, 1968.

SN 297,598. S.A. Colortex, Luxembourg. Filed May 7, 1968.

### VARICINETIC

For Machinery and Equipment for Dispersing, Dissolving, Deagglomerating, Emulsifying, Blending and Mixing Solid and Liquid Substances, Including Parts Thereof, and Mixing Impellers Utilized in the Foregoing Machinery and Equipment Including Parts of Such Impellers (Int. Cl. 7).
First use Aug. 1, 1961; in commerce at least as early as December 1967.

SN 299,424. Brewer Sewing Supplies Company, Chicago, Ill. Filed May 31, 1968.

### BREWER

For Sewing Machines (Int. Cl. 7).
First use Apr. 29, 1968.

SN 300,381. The Susquehanna Corporation, Alexandria, Va. Filed June 13, 1968.

### HELICONE

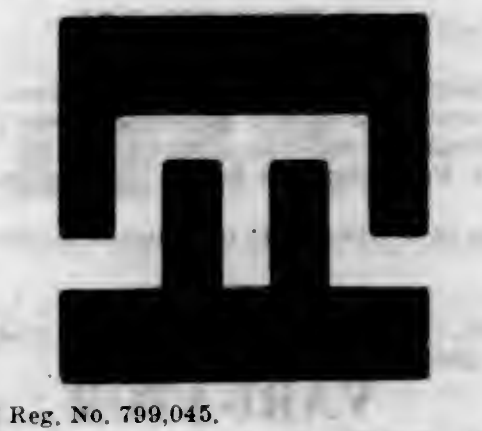
For Mixers for Viscous Liquids and Semisolids, and Blades for Such Mixers (Int. Cl. 7).
First use May 1966.

SN 300,494. Tempcraft Tool & Mold, Inc., Cleveland, Ohio. Filed June 14, 1968.

### VARI-FLEX

For Power Driven Hot Wax Injector Used in Investment Casting (Int. Cl. 10).
First use on or about Sept. 20, 1967.

SN 300,605. Mite Corporation, New Haven, Conn. Filed June 17, 1968.



Owner of Reg. No. 799,045.
For Sewing Machine Attachments—Namely, Cloth Guides, Attachment Feet, Adjustable Zipper and Cording Feet, Gathering Feet, Quilters, Narrow Hemmers, Hemmers, Edge Stitchers, Multiple Slotted Binders, Rufflers, Blind Stitch Hemmers, Automatic Buttonholers, and Decorative Zig-Zaggers (Int. Cl. 7).
First use September 1961.

SN 302,603. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed July 12, 1968.

### LOAD KING

For Industrial Lift Trucks and Parts Thereof (Int. Cl. 12).
First use at least as early as Jan. 1, 1953.

SN 302,719. Alco Standard Corporation, Fremont, Ohio. Filed July 15, 1968.

### FLIPPER

For Cutting Tools—Namely, Clip Scissors and Parts Thereof (Int. Cl. 8).
First use Oct. 11, 1967.

SN 304,638. The Wheelabrator Corporation, Mishawaka, Ind. Filed Aug. 7, 1968.

### NAD

For Machine for Descaling and Cleaning Metal Surfaces in Manufacturing Operations (Int. Cl. 7).
First use June 27, 1968.

SN 306,801. Pioneer Centrifuging Company, Houston, Tex. Filed Sept. 6, 1968.

### CLAYMASTER

For Assembly of Pumps, Centrifuges, Scrubbers, etc., for Recovering Weighting and Other Constituents From a Mud-Like Mixture in Well Drilling Operations (Int. Cl. 7).
First use Sept. 30, 1967.

SN 309,117. Tobler & Cie Ltd. Chemical Works, St. Gall, Switzerland. Filed Oct. 7, 1968.

### TOKOMAT

Owner of U.S. Reg. No. 798,732.
For Machines for Waxing Skis (Int. Cl. 7).
First use March 1967; in commerce November 1967.

SN 309,729. Advance Engineering Company, Minneapolis, Minn. Filed Oct. 16, 1968.

### EXECUTIVE

For Automatic Hot Drink Vending Machines (Int. Cl. 9).
First use Dec. 31, 1962.

SN 310,312. Devtek Limited, Toronto, Ontario, Canada. Filed Oct. 23, 1968.

### LEVITRON

For Adjustable Roll Employing Air or Liquid for Contact-Free Transportation of Web Materials, Films, Paper, Coated Paper, Cellophane, Sheeting Material, Plastics, or Cloth for Chemically Processing and Drying of Said Materials (Int. Cl. 7).
First use in October 1961; in commerce in October 1961.

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SN 310,600. Welles Products Corporation, Roscoe, Ill. Filed Oct. 25, 1968.

### VARI-ATOR

For Water Aerator Units for Commercial, Municipal, and Industrial Use (Int. Cl. 11).
First use Aug. 30, 1967.

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SN 311,510. Nordberg Manufacturing Company, Milwaukee, Wis. Filed Nov. 6, 1968.

### NORDITE

For Wear Metal Parts for Material Reduction Machines (Int. Cl. 7).
First use Sept. 4, 1968.

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SN 312,915. Sphinxworks Muller & Co. Ltd., Soleure, Switzerland. Filed Nov. 22, 1968.

### SPHINX

Owner of U.S. Reg. Nos. 864,831 and 865,190.
For Machine Gears and Pinions (Int. Cl. 7).
First use January 1931; in commerce January 1931.

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SN 314,250. Oneida Ltd., Oneida, N.Y. Filed Dec. 11, 1968.

### MICHELANGELO

"Michelangelo" is not the name of a particular living individual.
For Flatware Made of Non-Precious Metal (Int. Cl. 8).
First use Nov. 26, 1968.

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SN 315,250. Jet-X Corporation, Denver, Colo., assignee of PDR Manufacturing Corporation, Denver, Colo. Filed Dec. 26, 1968.

### MACH II

For Pressure Spray Washer Attachment for a Hose (Int. Cl. 7).
First use Aug. 31, 1967.

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SN 315,470. Cabot Corporation, Boston, Mass. Filed Dec. 31, 1968.

### ULTRATORQUE

For Speed Reducing Gears Employed in Heavy Industrial Machinery (Int. Cl. 7).
First use Dec. 18, 1968.

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SN 316,239. Prater Pulverizer Company, Chicago, Ill. Filed Jan. 9, 1969.

### BLUE STREAK

For Apparatus for Handling Bulk Materials—Namely, Feeders, Mixers, Crushers, Conveyors, Grinders, Elevator Legs, and Hoists (Int. Cl. 7).
First use at least as early as Feb. 3, 1926.

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SN 316,874. Sola Basic Industries, Inc., Milwaukee, Wis. Filed Jan. 17, 1969.

### HYEN

For Endothermic Gas Generators (Int. Cl. 7).
First use Sept. 8, 1967.

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SN 320,012. Alto Corporation, York, Pa. Filed Feb. 25, 1969.

### ROLL-OVER

For Apparatus for Folding and Stacking Hamburger and Hot Dog Rolls (Int. Cl. 7).
First use Mar. 21, 1965.

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SN 323,678. The Cleveland Twist Drill Company, Cleveland, Ohio. Filed Apr. 4, 1969.

### CLEVELAND

Owner of Reg. Nos. 137,973, 865,290, and others.
For Metal-Cutting Tools—Namely, Single- and Double-Ended End Mills, Shell Mills, and Holders, Arbors, Adapters and Parts Therefor (Int. Cl. 7).
First use September 1893.

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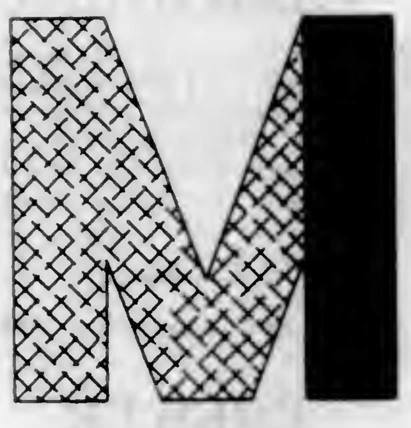
SN 323,834. Morbark Industries, Inc., Winn, Mich. Filed Apr. 7, 1969.



The drawing is lined for the color orange, but no claim is made to color as a feature of the mark.
For Forest Product Machines—Namely, Debarkers Including Pulpwood Debarkers, Scrag and Studmill Debarkers, Veneer Mill Debarkers, Particleboard Debarkers, Excelsior Mill Debarkers, Portable Log Debarkers, Stationary Log Debarkers; Post and Pole Peelers, Chippers, Chip Screens, Combination Chipping and Chip Screening Systems, Chip Mills, Log, Post and Pole Conveyors, Bark Conveyors, Live Decks, Log Loaders, Cutter Heads, Chipper Teeth, and Components Thereof (Int. Cl. 7).
First use Nov. 15, 1968.

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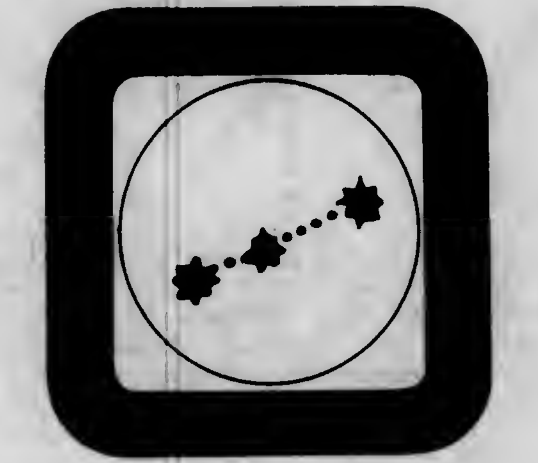
SN 324,084. Normark Corporation, Minneapolis, Minn. Filed Apr. 9, 1969.

### RAPALA

For Game Preparing Knives (Int. Cl. 8).
First use Aug. 31, 1965.

SN 326,902. Orion Corporation, Grafton, Wis. Filed May 9, 1969.



For Sleeve Bearings and Tilting Pad Journal Bearings (Int. Cl. 7).
First use Feb. 25, 1969.

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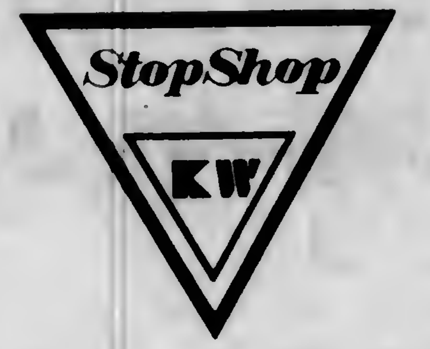
SN 327,855. Cedar Rapids Engineering Company, Cedar Rapids, Iowa. Filed May 21, 1969.



For Brake Service Equipment—Namely, Brake Drum Lathes, Brake Shoe Grinders, Disc Brake Lathes, Mobile Hydraulic Shop Cranes, and Hydraulic Shop Presses (Int. Cl. 7).
First use on or before Feb. 26, 1969.

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SN 328,139. Brown & Sharpe Manufacturing Company, North Kingstown, R.I. Filed May 23, 1969.

### HYDROCUT

For Controlled Machine Tools for Drilling, Tapping, Milling, and Boring (Int. Cl. 7).
First use Feb. 20, 1969.

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## Class 24 — Laundry Appliances and Machines

SN 330,662. G. A. Braun, Inc., Syracuse, N.Y. Filed June 23, 1969.

### NEUTRON

For Institutional Automated Clothes Washing and Extracting Machines (Int. Cl. 7).
First use at least as early as Sept. 1, 1964.

## Class 25 — Locks and Safes

SN 326,537. J. Legge & Company Limited, Willenhall, England. Filed May 6, 1969.

### LEGGE

Owner of British Reg. Nos. 879,051 and 879,052, dated May 5, 1965.
For Locking and Striking Plates, All Being Fittings for Locks and for Latches, Lock Fitting and Lock Furniture, All for Doors and for Cabinets; All the Aforesaid Goods Being Made Wholly or Principally of Metal or of Plastics (Int. Cls. 6 and 20).
First use in 1900; in commerce in 1900.

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## Class 26 — Measuring and Scientific Appliances

SN 275,022. American Camera and Photo Supply Co., Chicago, Ill. Filed June 29, 1967.

### ZOOMAREX

For Lenses, Movie Cameras, and Camera Cases (Int. Cl. 9).
First use on or about Feb. 13, 1967.

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SN 287,352. Divcon International (U.K.) Limited, London, England. Filed Dec. 21, 1967.

### SEACHORE

Priority claimed under Sec. 44(d) on British Reg. No. B915,246, dated Oct. 2, 1967.
For Underwater Equipment, Particularly Diving Chambers (Int. Cl. 9).

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SN 291,243. Berkeley Scientific Laboratories, Inc., Berkeley, Calif., assignee of Berkeley Scientific Laboratories, Berkeley, Calif. Filed Feb. 16, 1968.

### CHEMDATA

For Computers for Processing the Output of Chemical Analyzers Into Digital Form (Int. Cl. 9).
First use July 1967.

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SN 296,011. Endevco Corporation, Pasadena, Calif. Filed Apr. 19, 1968.

### TEMARS

For Digital Recording System for the Automatic Measurement and Recording of Shock Forces, Temperatures, and Other Environmental Conditions Encountered Over a Period of Time (Int. Cl. 9).
First use Oct. 10, 1966.

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SN 303,398. Conforma Laboratories, Inc., Norfolk, Va. Filed July 23, 1968.

### UNI-SEG

For One-Piece, Segment-Type Bifocal Corneal Lens (Int. Cl. 9).
First use May 1, 1968.

SN 305,966. Noyes, Moran & Company, Inc., Downers Grove, Ill. Filed Aug. 26, 1968.

### PERPETUAL MONEY WHEELS

The word "Wheels" is disclaimed separate and apart from the mark as shown.

For Rotatable Related Discs for Figuring What Systematic Savings Will Do for the Saver (Int. Cl. 16).

First use Apr. 17, 1968.

SN 306,551. Compagnie Industrielle des Lasers, Nozay, Monthlery, France. Filed Sept. 4, 1968.

### CILAS

Owner of French Reg. No. 722,245, dated Feb. 21, 1967.

For Electro-Optical Apparatus and Instruments, Such as Lasers and Masers, as Well as Accessories and Parts Thereof (Int. Cl. 9).

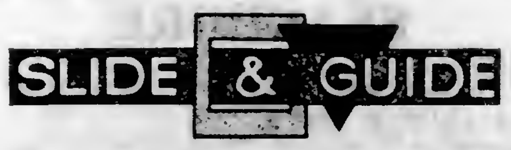
SN 308,064. Kabushiki Kaisha Cosina, Nakano-ku, Tokyo-to, Japan. Filed Sept. 17, 1968.

### COSINA

Owner of Japanese Reg. No. 740,838, dated Apr. 28, 1967.

For Photographic Cameras, Shutters, Photographic Lenses Including Telephotographic Lenses, Wide Angle Lenses, Lenses for Close-Up Photography, Supplemental Lenses, Slide Projectors, Movie Cameras, Lenses for Movie Cameras, Projectors, Screens, Editors and Splicers, Lens Hoods, Lens Caps, Filters, Self-Timers, Exposure Meters, Range-Finders, Releases, and Flash Guns (Int. Cl. 9).

SN 308,536. Society for Visual Education, Inc., Chicago, Ill. Filed Sept. 30, 1968.



The stippling shown in the drawing is used for shading purposes only. No claim is made to the word "Slide" apart from the mark as shown.

For Plastic Transparency Supports and Information Cards (Int. Cl. 9).

First use on or before Aug. 19, 1968.

SN 312,743. Azoplate Corporation, Murray Hill, N.J. Filed Nov. 21, 1968.

### PAPS

For Transparent or Translucent Films Having Positive Working Color-Containing Light Sensitive Coatings Thereon, for Use in the Graphic Arts (Int. Cl. 1).

First use Nov. 12, 1968.

SN 314,887. International Computer Products, Inc., Dallas, Tex. Filed Dec. 19, 1968.

### DIGICORDER

For Digital, Magnetic Tape Operated Read-Write Equipment for Operating Computers (Int. Cl. 9).

First use at least as early as Apr. 1, 1968.

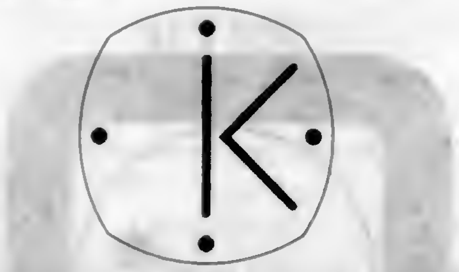
SN 315,128. University Laboratories, Incorporated, Berkeley, Calif. Filed Dec. 23, 1968.

### LASERTRON

For Gas Lasers and Parts Thereof (Int. Cl. 9).

First use October 1966.

SN 317,423. Kallestad Laboratories, Inc., Minneapolis, Minn. Filed Jan. 24, 1969.



For Instruments for Use in Analyzing Biochemical Materials—Namely, Immunodiffusion Cameras, Electrophoresis Cells, Diffusion Chambers, Template Blocks for Agarose Covered Slides, Leveling Tables and Illuminated Viewers for Slides; and Accessories for Said Instruments (Int. Cl. 9).

First use Apr. 17, 1968.

SN 317,875. Secol Limited, Thetford, Norfolk, England. Filed Jan. 29, 1969.

### TECS

Priority claimed under Sec. 44(d) on British Reg. No. 930,304, dated Sept. 3, 1968.

For Mountings and Frames for Photographic Transparencies (Int. Cl. 9).

First use Sept. 3, 1968; in commerce Dec. 3, 1968.

SN 318,262. Mayes Brothers Tool Mfg. Co., Johnson City, Tenn. Filed Feb. 3, 1969.

### UNI-VIAL

For Carpenters' Levels (Int. Cl. 9).

First use Sept. 20, 1968.

SN 321,463. Broadway-Hale Stores, Inc., Los Angeles, Calif. Filed Mar. 12, 1969.

### CENTURA

For Binoculars (Int. Cl. 9).

First use Nov. 11, 1968.

SN 324,636. Squires-Sanders, Inc., Atlanta, Ga. Filed Apr. 16, 1969.

### ILP 1400

For Computing Machines Designed To Fit the Particular Needs of the Sausage Industry for Ease of Handling Data Input of Ingredients With Varying Analyses (Int. Cl. 9).

First use June 1, 1968.

SN 327,831. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed May 21, 1969.

### DRI-LITH

For Photo-Offset Printing Plates (Int. Cl. 7).

First use Apr. 18, 1969.

SN 328,776. Olin Mathieson Chemical Corporation, New York, N.Y. Filed June 2, 1969.

### *WINCHESTER*

Owner of Reg. Nos. 142,353, 845,956, and others.

For Eye Glasses for Shooting (Int. Cl. 9).

First use on about Sept. 1, 1967.

SN 329,042. Institute of Gas Technology, Chicago, Ill. Filed June 4, 1969.

### ODOTRON

For Device for Detecting Gas Leaks (Int. Cl. 9).

First use Nov. 27, 1968.

SN 329,215. Atlas Supply Company, Springfield, N.J. Filed June 5, 1969.

### ATLAS

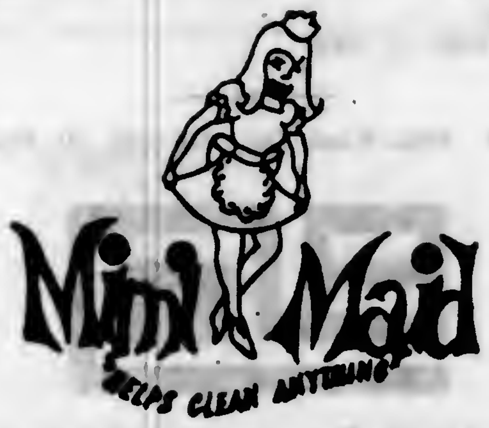
Owner of Reg. Nos. 506,651, 836,704, and others.

For Wheel Alignment Equipment—Namely, Automotive Wheel Aligners and Parts Thereof (Int. Cl. 9).

First use July 29, 1968.

## Class 29 — Brooms, Brushes, and Dusters

SN 316,460. Claire Nika, d.b.a. Pyramid Products, Green Brook, N.J. Filed Jan. 13, 1969.



The words "Helps Clean Anything" are disclaimed separate and apart from the mark as shown.

For Hand-Held Sponge Mop for Doing Dishes (Int. Cl. 21).

First use Dec. 30, 1968.

SN 321,245. The Manufacturers Brush Company, Cleveland, Ohio. Filed Mar. 10, 1969.

### ADVANCE

For Wire, Fiber, Hair, Bristle, and Synthetic Filament Brushes (Int. Cl. 21).

First use in or about March 1913.

## Class 31 — Filters and Refrigerators

SN 306,010. Zero Cold, Inc., Anaheim, Calif. Filed Aug. 26, 1968.

### BEV-WALL

For Refrigerated Beverage Display Cases (Int. Cl. 11).

First use Apr. 22, 1968.

SN 319,365. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.

### SPERRY RAND

Owner of Reg. Nos. 861,348, 873,379, and others.

For Oil Filters (Int. Cl. 11).

First use Aug. 16, 1967.

## Class 32 — Furniture and Upholstery

SN 305,398. Chesley Industries, Inc., Farmington, Mich. Filed Aug. 19, 1968.

### TOMORROW'S IDEAS . . . TODAY

For Display Devices for Storing and Displaying Retail Merchandise—Namely, Portable and Stationary Fixtures for Hanging and Laying Out Merchandise (Int. Cl. 20).

First use May 1962.

SN 308,764. Basketville, Inc., Putney, Vt. Filed Oct. 3, 1968.

### BASKETVILLE

For Sewing Stands, Smoking Stands, Hassock Barrels, Tables Made of Wood, Shoe Shine Stands With Foot Support for Home Use Made Principally of Wood, Footstools and Benches, and Children's Rockers (Int. Cl. 20).

First use during 1960 on sewing stands and smoking stands.

SN 310,842. Quentin H. McDonald, d.b.a. The Bobby-Mac Company, Scarsdale, N.Y. Filed Oct. 30, 1968.

### BOBBY-MAC

For Juvenile Furniture—Namely, Chairs, Tables, Car Seats, and Combinations Thereof (Int. Cl. 20).

First use Dec. 23, 1966.

SN 317,780. United States Tabulating Binder Corp., Niles, Ill. Filed Jan. 28, 1969.

### TAB-REF

For Book Racks (Int. Cl. 20).

First use Jan. 4, 1969.

SN 317,785. Wilson Jones Company, Niles, Ill. Filed Jan. 28, 1969.

### DATA-REF

For Book Racks (Int. Cl. 20).

First use Oct. 24, 1968.

SN 321,782. D'Altrui Industries, Elizabeth, N.J. Filed Mar. 14, 1969.

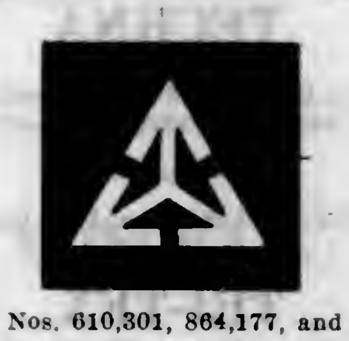
### DI

For Storage Racks (Int. Cl. 20).

First use on or about May 15, 1968.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 297,603. Sanders Associates, Inc., Nashua, N.H. Filed May 7, 1968.

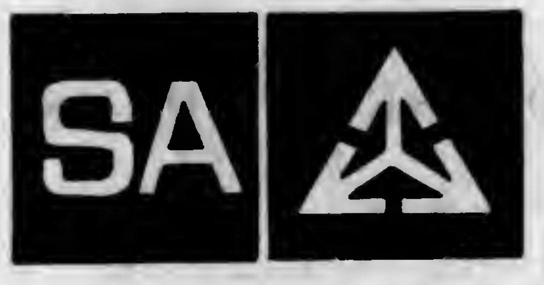


Owner of Reg. Nos. 610,301, 864,177, and others.

For Miniature Electric Blowers Which Provide a Discharge of Air To Cool Heat Emanating Mechanisms (Int. Cl. 11).

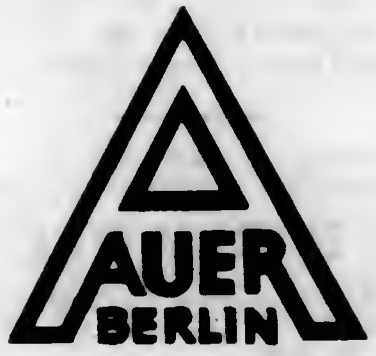
First use Dec. 8, 1967.

SN 300,969. Sanders Associates, Inc., Nashua, N.H. Filed June 20, 1968.



Owner of Reg. No. 610,301 and 621,611.
For Miniature Electric Blowers Which Provide a Discharge of Air to Cool Heat Emanating Mechanisms (Int. Cl. 11).
First use Dec. 8, 1967.

SN 310,556. Auergesellschaft G.m.b.H., Berlin, Germany. Filed Oct. 25, 1968.



The word "Berlin" is disclaimed apart from the mark as shown. Owner of U.S. Reg. Nos. 622,299 and 638,760.
For Incandescent Mantles (Int. Cl. 11).
First use at least as early as 1953; in commerce January 1968.

SN 317,996. Emil Gehring, Wausau, Wis. Filed Jan. 31, 1969.

**FLIP-FLOP**

For Portable Barbeque Grills (Int. Cl. 11).
First use on or about Mar. 1, 1960.

SN 323,398. Western Gold and Platinum Company, Belmont, Calif. Filed Apr. 1, 1969.

**TICUNI**

For Brazing Alloys (Int. Cl. 6).
First use Oct. 10, 1967.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 310,770. Ford Motor Company, Dearborn, Mich. Filed Oct. 29, 1968.

**TECHNA**

For Automotive Hoses and Drive Belts (Int. Cl. 12).
First use on or about Sept. 18, 1968.

SN 316,483. Tri-Point Industries, Inc., Comack, N.Y. Filed Jan. 13, 1969.

**TRI-TEX**

For Laminated Conveyor Belt Material (Int. Cl. 7).
First use Sept. 26, 1968.

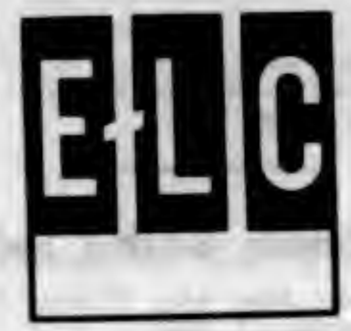
## Class 36 — Musical Instruments and Supplies

SN 318,997. Tape Services, Inc., Moorestown, N.J. Filed Feb. 12, 1969.

**COMBO**

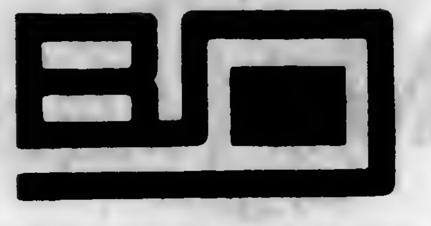
For Multipurpose Cartridges Having Magnetic Recording Tape for Testing Stereo Recording Systems (Int. Cl. 9).
First use Sept. 30, 1968.

SN 323,996. Electro-Learner Corporation, Bethesda, Md. Filed Apr. 9, 1969.



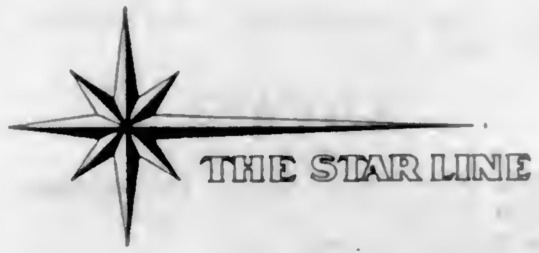
For Organs, Featuring Electrical Instructional Displays (Int. Cl. 15).
First use Sept. 17, 1968.

SN 329,054. Belle Wood, Inc., Bellwood, Ill. Filed June 4, 1969.



For Tape Cartridge Players and Parts Thereof (Int. Cl. 9).
First use Jan. 31, 1969.

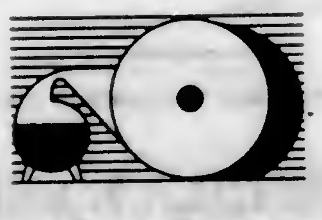
SN 329,652. Capitol Records, Inc., Los Angeles, Calif. Filed June 11, 1969.



For Phonograph Records (Int. Cl. 9).
First use Apr. 26, 1960.

## Class 37 — Paper and Stationery

SN 278,286. Combined Paper Mills, Inc., Chicago, Ill. Filed Aug. 15, 1967.



For Offset Printing Papers, Rotogravure Printing Papers, Letterpress Printing Papers, and Specialty Papers (Int. Cl. 16).
First use May 3, 1966.

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SN 288,344. Professional Tape Co., Inc., Riverside, Ill. Filed Jan. 8, 1968.

**TIME FLO-METER**

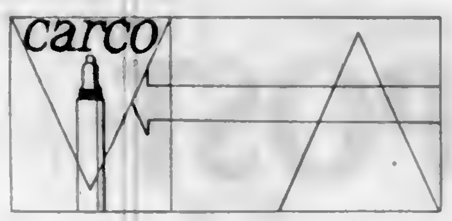
For Partially Printed Recording Labels Intended for Use Mainly in Connection With the Parenteral Administration of Liquids (Int. Cl. 16).
First use on or about Nov. 27, 1967.

SN 301,043. Coniker Enterprises, Inc., Chicago, Ill. Filed June 21, 1968.

**RIGHT NOW BINDERS**

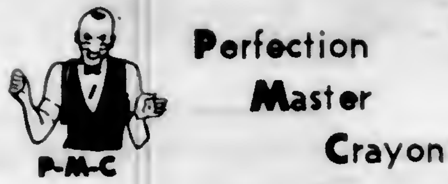
The word "Binders" is disclaimed apart from the mark as shown.
For Binders, Either Looseleaf or Bound (Int. Cl. 16).
First use Jan. 30, 1968.

SN 301,911. Carco, Incorporated, Detroit, Mich. Filed July 3, 1968.



Applicant disclaims the representation of a marking pen separate and apart from the mark as shown. Owner of Reg. No. 429,849.
For Brush Pens—Namely, Felt Tipped, Nylon Tipped, and Bristle Tipped Marking Devices (Int. Cl. 16).
First use before Apr. 1, 1965.

SN 305,447. J. Hershkowitz, Inc., Brooklyn, N.Y. Filed Aug. 19, 1968.



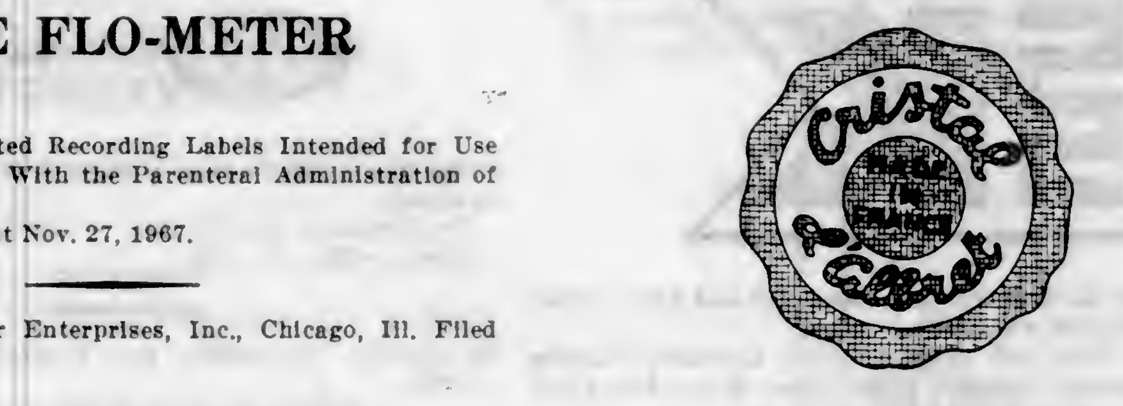
Applicant disclaims any rights in the use of the word "Crayons" separate and apart from use in the mark. Owner of Reg. Nos. 301,928 and 603,011.
For Tailors' Marking Crayons (Int. Cl. 16).
First use Dec. 2, 1932.

SN 310,788. N. L. & E. W. Kruysman, Inc., New York, N.Y. Filed Oct. 29, 1968.

**KYREX**

For Gusset Reinforcing Fabric for Paper Envelopes (Int. Cl. 16).
First use Oct. 18, 1968.

SN 312,028. Cristalleries et Verreries de Vianne, S.a.r.l., Boulogne-sur-Seine, France. Filed Nov. 13, 1968.



The word "Cristal" and the wording "Made in France" are disclaimed separate and apart from the mark as shown. The drawing is lined for the color gold. Owner of Reg. No. 866,341.
For Paper Weights (Int. Cl. 16).
First use Sept. 15, 1965; in commerce Sept. 15, 1965.

SN 317,210. Commercial Ball Pen Co., Inc., New York, N.Y. Filed Jan. 22, 1969.

**ATHENA**

For Writing and Drawing Instruments—Namely, Pens, Markers, and Stylographs (Int. Cl. 16).
First use December 1965.

SN 317,356. Masonite Corporation, Chicago, Ill. Filed Jan. 23, 1969.

**Clipmaster**

For Artistic Board or Clip Board Upon Which Paper Is Affixed to for Writing (Int. Cl. 16).
First use Aug. 2, 1968.

SN 319,130. Chemolene Industries, Inc., Bordentown, N.J. Filed Feb. 14, 1969.

**TV**

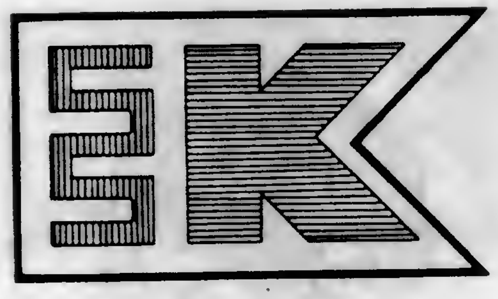
For Writing Instruments—Namely, Marking Pens and Felt-Tip Markers (Int. Cl. 16).
First use Jan. 23, 1969.

SN 322,623. Reliure Industrielle S.T.D., Argenteuil, Val d'Oise, France. Filed Mar. 24, 1969.

**MONORAIL**

Owner of French Reg. No. 468,759, dated Dec. 9, 1957 (Seine); Natl. Inst. No. 99,500.
For Book Bindings (Int. Cl. 16).

SN 327,913. S. S. Kresge Company, Detroit, Mich. Filed May 21, 1969.



The drawing is lined for the colors red and blue. Owner of Reg. Nos. 857,061, 864,429, and others.

For Utility Pens and Ballpoint Pens, Luncheon Napkins and Facial Tissues, Notebook Filler Paper, Toilet Tissue and Paper Towels, and Photo Albums (Int. Cl. 16).

First use on or prior to Apr. 24, 1967, on toilet tissue and paper towels.

## Class 38 — Prints and Publications

SN 254,146. Jack Gasnick, d.b.a. Cross at the Green Enterprises, New York, N.Y. Filed Sept. 9, 1966.

A CROSS AT THE GREEN

For Stickers or Similar Tags or Labels Containing Traffic Safety Slogans (Int. Cl. 16).

First use Aug. 30, 1957.

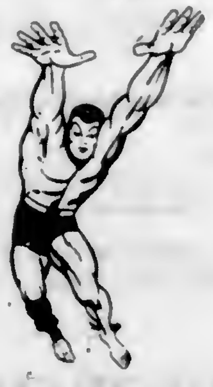
SN 274,503. Clinton F. Egerton, Miramar Park, Fla. Filed June 22, 1967.

T
I
R
M

For Printed Sheet in the Form of a Graphic Index Which Is Used To Classify Technical Information (Int. Cl. 16).

First use June 17, 1966.

SN 278,116. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, New York, N.Y. Filed Aug. 11, 1967.



The facial feature which forms a part of the mark does not represent any human being and is merely fanciful.

For Publications, Particularly Comic Magazines (Int. Cl. 16).

First use on or about Feb. 16, 1967; August 1966 in a different form.

SN 296,924. Preston Publications, Inc., Atlanta, Ga. Filed Apr. 30, 1968.

Outdoor WORLD

The map outline design is disclaimed apart from the mark as shown.

For Magazine (Int. Cl. 16).

First use Mar. 29, 1968.

SN 300,051. Availability, Inc., Rockford, Ill. Filed June 10, 1968.

availLETTER

For Publication in the Form of a Newsletter, Distributed From Time to Time to Franchised Employment and Personnel Agencies (Int. Cl. 16).

First use July 1964.

SN 300,513. American Chemical Society, Washington, D.C. Filed June 17, 1968.

POLYMER SCIENCE & TECHNOLOGY
POST·P

Applicant disclaims the terminology "Polymer Science & Technology" apart from the mark as shown.

For Journal (Int. Cl. 16).

First use Feb. 13, 1967.

SN 309,923. Xerox Corporation, Rochester, N.Y. Filed Oct. 17, 1968.

IMAGINE AND WRITE

For Series of Practice Books in Workbook Form for Students on the Elementary School Level (Int. Cl. 16).

First use Aug. 15, 1967.

SN 310,619. Abbott Laboratories, d.b.a. Ross Laboratories, North Chicago, Ill. Filed Oct. 28, 1968.

PEDIATRIC WORLD

For Periodical Newsletter Relating to Pediatric Medical Practice (Int. Cl. 16).

First use Jan. 1, 1963.

SN 311,217. Abbott Laboratories, d.b.a. Ross Laboratories, North Chicago, Ill. Filed Nov. 4, 1968.

PEDIATRIC CURRENTS

For Periodical Newsletter Relating to Pediatric Medical Practice (Int. Cl. 16).

First use January 1959.

SN 311,803. Abbott Laboratories, d.b.a. Ross Laboratories, North Chicago, Ill. Filed Nov. 12, 1968.

HOSPITAL
ADMINISTRATION
CURRENTS

For Periodical Newsletter Relating to Hospital Administration (Int. Cl. 16).

First use January 1968.

SN 317,558. Haire Publishing Corporation, New York, N.Y. Filed Jan. 27, 1969.

NOTIONS

Owner of Reg. No. 505,984.

For Trade Magazine Produced Monthly (Int. Cl. 16).

First use Jan. 10, 1969.

SN 318,899. Fieldcrest Mills, Inc., Eden, N.C. Filed Feb. 11, 1969.

THE MILL WHISTLE

For Employees' Magazine (Int. Cl. 16).

First use Oct. 8, 1956.

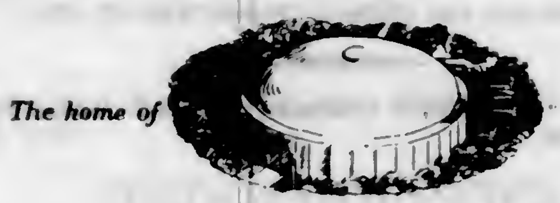
SN 321,586. Weight Watchers International, Inc., Great Neck, N.Y. Filed Apr. 11, 1969.

WW

For Food Recipes and Menus; Periodically Issued Bulletins Containing Recipes (Int. Cl. 16).

First use June 1, 1963.

SN 324,472. The Lancaster Enterprise Corporation, Lancaster, N.Y. Filed Apr. 14, 1969.



For Weekly Newspaper (Int. Cl. 16).

First use on or about Feb. 20, 1969.

SN 324,549. Visual Wholesale Supply Co., Los Angeles, Calif. Filed Apr. 14, 1969.

QUICKTYPE

For Transfer Sheet Having Letters, Numbers, and Other Symbols (Int. Cl. 16).

First use Apr. 1, 1969.

SN 329,105. Mathograms, Inc., Woodbury, Conn. Filed June 4, 1969.

MATHOGRAMS

For Printed Set of Cards for Teaching Mathematics and Number Concepts (Int. Cl. 16).

First use Nov. 1, 1968.

## Class 39 — Clothing

SN 279,323. The Stuart McGuire Company, Inc., Salem, Va., by change of name from Ortho-Vent Shoe Company, Inc., d.b.a. Andree Hosiery Company, Salem, Va. Filed Aug. 29, 1967.

Andrée

For Ladies' Hosiery (Int. Cl. 25).

First use Feb. 27, 1967.

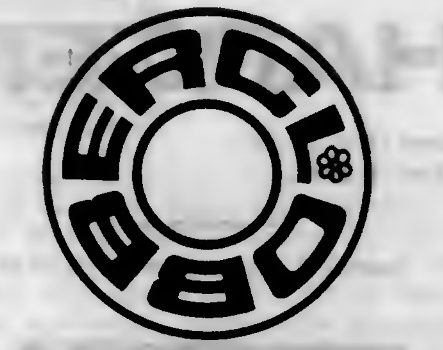
SN 291,480. Atkins Brothers (Regent Street Hinckley) Limited, Hinckley, England. Filed Feb. 20, 1968.

High Cross

Owner of British Reg. No. B723,721, dated Nov. 12, 1953.

For Underwear for Men and Boys, Hose and Socks for Men, Jackets and Coats (Int. Cl. 25).

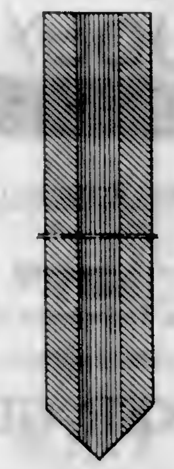
SN 305,034. Clobber (Blackheath) Limited, London, England. Filed Aug. 13, 1968.



For Ladies' Dresses, Coats, Suits, Shirts, Skirts, Lingerie, and Hosiery (Int. Cl. 25).

First use Sept. 29, 1965; in commerce Apr. 1, 1966.

SN 307,019. Henry Friedricks & Co., Inc., New York, N.Y. Filed Sept. 10, 1968.



The drawing is lined for green and red, but no claim is made as to color.

For Ladies' and Misses' Coats (Int. Cl. 25).

First use Sept. 5, 1967.

SN 308,038. Serbin, Inc., Miami, Fla. Filed Sept. 23, 1968.

**DRY DOCK**

**by Serbin**

Owner of Reg. Nos. 532,951, 595,986, and 606,130.
For Men's and Women's All-Weather Coats, Raincoats, and Jackets (Int. Cl. 25).
First use Aug. 16, 1968.

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SN 308,093. Clif-Tex Manufacturing Co., Inc., Cleburne, Tex. Filed Sept. 24, 1968.

**ZERO-ZONE**

For Insulated One-Piece Outer Suits (Int. Cl. 25).
First use Mar. 20, 1967.

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SN 309,973. Lady Oak Hill Sportswear, Inc., New York, N.Y. Filed Oct. 18, 1968.

**OAK-HILL**

For Ladies' Blouses (Int. Cl. 25).
First use Sept. 6, 1968.

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SN 310,674. A-1 Kotzin Co., Los Angeles, Calif. Filed Oct. 28, 1968.

**CHARGERS**

For Trousers (Int. Cl. 25).
First use Oct. 1, 1963.

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SN 314,163. Joanna Z. Stern, New York, N.Y. Filed Dec. 11, 1968.

**❀ Just ❀ JOEY**

For Dresses, Blouses and Jumpers (Int. Cl. 25).
First use Dec. 2, 1968.

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SN 315,823. Aris Gloves, Incorporated, New York, N.Y. Filed Dec. 24, 1968.

**ISOTONER GLOVES**

Applicant disclaims the term "Gloves" apart from the mark as shown.
For Ladies' and Misses' Gloves (Int. Cl. 25).
First use July 15, 1968.

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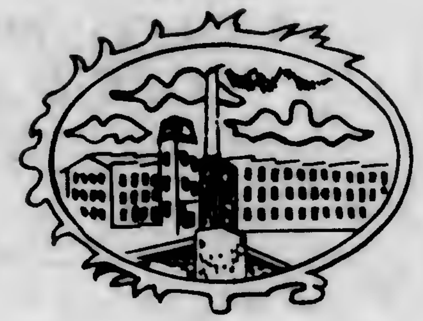
SN 316,620. City Pants Works, Los Angeles, Calif. Filed Jan. 15, 1969.

**City Pants Works**



No claim is made to "Pants Works," apart from the mark as shown, without waiving any common law rights therein.
For Women's Wearing Apparel—Namely, Shorts, Shirts, Midriffs, Blouses, Jumpsuits, Pants, Slacks, and Tops (Int. Cl. 25).
First use Sept. 30, 1968.

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SN 317,443. Essila Oy, Kuopio, Finland. Filed Jan. 24, 1969.

*finnbird*

Owner of Finnish Reg. No. 51,941, dated Mar. 5, 1968.
For Women's and Misses' Overcoats, Dresses, Blouses, Skirts, Slacks; and Women's and Men's Sportswear—Namely, Men's and Women's Ski Wear, Women's Long Trousers, Women's Suits of Clothes With Trousers and/or Skirts, and Women's Overcoats and Outdoor Dresses (Int. Cl. 25).

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SN 321,070. Palm Beach Company, Portland, Maine. Filed Mar. 7, 1969.

**BLAZER III**

Applicant disclaims the word "Blazer" apart from the mark as shown. Owner of Reg. No. 837,193.
For Men's and Boys' Suits, Slacks, Coats, Trousers and Sport Coats (Int. Cl. 25).
First use July 25, 1968.

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SN 321,870. Arthur R. Lewis, Inc., New York, N.Y. Filed Mar. 17, 1969.

**HEAT WAVE**

For Women's Swimwear and Sportswear—Namely, Beach Jackets, Shifts, Skirts, Pants and Pants Tops (Int. Cl. 25).
First use Feb. 1, 1969.

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SN 322,606. Jacques R. Milberg, New York, N.Y. Filed Mar. 24, 1969.

**TRI PAK Panties**

Applicant disclaims exclusive rights in the word "Panties" apart from the mark as shown. Owner of Reg. No. 761,769.
For Panties (Int. Cl. 25).
First use July 24, 1962.

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SN 322,858. Glamorise Foundations, Inc., New York, N.Y. Filed Mar. 26, 1969.

**ELINOR ROSE**

The name "Elinor Rose" is fanciful.
For Foundation Garments (Int. Cl. 25).
First use Mar. 3, 1969.

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SN 323,455. The Hillsbrook Company, Inc., Cartersville, Ga. Filed Apr. 2, 1969.

**BETTY DUKE**

The name "Betty Duke" is fanciful.
For Wearing Apparel for Women—Namely, Panties (Int. Cl. 25).
First use Mar. 15, 1966.

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SN 324,483. Pakula and Company, Chicago, Ill. Filed Apr. 14, 1969.

**"Belly Bands"**

For Ornamental Belts (Int. Cl. 25).
First use on or about Mar. 21, 1969.

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SN 324,706. Elco Shoe Co., Inc., Brooklyn, N.Y. Filed Apr. 16, 1969.

**HEDGEHOPPER'S**

For Shoes (Int. Cl. 25).
First use May 1, 1968.

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SN 324,938. Sero of New Haven, Inc., New Haven, Conn. Filed Apr. 18, 1969.

**SCOUNDREL**

Owner of Reg. No. 767,973.
For Men's Shirts (Int. Cl. 25).
First use Feb. 20, 1969.

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SN 325,565. Atlas Underwear Corporation, Piqua, Ohio. Filed Apr. 25, 1969.

**SKI SKINS CHRISTY**

For Men's, Women's, and Children's Sox (Int. Cl. 25).
First use Mar. 28, 1969.

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SN 329,205. The United States Shoe Corporation, Cincinnati, Ohio. Filed June 5, 1969.

**Fiamma**

For Ladies' Shoes (Int. Cl. 25).
First use at least as early as May 8, 1969.

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SN 329,671. The United States Shoe Corporation, Cincinnati, Ohio. Filed June 11, 1969.

**Fabulaire**

For Ladies' Shoes (Int. Cl. 25).
First use at least as early as June 2, 1969.

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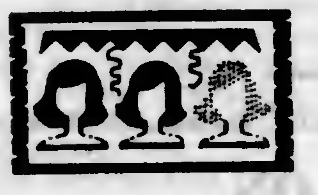
## Class 40 — Fancy Goods, Furnishings, and Notions

SN 301,840. Hair Fair, Inc., Miami Beach, Fla. Filed July 2, 1968.

**Hair Fair Wigs**



Applicant disclaims the words "Wigs" and "Hair," and the representation of the wigs, apart from the mark as shown. The stippling is used to indicate shading for the purpose of indicating blonde hair.
For Wigs and Hair Goods of All Kinds—Namely, Hair Pieces, Wiglets, Eye Lashes, Moustaches, Toupees, and Side Burns Made of Natural and Artificial Hair (Int. Cl. 26).
First use on or before Nov. 1, 1965.

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SN 319,352. Paragon Hair Goods, Ltd., New York, N.Y. Filed Feb. 17, 1969.

**SCARLETT O'HARA**

"Scarlett O'Hara" is a fictional character appearing in a book called "Gone With the Wind" written by Margaret Mitchell.
For Wigs (Int. Cl. 26).
First use Feb. 1, 1968.

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## Class 41 — Canes, Parasols, and Umbrellas

SN 304,821. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Aug. 9, 1968.

**SONY**

Owner of Reg. Nos. 705,902, 801,885, and others.
For Umbrellas (Int. Cl. 18).
First use July 20, 1967; in commerce July 20, 1967.

## Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 313,800. Asten-Hill Mfg. Company, Philadelphia, Pa. Filed Dec. 6, 1968.

**THERMESH**

For Dryer Felts and Fabrics for Paper Machines and Sold Only to the Paper-Making Industry (Int. Cl. 7).
First use Nov. 27, 1968.

SN 320,795. Clark-Schwebel Fiber Glass Corporation, New York, N.Y. Filed Mar. 5, 1969.

**NUBBIN**

For Textile Fabrics in the Piece Incorporating Synthetic and Glass Fiber Novelty Yarns (Int. Cl. 24).
First use on or about Nov. 15, 1967.

SN 324,200. Joanna Western Mills Company, Chicago, Ill. Filed Apr. 10, 1969.

**HYDEL**

For Upholstery Fabric (Int. Cl. 24).
First use Feb. 26, 1969.

SN 329,265. Perfect Fit Industries, Inc., New York, N.Y. Filed June 5, 1969.

**DAWSON SPRINGS**

For Rugs, Bedspreads, Mattress Covers, Mattress Pads, Sheets, Pillow Cases, and Blanket Covers (Int. Cls. 24 and 27).
First use Jan. 10, 1969.

SN 329,276. Sears, Roebuck and Co., Chicago, Ill. Filed June 5, 1969.

**DRYLON**

For Bath Towels, Hand Towels, and Washcloths (Int. Cl. 24).
First use on or about Mar. 24, 1969.

SN 329,418. John C. Whitaker, Jr., Raleigh, N.C. Filed June 9, 1969.

**HALLMARK**

For Carpets and Carpeting (Int. Cl. 27).
First use Mar. 29, 1969.

## Class 43—Thread and Yarn

SN 309,533. American Associated Companies, Inc., Atlanta, Ga. Filed Oct. 14, 1968.

**TARZAN**

For Mop Yarn (Int. Cl. 23).
First use Feb. 1, 1940.

SN 317,822. Columbia-Minerva Corporation, New York, N.Y. Filed Jan. 29, 1969.

**HAZE**

For Hand-Knitting Yarn (Int. Cl. 23).
First use Jan. 13, 1969.

## Class 44—Dental, Medical, and Surgical Appliances

SN 315,927. Jintan Terumo Co., Ltd., Shibuya-ku, Tokyo, Japan. Filed Jan. 6, 1969.

*Venoject*

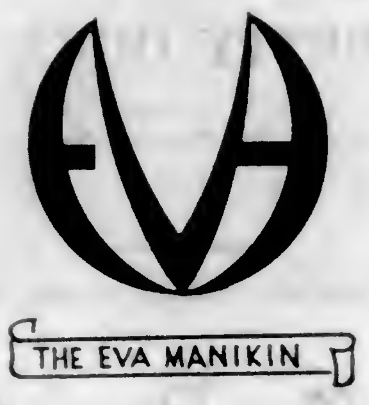
For Vacuum Blood Collectors, i.e., Blood Collecting Needles (Int. Cl. 10).
First use Mar. 10, 1968; in commerce Mar. 10, 1968.

SN 316,321. John Gordon Macdonald, London, England. Filed Jan. 10, 1969.

**KUSOK**

Owner of British Reg. No. B850,507, dated June 18, 1963.
For Medicated Insoles (Int. Cl. 5).

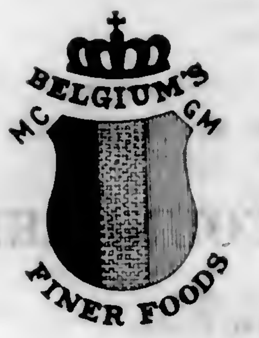
SN 319,438. Depex N.V., De Bilt, Netherlands. Filed Feb. 18, 1969.



Applicant disclaims the terms "The" and "Manikin" separate and apart from the mark as shown.
For Manikins for Use in Training Medical Personnel (Int. Cl. 10).
First use Sept. 16, 1968; in commerce Oct. 11, 1968.

## Class 46—Foods and Ingredients of Foods

SN 256,521. Belgium's Finer Food A.S.B.L., Brussels, Belgium. Filed Oct. 17, 1966. COLLECTIVE MARK.



Priority claimed under Sec. 44(d) on Belgian Reg. No. 321, dated June 13, 1966. Applicant disclaims the following apart from its use in connection with the mark: "Belgium's Finer Foods," "MC" and "GM." The drawing is lined for the colors yellow and red.
For Food Products—Namely, Fresh, Canned and Bottled Fruits and Vegetables, Biscuits, Chocolates, Puddings in Powdered and Liquid Form; Baked Goods, Namely, Cookies and Wafers; Vegetable Preserves, Soups, Jams, Jellies, and Marmalades (Int. Cls. 29, 30, and 31).

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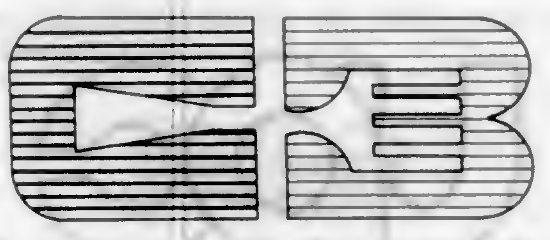
SN 291,362. Curtice-Burns, Incorporated, Rochester, N.Y. Filed Feb. 19, 1968.



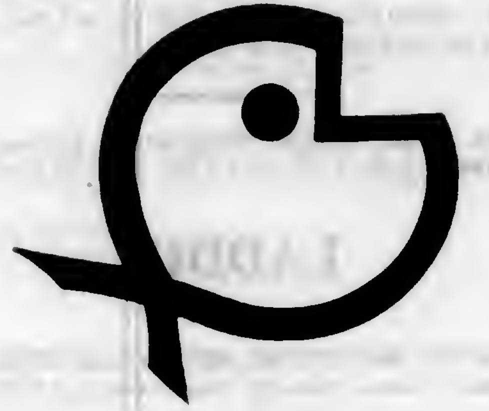
The drawing is lined for a dark blue "C" and a light blue "B," but no claim is made to the color.
For Canned, Bottled, and Frozen Vegetables, Fruits, and Vegetable Juices (Int. Cls. 29 and 32).
First use Dec. 14, 1967.

SN 305,124. General Foods Corporation, White Plains, N.Y. Filed Aug. 14, 1968.

**OVEN•FRY**

For Seasoned Coating Mix (Int. Cl. 30).
First use Apr. 16, 1968.

SN 308,930. Sternco Industries, Inc., Harrison, N.J. Filed Oct. 4, 1968.



For Aquarium Fish Food (Int. Cl. 31).
First use June 1, 1966.

SN 311,034. The Greyhound Corporation, Chicago, Ill. Filed Oct. 31, 1968.

**GREYHOUND**

Owner of Reg. Nos. 541,197, 839,755, and others.
For Candy (Int. Cl. 30).
First use in or about June 1959.

SN 311,359. Diversified Products and Chemicals of Africa (Proprietary) Limited, Johannesburg, Transvaal, Republic of South Africa. Filed Nov. 5, 1968.

**CHOC-O-SLIM**

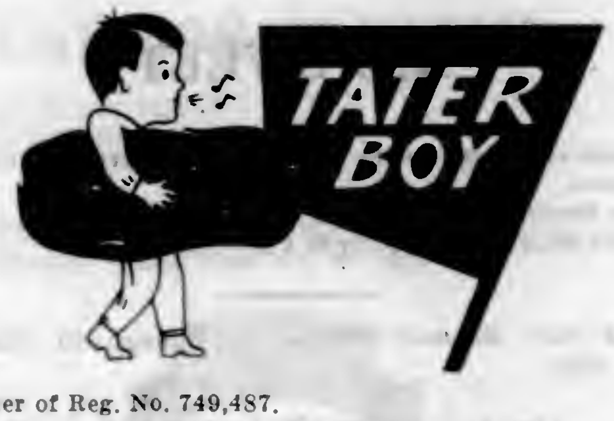
For Dietetic Chocolate Bar for Use in Weight Control (Int. Cl. 5).
First use July 15, 1968; in commerce July 15, 1968.

SN 312,462. I. J. Grass Noodle Co., Inc., Chicago, Ill. Filed Nov. 18, 1968.

**BEEF RINGO**

Applicant disclaims the word "Beef" apart from the mark as shown.
For Soup Mixture Containing Macaroni (Int. Cl. 29).
First use Oct. 23, 1968.

SN 313,975. Rogers Walla Walla, Inc., Walla Walla, Wash. Filed Dec. 9, 1968.



Owner of Reg. No. 749,487.
For Frozen French Fried Potatoes (Int. Cl. 29).
First use Oct. 1, 1959.

SN 315,570. Kellogg Company, Battle Creek, Mich. Filed Jan. 2, 1969.

**KOMBOS**

For Cereal Breakfast Food (Int. Cl. 30).
First use Dec. 24, 1968.

SN 315,594. Rialto Foods, Inc., Baltimore, Md. Filed Jan. 2, 1969.

**MAGIC KITCHENS**
**OF AMERICA**

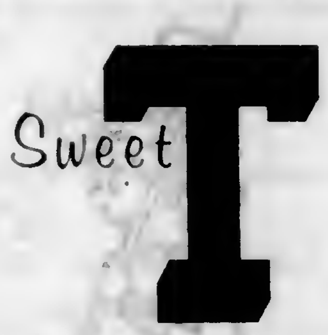
Applicant disclaims exclusive rights to the words "Of America" apart from the mark as shown.
For Fresh, Smoked, and Dried Sausages Made With Beef, Veal, Pork and Mutton; Scrapple; Fresh, Frozen, and Cooked Short Ribs of Beef; Fresh, Frozen and Cooked Meat Patties; Frozen and Pre-Cooked Prepared Meals Consisting of Meats and Vegetables Which Can Be Reconstituted by Heating; Vinegar Pickled Sausage; and Other Prepared Meat Products (Int. Cl. 29).
First use June 1967.

SN 315,969. Wilson Industries, Inc., Prairie Village, Kans. Filed Jan. 6, 1969.

**FAR BEST**

The word "Best" is disclaimed apart from the mark as shown.
For Dog and Cat Food (Int. Cl. 31).
First use Aug. 19, 1968.

SN 315,981. Aderhold Groves, Edinburg, Tex. Filed Jan. 7, 1969.



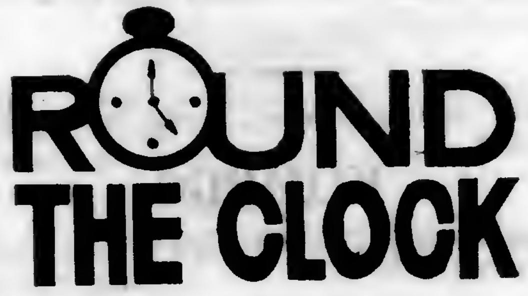
Applicant hereby disclaims exclusive right to use of the word "Sweet," apart from the mark as shown, reserving, however, unto itself all rights which it may possess under the common law.
For Fresh Citrus Fruit—Namely, Oranges, Grapefruit, Tangerines, Tangelos, Limes, and Lemons (Int. Cl. 31).
First use Dec. 5, 1968.

SN 316,013. Lake Delta Citrus Association, Weslaco, Tex. Filed Jan. 7, 1969.

### RIO SWEET

Applicant disclaims the word "Sweet" apart from the mark as shown.
For Fresh Citrus Fruit (Int. Cl. 31).
First use at least as early as Feb. 7, 1968.

SN 317,812. Bahms-D Trading Co., Chicago, Ill. Filed Jan. 29, 1969.



For Frozen Packaged Meats (Int. Cl. 29).
First use Jan. 6, 1969.

SN 317,903. Eskimo Pie Corporation, Richmond, Va. Filed Jan. 30, 1969.

### ESKIMOO

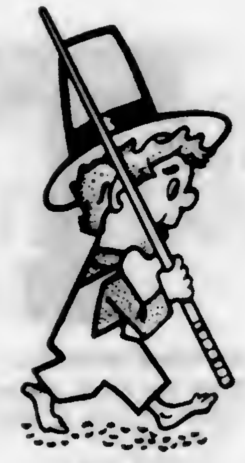
Owner of Reg. Nos. 300,055, 771,989, and others.
For Frozen Confections (Int. Cl. 30).
First use at least as early as Oct. 21, 1968.

SN 317,942. J. H. Filbert, Inc., Baltimore, Md. Filed Jan. 30, 1969.

### LEMONAISE

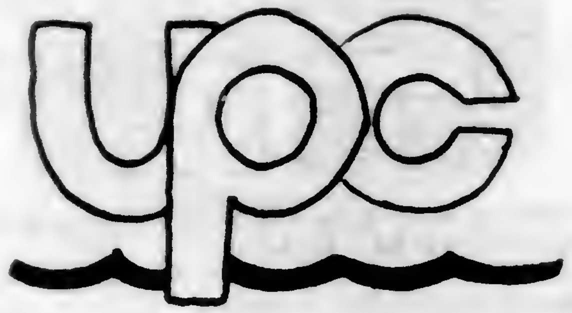
Owner of Reg. No. 378,084.
For Mayonnaise and Salad Dressing (Int. Cl. 29).
First use August 1938.

SN 321,972. Odom Sausage Co., Inc., Madison, Tenn. Filed Mar. 17, 1969.



For Sausage, Ham, Bacon, Souse, and Lard (Int. Cl. 29).
First use Apr. 3, 1957.

SN 322,390. Universal Packers Corporation, Oxnard, Calif. Filed Mar. 21, 1969.



The mark consists of a fanciful display of the letters "UPC."
For Canned Fish (Int. Cl. 29).
First use Jan. 27, 1969.

SN 323,059. Dolly Madison Industries, Inc., Philadelphia, Pa. Filed Mar. 28, 1969.

### GOLDEN BUCK

For Canned and Glass Packed Welsh Rarebit, Baked Ham Glaze, and Indian Pudding (Int. Cls. 29 and 30).
First use at least as early as 1939.

SN 323,587. National Can Corporation, Chicago, Ill. Filed Apr. 3, 1969.

### LADDIE

Owner of Reg. Nos. 239,084, 656,198, and 853,331.
For Animal Foods—Namely, Dog Foods and Cat Foods (Int. Cl. 31).
First use Mar. 21, 1969.

SN 324,633. Beri's, Inc., Jacksonville, Fla. Filed Apr. 16, 1969.

### BERI'S

For Ice Cream (Int. Cl. 30).
First use Apr. 9, 1969.

SN 327,327. The Quaker Oats Company, Chicago, Ill. Filed May 15, 1969.

### CAPTAIN V

For Breakfast Cereal (Int. Cl. 30).
First use Apr. 28, 1969.

SN 328,499. Castle & Cooke, Inc., d.b.a. Dole Company, Honolulu, Hawaii. Filed May 28, 1969.

### MEAT MAN

For Instant Barbecue Marinade (Int. Cl. 30).
First use May 15, 1969.

## Class 47 — Wines

SN 300,491. St. Ursula Weingut und Weinkellerei GmbH, Bingen, Germany. Filed June 14, 1968.

### Goldener
### OKTOBER

The word "Goldener" is disclaimed apart from the mark as shown. The words "Goldener Oktober" mean "golden October" in the English language. Owner of German Reg. No. 809,770, dated Oct. 21, 1964.
For Wines (Int. Cl. 33).

SN 303,271. Champagne Alberto Valdivieso S.A., Santiago, Chile. Filed July 22, 1968.

### VALDIVIESO

For Champagne (Int. Cl. 33).
First use 1929; in commerce on or about June 15, 1942.

SN 303,887. John Bardenheier Wine & Liquor Company, d.b.a. Bardenheier's Wine Cellars, St. Louis, Mo. Filed July 30, 1968.

### OZARK MOUNTAIN

For Wine (Int. Cl. 33).
First use July 16, 1968.

SN 307,550. Bodegas Bilbainas, S.A., Bilbao, Spain. Filed Sept. 17, 1968.

### CEPA DE ORO

The word "Cepa" is disclaimed apart from the mark as shown. The words "Cepa de Oro" may be translated from the Spanish language as "golden vinestock."
For Wine (Int. Cl. 33).
First use July 30, 1928; in commerce Feb. 13, 1945.

SN 323,019. Robin Fils & Cie, Ltd., Batavia, N.Y. Filed Mar. 27, 1969.

### STRAWBERRY DUCK

The word "Strawberry" is disclaimed apart from the mark as shown. Owner of Reg. No. 850,721.
For Sparkling Wine (Int. Cl. 33).
First use Mar. 13, 1969.

## Class 49 — Distilled Alcoholic Liquors

SN 219,013. Charles Rosenblum, d.b.a. Stuart Lloyd Co., New York, N.Y. Filed May 27, 1965.

### TORO ROJO

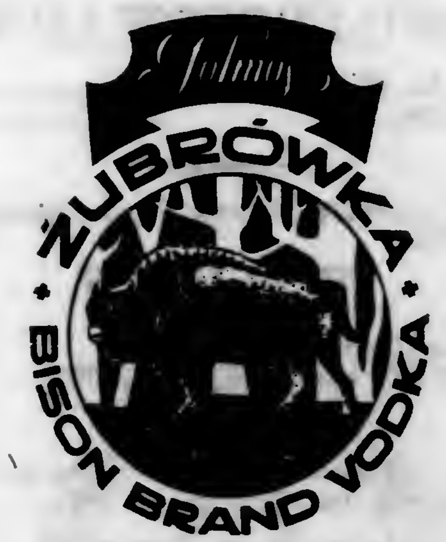
The English translation for "Toro Rojo" is "red bull."
For Rum (Int. Cl. 33).
First use November 1958.

SN 277,897. E. Delatour & Cie., Sosiete Anonime, Christainsted, St. Croix, Virgin Islands. Filed Aug. 9, 1967.

### CARIBBEAN PALMS

For Liqueur (Int. Cl. 33).
First use Dec. 15, 1965.

SN 289,831. Przedsiebiorstwo Handlu Zagranicznego "Agros," Warsaw, Poland. Filed Jan. 29, 1968.



No claim is made to the words "Brand," "Vodka" and "Zubrowka" separately and apart from the mark. Owner of Polish Reg. No. 46,050, dated Oct. 31, 1966; and U.S. Reg. Nos. 757,016, 849,557, and others.
For Vodka (Int. Cl. 33).

SN 300,208. Lopez Hermanos, S.A., Malaga, Spain. Filed June 11, 1968.

### a.w. cava 16

Owner of Spanish Reg. No. 93,704, dated June 12, 1953.
For Brandies and Liqueurs (Int. Cl. 33).

SN 303,402. Double Springs Distillers, Inc., d.b.a. Greenbrier, Bardstown Distillery, Louisville, Ky. Filed July 23, 1968.

### CROWN COACH

Owner of Reg. No. 829,556.
For Whiskey, Gin, and Vodka (Int. Cl. 33).
First use Apr. 25, 1967.

SN 316,893. James Burrough Limited, London, England. Filed Jan. 17, 1969.

### BORZOI

"Borzoi" is a Russian word which means "wolfhound." Owner of Reg. No. 633,759.
For Vodka (Int. Cl. 33).
First use July 6, 1955; in commerce July 6, 1955.

SN 317,328. Esbeco Distilling Corp., d.b.a. Blair House Import Co., Stamford, Conn. Filed Jan. 23, 1969.

### PEERAGE

For Whisky (Int. Cl. 33).
First use Jan. 20, 1969.

SN 319,890. Heublein Inc., d.b.a. Ste. Pierre Smirnoff Fls., Hartford, Conn. Filed Feb. 24, 1969.

### SMIRNOFF

Owner of Reg. Nos. 328,594, 862,846, and others.
For Gin (Int. Cl. 33).
First use Sept. 20, 1968.

SN 320,066. Licoreria Trigo, Inc., San Juan, Puerto Rico. Filed Feb. 25, 1969.

### BOCOY

For Rum (Int. Cl. 33).
First use 1953.

SN 322,422. European Import Corp., Clayton, Mo. Filed Mar. 21, 1969.

### WALDORF

For Whisky (Int. Cl. 33).
First use at least as early as Aug. 27, 1953.

SN 328,195. Old Boone Distillery Co., d.b.a. Ascot Distillery, Ltd., Cincinnati, Ohio. Filed May 23, 1969.

### ASCOT CLUB

For Gin (Int. Cl. 33).
First use July 16, 1959.

## Class 50 — Merchandise Not Otherwise Classified

SN 299,867. Ritchie Manufacturing Company, Conrad, Iowa. Filed June 6, 1968.

### FEEDER FOUNT

For Portable Feed and Water Holding Container for Feeding Farm Animals (Int. Cl. 21).
First use May 14, 1968.

SN 301,436. William Landwehr, Mequon, Wis. Filed June 26, 1968.

### THE ART MACHINE

For Three Dimensional Art Objects Composed of Painting, Sculpture, and the Like (Int. Cl. 20).
First use Jan. 31, 1968.

SN 306,589. P.D.C. Plastics, Inc., New York, N.Y. Filed Sept. 4, 1968.

### WARDROBER

For Plastic Clothes Hangers (Int. Cl. 26).
First use Aug. 20, 1968.

SN 315,348. The Standard Products Company, Cleveland, Ohio. Filed Dec. 30, 1968.

### QUICKEDGE

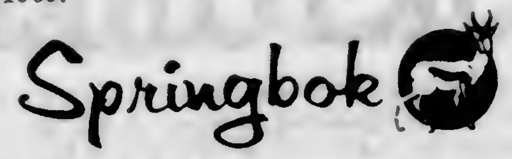
For Plastic Trim Strip for General Use (Int. Cl. 17).
First use at least as early as June 1963.

SN 319,815. Boise Cascade Corporation, Boise, Idaho. Filed Feb. 24, 1969.

### ROSE CHIMNEY

Applicant disclaims the word "Rose" apart from the mark as shown.
For Plant Protection Enclosure (Int. Cl. 16).
First use Nov. 1, 1964.

SN 327,070. Springbok Editions, Inc., New York, N.Y. Filed May 12, 1969.



Owner of Reg. No. 823,328.
For Packaged Precut Pieces, Parts and Equipment for Assembling and Completing Construction of Decorative Articles (Int. Cl. 20).
First use August 1968.

## Class 51 — Cosmetics and Toilet Preparations

SN 307,540. Amole, Incorporated, Dayton, Ohio. Filed Sept. 17, 1968.

### PEACHY DANDY

Applicant disclaims exclusive rights to the use of "Peachy," apart from the mark shown, but does not waive any of its common law rights therein.
For Foam Bath (Int. Cl. 3).
First use at least as early as Aug. 8, 1968.

SN 310,632. Joseph Block, d.b.a. Ipana Pharmaceuticals Co., Bronx, N.Y. Filed Oct. 28, 1968.

### IPANA

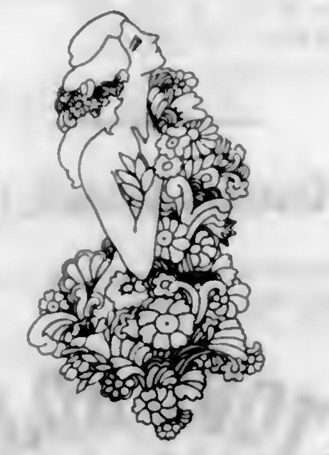
For Toothpaste (Int. Cl. 3).
First use Oct. 1, 1968.
Subj. to Intf. with SN 308,732 and SN 309,784.

SN 310,633. Joseph Block, d.b.a. Ipana Pharmaceuticals Co., Bronx, N.Y. Filed Oct. 28, 1968.

### IPANA PLUS

For Toothpaste (Int. Cl. 3).
First use Oct. 1, 1968.
Subj. to Intf. with SN 308,732 and SN 309,784.

SN 315,147. Calgon Corporation, Pittsburgh, Pa. Filed Dec. 24, 1968.



The female figure shown in the mark is fictitious and not that of any living individual.
For Compositions for Treating Bath Water To Soften and Perfume the Same (Int. Cl. 3).
First use Nov. 22, 1968.

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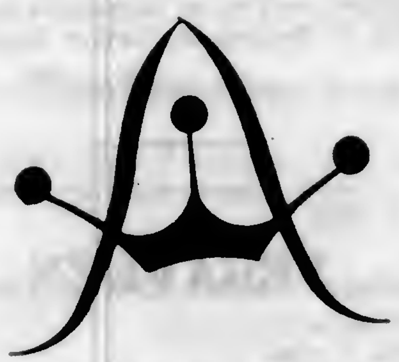
SN 318,424. Hunt Oil Company, Dallas, Tex. Filed Feb. 5, 1969.

### BRENDA

For Bath Oil, Creme Rinse, and Hand and Body Lotion (Int. Cl. 3).
First use July 1, 1966.

SN 319,179. Arthur Matney, d.b.a. Aristocrat Cosmetics Co., Inc., Brooklyn, N.Y. Filed Feb. 14, 1969.



For Cake Eyeliner, Eye Shadow, Lipsticks, Powder Filled Compacts, Foundation Makeup, Blusher and Dusting Powder (Int. Cl. 3).
First use Dec. 16, 1968.

SN 319,512. Societe Maurice Blanchet, Parfums de Luxe, Suresnes, Hauts-de-Seine, France. Filed Feb. 18, 1969.

### TOCADE

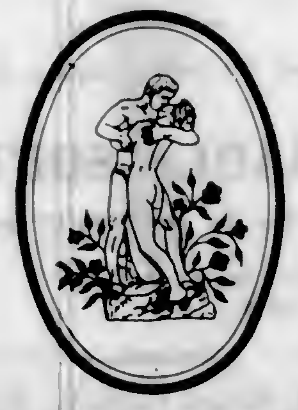
"Tocade" is a French word which means "fad" or "passing fancy." Owner of French Reg. No. 741,268, dated May 15, 1968.
For Perfume, Toilet Water, Cologne; Face, Body and Hand Lotion; Bath Salts, Powder and Rouge (Int. Cl. 3).

SN 320,311. The Gillette Company, Boston, Mass. Filed Feb. 28, 1969.

### NUTS & BOLTS

For Cologne and After Shave and Shower Lotion (Int. Cl. 3).
First use Dec. 5, 1968.

SN 321,022. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. Filed Mar. 7, 1969.



For Perfume, Perfume Oil, Dusting Powder, Perfumed Skin Lotion, Eau de Parfum, and Cologne (Int. Cl. 3).
First use Aug. 14, 1968.

SN 322,382. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 21, 1969.

### TOUGH & TENDER

Owner of Reg. No. 834,882.
For Shave Cream (Int. Cl. 3).
First use Oct. 11, 1966.

SN 323,407. Viviane Woodard Corporation, Panorama City, Calif. Filed Apr. 1, 1969.

### FLEURS ENCHANTEES

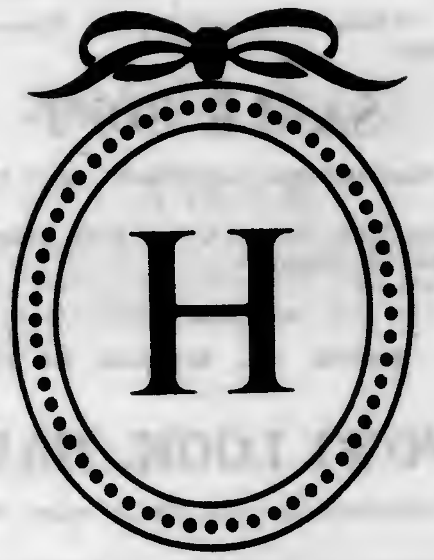
The translation of the mark is "enchanted flowers."
For Fragranced Bath Oil (Int. Cl. 3).
First use Feb. 26, 1969.

SN 323,408. Viviane Woodard Corporation, Panorama City, Calif. Filed Apr. 1, 1969.

### ENCHANTED FLOWERS

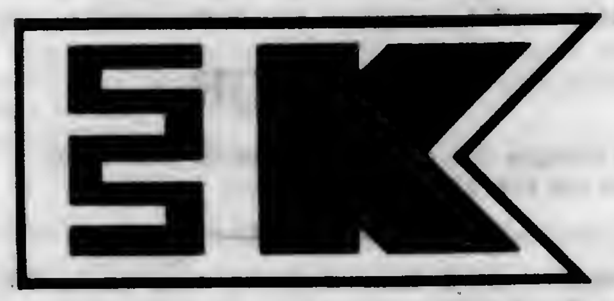
For Fragranced Bath Oil (Int. Cl. 3).
First use Feb. 26, 1969.

SN 323,456. Houbigant, Inc., New York, N.Y. Filed Apr. 2, 1969.



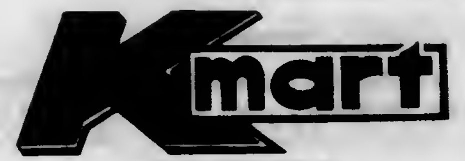
For Perfume, Eau de Cologne, Toilet Water, Bath Oil, Dusting Powder, Perfumed Bubble Bath, Foam Milk Bath, Hand Lotion, Lipstick, Rouge, Face Powder, Talcum Powder, Skin Cream and Lotion, Perfumed Moisture Balm, Perfumed Oil, Skin Sachet, Foundation Cream, Brilliantine, Hair Spray, Hair Dressing, Personal Deodorant, Skin Bronzer, Sun Tan Lotion and Tanning Cream (Int. Cls. 3 and 5).
First use June 21, 1965.

SN 323,571. S. S. Kresge Company, Detroit, Mich. Filed Apr. 3, 1969.



For Hair Conditioners and Suntan Lotion (Int. Cl. 3).
First use on or before Apr. 15, 1968.

SN 323,572. S. S. Kresge Company, Detroit, Mich. Filed Apr. 3, 1969.



Owner of Reg. No. 817,528, and others.
For Hair Conditioners and Suntan Lotion (Int. Cl. 3).
First use on or before Apr. 15, 1968.

SN 323,958. Lever Brothers Company, New York, N.Y. Filed Apr. 8, 1969.

**EVERYTHING YOU NEED WHEN YOU'RE UP CLOSE**

Owner of Reg. No. 818,419, and others.
For Dentifrice (Int. Cl. 3).
First use Mar. 28, 1969.

SN 325,285. Chesebrough-Pond's Inc., New York, N.Y. Filed Apr. 23, 1969.

**BUSY GIRL**

Owner of Reg. No. 863,657.
For Hair Conditioner (Int. Cl. 3).
First use Apr. 10, 1969.

SN 325,419. Whink Products Company, Eldora, Iowa. Filed Apr. 23, 1969.

**SABLE SOFT**

Applicant disclaims the word "Soft" apart from the mark as shown.
For Foaming Bath Oil and Creme Hair Rinse (Int. Cl. 3).
First use Nov. 25, 1968.

SN 325,752. Hair-Nu, Inc., Evanston, Ill. Filed Apr. 28, 1969.

**WOW! LOOK, HAIR**

Applicant disclaims the word "Hair" apart from the mark as shown.
For Preparation for Promoting the Growth of Hair (Int. Cl. 3).
First use Feb. 15, 1969.

SN 325,928. Robert P. Herr, Miami, Fla. Filed Apr. 30, 1969.

**GROMETICS**

For Cologne and After Shave Lotion (Int. Cl. 3).
First use Apr. 1, 1963.

SN 325,929. Robert P. Herr, Miami, Fla. Filed Apr. 30, 1969.

**TOZEUR**

For Cologne and After Shave Lotion (Int. Cl. 3).
First use Feb. 11, 1963.

SN 326,841. Block Drug Company, Inc., Jersey City, N.J. Filed May 9, 1969.

**DENZYME**

For Preparation for Cleaning, Washing and Polishing Natural and Artificial Denture (Int. Cl. 3).
First use on or about Apr. 9, 1969.

SN 327,459. Yorktown Products Corporation, New York, N.Y. Filed May 16, 1969.

**NUFOL**

For Hair Dressing (Int. Cl. 3).
First use at least as early as Dec. 31, 1968.

### Class 52 — Detergents and Soaps

SN 304,229. Franz Kindler, Camp Hill, Pa. Filed Aug. 2, 1968.

K
Q P
Latha-Rich

For Lather Additive Used by Barbers To Enrich the Lather, and as an Aid in Keeping the Lather Machine Clean (Int. Cl. 3).
First use May 15, 1968.

SN 308,602. Cooper Laboratories, Inc., Bedford Hills, N.Y. Filed Oct. 1, 1968.

**SEBAVEEN**

For Hair Shampoo (Int. Cl. 3).
First use Dec. 7, 1964.

SN 315,881. Brunswig Drug Company, Vernon, Calif., by change of name and assignment from Brunswig Drug Company, d.b.a. Kip, Inc., Vernon, Calif. Filed Jan. 6, 1969.

**KIP**

For Medicated Soap for Use With Water on Human Sunburned Skin (Int. Cl. 3).
First use Oct. 29, 1968.

SN 317,091. Paula Payne Products Company, Inc., d.b.a. Paula Payne Products Co., Charlotte, N.C. Filed Jan. 21, 1969.

**CHERRY JUBILEE**

For Hair Shampoo (Int. Cl. 3).
First use Apr. 13, 1966.

SN 317,687. Inner Cities Chemical Products, Inc., Jamaica, N.Y. Filed Jan. 28, 1969.

**SOUL MOUNTAIN**

For Pine Oil Cleaner for Household Use (Int. Cl. 3).
First use Jan. 10, 1969.

SN 323,042. Whink Products Company, Eldora, Iowa. Filed Mar. 27, 1969.

**SABLE SOFT**

Applicant disclaims the word "Soft" apart from the mark as shown.
For Hair Shampoo (Int. Cl. 3).
First use Jan. 2, 1969.

SN 323,573. S. S. Kresge Company, Detroit, Mich. Filed Apr. 3, 1969.

**SSK**

For Hair Shampoo (Int. Cl. 3).
First use on or before Aug. 21, 1967.

SN 323,643. Lever Brothers Company, New York, N.Y. Filed Apr. 4, 1969.

**LYRIL**

Owner of Reg. Nos. 500,305 and 598,888.
For Household Detergent for General Washing and Cleansing (Int. Cl. 3).
First use Mar. 31, 1969.

SN 323,759. Chesebrough-Pond's Inc., New York, N.Y. Filed Apr. 7, 1969.

**PROPHECY**

Owner of Reg. No. 763,251.
For Toilet Soap (Int. Cl. 3).
First use Mar. 28, 1962.

## SERVICE MARKS

### Class 100 — Miscellaneous

SN 274,659. Record Club of America, Inc., York, Pa. Filed June 23, 1967.

RECORD CLUB OF AMERICA

The words "Record Club" are disclaimed apart from the mark as shown.
For Phonograph Record Mail Order Services (Int. Cl. 42).
First use Nov. 1, 1960.

SN 278,051. The Williams Inlan Corporation, Westport, Conn., assignee of Paul Gilmore Williams, Jr., Westport, Conn. Filed Aug. 10, 1967.

**INLAN**

For Advice and Consultation to Top Business Management To Aid Them in Understanding and Solving Business Problems, and Communicating Such Problems and Solutions to Others (Int. Cl. 35).
First use 1966.

SN 285,603. Weight Watchers International, Inc., Forest Hills, N.Y. Filed Nov. 24, 1967.

The mark constitutes a photograph of "Jean Nidetch" the president of applicant corporation. Owner of Reg. No. 845,123.
For Planning, Executing and Supervising Diet Programs by Means of Group Meetings, Courses Relating to Diet and Nutrition, and the Distribution of Literature (Int. Cl. 42).
First use Sept. 17, 1966.

SN 291,220. Gilman Street Pharmacy, Berkeley, Calif. Filed Feb. 6, 1968.

**MR. CASH**

For Preparation and Dispensation of Prescription Drugs (Int. Cl. 42).
First use July 17, 1966.

SN 294,837. Gordon B. Harvey, Pittsford, N.Y. Filed Apr. 3, 1968.

**TRAK-A-PAK**

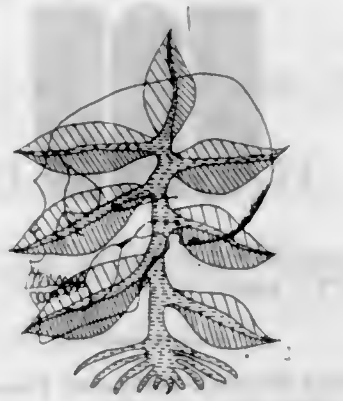
For Registering Luggage, Brief Cases, Coats, Hats, Umbrellas, and Other Articles, and Tracing Lost Articles of This Nature (Int. Cl. 42).
First use Mar. 25, 1968.

SN 302,114. Dresser Industries, Inc., Dallas, Tex., assignee of Pan Geo Atlas Corporation, Houston, Tex. Filed July 5, 1968.

**ATLAS**

For Well Logging and Surveying, Well Perforating, Wire Line Services, Radioactivity Surveys, Temperature Surveys, and Evaluation of Earth Formations (Int. Cl. 42).
First use 1947.

SN 311,809. American Institute of Biological Sciences, Washington, D.C. Filed Nov. 12, 1968.



The mark comprises a stylized tree superimposed over the outline of a human skull. The mark is lined for the colors green and gray, but no claim is made to color.
For Association Services Advancing the Biological, Medical and Agricultural Sciences and Expanding Their Applications to Human Welfare (Int. Cl. 42).
First use Mar. 1, 1968.

SN 312,177. Beckwith Enterprises, Inc., Princeton, N.J. Filed Nov. 14, 1968.

**PLEASURE-TROVE**

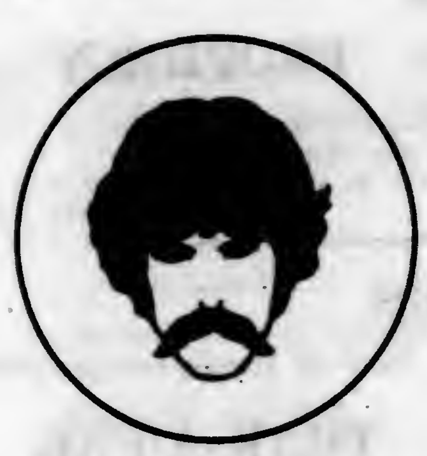
For Book Club Services, Providing a Means of Giving Books to Persons Designated by Members (Int. Cl. 42).
First use Oct. 14, 1968.

SN 313,551. American Snacks, Inc., Chelsea, Mass. Filed Dec. 4, 1968.

**BEEF 'N COUNTER**

Applicant disclaims the word "Beef" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use Nov. 1, 1968.

SN 314,586. Peter Max, New York, N.Y. Filed Dec. 16, 1968.



The mark consists of a portrait of the applicant.
For Preparing Decorative Designs for Posters, Building Interiors, Housewares, and Other Industrial Objects or Products on the Order of Others (Int. Cl. 42).
First use in or about April 1967.

SN 317,660. Three Chefs Corporation, Annandale, Va. Filed Jan. 24, 1969.

## THREE CHEFS

For Restaurant Service (Int. Cl. 42).
First use Sept. 11, 1961.

SN 319,406. Carl D. Wahlquist, Los Angeles, Calif. Filed Feb. 17, 1969.

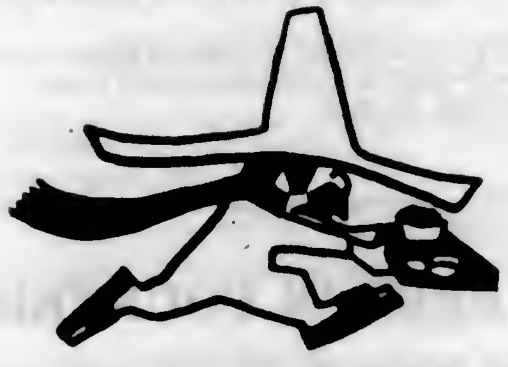
For Architectural Services (Int. Cl. 42).
First use Jan. 17, 1969.

SN 319,607. Iowa Electric Light and Power Company, Cedar Rapids, Iowa. Filed Feb. 19, 1969.

## TOTAL PEOPLE CONDITIONING

For Operation of a Public Utility (Int. Cl. 42).
First use Feb. 17, 1969.

SN 321,631. Casa Taco Corporation, Memphis, Tenn. Filed Mar. 13, 1969.



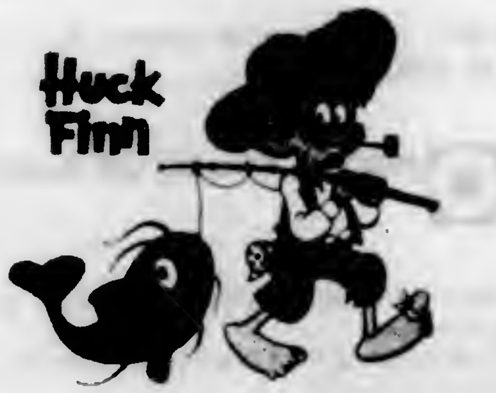
For Restaurant Services (Int. Cl. 42).
First use Feb. 7, 1969.

SN 321,654. Mahalia Jackson's Chicken System, Inc., Memphis, Tenn. Filed Mar. 13, 1969.

## MAHALIA'S

For Restaurant Services (Int. Cl. 42).
First use on or before Nov. 1, 1968.

SN 321,939. Huckleberry Finn Catfish Systems, Inc., Memphis, Tenn. Filed Mar. 17, 1969.



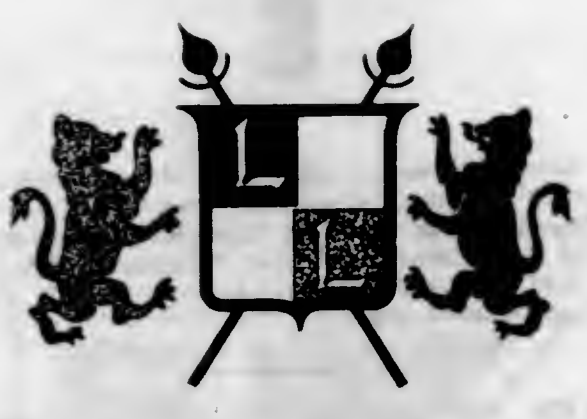
For Restaurant Services (Int. Cl. 42).
First use Mar. 3, 1969.

SN 322,385. London Ltd. of Norfolk, Incorporated, Norfolk, Va. Filed Mar. 21, 1969.

London Ltd.

Owner of Reg. No. 868,508.
For Carry-Out Food Services, Including the Preparation and Vending of Sandwiches, Beverages, and Related Items (Int. Cl. 42).
First use Apr. 1, 1968.

SN 322,386. London Ltd. of Norfolk, Incorporated, Norfolk, Va. Filed Mar. 21, 1969.



The drawing is stippled for purposes of indicating color contrast only and the stippling does not form a part of the mark.
For Carry-Out Food Services, Including the Preparation and Vending of Sandwiches, Beverages, and Related Items (Int. Cl. 42).
First use Apr. 1, 1968.

## Class 101 — Advertising and Business

SN 311,059. Progressive PR, Inc., Washington, D.C. Filed Oct. 31, 1968.

PROGRESSIVE

The mark consists of the word "Progressive" and the fanciful letters "P" and "R."
For Advertising Agency and Public Relations Services (Int. Cl. 35).
First use July 1, 1968.

SN 316,834. Salesworld, Inc., Cleveland, Ohio. Filed Jan. 16, 1969.

## SALESWORLD

For Furnishing Employment and Counselling Services for Sales and Marketing Personnel (Int. Cl. 35).
First use June 5, 1968.

SN 316,835. Salesworld, Inc., Cleveland, Ohio. Filed Jan. 16, 1969.

SALESWORLD

For Furnishing Employment and Counselling Services for Sales and Marketing Personnel (Int. Cl. 35).
First use Dec. 19, 1968.

## Class 102 — Insurance and Financial

SN 297,778. First National Bank of Elkhart County, Elkhart, Ind. Filed May 9, 1968.

the mark of quality bankkeeping.

For Banking Services (Int. Cl. 36).
First use Mar. 2, 1968.

SN 299,826. Banque Canadienne Nationale, Montreal, Quebec, Canada. Filed June 6, 1968.

Owner of Canadian Reg. No. 143,393, dated Jan. 7, 1966.
For Banking Services (Int. Cl. 36).

SN 312,414. The Aetna Casualty and Surety Company, Hartford, Conn. Filed Nov. 18, 1968.

Epic
employee personal insurance counseling

Applicant disclaims any intention to seek protection for its use of the term "Employee Personal Insurance Counseling."
For Underwriting of Group Insurance, With the Added Feature of Providing for Premium Payments by Means of Payroll Deductions (Int. Cl. 36).
First use on or before Oct. 21, 1968.

SN 312,619. Union National Bank of Little Rock, Little Rock, Ark. Filed Nov. 19, 1968.

The mark consists of a fanciful design of the letter "U."
For Banking Services (Int. Cl. 36).
First use June 12, 1966.

SN 320,784. American Express Company, New York, N.Y. Filed Mar. 5, 1969.

## SIGN & SAIL

Owner of Reg. Nos. 801,106 and 817,992.
For Credit Financing of Arranged or Escorted Tours (Int. Cl. 36).
First use Apr. 15, 1968.

SN 321,414. United Virginia Bankshares, Incorporated, Richmond, Va. Filed Mar. 11, 1969.

## UNITED VIRGINIA BANK

Applicant disclaims the word "Bank" apart from the mark as shown, but reserves all common law rights therein.
For Banking Services (Int. Cl. 36).
First use Feb. 19, 1969.

SN 321,415. United Virginia Bankshares, Incorporated, Richmond, Va. Filed Mar. 11, 1969.

United Virginia
Bank

Applicant disclaims the word "Bank" apart from the mark shown, but reserves all common law rights therein.
For Banking Services (Int. Cl. 36).
First use Feb. 19, 1969.

SN 321,804. Insurance Company of North America, Philadelphia, Pa. Filed Mar. 14, 1969.

### TEXPAC

For Underwriting Insurance (Int. Cl. 36).
First use Dec. 30, 1968.

SN 325,649. The Chicago-Tokyo Bank, Chicago, Ill. Filed Apr. 28, 1969.

### GOLDEN BONUS ACCOUNT

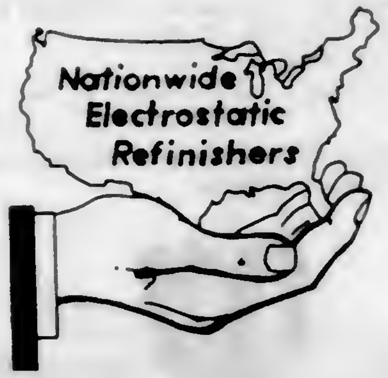
No claim is made to the word "Account" apart from the mark as shown.
For Banking Services—Namely, Saving Account Services (Int. Cl. 36).
First use Mar. 3, 1969.

## Class 103 — Construction and Repair

SN 293,325. Taylor Machine Works, Louisville, Miss. Filed Mar. 14, 1968.

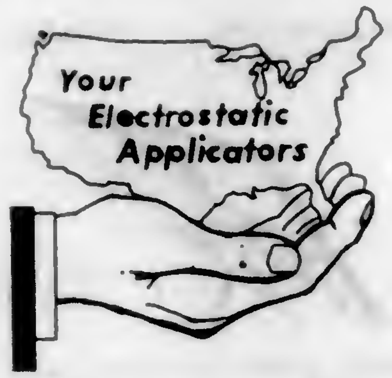
Applicant disclaims the word "Service" apart from the mark as shown.
For Repair and Maintenance Services—Namely, the Repair and Maintenance of Industrial and Construction Vehicles and Machines (Int. Cl. 37).
First use June 1966.

SN 324,127. Electro Painters, Inc., Indianapolis, Ind. Filed Apr. 10, 1969.



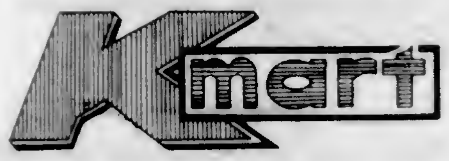
The words "Nationwide Electrostatic Refinishers" are disclaimed apart from the mark as shown, without waiver of any common law rights therein.
For Painting, Refinishing and Retopping Office Furniture and Equipment (Int. Cl. 37).
First use July 1968.

SN 324,128. Electro Painters, Inc., Indianapolis, Ind. Filed Apr. 10, 1969.



The words "Your Electrostatic Applicators" are disclaimed apart from the mark as shown, without waiver of any common law rights therein.
For Painting, Refinishing and Retopping Office Furniture and Equipment (Int. Cl. 37).
First use February 1964.

SN 327,927. S. S. Kresge Company, Detroit, Mich. Filed May 21, 1969.



The drawing is lined for the colors red and blue. Owner of Reg. Nos. 831,214, 845,181, and others.
For Automotive Service Including Repairs, Tire Maintenance, Lubrication, Brake Adjustment, and Muffler Replacement (Int. Cl. 37).
First use on or prior to Feb. 28, 1962.

## Class 104 — Communication

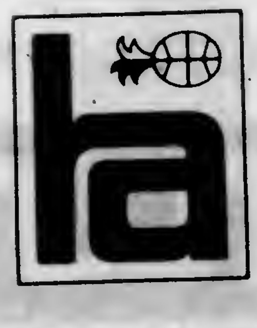
SN 311,796. RCA Corporation, New York, N.Y., by change of name from Radio Corporation of America, New York, N.Y. Filed Nov. 12, 1968.

### THE INTERNATIONAL EXPRESS

Applicant disclaims exclusive rights to the word "International" apart from the mark as shown.
For Electronic Telegraph Services (Int. Cl. 38).
First use at least as early as Oct. 1, 1968.

## Class 105 — Transportation and Storage

SN 289,921. Rogal/Colpitts Travel Corp., Boston, Mass. Filed Jan. 30, 1968.



For Travel Agency Services and Conducting Travel Tours (Int. Cl. 39).
First use Oct. 1, 1967.

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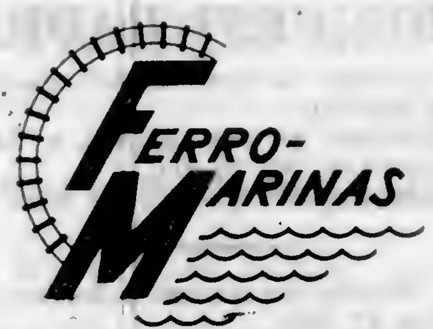
SN 292,214. Marine Trading Limited, San Francisco, Calif. Filed Feb. 29, 1968.



The drawing is lined for the colors blue and yellow.
For Transportation by Seagoing Vessels of Cargo in Container Vans Which, in Turn, May Be Used for Inland Transportation (Int. Cl. 39).
First use June 5, 1966.

SN 307,111. Linden Travel Bureau, Inc., New York, N.Y. Filed Sept. 11, 1968.

### "DIG" ISRAEL

The term "Israel" is disclaimed apart from the mark as shown.
For Conducting Travel Tours Including Historical Areas of Archaeological Excavations (Int. Cl. 39).
First use on or about June 8, 1968.

SN 312,037. Gabriel Olsen Travel International, Inc., d.b.a. GO Travel International, Inc., Beverly Hills, Calif. Filed Nov. 13, 1968.

GOLSEN
GABRIEL Travel International Inc.

Applicant disclaims the terms "Travel International" as used separate and apart from the mark as shown.
For Travel Agency Services (Int. Cl. 39).
First use Oct. 10, 1968.

SN 314,277. Unitours, Los Angeles, Calif. Filed Dec. 11, 1968.

### CLUB UNIVERSE

For Organizing, Arranging and Conducting Travel Tours and Accommodations (Int. Cl. 39).
First use Nov. 3, 1968.

SN 320,256. Execuplane, Inc., White Plains, N.Y. Filed Feb. 27, 1969.

### EXECUPLANE

For Charter and Contract Air Transportation Services (Int. Cl. 39).
First use Aug. 17, 1959.

SN 320,369. Penn Central Company, Philadelpia, Pa. Filed Feb. 28, 1969.

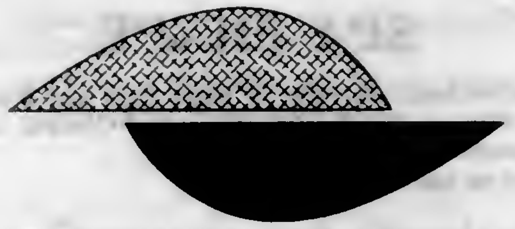
The drawing is lined for the color orange.
For Railroad Passenger Services (Int. Cl. 39).
First use Jan. 16, 1969.

SN 320,370. Penn Central Company, Philadelphia, Pa. Filed Feb. 28, 1969.

### METROLINER

For Railroad Passenger Services (Int. Cl. 39).
First use Jan. 16, 1969.

SN 320,371. Penn Central Company, Philadelphia, Pa. Filed Feb. 28, 1969.



The drawing is lined for the color orange.
For Railroad Passenger Services (Int. Cl. 39).
First use Jan. 16, 1969.

SN 321,617. American Airlines, Inc., New York, N.Y. Filed Mar. 13, 1969.

### AMERICANA

For Transportation of Passengers by Air (Int. Cl. 39).
First use Feb. 19, 1969.

## Class 106 — Material Treatment

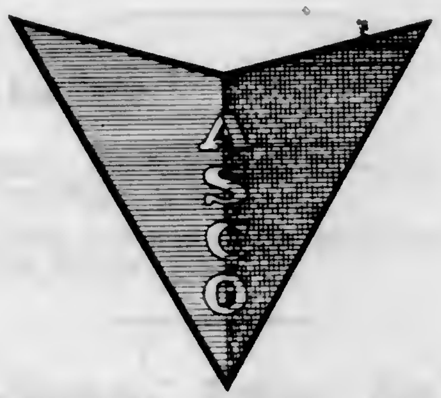
SN 314,669. Metallurgical International, Inc., New Shrewsbury, N.J. Filed Oct. 22, 1968.

### COLDSTREAM

For Pneumatic Impact Reduction of Materials (Int. Cl. 40).
First use Nov. 30, 1965.

## Class 107 — Education and Entertainment

SN 284,438. Aviation Service Company, Inc., Annandale, Va. Filed Nov. 9, 1967.



The drawing is lined for the colors blue and yellow.
For Flight and Ground Training of Persons Outside Applicant's Organization (Int. Cl. 41).
First use Aug. 1, 1967.

SN 307,230. Perma-Slim Plan, Inc., Milwaukee, Wis. Filed Sept. 12, 1968.

**"PERMA-SLIM PLAN"**

The word "Plan" is disclaimed apart from the mark as shown.

For Conducting Courses in Weight Reduction and Control (Int. Cl. 41).

First use Dec. 7, 1967.

SN 309,108. Spa International, Inc., Houston, Tex. Filed Oct. 7, 1968.

**SPA SHAPE**

For Instructional Services in Body Care and Body Health, Including Fitness, Weight Reduction and Control, and Therapeutic Treatment (Int. Cl. 41).

First use on about Mar. 4, 1968.

SN 310,916. Roy H. Park Broadcasting of Virginia, Inc., Richmond, Va. Filed Oct. 30, 1968.

**REQUEST RADIO**

Applicant disclaims the term "Radio" separate and apart from the mark as shown.

For Entertainment Services—Namely, a Radio Program Concerned With Music (Int. Cl. 41).

First use February 1968.

SN 324,979. Bankers Management & Services, Inc., Dallas, Tex. Filed Apr. 21, 1969.

**JON & ROBIN**

"Jon & Robin" are fictitious names.

For Musical Entertainment Services Rendered by a Vocal and Instrumental Group (Int. Cl. 41).

First use Jan. 22, 1966.

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# TRADEMARK REGISTRATIONS ISSUED

## PRINCIPAL REGISTER

### Class 1 — Raw or Partly Prepared Materials

880,265. A SYMBOL. Stull Brothers, Incorporated. SN 269,580. Pub. 8-26-69. Filed 4-19-67.

880,266. GOLD MEDALLION. Calavo Growers of California. SN 283,620. Pub. 8-26-69. Filed 10-30-67.

880,267. OLECON. Dart Industries Inc., by change of name from Rexall Drug and Chemical Company, d.b.a. Fiberfil. SN 289,121. Pub. 8-26-69. Filed 1-18-68.

880,268. IPI AND DESIGN. Isocyanate Products, Inc. SN 292,103. Pub. 8-26-69. Filed 2-28-68.

880,269. PANTHER CREEK. American Colloid Company. SN 298,303. Pub. 8-26-69. Filed 5-16-68.

880,270. PORSILENE. Sweetheart Plastics, Inc. SN 305,574. Pub. 8-26-69. Filed 8-20-68.

880,271. TIDY. Lowe's Inc. SN 309,976. Pub. 8-26-69. Filed 10-18-68.

880,272. TIMBER-TANNED BY DERMATAN. Dermatan Leather Company, Inc. SN 310,072. Pub. 8-26-69. Filed 10-21-68.

880,273. DIOLEN STAR QUALITY WITH THE BLACK ROSE AND DESIGN. Glanzstoff AG. MULTIPLE CLASS (Classes 1, 39, 42, and 43). SN 312,537. Pub. 8-26-69. Filed 11-19-68.

880,274. GE AND DESIGN. General Electric Company. SN 321,792. Pub. 8-26-69. Filed 3-14-69.

### Class 2 — Receptacles

880,275. HOIST-A-HORN AND DESIGN. Capitol Ideas, Inc. SN 314,526. Pub. 8-26-69. Filed 12-16-68.

880,276. CHALLENGER. The Firestone Tire & Rubber Company. SN 316,302. Pub. 8-26-69. Filed 1-10-69.

### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

880,277. SUITCASE DESIGN AND COLORS. Ventura Travelware, Inc. SN 254,002. Pub. 3-26-68. Filed 9-7-66.

880,278. LUGGAGE (DESIGN). Ventura Travelware, Inc. SN 255,663. Pub. 1-23-68. Filed 10-3-66.

880,279. EDDIE BAUER. Eddie Bauer, Inc., assignee of Eddie Bauer. MULTIPLE CLASS (Classes 3, 22, 23, 26, 27, 32, 39, and 42). SN 263,980. Pub. 8-26-69. Filed 2-6-67.

880,280. EDDIE BAUER. Eddie Bauer, Inc., assignee of Eddie Bauer. MULTIPLE CLASS (Classes 3, 22, 23, 26, 27, 32, 39, and 42). SN 263,981. Pub. 8-26-69. Filed 2-6-67.

880,281. NESCO. Nelson Sales Company. MULTIPLE CLASS (Classes 3, 9, and 22). SN 274,449. Pub. 8-26-69. Filed 6-21-67.

880,282. EUROPA. Travel Products, Inc. SN 311,534. Pub. 8-26-69. Filed 11-6-68.

### Class 4 — Abrasives and Polishing Materials

880,283. ULTRAMATIC. Ultramatic Equipment Co. MULTIPLE CLASS (Classes 4 and 23). SN 311,639. Pub. 8-26-69. Filed 11-8-68.

880,284. RAPID GLO SHINE. F.A.M. Corporation. SN 316,633. Pub. 8-26-69. Filed 1-15-69.

### Class 5 — Adhesives

880,285. MISCELLANEOUS DESIGN. Industrial Lubricants Co., Inc. MULTIPLE CLASS (Classes 5, 6, and 15). SN 258,813. Pub. 2-4-69. Filed 11-16-66.

880,286. PERMSTOP. Owens-Corning Fiberglas Corporation. SN 319,185. Pub. 8-26-69. Filed 2-14-69.

880,287. ORANGE CORE. Hudson Pulp & Paper Corp. SN 319,894. Pub. 8-26-69. Filed 2-24-69.

### Class 6 — Chemicals and Chemical Compositions

880,285. (See Class 5 for this trademark.)

880,288. SILOO ENGINKOOL AND DESIGN. Siloo Incorporated. SN 277,074. Pub. 8-26-69. Filed 7-28-67.

880,289. T AND DESIGN. Technicon Corporation. SN 282,146. Pub. 8-26-69. Filed 10-9-67.

880,290. CAR-BAN. Carlisle Chemical Works, Inc. SN 282,356. Pub. 4-29-69. Filed 10-12-67.

880,291. KROMYL. Crown Chemical Corporation. SN 286,002. Pub. 8-26-69. Filed 12-1-67.

880,292. WIRTH AND W DESIGN. Leon J. Wirth, d.b.a. Wirth Co. Inc. MULTIPLE CLASS (Classes 6 and 37). SN 294,986. Pub. 8-26-69. Filed 4-4-68.

880,293. C.T. 86. Harbor Chemical & Engineering Corporation. SN 296,020. Pub. 8-26-69. Filed 4-19-68.

880,294. COPE. W. C. Copeland, Jr. SN 298,659. Pub. 8-26-69. Filed 5-16-68.

880,295. ADJUZYME. Enzyme Development Corporation. SN 301,214. Pub. 8-26-69. Filed 6-24-68.

880,296. INSTACOLOR. Metalphoto Corporation. SN 301,634. Pub. 8-26-69. Filed 6-28-68.

880,297. HYDROFENE. Lester Laboratories, Inc. SN 304,099. Pub. 8-26-69. Filed 8-1-68.

880,298. VESTA-FOAM. W. R. Grace & Co. SN 307,571. Pub. 8-26-69. Filed 9-17-68.

880,299. RAN-GETSU. Gomei Kaisha Kokando. SN 308,104. Pub. 8-26-69. Filed 9-24-68.

880,300. JAPANESE LETTERS. Gomei Kaisha Kokando. SN 308,105. Pub. 8-26-69. Filed 9-24-68.

880,301. CRYOCEPS. Walter Kidde & Company, Inc. SN 308,789. Pub. 8-26-69. Filed 10-3-68.

880,302. MILES M. Miles Laboratories, Inc. MULTIPLE CLASS (Classes 6 and 18). SN 312,369. Pub. 8-26-69. Filed 11-18-68.

### Class 7 — Cordage

880,303. MERIT. American Cotton Yarns, Inc. SN 318,731. Pub. 8-26-69. Filed 2-10-69.

880,304. SAXON. American Cotton Yarns, Inc. SN 318,733. Pub. 8-26-69. Filed 2-10-69.

### Class 8 — Smokers' Articles, Not Including Tobacco Products

880,305. BEECH-NUT. Lorillard Corporation. SN 318,070. Pub. 7-8-69. Filed 1-31-69.

## Class 9 — Explosives, Firearms, Equipments, and Projectiles

880,281. (See Class 3 for this trademark.)

880,306. THE SEA RANCH AND DESIGN. Oceanic Properties, Inc. SN 246,931. Pub. 8–26–69. Filed 5–31–66.

## Class 10 — Fertilizers

880,307. UNIFOL. Union Carbide Inter-America, Inc. SN 305,167. Pub. 2–18–69. Filed 8–14–68.

## Class 11 — Inks and Inking Materials

880,308. TRIANGLE AND TCC (DESIGN). Triangle Conduit & Cable Co., Inc., by merger and change of name from Triangle Conduit & Cable Co. Inc. MULTIPLE CLASS (Classes 11, 13, 14, and 21). SN 301,802. Pub. 8–26–69. Filed 7–2–68.

## Class 12 — Construction Materials

880,309. CHEMSET. Macnaughton-Brooks Limited. SN 237,984. Pub. 5–2–67. Filed 2–3–66.

880,310. REGLIT. Bauglasindustrie A.G. MULTIPLE CLASS (Classes 12 and 33). SN 279,046. Pub. 8–26–69. Filed 8–25–67.

880,311. LUX O WOOD. Borneo Sumatra Trading Company, Inc. SN 306,548. Pub. 6–10–69. Filed 9–4–68.

880,312. K-90. R. L. Kuss & Co., Inc. SN 306,784. Pub. 8–26–69. Filed 9–6–68.

880,313. FOUR CIRCLE DESIGN. Wilson Research Corp. SN 312,714. Pub. 8–26–69. Filed 11–20–68.

880,314. BOATLIFE AND DESIGN. Flo-Paint, Inc. MULTIPLE CLASS (Classes 12 and 16). SN 313,534. Pub. 6–17–69. Filed 12–4–68.

## Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

880,308. (See Class 11 for this trademark.)

880,315. DRYAD. Dryad Metal Works Limited. SN 288,292. Pub. 8–26–69. Filed 1–8–68.

880,316. TWIST-LIFT. Superior Concrete Accessories, Inc. SN 291,787. Pub. 8–26–69. Filed 2–23–68.

880,317. AQUATRONIC. The Hobart Manufacturing Company. SN 296,158. Pub. 8–26–69. Filed 4–22–68.

880,318. HALT. Pike Corporation of America. SN 296,345. Pub. 7–29–69. Filed 4–23–68.

880,319. KGS AND SEA HORSE DESIGN. Keely, Gardner, Swasey, Inc. SN 297,067. Pub. 8–26–69. Filed 5–1–68.

880,320. ROTO SQUIRT SQUARE CIRCLE AND DESIGN. Irrigation Motor & Pump Co. SN 305,138. Pub. 8–26–69. Filed 8–14–68.

880,321. NOVO. Novo Industrial Corporation. SN 305,753. Pub. 8–26–69. Filed 8–22–68.

880,322. VALCON. RCV Corporation, d.b.a. Valcon. SN 305,856. Pub. 8–26–69. Filed 8–23–68.

880,323. NR 660. The Mead Corporation. MULTIPLE CLASS (Classes 13, 23, and 37). SN 306,606. Pub. 8–26–69. Filed 9–5–68.

880,324. WOVACON. Murdock Webbing Company, Inc. SN 311,052. Pub. 8–26–69. Filed 10–31–68.

880,325. WINTER GRIP. Die Mesh Corporation. SN 311,118. Pub. 8–26–69. Filed 11–1–68.

880,326. TOWER (DESIGN). Metalurgica Vive y Casals, S.A. SN 316,752. Pub. 8–26–69. Filed 1–16–69.

## Class 14 — Metals and Metal Castings and Forgings

880,308. (See Class 11 for this trademark.)

880,327. USINOR. Union Siderurgique du Nord et de l'Est de la France "Usinor." SN 303,259. Pub. 8–26–69. Filed 7–10–68.

880,328. CENTURY SERIES. Republic Steel Corporation. SN 304,016. Pub. 8–26–69. Filed 7–31–68.

880,329. EKCO WRAP. American Home Products Corporation. SN 310,729. Pub. 8–26–69. Filed 10–29–68.

## Class 15 — Oils and Greases

880,285. (See Class 5 for this trademark.)

880,330. LECTOR. Standard Oil Company. SN 301,096. Pub. 8–26–69. Filed 6–21–68.

## Class 16 — Protective and Decorative Coatings

880,314. (See Class 12 for this trademark.)

880,331. DELICATELY SCENTED COLAROMA. Precision Paint Corporation. SN 289,714. Pub. 8–26–69. Filed 1–26–68.

880,332. DU PONT IN AN OVAL DESIGN. E. I. du Pont de Nemours and Company. SN 298,816. Pub. 8–26–69. Filed 5–22–68.

880,333. STOBEN. Morchaj Brochsztejn, d.b.a. Michel Brochetain. SN 309,466. Pub. 8–26–69. Filed 10–11–68.

880,334. VITRALON. Pratt & Lambert-Inc. SN 306,590. Pub. 8–26–69. Filed 9–4–68.

880,335. DUROMID. General Electric Company. SN 310,883. Pub. 8–26–69. Filed 10–30–68.

880,336. SENTRY. Sentry Hardware Corporation. SN 318,463. Pub. 8–26–69. Filed 2–5–69.

## Class 17 — Tobacco Products

880,337. MARLBORO COUNTRY. Philip Morris Incorporated. SN 306,688. Pub. 8–26–69. Filed 9–5–68.

880,338. AMERICAN BRANDS AND DESIGN. The American Tobacco Company. SN 308,945. Pub. 8–26–69. Filed 10–7–68.

## Class 18 — Medicines and Pharmaceutical Preparations

880,302. (See Class 6 for this trademark.)

880,339. UNIFINE. Otsuka Chemical Co., Ltd. SN 261,607. Pub. 8–26–69. Filed 12–29–66.

880,340. RALGRO. Commercial Solvents Corporation. SN 297,845. Pub. 4–15–69. Filed 5–10–68.

880,341. EQUIGARD. Shell Oil Company. SN 299,878. Pub. 8–26–69. Filed 6–6–68.

880,342. EKKO. Fleming and Company, Pharmaceuticals. SN 301,221. Pub. 8–26–69. Filed 6–24–68.

880,343. SOLUTABS. McNeil Laboratories, Incorporated. SN 305,560. Pub. 7–8–69. Filed 8–20–68.

## Class 19 — Vehicles

880,344. LAPLIFT. Donald L. Wollard, d.b.a. Don's Marine Center. SN 252,362. Pub. 8–26–69. Filed 8–15–66.

880,345. AL-RITE. The John-Wilmer Company, Inc. SN 292,104. Pub. 8–26–69. Filed 2–28–68.

880,346. MISCELLANEOUS DESIGN. Docutel Corporation. SN 292,191. Pub. 8–26–69. Filed 2–29–68.

880,347. SECURITY IS . . . A BIG BOY MARK 1 TRAILER HITCH. Big Boy Products, Inc. SN 301,815. Pub. 8–26–69. Filed 7–2–68.

880,348. DESIGN OF ROADRUNNER. Peerless Trailer and Truck Service, Inc. SN 302,509. Pub. 8–26–69. Filed 7–11–68.

880,349. "ORANGE KRATE." Schwinn Bicycle Company. SN 302,976. Pub. 8–26–69. Filed 7–17–68.

880,350. K-BOOSE. K-Boose, Inc. SN 307,211. Pub. 8–26–69. Filed 9–12–68.

880,351. UPSIDE DOWN CHARLEY'S MOBILE HOMES AND DESIGN. AAA Enterprises, Inc. SN 312,258. Pub. 8–26–69. Filed 11–15–68.

880,352. WOLVERINE. Couparral Incorporated. SN 315,214. Pub. 8–26–69. Filed 12–26–68.

880,353. HOMELITE. Textron Inc. SN 316,695. Pub. 8–26–69. Filed 1–15–69.

880,354. DPD. DPD Manufacturing Company, Inc. SN 316,773. Pub. 8–26–69. Filed 1–16–69.

## Class 21 — Electrical Apparatus, Machines, and Supplies

880,308. (See Class 11 for this trademark.)

880,355. PLANAR-GRID. Winegard Company. SN 253,391. Pub. 8–26–69. Filed 8–29–66.

880,356. NAMCO. Acme-Cleveland Corporation, by change of name from The National Acme Company. SN 256,957. Pub. 12–24–68. Filed 10–21–66.

880,357. STAFF. Staff & Schwarz GmbH Leuchtenwerke. SN 286,851. Pub. 8–26–69. Filed 12–13–67.

880,358. VEE CAL. Vitramon, Incorporated. SN 287,200. Pub. 8–26–69. Filed 12–18–67.

880,359. GENERAL INSTRUMENT AND DESIGN. General Instrument Corporation. SN 287,357. Pub. 8–26–69. Filed 12–21–67.

880,360. BR AND DESIGN. Babcock Electronics Corporation. SN 287,414. Pub. 8–26–69. Filed 12–22–67.

880,361. COLOR WHIZ. JFD Electronics Corporation, assignee of Stratford Retreat House. SN 288,552. Pub. 5–27–69. Filed 1–10–68.

880,362. TECHNITRON. Technitron, Inc. SN 289,355. Pub. 8–26–69. Filed 1–22–68.

880,363. MODELL'S. Emanuel Modell. SN 293,068. Pub. 8–26–69. Filed 2–28–68.

880,364. ADJUSTA-POISE. Dazor Manufacturing Corp. SN 293,241. Pub. 8–26–69. Filed 3–14–68.

880,365. KAMPLEX. Kamplex A/S. MULTIPLE CLASS (Classes 21, 26, and 44). SN 294,199. Pub. 8–26–69. Filed 3–26–68.

880,366. SPIRACEL. Yardney Electric Corporation. SN 301,292. Pub. 8–26–69. Filed 6–24–68.

880,367. IRONEES. The Ironees Company. MULTIPLE CLASS (Classes 21 and 24). SN 303,865. Pub. 8–26–69. Filed 7–30–68.

880,368. METRO TEL AND DESIGN. Metro-Tel Corp. SN 304,945. Pub. 8–26–69. Filed 8–12–68.

880,369. OLSON AND DESIGN. Olson Electronics, Inc. MULTIPLE CLASS (Classes 21, 26, and 36). SN 316,042. Pub. 8–26–69. Filed 1–8–69.

880,370. UNION CARBIDE AND DESIGN. Union Carbide Corporation. SN 316,150. Pub. 8–26–69. Filed 1–8–69.

## Class 22 — Games, Toys, and Sporting Goods

880,279. (See Class 3 for this trademark.)

880,280. (See Class 3 for this trademark.)

880,281. (See Class 3 for this trademark.)

880,371. PAR TWO CHIP-N-PUTT. Joseph Elesh. SN 293,705. Pub. 8–26–69. Filed 3–20–68.

880,372. POM-POM-PETS. J. W. Spear & Sons Limited. SN 300,130. Pub. 8–26–69. Filed 6–10–68.

880,373. THE DETROITER. Michigan Ladder Company. SN 302,102. Pub. 8–26–69. Filed 7–5–68.

880,374. SLIM-TWIST. Vogt Appliance Corporation, assignee of Vogt Appliance Company. SN 302,547. Pub. 8–26–69. Filed 7–11–68.

880,375. SAND CASTLE. Sea/Shore Products, Inc. SN 308,820. Pub. 8–26–69. Filed 10–3–68.

880,376. MR. CIRCUS SAYS. Mattel, Inc. SN 310,396. Pub. 8–26–69. Filed 10–24–68.

880,377. THUNDERBIRD. Berkley & Company, Inc. SN 310,745. Pub. 8–26–69. Filed 10–29–68.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

880,279. (See Class 3 for this trademark.)

880,280. (See Class 3 for this trademark.)

880,323. (See Class 13 for this trademark.)

880,283. (See Class 4 for this trademark.)

880,378. HYDRO-AIRE. Crane Co. SN 278,878. Pub. 8–26–69. Filed 8–23–67.

880,379. COVEMA. Covema S.R.L. SN 283,984. Pub. 8–26–69. Filed 11–2–67.

880,380. U SELECT IT AND DESIGN. Coan Manufacturing Company, Inc. SN 284,617. Pub. 8–26–69. Filed 11–13–67.

880,381. HYDRO FEED. Roland J. Hawes, Jr., assignee of Supplements, Incorporated. SN 284,947. Pub. 8–26–69. Filed 11–15–67.

880,382. BRIGHT MEADOW. Imperial Knife Associated Companies, Inc. SN 285,425. Pub. 8–26–69. Filed 11–22–67.

880,383. MISCELLANEOUS DESIGN. A-C Industrial Cutlery Corporation. SN 286,311. Pub. 8–26–69. Filed 12–6–67.

880,384. CHIPARVESTOR. Morbark Debarker Company. SN 286,705. Pub. 8–26–69. Filed 12–11–67.

880,385. JAPANESE LETTERS. Eiichi Sugiyama. SN 287,387. Pub. 8–26–69. Filed 12–21–67.

880,386. TABOR. Turbo Machine Company. SN 288,388. Pub. 8–26–69. Filed 1–8–68.

880,387. TWINPACTOR. Virginia International Equipment Corporation. SN 288,729. Pub. 8–26–69. Filed 1–12–68.

880,388. VARI-MESH. Kennedy Van Saun Corporation. SN 289,098. Pub. 8–26–69. Filed 1–18–68.

880,389. WEY WRAP. Weyerhaeuser Company. SN 289,363. Pub. 8–26–69. Filed 1–22–68.

880,390. F 20/20. Lily-Tulip Cup Corporation. SN 289,706. Pub. 8–26–69. Filed 1–26–68.

880,391. NO-MAG. Peterson Machine Tool, Inc. SN 290,106. Pub. 8–26–69. Filed 2–1–68.

880,392. PLAS-TIE-MATIC. Royal Industries, Inc., assignee of Royal Industries. SN 290,192. Pub. 8–26–69. Filed 2–2–68.

880,393. AL-RITE. The John-Wilmer Company, Inc. SN 292,105. Pub. 8–26–69. Filed 2–28–68.

880,394. PACECO PACER. Fruehauf Corporation, assignee of Paceco Inc. SN 292,707. Pub. 8–26–69. Filed 3–7–68.

880,395. MISCELLANEOUS DESIGN. Hydrotrole Limited. SN 300,821. Pub. 8–26–69. Filed 6–19–68.

880,396. WSI. Washington Scientific Industries, Inc. SN 301,986. Pub. 8–26–69. Filed 7–3–68.

880,397. MPB AND DESIGN. MPB Corporation. SN 303,177. Pub. 8–26–69. Filed 7–19–68.

880,398. RECLAM-ATOR. Welles Products Corporation. SN 303,372. Pub. 8–26–69. Filed 7–22–68.

880,399. K AND DESIGN. Kahr Bearing Corporation. SN 304,472. Pub. 8–26–69. Filed 8–6–68.

880,400. CLEANLINE. Rapistan Incorporated. SN 304,814. Pub. 8–26–69. Filed 8–9–68.

880,401. SKY HORSE. American Hoist & Derrick Company. SN 305,709. Pub. 8–26–69. Filed 8–22–68.

880,402. WORLDWIDE AND DESIGN. Lempco Industries, Inc. MULTIPLE CLASS (Classes 23, 31, and 35). SN 314,127. Pub. 8–26–69. Filed 12–11–68.

880,403. LOCKAID. Majestic Lock Co., Inc. SN 319,922. Pub. 8–26–69. Filed 2–24–69.

880,404. CREEL-PAK. Deering Milliken, Inc. SN 321,113. Pub. 8–26–69. Filed 3–10–69.

880,405. CLOISONNE. World Tableware Corporation. SN 321,612. Pub. 8–26–69. Filed 3–13–69.

## Class 24 — Laundry Appliances and Machines

880,367. (See Class 21 for this trademark.)

## Class 25 — Locks and Safes

880,406. TEL-AIR. Lefebure Corporation. SN 295,746. Pub. 8–26–69. Filed 4–16–68.

880,407. SAFE-LOK. Ted Tronson, d.b.a. Safe-Lok Company. SN 307,881. Pub. 6–3–69. Filed 9–20–68.

880,408. STRESS-KEY. Marolf Hygienic Equipment, Inc. SN 313,430. Pub. 8–26–69. Filed 12–2–68.

880,409. RAVEN AND DESIGN. Raven Industries, Inc. SN 319,956. Pub. 8–26–69. Filed 2–24–69.

## Class 26 — Measuring and Scientific Appliances

880,279. (See Class 3 for this trademark.)

880,280. (See Class 3 for this trademark.)

880,365. (See Class 21 for this trademark.)

880,369. (See Class 21 for this trademark.)

880,410. TOMOE AND JAPANESE CHARACTERS. Tomoe Soroban Kabushiki Kaisha. SN 259,277. Pub. 10–29–68. Filed 11–22–66.

880,411. T AND DESIGN. Tridea Electronics Company, d.b.a. Tridea Electronics. SN 262,644. Pub. 8–26–69. Filed 5–28–69.

880,412. IRI. Industrial Reproductions, Inc. MULTIPLE CLASS (Classes 26 and 100). SN 275,979. Pub. 8–26–69. Filed 7–14–67.

880,413. FIBERICON. Bausch & Lomb Incorporated. SN 289,261. Pub. 8–26–69. Filed 1–22–68.

880,414. CUE SLIDE AND DESIGN. Norman L. Chalfin, d.b.a. The Cue-Slide Company. SN 292,314. Pub. 8–26–69. Filed 3–4–68.

880,415. TURBO-PROBE. Flow Technology, Inc. SN 292,686. Pub. 8–26–69. Filed 3–7–68.

880,416. SPECTRASCAN. National Design Center Delaware Inc. SN 294,958. Pub. 8–26–69. Filed 4–4–68.

880,417. GARDEN MASTER. Emil E. Jensen. SN 295,341. Pub. 8–26–69. Filed 4–10–68.

880,418. OMNILECTRIC. George W. Dahl Company, Inc. SN 296,128. Pub. 8–26–69. Filed 4–22–68.

880,419. VACUUM SENTINEL. Dairy Equipment Company. SN 297,041. Pub. 8–26–69. Filed 5–1–68.

880,420. MISCELLANEOUS DESIGN. Regiscope Corporation of America. SN 297,706. Pub. 8–26–69. Filed 5–8–68.

880,421. TC ETC. AND DESIGN. Trigonometrical Computers Co. SN 298,766. Pub. 8–26–69. Filed 5–21–68.

880,422. CYBERMATIC. Johnson Service Company. SN 298,940. Pub. 4–8–69. Filed 5–23–68.

880,423. QUAD. Electronic Associates, Inc. SN 299,009. Pub. 8–26–69. Filed 5–24–68.

880,424. PLA-MATIC. La Belle Industries, Inc. SN 299,682. Pub. 8–26–69. Filed 6–4–68.

880,425. THE LOOK IS YOU. Jack Gasnick, d.b.a. Cross at the Green Enterprises. MULTIPLE CLASS (Classes 26 and 39). SN 300,566. Pub. 8–26–69. Filed 6–17–68.

880,426. CONOMETRY. E. R. Squibb & Sons, Inc. SN 301,094. Pub. 8–26–69. Filed 6–21–68.

880,427. METRAWATT. Metrawatt Aktiengesellschaft. SN 302,101. Pub. 8–26–69. Filed 7–5–68.

880,428. SAFE-T-SCAN AND DESIGN. Security Electronics, Inc. SN 302,572. Pub. 8–26–69. Filed 7–12–68.

880,429. SAFE-T-SCOPE AND DESIGN. Security Electronics, Inc. SN 302,573. Pub. 8–26–69. Filed 7–12–68.

880,430. F (DESIGN). Fluoroware, Inc. SN 302,610. Pub. 8–26–69. Filed 7–12–68.

880,431. TEMETER AND DESIGN. Fritz Bracht Company. SN 302,834. Pub. 8–26–69. Filed 7–16–68.

880,432. TENDEROMETER. Armour and Company. SN 303,587. Pub. 8–26–69. Filed 7–25–68.

880,433. SLIDE-TROL. Stockpole Components Company. SN 306,816. Pub. 8–26–69. Filed 9–6–68.

880,434. FUMOSENS. Impulsphysik G.m.b.H. SN 309,388. Pub. 8–26–69. Filed 10–10–68.

880,435. CALBIOMETER. Calbiochem. SN 310,636. Pub. 8–26–69. Filed 10–28–68.

880,436. WATSLINE MONITOR. News Electronics Corp. SN 315,435. Pub. 8–26–69. Filed 12–30–68.

880,437. DYLASTIR. Will Scientific, Inc. SN 315,457. Pub. 8–26–69. Filed 12–30–68.

880,438. GAF. GAF Corporation. SN 317,995. Pub. 8–26–69. Filed 1–31–69.

880,439. KWIK-CHECK. I-T-E Imperial Corporation. SN 322,523. Pub. 8–26–69. Filed 3–24–69.

## Class 27 — Horological Instruments

880,279. (See Class 3 for this trademark.)

880,280. (See Class 3 for this trademark.)

880,440. MONDAINE AND DESIGN. Mondaine Watch Ltd. SN 309,779. Pub. 8–26–69. Filed 10–16–68.

880,441. TF. Bulova Watch Company, Inc. SN 312,021. Pub. 8–26–69. Filed 11–13–68.

880,442. SIGNAL. Wyler Watch Corporation. SN 312,087. Pub. 8–26–69. Filed 11–13–68.

880,443. FONTRONIC. Fabrique d'Horlogerie de Fontainemelon S.A. SN 312,883. Pub. 8–26–69. Filed 11–22–68.

880,444. BELAIR. Belair Watch Corporation. SN 313,487. Pub. 8–26–69. Filed 12–3–68.

## Class 28 — Jewelry and Precious-Metal Ware

880,445. DIAMOND POINT. Les Bernard, Inc. SN 313,943. Pub. 8–26–69. Filed 12–9–68.

880,446. CLEAN-FLEX. Mates A. Bruner, d.b.a. MAB Jewelers. SN 314,953. Pub. 8–26–69. Filed 12–20–68.

880,447. LAURA. Buccellati Silver, Ltd. SN 316,733. Pub. 8–26–69. Filed 1–16–69.

## Class 29 — Brooms, Brushes, and Dusters

880,448. FLUORIDE GROOM-AID AND DESIGN. Groomaid International Ltd. SN 304,219. Pub. 8–26–69. Filed 8–2–68.

880,449. CIRCULEEN. Industrial Brush Company. SN 315,230. Pub. 8–26–69. Filed 12–26–68.

880,450. DUO-TEX. Chemway Corporation. SN 317,933. Pub. 8–26–69. Filed 1–30–69.

880,451. JOURNEYMAN. Ideal Brushes, Inc. SN 317,954. Pub. 8–26–69. Filed 1–30–69.

## Class 30 — Crockery, Earthenware, and Porcelain

880,452. STARSTONE. Nikko Ceramics, Inc. SN 312,215. Pub. 8–26–69. Filed 11–14–68.

## Class 31 — Filters and Refrigerators

880,402. (See Class 23 for this trademark.)

880,453. SPIC AND SPUN. Metaframe Corporation. SN 292,491. Pub. 8–26–69. Filed 3–5–68.

880,454. TRONIC. Tropical Fish Patterns, Inc. SN 302,657. Pub. 8–26–69. Filed 7–12–68.

880,455. MISCELLANEOUS DESIGN. Kitco Eng. & Mfg. Co., assignee of The K-Way Dispensing Equipment Company. SN 304,797. Pub. 8–26–69. Filed 8–9–68.

880,456. RRR AND DESIGN. Triple R Manufacturing, Inc. SN 305,696. Pub. 8–26–69. Filed 8–21–68.

## Class 32 — Furniture and Upholstery

880,279. (See Class 3 for this trademark.)

880,280. (See Class 3 for this trademark.)

880,457. DENSITE. Tenneco Chemicals, Inc., by merger from General Foam Corporation. SN 289,671. Pub. 8–26–69. Filed 1–26–68.

880,458. PINE-SHIELD. Sprague & Carleton, Inc. SN 295,411. Pub. 8–26–69. Filed 4–11–68.

880,459. "GOLDEN MERCHANDISER." Oscar Mayer & Co. Inc. SN 308,116. Pub. 8–26–69. Filed 9–24–68.

880,460. BILTWELL. Portland Furniture Manufacturing Company. SN 312,495. Pub. 8–26–69. Filed 11–18–68.

880,461. HYSTRON. Ideal Upholstering Co, Ltd. SN 317,787. Pub. 7–15–69. Filed 1–3–69.

880,462. KNIGHT DESIGN. Invincible Metal Furniture Co. SN 319,902. Pub. 8–26–69. Filed 2–24–69.

880,463. RESTLUX. National Mattress Company. SN 320,641. Pub. 8–26–69. Filed 3–3–69.

880,464. CRAFTMASTER. Sleepmaster Products Company, Inc. SN 320,746. Pub. 8–26–69. Filed 3–4–69.

## Class 33 — Glassware

880,310. (See Class 12 for this trademark.)

880,465. FRIJI-TINI. Hobco Marine Systems, Inc. SN 311,036. Pub. 8–26–69. Filed 10–31–68.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

880,466. HEET-MASTER. Aeroil Products Company, Inc. SN 217,516. Pub. 8–26–69. Filed 4–28–65.

880,467. THERMO-BREW. Har-Wil Corporation. SN 292,929. Pub. 8–26–69. Filed 3–11–68.

880,468. BCF. American Standard Inc. SN 296,288. Pub. 8–26–69. Filed 4–23–68.

880,469. CON-RAD. Con-Rad Corporation. SN 300,171. Pub. 8–26–69. Filed 6–11–68.

880,470. SEXAUER. J. A. Sexauer Mfg. Co., Inc. SN 302,345. Pub. 8–26–69. Filed 7–9–68.

880,471. TOMATO-CON. Blaw-Knox Company. SN 304,581. Pub. 8–26–69. Filed 8–7–68.

880,472. P POWERMATIC AND DESIGN. Houdaille Industries, Inc. SN 310,460. Pub. 8–26–69. Filed 10–24–68.

880,473. RDP. Ray Products Company, Inc. SN 316,389. Pub. 8–26–69. Filed 1–13–69.

880,474. (See Class 35 for this trademark.)

880,475. ROOMMATE. International Telephone and Telegraph Corporation. SN 316,867. Pub. 8–26–69. Filed 1–17–69.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

880,402. (See Class 23 for this trademark.)

880,474. SPORT STUD. The Goodyear Tire & Rubber Company. SN 311,485. Pub. 8–26–69. Filed 11–6–68.

880,475. (See Class 34 for this trademark.)

## Class 36 — Musical Instruments and Supplies

880,369. (See Class 21 for this trademark.)

880,476. CRY BABY. Thomas Organ Company. SN 278,138. Pub. 8–26–69. Filed 8–11–67.

880,477. LATIN PERCUSSION AND LP DESIGN. Martin Cohen, d.b.a. Latin Percussion Company. SN 287,723. Pub. 8–26–69. Filed 12–28–67.

880,478. MEMO TRACK. Tapecon Incorporated. SN 291,444. Pub. 8–26–69. Filed 2–19–68.

880,479. GOWER GUITAR EST. 1955 AND DESIGN. James W. Gower, Bobby Max Gower, Finis Harold Gower, and Alma Gower Moore (joint owners), d.b.a. Gower Guitars. SN 308,888. Pub. 8–26–69. Filed 10–4–68.

880,480. TMC AND DESIGN. Transcontinental Music Corporation. SN 309,920. Pub. 8–26–69. Filed 10–17–68.

880,481. GAF. GAF Corporation. SN 317,181. Pub. 8–26–69. Filed 1–22–69.

880,482. GAF AND DESIGN. GAF Corporation. SN 317,183. Pub. 8–26–69. Filed 1–22–69.

## Class 37 — Paper and Stationery

880,292. (See Class 6 for this trademark.)

880,323. (See Class 13 for this trademark.)

880,483. BEST POINT AND DESIGN. Arrbest Pen, Inc. SN 242,877. Pub. 1-17-67. Filed 4-7-66.

880,484. COST-AC. Smutz Systems, Inc. SN 277,718. Pub. 8-26-69. Filed 8-7-67.

880,485. KIMARK. Kimberly-Clark Corporation. SN 300,280. Pub. 8-26-69. Filed 6-12-68.

880,486. ETCETERAS. Mattel, Inc. SN 300,784. Pub. 8-26-69. Filed 6-19-68.

880,487. SLIDE-SHO. W. R. Grace & Co. SN 304,602. Pub. 8-26-69. Filed 8-7-68.

880,488. PATRICIAN LEATHER CRAFTERS, LTD. Keith Clark, Inc. SN 304,736. Pub. 8-26-69. Filed 8-9-68.

880,489. LOWNDINETTE. Lowndes Products, Inc. (Delaware corporation), assignee of Lowndes Products, Inc. (South Carolina corporation). MULTIPLE CLASS (Classes 37 and 42). SN 305,147. Pub. 8-26-69. Filed 8-14-68.

880,490. PAPER POWER. Norcross, Inc. SN 305,668. Pub. 7-15-69. Filed 8-21-68.

880,491. 100% PLUS. Bourges Color Corporation. SN 305,799. Pub. 8-26-69. Filed 8-23-68.

880,492. FORTUNE GLOSS. Consolidated Papers, Inc. SN 311,839. Pub. 8-26-69. Filed 11-12-68.

880,493. AM AND DESIGN. Addressograph-Multigraph Corporation. SN 312,867. Pub. 8-26-69. Filed 11-22-68.

880,494. CHALK GUARD. Listo Pencil Corporation. SN 314,801. Pub. 8-26-69. Filed 12-18-68.

## Class 38 – Prints and Publications

880,495. FLEXSTABIL. Hollmann K.G. SN 222,939. Pub. 8-26-69. Filed 7-8-65.

880,496. GOLF COURSE SUPERINTENDENTS ASSOCIATION OF AMERICA AND DESIGN. The Golf Course Superintendents Association of America. SN 271,935. Pub. 8-26-69. Filed 5-19-67.

880,497. ENERGY WEEK. The Petroleum Engineer Publishing Company. SN 299,482. Pub. 8-19-69. Filed 5-31-68.

880,498. INDUSTRIAL AD-REPLY. Richard H. Mahoney, d.b.a. Industrial Ad-Reply Co. SN 301,082. Pub. 8-26-69. Filed 6-21-68.

880,499. DR. GORGY'S HAPPINESS BOOKS AND DESIGN. Educational Aids Publishing Corp. SN 304,596. Pub. 7-29-69. Filed 8-7-68.

880,500. ASSIMIL. ASSIMIL, Société à Responsabilité Limitee. SN 313,799. Pub. 8-26-69. Filed 12-6-68.

## Class 39 – Clothing

880,273. (See Class 1 for this trademark.)

880,279. (See Class 3 for this trademark.)

880,280. (See Class 3 for this trademark.)

880,425. (See Class 26 for this trademark.)

880,501. EL VALIENTE. Standard Garments, Inc. SN 255,026. Pub. 8-26-69. Filed 9-23-66.

880,502. FINNWEB AND DESIGN. Oy Suomen Vanutehdas-Finnwad Ltd. MULTIPLE CLASS (Classes 39 and 42). SN 299,717. Pub. 8-26-69. Filed 6-5-68.

880,503. SLAZENGER AND DESIGN. Slazengers Limited. SN 300,977. Pub. 8-26-69. Filed 6-20-68.

880,504. LADYCRAFT AND DESIGN. Janet Stewart, d.b.a. Ladycraft. SN 301,313. Pub. 8-26-69. Filed 6-25-68.

880,505. DI MARO. Gelles Neckwear Ltd., Inc. SN 312,451. Pub. 8-26-69. Filed 11-18-68.

880,506. TICKLED PINK. Doe Spun Inc. SN 312,756. Pub. 8-26-69. Filed 11-21-68.

880,507. CLUETT PEABODY CP AND DESIGN. Cluett, Peabody & Co., Inc. SN 314,284. Pub. 8-26-69. Filed 12-12-68.

880,508. PANTINETTE. Penn-Dale Knitting Mills, Inc. SN 314,814. Pub. 7-8-69. Filed 12-18-68.

880,509. ANDHURST. Belk Stores Services, Inc. SN 318,151. Pub. 8-26-69. Filed 2-3-69.

880,510. CARLO GRUBER. Carlo Gruber. SN 318,303. Pub. 8-26-69. Filed 2-4-69.

880,511. FRANSIL. Frank Bodzin, d.b.a. Imsco, and Fransil Hosiery Co. SN 318,625. Pub. 8-26-69. Filed 2-7-69.

880,512. MISS ANITA. Anita Shops Incorporated. SN 318,737. Pub. 8-26-69. Filed 2-10-69.

880,513. PERIPHERY. Nan-Flower Lingerie, Inc. SN 318,882. Pub. 8-26-69. Filed 2-11-69.

880,514. SNEAKER SHIRT. Uniroyal, Inc. SN 321,350. Pub. 8-26-69. Filed 1-27-69.

880,515. TUFFSPUN AND DESIGN. Richard T. Derthick. SN 321,783. Pub. 8-26-69. Filed 3-14-69.

880,516. SOFFSPUN AND DESIGN. Richard T. Derthick. SN 321,784. Pub. 8-26-69. Filed 3-14-69.

880,517. OLDMAINE TROTTERS. Old Town Shoe Company. SN 321,973. Pub. 8-26-69. Filed 3-17-69.

880,518. TAIL'S END AND FEMALE DESIGN. Tail's End, Inc. SN 322,197. Pub. 8-26-69. Filed 3-19-69.

880,519. LUSHEEN. Lucien Piccard Sportswear, Ltd. SN 322,306. Pub. 8-26-69. Filed 3-20-69.

880,520. GLAMOR-FLEX. Glamorise Foundations, Inc. SN 322,859. Pub. 8-26-69. Filed 3-26-69.

880,521. POSE'N PRETTY. Berkley Shirt Co., Inc. SN 323,183. Pub. 8-26-69. Filed 4-1-69.

880,522. FLORENCE FREDERICK ORIGINALS. Frederick Brown. SN 323,184. Pub. 8-26-69. Filed 4-1-69.

880,523. MR MCNEIL AND DESIGN. Interco Incorporated, d.b.a. The Florsheim Shoe Company. SN 323,514. Pub. 8-26-69. Filed 4-3-69.

880,524. ALAD. Eagle Shoe Mfg. Company, Inc. SN 323,911. Pub. 8-26-69. Filed 4-8-69.

880,525. CLACKERGRAM. General Mills, Inc. SN 324,004. Pub. 8-26-69. Filed 4-9-69.

880,526. WISE CLACKS. General Mills, Inc. SN 324,005. Pub. 8-26-69. Filed 4-9-69.

880,527. CLACKERS. General Mills, Inc. SN 324,006. Pub. 8-26-69. Filed 4-9-69.

880,528. FLATTERPANTS. The Lovable Company. SN 324,264. Pub. 8-26-69. Filed 4-11-69.

880,529. YOUNG YUMS. The Lovable Company. SN 324,266. Pub. 8-26-69. Filed 4-11-69.

## Class 40 – Fancy Goods, Furnishings, and Notions

880,530. CRAMLON. K & C Wig Creations, Inc. SN 312,545. Pub. 8-26-69. Filed 11-19-68.

880,531. COLOR MATE AND DESIGN. Finesse Products, Inc. SN 314,149. Pub. 8-26-69. Filed 12-11-68.

880,532. CURL-DOWN. Paragon Hair Goods, Ltd. SN 319,351. Pub. 8-26-69. Filed 2-17-69.

## Class 42 – Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

880,273. (See Class 1 for this trademark.)

880,279. (See Class 3 for this trademark.)

880,280. (See Class 3 for this trademark.)

880,489. (See Class 37 for this trademark.)

880,502. (See Class 39 for this trademark.)

880,533. CAMEO (DESIGN). Hampton Mills, Inc., d.b.a. House of Cameo of Cherrylog, Georgia. SN 298,598. Pub. 8-26-69. Filed 5-20-68.

880,534. HOUSE OF CAMEO. Hampton Mills, Inc., d.b.a. House of Cameo of Cherrylog, Georgia. SN 298,599. Pub. 8-26-69. Filed 5-20-68.

880,535. SYNTEL. Ludlow Corporation. SN 302,629. Pub. 3-25-69. Filed 7-12-68.

880,536. NUREL-S. Standard Oil Company, SN 313,792. Pub. 6-24-69. Filed 12-6-68.

880,537. WHITE HOUSE COLLECTION. United Merchants and Manufacturers, Inc. SN 320,882. Pub. 8-26-69. Filed 3-5-69.

880,538. SOFTCEL. Johnson & Johnson, d.b.a. Cel-Fibe. SN 321,657. Pub. 8-26-69. Filed 3-13-69.

880,539. BEACON AND B DESIGN. Beacon Manufacturing Company. SN 322,400. Pub. 8-26-69. Filed 3-21-69.

880,540. SHEER MIST. Indian Head Inc. SN 323,297. Pub. 8-26-69. Filed 4-1-69.

## Class 43 – Thread and Yarn

880,273. (See Class 1 for this trademark.)

## Class 44 – Dental, Medical, and Surgical Appliances

880,365. (See Class 21 for this trademark.)

880,541. SARNS. Sarns, Inc. SN 305,072. Pub. 8-26-69. Filed 8-13-68.

## Class 45 – Soft Drinks and Carbonated Waters

880,542. GREAT AMERICAN AND DESIGN. H. J. Heinz Company. MULTIPLE CLASS (Classes 45 and 46). SN 290,852. Pub. 8-26-69. Filed 2-12-68.

880,543. SODA BARREL. Tasty-Mates Company, assignee of S. Twitchell Company, d.b.a. The Soda Barrel Co. SN 316,875. Pub. 7-29-69. Filed 1-17-69.

880,544. MISCELLANEOUS DESIGN. The Pillsbury Company. SN 322,904. Pub. 8-26-69. Filed 3-26-69.

880,545. MISCELLANEOUS DESIGN. The Pillsbury Company. SN 322,905. Pub. 8-26-69. Filed 3-26-69.

880,546. MISCELLANEOUS DESIGN. The Pillsbury Company. SN 322,906. Pub. 8-26-69. Filed 3-26-69.

## Class 46 – Foods and Ingredients of Foods

880,542. (See Class 45 for this trademark.)

880,547. SLEEK. Fruen Milling Company. SN 271,460. Pub. 8-26-69. Filed 5-15-67.

880,548. D DESIGN. SCM Corporation, d.b.a. Durkee Famous Foods. SN 286,846. Pub. 8-26-69. Filed 12-13-67.

880,549. MOLAT. Keim-Diat G.m.b.H. SN 289,902. Pub. 8-26-69. Filed 1-30-68.

880,550. BIG OTTO AND DESIGN. Auto-Dine Corporation, d.b.a. Auto-Dine. SN 291,242. Pub. 3-25-69. Filed 2-16-68.

880,551. HOW-DEE-LICIOUS! Performance Systems, Inc., by change of name from Minnie Pearl's Chicken System, Inc. SN 292,804. Pub. 8-26-69. Filed 3-8-68.

880,552. DOZY OAT CAKES. Borden, Inc. SN 297,520. Pub. 8-26-69. Filed 5-7-68.

880,553. FRUIT BOWL (DESIGN). William A. Shade Co., Inc. SN 300,487. Pub. 8-26-69. Filed 6-14-68.

880,554. OLD HOME AND DESIGN. Old Home Foods, Inc. SN 301,244. Pub. 8-26-69. Filed 6-24-68.

880,555. SIMPATICO. Perugina S.p.A. Cioccolato & Confetture. SN 303,700. Pub. 8-26-69. Filed 7-26-68.

880,556. TASMAN. David Lavery & Son Proprietary Limited. SN 304,003. Pub. 8-26-69. Filed 7-31-68.

880,557. DELITEFULLY LITE. Pevely Dairy Company. SN 304,243. Pub. 8-26-69. Filed 8-2-68.

880,558. LEAN 'N LIVELY. Carnation Company. SN 304,889. Pub. 8-5-69. Filed 8-12-68.

880,559. NEW TRICKS. Kelly and Weinman, Inc. SN 305,461. Pub. 8-26-69. Filed 8-19-68.

880,560. EVERDAY. Regal Fruit Cooperative. SN 306,945. Pub. 8-26-69. Filed 9-9-68.

880,561. CERETANA BIG SKY 20'S. Montana Flour Mills Company. SN 308,121. Pub. 8-26-69. Filed 9-24-68.

880,562. HEARTH-MASTER. H. C. Brill Company, Inc. SN 308,458. Pub. 8-26-69. Filed 9-30-68.

880,563. RY-MASTER. H. C. Brill Company, Inc. SN 308,459. Pub. 8-26-69. Filed 9-30-68.

880,564. CORN PONIES. A. H. Robine Company, Incorporated. SN 309,296. Pub. 8-26-69. Filed 10-9-68.

880,565. WHEEL-O-MACS AND DESIGN. Procino-Rossi Corporation. SN 309,694. Pub. 8-26-69. Filed 10-15-68.

880,566. PHOTOGRAPH (DESIGN). Totinos Finer Foods, Inc. SN 310,152. Pub. 8-26-69. Filed 10-21-68.

880,567. KEYSTONE AND DESIGN. Keystone Cooperative Grape Association. SN 310,235. Pub. 8-26-69. Filed 10-22-68.

880,568. TOTINO'S. Totinos Finer Foods, Inc. SN 310,260. Pub. 8-26-69. Filed 10-22-68.

880,569. ZUMBRO VALLEY. North Star Dairy. SN 310,488. Pub. 8-26-69. Filed 10-24-68.

880,570. BONANZA. Hurley Company. SN 310,565. Pub. 8-26-69. Filed 10-25-68.

880,571. PIZZO PIES. Campbell Soup Company. SN 310,858. Pub. 8-26-69. Filed 10-30-68.

880,572. MISH MASH. A. H. Robins Company, Incorporated. SN 310,921. Pub. 8-26-69. Filed 10-30-68.

880,573. TROPIC TREAT. Rio-Tex Citrus Association. SN 311,064. Pub. 7-8-69. Filed 10-31-68.

880,574. LEADER MOONSHOT AND DESIGN. Leader Candies, Inc. SN 312,049. Pub. 8-26-69. Filed 11-13-68.

880,575. BOSS BUBBLE. Philadelphia Chewing Gum Corporation. SN 312,324. Pub. 8-26-69. Filed 11-15-68.

880,576. HONEY HOOKERS. Dainty Cookies, Inc. SN 313,080. Pub. 8-26-69. Filed 11-26-68.

880,577. CHOCOBEE. Drew Chemical Corporation. SN 313,085. Pub. 8-26-69. Filed 11-26-68.

880,578. WECOTEX. Drew Chemical Corporation. SN 313,087. Pub. 8-26-69. Filed 11-26-68.

880,579. ZIP-WHIP. B. A. Patterson, d.b.a. Albulac Company. SN 313,194. Pub. 8-26-69. Filed 11-27-68.

880,580. QUIK WAY. Eggway Foods, Inc. SN 313,561. Pub. 8-26-69. Filed 12-4-68.

880,581. SHRIMP WALK AND DESIGN. William R. Koretz, SN 314,087. Pub. 8-26-69. Filed 12-10-68.

880,582. GRANFONTENE. Universal Foods Corporation. SN 314,612. Pub. 8-26-69. Filed 1-21-69.

880,583. TIC TAC TOE. Long Island Macaroni Co., Inc. SN 317,664. Pub. 8-26-69. Filed 1-22-69.

880,584. BONNIE BEE AND DESIGN. Barnes Grocer Company. SN 317,707. Pub. 8-26-69. Filed 1-28-69.

880,585. CHOC II. The Quaker Oats Company, d.b.a. Burry's or Burry Biscuit Division. SN 318,275. Pub. 8-26-69. Filed 2-4-69.

880,586. RED LANTERN AND DESIGN. Wilbur-Ellis Company. SN 319,124. Pub. 8-26-69. Filed 2-14-69.

880,587. PURA-LASSES. Ralston Purina Company. SN 322,233. Pub. 8-26-69. Filed 3-20-69.

880,588. FREDLO FARMS. Fredlo Farms. SN 323,192. Pub. 8-26-69. Filed 4-1-69.

880,589. CLACKERS. General Mills, Inc. SN 324,007. Pub. 8-26-69. Filed 4-9-69.

## Class 47 – Wines

880,590. BEAR HAIR DRY SHERRY AND DESIGN. Thomas E. Dunlap, d.b.a. Swiss Hotel Cellars. SN 291,847. Pub. 8-26-69. Filed 2-26-68.

## Class 49 – Distilled Alcoholic Liquors

880,591. 501 ETC AND DESIGN. Carlos y Javier de Terry, S.L. SN 300,685. Pub. 8-26-69. Filed 6-18-68.

## Class 50 – Merchandise Not Otherwise Classified

880,592. ZENITH. Zenith Radio Corporation. SN 271,003. Pub. 8-26-69. Filed 5-8-67.

880,593. DOMINO DOCKS. Bethurem Machinist Center, Inc. SN 313,396. Pub. 8-26-69. Filed 12-2-68.

880,594. QUIET WORLD. Quiet Worlds, Inc. SN 314,457. Pub. 8-26-69. Filed 12-13-68.

880,595. BUSSARDS BACT FOIL AND DESIGN. R. D. Bussard & Son, Inc. SN 316,602. Pub. 8-26-69. Filed 1-15-69.

880,596. INTERNATIONAL RUBBER. International Rubber Corporation. SN 317,343. Pub. 8-26-69. Filed 1-23-69.

## Class 51 – Cosmetics and Toilet Preparations

880,597. THE QUIET RINSE. Clairol Incorporated. MULTIPLE CLASS (Classes 51 and 52). SN 289,741. Pub. 8-26-69. Filed 1-29-68.

880,598. KAMILL. Blendax-Werke R. Schneider & Co. MULTIPLE CLASS (Classes 51 and 52). SN 301,330. Pub. 8-26-69. Filed 6-25-68.

880,599. RRP AND DESIGN. Richter Research Products Corp. SN 304,621. Pub. 8-26-69. Filed 8-7-68.

880,600. EYE SHADOW THEATRE. New York Pencil Co., Inc. SN 304,950. Pub. 8-26-69. Filed 8-12-68.

880,601. QUICK-GLOW. New York Pencil Co., Inc. SN 304,952. Pub. 8-26-69. Filed 8-12-68.

880,602. CARTON DESIGN. Chas. Pfizer & Co., Inc. SN 309,785. Pub. 8-26-69. Filed 10-16-68.

880,603. DIRECTIONALE. Elizabeth Arden Sales Corporation. SN 311,330. Pub. 8-26-69. Filed 11-5-68.

880,604. ZIG ZAG. Zsa Zsa Limited. SN 317,786. Pub. 7-29-69. Filed 1-28-69.

880,605. I FEEL PRETTY. John H. Breck, Inc. SN 320,239. Pub. 8-26-69. Filed 2-27-69.

## Class 52 – Detergents and Soaps

880,597. (See Class 51 for this trademark.)

880,598. (See Class 51 for this trademark.)

880,606. RESOURCE. Wyandotte Chemicals Corporation. SN 297,118. Pub. 8-26-69. Filed 5-1-68.

880,607. RRP AND DESIGN. Richter Research Products Corp. SN 304,622. Pub. 8-26-69. Filed 8-7-68.

880,608. KITCHEN SHIELD. American Home Products Corporation. SN 312,850. Pub. 4-1-69. Filed 11-22-68.

880,609. PROFESSIONAL CHEMICALS AND DESIGN. Professional Chemicals Corporation. SN 319,730. Pub. 8-26-69. Filed 2-20-69.

880,610. I FEEL PRETTY. John H. Breck, Inc. SN 320,240. Pub. 8-26-69. Filed 2-27-69.

# Service Marks

## Class 100 – Miscellaneous

880,412. (See Class 26 for this trademark.)

880,611. PANOPHONIC HEARING AND DESIGN. Buchanan Hearing Aid Co., Inc., d.b.a. Panophonic Hearing Devices. SN 257,583. Pub. 8-26-69. Filed 10-31-66.

880,612. POLICE STEUBEN ASS'N. N.Y.C. AND DESIGN. Steuben Association of the Police Department of the City of New York, Inc. MULTIPLE CLASS (Classes 100 and 200). SN 266,177. Pub. 8-26-69. Filed 3-7-67.

880,613. ALLSTATE MOTOR CLUB AND DESIGN. Allstate Enterprises, Inc. SN 285,642. Pub. 8-26-69. Filed 11-27-67.

880,614. DD CHUCKWAGON AND DESIGN. Chuckwagon Service Corporation. SN 286,905. Pub. 12-10-68. Filed 12-14-67.

880,615. GARY'S AND DESIGN. Gary's Restaurants Franchise Co., Inc. SN 291,147. Pub. 8-12-69. Filed 2-15-68.

880,616. GARY'S. Gary's Restaurants Franchise Co., Inc. SN 291,148. Pub. 8-19-69. Filed 2-15-68.

880,617. COPY CENTER AND DESIGN. Spaulding Company, Inc. MULTIPLE CLASS (Classes 100, 101, and 103). SN 294,867. Pub. 8-26-69. Filed 4-3-68.

880,618. DESIGN OF IONIC COLUMN. Osborne Photographic Laboratories, Inc. SN 298,621. Pub. 8-26-69. Filed 5-20-68.

880,619. GEORGIAN. Osborne Photographic Laboratories, Inc. SN 298,622. Pub. 8-26-69. Filed 5-20-68.

880,620. THE GENTLEMEN II. Michael James, Inc. SN 298,745. Pub. 8-26-69. Filed 5-21-68.

880,621. KENTUCKY ROAST BEEF. Kentucky Fried Chicken Corporation. SN 302,623. Pub. 8-26-69. Filed 7-12-68.

880,622. PINWHEEL DESIGN. Houstonaire, Inc. MULTIPLE CLASS (Classes 100 and 107). SN 304,223. Pub. 8-26-69. Filed 8-2-68.

880,623. "YOUR" PIZZA SHOP INC. ETC. AND DESIGN. Your Pizza Shop, Inc. SN 304,274. Pub. 8-26-69. Filed 8-2-68.

880,624. CHIC A SEA AND DESIGN. Chicasea, Inc., d.b.a. Chic A Sea Take Home Shop. SN 304,306. Pub. 8-26-69. Filed 8-5-68.

880,625. LINKY'S. Linky's Incorporated. SN 318,271. Pub. 8-26-69. Filed 2-4-69.

880,626. 7 KINGS AND DESIGN. Seven Kings, Inc. SN 320,651. Pub. 8-26-69. Filed 3-3-69.

880,627. JULIUS CAESAR'S "HOME OF THE ROMAN STEAK." Donna Mare, Inc., d.b.a. Julius Caesar's Restaurant. SN 322,793. Pub. 8-26-69. Filed 3-26-69.

## Class 101 – Advertising and Business

880,617. (See Class 100 for this trademark.)

880,628. MISS CHEERLEADER USA. Florida Cypress Gardens, Inc. SN 265,187. Pub. 1-9-68. Filed 2-21-67.

880,629. TECHNICAL TIPS. Technical Marketing, Inc. SN 274,469. Pub. 6-10-69. Filed 6-21-67.

880,630. NICCI. Mercantile Trust Company National Association. MULTIPLE CLASS (Classes 101 and 102). SN 278,022. Pub. 8-26-69. Filed 8-10-67.

880,631. IDEAS ETC. AND DESIGN. Betty Cook Rottmann. SN 296,986. Pub. 8-26-69. Filed 4-30-68.

880,632. ACUNET. Recognition Equipment Incorporated. SN 300,620. Pub. 8-26-69. Filed 6-17-68.

880,633. GRAND UNION MAKES SHOPPING MORE REWARDING. The Grand Union Company. SN 302,231. Pub. 8-26-69. Filed 7-8-68.

880,634. ROTH YOUNG. Roth Young Personnel Service, Inc. SN 302,356. Pub. 8-26-69. Filed 7-9-68.

880,635. CAMPUS CHEFS. Campus Chefs, Incorporated. SN 303,889. Pub. 8-26-69. Filed 7-30-68.

880,636. ADD+A+GIRL. Add-A-Man, Inc. SN 303,072. Pub. 8-26-69. Filed 7-31-68.

880,637. ALFIE'S FISH AND CHIPS ETC. AND DESIGN. Alfie's Fish & Chips, Inc. SN 312,259. Pub. 8-26-69. Filed 11-15-68.

880,638. LUCKY MONEY. Glendinning Companies, Inc. SN 313,415. Pub. 8-26-69. Filed 12-2-68.

880,639. LUCKY PARTNERS. Glendinning Companies, Inc. SN 313,416. Pub. 8-26-69. Filed 12-2-68.

880,640. WORDS & MUSIC LIBRARY. Glendinning Companies, Inc. SN 313,417. Pub. 8-26-69. Filed 12-2-68.

880,641. MAN IN MOTION. Man In Motion, Inc. SN 314,024. Pub. 8-26-69. Filed 12-10-68.

880,642. CABLE CAR DESIGN. Mathew D. Artson, d.b.a. A-A Answering Service. SN 316,073. Pub. 8-26-69. Filed 1-8-69.

## Class 102 – Insurance and Financial

880,630. (See Class 101 for this trademark.)

880,643. ANIMAL DESIGN. James R. Baker, d.b.a. James R. Baker & Associates. SN 278,182. Pub. 8-26-69. Filed 8-14-67.

880,644. "GREETINGS FROM TIGATOR LAND." James R. Baker, d.b.a. James R. Baker & Associates. SN 278,183, Pub. 8-26-69. Filed 8-14-67.

880,645. "OUR SYMBOL THAT TYPIFIES OUR AMBITION TO ALWAYS BE ON THE MOVE AND EXCEEDINGLY AGGRESSIVE" AND DESIGN. James R. Baker, d.b.a. James R. Baker & Associates. SN 278,184. Pub. 8-26-69. Filed 8-14-67.

880,646. ASMBA AND DESIGN. Armed Services Mutual Benefit Association. SN 296,292. Pub. 8-26-69. Filed 4-23-68.

880,647. F DESIGN OF TREE. The Fidelity Mutual Life Insurance Company. SN 296,953. Pub. 8-26-69. Filed 4-30-68.

880,648. ULTRA/CHEK. The Detroit Bank and Trust Company. SN 302,724. Pub. 8-26-69. Filed 7-15-68.

880,649. CHARGETTE. Chargette, Inc. SN 305,715. Pub. 8-26-69. Filed 8-22-68.

880,650. PSL. Palmetto State Life Insurance Company. SN 307,618. Pub. 8-26-69. Filed 9-18-68.

880,651. S AND DESIGN. Suffolk County Federal Savings & Loan Association. SN 310,932. Pub. 8-26-69. Filed 10-30-68.

880,652. EXEMPLAR. Exemplar Service, Inc. SN 313,499. Pub. 8-26-69. Filed 12-3-68.

880,653. MISCELLANEOUS DESIGN. Union National Bank. SN 315,167. Pub. 8-26-69. Filed 12-24-68.

880,654. PORTVIEW. United California Bank. SN 315,859. Pub. 8-26-69. Filed 1-6-69.

880,655. CADUCEUS AND HAND CLASP DESIGN. Physicians Mutual Insurance Company. SN 317,283. Pub. 8-26-69. Filed 1-23-69.

## Class 103 – Construction and Repair

880,617. (See Class 100 for this trademark.)

880,656. SVENSK TESTAD AND DESIGN. Volvo Distributing, Inc. SN 295,268. Pub. 8-26-69. Filed 4-9-68.

880,657. M AND DESIGN. Medallion Pool Corporation. SN 308,065. Pub. 8-26-69. Filed 9-18-68.

880,658. MERMAID (DESIGN). The Anchorage, Inc. SN 316,728. Pub. 8-26-69. Filed 1-16-69.

## Class 104 – Communication

880,659. EASTER BUNNY-GRAM AND DESIGN. The Western Union Telegraph Company. SN 315,455. Pub. 8-26-69. Filed 12-30-68.

880,660. BUNNYGRAM. The Western Union Telegraph Company. SN 315,456. Pub. 8-26-69. Filed 12-30-68.

## Class 105 – Transportation and Storage

880,661. BERRY PRIVATE JET VACATIONS AND DESIGN. Berry World Travel, Inc. SN 295,907. Pub. 8-26-69. Filed 4-18-68.

880,662. PIER 66. Phillips Petroleum Company. SN 308,309. Pub. 8-26-69. Filed 9-26-68.

880,663. ELECTRONICRUISER. The Greyhound Corporation. SN 310,562. Pub. 8-26-69. Filed 10-25-68.

880,664. PARTY JET. Vacations West, Inc. SN 311,423. Pub. 8-26-69. Filed 11-5-68.

880,665. CARGILL. Cargill, Incorporated. SN 311,772. Pub. 8-26-69. Filed 11-12-68.

880,666. THRIFTY. Stemmons, Inc. SN 315,114. Pub. 8-26-69. Filed 12-23-68.

880,667. ACT AND DESIGN. Associated Container Transportation Limited. SN 316,043. Pub. 8-26-69. Filed 1-8-69.

880,668. OLSON'S ROYAL COACH TOURS. Olson's Royal Coach Tours, Inc. SN 316,939. Pub. 8-26-69. Filed 1-21-69.

880,669. 711 AND TWIN GLOBE DESIGN. Crown Peters Travel Service, Inc. SN 317,794. Pub. 8-26-69. Filed 1-29-69.

880,670. 711 AND OVAL AND GLOBE DESIGN. Crown Peters Travel Service, Inc. SN 317,795. Pub. 8-26-69. Filed 1-29-69.

## Class 106 – Material Treatment

880,671. ARTOGRAPHY AND DESIGN. James P, Bettio, Jr., d.b.a. Artography. SN 283,615. Pub. 8-26-69. Filed 10-30-67.

880,672. MINIMAX. Cushing and Company. SN 314,776. Pub. 8-26-69. Filed 12-18-68.

880,673. HANDLED WITH CARE AND DESIGN. Progressive Industries Corporation, by merger from Tru-Foto, Inc. SN 318,868. Pub. 8-26-69. Filed 12-16-68.

## Class 107 – Education and Entertainment

880,622. (See Class 100 for this trademark.)

880,674. CHILDREN'S ALLEY GARDENS ENDEAVOR. Dora Grube Antrim. SN 281,349. Pub. 8-26-69. Filed 9-28-67.

880,675. COUNTRY PLAYBOYS. HMH Publishing Co. Inc., assignee of Terence E. Coleman. SN 283,229. Pub. 6-18-68. Filed 10-24-67.

880,676. SOCIETY'S CHILDREN. Peter Anthony Disarro. SN 294,023. Pub. 8-26-69. Filed 3-25-68.

880,677. IT'S IN TO BE THIN. The Diet Workshop, Inc., d.b.a. The Diet Workshop. SN 295,426. Pub. 8-26-69. Filed 4-11-68.

880,678. IT'S IN TO BE THIN THE DIET WORKSHOP WAY AND DESIGN. The Diet Workshop, Inc., d.b.a. The Diet Workshop. SN 296,526. Pub. 8-26-69. Filed 4-25-68.

880,679. LOGOTYPE (DESIGN). Madison Square Garden Corporation, assignee of Madison Square Garden Center, Inc. SN 299,634. Pub. 8-26-69. Filed 6-4-68.

880,680. I. Q. ZOO. Animal Behavior Enterprises, Inc. SN 300,887. Pub. 8-26-69. Filed 6-20-68.

880,681. MISCELLANEOUS DESIGN. Information & Systems Institute, Inc. SN 306,383. Pub. 8-26-69. Filed 8-30-68.

880,682. YOUNG COUNTRY. Show Biz, Inc. SN 309,488. Pub. 8-26-69. Filed 10-11-68.

880,683. TEKE. Tau Kappa Epsilon Fraternity. SN 307,289. Pub. 8-26-69. Filed 9-13-68.

## Collective Membership Mark

### Class 200

880,612. (See Class 100 for this trademark.)

## Certification Mark

### Class A — Goods

880,684. IWS (DESIGN). The Wool Bureau, Incorporated. SN 307,721. Pub. 8-26-69. Filed 9-19-68.

## SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

### Class 19 — Vehicles

880,685. Metalcrafters Specialties Inc., Bronx, N.Y. SN 305,056. Filed P.R. 8-13-68; Am. S.R. 7-7-69.

**SAFE-T-GUARDS**

For Protective Cushions for Automobile Bumpers (Int. Cl. 12).

First use October 1967.

### Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

880,686. Lubbock Manufacturing Company, Lubbock, Tex. SN 299,991. Filed P.R. 6-7-68; Am. S.R. 7-10-69.

**LUBBOCK**

For Earth-Working Equipment—Namely, Plows and Cable Layers (Int. Cl. 7).

First use June 1, 1965.

### Class 26 — Measuring and Scientific Appliances

880,687. Spiratone, Inc., Flushing, N.Y. SN 296,049. Filed P.R. 4-19-68; Am. S.R. 8-25-69.

**MULTIMAGE**

For Photographic Lens Attachment (Int. Cl. 9).

First use Aug. 5, 1966.

### Class 36 — Musical Instruments and Supplies

880,688. Kenner Products Company, Cincinnati, Ohio. SN 323,316. Filed P.R. 4-1-69; Am. S.R. 8-21-69.

**CLOSE 'N PLAY**

For Phonographs (Int. Cl. 9).

First use on or about July 24, 1966.

## TRADEMARK REGISTRATIONS RENEWED

33,953. ZIG ZAG RULES Z.Z. AND DESIGN. Cl. 26 (Int. Cl. 9). 12-26-1899.
74,897. "BOLS" ETC. AND DESIGN. Cl. 49 (Int. Cl. 33). 8-17-09.
75,369. "ARROW" AND DESIGN. Cl. 39 (Int. Cl. 25). 9-28-09.
258,094. EQUITY. Cl. 38 (Int. Cl. 16). 6-25-29.
259,682. CHEVY. Cl. 39 (Int. Cl. 25). 8-6-29.
260,109. PYXOLA. Cl. 18 (Int. Cl. 5). 8-13-29.
260,356. THE PARISIENNE. Cl. 27 (Int. Cl. 14). 8-20-29.
261,353. MADERAS DE ORIENTE. Cl. 51 (Int. Cl. 3). 9-17-29.
261,359. WEATHERMAKER. Cl. 34 (Int. Cl. 11). 9-17-29.
261,440. PACKER. Cl. 23 (Int. Cl. 16). 9-17-29.
261,488. MILK SHAKE. Cl. 46 (Int. Cl. 30). 9-17-29.
261,552. SUSPIRO DE GRANADA. Cl. 51 (Int. Cl. 3). 9-17-29.
261,563. "L" AND DESIGN. Cl. 14 (Int. Cl. 6). 9-17-29.
261,716. "BLANCO Y NEGRO" AND DESIGN. Cl. 18 (Int. Cl. 5). 9-24-29.
261,914. RUS-TEX. Cl. 12 (Int. Cl. 19). 9-24-29.
262,295. WALL. Cl. 39 (Int. Cl. 25). 10-1-29.
262,405. "MISS UNIVERSE." Cl. 27 (Int. Cl. 14). 10-8-29.
262,667. AMISOL. Cl. 6 (Int. Cl. 1). 10-22-29.
262,788. OVERLAND. Cl. 12 (Int. Cl. 19). 10-22-29.
262,865. CO-ED. Cl. 27 (Int. Cl. 14). 10-29-29.
265,935. DWIGHT-LLOYD. Cl. 23 (Int. Cls. 7 and 11). 1-7-30.
266,394. "FRALINGER'S" ETC. Cl. 46 (Int. Cl. 30). 1-14-30.
266,416. ULLMANINE. Cl. 11 (Int. Cl. 2). 1-14-30.
267,544. SUNOLENE. Cl. 15 (Int. Cl. 4). 2-25-30.
443,336. BUGRENADE AND DESIGN. Cl. 23 (Int. Cl. 5). 9-6-49.
443,340. UNIT AND DESIGN. Cl. 12 (Int. Cl. 19). 9-6-49.
443,344. WESTMOOR. Cl. 39 (Int. Cl. 25). 9-6-49.
443,578. CAPCO NUTS FULL FLAVORED AND DESIGN. Cl. 46 (Int. Cl. 29). 11-29-49.
443,579. THE CAPCO PARADE OF NUTS AND DESIGN. Cl. 46 (Int. Cl. 29). 11-29-49.
505,565. ALOE. Cl. 32 (Int. Cls. 10 and 20). 1-11-49.
510,262. MIF AND DESIGN. Cl. 13 (Int. Cl. 6). 5-31-49.
510,622. SOOTOUT. Cl. 6 (Int. Cl. 1). 6-7-49.
511,283. LAHER "THE BATTERY WITH 9 LIVES" AND DESIGN. Cl. 21 (Int. Cl. 9). 6-21-49.
511,551. SNIPE. Cl. 19 (Int. Cl. 12). 6-28-49.
512,016. JOHNSONS. Cl. 22 (Int. Cl. 28). 7-5-49.
512,027. TUF-LUSTRE. Cl. 16 (Int. Cl. 3). 7-12-49.
512,072. 872 TRIPLE ALLOY STEEL. Cl. 14 (Int. Cl. 6). 7-12-49.
513,161. TENNANT. Cl. 4 (Int. Cl. 3). 8-2-49.
513,701. HOPPER. Cl. 46 (Int. Cl. 31). 8-16-49.
513,702. LUCERNE. Cl. 46 (Int. Cl. 31). 8-16-49.
514,142. METEX AND DESIGN. Cl. 4 (Int. Cl. 1). 8-23-49.
514,359. BE BE BOND. Cl. 5 (Int. Cl. 1). 8-30-49.
514,524. ATLAS. Cl. 39 (Int. Cl. 25). 8-20-49.
514,648. WELDPOWER. Cl. 21 (Int. Cl. 9). 9-6-49.
514,811. SIERRA. Cl. 21 (Int. Cl. 9). 9-6-49.
514,812. SIERRA AND DESIGN. Cl. 21 (Int. Cl. 9). 9-6-49.
514,813. THE SIERRA LINE. Cl. 21 (Int. Cl. 9). 9-6-49.
514,858. AMIJEL AND DESIGN. Cl. 5 (Int. Cl. 1). 9-6-49.
514,899. ACMI. Cl. 44 (Int. Cl. 10). 9-6-49.
514,917. EAU DE SACHET. Cl. 51 (Int. Cl. 3). 9-6-49.
515,258. HAMLET. Cl. 37 (Int. Cl. 16). 9-20-49.

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515,288. KOHPLASTIC. Cl. 37 (Int. Cl. 16). 9-20-49.
515,313. ATLAS ETC. AND DESIGN. Cl. 39 (Int. Cl. 25). 9-20-49.
515,369. REGIMENTALS. Cl. 39 (Int. Cl. 25). 9-20-49.
515,486. FAMOUS FOR ITS LATHER. Cl. 52 (Int. Cl. 3). 9-20-49.
515,594. PRECIPITRON. Cl. 21 (Int. Cl. 11). 9-27-49.
515,637. STIXTITE. Cl. 40 (Int. Cl. 26). 9-27-49.
515,640. ACE-HI. Cl. 50 (Int. Cl. 16). 9-27-49.
515,666. SPARKIES. Cl. 46 (Int. Cl. 30). 9-27-49.
515,729. GOOD YEAR AND DESIGN. Cl. 15 (Int. Cl. 4). 9-27-49.
515,770. NFZ. Cl. 18 (Int. Cl. 5). 9-27-49.
515,805. RONAY. Cl. 3 (Int. Cl. 18). 9-27-49.
515,822. ALLIED. Cl. 105 (Int. Cl. 39). 9-27-49.
515,823. ALLIED VAN LINES. Cl. 105 (Int. Cl. 39). 9-27-49.
515,842. LAHER. Cl. 19 (Int. Cl. 12). 10-4-49.
515,849. BIG BILL AND DESIGN. Cl. 17 (Int. Cl. 34). 10-4-49.
515,850. BLACK MARIA AND DESIGN. Cl. 17 (Int. Cl. 34). 10-4-49.
515,851. BULL OF THE WOODS AND DESIGN. Cl. 17 (Int. Cl. 34). 10-4-49.
515,936. DREW. Cl. 39 (Int. Cl. 25). 10-4-49.
515,937. DUFF. Cl. 39 (Int. Cl. 25). 10-4-49.
515,938. HULL. Cl. 39 (Int. Cl. 25). 10-4-49.
515,939. MARCY. Cl. 39 (Int. Cl. 25). 11-4-49.
515,986. HOLLYWOOD. Cl. 46 (Int. Cl. 30). 10-4-49.
516,066. COLORSUDS. Cl. 52 (Int. Cl. 3). 10-4-49.
516,078. VAPOLOID. Cl. 18 (Int. Cl. 5). 10-4-49.
516,151. SWANSON. Cl. 46 (Int. Cl. 29). 10-11-49.
516,300. HO. Cl. 28 (Int. Cl. 14). 10-11-49.
516,695. RICH & RIPE AND DESIGN. Cl. 17 (Int. Cl. 34). 10-25-49.
516,728. CHANNELLOCK. Cl. 23 (Int. Cl. 8). 10-25-49.
516,729. ACUSHNET. Cl. 22 (Int. Cl. 28). 10-25-49.
516,764. STIDD'S. Cl. 46 (Int. Cl. 29). 10-25-49.
516,800. MARVIN. Cl. 46 (Int. Cl. 29). 10-25-49.
516,941. CUTTER. Cl. 18 (Int. Cl. 5). 10-25-49.
516,950. BLUFIXE SOUR AND DESIGN. Cl. 6 (Int. Cl. 1). 10-25-49.
516,951. BLUSOUR. Cl. 6 (Int. Cl. 1). 10-25-49.
516,990. MAINE COAST FISHERMAN. Cl. 38 (Int. Cl. 16). 10-25-49.
517,020. STUART HALL AND DESIGN. Cl. 37 (Int. Cl. 16). 10-25-49.
517,362. SMITH-CORONA. Cls. 23 and 26 (Int. Cls. 9 and 16). 11-8-49.
517,373. REPRESENTATION OF AN ANCHOR. Cl. 23 (Int. Cl. 8). 11-8-49.
517,586. TRIUMPH. Cl. 26 (Int. Cl. 9). 11-15-49.
517,593. MARCHANT. Cl. 26 (Int. Cl. 9). 11-15-49.
517,625. GARRETT AND DESIGN. Cl. 47 (Int. Cl. 33). 11-15-49.
517,650. TENNANT. Cl. 2 (Int. Cl. 7). 11-15-49.
517,875. GOOD YEAR AND DESIGN. Cl. 16 (Int. Cls. 2 and 3). 11-22-49.
517,879. TASTONE. Cl. 46 (Int. Cl. 30). 11-22-49.
517,973. PEARCE AND ARROW DESIGN. Cl. 42 (Int. Cl. 24). 11-22-49.
517,976. HY-WITE. Cl. 52 (Int. Cl. 3). 11-22-49.
518,030. WEBBS TAMPA BEAUTIES. Cl. 17 (Int. Cl. 34). 11-22-49.
518,081. B-N. Cl. 23 (Int. Cl. 7). 11-29-49.
518,158. PARKERETTE. Cl. 23 (Int. Cl. 7). 11-29-49.
518,214. MANAGE. Cl. 38 (Int. Cl. 16). 11-29-49.
518,339. RED BAR AND DESIGN. Cl. 21 (Int. Cl. 9). 12-6-49.
518,504. LEDLOK. Cl. 13 (Int. Cl. 6). 12-6-49.
518,505. CLOSED BACK. Cl. 13 (Int. Cl. 6). 12-6-49.
518,589. MISS SAYLOR'S. Cl. 46 (Int. Cl. 30). 12-13-49.
518,590. MISS SAYLOR'S COFFEE-ETS. Cl. 46 (Int. Cl. 30). 12-13-49.
518,592. RUGGIES. Cl. 39 (Int. Cl. 25). 12-13-49.
518,651. TOPSY. Cl. 23 (Int. Cl. 8). 12-13-49.
518,658. EVABRITE. Cl. 26 (Int. Cl. 9). 12-13-49.
518,832. NU-BAR. Cl. 35 (Int. Cl. 7). 12-13-49.
519,108. RAY SURE. Cl. 11 (Int. Cl. 16). 12-20-49.
519,158. CRESTA BLANCA AND DESIGN. Cl. 47 (Int. Cl. 33). 12-27-49.
519,172. DIXIE DARLING. Cl. 46 (Int. Cl. 30). 12-27-49.
519,218. SEAT EDGE. Cl. 32 (Int. Cl. 20). 12-27-49.
519,222. CRAWFORD. Cl. 32 (Int. Cls. 20 and 24). 12-27-49.
519,293. QUAKERAL. Cl. 6 (Int. Cl. 1). 12-27-49.
519,328. VIS QUEEN. Cl. 42 (Int. Cl. 17). 12-27-49.
519,405. TOPMOST. Cl. 46 (Int. Cls. 29 and 32). 1-3-50.
519,789. REALTOR. Cl. 102 (Int. Cl. 36). 1-10-50.
519,790. EMBLEM DESIGN MARK. Cl. 102 (Int. Cl. 36). 1-10-50.
519,909. JOHNSON. Cl. 23 (Int. Cl. 7). 1-17-50.
519,921. LAKIN. Cl. 23 (Int. Cl. 8). 1-17-50.
519,977. THE AMERICAN JOURNAL OF SURGERY. Cl. 38 (Int. Cl. 16). 1-17-50.
519,980. MORUSUL. Cl. 18 (Int. Cl. 5). 1-17-50.
520,032. MECHANIX ILLUSTRATED. Cl. 38 (Int. Cl. 16). 1-17-50.
520,069. KINSTON DAILY FREE PRESS. Cl. 38 (Int. Cl. 16). 1-17-50.
520,249. HAMIKUT. Cl. 15 (Int. Cl. 4). 1-24-50.
520,284. HOUGHTO-SOLV. Cl. 52 (Int. Cl. 1). 1-24-50.
520,420. RED JUICE MILD & JUICY AND DESIGN. Cl. 17 (Int. Cl. 34). 1-31-50.
520,539. FAMOUS FINISHES BDA. Cl. 106 (Int. Cl. 40). 1-31-50.
520,592. CELLUTEX. Cl. 37 (Int. Cl. 16). 2-7-50.
520,610. SIMPLEX. Cl. 12 (Int. Cl. 19). 2-7-50.
520,619. CUPID. Cl. 46 (Int. Cl. 31). 2-7-50.
520,806. REDWOOD AND DESIGN. Cl. 46 (Int. Cl. 29). 2-7-50.
520,867. G-T. Cl. 35 (Int. Cl. 17). 2-7-50.
520,879. AUNT MARIA'S AND DESIGN. Cl. 46 (Int. Cl. 30). 2-7-50.
520,908. PARACRIL. Cl. 1 (Int. Cl. 17). 2-7-50.
520,914. RUFF & TUFF. Cl. 27 (Int. Cl. 14). 2-7-50.
520,952. ELECTRO-KLEAN. Cl. 21 (Int. Cl. 11). 2-7-50.
520,954. THE DIAMOND LOOK. Cl. 28 (Int. Cl. 14). 2-7-50.
520,962. STAY-TY. Cl. 40 (Int. Cl. 26). 2-7-50.
520.972. 1850 AMERICAN AND DESIGN. Cl. 26 (Int. Cl. 9). 2-14-50.
520,995. NATONA. Cl. 42 (Int. Cl. 24). 2-14-50.
520,996. SUPER-GERMITE. Cl. 18 (Int. Cl. 5). 2-14-50.
521,004. AUDIGAGE. Cl. 26 (Int. Cl. 9). 2-14-50.
521,156. STYL-EEZ. Cl. 39 (Int. Cl. 25). 2-21-50.
521,253. BEDFORD. Cl. 39 (Int. Cl. 25). 2-21-50.
521,305. FLOBERT AND DESIGN. Cl. 39 (Int. Cl. 25). 2-21-50.
521,376. MT. NEBO. Cl. 46 (Int. Cl. 31). 2-21-50.
521,425. LEGENDARY BLADES. Cl. 23 (Int. Cl. 8). 2-28-50.

## TRADEMARK REGISTRATIONS CANCELED

### Section 8

*The following registrations issued Sept. 24, 1963*

757,064. LAVENDER ICE. Cl. 1.
757,065. ORCHID SNOW. Cl. 1.
757,066. CAN-A-LITE. Cl. 1.
757,069. AM-O-LITE. Cl. 1.
757,073. WONDER-FUEL. Cl. 1.
757,074. BOMBE. Cl. 1.
757,076. LETTER G SURROUNDING A SIMULATED GLOBE. Cl. 2.
757,078. CANTEENER. Cl. 2.
757,083. TWIST-EROOOOO AND DESIGN. Cl. 3.
757,084. SPORTY ETC. AND DESIGN. Cl. 3.
757,087. GOLDEN DOT. Cl. 3.
757,089. LEISURE LINE. Cl. 3.
757,093. LATITE. Cl. 5.
757,100. SAFE-T-FOG. Cl. 6.
757,105. SAILS AND DESIGN. Cl. 6.
757,106. REZAD. Cl. 6.
757,109. GLEEN. Cl. 6.
757,111. VAPOR GARD. Cl. 6.

757,113. RETECHOL. Cl. 6.
757,114. HP 65. Cl. 6.
757,115. CONTELYT. Cl. 6.
757,116. ILFOCHROME. Cl. 6.
757,117. ILFOCOPY. Cl. 6.
757,119. GRANLOX. Cl. 6.
757,123. OCEANAIRE. Cl. 6.
757,126. CHUM. Cl. 6.
757,130. STEAMEX. Cl. 8.
757,136. ALUMA-BOARD. Cl. 12.
757,137. DUO-DOR. Cl. 12.
757,147. MICHELANGELO. Cl. 12.
757,153. F AND DESIGN. Cl. 13.
757,156. WINKHAUS SWING-O-TILT. Cl. 13.
757,174. TRU-FORGE AND DESIGN. Cl. 13.
757,175. VISUFLEX. Cl. 13.
757,177. RESICAL. Cl. 14.
757,178. DILAVAR. Cl. 14.
757,180. COM-PAK. Cl. 14.
757,182. CREST. Cl. 15.
757,186. SQUILLO AND DESIGN. Cl. 17.
757,194. DIANARIT-B. Cl. 18.
757,198. GERISEP. Cl. 18.
757,210. CADRE. Cl. 21.
757,211. EYE WITHIN AN OVAL DESIGN AND EYE REST GREEN LAMP. Cl. 21.
757,213. DYMATIC. Cl. 21.
757,216. UNICEIVER. Cl. 21.
757,217. ROTO MOUNT. Cl. 21.
757,222. SHERBROOKE. Cls. 21 and 36.
757,226. JUMPING D.J. Cl. 22.
757,227. GAYLORD. Cl. 22.
757,229. TOURNAMENT AND DESIGN. Cl. 22.
757,231. CALITE. Cl. 22.
757,232. MAGNO-LITE. Cl. 22.
757,237. "IT'S THE BITE THAT COUNTS" AND DESIGN. Cl. 23.
757,243. BIG 20. Cl. 23.
757,244. DYNAPROP. Cl. 23.
757,245. MOT'R-SAV'R. Cl. 23.
757,247. REPRESENTATION OF MERCURY. Cl. 23.
757,251. MILLARVAC. Cl. 23.
757,253. GUMTY-DUMPTY. Cl. 23.
757,256. JECTAIR. Cl. 23.
757,257. EGAN MACHINE CORP. AND DESIGN. Cl. 23.
757,258. METRO GNOME. Cl. 23.
757,261. ASTRO-LITE. Cl. 23.
757,263. BS & B AND DESIGN. Cl. 23.
757,270. KONNIE. Cl. 23.
757,273. LABPOWER AND DESIGN. Cl. 26.
757,276. D AND DESIGN. Cl. 26.
757,284. CLEAR CORDER AND DESIGN. Cl. 26.
757,287. ILFOCHROME. Cl. 26.
757,292. ISOLAR. Cl. 26.
757,300. STYLIZED LETTER W. Cl. 28.
757,301. LF AND DESIGN. Cl. 28.
757,302. TSC. Cl. 28.
757,303. SHIELD (DESIGN). Cl. 28.
757,305. BENK K. Cl. 28.
757,308. IF AND DESIGN. Cl. 28.
757,310. U-ROL. Cl. 29.
757,312. SATIN-WARE. Cl. 30.
757,315. PETERSON CLOTH DISCHARGER AND DESIGN. Cl. 31.
757,316. GALLEY FRIDGE. Cl. 31.
757,318. HYDRO-MATIC AND DESIGN. Cl. 31.
757,326. HUDSON HOUSE. Cl. 32.
757,327. TOWN & COUNTRY. Cl. 32.
757,331. SYKOETTE. Cl. 32.
757,332. DURA-STEEL. Cl. 32.
757,333. HUSKIES. Cl. 32.
757,335. VENT-X IT. Cl. 34.
757,344. FUN FOOD. Cl. 34.
757,347. LANCER. Cl. 34.
757,354. U.S. ROYALITE. Cl. 35.
757,357. HI-LIFE. Cl. 36.
757,362. ARMOR. Cl. 37.
757,367. INSTANT BUCKS. Cl. 37.
757,371. THE AMERICAN BUSINESSMAN. Cl. 38.
757,372. BLUE PHANTOM. Cl. 38.
757,374. BERKLEY DIAMOND AND DESIGN. Cl. 38.
757,376. ILFOCHROME. Cl. 38.
757,377. BERKLEY LIBRARY SELECTION AND DESIGN. Cl. 38.
757,378. LS AND DESIGN. Cl. 38.
757,381. MIDNIGHT LACE. Cl. 39.
757,383. FIBER FOAM AND DESIGN. Cl. 39.
757,387. SILAND. Cl. 39.
757,391. DESIGN OF GOSSELIN COBBLER. Cl. 39.
757,392. AQUAKNIT. Cl. 39.
757,393. TERCRYL. Cl. 39.
757,397. PUCCINI STYLED BY KOGAN. Cl. 39.
757,399. TEE BIRD AND DESIGN. Cl. 39.
757,400. ROBART AND DESIGN. Cl. 39.
757,403. BOSSA NOVA. Cl. 39.
757,408. LINNEL. Cl. 39.
757,412. MIRACLE AND DESIGN. Cl. 40.
757,415. TERCRYL. Cl. 42.
757,421. BATES AND DESIGN. Cl. 42.
757,422. JIL AND DESIGN. Cl. 42.
757,425. COUNTY FAIR. Cl. 42.
757,427. PROLOFT. Cl. 43.
757,428. TERCRYL. Cl. 43.
757,433. THUMSIES. Cl. 44.
757,443. ARROW DESIGN WITHIN A CIRCLE. Cl. 45.
757,446. DOUGEUR. Cl. 46.
757,447. HAPPY HOUSE. Cl. 46.
757,449. CHEMTEST '900' DIET PLAN ETC. AND DESIGN. Cl. 46.
757,453. CORN CABIN ETC. AND DESIGN. Cl. 46.
757,456. TWIN HEARTS BY RED HEART. Cl. 46.
757,460. PERDEX. Cl. 46.
757,474. PEPPEROME. Cl. 46.
757,475. HAPPY AGE. Cl. 49.
757,476. CAVIAR. Cl. 49.
757,483. "TELSTAR." Cl. 50.
757,484. MAGNA-MAT. Cl. 50.
757,485. 600. Cl. 50.
757,488. L'AUTRE DE JEAN DESSES. Cl. 51.
757,494. INSTIN. Cl. 51.
757,498. KLEENWAY AND DESIGN. Cl. 52.
757,500. HARRISON'S BENZA-LAC AND DESIGN. Cl. 52.
757,503. WEATHERGARD ETC. AND DESIGN. Cl. 52.
757,510. TOWNSMAN. Cl. 100.
757,516. PETER PAN'S PANTRY AND DESIGN. Cl. 101.
757,517. CHECK-STOP. Cl. 101.
757,518. AMERAD AND DESIGN. Cl. 101.
757,519. EURADVICEQ. Cl. 102.
757,527. BA AND DESIGN. Cl. 105.
757,529. SKI DEK AND DESIGN. Cl. 107.
757,530. AQUA SPECTACULAR. Cl. 107.
757,533. STAK-RITE. Cl. 32.

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# INDEX OF REGISTRANTS

## NOVEMBER 11, 1969

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A-A Answering Service : *See*—
  Artson, Mathew D.
AAA Enterprises, Inc., Atlanta, Ga. 880,351, pub. 8–26–69. Cl. 19.
A-C Industrial Cutlery Corp., New York, N.Y. 880,383, pub. 8–26–69. Cl. 23.
A & W Root Beer Co., Santa Monica, Calif. 757,217, canc. Cl. 21.
A & W Root Beer Co., Santa Monica, Calif. 757,443, canc. Cl. 45.
ASSIMIL, Societe a Responsibilite Ltd., Paris, France. 880,500, pub. 8–26–69. Cl. 38.
Acme-Cleveland Corp., from The National Acme Co., Cleveland, Ohio. 880,356, pub. 8–26–69. Cl. 21.
Actors' Equity Association, New York, N.Y. 258,094, ren. 11–11–69. Cl. 38.
Acushnet Co. : *See*—
  Acushnet Process Co.
Acushnet Process Co., to Acushnet Co., New Bedford, Mass. 516,729, ren. 11–11–69. Cl. 22.
Add-A-Man, Inc., Chicago, Ill. 880,636, pub. 8–26–69. Cl. 101.
Addressograph-Multigraph Corp., Cleveland, Ohio. 880,493, pub. 8–26–69. Cl. 37.
Aeroil Products Co., Inc., South Hackensack, N.J. 880,466, pub. 8–26–69. Cl. 34.
Agfa Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 757,292, canc. Cl. 26.
Albulac Co. : *See*—
  Patterson, B. A.
Alco Chemical Corp., Philadelphia, Pa. 757,111, canc. Cl. 6.
Alfie's Fish & Chips, Inc., Houston, Tex. 880,637, pub. 8–26–69. Cl. 101.
Allen, S. L., & Co., Inc., Philadelphia, Pa. 757,243, canc. Cl. 23.
Allied Van Lines, Inc., Broadview, Ill. 515,822–3, ren. 11–11–69. Cl. 105.
Allstate Enterprises, Inc., Northbrook, Ill. 880,613, pub. 8–26–69. Cl. 100.
Aloe, A. S., Co., St. Louis, Mo., to Sherwood Medical Industries Inc., Chicago, Ill. 505,565, ren. 11–11–69. Cl. 32.
Amerad Corp., Charlottesville, Va. 757,518, canc. Cl. 101.
American Air Filter Co., Inc., Louisville, Ky. 520,952, ren. 11–11–69. Cl. 21.
American Businessman Inc., The, Washington, D.C. 757,371, canc. Cl. 38.
American Colloid Co., Skokie, Ill. 880,269, pub. 8–26–69. Cl. 1.
American Cotton Yarns, Inc., Chicago, Ill. 880,303–4, pub. 8–26–69. Cl. 7.
American Cystoscope Makers, Inc., Pelham Manor, N.Y. 514,899, ren. 11–11–69. Cl. 44.
American Hoist & Derrick Co., St. Paul, Minn. 880,401, pub. 8–26–69. Cl. 23.
American Home Products Corp., New York, N.Y. 880,329, pub. 8–26–69. Cl. 14.
American Home Products Corp., New York, N.Y. 880,608, pub. 8–26–69. Cl. 52.
American Standard Inc., New York, N.Y. 880,468, pub. 8–26–69. Cl. 34.
American Tobacco Co., The, New York, N.Y. 880,338, pub. 8–26–69. Cl. 17.
Amos-Thompson Corp., Edinburg, Ind. 757,069, canc. Cl. 1.
Amsterdamsche Likeurstokerij "T Lootsje" Der Erven Lucas Bols, to N.V. Amsterdamsche Likeurstokerij "T Lootsje" Der Erven Lucas Bols, Amsterdam, Netherlands. 74,897, ren. 11–11–69. Cl. 49.
Anchorage, Inc., The, Warren, R.I. 880,658, pub. 8–26–69. Cl. 103.
Animal Behavior Enterprises, Inc., Hot Springs, Ark. 880,680, pub. 8–26–69. Cl. 107.
Anita Shops, Inc., Los Angeles, Calif. 880,512, pub. 8–26–69. Cl. 39.
Antrim, Dora G., Dayton, Ohio. 880,674, pub. 8–26–69. Cl. 107.
Arbest Pen, Inc., New York, N.Y. 880,483, pub. 1–17–67. Cl. 37.
Arden, Elizabeth, Sales Corp., New York, N.Y. 880,603, pub. 8–26–69. Cl. 51.
Armed Services Mutual Benefit Association, Nashville, Tenn. 880,646, pub. 8–26–69. Cl. 102.
Armor Paper Products, Inc., Linden, N.J. 757,362, canc. Cl. 37.
Armour & Co., Chicago, Ill. 880,432, pub. 8–26–69. Cl. 26.
Armour-Dial, Inc. : *See*—
  Bruce, E. L., Co.
Artography : *See*—
  Bettio, James P., Jr.
Artson, Mathew D., d.b.a. A-A Answering Service, San Francisco, Calif. 880,642, pub. 8–26–69. Cl. 101.
Associated Container Transportation Ltd., London, England. 880,667, pub. 8–26–69. Cl. 105.
Associated Products & Service Co., Inc., Long Branch, N.J. 757,273, canc. Cl. 26.
Atlas Co., The : *See*—
  Atlas Overall Co.
Atlas Overall Co., Philadelphia, to The Atlas Co., Ephrata, Pa. 515,313, ren. 11–11–69. Cl. 39.
Atlas Underwear Co., The, to Atlas Underwear Corp., Piqua, Ohio. 514,524, ren. 11–11–69. Cl. 39.
Audio Program Corp., Trenton, N.J. 757,216, canc. Cl. 21.
Aunt Maria, Dorset, Vt. 520,879, ren. 11–11–69. Cl. 46.
Auto-Dine Corp., Bismarck, N. Dak. 880,550, pub. 3–25–69. Cl. 46.
B.B. Chemical Co., to USM Corp., Boston, Mass. 514,359, ren. 11–11–69. Cl. 5.
Babcock Electronics Corp., Costa Mesa, Calif. 880,360, pub. 8–26–69. Cl. 21.
Bache, Semon, & Co., New York, N.Y. 518,658, ren. 11–11–69. Cl. 26.
Baker, James R., d.b.a. James R. Baker & Associates, Wichita, Kans. 880,643, pub. 8–26–69. Cl. 102.
Baker, James R., & Associates : *See*—
  Baker, James R.
Balyeat Co., The, Mansfield, Ohio. 757,331, canc. Cl. 32.
Barnes Grocer Co., Poplar Bluff, Mo. 880,584, pub. 8–26–69. Cl. 46.
Basic Food Materials, Inc., Vermilion, Ohio. 757,474, canc. Cl. 46.
Bates Mfg. Co., Lewiston, Maine. 757,421, canc. Cl. 42.
Bauer, Eddie, Inc., from Eddie Bauer, Seattle, Wash. 880,279–80, pub. 8–26–69. Multiple Class (Classes 3, 22, 23, 26, 27, 32, 39, and 42).
Bauglasindustrie A.G., Smelz, Saar, Germany. 880,310, pub. 8–26–69. Multiple Class (Classes 12 and 33).
Bausch & Lomb Inc., Rochester, N.Y. 880,413, pub. 8–26–69. Cl. 26.
Beacon Mfg. Co., New York, N.Y. 880,530, pub. 8–26–69. Cl. 42.
Beck, A. S., Shoe Corp., New York, N.Y. 757,083, canc. Cl. 3.
Belair Watch Corp., New York, N.Y. 880,444, pub. 8–26–69. Cl. 27.
Belk Stores Services, Inc., Charlotte, N.C. 880,509, pub. 8–26–69. Cl. 39.
Bell Records, Inc., New York, N.Y. 757,357, canc. Cl. 36.
Belmont Aviation Corp., Long Beach, Calif. 757,527, canc. Cl. 105.
Bendel, Henri, Inc., to Genesco, Inc., d.b.a. Henri Bendel, Inc., New York, N.Y. 514,917, ren. 11–11–69. Cl. 51.
Berg Equipment Corp. : *See*—
  Simplex, Inc.
Berkely & Co., Inc., Spirit Lake, Iowa. 880,377, pub. 8–26–69. Cl. 22.
Berkley Publishing Corp., New York, N.Y. 757,374, canc. Cl. 38.
Berkley Publishing Corp., New York, N.Y. 757,377, canc. Cl. 38.
Berkley Shirt Co., Inc., New York, N.Y. 880,521, pub. 8–26–69. Cl. 39.
Bernard, Les, Inc., New York, N.Y. 880,445, pub. 8–26–69. Cl. 28.
Berry World Travel, Inc., Kansas City, Mo. 880,661, pub. 8–26–69. Cl. 105.
Bethurem Machinist Center, Inc., Rock Island, Ill. 880,593, pub. 8–26–69. Cl. 50.
Better Packages, Inc., New York, N.Y., to Better Packages, Inc., Shelton, Conn. 261,440, ren. 11–11–69. Cl. 23.
Bettio, James P., Jr., d.b.a. Artography, Studio City, Calif. 880,671, pub. 8–26–69. Cl. 106.
Big Boy Products, Inc., Warsaw, Ind. 880,347, pub. 8–26–69. Cl. 19.
Black, Sivalls & Bryson, Inc., Kansas City, Mo., 757,263, canc. Cl. 23.
Blaw-Knox Co., Pittsburgh, Pa. 880,471, pub. 8–26–69. Cl. 34.
Blendax-Werke R. Schneider & Co., Mainz, Germany. 880,598, pub. 8–26–69. Multiple Class (Classes 51 and 52).
Bodzin, Frank, d.b.a. Imsco & Fransil Hosiery Co., Dallas, Tex. 880,511, pub. 8–26–69. Cl. 39.
Borden, Inc., New York, N.Y. 880,552, pub. 8–26–69. Cl. 46.
Borneo Sumatra Trading Co., Inc., Rutherford, N.J. 880,311, pub. 6–10–69. Cl. 12.
Bourges Color Corp., New York, N.Y. 880,491, pub. 8–26–69. Cl. 37.
Bracht, Fritz, Co., Ludenscheid, Germany. 880,431, pub. 8–26–69. Cl. 26.
Bradford Dyeing Association (U.S.A.), to Bradford Dyeing Association (U.S.A.) Inc., Westerly, R.I. 520,539, ren. 11–11–69. Cl. 106.
Bradford Novelty Co. Inc., Boston, Mass. 757,483, canc. Cl. 50.
Branson Instruments, Inc., Danbury, to Branson Instruments, Inc., Stamford, Conn. 521,004, ren. 11–11–69. Cl. 26.
Breck, John H., Inc., Wayne, N.J. 880,605, pub. 8–26–69. Cl. 51.
Breck, John H., Inc., Wayne, N.J. 880,610, pub. 8–26–69. Cl. 52.
Brill, H. C., Co., Inc., Cedar Grove, N.J. 880,563–2, pub. 8–26–69. Cl. 46.
Brochsztejn, Norchaj, d.b.a. Michel Brochetain, Paris, France. 880,333, pub. 8–26–69. Cl. 16.
Brown, Frederick, Brooklyn, N.Y. 880,522, pub. 8–26–69. Cl. 39.

- Brown & Williamson Tobacco Corp., Louisville, Ky. 520,420, ren. 11–11–69. Cl. 17.
- Bruce, E. L., Co., Memphis, Tenn., to Armour-Dial, Inc., Chicago, Ill. 512,027, ren. 11–11–69. Cl. 16.
- Bruner, Mates A., d.b.a. Mab Jewelers, Springfield Roads, Aldan, Pa. 880,446, pub. 8–26–69. Cl. 28.
- Buccellati Silver, Ltd., New York, N.Y. 880,447, pub. 8–26–69. Cl. 28.
- Buchanan Hearing Aid Co., Inc., Washington, D.C. 880,611, pub. 8–26–69. Cl. 100.
- Bulova Watch Co., Inc., Flushing, N.Y. 262,405, ren. 11–11–69. Cl. 27.
- Bulova Watch Co., Inc., Flushing, N.Y. 262,865, ren. 11–11–69. Cl. 27.
- Bulova Watch Co., Inc., Flushing, N.Y. 880,441, pub. 8–26–69. Cl. 27.
- Burgess-Norton Mfg. Co., Geneva, Ill. 518,081, ren. 11–11–69. Cl. 23.
- Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y. 516,078, ren. 11–11–69. Cl. 18.
- Burry's or Burry Biscuit Division : *See*—
    - Quaker Oats Co., The.
- Bussard, R. D., & Son, Inc., Albany. Oreg. 880,595, pub. 8–26–69. Cl. 50.
- CPC International Inc. : *See*—
    - Corn Products Refining Co.
- Cadre Industries Corp., Endicott, N.Y. 757,210, canc. Cl. 21.
- Calavo Growers of California. Los Angeles, Calif. 880,266, pub. 8–26–69. Cl. 1.
- Calbiochem. Los Angeles, Calif. 880,435, pub. 8–26–69. Cl. 26.
- Callaway Mills Co., Lagrange, Ga. 757,182, canc. Cl. 15.
- Campbell Soup Co. : *See*—
    - Swanson, C. A., & Sons.
- Campbell Soup Co., Camden, N.J. 880,571, pub. 8–26–69. Cl. 46.
- Campus Chefs, Inc., Elizabeth, N.J. 880,635, pub. 8–26–69. Cl. 101.
- Canale Chemical Corp., Glen Cove, N.Y. 757,066, canc. Cl. 1.
- Capitol Ideas, Inc., Manitowoc, Wis. 880,275, pub. 8–26–69. Cl. 2.
- Cargill, Inc., Minneapolis, Minn. 880,665, pub. 8–26–69. Cl. 105.
- Carlisle Chemicak Works, Inc., Reading, Ohio. 880,290, pub. 4–29–69. Cl. 6.
- Carnation Co., Los Angeles, Calif. 880,558, pub. 8–26–69. Cl. 46.
- Carpenter Steel Co., The, to Carpenter Technology Corp., Reading, Pa. 512,072, ren. 11–11–69. Cl. 14.
- Carpenter Technology Corp. : *See*—
    - Carpenter Steel Co., The.
- Carrier Corp. : *See*—
    - Carrier-Lyle Corp.
- Carrier-Lyle Corp., New York, to Carrier Corp., Syracuse, N.Y. 261,359, ren. 11–11–69. Cl. 34.
- Carson-Newton Corp., Belleville, N.J. 757,237, canc. Cl. 23.
- Cater, Bernard, d.b.a. Magna-Mat, Whittier, Calif. 757,484, ren. 11–11–69. Cl. 50.
- Certified Dry Mat Corp., New York, N.Y. 515,640, ren. 11–11–69. Cl. 50.
- Chairs & Tables, Inc., Bellwood, Ill. 757,332, canc. Cl. 32.
- Chalfin, Norman L., d.b.a. The Cue-Slide Co., Pasadena, Calif: 880,414, pub. 8–26–69. Cl. 26.
- Champion Dearment Tool Co., to Channellock, Inc., Meadville, Pa. 516,728, ren. 11–11–69. Cl. 23.
- Channellock, Inc. : *See*—
    - Champion Dearment Tool Co.
- Chapman & Chapman : *See*—
    - Chapman, Harry P.
- Chapman, Harry P., d.b.a. Chapman Drug Co., to Chapman & Chapman, Yazoo City, Miss. 260,109, ren. 11–11–69. Cl. 18.
- Chargette, Inc., Akron, Ohio. 880,649, pub. 8–26–69. Cl. 102.
- Check-Stop, Inc., from C. J. Locke, d.b.a. Locke Detective Agency & Check-Stop, El Cerrito Plaza, El Cerrito, Calif. 757,517, canc. Cl. 101.
- Chemionics Inc., Roselle, N.J. 757,126, canc. Cl. 6.
- Chemtest Products, Inc., from Chemtest Laboratories, Inc., Kansas City, Mo. 757,449, canc. Cl. 46.
- Cheway Corp., Wayne, N.J. 880,450, pub. 8–26–69. Cl. 29.
- Chic A Sea Take Home Shop : *See*—
    - Chicasea, Inc.
- Chicasea, Inc., d.b.a. Chic A Sea Take Home Shop, Richmond, Va. 880,624, pub. 8–26–69. Cl. 100.
- Chuckwagon Service Corp., Bala Cynwyd, Pa. 880,612, pub. 8–26–69. Cl. 100.
- Ciba Corp., New York, N.Y. 757,194, canc. Cl. 18.
- Clairol Inc., New York, N.Y. 757,494, canc. Cl. 51.
- Clairol, Inc., New York, N.Y. 880,597, pub. 8–26–69. Multiple Class (Classes 51 and 52).
- Clark, Keith, Inc., New York, N.Y. 880,488, pub. 8–26–69. Cl. 37.
- Cluett, Peabody & Co., to Cluett, Peabody & Co., Inc., Troy, N.Y. 75,369, ren. 11–11–69. Cl. 39.
- Cluett, Peabody & Co., Inc., Troy, N.Y. 259,682, ren. 11–11–69. Cl. 39.
- Cluett, Peabody & Co., Inc., Troy, N.Y. 262,295, ren. 11–11–69. Cl. 39.
- Cluett, Peabody & Co., Inc., Troy, N.Y. 515,369, ren. 11–11–69. Cl. 39.
- Cluett, Peabody & Co., Inc., Troy, N.Y. 515,936–9, ren. 11–11–69. Cl. 39.
- Cluett, Peabody & Co., Inc., Troy, N.Y. 880,507, pub. 8–26–69. Cl. 39.
- Coan Mfg. Co., Inc., Madison, Wis. 880,380, pub. 8–26–69. Cl. 23.
- Cohen, George, & Sons & Co., Ltd., London, England. 757,485, canc. Cl. 50.
- Cohen, Martin, d.b.a. Latin Percussion Co., Maywood, N.J. 880,477, pub. 8–26–69. Cl. 36.
- Coit Mfg. Co., Mendota, Calif. 757,232, canc. Cl. 22.
- Coleman, Terence E. : *See*—
    - HMH Publishing Co., Inc.
- Collins & Aikman Corp., New York, N.Y. 757,231, canc. Cl. 22.
- Colonial Cedar Co., Inc. : *See*—
    - Putman, Charles E.
- Columbia Ribbon & Carbon Mfg. Co., Inc., Glen Cove, N.Y. 519,108, ren. 11–11–69. Cl. 11.
- Commercial Solvents Corp., New York, N.Y. 880,340, pub. 4–15–69. Cl. 18.
- Con-Rad Corp., Tulsa, Okla. 880,469, pub. 8–26–69. Cl. 34.
- Consolidated Foods Corp. : *See*—
    - Hollywood Brands, Inc.
    - Martoccio, F. A., Co.
- Consolidated Papers, Inc., Wisconsin Rapids, Wis. 880,492, pub. 8–26–69. Cl. 37.
- Copeland, W. C., Jr., Madison, Fla. 880,294, pub. 8–26–69. Cl. 6.
- Coppus Engineering Corp., Worcester, Mass. 757,256, canc. Cl. 23.
- Corn Cabin Co., Elgin, Ill. 757,453, canc. Cl. 46.
- Corn Products Refining Co., New York, N.Y., to CPC International, Englewood Cliffs, N.J. 262,667, ren. 11–11–69. Cl. 6.
- Corn Products Refining Co., New York, N.Y., to CPC International Inc., Englewood Cliffs, N.J. 514,858, ren. 11–11–69. Cl. 5.
- Cosselin Cobblers, St. Paul, Minn. 757,391, canc. Cl. 39.
- Couparral Inc., St. Paul, Minn. 880,352, pub. 8–26–69. Cl. 19.
- Covema S.R.L., Milan, Italy. 880,379, pub. 8–26–69. Cl. 23.
- Crane Co., New York, N.Y. 880,378, pub. 8–26–69. Cl. 23.
- Crawford Mfg. Co., Inc., Richmond, Va. 519,222, ren. 11–11–69. Cl. 32.
- Croft, H. D. & E. H., Co., Minneapolis, Minn. 757,284, canc. Cl. 26.
- Crown Chemical Corp., Providence, R.I. 880,291, pub. 8–26–69. Cl. 6.
- Crown Peters Travel Services, Inc., New York, N.Y. 880,669–70, pub. 8–26–69. Cl. 105.
- Cudahy Brothers Co., to Patrick Cudahy Inc., Cudahy, Wis. 520,806, ren. 11–11–69. Cl. 46.
- Cudahy, Patrick, Inc. : *See*—
    - Cudahy Bros. Co.
- Cushing & Co., Chicago, Ill. 880,672, pub. 8–26–69. Cl. 106.
- Cutter Laboratories, to Cutter Laboratories, Inc., Berkeley, Calif. 516,941, ren. 11–11–69. Cl. 18.
- DPD Mfg. Co., Inc., San Antonio, Tex. 880,354, pub. 8–26–69. Cl. 19.
- Dahl, George W., Co., Inc., Bristol, R.I. 880,418, pub. 8–26–69. Cl. 26.
- Dainty Cookies, Inc., Palisades Park, N.J. 880,576, pub. 8–26–69. Cl. 46.
- Dairy Equipment Co., Madison, Wis. 880,419, pub. 8–26–69. Cl. 26.
- Dart Industries, Inc., from Rexall Drug & Chemical Co., d.b.a. Fiberfil, Los Angeles, Calif. 880,267, pub. 8–26–69. Cl. 1.
- Dazor Mfg. Corp., St. Louis, Mo. 880,364, pub. 8–26–69. Cl. 21.
- Deering, A. C., Co., Inc., Dedham, Mass. 757,136, canc. Cl. 12.
- Deering Milliken, Inc., New York, N.Y. 880,404, pub. 8–26–69. Cl. 23.
- Dell Publishing Co., Inc., New York, N.Y. 757,372, canc. Cl. 38.
- Dermatan Leather Co., Inc., Newark, N.J. 880,272, pub. 8–26–69. Cl. 1.
- Derthick, Richard T., Birmingham, Mich. 880,515–16, pub. 8–26–69. Cl. 39.
- De Terry, Carlos y Javier, S.L., Puerto de Santa Maria, Cadiz, Spain. 880,591, pub. 8–26–69. Cl. 49.
- Detroit Bank & Trust Co., The, Detroit, Mich. 880,648, pub. 8–26–69. Cl. 102.
- Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, Germany. 757,177–8, canc. Cl. 14.
- Die Mesh Corp., Pelham, N.Y. 880,325, pub. 8–26–69. Cl. 13.
- Diet Workshop, Inc., The, d.b.a. The Diet Workshop, Newton Corner, Mass. 880,677, pub. 8–26–69. Cl. 107.
- Disarro, Peter A., Johnston, R.I. 880,676, pub. 8–26–69. Cl. 107.
- Docutel Corp., Dallas, Tex. 880,346, pub. 8–26–69. Cl. 19.
- Doe Spun Inc., York, Pa. 880,506, pub. 8–26–69. Cl. 39.
- Donna Mare, Inc., d.b.a. Julius Caesar's Restaurant, Hialeah, Fla. 880,627, pub. 8–26–69. Cl. 100.
- Donnelley, Reuben H., Corp., The : *See*—
    - Yorke Publishing Co., Inc., The.
- Dorsett Electronics, Inc., Norman, Okla. 757,276, canc. Cl. 26.
- Douglas Furniture Corp., Chicago, Ill. 757,533, canc. Cl. 32.
- Dresser Industries, Inc. : *See*—
    - Manning, Maxwell & Moore, Inc.
- Drew Chemical Corp., New York, N.Y. 880,577–8, pub. 8–26–69. Cl. 46.
- Dryad Metal Works Ltd., Leicester, England. 880,315, pub. 8–26–69. Cl. 13.
- Dumas Milner Corp., Jackson, Miss. 757,123, canc. Cl. 6.
- Duncan, Donald F., Inc., Evanston, Ill. 757,229, canc. Cl. 22.
- Dunlap, Thomas E., Sonoma, Calif. 880,590, pub. 8–26–69. Cl. 47.
- Du Pont de Nemours, E. I., & Co., Wilmington, Del. 880,332, pub. 8–26–69. Cl. 16.
- Dwight & Lloyd Metallurgical Co., New York, N.Y., to McDowell-Wellman Engineering Co., Cleveland, Ohio. 265,935, ren. 11–11–69. Cl. 23.

- Eagle Shoe Mfg. Co., Inc., Everett, Mass. 880,524, pub. 8–26–69. Cl. 39.
- Educational Aids Publishing Corp., Long Island, N.Y. 880,499, pub. 8–26–69. Cl. 38.
- Egan Machine Corp., The, Terryville, Conn. 757,257, canc. Cl. 23.
- Eggway Foods, Inc., Jacksonville, Fla. 880,580, pub. 8–26–69. Cl. 46.
- Electronic Associates, Inc., West Long Branch, N.J. 880,423, pub. 8–26–69. Cl. 26.
- Elesh, Joseph, Skokie, Ill. 880,371, pub. 8–26–69. Cl. 22.
- Elgin National Industries, Inc. : *See*—
    - Elgin National Watch Co.
- Elgin National Watch Co., to Elgin National Industries, Inc., New York, N.Y. 260,356, ren. 11–11–69. Cl. 27.
- Endo Laboratories, Inc. : *See*—
    - Endo Products Inc.
- Endo Products Inc., Richmond Hill, to Endo Laboratories, Inc., Garden City, N.Y. 519,980, ren. 11–11–69. Cl. 18.
- Enterprise Industries, assor. by mesne assignments, to Bridgeport Brass Co., to Sterling Drug Inc., New York, N.Y. 443,336, ren. 11–11–69. Cl. 23.
- Esso Standard Oil Co., to Uniroyal, Inc., New York, N.Y. 520,908, ren. 11–11–69. Cl. 1.
- Ethyl Corp. : *See*—
    - Visking Corp., The.
- Euco Corp., Chicago, Ill. 757,310, canc. Cl. 29.
- Exemplar Service, Inc., Teaneck, N.J. 880,652, pub. 8–26–69. Cl. 102.
- F.A.M. Corp., Atlanta, Ga. 880,284, pub. 8–26–69. Cl. 4.
- Faber-Castell, A. W., Pencil Co., Inc., Newark, N.J. 515,258, ren. 11–11–69. Cl. 37.
- Fabrique d'Horlogerie de Fontainemelon S.A., Neuchatel, Switzerland. 880,443, pub. 8–26–69. Cl. 27.
- Fawcett Publications, Inc., Greenwich, Conn. 520,032, ren. 11–11–69. Cl. 38.
- Feron, Louis, Inc., New York, N.Y. 757,301, canc. Cl. 28.
- Fidelity Mutual Life Insurance Co., The, Philadelphia, Pa. 880,647, pub. 8–26–69. Cl. 102.
- Fillmore Citrus Association, Fillmore, Calif. 520,619, ren. 11–11–69. Cl. 46.
- Finese Products, Inc., Mount Kisco, N.Y. 880,531, pub. 8–26–69. Cl. 40.
- Firestone Tire & Rubber Co., Akron, Ohio. 757,427, canc. Cl. 43.
- Firestone Tire & Rubber Co., The, Akron, Ohio. 880,276, pub. 8–26–69. Cl. 2.
- Fitch, Robert F., d.b.a. Fitch Products Co., Glendale, Calif. 757,433, canc. Cl. 44.
- Fleming & Co., Pharmaceuticals, St. Louis, Mo. 880,342, pub. 8–26–69. Cl. 18.
- Flexible Tubing Corp., Guilford, Conn. 757,175, canc. Cl. 13.
- Flobert Co., Inc., The, New York, N.Y. 521,305, ren. 11–11–69. Cl. 39.
- Flo-Paint, Inc., Long Island City, N.Y. 880,314, pub. 6–17–69. Multiple Class (Classes 12 and 16).
- Florida Cypress Gardens, Inc., Cypress Gardens, Fla. 880,628, pub. 8–26–69. Cl. 101.
- Florsheim Shoe Co., The : *See*—
    - Interco Inc.
- Flow Technology, Inc., Tempe, Ariz. 880,415, pub. 8–26–69. Cl. 26.
- Fluoroware, Inc., Chaska, Minn. 880,430, pub. 8–26–69. Cl. 26.
- Ford, Philip H., d.b.a. Ann Howard, Hawick, Scotland. 757,387, canc. Cl. 39.
- Fralingers, Inc. : *See*—
    - Lampres, Theo. J., Inc.
- Franklin Coffee Urn Co. : *See*—
    - Franklin Coffee Urn Corp.
- Franklin Coffee Urn Corp., from Franklin Coffee Urn Co., Buffalo, N.Y. 757,158, canc. Cl. 13.
- Fredio Farms, Arvin, Calif. 880,588, pub. 8–26–69. Cl. 46.
- Fruehauf Corp., Detroit, Mich., from Paceco Inc., Alameda, Calif. 880,394, pub. 8–26–69. Cl. 23.
- Fruen Milling Co., Minneapolis, Minn. 880,547, pub. 8–26–69. Cl. 46.
- GAF Corp., New York, N.Y. 880,438, pub. 8–26–69. Cl. 26.
- GAF Corp., New York, N.Y. 880,481–2, pub. 8–26–69. Cl. 36.
- Garrett & Co., Inc., Brooklyn, N.Y., to Guild Wine Co., Lodi, Calif. 517,625, ren. 11–11–69. Cl. 47.
- Gary's Restaurants Franchise Co., Inc., Maplewood, N.J. 880,615–16, pub. 8–26–69. Cl. 100.
- Gasnick, Jack, d.b.a. Cross at the Green Enterprises, New York, N.Y. 880,425, pub. 8–26–69. Multiple Class (Classes 26 and 39).
- Gelles Neckwear Ltd., Inc., Boston, Mass. 880,505, pub. 8–26–69. Cl. 39.
- Gem Electronic Distributors, Inc., Farmingdale, N.Y. 757,222, canc. Multiple Class (Classes 21 and 36).
- General Battery & Ceramic Corp. : *See*—
    - Red-Bar Battery Co.
- General Electric Co., Schenectady, N.Y. 880,274, pub. 8–26–69. Cl. 1.
- General Electric Co., Schenectady, N.Y. 880,335, pub. 8–26–69. Cl. 16.
- General Grocer Co., St. Louis, Mo. 519,405, ren. 11–11–69. Cl. 46.
- General Instrument Corp., Newark, N.J. 880,359, pub. 8–26–69. Cl. 21.
- General Mills, Inc., Minneapolis, Minn. 880,525–7, pub. 8–26–69. Cl. 39.
- General Mills, Inc., Minneapolis, Minn. 880,589, pub. 8–26–69. Cl. 46.
- General Plastics, Inc., Auburn, Maine. 757,245, canc. Cl. 23.
- Genesco, Inc. : *See*—
    - Bendel, Henri, Inc.
- Gerber Legendary Blades, Portland, Oreg. 521,425, ren. 11–11–69. Cl. 23.
- Glamorise Foundations, Inc., New York, N.Y. 880,520, pub. 8–26–69. Cl. 39.
- Glanzstoff Ag., Glanzstoff-Haus, Germany. 880,273, pub. 8–26–69. Multiple Class (Classes 1, 39, 42, and 43).
- Glasser, Alfred H., Corp., New York, N.Y. 757,303, canc. Cl. 28.
- Glendinning Co., Inc., Westport, Conn. 880,638–40, pub. 8–26–69. Cl. 101.
- Global Plastics Inc., Beverly Hills, Calif. 757,076, canc. Cl. 2.
- Golden Eagle Refining Co., Inc. : *See*—
    - Sunset Pacific Oil Co.
- Golf Course Superintendents Association, The, Des Plaines, Ill. 880,496, pub. 8–26–69. Cl. 38.
- Gomei Kaisha Kokando, Osaka, Japan. 880,299–300, pub. 8–26–69. Cl. 6.
- Goodyear Tire & Rubber Co., The, Akron, Ohio. 515,729, ren. 11–11–69. Cl. 15.
- Goodyear Tire & Rubber Co., The, Akron, Ohio. 517,875, ren. 11–11–69. Cl. 16.
- Goodyear Tire & Rubber Co., The, Akron, Ohio. 880,474, pub. 8–26–69. Cl. 35.
- Gower, James W., Bobby Max Gower, Finis Harold Gower, and Alma Gower Moore, Nashville, Tenn. 880,479, pub. 8–26–69. Cl. 36.
- Grace, W. R., & Co., New York, N.Y. 880,298, pub. 8–26–69. Cl. 6.
- Grace, W. R., & Co, New York, N.Y. 880,487, pub. 8–26–69. Cl. 37.
- Grand Union Co., The, East Paterson, N.J. 880,633, pub. 8–26–69. Cl. 101.
- Greene, Tweed & Co., to Greene, Tweed & Co., Inc., North Wales, Pa. 520,867, ren. 11–11–69. Cl. 35.
- Greyhound Corp., The, Chicago, Ill. 880,663, pub. 8–26–69. Cl. 105.
- Groomaid International Ltd., Merrick, N.Y. 880,448, pub. 8–26–69. Cl. 29.
- Gruber, Carlo, Plabutsucherstrabe, Austria. 880,510, pub. 8–26–69. Cl. 39.
- Guild Wine Co. : *See*—
    - Garrett & Co., Inc.
- HMH Publishing Co., Inc., Chicago, from T. E. Coleman, Evergreen Park, Ill. 880,675, pub. 8–26–69. Cl. 107.
- Haas-Miller Corp., to Harry Miller Corp., Philadelphia, Pa. 520,249, ren. 11–11–69. Cl. 15.
- Hall, Stuart, Co., Inc., Kansas City, Mo. 517,020, ren. 11–11–69. Cl. 37.
- Hampton Mills, Inc., Inc., d.b.a. House of Cameo of Cherrylog, Ga., Ellijay, Ga. 880,533–4, pub. 8–26–69. Cl. 42.
- Happy House Inc., d.b.a. Happy House Shops, Hopkins, Minn. 757,477, canc. Cl. 46.
- Harbor Chemical & Engineering Corp., Chicago, Ill. 880,293, pub. 8–26–69. Cl. 6.
- Hardtmuth, L. & C., Inc., Bloomsbury, N.J. 515,288, ren. 11–11–69. Cl. 37.
- Harrison, Benjamin, Chicago, Ill. 757,500, canc. Cl. 52.
- Harvey & Otis Inc., Providence, R.I. 516,300, ren. 11–11–69. Cl. 28.
- Har-Wil Corp., Warminster, Pa. 880,467, pub. 8–26–69. Cl. 34.
- Hawes, Roland J., Jr., from Supplements, Inc., Boise, Idaho. 880,381, pub. 8–26–69. Cl. 23.
- Heinz, H. J., Co., Pittsburgh, Pa. 880,542, pub. 8–26–69. Multiple Class (Classes 45 and 46).
- Henredon Furniture Industries, Inc., Morganton, N.C. 757,327, canc. Cl. 32.
- Henry Furnace Co., The, Medina, Ohio. 757,347, canc. Cl. 34.
- Hess, Dr., & Clark, Inc., Ashland, Ohio, to Richardson-Merrell Inc., New York, N.Y. 515,770, ren. 11–11–69. Cl. 18.
- Hobart Mfg. Co., Troy, Ohio. 880,317, pub. 8–26–69. Cl. 13.
- Hobco Marine Systems, Inc., Greenwich, Conn. 880,465, pub. 8–26–69. Cl. 33.
- Hoffmaster Co., Inc. : *See*—
    - Hoffmaster Paper Co., Inc.
- Hoffmaster Paper Co., Inc., to Hoffmaster Co., Inc., Oshkosh, Wis. 520,592, ren. 11–11–69. Cl. 37.
- Hollmann K.G., Bunderepublik, Germany. 880,495, pub. 8–26–69. Cl. 38.
- Hollywood Brands, Inc., d.b.a. Hollywood Candy Co., Centralia, to Consolidated Foods Corp., Chicago, Ill. 515,986, ren. 11–11–69. Cl. 46.
- Hopper, M. D., Hanford, Calif. 513,701–2, ren. 11–11–69. Cl. 46.
- Houdaille Industries, Inc., Buffalo, N.Y. 880,474, pub. 8–26–69. Cl. 34.
- Houghton, E. F., & Co., Philadelphia, Pa. 520,284, ren. 11–11–69. Cl. 52.
- House of Cameo of Cherrylog, Ga. : *See*—
    - Hampton Mills, Inc.
- Houstonaire, Inc., Houston, Tex. 880,622, pub. 8–26–69. Multiple Class (Classes 100 and 107).
- Hudson Pulp & Paper Corp., New York, N.Y. 880,287, pub. 8–26–69. Cl. 5.
- Humber Ltd., Coventry, Warwickshire, England. 511,551, ren. 11–11–69. Cl. 19.
- Hummel Technical Products, Inc., New York, N.Y. 757,247, canc. Cl. 23.
- Hurley Co., Jeffersonville, Ind. 880,570, pub. 8–26–69. Cl. 46.
- Hurst, Vanda Sauerborn : *See*—
    - Sauerborn, Leo J.
- Hydro Mfg. Co., Inc., Reading, Pa. 757,318, canc. Cl. 31.
- Hydrotrole Ltd., Stockport, England. 880,395, pub. 8–26–69. Cl. 23.
- I-T-E Imperial Corp., Philadelphia, Pa. 880,439, pub. 8–26–69. Cl. 26.

Ideal Brushes, Inc., North Hollywood, Calif. 880,451, pub. 8–26–69. Cl. 29.
Ideal Toy Corp., Hollis, N.Y. 757,227, canc. Cl. 22.
Ilford, Ltd., Ilford, Essex, England. 757,116–17, canc. Cl. 6.
Ilford, Ltd., Ilford, Essex, England. 757,287, canc. Cl. 26.
Ilford, Ltd., Ilford, Essex, England. 757,376, canc. Cl. 38.
Imperial Knife Associated Companies, Inc.: *See*—
  Imperial Knife Co., Inc.
Imperial Knife Associated Companies, Inc., Providence, R.I. 880,382, pub. 8–26–69. Cl. 23.
Imperial Knife Co., Inc., to Imperial Knife Associated Companies, Inc., Providence, R.I. 518,651, ren. 11–11–69. Cl. 23.
Impulsphysik G.m.b.H., Hamburg-Rissen, Germany. 880,434, pub. 8–26–69. Cl. 26.
Indian Head Inc.: *See*—
  Native Laces & Textiles, Inc.
Indian Head Inc., New York, N.Y. 880,540, pub. 8–26–69. Cl. 42.
Industrial Biochemicals, Inc., Edison, N.J. 757,109, canc. Cl. 6.
Industrial Brush Co., Pomona, Calif. 880,449, pub. 8–26–69. Cl. 29.
Industrial Development Service, Geneva, Switzerland. 757,519, canc. Cl. 102.
Industrial Lubricants Co., Inc., San Antonio, Tex. 880,285, pub. 2–4–69. Multiple Class (Classes 5, 6, and 15).
Industrial Reproductions, Inc., Nashua, N.H. 880,412, pub. 8–26–69. Multiple Class (Classes 26 and 100).
Information & Systems Institute, Inc., Cambridge, Mas. 880,681, pub. 8–26–69. Cl. 107.
Interco Inc., d.b.a. The Florsheim Shoe Co., Chicago, Ill. 880,523, pub. 8–26–69. Cl. 39.
International Rubber Corp., Avon, Mass. 880,596, pub. 8–26–69. Cl. 50.
International Telephone & Telegraph Corp., New York, N.Y. 880,475, pub. 8–26–69. Cl. 34.
Invincible Metal Furniture Co., Manitowoc, Wis. 880,462, pub. 8–26–69. Cl. 32.
Ironees Co., The, Philadelphia, Pa. 880,367, pub. 8–26–69. Multiple Class (Classes 21 and 24).
Irrigation Motor & Pump Co., Longmont, Colo. 880,320, pub. 8–26–69. Cl. 13.
Isi Fischzag, New York, N.Y. 757,308, canc. Cl. 28.
Isocyanate Products, Inc., New Castle, Del. 880,268, pub. 8–26–69. Cl. 1.
Iwaski Denki Kabushiki Kaisha, Tokyo, Japan. 757,211, canc. Cl. 21.
JFD Electronics Corp., Brooklyn, from Stratford Retreat House, White Plains, N.Y. 880,361, pub. 5–27–69. Cl. 21.
James, Michael, Inc., Washington, D.C. 800,620, pub. 8–26–69. Cl. 100.
Jensen, Emil E., Monrovia, Calif. 880,417, pub. 8–26–69. Cl. 26.
John-Wilmer Co., Inc., The, Atlanta, Ga. 880,345, pub. 8–26–69. Cl. 19.
John-Wilmer Co., Inc., Atlanta, Ga. 880,393, pub. 8–26–69. Cl. 23.
Johnson & Johnson, New Brunswick, N.J. 880,538, pub. 8–26–69. Cl. 42.
Johnson, Nestor, Mfg. Co., Chicago, Ill. 512,016, ren. 11–11–69. Cl. 22.
Johnson Service Co., Milwaukee, Wis. 880,422, pub. 4–8–69. Cl. 26.
Journal Publications: *See*—
  Journal Publishing Co., Inc., The.
Journal Publishing Co., Inc., The, to Journal Publications, Belfast, Maine. 516,990, ren. 11–11–69. Cl. 38.
Jute Industries Ltd., Dundee, England. 757,422, canc. Cl. 42.
K & C Wig Creations, Inc., Philadelphia, Pa. 880,530, pub. 8–26–69. Cl. 40.
Kahr Bearing Corp., Burbank, Calif. 880,399, pub. 8–26–69. Cl. 23.
Kamplex A/S, Assens, Denmark. 880,365, pub. 8–26–69. Multiple Class (Classes 21, 26, and 44).
K-Boose, Inc., St. Paul, Minn. 880,350, pub. 8–26–69. Cl. 19.
Keely, Gardner, Swasey, Inc., Miami, Fla. 880,319, pub. 8–26–69. Cl. 13.
Keim-Diat G.m.b.H., Augsburg, Germany. 880,549, pub. 8–26–69. Cl. 46.
Kelly & Weinman, Inc., New York, N.Y. 880,559, pub. 8–26–69. Cl. 46.
Kennedy Van Saun Corp., Danville, Pa. 880,388, pub. 8–26–69. Cl. 23.
Kenner Products Co., Cincinnati, Ohio. 880,688. Cl. 36.
Kentucky Fried Chicken Corp., Nashville, Tenn. 880,621, pub. 8–26–69. Cl. 100.
Keystone Cooperative Grape Association, North East, Pa. 880,567, pub. 8–26–69. Cl. 46.
Kidde, Walter, & Co., Inc., Belleville, N.J. 880,301, pub. 8–26–69. Cl. 6.
Kimberly-Clark Corp., Neenah, Wis. 880,485, pub. 8–26–69. Cl. 37.
Kincaid Furniture Co., Inc., Hudson, N.C. 757,326, canc. Cl. 32.
Kinston Free Press Co., Inc., Kinston, N.C. 520,069, ren. 11–11–69. Cl. 38.
Kitco Eng. & Mfg. Co., Bluffton, Ind., from The K-Way Dispensing Equipment Co., Cleveland, Ohio. 880,455, pub. 8–26–69. Cl. 31.
Knudsen, Anni & Bent, Kolding, Denmark. 757,305, canc. Cl. 28.
Kohnstamm, H., & Co., Inc., New York, N.Y. 516,066, ren. 11–11–69. Cl. 52.
Kohnstamm, H., & Co., Inc., New York, N.Y. 516,950–1, ren. 11–11–69. Cl. 6.
Kohnstamm, H., & Co., Inc., New York, N.Y. 517,976, ren. 11–11–69. Cl. 52.
Koppers Co., Inc.: *See*—
  Unit Structures, Inc.
Koppers Co., Inc., Pittsburgh, Pa. 757,106, canc. Cl. 6.
Koretz, William R., New York, N.Y. 880,581, pub. 8–26–69. Cl. 46.
Kramer Jewelry Creations, Inc., New York, N.Y. 520,954, ren. 11–11–69. Cl. 28.
Kreider's, W. L., Sons Mfg. Co., Inc., The, Palmyra, Pa. 518,592, ren. 11–11–69. Cl. 39.
Kuss, R. L., & Co., Inc., Findlay, Ohio. 880,312, pub. 8–26–69. Cl. 12.
La Belle Industries, Inc., Oconomowoc, Wis. 880,424, pub. 8–26–69. Cl. 26.
Laher Spring & Electric Car Corp.: *See*—
  Laher Spring & Tire Corp.
Laher Spring & Tire Corp., to Laher Spring & Electric Car Corp., Oakland, Calif. 511,283, ren. 11–11–69. Cl. 21.
Laher Spring & Tire Corp., to Laher Spring & Electric Car Corp., Oakland, Calif. 515,842, ren. 11–11–69. Cl. 19.
Lapres, Theo. J., Inc., to Fralingers, Inc., Atlantic City, N.J. 266,394, ren. 11–11–69. Cl. 46.
Larsen Products, Inc., Benton Harbor, Mich. 757,174, canc. Cl. 13.
Latex Process, Inc., Melrose, Mass. 757,093, canc. Cl. 5.
Latin Percussion Co.: *See*—
  Cohen, Martin.
Lavery, David, & Son Proprietary Ltd., Victoria, Australia. 880,556, pub. 8–26–69. Cl. 46.
Leader Candies, Inc., Brooklyn, N.Y. 880,574, pub. 8–26–69. Cl. 46.
Lebanon Steel Foundry, Lebanon, Pa. 261,563, ren. 11–11–69. Cl. 14.
Ledeen Inc., El Monte, Calif. 757,244, canc. Cl. 23.
Lefebure Corp., Cedar Rapids, Iowa. 880,406, pub. 8–26–69. Cl. 25.
Lempco Industries, Inc., Cleveland, Ohio. 880,402, pub. 8–26–69. Multiple Class (Classes 23, 31, and 35).
Les Parfums Jean Desses, Paris, France. 757,488, canc. Cl. 51.
Lester Laboratories, Inc., Atlanta, Ga. 880,297, pub. 8–26–69. Cl. 6.
Lily-Tulip Cup Corp., New York, N.Y. 880,390, pub. 8–26–69. Cl. 23.
Linky's Inc., Savannah, Ga. 880,625, pub. 8–26–69. Cl. 100.
Listo Pencil Corp., Alameda, Calif. 880,494, pub. 8–26–69. Cl. 37.
Locke, Clifford J.: *See*—
  Check-Stop, Inc.
Long Island Macaroni Co., Inc., Deer Park, N.Y. 880,583, pub. 8–26–69. Cl. 46.
Lorillard Corp., New York, N.Y. 880,305, pub. 7–8–69. Cl. 8.
Lovable Co., The, Atlanta, Ga. 880,528, pub. 8–26–69. Cl. 39.
Lowe's Inc., Cassopolis, Mich. 880,271, pub. 8–26–69. Cl. 1.
Lowndes Products, Inc., from Lowndes Products, Inc., Philadelphia, Pa. 880,489, pub. 8–26–69. Multiple Class (Classes 37 and 42).
Lubbock Mfg. Co., Lubbock, Tex. 880,686. Cl. 23.
Ludlow Corp., Needham Heights, Mass. 880,535, pub. 8–26–69. Cl. 42.
Lukens, Savage & Washburn, Philadelphia, Pa. 757,378, canc. Cl. 38.
MIF Industries: *See*—
  Malleable Iron Fittings Co.
MPB Corp., Keene, N.H. 880,397, pub. 8–26–69. Cl. 23.
Macdermid Inc., Waterbury, Conn. 514,142, ren. 11–11–69. Cl. 4.
Macmillan Ring-Free Oil Co., Inc., New York, N.Y. 757,503, canc. Cl. 52.
Macnaughton-Brooks Ltd., Ontario, Canada. 880,309, pub. 5–2–67. Cl. 12.
Madison Square Garden Center, Inc.: *See*—
  Madison Square Garden Corp.
Madison Square Garden Corp., from Madison Square Garden Center, Inc., New York, N.Y. 880,679, pub. 8–26–69. Cl. 107.
Mahoney, Richard H., d.b.a. Industrial Adreply Co., Norwood, Pa. 880,498, pub. 8–26–69. Cl. 38.
Majestic Lock Co., Inc., New York, N.Y. 880,403, pub. 8–26–69. Cl. 23.
Malleable Iron Fittings Co., New Haven, to MIF Industries, Branford, Conn. 510,262, ren. 11–11–69. Cl. 13.
Man In Motion, Inc., Chicago, Ill. 880,641, pub. 8–26–69. Cl. 101.
Manhasset Specialty Co., Inc., Yakima, Wash. 757,333, canc. Cl. 32.
Manning, Maxwell & Moore, Inc., New York, N.Y., to Dresser Industries, Inc., Dallas, Tex. 520,972, ren. 11–11–69. Cl. 26.
Marchant Calculating Machine Co., Emeryville, Calif., to SCM Corp., New York, N.Y. 517,593, ren. 11–11–69. Cl. 26.
Marland, Fredic, d.b.a. F.M. Products, Norwalk, Conn. 757,130, canc. Cl. 8.
Marolf Hygienic Equipment, Inc., Clearwater, Fla. 880,408, pub. 8–26–69. Cl. 25.
Mar-Shel Agencies, Inc., Spokane, Wash. 757,498, canc. Cl. 52.
Martoccio, F. A., Co., d.b.a. Hollywood Candy Co., Minneapolis, Minn., to Consolidated Foods Corp., Chicago, Ill. 261,488, ren. 11–11–69. Cl. 46.
Marvin, W. H., Co., The, Urbana, Ohio. 516,800, ren. 11–11–69. Cl. 46.
Maschinenfabrik Uerkheim Ag., Uerkheim, Switzerland. 757,115, canc. Cl. 6.
Mattel, Inc., Hawthorne, Calif. 757,226, canc. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 880,376, pub. 8–26–69. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 880,486, pub. 8–26–69. Cl. 37.

Mayer, Oscar, & Co., Inc., Madison, Wis. 880,459, pub. 8–26–69. Cl. 32.
McDonald Mfg. Co., Los Angeles, to Sierra Electric, Inc., Gardena, Calif. 514,811–13, ren. 11–11–69. Cl. 21.
McDowell-Wellman Engineering Co.: *See*—
  Dwight & Lloyd Metallurgical Co.
McNeil Laboratories, Inc., Fort Washington, Pa. 880,343, pub. 7–8–69. Cl. 18.
Mead Corp., The, Dayton, Ohio. 880,323, pub. 8–26–69. Multiple Class (Classes 13, 23, and 37).
Medallion Pool Corp., Lindenburst, N.Y. 880,657, pub. 8–26–69. Cl. 103.
Melville Shoe Corp., New York, N.Y. 757,403, canc. Cl. 39.
Mercantile Trust Co. National Association, St. Louis, Mo. 880,630, pub. 8–26–69. Multiple Class (Classes 101 and 102).
Metaframe Corp., Maywood, N.J. 880,453, pub. 8–26–69. Cl. 31.
Metalcrafters Specialties Inc., Bronx, N.Y. 880,685. Cl. 19.
Metalphoto Corp., Cleveland, Ohio. 880,296, pub. 8–26–69. Cl. 6.
Metrawatt Aktiengesellschaft, Nuernberg O, Germany. 880,427, pub. 8–26–69. Cl. 26.
Metro-Tel Corp., Westbury, N.Y. 880,368, pub. 8–26–69. Cl. 21.
Michigan Ladder Co., Ypsilanti, Mich. 880,373, pub. 8–26–69. Cl. 22.
Miles Laboratories, Inc., Elkhart, Ind. 880,302, pub. 8–26–69. Multiple Class (Classes 6 and 18).
Millars' Machinery Co., Ltd., and Pinners Hall, London, England. 757,251, canc. Cl. 23.
Mlle. Liberte Inc., New York, N.Y. 757,381, canc. Cl. 39.
Minnesota Laboratories, Virginia, Minn. 757,105, canc. Cl. 6.
Miracle Ribbon Products Corp., Nashville, Tenn. 757,412, canc. Cl. 40.
Modell, Emanuel, Bronx, N.Y. 880,363, pub. 8–26–69. Cl. 21.
Mondaine Watch Ltd., Zurich, Switzerland. 880,440, pub. 8–26–69. Cl. 27.
Montana Flour Mills Co., Great Falls, Mont. 880,561, pub. 8–26–69. Cl. 46.
Morbark Debarker Co., Winn, Mich. 880,384, pub. 8–26–69. Cl. 23.
Morrell, John, & Co., Chicago, Ill. 757,456, canc. Cl. 46.
Morris, Philip, Inc., New York, N.Y. 880,337, pub. 8–26–69. Cl. 17.
Muir, E. O., & Co., to Muir-Roberts Co., Inc., Salt Lake, Utah. 521,376, ren. 11–11–69. Cl. 46.
Muir-Roberts Co., Inc.: *See*—
  Muir, E. O., & Co.
Murdock Webbing Co., Inc., Central Falls, R.I. 880,324, pub. 8–26–69. Cl. 13.
Myrurgia S.A., to Myrurgia, S.A., Barcelona, Spain. 261,353, ren. 11–11–69. Cl. 51.
Myrurgia S.A., to Myrurgia, S.A., Barcelona, Spain. 261,552, ren. 11–11–69. Cl. 51.
Nan-Flower Lingerie, Inc., New York, N.Y. 880,513, pub. 8–26–69. Cl. 39.
National Association of Foremen, to The National Management Association Inc., Dayton, Ohio. 518,214, ren. 11–11–69. Cl. 38.
National Association of Real Estate Boards, Chicago, Ill. 519,789–90, ren. 11–11–69. Cl. 102.
National Design Center Delaware Inc., New York, N.Y. 880,416, pub. 8–26–69. Cl. 26.
National Management Association Inc., The: *See*—
  National Association of Foremen.
National Mattress Co., Huntington, W. Va. 880,463, pub. 8–26–69. Cl. 32.
Native Laces & Textiles, Inc., to Indian Head Inc., New York, N.Y. 520,995, ren. 11–11–69. Cl. 42.
Nelson Sales Co., Kansas City, Mo. 880,281, pub. 8–26–69. Multiple Class (Classes 3 and 9).
Netallurgica Vive y Casals, S.A., Barcelona, Spain. 880,326, pub. 8–26–69. Cl. 13.
New York Pencil Co., Inc., New York, N.Y. 880,600–1, pub. 8–26–69. Cl. 51.
News Electronics Corp., Chatsworth, Calif. 880,436, pub. 8–26–69. Cl. 26.
Nikko Ceramics, Inc., New York, N.Y. 880,452, pub. 8–26–69. Cl. 30.
Norcross, Inc., New York, N.Y. 880,490, pub. 7–15–69. Cl. 37.
North Star Dairy, St. Paul, Minn. 880,569, pub. 8–26–69. Cl. 46.
Novo Industrial Corp., New York, N.Y. 880,321, pub. 8–26–69. Cl. 13.
Oceanic Properties, Inc., Honolulu, Hawaii. 880,306, pub. 8–26–69. Cl. 9.
Octagon Ventilator Co., Chicago, Ill. 757,335, canc. Cl. 34.
Ohio Leather Co., The, Girard, Ohio. 757,074, canc. Cl. 1.
Old Home Foods, Inc., St. Paul, Minn. 880,554, pub. 8–26–69. Cl. 46.
Old Town Shoe Co., Boston, Mass. 880,517, pub. 8–26–69. Cl. 39.
Olson Electronics, Inc., Akron, Ohio. 880,369, pub. 8–26–69. Multiple Class (Classes 21, 26, and 36).
Olson's Royal Coach Tours, Inc., Chicago, Ill. 880,668, pub. 8–26–69. Cl. 105.
Onsrud Machine Works, Inc., Niles, Ill. 757,258, canc. Cl. 23.
Ortho Pharmaceutical Corp., Raritan, N.J. 757,114, canc. Cl. 6.
Osborne Photographic Laboratories, Inc., Cincinnati, Ohio. 880,618–19, pub. 8–26–69. Cl. 100.
Otsuka Chemical Co., Ltd., Osaka, Japan. 880,339, pub. 8–26–69. Cl. 18.
Outboard Marine Corp.: *See*—
  Outboard Marine & Mfg. Co.
Outboard Marine & Mfg. Co., to Outboard Marine Corp., Waukegan, Ill. 519,909, ren. 11–11–69. Cl. 23.
Owens-Corning Fiberglas Corp., Toledo, Ohio. 880,286, pub. 8–26–69. Cl. 5.
Oxford Mills, Inc., Ware, Mass. 757,425, ren. 11–11–69. Cl. 42.
Oy Soumen Vanutehdas-Finnwad Ltd., Alexna dersgatan Helsingfors, Finland. 880,502, pub. 8–26–69. Multiple Class (Classes 39 and 42).
Palmetto State Life Insurance Co., Columbia, S.C. 880,650, pub. 8–26–69. Cl. 102.
Paragon Hair Goods, Ltd., New York, N.Y. 880,532, pub. 8–26–69. Cl. 40.
Parker Pattern & Foundry Co., The, to Parker Sweeper Co., Springfield, Ohio. 518,158, ren. 11–11–69. Cl. 23.
Parker Sweeper Co.: *See*—
  Parker Pattern & Foundry Co., The.
Patterson, B. A., d.b.a. Albulac Co., Chicago, Ill. 880,579, pub. 8–26–69. Cl. 46.
Pearce Mfg. Co., Latrobe, to Pearce Woolen Mills, Inc., Woolrich, Pa. 517,973, ren. 11–11–69. Cl. 42.
Pearce Woolen Mills, Inc.: *See*—
  Pearce Mfg. Co.
Peerless Trailer & Truck Service, Inc., Tualatin, Oreg. 880,348, pub. 8–26–69. Cl. 19.
Penn-Dale Knitting Mills, Inc., Sinking Spring, Pa. 880,508, pub. 8–26–69. Cl. 39.
Performance Systems, Inc., from Minnie Pearl's Chicken System, Inc., Nashville, Tenn. 880,551, pub. 8–26–69. Cl. 46.
Perugina S.p.A., Cioccolato & Confetture, Perugia, Italy. 880,555, pub. 8–26–69. Cl. 46.
Peter Pan's Pantry, Inc., Memphis, Tenn. 757,516, canc. Cl. 101.
Peterson, Charles A., Co., The, Cleveland, Ohio. 443,578–9, ren. 11–11–69. Cl. 46.
Peterson Filters & Engineering Co., Salt Lake City, Utah. 757,315, canc. Cl. 31.
Peterson Machine Tool, Inc., Merriam, Kans. 880,391, pub. 8–26–69. Cl. 23.
Petri Cigar Co., Clarksville, Tenn., from Angelo Squillo, New Haven, Conn. 757,186, canc. Cl. 17.
Petroleum Engineer Publishing Co., The, Dallas, Tex. 880,497, pub. 8–19–69. Cl. 38.
Pevely Dairy Co., St. Louis, Mo. 880,557, pub. 8–26–69. Cl. 46.
Pfizer, Chas., & Co., Inc., New York, N.Y. 880,602, pub. 8–26–69. Cl. 51.
Philadelphia Chewing Gum Corp., Havertown, Pa. 880,575, pub. 8–26–69. Cl. 46.
Phillips Petroleum Co., Bartlesville, Okla. 880,662, pub. 8–26–69. Cl. 105.
Physicians Mutual Insurance Co., Omaha, Nebr. 880,655, pub. 8–26–69. Cl. 102.
Piccard, Lucien, Sportswear, Ltd., New York, N.Y. 880,519, pub. 8–26–69. Cl. 39.
Pike Corp. of America, Los Angeles, Calif. 880,318, pub. 7–29–69. Cl. 13.
Pillsbury Co., The, Minneapolis, Minn. 880,544–6, pub. 8–26–69. Cl. 45.
Plastic Mold & Engineering Co., East Providence, R.I. 757,213, canc. Cl. 21.
Plough Chemical Co., to Plough, Inc., Memphis, Tenn. 261,716, ren. 11–11–69. Cl. 18.
Plough, Inc.: *See*—
  Plough Chemical Co.
Portable Appliances Inc., New York, N.Y. 757,316, canc. Cl. 31.
Portland Furniture Mfg. Co., Portland, Oreg. 880,460, pub. 8–26–69. Cl. 32.
Pratt & Lambert-Inc., Erie, N.Y. 880,334, pub. 8–26–69. Cl. 16.
Precision Paint Corp., Atlanta, Ga. 880,331, pub. 8–26–69. Cl. 16.
Procino-Rossi Corp., Auburn, N.Y. 880,565, pub. 8–26–69. Cl. 46.
Professional Chemicals Corp., Phoenix, Ariz. 880,609, pub. 8–26–69. Cl. 52.
Progressive Industries Corp., from Tru-Foto, Inc., Dayton, Ohio. 880,673, pub. 8–26–69. Cl. 106.
Puccini Boys' Wear, Inc., New York, N.Y. 757,397, canc. Cl. 39.
Purdue Frederick Co., The, New York, N.Y. 757,198, canc. Cl. 18.
Puritan Sportswear Corp., The Altoona, Pa. 757,392, canc. Cl. 39.
Putman, Charles E., to Colonial Cedar Co., Inc., Seattle, Wash. 261,914, ren. 11–11–69. Cl. 12.
Quaker Oats Co., The, Chicago, Ill. 515,666, ren. 11–11–69. Cl. 46.
Quaker Oats Co., The, Chicago, Ill. 519,293, ren. 11–11–69. Cl. 6.
Quaker Oats Co., The, d.b.a. Burry's or Burry Biscuit Division, Chicago, Ill. 880,585, pub. 8–26–69. Cl. 46.
Quiet Worlds, Inc., Winter Park, Fla. 880,594, pub. 8–26–69. Cl. 50.
RCV Corp., El Monte, Calif. 880,322, pub. 8–26–69. Cl. 13.
Ralston Purina Co., St. Louis, Mo. 880,587, pub. 8–26–69. Cl. 46.
Rapistan Inc., Grand Rapids, Mich. 880,400, pub. 8–26–69. Cl. 23.
Ray Products Co., Inc., Alhambra, Calif. 880,473, pub. 8–26–69. Cl. 34.
Raytheon Co.: *See*—
  Raytheon Mfg. Co.
Raytheon Mfg. Co., Newton, to Raytheon Co., Lexington, Mass. 514,648, ren. 11–11–69. Cl. 21.
Recognition Equipment Inc., Dallas, Tex. 880,632, pub. 8–26–69. Cl. 101.

Red-Bar Battery Co., Dayton, Ohio, to General Battery & Ceramic Corp., Reading, Pa. 518,339, ren. 11–11–69. Cl. 21.
Regal Fruit Cooperative, Tonasket, Wash. 880,560, pub. 8–26–69. Cl. 46.
Regiscope Corp. of America, New York, N.Y. 880,420, pub. 8–26–69. Cl. 26.
Republic Steel Corp., Cleveland, Ohio. 880,328, pub. 8–26–69. Cl. 14.
Retiree Research & Development Institute, Inc., Toledo, Ohio. 757,113, canc. Cl. 6.
Reven Industries, Inc., Sioux Falls, S. Dak. 880,409, pub. 8–26–69. Cl. 25.
Reynolds Metals Co., Richmond, Va. 757,180, canc. Cl. 14.
Rhode Island Textile Co., Pawtucket, R.I. 520,962, ren. 11–11–69. Cl. 40.
Richardson-Merrell Inc.: *See*—
  Dr. Hess & Clark, Inc.
Rich-Con Inc., El Segundo, Calif. 757,270, canc. Cl. 23.
Richter Research Products Corp., Woodside, N.Y. 880,599, pub. 8–26–69. Cl. 51.
Richter Research Products Corp., Woodside, N.Y. 880,607, pub. 8–26–69. Cl. 52.
Rio-Tex CITRUS Association, Edinburg, Tex. 880,573, pub. 8–26–69. Cl. 46.
Robart International, Inc., New York, N.Y. 757,400, canc. Cl. 39.
Robbin, Meyer, d.b.a. Robbin Products, Los Angeles, to Robbin Products Co., Beverly Hills, Calif. 520,914, ren. 11–11–69. Cl. 27.
Robbin Products Co.: *See*—
  Robbin Meyer.
Robins, A. H., Co., Richmond, Va. 880,564, pub. 8–26–69. Cl. 46.
Robins, A. H., Co., Richmond, Va. 880,572, pub. 8–26–69. Cl. 46.
Rogers Canning Co., Milton-Freewater, Oreg. 757,446, canc. Cl. 46.
Ronay, Inc., New York, N.Y. 515,805, ren. 11–11–69. Cl. 3.
Roth Young Personnel Service, Inc., New York, N.Y. 880,634, pub. 8–26–69. Cl. 101.
Rottmann, Betty C., Columbia, Mo. 880,631, pub. 8–26–69. Cl. 101.
Royal Industries, Inc., from Royal Industries, Pasadena, Calif. 880,392, pub. 8–26–69. Cl. 23.
Ryan, Patrick J., Los Angeles, Calif. 757,147, canc. Cl. 12.
SCM Corp.: *See*—
  Merchant Calculating Machine Co.
  Smith, L. C., & Corona Typewritters, Inc.
SCM Corp., d.b.a. Durkee Famous Foods, Cleveland, Ohio. 880,548, pub. 8–26–69. Cl. 46.
Safe-Guard of America, Inc., Kansas City, Mo. 757,100, canc. Cl. 6.
Sandler, A., Co.: *See*—
  Selby Shoe Co., The.
Sarns, Inc., Ann Arbor, Mich. 880,541, pub. 8–26–69. Cl. 44.
Sauerborn, Leo J., d.b.a. Lubaid Co., to Vanda Sauerborn Hurst d.b.a. Lubaid Co., Milwaukee, Wis. 510,622, ren. 11–11–69. Cl. 6.
Saylor's, Miss. Chocolates, Inc., Oakland, Calif. 518,589–90, ren. 11–11–69. Cl. 46.
Schenley Distillers, Inc., New York, N.Y. 757,475, canc. Cl. 49.
Schenley Industries, Inc., New York, N.Y. 519,158, ren. 11–11–69. Cl. 47.
Schwin Bicycle Co., Chicago, Ill. 880,349, pub. 8–26–69. Cl. 19.
Seagram, Joseph E., & Sons, Inc., New York, N.Y. 757,476, canc. Cl. 49.
Sea/Shore Products, Inc., Hinsdale, Ill. 880,375, pub. 8–26–69. Cl. 22.
Security Electronics, Inc., Omaha, Nebr. 880,428–9, pub. 8–26–69. Cl. 26.
Selby Shoe Co., The, Portsmouth, Ohio, to A. Sandler Co., Needham Heights, Mass. 521,156, ren. 11–11–69. Cl. 39.
Select Nurseries, Inc., Brea, Calif. 757,064–5, canc. Cl. 1.
Sentry Hardware Corp., Cleveland, Ohio. 880,336, pub. 8–26–69. Cl. 16.
Seven Kings, Inc., Lexington, Ky. 880,626, pub. 8–26–69. Cl. 100.
Seward Luggage Mfg. Co., Petersburg, Va. 757,089, canc. Cl. 3.
Sexauer, J. A., Mfg. Co., Inc., White Plains, N.Y. 880,470, pub. 8–26–69. Cl. 34.
Shade, William A., Co., Inc., Belmont, Calif. 880,553, pub. 8–26–69. Cl. 46.
Shell Oil Co., New York, N.Y. 880,341, pub. 8–26–69. Cl. 18.
Sherwood Medical Industries Inc.: *See*—
  Aloe, A. S., Co.
Sierra Electric, Inc.: *See*—
  McDonald Mfg. Co.
Show Biz, Inc., Nashville, Tenn. 880,682, pub. 8–26–69. Cl. 107.
Siloo Inc., New York, N.Y. 880,288, pub. 8–26–69. Cl. 6.
Simplex, Inc., to Berg Equipment Corp., Marshfield, Wis. 520,610, ren. 11–11–69. Cl. 12.
Ski-Deck Corp., Caldwell, N.J. 757,529, canc. Cl. 107.
Skyway Luggage Co., Seattle, Wash. 757,087, canc. Cl. 3.
Slazengers Ltd., Croydon, Surrey, England. 880,503, pub. 8–26–69. Cl. 39.
Sleepmaster Products Co., Inc., Newark, N.J. 880,464, pub. 8–26–69. Cl. 32.
Smith, L. C., & Corona Typewriters, Inc., Syracuse, SCM Corp., New York, N.Y. 517,362, ren. 11–11–69. Multiple Class (Classes 23 and 26).
Smutz Systems, Inc., Denver, Colo. 880,484, pub. 8–26–69. Cl. 37.
Societe Rhodiaceta, Paris, France. 757,393, canc. Cl. 39.
Societe Rhodiaceta, Paris, France. 757,415, canc. Cl. 42.
Societe Rhodiaceta, Paris, France. 757,428, canc. Cl. 43.
Soda Barrel Co., The: *See*—
  Tasty-Mates Co.
Spalding Co., Inc., Natick, Mass. 880,617, pub. 8–26–69. Multiple Class (Classes 100, 101, and 103).
Spear, J. W., & Sons Ltd., Enfield, Middlesex, England. 880,372, pub. 8–26–69. Cl. 22.
Spiratone, Inc., Flushing, N.Y. 880,687. Cl. 26.
Sportsman's Market, Cincinnati, Ohio. 757,084, canc. Cl. 3.
Sprague & Carleton, Inc., Houston, Tex. 880,458, pub. 8–26–69. Cl. 32.
Squibb, E. R., & Sons, Inc., New York, N.Y. 880,426, pub. 8–26–69. Cl. 26.
Staff & Schwarz GmbH, Leuchtenwerke, Lemgo-Lippe, Germany. 880,357, pub. 8–26–69. Cl. 21.
Standard Brands Inc., New York, N.Y. 517,879, ren. 11–11–69. Cl. 46.
Standard Garments, Inc., Baltimore, Md. 880,501, pub. 8–26–69. Cl. 39.
Standard Oil Co., Flemington, N.J. 880,330, pub. 8–26–69. Cl. 15.
Standard Oil Co., Flemington, N.J. 880,536, pub. 8–26–69. Cl. 42.
Standard Oil Co. of California, San Francisco, Calif. 520,996, ren. 11–11–69. Cl. 18.
Stanley Rule & Level Co., to The Stanley Works, New Britian, Conn. 33,953, ren. 11–11–69. Cl. 26.
Stanley Works, The: *See*—
  Stanley Rule & Level Co.
State Steel Industries, Inc., City of Industry, Calif. 757,344, canc. Cl. 34.
Stearns & Foster Co., The, Cincinnati, Ohio. 519,218, ren. 11–11–69. Cl. 32.
Stemmons, Inc., Tulsa, Okla. 880,666, pub. 8–26–69. Cl. 105.
Stepan Chemical Co., Maywood, N.J. 757,119, canc. Cl. 6.
Sterling Drug Inc.: *See*—
  Enterprise Industries.
Sterol Derivatives, Inc., Los Angeles, Calif. 757,460, canc. Cl. 46.
Steuben Association of the Police Dept. of the City of New York, Inc., Brooklyn, N.Y. 880,612, pub. 8–26–69. Multiple Class (Classes 100 and 200).
Stewart, Janet, d.b.a. Ladycraft, Memphis, Tenn. 880,504, pub. 8–26–69. Cl. 39.
Stidd's, Inc., Portland, Oreg. 516,764, ren. 11–11–69. Cl. 46.
Stockpole Components Co., Raleigh, N.C. 880,433, pub. 8–26–69. Cl. 26.
Stone Container Corp., Chicago, Ill. 757,078, canc. Cl. 2.
Stull Bros., Inc., Sebree, Ky. 880,265, pub. 8–26–69. Cl. 1.
Suddeth-Baker Co., Long Beach, Calif. 757,073, canc. Cl. 1.
Suffolk County Federal Savings & Loan Association, Babylon, N.Y. 880,651, pub. 8–26–69. Cl. 102.
Sugiyama, Eiichi, Shizuoka Prefecture, Japan. 880,385, pub. 8–26–69. Cl. 23.
Sun Chemical Corp.: *See*—
  Ullman, Sigmund, Co.
Sunset Pacific Oil Co., to Golden Eagle Refining Co., Inc., Los Angeles, Calif. 267,544, ren. 11–11–69. Cl. 15.
Superior Concrete Accessories, Inc., Franklin Park, Ill. 880,316, pub. 8–26–69. Cl. 13.
Suwannee Food & Baking Co., to Winn-Dixie Stores, Inc., Jacksonville, Fla. 519,172, ren. 11–11–69. Cl. 46.
Swanson, C. A., & Sons, Omaha, Nebr., to Campbell Soup Co., Camden, N.J. 516,151, ren. 11–11–69. Cl. 46.
Sweetheart Plastics, Inc., Wilmington, Mass. 880,270, pub. 8–26–69. Cl. 1.
Tail's End, Inc., New York, N.Y. 880,518, pub. 8–26–69. Cl. 39.
Tapecon Inc., Rochester, N.Y. 880,478, pub. 8–26–69. Cl. 36.
Tarlton Silver Corp., New York, N.Y. 757,302, canc. Cl. 28.
Tasty-Mates Co., from S. Twitchell Co., d.b.a. The Soda Barrel Co. 880,543, pub. 8–26–69. Cl. 45.
Tau Kappa Epsilon Fraternity, Indianapolis, Ind. 880,683, pub. 8–26–69. Cl. 200.
Taylor Bros., Inc., Winston-Salem, N.C. 515,849–51, ren. 11–11–69. Cl. 17.
Taylor Bros., Inc., Winston-Salem, N.C. 516,695, ren. 11–11–69. Cl. 17.
Technical Marketing, Inc., Chicago, Ill. 880,629, pub. 8–26–69. Cl. 101.
Technicon Corp., Ardsley, N.Y. 880,289, pub. 8–26–69. Cl. 6.
Technitron, Inc., Carol Stream, Ill. 880,362, pub. 8–26–69. Cl. 21.
Tennant Co.: *See*—
  Tennant, G. H., Co.
Tennant, G. H., Co., to Tennant Co., Minneapolis, Minn. 513,161, ren. 11–11–69. Cl. 4.
Tennant, G. H., Co., to Tennant Co., Minneapolis, Minn. 517,650, ren. 11–11–69. Cl. 2.
Tennco Chemicals, Inc., from General Foam Corp., New York, N.Y. 880,457, pub. 8–26–69. Cl. 32.
Terrace Ceramics, Inc., Zanesville, Ohio. 757,312, canc. Cl. 30.
Textron, Inc., Providence, R.I. 880,353, pub. 8–26–69. Cl. 19.
Thomas & Betts Co. The, to Thomas & Betts Corp., Elizabeth, N.J. 519,921, ren. 11–11–69. Cl. 23.
Thomas Organ Co., Sepulveda, Calif. 880,476, pub. 8–26–69. Cl. 36.
Tomoe Soroban Kabushiki Kaisha, Tokyo, Japan. 880,410, pub. 10–29–68. Cl. 26.
Totinos Finer Foods, Inc., Minneapolis, Minn. 880,566, pub. 8–26–69. Cl. 46.

Totinos Finer Foods, Inc., Minneapolis, Minn. 880,568, pub. 8–26–69. Cl. 46.
Townsman Motel, Inc., Blackwell, Okla. 757,510, canc. Cl. 100.
Traffic Builders Inc., Great Neck, N.Y. 757,367, canc. Cl. 37.
Transcontinental Music Corp., New York, N.Y. 880,480, pub. 8–26–69. Cl. 36.
Travel Products, Inc., West Pittsburg, Pa. 880,282, pub. 8–26–69. Cl. 3.
Triangle Conduit & Cable Co., Inc., New Brunswick, N.J. 880,308, pub. 8–26–69. Multiple Class (Classes 11, 13, 14, and 21).
Tridea Electronics: *See*—
  Tridea Electronics Co.
Tridea Electronics Co., d.b.a. Tridea Electronics, El Monte, Calif. 880,411, pub. 8–26–69. Cl. 26.
Trigonometrical Computers Co., New York, N.Y. 880,421, pub. 8–26–69. Cl. 26.
Triple Mfg., Inc., Philadelphia, Pa. 880,456, pub. 8–26–69. Cl. 31.
Triumph Mfg. Co., The, Cincinnati, Ohio. 517,586, ren. 11–11–69. Cl. 26.
Tronson, Ted, d.b.a. Safe-Lok Co., Gardena, Calif. 880,407, pub. 8–26–69. Cl. 25.
Tropical Fish Patterns, Inc., Jersey City, N.J. 880,454, pub. 8–26–69. Cl. 31.
Tru-Foto, Inc.: *See*—
  Progressive Industries Corp.
Turbo Machine Co., Lansadale, Pa. 880,386, pub. 8–26–69. Cl. 23.
Twitchell, S., Co.: *See*—
  Tasty Mates Co.
USM Corp.: *See*—
  B.B. Chemical Co.
Ullman, Sigmund, Co., to Sun Chemical Corp., New York, N.Y. 266,416, ren. 11–11–69. Cl. 11.
Ultramatic Equipment Co., Addison, Ill. 880,283, pub. 8–26–69. Multiple Class (Classes 4 and 23).
Union Carbide Corp., New York, N.Y. 880,370, pub. 8–26–69. Cl. 21.
Union Carbide Inter-America, Inc., New York, N.Y. 880,307, pub. 2–18–69. Cl. 10.
Union Fork & Hoe Co., The, Columbus, Ohio. 757,261, canc. Cl. 23.
Union National Bank, Kansas City, Mo. 880,653, pub. 8–26–69. Cl. 102.
Union Siderurgique du Nord et de l'Est de la France "USINOR," Paris, France. 880,327, pub. 8–26–69. Cl. 14.
Uniroyal, Inc.: *See*—
  Esso Standard Oil Co.
Uniroyal, Inc., New York, N.Y. 880,514, pub. 8–26–69. Cl. 39.
Unit Structures, Inc., Peshtigo, Wis., to Koppers Co., Inc., Pittsburgh, Pa. 443,340, ren. 11–11–69. Cl. 12.
United California Bank, Los Angeles, Calif. 880,654, pub. 8–26–69. Cl. 102.
United Merchants & Mfg., Inc., New York, N.Y. 880,537, pub. 8–26–69. Cl. 42.
U.S. Expansion Bolt Co., York, Pa. 518,504–5, ren. 11–11–69. Cl. 13.
United States Gypsum Co., to United States Gypsum Co., Chicago, Ill. 262,788, ren. 11–11–69. Cl. 12.
United States Rubber Co., New York, N.Y. 757,354, canc. Cl. 35.
United Stay Co., Inc., Cambridge, Mass. 515,637, ren. 11–11–69. Cl. 40.
Universal Foods Corp., Milwaukee, Wis. 880,582, pub. 8–26–69. Cl. 46.
Vacations West, Inc., New York, N.Y. 880,664, pub. 8–26–69. Cl. 105.
Ventura Travelware, Inc., New York, N.Y. 880,277–8, pub. 1–23–68. Cl. 3.
Victory Vending Corp., Chicago, Ill. 757,253, canc. Cl. 23.
Virginia International Equipment Corp., Gainesville, Va. 880,387, pub. 8–26–69. Cl. 23.
Visking Corp., The, Chicago, Ill., to Ethyl Corp., Richmond, Va. 519,328, ren. 11–11–69. Cl. 42.
Vitramon, Inc., Monroe, Conn. 880,358, pub. 8–26–69. Cl. 21.
Vogt Appliance Corp., from Vogt Appliance Co., Kalamazoo, Mich. 880,374, pub. 8–26–69. Cl. 22.
Volvo Distributing, Inc., Rockleigh, N.J. 880,656, pub. 8–26–69. Cl. 103.
Washington Scientific Industries, Inc., Minnetonka, Minn. 880,396, pub. 8–26–69. Cl. 23.
Water Show Spectaculars, Inc., North Miami, Fla. 757,530, canc. Cl. 107.
Weather-Proof Co., The, Litchfield, Ill. 757,137, canc. Cl. 12.
Webb, J. A., Belting Co., Inc., Buffalo, N.Y. 518,832, ren. 11–11–69. Cl. 35.
Webb's City, Inc., St. Petersburg, Fla. 518,030, ren. 11–11–69. Cl. 17.
Welles Products Corp., Roscoe, Ill. 880,398, pub. 8–26–69. Cl. 23.
Wenzel, H., Tent & Duck Co., St. Louis, Mo. 757,383, canc. Cl. 39.
Wester, Herbert, d.b.a. Wester Bros., New York, N.Y. 517,373, ren. 11–11–69. Cl. 23.
Western Union Telegraph Co., New York, N.Y. 880,659–60, pub. 8–26–69. Cl. 104.
Westinghouse Electric Corp., Pittsburgh, Pa. 515,594, ren. 11–11–69. Cl. 21.
Westmoor Mfg. Co., Omaha, Nebr. 443,344, ren. 11–11–69. Cl. 39.
Weyerhaeuser Co., Tacoma, Wash. 880,389, pub. 8–26–69. Cl. 23.
Wilbar Ring Mfg. Co., Inc., Buffalo, N.Y. 757,300, canc. Cl. 28.
Wilbur-Ellis Co., San Francisco, Calif. 880,586, pub. 8–26–69. Cl. 46.
Will Scientific, Inc., Rochester, N.Y. 880,437, pub. 8–26–69. Cl. 26.
Williams, J. B., Co., The, Glastonbury, Conn., to The J. B. Williams Co., Inc., New York, N.Y. 515,486, ren. 11–11–69. Cl. 52.
Williams, J. B., Co., Inc., The: *See*—
  Williams, J. B., Co., The.
Wilson Research Corp., Erie, Pa. 880,313, pub. 8–26–69. Cl. 12.
Winegard Co., Burlington, Iowa. 880,355, pub. 8–26–69. Cl. 21.
Winkhaus, August, Westephelia, Germany. 757,156, canc. Cl. 13.
Winn-Dixie Stores, Inc.: *See*—
  Suwannee Food & Baking Co.
Winter, Jack, Mfg. Corp., Mirianna, Ark. 757,399, canc. Cl. 39.
Wirth, Leon J., Oakland, Calif. 880,292, pub. 8–26–69. Multiple Class (Classes 6 and 37).
Wollard, Donald L., d.b.a. Don's Marine Center, Islamorada, Fla. 880,344, pub. 8–26–69. Cl. 19.
Wool Bureau, Inc., The, New York, N.Y. 880,684, pub. 8–26–69. Cl. A.
Woolf Bros., Inc., Kansas City, Mo. 521,253, ren. 11–11–69. Cl. 39.
World Tableware Corp., Meriden, Conn. 880,405, pub. 8–26–69. Cl. 23.
Wyandotte Chemicals Corp., Wyandotte, Mich. 880,606, pub. 8–26–69. Cl. 52.
Wyler Watch Corp., New York, N.Y. 880,442, pub. 8–26–69. Cl. 27.
Yardley Electric Corp., New York, N.Y. 880,366, pub. 8–26–69. Cl. 21.
Yorke Publishing Co., Inc., The, to The Reuben H. Donnelley Corp., New York, N.Y. 519,977, ren. 11–11–69. Cl. 38.
Young Viewpoint Sales, Inc., New York, N.Y. 757,408, canc. Cl. 39.
Your Pizza Shop, Inc., Canton, Ohio. 880,623, pub. 8–26–69. Cl. 100.
Zenith Radio Corp., Chicago, Ill. 880,592, pub. 8–26–69. Cl. 50.
Zsa Zsa Ltd., New York, N.Y. 880,604, pub. 8–26–69. Cl. 51.

U.S. GOVERNMENT PRINTING OFFICE: O—1969

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 18, 1969 Volume 868 Number 3

# PATENTS

## NOTICES

### Board of Appeals Decisions Rendered in the Month of October 1969

| | |
|---|---|
| Examiner affirmed | 146 |
| Examiner affirmed in part | 15 |
| Examiner reversed | 32 |
| Total | 193 |

### Disclaimer

3,459,680.—*Charles J. Plank,* Woodbury, and *Edward J. Rosinski,* Deptford, N.J. CRYSTALLINE ZEOLITE COMPOSITE FOR CATALYTIC HYDROCARBON CONVERSION. Patent dated Aug. 5, 1969. Disclaimer filed May 22, 1969, by the assignee, *Mobil Oil Corporation.*

Hereby disclaims the terminal portion of the term of the patent subsequent to July 7, 1981.

### Certificates of Correction for the Week of Nov. 18, 1969

3,023,893
3,285,017
3,311,819
3,317,466
3,341,900
3,342,797
3,343,440
3,346,371
3,348,902
3,352,941
3,354,818
3,356,628
3,360,327
3,364,028
3,370,904
3,371,485
3,373,444
3,375,161
3,376,434
3,377,336
3,378,490
3,378,786
3,379,918
3,382.174
3,382,460
3,383,271
3,383,402
3,384,324
3,384,651
3,384,671
3,385,008
3,385,015
3,385,295
3,385,573
3,385,713
3,385,750
3,385,751
3,385,935
3,386,835
3,386,965
3,387,512
3,387,575
3,387,913
3,387,954
3,388,122
3,388,142
3,388,146
3,388,292
3,388,307
3,388,760
3,388,900
3,389,389
3,389,436
3,389,793
3,390,072
3,390,133
3,390,267
3,390,528
3,391,007
3,391,012
3,391,123
3,391,190
3,391,580
3,391,678
3,391,753
3,391,871
3,393,583
3,398,325
3,406,664
3,412,694
3,420,961
3,422,122
3,424,455
3,425,631
3,426,889
3,429,778
3,429,779
3,429,795
3,430,260
3,431,140
3,438,928
3,439,729
3,442,039
3,442,366
3,443,952
3,444,271
3,444,370
3,445,148
3,445,322
3,445,665
3,446,568
3,448,800
3,449,442
3,449,995
3,450,629
3,452,316
3,452,535
3,452,586
3,452,875
3,453,543
3,453,812
3,455.355
3,455.361
3,455.713
3,455,801
3,456,532
3,457,193
3,457,215
3,457 545
3,457.860
3,458 314
3,461,486

### Patents Available for Licensing or Sale

3,376,771. TOOL POST AND HOLDER ASSEMBLY. James R. Barnes, 6 Beverly Road, Boonton, N.J., 07005.

3,425,652. VIBRATION CONTROLLING MOUNTING APPARATUS. Gordon H. Leary. Correspondence to: Donald J. Voss, 130 W. Prospect Ave., Pittsburgh, Pa., 15205.

3,442,309. COMBINATION TEMPLATE, WORK SUPPORT AND GUIDE FOR ROUTER. Thomas F. Jentsch, 7064 Bollinger Road, San Jose, Calif., 95129.

3,448,246. ELECTRICAL HEATING MAT WITH AUTOMATIC TEMPERATURE CONTROL. Fritz Armbruster, Stuttgart, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,453,410. AUTOMATIC WELDING MACHINE FOR MASS PRODUCED ARTICLES. Tital Eisenwarenfabrik GmbH., Schwelm, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017

3,468,290. DOG RATTLE. Mintie P. Elliott, Glen Rose, Tex. Correspondence to: Krafft & Wells, 2001 Jefferson Davis Highway, Arlington, Va., 22202.

The following 2 patents are offered by: John T. LeRose, 61 Joseph St., Moonachie, N.J.

D. 215,150. STEP BODIED AUTOMOBILE.

D. 207,002. FOLDABLE STEERING ASSEMBLY.

The following 2 patents are offered by: Instituto Nacional de Industria, Madrid, Spain. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,440,100. STORAGE BATTERY.

3,428,529. SOLAR DISTILLATION OF FOAMED SALINE WATER TO RECOVER FRESH WATER.

The General Electric Company is prepared to grant nonexclusive licenses under the following 16 patents upon reasonable terms to domestic manufacturers.

Applications for licenses under the following patent may be addressed to: Division Patent Counsel, Power Transmission Division, General Electric Company, 6901 Elmwood Ave., Philadelphia, Pa., 19142.

3,467,205. Y-TYPE CLEVIS YOKE FOR ELECTRIC POWER TRANSMISSION LINES.

Applications for license under the following 2 patents may be addressed to: Patent Counsel, Metallurgical Products Department, General Electric Company, Box 237, GPO, Detroit, Mich., 48232.

3,084,416. CUTTING TOOL.

3,466,405. PERMANENT MAGNET BASKET ASSEMBLY FOR A SPEAKER.

Applications for license under the following 6 patents may be addressed to: Patent Counsel, Electronic Systems Division, General Electric Company, Legal Section, Bldg. 1, Room 36, Court Street Plant, Syracuse, N.Y., 13201.

3,082,383. FERROMAGNETIC LIMITER.

3,205,501. CLOSELY SPACED STOCKED WAVEGUIDE ANTENNA ARRAY EMPLOYING RECIPROCAL RIDGED WAVEGUIDE PHASE SHIFTERS.

### New Applications Received During September 1969

| | |
|---|---|
| Patents | 8265 |
| Designs | 427 |
| Plant Patents | 7 |
| Reissues | 16 |
| Total | 8715 |

### Issue—November 18, 1969

| | | | | |
|---|---|---|---|---|
| Patents | 1301 | —No. 3,478,365 | to No. | 3,479,665, incl. |
| Designs | 74 | —No. 215,997 | to No. | 216,070, incl. |
| Plant Patents | 2 | —No. 2,940 | to No. | 2,941, incl. |
| Reissues | 9 | —No. 26,711 | to No. | 26,719, incl. |
| Total | 1386 | | | |

3,221,276. MICROWAVE VARIABLE REACTANCE DEVICE OPERATING ABOUT A RESONANT CONDITION.

3,249,882. SPIN AND PHONON SPIN TRAVELING WAVE PARAMETRIC AMPLIFIERS AND SPIN WAVE DELAY LINES.

3,290,622. MICROWAVE FERROMAGNETIC PHASE SHIFTER HAVING CONTROLLABLE D.C. MAGNETIZATION.

3,293,648. MONOPULSE RADAR BEAM ANTENNA ARRAY WITH NETWORK OF ADJUSTABLE DIRECTIONAL COUPLERS.

Applications for license under the following 7 patents may be addressed to: Patent Counsel, Avionic Controls Department, General Electric Company, P.O. Box 5000, Binghamton, N.Y., 13902.

3,374,704. LINEAR CALIBRATING INTERFEROMETER.

3,411,411. REDUNDANT ACTUATOR VALVING USING PARALLEL AND SERIAL CONNECTED VALVES.

3,436,643. SOLID-STATE D.-C. TO A.-C. CONVERTER.

3,426,980. DOUBLE TUNED NUTATION DAMPER.

3,435,196. PULSE-WIDTH FUNCTION GENERATOR.

3,443,074. SEQUENTIAL ANALOG-DIGITAL COMPUTER.

3,456,099. PULSE WIDTH MULTIPLIER OR DIVIDER.

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The RCA Corporation offers to grant non-exclusive licenses on reasonable terms and conditions under the following 33 patents.

Inquiries respecting licenses should be addressed to: RCA Corporation, Staff Vice President, Domestic Licensing, 1133 Avenue of Americas, New York, N.Y., 10036.

3,465,130. RELIABILITY CHECK CIRCUIT FOR OPTICAL READER.

3,465,199. ELECTRONIC HALFTONE IMAGE GENERATOR.

3,465,209. SEMICONDUCTOR DEVICES AND METHODS OF MANUFACTURE THEREOF.

3,465,210. HOUSING AND LEAD ASSEMBLY FOR HIGH-FREQUENCY SEMICONDUCTOR DEVICES.

3,465,212. HEAT DISSIPATOR.

3,465,288. CHARACTER READER.

3,465,292. FLEXODE CROSSPOINT ADAPTIVE MATRIX CIRCUITS.

3,465,347. LASER RECORDER WITH OPTICAL FILTER.

3,465,577. AUTOMOBILE CONTROL MANIUPLATING APPARATUS.

3,465,790. ELECTRICALLY OPERATED THROTTLE DEVICE.

3,466,549. ELECTRICAL SWITCHING SYSTEM WHICH DEFEATS AUTOMATIC FINE TUNING CONTROL THROUGH ONE SWITCH CONTACT, ACTUATED DURING EITHER MANUAL CHANNEL CHANGE OR MANUAL FINE TUNING.

3,466,574. DELAY LINES.

3,466,575. SEMICONDUCTOR DELAY LINE.

3,466,625. READ-ONLY MEMORIES.

3,466,646. ANALOG POSITION TO BINARY NUMBER TRANSLATOR.

3,467,468. AUTOMATIC COLOR ELECTROPHOTOGRAPHIC APPARATUS.

3,467,906. CONSTANT-GAIN LOW-NOISE LIGHT AMPLIFIER.

3,467,909. INTEGRATED AMPLIFIER CIRCUIT ESPECIALLY SUITED FOR HIGH FREQUENCY OPERATION.

3,469,017. ENCAPSULATED SEMICONDUCTOR DEVICE HAVING INTERNAL SHIELDING.

3,469,022. COMBINATION CHROMINANCE AMPLIFIER, BURST AMPLIFIER, AND BURST GATE CIRCUIT FOR A COLOR TELEVISION RECEIVER.

3,469,025. AUTOMATIC FREQUENCY CONTROL SYSTEM.

3,469,032. SYNCHRONIZING SYSTEM FOR TELEVISION RECEIVERS.

3,469,113. SWITCHING CIRCUIT EMBODYING PARALLEL PAIR OF CONTROLLED RECTIFIERS.

3,469,195. DETECTOR AND AGC CIRCUIT STABILIZATION RESPONSIVE TO POWER SUPPLY CHANGES.

3,469,203. AMPLIFIER CONTROL SYSTEM.

3,469,245. SWITCHING SYSTEM FOR DRIVING READ-WRITE LINES IN A MAGNETIC MEMORY.

D.215,380. CHECK-OUT COUNTER OR SIMILAR ARTICLE.

3,469,911. ELECTROMAGNETIC PUMPING APPARATUS FOR USE IN ELECTROPHOTOGRAPHY.

3,470,310. COLOR IMAGE DISPLAY SYSTEM UTILIZING A LIGHT VALVE.

3,470,375. HIGH FREQUENCY SEMICONDUCTOR SYSTEMS USING ELECTRIC FIELDS PERPENDICULAR TO THE DIRECTION OF WAVE PROPAGATION.

3,470,391. CURRENT PULSE DRIVER WITH MEANS TO STEEPEN AND STABILIZE TRAILING EDGE.

3,470,486. DIFFERENTIAL AMPLIFIER SINGLE ENDING CIRCUIT.

3,470,540. MULTIPROCESSING COMPUTER SYSTEM WITH SPECIAL INSTRUCTION SEQUENCING.

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# PATENT EXAMINING CORPS

## R. A. WAHL, Assistant Commissioner

## CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 3, 1969

| PATENT EXAMINING GROUPS<br>*Denotes oldest new application. | Actual Filing Date of Oldest New Case Awaiting Action |
|---|---|
| **CHEMICAL EXAMINING GROUPS** | |
| GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director<br>Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices. | 10-26-67 |
| GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director<br>Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides. | *4-28-67 |
| HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director<br>Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes. | 5-29-67 |
| COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director<br>Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography. | 6-01-67 |
| SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director<br>Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes. | 5-02-67 |
| **ELECTRICAL EXAMINING GROUPS** | |
| INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director<br>Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous. | 2-21-68 |
| SECURITY, GROUP 220—S. BOYD, Director<br>Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material. | 7-07-67 |
| INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director<br>Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts. | *5-29-67 |
| ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director<br>Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring. | 10-12-67 |
| PHYSICS, GROUP 280—R. L. EVANS, Director<br>Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments. | 1-25-68 |
| DESIGNS, GROUP 290—S. BOYD, Director<br>Industrial Arts; Household, Personal and Fine Arts. | 1-02-69 |
| **MECHANICAL EXAMINING GROUPS** | |
| HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director<br>Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages. | 4-23-68 |
| MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director<br>Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks. | *12-26-67 |
| AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director<br>Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination. | 1-17-68 |
| HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director<br>Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission. | 10-01-68 |
| FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director<br>Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures. | 7-25-68 |
| TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director<br>Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling. | 3-04-68 |

| | |
|---|---|
| Total number of pending applications (excluding Designs) | 182,774 |
| Total number of Design applications pending | 3,372 |

**Expiration of patents**: The patents within the range of numbers indicated below expire during November 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

| | |
|---|---|
| Patents | Numbers 2,616,081 to 2,619,636, inclusive |
| Plant Patents | Numbers 1,142 to 1,151, inclusive |

# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

In re Llewellyn W. Fancher and David James Broadbent

*No. 8152. Decided May 15, 1969*

[56 CCPA —; 410 F.2d 813; 161 USPQ 613]

1. Patentability—Particular Subject Matter—Insecticidal and Miticidal Compounds.

The decision of the Board of Appeals, refusing certain claims to compounds having insecticidal and miticidal properties as unpatentable over the prior art, is affirmed.

Appeal from Patent Office. Serial No. 366,617.

AFFIRMED.

*Wayne C. Jaeschke*, for appellants.

*Joseph Schimmel* (*Leroy B. Randall*, of counsel) for the Commissioner of Patents.

Before Rich, *Acting Chief Judge*, Clark, *Justice* (*Ret.*), Neese, *Judge*, sitting by designation, Almond and Baldwin, *Associate Judges*

Baldwin, *J.*, delivered the opinion of the court.

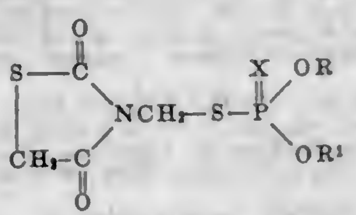
This appeal is from the Patent Office Board of Appeals decision affirming the Examiner's rejection of claims 1–6, all of the claims in appellants' application [1] "as being unpatentable over the French Patent [2] in view of Kittleson [3] and Schrader et al.,[4] 35 U.S.C. 103."

### *The Invention*

This invention relates to compounds having valuable insecticidal and miticidal properties. The specification sets forth how the compounds may be made and gives examples showing the results achieved in killing various pest organisms.

Claim 1 recites the generic compound formula, while claims 2–6 define particular species within that genus. Claim 1 reads:

1. A compound of the formula

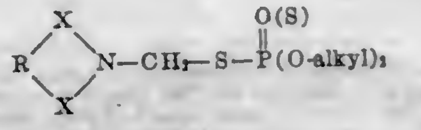


wherein R and R¹ are lower alkyl, X is a member selected from the group consisting of oxygen and sulfur.

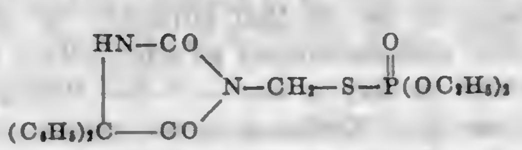
The heterocyclic moiety can be referred to as "thiazolidinedione" or as "2,4-dioxothiazolidine," which terms are equivalent.

### *The References*

The French patent (Bayer) discloses insecticidal compounds of the following general formula

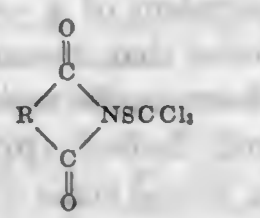


where X is CO or $SO_2$ and R is an organic radical. Bayer discloses that the organic radical R may belong to aliphatic, aromatic or heterocyclic series, and Example 13 discloses a compound of the following formula:

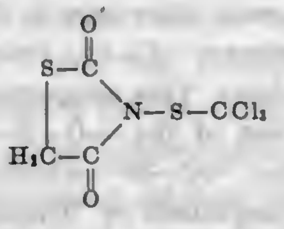


Although Bayer discloses other identities for the radical R in the heterocyclic moiety, he does not teach any which include the —C—S— linkage present in the heterocyclic moiety of appellants' claimed compound.

Kittleson discloses insecticidal compounds which may, for example, be of the following general formula:

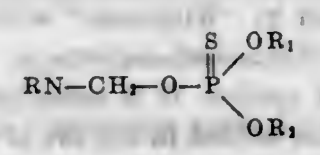


Kittleson makes clear that it is the $NSCCl_3$ group which is of primary significance in his insecticide, but discloses various different identities for the R group. One of the exemplary compounds of Kittleson (column 9, tenth compound down from the top of the page) contains the same heterocyclic moiety as appellants' claimed compound, and is identified as N-thiotrichloromethyl 2,4-dioxothiazolidine, which has the formula:



Kittleson also discloses other R groups which would provide, variously, —C—C—, —C—N—, and —C—O— linkage.

Schrader discloses insecticidal compounds of the general formula



$$RN-CH_2-O-\overset{S}{\overset{\|}{P}}(OR_1)(OR_2)$$

in which R stands for a group of atoms which are necessary to complete a nitrogen containing heterocyclic ring system, and $R_1$ and $R_2$ stand for alkyl radicals.

### *The Rejection*

The Examiner rejected the claim under 35 U.S.C. 103 as unpatentable over the French patent (Bayer) in view of Kittleson and Schrader, reasoning that:

> The claimed compounds differ from those of the French patent in having dioxothiazolidine as the imide, whereas the French patent does not specifically describe this imide. However, the Kittleson patent teaches the equivalence of the dioxothiazolidine with the imides of the French patent as the carrier imide on the similar series of insecticides. Thus the selection of the dioxothiazolidine moiety for the imide "carrier" on compounds of the series taught by the French patent and Schrader et al. is clearly suggested by Kittleson. * * *

In affirming the Examiner, the Board stated:

> Kittleson et al., in describing other insecticidal imides, disclose that in this art "aliphatic" linkages corresponding to the "R" linkage in the imides of Bayer

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[1] Serial No. 366,617, filed May 11, 1964, for "Use."

[2] French Patent No. 1,093,728, issued Nov. 24, 1954.

[3] U.S. Patent No. 2,553,770, issued May 22, 1951.

[4] U.S. Patent No. 2,914,530, issued Nov. 24, 1959.

are accepted as including carbon-carbon, carbon-oxygen, carbon-nitrogen and carbon-sulfur groups which with the imido linkage form final products which are succinimides, oxazolidine diones, hydantoins and dioxothiazolidines. * * * In view of this knowledge in the art that aliphatic "R" groups in imides, such as those taught in Bayer, also encompass as alternatives for the —C—C— and —C—N— groups specified in Bayer, the —C—S— linkage herein claimed, we agree with the Examiner that Kittleson et al. render obvious to the organic chemist selection of the —C—S— member of the same "aliphatic" class as a substitute for the specific —C—C—; and —C—N— members exemplified in Bayer.

### *Opinion*

Here it is appellants' main contention that the Board erred in construing Kittleson as teaching that a —C—S— linkage in the heterocyclic moiety was the equivalent of a —C—C or —C—O— linkage, from which it then concluded that it would be obvious to substitute a —C—S— linkage in the heterocyclic moiety of Bayer to arrive at appellants' claimed compound. Indeed, appellants argue, one skilled in the art, reading Kittleson, would come to a quite contrary conclusion regarding the equivalence of the —C—S— linkage to the other linkages than that asserted by the Board. In advancing this argument, appellants turn to the tabulated results of Example IX of Kittleson and draw particular attention to the results for N-thiotrichloromethyl succinimide and N-thiotrichloromethyl 2,4-dioxothiazolidine. Appellants' reason for comparing these two particular compounds is stated to be:

> These compounds differ from each other only in the linkages of the heterocyclic moiety. The succinimide comprises a —C—C— linkage whereas the dioxothiazolidine comprises a —C—S— linkage. This comparison appears to appellants to be the only side-by-side comparison of the —C—S— linkage with other linkages such as the —C—C—, —C—O—, —C—N— which the Patent Office has asserted to be equivalent. The other compounds of "Kittleson" differ in structure from N-thiotrichloromethyl 2,4-dioxothiazolidine in additional ways.

From comparison of these tabulated results, appellants conclude:

> The succinimide compound exhibits a high level of insecticidal activity against the four test species reported by "Kittleson," whereas for the comparable dioxothiazolidine compound "Kittleson" reports no insecticidal activity at all against any of the same test species. It is submitted that the above-mentioned comparison would have led one skilled in the art of biologically active chemicals to conclude that the —C—S— linkage is not the equivalent of the various other possible linkages disclosed in "Bayer" and "Kittleson." Moreover, since "Kittleson's" usually active functional group $>NSCCl_3$ is not shown to be insecticidally active in the only example of a compound containing a —C—S— linkage in the heterocyclic moiety, appellants submit that the combination made by the Patent Office of the heterocyclic moiety containing a —C—S— linkage with the insecticidal thiophosphate moiety of "Bayer" is not obvious.

The lack of insecticidal activity for the N-thiotrichloromethyl 2,4-dioxothiazolidine disclosed above by Kittleson is further argued by appellants to be supported by certain test results disclosed in an affidavit of one Dorman, an employee of the assignee of the instant application.

The Solicitor, in rebuttal of these arguments, points out that the Dorman affidavit, even if conceded to accurately reflect the results of the tests conducted by Dorman, cannot affect the fact that one skilled in the insecticide art, upon reading the Kittleson et al. disclosure, would learn that an imide compound having a 2,4-dioxothiazolidine structure was listed as a member of a group possessing insecticidal activity. Moreover the Solicitor points out:

> Dorman has merely shown that at the particular conditions used by him, the dioxothiazolidine compound of Kittleson et al. was not effective as an insecticide. This does not affect the disclosure of Kittleson et al., since one reading it would still expect the insecticidal activity. * * *

Having thus disposed the Dorman affidavit from further consideration, the Solicitor turns to the other contention of appellants, that Kittleson on its face shows that the —C—S— linkage is not the equivalent of the other linkages disclosed. It is the Solicitor's position that the lack of insecticidal values for the dioxothiazolidine compound in the Example IX table of Kittleson does not indicate zero insecticidal activity but merely reflects that tests against insects for that compound may not have been conducted. Thus the Solicitor states:

> The fact that there is no numerical value given in the table listing this compound * * * [the dioxothiazolidine compound] is stated by the appellant to show that Kittleson et al. "fails to exhibit insecticidal activity" * * * and that the substitution of the C—S linkage in the Bayer patent is therefore not warranted by the Kittleson et al. disclosure. No such assumption is believed to be proper, since Kittleson et al. states his compounds are insecticides * * * and where there was an actual test of the involved compound, as for example, the N-thiotrichloromethyl-5-phenyl-5-methyl-oxazolidine-2,4-dione in the table bridging columns 9 and 10 * * * which showed no actual insecticidal activity, there is a zero placed in that column. There is no numeral in the appropriate columns for the 2,4-dioxothiazolidine compound. * * *

In reviewing the positions taken by the parties, it seems to us that the Solicitor's arguments effectively counter the attack made by appellants as to the teachings to be derived from Kittleson concerning the insecticidal activity of Kittleson's imide compound having the 2,4-dioxothiazolidine nucleus. Thus, the Patent Office position that it would be obvious to substitute a 2,4-dioxothiazolidine nucleus, taught by Kittleson as constituting the heterocyclic moiety of an insecticidal imide, for the heterocyclic moiety of the Bayer compound to arrive at appellants' claimed compound seems to us to be sound. **[1]** The decision is therefore affirmed.

AFFIRMED.

NEESE, *J.*, took no part in the decision of this case.

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## U.S. Court of Customs and Patent Appeals

### IN RE FREDERICK C. TARBOX

*No. 8092. Decided June 19, 1969*

[56 CCPA —; 411 F.2d 1029; 162 USPQ 90]

1. PATENTABILITY—PARTICULAR SUBJECT MATTER—"IMPROVEMENTS IN MOWERS."
The decision of the Board of Appeals, refusing certain claims in an application entitled "Improvements in Mowers" as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 328,843.

AFFIRMED.

*N. Douglas Parker, Jr.*, (*Jerome R. Cox*, of counsel) for appellant.

*Joseph Schimmel* (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

This appeal is from a decision of the Board of Appeals affirming the Examiner's rejection of all the claims of appellant's patent application[1] under 35 U.S.C. 103.

Appellant's invention relates to a grass cutting mower of the type having a tractor and a plurality of cutters. The tractor motor and the individual cutter motors are operated by one hydraulic system best described with reference to FIGURE 4 of the application:

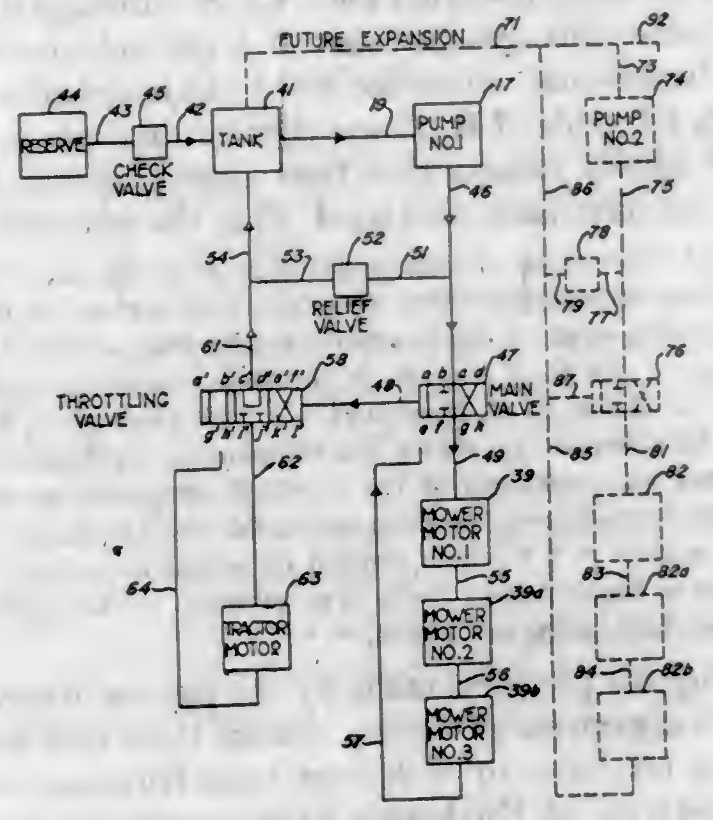

FIG. 4

In one position of the main valve (47), fluid from the pump (17) is directed in series through the mower motors (39, 39*a*, 39*b*), a variable throttling valve (58) and the tractor motor (63), thus enabling the mower to be driven across a grassy surface to be mowed with the cutter motors operating under full pressure at optimum speed and with the tractor motor moving at a variable speed controlled by the setting of the variable throttling valve.

In another position, the main valve blocks off fluid flow to or from the cutter motors to hold the cutters stationary, with the flow from the pump being directed through the throttling valve to the tractor motor. In that condition the mower may be driven at variable speed or left stationary, depending on the setting of throttling valve, with the cutters immovable.

Independent claims 16 and 17 of appellant's application read:

> 16. In the power mower combination of a plurality of cutter vehicles, each having cutting blades, and a hydraulic motor powered tractor vehicle for pulling said cutting vehicles the improvement which comprises:
> (1) a hydraulic motor on each of said cutter vehicles for driving said cutting blades;
> (2) means whereby said tractor motor and each of said cutter motors are actuated by the fluid pressure of a common hydraulic system; and
> (3) valve means for controlling said fluid pressure and adapted to, selectively, (*a*) isolate all said motors from said fluid pressure, (*b*) isolate only said tractor motor from said fluid pressure while maintaining full fluid pressure to said cutter motors, (*c*) isolate only said cutter motors from said fluid pressure while providing said tractor motor with a controllable variable and directional fluid pressure, or (*d*) provide the cutter hydraulic motors with full fluid pressure while providing said tractor motor with a controllable variable and directional fluid pressure.
>
> 17. In the power mower combination of a plurality of cutter vehicles, each having cutting blades, and a hydraulic motor powered tractor vehicle for pulling said cutter vehicles the improvement which comprises:
> (1) a hydraulic motor on each of said cutter vehicles for driving said cutting blades;
> (2) means whereby said cutter motors and said tractor motor are actuated by the fluid pressure of a common hydraulic system;
> (3) a valve in said common hydraulic system which provides a selective on-off fluid pressure to said cutter motors while providing a substantially constant positive pressure to said tractor motor; and
> (4) a second valve in said hydraulic system which provides a controllable variable and directional fluid pressure to said tractor motor.

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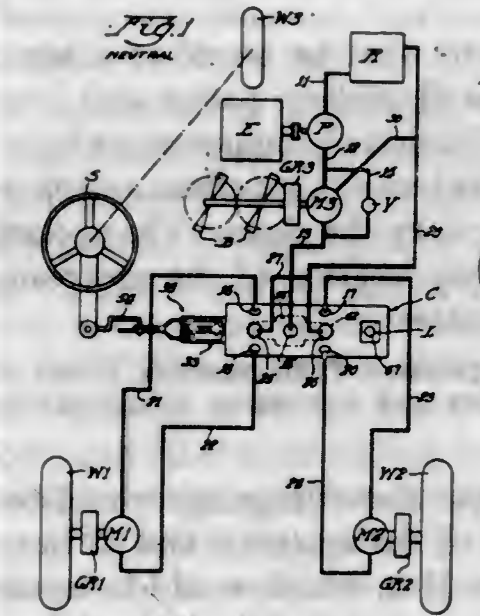
[1] Application of Frederick C. Tarbox, filed December 9, 1963, Serial No. 328,843, for "Improvements in Mowers."

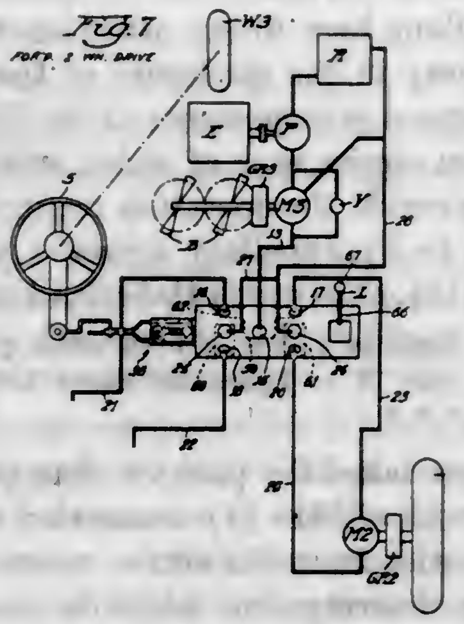
Claim 18 depends from claim 17 and adds the additional limitation that at least three overlapping cutter vehicles having at least three overlapping blades are provided.

The references are:

Haberland et al., 2,953,164, Sept. 20, 1960.
Dunn, 3,135,079, June 2, 1964.

Haberland discloses a grass cutting mower driven by hydraulic motors and having a hydraulic cutter motor. Operation of the Haberland device is most easily understood from FIGURES 1 and 7 of the patent:





In Haberland, fluid from a pump P is directed to a cutter motor M–3 to drive the cutter blades B, with the flow of fluid from the motor returning via a line (30) to a reservoir R. Fluid is also directed through a line (13) to a spool valve C which contains an inner member having an internal recess (56). In a neutral position of the spool valve C shown in FIGURE 1, the recess (56) directs the incoming fluid from the line (13) to two outlet ports (25, 26) which return the fluid through a line (28) to the reservoir R. To move the vehicle, the inner member of the spool valve C is rotated forwardly to the position shown in FIGURE 7 in which the recess (56) directs the incoming fluid to two ports (16, 17) which communicate through lines (21, 23) with the wheel motors $M_1$, $M_2$ to drive them. The speed of the wheel motors $M_1$, $M_2$ may be varied by selectively controlling the spool valve C. To control the cutter blade movement, the motor

$M_3$ may be selectively bypassed through a line (14) controlled by a valve V interposed in the line (14).

The Dunn patent discloses grass mowing apparatus comprising three hydraulically powered cutting units connected in series, drawn by a tractor. However, the tractor is not disclosed as being powered by a hydraulic motor.

The Examiner rejected the claims under 35 U.S.C. 103, taking the position that the only difference between the vehicle-mower combination of Haberland and appellant's claimed device was that appellant provides a separate motor for each of the cutters which would be an obvious expedient in view of Dunn's showing of 3 hydraulic cutting motors connected in series. Appellant argued that the valves V and C of Haberland would not conform in their operation to the requirements of the claims on appeal and, in particular, that valve V failed to "isolate" the cutter motor. The Board affirmed the Examiner, stating:

> It appears to us that the patent to Haberland et al. does show a construction wherein the operation of the valve means V and C thereof conforms to the requirements of the claims.
>
> Appellant takes issue with the Examiner's interpretation of Haberland et al., arguing that the Examiner is in error in stating that the valve V of the system of the patent is merely a by-pass valve and will not isolate the cutter mowers at any time. As we see it, the specification of Haberland et al. at column 3, lines 19–37, inclusive, clearly discloses that the motor M–3 will not actuate the cutter blades when the valve V is open. This condition, therefore, is one wherein the motor M–3 is isolated from the rest of the system insofar as concerns the operation thereof. The motor M–3 will, at that time, be isolated from the fluid pressure.

Appellant here draws attention to what he considers a region of uncertainty in the disclosure of the Haberland patent and hypothesizes various arrangements of the Haberland components within that uncertain region, each of which arrangements appellant asserts would fail to provide the operation required by the claims. The uncertainty pointed to by appellant concerns the location of the upstream end of line (13), as to which Haberland states:

> Pump P supplies a flow of fluid under pressure, from reservoir R and line 11 through line 12 to hydraulic motor M–3 and line 13 to directional control valve C. * * *

Appellant takes the position that the above language would be consistent with either: (1) connection of the upstream end of line (13) to the outlet from the cutter motor M–3, which would be consistent with the drawings but might be inconsistent with the specification,[2] or (2) connection of the upstream end of line (13) to line (12) upstream of motor M–3, which would be consistent with an interpretation of the drawings as representing line (13) passing underneath M–3 to connect with line (12) upstream of M–3.

Considering the first possibility, if line (13) and line (30) are both receiving flow from the outlet of M–3, then the lines (13) and (30) would presumably be in fluid communication with each other. If that were so, whenever valve V were opened fully to bypass M–3 to stop the blades, then the flow through conduit (14) would pass directly via communicating lines (13) and (30) to the reservoir so that none of the motors $M_1$, $M_2$ and $M_3$ would operate, clearly an unacceptable result.

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[2] It might be considered that Haberland returns all the outflow from M–3 via line (30) as the only disclosure as to that line states: "It is to be noted also that the hydraulic motor M–3 is connected by line 30 to the return line 28 to permit the flow of fluid from the hydraulic motor M–3 to return to the reservoir R."

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The other possibility, that the upstream end of Haberland's line (13) connects to line (12) upstream of the motor M–3, is illustrated by the following hypothetical diagram from appellant's brief:

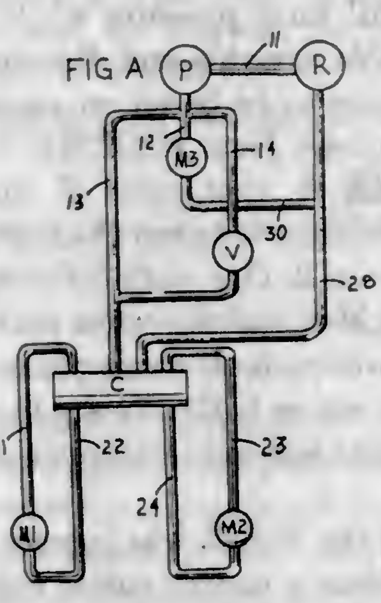
FIG A

Regarding that figure, appellant speculates:

> In the construction of FIG. A, the line 13 is shown in parallel with line 14 as if it is positioned behind the motor M–3 in Haberland's FIG. 1. In such case it would serve as a permanent by-pass of valve V. Thus, if the structure shown in FIG. A is Haberland's construction, valve V would have no effect and is useless, and the provision of valve V in this manner is not consistent with the other description of Haberland. This appears obvious because line 13 in FIG. A is the equivalent of line 14 with valve V open.

If that contention of appellant's were correct, it would, of course, cast considerable doubt on the accuracy of the following statement from Haberland to which the Board looked in deciding that motor M–3 was isolated by opening of valve V:

> If the valve V is open and permits flow through the by-pass line 14 there is insufficient power in the hydraulic motor M–3 to drive the blades B and, conversely, if the valve V does not permit full flow through the by-pass line 14 full or partial fluid pressure is directed into motor M–3 to drive the blades B.

However, appellant's speculation is not conclusive for it could equally be speculated with reference to appellant's FIGURE A that if the portion of line (13) bypassing M–3 were to be of sufficiently narrow bore to present a resistance to passage of fluid comparable to that presented by M–3 and if bypass conduit (14) were to have a very wide bore and low impedance, then it might not indeed be until valve V is opened that M–3 is effectively bypassed.

From the foregoing, it appears that speculation alone as to the operation of Haberland, which forms the basis of appellant's argument, is inconclusive. We therefore think we must accept as correct the portion of Haberland just quoted above explicitly describing the action of valve V, when fully open, in terminating the driving action of the motor M–3 driving the blades. That action is, we think, consistent with the previously quoted conclusion of the Board that:

> This condition, therefore, is one wherein the motor M–3 is isolated from the rest of the system insofar as concerns the operation thereof.

Also, there appears to be no sound reason to doubt that such operation could be attained by one of ordinary skill in the art following Haberland's disclosure.

Another argument that appellant makes is that with valve V of Haberland closed to permit operation of the cutter motor M–3 and with valve C in forward drive position to direct fluid to the wheel motors $M_1$ and $M_2$, then less than full pressure will be applied to the cutter motor M–3 with the result that Haberland could not satisfy the requirement of claim 16 that the system "(*d*) provide the cutter hydraulic motors with full fluid pressure while providing said tractor motor with a controllable variable and directional fluid pressure."

That argument appears to be based on an incorrect understanding of Haberland for it appears from FIGURE 7 thereof, as interpreted by appellant's FIGURE A, that, with V closed and C in forward position, two fluid paths exist between the high pressure source P and the low pressure reservoir R. One path is through the line (13), valve C and motors M–1 and M–2 and the other path is through motor M–3 and the line (30). However, both those paths are in parallel so that full pressure is applied across both. We are therefore unable to accept appellant's argument that less than full pressure [3] is applied to motor M–3.

**[1]** We are satisfied the Board was correct in concluding that the Haberland patent discloses a mower cutter combination in which the operation of the valves V and C conform to the requirements of the claims. As it is quite clear that merely increasing the number of cutting units would be obvious from the teachings of Dunn, we therefore affirm the decision of the Board.

AFFIRMED.

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[3] Further on that point, the Solicitor urges that the cutter motor will have full pressure "because the pump in Haberland et al. has a direct connection to the motor M–3." He states:

> * * * In fact, the cutter motor would be more likely to have full pressure in Haberland et al. than in appellant's apparatus wherein the fluid must pass through valve 47 before reaching the cutter motors. Therefore, Haberland et al. do provide the cutters with full pressure while providing the tractor motors with a controllable pressure in accordance with the positions of the valves V and C in much the same manner as appellant provides such control with valves 47 and 58. * * *

Consistent with that argument, we are satisfied from the direct connection of the motor M–3 of Haberland to fluid pressure supply that appellant's position that less than full pressure is applied to that motor is not sound.

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## U.S. Court of Customs and Patent Appeals

WILLIAM S. GUBELMANN, DECEASED, BY WALTER S. GUBELMANN, EXECUTOR *v.* HERMAN GANG

*No. 8105. Decided April 3, 1969*

[56 CCPA —; 407 F.2d 900; 160 USPQ 801]

1. INTERFERENCE—PATENT AND APPLICATION—CONSTRUCTION OF COUNT—RESORT TO PATENT SPECIFICATION FOR MEANING OF AMBIGUOUS COUNT.

"The Examiner's reasoning requires the conclusion that the count language in question, 'operable in a return stroke to restore,' defines something less than affirmative action. We disagree. While not unmindful of the rule that a copied claim forming a count in an interference must be given the broadest construction which its language will reasonably permit, we agree with the Board that the above-quoted language clearly requires that the drive means act positively in its return stroke to perform the stated function of restoring the actuator. It would be unreasonable to read into the unequivocal count language the limitation 'permit or allow restoration' in place of simple term 'restore.' Were we to adopt appellant's broad construction of the language, the count then can cover both Gang and Gubelmann only by giving it the affirmative meaning when applied to Gang and the different, 'permissive' meaning when applied to Gubelmann. This is ambiguity and resort to the specification of the patent in which the count originated as a claim to ascertain its meaning would be proper. Such reference here would merely reinforce our finding above."

2. SAME—SAME—RIGHT TO MAKE.

"Turning to a consideration of appellant's disclosed device, we repeat the rules applicable to such an interference proceeding. One copying a claim from

a patent has the burden of showing that his application clearly supports the count. In determining applicant's right to make a copied claim, all limitations in the claim will be considered material and doubts arising as to such right must be resolved against the copier. Where support must be based on an inherent disclosure, it is not sufficient that a person following the disclosure might obtain the result set forth in the count; it must invariably happen. See *Smith* v. *Wehn*, 50 CCPA 1544, 318 F.2d 325, 138 USPQ 52 and *Dreyfus and Harrison* v. *Sternau*, 53 CCPA 1050, 357 F.2d 411. 149 USPQ 63."

APPEAL from Patent Office. Interference No. 94,638.

AFFIRMED.

*Burgess, Ryan & Hicks* (*John F. Ryan*, of counsel) for appellant.
*Norman Friedman* for appellee.

Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*

ALMOND, *J.*, delivered the opinion of the court.

William S. Gubelmann appeals from the decision of the Board of Patent Interferences awarding priority of invention of the subject matter of Interference No. 94,638 to Herman Gang, the junior party.

Gubelmann is involved on application Serial No. 168,595, filed January 22, 1962, a "continuation" of application Serial No. 69,227, filed November 14, 1960, which in turn was a "division" of application Serial No. 194,273, filed November 6, 1950, and now Patent No. 2,969,177. The benefit of the filing date of the latter application was accorded Gubelmann by the Examiner. In issue are two counts copied from U.S. Patent No. 3,102,688, granted to the junior party, Gang, on an application filed February 2, 1960.

The invention relates to tens transfer or "carry" mechanisms for calculating machines, of the type known as "simultaneous" tens transfer mechanism. The counts read: [1]

1. In a register including an ordinal series of register wheels, a reciprocatory transfer actuator for each wheel, a common reciprocatory drive means for said actuators, normally disabled connecting means adjustable upon movement of each wheel from a first to a second given registering position to connect the actuator of the next higher order wheel to said drive means for a forward stroke in a primary transfer operation, *said drive means thereupon being operable in a return stroke to restore said actuator independently of said connecting means*, normally disabled drive transmission means between each pair of adjacent actuators operable during the forward stroke of operation of the lower order actuator of said pair to transmit like movement to the higher order actuator of said pair in a secondary transfer operation, *said actuator drive means thereupon being operable to restore said pair of actuators simultaneously and each independently in a return stroke*, and means operable when each wheel is in said first given registering position to enable the drive transmission means between its actuator and the actuator of the next higher order wheel.

2. In a register including an ordinal series of register wheels, a reciprocatory transfer actuator for each wheel, *a common reciprocatory drive means for said actuators normally ineffectively operable in its forward stroke and normally operable in its return stroke to return all of said actuators simultaneously and each independently from their forward stroke position*, normally disconnected coupling means for connecting each actuator to said drive means for forward stroke operation therewith in a primary transfer operation, means operable upon movement of each wheel from a first to a second given registering position to connect the coupling means for the actuator of the next higher order wheel, normally disabled drive transmission means operable by each actuator in its forward stroke to impart forward stroke secondary transfer operation to the next higher order actuator, and means operable when each wheel is in said first given registering position to enable the drive transmission means to the actuator of the next higher order wheel.

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[1] Emphasis is supplied to designate the recitations principally involved here.

The sole issue raised by this appeal is whether the disclosure of Gubelmann supports certain limitations in the count or, stated briefly, Gubelmann's "right to make."

It is Gang's contention that Gubelmann cannot support the following limitations: (1) a drive means operable in its return stroke to restore the actuator (counts 1 and 2); (2) a drive means operable to restore the actuator independently of the connecting means (count 1). In his brief before this court Gang additionally contended, for the first time, that Gubelmann failed to support the counts "because there is no primary tens transfer between any orders of the mechanism Gubelmann is relying on." We agree with Gang as to Gubelmann's lack of support for the first limitation set forth above, and thus need not consider the other reasons raised by appellee.[2]

Procedurally, this appeal comes to this court with this history. The interference was originally declared on the basis of count 1. Gang alleged no date prior to the effective filing date of Gubelmann and, accordingly, was placed under order to show cause why judgment should not be entered against him. Gang responded by moving to dissolve on the ground that the count is not supported by Gubelmann's disclosure. Gubelmann filed two motions to amend by adding proposed counts 2–5 and 6. Both motions were opposed by Gang on the ground and for reasons similar to those advanced in his motion to dissolve. The Primary Examiner denied Gang's motion to dissolve and granted Gubelmann's motion to amend as to proposed count 2. Gang thereupon requested that final hearing be set for consideration of the question of Gubelmann's right to make counts 1 and 2 and that request was granted. The Board of Patent Interferences held that Gubelmann had failed to establish his right to make the counts and awarded priority to Gang.

The counts in issue define an invention which constitutes only a small portion of a relatively complex mechanism. However, a description of the specific structures relating to the counts will suffice for our consideration of the issue before us. First, an understanding of what is meant by the terms "primary" and "secondary" transfer is helpful. A primary tens transfer operation is one in which a tens transfer is caused by addition of a value into a register wheel through the usual value entry means such as differentially settable actuator gears. For example, the wheel stands at "8" and the value of "3" is added, causing a tens transfer of 1 into the order to the left. A secondary transfer is one in which a tens transfer is caused by a tens transfer from the adjacent lower order. For example, three adjacent orders of the register wheels register the value "998," and a value of "3" is added to the first, or lowest, order. The "3" added to "8" causes a primary tens transfer into the second order. This primary transfer of a value of 1 into this order will cause its register wheel to go from 9 to 0, which will cause a tens transfer into the third order. The latter wheel will go from "9" to "0," causing a tens transfer into the fourth order. The latter two transfers are secondary transfers, since they were caused by a tens transfer from the next lower order. A simultaneous tens transfer mechanism is one in which the primary and all resulting secondary transfers occur simultaneously.

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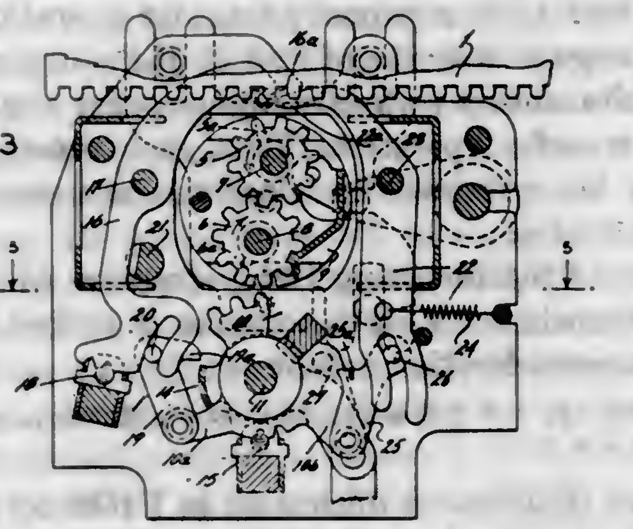
[2] In view of the new point raised in Gang's brief, appellant Gubelmann moved for, and was granted, leave to file a reply brief. Appellee, in response to the reply brief, moved to strike certain portions as going beyond the new point raised in his brief. The court denied this motion without prejudice to renewal at the time of oral argument. Appellee renewed the motion to strike at oral argument; however, the view we take of the case renders consideration of the merits of the motion unnecessary and accordingly appellee's motion to strike is dismissed.

The pertinent portion of the Gang device is shown in FIG. 3:

FIG.3



Gang's primary tens transfer mechanism is adequately described in Gubelmann's brief as follows:

> [A] series of reciprocatory tens transfer actuator gear segments 10 are associated with an ordinal series of register wheel gears 6. Normally, actuators 10 are in the counterclockwise position of FIG. 3 to which they are restored by a common reciprocatory drive means comprising a bail 14 which extends transversely of the actuators above arms 10*a* of said actuators. Bail 14 is reciprocated, subsequent to digital registration, clockwise in a forward stroke and then return counterclockwise in a return stroke.
>
> An upstanding link 19 is pivotally mounted at its lower end to the end of arm 10*a* of each transfer gear segment 10. Normally link 19 is in the counterclockwise position of FIG. 3 with a hook end 19*a* out of the path of drive bail 14. Thus, in a sequence of operation, the bail is normally reciprocated without affecting the link or the actuator. In other words, the bail is normally reciprocating ineffectively.
>
> When a register wheel passes through "9" in additive digital registration, link 19 of the next higher order transfer actuator 10 will be rocked clockwise to bring its hook end 19*a* above and into the path of bail 14 thereby connecting the actuator with the bail. Therefore, when bail 14 is rocked clockwise in its forward stroke, the connected transfer actuator 10 will be likewise rocked * * *. During this forward stroke, the related wheel gear 6 will remain disengaged and therefore transfer gear 10 will be idly operated in a primary transfer operation.
>
> After the above forward stroke of the parts, gear 6 will be engaged with transfer actuator 10. Then during the return stroke movement of bail 14, its lower edge will engage arm 10*a* of transfer segment 10 thereby restoring said segment counterclockwise and entering one unit into the engaged wheel gear 6 in a primary transfer * * *. Drive bail 14 restores the actuator 10 and the connected hook link 19 counterclockwise about shaft 11 to normal position without any particular dependence upon the hook link 19. However, it should be noted that hook link 19 (connecting means) is restored counterclockwise about shaft 11 together with the connected actuator 10. Thereafter his shaft 21 must be rotated in a separate operation of the sequence to normalize the member 16 for shifting the hook link 19 counterclockwise about its own pivot and for thus disengaging the hook link 19 from the drive bail 14 to complete restoration of the hook link 19 to the position shown in FIG. 3.

One or more secondary transfers are performed simultaneously with a primary transfer as follows: Referring to FIG. 3, each tens transfer actuator 10 has an upstanding link 25 pivotally mounted at its lower end to a right arm 10*b* of said actuator. A pin 27 in arm 10*b* extends toward the next higher order actuator to the plane of link 25 of said higher order.

Consider an adjacent pair of actuators 10. If the register wheel of the lower order actuator stands at a value of "9," link 25 of the higher order actuator will be rocked counterclockwise from the position of

FIG. 3. This will position a nose 25*a* of link 25 beneath pin 27 of the lower order actuator. Therefore, if the lower order actuator is rocked clockwise by bail 14 in a primary transfer operation, pin 27 of said actuator will engage nose 25*a* of link 25 of the higher order actuator; and will simultaneously rock said higher order actuator clockwise in a secondary transfer operation. Thus, each successive higher order actuator may be entrained for clockwise movement with the next lower order actuator.

The portion of the foregoing Gang structure which is pertinent to the issue of Gubelmann's right to make is recited in the limitation singled out for consideration as follows:

> drive means [bail 14] * * * operable in a return stroke to restore said actuator [segment 10] * * *.

Gubelmann's structure is illustrated in FIGS. 29 and 30 as well as FIG. 124 of the parent patent:

FIG.29

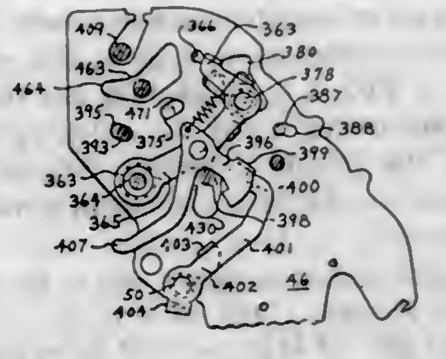


FIG.30

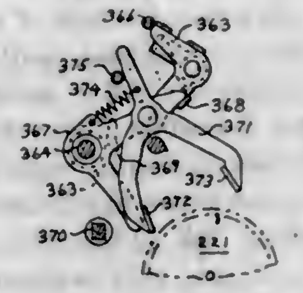
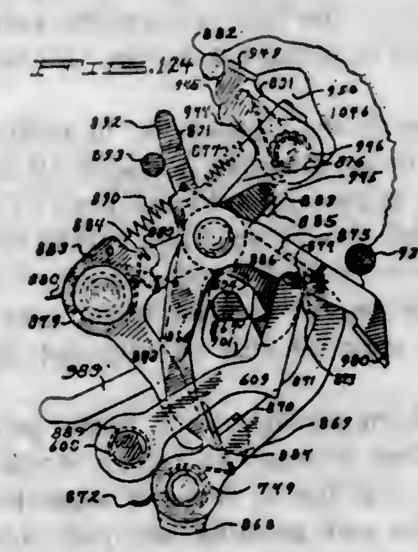


FIG.124



A plurality of gears 221 (FIG. 30) for the various orders are each meshed with corresponding number wheels (not shown). Means for rotating gears 221 comprise, for each gear, a drive pawl 371 (FIG. 30) pivotally mounted on an arm of a member 367 (FIG. 30) which is pivotally mounted on shaft 364. Member 367 is coupled to a lever 363 which is pivotally mounted adjacent its lower end on shaft 364. Members 367 is blocked from rotation in a clockwise direction relative to lever 363 when the parts are in the position shown by lateral lug 368 (FIG. 30) which extends from lever 363 to the outer end of the upper arm of member 367. Torsion spring 369 maintains that arm of member 367 in contact with lateral lug 368 as lever 363 rotates on shaft 364, until such time as a depending arm of the member strikes sleeved shaft 370.

Drive pawl 371 can be swung into two positions, depending upon the position of rod 375. Clockwise rotation of member 367 will cause either lug 372 or lug 373 to strike and rotate gear 221, the direction

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of rotation depending upon which lug first makes contact. This motion adds or subtracts a digit in the number wheel. The object of the structure concerned in this interference is to control the motion of member 367 so as to achieve a clockwise registration stroke at appropriate times followed by a counterclockwise restoration or return stroke. This is done by controlling similar motions on the part of lever 363, to which member 367 is effectively coupled by lug 368 and biasing spring 369. A spring 365 biases lever 363 in a counterclockwise direction to normally abut stop rod 366 as shown in FIG. 29.

During each cycle of the machine, a drive means actuating rod 398 (FIG. 29), transverse all orders of levers 363, is reciprocated once, first clockwise, then counterclockwise. During its reciprocation the rod moves from the raised position, as shown in FIG. 29, to a middle or "hook engaging position" as seen (designated 867) in FIG. 124. After pausing in this position, rod 398 drops further to an "operated position." The cycle is completed by rod 398 rising to the "return position."

Hook 396 is pivotally attached to the middle of lever 363. A tension spring exerts a torque on hook 396, constantly tending to rotate the hook clockwise about its pivotal connection with lever 363. When rod 398 is in the uppermost "return position," this torque is overcome by the camming action of the rod on the adjacent edge face of hook 396 and the hook assumes the counterclockwise position shown in FIG. 29. As a cycle of operation begins, rod 398 drops to a generally central position in its slot 430 (FIG. 29), as indicated (designated 901) in FIG. 124, while spring 365 in each order holds its respective lever 363 in normal position. In this central position of the rod, the registration operations of the machine occur and, at this time, a detent 401 (FIG. 29) may be swung clockwise to disengage it from hook 396 and permit the hook to engage rod 398 under tension of the spring. Normally, as rod 398 descends, lug 399 will latch onto or hang-up on lug 400 of detent 401. In this condition no part of hook 396 can thereafter engage actuating rod 398 as the rod continues its descent, and lever 363, member 367 and drive pawl 371 will remain unmoved during the remainder of the new stroke. The drive means thus normally operates ineffectively in its forward stroke.

If, however, the dial in the next lower order to that being discussed passes through a "tens carry" position, as from 9 to 0, while rod 398 is in the hook-engaging position, detent 401 in the order being discussed will be rotated clockwise before rod 398 descends to the operated position. That rotation of detent 401 frees hook 396 and allows it to rotate in a clockwise direction from the position shown in FIG. 29 so that the ledge or nose adjacent its lower end can engage below actuating rod 398. If hook 396 so engages the rod as just described, the hook, lever 363, member 367 and drive pawl 371 will all be pulled downward in a clockwise direction into the operated position, achieving a "primary transfer operation."

The forward stroke having been achieved, the various parts of the device are restored as rod 398 rises to the returned position. Prior to completion of this restoration motion, detent 401 will have swung counterclockwise to its normal position. As hook 396 rises, however, lug 399 thereon will contact the lower edge of lug 400 on detent 401, and will push the detent aside sufficiently to allow hook 396 to pass. Once the hook has passed the detent, the latter will snap counterclockwise under the influence of torsion spring 402, thus passing under lug 399 on the hook and into position to block its clockwise rotation during the next cycle.

The action of rod 398 in pulling down hook 396 of what is termed in Gubelmann "the first outboard order" constitutes a primary transfer operation. The rotation of outboard orders which are higher than the first outboard order is a secondary transfer operation and is not accomplished by the hooks 396 associated with the higher orders. Instead each lever 363 is equipped with a mechanism at its upper end which temporarily connects it to lever 363 of the next higher operating order when carry is required. When such connections have been established, clockwise rotation of lever 363 of the first outboard order during a primary transfer operation will result in similar rotation of all the levers 363 of the higher outboard orders which are coupled, either directly or indirectly, to the lever of the first outboard order. Whether or not adjacent levers will be coupled together is determined by the position of the number wheel corresponding to the lower order of the two.

The above accounts of the structure and operation of the mechanisms do not appear to be subject to controversy. The issue develops as we consider the decisions below.

In reply to Gang's motion to dissolve, the Primary Examiner stated:

> The terms of the claims are not strained at all by reading the "drive means" on Gubelmann's bail 398. This bail is operated in a forward and return stroke, and it is operable in the latter in order to restore (cause restoration, permit restoration) of the individual carry actuators; the language of the claim does not require restoration by direct engagement (and pushing) with the actuators; it is satisfied by the freeing of the actuators for restoration by springs 365 when bail 398 is restored.

The Board took a different view, interpreting first the language "drive means * * * operable in a return stroke to restore said actuator;" it found it free of ambiguity, stating:

> It is clear and plain; it requires the "drive means" to *perform* two specified functions, that means and no other. One function it is required to *perform*, not merely *permit* the performance of, is to "restore" or to "return" "the actuator" to its former, normal position.

Turning to Gubelmann's disclosure, the Board found that

> * * * nowhere in his disclosure did Gubelmann specifically disclose or contemplate that the same rod 398 would perform any restoring or returning function on lever 363 and its associated connected elements beyond cooperating with the curved surface 406 on hook 396 to effect the disengagement of the nose of that hook from the rod 398 and the relatching of that hook by detent 401. * * * His only *specific* disclosure is directly to the contrary, irrespective of how the structure *might* operate. Indeed, Gubelmann has pointed to only one place on his specification * * * for any support for his position and then refers only to the *holding* function of a "*return* spring 365" with respect to the noted lever 363 and associated connected elements.
>
> * * * * * * *
>
> We believe that Gubelmann designated spring 365 a "return" spring because that is what he intended it to be and because that is what it is. It is the *only* element specifically designated as a "return" element that cooperates with the lever 363 and connected elements to restore or return the actuating means to its former, normal position after a transfer operation. The "return spring 365" is the only element that positively effects a function in the "restore" or "return" operation.
>
> To the contrary, the rod 398, i.e. the "drive means," at most apparently effects only a control function in limiting the rate at which the lever 363 and associated elements are *permitted* to be restored or returned to their initial position. Thus, the hook 396 *prevents* the return of the lever 363 at a faster rate than it is moving itself. This we do not regard as effecting a restoring or returning function.

The Board concluded by holding that real doubt existed as to Gubelmann's right to make the counts and that it would require an unreasonable straining of the language of the counts in order to find support therefor in Gubelmann's disclosure.

**[1]** The Examiner's reasoning requires the conclusion that the count language in question, "operable in a return stroke to restore," defines something less than affirmative action. We disagree. While not unmindful of the rule that a copied claim forming a count in an interference must be given the broadest construction which its language will reasonably permit, we agree with the Board that the above-quoted language clearly requires that the drive means act positively in its return stroke to perform the stated function of restoring the actuator. It would be unreasonable to read into the unequivocal count language the limitation "permit or allow restoration" in place of simple term "restore." Were we to adopt appellant's broad construction of the language, the count then can cover both Gang and Gubelmann only by giving its the affirmative meaning when applied to Gang and the different, "permissive" meaning when applied to Gubelmann. This is ambiguity and resort to the specification of the patent in which the count originated as a claim to ascertain its meaning would be proper. Such reference here would merely reinforce our finding above.

**[2]** Turning to a consideration of appellant's disclosed device, we repeat the rules applicable to such an interference proceeding. One copying a claim from a patent has the burden of showing that his application clearly supports the count. In determining applicant's right to make a copied claim, all limitations in the claim will be considered material and doubts arising as to such right must be resolved against the copier. Where support must be based on an inherent disclosure, it is not sufficient that a person following the disclosure might obtain the result set forth in the count; it must invariably happen. See *Smith* v. *Wehn*, 50 CCPA 1544, 318 F.2d 325, 138 USPQ 52 and *Dreyfus and Harrison* v. *Sternau*, 53 CCPA 1050, 357 F.2d 411. 149 USPQ 63.

In support of his contention that he can make the counts in issue, Gubelmann proposes "first," "second," and "third" definitions of his actuator and connecting means. His "first" definition actuator comprises lever 363, member 367 and pawl 371, with hook 396 excluded. The second additionally includes all of the hook except the nose, while the third includes all of the hook. Three connecting means definitions respectively fitting with the actuator definitions are also discussed. Regardless of which definition is adopted, Gubelmann urges that the actuator is completely controlled during its restoration by the action and position of the drive means, rod 398. He states:

> *Restoration of the "actuator" never occurs unless the rod 398 rises; if it does rise, restoration always occurs. The speed of restoration depends directly on the speed with which rod 398 rises.* The drive means rod 398 is the only thing that is directly motivated by a power source to restore the actuators.

In response to Gang's contention that the return spring 365 provides all the force reqiured to return the actuator, Gubelmann argues that such requires, first, the assumption that hook 396 forms no part of the actuator, for clearly spring 365 cannot restore the hook unless rod 398 moves to restore the actuator. Second, it is urged, spring 365 is disclosed only as *holding* lever 363 against stop 366, the inference being that it would not possess sufficient strength to *restore* the actuator. The tension of such a spring is allegedly known in the art to be light since the tension of a plurality of them, one for each order of actuators, would be added together to resist forward operation. Furthermore, it is suggested that wear, misalignment, corrosion or the presence of dirt might cause the bearings of lever 363 to stick, with the result that rod 398 will then push directly on the bulge in the middle of the lever, thus bringing it within the language of the claim which allegedly "does not require that it be so operated at every cycle of the machine." Appellant concludes that while spring 365, by its inherent nature, may assist restoration of the actuator, it cannot initiate such restoration which is entirely dependent upon the return stroke of rod 398. Therefore, the drive means bail rod 398 is "operable in a return stroke to restore" as required by the counts.

We are not persuaded by this argument. We believe that the "first" definition actuator, set forth above, conforms to the only reasonable reading of the counts on Gubelmann's disclosure. The second and third definitions arbitrarily include hook 396 as part of the actuator when in actuality it appears to be more of a connecting element. Moreover, the second definition arbitrarily subdivides the unitary hook into two components, and assigns one portion to the actuator and another portion, the nose, to the connecting means. This is without reason.

We find unconvincing appellant's attempt to now limit the function of spring 365. We agree with the Board that "return spring 365" was intended to be just that, a *return* element. The parent patent discloses that the torsion spring "serves to *rotate* the lever * * * counterclockwise" (emphasis ours), further indicative of its function. Appellant's speculation as to instances of inoperativeness in his device appears to us to be rather far-fetched. We are not concerned with what *might* happen if the mechanism fails to operate as intended. Additionally, we note that slot 901 in FIG. 124 (430 in FIG. 29) terminates below the bulge of lever 876 (363 in FIG. 29), thus precluding rod 867 (398 in FIG. 29) from restoring the lever completely. Even acknowledging that rod 398 "*controls*" the return of lever 363, this still fails to meet the express requirement that it operate to "*restore*" the lever.

Appellant directs our attention to *Christian* v. *Muller*, 26 CCPA 1324, 104 F.2d 361, 42 USPQ 26, as allegedly involving a situation remarkably similar to that of the present interference. There the counts in an interference described a calculating machine carriage mechanism. Count 9 recited that the machine had motor-driven operating means and front-feed means having portions forming a front-feed throat (for paper insertion). The count further recited "throat opening means operable by power furnished by said motor driven operating means during a cycle of operation of said machine * * * for moving said front-feed means to open throat position." The appellant applied the power of an electric motor directly to the front-feed means in order to open its throat. The question was whether the language was supported by the appellee's arrangement in which a motor first wound a spring, the release of which then operated the front-feed throat opening means at the appropriate time. The court held that it did, saying:

> That the front-feed throat opening means is operated indirectly by the motor in appellee's construction is clear. In each cycle of operation of the machine the motor tightens the spring, storing its energy for use in the next cycle of operation of the machine.
>
> We find nothing in said counts requiring the front-feed throat opening means to be operated directly by the motor, and we are not at liberty to read the word "directly" before the word "operable" in said counts.

Appellant contends that the reasoning applied in *Christian* applies here and that the count language in issue is met by rod 398 indirectly winding spring 365 during its clockwise movement.

At first glance, appellant's argument appears impressive; however, it overlooks the fact that the language involved here is narrower than that in *Christian* and specifically requires that the drive means operate in its *return stroke* to restore the actuator. At best, charging of spring 365 here can be characterized only as resulting in the drive means operating in its *forward stroke* to later permit restoration of the actuator.

We have considered fully all arguments of the parties; however, we think it apparent from the foregoing that Gubelmann has not discharged the burden which the law imposes on one in his position. Accordingly, the decision of the Board is affirmed.

AFFIRMED.

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## U.S. Court of Customs and Patent Appeals

In re Rudolf Beckmann, Erich Behr and Franz Joseph Huster

*No. 8123. Decided June 5, 1969*

[56 CCPA —; 410 F.2d 1399; 161 USPQ 780]

1. Patentability—Evidence—Argument in Brief Is Not Evidence.

"Granted that *some* difference in surface characteristics *may* exist between a cross-linked polyolefin and a noncross-linked polyolefin, it is evident that the Examiner and Board did not see the significance, if any, of that difference in the present circumstances. Nor do we. The difficulty with appellants' case, as we see it, is the lack of evidence in the record bolstering their argumentative conclusion as to what 'Quotation I' means to one of ordinary skill in this art, and contradicting the plausible interpretation advanced by the Examiner and Board. We find no support for their contentions that one of ordinary skill would regard it unobvious or unexpected that Grimminger's coating process could be applied to a cross-linked polyolefin substrate as well as to an 'untreated' polyolefin substrate. Nor is there any evidence of record to convince us that, as appellants allege, the use of a particular type or species of organic peroxide in combination with the particular coating copolymer of butadiene and styrene is significant or is not suggested by the reference. Argument in the brief does not take the place of evidence in the record on that score."

2. Same—Particular Subject Matter—"Coating of Surfaces of Cross-Linked Olefin Polymers."

The refusal of certain claims in an application entitled "Coating of Surfaces of Cross-Linked Olefin Polymers," as unpatentable over the prior art, is affirmed.

Appeal from Patent Office. Serial No. 281,856.

AFFIRMED.

*Arnold Sprung*, *Burgess*, *Dinklage & Sprung* (*Frank M. Murphy*, of counsel) for appellants.

*Joseph Schimmel* (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before Worley, *Chief Judge*, Rich, Almond and Baldwin, *Associate Judges*

Worley, *Chief Judge*, delivered the opinion of the court.

The issue here is whether the Board of Appeals committed reversible error in sustaining the Examiner's rejection of claims 1–8[1] as obvious under 35 U.S.C. 103 in view of Belgian Patent 572,948[2] to Grimminger.

Appellant's specification defines the problem they and the prior art faced with respect to providing the surface of a cross-linked olefin polymer with a coating of another polymer:

> This invention relates to the application of coatings such as varnish coatings to the surfaces of cross-linked olefin polymers.
>
> Commonly, before the application of a varnish coating to the surface to be coated, the surface is subjected to a preliminary treatment so that the varnish will adhere strongly to the surface. Mechanical treatment of the surface is often not practical because of the injury which would occur to the surface. A better approach is to attempt a treatment as will impart cohesiveness to the surface, and this approach is desirable in respect to smooth, hard, and dense plastic surfaces, particularly where the plastic is of polymers which are non-polar and are saturated. Such treatments have been proposed and included among these are the utilization of a swelling solvent, oxidizing treatments as for example by ozonizing or by use of strong oxidizing acids, the subjecting of the surface to electric discharge at high voltage, or the utilization of the flame contact method. These treatments can condition the surface for application of coatings, such as primer coatings, varnish coatings and the like, by providing at the plastic surface polar and/or unsaturated groups.
>
> In respect to the application of coatings to cross-linked olefin polymers, however, the above-referred to prior art proposals, in general, do not provide satisfactory results.

To solve that problem, appellants coat the surface of a cross-linked olefin polymer, such as polyethylene or polypropylene, with a strongly adhering film of butadiene-styrene copolymer, using the method set forth in representative claim 1:

> 1. Process for coating a surface of a cross-linked olefin polymer which comprises contacting the surface thereof with an organic peroxide having a tertiary carbon atom and providing on the organic peroxide contacted surface a copolymer of butadiene and styrene, and maintaining the surface coated with the copolymer at a temperature and for a time sufficient to harden it providing a hardened film of the copolymer strongly adhering to the olefin polymer surface.

According to appellants, "in general, all the organic peroxides suitable for use as cross-linking agents for polyolefins," particularly those with a tertiary carbon atom, may be used in the process, the peroxide apparently functioning as a cross-linking agent to attach the butadiene-styrene copolymer coating to the olefin polymer by primary valence linkages or bonds.

Grimminger too discusses the problem he faced of coating the nonpolarized, smooth surface of "untreated" polyethylene or polypropylene substrates with other materials. He states:

> Owing to the particular molecular structure of the polymers of ethylene and its homologs it is not easily possible to provide these high polymers with a print, bond or other kind of coating firmly adhering to them. The aforesaid polyolefins are known to consist of linear or branched carbon chains whose macromolecules do not contain polarizable atoms or atomic groups that owing to strong electrical (intermolecular) forces, would be capable of binding artificial materials of a similar or a different kind such as color lakes or adhesives at the wax-like surfaces. Moreover, all commercial articles prepared from the aforesaid hydrocarbons of high molecular weight have a very smooth surface which is practically free from pores and this, too, increases the difficulty * * *. Many processes have been developed for improving the surfaces adhesiveness of the aforesaid macromolecular materials by modifying the surface to be coated prior to the coating by a physical, physico-chemical or chemical pretreatment (singeing, shooting of electrons, radiation with $\gamma$- or X-rays, electrical gas discharge, oxidation, halogenation). In all the processes that have hitherto been applied the modification is brought about by the addition reaction of polarizable atoms or atomic groups (or radicals having a permanent dipole moment) with the hydrocarbon chains of the surface of the sample. The characteristic feature of the improved adhesiveness thus obtained is that it is due to the polarity of the pretreated surface, that is to say that it is only brought about by a secondary bond * * *. However, by a pretreatment of this kind the capacity of the material for being welded or subjected to a heat sealing process is in most cases more or less considerably impaired.

Grimminger solved that problem by applying to the "untreated" polyolefin surface a coating material which may be, inter alia, a copolymer of "butadiene and styrene," and subsequently bringing about a cross-linking reaction between the base material and coating. According to Grimminger, cross-linking may be accomplished by (1) applying a free radical-forming organic peroxide—benzoyl peroxide, for example—to the polyolefin surface prior to, or simultaneously with, the application of the coating material, and thereafter heating the composite layers to activate the peroxide, or (2) subjecting the two layers to various forms of radiation capable of producing free radicals.

Grimminger acknowledges that known methods involving radiation and chemicals had previously been used to produce free radicals and cause cross-linking of the molecules in a polyolefin polymer mass, thereby improving mechanical strength, heat resistance and insolubility of the polyolefin. In such processes, Grimminger states, the lifetime of the radicals formed at the surface of the mass is probably considerably shorter than that of the radicals formed in the interior, since the surface radicals posses the capability of reacting with the atmosphere to saturate themselves in contrast to the radicals in the interior which apparently must wait for diffusion to bring adjacent radicals sufficiently close to each other to saturate themselves. As a result, Grimminger observes:

> [Quotation I] The known methods provide cross-linking of the macromolecules *in the interior* of the macromolecular material, but the *radicals forming at the surface of the material are no longer capable of reacting and thereby forming primary valence linkages, since, owing to saturation, they are transformed after only a very short time and if a coating is applied it can no longer be bound by atomic (homopolar) linkages.* [Emphasis supplied.]

By contrast, when operating according to Grimminger's disclosed process, "the radicals which are rather short-lived when being formed at the surface of a material are enabled to produce a primary bond between the two layers of the compound material." "The adhesiveness obtained by the process according to the present invention," says Grimminger, "very much excels that produced by the known processes" where reliance is placed on secondary bonds, not primary bonds, to cause the coating material to adhere to the polyolefin substrate.

In the Examiner's view, the principal difference between the processes of Grimminger and appellants is that the former employs a polyolefin substrate which is *not* initially cross-linked, whereas appellants employ one which is. The Examiner considered the problems of coating a cross-linked polyolefin substrate and a noncross-linked substrate to be the same, and that it would be obvious to use an initially cross-linked polyolefin substrate in the process of Grimminger where the well-known advantages of such a material, as particularly set forth by Grimminger, are desired. The Examiner further found that the benzoyl peroxide used by Grimminger met the "organic peroxide having a tertiary carbon atom" called for in the claims. The Board agreed.

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[1] Appearing in application Serial No. 281,856, for "Coating of Surfaces of Cross-Linked Olefin Polymers," filed May 9, 1963 and claiming priority under 35 U.S.C. 119 of a German application filed May 16, 1962.

[2] The Belgian patent is not physically part of the record. Appellants and the Patent Office agree that Grimminger Canadian Patent 662,156, issued April 30, 1963, may be regarded as an English translation of the Belgian patent, although the Canadian patent itself is not available as a reference since it issued subsequent to appellants' Germany priority date.

Here appellants argue that there "is no justification" for the Examiner's conclusion that a cross-linked polyolefin substrate presents the same type of coating problem as a non-cross-linked or "untreated" polyolefin substrate. They refer to the discussion in their specification of the problem they and the prior art faced, quoted earlier in this opinion, for an explanation that, in general, procedures applicable for coating of linear or noncross-linked polyolefins are not applicable to cross-linked polyolefins.[3] Indeed, they feel that Grimminger himself suggests that the procedure of the present claims would not be operative. Relying on the paragraph of Grimminger heretofore denoted "Quotation I," appellants urge that:

> It is a clear indication of the reference that the surface of a cross-linked olefin is in such condition that it is no longer capable of reacting in the manner utilized in the process of the reference to bond a coating to the base material. This amounts to an indication that the procedure of the reference is not suitable for application to cross-linked olefin.

The Examiner and Board did not agree with appellants' interpretation of "Quotation I" from Grimminger. It is the Patent Office position that one of ordinary skill, after reading "Quotation I" in context, would understand that he cannot apply a polymeric coating material to an already cross-linked polymer with the expectation that there would be free radicals still remaining on the surface of the latter to react and effect cross-linking with the coating. In that circumstance, Grimminger says, there are no free radicals left, "since, owing to saturation, they are transformed after only a very short time," possibly through reaction with the atmosphere. The Examiner did not think that "Quotation I" teaches one of ordinary skill that the surface of a cross-linked polyolefin would be incapable of being "reactivated" by a second application of free radical-producing chemicals, or that it would preclude applying a peroxide in combination with a coating polymer to an already cross-linked substrate and heating to generate new free radicals at the interface between coating and substrate, stating:

> * * * While the presence of free-radicals, formed during the initial cross-linking treatment cannot be taken advantage of, it is clear that the peroxide treatments taught by Grimminger will open up the primary valence bonds and provide free radicals for reaction with the applied coating * * *. The fact that one may not readily take advantage of the free-radicals formed during cross-linking would not deter one skilled in the art from treating to cross-link and then further treating, as taught by Grimminger to adhere the coating. Only the expected additive results are obtained.

The Board agreed, adding that it is apparent from Grimminger's disclosure in "Quotation I" that at least part of the surface of a cross-linked polymer is not actually cross-linked. Observing that appellants' claims do not specify the degree of initial cross-linking in the polyolefin substrate employed in their method, the Board felt it would be obvious to apply to the surface recited in the claims a process operative with surfaces which are not cross-linked albeit to possibly a different extent.

**[1]** Granted that *some* difference in surface characteristics *may* exist between a cross-linked polyolefin and a noncross-linked polyolefin, it is evident that the Examiner and Board did not see the significance, if any, of that difference in the present circumstances. Nor do we. The difficulty with appellants' case, as we see it, is the lack of evidence in the record bolstering their argumentative conclusion as to what "Quotation I" means to one of ordinary skill in this art,[4] and contradicting the plausible interpretation advanced by the Examiner and Board. We find no support for their contentions that one of ordinary skill would regard it unobvious or unexpected that Grimminger's coating process could be applied to a cross-linked polyolefin substrate as well as to an "untreated" polyolefin substrate. Nor is there any evidence of record to convince us that, as appellants allege, the use of a particular type or species of organic peroxide in combination with the particular coating copolymer of butadiene and styrene is significant or is not suggested by the reference. Argument in the brief does not take the place of evidence in the record on that score. *In re Schulze*, 52 CCPA 1422, 346 F.2d 600, 145 USPQ 716 (1965); *In re Weber*, 52 CCPA 1015, 341 F.2d 143, 144 USPQ 495 (1965).

**[2]** The decision is affirmed.

AFFIRMED.

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[3] The cited paragraph of the specification does not support appellants' position. As pointed out by the Solicitor, and as is clear from that paragraph of the specification, there is no apparent reference to noncross-linked polymers contained therein. It seems to us that appellants are merely stating in that paragraph that the various methods previously used by the prior art to provide cross-linked olefin polymeric substrates with an adherent coating "do not provide satisfactory results." Grimminger found those same methods, which rely on secondary bonding effects, to be unsatisfactory to coat noncross-linked olefin polymer substrates, and proposed his solution therefor.

[4] Cf. *In re Lemin*, 53 CCPA 1382, 364 F.2d 864, 150 USPQ 546 (1966).

# PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

**2,746,472.** (See 3,286,216.)

**2,982,145**, H. Orner, RECIPROCABLE FEED MECHANISM; **3,234,810**, same, PRELOADED BALL BEARING SCREW AND NUT MECHANISM, **filed** Aug. 13, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1693, *Harry Orner* v. *Scully-Jones Company.*

**3,026,076**, R. B. Bender, SUPPORT FOR PIPELINE, **filed** Aug. 15, 1969, D.C., W.D. Tenn. (Memphis), Doc. C–69–240, *Tejas Plastics Materials Supply Company* v. *Zack McClenson, doing business as Drew Foam.*

**3,044,669**, J. E. Kienel, PNEUMATIC APPARATUS FOR TURNING AND STACKING HOSIERY; **3,351,033**, same, APPARATUS AND METHOD FOR SEAMING HOSIERY BLANKS, **filed** Apr. 21, 1969, D.C.S.C. (Greenville), Doc. C.A. 69–362, *Joseph E. Kienel* v. *Brian Lyttle, Inc.*

**3,058,663.** (See 3,286,216.)

**3,066,526**, H. R. Tear, UNBALANCE DETECTION APPARATUS, **filed** Mar. 18, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c579, *Stewart-Warner Corporation* v. *Hunter Engineering Company et al.* Patent is infringed and valid; defendants permanently enjoined, Aug. 19, 1969.

**3,083,837**, Jones, Noll, Nielsen and Klos, CRANE, **filed** Aug. 14, 1969, D.C., E.D. Wis. (Milwaukee), Doc. 69–C–399, *Harnischfeger Corporation* v. *Koehring Company.*

**3,090,300**, L. G. Dubuit, SILK SCREEN PRINTING MACHINE, **filed** Aug. 18, 1969, D.C.N.C. (Charlotte), Doc. 2525, *Louis Gilbert Dubuit et al.* v. *Harwell Enterprises, Inc., and Roy M. Harwell, Jr.*

**3,134,488**, Brekelbaum, Jones, Noll, Nielsen, and Klos, CRANE, **filed** Aug. 14, 1969, D.C., E.D. Wis. (Milwaukee), Doc. 69–C–398, *Harnischfeger Corporation* v. *Koehring Company.*

**3,146,316**, N. P. Knoth, TAPE RECORDER, **filed** Aug. 27, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1783, *Warwick Electronics Inc.* v. *North American Philips Company, Inc.*

**3,156,401**, J. N. Krause, CONTAINER, **filed** Aug. 19, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1731, *Anaconda Aluminum Company* v. *Owens-Illinois, Inc.*

**3,163,464**, Martin and Re, MECHANISM FOR RECLINER-ROCKER TYPE OF CHAIR, **filed** Aug. 13, 1969, D.C. Mass. (Boston), Doc. 69–850–J C.A., *Futorian Manufacturing Corporation et al.* v. *Dual Manufacturing & Engineering Inc.*

**3,170,344**, R. E. Marrs, METHOD AND APPARATUS FOR CONTROLLING THE THICKNESS OF ROLLED STRIP MATERIAL; **3,332,263**, Beadle, Lehr and Maxwell, COMPUTER CONTROL SYSTEM FOR METALS ROLLING MILL, **filed** Dec. 13, 1968, D.C., W.D.N.Y. (Buffalo), Doc. C–1968–399, *Westinghouse Electric Corporation* v. *General Electric Company.* Stipulation and order of dismissal, July 25, 1969.

**3,171,700**, Parsell and Brickman, BAR CABINET, **filed** Dec. 16, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c2319, *Ever-Wear Inc.* v. *Wieboldt Stores Inc.* Judgment, patent is invalid, Aug. 21, 1969.

**3,173,473.** (See 3,286,216.)

**3,174,863**, A. A. Shoup, SMOKELESS BROILER, **filed** Aug. 12, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1682, *Marian Shoup* v. *Marshall Field & Co.* **Same, filed** Apr. 22, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c872, *Marian Shoup* v. *Dominion Electric Corporation et al.* Stipulation, order cause dismissed without prejudice, Aug. 20, 1969.

**3,190,059**, Bauder and Hart, POCKET FILTER; **3,273,321**, Bauder, Hart and Cleminshaw, AIR FILTER HAVING A REPLACEABLE CARTRIDGE, **filed** July 11, 1969, D.C., S.D.N.Y., Doc. 69–C–3001, *Cambridge Filter Corporation* v. *Arco Manufacturing Corp.*

**3,203,389**, R. C. Cale, STABILIZED PLANING HULL, **filed** June 20,1969, D.C., E.D. Wis. (Milwaukee), Doc. 69–C–309, *Richard C. Cale* v. *Outboard Marine Corporation.*

**3,234,810.** (See 2,982,145.)

**3,243,917**, Giammarino and Brand, ELECTRICAL MOTOR OPERATED TOY VEHICLE, **filed** Aug. 22, 1969, D.C., S.D.N.Y., Doc. 69–C–3692, *Aurora Plastics Corp.* v. *Charles Merzbach Company Inc.*

**3,273,321.** (See 3,190,059.)

**3,286,216**, Jackson and Braucksiek, ELECTRIC TERMINAL; **3,286,923**, same, THERMOSTATIC CONTROL DEVICE FOR NORMAL AND ABNORMAL CONDITIONS; **D. 207,342**, T. J. Dykzeul, THERMOSTAT TUBE; **2,746,472**, M. G. Sogge, SAFETY VALVE; **3,173,473**, R. S. Loveland, THERMOCOUPLE CLIP; **3,354,901**, Dietiker, Krueger and Morgan, CONTROL APPARATUS; **3,058,663**, W. B. Barnard, SELECTIVE CONTROL AND DISPLAY APPARATUS, **filed** July 12, 1968, D.C., C.D. Calif. (Los Angeles), Doc. 68–1132–S, *Robertshaw Controls Company* v. *Honeywell, Inc.* Stipulation dismissing complaint with prejudice; also dismisses the counterclaim with prejudice except to Patent No. 3,058,663 which was dismissed without prejudice, July 3, 1969.

**3,286,923.** (See 3,286,216.)

**3,291,619**, D. W. Luks, CERAMIC PRODUCTS AND PROCESS OF MAKING SAME, **filed** June 27, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1254–HP, *Kyocera International Inc.* v. *Alloys Unlimited, Inc.* **Same, filed** July 2, 1969, D.C., N.D. Calif. (San Francisco), Doc. 51668, *Frenchtown/CFI* v. *Kyocera International Inc.*

**3,299,558**, A. R. Karl, METAL GUN BARREL WITH ENCIRCLING PLASTIC LAYER AND INTEGRAL PLASTIC SIGHT, **filed** Jan. 7, 1969, D.C. Conn. (New Haven), Doc. 12914, *Anthony Robert Karl* v. *High Standard Manufacturing Corp.* Stipulation for dismissal, Aug. 19, 1969.

**3,303,825**, Shuman and Meinhardt, BALL POINT WRITING INSTRUMENTS, **filed** Nov. 6, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c2086, *The Parker Pen Company* v. *Waterman-Bic Pen Corporation.* By stipulation, cause dismissed with prejudice, Apr. 25, 1969.

**3,310,966**, C. A. Berry, LADIES' STRETCH TUBE STOCKING; **D. 207,047**, same, LADY'S STOCKING, **filed** July 24, 1968, D.C., S.D.N.Y. (Foley Square), Doc. 68–C–3015, *Pilot Research Corporation* v. *S. Klein Department Stores, Inc.* Stipulation of dismissal without prejudice, Aug. 6, 1969.

**3,315,691**, J. E. Widner, VEHICLE POWER WASHING APPARATUS, **filed** Aug. 22, 1969, D.C., E.D. Ky. (Lexington), Doc. 335, *Gyro-Wash, Inc.* v. *Robo-Wash, Inc. and Citation Manufacturing Co., Inc.*

**3,321,081**, A. H. Willinger, AQUARIUM FILTER APPARATUS, **filed** Aug. 19, 1969, D.C.N.J. (Newark), Doc. 993–69, *Aquariums, Inc.* v. *National Aquarium Supplies and Accessories, Inc. and Robert Newsteder.*

**3,332,263.** (See 3,170,344.)

**3,351,033.** (See 3,044,669.)

**3,354,901.** (See 3,286,216.)

**3,422,189**, J. A. Rider, METHOD AND COMPOSITIONS FOR THE TREATMENT OF GASTRO-INTESTINAL DISORDERS, **filed** Aug. 11, 1969, D.C., S.D. Fla. (Miami), Doc. 69–956–C–CF, *Moraine Products, Inc., etc.* v. *Plough, Inc. and Crandon Drugs, Inc.*

**D. 207,047.** (See 3,310,966.)

**D. 207,342.** (See 3,286,216.)

**D. 209,499**, C. L. Leavitt, BOBBIN HOLDER, **filed** Aug. 26, 1969, D.C., S.D.N.Y., Doc. 69–3718, *Reynolds Industries Inc.* v. *W. H. Collins Inc.*

U.S. GOVERNMENT PRINTING OFFICE: O——1969

# DEFENSIVE PUBLICATIONS

## PUBLISHED NOVEMBER 18, 1969

Published at the request of the applicant or owner in accordance with Notice of Apr. 11, 1968, 849 O.G. 1221. The abstracts are identified by serial number of the applications and arranged in chronological order. The heading of each abstract of application published herein indicates the number of pages of specification, including claims and sheets of drawing contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Applications published under the Defensive Publication Program have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

### 729,834

### LIQUID POLYESTER COMPOSITION AND METHOD OF PREPARATION

**Hugh J. Hagemeyer, Jr., and Jon Marc Johnson, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**Original application Sept. 23, 1963, Ser. No. 310,924. Divided and this application Feb. 20, 1968. Published Nov. 18, 1969**

**Int. Cl. C08f** *45/38;* **C07c** *69/44*
**U.S. Cl. 260—31.6**

**No Drawing. 19 Pages Specification**

The liquid polyester product of adipic acid, 2,2,4-trimethylpentane-1,3-diol, and a terminating agent selected from the group consisting of (a) a monocarboxylic acid and (b) a monoester of said acid and 2,2,4-trimethylpentane-1,3-diol, is useful as a plasticizer (e.g., for polyvinyl chloride).

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### 841,605

### PREPARATION OF HYDROLYZED COPOLYMERS IN THE SOLID FORM

**John E. Bristol, 1336 Saunders Settlement Road, Niagara Falls, N.Y. 14305**

**Continuation-in-part of applications Ser. No. 605,999, Dec. 30, 1966, Ser. No. 684,475, Nov. 20, 1967, and Ser. No. 706,782, Feb. 20, 1968. This application July 14, 1969. Published Nov. 18, 1969**

**Int. Cl. C08f** *19/10*
**U.S. Cl. 260—87.3**

**No Drawing. 11 Pages Specification**

A process is provided for the production of a polymer containing hydroxyl groups. The process comprises subjecting a solid copolymer of an olefinic hydrocarbon (ethylene) and up to 50 weight percent of an ester of an unsaturated alcohol (vinyl acetate) to the action of a hydrolyzing agent (methanol) while the copolymer is immersed in the hydrolyzing agent in the solid form.

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### 814,213

### VALVE FOR PRODUCING PRESSURIZED FLUID PULSES

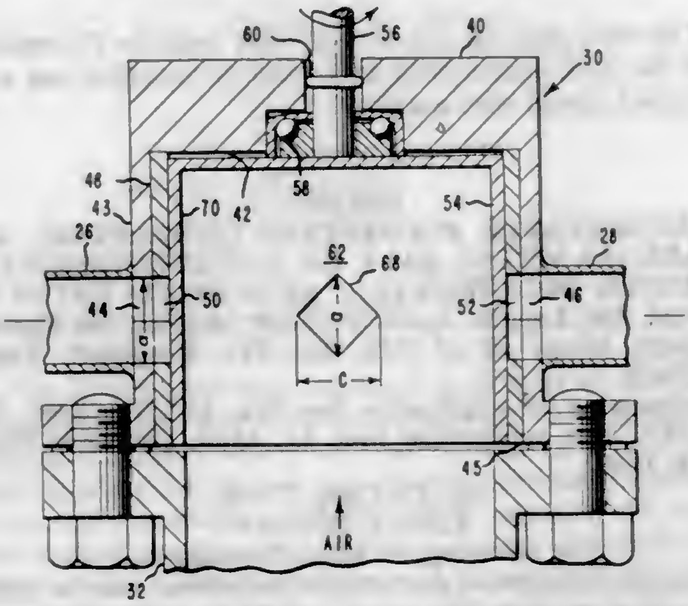
**William Achard Fintel, 340 Vanderbilt Road, Old Hickory, Tenn. 37138**

**Continuation-in-part of application Ser. No. 651,793, July 7, 1967. This application Dec. 31, 1968. Published Nov. 18, 1969**

**Int. Cl. F16k** *31/00*
**U.S. Cl. 137—624.13**

**2 Sheets Drawing. 13 Pages Specification**

An apparatus for deflecting in a controlled manner, filaments emerging from the outlet of a forwarding jet. A housing attached to the outlet end of the jet is periodically supplied with pulses of pressurized fluid that vary linearly with time which are directed onto the filaments emerging from the jet. The source of supply for the pulses is a center fed rotary valve connected between a source of pressurized fluid and the jet housing by a conduit system. The valve ports are diamond shaped, identical in cross-sectional area, and have a diagonal dimension which is oriented with the central axis of the valve and are positioned so that during rotation of the valve rotor the ports register to define an orifice between the source and conduit. The ports and conduits are sized with respect to the fluid source so that the flow through the orifice is at sonic velocity for all degrees of openness, and that peak fluid velocity at any point in the conduits does not exceed 80% of sonic velocity.



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### 667,231

### METHODS OF AND APPARATUS FOR TREATING ARTICLES

**Arthur Julian Avila, Middlesex, and Theodore Elwyn Torok, Flemington, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**

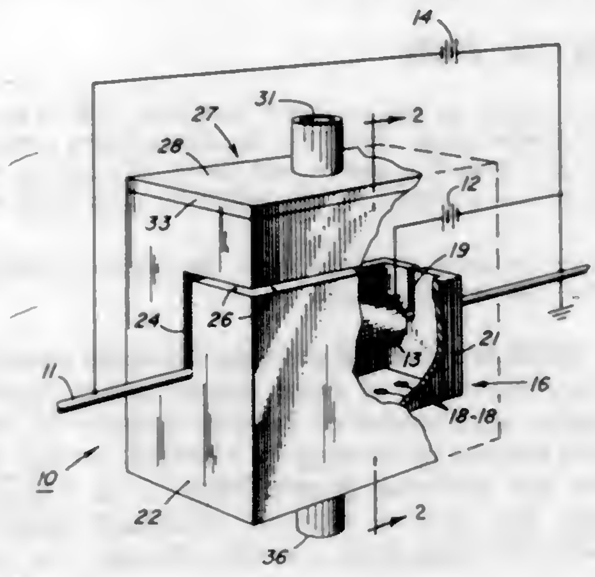
**Filed Sept. 12, 1967. Published Nov. 18, 1969**

**Int. Cl. C23b** *5/58, 5/68*
**U.S. Cl. 204—28**

**2 Sheets Drawing. 16 Pages Specification**

A wire is alloy-plated by advancing it through an open-topped tank at a constant rate while delivering an alloy plating solution into the tank from above the wire. The solution is discharged from below the wire at a rate less than the delivery rate to overflow the tank and establish a substantially constant static pressure head of solution therein, thereby providing a substantially constant flow rate of solution passing through the tank. The discharge means is located so as to provide a substantially streamline flow pattern of solution, particularly in the plane passing vertically through the wire.

A plating voltage may be applied between the wire and an anode which is disposed within the tank-held solution. Moreover, a current may be passed down the wire during plating to establish a circumferential magnetic field about the wire. Such field is desirable where the alloy is a magnetic material to induce circumferential anisotropy therein.



The wire may be Cu-Be; the alloy may be Permalloy; and the alloy-plated wire may have an intended use as a so-called plated wire memory.

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### 835,295

### BASIC-DYEABLE POLYESTERS CONTAINING AN ALKALI METAL SALT OF A SULFODIPHENYLETHER DICARBOXYLIC ACID OR ITS ESTER

**Gerald Ray Lappin, James Cuthbert Martin, and Ronald Hugh Meen, all of P.O. Box 511, Kingsport, Tenn. 37662**

**Continuation of application Ser. No. 671,565, Sept. 29, 1967. This application June 11, 1969. Published Nov. 18, 1969**

**Int. Cl. C08g** *17/08*
**U.S. Cl. 260—49**
**No Drawing. 22 Pages Specification**

Linear, high molecular weight polyesters, such as poly(ethylene terephthalate) and poly(1,4-cyclohexylenedimethylene terephthalate), are rendered dyeable with basic dyes by incorporating in the polymer chain of said polyesters the residue of a new organic compound which is an alkali metal salt of a sulfodiphenyl ether dicarboxylic acid or its ester.

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### 687,450

### LITHOGRAPHIC PLATE

**Paul L. Johnstone, Greenville, and Richard L. Wagner, Sherwood Park, Del., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware**

**Filed Dec. 4, 1967. Published Nov. 18, 1969**
**Int. Cl. B41n** *1/00, 3/00;* **G03f** *7/02*
**U.S. Cl. 101—455**
**No Drawing. 11 Pages Specification**

Lithographically grained metal plates closely resembling tub grained metal plates can be prepared by coating a smooth metal plate such as an aluminum or zinc plate, with an aqueous dispersion of (1) an alkali metal silicate such as sodium of potassium silicate, (2) boric acid, and (3) a finely divided metallic agent selected from aluminum hydroxide, aluminum oxide, aluminum, and zinc. If desired, the metal plates can be plastic or paper laminates faced with metal foil.

The aqueous dispersion used to coat the plates will contain from about 15% to about 75% of an alkali metal silicate, from about 0% to about 4% boric acid, and from about 22% to about 76% of finely divided metallic agent.

In the process of preparing the said plates, a coating of from about 0.1 mil to about 5 mils of the dispersion is applied to smooth metal sheets. If desired the coating can be cured by heating and sealed by dipping in an aqueous solution of an alkali metal silicate, draining, and then dipping in an aqueous solution of boric acid.

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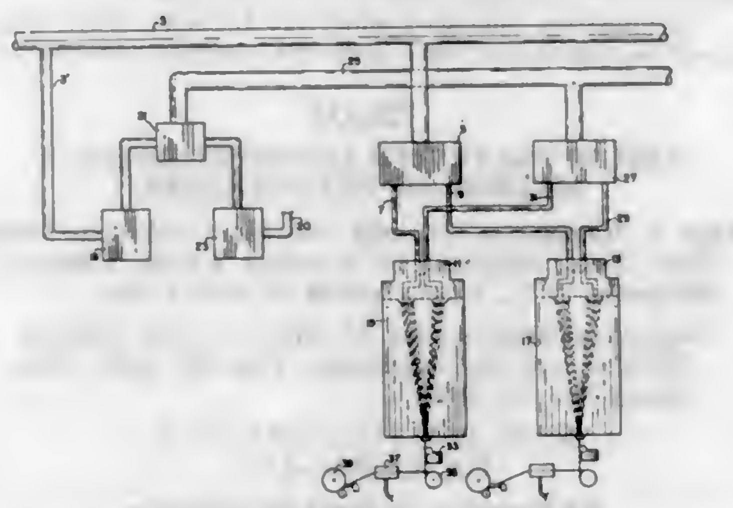
### 840,133

### PROCESS FOR PRODUCING HEATHER YARN

**Robert C. Yantz, 1216 Radcliffe Ave. 37664, and Charles A. Jarrett, 2245 Sunningdale Road 37660, both of Kingsport, Tenn.**

**Continuation of application Ser. No. 713,678, Mar. 18, 1968. This application July 2, 1969. Published Nov. 18, 1969**

**Int. Cl. D02g** *1/02*
**U.S. Cl. 264—103**
**2 Sheets Drawing. 7 Pages Specification**



Process for manufacturing yarns having a heather color effect comprising spinning two groups of filaments which are of different colors or shades in a single spinning cabinet, forming the filaments into a single strand, and further intermingling the filaments by means of a mixing jet.

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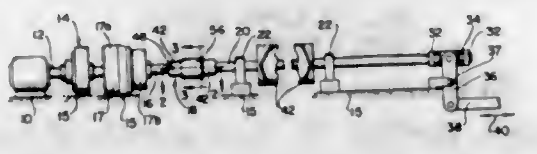
### 749,501

### DRIVE CONTROL MEANS FOR A YARN TRAVERSE ROLL MECHANISM

**Richard I. Walden, Warwick, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts**

**Filed Aug. 1, 1968. Published Nov. 18, 1969**
**Int. Cl. B65h** *54/28*
**U.S. Cl. 242—18.1** **14 Claims**
**1 Sheet Drawing. 10 Pages Specification**



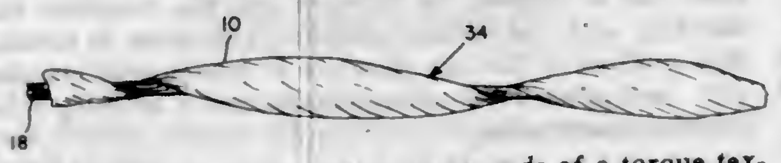
Mechanism for operating traverse rolls to reduce patterning of yarn packages and to provide the packages with soft edges. The traverse rolls are mounted for rotation with a traverse roll shaft which is mounted for both reciprocation and rotation. Reciprocation of the shaft is provided in any suitable manner and results in soft edges of the package. A constantly operating motor is connected through an electric clutch and a drive shaft for intermittently rotating the traverse roll shaft. The clutch operates to declutch the shaft from the motor concurrently with operation of an eddy current brake which slows the shaft and thus causes slippage between the traverse rolls and their packages when the clutch is reengaged, which prevents patterning. A coupling is provided for drivingly rotating the shaft and for permitting the reciprocating movement of the traverse roll shaft. This coupling comprises a pair of body members fixedly secured to adjacent ends of the drive and traverse roll shafts. A plurality of axially extending fingers of the body members are intermeshed and receive rollers therebetween with a snug sliding fit. A sheath encases the fingers and rollers and sealingly engages the body members to retain lubricant within the sheath and to permit relative axial movement of the body members.

### 778,096

### COVERED ELASTIC YARN AND METHOD OF MAKING SAME

**Salim M. Ibrahim, 2304 Riddle Ave., Wilmington, Del. 19806**

**Filed Nov. 22, 1968. Published Nov. 18, 1969**
**Int. Cl. D02g** *3/36*
**U.S. Cl. 57—152** **6 Claims**
**1 Sheet Drawing. 15 Pages Specification**



A process for plying one or more ends of a torque textured sheath yarn having a pseudo twist with an extended elastomeric core yarn wherein the ply twist applied is in the same direction as the pseudo twist of the torque textured yarn. When more than one end of sheath yarn is used the pseudo twist of the sheath yarns is in the same direction. The sheath filaments of the core-ply yarns of this invention are torque-textured thermoplastic yarns and may be polyamides, polyesters, polyolefins, or the like. The sheath yarn component may be of any convenient size, preferably in the range of from about 15 to about 200 denier, the denier per filament ranging from about 2 to about 5. The core yarn component is preferably spandex, and its denier is in the range of from about 20 to about 280. The spandex is extended from about 3× to about 5× depending on denier. The ply twist may range from about 10 to about 35 turns per inch for the heavy to the fine core-ply deniers respectively. The core-ply yarns are wound on conventional packages, i.e., using enough tension to maintain the yarn in a fully extended state. The process affords a twist-on-twist effect, thereby better utilizing the inherent characteristics of the torque-textured yarn. The core-plied yarns of this invention are unexpectedly better in cover, uniformity, and power than similar yarns known heretofore.

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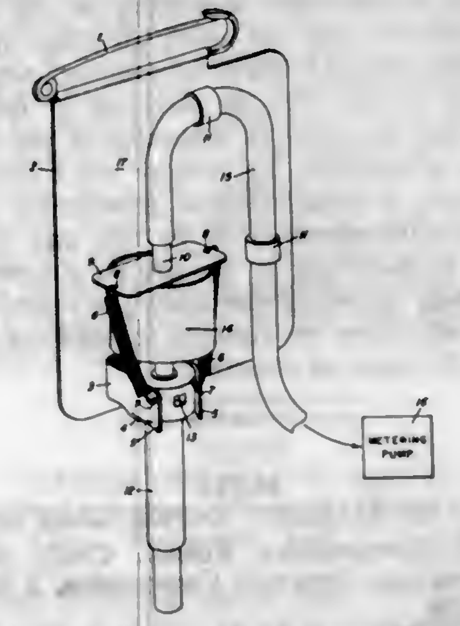
### 789,577

### PERSONAL DUST SAMPLER HOLDER

**John B. Shutack, 354 Knoedler Road, Pittsburgh, Pa. 15236**

**Filed Jan. 7, 1969. Published Nov. 18, 1969**
**Int. Cl. B01d** *45/12*
**U.S. Cl. 55—337**
**1 Sheet Drawing. 5 Pages Specification**



Spring action retainers hold a particle separation cyclone and an air filter in operative position for filtering air samples drawn through an inlet aperture in the cyclone. The retainers include a fuse-type spring clip and a flat apertured retaining plate joined to the clip by coil springs. The filter and cyclone are supported by the clip at the neck of the cyclone adjacent the inlet aperture. The retaining plate, positioned over the filter, biases the cyclone and filter combination against a flange on the lower portion of the clip. A tubular connector, secured through the aperture in the retaining plate, connects with the filter on one side, and with a vacuum hose on the other side for connecting the filter outlet to the inlet of an air metering pump. The clip and several hose guides are secured to a supporting plate which includes a pin-type fastener for attaching the sampler holder to the garment of a person in his breathing zone when collecting respirable dust samples.

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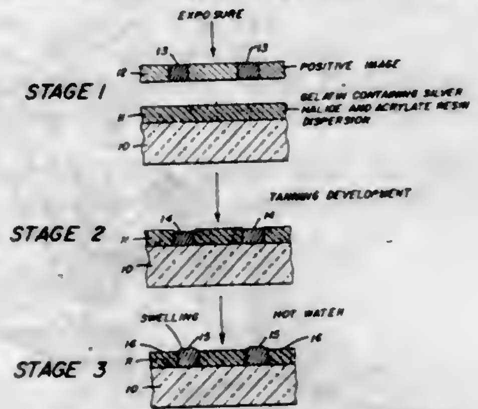
### 825,262

### LITHOGRAPHIC PRINTING PLATE

**Edward C. Yackel, Pittsford, N.Y. (℅ Eastman Kodak Company, Rochester, N.Y. 14650)**

**Filed May 16, 1969. Published Nov. 18, 1969**
**Int. Cl. G03f** *7/02;* **B41m** *5/00;* **B41n** *3/00*
**U.S. Cl. 96—33**
**1 Sheet Drawing. 9 Pages Specification**



The instant invention relates to a method of making a direct positive lithographic printing plate which comprises coating a support with a layer of hydrophilic colloid containing silver halide and an aqueous colloidal dispersion of a water-insoluble soft vinyl resin, exposing the sensitive colloid layer to light under an image, developing the exposed layer under conditions of tanning development, and treating the developed layer with hot water to swell the colloid in the exposed regions of the layer and to remove hydrophilic colloid from thhe unexposed regions without removing the resin.

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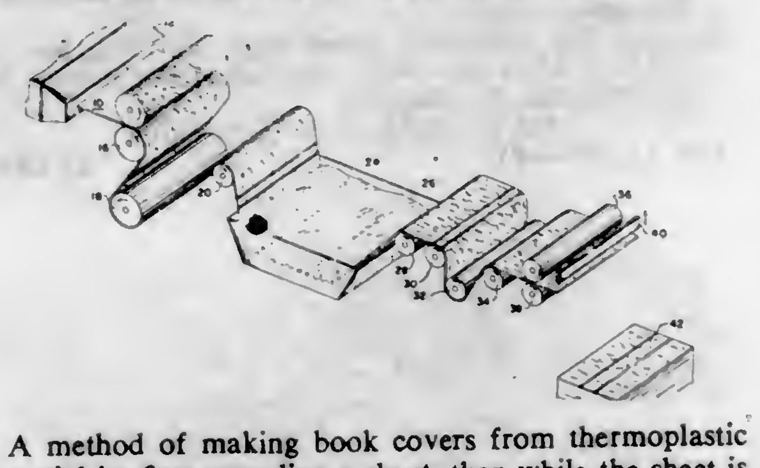
### 832,247

### METHOD OF MAKING PLASTIC BOOK COVERS

**Robert B. Davis, 8A Mayberry Drive, Apt. 6, Westboro, Mass. 01581, and Robert B. McFall, P.O. Box 511, Kingsport, Tenn. 37662**

**Filed June 11, 1969. Published Nov. 18, 1969**
**Int. Cl. B29c** *17/14;* **B29f** *3/01*
**U.S. Cl. 264—151** **3 Claims**
**1 Sheet Drawing. 7 Pages Specification**



A method of making book covers from thermoplastic material by first extruding a sheet, then while the sheet is still molten, embossing one surface of the sheet with a pattern or design which includes depressed hinge lines extending in a direction across the sheet or perpendicular to the direction of extrusion, and cooling the sheet. In this manner, the molecules at the hinges are oriented during embossing across the hinges.

# REISSUES

## NOVEMBER 18, 1969

Matter enclosed in heavy brackets **[ ]** appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

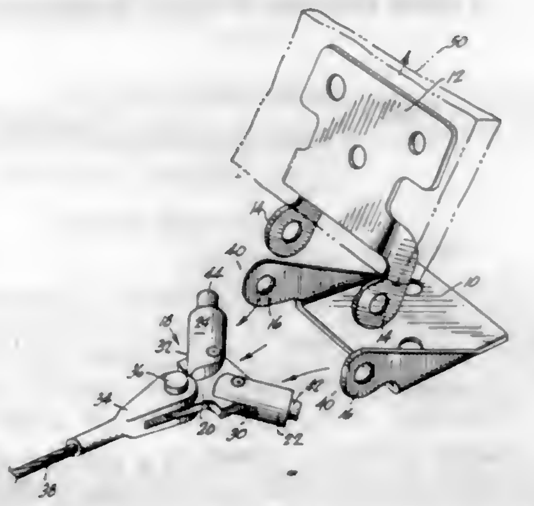
### 26,711
### EMERGENCY OPENING LATCH

**Henry C. Banas, Costa Mesa, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland**

**Original No. 3,338,609, dated Aug. 29, 1967, Ser. No. 533,468, Mar. 11, 1966. Application for reissue Oct. 2, 1967, Ser. No. 682,689**

**Int. Cl. E05c** *9/04, 15/02*

**U.S. Cl. 292—21** **5 Claims**



*A hinge pin type of latch which securely fastens a flange located on an aircraft door to a flange located on an emergency slide container. The hinge pin is composed of three separate sections, a centrally located section and two outer sections. The outer sections are pivotally mounted to the central section and establish an over-center locking action which maintains the latching of the flanges. A pulling force applied to the central section causes the outer sections of the pin to pivot toward the central sections and be dislodged from the flanges, thereby opening the container.*

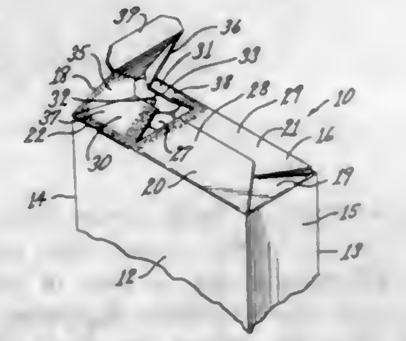
### 26,712
### CIGARETTE PACKAGE CONSTRUCTION OR THE LIKE

**William C. Whitaker, Chesterfield County, and Joseph Y. Thomas, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware**

**Original No. 3,270,945, dated Sept. 6, 1966, Ser. No. 351,997, Mar. 16, 1964. Application for reissue Aug. 30, 1968, Ser. No. 760,390**

**Int. Cl. B65d** *17/00, 5/54, 5/70*

**U.S. Cl. 229—51** **25 Claims**



*This application discloses an improved container having improved opening means and a blank from which the same can be formed. On its open end, the container has side flaps with one end flap extending therefrom so formed that portions of the side flaps are in overlapping relation with each other while other portions are in abutting relation with each other.*

### 26,713
### ASYMMETRIC PNEUMATIC TIRES

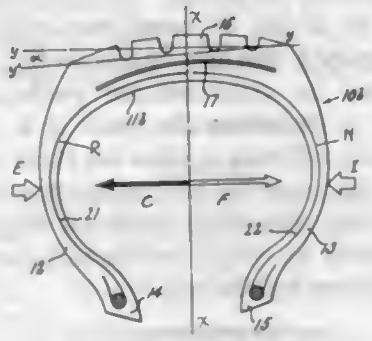
**Henri Mirtain and André Devienne, Compiegne, France, assignors to Uniroyal-Englebert France**

**Original No. 3,363,660, dated Jan. 16, 1968, Ser. No. 551,003, May 18, 1966. Application for reissue Dec. 6, 1968, Ser. No. 794,829**

**Claims priority, application France, June 1, 1965, 19,085**

**Int. Cl. B60c** *9/02, 13/00*

**U.S. Cl. 152—353** **10 Claims**



*In a standard belted radial ply pneumatic tire in service on a vehicle, an uncontrolled lateral slip force may be generated, the components of which are a laterally directed "force of structure" resulting from the interaction of the cords of the outermost breaker ply with the road, the direction of this force depending on the direction of rotation of the tire but not on its direction of mounting, and a laterally directed "force of conicity" resulting from the geometry of the tire, the direction of this force depending on the direction of mounting of the tire but not its direction of rotation. To provide for a controlled lateral slip force, a predetermined geometrical asymmetry is deliberately incorporated in the tire, and concurrently the manner of mounting of the tire on a vehicle is accurately specified, to ensure that when the vehicle is moving forwardly, the force of conicity is directed vectorially opposite to the force of structure.*

### 26,714
### METHOD OF MAKING TAPER LEAF SPRINGS

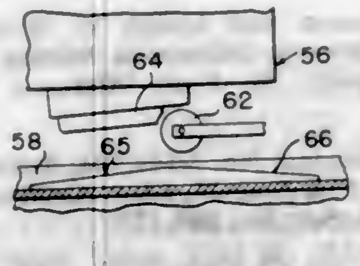
**Rostislaw S. Komarnitsky, Poway, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware**

**Original No. 3,345,727, dated Oct. 10, 1967, Ser. No. 449,585, Apr. 20, 1965. Application for reissue Nov. 19, 1968, Ser. No. 794,827**

**Int. Cl. B21f** *35/00*

**U.S. Cl. 29—173** **18 Claims**

A finished steel spring leaf is preferably formed by taper rolling, and the surface at the side which is to be the tension surface in operation together with the opposite side edge surfaces extending adjacent and along said tension surface are ground and subsequently *shot or* stress peened.



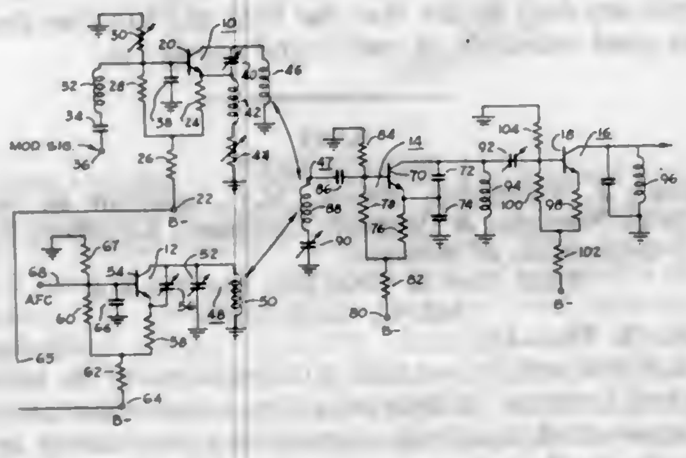
### 26,715
### LINEAR FREQUENCY MODULATION SYSTEM INCLUDING AN OSCILLATING TRANSISTOR, AN INTERNAL CAPACITY OF WHICH IS VARIED IN ACCORDANCE WITH A MODULATING SIGNAL

**Leopold A. Harwood, Somerville, N.J., assignor to RCA Corporation, a corporation of Delaware**

**Original No. 3,403,354, dated Sept. 24, 1968, Ser. No. 450,805, Apr. 26, 1965. Application for reissue Nov. 29, 1968, Ser. No. 791,818**

**Int. Cl. H03c** *3/14*

**U.S. Cl. 332—19** **12 Claims**



A linear frequency modulation system is provided utilizing a modulated **[**oscillating**]** *oscillator including* a transistor which needs no variable reactance element other then the internal capacity change between electrodes of the transistor. To avoid changes in frequency of the oscillator due to changes in temperature, or due to variations in the voltage supply, a second similar unmodulated **[**oscillating**]** *oscillator including a second* transistor, which is subjected to the same temperature and which is supplied by the same voltage supply is provided. A beat frequency which is obtained by beating the waves provided by the two oscillating transistors therefor will not vary in frequency due to change in ambient temperature or in change of supply voltage and yet may be linearly frequency modulated.

### 26,716
### FILTER RETAINING DEVICE

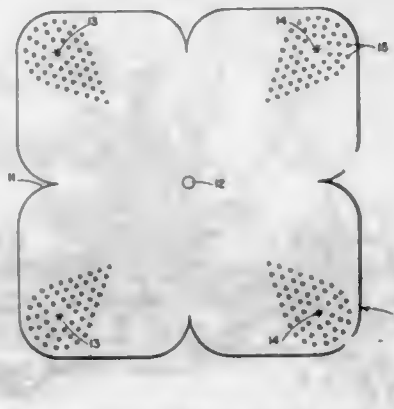
**Vincent W. Cirrincione, Rochester, N.Y., assignor to Andex Corp., Rochester, N.Y., a corporation of New York**

**Original No. 3,225,680, dated Dec. 28, 1965, Ser. No. 340,580, Jan. 8, 1964, which is a continuation of application Ser. No. 187,846, Apr. 16, 1962. Application for reissue Dec. 14, 1966, Ser. No. 607,353**

**Int. Cl. A47j** *31/06*

**U.S. Cl. 99—312** **6 Claims**

*A filter sheet for coffee grounds for use with a percolator. The sheet is square with a central aperture and an aperture at each of the corner areas. The sheet, with the coffee therein, is placed in the percolator cup with the corners folded and the apertures threaded over the percolator tube. The corner areas have small perforations to permit free flow of water.*



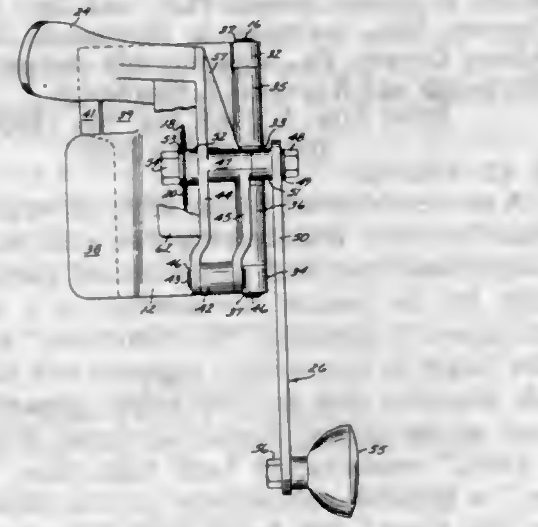
### 26,717
### CONDUIT SAW

**Elmer Richard Huchinson, North Hollywood, Calif., assignor of one-half to Elmer D. Dudek, Costa Mesa, Calif.**

**Original No. 3,371,415, dated Mar. 5, 1968, Ser. No. 638,432, May 15, 1967. Application for reissue June 17, 1968, Ser. No. 741,827**

**Int. Cl. B26d** *1/16*

**U.S. Cl. 30—90.3** **7 Claims**



There is described in the specification a manually operated saw for making longitudinal cuts into cables and conduits and the like. The device is arranged so that a longitudinal section of the conduit is held in a vice one jaw of which has a finger paddle and the other a hand heel paddle whereby the jaws may be manually clamped. A saw blade carried by a hinged saw blade holder is lowered in selected degree through a cutout or slot in one jaw of the device into the space where the conduit is clamped. A handle is arranged to turn the saw blade.

### 26,718
### TRACTOR MOUNTED CABLE LAYING DEVICE

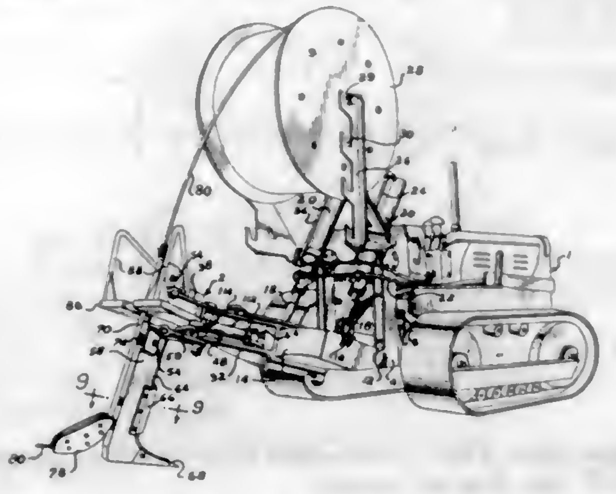
**Leon O. Kelley, P.O. Box 488, Stamford, Tex. 79553**

**Original No. 3,170,300, dated Feb. 23, 1965, Ser. No. 48,271, Aug. 8, 1960, which is a continuation of application Ser. No. 525,275, Jan. 3, 1966. Application for reissue Jan. 26, 1967, Ser. No. 617,433**

**Int. Cl. E02f** *5/02;* **H02g** *1/06;* **A01b** *17/00*

**U.S. Cl. 61—72.6** **11 Claims**

*A device for laying cable or flexible conduit, which device is mounted on a traction element, and plows a furrow only slightly wider than the cable being laid, and directs the cable from a reel mounted on the tractor to a point rearward of the plow and directs the cable into the bottom of the furrow. The path of the plow being* *laterally movable with respect to the center of the path of the traction element, which enables cable to be laid in*



*off-set relation with respect to the center of the line of travel traversed by the tractor.*

### 26,719

### PRINT-OUT PROCESS AND IMAGE REPRODUCTION SHEET THEREFOR

**David P. Sorensen and Joseph W. Shepard, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**

**No Drawing. Original No. 3,152,904, dated Oct. 13, 1964, Ser. No. 379,016, June 29, 1964. Application for reissue Oct. 10, 1966, Ser. No. 589,178**

**Int. Cl. G03c** *5/26, 1/48*

**U.S. Cl. 96—63** **22 Claims**

*The invention pertains to image reproduction sheets in which radiation-sensitive heavy metal salts may be reduced to free metal and form the image components in an oxidation reduction reaction combination by producing a visible color change with an organic silver salt.*

# PLANT PATENTS

## GRANTED NOVEMBER 18, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

### 2,940

### PEACH TREE

**Mariano B. Russo, Sewell, N.J., and Earl E. Slaybaugh, Towson, Md., assignors to Slaybaugh Bros. Nursery, Adams County, Pa., a partnership composed of Earl E. Slaybaugh and Raymond I. Slaybaugh**

**Filed Mar. 1, 1968, Ser. No. 709,843**

**Int. Cl. A01h** *5/08*

**U.S. Cl. Plt.—43** **1 Claim**

1. A new and distinct variety of peach tree of the yellow-fleshed, freestone, fruit-bearing type, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a tree size and shape generally similar to "Rio Oso Gem," but sometimes a little larger in size, a more vigorous tree habit, but with tough branches that are not brittle, non-showy blooms instead of the typical large and showy blooms of "Rio Oso Gem," smaller fruit buds than those of "Rio Oso Gem," a general resemblance of the fruit to that of "Rio Oso Gem," but being slightly larger in size and having a more attractive color and appearance, with a smoother suture, an earlier fruit ripening habit, averaging about ten days earlier than the fruit of "Rio Oso Gem," and good resistance to canker and brown rot.

### 2,941

### PEACH TREE

**Joseph J. Ponchalek, Ithaca, N.Y., assignor to Stark Bro's Nurseries & Orchards Company, Louisiana, Mo., a corporation of Missouri**

**Filed Mar. 8, 1968, Ser. No. 711,814**

**Int. Cl. A01h** *5/08*

**U.S. Cl. Plt.—43** **1 Claim**

1. A new and distinct variety of peach tree of the yellow-fleshed, freestone, fruit-bearing type, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a hardy tree and flower bud habit, a fruit ripening season about the same as the Gleason strain of "Early Elberta" (unpatented), but the fruit skin being a much deeper red color which develops about a week before maturity to enable earlier harvesting and shipping, a deeper yellow fruit flesh color, and a richer and sweeter fruit flavor.

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# PATENTS

## GRANTED NOVEMBER 18, 1969

# GENERAL AND MECHANICAL

### 3,478,365

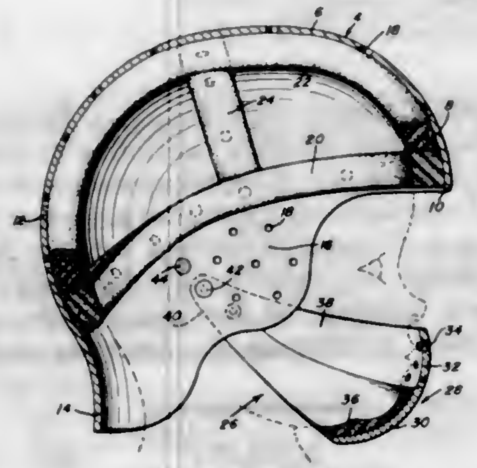
### PROTECTIVE HELMET FOR BABIES

**Tibor Joseph Varga, 1291 W. 103rd St., Cleveland, Ohio 44102**

**Filed Aug. 21, 1967, Ser. No. 661,865**

**Int. Cl. A42b** *1/08;* **A63b** *71/10*

**U.S. Cl. 2—3** **2 Claims**



Babies learning to crawl and walk and accident-prone and handicapped youngsters maneuvering and playing indoors in limited quarters are constantly beset with potential hazards such as sharp-cornered tables, chairs and furniture. The invention shown provides a defensive-type safeguarding helmet specially designed and capably adapted for protective use. It features a lightweight, durable, padded, ventilated helmet, and an added chin and mouth guard having minimal movement for the results desired.

### 3,478,366

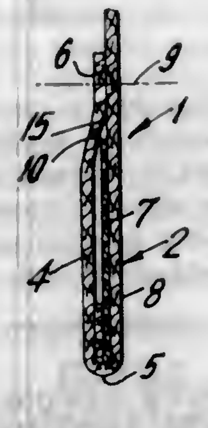
### GARMENT HEM CONSTRUCTION

**Samuel Kaufman, 1491 Shore Parkway, Brooklyn, N.Y. 11214**

**Filed Mar. 25, 1969, Ser. No. 810,116**

**Int. Cl. A41d** *1/22, 1/00;* **A41b** *7/00*

**U.S. Cl. 2—74** **7 Claims**



The invention is concerned with the construction of a garment hem, wherein a strip of pre-stretched bias material is blind stitched to the material of the garment and along the inside of the projected hemline thereof prior to the making of the hem fold; so that the bias material is folded inside the hem and holds the material of the garment preventing it from deforming when the hem fold is made and the hem pressed in.

### 3,478,367

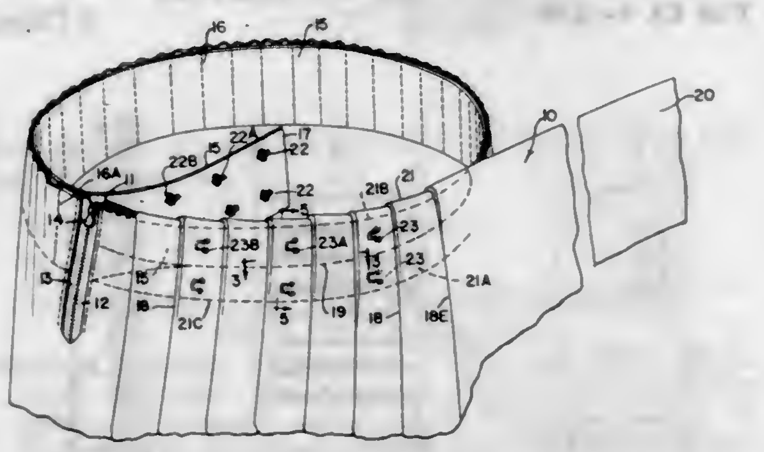
### INSTANT SARI

**Thammayya Vatti, 3855 Orloff Ave., Bronx, N.Y. 10463**

**Filed June 7, 1968, Ser. No. 735,208**

**Int. Cl. A41d** *1/14*

**U.S. Cl. 2—76** **8 Claims**



A tailored garment formed from a single piece of fabric to simulate a sari used in India by providing a tubular sheath corresponding to the skirt portion with the waist having an elongated band secured to the waist portion and providing for increasing the diameter by the provision of a slit and having a free end of the elongated band with fasteners cooperating with other fasteners in an overlapping area of the waist and the other end of the piece of cloth being free to be thrown over the shoulder of the wearer.

### 3,478,368

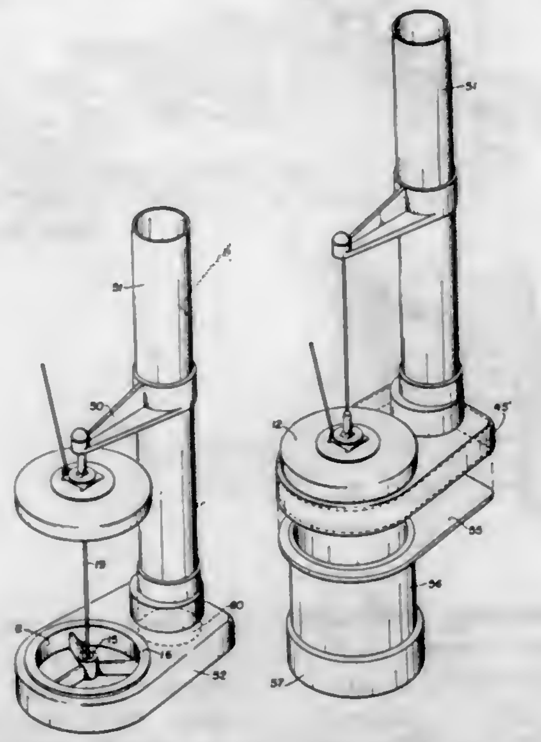
### FLUSH VALVE ASSEMBLY

**Philip J. Brewington, 6902 Manshaca Road, Austin, Tex. 78745**

**Filed Dec. 18, 1967, Ser. No. 691,537**

**Int. Cl. E03d** *1/34*

**U.S. Cl. 4—57** **11 Claims**



Disclosed is a flush valve assembly, the two basic portions being a dual seat arrangement and a valve seal or closure member which rests firmly against the dual seats when the valve is closed. The valve seal may be fabricated of soft flexible polyvinyl chloride foam. A recess in one of the seats receives a guide wire on which the valve seal slides. The valve assembly is illustrated separately, as part of a composite unit including a base portion and pipe, and incorporated into original equipment which is mounted within a standard flush tank.

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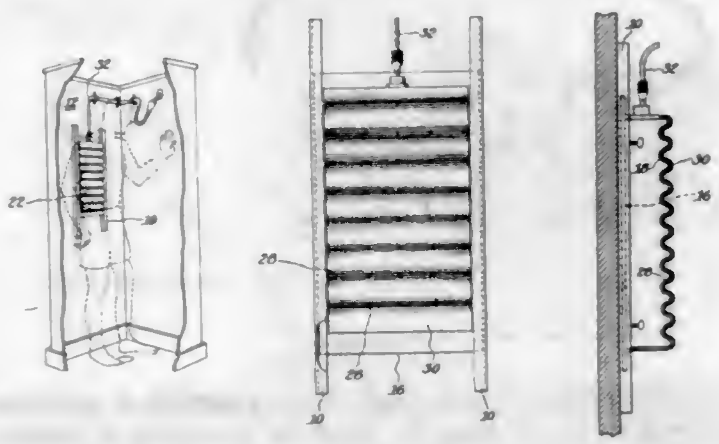
### 3,478,369
### BACK WASHING APPARATUS

**Earl Edward Ensley, Box 804,**
**Deming, Wash. 98244**
**Filed Dec. 11, 1967, Ser. No. 689,507**
**Int. Cl. A47k** *7/00;* **A61h** *9/00*
**U.S. Cl. 4—158** **5 Claims**



Apparatus adapted to be mounted in a stall shower for use in bathing the back of any user.

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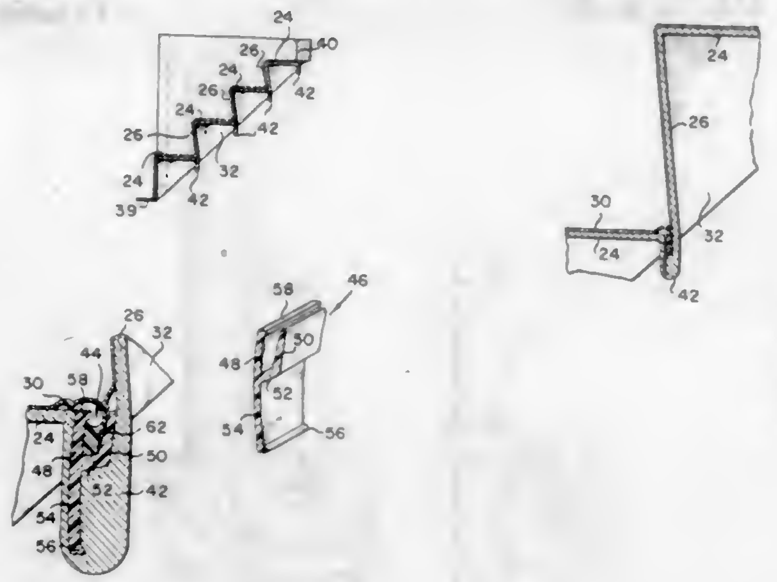
### 3,478,370
### SWIMMING POOL STEP CONSTRUCTION WITH INTEGRAL VINYL LINER

**Robert Stern, 130 Clayton Ave., and Rosario A. Purpuri, 118 Clayton Ave., both of Toms River, N.J. 08753**
**Filed Jan. 19, 1968, Ser. No. 699,123**
**Int. Cl. E04h** *3/16*
**U.S. Cl. 4—172** **11 Claims**



A swimming pool step construction with an integral vinyl liner wherein each step is provided with a recess to hold a clip which secures the integral vinyl liner. The step construction is preferably molded from flexible glass fibers such as "Fiberglas." Each clip is preferably Y-shaped in cross section and provided with a protuberance on its leg so as to retain each clip within its recess.

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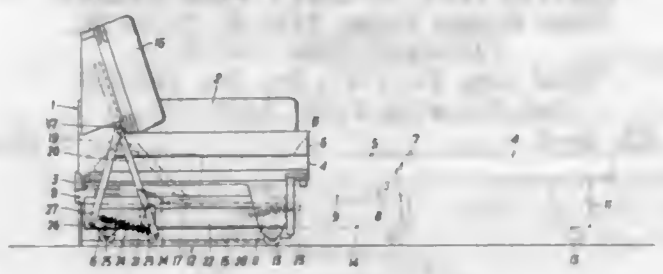
### 3,478,371
### SEAT FURNITURE UNIT WHICH IS CONVERTIBLE INTO A BED

**Ludwig Viehaus, Mattersburgerstrasse 60,**
**Schattendorf, Austria**
**Filed Dec. 12, 1967, Ser. No. 689,977**
**Claims priority, application Austria, Dec. 19, 1966, A 11,679/66; Apr. 24, 1967, A 3,869/67**
**Int. Cl. A47c** *17/13*
**U.S. Cl. 5—37** **8 Claims**



A convertible seating unit having a backrest and a support frame within which a bedclothes drawer is movable. The unit has a pair of superimposed cushions hinged together and coupled with the drawer such that the underlying cushion is first drawn out and entrains the drawer. The latter swings the backrest into the plane of the bed and the space between the backrest and the underlying cushion is filled by flipping the overlying cushion into the gap.

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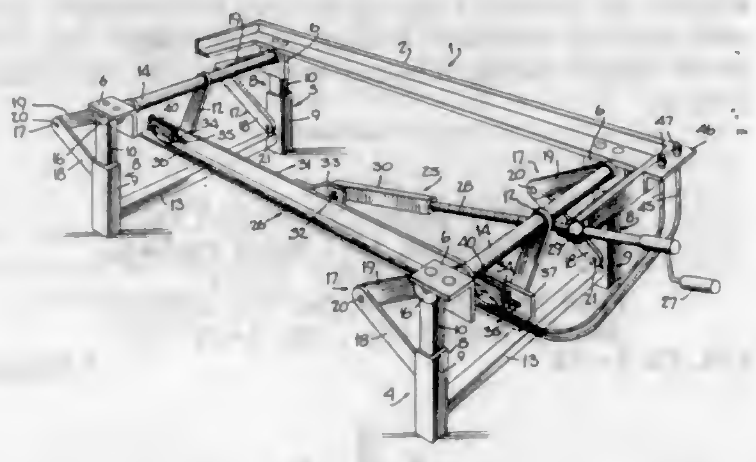
### 3,478,372
### ADJUSTABLE BED

**Roland A. Benoit, Fresh Meadows, and Joseph Tripodi, Brooklyn, N.Y., assignors to Royalmetal Corporation, New York, N.Y., a corporation of Delaware**
**Filed Nov. 1, 1967, Ser. No. 679,824**
**Int. Cl. A61g** *7/00;* **A47c** *19/00*
**U.S. Cl. 5—63** **10 Claims**



A hospital bed adjustable to provide Trendelenburg or Fowler selection includes a frame which may be inclined toward the head or toward the foot of the bed and a selection device which in cooperation with a suitable motor allows the bed operator to adjust bed position from a point at one end of the bed.

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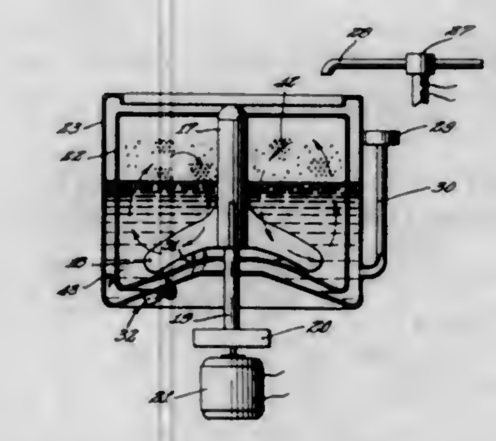
### 3,478,373
### FLOW RESPONSIVE AUTOMATIC WATER LEVEL CONTROL

**Harold O. McBride and Oscar A. W. Tichy, St. Joseph, and Howard G. McNish, Stevensville, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware**
**Filed Mar. 28, 1968, Ser. No. 714,580**
**Int. Cl. D06f** *33/02;* **F16k** *21/18*
**U.S. Cl. 8—158** **12 Claims**

Method and apparatus for controlling the liquid level in a washing machine, employing a sensing means which is positioned along a predetermined liquid flow path to sense the presence of a predetermined flow pattern in the liquid, whereupon the sensing means operates circuitry to terminate the introduction of water into the machine.



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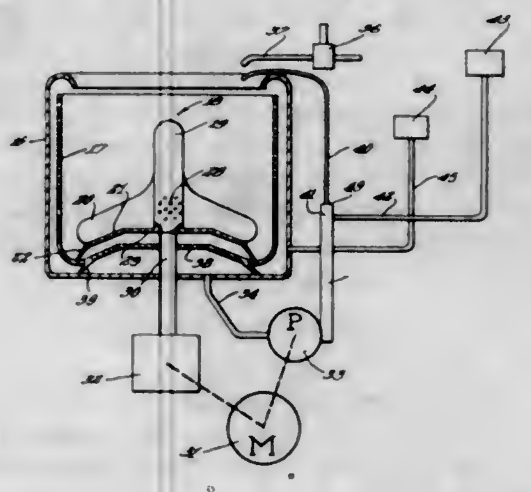
### 3,478,374
### AUTOMATIC WATER LEVEL CONTROL

**Harold Oren McBride, St. Joseph, and William H. Gartley, Stevensville, Mich., assignors to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware**
**Filed Mar. 28, 1968, Ser. No. 716,963**
**Int. Cl. D06f** *33/02;* **F16k** *21/18*
**U.S. Cl. 8—158** **9 Claims**



Method and apparatus for controlling the introduction of washing liquid into a washing machine having an oscillatory agitator which involves employing a sensing zone in proximity to the axis of the agitator, applying a reduced pressure at the sensing zone, and then introducing additional amounts of water into the machine when the water has been depleted from the sensing zone as a result of an excessive amount of wash being present in comparison to the amount of washing liquid.

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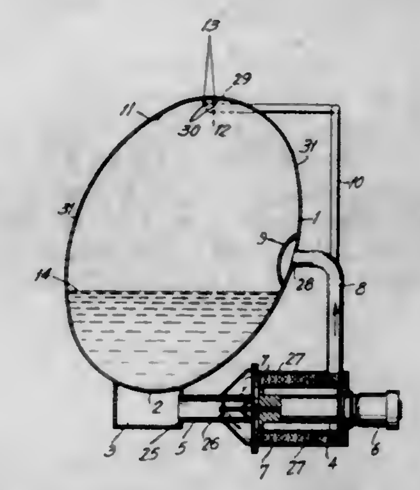
### 3,478,375
### CLOSED DYEING APPARATUS AND METHOD OF PREVENTING CONDENSATE THEREIN

**Karl-Heinz Buehl, Aachen, Germany, assignor to H. Krantz, Aachen, Germany, a corporation of Germany**
**Filed Apr. 19, 1968, Ser. No. 722,676**
**Int. Cl. D06f** *17/02*
**U.S. Cl. 8—158** **7 Claims**

The present disclosure describes a closed pressure vat dye vessel of either cylindrical or ovular form in which the hot dye liquor is circulated while the fabric is being treated therein and at the same time a spray is caused to flow over the top and upper sides of the vessel to prevent any condensation.



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### 3,478,376
### DYEING AND PRINTING SYNTHETIC POLYAMIDE FIBRES

**Manfred Daeuble, Frankenthal, Pfalz, and Klaus Dieck, Hans Heinrich, and Guenter Witsch, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**
**No Drawing. Filed Oct. 10, 1966, Ser. No. 585,294**
**Claims priority, application Germany, Oct. 16, 1965, 1,469,646**
**Int. Cl. D06p** *3/24, 1/84, 1/62*
**U.S. Cl. 8—169** **9 Claims**

Process and composition for dyeing or printing polyamide fibers in which an aqueous solution of an (a) anionic dye is employed which further contains as essential assistants a mixture of (b) at least one water-soluble salt of sulfonic acids or sulfuric acid hemi-esters having a hydrophobic portion in the molecule, (c) at least one oxypropylated or oxybutylated alkylphenol or aliphatic alcohol which may also be oxyethylated, and (d) at least one monophenyl or mononaphthyl ether of ethylene glycol or diethylene glycol. The invention is useful in providing an improvement in dyed or printed fibers of synthetic polyamides having a level dyeing.

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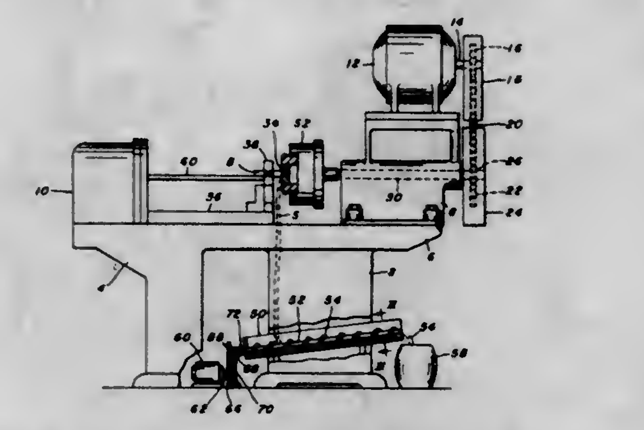
### 3,478,377
### THREADING MACHINE

**Eugene Stoker, Pittsburgh, Pa., assignor to Anvil Products, Inc., Allison Park, Pa., a corporation of Pennsylvania**
**Filed June 8, 1967, Ser. No. 644,512**
**Int. Cl. B23q** *11/00;* **B23g** *11/00*
**U.S. Cl. 10—102** **2 Claims**



This patent discloses a nipple-threading machine provided with a screw-type conveyor for removing from beneath the machine the chips or shavings that are formed in the thread-chasing operation, the removal being done continuously without stopping the machine and the conveyor not becoming fouled in the event that a nipple drops among the shavings or chips to be removed.

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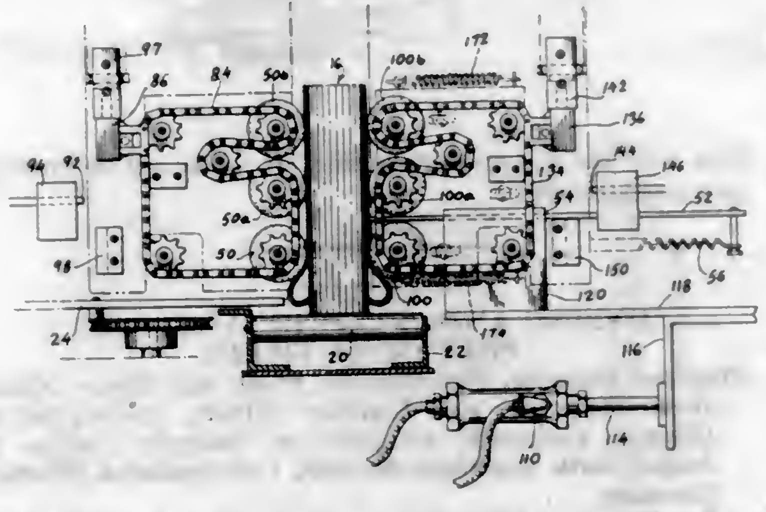
### 3,478,378

### BOOKBINDING MACHINE FOR FOLDING BOOK END LEAVES

**Paul J. Glasgow, Woodmere, N.Y., assignor to Robbins and Bendror Associates, Inc., Port Washington, N.Y.**
**Filed July 31, 1968, Ser. No. 749,113**
**Int. Cl. B42c** *13/00;* **B65h** *45/14*
**U.S. Cl. 11—1** **22 Claims**



Machine for folding end leaf assemblies on books preparatory to mounting the covers thereon, said machine performing the conventional function of folding the outer leaves upon the inner leaves, by the novel method of first looping and then pressing the outer leaves to form the folds.

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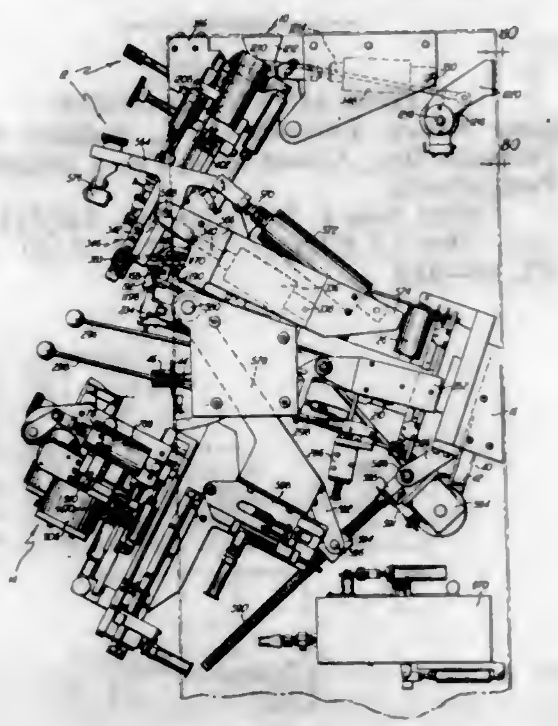
### 3,478,379

### LASTING MACHINE

**Allen C. Harriman, Brockton, and Karl F. Vornberger, Tewksbury, Mass., assignors to Jacob S. Kamborian, West Newton, Mass.**
**Filed Mar. 8, 1967, Ser. No. 621,514**
**Int. Cl. A43d** *21/00*
**U.S. Cl. 12—10.1** **54 Claims**



There is disclosed herein a machine for wiping the toe and heel portions of a last-mounted shoe upper against the corresponding portions of a shoe insole located on the last bottom. The machine incorporates mechanism for applying cement to the toe and heel portions of the insole, mechanism for stretching the upper tightly about the last, mechanism for clamping the stretched upper against the last, and toe and heel wipers for wiping the toe and heel portions of the upper margin against the insole to cementitiously attach the wiped margin portions to the insole.

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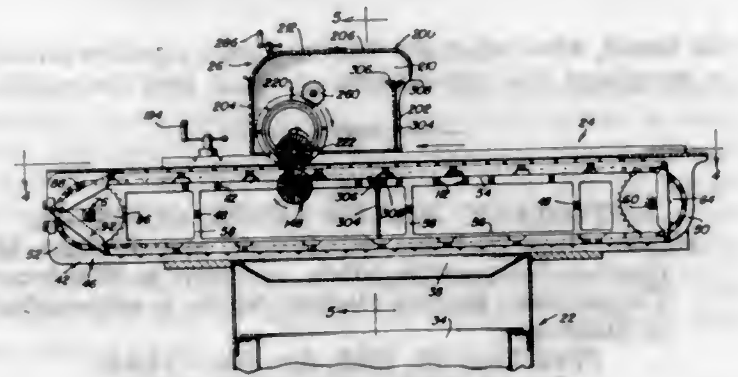
### 3,478,380

### AUTOMATIC MEAT CLEANING APPARATUS

**Herman F. Russell, 13900 Cherrylawn St., Detroit, Mich. 48238**
**Continuation-in-part of application Ser. No. 704,971, Jan. 15, 1968. This application June 5, 1968, Ser. No. 734,729**
**Int. Cl. A22c** *17/08*
**U.S. Cl. 15—3.17** **15 Claims**



A meat cleaning machine including an endless meat carrying open network blade-type conveyor and an open network blade-type roller overlying a portion of said conveyor and operable in a coordinated manner therewith for moving a cut of meat by a pair of opposed brushes, one mounted within the conveyor and one within the roller. The brushes rotate in directions opposed to the direction of travel of the meat for brushing engagement therewith. The roller unit is removably mounted on the conveyor unit for independent use of the conveyor unit, the conveyor unit itself being removably mounted on a support table for ease of cleaning.

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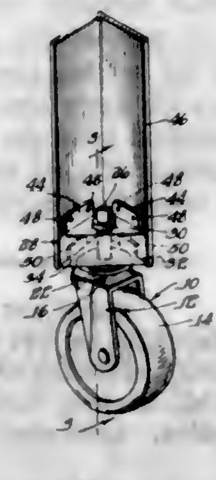
### 3,478,381

### CASTER BRACKET DEVICE

**Edward H. Schultz, Jr., Chicago, Ill., assignor to Nagel-Chase Manufacturing Company, Chicago, Ill., a corporation of Illinois**
**Filed Nov. 7, 1966, Ser. No. 592,588**
**Int. Cl. B60b** *33/00*
**U.S. Cl. 16—29** **6 Claims**



1. A workpiece supporting bracket structure for accommodating a caster pintle including an upper, substantially horizontal bracket plate section apertured to telescopically accommodate the upper extremity of a caster pintle, a lower substantially horizontal bracket plate section spaced vertically from said upper section and having a pintle accommodating aperture disposed coaxially with respect to the aperture of the upper bracket section, a spacer bracket section for maintaining said upper and lower bracket plate sections in predetermined spaced relation, marginal, axially extending weldable flange means on said upper bracket plate section, and bracket locating marginal, axially extending flange means on said lower bracket section, positioned radially outwardly of a vertical plane coincident with said weldable flange means, whereby to enable unencumbered peripheral exposure of the outer surface of a supported workpiece in the vicinity of said weldable flange means.

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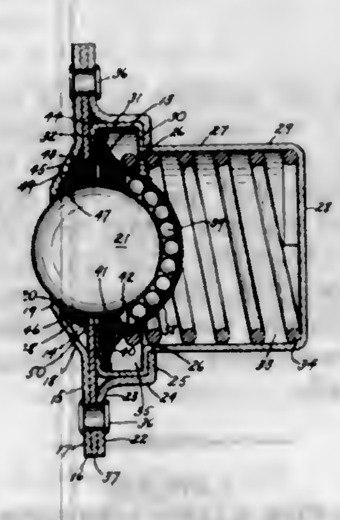
### 3,478,382

### SEALED BALL TRANSFER

**Mario Nosenzo, Great Neck, N.Y., assignor to General Bearing Company, West Nyack, N.Y.**
**Filed July 3, 1967, Ser. No. 650,809**
**Int. Cl. B60b** *33/00, 33/08*
**U.S. Cl. 16—44** **2 Claims**



A sealed ball transfer in which the main ball is resiliently mounted with respect to a housing, and in which the sealing means is snapped directly upon the ball to move with the same under deflection.

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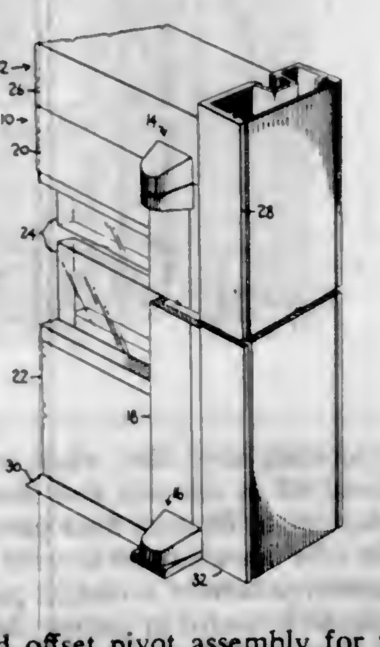
### 3,478,383

### DOOR PIVOTS

**Marvin V. Brooks, Kokomo, Ind., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed May 1, 1967, Ser. No. 635,154**
**Int. Cl. E05d** *7/08*
**U.S. Cl. 16—151** **17 Claims**



A non-handed offset pivot assembly for tubular doors comprising upper and lower pairs of non-handed pivot members, a pair of non-handed door brackets for mounting the door pivot members, and a pair of non-handed frame clips for mounting the frame pivot members. The door brackets and the frame clips are concealed within the tubular door and the surrounding tubular frame, respectively. The structures of the non-handed pivot members, the door brackets and the frame clips are cooperatively interrelated to accommodate any desired swing and hand for offset pivoted tubular doors.

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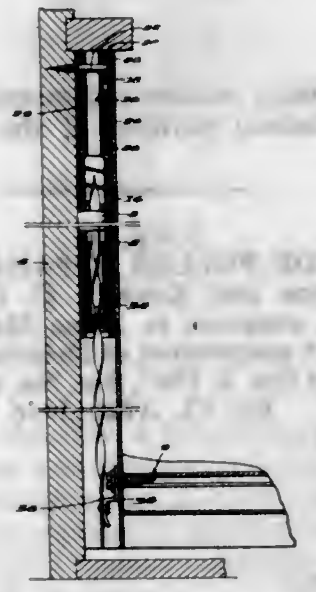
### 3,478,384

### SASH BALANCE

**Phil Skolnik, 13131 Almeda Road, Houston, Tex. 77045**
**Filed Feb. 8, 1968, Ser. No. 704,017**
**Int. Cl. E05d** *13/12*
**U.S. Cl. 16—197** **7 Claims**



A sash balance comprising a vertical hollow housing containing a spiral torsion spring fixedly connected to the housing at its upper end. A projecting shaft secured to the lower end of the spring has a slot embracing a concentric spiral rod in mating relation to cause the shaft to be rotated by axial motion of the rod. A connector is fixedly connected to the lower end of the housing. The connector and the shaft include snap-acting, interengaging means for rotatably connecting the shaft and the second connector upon predetermined relative axial closing movement between them.

The lower end of the spiral rod includes a stud received within a slot in a clip adapted to be secured to the window sash. The clip is bent away from the rod adjacent an open end of the slot to prevent separation of the stud from the clip.

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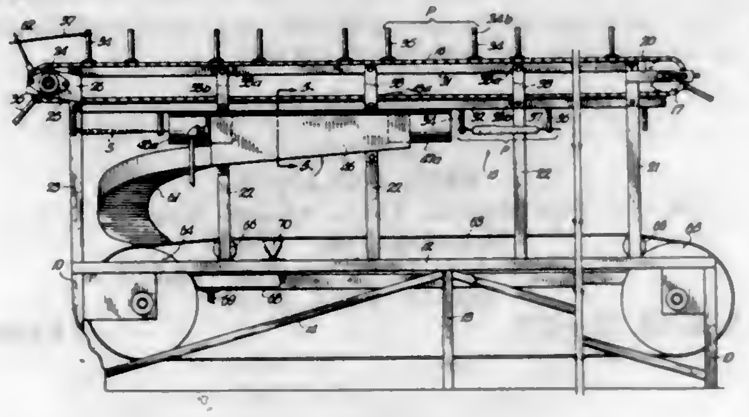
### 3,478,385

### METHOD AND APPARATUS FOR REMOVING MEAT FROM ANIMAL CARCASSES

**John Joseph Kaplan, Omaha, Nebr.**
**(1023 4th St., Council Bluffs, Iowa 51501)**
**Filed Feb. 24, 1967, Ser. No. 618,439**
**Int. Cl. A22c** *17/00;* **A22b** *5/00*
**U.S. Cl. 17—46** **5 Claims**

The axial skeleton of a cooked carcass section is mounted free for rotation on substantially its central axis and high velocity fluid jets are directed laterally against the carcass, the jets being oriented transversely with respect to the carcass and offset from the central axis thereof to cause spinning of the carcass about the axes at sufficiently high speed to cause all the meat to separate from the carcass skeleton under the combined impact and centrifugal forces. Apparatus is provided for carrying out the method on a substantially continuous basis using jets of water for obtaining the spinning motion of the carcass sections. The apparatus includes special carriers for the carcass sections and means for disassociating the denuded skeletal portions of the carcass from the carriers.



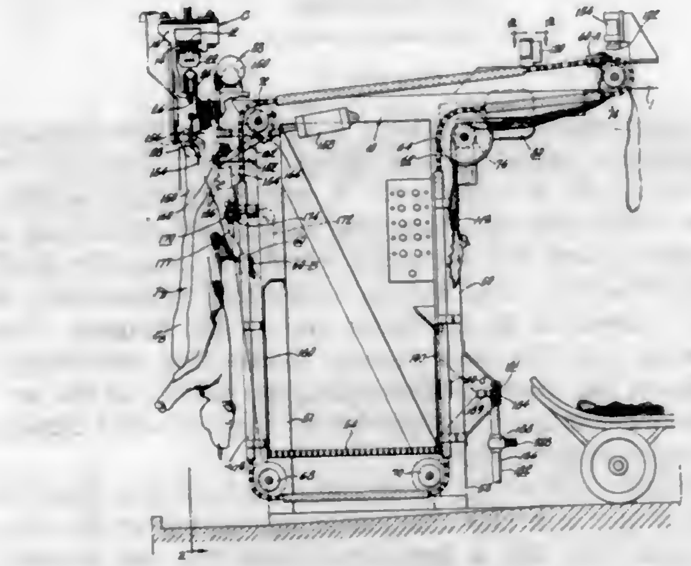
### 3,478,386
### HIDE PULLER APPARATUS

**Fred E. Robison and Kenneth C. Cochran, Franklin County, Pa., assignors to Acme Markets, Inc., Philadelphia, Pa., a corporation of Delaware**

**Filed Oct. 2, 1967, Ser. No. 672,046**

**Int. Cl. A22b** *5/16*

**U.S. Cl. 17—21** **9 Claims**



A hide puller apparatus for use in processing slaughtered livestock and adapted to be disposed along the path of a conveyor which moves the carcasses through various stations. The hide puller comprises a main frame structure which mounts a plurality of hide gripping mechanisms adapted for movement in an endless path. In each complete hide stripping cycle, a given gripping mechanism moves from a "home" position where the operator secures the hide to the gripping mechanism to a "dwell" position and at the outset of the next cycle to a "discharge" position where the stripped hide is discharged into a collecting bin or the like. Suitable control mechanisms and circuitry are provided for effecting continuous movement of carcasses on the main conveyor to the hide puller for the stripping operation. The hide puller further includes a sterilizing system for automatically sterilizing portions of the apparatus which come in contact with the carcass during a stripping cycle.

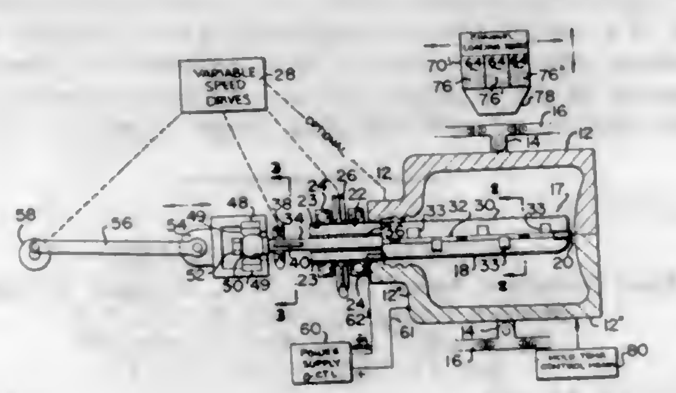
### 3,478,387
### APPARATUS FOR ELECTROSTATIC MOLDING

**Herbert S. Ruekberg, Highland Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York**

**Filed Oct. 21, 1965, Ser. No. 499,893**

**Int. Cl. B29c** *5/04*

**U.S. Cl. 18—5** **9 Claims**



An apparatus for molding articles from comminuted material capable of being electrostatically charged, the apparatus being comprised of a mold charged at a first potential, a dispensing means for dispensing electrostatically charged material within the mold which is electrically insulated from the mold and charged at a second potential. In operation, rotational motion is produced between the dispensing means and the mold to uniformly distribute electrostatically charged comminuted material on the mold walls.

### 3,478,388
### APPARATUS FOR BLOW MOLDING, CUTTING AND SEALING

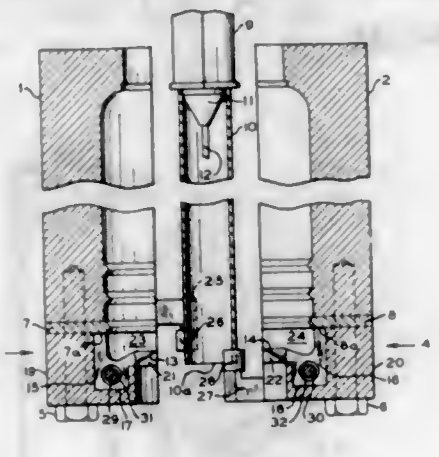
**Edward W. Turner, Somers, Conn., assignor to Phillips Petroleum Company, a corporation of Delaware**

**Filed Nov. 21, 1966, Ser. No. 595,910**

**The portion of the term of the patent subsequent to July 2, 1985, has been disclaimed**

**Int. Cl. B29d** *23/03*

**U.S. Cl. 18—5** **6 Claims**



In a blow molding operation wherein a thermoplastic parison is closed off at one end and thereafter expanded by the introduction of internal fluid pressure to conform to a mold, the tube is sealed and severed by at least three jaws which converge toward a central point. This sealing means is particularly useful in sealing thermoplastic parisons which have been cooled and thereafter reheated to a temperature near but below the crystalline melting point of the thermoplastic material.

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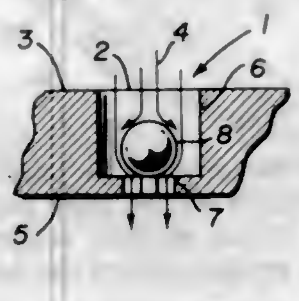
### 3,478,389
### SPINNERET

**Bruce R. Bradley, Gulf Breeze, and James G. Sims, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**

**Filed Oct. 19, 1967, Ser. No. 676,418**

**Int. Cl. D01d** *3/00*

**U.S. Cl. 18—8** **5 Claims**



A spinneret assembly particularly suitable for melt-spinning filaments of noncircular cross section is provided. The spinneret is made of a solid plate having an extrusion face and a melt face. At least one orifice extends between the faces and is provided with a counterbore melt receiving portion and an extrusion portion presenting a plurality of elongated slots. In the counterbore a solid discrete spheroid is positioned to divert the flow of the melt toward the extremities of the elongated slots. This arrangement makes possible a convenient extension of the number of noncircular cross-sectional shapes that one can produce in filaments made using a given spinneret.

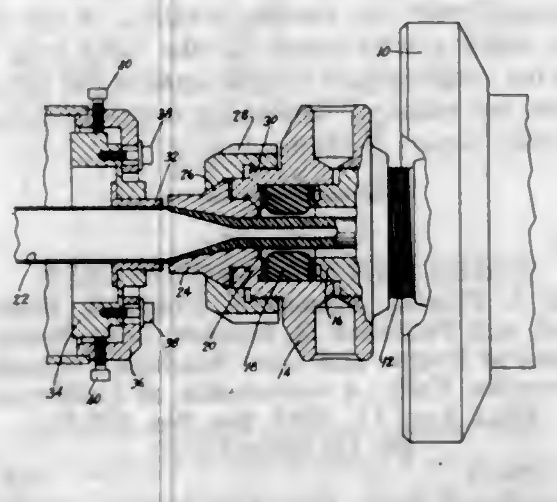
### 3,478,390
### SUPPORTING DIE

**Edward E. Merritt and Curtiss W. Titterud, Anoka, Stanley E. Peterson, Elk River, and Arthur J. Bulow, Anoka, Minn., assignors to Federal Cartridge Corporation, Minneapolis, Minn., a corporation of Minnesota**

**Filed Oct. 22, 1965, Ser. No. 502,164**

**Int. Cl. B29d** *23/04*

**U.S. Cl. 18—14** **6 Claims**



This invention is a supporting die for a polyolefin tube expanding machine of the sort in which crystallized tubing is reheated without destroying crystallization and expanded in contact with the supporting die by the application of internal fluid pressure. Most advantageously, the supporting die is coupled with a final tube sizing die which may be misaligned with respect to the longitudinal axis of the supporting die and where one or both are grooved. All of which aids in providing great consistency in tube wall thickness.

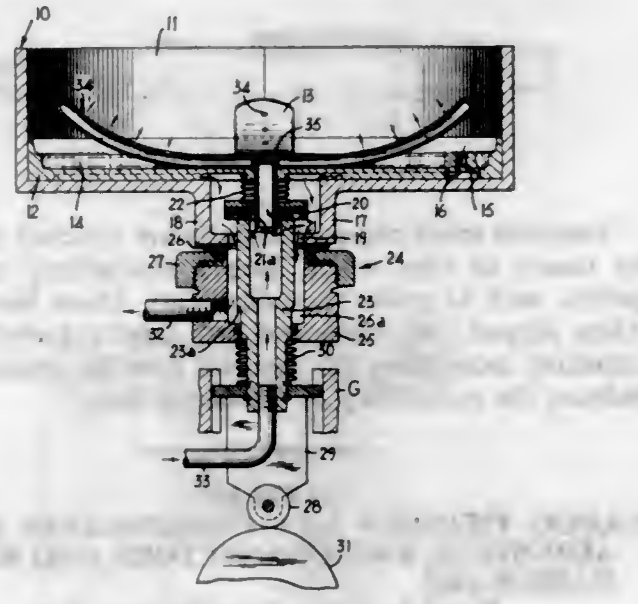
### 3,478,391
### FILM-FORMING APPARATUS

**Douglas P. Roome, Cedar Grove, N.J., assignor to Standard Packaging Corporation, New York, N.Y., a corporation of Virginia**

**Filed Apr. 28, 1967, Ser. No. 634,648**

**Int. Cl. B29c** *17/04*

**U.S. Cl. 18—19** **11 Claims**



The specification describes a film-forming apparatus of a packaging machine and method of forming the film in which a heated packaging film is drawn by suction into a film-forming cavity containing means therein for directing a film cooling fluid against a selected region of the film to retard the stretch thereof.

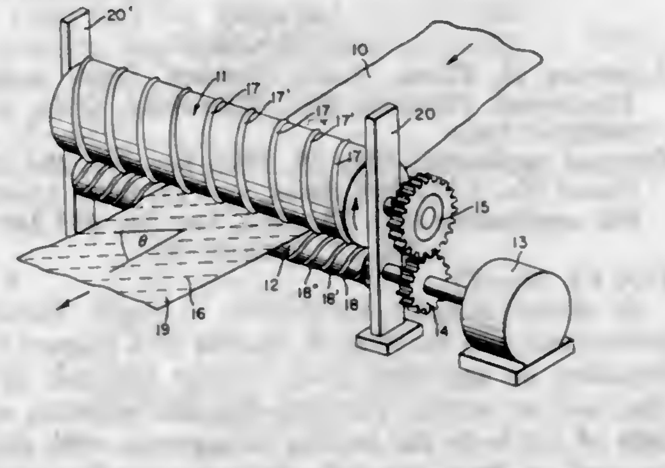
### 3,478,392
### TOW SLICING APPARATUS

**Adly Abdel-Moniem Gorrafa, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**Filed Apr. 9, 1968, Ser. No. 719,968**

**Int. Cl. D01g** *1/04;* **B26d** *1/22*

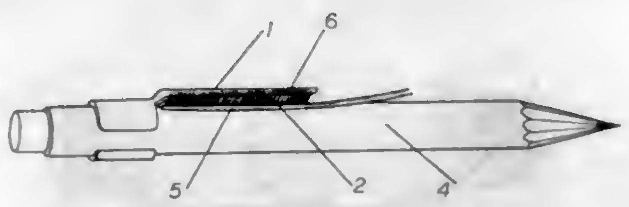
**U.S. Cl. 19—.62** **2 Claims**



An apparatus for converting continuous filament tows to a web of staple fibers wherein the tow is passed between a pair of coacting counter rotating rollers. One of the rollers has a helical blade disposed on its peripheral surface while the other roller has a helically disposed groove of opposite hand in its peripheral surface. The blade extends partially into the groove and clearance is maintained between the blade and groove during rotation of the rollers.

### 3,478,393
### PEN CLIPS

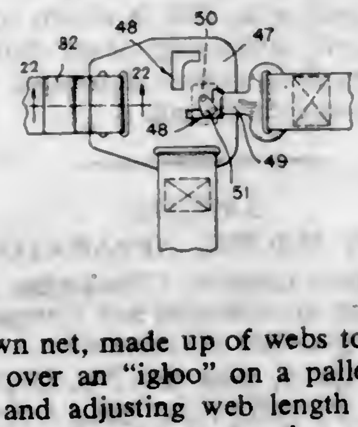
**Elmer Gordon Paquette, Madison, Wis., assignor to Bjorksten Research Laboratories, Inc., Madison, Wis., a corporation of Wisconsin**
**Filed Dec. 1, 1967, Ser. No. 687,206**
**Int. Cl. B43k** *25/00*
**U.S. Cl. 24—11** **9 Claims**



Pens and small objects generally are attached to pockets by means of clips which have a multiplicity of contact points, such as coiled monofilaments. These bend inward when slipped over cloth and they have a barb-like effect requiring more force for removal than for insertion. This reduces the probability of accidental loss.

### 3,478,394
### CARGO TIEDOWN NET COMBINATION OF WEB ADJUSTERS, END CONNECTORS AND REEVING HARDWARE

**Frank L. Davis, Fort Salonga, N.Y.**
**Filed Mar. 21, 1968, Ser. No. 715,107**
**Int. Cl. A44b** *11/25*
**U.S. Cl. 24—75** **4 Claims**

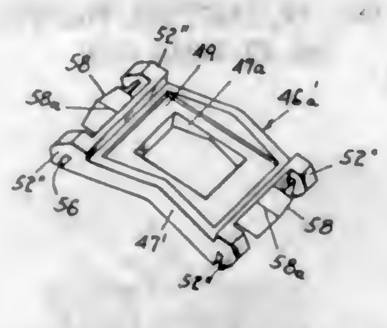


Cargo tiedown net, made up of webs to fit over a load on a pallet or over an "igloo" on a pallet, with buckles for taking up and adjusting web length and connectors for connecting lengths of web together and for connecting ends of web to the pallet.

### 3,478,395
### FASTENERS

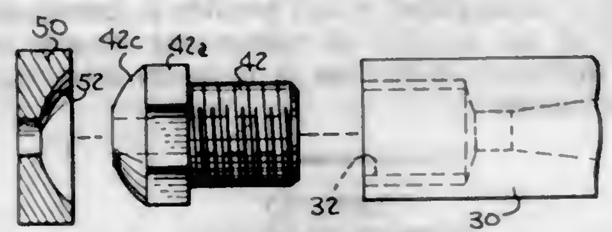
**Laurence H. Flora, North Olmsted, Ohio, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio**
**Original application May 29, 1963, Ser. No. 284,223, now Patent No. 3,313,083, dated Apr. 11, 1967. Divided and this application Dec. 22, 1966, Ser. No. 655,248**
**Int. Cl. F16b** *29/00*
**U.S. Cl. 24—73** **8 Claims**

A plastic adapter to receive a plastic fastener for securement of a molding or the like to a support member including an apertured body at least one pair of spaced cam and/or anchor portions disposed adjacent opposed ends of the body for locking engagement with the molding and at least one tab portion extending outwardly between the cam and/or anchor portions for holding the molding against the cam and/or anchor portions and in spaced relation on the support member. The fastener includes a bored head portion, a pair of tab portions extending downwardly from the head portion, a bored body portion including a plunger member extending downwardly from the head portion with the upper end of the plunger member being severably connected to the tab portions, and a pair of resilient leg portions connecting the head portion to the body portion adapted to be deformed outwardly with movement of the plunger member between the tab portions upon self-threading movement of a threaded member through the lower end of the body portion, and abutments on the body portion adapted for engagement with the tab portions to limit upward movement of the body portion toward the head portion.



### 3,478,396
### STRAND CHUCK

**William Drouillard, Oak Park, Ill., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri**
**Filed Jan. 4, 1968, Ser. No. 695,706**
**Int. Cl. F16g** *11/04*
**U.S. Cl. 24—126** **3 Claims**

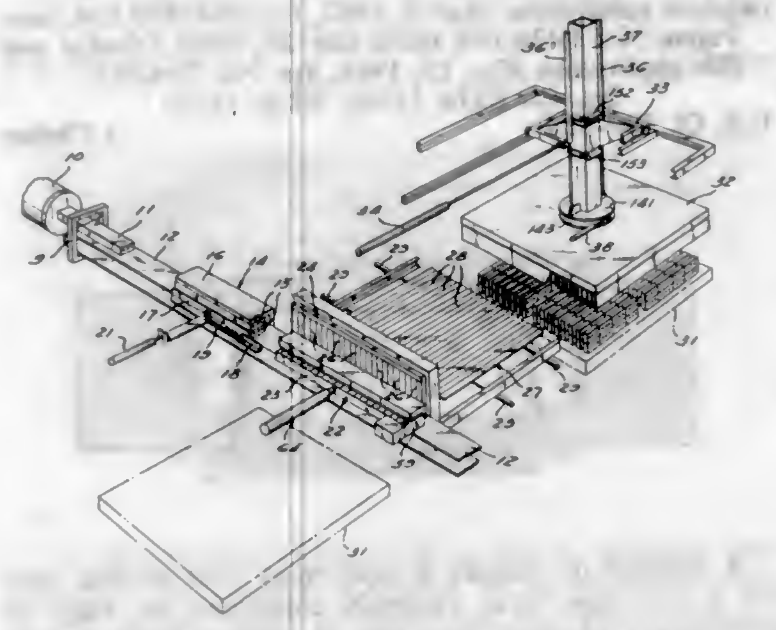


A tubular body is provided with a conical bore which receives a set of tendon engaging jaws. The body threaded and a threaded collar or bushing is engaged therewith. A tendon which extends through a concrete structure extends through the body and is engaged by the jaws. The tendon is stressed and the device moved along the strand into engagement with the concrete form around the tendon. The tension may then be released and the tendon severed. With tension applied to the tendon and jaws fully engaged with the tendon, rotation of the threaded collar or bushing with respect to the body may be used to cause the rotating part to bear against the structure so that when the external tensioning device is released no loss in strain occurs in the tendon.

### 3,478,397
### BRICK CUTTER AND HACKER

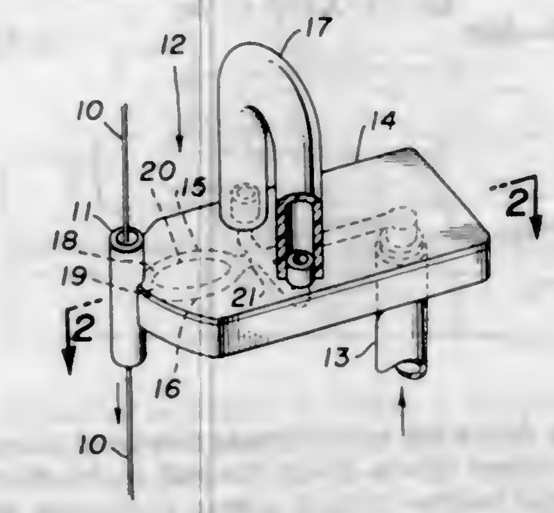
**Florentin J. Pearne, Alhambra, Frank S. Pearne, San Gabriel, and Frederick G. Robson, Long Beach, Calif., assignors to Pearne and Lacy Machine Company, Inc., Los Angeles, Calif., a corporation of California**
**Filed Aug. 11, 1965, Ser. No. 478,913**
**Int. Cl. B28b** *15/00*
**U.S. Cl. 25—2** **10 Claims**

An automated brick hacker including an off-bearing belt which receives brick slugs from an extruder, an inverter operates to position alternate slugs on the following slugs so that subsequent operations are simultaneously performed on two slugs or on double rows of bricks. From the inverter the pairs of slugs continue along the off-bearing belt to a cutter station providing a cutter frame through which the slugs are pushed to cut them into double rows of bricks. The double rows are then moved to a spreader table in groups of rows to form grids. The spreader table separates the adjacent pairs of bricks, forming grids of brick consisting of a plurality of spaced rows of endwise abutting pairs of brick. A transfer then grips the grids and forms stacks of grids on a kiln car while turning alternate grids through 90° so that the rows in each grid extend perpendicular to the rows of adjacent grids.



### 3,478,398
### YARN JET APPARATUS

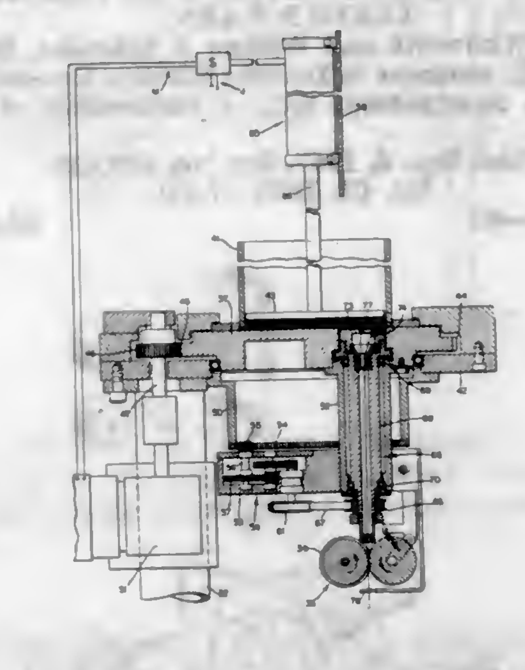
**Paul D. Barlow, Whispering Pines, and John L. Marshall, Jr., Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**Original application Sept. 25, 1967, Ser. No. 670,137, now Patent No. 3,422,516, dated Jan. 21, 1969. Divided and this application Apr. 12, 1968, Ser. No. 720,798**
**Int. Cl. D02g** *1/16;* **D01h** *13/30*
**U.S. Cl. 28—1** **4 Claims**



A jet device for treating yarn in various ways is provided. The jet includes a tube defining a confined zone for yarn passage therethrough and wherein the yarn is treated. A fluidic diverting valve having two intersecting output ports opening into the confined zone form part of the apparatus. A source of treating fluid is supplied to an input port of the valve. A tapered block is positioned internally of the block for splitting the fluid alternatingly delivered from the input port to the two output ports. Means are associated with the valve for rapidly oscillating substantially the complete flow of the fluid from one output port to the other output port to intermittently deliver treating fluid to the yarn as the same moves axially through the zone.

### 3,478,399
### APPARATUS FOR COILING A TEXTILE PRODUCT

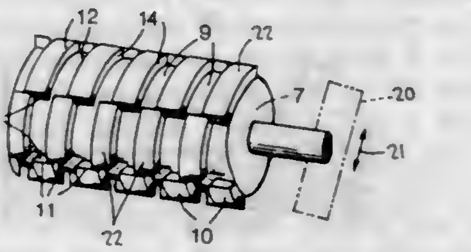
**William Kirk Wyatt, Lansdale, Edward G. Mueller, Huntingdon Valley, and William H. Hebrank, Wallingford, Pa., assignors to Turbo Machine Company, Lansdale, Pa., a corporation of Pennsylvania**
**Filed June 29, 1967, Ser. No. 650,094**
**Int. Cl. B65h** *51/02, 55/00*
**U.S. Cl. 28—21** **15 Claims**



Yarn is laid continuously in loops progressively in a path along an annulus to form an annular layer as part of a coiled yarn package. Various means are used to vary the size of the loops, the number of loops laid over one revolution around the annulus, and the radial position of the loops in the annulus. The loops are laid along the annulus by feeding the yarn upwardly through a rotating nozzle in the annulus. A second annular layer of loops is formed beneath, and as a continuation of, the preceding one, and this step is repeated so that a stack of annular layers of looped yarn is formed into a coiled yarn package.

### 3,478,400
### YARN FIELD DISTRIBUTION APPARATUS

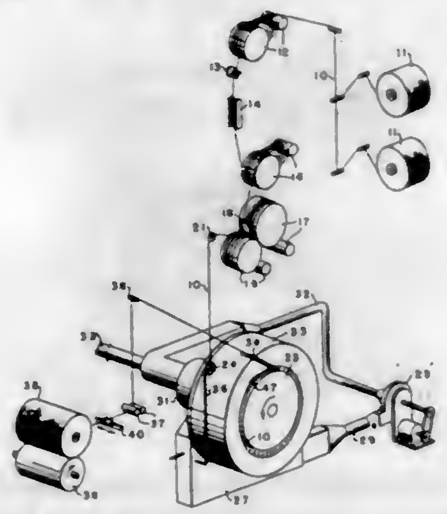
**Max Wenger, Uzwil, Switzerland, assignor to Maschinenfabrik Benninger AG, Uzwil, Switzerland, a corporation of Switzerland**
**Filed July 25, 1968, Ser. No. 747,660**
**Claims priority, application Switzerland, Aug. 1, 1967, 10,857/67**
**Int. Cl. D03j** *1/02*
**U.S. Cl. 28—28** **9 Claims**



This invention discloses a yarn field distribution apparatus capable of engaging with a yarn field or group of yarns moving relative thereto in order to remove yarn accumulations. The inventive apparatus comprises roller means having an outer surface provided with a series of substantially spiral staircase-like adjacently arranged parallelepiped or block-like raised portions. These raised portions incorporate axially extending edge means and tangentially extending edge means. The yarn field passes over these raised portions in such a way that their axially extending edges place the yarn field into oscillation and at the same time their tangentially extending edges break up or remove yarn accumulations passing thereover.

### 3,478,401
### METHOD AND APPARATUS FOR TREATING TEXTILE YARN

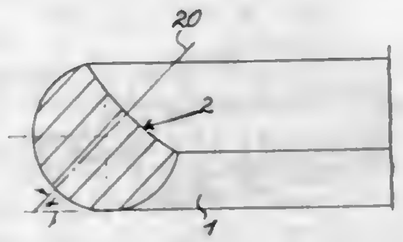
**James W. Whitworth and William J. Schroder, Spartanburg, S.C., assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina**
**Filed Dec. 8, 1967, Ser. No. 689,025**
**Int. Cl. D02j** *11/00*
**U.S. Cl. 28—62** **18 Claims**



A novel method of continuously processing a textile yarn comprises subjecting a yarn to a stream of gas, overfeeding the yarn to yarn advancing means under low tension, advancing the yarn by contact with a moving surface of the yarn advancing means, and subjecting the yarn to a gaseous atmosphere while the yarn is being advanced in contact with the moving surface; also, apparatus for such processing.

### 3,478,402
### METHOD OF MAKING A WIRE RACE FOR ANTIFRICTION BEARINGS

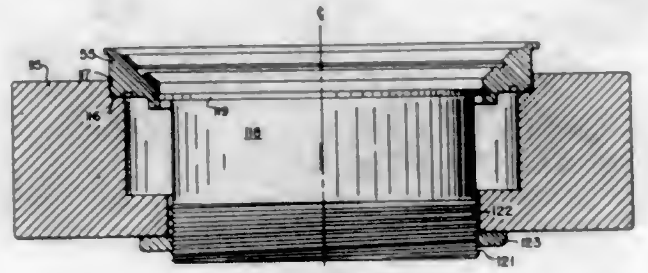
**Wolfgang Schmude, Langenfeld, and Heinz Pöhler, Herdecke-Kirchenende, Germany, assignors to Eisenwerk Rothe Erde G.m.b.H., Dortmund, Germany**
**Filed Sept. 13, 1966, Ser. No. 579,093**
**Claims priority, application Germany, Sept. 13, 1965, E 30,084**
**Int. Cl. B21h** *1/12;* **B21k** *1/04*
**U.S. Cl. 29—148.4** **8 Claims**



A process for the production of wire races for antifriction bearings which a wire of generally circular cross-section is provided with a track portion by drawing the wire through a drawing die and in which at least a portion of the wire is formed into an annular race of predetermined diameter with the track portion forming an annular track of constant bearing contact angle.

### 3,478,403
### METHOD OF MAKING SEAT RING FOR PLUG VALVE

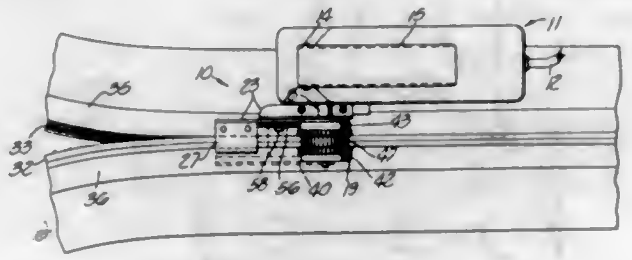
**Adolph Wolfensperger, Kearney, Nebr., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Original application Mar. 1, 1965, Ser. No. 435,838, now Patent No. 3,424,190, dated Jan. 28, 1969. Divided and this application Mar. 13, 1968, Ser. No. 734,503**
**Int. Cl. B21d** *53/00;* **B23p** *13/00*
**U.S. Cl. 29—157** **4 Claims**



A method of making a preformed plug seating ring for a ball type valve assembly comprises the steps of providing a relatively rigid ring of resilient metal having an annular arcuate surface at one side, mounting said ring in a fixture and deforming said ring axially of said surface, accurately forming said surface to temporary spherical contour while the ring is held deformed in said fixture, and releasing said ring from the fixture to relax and allow said formed surface to assume a desired non-spherical contour which is substantially that assumed by the initially spherical surface of a ball plug exposed to full upstream line pressure as the ring resiliently tends to resume its initial condition.

### 3,478,404
### POWER-DRIVEN SEAM CLOSING DEVICE

**Walter A. Plummer, 3546 Crownridge Drive, Sherman Oaks, Calif. 91403**
**Filed July 17, 1967, Ser. No. 653,906**
**Int. Cl. A41h** *37/06*
**U.S. Cl. 29—200** **10 Claims**



A closing device for seam-forming tapes and more particularly a power driven device adapted to be driven at variable speed to open or close a seam of the type having oppositely facing tongues and grooves effective to form a strong interlocked seam when pressed together. The device includes a suitable motor preferably arranged to provide a handgrip for the device and operable to drive traction roller means cooperating with a back-up roller to embrace the overlapped edges of seam forming tapes as the tape is fed past the rollers and is pressed together thereby. The closing rollers are preferably located laterally of one side of the handgrip to facilitate full view by the user. The device includes a pair of guide channels embracing the edges of the tapes in a manner serving to guide them between the rollers in proper position for closing. A feature of the device is the provision of fast-action manually operated means for shifting the closing rollers quickly between open and closed positions as well as for regulating the traction pressure against the tapes.

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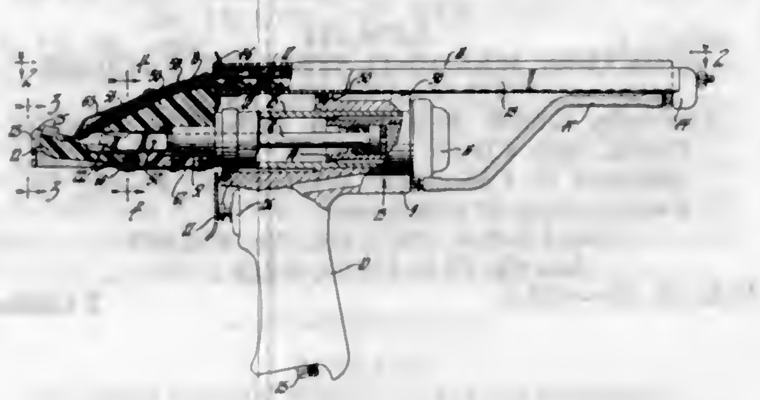
### 3,478,405
### CLIP INSTALLING TOOL

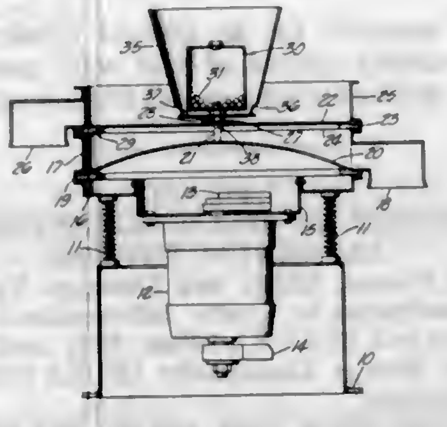
**Norman R. Brown, Pontiac, Mich., Michael J. Martin, Jr., Somerville, N.J., and Donald Stanner, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Sept. 7, 1967, Ser. No. 666,014**
**Int. Cl. B23p** *19/04;* **B23q** *7/10*
**U.S. Cl. 29—212** **2 Claims**



An air-operated tool for fitting reveal molding clips includes a body having a handle, an air cylinder driving a ram, guide means to locate the tool relative to the vehicle body panel, a hammer mounted on the ram, a magazine for the clips, means to feed the clips into position to be engaged by the hammer, and a stop for the clips which is cammed out of the way by the hammer as it moves to install the clip.

### 3,478,406
### SCREENING SEPARATOR

**Wayne James Auckland, Burlington, Ontario, Canada, assignor to SWECO Inc., Los Angeles, Calif., a corporation of California**
**Filed Apr. 28, 1967, Ser. No. 634,526**
**Int. Cl. B07b** *1/32*
**U.S. Cl. 209—334** **6 Claims**

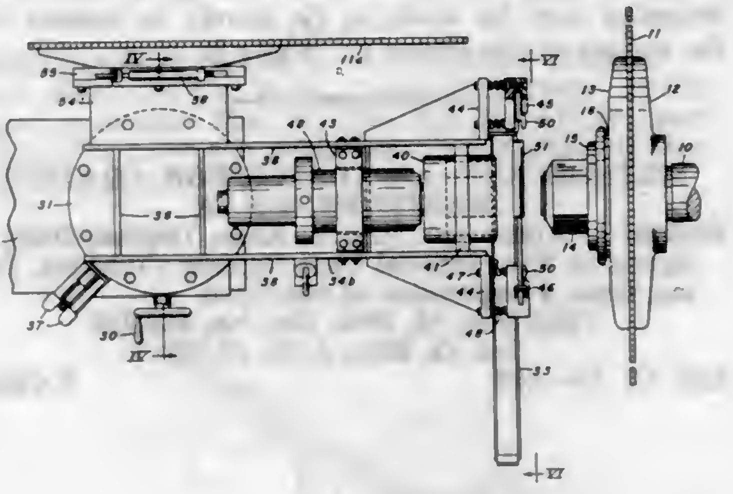


A vibratory separator in which a circular screen is vibrated by an eccentric for the separation of material into 2 components which have an impact-producing means which may consist of metal spheres in a container and which is actuated by the vibratory means to impart impacts to the screen.

### 3,478,407
### APPARATUS FOR MANIPULATING DISC-LIKE MEMBERS

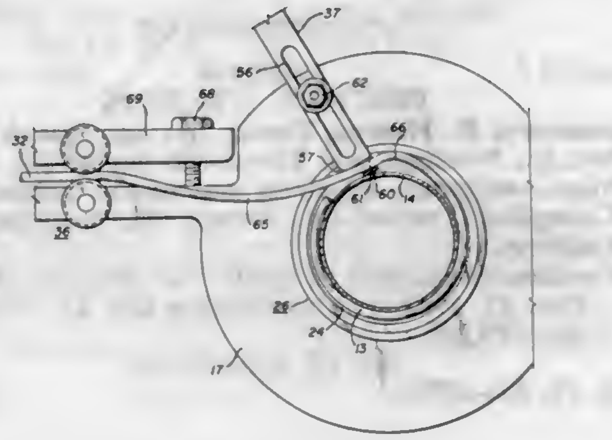
**Lloyd H. Fenstermaker, Whitehall Borough, and Quin Shen Yu, Forest Hills Borough, Pa., assignors to United States Steel Corporation, a corporation of Delaware**
**Filed Dec. 11, 1967, Ser. No. 689,685**
**Int. Cl. B23p** *19/04*
**U.S. Cl. 29—240** **7 Claims**

Apparatus for removing a saw blade from its arbor and replacing it comprises a base having a ram thereon reciprocable toward and from the arbor along the axis thereof. A cross slide on the ram mounts a turret provided with a cantilever arm having a power wrench for turning a nut on the arbor and jaws for seizing a blade to be removed. At an angle to the arm, a set of blade-applying jaws is mounted on the turret, to support a blade for placement on the arbor after the used blade has been removed and the turret rotated through a predetermined angle.



### 3,478,408
### METHOD AND APPARATUS FOR FORMING HELICAL SPRINGS AND THE LIKE

**Kenard Daniel Brown, 1227 S. Willow St., Casper, Wyo. 82601**
**Continuation-in-part of application Ser. No. 225,559, Sept. 24, 1962. This application Oct. 21, 1965, Ser. No. 499,374**
**Int. Cl. B21d** *7/00, 11/00*
**U.S. Cl. 29—458** **23 Claims**



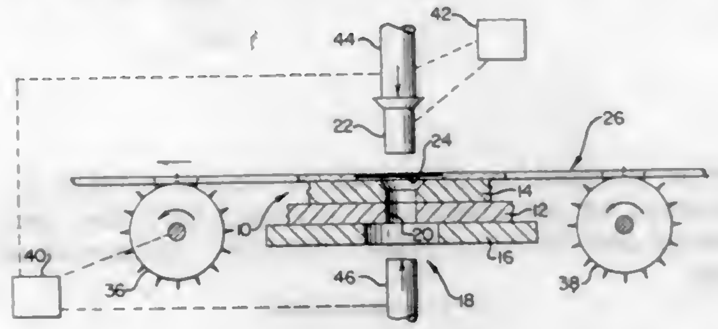
A method for producing a helical coil of wire comprises drawing a wire continuously across a deflector and pressing it into engagement therewith to produce a curl in the wire about an axis on the same side of the wire as the deflector and then guiding the wire into a helical coil about a longitudinal axis. The longitudinal axis may be that of a cylindrical tube about which the coil is wrapped. The method may further include passing the wire over spaced deflectors the first to bend the wire away from and the second toward the longitudinal axis.

An apparatus on which the method may be practical comprises a rotatable wire supply and forming assembly having a hollow center shaft through which a plastic tubing or the like may be fed for wrapping with a helical coil of wire. The wire is fed through a tool on the rotating assembly and onto the tube about which the assembly is rotated. The tool comprises spaced deflecting elements arranged first to bend the wire away from the tube and then toward the tube. The tool rotates about the tube close to its surface and the bend away from the tube occurs nearer the center of rotation than the subsequent bend toward the center. The apparatus produces continuous lengths of helical wire wrapped tubing—the wrapping may be made to lie merely in contact with the surface of the tubing or to grip it.

**3,478,409**

### METHOD AND APPARATUS FOR COATING FASTENER HOLES

**Richard L. Votaw and John E. Kline, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**
**Filed May 16, 1966, Ser. No. 550,218**
**Int. Cl. B23p** *3/00, 25/00*
**U.S. Cl. 29—458** **3 Claims**

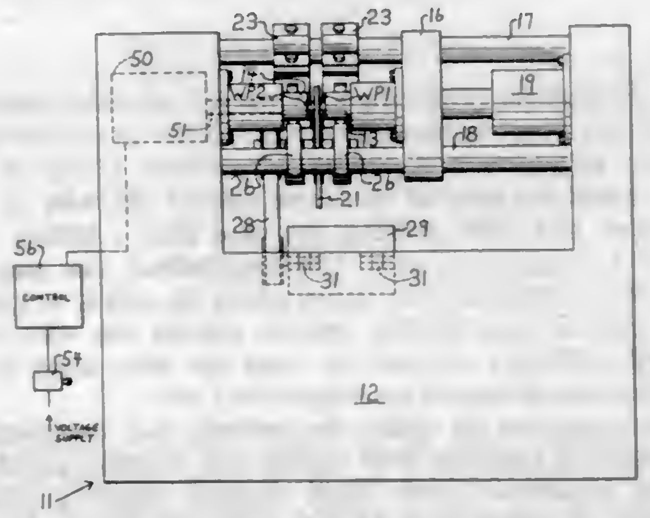


A method and apparatus for coating fastener holes, which method and apparatus are especially adaptable for use with automatic fastener machines. The coating material to be applied to a hole is carried on a rupturable member of a carrier means, which carrier means is positioned between the hole to be coated and the fastener to be inserted therein. The fastener is moved through the rupturable member into the fastener hole and moves at least a portion of the coating material into the hole to coat it when the fastener is secured in the hole.

**3,478,410**

### FRICTION WELDING

**Ramamurat R. Maurya, Peoria, Ill., and Joseph Harrington, Jr., Wenham, and Edward R. Squibb III, Harvard, Mass., assignors, by direct and mesne assignments, to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Continuation-in-part of application Ser. No. 516,313, Dec. 27, 1965. This application Oct. 21, 1966, Ser. No. 595,289**
**Int. Cl. B23k** *27/00*
**U.S. Cl. 29—470.3** **7 Claims**

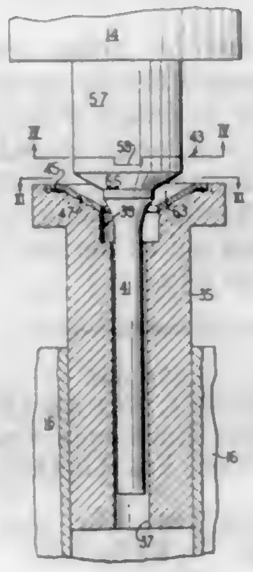


A method and apparatus for friction welding two metal workpieces axially arranged in spaced apart relation with their facing surfaces engaged in rubbing contact with a frictional heating member for a sufficient time and under sufficient pressure to heat the facing surfaces to a plastic bondable condition. The heating member is thereafter withdrawn and the facing surfaces are pressed together with sufficient force to bond the parts while relatively moving the engaged parts to produce heavy plastic working and forging of the engaged surfaces.

**3,478,411**

### FRICTION WELDING STELLITE FACINGS TO VALVE SEATS

**Alexander Goloff, East Peoria, Richard E. Hautala, Peoria, and Claude F. White, Creve Coeur, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Oct. 9, 1967, Ser. No. 673,553**
**Int. Cl. B23k** *27/00;* **B21k** *1/20*
**U.S. Cl. 29—470.3** **3 Claims**

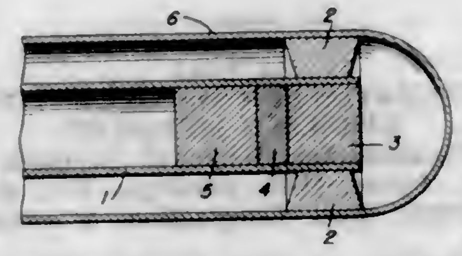


A valve assembly for an internal combustion engine wherein a seating surface of said valve assembly has a thin disc of Stellite facing material friction welded thereto.

**3,478,412**

### METHOD OF WELDING SINTERED ALUMINUM POWDER

**Giovanni Perona, Milan, and Giuseppe Volta, Ispra, Italy, assignors to Centro Informazioni Studi Esperienze s.r.l. (C.I.S.E.), Milan, Italy, and European Atomic Energy Community (EURATOM), Brussels, Belgium**
**Filed July 8, 1966, Ser. No. 564,524**
**Claims priority, application Italy, July 17, 1965, 7,066/65**
**Int. Cl. B23k** *19/00*
**U.S. Cl. 29—472.9** **6 Claims**



A process for hermetically sealing an end of a fuel element sheath of sintered aluminum wherein a sealing plug is inserted within the sheath and said sheath and said plug are heated and hammered with a rotary hammer so that said plug is welded to said sheath by intermetallic diffusion.

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**3,478,413**

### ALUMINIDE COATING BRAZE STOP-OFF

**John D. Gadd, Willowick, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio**
**No Drawing. Filed May 9, 1966, Ser. No. 548,423**
**Int. Cl. C23c** *1/08;* **B23k** *1/20*
**U.S. Cl. 29—490** **5 Claims**

A method of brazing in which a stop-off is provided by applying aluminum particles over the stop-off area, heat treating the particles to cause diffusion of aluminum into the article resulting in the production of a metal aluminide layer, and then oxidizing the aluminide layer to provide an exterior surface of an oxide which is metallurgically bonded to the area by the intermediate aluminide layer.

**3,478,414**

### WATER WHITE ROSIN FLUX IN BENZYL ALCOHOL SOLUTION

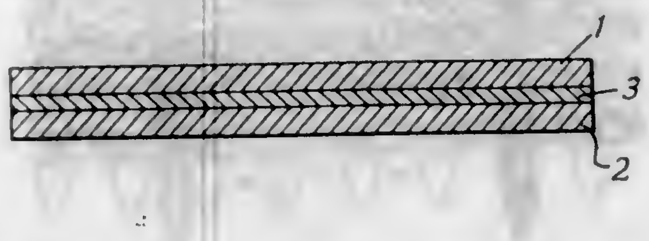
**Macy Potter, Pleasant Valley, and William J. Strogis, Beacon, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**No Drawing. Filed May 5, 1967, Ser. No. 637,875**
**Int. Cl. B23k** *35/36, 31/02*
**U.S. Cl. 29—495** **4 Claims**

A composition suitable for use in soldering and similar operations comprising water white rosin and benzyl alcohol.

**3,478,415**

### BONDING OF METALS OR ALLOYS

**Gordon L. Selman, London, England, assignor to Johnson Matthey & Company Limited, London, England, British company**
**Filed Aug. 12, 1966, Ser. No. 572,031**
**Claims priority, application Great Britain, Aug. 27, 1965, 36,907/65**
**Int. Cl. B23k** *31/02*
**U.S. Cl. 29—497.5** 7 Claims



A method of bonding, and the resulting assembly, wherein two dissimilar metals are bonded together by the use of an intermediate barrier layer which is disposed between the two dissimilar metals, the barrier layer being formed of a mixture of a refractory ceramic material and a metal which is substantially insoluble in one of the metals to be bonded but is substantially soluble in the other metal to be bonded.

**3,478,416**

### BONDING OF BERYLLIUM MEMBERS

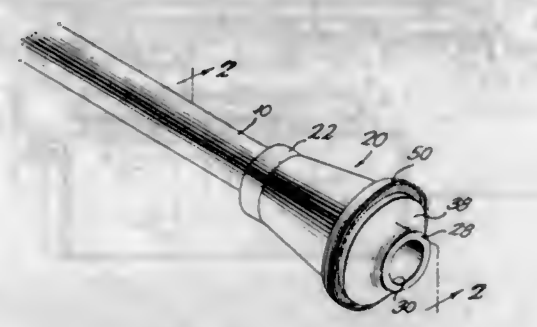
**Charles H. Hamilton, Cleveland, Ohio, assignor to North American Rockwell Corporation**
**No Drawing. Filed Feb. 15, 1967, Ser. No. 616,183**
**Int. Cl. B23k** *31/02*
**U.S. Cl. 29—498** **11 Claims**

A process for joining or bonding of beryllium to beryllium or other metals, such as stainless steel or titanium, wherein a thin layer of an interface material is provided between the surfaces to be bonded to facilitate diffusion. The interface material is preferably aluminum, copper, gold, silver or combinations thereof and may be plated on one or both surfaces or provided as a foil between the surfaces. The surfaces are then clamped together and heated to 1000 to 1300° F. for several hours to effect atomic diffusion and bonding of the two surfaces.

**3,478,417**

### METHOD OF MAKING A MUZZLE BRAKE

**John J. Shaw, 310 NE. D. St., Grants Pass, Oreg. 97526**
**Original application Mar. 24, 1966, Ser. No. 537,191, now Patent No. 3,368,453. Divided and this application Dec. 14, 1967, Ser. No. 721,889.**
**Int. Cl. B23p** *13/04*
**U.S. Cl. 29—558** **4 Claims**

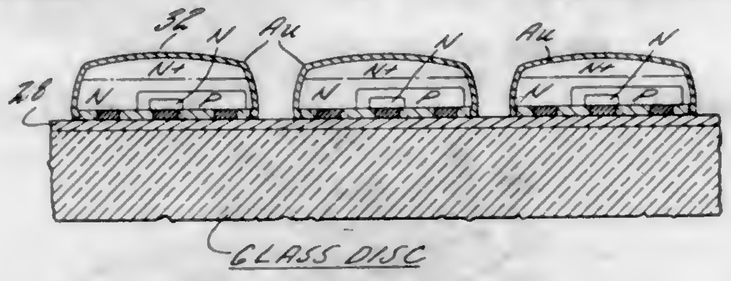


A method is disclosed for making a one-piece body muzzle brake threaded on the outer end of a gun barrel containing a plurality of spaced discrete tapered holes allowing gases to escape outwardly to impinge on a baffle surface to reduce the recoil, and a further deflector surface receiving gases deflected by said baffle surface, the deflector surface sloping forwardly to deflect sound wave forwardly of the muzzle brake to reduce the sound reaching the user's ears.

**3,478,418**

### FABRICATION OF THIN SILICON DEVICE CHIPS

**Louis N. Pomante, Levittown, Pa., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Nov. 29, 1967, Ser. No. 686,611**
**Int. Cl. B01j** *17/00;* **H01l** *7/00*
**U.S. Cl. 29—574** **2 Claims**



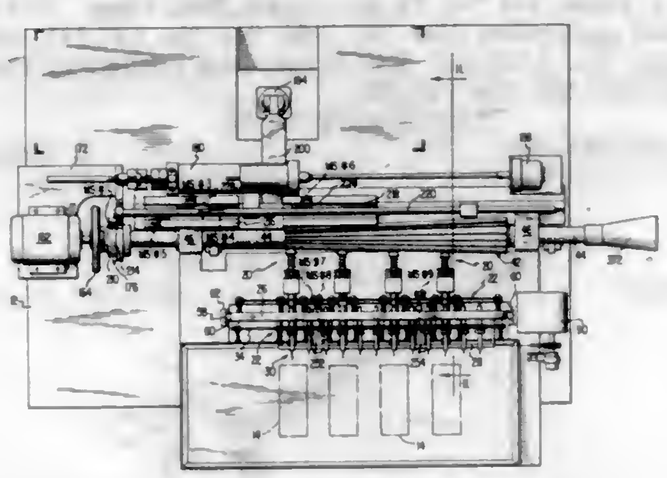
A plurality of different circuit areas are formed on a silicon wafer using any conventional dielectric isolation technique. Then, electronic devices are formed in the areas and the areas are allowed to separate. The need for scribing and dicing is avoided, and therefore the need for a device of a given thickness (on the order of three or four mils) is eliminated; device chips as thin as one mil or less may be produced.

**3,478,419**

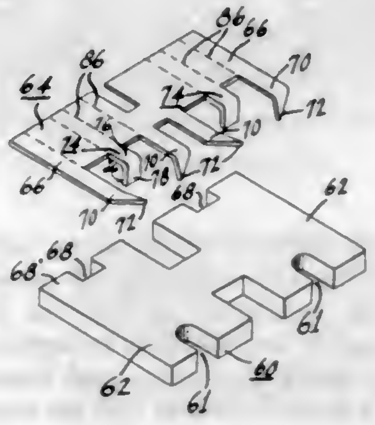
### METHOD AND APPARATUS FOR CONDUCTING MACHINING OPERATIONS

**John A. Cupler II, 10 Cupler Drive LaVale, Cumberland, Md. 21502**
**Filed Mar. 25, 1968, Ser. No. 715,711**
**Int. Cl. B23q** *3/157;* **B23b** *47/18*
**U.S. Cl. 29—568** **45 Claims**

The disclosure introduces a new concept in machining; that of the non-captive tool. A non-captive tool is herein defined as one which may undergo bodily movement, transversely of its own axis, relative to both the tool bearing structure which supports the tool in working position and a tool support structure which supports the tool in a non-working position adjacent the bearing structure. The non-captive tool is unrestrained against the aforesaid bodily movement except during that time the tool is actually working and, while working, the restraint imposed is due to engagement with the tool driving means. Accordingly, removal of the tool driving means from engagement with the tool frees the same for bodily movement which movement may, advantageously, be integrated with the movement of the tool driving means out of engagement with the tool.

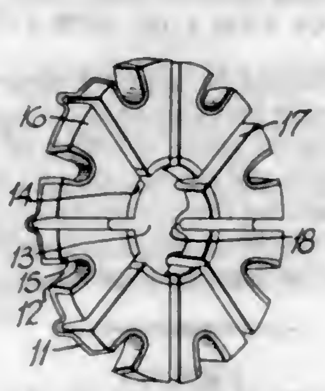


**3,478,420**
### METHOD OF PROVIDING CONTACT LEADS FOR SEMICONDUCTORS
**Milton J. Grimes, Flemington, Donald F. Henrikson, Somerset, and Herbert R. Meisel, Springfield, N.J., assignors to RCA Corporation, a corporation of Delaware**
**Continuation-in-part of application Ser. No. 554,564, June 1, 1966. This application Dec. 31, 1968, Ser. No. 795,388**
**Int. Cl. B01j** *17/00;* **H01l** *1/10*
**U.S. Cl. 29—588** **9 Claims**



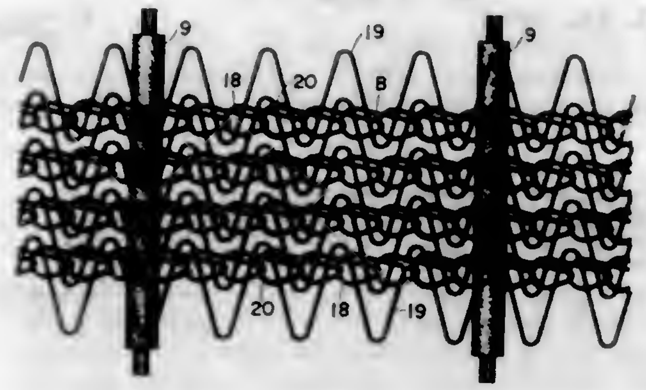
A substrate is provided onto which a semiconductor pellet is mounted. A terminal means having an extending contact is engaged with the substrate with the free end of the contact engaged with a preselected spot on the pellet. The relative positioning of the contact, pellet, and substrate are fixed, by encapsulating a portion of the substrate, the pellet, and a portion of the contact in a solidifying encapsulating material. The contact is then separated from the terminal means leaving the contact extending outwardly from the encapsulating material to serve as a lead for the device.

**3,478,421**
### METHOD OF MANUFACTURING COMMUTATORS
**Kenneth Preece, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England**
**Filed July 10, 1967, Ser. No. 652,252**
**Claims priority, application Great Britain, July 20, 1966, 32,579/66**
**Int. Cl. H01r** *43/00*
**U.S. Cl. 29—597** **6 Claims**



A commutator of a dynamo electric machine, wherein, each conductive segment of the commutator comprises a first portion which is formed from a first conductive material and which in use is engaged by the brushes of the dynamo electric machine, and a second portion supporting the first portion, and formed in a second material which in use constitutes a heat sink for the first portion.

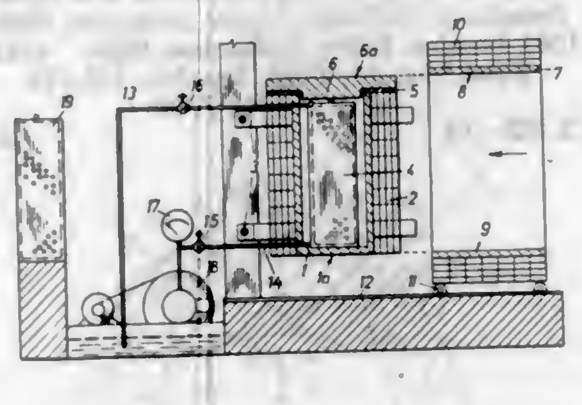
**3,478,422**
### METHOD OF MAKING AN ELECTRIC BLANKET
**Toshiaki Inui, 153 4-chome, Yamatocho Nara Prefecture, Nara, Japan**
**Filed Aug. 26, 1966, Ser. No. 575,370**
**Claims priority, application Japan, Sept. 7, 1965, 40/54,992**
**Int. Cl. H05b** *3/00*
**U.S. Cl. 29—611** **2 Claims**



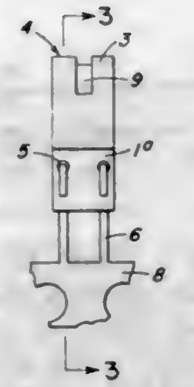
The method and apparatus for the making of an electric blanket provides for the insertion of an insulated heating element into the blanket fabric at the same time when the knitted fabric is being knitted into a two-ply blanket fabric on the knitting machine.

**3,478,423**
### PRESSING AND COMPRESSING TUBULAR HEATERS
**Adolf Jagersberger, Salzburg, Austria, assignor to Bleckmann & Co., Salzburg, Austria, a company of Austria**
**Filed July 28, 1965, Ser. No. 475,537**
**Claims priority, application Austria, July 31, 1964, A 6,577/64**
**Int. Cl. H01c** *17/00*
**U.S. Cl. 29—615** **17 Claims**

In a process for making tubular heaters the improvement comprising: inserting one or more heating elements and a filling material or insulating material in a metal tube; compressing the filling material or insulating material by reducing the diameter of the metal tube, thereby obtaining a precompressed tubular member; forming the precompressed tubular member into the shape desired for the tubular heater, thereby obtaining a prepressed tubular heater placing the prepressed tubular heater or several heaters so formed in a pressure reservoir; tightly closing the reservoir; feeding pressure media into the pressure reservoir; raising the pressure in the reservoir; turning off the pressure consequent upon the reaching of a given predetermined pressure; opening the reservoir and taking out the pressed tubular heaters.

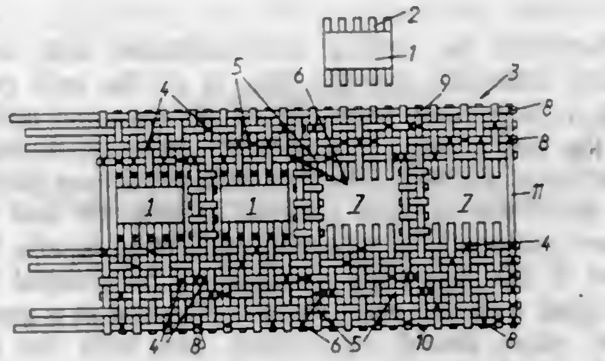


**3,478,424**
### METHOD OF MANUFACTURING FIXED VALUE RESISTORS
**Angelo Meoni, Paris, France, assignor to Societe Gerafin S.A., Mesocco, Grisons, Switzerland**
**Original application July 8, 1965, Ser. No. 470,352, now Patent No. 3,409,856. Divided and this application Apr. 5, 1967, Ser. No. 646,780**
**Claims priority, application France, July 28, 1964, 983,258**
**Int. Cl. H01c** *17/00*
**U.S. Cl. 29—619** **4 Claims**



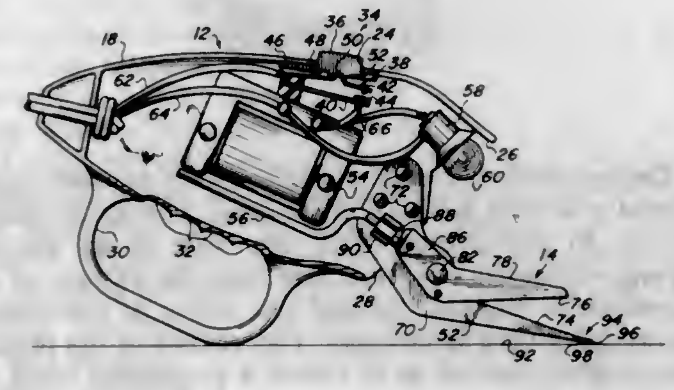
A method of manufacturing fixed value resistors comprising the steps of coating one face of an insulating support laminate with a thin metallic layer, depositing a layer of a semiconductor material on a portion of the other face of the support in the longitudinal direction, on one of its longitudinal edges and on a part of the first face, the semiconductor material being in contact with the said metallic layer, providing a row of holes in the part of the support which is not covered with semiconductor material, introducing into each hole a conducting rod serving as a terminal connection and disposed substantially normally to the row of holes, setting and soldering the rod on the metallic layer, separating each pair of terminal connections by cutting the support transversely between two terminals of two consecutive pairs of terminals, cutting the metallic layer rigid with the insulating support transversely between the terminals of each pair into two substantially equal parts, and finally standardizing each resistor thus formed by comparing its value with the value of a reference resistor and modifying the resistor by removal, in an appropriate zone, of a portion of the semiconductor material until the value of the resistor reaches that of the reference resistor.

**3,478,425**
### METHOD OF MAKING AN ELECTRICAL ASSEMBLY
**Reginald Benjamin William Cooke, Bishop's Stortford, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware**
**Filed Jan. 16, 1967, Ser. No. 609,454**
**Claims priority, application Great Britain, Jan. 31, 1966, 4,137/66**
**Int. Cl. H01b** *13/00;* **H05k** *3/00*
**U.S. Cl. 29—624** **11 Claims**



A matrix of electrical conductors which have been interconnected at selected cross points by wiring the conductors together at said cross points. After wiring, the unbonded cross points are insulated by oxidation, e.g., by anodizing the wires at the cross points to produce surface oxide insulating layers on said wires.

**3,478,426**
### ELECTRIC SCISSORS
**Oscar Greene, New York, N.Y., assignor to Name-Maker Corporation, New York, N.Y., a corporation of New York**
**Filed June 22, 1967, Ser. No. 648,108**
**Int. Cl. B26b** *15/00*
**U.S. Cl. 30—228** **7 Claims**

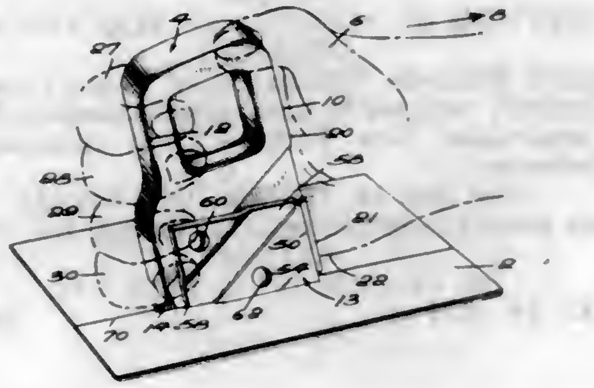


An electric scissors having a casing including a light source for illuminating a blade assembly projecting from the casing, and a depending hand guard portion arranged to cooperate with the blade assembly for guiding the scissors along a surface. The blade assembly includes a motor-driven oscillating blade and a stationary blade made appreciably longer than the oscillating blade for retaining thereon material to be cut. The stationary blade terminates in a flat blunt portion adapted to slide along the material to be cut without snagging or piercing the same.

**3,478,427**

### HANDTOOL FOR CUTTING SHEET MATERIAL

**Fred W. Tims, Jr., Stratford, Conn., assignor to The Camson Manufacturing Company, West Haven, Conn., a corporation of Connecticut**
**Filed Sept. 26, 1967, Ser. No. 670,678**
**Int. Cl. B26b** *3/08*
**U.S. Cl. 30—293 5 Claims**



A handtool for cutting sheet material such as floor covering materials and the like, is of the pull type intended to be grasped manually by the user and pulled toward the user's body in a forward direction during cutting action of the tool. The tool includes a base plate having a flat lower surface adapted to slide on and across the sheet material. An upwardly projecting handle fixedly secured to the base plate is shaped to be grasped by the user's hand with the palm thereof disposed in a generally vertical plane thumb uppermost, and with the fingers thereof clenched about the handle at the second finger joints. The cutting blade includes a forwardly and upwardly inclined, cutting edge extending through an opening in the base plate from a point spaced below the base plate. Means are provided for fixedly connecting the blade with the handle to hold the blade in cutting orientation.

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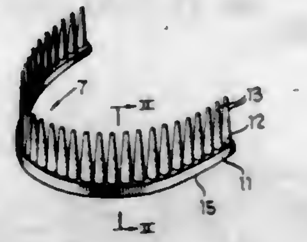
**3,478,428**

### APPARATUS FOR DENTAL MODELS

**Heinz William Stengel, 7705 Maple Ave., Gary, Ind. 46403**
**Filed Mar. 21, 1968, Ser. No. 715,060**
**Int. Cl. A61c** *13/22*
**U.S. Cl. 32—11 6 Claims**



The apparatus includes a single row of parallel oriented conically shaped teeth or guide pins. The guide pins are secured to and project from one side of an arcuately shaped, elongated retaining base, and the surface of each pin which is disposed toward the radius of curvature of the retaining base is flattened. The surface of the retaining base is developed so as to insure a permanent bond with the dental stone cast thereabout. In use, the apparatus is seated within a dental impression with the base thereof disposed toward and firmly seated within the impression. The various die stones forming the model are poured, and, after the model has hardened, a thin saw blade or other suitable cutting instrument is used to separate the model between the margins of the selected die or dies to be removed. The cut is made sufficiently deep to assure severing the retaining base. Thereafter, the cast tooth can easily be removed. The pins which project from the lower surface of the die serve as guide members for the die and assure proper orientation with respect to the remaining teeth when the die is replaced in the model.

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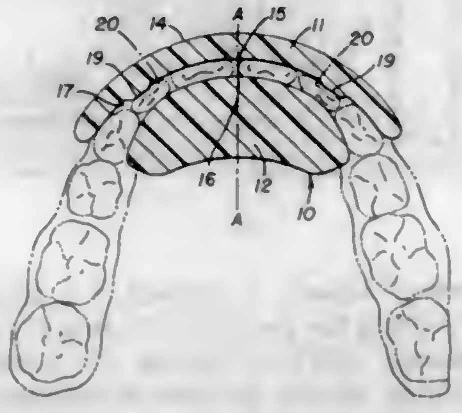
**3,478,429**

### STANDARDIZED ORTHODONTIC TOOTH-POSITIONING AND RETAINING DEVICE

**Douglas J. Shilliday, Upper Arlington, Ohio (1501 London Drive, Columbus, Ohio 43221)**
**Filed May 21, 1968, Ser. No. 730,716**
**Int. Cl. A61c** *7/00*
**U.S. Cl. 32—14 4 Claims**



A non-custom-molded, tooth-positioning and retaining device for use by persons who have previously undergone orthodontic correction; the device comprising a resiliently flexible, mouthpiece body adapted to fit over and encase the upper and lower six anterior teeth and made with standardized dimensions so as to fit the greater majority of orthodontically corrected patients.

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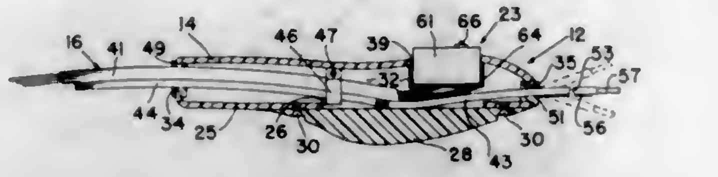
**3,478,430**

### COMBINED AIR, WATER, AND SPRAY APPARATUS FOR DENTISTRY

**Robert C. Park and Jon K. Park, both of 911 Brown Bldg., Wichita, Kans. 67202**
**Filed Sept. 19, 1966, Ser. No. 580,525**
**Int. Cl. A61c** *17/02*
**U.S. Cl. 32—28 2 Claims**



This invention is a dental handpiece to supply fluid to a desired location through the use of switch means to selectively eject air, water, or an air water spray therefrom. More particularly, this invention is an apparatus having a housing; conduit means secured to the housing to supply air, water, and electricity thereto; the conduit means having bendable discharge portions to direct air and water to a desired location; and control means having switch means to selectively regulate the flow of air and water through the discharge portions.

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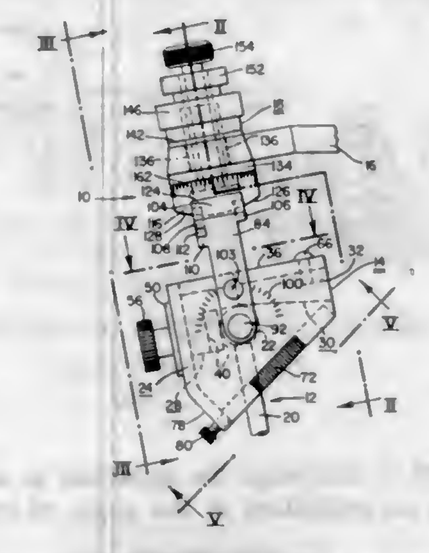
**3,478,431**

### HINGE JOINT FOR DENTAL ARTICULATOR

**Anthony J. De Pietro, 208 School Lane, Springfield, Pa. 19063**
**Continuation of application Ser. No. 729,868, Apr. 22, 1968, and a continuation-in-part of application Ser. No. 570,327, Aug. 4, 1966. This application Dec. 31, 1968, Ser. No. 789,658**
**Int. Cl. A61c** *11/00*
**U.S. Cl. 32—32 20 Claims**

A hinge-type joint for a dental articulator is provided with a hinge part in the form of a spherical element carried by the lower bow member and a hinge part carried by the upper bow member including means providing a condylar guide surface seated upon the spherical element and an abutment surface engaging the side of the spherical element. The abutment surface and the posterior part of the condylar guide surface may be adjustably fixed relative to the anterior part of the condylar guide surface.



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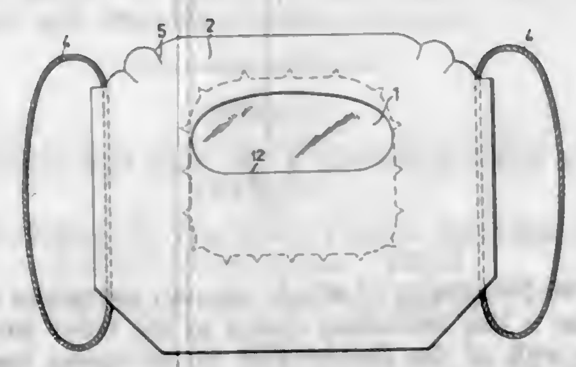
**3,478,432**

### DENTAL ARTICLES

**Carl-Axel Gross, Tandlakare, C–A Gross, Rasundavagen 68, Solna, Sweden**
**Filed June 20, 1966, Ser. No. 558,791**
**Claims priority, application Sweden, June 29, 1965, 8,591/65**
**Int. Cl. A61c** *5/00, 17/00*
**U.S. Cl. 32—35 5 Claims**



A puncturable rubber sheet has a layer of saliva and liquid-absorbing material disposed at opposite faces thereof, the edges of the rubber sheet being secured between these layers by heat sealing and using a plastic material binding agent. Each of the layers of absorbent material has a cutout formed therethrough, the cutouts being of different size and at least partly overlapping one another. Inner edges of at least one of said layers of absorbent material include portions which overlie and are unconnected with the rubber sheet to form expandable pockets with the rubber sheet to collect liquid. Resilient loop-like members are secured to opposite sides of the device and are adapted to fit about the ears of the patient for keeping the device in position. Slits are also provided in the outer edges of the layers of absorbent material for the fixation of ligature wires.

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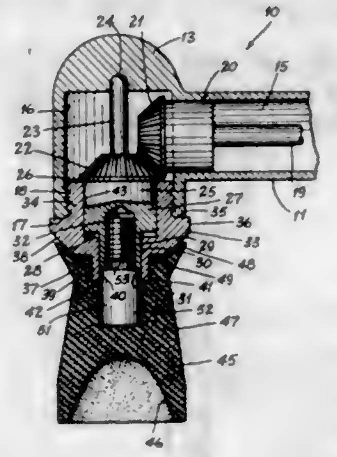
**3,478,433**

### TOOTH CLEANING TOOL

**George E. Richmond, 828 Fernview, St. Louis, Mo. 63141**
**Continuation-in-part of application Ser. No. 508,785, Nov. 19, 1965. This application Apr. 15, 1968, Ser. No. 721,288**
**Int. Cl. A61c** *3/06*
**U.S. Cl. 32—59 8 Claims**

A tooth polisher having rotating, yieldable surfaces which rub against stationary surfaces to maintain seal barriers for preventing pumice from entering the space containing moving parts in the angle member. The polisher has an annular skirt biased into rubbing contact with a cap mounted on the housing for the driving mechanism. A sleeve extending from the cap provides a second bearing seal with the polisher.



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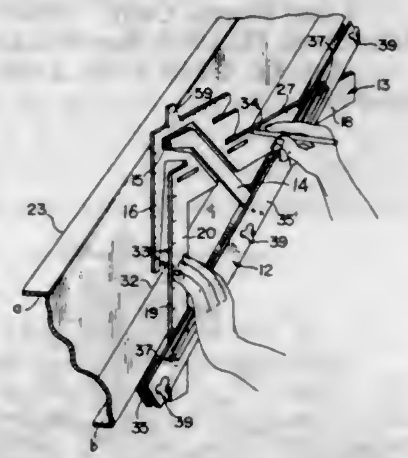
**3,478,434**

### STAIRS LAYOUT TOOLS

**Frank R. Catalano, 1230 Garrison Ave., Rockford, Ill. 61103**
**Filed Dec. 28, 1967, Ser. No. 694,179**
**Int. Cl. B43l** *7/06, 13/24*
**U.S. Cl. 33—93 19 Claims**



This tool, consisting of a T-square pivotally adjustable by the outer end of the leg thereof relative to the corner portion of a carpenter's square, can be set for a given riser dimension and a given tread dimension by the corresponding hypotenuse dimension, whereupon the cross-bar of the T-square is clamped across the two legs of the carpenter's square, the cross-bar of the T-square then being slidable along the bottom edge of a stringer for a steel stairs on which the lines are to be scribed using the carpenter's square for locating the carriers for the risers and treads. Holes in the carpenter's square are used to mark the locations of bolt holes on the stringer for fastening the same to posts at landing platforms. The tool also is used for scribing the lines for cutting off the ends of stair stringers at the proper angles to connect with platform stringers.

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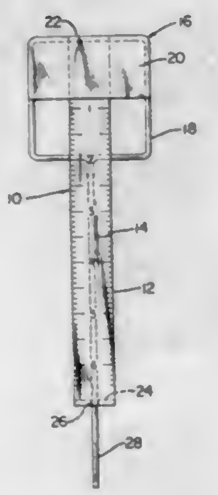
**3,478,435**

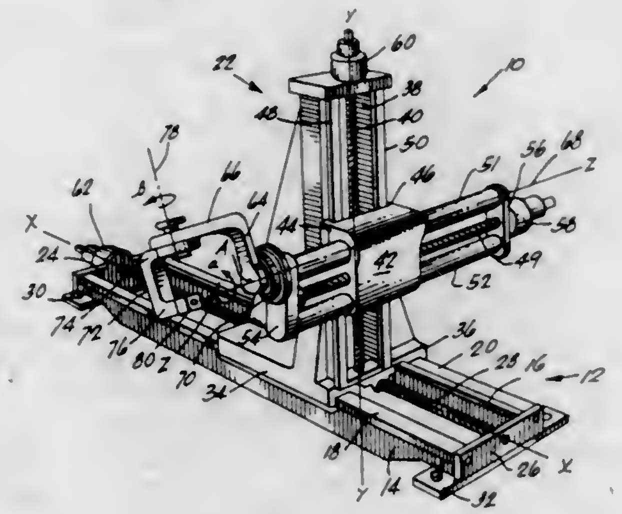
### DEPTH GAUGE FOR MEASURING THE THICKNESS OF ANIMAL TISSUES

**Edmond A. Cook, Box 926, Pine Bluffs, Wyo. 82082**
**Filed Mar. 11, 1968, Ser. No. 712,037**
**Int. Cl. G01b** *3/22, 5/02*
**U.S. Cl. 33—169 1 Claim**

A depth gauge for measuring the thickness of animal tissue layers, such as, layers of fat and muscle or lean tissue, comprising a scale, and a cursor slidably mounted thereon having a probe attached thereto for penetrating the layer of animal tissue to be measured, the cursor having an indicator cooperating with the scale to indicate the depth of penetration of the probe. An improvement is the use of a cannula for seating in the animal skin to provide a conduit in the skin through which the probe operates.



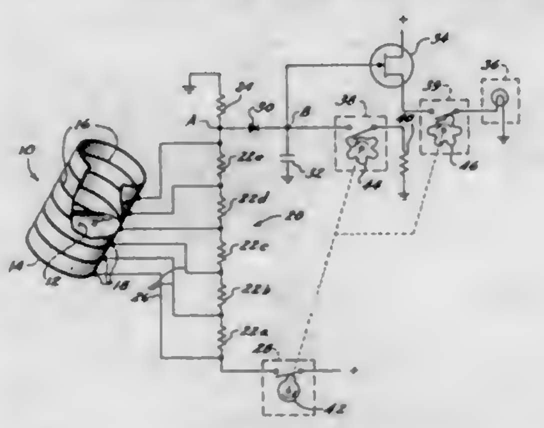
### 3,478,436
### JIG MASTER
**Clair E. Barnes, 4525 Keever Ave.,**
**Long Beach, Calif. 90807**
**Filed Aug. 22, 1967, Ser. No. 662,387**
**Int. Cl. G01b** *5/00, 3/00*
**U.S. Cl. 33—170** **2 Claims**



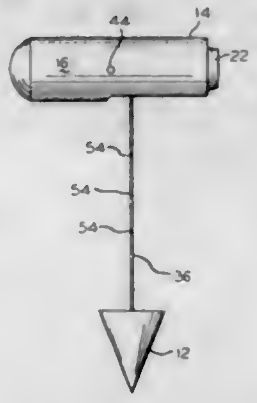
In a machine having X, Y, Z, Alpha and Beta axes settings, the specific correlation of the Alpha and Beta axes with the Z-axis so the center point of the operating head is always maintained at the intersection of the Alpha and Beta axes.

### 3,478,437
### INCLINOMETER
**Wade R. Cothran, Arlington County, Va., assignor to The Susquehanna Corporation, a corporation of Delaware**
**Filed July 5, 1967, Ser. No. 651,244**
**Int. Cl. G01c** *9/02, 9/10*
**U.S. Cl. 33—206** **7 Claims**

One embodiment of the inclinometer utilizes a potentiometer in which one or more sections are shorted-out or bypassed by an inclinable mercury switch to vary the resistance of the potentiometer. The potentiometer output voltage is applied to a storage capacitor. Thereafter, this capacitor is incrementally discharged. The number of steps needed to discharge the capacitor to a preset threshold level is an indication of the angle of inclination.

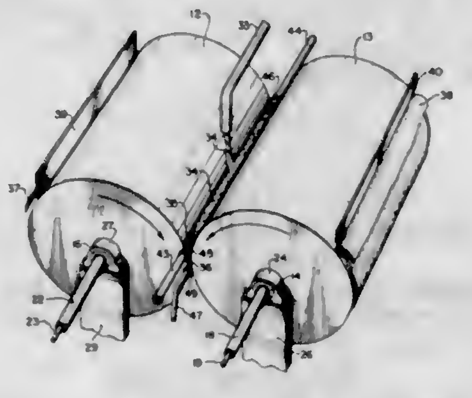


### 3,478,438
### POCKET TYPE RETRACTABLE PLUMB-BOB AND CASING
**Edward Lazar, 7623 Kildare Ave., Skokie, Ill. 60076**
**Filed Nov. 20, 1967, Ser. No. 684,197**
**Int. Cl. G01c** *15/10, 9/00*
**U.S. Cl. 33—217** **3 Claims**



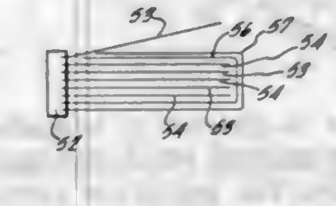
A two-part casing of which one part comprises a plumbbob has a line retraction means in the other part; a slot in the wall of the second part of the casing opening to the end thereof enables the bob to be used with the casing held in various positions and also insures a tight press-fit between the two parts of the casing.

### 3,478,439
### DRUM DRIER IMPROVEMENT
**Roy G. Hyldon, Crystal Lake, Ill., assignor to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey**
**Filed Apr. 2, 1968, Ser. No. 718,092**
**Int. Cl. F26b** *13/18*
**U.S. Cl. 34—114** **5 Claims**



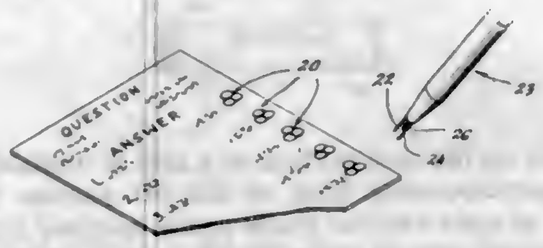
An improvement for a rotating, double-drum drier comprising one or more gas discharging means located above the ends of the drums with the gas discharging means being set to direct a gas toward the middle of the drums in order to force a material placed in the trough of the drier away from the ends of the drier drums.

### 3,478,440
### TEACHING DEVICE
**Ralph W. Ritchie and Fern Joan Ritchie, 318 E. Bonnie Brae Court, and Miriam G. Piequet, 1551a Dahlia Court, all of Ontario, Calif. 91762**
**Filed Sept. 26, 1966, Ser. No. 582,056**
**Int. Cl. G09b** *3/00*
**U.S. Cl. 35—9** **7 Claims**



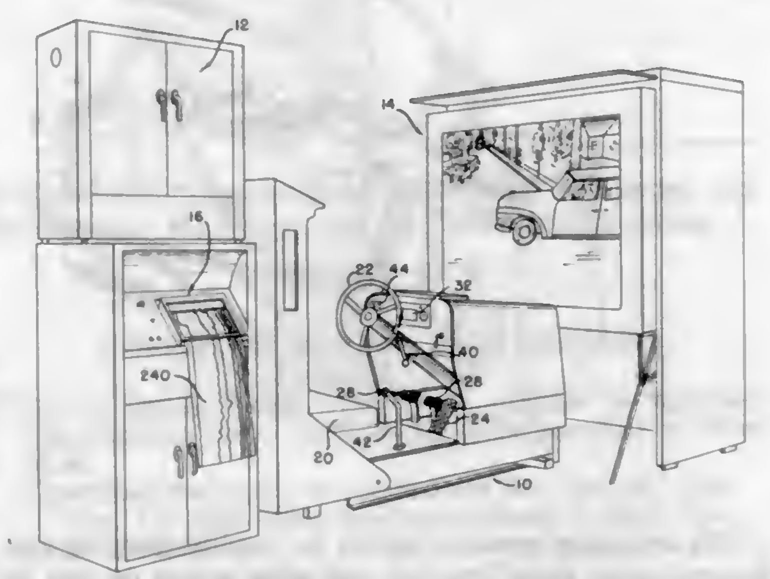
A teaching device in which one or more colored filter sheets are used selectably to conceal answer information on an underlying question sheet. A student writes his answer on the filter sheet or on an overlying transparent sheet, and the filter sheet is then lifted or slipped off the question sheet to reveal the correct answer for comparison to the student's response. Use of several filter sheets adapts the device to multi-part questions. In one form, the sheets are bound in book form to provide a convenient and reusable teaching system.

### 3,478,441
### TEACHING AID FOR SELF INSTRUCTION AND TESTING
**Ernest A. Zadig, % The Zadig Patents, P.O. Box 561, South Norwalk, Conn. 06856**
**Filed Dec. 5, 1967, Ser. No. 688,192**
**Int. Cl. G09b** *7/06*
**U.S. Cl. 35—9** **10 Claims**



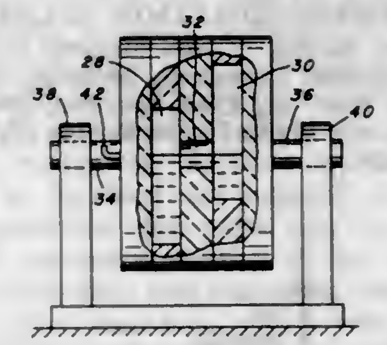
A teaching aid which in one form may be used on a trial and error basis for self-instruction and simply self testing in connection with a question and plural or multiple choice answers, and, in a modified form may be used for testing in a more sophisticated way and scoring by differential counter means. In the first form a stylus with three contact points gives different signals indicating an incorrect selection of answer as well as a correct selection of answer. Optionally, for simple self testing and preventing repeated selection of the same answer, the question sheet comprising a test contact strip for each question may be marked and progressively destroyed as each selection is made. In the second form counting means of known kind may be actuated to keep score, preferably giving a total score which is the aggregate of correct and incorrect answer selections, and optionally the test sheet may also be destroyed progressively as each selection is made.

### 3,478,442
### SIMULATOR
**Anatolijus Jazbutis, Syracuse, and Richard T. Swanson, Lakewood, N.Y., assignors, by mesne assignments, to Aetna Casualty and Surety Company, a corporation of Connecticut**
**Filed Nov. 21, 1963, Ser. No. 325,257**
**The portion of the term of the patent subsequent to Nov. 18, 1983, has been disclaimed**
**Int. Cl. G09b** *9/02*
**U.S. Cl. 35—11** **8 Claims**



The invention disclosed herein provides a novel means by which an operator of an automotive vehicle simulator can be tested. The simulator is equipped with two types of gearshifts, one is mounted on the steering column and the other is mounted on the floor. Conversion from one to the other can be quickly and efficably accomplished. The two types of gearshifts are adapted to develop response signals which are functionally indicative of the correctness of the gearshift manipulation by the operator.

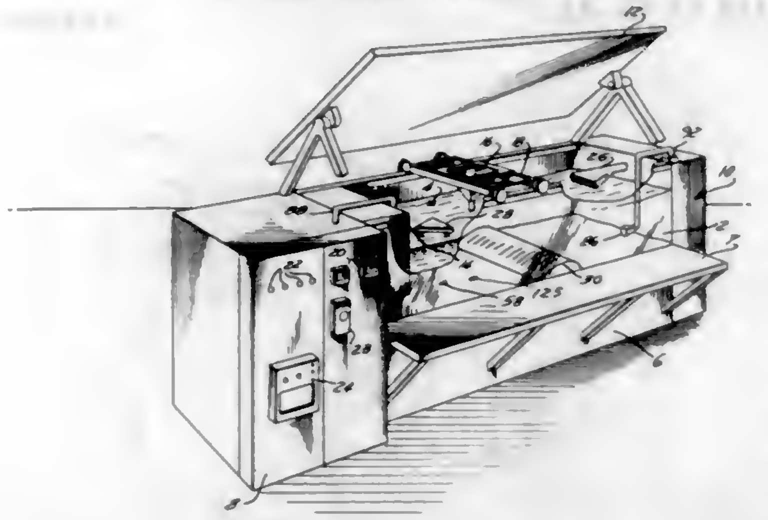
### 3,478,443
### TEACHING DEVICE
**Paul Imris, 507 Pittsburgh St.,**
**Springdale, Pa. 15144**
**Filed Nov. 16, 1967, Ser. No. 683,580**
**Int. Cl. G09b** *23/06;* **A63h** *29/10;* **G01f** *15/06*
**U.S. Cl. 35—19** **9 Claims**



This patent discloses a device useful in the teaching of physics. It comprises a pair of vessels, substantially in the form of congruent equilateral triangular prisms, so arranged that the centers of gravity of the triangular base are collinear, with a conduit connecting the two chambers in the vicinity of the line containing the above-mentioned centers of gravity. The apices of the triangles forming the bases of one chamber are not aligned with the corresponding apices of the triangles forming the bases of the other chamber; rather, the first apices are displaced by 60° with respect to the second. Means are provided for adapting the vessel to be rotated about the common line containing the above-mentioned centers of gravity. Liquid is provided in the amount required to fill one of said chambers and half of said conduit.

### 3,478,444
### OCEAN CURRENT AND WAVE GENERATOR

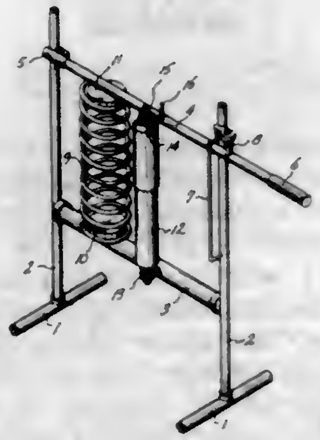
**Carlton E. Presnell, Pasadena, and Guido Z. Zemgals, San Gabriel, Calif., assignors by mesne assignments, to the United States of America**
**Filed Nov. 28, 1967, Ser. No. 686,231**
**Int. Cl. G09b** *23/06;* **G01m** *9/00*
**U.S. Cl. 35—19** **10 Claims**



This invention provides means for readily studying and demonstrating wave, current, and wind action on and in a body of water, which were lacking in the prior art. Such means are provided in the form of a liquid filled glass fronted tank containing a plenum chamber which is connected to a pneumatic compressor and valving system to generate wave action in the liquid. Additional compressors and a pump, together with connecting ducts and plumbing, are provided to generate wind, tide and current effects. Models of marine structures and/or natural formations may be locked in the tank magnetically for studies and demonstrations. Means for introducing particles and/or dyes into thte tank are provided for demonstrating currents, aggredation and degradation of the ocean floor, and mass transport, as of sand and other materials. The tank may be expanded and/or the bottom surface contour altered readily by the use of the models.

### 3,478,445
### SHOCK ABSORBER PERFORMANCE DEMONSTRATION STAND

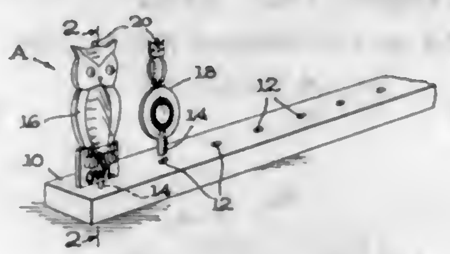
**Loyd McAfee, Seattle, Wash., assignor to Monroe Auto Equipment Company, Monroe, Mich.**
**Filed Nov. 23, 1966, Ser. No. 596,564**
**Int. Cl. G09b** *25/00;* **G01m** *17/04*
**U.S. Cl. 35—49** **4 Claims**



A shock absorber demonstration stand comprising a frame and a movable lever arm and a spring, the frame adapted to support a shock absorber, the shock absorber being compressed upon preselected movement of the lever arm so as to demonstrate the operation of the shock absorber.

### 3,478,446
### EDUCATIONAL AND RECREATIONAL LESSON AID PIXX GAMES WITH PEGBOARDS

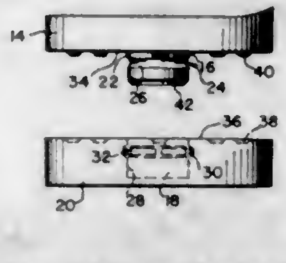
**Lulu A. McCutcheon, Oakland, Calif.**
**(General Delivery, Washington, D.C.)**
**Filed Apr. 28, 1967, Ser. No. 634,564**
**Int. Cl. A68b** *33/00;* **G09b** *1/06*
**U.S. Cl. 35—73** **12 Claims**



This invention is directed to educational and recreational lesson aid material which utilizes both mental and physical processes. The games are particularly useful in imparting information and instruction embracing the three R's and many other subjects to novice, retarded, deaf and other young and old people, as well as being susceptible to successful social enjoyment by players of all ages. The game presents a large and distinctive variety of combination pictorial, digital and alphabetical letters, symbols or characters and the like in various design and/or card form adaptable for both visual study and physical manipulation in conjunction with a variety of pegboard or other supports, to develop new abilities and desires on the part of the users to learn the various concepts herein.

### 3,478,447
### SHOE HEEL WITH ROTATABLE LIFT

**J. Foster Gillead, 270 Convent Ave., New York, N.Y. 10031**
**Filed May 27, 1968, Ser. No. 732,118**
**Int. Cl. A43b** *21/36, 21/24*
**U.S. Cl. 36—36** **8 Claims**

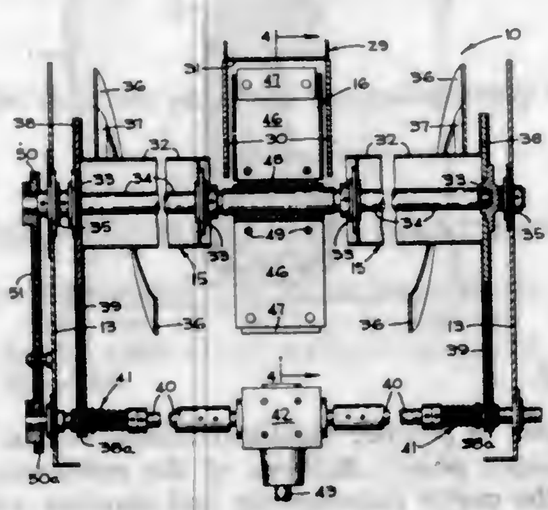


A pin on the base portion of a heel is rotatably retained in a corresponding bore of the lift portion by a wire spring of open annular shape partly received in respective annular grooves of the walls of the bore and of the pin, and the pin may be withdrawn when the spring is deflected into the groove of the lift portion by an obliquely inclined cam face which bounds the groove of the base portion. A click stop arrangement arrests the lift portion in several angular positions under the pressure of the spring on the cam face.

### 3,478,448
### SNOW CASTER

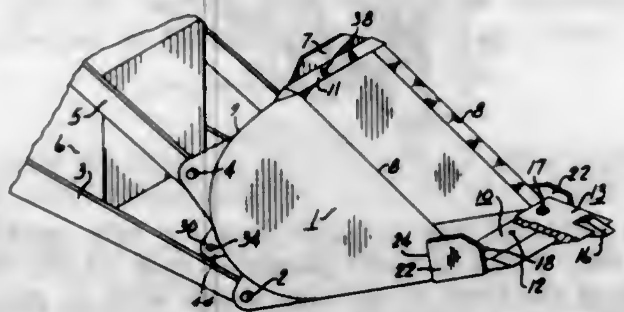
**Roger J. Bacon, Port Washington, Wis., assignor to FMC Corporation, San Jose, Calif., a corporation of California**
**Filed Apr. 28, 1967, Ser. No. 634,659**
**Int. Cl. E01h** *5/09;* **B65g** *53/48*
**U.S. Cl. 37—43** **5 Claims**

A machine for removing snow that employs a scoop-shaped shield movable through the snow with its open end forward. A rotatable shaft mounted transversely in said shield, a pair of ribbon-type augers mounted for rotation on said shaft, an impeller fixed to the center of said shaft coaxially with and between said augers, an impeller housing extending outwardly from within said shield and overlying said impeller, a pair of semicircular baffle plates forming portions of the sides of said impeller housing and extending between said impeller and said augers so that 40 percent of the side ingress to said impeller is blocked, means for rotating said impeller at a speed seven times the rotational speed of said augers, at a predetermined forward shield speed the capacities of said augers and said impeller having the relationship of $I=A+Y$ where I equals the total capacity of the impeller, A equals the amount of snow that the augers move into the impeller and Y is the amount of snow fed directly into the impeller due to the forward movement of the shield, but wherein the total capacity of the augers is greater than the quantity A and part of their capacity is blocked by said baffles and recirculated as a quantity X.



### 3,478,449
### EXCAVATING BUCKET DIGGING BLADE

**Alfred Baker, 28 Sharp Ave., Washington, Pa. 15301**
**Filed Feb. 7, 1967, Ser. No. 614,471**
**Int. Cl. E02f** *3/74, 3/81, 9/28*
**U.S. Cl. 37—141** **12 Claims**

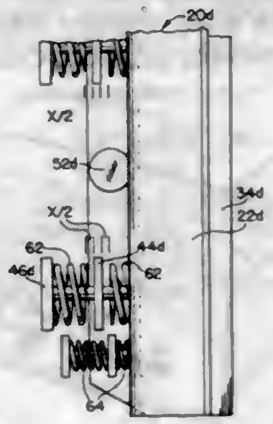


An excavating bucket digging bar having spaced forwardly projecting teeth and a rearwardly facing under pocket to mate over the bucket cutting bar when tightly secured in clamped relation to reinforce the digging bar when in use and pivotally carried by the bucket to swing to a locked position at the top of the bucket to function as a splash bar and add its weight to aid in the action of the bucket cutting bar.

### 3,478,450
### EARTH MOVING APPARATUS WITH VIBRATING CUTTING EDGE

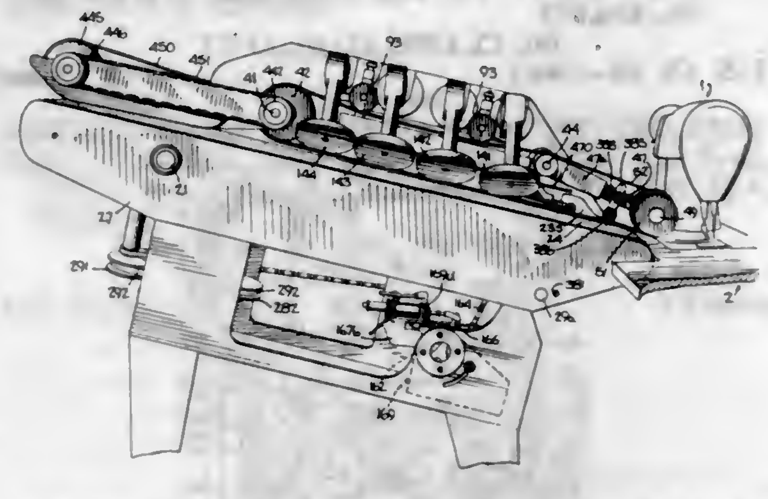
**Ernest R. Cunningham, Libertyville, Ill.**
**(8501 W. Higgins Road, Chicago, Ill. 60631)**
**Filed Oct. 18, 1967, Ser. No. 676,110**
**Int. Cl. E02f** *3/76*
**U.S. Cl. 37—141** **15 Claims**

An earth moving shell for construction equipment having cutting blade means vibrated through a frequency range including a natural frequency, but limited in the amplitude of its vibratory excursions to obtain an efficient method of dislodging and moving compacted materials which are engaged by said cutting blade means.



### 3,478,451
### COMBINED SEWING AND IRONING MECHANISM

**Victor J. Sigoda, Great Neck, N.Y., assignor to Man-Sew Corporation, New York, N.Y., a corporation of New York**
**Continuation-in-part of application Ser. No. 481,522, Aug. 23, 1965. This application June 5, 1967, Ser. No. 643,458**
**Int. Cl. D06f** *69/02, 27/00*
**U.S. Cl. 38—10** **48 Claims**

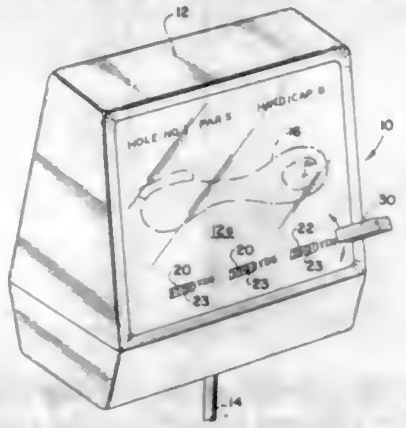


Ironing mechanism for use independently or with a sewing machine in which the ironing members are retractable pods which engage a moving, thin, heat transfer belt, and a floating buck. The buck has a moving internal belt in contact with the fabric and which is driven in unison with the heat transfer belt by pressure exerting, driven rollers. Transversely shiftable and swivellable inserts mounted in the buck are adapted to compensate for fabric irregularities. The buck also has an internal lip which limits transverse shifting of the inserts in one direction. The mechanism also includes a prepuller having magnetically coupled feed discs, and a post puller which stretches the freshly ironed fabric as a cooling air blast sets the fabric. Steam applied to the fabric is supplied from a circulating system having condensation reducing features, and a steam heated radiator preheats the transfer belt.

### 3,478,452
### VISUAL AID FOR GOLF

**Robert E. Bidwell, 27 Montrose Place, Huntington, N.Y. 11743, and Sidney Mishkin, 130 Chestnut Drive, Roslyn, N.Y. 11576**
**Filed Dec. 7, 1967, Ser. No. 688,946**
**Int. Cl. G09f** *11/04;* **A63h** *33/26*
**U.S. Cl. 40—68** **10 Claims**

A tamper-proof visual indication device for a golf course to be located at each tee comprising an enclosed housing containing a three-dimensional representation of the particular golf hole and a changeable yardage marker. The yardage marker comprises numbered wheels with a magnet associated with each number which may be viewed when moved to a viewing position. Control of the rotation of the wheel and thus of the positioning of the numbers is effected by a permanent magnet completely separate from the device housing. A holding magnet holds the wheel in a fixed position in the absence of the control magnet.



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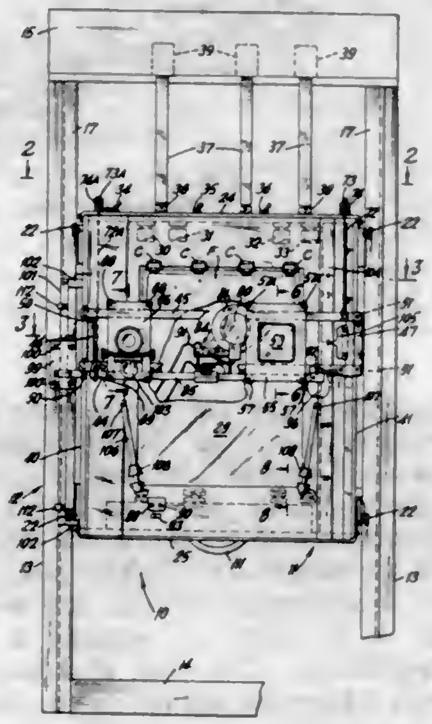
### 3,478,453
### X-RAY FILM ILLUMINATOR

**Ralph Howard Brodsky, 14 E. 81st St.,**
**New York, N.Y. 10028**
**Continuation-in-part of application Ser. No. 575,309, Aug. 26, 1966. This application Mar. 4, 1969, Ser. No. 806,019**
**Int. Cl. G09f** *13/10, 13/12*
**U.S. Cl. 40—106.1** **4 Claims**



An X-ray film illuminator having means for viewing X-ray film under precision conditions, including scanning magnifier means movable to any desired viewing position; and combined fixed and movable illuminating means for obtaining precision illumination of selected portions of the film being viewed.

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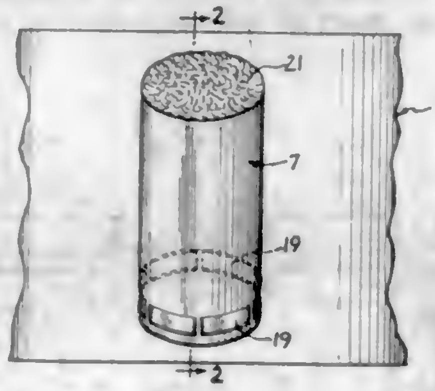
### 3,478,454
### DISPLAY DEVICE

**William M. Swartz, 1430 W. Wrightwood Ave.,**
**Chicago, Ill. 60614**
**Filed May 15, 1967, Ser. No. 638,275**
**Int. Cl. G09f** *19/12;* **B44f** *7/00*
**U.S. Cl. 40—126** **4 Claims**

A display device comprises two sheets having designs that are embossed in opposite directions and are placed together to make up a three-dimensional object having an actual depth less than the illusory depth. One of the designs may be sufficiently transparent to permit observation of the other design therethrough. The embossings are shaped to produce highlights comparable to those on a full depth object. Portions of the embossings extend across the cavity therebetween and simulate surfaces in perspective.



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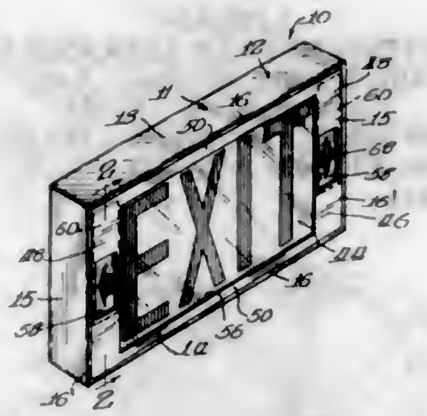
### 3,478,455
### SIGNS

**Robert S. Fremont, Glencoe, Ill., assignor, by mesne assignments, to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware**
**Filed May 24, 1967, Ser. No. 640,857**
**Int. Cl. G09f** *13/04, 13/06, 9/00*
**U.S. Cl. 40—132** **4 Claims**



A universal sign for indicating the exit, entrance, or the like, which includes means at each of the opposite ends of the front of the sign which serve as directional indicators and which are movable into viewing and nonviewing position.

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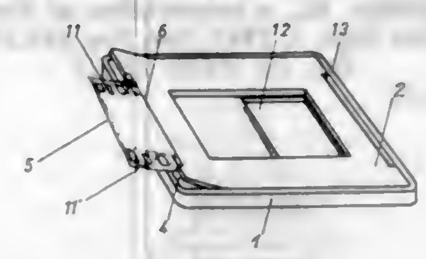
### 3,478,456
### UNITARY SLIDE FRAME

**Peter Mundt, Garmisch-Partenkirchen, and Otfried Urban, Kochel am See, Germany, assignors to Geimuplast Peter Mundt KG, Farchant, Germany**
**Filed Apr. 22, 1968, Ser. No. 723,198**
**Claims priority, application Germany, Apr. 27, 1967, G 49,947**
**Int. Cl. G09f** *1/12, 13/10*
**U.S. Cl. 40—152** **6 Claims**

This invention relates to a unitary slide frame consisting of plastics material, preferably free of glass, and having at least one resiliently expandable, lateral insertion slot. A relatively thin cover is connected to the other part of the frame at a distance from the insertion slot and both frame edge portions disposed laterally of the path in which the picture portion of the transparency is inserted have run-up ramps in the insertion path within the slot so that the transparency lifts the cover and thus widens the insertion slot while the transparency is being inserted.



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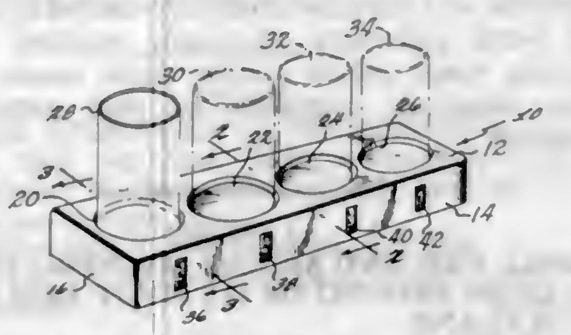
### 3,478,457
### FAMILY DRINKING GLASS IDENTIFYING SUPPORT

**Laverne L. Watkins, 2205 Belair Drive, Bowie, Md.**
**Filed Nov. 13, 1967, Ser. No. 682,288**
**Int. Cl. G09f** *11/02;* **A47b** *73/00, 81/04*
**U.S. Cl. 40—324** **5 Claims**



A support for family drinking glasses is disclosed which includes a housing having a plurality of flat-bottomed depressions therein for positioning and supporting drinking glasses, a front wall which includes a plurality of apertures therethrough in corresponding juxtaposition to the depressions in the top of the housing, a plurality of relatively disposed wheels mounted in the housing having indicia on the periphery thereof and means for supporting and selectively positioning the wheels such that selected sets of indicia may be displayed through each of the apertures so as to identify the glass supported in the depression as belonging to a particular person.

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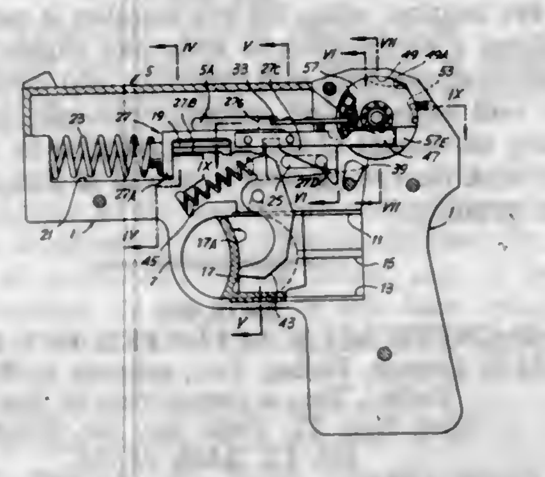
### 3,478,458
### TOY GUN HAVING A CYLINDRICAL MAGAZINE FOR ACCOMMODATING A STRIP OF CUP-LIKE CAPS

**Giampiero Ferri, Via Stoppani 38, Florence, Italy**
**Filed Oct. 6, 1967, Ser. No. 673,488**
**Claims priority, application Italy, Oct. 10, 1966, 26,063/66, Patent 777,893**
**Int. Cl. F41c** *3/08, 3/06*
**U.S. Cl. 42—57** **8 Claims**



A toy gun includes a magazine in which a roll of cup-like caps can be loaded. The magazine is detachable from the gun in one embodiment and in another embodiment forms part of the gun itself. In both embodiments the caps are indexed successively to a firing position and the firing pin is rigid with a part which has the effect of angularly indexing the magazine to the next cap.

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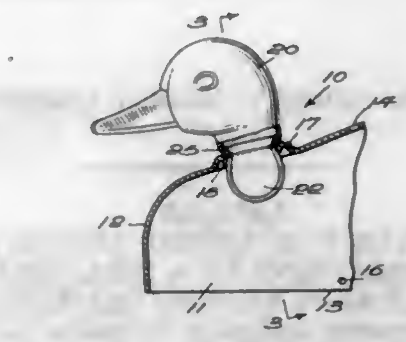
### 3,478,459
### DECOY

**John J. Gazalski, P.O. Box 937,**
**Henryetta, Okla. 74437**
**Filed Aug. 14, 1968, Ser. No. 752,587**
**Int. Cl. A01m** *31/06*
**U.S. Cl. 43—3** **4 Claims**



A decoy has a plastic shell body formed with a flanged opening. A hollow head member has a depending bulbous bifurcated neck portion which is compressible and is snap-fitted in the opening to provide a swivel connection between the body and head.

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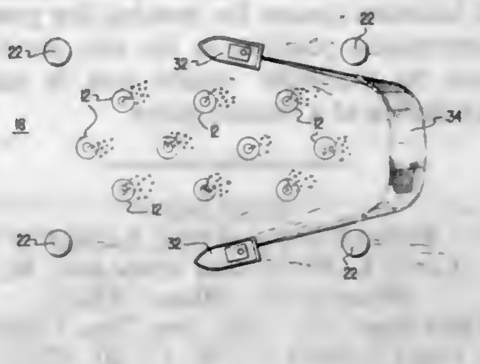
### 3,478,460
### METHOD OF ATTRACTING AND NETTING FISH

**Harry E. Kimble, 2109 Juniper Road, Knoxville, Tenn. 37900, and Paul W. Reinhardt, Rte. 3, Box 92A, Kingston, Tenn. 37763**
**Filed Nov. 20, 1967, Ser. No. 684,429**
**Int. Cl. A01k** *79/00, 75/00*
**U.S. Cl. 43—4.5** **4 Claims**



A method of attracting and netting fish comprising the steps of oxygenating a zone or volume of water by placing a plurality of oxygen generators therein to attract fish thereinto and, thereafter, netting the fish attracted to the oxygenated zone.

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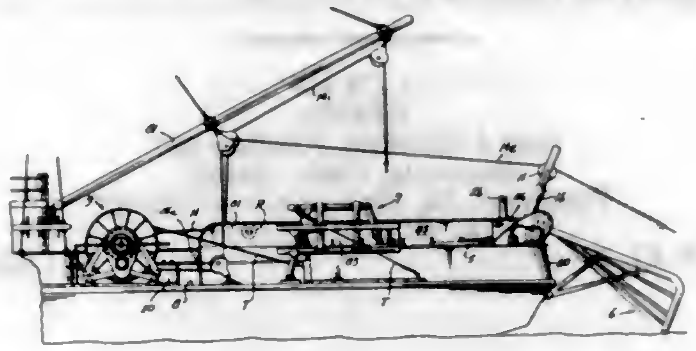
### 3,478,461
### HANDLING OF A NET AND ITS CATCH ABOARD A TRAWLER

**Frank J. Luketa, Seattle, Wash., assignor to Robbins, Felix & Robbins, Seattle, Wash.**
**Division of application Ser. No. 394,644, Aug. 6, 1964, now Patent No. 3,257,008, which is a division of application Ser. No. 215,041, Aug. 8, 1962, now Patent No. 3,184,080, which in turn is a continuation of application Ser. No. 859,389, Dec. 14, 1959. This application June 20, 1966, Ser. No. 558,917**
**Int. Cl. A01k** *73/06, 73/02*
**U.S. Cl. 43—8** **11 Claims**

A stern ramp trawler is provided with a stern mounted fish receiving and sorting trough and a net winch positioned forwardly of the trough. A transverse roller is positioned rearwardly of the winch and elevates the forward end of the codend to facilitate spilling the fish into the trough.



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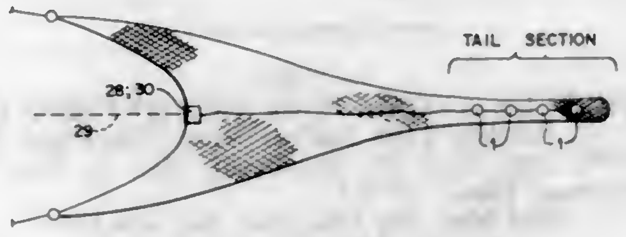
### 3,478,462
### APPARATUS FOR ASCERTAINING LOAD CONDITIONS IN A DRAGNET

**Hagen Herbst, Eckhart Kleedehn, and Herbert Pietrucha, Wolgast, Germany, assignors, by mesne assignments, to VEB Funkwerk Kopenick**
**Filed Mar. 18, 1966, Ser. No. 535,388**
**Int. Cl. A01k** *73/10*
**U.S. Cl. 43—9** **15 Claims**



Apparatus for ascertaining the load conditions in a fishing net includes means for sensing the presence of fish at a predetermined position in the net. An output signal is produced by oscillator means and is communicated to a display device at a remote point.

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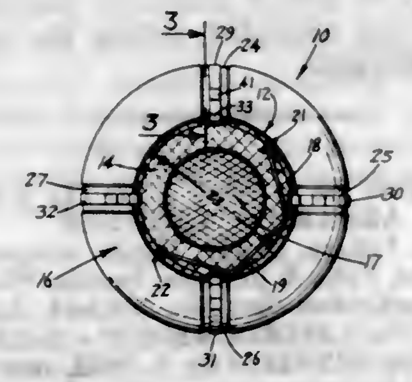
### 3,478,463
### FLOATABLE FISH BASKET

**Lewis L. Ruter, 218 26th Ave. N., Minneapolis, Minn. 55411**
**Filed Sept. 19, 1968, Ser. No. 760,913**
**Int. Cl. A01k** *63/00, 71/00, 97/00*
**U.S. Cl. 43—55** **10 Claims**



A collapsible wire fish basket having a funnel-shaped inlet ring releasably fastened to an annular floatation collar. The ring is partly supported on an inner peripheral annular portion of the floatation collar.

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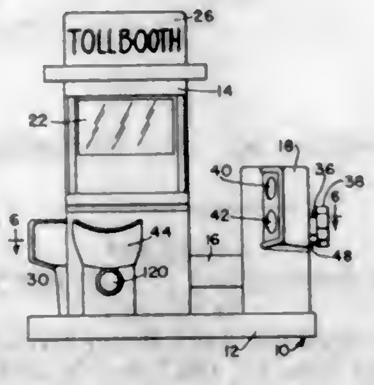
### 3,478,464
### TOY TOLL BOOTH

**Mel Appel, Livingston, N.J., assignor to Buddy L Corp., East Moline, Ill., a corporation of Delaware**
**Filed Sept. 5, 1967, Ser. No. 665,555**
**Int. Cl. A63h** *29/22*
**U.S. Cl. 46—12** **20 Claims**



A toy useful for the simulated toll regulation of toy vehicular, etc. traffic and including a power operated extendible and retractable toll gate carried by a simulated toll booth preferably electrically operated and incorporating visual and/or audible signal means, the whole being selectively controlled by push button or coin operation.

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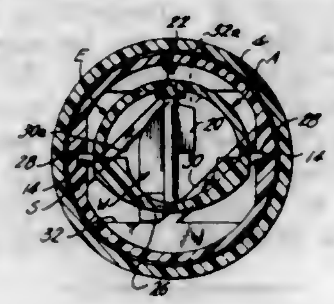
### 3,478,465
### DOLL EYE AND MEANS PIVOTING THE EYE UPON MOVING OF ITS PIVOT AXIS WITHIN A PLANE

**John H. Wilhelm, Newark, N.J., assignor to Marjon Corporation, Newark, N.J., a corporation of New Jersey**
**Filed Mar. 19, 1964, Ser. No. 353,053**
**Int. Cl. A63h** *3/40*
**U.S. Cl. 46—169** **14 Claims**



1. A doll eye assembly comprising a support, an eye member pivotally mounted on said support for pivotal movement thereon about a horizontal axis between eye open and closed conditions, a weight pivotally mounted on said eye member for pivotal movement relative to said eye member about a vertical axis between a vertical pendant position and a side-tilted position, means associated with said support for restraining said pivotal movement of the eye member when the eye member is moved between positions corresponding to erect and supine positions, of a doll equipped with said assembly, and means associated with said support, and coacting with said weight for effecting movement of the eye member to its closed condition when the eye member is moved to a supine and side-tilted position.

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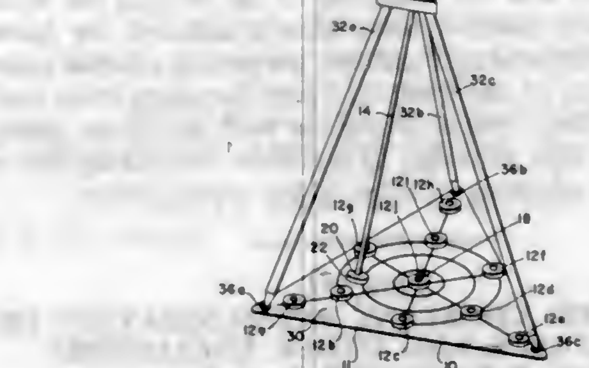
### 3,478,466
### MAGNETICALLY ACTUATED TOY DEVICE

**David C. Conner, Dallas, Tex., assignor to Rathcon, Inc., Dallas, Tex., a corporation of Texas**
**Filed Dec. 17, 1968, Ser. No. 784,302**
**Int. Cl. A63h** *33/26*
**U.S. Cl. 46—236** **10 Claims**

A magnetically actuated toy device wherein a plurality of magnets are positioned on a base in a desired pattern. A rigid pendulum element is supported at one end for universal movement and has a magnet at the other end. The movement of the pendulum is determined by the interaction of the magnetic field of the magnet connected to the free end of the pendulum and the magnetic field of magnets positioned on the base.



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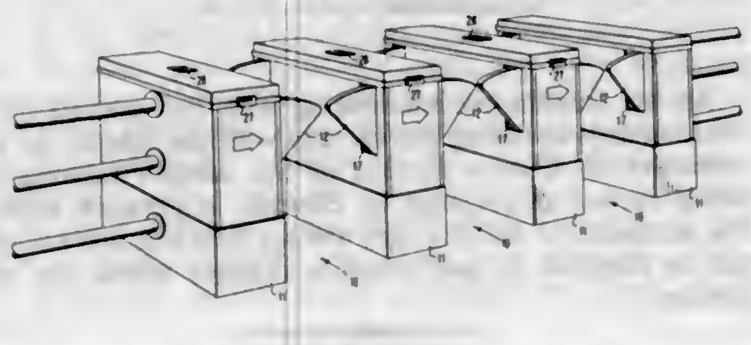
### 3,478,467
### FARE OPERATED GATE ASSEMBLY

**Gordon H. May, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed May 3, 1967, Ser. No. 635,894**
**Int. Cl. E05b** *65/00;* **E01f** *13/00*
**U.S. Cl. 49—35** **4 Claims**



A fare-operated gate assembly is provided for controlling ingress of egress through a pedestrian passageway. One or more relatively-thin, planar gates are mounted in a console immediately adjacent a passageway. The gates are supported for movement in vertical planes extending normal to the adjacent passageway. Each gate is selectively extended from or withdrawn into the console to block or open the associated passageway.

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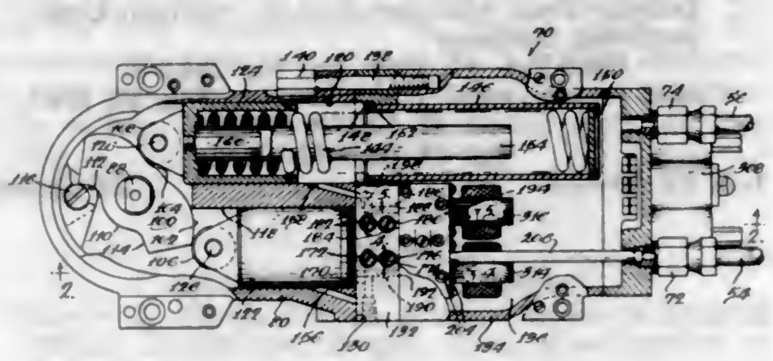
### 3,478,468
### AUTOMATIC DOOR OPERATOR

**Paul W. Martin, Des Plaines, Ill., assignor to Republic Industries, Inc., Chicago, Ill., a corporation of Illinois**
**Filed July 29, 1968, Ser. No. 748,529**
**Int. Cl. E05f** *15/02*
**U.S. Cl. 49—137** **11 Claims**

A door operator of the hydraulic automatic type with a wide range of adaptability to different situations by the interchange of accessories to the major unit or units. Situations provided for are right or left door swinging, power opening with spring closing including hydraulic damping, power opening with power closing including power hold closed with spring closing and spring hold closed as a failsafe feature. Also provided is adaptability to single or multiple unit pump use and continuous or intermittent pump operation. Safety features are provided to prevent injury to persons passing improperly and to prevent obstruction of door way in the event of power failure, and optionally a traffic sensor may be provided with the continuous running pump option to shift the pump mechanism to intermittent operation when traffic density is light.



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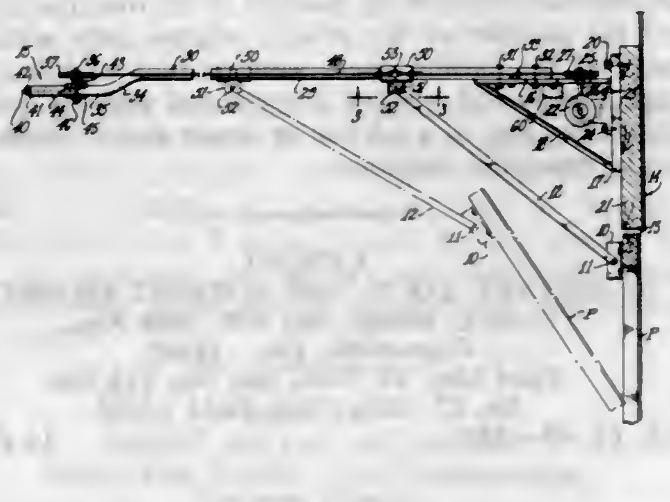
### 3,478,469
### DOOR MOVING MECHANISM

**Cyrus L. Estes, 15118 S. Budlong Ave., Gardena, Calif. 90247**
**Filed July 2, 1968, Ser. No. 741,979**
**Int. Cl. E05d** *15/22*
**U.S. Cl. 49—199** **10 Claims**



Remote-operable shuttle mechanism can be coupled to movable panel or door to open and close same as by remote control; usable for example with overhead garage-type doors, or paired closures swingable on vertical hinges, or horizontally slidable upright panels, louvers, etc. A generally straight track formed of cylindrical bar or tube stock carries one axially slidable collar for each door, each collar being fixed to a closed-loop cable which cable spacedly lies along opposite sides of the track. The cable is alternately drawn in one direction or the other by a reversible electric gear motor so as to move the collar reciprocably along the track. Each collar is also pivotally connected to a movable panel—by a pull rod for overhead door, in which case the track is located above and horizontally perpendicular to closed position of door when the latter is upstanding; when the track is parallel to the closed position of pair of upright side-hinged swinging doors, each door is lever-attached to a different slide collar on the same track. For sliding doors, collar on parallel, overhead track is attached to top of door which slides or rolls in lower channel. Motor control means are operable at will by each of radio signal, by limit means carried on cable, or manual switch, and include solenoid-operated ratchet-drum relay unit carrying succession of contact lugs which are programmed for continuous sequence of start, stop, reverse, stop, start, stop, etc., of motor.

### 3,478,470

### ACTUATING MECHANISM FOR A PIVOTAL WINDOW OF A MOTOR VEHICLE

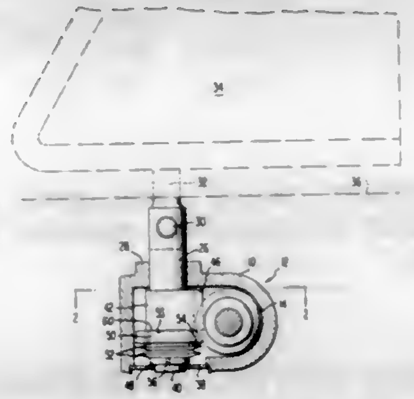
**Rudolf Andres, Sindelfingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**

**Filed Feb. 16, 1968, Ser. No. 706,078**

**Claims priority, application Germany, Feb. 18, 1967, D 52,329**

**Int. Cl. E05f** *11/34*

**U.S. Cl. 49—337** **25 Claims**



An actuating mechanism for a pivotal window of a vehicle which is pivoted by a rotatable element actuated by a passenger from within the passenger space, whereby the rotatable element is connected to the pivotal window by way of a self-locking reduction gear that is so arranged and constructed that it produces an unequivocal angular coordination between the position of the rotatable element and the position of the pivotal window only within the range of the closing angle while outside of this closing angle, the pivotal window is connected with the rotatable element by way of a friction or detent clutch whose force can be manually overcome.

### 3,478,471

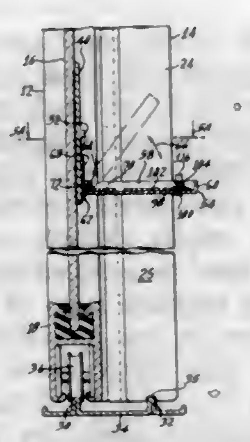
### AUXILIARY LOCK FOR SLIDING MEMBERS

**Keith L. Hodge, 205 NW. 10th Ave., Gainesville, Fla. 32601**

**Filed Mar. 13, 1968, Ser. No. 712,700**

**Int. Cl. E05c** *7/00;* **E05d** *13/00*

**U.S. Cl. 49—149** **14 Claims**



An attachment for use in combination with a structural closure having front and rear planar sliding members within a frame, the rear member being slidable or fixed in the closure along a first plane and the front member being slidable in the closure closely adjacent the rear member and along a second plane parallel to the first plane. The attachment includes an elongated locking bar extending in a generally horizontal direction substantially the width of the rear member and an elongated plate connectable to the rear member and extending substantially the width of the rear member, the locking bar and the plate being pivotally connected together. The plate and the locking bar, when in its inoperative position, being located generally within the first plane, and the locking bar being pivotal outwardly and forwardly from its inoperative position into an operative blocking position in the second plane. One end of the locking bar when in its blocking position being closely adjacent one edge of the front member and the other end of the locking bar when in its blocking position being closely adjacent the frame thereby locking and substantially preventing relative opening movement of the front and rear members from their closed positions. Means engagable with the front sliding member are also provided to maintain the locking bar in its operative blocking position in the second plane.

### 3,478,472

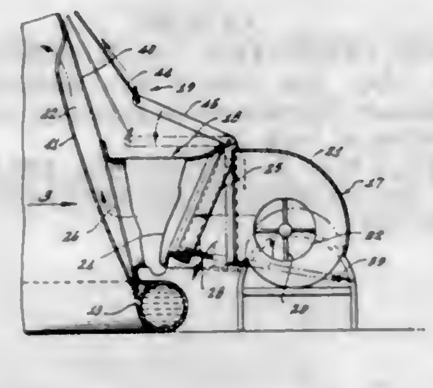
### MEANS FOR CONSTANT PRESSURIZATION OF INFLATABLE AND OTHER ENCLOSURES

**John P. Kwake, 2507 Carob Drive, Los Angeles, Calif. 90046**

**Filed Nov. 29, 1967, Ser. No. 686,528**

**Int. Cl. E04b** *1/345;* **E04h** *9/00*

**U.S. Cl. 52—1** **9 Claims**



An air conduit communicating with the exhaust of a continuously-operating blower and with the interior of an enclosure, at least a portion of the conduit capable of being opened in response to changes in pressure within the enclosure to thereby vary the air flow into the enclosure in response to said pressure changes within the enclosure.

### 3,478,473

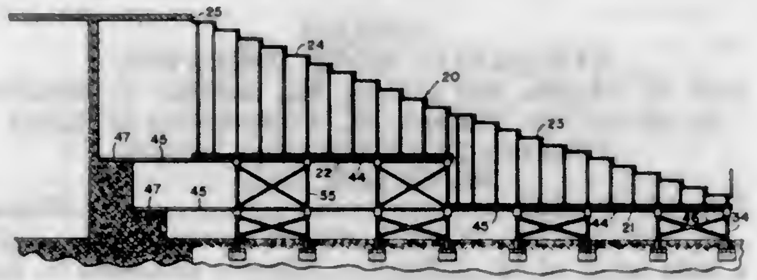
### FOLDABLE BLEACHER SEATING FOR SPORTS AREAS

**Alfred C. Hoven, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a corporation of Delaware**

**Filed July 12, 1968, Ser. No. 744,431**

**Int. Cl. E04h** *3/12, 3/14*

**U.S. Cl. 52—9** **12 Claims**



To vary the playing area in a sports field, sunken supports in the field have portions extending upwardly and terminating below ground level, and above-ground supports telescope with the sunken supports and carry a track upon which sectional bleachers may be moved inwardly and outwardly. When the bleachers are moved inwardly into folded or stacked position, the sunken supports may be covered so that the area can be used as a playing area. When such area is not needed as a playing area, the bleachers can be expanded and firmly anchored upon the sunken supports.

### 3,478,474

### ROOF CONSTRUCTION

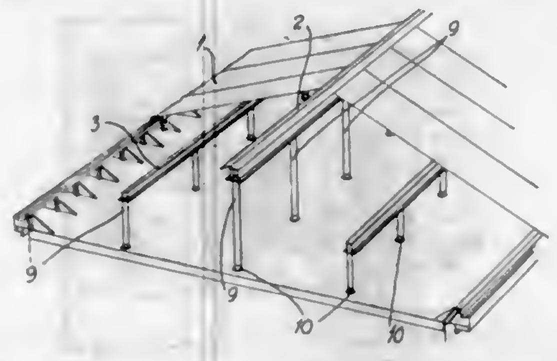
**Karl N. Ingvar Johansson, Oregrundsgatan 14, Stockholm, Sweden**

**Filed Oct. 2, 1967, Ser. No. 672,143**

**Claims priority, application Sweden, Dec. 7, 1966, 16,798/66**

**Int. Cl. E04b** *7/04;* **E04d** *13/06*

**U.S. Cl. 52—11** **11 Claims**



A roof structure wherein a bend resistant roof covering is supported between a ridge beam member and an eave structure at the outer edge of the floor structure of the roof, the roof covering is also supported by one or more transverse beam members located between the ridge beam and the eave structure, the ridge and intermediate beams are in turn supported by tubular sheet metal posts resting on the floor structure of the roof, the eave structure comprises a number of upright plates which present a horizontal base edge, side edges and an upper edge, having the same angle of slope as that of the roof proper, provision is also made for the mounting of a guttering in the eave structure, and all structural elements of the roof structure, including the beams, eave structure, tubular posts and guttering, are manufactured from sheet metal.

### 3,478,475

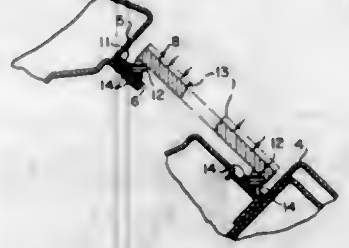
### MOUNTING UNIT EMPLOYING DUAL GASKET CONSTRUCTION

**Donald R. Strack, Dayton, Ohio, assignor to Protective Treatments Inc., Dayton, Ohio, a corporation of Ohio**

**Filed Jan. 23, 1967, Ser. No. 611,129**

**Int. Cl. B60j** *1/02;* **E06b** *3/62, 3/02*

**U.S. Cl. 52—208** **6 Claims**



A supported element such as a windshield is resiliently mounted on a support element such as the pinch weld flange of an automobile using two self-sustaining elastomeric strips. The first strip is desirably triangular and secured to the periphery of the windshield and is of resilient load bearing material which is too stiff to handle tension forces without delamination if used alone. The second strip is adhered to the pinch weld flange and is desirably flat and is too soft and deformable to handle compressive forces without flowing away if used alone. The mounting of the windshield is effected when the two strips are strongly adhered together, preferably at a narrow interface. In the composite, the triangular strip bears the compressive forces which are encountered and the flat strip accommodates the tensive forces. In the construction of the respective strips, a curable elastomer is used with large proportions of oil plasticizer and filler. The mixture is extruded into the desired form and then cured.

### 3,478,476

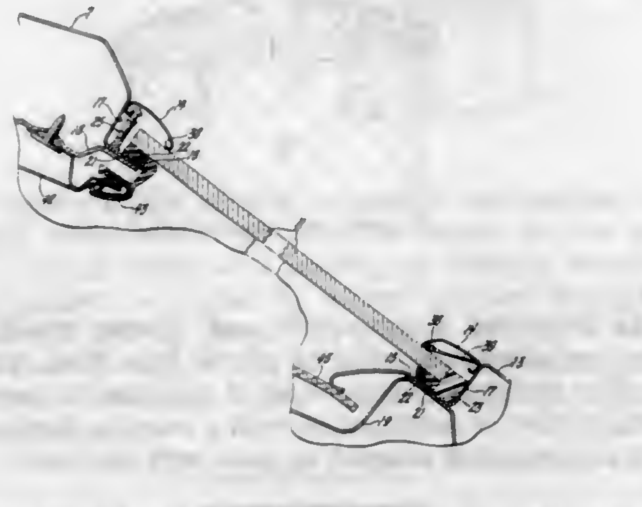
### MOLDING INSTALLATION

**Clarence G. Kemp, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Mar. 15, 1968, Ser. No. 713,530**

**Int. Cl. E06b** *1/36;* **B60j** *1/18*

**U.S. Cl. 52—208** **5 Claims**



An automobile rear window is mounted in the opening in the rear of the body in a known manner. A reveal molding which surrounds the margin of the window is retained by a number of spring pins fixed to the body and extending from it perpendicular to the window between the margin of the window and the frame. These pins have heads under which a flange of the reveal molding is caught.

### 3,478,477

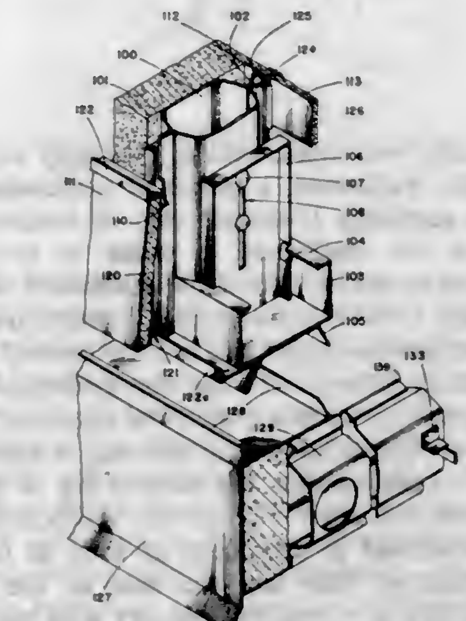
### SHEET METAL BUILDING

**Joseph Roy Poyton, West Flamborough, Ontario, Canada**

**Filed July 6, 1967, Ser. No. 651,534**

**Int. Cl. E04b** *7/04, 5/48, 5/10*

**U.S. Cl. 52—220** **8 Claims**



This specification discloses a sheet metal building structure in which both the supporting members and basic frame as well as the outer sheathing, are formed of sheet metal, and in which the various members are provided with interlocking portions to reduce the number of special fasteners required.

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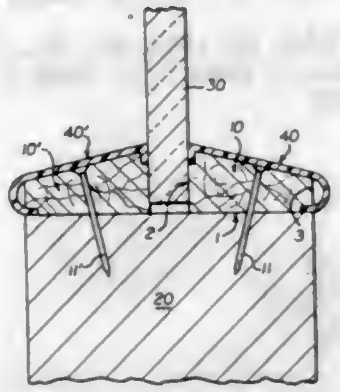
### 3,478,478
### SNAP-ON PLASTIC COVER

**Donald F. Luebs, Carmel, N.Y., assignor to U.S. Plywood-Champion Papers, Inc., a corporation of New York**
**Filed July 16, 1968, Ser. No. 745,244**
**Int. Cl. E06b** *1/32, 3/02*
**U.S. Cl. 52—309** **10 Claims**



An improved manufacture and system which comprises an elongated wood or plastic base door, window, or other structure glazing bead of a particular geometric configuration in combination with a snap-on plastic cover of a configuration adapted to mate with the bead.

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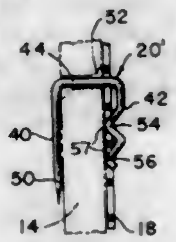
### 3,478,479
### COMPOSITE WALL CONSTRUCTION

**Rocco Papalia, Antioch, Calif., assignor to Kaiser Gypsum Company, Inc., Oakland, Calif., a corporation of Washington**
**Filed July 24, 1967, Ser. No. 655,393**
**Int. Cl. E04f** *13/04*
**U.S. Cl. 52—361** **8 Claims**



A composite wall construction, generally comprised of a puncturable wallboard, a length of perforated lath and a one-piece generally U-shaped clip of resilient material fastenable to the wallboard in order to hold the lath adjacent to at least one side of the wallboard. One spaced leg of the clip is indented with one or more indents at its outer end while the second spaced leg thereof is adapted to be forcefully driven through the wallboard at a preselected location to form a punctured opening. The aforesaid clip, upon formation of the opening, is inserted therein in such a fashion that the second leg is disposed in abutment with the other side of the wallboard while the one leg is disposed in abutment at least at its indented outer end thereof with the one side of the wallboard whereby the clip is in resilient contact with opposed sides of the wallboard and whereby a part of the lath is hookingly engaged by the one leg of the clip inwardly of the indented end thereof during insertion of the other leg into and through the opening for effectively holding the lath adjacent one side of the wallboard prior to placement of a later applied coating of a cementitious material to the lath and the associated side of the wallboard.

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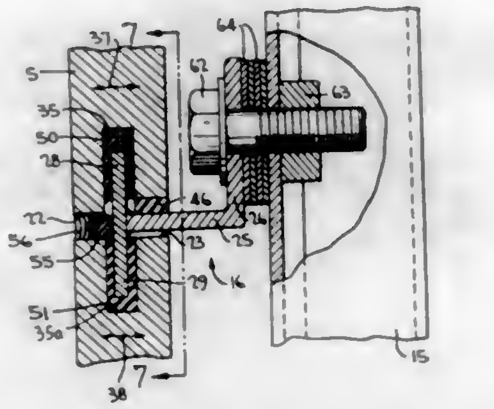
### 3,478,480
### THIN STONE SUPPORTING AND ANCHORING SYSTEM

**William E. Swenson, 6807 Capstan Drive, Annandale, Va. 22003**
**Filed June 17, 1968, Ser. No. 737,515**
**Int. Cl. E04b** *2/30, 2/02;* **E04c** *2/04*
**U.S. Cl. 52—396** **11 Claims**



A system for supporting and anchoring contiguous slabs of material for forming a building facing is provided wherein vertical bars carry angle brackets, each having a horizontal leg to provide repeating cantilever supporting points for said slabs. The upper and lower operative edges of said slabs are provided with semicircular kerfs which cooperate with an anchoring disc on the brackets. A strip of resilient material is positioned between the stone slab and the supporting leg of the angle bracket whereby the slab is isolated from expansion and contraction as well as vibration stresses. Clearance space within the semicircular kerfs of the lower edge of the stone is filled with mortar for stability and resilient compound is utilized within the clearance space of the kerfs of the upper edge to insure the necessary movement and flexure of the slab.

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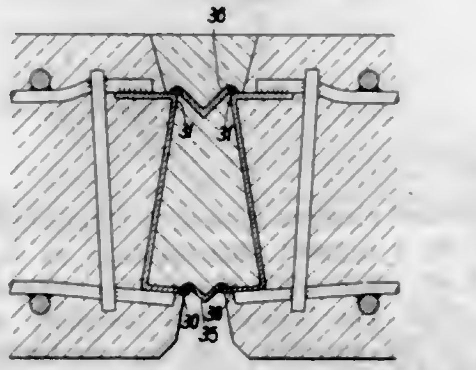
### 3,478,481
### REINFORCED CONCRETE MODULE JOINT

**Werner Heierli, Buchzelgstrasse 15, Zurich, Switzerland, and Armin Schuppisser, Geerlisbergstrasse 450, Bassersdorf, Switzerland**
**Filed May 8, 1967, Ser. No. 636,779**
**Claims priority, application Switzerland, May 10, 1966, 6,779/66; Sept. 20, 1966, 13,549/66**
**Int. Cl. E04c** *5/20, 1/41*
**U.S. Cl. 52—432** **2 Claims**



The present invention relates to connections between prefabricated reinforced concrete building components, the connections being provided by welding together parts of metal reinforcements projecting from the building components or welding the projecting reinforcement parts to a metal connection part.

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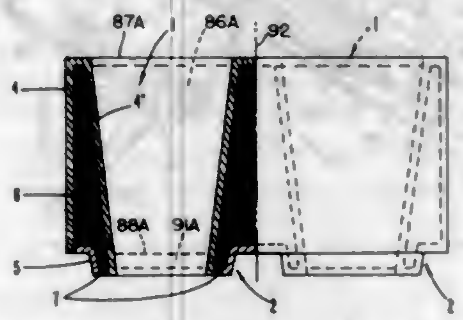
### 3,478,482
### BUILDING BLOCK CONSTRUCTION

**Richard L. Weir, 75 Sinclair Ave., Dayton, Ohio 45405**
**Continuation-in-part of application Ser. No. 317,474, Oct. 21, 1963. This application Oct. 24, 1967, Ser. No. 677,557**
**Int. Cl. E04c** *1/10, 1/08, 1/30*
**U.S. Cl. 52—594** **5 Claims**



This application discloses a system of building block construction which uses as a main component a standard rectangular modular block made of one or two basically cubular sections which are modular in all three dimensions. Each section has a tapered hollow truncated pyramid shaped hole of square transverse cross section. Each cubical section has a lower, square tapered protruding hole extension that has a smooth unchanging continuation of said first named hole and has a square outer frustopyramidal surface that fits tightly both horizontally and vertically into the top of the hole of a similar lower and adjacent cubical section. The blocks of this invention can be assembled to form walls, partitions, floors and/or roofs of buildings. Such blocks may surround windows and/or doors and may be pre-stressed and pulled together by tension members. The blocks may also have flexible removable bands or seals to permit walls, etc., to be assembled without mortar. Such walls may also be disassembled and reassembled, if desired.

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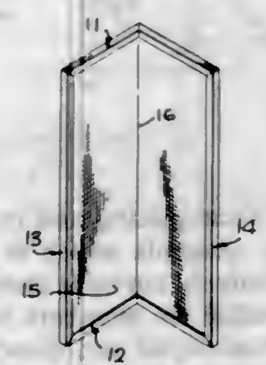
### 3,478,483
### PANEL FILTER CONSTRUCTION

**Robert A. Baker, 171 Cedar Lane, Santa Barbara, Calif. 93103**
**Filed Apr. 26, 1967, Ser. No. 633,741**
**Int. Cl. E04c** *2/38*
**U.S. Cl. 52—658** **9 Claims**



The device comprises top and bottom U-shaped frame sections for retaining a filter panel therebetween. The top and bottom section have respective oppositely disposed triangular cutouts, whereby the top and bottom frame sections may be folded to provide an angular filter construction.

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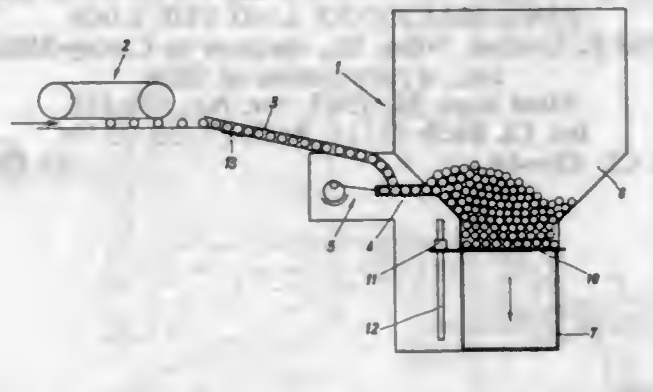
### 3,478,484
### APPARATUS FOR PACKING AMPULES INTO CARTONS OR LIKE CONTAINERS

**Rudolf Betz, Merzbergstrasse 29, Liesberg, Upper Bavaria, Germany**
**Filed May 2, 1967, Ser. No. 635,428**
**Claims priority, application Germany, May 5, 1966, B 86,976**
**Int. Cl. B65b** *23/22, 35/32, 39/06*
**U.S. Cl. 53—26** **5 Claims**



An apparatus for packing ampoules into cartons has a hopper which serves as collection means for the ampoules from an outlet of a printing or labeling machine. The ampoules are pushed by a feed member through a feed passage into the hopper. A plate is adapted to close the outlet of the hopper and to be lowered in and inserted into a carton mounting means and rotated about a spindle carrying the plate.

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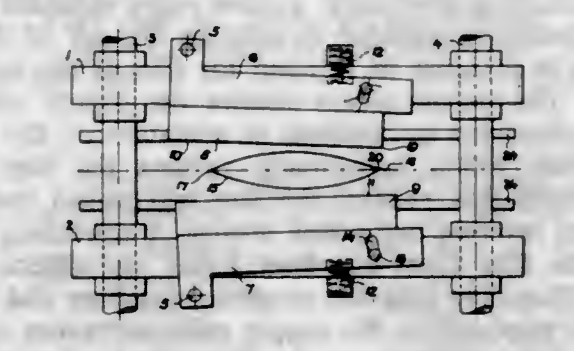
### 3,478,485
### PROCESS AND WELDING DEVICE FOR MAKING CONTAINERS FILLED WITH FLUID

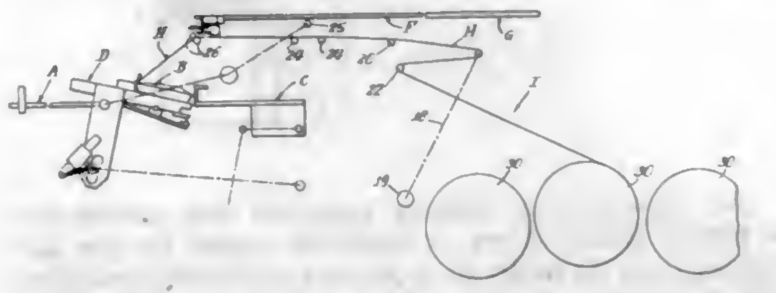
**Hans Hechenleitner, Villach, Austria, assignor to Hechenleitner & Cie., Villach, Austria, a corporation of Austria**
**Filed Aug. 2, 1967, Ser. No. 657,829**
**Claims priority, application Austria, Oct. 14, 1966, A 9,634/66**
**Int. Cl. B65b** *9/06, 9/12*
**U.S. Cl. 53—28** **3 Claims**



A process and apparatus for making containers filled with liquid having longitudinal end flaps from longitudinal strips of plastic material, coated paper, and the like, comprising bending a strip longitudinally along its length and welding the adjacent inner surfaces adjacent the longitudinal edges of the strip together to form a longitudinal welding seam with extending edges and welding transversely a lower end thereof to form a tube capable of being filled with liquid with a substantially lenticular cross-section, filling the tube with fluid, compressing the substantially lenticular cross-section of the tube with two die halves one of which is pivotally mounted for horizontal pivotal movement forming an acute angle with the other die half into a wedge-shaped cross-sectional tube in which the narrow end of the wedge is at the longitudinal welding seam, shaping sections of the tube into a container section thereby causing the tube to extend at the bent longitudinal portion due to the counter pressure caused by the fluid within the tube which is pressed back during the shaping, and transversely welding the tube at the end of the shaped section to form a completely fluid filled container, which transverse welding is accomplished thereby without small longitudinal folds.

### 3,478,486
### FILM FEED MECHANISM FOR PACKAGE WRAPPING MACHINES AND THE LIKE

**Fritz F. Treiber, Niles, Ill., assignor to Corley-Miller, Inc., a corporation of Ohio**
**Filed Sept. 26, 1967, Ser. No. 670,605**
**Int. Cl. B65b** *41/16;* **B65h** *17/02, 23/06*
**U.S. Cl. 53—64** **32 Claims**

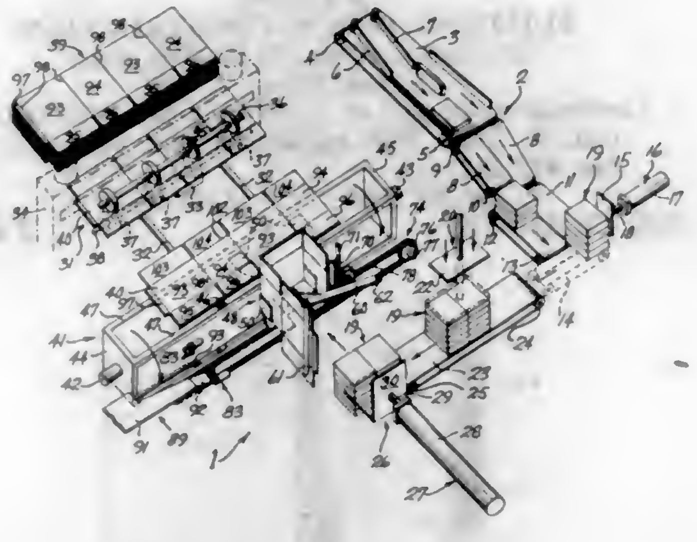


A film feed mechanism for package wrapping machines and the like, in which the film is fed from a selected one of a plurality of supply rolls of film to a package wrapping station. Power means are provided for rotating the supply rolls of film and the rolls are selectively engageable with the power means. A film return check is provided to prevent return of the film from the wrapping station to the supply roll during wrapping operations. A rewind mechanism is provided for sequentially rendering the film return check ineffective and actuating the power means to rotate the supply roll of film in a rewind direction. In one form of the invention for feeding film which has little static electricity, the power means rotates one of the supply rolls in a feed direction in response to a demand for film at the wrapping station and rotates the supply roll in a rewind direction in response to actuation of the rewind mechanism. In a second form of the invention for feeding film which has much static electricity, a draw roller operated by the power means is provided to pull the film off of the supply roll in response to demand for film at the wrapping station. The power means rotates the supply roll in a rewind direction in response to actuation of the rewind mechanism which sequentially renders the film return check ineffective, renders the film pull means ineffective and then reverses the power means. A conveying means strips the film from the draw roller and directs it for proper threading into the wrapping machine and a drag brake is provided on the supply rolls to prevent the supply roll from overrunning the film pulled off of the supply roll.

### 3,478,487
### METHOD OF AND APPARATUS FOR WRAPPING PRODUCTS

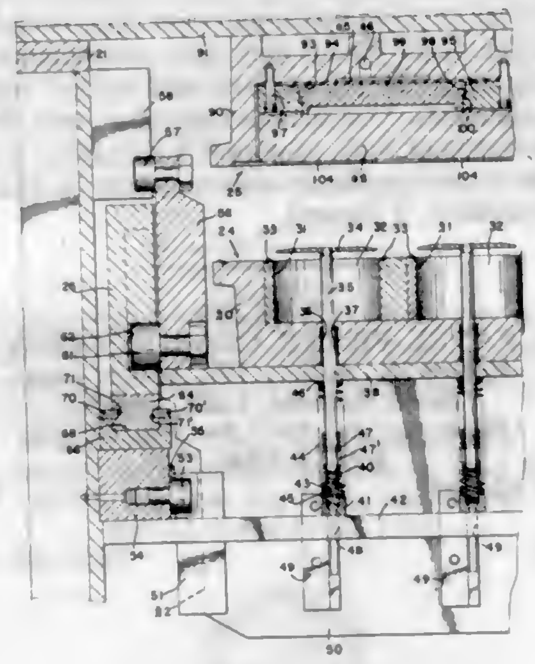
**Barton K. Smith, 801 Locust, Winnetka, Ill. 60093; Ralph W. Groff, Sr., 325 Plymouth Place, Cherry Hill, N.J. 08034; James B. Rodman, Sr., 450 Locust Ave., Burlington, N.J. 08016; Henry F. Orzechowski, 201 E. Elm Ave., Lindenwold, N.J. 08021; and Joseph S. Hartle, Sr., 508 N. Stanwick Road, Moorestown, N.J. 08057**
**Filed Dec. 28, 1966, Ser. No. 605,321**
**Int. Cl. B65b** *59/02, 35/52, 43/10*
**U.S. Cl. 53—66** **13 Claims**

An apparatus and method for packaging articles of variable height. The articles are stacked and the height measured. A half-slotted container is then cut to size and scored and slotted. The blank is partially erected and the articles placed into the container through an open side. The container is then closed.



### 3,478,488
### PACKAGING MACHINE

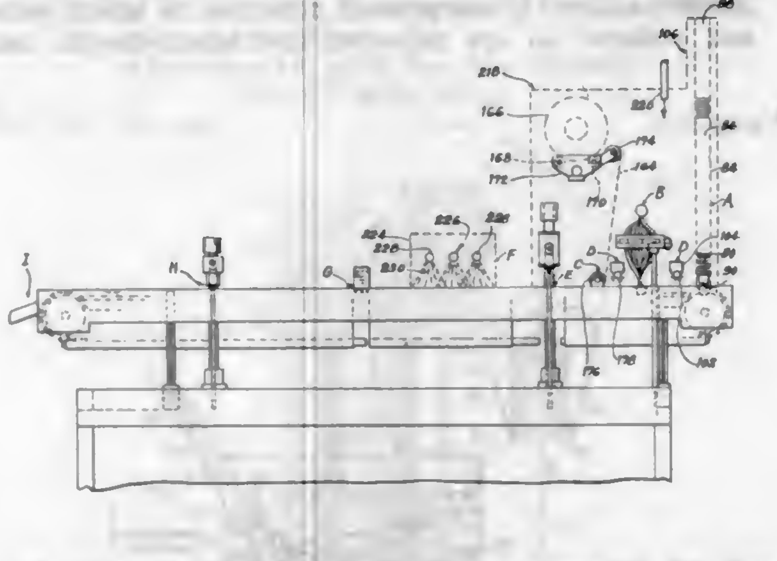
**Hans A. Jensen and Myron J. Merdler, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois**
**Filed Mar. 27, 1967, Ser. No. 626,297**
**Int. Cl. B65b** *31/02, 51/14*
**U.S. Cl. 53—112** **15 Claims**



An apparatus for vacuumizing and pressure sealing an assembly of package elements which is characterized by vertically aligned, relatively movable lower and upper vacuum chamber and sealing die members between which the package elements are clamped and associated mechanism for evacuating a plurality of compartments in the lower member when a series of connected product-receiving package forms are seated therein and the die members are closed, and for sealing portions of the package forms which are trapped between the dies while pressure is applied to opposite faces of the product enclosing portions so as to compress the product and fill the product accommodating space within the packages.

### 3,478,489
### CUP FILLING MACHINE AND ELEMENTS

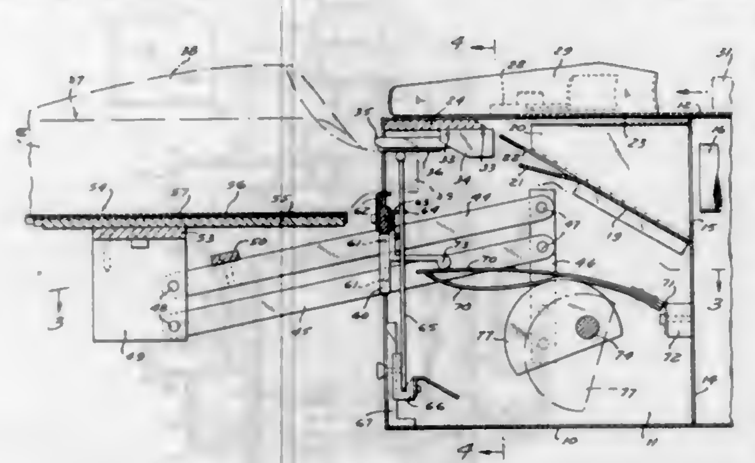
**Paul Meisner, Atlanta, Ga., assignor to Top Seal Incorporated, Chamblee, Ga.**
**Filed Feb. 15, 1967, Ser. No. 616,270**
**Int. Cl. B65b** *3/06, 55/08, 61/06*
**U.S. Cl. 53—167** **33 Claims**



A machine capable of continuous operation for the filling of dished cup-shaped members with content material and for sealing the filled cups for distribution and use wherein the machine makes use of cup-shaped members in strips having a plurality of the cup-shaped members in laterally spaced apart relationship with means for feeding the strips onto supporting platens by which the strips are carried through a sequence of operations including sterilization, filling, covering with a sealing strip and sterilization of the filled cup and sealing strip, heat sealing the covering film onto the strip about the cup-shaped members to seal off the content material, cooling to set the bond between the covering film and strip, slitting lengthwise between the cups to separate the cup-shaped members in the strip while slitting the covering film into lengthwise strips and then shearing the covering film crosswise to produce the individual sealed containers of content material.

### 3,478,490
### BAG LOADING DEVICE HAVING TWO-PART BAG SUPPORT MEANS

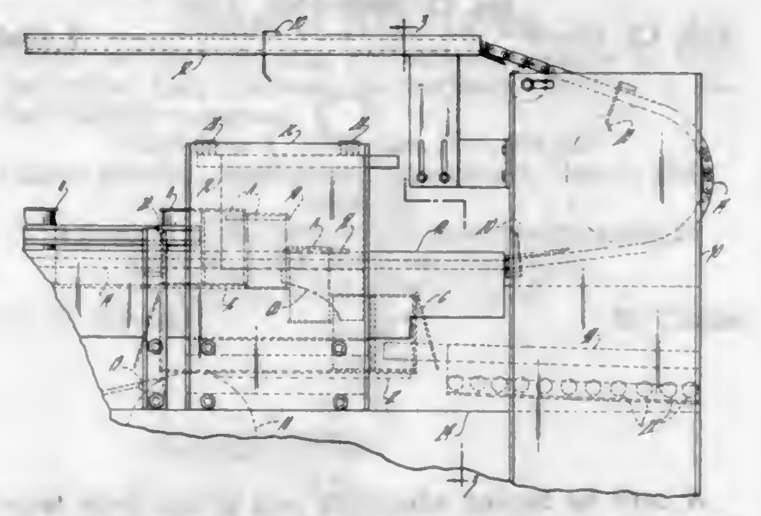
**John D. Sylvester, Garden City, N.Y., and John D. Keenan, Jr., Caldwell, N.J., assignors to Amsco Packaging Machinery, Inc., a corporation of New York**
**Filed Nov. 17, 1967, Ser. No. 683,952**
**Int. Cl. B65b** *43/12, 43/36, 67/04*
**U.S. Cl. 53—189** **7 Claims**



Platform supporting bag bodies and table supporting bag lips are urged upwardly by a spring. Platform and table mounted on parallelogram mechanism so that platform moves upwardly at faster rate than table. Spring may be leaf spring adapted to be selectively deformed by a manually controlled eccentric cam.

### 3,478,491
### APPARATUS FOR LOADING ARTICLES IN UPWARDLY OPEN NONPARTITIONED PACKING CASES

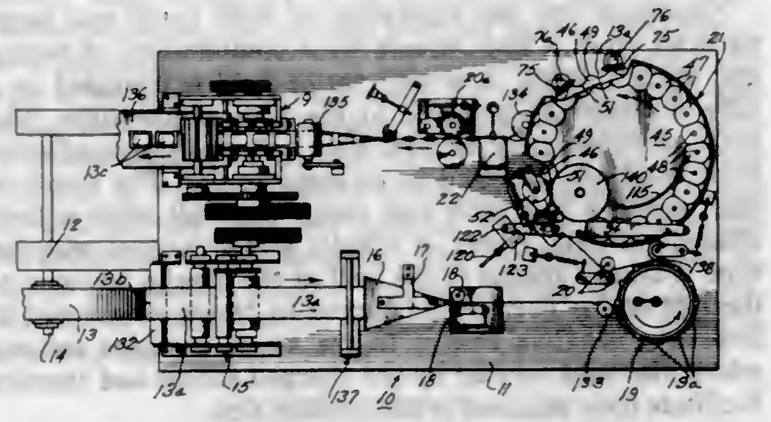
**Horst G. Lattke, Middletown, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut**
**Filed Sept. 29, 1967, Ser. No. 671,631**
**Int. Cl. B65b** *5/08, 5/12*
**U.S. Cl. 53—248** **10 Claims**



Upwardly open packing cases, without individual partitions, are fed to a loading zone by a first flight bar conveyor and a second flight bar conveyor carries successive slugs of cans to the edge of a deadplate above the case to be packed. The second conveyor advances the cans as they are dropped off the deadplate onto guide rails and thence into the case. The guide rails are arranged so that they engage the upper chimed edges of the cans being dropped to retard the rate of descent of said cans. Two such pairs of guide rails successively engage the dropping cans as they are being advanced by the second conveyor. Once the first lateral row of cans enters the case, this second conveyor advances the case as well.

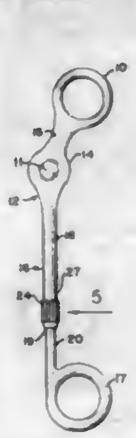
### 3,478,492
### PACKAGING MACHINE

**Charles E. Cloud, Wilmette, Richard G. King, Chicago, and James R. George, Franklin Park, Ill., assignors to Cloud Machine Corporation, Skokie, Ill., a corporation of Delaware**
**Filed Apr. 21, 1966, Ser. No. 544,301**
**Int. Cl. B65b** *9/08, 37/20, 39/14*
**U.S. Cl. 53—266** **34 Claims**



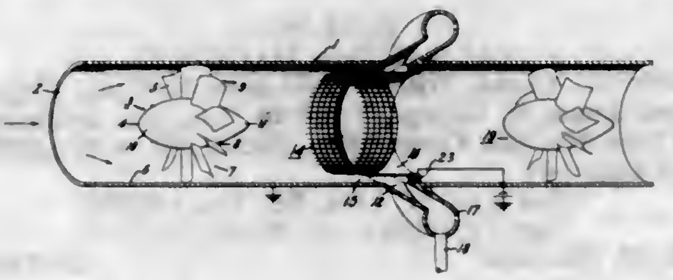
A machine for continuously forming packages from strip stock including a vertical heat sealer for forming longitudinally spaced pockets thereby forming pockets in the length of the strip, a filling station, means for training the strip in an arc about the filling station with the station having a series of funnels for loading each pocket, means carried by the rotating filling station or wheel for allowing the extension and retraction of a plurality of feed-outs for transferring a metered quantity of product from the filling station into individual ones of the pockets while the strip is trained in an arc about the filling station, and means for removing these strips from the filling station and for the sealing the filled pockets of the strip.

### 3,478,493
### ADJUSTABLE CURB BIT
**Charles L. Welton, % Welton's Western Wear,
Saratoga, Wyo. 83231
Filed Mar. 15, 1967, Ser. No. 623,257
Int. Cl. B68b** *1/06, 1/08*
**U.S. Cl. 54—7 7 Claims**



A curb bit having adjustable rein levers. Each lever is formed as a tubular arm and a rod, carrying a rein eye, slideably extends from this arm. Each rod is secured in the arm at any selected position by a collet type lock which is tightened by a lock nut at the end of the arm.

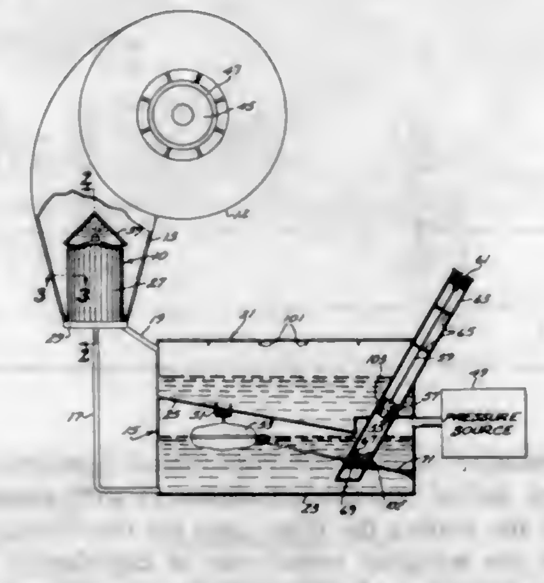
### 3,478,494
### VORTEX-ELECTROSTATIC SEPARATOR
**Edward L. Lustenader, Scotia, and Frank W. Van Luik, Jr., Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Continuation-in-part of application Ser. No. 546,672, May 2, 1966. This application June 26, 1968, Ser. No. 740,320
Int. Cl. B03c** *3/14*
**U.S. Cl. 55—127 1 Claim**



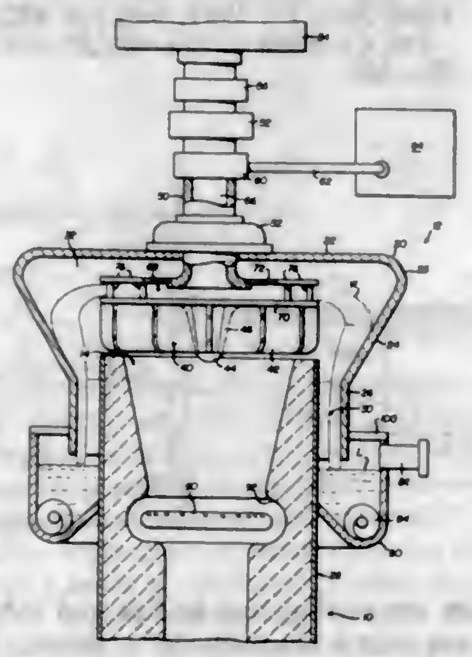
Apparatus for the separation of both small and large particles from a flow stream by a combination of vortex and electric fields. A strong vortex field is provided in a tube for swirling particles to the wall of the tube. The large particles reach the wall after a short distance of axial travel and are collected in an annular slot. The small or fine particles approach and reach the wall after a long distance of axial travel. A tubular screen coaxial with the tube is closely spaced to the wall of the tube in advance of the slot and is negatively charged to create a field and to impart a negative charge to the small particles coming within the field created by the charged screen and thereby facilitate their removal in the annular slot.

### 3,478,495
### AIR POLLUTION FILTER APPARATUS
**Reynaldo M. Deary, 2206 N. Poinsettia Ave., Santa Ana, Calif. 92706
Filed Jan. 23, 1968, Ser. No. 699,961
Int. Cl. B01d** *47/00*
**U.S. Cl. 55—227 6 Claims**

Apparatus for removing pollutants from air by contacting pollutant laden air with water so that some of the water is vaporized and contains pollutants which are dissolved or suspended in such vapor and so that other pollutants which are trapped by water and which collect or float on its surface are carried away and discharged as liquids and solids. The embodiment of the invention selected for illustration in the drawing is suitable for mounting upon a motor vehicle having an internal combustion engine. It comprises a structure to which water and polluted air are delivered and where the air and water come into contact. Two containers are provided. One is a source of water supplied to the water-air contacting means and the other is a source container for water which has been delivered to the water-air contacting means and was not there vaporized. The two containers are connected by a passageway and valve system which permits recirculation of the water without recirculating those pollutants which are solid or are reduced to liquid form by contact with water and which float upon it.

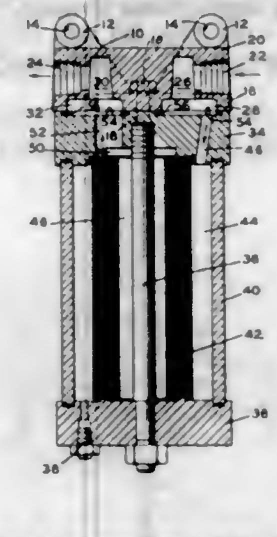


### 3,478,496
### APPARATUS FOR TREATING EXHAUST GASES FROM A STACK
**William R. Keough, 124 S. Willliamsbury, Birmingham, Mich. 48010
Filed Nov. 13, 1967, Ser. No. 682,323
Int. Cl. B01d** *47/10*
**U.S. Cl. 55—230 2 Claims**



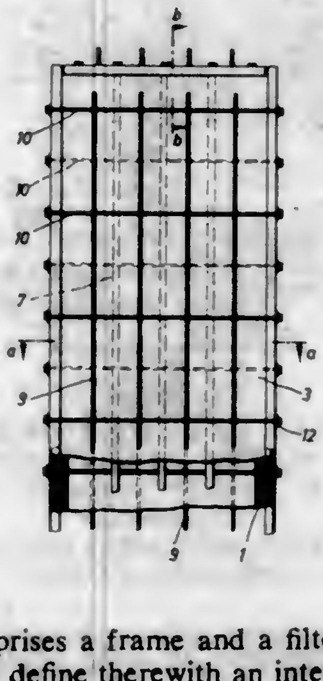
A device for removing impurities from exhaust gases. The device includes means for producing a water curtain surrounding the open end of a stack and a fan for forcing the exhaust gases through the jacket to remove impurities therefrom.

### 3,478,497
### DIRECTIONAL MOUNTING PLATE FOR AIR LINE FILTER
**George Doig and Donald E. McGeachy, Highland, Mich., assignors to Numatics, Incorporated, Highland, Mich., a corporation of Michigan
Filed May 14, 1965, Ser. No. 455,695
Int. Cl. B01d** *35/02*
**U.S. Cl. 55—411 1 Claim**



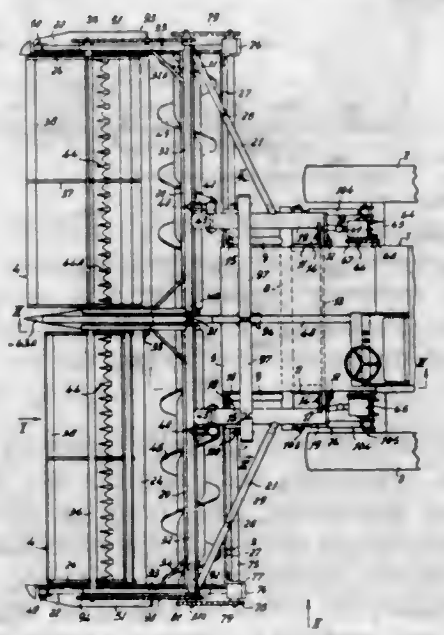
Improvement in a mounting plate for an air line filter whereby the direction of air flow through the filter is the same regardless of which port of the mounting plate is used as an air inlet for the mounting plate and filter assembly. The porting in the supporting base and the head plate for the filter element is so arranged that a 180° rotation of the head plate relative to the supporting base reverses the air inlet and air outlet of the supporting base so that the proper direction of air flow through the filter element can be maintained regardless of which port in the supporting base is used as the air inlet.

### 3,478,498
### FILTER STRUCTURE
**Werner Sauermann, Munster, in Westfalen, Germany, assignor to Standard Filterbau-GmbH, Munster, in Westfalen, Germany
Filed Dec. 13, 1967, Ser. No. 690,224
Claims priority, application Germany, Dec. 17, 1966, St 26,307; Sept. 27, 1967, St 27,381
Int. Cl. B01d** *35/00*
**U.S. Cl. 55—492 14 Claims**



A filter comprises a frame and a filter element carried by the frame to define therewith an internal chamber. The filter element consists of two apertured supporting layers and a filter layer of fibrous filter material sandwiched therebetween. A plurality of supporting bars are located in the internal chamber and engage the inner surfaces of the filter element. A plurality of deflecting bars engage the outer surfaces of the filter element intermediate the reinforcing bars and deflect the filter element intermediate such reinforcing bars inwardly into the chamber.

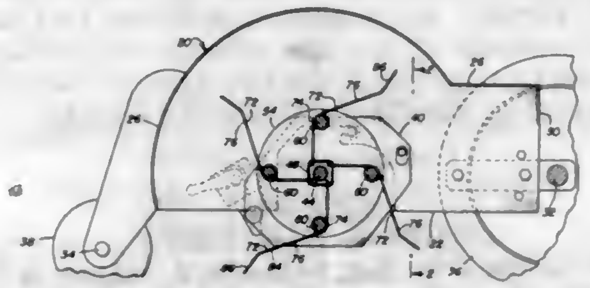
### 3,478,499
### COMBINE HARVESTER
**Cornelis van der Lely, Zug, Switzerland, assignor to Texas Industries Inc., Curacao, Netherlands Antilles, a limited-liability company
Filed June 1, 1965, Ser. No. 460,130
Claims priority, application Netherlands, June 3, 1964, 6406213
The portion of the term of the patent subsequent to Oct. 10, 1984, has been disclaimed
Int. Cl. A01d** *41/02, 75/22*
**U.S. Cl. 56—23 20 Claims**



A combine harvester with two mowing portions each including a reel and auger, a forwardly extending partition between the portions and an elevator housing for receiving cut crop from the portions located to the rear, the portions with their reels being foldable together relative to the elevator housing about pivots having horizontal axes extending longitudinally of the harvester. When so folded, the mowing portions have a width which is substantially the same as the vehicle. A hydraulic circuit is included in the harvester for supporting the portions, such circuit including hydraulic cylinders which in cooperation with ground feelers maintain the mowing portions at a desired height above the underlying ground or alternatively in a set position relative to the other components of the harvester. The hydraulic circuit includes gas under pressure communicating with the hydraulic cylinders which support the mowing portions whereby the support rendered is of a resilient type.

### 3,478,500
### REEL TYPE RAKE OR SWEEPER
**Loy D. Rhoads, Enon, Ohio, assignor to Parker Sweeper Company, Springfield, Ohio, a corporation of Ohio
Filed July 20, 1967, Ser. No. 654,806
Int. Cl. A01d** *57/12, 79/02, 7/06*
**U.S. Cl. 56—27 11 Claims**

A reel of the rake type comprises a frame including a plurality of tine supports arranged longitudinally of and spaced an equal distance from one another and an equal distance from the shaft of the frame. The reel also includes tines having coil portions surrounding the tine supports, one end which engages the turf and an opposite end



which extends into openings, in the form of holes, in the shaft.

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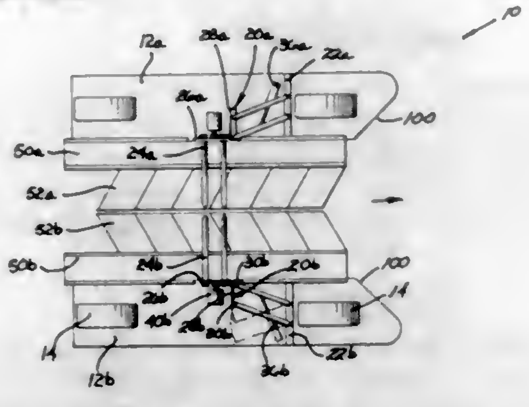
### 3,478,501
## BERRY HARVESTING MACHINE
**Albert W. Patzlaff, 15551 Quincy St.,**
**Holland, Mich. 49423**
**Filed Mar. 2, 1967, Ser. No. 620,101**
**Int. Cl. A01g** *19/00*
**U.S. Cl. 56—330** **15 Claims**



A harvester unit for vibrationally removing crop items such as fruits, vegetables, nuts, and the like, particularly berries such as blueberries, from branches particularly of bushes, with minimum scuffing of the branches, such unit having eccentrically driven, rotational beaters, the branch-engaging periphery of which is free from inner rotating shaft means, and preferably rotates opposite the arcuate advancing direction of the unit, by the use of a freely rotatable sleeve eccentrically driven by the inner rotational eccentric shaft but reversely rotated by peripherally engaging a surrounding friction element.

Also, a vehicular harvesting machine shiftably mounting a series of such beater units, when specifically oriented, in a special fashion for shifting them into and out of bush engagement while continuously operated and advanced.

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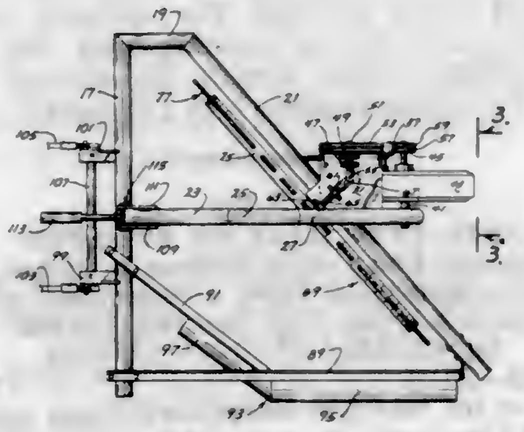
### 3,478,502
## WINDROW TURNING DEVICE
**Henry K. Orthman, Rte. 2, Lexington, Nebr. 68850**
**Filed Nov. 4, 1965, Ser. No. 506,387**
**Int. Cl. A01d** *79/02*
**U.S. Cl. 56—366** **5 Claims**



A window turning device including a single windrow turning wheel rotatably mounted on a frame means. The frame means is secured to a tractor multiple point hitch and has a ground engaging drive wheel operatively mounted thereon. A drive means connects the drive wheel with the turning wheel so that rotation of the drive wheel will cause rotation of the turning wheel.

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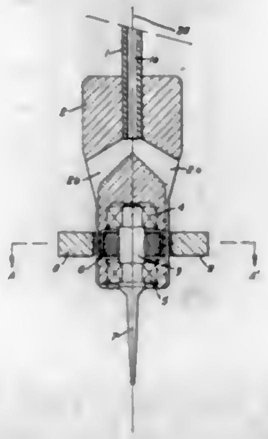
### 3,478,503
## MANUFACTURE OF A FANCY YARN
**Pierre Seguin, Chavanoz, France, assignor to Moulinage et Relorderire de Chavanoz, S.A., a corporation of France**
**Filed Nov. 6, 1967, Ser. No. 680,906**
**Claims priority, application France, Nov. 14, 1966, 83,493, 83,494**
**Int. Cl. D01h** *13/26;* **D02g** *1/00, 3/02*
**U.S. Cl. 57—34** **9 Claims**



A method and apparatus for manufacturing fancy yarn especially helically wound yarn which utilizes means to allow the yarn to accumulate after being heat set and to simultaneously cool yarn to preserve the heat set before any stress is applied thereto.

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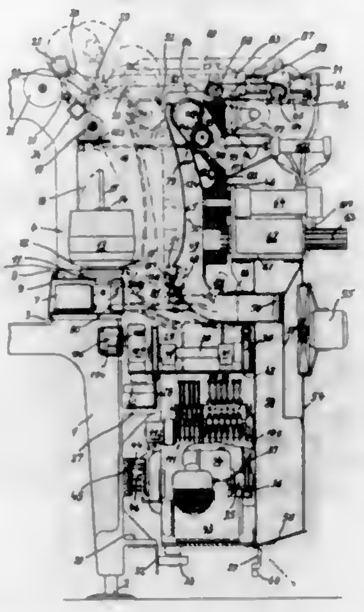
### 3,478,504
## METHOD OF AND APPARATUS FOR REMEDYING A THREAD BREAK
**Klaus Nimtz, Krefeld, and Gustav Franzen, Neersen, near Krefeld, Germany, assignors to Palitex Project-Company G.m.b.H., Krefeld, Germany**
**Filed Jan. 15, 1968, Ser. No. 697,969**
**Claims priority, application Germany, Jan. 17, 1967, P 41,217**
**Int. Cl. D01h** *13/26, 7/02;* **D07b** *3/02*
**U.S. Cl. 57—34** **22 Claims**



Method and apparatus for tying broken threads in a multispindle two-for-one twisting machine in which a carriage is provided which is self-propelled and which is moveable along the frame of the machine so as to align with pairs of bobbins between which a thread is broken. A thread break detector for each pair of bobbins in the machine stops the pertaining bobbins and calls on the carriage when a thread break occurs whereupon the carriage moves into position, draws the thread ends in by suction, ties the thread ends together, and ejects the tied thread so the bobbins pertaining to the tied thread can resume operation.

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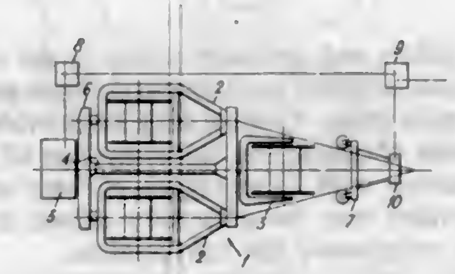
### 3,478,505
## CABLE WINDING MACHINE
**Amund Braaten, Oslo, and Willy Wilhelmsen, Snaroya, Norway, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware**
**Filed Dec. 11, 1967, Ser. No. 689,696**
**Int. Cl. D01h** *7/90, 7/02;* **D07b** *3/02*
**U.S. Cl. 57—59** **3 Claims**



A rotatable carriage for a cable winding machine includes four cradles and payoff reels, three of which are arranged symmetrically about a central axis and the fourth is positioned between outlets of the other three and the laying-up point at which the conductors are brought together. A filler material reel is mounted on a separate carriage adjacent the laying-up point.

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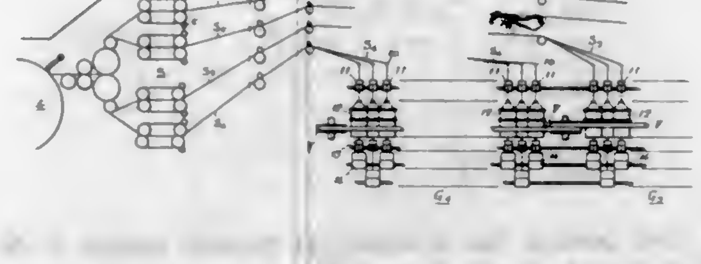
### 3,478,506
## METHOD OF MANUFACTURING A YARN
**Kanichi Kawashima, 2 3-chome, Sanae-cho, Gifu, Japan**
**Filed Dec. 22, 1967, Ser. No. 692,905**
**Claims priority, application Japan, Dec. 24, 1966, 41/84,711; July 14, 1967, 42/45,354; Sept. 18, 1967, 42/60,280; Oct. 28, 1967, 42/69,463**
**Int. Cl. D02g** *3/36;* **D01g** *15/00;* **D01h** *5/00*
**U.S. Cl. 57—160** **4 Claims**



Method of making a yarn composed of a non-twisted sliver by winding thread around said sliver after a temporary twist is imparted to said sliver.

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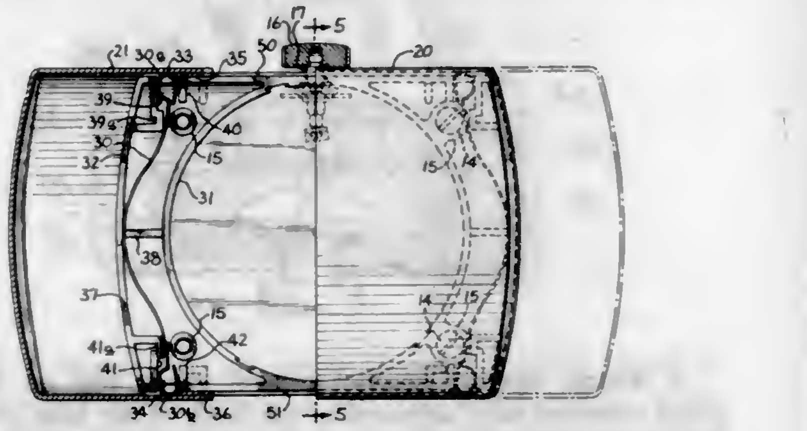
### 3,478,507
## PULL-OUT TIMEPIECE CASING
**Hubertus G. Frey, Peru, Ill., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware**
**Filed May 1, 1967, Ser. No. 634,962**
**Int. Cl. G04b** *37/12*
**U.S. Cl. 58—53** **7 Claims**

A pull-out timepiece casing having a central housing containing a conventional timepiece movement, and a pair of slidable casing sections fitted over opposite ends of the central housing for telescoping movement therewith. When the two sliding casing sections are telescoped over the central housing so that they abut one another, the display face of the timepiece is enclosed and concealed to provide a compact unit suitable for carrying in the user's pocket, for example. When the two casing sections are telescoped outwardly away from one another, the display face of the timepiece is revealed. A pair of leaf springs are mounted within opposite ends of the main housing with the ends of the springs extending outwardly through the housing walls into bearing engagement with the inside surfaces of the two slidable casing sections. A pair of stop members are mounted on each casing section so as to abut the exposed ends of the leaf springs when the casing sections are in the open position to provide a positive stop for the open position of the casing. The abutting surfaces of the stop members and the exposed ends of the leaf springs are adapted to retract the ends of the springs by bowing the central portion of the springs inside the housing, thereby permitting the slidable casing sections to be completely removed from the central housing. The housing can then be readily disassembled for repair or cleaning purposes. A pair of grooves are formed in the two walls of the housing adjacent the stop members so as to provide a guiding track of said stop members.



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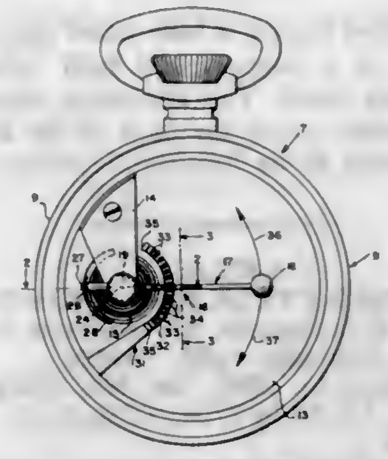
### 3,478,508
## WATCH REGULATOR
**Theodore M. Williams, 816 N. Ridgewood Ave.,**
**Daytona Beach, Fla. 32074**
**Filed Oct. 10, 1968, Ser. No. 766,512**
**Int. Cl. G04b** *17/14*
**U.S. Cl. 58—109** **5 Claims**



A watch regulator provided with an elongated regulator arm pivotally mounted above an arcuate bar having a series of serrations thereon. One end of the regulator arm being attached to the outer convolution of the hairspring and the other end of the arm, remote from said hairspring having a weight secured thereto. The tension of the hairspring can be varied to increase or decrease the running rate of a watch by a tapping force imparted to portions of the periphery of the watch case, for correcting an inaccuracy in the running rate of the watch without the necessity of opening the watch case.

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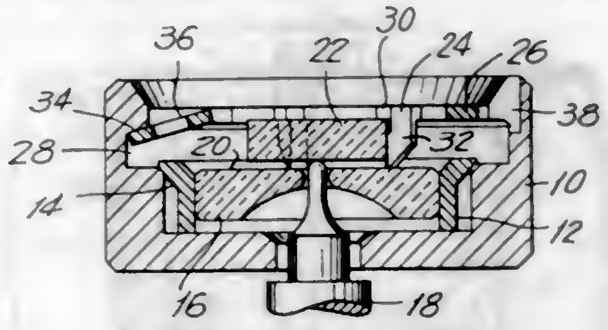
### 3,478,509
### BEARING FOR WATCH PIVOT
**Fritz Marti, La Chaux-de-Fonds, Switzerland, assignor to Portescap, Le Porte-Echappement Universel S.A., La Chaux-de-Fonds, Switzerland**
**Filed Feb. 12, 1968, Ser. No. 704,826**
**Claims priority, application Switzerland, Feb. 16, 1967, 2,406/67**
**Int. Cl. G04b** *31/00*
**U.S. Cl. 58—140** **8 Claims**



A watch bearing having a hole jewel and an end-piece which is held adjacent to the back of the hole jewel. The end-piece does not completely cover the back of the hole jewel allowing the bearing to be lubricated without removal or dismantlement.

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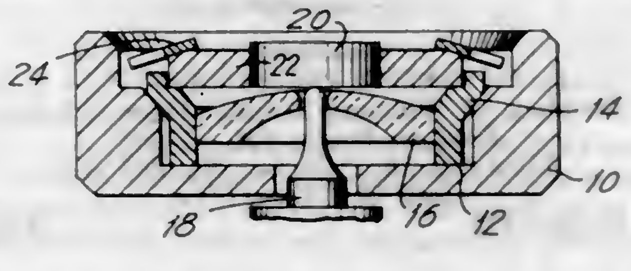
### 3,478,510
### BEARING FOR WATCH PIECE PIVOT
**Fritz Marti, La Chaux-de-Fonds, Switzerland, assignor to Portescap, Le Port-Echappement Universel S.A., La Chaux-de-Fonds, Switzerland**
**Filed Feb. 12, 1968, Ser. No. 704,827**
**Claims priority, application Switzerland, Feb. 28, 1967, 2,889/67**
**Int. Cl. G04b** *31/00*
**U.S. Cl. 58—140** **7 Claims**



A watch bearing having a hole jewel and an end-piece which is fitted in a support and held adjacent to the back of the hole jewel. The end-piece with its support does not completely cover the back of the hole jewel allowing the bearing to be lubricated without removal or dismantlement.

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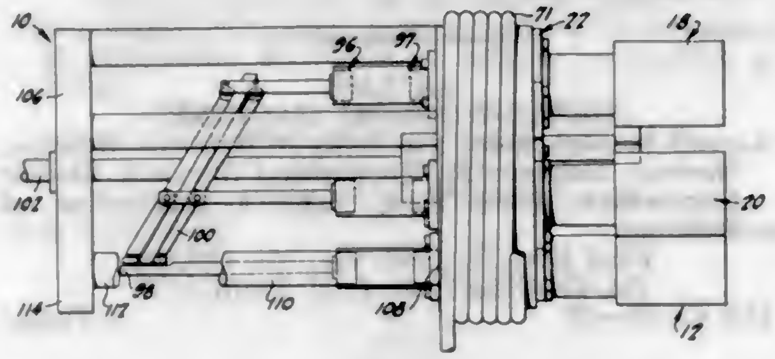
### 3,478,511
### CLOSED-CYCLE GAS ENGINE
**Arnold J. Schwemin, 429 Bellevue Ave., Oakland, Calif. 94610**
**Filed July 13, 1967, Ser. No. 653,119**
**Int. Cl. F03g** *7/06;* **F25b** *9/00*
**U.S. Cl. 60—24** **1 Claim**

The invention disclosed and claimed herein is an improved heat engine operating on a new closed cycle that in certain respects is similar to a Stirling cycle. The engine hereof includes a plurality of pistons with external heating and cooling of an operating fluid, means interconnecting successive pistons and individual pistons being operated by pressure differential thereacross resulting from a phase difference in pressures in the volumes above and below the pistons. A preferred physical embodiment of the invention, disclosed herein, incorporates a plurality of cylinders, preferably four or five, with a movable piston in each cylinder, and one end of each cylinder being connected through a heater, a regenerator and cooler to the opposite end of the adjacent cylinder. Heat is externally applied to or adjacent the first or hot end of each cylinder, and the entire engine is charged with an inert gas in a closed system whereby each piston then serves both as a power piston and displacer piston in the terminology of Stirling-cycle engines; each piston delivers power at two portions of each cycle. Control may be provided by varying the amount of gas in the closed system of the engine; and, in common with other types of heat engines, the present invention may be externally driven to move the pistons as a compressor for refrigeration.



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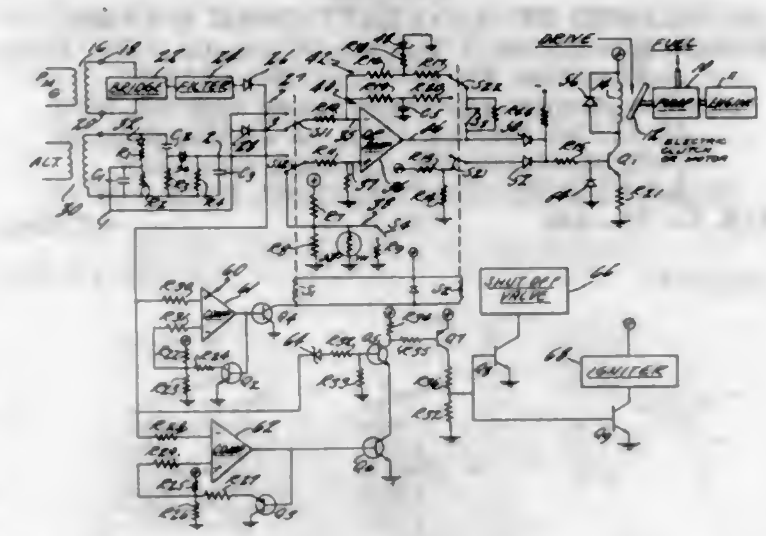
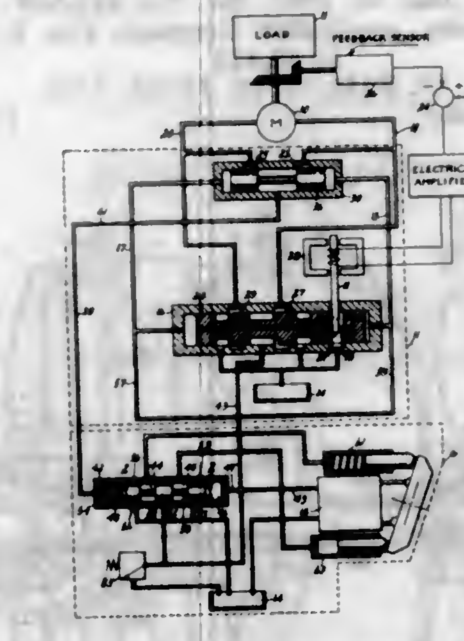
### 3,478,512
### FUEL CONTROL FOR A SMALL GAS TURBINE ENGINE
**Charles B. Brahm, Ellington, Conn., John M. Corcoran, Piscataway, N.J., Edward M. Glista, East Longmeadow, Mass., and David L. Van Olinda, Granby, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Nov. 3, 1967, Ser. No. 680,709**
**Int. Cl. F02c** *9/06;* **F02g** *3/00;* **F04b** *49/06*
**U.S. Cl. 60—39.28** **1 Claim**



A fuel control for a small gas turbine engine is described. Speed signals derived from a permanent magnet generator and an alternator are used to drive a differential amplifier having variable gain characteristics. A switch is employed to detect the occurrence of the acceleration mode of the engine control and the speed mode operation of the control to alter and select the amplifier gain characteristic commensurate with the sensed mode of operation of the control. Additional switch functions are provided to control a shutoff valve and ignite the fuel to the engine. The output voltage obtained from the variable gain amplifier is used to drive the coil of a hysteresis clutch. The clutch driven by the engine in turn drives a positive displacement pump and the variable control from the amplifier is used to vary the speed of the pump and therewith the fuel flow to the engine.

### 3,478,513
### HYDRAULIC CONTROL SYSTEM
**Carlton Y. W. Ma, Cincinnati, and Stanley A. Pfister, Wilmington, Ohio, assignors to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio**
**Filed May 8, 1968, Ser. No. 727,542**
**Int. Cl. F16h** *39/46, 39/50*
**U.S. Cl. 60—52** **16 Claims**



A load compensating hydaulic system which controls the output of a variable delivery pump to make it proportional to the load. When the load on a hydraulic motor is increased, pressure to the motor increases, exhaust from the motor decreases, and the difference between the two increases. Any one of these changes is then fed back to control the output from the pump to the motor which in turn makes the system load compensated.

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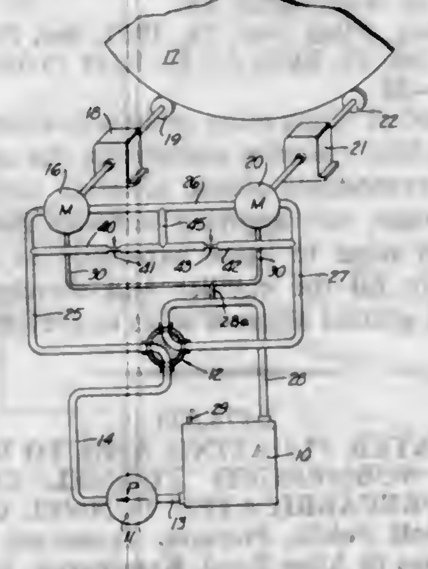
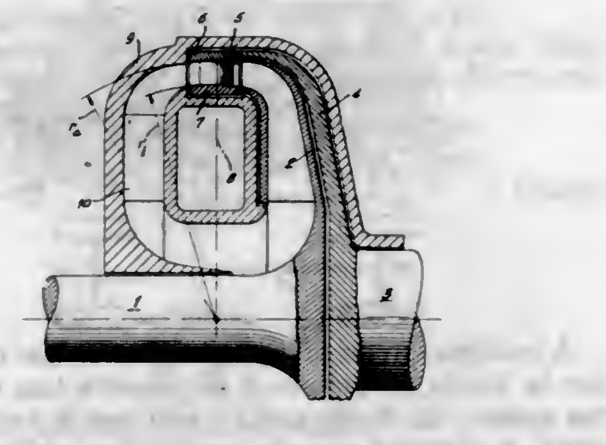
### 3,478,514
### HYDRAULIC DRAIN MEANS FOR SERVO-SYSTEMS
**Gary L. Parker, La Canada, Calif., assignor, by mesne assignments, to California Institute Research Foundation, Pasadena, Calif., a corporation of California**
**Filed Feb. 5, 1968, Ser. No. 703,107**
**Int. Cl. F01b** *21/00;* **F01k** *23/00*
**U.S. Cl. 60—53** **5 Claims**



A hydraulic servo drive for large loads providing improved response at very low speeds. A control system for providing substantial reduction in problems due to backlash and independent operation of motors. A pair of hydraulic drive motors connected in series with the fluid power source and an auxiliary system for compensating for drain line loss. An orifice connected across each motor to provide a source of fluid to the junction of the series connected motors.

### 3,478,515
### OVERDRIVE TORQUE CONVERTER WITH ADJUSTABLE AXIAL TURBINE BLADES
**Karl Haide, Friedrichshafen-Jettenhausen, Germany, assignor to Maybach Mercedes-Benz Motorenbau G.m.b.H., Friedrichshafen, Germany**
**Filed May 2, 1967, Ser. No. 635,478**
**Claims priority, application Germany, May 13, 1966, M 69,486**
**Int. Cl. F16d** *33/04;* **F16h** *41/12, 41/24*
**U.S. Cl. 60—54** **7 Claims**



A Föttinger-type overdrive torque converter which includes within a housing a centrifugal-type pump wheel, an axial flow turbine wheel and a guide wheel as well as blades arranged between an outer and an inner turbine wheel ring whereby the blades are individually adjustable about radially extending axes and are fixed in a particular position corresponding to the desired torque converter properties. The pump wheel is preferably of the type having a radially outwardly decreasing flow area and as large as possible an outlet diameter while the guide wheel is arranged between two substantially parallel planes normal to the torque axis. The inner and outer rings are provided with mutually facing spherical surfaces of different radii with the centers coinciding substantially with the axis of the torque converter, the adjusting axes of the turbine blades also passing through the common center point.

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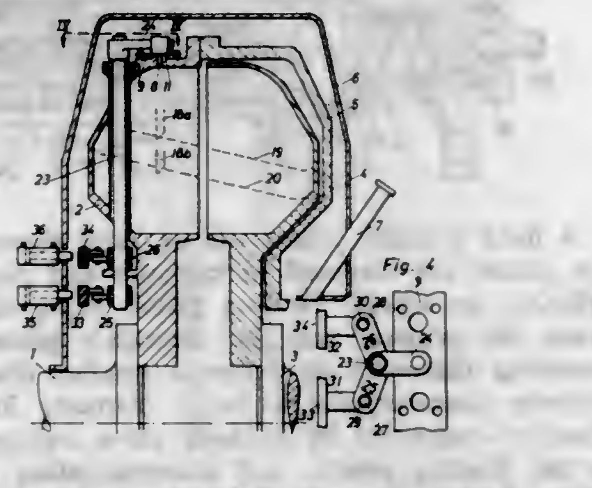
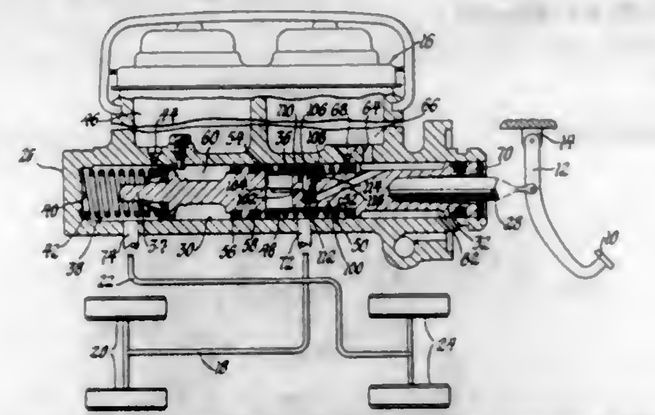
### 3,478,516
### EMPTYING DEVICE FOR FLUID FLOW CIRCUITS
**Gustav Bönsch, Heidenheim (Brenz), and Klaūs Nolz, Crailsheim, Germany, assignors to Voith Getriebe KG, Heidenheim (Brenz), Germany**
**Filed Mar. 13, 1968, Ser. No. 712,732**
**Claims priority, application Germany, Mar. 22, 1967, 1,600,974**
**Int. Cl. F16d** *33/18;* **F16h** *41/30;* **F04d** *29/00*
**U.S. Cl. 60—54** **14 Claims**



An emptying device for fluid flow circuits, especially fluid couplings, with a rotatable housing having radially extending discharge openings controlled by a flexible spring elastic band, preferably a spring steel band, which is circumferentially displaceable on said housing.

### 3,478,517
### BRAKE MASTER CYLINDER

**Ronald L. Shellhause, Vandalia, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed May 21, 1968, Ser. No. 730,879**
**Int. Cl. F15b** *7/08;* **B60t** *11/22*
**U.S. Cl. 60—54.6** **11 Claims**



A multiple circuit brake system has a dual master cylinder in which, in the event of pressure loss in a part of the system, the brake pedal travel loss is kept to a minimum. A pressure sensitive mechanism within the master cylinder senses the normal build-up of fluid pressure in the primary pressurizing chamber when the brake pedal is moved in the brake actuating direction. So long as a normal pressure build-up occurs, the pressure sensitive mechanism moves a normally locked detent or other locking arrangement into an unlocked position. If normal pressure build-up does not occur with brake pedal movement in the brake actuating direction, the locking mechanism will remain in a locked position. The brake pedal force is then transmitted to the secondary pressurizing piston through the locking mechanism without requiring the full stroke of the primary piston.

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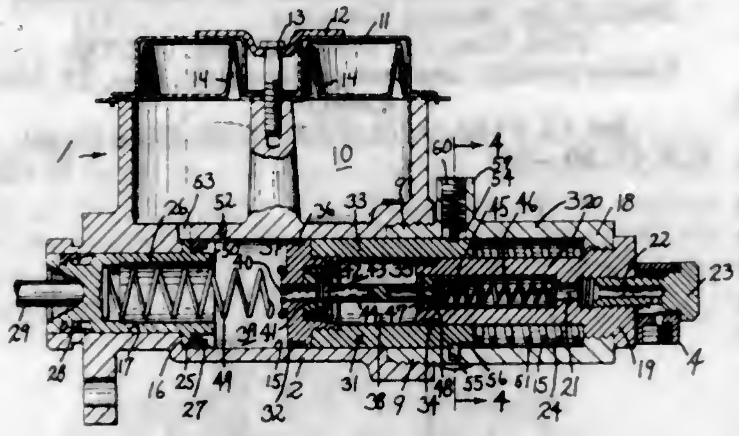
### 3,478,518
### COMPOUND MASTER BRAKE CYLINDER

**William Lagerquist, North Mankato, Minn., assignor to Minnesota Automotive, Inc., Mankato, Minn., a corporation of Minnesota**
**Filed Aug. 16, 1968, Ser. No. 753,218**
**Int. Cl. F15b** *7/08, 7/00*
**U.S. Cl. 60—54.6** **10 Claims**



A fixed primary piston and an axial movable secondary piston are disposed in opposite end portions of a cylinder, an axially floating piston being disposed between the primary and the secondary pistons and cooperating therewith to define a smaller diameter high pressure chamber and a larger diameter low pressure chamber connected by a check valve equipped passage in the floating piston, and communicating respectively with a fluid outlet and a fluid inlet. A releasable element holds the floating piston against movement until a predetermined pressure is reached in the low pressure chamber, the floating piston then moving in a direction toward the fixed piston to close the check valve and discharge fluid only from the high pressure chamber through said outlet.

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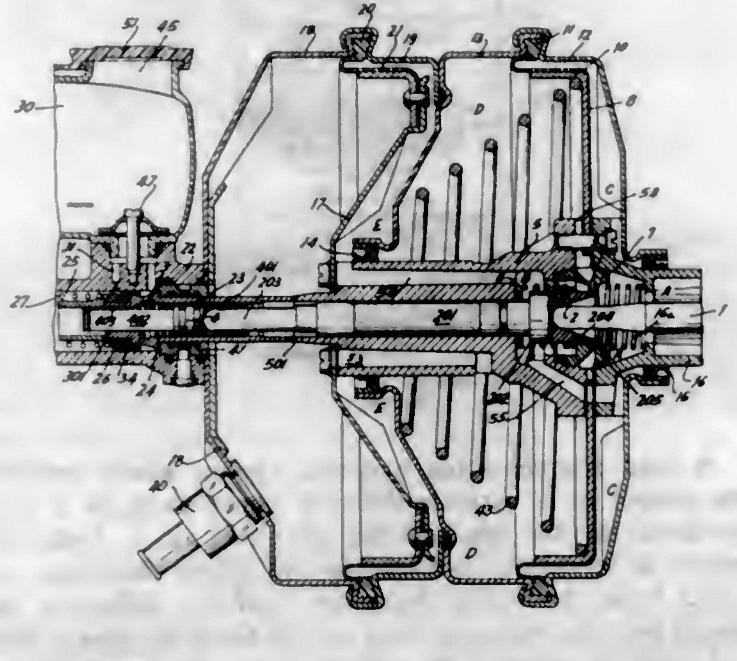
### 3,478,519
### MULTIPLE POWER BOOSTER ARRANGEMENT

**Giorgio Eggstein, Turin, Italy, assignor to Ernst Heinkel, Aktiengesellschaft, Stuttgart-Zuffenhausen, Germany**
**Filed Jan. 30, 1967, Ser. No. 612,549**
**Claims priority, application Germany, Feb. 1, 1966, H 58,415**
**Int. Cl. F15b** *13/10, 15/00, 7/08*
**U.S. Cl. 60—54.6** **11 Claims**



A force transmitting body is secured to the two power pistons of a power booster and operates the master piston of a hydraulic brake system. The force transmitting body contains all ducts required for the control of the power pistons by a membrane valve on one of the power pistons so that the master piston is first operated by the force of the operator, and then by the combined forces of both power pistons.

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### 3,478,520
### METHOD FOR FILLING ABANDONED MINES

**Albert Andy, Washington, Pa., assignor of one-fourth each to Anthony Andy, William Andy, and Victor Andy, all of Washington, Pa.**
**No Drawing. Filed Nov. 16, 1967, Ser. No. 683,482**
**Int. Cl. E02d** *27/32;* **E21f** *15/00*
**U.S. Cl. 61—35** **3 Claims**

The method of filling mine cavities in abandoned mines by a strong filler material comprising the application of particles of expandable plastic material, such as expandable polystyrene, and applying sufficient heat thereto in the cavity or mine to cause expansion to an extent as to completely fill the cavities and thereby adequately reinforce the ground above it so as to prevent subsidence.

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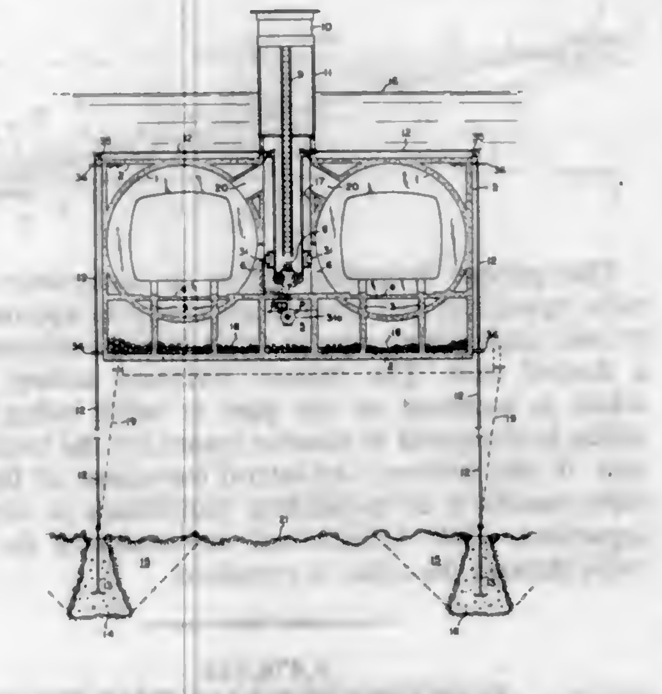
### 3,478,521
### UNDERWATER FLOATING AND TO REQUIRED LEVEL SUBMERGED TUNNEL COMPOSED FROM PREFABRICATED TUNNEL UNITS

**Dragan Rudolf Petrik, Pretoria, Transvaal, Republic of South Africa (8 Alice Road, Kensington, Johannesburg, Transvaal, Republic of South Africa)**
**Continuation-in-part of application Ser. No. 252,944, Jan. 21, 1963. This application Aug. 18, 1965, Ser. No. 481,448**
**Claims priority, application Republic of South Africa, Jan. 23, 1962, 62/286**
**Int. Cl. E02d** *29/06, 25/00;* **B63c** *11/34*
**U.S. Cl. 61—43** **5 Claims**

A submerged tunnel construction in which the tunnel is maintained suspended in a body of water by anchor means including ropes or the like connected to winding devices on the tunnel. The winding devices vary the effective length of the ropes to adjust the depth at which the tunnel is submerged. The water ballast on the tunnel is varied by a weighing device responsive to the tension in the ropes to control pumps which pump water to and from ballast compartments in the tunnel. The tunnel may be formed by a plurality of prefabricated tubes connected together by flexible waterproof sheets which permit relative displacement of the tube ends while maintaining a continuous underwater passageway.



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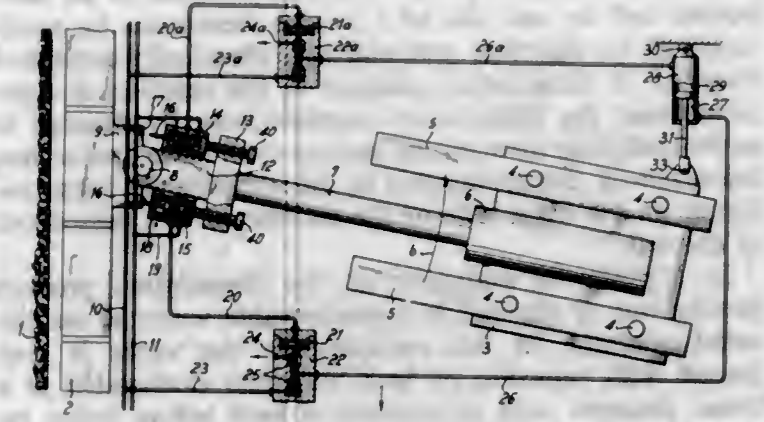
### 3,478,522
### CONTROL ARRANGEMENTS FOR HYDRAULIC PIT PROP SUPPORT UNITS

**Hans Rieschel, Essen-Holsterhausen, Germany, assignor to Bergwerksverband G.m.b.H., Essen, Germany, a company of Germany**
**Filed Jan. 29, 1968, Ser. No. 701,401**
**Claims priority, application Germany, Feb. 2, 1967, B 91,001; Feb. 14, 1967, B 91,168**
**Int. Cl. E21d** *23/04;* **F01b** *31/12, 25/26*
**U.S. Cl. 61—45** **5 Claims**



This invention relates to a control and regulating arrangement for maintaining a predetermined angle between the longitudinal axis of a feed cylinder or jack of a hydraulic pit prop support unit and the longitudinal axis of a strongpoint support also set up in the mine working, in particular the longitudinal axis of a conveyor, the feed cylinder or its piston rod being fixed to the strongpoint through a pivotal joint and the unit being equipped, for purposes of reaction against the neighbouring support unit, with an aligning or jacking cylinder disposed transversely of the feed direction, which cylinder becomes operative automatically during the advancing operation of the support units, and is characterised by the provision of a controller incorporating a servo-device responsive to variation in the angle between the feed mechanism axis and the strongpoint axis and acting on the pit prop support unit to restore said angle to the predetermined value.

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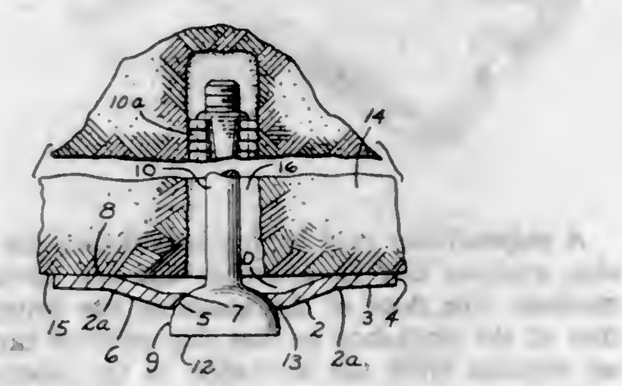
### 3,478,523
### MINE ROOF BOLT BEARING PLATE

**Hans E. Reusser, Cleveland, and Morse Hill, Berea, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey**
**Filed Feb. 16, 1968, Ser. No. 706,177**
**Int. Cl. E21d** *21/00;* **F16b** *29/00, 39/24*
**U.S. Cl. 61—45** **7 Claims**



A mine roof bearing member including, a plate having a substantially straight peripheral flange and a central conical frustum provided with an opening the circular wall of which comprises a spherical seat adjacent the plate bottom and an axially extending socket edge adjacent the plate top.

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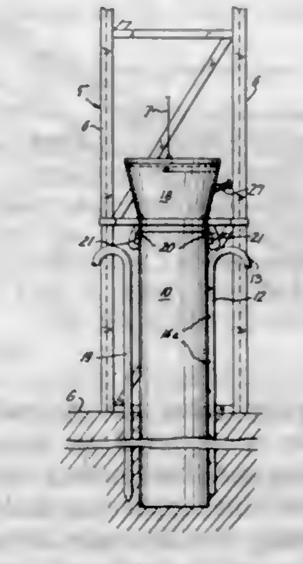
### 3,478,524
### APPARATUS FOR INSTALLING NONDISPLACEMENT SAND DRAINS

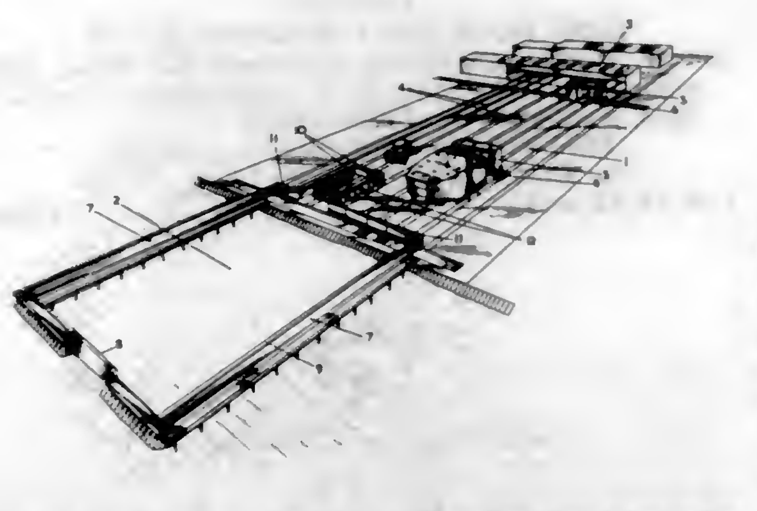
**Clemens B. Hoppe, Box 590, Palm Beach, Fla. 33480**
**Continuation-in-part of application Ser. No. 477,366, Aug. 5, 1965. This application Mar. 26, 1968, Ser. No. 719,821**
**Int. Cl. E02d** *5/22, 5/46;* **E21d** *1/08*
**U.S. Cl. 61—63** **20 Claims**



Installation of columns of sand in soft unstable soil for the purpose of strengthening or stabilizing the soil sufficiently to support highways, buildings etc.

### 3,478,525
## SHIPBUILDING YARD AND METHOD FOR BUILDING AND LAUNCHING SHIPS OR SIMILAR FLOATABLE BODIES

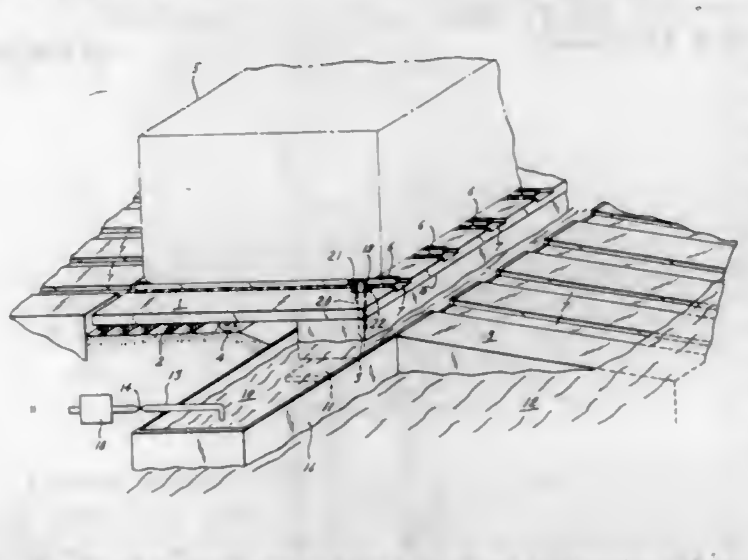
**Hendrik Adriaan Van der Hoeven, Vlissingen, Netherlands, assignor to N.V. Koninklijke Maatschappij "De Schelde," Vlissingen, Netherlands**
**Filed Nov. 30, 1967, Ser. No. 686,954**
**Int. Cl. B63c** *3/02, 1/00;* **B63b** *9/00*
**U.S. Cl. 61—64** **6 Claims**



A shipbuilding yard having a workshop for fabricating ship sections and an assembly site for assembling ship sections. The floor of the assembly site being level with that of the workshop so that ship sections can be moved on vehicles from the workshop to the assembly site. A basin adjoining the assembly site is separated from open water by a dike having a lock or gate which permits communication with open water. An embankment on the site being at least partly removable and being adapted to be connected to said dike and to surround a ship to be launched.

### 3,478,526
## SHIP LAUNCHING APPARATUS AND METHOD

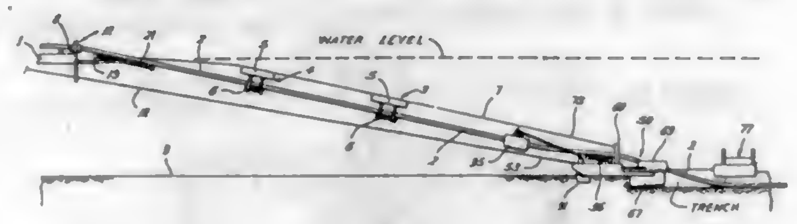
**Christopher J. Foster, Sands Point, N.Y.**
**(14 Vanderventer Ave., Port Washington, N.Y. 11050)**
**Continuation-in-part of application Ser. No. 538,447, June 17, 1966. This application May 1, 1968. Ser. No. 725,621**
**Int. Cl. B63c** *3/00*
**U.S. Cl. 61—67** **22 Claims**



A new launching apparatus and method permits a floatable structure to be constructed on the apparatus or at a convenient location and then moved onto the launching apparatus. The launching apparatus includes a platform suitable for supporting the floatable structure which can be rotated from a normally horizontal position to an inclined launching position. The floatable structure may be launched directly into the water from the inclined platform or from a sloping ramp aligned with the platform in an inclined position.

### 3,478,527
## STEERING DEVICE

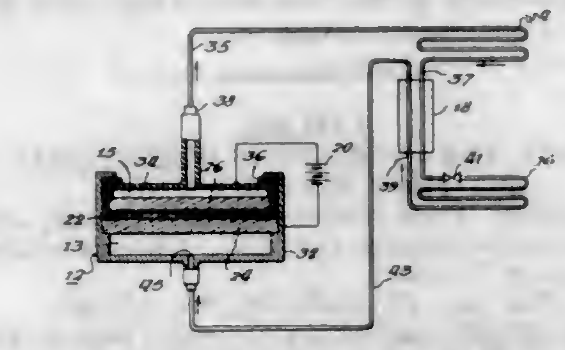
**Buddy L. Sherrod, P.O. Box 1072, Conroe, Tex. 77301**
**Original application Apr. 15, 1966, Ser. No. 542,832, now Patent No. 3,347,054, dated Oct. 17, 1967. Divided and this application Sept. 25, 1967, Ser. No. 670,122**
**Int. Cl. B23b** *35/04;* **F16l** *1/00;* **E02f** *5/02*
**U.S. Cl. 61—72.4** **6 Claims**



The present invention relates to underwater pipe or cable apparatus and more particularly to apparatus used to steer underwater pipe or cable laying equipment along a desired path. The present invention utilizes a collar which is mounted on the pipe or cable being laid and which is connected to steering means for the trenching device. In this manner, any lateral movement of the pipe or cable results in corresponding movements in the steering apparatus, while longitudinal movement of the pipe or cable through the collar is permitted.

### 3,478,528
## ELECTROCHEMICAL COOLING

**Charles Roland McCully, 21 Wildwood Drive S., Prospect Heights, Ill. 60070**
**Filed Jan. 5, 1968, Ser. No. 696,001**
**Int. Cl. F25b** *21/00*
**U.S. Cl. 62—3** **14 Claims**



A method for cooling and device for cooling are provided utilizing electrical energy to force an endothermic chemical dissociation reaction to proceed at a temperature below the temperature level at which the reaction could proceed spontaneously. The reaction proceeds in an electrolytic cell on one side of a porous membrane by application of an electrical potential to a chemically combined material. A dissociation product of the reaction is separated from the dissociation reaction zone by passage in an ionized state through the porous membrane and is then deionized by the application of the opposite electrical potential on the other side of the membrane and passed out of the cell.

In a preferred embodiment, the dissociation product passing out of the cell is a condensable vapor at an elevated pressure. In this embodiment, the vapor is condensed with rejection of heat and then evaporated at a lower pressure with absorption of heat before being recycled to the electrolytic cell. Cooling in this embodiment takes place at the evaporator or by the product stream emerging from the evaporator.

In another embodiment, the dissociation product passing out of the cell may be any fluid material since change of state is not relied on for cooling. In this embodiment, the cooling takes place in the electrolytic cell and the dissociation products are recombined in a zone external to the cell so that the exothermic heat of the association reaction may be removed prior to the return of the chemically combined material to the cell.

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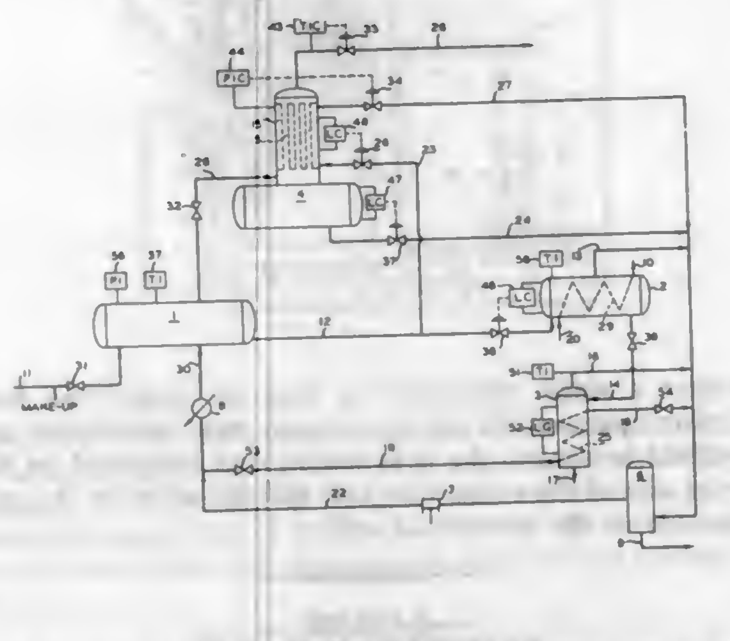
### 3,478,529
## PURIFICATION OF REFRIGERANT

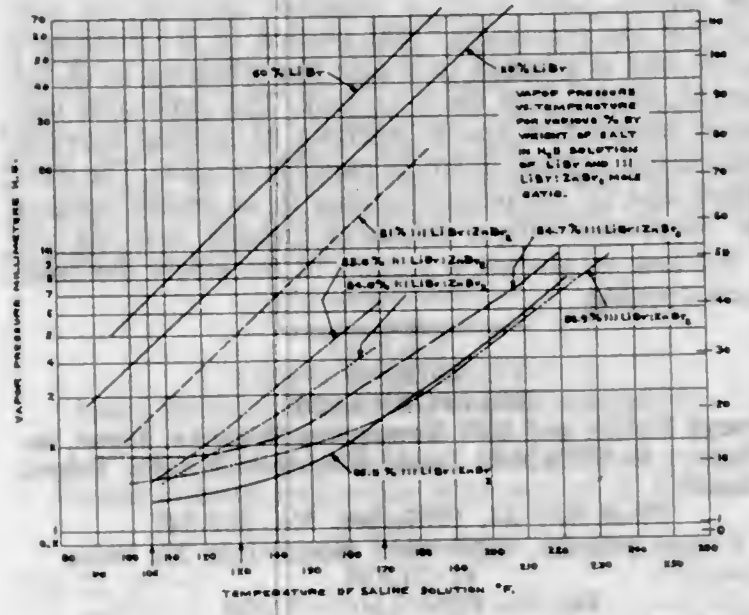
**Philip J. Boykin, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Apr. 17, 1968, Ser. No. 721,962**
**Int. Cl. F25b** *43/00*
**U.S. Cl. 62—85** **7 Claims**



A process for continuously or intermittently purifying an impure refrigerant in a cooling system thereby increasing the efficiency of refrigeration and reducing the cost of operation and equipment. The refrigerant is purified by vaporizing the lighter impurities in one zone and by removing the heavier impurities from the evaporator. The refrigerant associated with the heavier impurities is vaporized by using a portion of the hot compressed gases from the compressor as the heat source.

### 3,478,530
## ABSORPTION REFRIGERATION SYSTEM

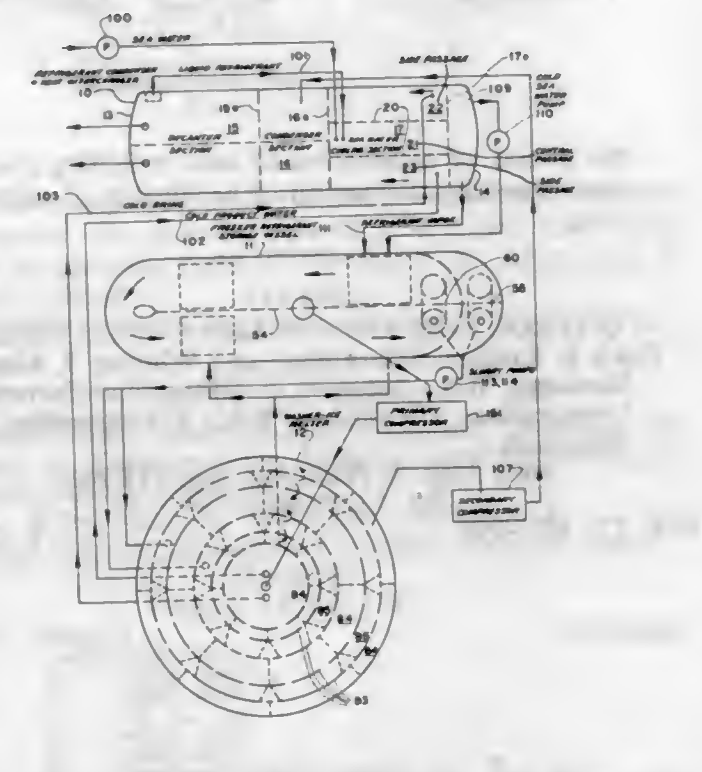
**David Aronson, Upper Montclair, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 559,889, June 23, 1966. This application Dec. 15, 1967, Ser. No. 706,737**
**Int. Cl. F25b** *15/06;* **C09k** *3/06*
**U.S. Cl. 62—112** **8 Claims**



Absorption refrigeration processes and systems employing an aqueous solution of mixed lithium and zinc halides therein; aqueous solutions of mixed lithium and zinc halides useful as coolants and in absorption refrigeration.

### 3,478,531
## SALINE WATER CONVERSION SYSTEM

**George B. Karnofsky, Mount Lebanon Township, Allegheny County, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware**
**Filed July 22, 1966, Ser. No. 567,201**
**Int. Cl. C02b** *1/12;* **B01d** *9/02*
**U.S. Cl. 62—123** **3 Claims**



An apparatus and method are provided for saline water conversion by freezing comprising means for making ice by vaporization of refrigerant in direct contact with saline water, a primary compressor, a secondary compressor, a single vessel incorporating means for ice washing and means for ice melting by contact with refrigerant vapor from the primary compressor, single vessel means for heat interchange between feed saline water and product water and brine and for condensation of refrigerant vapor from the secondary compressor, connections through the primary compressor from the means for making ice to the single vessel ice washing means and connections through the secondary compressor from the single vessel ice washing and melting means to the single vessel heat interchange means.

### 3,478,532
## ELECTRONIC HEAD PRESSURE CONTROL FOR CONDENSING UNITS

**Thomas A. Cootey and Larry M. Fischer, San Antonio, Tex., assignors to Friedrich Refrigerators, Incorporated, San Antonio, Tex., a corporation of Texas**
**Filed Aug. 5, 1964, Ser. No. 387,821**
**Int. Cl. F25b** *39/04*
**U.S. Cl. 62—184** **11 Claims**

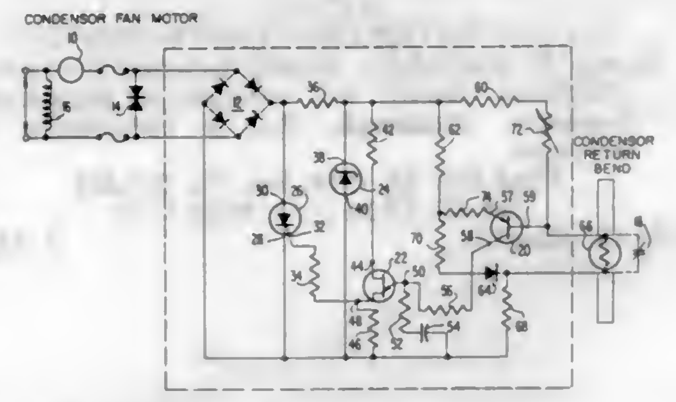
1. A control system for regulating within predetermined limits the condensing pressure in a fan motor cooled refrigerant condenser, comprising:

(1) sensor means to sense changes in the temperature of the condenser;

(2) signal generating means connected to said sensor means to produce electrical signals proportional to the temperature of the condenser;

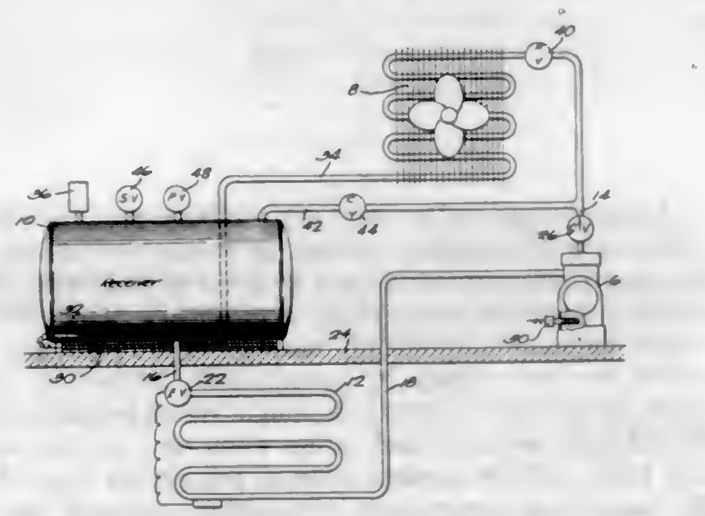
(3) an oscillator circuit, connected to and having its period of oscillation controlled by said signal generating means; and

(4) switching means connected to the fan motor and connected to and controlled by said oscillator so that the period of conduction of said switching means is determined by the period of oscillation of said oscillator.



### 3,478,533
### CONTROL FOR AIR COOLED CONDENSERS

**Erich J. Kocher, Milwaukee, and Whitney I. Grant, Muskego, Wis., assignors to Vilter Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin**
**Filed Mar. 8, 1968, Ser. No. 711,702**
**Int. Cl. F25b** *41/00*
**U.S. Cl. 62—196** **1 Claim**

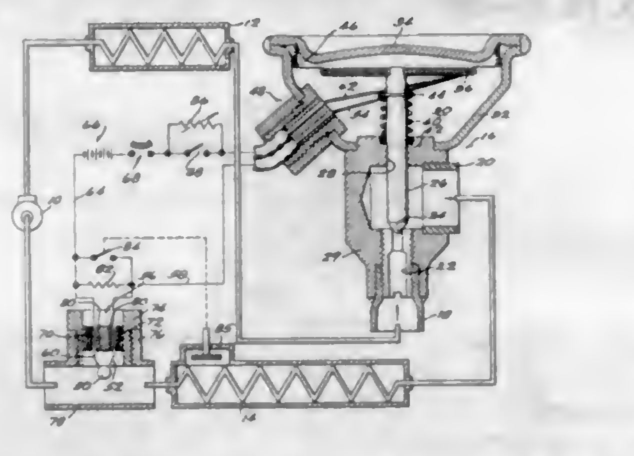


An automatically operable all-weather control for refrigeration systems embodying an outside condenser which is exposed to changes in atmospheric temperature and especially winter conditions.

### 3,478,534
### THERMISTOR CONTROLLED REFRIGERATION EXPANSION VALVE

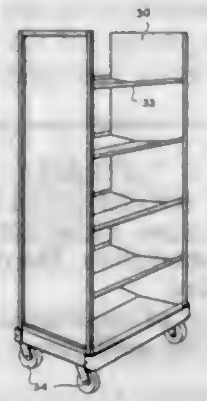
**Alan A. Matthies, Milwaukee, Wis., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware**
**Filed Aug. 11, 1967, Ser. No. 659,962**
**Int. Cl. F25b** *41/04;* **G05d** *23/24*
**U.S. Cl. 62—225** **27 Claims**

An expansion valve includes an electrical heat motor operator which responds to an electrical input to control the valve opening and, correspondingly, flow of refrigerant in a refrigeration system. A thermistor is connected in the electrical circuit providing the input to the heat motor. The thermistor is directly exposed to refrigerant flowing in the refrigeration system and is thermally insulated from the structural elements of the system so that the thermistor operates on the basis of self-heating and responds to the condition of the refrigerant, i.e. its state or phase and temperature. The thermistor has a markedly significant response to the difference between refrigerant in a liquid phase and a gaseous phase and is capable of providing control about 0° superheat. In one aspect a single thermistor is used to control the heat motor operator. In another aspect two thermistors are utilized to control the heat motor, one positioned on the inlet side of the evaporator coil and the other on the outlet side of the evaporator coil.



### 3,478,535
### REFRIGERATED CASE

**Arthur Perez and James E. Myers, Niles, Mich., assignors to Clark Equipment Company, a corporation of Michigan**
**Filed Jan. 24, 1968, Ser. No. 700,233**
**Int. Cl. A47f** *3/04;* **F25d** *17/06*
**U.S. Cl. 62—237** **9 Claims**

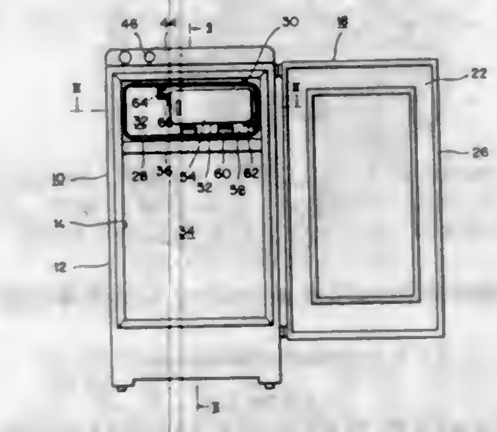


A refrigerated case has a stationary section with a removable front portion and is adapted to receive a movable section. Duct work is furnished between the rear wall and the removable front portion of the stationary section and is adapted to enable the wheeling in of the movable section over the duct work. The removable portion is removed to enable insertion of stocked movable sections and removal of empty movable sections. The front portion has an air passage ending in an intake opening that cooperates with a discharge opening near the top of the case to provide a curtain of air across the front access opening.

### 3,478,536
### REFRIGERATOR

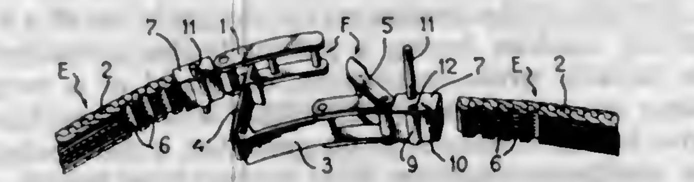
**Tetsuya Kohya and Eiiti Komagata, Shizuoka, Japan, assignors to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan**
**Filed July 24, 1967, Ser. No. 655,547**
**Claims priority, application Japan, July 28, 1966, 41/71,559**
**Int. Cl. F25d** *11/02, 23/06*
**U.S. Cl. 62—441** **5 Claims**

In order to store refrigerated food, a thermally insulating case with a thermally insulating lid is disposed within an evaporator of the usual construction. The case is provided with a plurality of vents on each of the upper and lower portions of each side wall with the upper vents having a diameter tapered from the interior toward the exterior of the case to cause warm air to easily leave the case while the lower vents have a diameter tapered from the exterior toward the interior of the case to cause cooled air to easily enter the case. Also a space is provided between the bottom walls of the case and evaporator or between the upper wall of the evaporator and the inner top wall of the refrigerator housing for receiving ice-making trays.



### 3,478,537
### BRACELET OR LIKE ARTICLE OF JEWELRY CAPABLE OF BEING IMMEDIATELY BROUGHT TO SIZE

**Boris Golberine and Roger Berr, Paris, France, assignors to Berr et Cie, Paris, France, a French body corporate**
**Filed Nov. 29, 1966, Ser. No. 597,656**
**Claims priority, application France, May 27, 1966, 63,223**
**Int. Cl. A44c** *5/02, 5/18;* **A45c** *11/10*
**U.S. Cl. 63—4** **7 Claims**

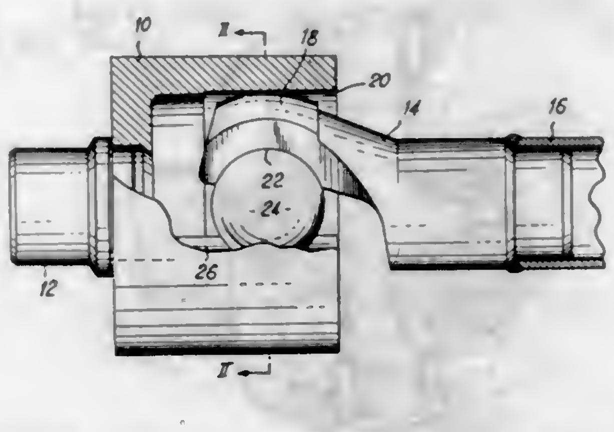


Article of jewelry such as a bracelet having two free end portions connected to a connecting element through two box portions. Each box portion has a locking member mounted therein which engages one recess of a series of fixing recesses which are in spaced relation longitudinally of the article and located solely on a single side of the article, each free end portion of the jewelry being engaged in the corresponding box portion. The bracelet can be shortened by cutting the ends thereof and reinserting the bracelet in the box portions and engaging the locking member in another recess.

### 3,478,538
### UNIVERSAL JOINT

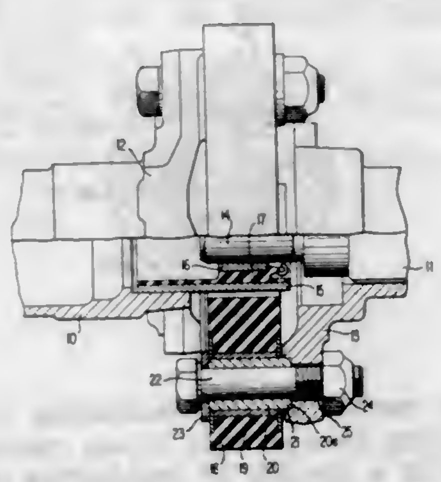
**André Heimler, Montreuil, France, assignor to Societe Anonyme D.B.A.**
**Filed Mar. 28, 1968, Ser. No. 716,766**
**Claims priority, application France, Apr. 4, 1967, 101,407**
**Int. Cl. F16d** *3/22*
**U.S. Cl. 64—7** **8 Claims**

A universal joint in which the torque is transmitted between an inner member and an outer member by balls located in rectilinear grooves extending axially in the internal wall of the outer member, wherein the inner member comprises a part spherical convex surface cooperating with a portion of internal surface of the outer member which is substantially cylindrical and further comprises a cylindrical concave surface having its axis perpendicular to the axis of the joint in aligned condition which cooperates with two balls diametrally opposed and located in grooves extending symmetrically with respect to the axial plane of symmetry of said portion of internal surface.



### 3,478,539
### JOINT COUPLING

**Hans-Karl Daur, Stuttgart-Bad Cannstatt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**
**Filed Nov. 24, 1967, Ser. No. 685,483**
**Claims priority, application Germany, Nov. 26, 1966, D 51,653**
**Int. Cl. F16d** *3/78*
**U.S. Cl. 64—13** **10 Claims**

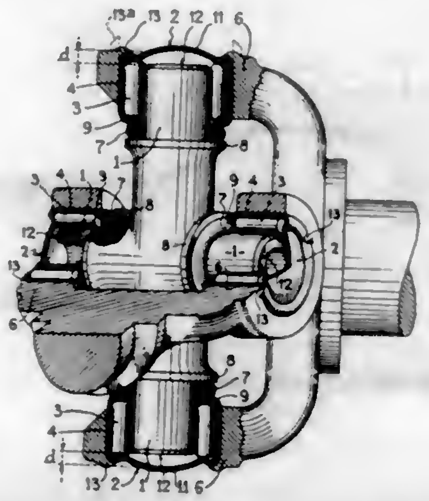


A joint coupling for the jointed connection of two shafts by means of a torque-transmitting elastic joint disk, in which the latter is alternately connected with the coupling halves by means of coupling bolts mutually offset in the circumferential direction whereby the coupling bolts extend through bushings which are inserted into bores provided therefor in the joint disk and are extended beyond the elastic joint disk up to recesses provided in the coupling halves which receive the bushings with appropriate fit.

### 3,478,540
### UNIVERSAL JOINT

**Alfred Pitner, Paris, France, assignor to Nadella S.A., Rueil-Malmaison, France, a French body corporate**
**Filed July 3, 1967, Ser. No. 651,353**
**Claims priority, application France, Sept. 29, 1966, 78,091**
**Int. Cl. F16d** *3/24*
**U.S. Cl. 64—17** **5 Claims**

A universal joint in which the end face of each journal of the cross-shaped member of the joint is spaced from the end wall of the corresponding needle bearing cup a given distance owing to the support offered by the corresponding sealing ring, disposed between a shoulder on the journal and the cup, to a radial flange of the cup, the sealing ring thus also performing the function of a spacer and abutment member.



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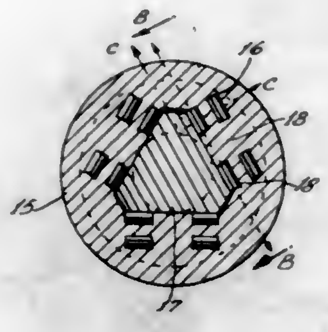
### 3,478,541
### ROLLER BEARING SPLINES

**Daniel F. McGill, Portland, Oreg., and Alfred T. McGill, 511 SE. Belmont St., Portland, Oreg. 97214; said Daniel F. McGill assignor to said Alfred T. McGill**
**Filed Jan. 8, 1968, Ser. No. 697,557**
**Int. Cl. F16d** *3/06*
**U.S. Cl. 64—23.7 3 Claims**



A spline mechanism for transmitting rotary torque from a driving member to a driven member which is provided with a plurality of anti-friction roller bearing means mounted to ride in respective axially-extending endless track channels situated in the interface between said members so as to permit friction-free axial movement of one member relative to the other.

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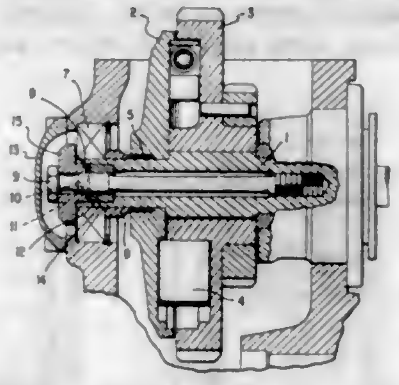
### 3,478,542
### INJECTION MOMENT ADJUSTABLE CONNECTION FOR INJECTION PUMPS OF INTERNAL COMBUSTION ENGINES

**Hans Dinger, Stuttgart, and Herbert Deutschmann, Stuttgart-Bad Cannstatt, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**
**Filed Aug. 15, 1966, Ser. No. 572,251**
**Claims priority, application Germany, Aug. 17, 1965, D 47,991**
**Int. Cl. F16d** *3/10, 1/08*
**U.S. Cl. 64—24 10 Claims**

An injection moment adjustable connection between the engine shaft connected drive gear and the concentric drive shaft for the injection pump, which connection employs ring wedges actuated by a single bolt threaded into the drive shaft. The bolt head is concentric with and immediately adjacent a tool engaging head for rotating the drive shaft during adjustment. Preferably, there is an automatic speed responsive injection adjusting device within the drive gear.



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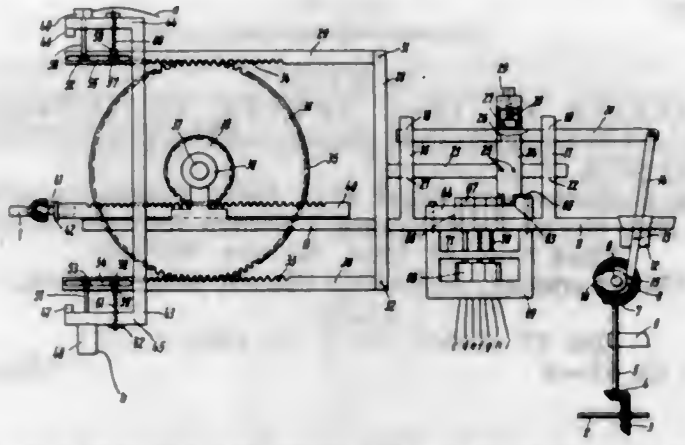
### 3,478,543
### VARIABLE STROKE MECHANISM

**Bruno Faninger, Avenida Grau 676, Miraflores, Lima, Peru**
**Filed Dec. 27, 1967, Ser. No. 693,997**
**Int. Cl. D04b** *27/10*
**U.S. Cl. 66—86 8 Claims**



Variable stroke mechanism for the guide bar of a warp knitting machine having a pattern facility connected to the variable stroke mechanism, composed of a reciprocating drive operated synchronously with the machine, a drive linkage connected to the guide bar, a clutch adapted for rectilinear operation fixed to the drive linkage and engaging the reciprocating drive, and means controlled by pattern data stored in a data carrier to vary the effective stroke of the clutch.

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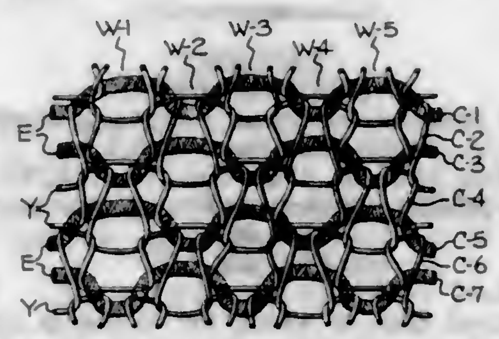
### 3,478,544
### METHOD OF KNITTING SHEER SEAMLESS SUPPORT STOCKINGS

**Elwood P. Homan, Wytheville, Va., assignor, by mesne assignments, to Kayser-Roth Corporation, New York, N.Y., a corporation of New York**
**Filed Sept. 25, 1967, Ser. No. 670,248**
**Int. Cl. D04b** *15/06, 9/46*
**U.S. Cl. 66—108 4 Claims**



This method includes feeding a nylon body yarn to every needle and forming stitch loops thereon at one knitting station of a multi-feed circular knitting machine

while feeding a covered spandex yarn to alternate needles and forming stitch loops thereon at the next successive knitting station. The covered spandex yarn is fed under a substantial amount of tension, in the range of about 10 grams, while the stitch forming instrumentalities are controlled to incorporate a greater length of nylon body yarn and a lesser length of covered spandex yarn to enhance the sheer appearance of the stocking.

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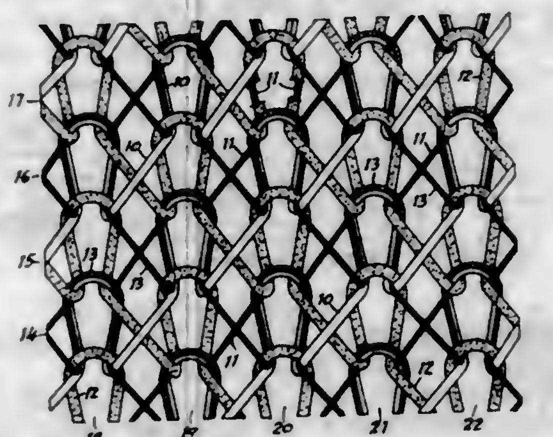
### 3,478,545
### WARP KNIT FABRIC

**Otto Engelhard, Forest Hills, N.Y., assignor to Indian Head Inc., New York, N.Y., a corporation of Delaware**
**Filed Feb. 16, 1968, Ser. No. 706,105**
**Int. Cl. D04b** *21/04*
**U.S. Cl. 66—195 12 Claims**



Warp knit fabric composed of two sets of yarns in each set of which thick and thin yarns alternate, with the yarns so disposed that a thin and a thick yarn is contained in each stitch of the fabric. The relative deniers of the thick and of the thin yarns is such that the appearance of a design in the fabric is determined by the appearance of the thick yarns. The fabric is made on a two bar warp knitting machine wherein each bar is fully threaded, with said thick and thin yarns arranged in alternation, and wherein the bars feed a thick and a thin yarn to each needle in each course of knitting.

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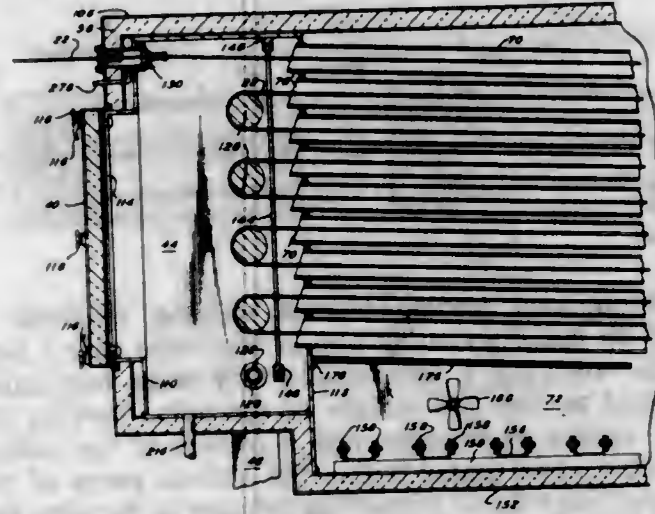
### 3,478,546
### SEAL FOR FABRIC TREATING MACHINE

**Jacob Serbin, Cedarbrook Hill Apartments, Wyncote, Pa. 19095**
**Continuation-in-part of application Ser. No. 380,740, June 19, 1964. This application May 28, 1968, Ser. No. 732,568**
**Int. Cl. B65d** *53/00;* **D06f** *37/00*
**U.S. Cl. 68—5 17 Claims**



A seal for use in a fabric treating machine comprising a housing including a pair of converging plates. The plates are forced into abutment by adjustable spring means.

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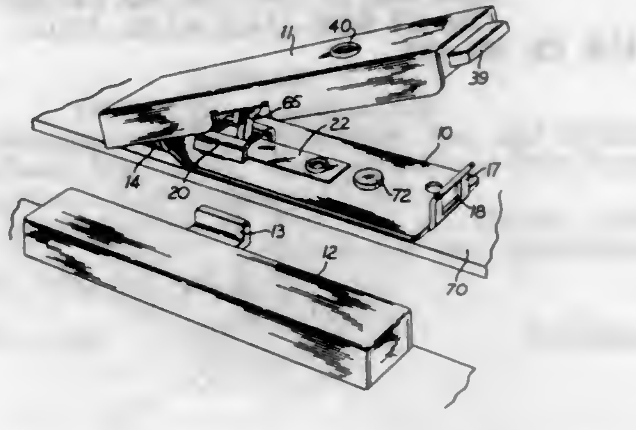
### 3,478,547
### LUGGAGE LOCKS

**Eric Frederick Constable, Solihull, England, assignor to C. W. Cheney & Son Limited, Hockley, England**
**Filed June 9, 1967, Ser. No. 644,933**
**Claims priority, application Great Britain, June 16, 1966, 26,925**
**Int. Cl. E05b** *65/52;* **E05c** *19/14, 5/00*
**U.S. Cl. 70—71 3 Claims**



The invention provides a lock having an attachment plate and a lever pivoted at one end to the attachment plate and with a link extending between the lever and the attachment plate to limit pivoting movement of the lever, in which the link is connected to one end after the attachment plate has been secured to the suitcase, and when so connected is not readily releasible. This allows the attachment plate to be fixed to the suitcase whilst the lever is well clear of the attachment plate.

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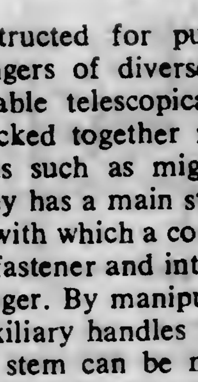
### 3,478,548
### DRAW KEY FOR UNLOCKING FASTENERS HAVING SOLID OR HOLLOW CONTROL PLUNGERS

**Frederick P. Finck, Jr., Fairfield, Conn., assignor to The Ruleta Company, Inc., Bridgeport, Conn., a corporation of New York**
**Filed Feb. 2, 1968, Ser. No. 702,694**
**Int. Cl. E05b** *25/00, 35/04*
**U.S. Cl. 70—397 7 Claims**



A draw key constructed for pulling attachment to fastener locking plungers of diverse constructions. The fasteners have separable telescopically assembled body parts which when locked together retain otherwise separable work elements such as might be coupled by a padlock. The draw key has a main straight hollow handle in coaxial alignment with which a compound stem extends to be inserted in the fastener and into pulling engagement with the control plunger. By manipulating the main handle together with auxiliary handles from outside the fastener the compound stem can be made either to wedge in and cling to the wall of a recess in the end of a hollow type of locking control plunger or can be screwed into pulling engagement with a threaded stud carried by a solid type of control plunger.

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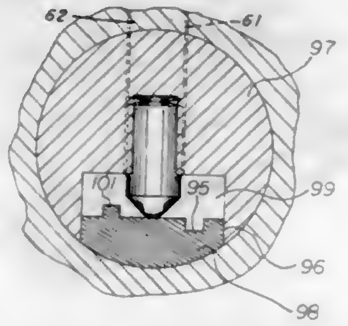
### 3,478,549
### PICK RESISTANT LOCK UNIT

**Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation**
**Filed June 19, 1967, Ser. No. 647,103**
**Int. Cl. E05b** *15/08, 63/00, 19/04*
**U.S. Cl. 70—421** **3 Claims**



A lock cylinder unit has a body with a circular cylindrical bore in which a circular cylindrical plug turns about the bore axis. At least partly formed in the plug is an axial keyway having in transverse section an upright channel and a cross channel arranged in the shape of an inverted T. A number of tumbler pin bores in the plug are arranged along the upright channel and extend into the keyway opposite the bottom wall thereof. In one rotated position of the plug, the tumbler pin bores in the plug align with respective ones of corresponding driver pin bores in the body. In that rotated position of the plug, the ends of tumbler pins in the tumbler pin bores are urged into substantial abutment with the bottom wall by spring pressed driver pins in the driver pin bores. The blunt nose of a lock pick endeavoring to advance in the keyway is blocked by the side of the tumbler pin first encountered. The sharp nose of an advancing lock pick enters the small space in the upright channel between the bottom wall and the substantially abutting end of the first encountered tumbler pin. In advaneing farther, the higher body of the sharp-nosed pick lifts the first encountered tumbler pin across the shear line and thus prevents plug rotation even though subsequently encountered tumbler pins are flush with the shear line. The key for the lock cylinder unit has a portion occupying only the small space in the upright channel and is strengthened by another key portion occupying the cross channel.

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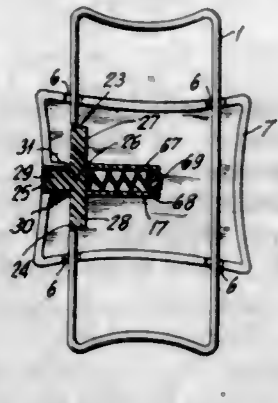
### 3,478,550
### KEY RETAINING DEVICE

**William R. Salvesen, 515 Grant St.,**
**Linden, N.J. 07036**
**Filed Jan. 17, 1967, Ser. No. 609,940**
**Int. Cl. A45c** *11/32;* **A44b** *15/00*
**U.S. Cl. 70—459** **2 Claims**



The present invention provides an easily assembled key retaining device adapted to retain keys or other similar articles, the key retainer adapted to be of varying symmetrical or asymmetrical shapes having one or more key retention portions, the retainer having a locking means between a moveable housing and the body of the key retainer internal of the housing wherein a portion of the formed body in the area of the lock provides a surface upon which the lock in released position is adapted to ride upon.

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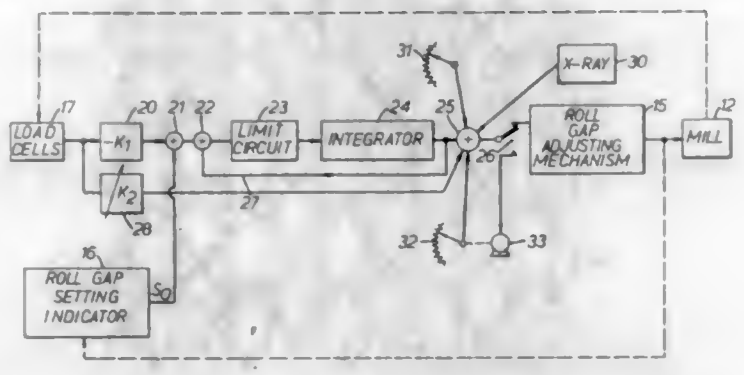
### 3,478,551
### CONTROL SYSTEMS

**Charles Francis Alsop, Baslow, Bakewell, England, assignor to Davy and United Instruments Limited, Sheffield, Yorkshire, England**
**Filed May 4, 1967, Ser. No. 636,109**
**Claims priority, application Great Britain, May 6, 1966, 20,138/66**
**Int. Cl. B21b** *37/12*
**U.S. Cl. 72—8** **8 Claims**



This invention relates to control systems for controlling rolling mills. It is particularly concerned with such a control system, in which the roll gap setting is controlled by signals generated in dependence on the rolling load and the roll gap setting, in order to maintain the gauge of the material leaving the rolling mill substantially at a constant value. By "roll gap setting" is meant the roll gap under zero rolling load conditions, the roll gap setting being measured in a conventional mill stand by an indicator coupled to the screws or other device supplied for controlling the roll gap.

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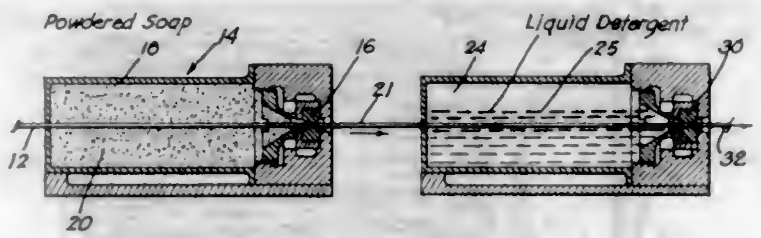
### 3,478,552
### METHOD OF MAKING WELDING ELECTRODE

**Paul E. Dane, Troy, Ohio, assignor to Hobart Brothers Company, Troy, Ohio, a corporation of Ohio**
**Continuation of application Ser. No. 255,528, Feb. 1, 1963. This application Dec. 8, 1966, Ser. No. 600,276**
**Int. Cl. C23f** *17/00;* **B21f** *45/16;* **B21c** *1/00*
**U.S. Cl. 72—42** **2 Claims**



A continuous feeding ferrous welding electrode is formed by initially coating a mild steel wire with a lime solution, applying a substantially dry soap lubricating compound to coat the surface of the wire, drawing the wire to reduce its diameter with a portion of the sodium soap being impregnated within the surface pores of the wire, applying a liquid lubricating solution to the wire, and further drawing the wire to reduce its diameter with a portion of the lubricating solution also being impregnated into the surface pores of the wire to provide a rust and corrosion resistant electrode having improved feeding and welding characteristics.

### 3,478,553
### METHOD OF FORMING SANDWICH PANELS

**Walter P. Weglarz, Lafayette Hill, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Feb. 14, 1962, Ser. No. 173,172**
**Int. Cl. B21d** *11/04*
**U.S. Cl. 72—46** **8 Claims**

1. The method of forming flat sandwich panels into curved rocket casing elements comprising, providing a flat sandwich panel having an upper skin sheet, a lower skin sheet and a core filled with a low melting temperature metal, providing lateral extension of said lower skin sheet beyond said core and said upper skin sheet, attaching a tension plate adjacent to said lower skin sheet, clamping said lower skin sheet and said tension plate of said sandwich panel into a fixed clamping member, providing a male punch inside said fixed clamping member, simultaneously forming said upper skin sheet of said sandwich panel with said male punch and tension forming said lower skin sheet between said core and said tension plate while said tension plate holds said panel in compression, removing said low melting temperature metal in said core, and removing said tension plate from said formed sandwich panel.

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### 3,478,554
### COATED SHEET METAL AND METHOD OF FORMING THE SAME

**John N. Demsey, Zion, Ill., and Vernon C. Heffran, Toledo, Ohio, assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania**
**No Drawing. Filed May 26, 1967, Ser. No. 641,475**
**Int. Cl. B21b** *45/06;* **B21c** *23/24*
**U.S. Cl. 72—46** **6 Claims**

Drawing metal sheet having a resinous coating containing a lubricant. The lubricant in the coating reduces the tendency of the sheet to ear in the drawing operation.

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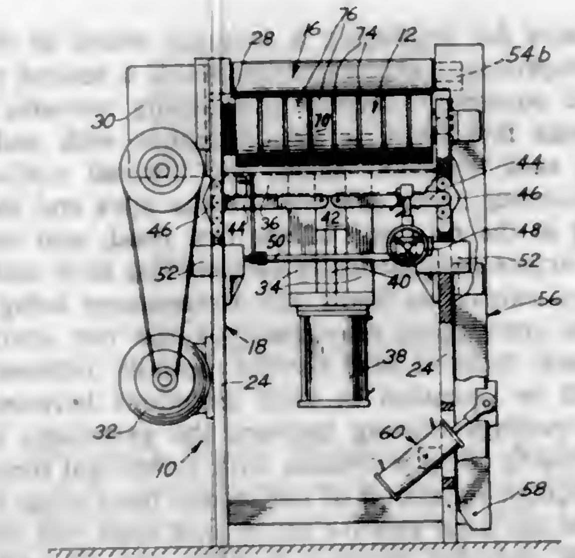
### 3,478,555
### TWO-ROLL MACHINE FOR ROLLING SHEET METAL

**Howard S. Achler, Chicago, and Harold Kaufmann, Homewood, Ill., assignors to Kaufmann Tool and Engineering Corp., a corporation of Illinois**
**Continuation-in-part of applications Ser. No. 357,413, Apr. 6, 1964, and Ser. No. 512,710, Dec. 9, 1965. This application Dec. 15, 1966, Ser. No. 602,068**
**Int. Cl. B21d** *5/14*
**U.S. Cl. 72—166** **4 Claims**



A two-roll machine for rolling sheet metal, such as steel in gauge sizes and up to a maximum of about ⅜ inch thickness, utilizes one roller with a relatively deformable urethane rubber periphery and a second roller with a relatively hard periphery, the rollers being forced against each other to develop the pressures needed to deform the sheet metal during the rolling operation. For increasing the capacity of the two rollers to cause the requisite degree of deformation of the urethane rubber necessary to effect the desired rolling, a plurality of uniformly spaced annular spaces, or voids, are provided in the periphery of the urethane rubber.

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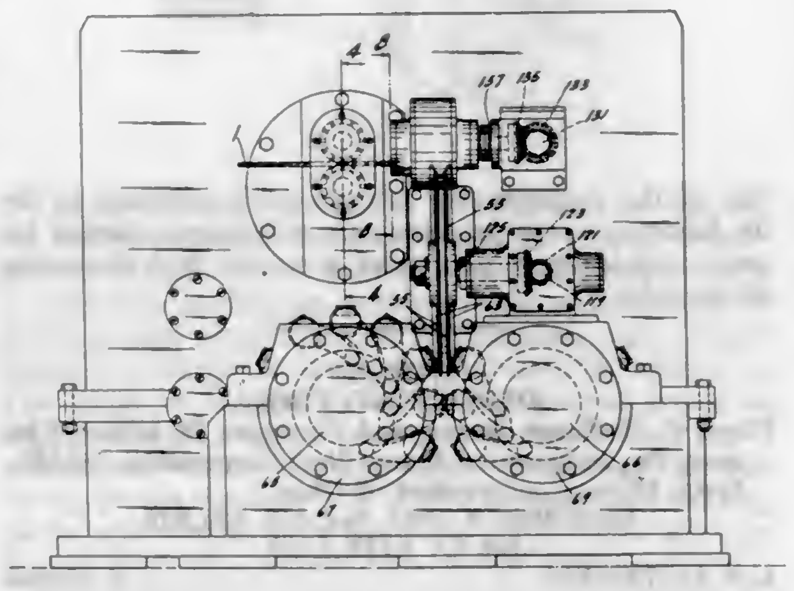
### 3,478,556
### FORGING APPARATUS

**John R. Baumgartner, Fort Lauderdale, Fla., and Arthur J. Bouchard, Milwaukee, Wis., assignors to Rota Forg Corporation, a corporation of Illinois**
**Original application Jan. 15, 1962, Ser. No. 166,031, now Patent No. 3,239,912. Divided and this application Oct. 15, 1965, Ser. No. 495,920**
**Int. Cl. B21d** *13/08*
**U.S. Cl. 72—185** **15 Claims**



For forging balls, slugs are interposed between dies which are mounted on rotors and close in the course of rotor movement, the dies being pivoted to their respective rotors and cam controlled in such manner as to be maintained in alignment as they close, thus controlling grain distribution and minimizing flash. Optionally, the material from which the slugs are severed may be passed helically through a compact heating furnace for delivery in continuous movement into the dies.

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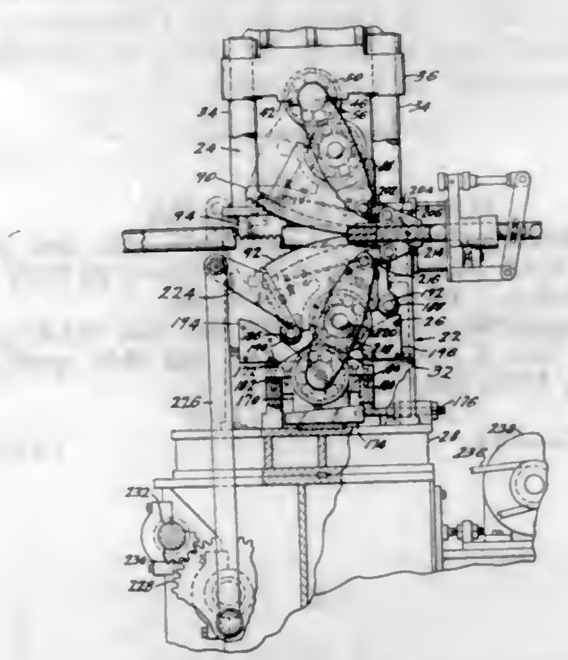
### 3,478,557
### TUBE REDUCING MACHINE

**Albert F. Tremblay, Toledo, Ohio, assignor to Kent-Owens Machine Company, Toledo, Ohio, a corporation of Ohio**
**Continuation-in-part of application Ser. No. 459,661, May 28, 1965. This application July 28, 1967, Ser. No. 656,790**
**Int. Cl. B21b** *21/00*
**U.S. Cl. 72—189** **13 Claims**

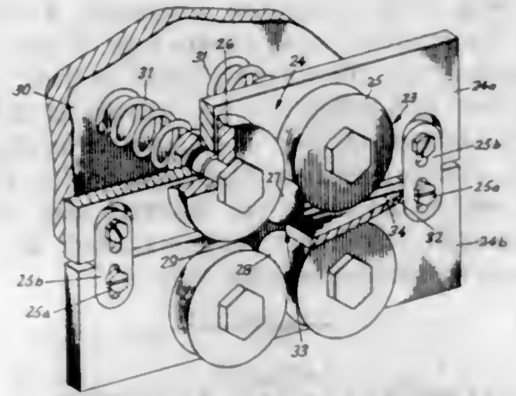
A tube reducing machine is provided which has large diameter dies and die holders supported in a stationary frame. The machine includes relatively simple components for movably supporting the die holders relative to the frame of the machine and yet enabling the die holders to move with forward and rearward coordinated strokes without the necessity of moving the frame back and forth. The die holders carry gear segments which are engaged with one another to synchronize movement thereof, with one of the gears also being engaged with a gear rack to further control movemnt of the die holders. The tube reducing machine also has a unique drive arrangement by means of which only one of the die holders is driven, with a linkage connection arranged between the die holders to move the second holder with the first. The



dies of the machine also are adjustably mounted in the die holders so as to be accurately positioned, adjusted for wear, and adjusted to produce a precise final dimension of the tube.

### 3,478,558
### DEBURRING TOOL

**Floyd C. Hoffman, Butler, and Theodore W. Miller, Chicora, Pa., assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio**
**Filed Mar. 9, 1967, Ser. No. 621,926**
**Int. Cl. B21b** *1/00*
**U.S. Cl. 72—199** **3 Claims**

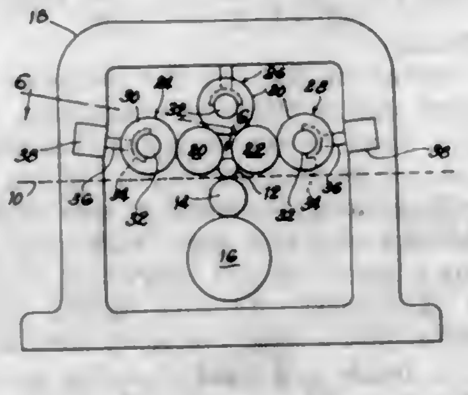


A deburring tool for mashing burrs from cut edges of sheet metal which comprises generally two aligned, freely rotatable spaced apart balls through which the cut edges of sheet metal are drawn, causing the burrs thereon to be mashed against the sheet metal.

### 3,478,559
### FLEXIBLE STRIP ROLLING MILL

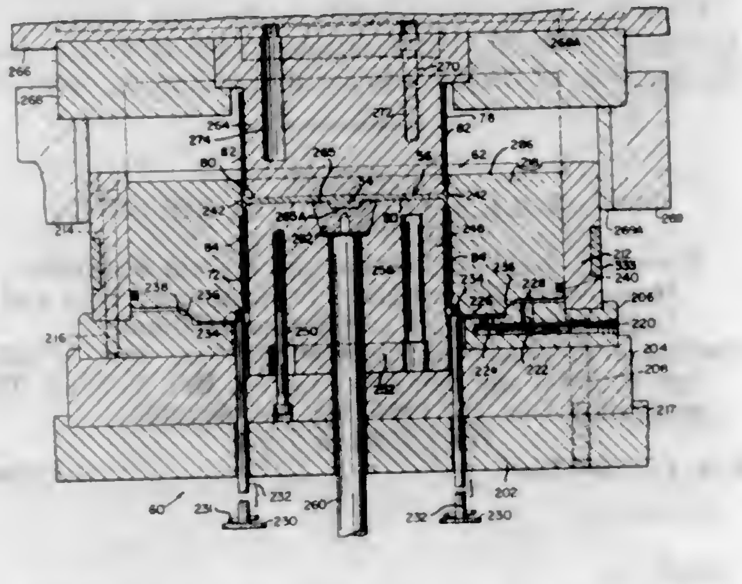
**Natalis H. Polakowski, 500 Kin Court, Wilmette, Ill. 60091**
**Filed May 20, 1966, Ser. No. 551,647**
**Int. Cl. B21b** *13/14, 29/00, 31/32*
**U.S. Cl. 72—242** **11 Claims**

A rolling mill for reducing strip thickness comprising work rolls, backup rolls and support rolls. The support rolls comprise rows of narrow disc-like rolls biased individually by fluid pressure means, whereby the work rolls deflect in conformance with the strip profile to produce a uniform transverse reduction in the thickness thereof. This action avoids buckles which result along initially thickened portions of strip reduced in mills having rigid roll support means.



### 3,478,560
### METAL FORMING SYSTEM

**Paul R. O'Brien, Anchorage, Ky., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware**
**Original application Oct. 24, 1962, Ser. No. 232,691, now Patent No. 3,263,315, dated Aug. 2, 1966. Divided and this application Oct. 12, 1965, Ser. No. 509,665**
**Int. Cl. B21c** *23/18;* **B21d** *22/26*
**U.S. Cl. 72—257** **8 Claims**



Apparatus for producing a wrought wheel of ductile metal comprising a first extrusion head, a second extrusion head concentric thereto and axially movable relative to said first head, a die concentric with and surrounding said extrusion heads, the internal surface of the die member being conical with the apex end thereof extending in the direction of the first head, said conical interior surface concentrically surrounding both said first and second extrusions heads, the arrangement being such that upon converging movement of the two extrusion heads metal from a disc thereof initially between the heads will be extruded in both directions between the annular openings existing between the extrusions heads and said die to form a product with cylindrical members and subsequent retraction of the second head while maintaining the die fixed relative to the first head will tend to wedge the extruded member between the die and first head to permit removal of the second head, whereafter movement of the die relative to the first head in the direction in which the second head was removed frees the extruded member from the first head.

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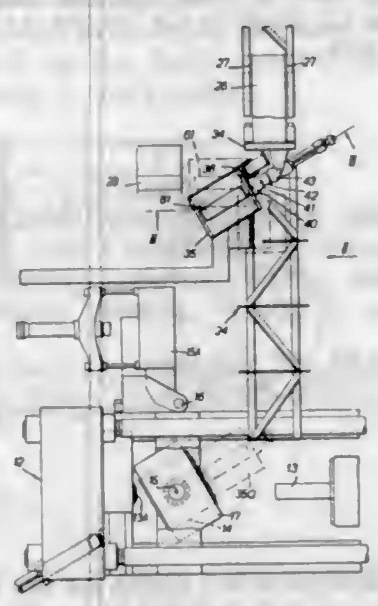
### 3,478,561
### EXTRUSION

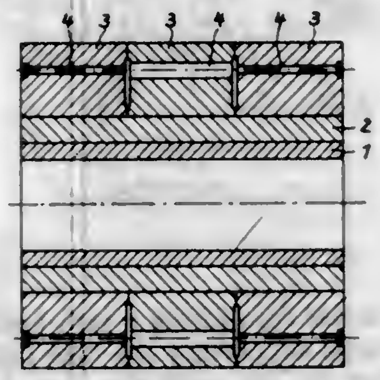
**Herbert John Samuel, Dorset, England, assignor to Davy and United Engineering Company Limited, Sheffield, Yorkshire, England**
**Filed Oct. 21, 1966, Ser. No. 588,490**
**Claims priority, application Great Britain, Oct. 27, 1965, 45,484/65, 45,485/65**
**Int. Cl. B21c** *23/00, 33/00*
**U.S. Cl. 72—270** **11 Claims**



An extrusion system for metals comprising an extrusion press having a pivotable container, at least one furnace for heating the metal billets preparatory to extrusion, a transfer device having a glassing unit for applying a lubricant to the surfaces of the billet and a billet loader for loading billets into the press container. The transfer device being movable between positions adjacent the or each furnace and the extrusion press.

### 3,478,562
### INDUCTIVELY HEATED BILLET-CONTAINERS FOR EXTRUSION PRESSES

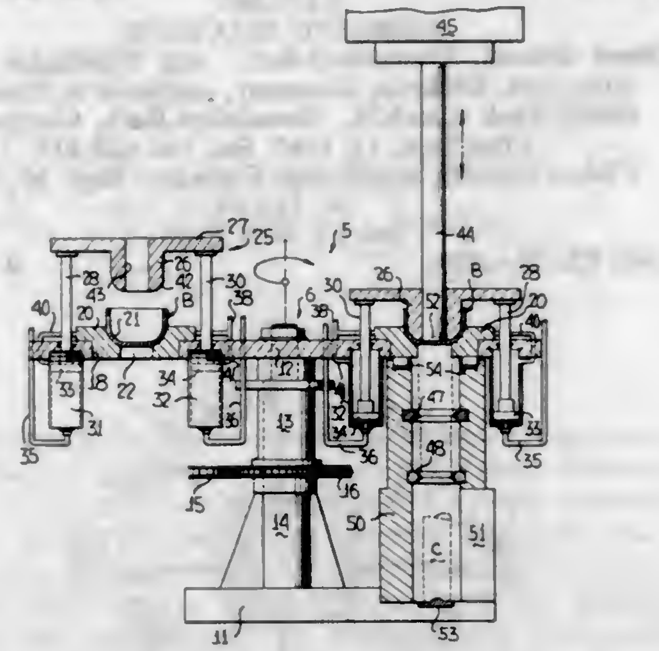
**Horst Hans Groos, Metzkausen, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany**
**Filed June 9, 1967, Ser. No. 644,865**
**Claims priority, application Germany, June 15, 1966, Sch 39,125**
**Int. Cl. B21c** *29/02*
**U.S. Cl. 72—272** **5 Claims**



An inductively heated billet-container for extrusion presses, with longitudinal bores accommodating bar-shaped conductors forming an induction coil, with material that does not conduct the magnetic field of force interposed between the conductors and the walls of the bores, the cross-sectional area of the said non-magnetic material being greater in the central part of the container than towards its ends.

### 3,478,563
### APPARATUS FOR REDRAWING AND WALL IRONING CONTAINERS

**John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York**
**Filed Nov. 27, 1967, Ser. No. 685,835**
**Int. Cl. B21d** *22/28, 43/05*
**U.S. Cl. 72—349** **11 Claims**

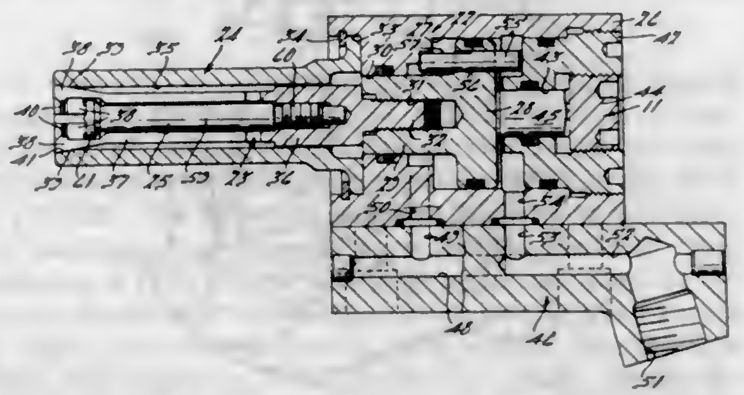


This disclosure is directed to an apparatus for redrawing and wall ironing cup-shaped metallic articles to produce containers or the like, and is particularly directed to a turret-like mechanism which at one station includes pneumatically actuated means for clamping a cup-shaped blank to a redraw die carried by a turret of the apparatus. The turret is indexed to bring the clamped article in alignment with a punch to one side of the turret and a plurality of wall ironing dies at an opposite side thereof. As the punch descends it is guided through the clamping means and progressively redraws and wall irons the cup-shaped blank to a tubular container or similar articles.

It is conventional to form containers or similar tubular articles by first blanking circular discs from aluminum or similar metallic material. The circular discs are formed to a cup-shaped configuration either after or simultaneously with the blanking operation, and the cup-shaped blanks are thereafter redrawn and wall ironed by progressively forcing the blanks through a plurality of female redraw and wall ironing dies, generally by means of a reciprocating punch.

### 3,478,564
### CRIMPING TOOL

**Ramon L. Hurd, Royal Oak, Mich., assignor to Huck Manufacturing Company, Detroit, Mich., a corporation of Michigan**
**Filed Dec. 14, 1967, Ser. No. 690,557**
**Int. Cl. B21d** *9/05, 31/00*
**U.S. Cl. 72—391** **2 Claims**



An installation tool for applying a fastener which comprises a bolt and a collar or nut in which a radially directed crimping force is applied to the nut substantially therearound, after the nut is first threaded on the bolt, to effect an elongation of the nut and in which locating means are incorporated in the tool to assure proper location of the crimp and to accommodate the force caused by elongation of the nut.

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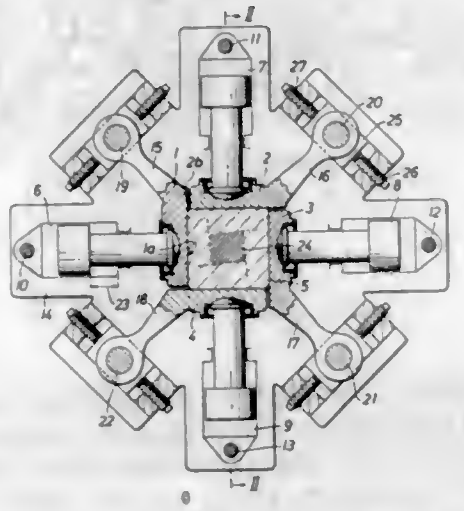
### 3,478,565
### FORGING MACHINE

**Horst Schenk, Dusseldorf-Rath, and Friedhelm Wurtz, Allendorf, Dillkreis, Germany, assignors to Maschinenfabrik Sack G.m.b.H., Dusseldorf-Rath, Germany**
**Filed Sept. 15, 1967, Ser. No. 668,019**
**Claims priority, application Germany, Sept. 30, 1966, M 71,124**
**Int. Cl. B21j** *7/16*
**U.S. Cl. 72—399** **4 Claims**



This invention relates to forging machines with at least three forging saddles pivoted on a fixed frame and each having an end face and a pressure face which bears against a workpiece. An hydraulic ram acts on each saddle to move it inwards against the workpiece, the pivots constraining the saddles to move so that the end face of each saddle is substantially in contact with the pressure face of a neighbouring saddle to maintain a substantially closed throat around the workpiece.

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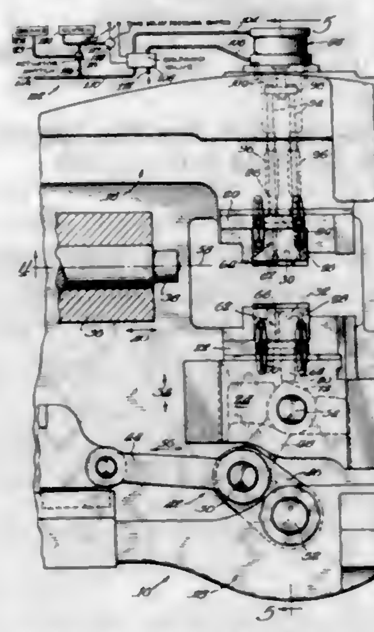
### 3,478,566
### KNOCKOUT FOR FORGE MACHINE

**Ellis H. Ferguson, Blue Island, Ill., assignor to Wyman-Gordon Company, Worcester, Mass., a corporation of Massachusetts**
**Filed Dec. 29, 1966, Ser. No. 605,893**
**Int. Cl. B21d** *45/00*
**U.S. Cl. 72—427** **7 Claims**



An ejector for a metal forging machine of the type having a fixed die, and a movable die actuated by toggle links. A cam portion on the end of the toggle links actuates a first ejector in the movable die. A fluid motor actuates a second ejector in the fixed die after the first ejector has ejected the workpiece from the movable die cavity.

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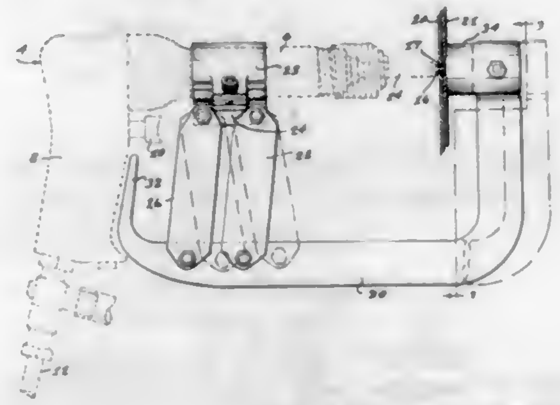
### 3,478,567
### RIVETING GUN BUCKER ATTACHMENT

**Glen T. Galutia, Colorado Springs, Colo. (22005 29 Court St., Kent, Wash. 98031)**
**Filed Nov. 4, 1966, Ser. No. 592,136**
**Int. Cl. B21j** *15/14, 15/18, 15/30*
**U.S. Cl. 72—457** **6 Claims**



The present disclosure is a device for use in combination with a riveting gun and includes an anvil or bucking bar which may be attached to the riveting gun and which has in combination therewith a sleeve and spring arrangement for determining the extent of upset on the rivet head.

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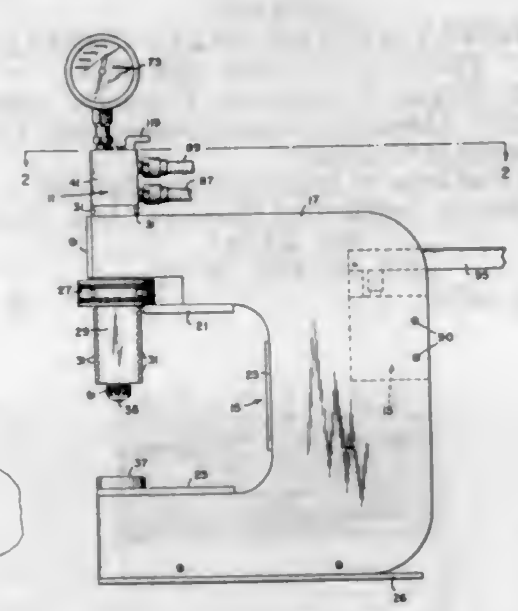
### 3,478,568
### HARDNESS TESTER

**Roland D. Borgersen, 394 Lakeside Road, Wynnewood, Pa. 19096**
**Filed Mar. 4, 1966, Ser. No. 531,656**
**Int. Cl. G01n** *3/48;* **B66f** *3/24*
**U.S. Cl. 73—81** **11 Claims**



A hardness tester comprising a ram housing, a stationary holding frame supporting the ram housing and supporting an anvil in line with the ram housing, a ram positioned in the housing, a ram pressure chamber behind the ram adapted to receive a hydraulic fluid to move the ram forwardly, a flexible cup-shaped washer positioned in the chamber at the rear of the ram and having an outwardly extending wall which is expanded against the inner wall of the housing by the force of the hydraulic fluid entering the chamber, thereby providing a seal against fluid leaking between the ram and the inner wall of the housing, a return spring connected between the ram and the ram housing for returning the ram to normal position when the fluid is released from the chamber, and mechanism for moving the ram housing toward and away from the anvil including threads formed on the outside of the ram housing, a threaded nut mounted on the ram housing and rotatably supported by the frame, the ram housing having outside walls positioned close enough to the frame so as to prevent rotation of the housing when the nut is turned, with the frame providing a stop against the movement of the nut in a direction away from the anvil when the ram is being forced toward the anvil by the fluid pressure in the pressure chamber to indent a work piece.

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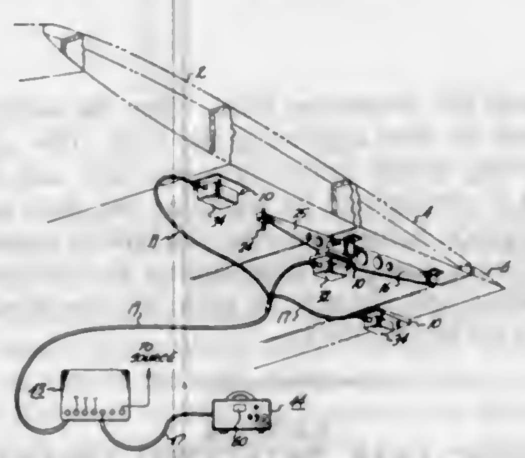
### 3,478,569
### ELECTRONIC METHOD FOR RIGGING AIRPLANE CONTROL SURFACES

**Harry H. Aichinger, Bellevue, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware**
**Filed Dec. 19, 1966, Ser. No. 603,042**
**Int. Cl. G01c** *25/00, 9/00;* **G01l** *25/00*
**U.S. Cl. 73—1** **2 Claims**



A method for rigging the control surfaces of aircraft. The method utilizes pendulous resolver units connected to the control surfaces and the wing and which transmit electrical signals indicative of the angle of the surface and wing with respect to the true horizontal. The signals are resolved by an indicator which remotely indicates the angular relationship of the wing and control surface so that the controls of the wing may be calibrated.

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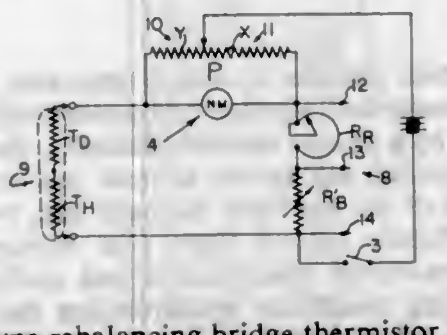
### 3,478,570
### ELECTRICAL CLINICAL THERMOMETER

**Raymond Ratnoff, 1106 Normandy Drive, Miami Beach, Fla. 33141**
**Filed Jan. 23, 1968, Ser. No. 699,838**
**Int. Cl. G01c** *17/38*
**U.S. Cl. 73—1** **6 Claims**



A null-type rebalancing bridge thermistor thermometer, in which the bridge leg adjacent the thermistor contains a readout resistor and a calibrating resistor, and the other two legs consist of a potentiometer with a tap adjustable for calibrating purposes. The calibrating resistances enable the device to be set for a desired range of any thermistor used. The values of the calibrating resistances are determined by two calibrating bridges.

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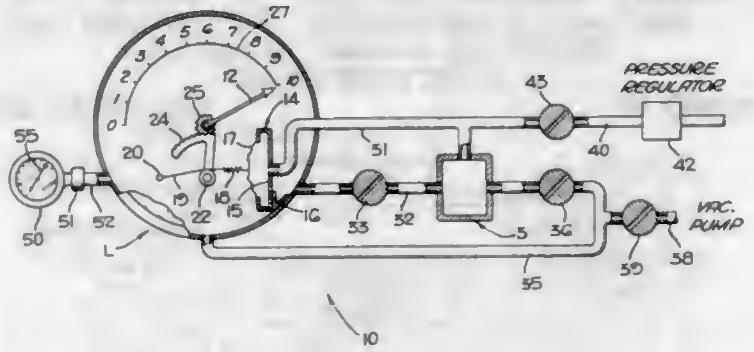
### 3,478,571
### APPARATUS AND TECHNIQUE FOR CALIBRATING PRESSURE GAUGES

**Carlyle A. Mounteer, 1250 Sierra Madre Villa Ave., Pasadena, Calif.**
**Filed Dec. 20, 1967, Ser. No. 692,115**
**Int. Cl. G01l** *27/00*
**U.S. Cl. 73—4** **7 Claims**



A high precision absolute pressure calibrating apparatus and technique utilizing two chambers of widely differing known volumetric capacities separated by the pressure sensitive sensor of a differential pressure indicator. Successive determinable masses of gas are added to the larger chamber after closing off the larger from the smaller chamber and using a constant setting of the differential pressure indicator to determine when the smaller chamber is filled with a new charge of the identical mass as the first one of said successive charges. It is then known that the release of this new charge into the large chamber will increase that chamber's pressure by another identical increment. The pressure instrument being calibrated is subject to the pressure in the large chamber which may and preferably does comprise the sealed housing of the different pressure indicator.

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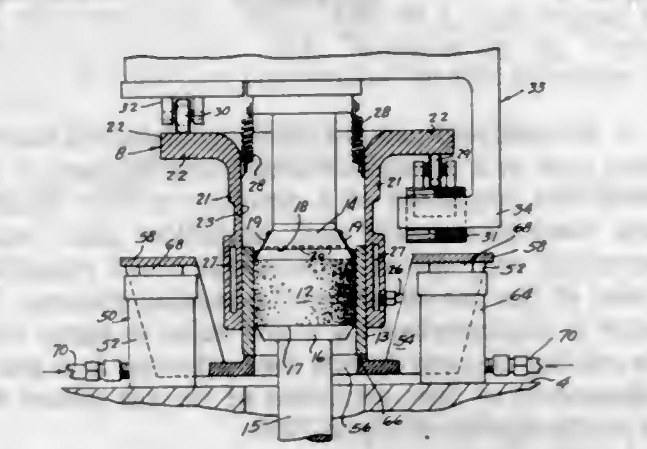
### 3,478,572
### WALL FRICTION DEVICE

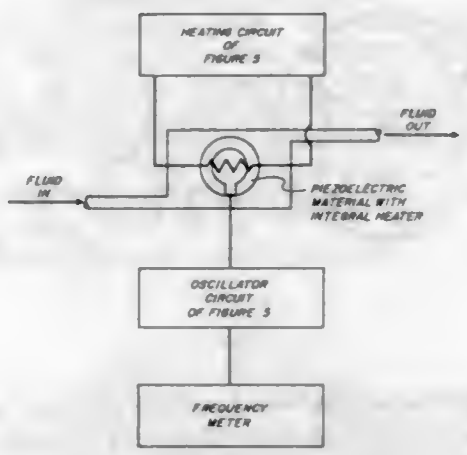
**John L. McRae, 416 Groome Drive, Vicksburg, Miss. 39180, and Joseph P. Wislocki, 2352 W. Wilson Ave., Chicago, Ill. 60625**
**Filed July 12, 1968, Ser. No. 744,356**
**Int. Cl. G01n** *3/56*
**U.S. Cl. 73—9** **8 Claims**



A wall friction device comprising a gyratory testing machine for the compaction of samples of soils or paving materials and provided with a mold, and an upper and lower ram for subjecting a test specimen in the mold to pressure. The apparatus further provides an accessory for attachment to the gyratory testing machine mold including a yoke means and jack means actuated by hydraulic means for applying pressure to the yoke means to cause the yoke means to bear against the mold in which the specimen is disposed and gauge means for registering the force bearing against the mold when the yoke means causes movement of the mold with respect to the specimen carried therein.

### 3,478,573
### INTEGRAL HEATER PIEZOELECTRIC DEVICES

**William H. King, Jr., Florham Park, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware**
**Filed July 29, 1965, Ser. No. 475,649**
**Int. Cl. G01n** *25/02*
**U.S. Cl. 73—26** **4 Claims**


HEATING CIRCUIT OF FIGURE 5
FLUID OUT
FLUID IN
PIEZOELECTRIC MATERIAL WITH INTEGRAL HEATER
OSCILLATOR CIRCUIT OF FIGURE 5
FREQUENCY METER

Piezoelectric crystals having integral heaters thereon are suitable for use in various measuring devices such as gas analyzers, thermal conductivity detectors, wattmeters, voltmeters, ammeters, etc.

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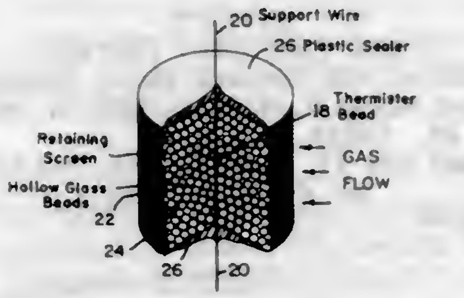
### 3,478,574
### THERMAL CONDUCTIVITY DETECTOR

**Michael Modell, Bound Brook, N.J., assignor, by mesne assignments, to Abcor Inc., Cambridge, Mass., a corporation of Massachusetts**
**Filed May 24, 1965, Ser. No. 458,022**
**Int. Cl. G01n** *31/08*
**U.S. Cl. 73—27** **17 Claims**



A thermal conductivity detector wherein a sensing element such as a thermistor is centrally disposed in a cylindrical bed composed of a plurality of low density nonheat conductive beads such as hollow glass beads, the interstitial void spaces between the beads permitting diffusion of the gas stream to the sensing element. The detector is characterized by a low noise to signal ratio and the sensing element detects the variations in a gas stream independent of flow variations of the gas stream above a Reynolds number of about 2000.

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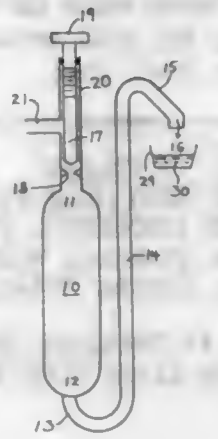
### 3,478,575
### LIQUID DILATOMETER

**Edwin F. Meyer, Washington, D.C., and Robert E. Wagner, Jr., Havre de Grace, Md., assignors to the United States of America as represented by the Secretary of the Army**
**Filed Sept. 1, 1967, Ser. No. 665,690**
**Int. Cl. G01n** *9/00*
**U.S. Cl. 73—32** **2 Claims**

A method and apparatus for measuring the volume and/or density of a liquid sample at various temperatures in which a bulbous member is provided with a valve controlled opening at its top for connecting the bulb with a source of liquid to be measured, or to a vacuum line, or which can be sealed by the valve. The bottom of the bulbous member opens into a U-tube which extends above the top of the bulb and terminates in a downwardly extending capillary arm with an outlet adapted to communicate with a receptacle containing a weighed quantity of measuring fluid which can be drawn into the bottom of the bulb through the U-tube, and partially displaced by the liquid sample occupying the space in the bulb between the valved opening and the measuring fluid, when the sample liquid is expanded by heat applied to the bulb. The amount of the measuring liquid drawn into the bulb and displaced therefrom is determined by weighing the fluid remaining in the receptacle before and after the bulb is heated, thereby providing a basis for determining the volume of the liquid sample and changes in such volume produced by changes in its temperature.



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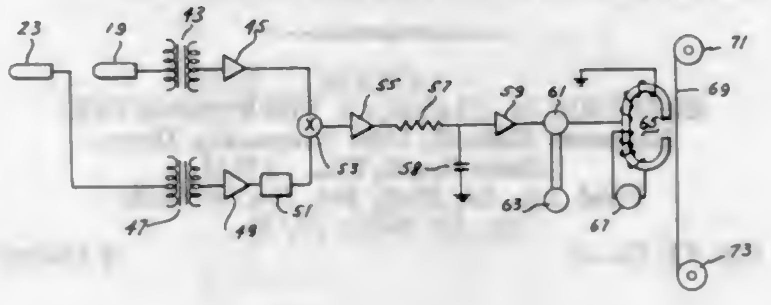
### 3,478,576
### ACOUSTIC LEAK DETECTING APPARATUS AND METHOD

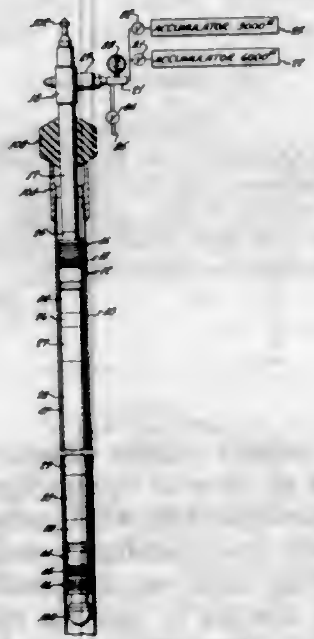
**Tommy G. Bogle, Houston, Tex., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey**
**Filed Aug. 18, 1967, Ser. No. 661,566**
**Int. Cl. G01m** *3/04*
**U.S. Cl. 73—40.5** **16 Claims**



This invention pertains to unique apparatus for passing through a pressurized pipeline and acoustically detecting leaks therein by a unique method. Basically, the apparatus includes a pipeline pig having at least one cup isolating the front end of the pig from the back end, two acoustic transducers fixedly spaced apart (the downstream one receiving point-source noise from a leak earlier than the other), delaying means for synchronizing the signal developed from the downstream transducer with the signal developed from the other transducer and combining means, such as a cross correlator, for producing an output that accentuates leak noise and relatively diminishes nonpoint source and upstream noises. The delaying means may be one or more recorders and playback and combining or correlation may be accomplished either inside the pig or later outside the pig.

### 3,478,577
### APPARATUS AND METHOD FOR TESTING WELL PIPE

**Ernest D. Hauk, Signal Hill, Calif., assignor of ten percent to Kenneth J. Carstensen, Bakersfield, Calif.**
**Filed Mar. 18, 1968, Ser. No. 713,613**
**Int. Cl. G01m** *3/08*
**U.S. Cl. 73—49.1** **26 Claims**



A pipe-testing apparatus and method for use in connection with oil wells, etc., and wherein water or other low-viscosity fluid is introduced extremely rapidly into the pipe section to be tested. Such high-velocity introduction of water dynamically simultaneously energizes the seals or packers at the ends of the test chamber and builds up static pressure within the chamber to maintain seal energization after cessation of flow.

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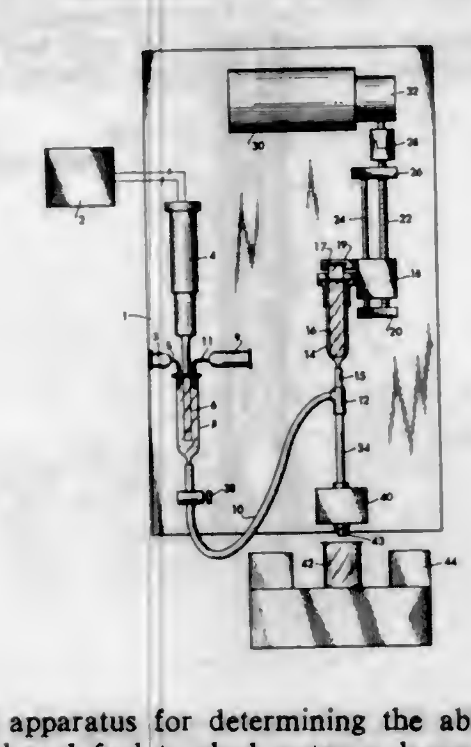
### 3,478,578
### DEVICE FOR MEASURING THE EFFECT OF SURFACE ACTIVE MATERIALS ON EMULSIFIED WATER RETENTION BY JET FUELS

**William G. Dukek, Summit, and Brian R. Wakeford, Kendall Park, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**
**Filed May 15, 1967, Ser. No. 638,441**
**Int. Cl. G01n** *11/00, 21/26*
**U.S. Cl. 73—61.1** **5 Claims**



In an apparatus for determining the ability of a petroleum based fuel to shed water, a known quantity of water is ultrasonically emulsified in a sample of the fuel to be tested. The water-fuel emulsion is then partially coalesced and the turbidity of the emulsion is measured, the result being indicative of the fuel's ability to shed water.

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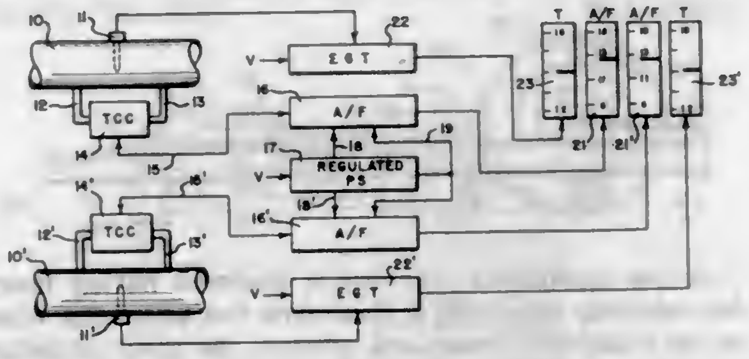
### 3,478,579
### AIR/FUEL RATIO INDICATOR

**Chatland Whitmore and George F. Redway, Ossining, N.Y., assignors to Cambridge Instrument Company, Inc., Ossining, N.Y., a corporation of New York**
**Filed Aug. 8, 1968, Ser. No. 751,289**
**Int. Cl. G01n** *25/18*
**U.S. Cl. 73—116** **10 Claims**



The composition of exhaust gases from aircraft engines, etc. is sensed by a thermal conductivity cell supplied with constant current, and the output of the cell is amplified and indicated. A regulated power supply uses a transformer with a primary winding connected in an oscillator circuit energized with DC. A rectifier supplied from a secondary winding controls the oscillator to maintain the rectifier voltage constant. Advantageously a transistor multivibrator whose bias is controlled by a separate rectifier is employed. Additional separate rectifiers connected to the transformer supply current to the sensing cell and to the indicator amplifier. A simple two-transistor constant current generator with additional control voltage regulation is described. Exhaust gas temperature may also be sensed and indicated on a meter adjacent the air/fuel meter.

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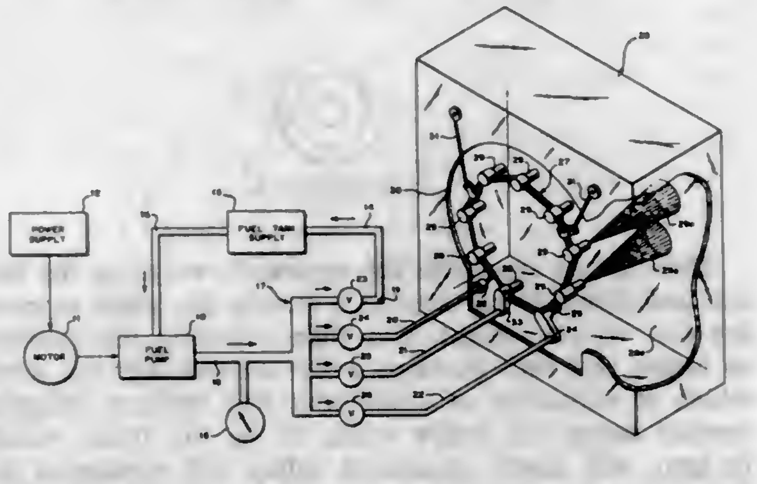
### 3,478,580
### METHOD AND APPARATUS FOR TESTING A GAS TURBINE FUEL MANIFOLD AND NOZZLE ASSEMBLY

**John S. Siemietkowski, Cherry Hill, N.J., and Walter D. Antkiewicz, Claymont, Del., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Oct. 30, 1967, Ser. No. 678,780**
**Int. Cl. G01m** *15/00*
**U.S. Cl. 73—119** **6 Claims**



The subject invention concerns a method and apparatus for testing fuel manifold and nozzle assemblies found in gas turbine engines. Fuel is circulated to the primary and secondary nozzle connections of the manifold assembly through the discharge conduits of a fuel line network which also controls the pressure of the fuel flow. The manifold and nozzle assembly is installed in a spray box while various tests are conducted at pressures simulating engine operation to insure proper spray angle and flow.

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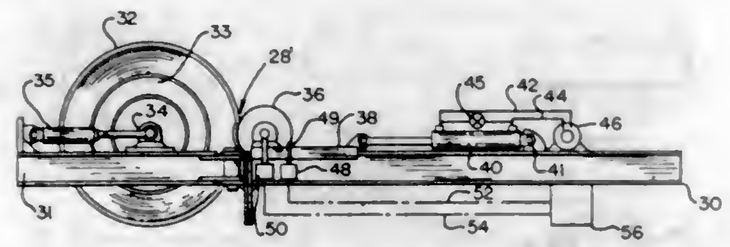
### 3,478,581
### APPARATUS FOR MEASURING TIRE UNIFORMITY

**Lawrence R. Sperberg, P.O. Box 12308,**
**El Paso, Tex. 79912**
**Filed Jan. 10, 1967, Ser. No. 608,344**
**Int. Cl. G01m** *17/02;* **B60c** *19/10*
**U.S. Cl. 73—146** **10 Claims**



A tire uniformity machine is disclosed having means for rotatably mounting a pneumatic tire and a test wheel on an elongated frame and wherein the outer periphery of the test wheel is held adjacent the outer periphery of the tire with a predetermined pressure. The elongated frame is hinged on each side and provided with axially rotatable means to enable the test wheel to be aligned with the buttress area or side wall of the tire, in addition to the conventional location adjacent the tread. The test wheel is provided with strain gauges and the diameter of the test wheel with respect to the diameter of the tire is held between the limits of 1:30 and 1:4, with the ratio of 1:16 being ideal or optimum.

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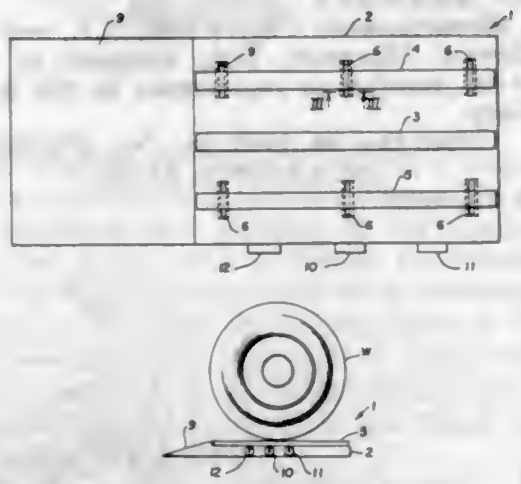
### 3,478,582
### APPARATUS AND METHOD FOR MEASURING ROAD CONTACT OF VEHICLE TIRES

**Dean R. Hough, Pittsburgh, Pa., assignor of forty-five percent to George W. Kendall, Wheeling, W. Va., and ten percent to William J. Ruano, Pittsburgh, Pa.**
**Filed Sept. 21, 1967, Ser. No. 669,542**
**Int. Cl. B60c** *23/02*
**U.S. Cl. 73—146.2** **7 Claims**



Method and apparatus for separately weighing the central and shoulder portions of a vehicle tire while supporting the vehicle weight, and then adjusting the pressure to insure that such portions weigh substantially the same, which is indicative of continuous and uniform gripping contact across the entire width of the tire tread, which, in turn, will assure maximum safety and maximum tire life.

Separate platforms of three scales support the mounted tire and the relative weights borne by the shoulder and central portions of the tread are determined. The pressure of the tire is then varied so that such relative weights borne will be substantially equal.

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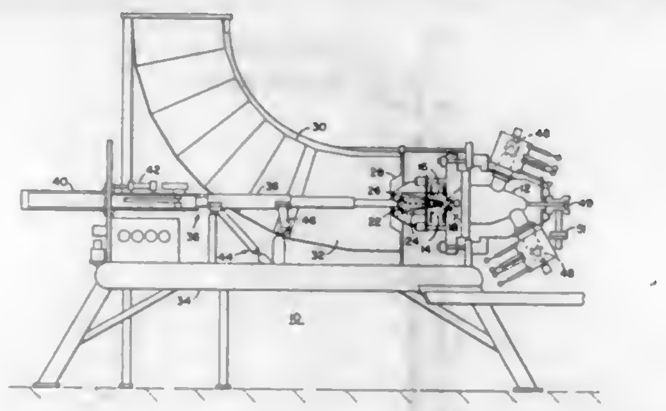
### 3,478,583
### PLASMA DRIVEN SHROUD WIND TUNNEL

**Thomas A. Barr, Jr. and Charles M. Cason III, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army**
**Filed Dec. 28, 1967, Ser. No. 694,186**
**Int. Cl. G01m** *9/00*
**U.S. Cl. 73—147** **6 Claims**



A wind tunnel utilizes plasma generators for generating a gas which is as close to equilibrium high temperature free air is possible. The wind tunnel provides the desired environment for reproducing simultaneously the heating and shearing loads on components of low altitude high velocity missiles so that the interaction of the missile with the high temperatures and high shear force boundary layer may be studied. The wind tunnel includes a copper-lined plenum having a plurality of the plasma generators communicating therein. A nozzle assembly includes a convergent portion communicating into the plenum chamber and a divergent portion communicating into a shroud which encompasses the test model. The contour of the nozzle and shroud ensures that the flow field next to the body of the test model, including the boundary layer, is the same at it would be for free flight.

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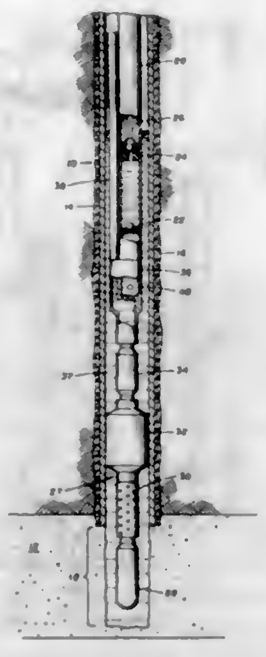
### 3,478,584
### METHOD AND APPARATUS FOR OBTAINING PRESSURE BUILD-UP DATA IN PUMPING WELLS

**Malcolm K. Strubhar and Vasel R. Slover, Jr., Irving, Tex., assignors to Mobil Oil Corporation, a corporation of New York**
**Filed Dec. 26, 1967, Ser. No. 693,368**
**Int. Cl. E21b** *47/00, 43/00*
**U.S. Cl. 73—155** **8 Claims**



This specification discloses a pumping well equipped to obtain pressure build-up data. The well is provided with a packer which separates the production interval of the well from the inlet of production tubing equipped with a downhole pumping system. A passage extends from below the packer to the well annulus above the packer. A remotely controlled valve is located in the passage and a pressure sensing device is located within the well below the packer. In order to obtain pressure build-up data the well may be pumped at a constant rate and the valve thereafter closed to shut in the well at the face of the formation. The pressure below the packer can then be measured to obtain a pressure build-up curve.

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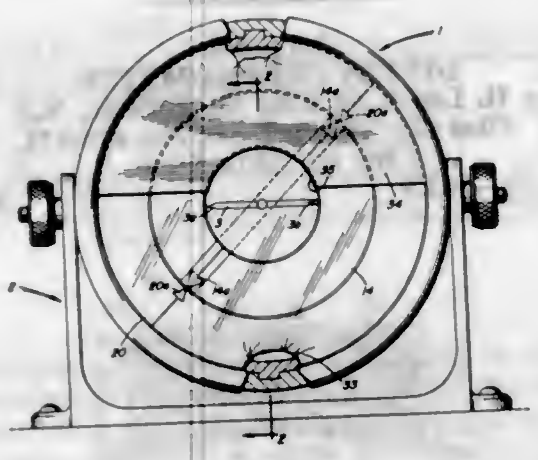
### 3,478,585
### SAILING ACCESSORY

**Val E. Scannell, 6218 Lone Oak Drive,**
**Bethesda, Md. 20034**
**Filed June 12, 1967, Ser. No. 645,123**
**Int. Cl. G01w** *1/02*
**U.S. Cl. 73—188** **9 Claims**



An accessory for use by sailing skippers including wind and desirable boom position indicators, the latter indicator automatically set according to the apparent wind direction, and indicating means for signalling the actual current position of the boom.

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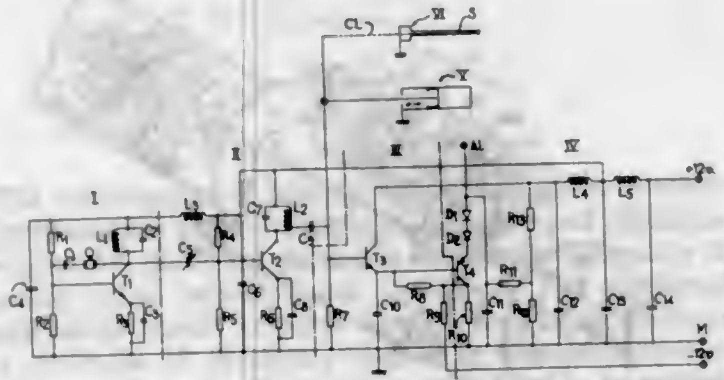
### 3,478,586
### SENSING DEVICE HAVING A VARIABLE IMPEDANCE AND THE APPLICATION THEREOF TO AN APPARATUS FOR SUPERVISING FROM A DISTANCE THE LEVEL OF OIL IN A TANK

**David Da Costa Vieira, Aix-en-Provence, France, assignor to Commissariat à l'Energie Atomique, Paris, France, a corporation of France**
**Filed May 22, 1967, Ser. No. 640,229**
**Claims priority, application France, May 31, 1966, 63,527**
**Int. Cl. G01f** *23/22*
**U.S. Cl. 73—304** **10 Claims**



A device for sensing and measuring fluctuations in the level of a liquid, comprising a probe having at one end a sensing element immersed in the liquid, the sensing element having an impedance which varies with variations in the level of the liquid in the sensing element, means being provided which are responsive to the variations in the impedance of the sensing element.

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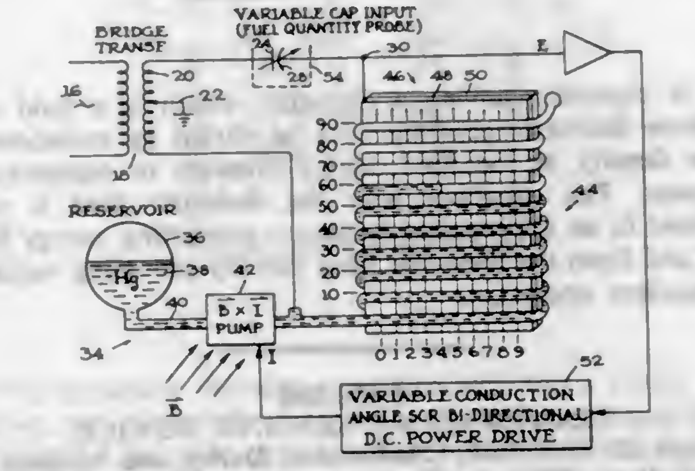
### 3,478,587
### CAPACITANCE-TYPE FLUID MEASURING APPARATUS

**David J. Philipps, Middlebury, and David A. Lamphere, Milton, Vt., assignors to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York**
**Filed Nov. 15, 1967, Ser. No. 683,336**
**Int. Cl. G01f** *23/26*
**U.S. Cl. 73—304** **1 Claim**


BRIDGE TRANSF
VARIABLE CAP INPUT (FUEL QUANTITY PROBE)
RESERVOIR
B×I PUMP
0123456789
VARIABLE CONDUCTION ANGLE SCR BI-DIRECTIONAL D.C. POWER DRIVE

A capacitance liquid contents gauge employing a bridge circuit which compares a reference signal with the measuring signal, the resultant signal being fed to a bridge amplifier. The rebalancing capacitor has a movable conductive liquid electrode and a fixed electrode with a magnetic pump responsive to the output of the amplifier for moving the liquid electrode to restore the bridge to balance.

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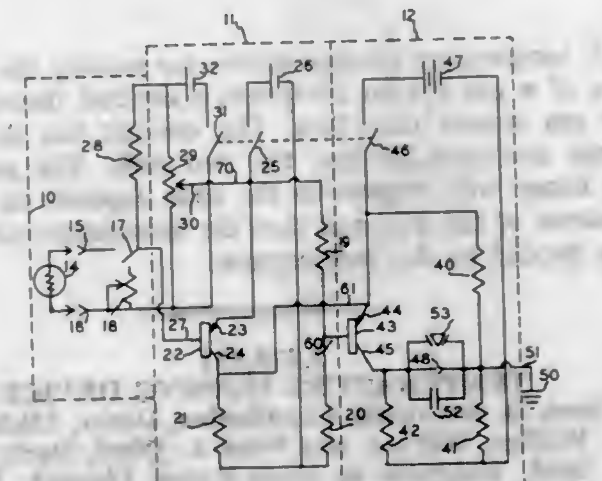
### 3,478,588
### CARDIAC OUTPUT METER

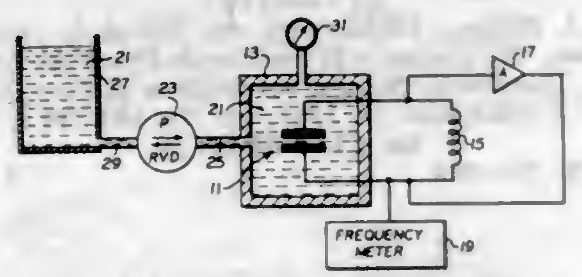
**Alfred W. Richardson, Carbondale, Ill., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed July 17, 1967, Ser. No. 654,016**
**Int. Cl. G01k** *5/18, 5/52, 5/72*
**U.S. Cl. 73—362** **8 Claims**



A double bridge system using a circuit having a pair of transistors and having a single variable resistance as a balance control to adjust the entire output to null; the circuit includes a thermistor as a sensing device to obtain a very sensitive temperature measuring instrument.

### 3,478,589
### DIELECTRIC VARIABLE CAPACITOR

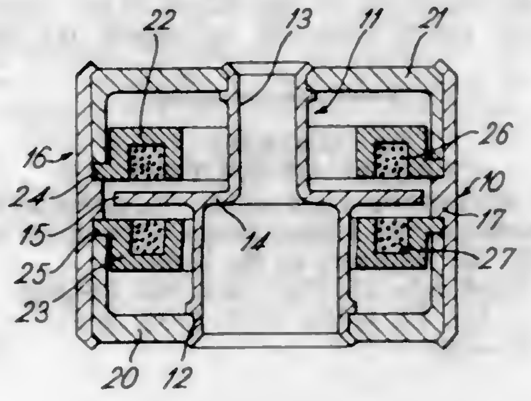
**Karl Birken, New York, N.Y., assignor to RC–95 Incorporated, New York, N.Y., a corporation of New York**
**Filed Oct. 11, 1965, Ser. No. 494,719**
**Int. Cl. G01k** *5/18, 5/52, 5/72*
**U.S. Cl. 73—362** **14 Claims**



A capacitor having a dielectric which is a fluid and whose dielectric constant may be varied by variation of the density of the fluid, as by pressure or temperature means. The capacitor with the dielectric fluid is contained in an appropriate enclosure permitting energy flow to and from the dielectric fluid thereby providing variable capacitor operation.

### 3,478,590
### TEMPERATURE SENSING DEVICE

**Frank D. Brownhill, Chaddesden, Derby, and Michael K. Walker, Wilford, England, assignors to Rolls-Royce Limited, Derby, England, a British company**
**Filed June 21, 1967, Ser. No. 647,689**
**Int. Cl. G01k** *5/18, 5/48, 5/52*
**U.S. Cl. 73—363** **13 Claims**

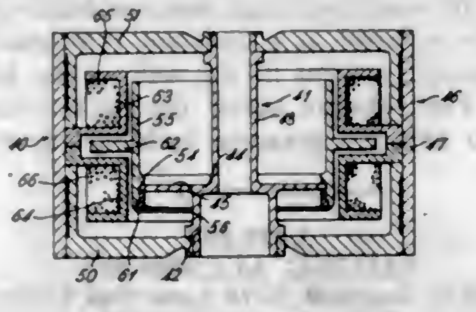


A temperature sensing device for sensing the temperature of a gas stream comprises a conduit through which the gas stream may flow. The conduit has an external flange arranged between the two coils. The position of the flange with respect to the coils depends on the temperature of the gas, and thus the inductances of the coils also depend on this temperature.

### 3,478,591
### TEMPERATURE SENSING DEVICE

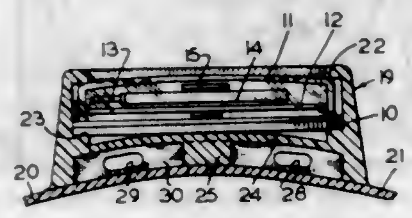
**Frank D. Brownhill, Chaddesden, Derby, Michael K. Walker, Wilford, and Peter A. Ward, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company**
**Filed June 21, 1967, Ser. No. 647,691**
**Claims priority, application Great Britain, Aug. 3, 1966, 34,812/66**
**Int. Cl. G01k** *5/48*
**U.S. Cl. 73—363** **9 Claims**

A temperature sensing device for sensing the temperature of a gas stream comprises a conduit through which the gas stream may flow. The conduit has an external flange operatively connected to a sleeve member which has a flange mounted thereon and arranged between two coils. The position of the flange mounted on the sleeve member with respect to the coils depends on the temperature of the gas, and thus the inductances of the coils also depend on this temperature.



### 3,478,592
### DIVERS THERMOMETER

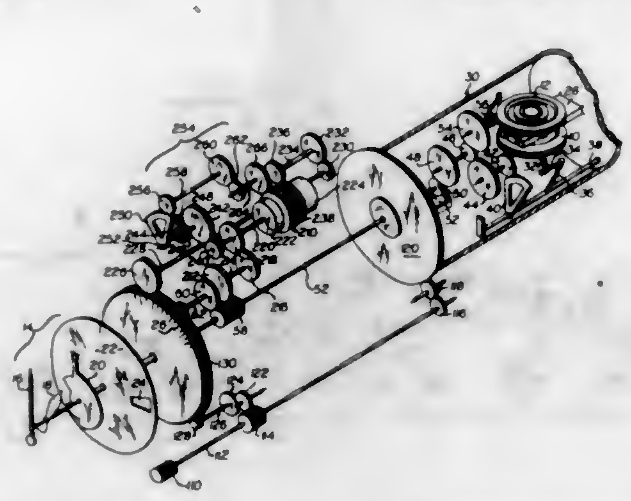
**Anthony H. Lamb, 66 King St., Hillside, N.J. 07205**
**Filed Oct. 19, 1967, Ser. No. 676,411**
**Int. Cl. G01k** *5/64*
**U.S. Cl. 73—363.9** **6 Claims**



A bi-metallic thermometer worn like a wrist watch by scuba and skin divers. A plastic housing encloses a spiral bi-metallic coil having secured thereto a pointer movable over a calibrated scale of temperature values. The housing is press-fitted into a cylindrical barrel of a wrist strap, which barrel is provided with passageways for the flow of water therethrough.

### 3,478,593
### COMPENSATING MEANS FOR SYNCHRO OUTPUT FOR BAROMETRICALLY ACTUATED SYSTEMS

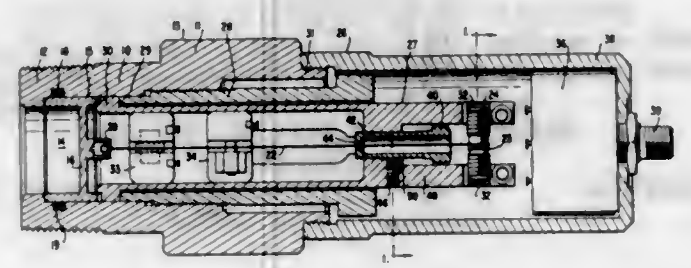
**Emil P. Knapp, New Fairfield, Conn., assignor to Lear Siegler, Inc., Armonk, N.Y., a corporation of Delaware**
**Filed Mar. 22, 1968, Ser. No. 715,436**
**Int. Cl. G01l** *7/12*
**U.S. Cl. 73—387** **12 Claims**



The inclusion in a pressure actuated altimeter of a novel anti-backlash means for the rotor of a signal generator, e.g., a synchro, driven by the altimeter. The anti-backlash means includes an anti-backlash spring, one end of which is connected to a spindle geared to the rotor shaft and the other end of which is connected to a post. Means are included for moving the post at the same angular speed as the spindle during an adjustment of the barometric setting in order to prevent a change in the torque that the spring applies to the spindle and thus to the rotor, which torque change would affect the output of the synchro.

### 3,478,594
### VARIABLE FREQUENCY PRESSURE TRANSDUCER

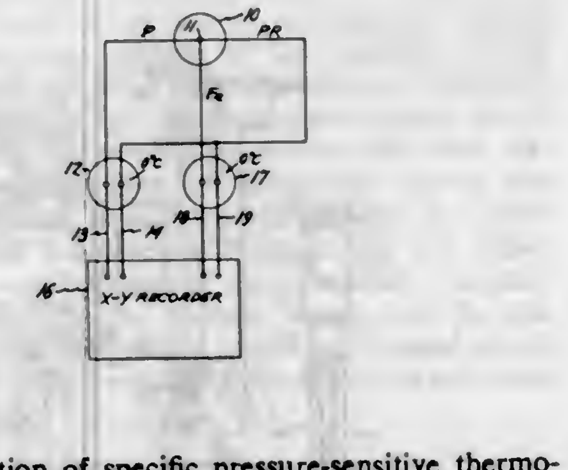
**Robert G. Love, Duncan, Okla., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware**
**Filed Aug. 2, 1967, Ser. No. 657,811**
**Int. Cl. G01l** *9/00*
**U.S. Cl. 73—398** **10 Claims**



A vibrating wire transducer is disclosed in which the effective length of the wire is changed to modify the range of frequencies at which the wire will vibrate to correspond to the range of forces to which the transducer will be required to sense. Means for adjusting the initial tension of the wire are also provided.

### 3,478,595
### THERMOCOUPLE PRESSURE-SENSING MEANS

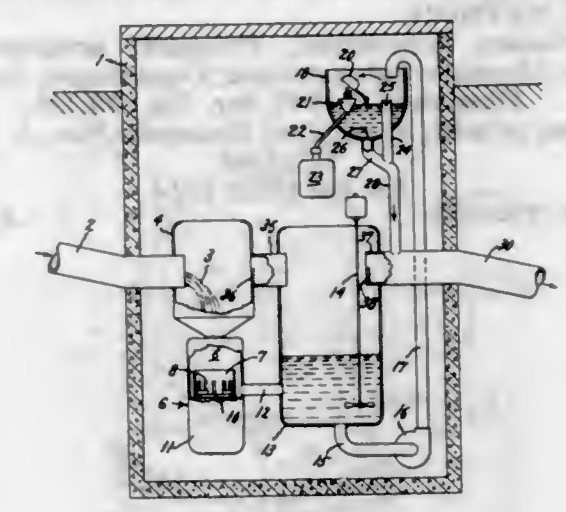
**Herbert M. Strong, Schenectady, and Roy E. Tuft, Guilderland Center, N.Y., assignors to General Electric Company, a corporation of New York**
**Filed May 17, 1968, Ser. No. 729,974**
**Int. Cl. G01l** *21/12*
**U.S. Cl. 73—399** **4 Claims**



The combination of specific pressure-sensitive thermoelectric couples (iron-platinum 10 rhodium and platinum-platinum 10 rhodium) having a very large difference in pressure error behavior are described. The preferred construction shown employs three wires (iron, platinum and platinum 10 rhodium) sharing a common junction which is subjected to the pressure conditions to be sensed. The millivolt output of both the iron-platinum 10 rhodium (Fe/PR) couple and the platinum-platinum 10 rhodium (P/PR) couple are simultaneously recorded on an X–Y recorder.

### 3,478,596
### WASTEWATER SAMPLING APPARATUS

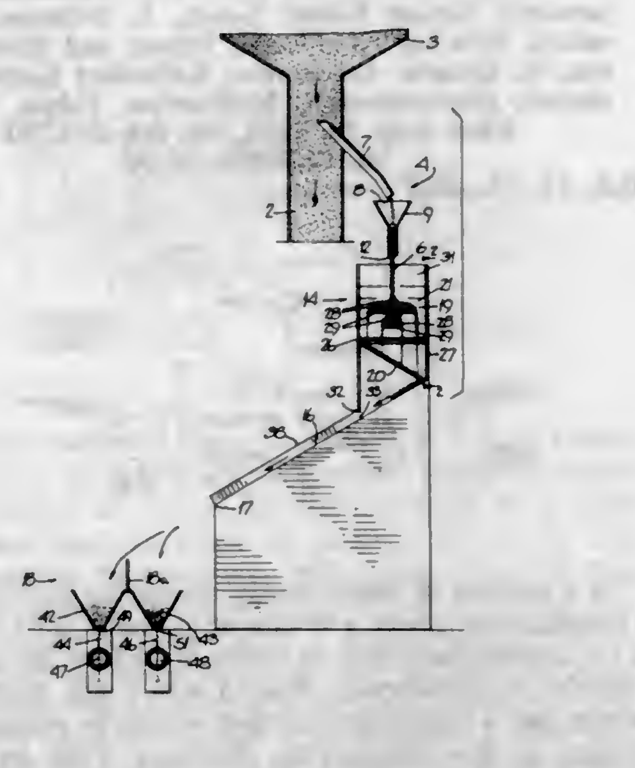
**Robert P. Farrell, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Sept. 11, 1967, Ser. No. 666,735**
**Int. Cl. G01n** *1/10*
**U.S. Cl. 73—421** **6 Claims**



This apparatus includes a grinder unit and a pump to deliver raw wastewater from the grinder into a sampling chamber. A sampler device which is operated automatically when the pump is running takes small samples of the wastewater flowing through the sampling chamber at fixed intervals and delivers them into a reservoir which may be refrigerated for subsequent analysis.

### 3,478,597
### PARTICLE SIZE MONITOR

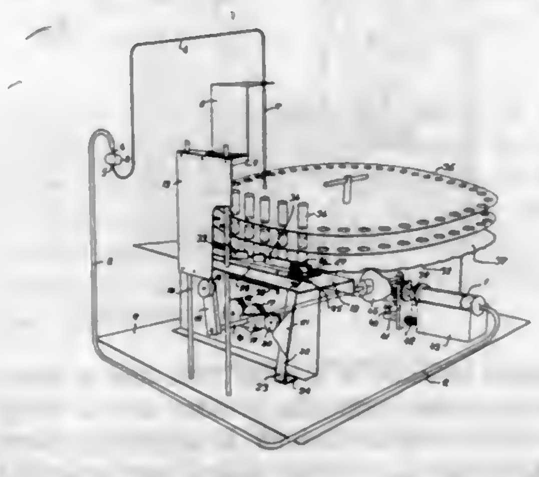
**Charles Reynolds Merigold, Golden, and William Charles Bauer, Boulder, Colo., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware**
**Filed Feb. 15, 1967, Ser. No. 616,306**
**Int. Cl. G01n** *1/00;* **B07c** *9/00;* **B07b** *13/10*
**U.S. Cl. 73—422** **10 Claims**



A continuous supply of fine angular hard particles is distributed across the upper portion of an inclined plane in an apparently thin flat stream. The size distribution of the material is determined by the amounts of the different sized particles falling at different distances from the point where they leave the plane. The monitoring of the size distribution is by use of photoelectric devices.

### 3,478,598
### METHOD OF INTRODUCING SUCCESSIVE LIQUID SAMPLES INTO A CELL OF AN ANALYZING DEVICE AND APPARATUS FOR CARRYING OUT THE METHOD

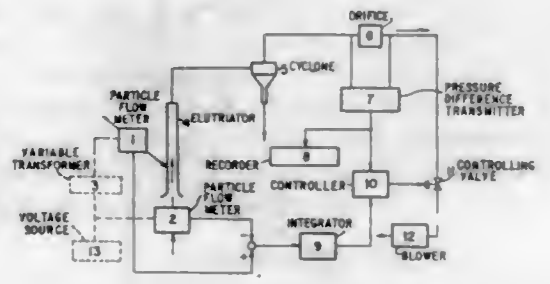
**Erik Nielsen, Albertslund, Denmark, assignor to H. Struers Chemiske Laboratorium, Copenhagen, Denmark**
**Filed Nov. 1, 1967, Ser. No. 679,730**
**Claims priority, application Denmark, Nov. 3, 1966, 5,725/66**
**Int. Cl. G01n** *1/14*
**U.S. Cl. 73—423** **4 Claims**



To analyze a series of liquid samples, these are successively sucked into an analyzing cell such as a cuvette, where an analyzing operation is performed, whereafter the liquid is again expelled. For sucking in and expelling the liquid a piston pump is used, and according to the invention the piston of this pump is caused to suck in an amount of air prior to sucking in a liquid sample, and to expel this air after expelling the liquid, thereby to remove residual liquid.

### 3,478,599
### MEASURING METHOD OF THE PARTICLE SIZE FOR POWDER AND GRAIN

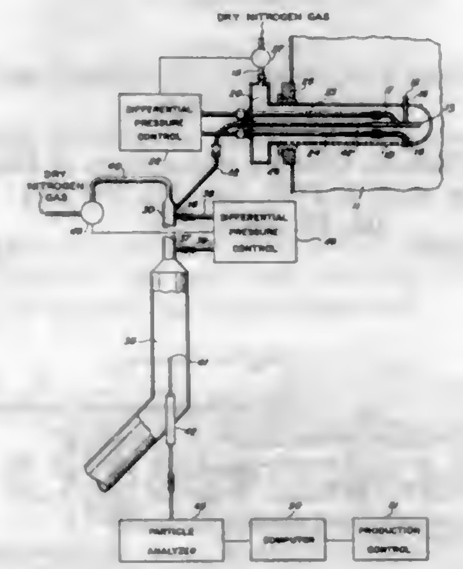
**Tatsuo Tanaka, 23 of 402-Tou, 373, Nakanoshima, Sapporo-shi, Japan; Keishi Gotoh, 1, 2-chome, Ashibemachi, Kita-ku, Nagoya-shi, Japan; and Hiroshi Kajiura, % Dengen Automation Kabushiki Kaisha, 24, 1-chome, Miyazono-dori, Nakano-ku, Tokyo, Japan**
**Filed Sept. 28, 1966, Ser. No. 582,703**
**Int. Cl. G01n** *33/00*
**U.S. Cl. 73—432** **5 Claims**



In a method of continuously measuring particle size in a classification device a stream of particles to be measured is fed continuously into an elutriator, where the stream of particles is continuously divided into a fine particle flow stream and a coarse particle flow stream by passing a continuous air flow through the elutriator. Then by controlling the air flow so that the ratio of the flow rates of the two streams is constant and by measuring the air flow, a continuous determination of the size of the particles in the feed stream is made.

### 3,478,600
### PARTICLE SIZE AND DISTRIBUTION ANALYZING APPARATUS

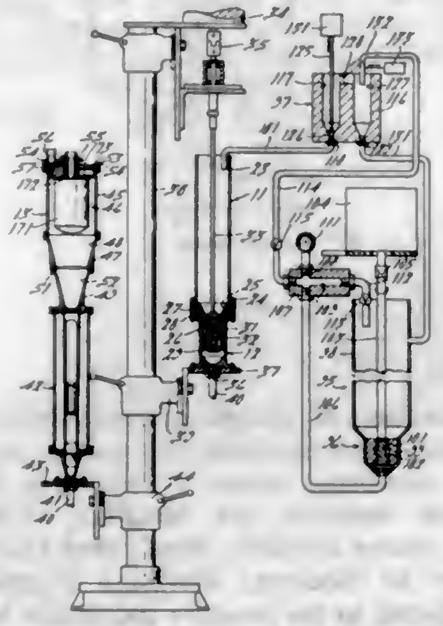
**Lewis G. Lynn, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**
**Filed Nov. 1, 1966, Ser. No. 591,180**
**Int. Cl. G01f** *15/14;* **G01j** *5/04*
**U.S. Cl. 73—432** **6 Claims**



Apparatus including a chamber having means associated therewith to divert a continuous representative sample of particulate material into a continuous flow of fluid being maintained within the chamber. Means are provided to detect and control the flow of fluid thru said chamber. A sampling tube is positioned in the chamber which is adapted to accept a continuous flow of material moving at the controlled volume rate of flow.

### 3,478,601
### FILTER TEST APPARATUS

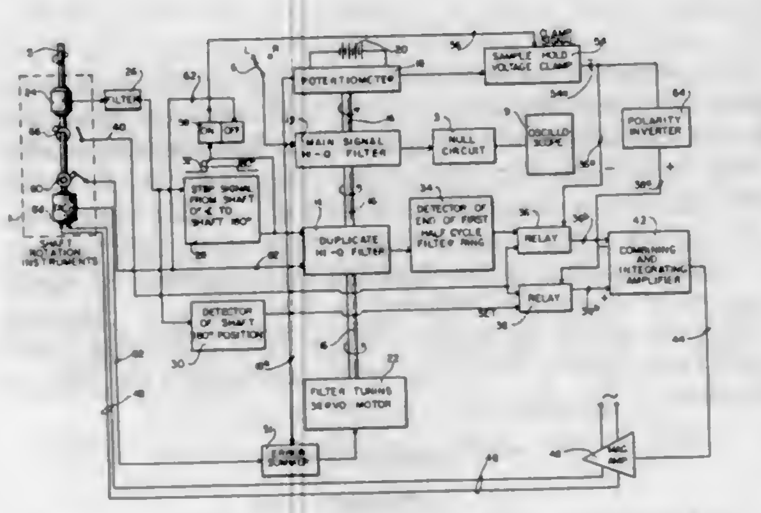
**Louis F. Niebergall, Racine, Wis., assignor to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 704,074, Feb. 8, 1968. This application July 26, 1968, Ser. No. 747,964**
**Int. Cl. G01f** *15/14;* **G01j** *5/04*
**U.S. Cl. 73—432** **7 Claims**



An apparatus and method for evaluating the efficiency of a filter and the size of foreign particles removed from a fluid by a fluid filter as well as the anticipated filter life. The apparatus includes a test housing having a specially formed cavity in which the filter to be tested is positioned and wherein a test fluid is directed through the filter. The special shape of the cavity precludes the settling out of foreign particles from the test fluid to insure against false efficiency readings. After the test fluid has passed through the fluid filter a sensing apparatus determines both the size of the particles remaining in the test fluid and the number of such particles. By continuously recirculating the test fluid through the filter being tested and through the sensing apparatus, instantaneous readings of the filter efficiency and the size of particles removed from the test fluid may be determined. An apparatus is also embodied for adding predetermined quantities of contaminants to the test apparatus at selected intervals during the test for determining filter life under conditions which closely approximate those encountered in actual use.

### 3,478,602
### FILTER FOR A BALANCING MACHINE

**Samuel A. Tatum, Newport News, Va., assignor to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia**
**Filed Oct. 28, 1966, Ser. No. 590,332**
**Int. Cl. G01m** *1/16*
**U.S. Cl. 73—462** **10 Claims**

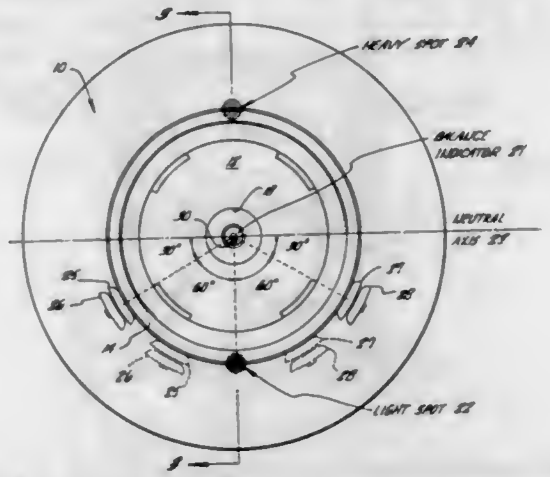


A system for filtering out undesired components coming from the vibration transducer means of a dynamic balancing machine to obtain a sine wave representing the fundamental unbalance motion of the workpiece being tested, the system including two substantially indentical filter circuits having tuning means gauged together to adjust their resonant frequencies in unison, one filter circuit being connected to filter the transducer signals, and the other filter circuit being coupled to means for measuring its resonant frequency and comparing this measurement with a measurement of the rotational frequency of the workpiece to derive an error signal, and the system including means responsive to the error signal to adjust the filter circuits' resonant frequencies toward elimination of the error.

### 3,478,603
### WHEEL BALANCE METHOD

**Vick G. Bonessa, Arcadia, Calif., assignor to The Bada Company, Pasadena, Calif., a corporation of California**
**Filed Nov. 16, 1966, Ser. No. 594,941**
**Int. Cl. G01m** *1/30*
**U.S. Cl. 73—483** **1 Claim**

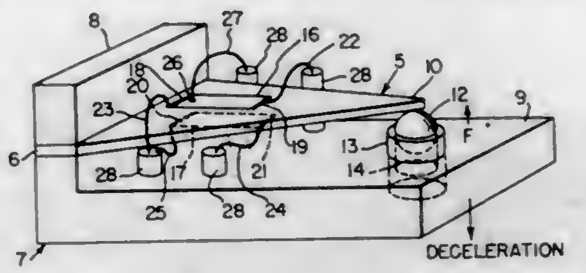
A method of balancing automotive wheels in which a wheel to be balanced is placed horizontally upon a balancing machine, such as a "bubble balancer," capable of indicating with accuracy the light spot of the wheel at which added balance weights are most effective to balance the wheel. Provide at least two and optimally three sets of four balance weights, the weight in each set being of equal mass and increasing in mass in selected increments from set to set. One set of weights is placed on the rim of the wheel in pairs 120 degrees apart from each other around the rim and 60 degrees from opposite sides of the wheel light spot. The pairs are moved symmetrically



toward or away from the light spot along the wheel rim, depending upon whether or not the initial placement of the weights overbalances the wheel, until a condition of wheel balance is achieved. Then one weight of each pair is connected to the wheel rim on the one side of the wheel at that location corresponding to the adjusted position of the pair at the time of balance, and the other weight is connected to the other side of the wheel at a corresponding position.

### 3,478,604
### ELECTRONIC SOLID-STATE ACCELEROMETER

**Edgar J. Evans, Parsippany, N.J., assignor to the United States of America as represented by the Secretary of the Army**
**Filed May 17, 1968, Ser. No. 730,188**
**Int. Cl. G01p** *15/08*
**U.S. Cl. 73—517** **4 Claims**

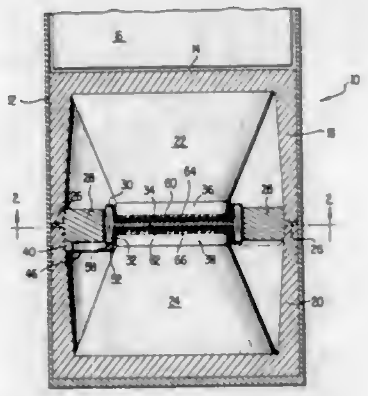


A tapered cantilever beam composed of P-type silicon is mounted to lie in a plane substantially at a right angle to the direction of motion of a body, such as a flight vehicle, and receives stress or pressure at its tip end which is applied by a movable ball weight. On each face side of the beam is an N-type epitaxial resistor wired into a circuit configuration to form a unijunction transistor. The flexing of the beam serves to vary the resistors in an opposite sense and to control a transistor connected into a relaxation oscillator circuit. The operation is such that the period of oscillation is varied linearly by the acceleration force applied to the end of the beam by the ball weight. A resistor-capacitor form of differentiating circuit produces a pulse at the end of each cycle of oscillation which is read by a pulse counter.

**3,478,605**

### ACCELEROMETER AND PICKOFF SYSTEM

**Vernon H. Siegel, 233 Bernhardt Drive, Snyder, N.Y. 14226**
**Continuation-in-part of application Ser. No. 139,666, Sept. 21, 1961. This application Oct. 22, 1964, Ser. No. 405,813**
**Int. Cl. G01p** *15/08*
**U.S. Cl. 73—517** **12 Claims**



1. An accelerometer comprising a casing, a pair of soft iron cups in said casng, a solid permanent magnet in each of said cups, a pole piece and stationary capacitory plate mounted on each of said magnets and defining an air gap therebetween, a spool carrying a forcer coil surrounding said air gap and having a web passing through said air gap, said web forming a movable capacitor plate, a soft iron ring surrounding said spool and joining said cups to complete the magnetic circuit about said magnets, suspension wires connected to said spool and supporting said spool for movement only axially of said forcer coil, an AC generator coupled to said capacitor plates, and a differential detector consisting entirely of passive circuit elements for sensing movement of said web and feeding back of signal to said forcer coil to oppose said movement.

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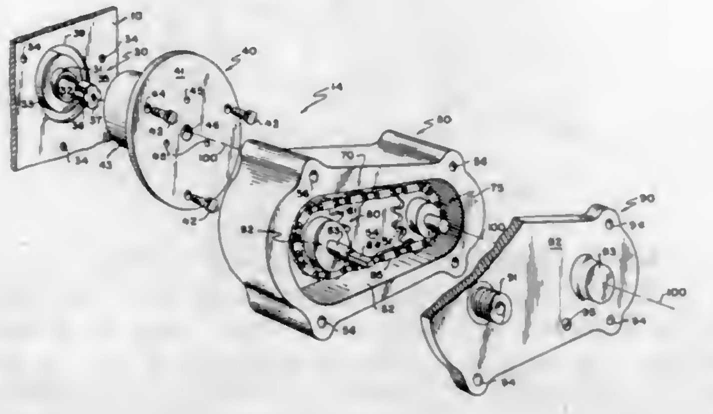
**3,478,606**

### APPARATUS FOR INDICATING THE RELATIVE MOVEMENT OF A SNOWMOBILE

**Walter H. Pederson, Rte. 1, St. Cloud, Minn. 56301**
**Filed Dec. 19, 1967, Ser. No. 691,789**
**Int. Cl. F16h** *7/00, 37/00*
**U.S. Cl. 74—12** **7 Claims**



Apparatus for indicating the relative movement of a snowmobile and more particularly to a velocity and distance indicator. A drive shaft adaptor is connected to a drive shaft of the snowmobile and a motion transfer housing is operatively connected to said adaptor. A rotational velocity adjustment means, within the transfer housing, provides selective velocity variation of the transferred rotational motion. A cable transfers the rotational motion from the transfer housing to an indicating head for ultimate indication of the present velocity of a snowmobile and the distance traveled by a snowmobile.

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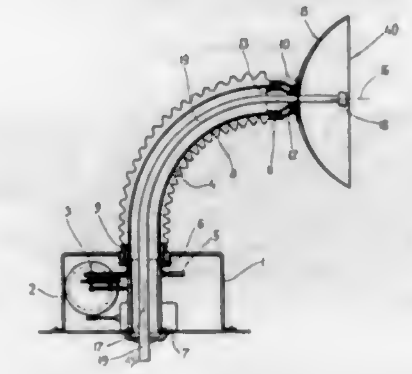
**3,478,607**

### DEVICE FOR TRANSMITTING ROTARY MOTION

**Erich Arbeitlang, Ottobrunn, near Munich, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, near Munich, Germany**
**Filed June 25, 1968, Ser. No. 739,736**
**Claims priority, application Germany, June 30, 1967, 1,625,018**
**Int. Cl. F16j** *15/52*
**U.S. Cl. 74—18.1** **12 Claims**



A device for the transmission of rotary motion is comprised of a housing and a crankshaft rotatably mounted in and extending outwardly from the housing. Outwardly from the housing the crankshaft is curved so that its outer end describes a circle about its axis of rotation within the housing when the crankshaft is rotated. A flexible bellows is rigidly secured to the housing and encloses the shaft outwardly from the housing. A base plate is disposed across the end of the bellows at the outer end of the shaft and is arranged in rotatable relationship with the axis of the shaft at its outer end.

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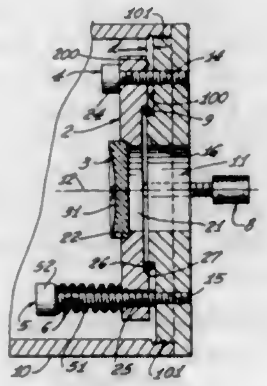
**3,478,608**

### ALIGNING AND MOUNTING MECHANISM DEVICE

**Viktor Met, Palo Alto, Calif., assignor to Electro Optics Associates, Palo Alto, Calif., a corporation of California**
**Filed June 23, 1966, Ser. No. 559,844**
**Int. Cl. F16h** *29/20*
**U.S. Cl. 74—89.15** **8 Claims**



Arrangements are described to obtain non-interacting *x-y* alignment for optical reflectors, of a resolution adequate for use in laser cavities. At the same time, specific configurations are described that represent the reduction to practice of this concept, while at the same time offering other concepts such as that of a completely adjustable, quick-interchange mount, as well as that of a micrometer driven vernier drive, to be operated independently or in combination with such a quick-interchange mount.

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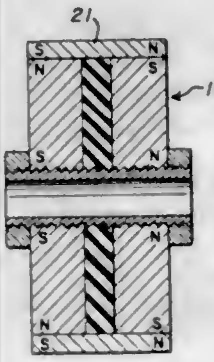
**3,478,609**

### BELT DRIVE

**Lucian J. Beindorf, Springfield, Mo., assignor to Dayco Corporation, Dayton, Ohio, a corporation of Delaware**
**Filed Dec. 26, 1967, Ser. No. 693,378**
**Int. Cl. F16h** *7/00*
**U.S. Cl. 74—229** **5 Claims**



A magnetic belt drive having a pulley with insulated magnetized halves of opposite polarity, and a ferrous or ferrous-loaded rubber belt which is magnetic and may be magnetized. As a variation, a magnetized belt may be used with a magnetic but non-magnetized ferrous pulley.

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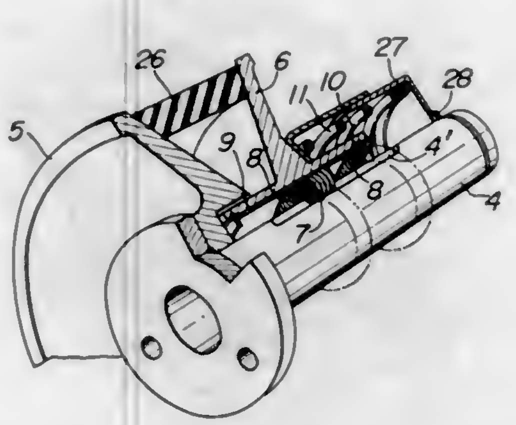
**3,478,610**

### STEPLESS TRANSMISSION USING ELASTIC ROLLING MECHANISM

**Yoshitaka Sakai, Nagoya-shi, Japan, assignor to Sakai Manufacturing Co., Ltd., Nagoya-shi, Japan, a corporation of Japan**
**Filed Apr. 2, 1968, Ser. No. 718,168**
**Claims priority, application Japan, Aug. 3, 1967, 42/49,910**
**Int. Cl. F16h** *55/56*
**U.S. Cl. 74—230.17** **1 Claim**



A stepless transmission of the type having a fixed conical plate member and an axially movable idle conical plate member mounted on each of the driving shaft and the driven shaft in confronting relation for engagement with a drive transmission belt, in which said idle conical plate member is keyed to said drive shaft or driven shaft by means of a coil spring disposed in a cylindrical cavity formed by a semicylindrical axial groove formed in the peripheral wall of said shaft and a corresponding semicylindrical groove formed in the peripheral wall of the axial bore in the boss of said idle conical plate member so that said idle conical plate member may be movable axially but not rotatable relative to said shaft, and between said idle conical plate member and said shaft is disposed an annular coil spring in a radially compressed state on each side of said key so as to elastically support said idle conical plate member on said shaft, said annular coil spring being rollable on said shaft to provide for axial displacement of said idle conical plate member on said shaft.

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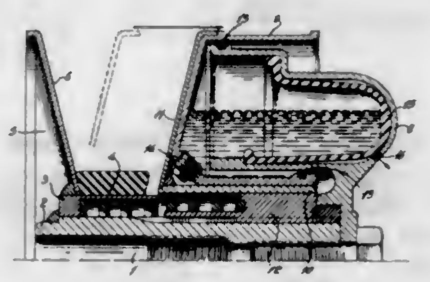
**3,478,611**

### VARIABLE SPEED DRIVE ASSEMBLY

**Claude Venne, 694 Bastien, Robert Forest, 637 Terrace Forest, and Serge Perreault, 61 Boulevard des Hauteurs, all of St. Jerome, Quebec, Canada**
**Filed July 15, 1968, Ser. No. 744,762**
**Int. Cl. F16h** *55/56*
**U.S. Cl. 74—230.17** **10 Claims**



This invention relates to a drive assembly comprising generally a rotatable drive shaft, a first annular pulley half having a tapered wall defining one pulley surface secured to the shaft, a piston member also secured to the shaft forming a first portion of a liquid chamber and a cylinder member telescopically mounted on the piston member and forming therwith a closed liquid chamber, the cylinder member having a tapered wall forming a second pulley half. A pressure compensator is positioned in the liquid chamber to compensate for the variation of volume due to the relative movement of the piston and cylinder members. The pressure compensator is in communication with the exterior to permit air to flow in and out of the chamber in a controlled manner while preventing the liquid from flowing out of the chamber. Consequently the pressure compensator acts as a cushion for controlling the rate of relative movement of the piston member with respect to the cylinder member.

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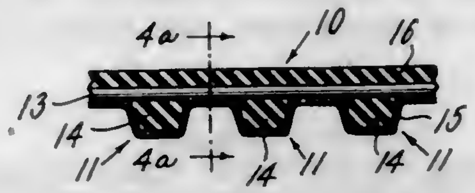
**3,478,612**

### POSITIVE BELT STRUCTURE

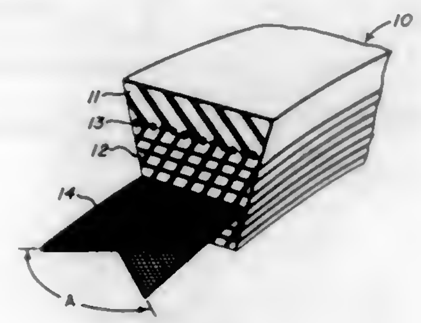
**Robert E. Wetzel, Huntingdon Valley, Pa., assignor to Uniroyal, Inc., a corporation of New Jersey**
**Original application Jan. 11, 1965, Ser. No. 424,760, now Patent No. 3,418,186, dated Dec. 24, 1968. Divided and this application June 28, 1968, Ser. No. 754,144**
**Int. Cl. F16g** *1/26*
**U.S. Cl. 74—232** **3 Claims**



A drive belt having an endless load carrying band, a plurality of spaced teeth bonded to said band, and a wear-resistant compressed flock covering bonded to the surfaces of said teeth and to the surface of said belt in the spaces between said teeth.

### 3,478,613
### V-BELTS

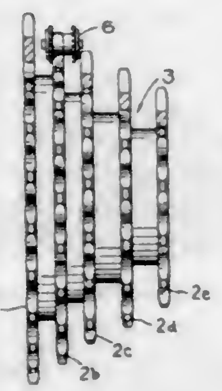
**Dale L. Waugh, Alden W. Brooks, and Howard J. Jensen, Springfield, and Kenneth D. Richmond, Nixa, Mo., assignors to Dayco Corporation, Dayton, Ohio, a corporation of Delaware**
**Continuation of application Ser. No. 575,330, Aug. 26, 1966. This application Mar. 3, 1969, Ser. No. 808,364**
**Int. Cl. F16g** *5/16*
**U.S. Cl. 74—233** **9 Claims**



A V-belt utilizing layers of stress-relief fabric in its body, in the compression and/or tension sections, or surrounding the strength cords. The stress-relief fabric has warp and weft threads at an angle of 95 to 155 degrees with each other.

### 3,478,614
### MULTISTAGE SPROCKET WHEEL ASSEMBLY FOR A BICYCLE OF SPEED CHANGE TYPE

**Keizo Shimano, Sakai, Japan, assignor to Shimano Kogyo Kabushiki Kaisha, Sakai, Japan**
**Filed Nov. 13, 1967, Ser. No. 682,036**
**Claims priority, application Japan, Nov. 17, 1966, 41/106,350, 41/106,351**
**Int. Cl. F16h** *55/30;* **B62m** *25/00*
**U.S. Cl. 74—243** **10 Claims**

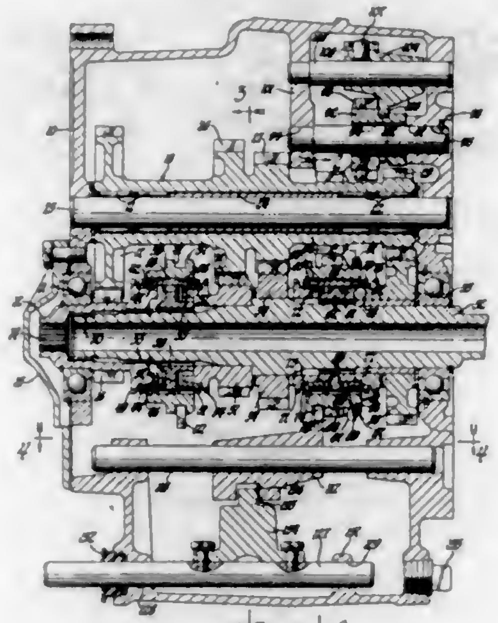


This invention relates to a multistage sprocket wheel assembly consisting of a plurality of sprocket wheels having different numbers of teeth or having different diameters arrange in parallel and mounted on a rear wheel hub of a bicycle for speed change purpose, and it involves an improved arrangement for maintaining the width of the sprocket wheel assembly as small as possible.

### 3,478,615
### DAMPER TO PREVENT GEAR CLASH IN A COUNTERSHAFT TRANSMISSION

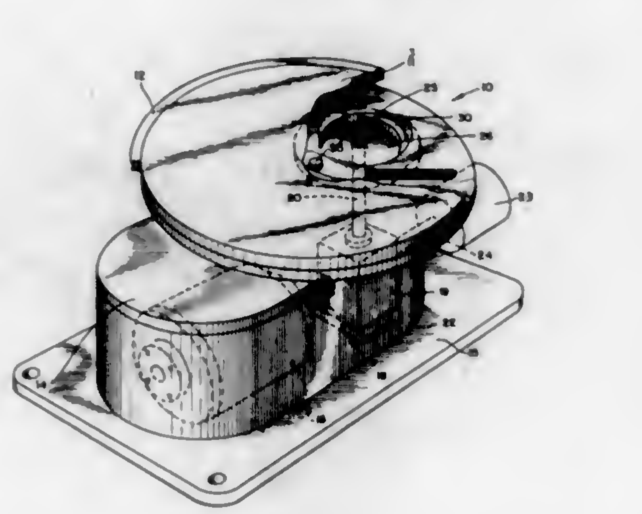
**Kenneth R. Hanchett, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed May 2, 1968, Ser. No. 726,168**
**Int. Cl. F16h** *3/38, 55/14*
**U.S. Cl. 74—339** **5 Claims**

A damper comprised of a resilient nonmetallic gear is bonded to a steel ring which is secured to the one-two shift collar of a countershaft transmission which collar rotates with the output shaft. Adjacent the damper, on the one-two shift collar is an external reverse gear which engages the reverse idler gear, during a downshift from second speed to first speed forward. During the downshift, the damper silently engages the reverse idler gear to cause it to rotate at the same speed as the external reverse gear so that the two reverse gears may be engaged with no perceptible metal to metal gear clash.



### 3,478,616
### INTERNAL GENEVA LOCK

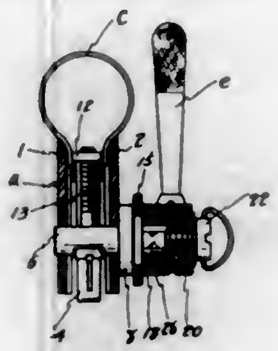
**Floyd E. Smith, 5704 Brewster Lane, Erie, Pa. 16505**
**Filed May 22, 1968, Ser. No. 731,211**
**Int. Cl. F16h** *55/04*
**U.S. Cl. 74—436** **9 Claims**



Internal four station and eight station Genevas in which arcuate relief is provided on the Geneva wheel to accommodate design capability of 180° lockup with the locking segment on the Geneva driver. Additional means disengage the driving power at a mid-point in the dwell position and in timed relationship to shift the driver to the end that a zero tolerance lockup can be provided at the mid-point in the dwell to thereby maximize the radial accuracy of alignment of a work table driven by the Geneva wheel.

### 3,478,617
### GEARBOX CHANGE LEVER FOR BICYCLES

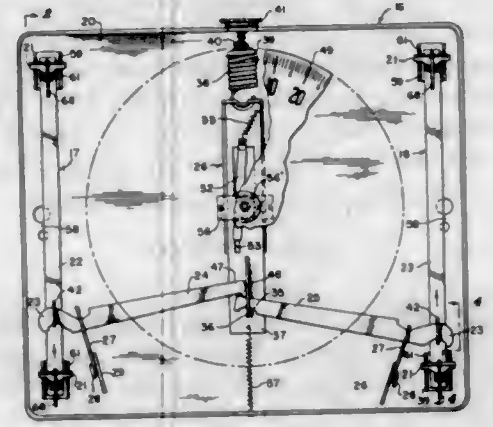
**Tetsuo Maeda, 12/1-ochome, Hamadera-Koen-cho, Osaka Prefecture, Sakai, Japan**
**Filed Sept. 26, 1967, Ser. No. 670,571**
**Claims priority, application Japan, Sept. 1, 1967, 42/75,105**
**Int. Cl. G05g** *11/00*
**U.S. Cl. 74—489** **1 Claim**

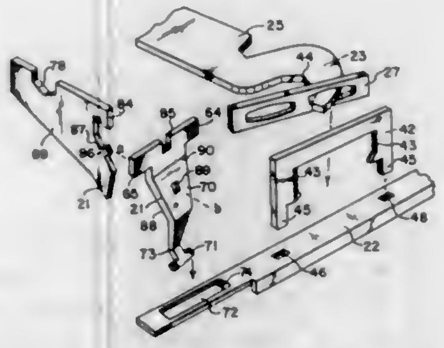


A gearbox change lever for bicycles comprising a housing adapted to be secured to the handle of a bicycle, a gearbox change lever axially mounted pivotally on one side of the housing and a brake lever axially mounted pivotally to the housing.

### 3,478,618
### TWO-PIECE SHEET METAL BELL-CRANK LEVER CONSTRUCTION

**Mike A. Provi and S. Robert Guinter, Rockford, Ill., assignors to The Brearley Company, Rockford, Ill., a corporation of Illinois**
**Original application Apr. 28, 1967, Ser. No. 641,096. Divided and this application Jan. 30, 1969, Ser. No. 795,280**
**Int. Cl. G05g** *4/04*
**U.S. Cl. 74—519** **8 Claims**

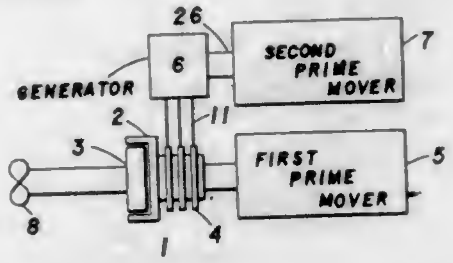




The two-piece bell-crank lever is made of two sheet metal stampings, one a generally triangular shaped bracket and the other a T-shaped body member disposed in right angle relationship, the bracket having a downwardly facing hook projection at its upper and engaging in a notch in the top of the body at the middle thereof, while a lug projecting from the inner end of the bracket in downwardly spaced relation to the hook enters a registering hole provided in the body, the inner edge of the bracket being generally V-shaped to match a generally V-shaped bend in the body, so that when the two pieces are placed between dies with the hook engaging loosely in the notch and the lug started entering the hole, and the dies are closed to crimp the body transversely between the hole and notch, the two pieces are pressed together entering the lug in the hole and tightly engaging the hook in the notch, the two pieces are rigidly and permanently connected by swaging the hook into the notch and upsetting the projecting end of the lug at the hole.

### 3,478,619
### ARRANGEMENTS COMBINING A PLURALITY OF PRIME MOVER POWERS

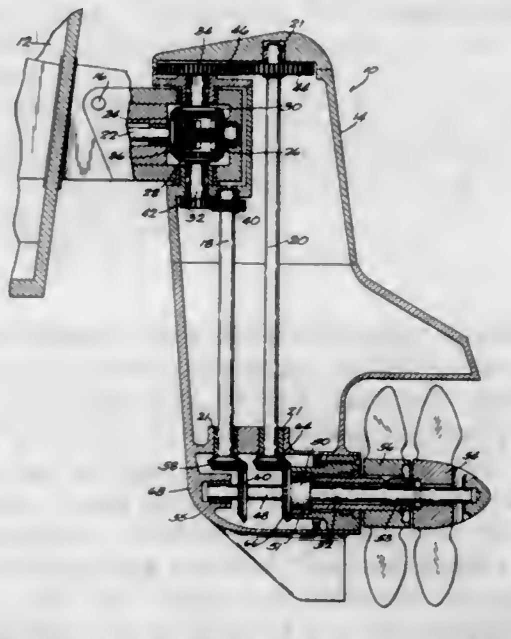
**Fukuo Shibata, 13 Tokiwa-cho, Nishinomiya, Hyogo Prefecture, Japan**
**Filed June 6, 1967, Ser. No. 645,094**
**Claims priority, application Japan, Aug. 11, 1966, 41/52,719; Sept. 25, 1966, 41/63,868**
**Int. Cl. F16h** *37/06;* **H02p** *15/00;* **H02k** *7/10*
**U.S. Cl. 74—661** **8 Claims**



In order to drive a load such as a propeller of a ship by combined powers of a plurality of prime movers such as diesel engines without sacrificing efficiency of operation or economy of apparatus of the arrangements, an electromagnetic coupling having two rotors which rotate with respect to each other is installed between a first prime mover and the load, and the electromagnetic coupling is supplied with an electric power from an electric generator driven by a second prime mover through an electric cable, in sequence the load side rotor rotates faster than the other rotor.

### 3,478,620
### MARINE PROPULSION UNIT WITH DUAL DRIVE SHAFTS AND DUAL PROPELLER SHAFTS

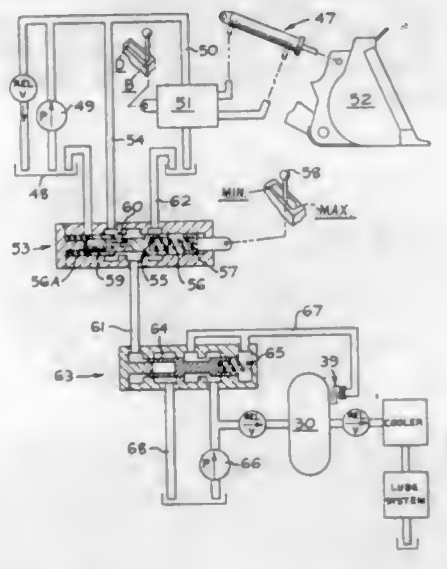
**William J. Shimanckas, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware**
**Filed Oct. 6, 1967, Ser. No. 673,357**
**Int. Cl. F16h** *1/22, 37/06*
**U.S. Cl. 74—665** **8 Claims**



A stern drive marine propulsion unit which includes two counterrotating drive shafts rotatably supported in a drive shaft housing with each drive shaft drivingly connected to separate co-axial propeller shafts, each shaft carrying a separate propeller.

### 3,478,621
### TORQUE CONVERTER AND CONTROL SYSTEM THEREFOR

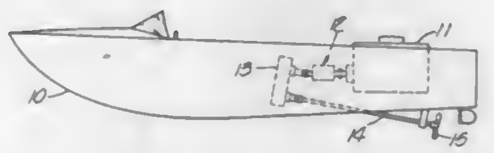
**Lowell E. Johnson and Robert C. Hansen, East Peoria, Shairyl I. Pearce, Highland Hills Estates, East Peoria, and Charles E. Lanchantin, Jr., Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed May 8, 1968, Ser. No. 727,620**
**Int. Cl. F16h** *47/08*
**U.S. Cl. 74—688** **45 Claims**



One of the stator and impeller members of a torque converter is divided into two elements so that one element may rotate relative to the other. A control system comprising fluid pressure signal means is operatively associated with one of the elements to control relative rotation occurring therebetween to infinitely vary the power absorption capability of the torque converter within a predetermined range.

### 3,478,622
### MARINE TRANSMISSION

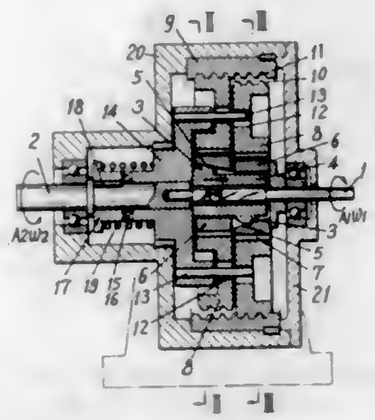
**Larry R. Reid, deceased, late of Santa Maria, Calif., by Richard D. Reid, administrator, 420 N. Miller St., Santa Maria, Calif. 93454**
**Filed Aug. 30, 1967, Ser. No. 664,572**
**Int. Cl. F16h** *57/00*
**U.S. Cl. 74—792** **10 Claims**



Transmission apparatus is coupled between the engine and the propeller of the marine vehicle in a direct manner not requiring clutching means. For producing forward drive, the planetary gears relating an input sun gear and an output ring gear are caged by moving the planetary gear system longitudinally of the input power shaft, bringing a further ring gear that is common to the planetary gears into engagement with the sun gear achieving direct driving relation between the engine and the propeller. Reverse drive is obtained by braking the caging member associated with the planetary gears while the further ring gear is disconnected from the sun gear.

### 3,478,623
### SPEED REDUCTION DEVICE

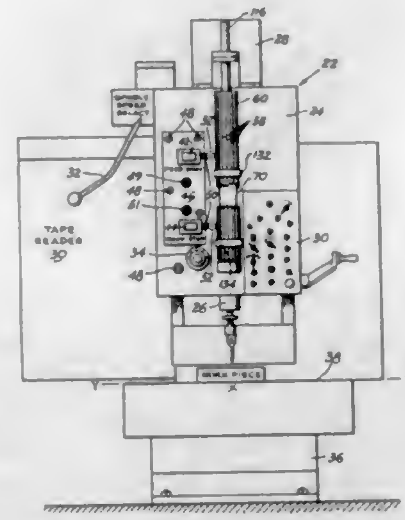
**Yoshiyuki Noguchi, 141 Idogayakamicho, Minami-ku, Yokohama-shi, Kanagawa-ken, Japan**
**Filed June 7, 1968, Ser. No. 735,265**
**Claims priority, application Japan, June 10, 1967, 42/36,997**
**Int. Cl. F16h** *1/32, 13/06*
**U.S. Cl. 74—798** **10 Claims**



A speed reduction device, the combination of a drive shaft and a driven shaft axially aligned to each other, annular eccentric shafts mounted on the drive shaft rotatable therewith, rolling wheels surrounding the eccentric shafts, a fixed outer wheel concentrically disposed relative to the common axis of the driving and driven shaft and to accommodate said rolling shafts. Between the drive shaft and eccentric shafts is inserted a cam shiftable in axial direction whereby frictional contact of the rolling wheels to the fixed wheel is varied. The driven shaft mounts a disc flange having pins which extend through radial slots provided in the rolling wheels so that the rotation of rolling wheels is transmitted to the flange. At one end of the flange is formed a cam face which frictionally contacts another cam face provided in a sleeve mounted on the driven shaft. By frictional engagement of the cam faces and load imparted to the driven shaft, the flange and aforesaid shiftable cam connected thereto are constrained to shaft in an axial direction. A spring is interposed between the flange and sleeve thereby a frictional contact of the rolling wheels to the fixed wheel is produced even when the driven shaft is nonloaded.

### 3,478,624
### INDEXABLE CONTROL MECHANISM

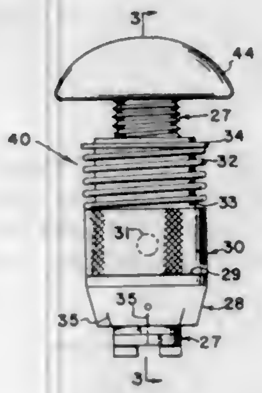
**Henry R. Stafford, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware**
**Filed Apr. 20, 1967, Ser. No. 632,300**
**Int. Cl. B23b** *49/00, 47/18*
**U.S. Cl. 77—32.1** **1 Claim**



An indexable device having a plurality of adjustable stop abutments movable with a tool-carrying spindle of an automated machine tool and engageable with switch means for controlling the operation including travel distance of the tool-carrying spindle.

### 3,478,625
### TOOL FOR ADJUSTING VALVES

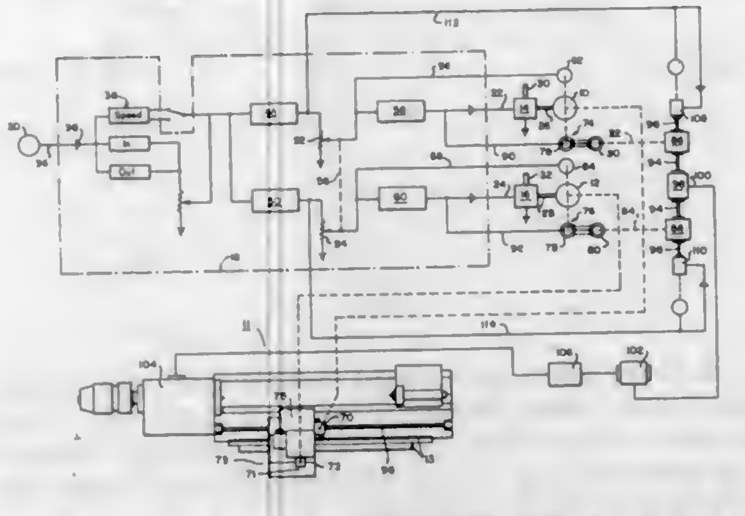
**David N. Crosthwait, Jr., Michigan City, Ind., assignor to Dunham-Bush, Inc., West Hartford, Conn., a corporation of Delaware**
**Filed Oct. 3, 1966, Ser. No. 583,539**
**Int. Cl. F16k** *51/00, 29/00*
**U.S. Cl. 81—3** **4 Claims**



A setting tool for adjusting the control disc in the bonnet of a fluid valve comprising a tool stem carrying a handle at one end and a pair of lugs at the other end. A tool body is adjustably mounted on the tool stem intermediate the ends and is movable axially along the tool stem to register with indicia carried on the lower end of the tool stem to indicate the relative position of the tool body on the tool stem.

### 3,478,626
### CONTROLLED FEED SYSTEM

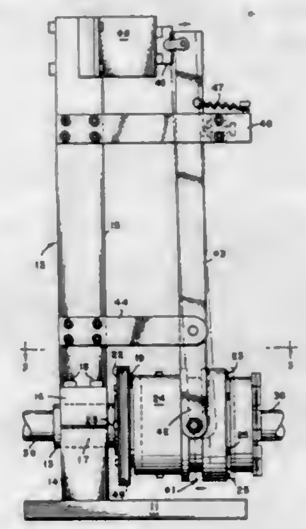
**George A. Stelmach, Butler, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware**
**Filed Mar. 14, 1967, Ser. No. 622,998**
**Int. Cl. B23b** *3/28;* **B23c** *1/16, 1/18*
**U.S. Cl. 82—14** **13 Claims**



The controlled feed system, when applied to lathes, carefully controls the tool feed pattern in both the longitudinal and cross-feed directions which are expressed in fractional inches per revolution of the headstock or lathe spindle in each feed direction. Error signals are generated, which are composite reference signals, the value of which are determined both by template tracer position and by adjustable signal reference means controlled by the rotary speed of the headstock. Hydraulic motors are employed for driving the longitudinal lathe carriage and the cross slide. The hydraulic motors are controlled respectively by component output signals of the tracing head circuit, and each of the motors is regulated by a tachometer feedback circuit. The motors are additionally controlled by the outputs of mechanical differentials, respectively, which in turn are controlled both by the tracing head component signals and by the speed of the lathe headstock. The differentials are coupled through synchro systems to the drive motors to generate the error signals. The error signals are fed back to the motor energizing circuits, or in the case of hydraulic motors, to their respective servo-valves. Thus, the error signal produced by one differential is related to both the X component position signal of the tracing head and to the lathe spindle speed while the error signal of the other differential is related both to the Y component position signal and to the lathe spindle speed.

### 3,478,627
### TUBE CUTTER

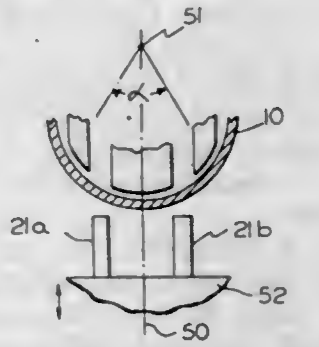
**Thomas E. Marion, Baltimore, Md., assignor to Universal Machine Co., Inc., Baltimore, Md., a corporation of Maryland**
**Filed Feb. 2, 1967, Ser. No. 613,552**
**Int. Cl. B23b** *3/04, 5/14*
**U.S. Cl. 82—70.2** **4 Claims**



A tube cutter in which a tube to be cut is placed in a tube holder which rotatably carries an inner and an outer collar. Coplanar blades to cut the tube are disposed at one end of the tube holder on one collar. These blades are normally in retracted position but can be protracted to cut the tube during rotation of the collars on axial and rotational movement fo the collars relative to each other.

### 3,478,628
### METHOD OF PUNCHING A CYLINDRICAL CRT CONVERGENCE ELECTRODE

**Edward E. Yorns, Owensboro, Ky., assignor to Kentucky Electronics, Inc., Owensboro, Ky., a corporation of Delaware**
**Original application Oct. 18, 1966, Ser. No. 587,519, now Patent No. 3,354,338, dated Nov. 21, 1967. Divided and this application Sept. 14, 1967, Ser. No. 667,707**
**Int. Cl. B26d** *3/12;* **B23d** *21/00*
**U.S. Cl. 83—54** **2 Claims**



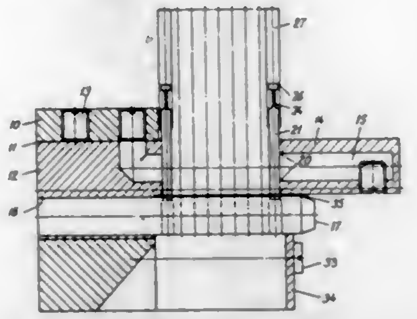
This application discloses methods of punching cylindrical cathode ray tube convergence electrodes with pairs of elongated slits punched into the walls to receive magnetic convergence pole pieces. The punches are disposed to move along a plane parallel to one passing through the cylinder axis to strike the cylinder walls off normal. The punches are generally L- or U-shaped to provide a transverse slit component, so that the punches are not deflected or worn as they are moved into the cylinder walls, and thereby to keep tolerances of the slits closer than possible with simple elongated slits.

### ERRATUM

For Class 83—105 see:
Patent No. 3,478,632

### 3,478,629
### HOLE PUNCHING DEVICES FOR RECORDING MEDIA

**Birger Henrik Ek, Sundbyberg, and Sven Gunnar Walter Stenudd, Lidingo, Sweden, assignors to Facit AB, Atvidaberg, Sweden, a Swedish joint-stock company**
**Filed May 1, 1967, Ser. No. 635,245**
**Claims priority, application Sweden, May 3, 1966, 6,019/66**
**Int. Cl. B26f** *1/04*
**U.S. Cl. 83—169** **9 Claims**

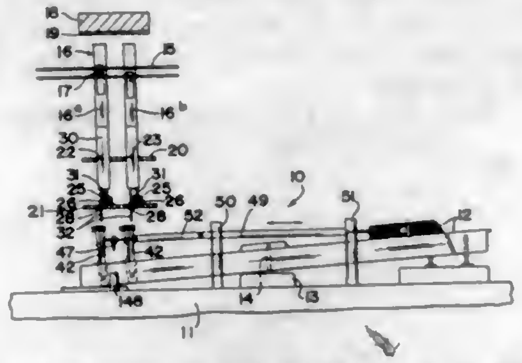


This invention relates to hole punching devices for punch tapes and similar recording media and has for an object the provision of a punch head in which a plurality of punches **21** are combined in a rigid yet easily interchangeable way with a punch die **17** and punch guide means **14**. The punch guide means are formed as a bar having a cylindrical shank portion **12** fitted into a base member **10** and adjustable angularly and longitudinally therein. The punches **21** are mounted for longitudinal displacement within transversal holes drilled in said punch guide **14** employing the overhanging rod-shaped punch die **17** mounted in said punch head **12, 14** as a drill jig. The upper ends of the punches **21** are connected to bell cranks **27** actuated by push rods **29** from a drive mechanism known in itself, and this connection is established and disestablished by turning the punch head shank **12** relative to the base member **10**.

### 3,478,630
### HARPSICHORD WITH VERTICAL ENGAGEMENT ACTION FOR JACKS

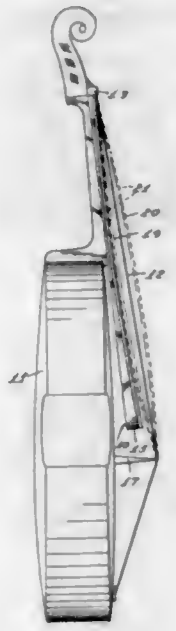
**Philip M. Cucchiara, 1101 S.O.M. Center Road, Cleveland, Ohio 44124**
**Continuation-in-part of application Ser. No. 753,338, Aug. 9, 1968, which is a continuation-in-part of application Ser. No. 614,210, Feb. 6, 1967. This application Nov. 6, 1968, Ser. No. 788,979**
**Int. Cl. G10c** *1/06*
**U.S. Cl. 84—258** **8 Claims**

The jacks in a harpsichord are positioned solely for sliding vertical movement, and counterweights may be associated with some jacks in the instrument, where the jacks are to have "on" and "off" conditions in the instrument. One or a pair of striking members are pivotally associated with the posterior end of each of the keys in the instrument and one of such members is individually brought into and out of engagement with a respective jack or counterweight when present in the instrument whereby one of such striking members will always be engaged with one jack or one counterweight so that the striking action of associated keys will remain the same regardless of whether or not a register is in the "on" or "off" position. Control means are provided to move the striking means by sets or registers into positions to operatively engage either all of the jacks in the register, or none of the jacks.



### 3,478,631
### CURVED FINGER BOARDS FOR STRINGED MUSICAL INSTRUMENTS

**Alan Robert Fisher, 69 Winona, Highland Park, Mich. 48203**
**Continuation-in-part of application Ser. No. 640,674, May 23, 1967. This application Dec. 5, 1968, Ser. No. 784,536**
**Int. Cl. G10d** *3/00, 3/06*
**U.S. Cl. 84—293** **2 Claims**

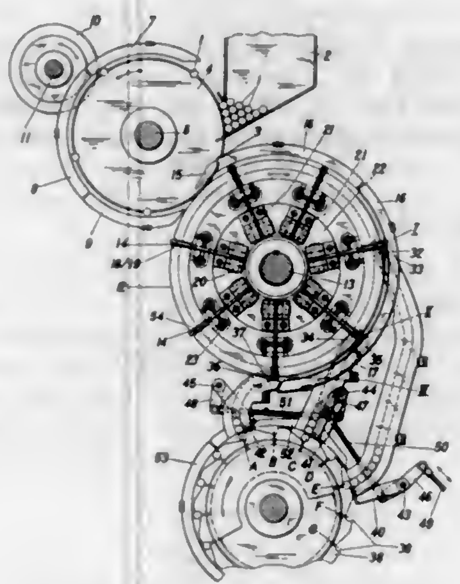


A finger board for stringed musical instruments which has a face longitudinally curved on a logarithmic spiral so that a string when pressed against the finger board at any point along its length will make the same angle with the finger board at each point.

### 3,478,632
### FILTER-SECTION DISTRIBUTING DEVICES, ESPECIALLY FOR USE IN THE MANUFACTURE OF FILTER TIPPED CIGARETTES

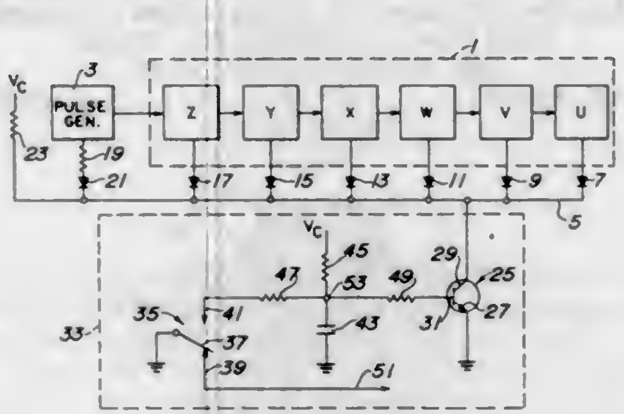
**Alfred Schmermund, 62 Kornerstrasse, 5820 Gevelsberg, Westphalia, Germany**
**Filed Dec. 20, 1967, Ser. No. 692,034**
**Claims priority, application Germany, Dec. 29, 1966, Sch 40,027**
**Int. Cl. B26d** *7/06*
**U.S. Cl. 83—105** **7 Claims**

Devices are described by means of which filter rods, the length of which equals an even multiple greater than two of the length of a filter plug, are each divided into a plurality of filter sections, the length of which equals twice the length of a filter plug for a filter tipped cigarette, cigarillo or cigar. The device essentially comprises three rotatable drums. A first one of said drums receives filter rods which by means of a cutter are divided into filter sections. The filter sections are transferred to a second one of said drums. The second drum co-operates with means for transferring the filter sections, one at a time, to guide means or chutes in which the filter sections are temporarily stored and from which they are supplied to the third drum conveying the filter sections to a working station for further processing the same.



### 3,478,633
### COUNTER RESETTING ARRANGEMENT FOR RHYTHM ACCOMPANIMENT STARTING

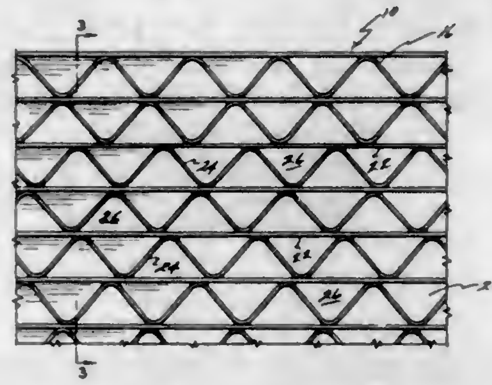
**Alfred L. Mallett, Pittsfield, N.H., assignor to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Feb. 7, 1966, Ser. No. 538,527**
**Int. Cl. G10f** *1/00;* **H03k** *23/08, 21/00*
**U.S. Cl. 84—1.03** **16 Claims**



The binary counter of an electronic rhythm accompaniment device is reset upon actuation by an instrumentalist to cause the rhythm produced by the device to be initiated concurrently with the first downbeat of the instrumentalist's play. Resetting is achieved by either setting each stage of the binary counter to the desired reset state or by "racing" the binary counter to the desired reset state while muting the audio output. In each embodiment, a reset transistor is connected to a common reset line.

### 3,478,634
### PIANO SOUNDING BOARD

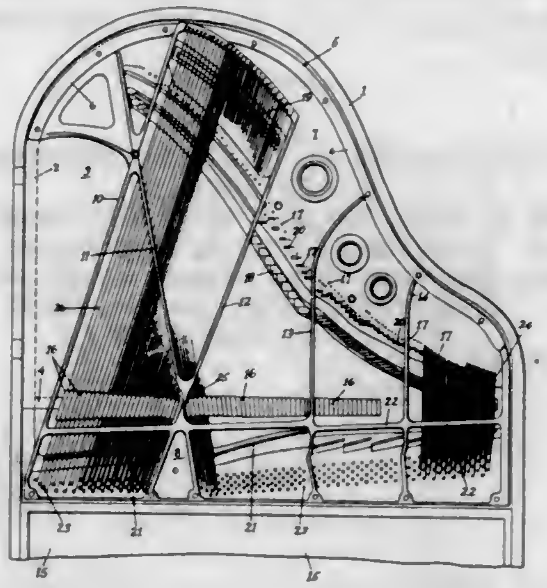
**Milton A. Haerich, 1033 Jamaica Court, Aurora, Colo. 80010**
**Filed Nov. 28, 1967, Ser. No. 686,100**
**Int. Cl. G10c** *3/06*
**U.S. Cl. 84—193** **3 Claims**



This invention relates to an improved piano sounding board comprising a sandwich-like laminate made up of spaced, substantially-parallel strips of sheet material interconnected by corrugated strips that cooperate to produce a series of rows of vertically-disposed individual cells overlaid both top and bottom by plastic sheets bonded thereto so as to produce a multiplicity of sealed individual sound-reverberating air chambers.

### 3,478,635
### HITCH PIN FOR STRINGED INSTRUMENTS

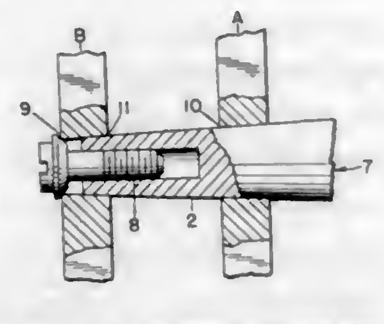
**Harold A. Conklin, Jr., Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio**
**Filed Aug. 15, 1966, Ser. No. 572,496**
**Int. Cl. G10c** *3/04, 3/08, 3/10*
**U.S. Cl. 84—197** **8 Claims**



A stringed musical instrument wherein the strings are secured at their rear ends to smooth cylindrical hitch pins having their axes substantially normal to the string plate and to the direction of extent of the strings, the strings engaging the hitch pins at points spaced upwardly from the string plate and being movable vertically to adjust the downbearing of the strings on the bridge of the instrument with which the strings are associated, the hitch pins preferably being in the form of hollow cylindrical members having a longitudinal split therein, the pins being spaced from the bridge of the piano in accordance with a prearranged schedule so that the length of the strings extending between the pins and the bridge will bear a substantially harmonic relationship to the speaking lengths of the strings.

### 3,478,636
### NON-SLIP TUNING PEG FOR STRING INSTRUMENTS PLAYED BY BOWS

**Robert C. Juzek, 570 River Vale Road,**
**River Vale, N.J. 07675**
**Filed Nov. 9, 1967, Ser. No. 681,856**
**Int. Cl. G10d** *3/14*
**U.S. Cl. 84—305** **4 Claims**



The non-slip tuning peg for string type instruments that are played by bows, specifically violins, violas, and cellos, is made of molded material, preferably of nylon. The tuning peg consists of three parts, to wit: (1) a tapered, round peg shaft that will fit the respective holes in the walls of the peg box of these instruments, (2) a retaining ring, and (3) a screw. The peg shaft has a longitudinal hole, extending inwardly from the small end of peg shaft. The retaining ring has flanges and a head portion, which head portion has an inward downwardly tapered friction surface; the flanges thereof fit inside the hole of the peg shaft. The screw is of a diameter to fit inside the hole of the retaining ring, and it threads itself into the hole. Upon tightening the screw the peg shaft is drawn further into the respective holes in the walls of the peg box of the instrument. This produces firm seating of the peg shaft in the holes in the walls of the peg box of the instrument, so that the tuning peg cannot back out, and hence become loose, resulting in de-tuning the string on the peg. The holes in the walls of the peg box are not of the same diameter and circumference, but that one nearer the retaining ring is the smaller of the two, which enables the tapered, round peg shaft to fit into the respective holes.

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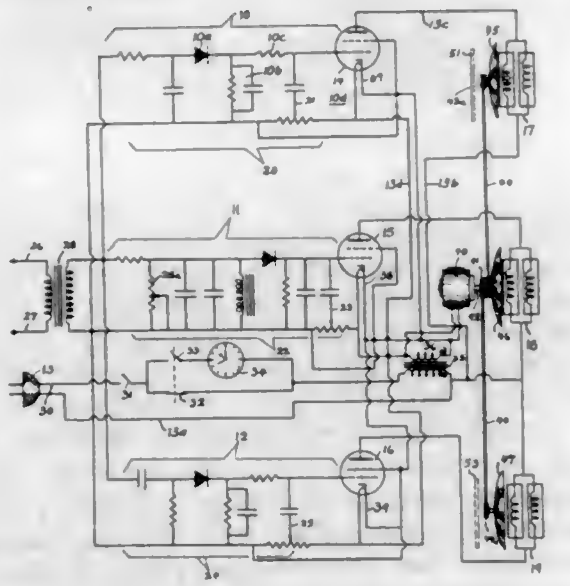
### 3,478,637
### AUDIO-TO-VISUAL PATTERN CONVERTING APPARATUS

**Edward A. Reed, Star Rte. 882, 14609 Moody, Orange, Calif. 92667, and Hrand M. Muncheryan, Anaheim, Calif.; said Muncheryan assignor to said Reed**
**Filed Mar. 30, 1966, Ser. No. 545,204**
**Int. Cl. A63j** *17/00*
**U.S. Cl. 84—464** **5 Claims**



Apparatus for generating a pattern of changing colored lights on a screen as a function of the frequency variations of an audible signal. A plurality of channels are provided, one for each frequency band, each channel providing changes from dim light with soft sounds to very bright light with loud sounds. Means are provided to set the bias of each channel to adjust the sensitivity thereof and for varying this sensitivity over a wide range.

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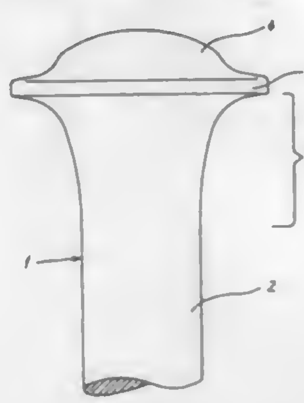
### 3,478,638
### ANCHORAGE NAIL

**Elmar Thurner, Feldkirch-Gisingen, Austria, assignor to Hilti A.G., Schaan, Liechtenstein**
**Filed Feb. 12, 1968, Ser. No. 704,753**
**Claims priority, application Germany, Mar. 7, 1967, H 62,048**
**Int. Cl. F16b** *15/02*
**U.S. Cl. 85—28** **4 Claims**



A nail of a type which is adapted to be driven in a hard receiving material such as concrete includes a large head diameter compared to its shaft diameter. The nail shaft is widened in a convex manner toward the head over a length adjacent the head corresponding substantially to the shaft diameter. The widening curve is preferably made such that the first and second thirds of the curve in a direction proceeding toward the head are relatively flat but become rapidly steep in the last third-portion which terminates in the outside diameter of the rim of the head. A flat rim is advantageously stamped around the head and the rim diameter is substantially double or triple the shaft diameter.

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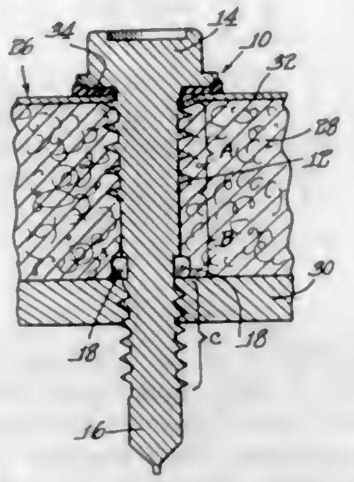
### 3,478,639
### SCREW TYPE FASTENER

**Ned Joseph Gruca, Elgin, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware**
**Filed Sept. 9, 1968, Ser. No. 758,503**
**Int. Cl. F16b** *35/00, 33/02*
**U.S. Cl. 85—41** **9 Claims**



This invention relates generally to screw type fasteners, and more particularly to fasteners of the type adapted for use with structures such as panels comprising insulation material such as foam insulation bounded by sheet material. One embodiment of the invention disclosed herein consists of a screw member which includes a shank with a clamping head at one extremity, said shank having a work entering or drilling extremity oppositely disposed from the head, and a first section of thread convolutions of relatively high pitch extending from the vicinity of the clamping side of the head and terminating intermediate said head and the entering extremity of the shank. A second section of thread convolutions is provided on the shank and is axially separated from the first section of thread convolutions by an unthreaded shank section. The second section of thread convolutions has a pitch and outer diameter less than the pitch and outer diameter of the first section of thread convolutions. Abutment means in the form of wing or lug members of limited axial extent radiate from the unthreaded shank section in the vicinity of the trailing convolutions of said second threaded section, the diameter determined by said wings or lugs being greater than the outer diameter of the convolutions of the second threaded section and less than the outer diameter of the convolutions of the first threaded section. The fastener as disclosed herein includes a drilling portion at the entering end of the shank immediately beyond the second section of threaded convolutions.

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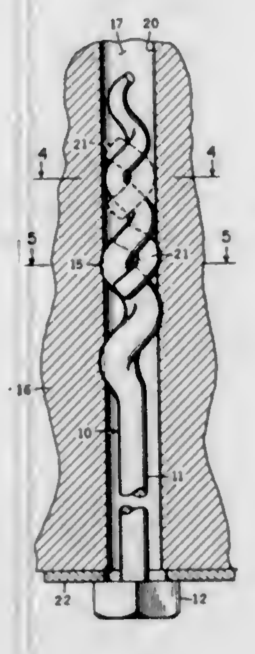
### 3,478,640
### ROOF BOLT CONNECTION

**Gerald W. Elders, 10 Hillcrest,**
**Christopher, Ill. 62822**
**Filed Feb. 19, 1968, Ser. No. 706,583**
**Int. Cl. F16b** *13/04, 33/04*
**U.S. Cl. 85—64** **11 Claims**



A roof bolt connection having a wedge engaged with a spiral bolt-holding portion of a bolt, the wedge being relatively movable longitudinally of the bolt spirals. The wedge and bolt-holding portion provide a combined increased cross sectional dimension as the wedge moves relatively toward a bolt head, and engages the hole wall. The wedge and bolt-holding portion are urged into effective lateral compression with each other and with the hole wall upon relative turning of the bolt and wedge in one direction, whereby to secure the bolt in the roof. Upon relative turning in the opposite direction, the effective lateral compression is released, and the bolt and coacting wedge can be retrieved. Specifically, the spiral bolt-holding portion increases in cross section longitudinally toward the bolt head. The wedge has a spiral shape entwined with the spiral bolt-holding portion. The bolt-holding portion has a cross section, at the point on the bolt-holding portion of first effective lateral compression and longitudinally of such point toward the bolt head, at least as great as the minimum cross section of the bolt shank.

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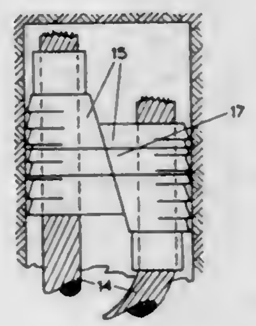
### 3,478,641
### ANCHOR OR ROOF BOLTS AND THE LIKE

**Hans O. Dohmeier, 30 van der Merwe St., Hillbrow Johannesburg, Transvaal, Republic of South Africa**
**Filed Feb. 5, 1968, Ser. No. 702,931**
**Claims priority, application Republic of South Africa, Feb. 7, 1967, 67/713**
**Int. Cl. F16b** *13/04*
**U.S. Cl. 85—79** **1 Claim**



An anchoring device comprising a looped flexible cable having a head means secured to each end with cooperating inclined surfaces to allow radial movement for locking in position.

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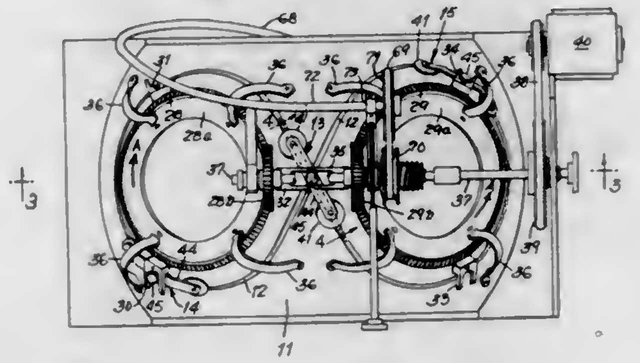
### 3,478,642
### SPHERICAL INCLINE BRAIDING APPARATUS

**George E. Jurta, Tilton, N.H.**
**(R.F.D. 1, Box 39, Franklin, N.H. 03235)**
**Filed Apr. 22, 1968, Ser. No. 722,834**
**Int. Cl. D04c** *3/02*
**U.S. Cl. 87—50** **7 Claims**



This invention relates to a braiding machine for weaving a braid having seamless strands. The braiding-tips traverse a figure-of-eight path or track along a spherical sector thereby providing a three dimensional movement of the braiding-tips in the weaving operation. This apparatus also provides structural features of a novel character for controlling braid density.

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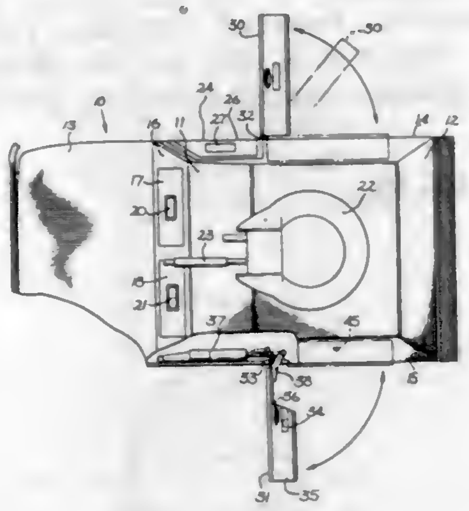
### 3,478,643
### BALLISTIC SHIELDING APPARATUS

**Robert W. Forsyth and John P. Forsyth, both of 1517 N. 3rd Ave., Upland, Calif. 91786**
**Filed Apr. 4, 1968, Ser. No. 718,781**
**Int. Cl. F41h** *5/12, 7/04*
**U.S. Cl. 89—36** **13 Claims**

A ballistic shielding apparatus disclosed herein includes a self-propelled vehicle having at least one laterally extendable shield formed so as to conform with the general contour and silhouette of the vehicle. The shield is composed of material suitable for repelling or absorbing impact loads encountered by impinging ballistic missiles, such as rocks, bullets, or the like. The shield is hingeably connected to the vehicle, and the apparatus includes a key-lock system employing electro-hydraulic components for selectively advancing and retracting the shield to and from predetermined positions laterally of the vehicle.



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3,478,644

### TRIGGER MECHANISM FOR AUTOMATIC FIREARMS FOR SELECTIVE FIRING OF A BURST OR A SINGLE SHOT

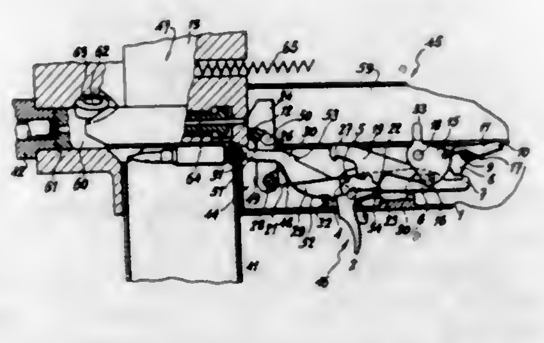
**Jiří Čermák, Brno, and Jindřich Jakubec, Tišnov, Czechoslovakia, assignors to Vyzkumny a vyvojovy ustav Zavodu vseobecneho strojirenstvi, Brno, Czechoslovakia, a corporation of Czechoslovakia**

**Filed Apr. 9, 1968, Ser. No. 719,991**

**Claims priority, application Czechoslovakia, Apr. 13, 1967, 2,688/67**

**Int. Cl. F41c** *5/02*

**U.S. Cl. 89—140** **7 Claims**



A trigger mechanism for automatic fire arms, for selective firing of a burst or a single shot which, comprises a switch which during a burst keep the tripping lever inoperative, while permitting the sear to engage a carrier catch; in its single shot position the switch deflects the tripping lever to engage the cocked hammer, while simultaneously releasing the sear from engagement with the carrier catch and the latter from engagement with the carrier. The trigger, when pulled, releases the hammer from the tripping lever, which allows the spring-loaded switch to return to its position for firing a burst.

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3,478,645

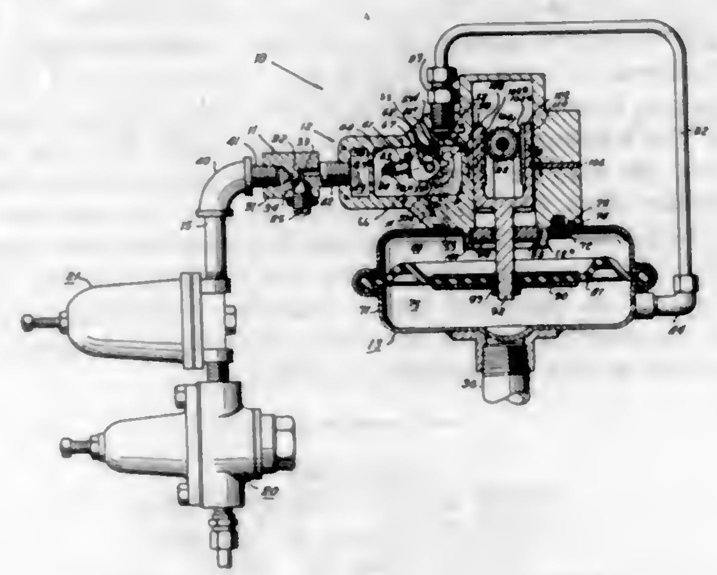
### FLUID POWERED TIMING DEVICES

**Carlos R. Canalizo, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware**

**Continuation of application Ser. No. 419,112, Dec. 17, 1964. This application May 24, 1967, Ser. No. 640,988**

**Int. Cl. F01l** *15/14, 31/04;* **F01b** *19/02*

**U.S. Cl. 91—335** **4 Claims**



A gas operated timing device having a diaphragm alternately displaceable in opposite directions by gas under pressure which is supplied alternately to opposite sides of the diaphragm through suitable control means.

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3,478,646

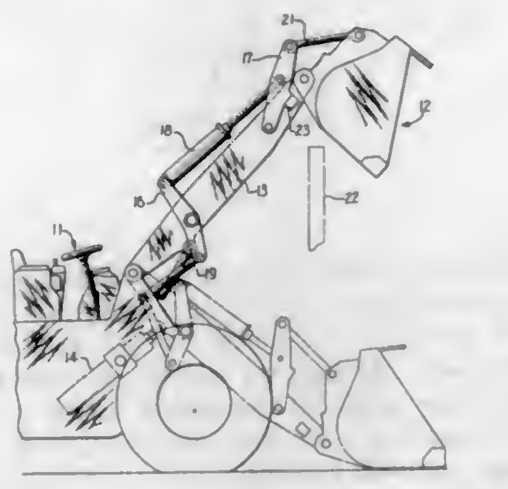
### RELIEF VALVE FOR HYDRAULIC CIRCUITS

**John R. Cryder and Neil W. Kroth, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**

Filed Dec. 20, 1967, Ser. No. 692,160

Int. Cl. F15b *11/20, 13/06;* **E02f** *3/86*

U.S. Cl. 91—411 **2 Claims**



A valve for relieving fluid pressure from tilt jacks of a bucket loader when operation of its lift jacks causes a fluid lock in the tilt jacks. The relief valve has a poppet valve for resisting passage of fluid pressure from the tilt jacks thereacross to drain. A spring biased spool tends to close the poppet valve and receives fluid pressure from the lift jack which tends to open the poppet valve.

3,478,647

### CIRCUIT FOR HYDRAULICALLY OPERABLE DEVICES, ESPECIALLY HYDRAULIC DREDGES

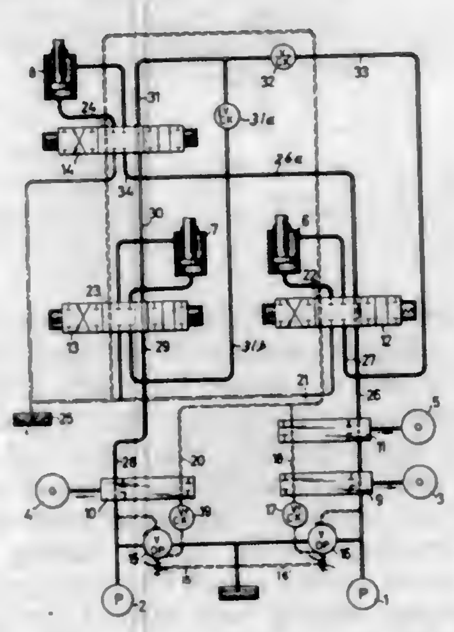
**Jürgen Gerber, Dortmund-Bodelschwingh, and Friedrich Fichtner, Bochum-Weitmar, Germany, assignors to Orenstein-Koppel und Lubecker Maschinenbau Aktiengesellschaft, Dortmund-Dorstfeld, Germany**

**Filed Mar. 11, 1968, Ser. No. 712,189**

**Claims priority, application Germany, Mar. 10, 1967, O 12,359**

**Int. Cl. F15b** *11/10, 13/042;* **F02b** *73/00*

**U.S. Cl. 91—411** **9 Claims**



Hydraulic circuit for implements such as a dredge in which a pair of pumps supply a plurality of motors via a control valve for each motor with a bypass channel leading from said pumps to exhaust via said valves and which bypass channel is interrupted when any valve is shifted from its neutral position. A second channel leads from each pump to the inlet of some of the control valves and is interrupted upon shifting of any of the control valves and on the downstream side of the shifted control valve.

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3,478,648

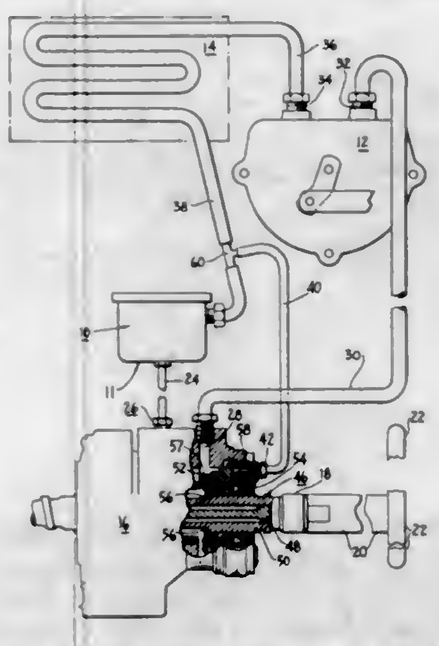
### FLUID SYSTEM

**Anthony R. D'Alba, Williamsville, N.Y., assignor to Trico Products Corporation, Buffalo, N.Y.**

**Filed Apr. 22, 1968, Ser. No. 723,001**

**Int. Cl. F15b** *11/16, 21/04, 15/20*

**U.S. Cl. 91—411** **8 Claims**



An hydraulic system incorporating a fluid pump, a power steering control valve and gearbox assembly, a heat exchange coil and an hydraulic windshield wiper motor. A pressure relief bypass circuit is provided to relieve back pressure on a lip seal in the power steering control valve housing through which a rotatable operating shaft extends. The lip seal provides a closure for the control valve housing assembly.

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3,478,649

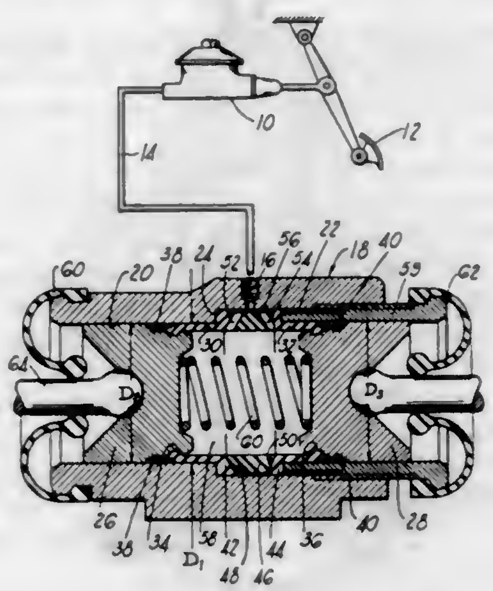
### SEALED WHEEL CYLINDER

**Richard L. Lewis, St. Joseph, Mich., assignor to The Bendix Corporation, a corporation of Delaware**

**Filed Aug. 3, 1967, Ser. No. 658,071**

**Int. Cl. F01b** *19/04;* **F16j** *3/00;* **F15b** *7/08*

**U.S. Cl. 92—50** **2 Claims**



A wheel cylinder having annular stretching diaphragms secured to the periphery of pistons slidable within the housing. The diaphragms can stretch to permit operation of the pistons and upon return do not restrict the bore diameter in that the stretching diaphragms as assembled within the housing are preloaded to exert a radially outward force.

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3,478,650

### PISTON-CYLINDER ASSEMBLY WITH DUSTCAP

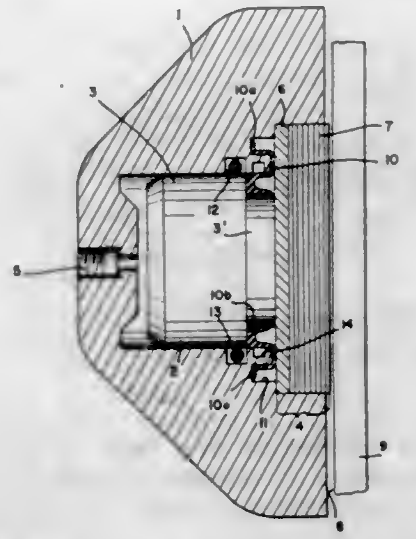
**Gert Schrader, Walldorf, Hesse, Germany, assignor to Alfred Teves GmbH, Frankfurt am Main, Germany, a corporation of Germany**

**Filed May 13, 1968, Ser. No. 728,625**

**Claims priority, application Germany, May 13, 1967, T 33,867**

**Int. Cl. F16j** *15/18, 15/50;* **B60t** *11/10*

**U.S. Cl. 92—168** **4 Claims**



In a piston-and-cylinder assembly for an automotive spot-type disk brake a recess is provided in the wall of the cylinder bore for the deposition of particles detached from the dustcap and the packing material, to prevent the agglomeration of such matter in the space between the piston and the cylinder wall where it is apt to interfere with trouble-free piston motion.

### 3,478,651

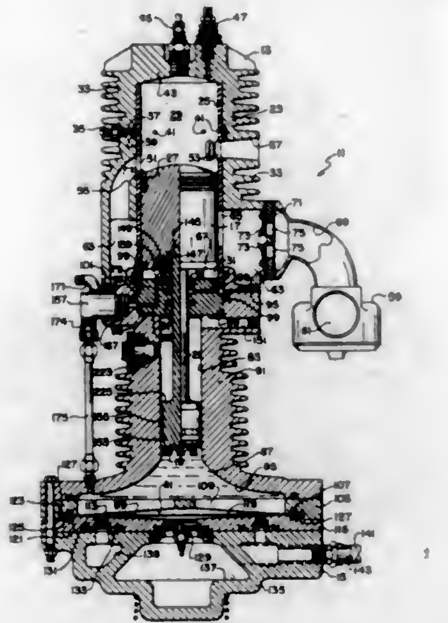
## PISTON CONNECTION FOR FREE-PISTON ENGINE

**Svend E. Sorensen, King of Prussia, and William L. McHale, Broomall, Pa., assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware**

**Original application Oct. 22, 1965, Ser. No. 501,719, now Patent No. 3,386,647, dated June 4, 1968. Divided and this application July 12, 1967, Ser. No. 688,281**

**Int. Cl. F01b** *11/02;* **F02f** *3/00*

**U.S. Cl. 92—152** **1 Claim**



The working and power pistons, operating in separate cylinders, of a free piston engine are provided with a universal joint type of construction where the piston rod connects to one of the pistons. The piston that is solidly connected to the piston rod is provided with a soft metal section allowing it to "wear in" as it reciprocates in its cylinder. This construction allows larger misalignment tolerances between the two cylinders.

### 3,478,652

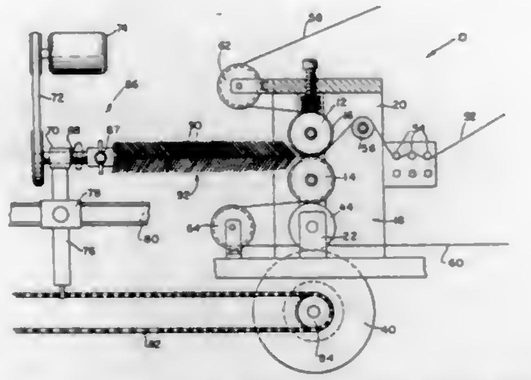
## METHOD FOR MAKING ARTIFICIAL CONIFEROUS TREE BRANCH

**Walter R. Goodridge, North Providence, R.I., assignor to Mr. Christmas Incorporated, a corporation of New York**

**Filed Dec. 22, 1965, Ser. No. 515,534**

**Int. Cl. A41g** *1/02*

**U.S. Cl. 93—1.5** **3 Claims**



An artificial coniferous tree limb is provided having an increased number of needles extending from the limb, thereby giving the artificial limb a more natural appearance. The increased number of needles is provided by simultaneously passing a pair of wires and a plastic film through the nip of cutting rollers, such rollers having grooves to receive the wires, and by moving the plastic film at a rate of speed at least about one and one-half times the rate of speed of the wires so that the needles cut from the plastic film "bunch up" between the wires and give the increased density of needles.

### 3,478,653

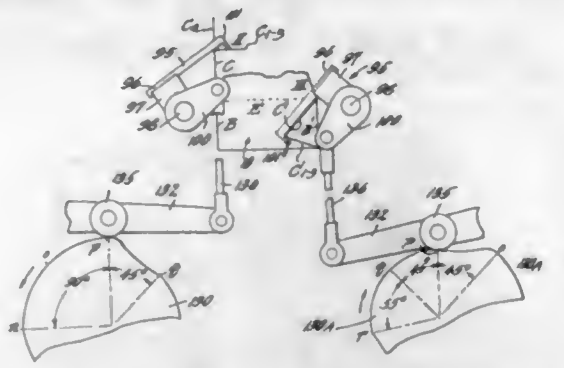
## CARTON FORMING APPARATUS AND METHOD

**Arthur J. Byrne, Lancaster, N.Y., assignor to F. N. Burt Company, Inc., Buffalo, N.Y., a corporation of Delaware**

**Filed Apr. 6, 1966, Ser. No. 540,699**

**Int. Cl. B31b** *1/44, 1/14, 1/26*

**U.S. Cl. 93—51** **5 Claims**



The machine and method disclosed is applicable to the erection of a display carton such as described, for example, in the patent to Puckett, 3,325,079, and involves a die structure through which an appropriate blank is forced by means of a kerfed plunger. The margins of the die are shaped to successively move the side and end walls of the carton to vertical positions. The die structure is also provided with swinging folding fingers, having projecting tongues and timed driving means for their operation. The projecting tongues during their inward movement first contact extended bracing tabs at the ends of the flaps which project from the side walls of the blank, fold them inwardly, and then continue to bend the flaps inwardly in the same direction, whereby the tabs come to a final position beneath the flaps to fix the flaps in article display position. The combined length of each flap and tab combination is greater than half the width of the carton and therefore, the driving means is so constituted as to effect the respective movements of the fingers sequentially to avoid obstruction and collision.

### 3,478,654

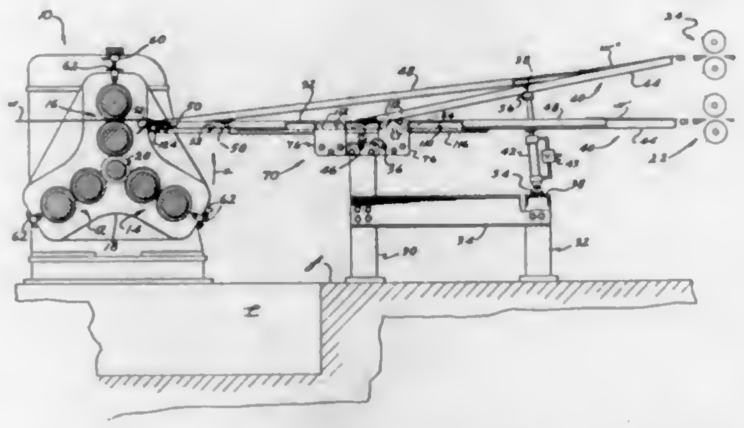
## LEAD-IN TABLE FOR PAPERBOARD SLITTING AND TRANSVERSE CUT-OFF MACHINERY

**Edwin J. Willard, East Longmeadow, Mass., assignor to Longview Fibre Company, a corporation of Delaware**

**Filed Sept. 12, 1967, Ser. No. 667,141**

**Int. Cl. B31b** *1/18;* **B21d** *7/06;* **B65h** *17/42*

**U.S. Cl. 93—58.2** **10 Claims**



A lead-in web directing table for supporting slit sections of a traveling web of corrugated paperboard from a slitting machine to vertically spaced transverse cut-off stations. Parallel fingers in the path of web travel are individually pivoted on a frame to form a selected inclined path to the upper transverse cut-off, and the frame is movable to extend closely adjacent the outlet of one of a plurality of slitting devices rotated into operative position, the frame being retractable outside of the path of rotation of said slitting devices. The fingers may be compositely formed of upper and lower nested portions, the upper portions being pivoted on said frame and elevated by lifting the lower portions.

### 3,478,655

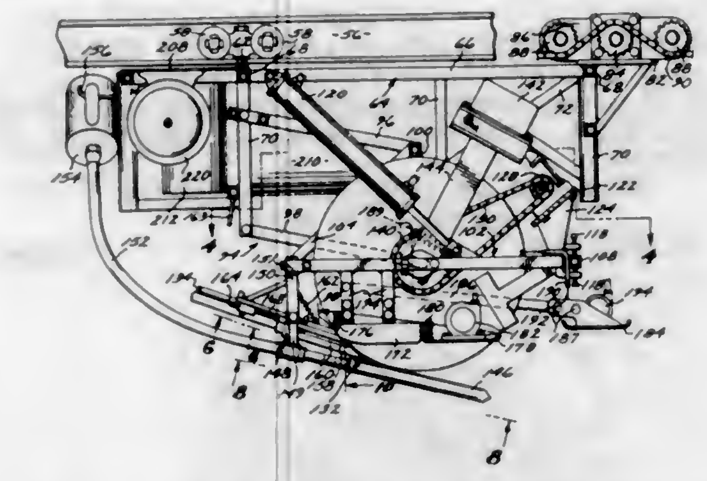
## APPARATUS FOR OPERATION UPON ELONGATED SECTION OF PLASTIC CONCRETE OR THE LIKE

**Donald W. Rasmussen, Downey, Calif., assignor to Edoco Technical Products, Inc., Long Beach, Calif., a corporation of California**

**Filed Mar. 27, 1967, Ser. No. 626,129**

**Int. Cl. E01c** *23/02;* **E02b** *5/02*

**U.S. Cl. 94—39** **14 Claims**



An apparatus for doing work of various types upon a large expanse of plastic concrete, and particularly upon the side slope and bottom of a relatively large canal, the apparatus including an elongated frame for orientation transversely of the canal in overlying relation to the side slope and a portion of the canal bottom. The frame is transportable in successive movements along the canal for location over successive transverse sections, the frame supporting a self-propelled car movable along the frame and carrying support structure adapted to mount feeding apparatus for inserting joint former strip material in the concrete of the canal while it is in a plastic condition, or to mount smoothing apparatus for providing a trowel-like finish on the concrete.

### 3,478,656

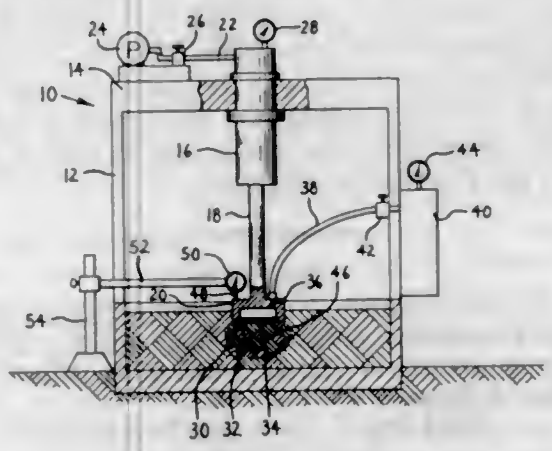
## METHOD AND APPARATUS FOR COMPACTING SOIL

**John K. McDonald, Portland, Oreg., assignor to Hyster Company, Portland, Oreg., a corporation of Nevada**

**Filed July 24, 1967, Ser. No. 655,363**

**Int. Cl. E01c** *19/41;* **E02d** *3/04;* **A01c** *23/02*

**U.S. Cl. 94—48** **24 Claims**



The present application discloses a method and means for compacting soils and other particulate materials. According to an illustrative embodiment of the method, a soil is compacted by applying surface pressure to a zone of the soil to place the same under compression. While the zone is under compression, compressed air or other gas is introduced into the soil under compression to weaken the same. The combined effects of the continued surface pressure and increased internal gas pressure within the soil collapses, and thus densifies, the soil to a degree not obtainable by the application of the surface pressure alone. Air or other gas within the soil zone is permitted to bleed therefrom, either through the surrounding soil during the entire operation, or upwardly through the densified soil zone following its collapse and release of the surface pressure.

Apparatus for carrying out the method can take several forms, all of which include a compaction device having a surface for pressing on the material to be compacted such as embodied in an earth tamping foot or earth compacting roller, an external source of a pressurized gas, and a device for injecting the gas under a controlled pressure into the material. The gas can be injected into the material through small openings in the material contacting surface of the compaction device, through injections arranged peripherally about the contact surface or by means of a hood placed over a surface portion of the zone and into which the pressurized gas is pumped.

Applications of the method include the densification of any gas permeable particulate material including, for example, soils, foundry sand, powdered metals, ceramic powders and dental materials.

### 3,478,657

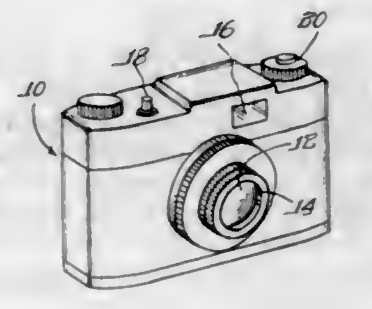
## CAMERA WITH DATING APPARATUS

**Nick P. Michels, 439 St. Mary's Parkway, Buffalo Grove, Ill. 60090**

**Filed June 16, 1966, Ser. No. 557,982**

**Int. Cl. G03b** *17/24*

**U.S. Cl. 95—1.1** **4 Claims**



In a camera a tape bearing indicia is arranged in front of the film and at one edge thereof, so that scene light passing to the film will be intercepted by the indicia bearing tape, and the indicia will be printed upon the film. The tape is supported to be moved between two spools so that the indicia can be changed as desired.

### 3,478,658

## OPTICAL FINGERPRINT RECORDING DEVICE

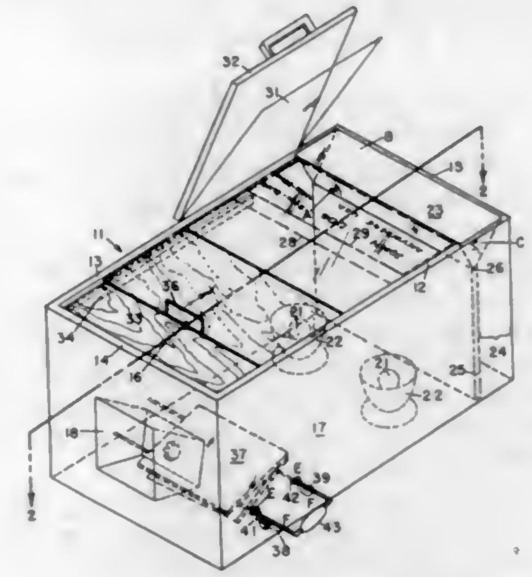
**Yow-Jiun Hu, Alexandria, and George L. Buc, Fairfax County, Va., assignors to Farrington Business Machines Corporation, Springfield, Va., a corporation of Massachusetts**

**Filed Dec. 6, 1966, Ser. No. 599,533**

**Int. Cl. G03b** *17/24*

**U.S. Cl. 95—1.1** **15 Claims**

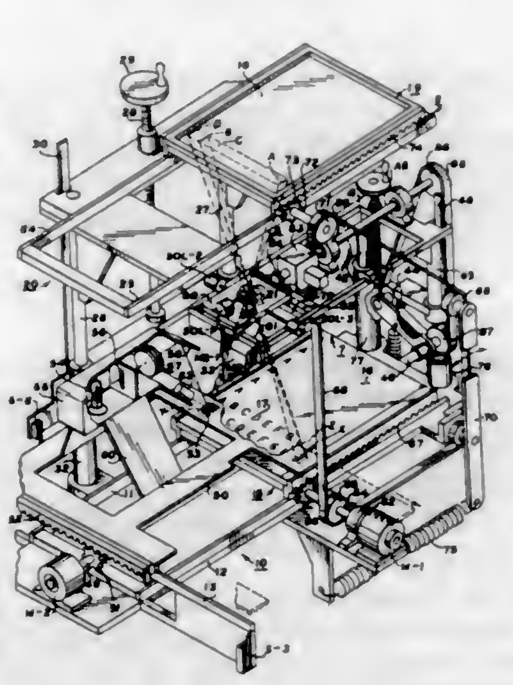
Apparatus for photographically recording one or more fingers or skin areas is disclosed including a housing. A prism is disposed at the top of the housing having first, second and third plane faces. Disposed at the third plane face is either a light absorbing chamber or a light absorbing coating. A camera having at least the lens thereof disposed within the housing has its lens focused through the housing enclosure to the first face of the prism via the second face thereof, the finger or skin area being placed upon or contacting the first face. A light source has its rays directed through the second face to the first face and thence to the third face by means of total internal reflection where the rays are absorbed by the above-mentioned light absorbing medium. Thus, as long as no finger or skin area is contacting the first face



of the prism the camera will see not light; however, as soon as such contact is established the total internal reflection will be interrupted at the points of contact thereby causing a certain amount of the light directed to the first face to be reflected back through the second face into the focusing lens of the camera. Hence, the ridges of a fingerprint would illuminate the camera film while the valleys thereof would appear as dark areas on the film.

### 3,478,659
## APPARATUS FOR JUSTIFYING A REPRODUCED LINE OF CHARACTERS

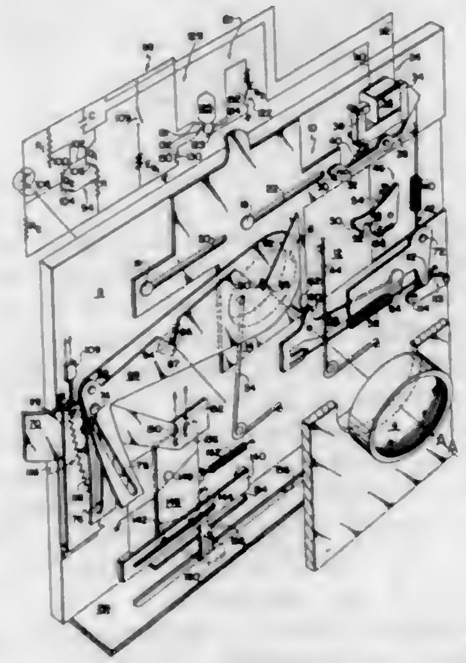
**Ernest Everet Minett, Rochester, and John W. Weigl, West Webster, N.Y.; said Minett assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**
**Filed July 1, 1965, Ser. No. 468,698**
**Int. Cl. B41b** *13/00, 15/00, 21/00*
**U.S. Cl. 95—4.5** **3 Claims**



Apparatus for justifying a line of printed matter including a planar support for an original document to be justified positioned in an optical path relative to a planar support for a sensitized recording member such than an original document is scanned to project a justified image onto the recording medium. The justifying apparatus includes an asymmetric lens supported by a lens carriage positioned intermediate the original document support and the recording member support and movable at a synchronous speed related to a scanning mechanism to expand or contract the graphic data for justifying the image onto the recording medium. A second embodiment discloses apparatus for sensing the number of spaces between words in a line of information to intermittently move the lens carriage at a speed related to the scanning of the information such that the desired line justification is effected during the scanning of the interword spaces.

### 3,478,660
## PHOTOGRAPHIC APPARATUS WITH FLASH EXPOSURE CONTROL SYSTEM

**Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware**
**Filed Sept. 29, 1966, Ser. No. 582,973**
**Int. Cl. G03b** *9/70*
**U.S. Cl. 95—11.5** **9 Claims**

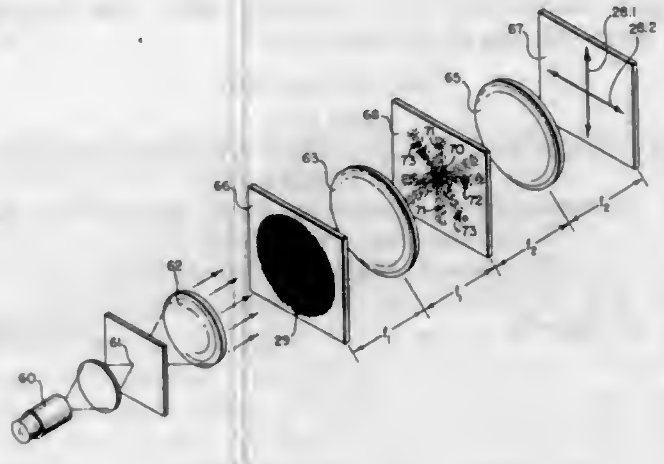


A photographic camera having a variable diaphragm and a control member coupled to the diaphragm for varying the exposure aperture of the diaphragm. The camera is also provided with an exposure mechanism including a flash unit, an adjustable element which is positioned in accordance with the range of the subject to be photographed, and an actuating device for actuating the exposure mechanism at the various settings of the diaphragm. The actuating device is slideably mounted in the camera and is automatically positioned for effecting a proper exposure of the film by the camera in response to the setting of the adjustable element. As the control member for the diaphragm is manually set to an appropriate aperture setting for an exposure, the control member cooperates with the actuating device to thereby actuate the exposure mechanism.

### 3,478,661
## MODULATED IMAGE PHOTOGRAPHY

**Helmut Heckscher, Belmont, Mass., assignor to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware**
**Filed Oct. 5, 1966, Ser. No. 584,577**
**Int. Cl. G03b** *33/10*
**U.S. Cl. 95—12.20** **10 Claims**

It is already known to modulate photostored images with spatial carrier frequencies in order to store several images on a single area of a photostorage medium, or in order to store color information on a black and white photostorage medium, in a manner which enables separate retrieval of one or more of the several images, or reproduction of a colored image in natural or arbitrary colors, respectively, by Fourier transform and spatial filtering techniques. Developments along these lines are described and claimed in the applications of Peter Mueller, Ser. No. 510,807 filed Dec. 1, 1965 and Ser. No. 564,340 filed July 11, 1966, both assigned to the same assignee as the present application. The present invention relates to camera systems for making such photostored images, employing a light modulating device located between the object being photographed and the camera, at a distance from the camera equal to or less than the hyperfocal distance but not less than one half the hyperfocal distance, for the particular focal length and aperture of the lens system. With the modulating device in such a location, the modulating device is multiplied with the image of the object in the photostored record and all of the properties of image storage and retrieval or reconstruction which are described and claimed in the above referenced applications of Mueller are available.

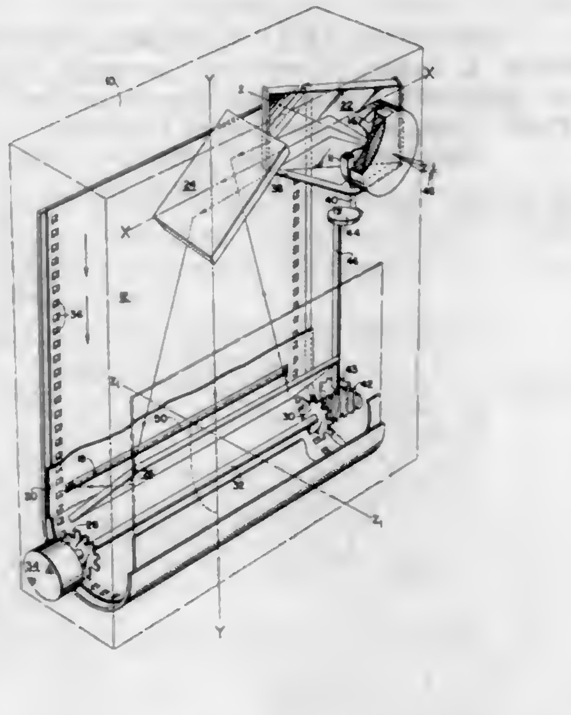


Location of the modulating device in the hyperfocal region as above specified makes it possible to use a modulating device of relatively coarse structure. Thus, for example, a series of superimposed modulating devices, each having a unique azimuthal orientation in a chosen plane transverse to the optic axis of the camera system can be built up in thin layers and will appear for pracitcal purposes to be in the same plane, as far as the camera is concerned.

According to a particular feature of the present invention, it is possible to employ as a modulating device a single structure having a plurality of gratings for imposing a periodic variation in intensity on incident light, each grating incorporating a different color filter and having such a unique orientation, in a new system in which several different objects are photographed in multiple overlapping exposures on the same piece of photostorage medium, each under light of a unique color corresponding respectively to one of the color filters. This has the practical effect of modulating the recorded image of each object with only one of the spatial carrier frequencies, namely that represented by the grating associated with the color of the light used in photographing the object, so that each image has associated with it a spatial carrier frequency which is characterized by its unique azimuthal orientation. The net result in this cast is to provide, in effect, an optically rotatable mechanically fixed spatial frequency modulating device in a system which makes a separately modulated record of each individual image. These images can thereafter be separately reconstructed from the photostored record by Fourier transform techniques with spatial filtering, as taught in the first of the above mentioned applications of Mueller.

### 3,478,662
## MULTIPLE-AXIS FOLDED OPTICAL SYSTEM FOR A PHOTOGRAPHIC CAMERA

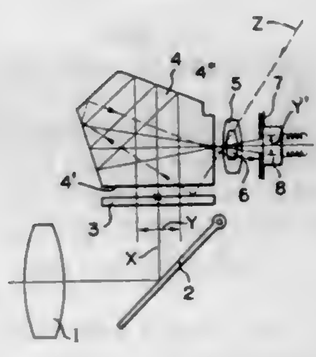
**James G. Baker, Winchester, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware**
**Filed Dec. 15, 1966, Ser. No. 601,946**
**Int. Cl. G03b** *37/02*
**U.S. Cl. 95—15** **8 Claims**



A compact, non-folding photographic camera embodying a folded optical system. The camera includes a relatively long focal length objective lens structure for imaging a scene upon a photosensitive material within the camera. The folded optical system for folding the exposure light path from the scene to the photosensitive material comprises a plurality of light reflective surfaces arranged to deflect the exposure light path successively along three substantially mutually orthogonal axes to permit not only the depth dimension but also either the width or length dimension of the camera to be especially compact.

### 3,478,663
## EXPOSURE METER FOR SINGLE LENS REFLEX CAMERA

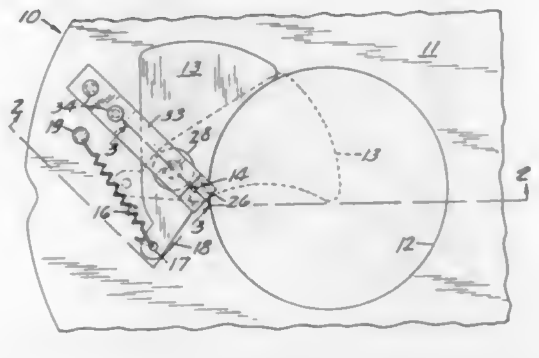
**Tomio Tsuruoka and Jun Shimomura, Tokyo, Japan, assignors to Nippon Kogaku K.K., Tokyo, Japan, a corporation of Japan**
**Filed Dec. 21, 1964, Ser. No. 419,690**
**Claims priority, application Japan, Apr. 16, 1964, 39/21,269**
**Int. Cl. G03b** *19/12;* **G01j** *1/40, 1/42*
**U.S. Cl. 95—42** **1 Claim**



In single lens reflex cameras having the light sensitive area of an exposure meter in the light path of the view finder system, erroneous measurements of the light intensity resulting from light coming through the eye-piece of the view finder become a problem due to the increased sensitivity of the present day improved materials. Efforts have been made to prevent or reduce the errors caused by this extraneous light and a number of devices have been introduced for this purpose.

### 3,478,664
## SHUTTER LEAF CONTROL SYSTEM

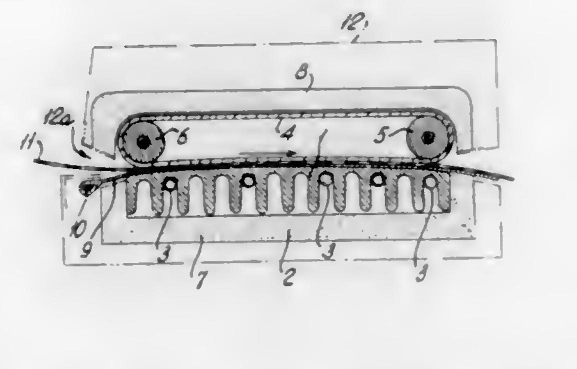
**Derrick A. Jones, Woodbury Township, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**
**Filed July 31, 1967, Ser. No. 657,130**
**Int. Cl. G03b** *9/10*
**U.S. Cl. 95—59** **2 Claims**



A photographic shutter apparatus wherein the movement of the shutter leaves are controlled electrostatically. A semiconductive disc is placed between an electrically conductive leaf and a stationary conductive restraining member. By applying an electrical potential between the conductive leaf surface and the conductive surface of the restraining member an electrostatic attraction is developed. Through the actual points of contact a frictional restraint is produced on the leaf to control its movement from an opened to a closed position.

### 3,478,665
## DEVELOPING APPARATUS FOR SENSITIVE PAPER

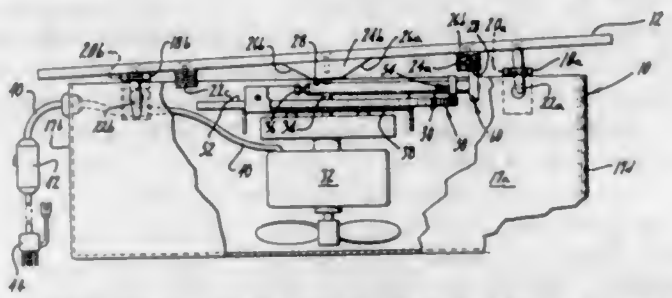
**Minoru Umahashi, Tokyo, and Hitoshi Yamakawa, Fujisawa-shi, Japan, assignors to Kabushiki Kaisha Ricoh, Tokyo, Japan, a corporation of Japan**
**Filed July 19, 1967, Ser. No. 654,514**
**Claims priority, application Japan, July 27, 1966, 41/71,147**
**Int. Cl. G03d** *3/00;* **F26b** *19/00;* **F24h** *3/02*
**U.S. Cl. 95—89** **3 Claims**



A developing apparatus for a copying machine including a heat table equipped with longitudinal ribs with heating elements between the ribs, and a belt for moving a sheet transversely across the top of said table.

### 3,478,666
## APPARATUS FOR ROCKING A PHOTOGRAPHIC TRAY

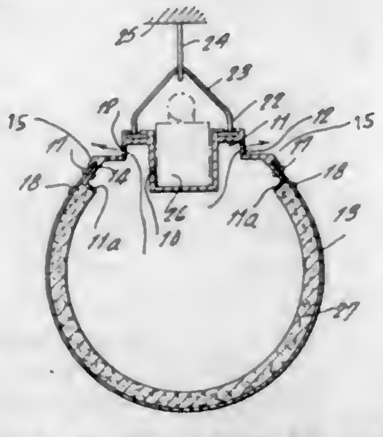
**Lewis H. Bishop, San Carlos, Calif., assignor to Pierce Specialized Equipment Company, San Carlos, Calif., a corporation of California**
**Filed Aug. 2, 1967, Ser. No. 657,967**
**Int. Cl. G03d** *3/04*
**U.S. Cl. 95—99** **6 Claims**



A tray rocker including a housing having outwardly extending tabs for supporting a platform for four way rocking motion about intersecting axes lying in common plane. Holes in the tabs receive guide pins associated with the platform to define the axes. A plurality of cams are attached to the lower surface of the platform and are engaged sequentially by a rotating rotor arm having a cam drive bearing at its outer end.

### 3,478,667
## TOP DISCHARGE AIR DUCT SYSTEM AND AIR DUCTS THEREFOR

**Paul A. Bourquin, Pleasantville, N.Y., assignor to Wolff & Munier, Inc., New York, N.Y.**
**Filed Jan. 6, 1969, Ser. No. 789,280**
**Int. Cl. F24f** *13/02;* **F16l** *3/00;* **F21v** *29/00*
**U.S. Cl. 98—40** **14 Claims**



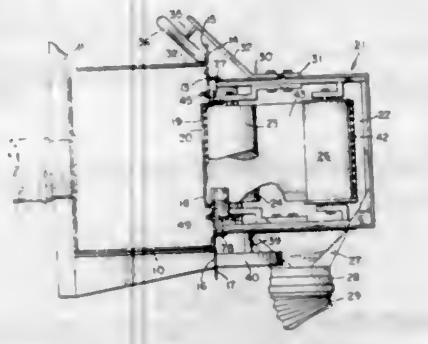
A top discharge air duct system is constructed from a plurality of ducts which ducts and system are suited for hanging from a ceiling or sub-ceiling, each air duct comprising a U-shaped member having flanged portions extending therefrom and having spaced holes or slots therethrough, a wrapper cylindrically curved, the ends of which terminate at the flanged portions, means for securing the ends of the wrapper to the flanged portions and means for joining adjacent air duct sections together and hanging said sections from the ceiling. When so hung from a ceiling, the air is discharged from the top and is not readily or easily visible from below. If desired, a lighting fixture may be disposed along the top of the duct in which event the U-shaped member is in the form of a right side up U.

### 3,478,668
## TRAVELING ASPIRATOR SYSTEM WITH VALVING MEANS

**John R. Scheel, Anderson, and Adolph J. Nordman, Jr., Wabash, Ind., assignors to Hawley Manufacturing Corporation, Indianapolis, Ind., a corporation of Indiana**
**Filed May 29, 1968, Ser. No. 733,126**
**Int. Cl. F23j** *11/08;* **F24f** *7/06*
**U.S. Cl. 98—115** **10 Claims**

A traveling aspirator system comprising a continuously evacuated, elongated header, one substantially vertical

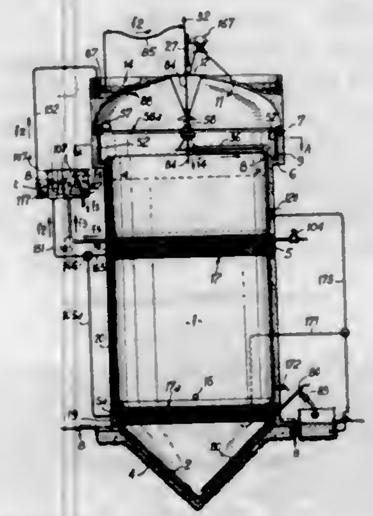
wall of which is provided with port means substantially throughout its length, an elongated flexible web associated with the ported wall normally to seal such port means against fluid flow, retainer means carried by the header and arranged along the upper and lower edges of the web and yieldably biased to overlying relation with said web edges, a carriage supported from said header for travel longitudinally relative thereto, said carriage defining a chamber enveloping a short section of said web and internally carrying means engaging the enveloped web section to hold that section out of sealing association with such port means, said carriage being



provided with means effective, as said carriage travels relative to said header, to shift said retainer means out of everlying relation to said web edges as said web-engaging means approaches and to release said retainer means to return to such overlying relation as said web-engaging means departs; said carriage being supported from said header by upper roller means carried by said carriage and bearing upon an inwardly facing surface of a rail upstanding above the top of said header and bearing also on the top of the header, and by lower roller means carried by said carriage and bearing upon an outwardly facing surface of a rail disposed below the ported region of said vertical header wall.

### 3,478,669
## APPARATUS FOR MAKING WINE

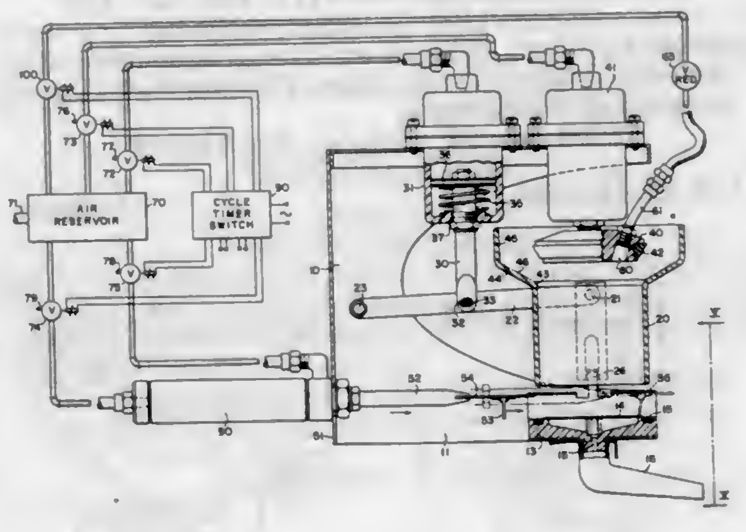
**Jacques P. H. Lanes, 12 Rue du Palais, Carcassonne, Aude, France**
**Filed Sept. 16, 1966, Ser. No. 580,007**
**Claims priority, application France, Sept. 17, 1965, 31,873; Feb. 9, 1966, 49,020**
**Int. Cl. C12b** *1/10*
**U.S. Cl. 99—276** **8 Claims**



Apparatus for the fermentation of crushed grapes comprising a vertically positioned fermentation tank, having a top portion, closed body and a cylindrical portion intermediate said top and bottom. A conduit for introducing crushed grapes into the tank is provided at the lower portion thereof. The apparatus also includes means for washing the cap formed at the top portion of the tank and a conduit in the cylindrical portion of the tank for withdrawing wine therefrom. This conduit also includes a recycle conduit which communicates with the upper portion of the tank. The apparatus also includes injector means adapted to be vertically reciprocated within the upper portion of the tank.

### 3,478,670
## AIR OPERATED SINGLE CUP COFFEE BREWER

**Norman L. Fuqua, Wilbraham, Mass., assignor to Westinghouse Electric Corporation, Pitttsburgh, Pa., a corporation of Pennsylvania**
**Filed June 28, 1968, Ser. No. 741,027**
**Int. Cl. A47j** *31/32*
**U.S. Cl. 99—283** **13 Claims**

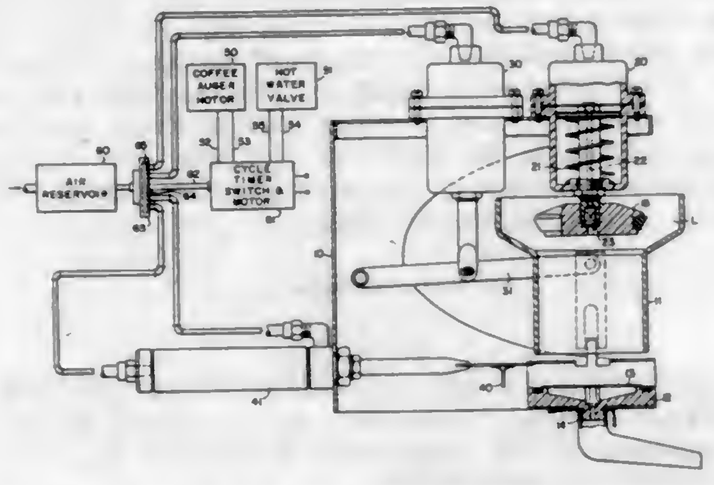


An air operated single cup coffee brewer for vending machines including a fixed lower platform with filter screen and brewed coffee discharge opening and with an open ended brew cylinder normally spaced above the platform but movable onto the platform in sealing relation together with means to thereafter add ground coffee and hot water to the cylinder. A stopper is movable into sealing relation with the upper end of the cylinder and air under pressure is passed through the stopper to force brewed coffee through the screen following which the stopper and cylinder are returned to their normal positions and a wiper is reciprocated across the screen to remove spent coffee grounds.

### 3,478,671
## TIMING ARRANGEMENT FOR AN AIR OPERATED COFFEE BREWER

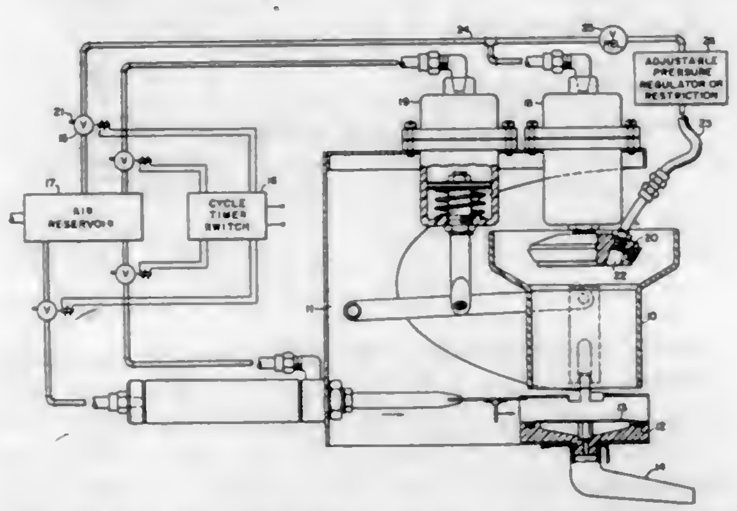
**Norman L. Fuqua and John J. Ambrose, Wilbraham, Mass., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed June 28, 1968, Ser. No. 741,029**
**Int. Cl. A47j** *31/32*
**U.S. Cl. 99—283** **2 Claims**

In an air operated coffee brewer having a movable brew cylinder, stopper and screen wiper together with air cylinders for moving them in timed relation during a brew cycle; the brewer also having electrically operated devices for feeding ground coffee and water to the brew cylinder during the cycle; the combination of a timing arrangement including a rotatable cycle switch and rotatable air valve driven by a single electric motor for controlling both said air operated and said electrically operated devices in timed relation to each other.



### 3,478,672
### PRESSURIZER APPARATUS FOR AN AIR OPERATED COFFEE BREWER

**Norman L. Fuqua, Wilbraham, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed June 28, 1968, Ser. No. 741,025**
**Int. Cl. A47j** *31/32*
**U.S. Cl. 99—302** **5 Claims**

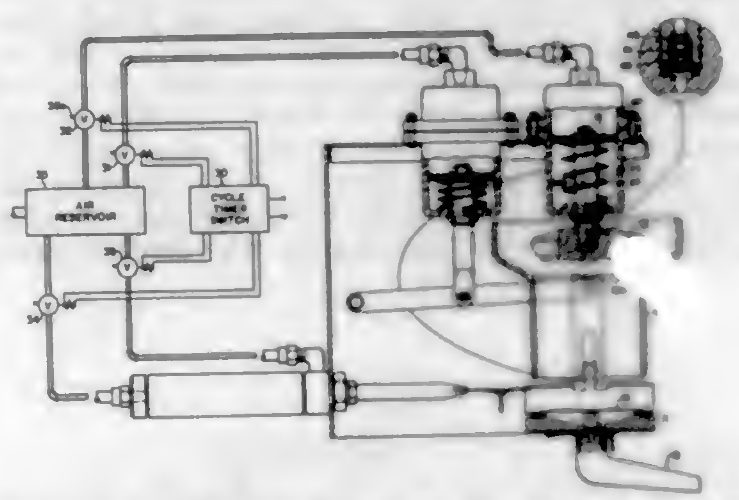


In an air operated coffee brewer having a movable stopper and brew cylinder together with an air cylinder with piston and rod connected to the stopper to move the stopper into sealing relation with the brew cylinder during the brew cycle; the pressurizer for the brew cylinder comprising a bore through the stopper and an air line with a pressure relief valve therein connecting the bore to the air pressure in the air cylinder. In a preferred form, a pressure regulator is also provided in the air line between the pressure relief valve and the stopper.

### 3,478,673
### APPARATUS FOR PRESSURIZING AN AIR OPERATED SINGLE CUP COFFEE BREWER

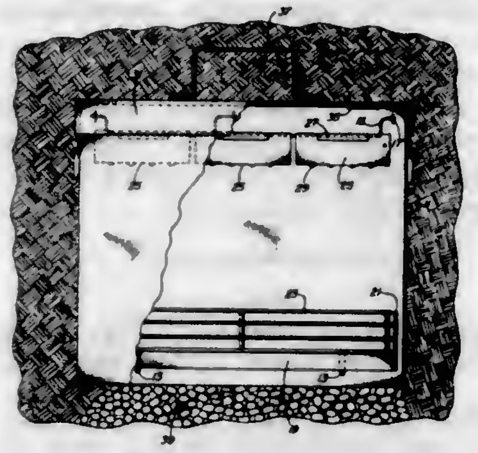
**Ivan T. Burney, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed June 28, 1968, Ser. No. 741,026**
**Int. Cl. A47j** *31/32*
**U.S. Cl. 99—302** **4 Claims**

In an air operated coffee brewer having a movable stopper and brew cylinder together with an air cylinder with piston and rod connected to the stopper to move the stopped into sealing relation with the brew cylinder during the brew cycle; the pressurizer for the brew cylinder comprising a bore through the piston, rod and stopper with a restriction therein to reduce the flow of air into the brew cylinder and control the rate of build-up of air pressure in the brew cylinder.



### 3,478,674
### OVEN FOR COOKING FOOD USING COALS AND STORED HEAT

**Joe Lewis Medeiros, 6694 San Miguel, Lemon Grove, Calif. 92045**
**Continuation-in-part of application Ser. No. 622,864, Feb. 8, 1967. This application Aug. 10, 1967, Ser. No. 659,760**
**Int. Cl. A47j** *37/01, 27/00*
**U.S. Cl. 99—347** **19 Claims**



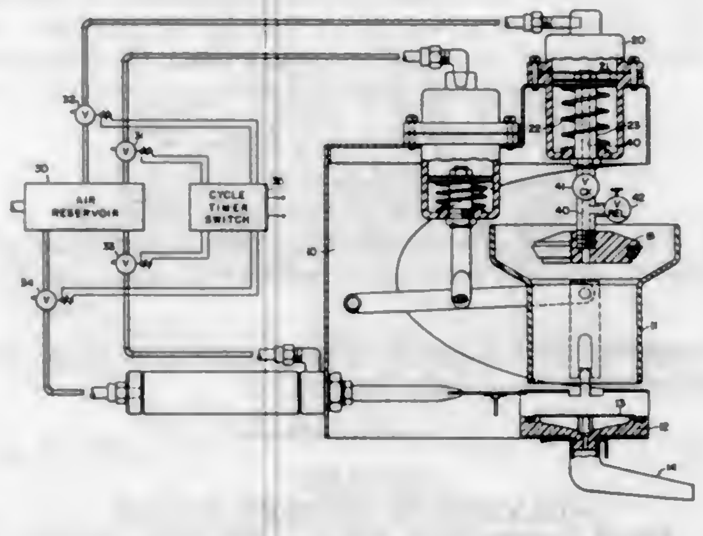
Apparatus for cooking employing an oven. A solid fuel, such as coke, charcoal or wood is burned to create hot coals. The heat is introduced into and stored in a heat absorbing material such as sand or ground. Thereafter, the food in a container is subjected to the stored heat, the container being completely covered. Drippings from the food are prevented from entering the hot coals. The fuel may be burned in a hole in the ground and after the container with the food therein is placed above the hot coals, the entire container is covered with ground. Or, the oven may be of the portable and insulated type and receives sand which functions also as the heat absorbing material.

### 3,478,675
### APPARATUS FOR PRESSURIZING AIR OPERATED COFFEE BREWER

**Charles D. Wright, Chicopee, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed June 28, 1968, Ser. No. 741,028**
**Int. Cl. A47j** *31/32*
**U.S. Cl. 99—302** **2 Claims**

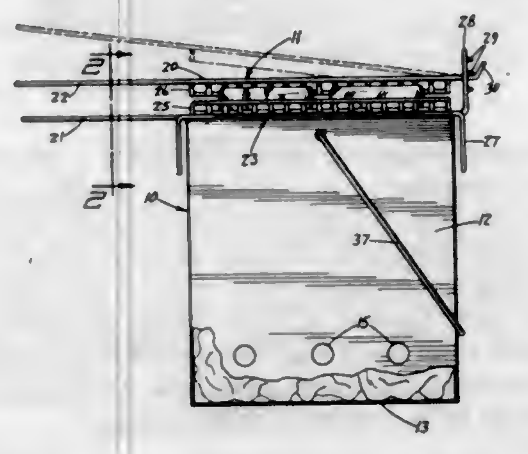
In an air operated coffee brewer with a movable stopper and brew cylinder together with an air cylinder

having a piston and piston rod connected to the stopper to move the stopper into sealing with the brew cylinder during the brew cycle; the pressurizer for the brew cylinder comprising a bore through the piston, rod and stopper and a first pressure relief valve in the bore and a second relief valve connecting the bore to the atmosphere at a point between the first valve and the stopper.



### 3,478,676
### PORTABLE GRILL

**William M. Schulze, 224 W. Minnehaha Parkway, Minneapolis, Minn. 55419**
**Continuation-in-part of application Ser. No. 473,145, July 19, 1965. This application June 1, 1967, Ser. No. 642,905**
**The portion of the term of the patent subsequent to June 6, 1984, has been disclaimed**
**Int. Cl. A47j** *37/07*
**U.S. Cl. 99—357** **4 Claims**

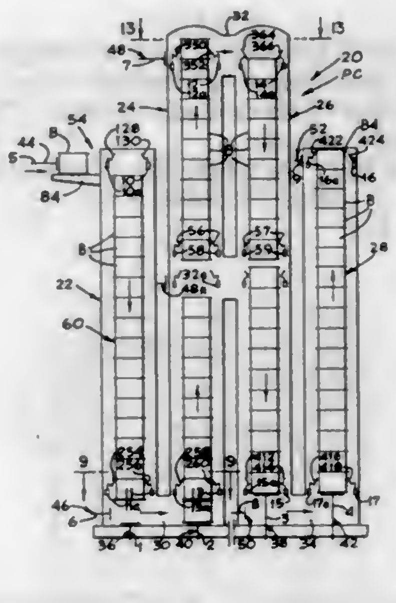


A portable grill for outdoor cooking designed to be fueled solely by paper sheet, such as newspaper. The grill includes a rectangular firebox having parallel spaced apart side walls with a plurality of spaced apart air vents adjacent the bottom. A broiler rack fits over the top of the firebox and is held by a number of legs, which also permit the rack to be placed on the ground without contaminating the food being cooked. A food storage chest is adapted to fit telescopically within the firebox for ease of transport.

### 3,478,677
### PRESSURE COOKER

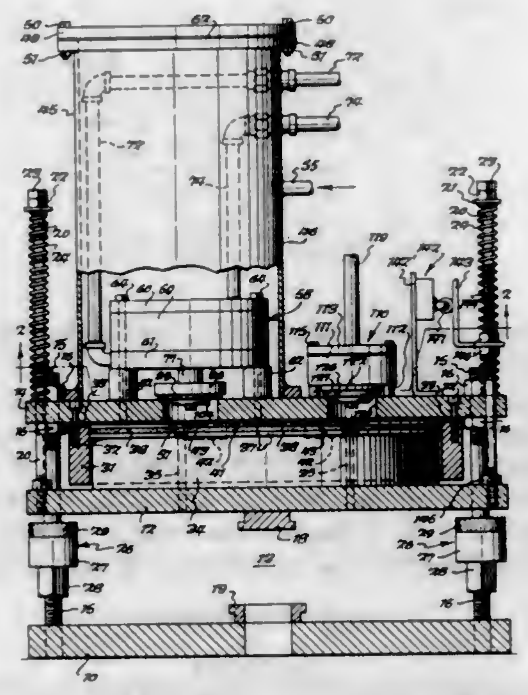
**Samuel A. Mencacci, Antwerp, Belgium, assignor to International Machinery Corporation, St.-Niklaas-Waas, Belgium, a corporation of Belgium**
**Filed Aug. 8, 1966, Ser. No. 571,017**
**Int. Cl. A23l** *3/04*
**U.S. Cl. 99—360** **14 Claims**

A pressure cooker having a pair of sterilizing housings having a heat treatment medium therein maintained under high pressure and communicating with a water filled inlet housing and a water filled outlet housing. A series of unlinked baskets are moved along a predetermined path through the cooker housings by a series of column lifting jacks, transfer pushers, and holding dogs all controlled so as to operate in timed relation.



### 3,478,678
### PNEUMATIC PRESS

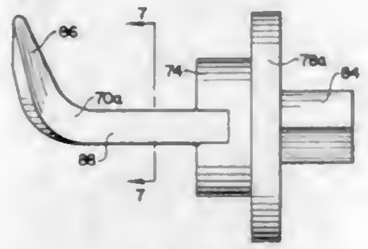
**Robert P. Lickliter, 113 Buffalo St., and Earl Abbott, 81 Dudley Ave., both of Hamburg, N.Y. 14075, and John F. Reeves, Tonawanda, N.Y.; said Reeves assignor to said Lickliter and Abbott**
**Continuation-in-part of application Ser. No. 604,955, Dec. 27, 1966. This application July 15, 1968, Ser. No. 744,898**
**Int. Cl. B30b** *15/16, 1/38*
**U.S. Cl. 100—49** **10 Claims**



An air actuated press having a fluid pressure tank directly mounted on a surface of a mounting plate opposite the surface to which a press cylinder for actuating a ram head is mounted. A control valve is mounted within the pressure tank for admitting air under pressure from the tank to the cylinder via an opening in the mounting plate. An exhaust valve mounted on the same surface of the mounting plate as the pressure tank but exteriorly of the latter is operable to exhaust pressure fluid from said cylinder to atmosphere via a second opening provided in the mounting plate.

### 3,478,679
### PULP DELIQUIFYING PRESS

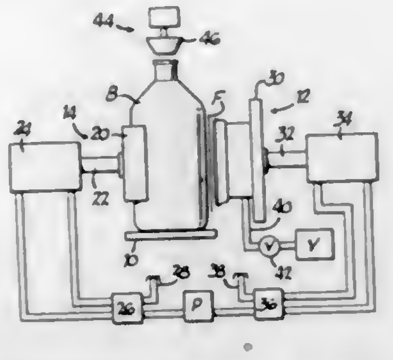
**Howard M. Bauserman, Littleton, Colo., assignor to Stearns-Roger Corporation, Denver, Colo., a corporation of Colorado**
**Filed May 24, 1967, Ser. No. 640,917**
**Int. Cl. B30b** *9/12*
**U.S. Cl. 100—117** **10 Claims**



This invention relates to an improved rotating screw-type pulp press wherein adjustable bladed stops are interposed in the path of the rotating compressed pulp mass between interruptions in the helicoid flighting on the tapered spindle for the purpose of varying the pulp flow-rate along with its fliud content and also mixing same so as to bring the wet portions thereof farthest from the screens into closer proximity thereto.

### 3,478,680
### METHOD AND APPARATUS FOR DECORATING HOLLOW PLASTIC ARTICLES

**Winfield S. Anderson, Jr., Pitman, N.J., assignor to Owens-Illinois, Inc., a corporation of Ohio**
**Filed July 6, 1965, Ser. No. 469,379**
**Int. Cl. B44c** *1/24;* **B41f** *3/50*
**U.S. Cl. 101—32** **4 Claims**

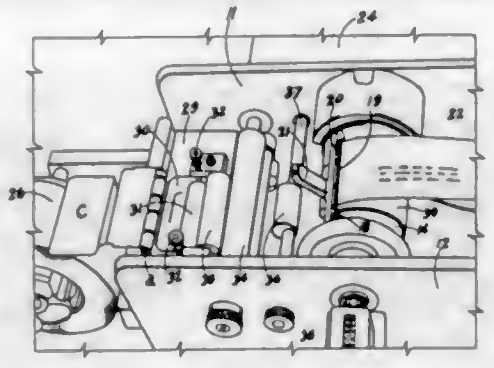


Methods and apparatus for hot leaf stamping of plastic containers whose sides are flexible. A strip of pigmented foil is placed in contact with the surface to be printed and a vacuum chamber is sealed to the surface in overlying relationship to the foil. Application of a vacuum to the interior of the chamber draws the surface and foil into contact with a heated die which defines the inner wall of the chamber, the die bonding the foil to the surface.

### 3,478,681
### CARBON MASTER TRANSFER DEVICE

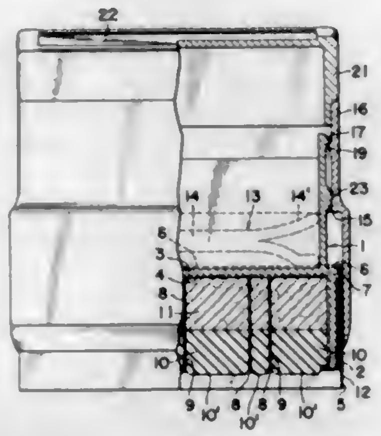
**Reynold B. Smith and Robert W. Trimmer, York, Pa., assignors to York Label Corporation, York, Pa., a corporation of Pennsylvania**
**Filed Sept. 14, 1964, Ser. No. 396,174**
**Int. Cl. B41f** *13/56, 13/10*
**U.S. Cl. 101—227** **13 Claims**

A carbon master transfer device is provided wherein the intermittent length of feed stock is varied by means of a resilient pad mounted on a drive roll. An offset cam is located between a pair of feed rolls and the drive roll to cause continued stock movement during the period that the resilient pad is not in driving contact to avoid over impregnation by transfer liquid.



### 3,478,682
### MULTICOLOR RUBBER STAMP

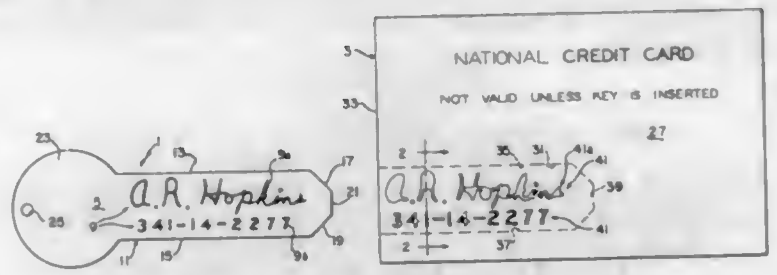
**Takaji Funahashi, 1 2-chome, Kitatakajo-machi, Nishi-ku, Nagoya-shi, Aichi-ken, Japan**
**Filed May 9, 1967, Ser. No. 637,162**
**Claims priority, application Japan, Oct. 28, 1966, 41/100,072**
**Int. Cl. B41k** *1/46*
**U.S. Cl. 101—327** **5 Claims**



A novel stamping device in which a plurality of partitioned chambers are formed by partition plates at the lower part of the framing case, each partition accommodating therein a desired rubber letter block having numerous continuous pores and an ink absorber lodged on the back thereof, so that ink of different color can be supplied from each ink absorber thereby realizing a vivid multi-colored stamping operation upon pressing against an article to be stamped, such as a paper.

### 3,478,683
### SAFETY CREDIT CARD CONSTRUCTION

**Arnold R. Hopkins, P.O. Box 276, Sandoval, Ill. 62882, and Leo J. Pindjak, R.R. 3, Flora, Ill. 62839**
**Filed June 5, 1967, Ser. No. 643,611**
**Int. Cl. B41n** *1/00;* **G09f** *3/02*
**U.S. Cl. 101—368** **15 Claims**



A key and a card are used in combination for imprinting on a charge ticket or the like. The key contains raised indicia comprising a facsimile of the signature and the identifying number of the person authorized to use the card. There are openings through the front face of the card corresponding to the key indicia which permit the indicia on the key to project through the openings for imprinting the indicia on a charge ticket or the like. The key and the corresponding card parts are used in combination with each other; neither can be used with a part of another credit card construction.

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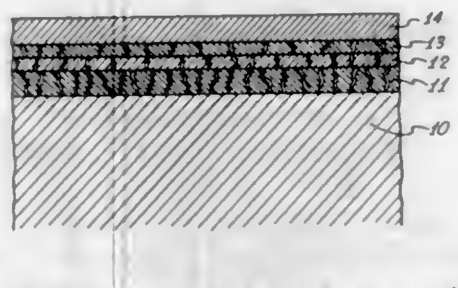
### 3,478,684
### PLANOGRAPHIC PRINTING PLATES

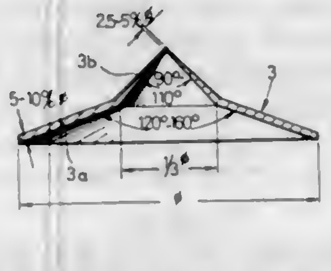
**Armando Birlain Schafler, Col. Cuahuatemoc, Ganges 73, Mexico, and Allan Kilroe Lombardo, Dakota 249-503, Mexico**
**Filed Nov. 18, 1966, Ser. No. 595,391**
**Claims priority, application Mexico, Nov. 22, 1965, 85,775, 85,776**
**Int. Cl. B41h** *1/00;* **C23b** *5/18*
**U.S. Cl. 101—453** **1 Claim**



The essentially non-porous chromium working layer of a printing plate is separated from the base sheet by two copper layers which have different porosities. Both are deposited from acid copper baths, the first from a bath containing a crystal growth reducing agent such as conventional brightener, and the second is deposited on the first from a bath which does not contain a crystal growth reducing agent. The different porosities of the acid copper layers form an effective barrier to the capillary migration of fluids between the base sheet and working layer and the larger crystals of the second copper layer form a protective cushion beneath the working layer.

### 3,478,685
### PROJECTILE WITH HIGH INITIAL VELOCITY

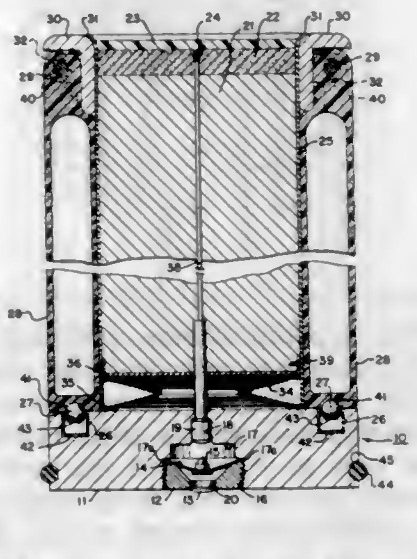
**Franz Rudolf Thomanek, Landkreis Schrobenhausen, Upper Bavaria, and Heinz Schlesiger, Schrobenhausen, Upper Bavaria, Germany, assignors to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, near Munich, Germany**
**Filed Jan. 26, 1968, Ser. No. 700,808**
**Int. Cl. F42b** *3/08*
**U.S. Cl. 102—24** **4 Claims**



A projectile with high initial velocity is formed from the conical cavity lining of a relatively static hollow charge during detonation of the charge, and capable of penetrating through a relatively thick camouflage layer, or armor without substantial impairment of its piercing effect. The lining of the conical cavity is an integral conical lining having its portion nearer the axis of the cavity formed with a more acute apex or cone angle than the overall conical angle or pitch angle of the lining. In addition, that part of the lining nearest the axis has a substantially reduced thickness as compared to the remainder of the lining. An additional increase in the initial impulse and an increased effect are attained by forming the hollow explosive charge to have an exterior form of a truncated cone.

### 3,478,686
### TARGET MARKING DEVICE

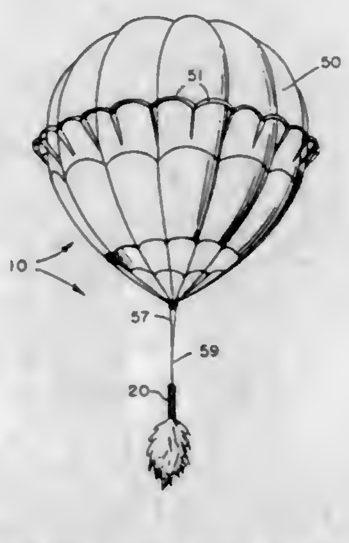
**Robert E. Berg, Redondo Beach, Calif., assignor to Fairchild Hiller Corporation, Bay Shore, N.Y., a corporation of New York**
**Filed Aug. 25, 1967, Ser. No. 663,433**
**Int. Cl. F42b** *25/04, 13/38*
**U.S. Cl. 102—35** **6 Claims**



A launchable target marking device having a plurality of arms disposed parallel to the longitudinal axis of the charge holder during launching. Upon launching of the device, the charge is released from its holder into a burning position and the arms are released allowing them to move into an angular position with respect to the longitudinal axis of the charge holder.

### 3,478,687
### VERY LOW DESCENT RATE, HIGH INTENSITY, ILLUMINATING FLARE

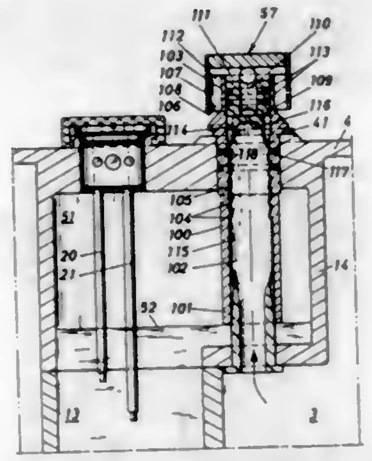
**Jimmie M. Craig, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Nov. 8, 1967, Ser. No. 683,095**
**Int. Cl. F42b** *25/04, 13/38*
**U.S. Cl. 102—35** **2 Claims**



A very low descent rate, high intensity, illuminating flare system comprising a flare assembly and a suspension balloon assembly is provided in a compact package for aerial delivery. The flare assembly consists of a flare candle, a flare candle igniter and a heat generator. The descent rate of the system is controlled by novel hot air balloon suspension means.

### 3,478,688
### PUMP DRIVEN BY AN ELECTRIC MOTOR

**Carl Eric Gottfrid Lind, Partille, Sweden, assignor to Aktiebolaget Svenska Precisionsverktyg, Nacka, Sweden, a corporation of Sweden**
**Filed Sept. 7, 1967, Ser. No. 666,008**
**Claims priority, application Sweden, Nov. 14, 1966, 15,527/66**
**Int. Cl. F04d** *15/00*
**U.S. Cl. 103—25** **14 Claims**



A valve for a pump having pumping chamber, a second chamber communicating with the pump chamber, and a motor for operating the pump when liquid in the second chamber exceeds a certain level, comprises a sleeve mounted in a vent in the top of the second chamber, an axially bored plug secured in the upper end of the sleeve, and a flexible tube closed at one end and having its closed end extending into the sleeve, and its open end communicating with the pump chamber. Normally the closed end of the tube is spaced from the inner wall of the sleeve to vent the second chamber through the plug, but when the pump is operating, increased pressure in the pump chamber expands the tube into contact with the inner wall of the sleeve and the lower end of the plug to seal then vent.

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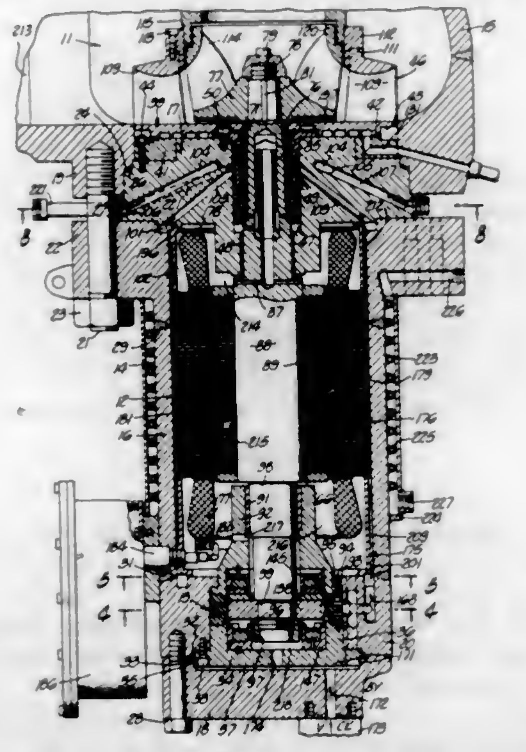
### 3,478,689
### CIRCULATING PUMP

**Rowland E. Ball, Long Beach, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Aug. 2, 1967, Ser. No. 657,978**
**Int. Cl. F04d** *13/06, 1/00;* **H02k** *9/16*
**U.S. Cl. 103—87** **8 Claims**



The provision of a compact, unitary, combination of high pressure-high temperature hydrocarbon reactor circulating pump and an electric motor, with an improved cooling, heat repelling and heat dissipating arrangement for temperature regulation of the motor. There is also a unitary, combined thermal plate and pump diffuser removably attached to the pump cover body for facilitating assembly, service, repair, and replacement.

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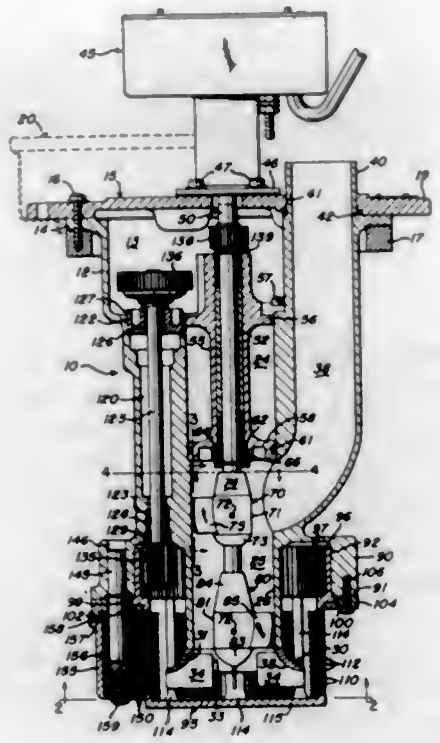
### 3,478,690
### RECIRCULATING SYSTEM FOR A SELF-CONTAINED SEWAGE UNIT

**Robert C. Helke, Dayton, and Wayne E. Sturgeon, Xenia, Ohio, assignors to Koehler-Dayton, Inc., Dayton, Ohio, a corporation of Ohio**
**Filed Dec. 28, 1967, Ser. No. 694,322**
**Int. Cl. F04d** *3/02;* **F04b** *21/00;* **E03d** *11/10*
**U.S. Cl. 103—93** **18 Claims**



A recirculating system having an axial flow pump with an upper outlet and a lower inlet formed by a bell-shaped diffusor; a slotted filter supported for rotation around the diffusor and having a plurality of axially spaced peripheral slots each receiving a cleaning plate. A reversible motor connected to one shaft for rotating the filter in opposite directions and to another shaft supporting two axial flow impellers each having a single vane providing surfaces extending transversely in opposite directions relative to the shaft. One of the vanes positioned adjacent the diffusor and the other adjacent the outlet and cooperating to produce a single direction, axial flow of liquid within the chamber regardless of the direction of rotation of the motor.

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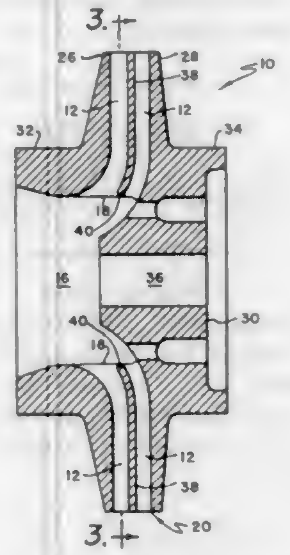
### 3,478,691
### QUIET MULTIVANE MULTIROW IMPELLER FOR CENTRIFUGAL PUMPS

**John W. Henry IV, Annapolis, Md., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Dec. 27, 1967, Ser. No. 693,805**
**Int. Cl. F04d** *29/22;* **F04b** *21/00*
**U.S. Cl. 103—115** **4 Claims**

A multivane impeller for centrifugal pumps having a plurality of axially spaced rows of vanes separated by disc-shaped members thereby defining radially extending fluid passages. The equi-angularly spaced peripheral output ports of the fluid passages in one axial row are angularly spaced in relation to the ports of the next adjacent axially spaced row thereby reducing pressure pulsations on the pump output pressure and therefore reduce fluid-borne and structure-borne noise.



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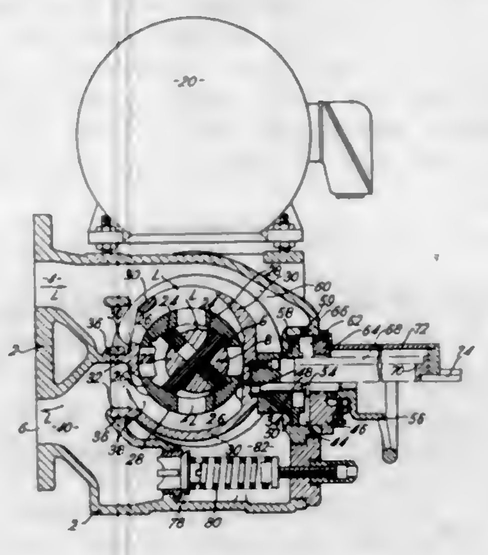
### 3,478,692
### PUMPS

**Stamford R. F. Vanderstegen-Drake, Newbury, England, assignor to Plenty & Son Limited, Newbury, England, a British company**
**Filed May 24, 1967, Ser. No. 640,865**
**Claims priority, application Great Britain, May 27, 1966, 23,983/66**
**Int. Cl. F04c** *1/00, 3/00*
**U.S. Cl. 103—120** **2 Claims**



The variable capacity rotary pump includes a casing having an inlet and an outlet port, and has a sliding block provided with a cylindrical recess in which a rotor is rotatably supported. The rotor has a number of inwardly facing bearing surfaces which are engaged by the ends of vanes slidably mounted in slots formed in a rotor shaft passing through the rotor and supported in bearings fixed to the casing. The sliding block has two oppositely-disposed cylindrical projections, namely, a first and a second projection, which engage within two corresponding cylindrical seatings in the pump casing and which allow sliding movement of the block in a direction at right angles to the axis of the rotor shaft to vary the capacity of the pump. The first projection is formed with a passage leading from the rotor to the outlet port. The second projection comprises a piston whose position can be set relative to the casing. The piston is provided with a flange, the side of the flange facing towards the sliding block being open to the liquid passage at the delivery portion, and the side of the flange remote from the sliding block being open to the liquid passage at the inlet portion.

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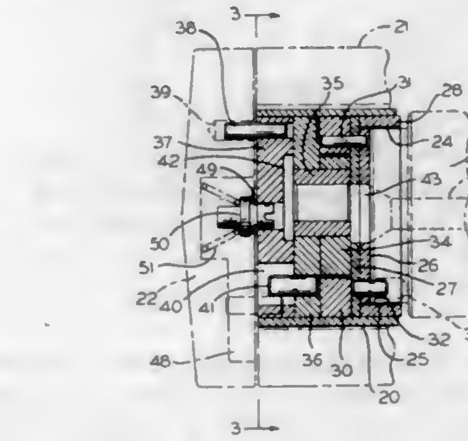
### 3,478,693
### LOBE GEAR PUMP

**Walter J. Bangs, Chicago, Ill., assignor to Tuthill Pump Company, a corporation of Delaware**
**Filed Apr. 29, 1968, Ser. No. 725,083**
**Int. Cl. F04c** *1/06*
**U.S. Cl. 103—126** **14 Claims**



Unidirectional flow lobe gear pump which is in cartridge form and which is mounted for limited axial movement between a cover element and a drive shaft. This compensates for unsquare ends of drive shafts and also compensates for end play in the drive shaft during rotation thereof. A porting arrangement reduces impact forces in the pump during shifting of the ports by a port plate and provides for better reversing reliability.

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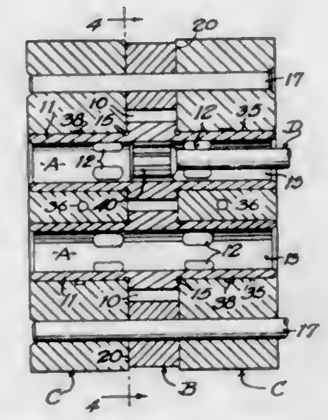
### 3,478,694
### HIGH-SPEED, SELF-BOOSTING GEAR PUMP

**Jorge A. Morando, Burbank, Calif., assignor to Crane Co., doing business as Hydro-Aire Division, Burbank, Calif., a corporation of Illinois**
**Filed May 17, 1968, Ser. No. 730,007**
**Int. Cl. F04c** *1/08*
**U.S. Cl. 103—126** **8 Claims**



A high-speed gear pump having inlet flow through tubular gear shafts which embody centrifugal pumping windows to pump the entering liquid into the inlet chamber which feeds the gears, thus eliminating the need for a separate inlet booster pump.

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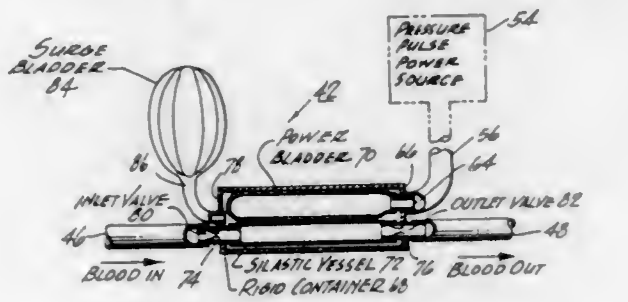
### 3,478,695
### PULSATILE HEART PUMP

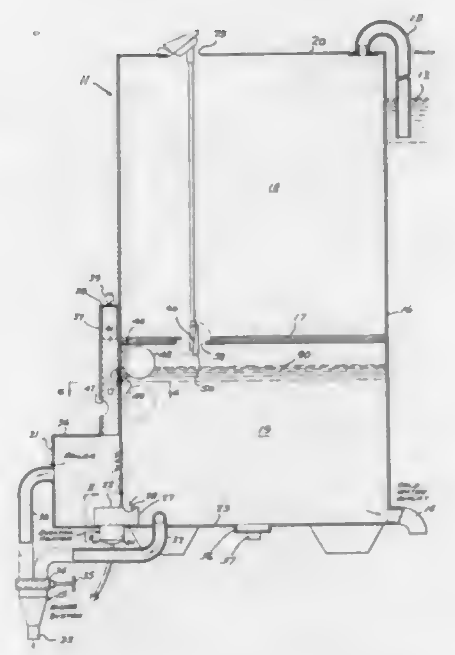
**Richard B. Goranson, Kennewick, and William R. Martini, Richland, Wash., assignors to McDonnell Douglas Corporation, a corporation of Maryland**
**Filed Feb. 13, 1968, Ser. No. 705,121**
**Int. Cl. F04b** *43/12, 17/00;* **F15b** *7/00*
**U.S. Cl. 103—152** **9 Claims**

Pulsatile, passive filling (controlled suction), pump device is used in a pair as assist device or total replacement for an animal's heart. Each pump device includes a rigid container which houses a power bladder positioned closely beside a resilient vessel. Blood inlet and outlet check valves are suitably located in each vessel. Void space in container is filled at all times with air from a surge bladder which is maintained at atmospheric pressure. A source of periodic pressures pulses regularly distends power bladder which compressively discharges the blood-filled vessel. Other versions of the pump device are also disclosed.



### 3,478,696
### PUMPING CONTAINER

**Michael L. Audette and Anita A. Audette, both of 237 E. Fireweed Lane, Anchorage, Alaska 99503**
**Filed Apr. 12, 1968, Ser. No. 720,962**
**Int. Cl. F04b** *3/00, 1/02*
**U.S. Cl. 103—236 12 Claims**



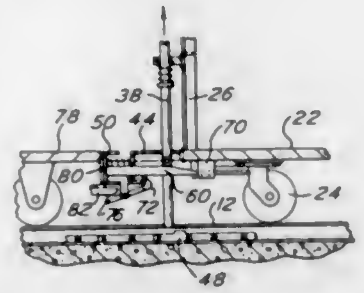
A fluid pump assembly of the steam injection type consisting of a tank having a top chamber and a bottom chamber. The bottom chamber contains a boiler portion with an electric heater. A float valve mounted in the bottom chamber controls admission of steam into the bottom chamber from the boiler portion. Tandem-operating valves are provided in the top walls of the top and bottom chambers. The top valve is normally open and elevated and contains a capsule containing mercury which expands responsive to heat, moving the valve from open to closed position. This also closes the bottom valve. Steam from the bottom chamber can enter the top chamber and acts on the mercury capsule to cause the two valves to close. Trapped steam in the top chamber condenses, creating a vacuum. The top chamber is connected to a liquid source. The vacuum draws the liquid into the top chamber, causing the mercury capsule to cool and causing fluid pressure to be developed in the top chamber, whereby to re-open the tandem valves. The liquid flows into the bottom chamber, acting on the float valve to cut off the flow of steam when the level in the bottom chamber reaches a desired height. The assembly is provided with a hot-and-cold fluid-mixing outlet conduit system connected to the bottom chamber.

### ERRATUM

For Class 104—172 see:
Patent No. 3,479,665

### 3,478,697
### TOW TRUCK SYSTEM AND TRUCK THEREFOR

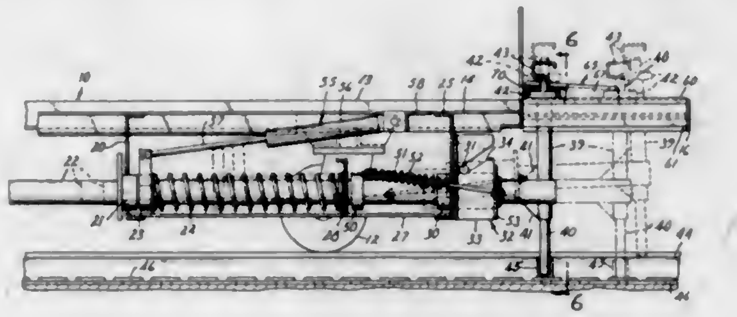
**Lynn J. Bradt, Easton, Pa., assignor to SI Handling Systems, Inc., Easton, Pa., a corporation of Pennsylvania**
**Filed Apr. 24, 1967, Ser. No. 633,163**
**Int. Cl. B61b** *9/00;* **B61c** *11/02*
**U.S. Cl. 104—172 8 Claims**



The present invention relates to a tow truck system of the type in which a dependent tow pin on the cart engages a movable chain in a main guide slot. A front bumper is provided which when engaged obstruction will act to lift the tow pin from engagement with the driving chain. A latch means is provided, in the instant case, on the front of the tow cart which is so interrelated with the tow pin that when the tow pin is raised by the front bumper the latch means interengages with a latch means on a preceding halted cart to maintain the tow pin in a raised position.

### 3,478,698
### ACCELERATION CONTROL MECHANISM

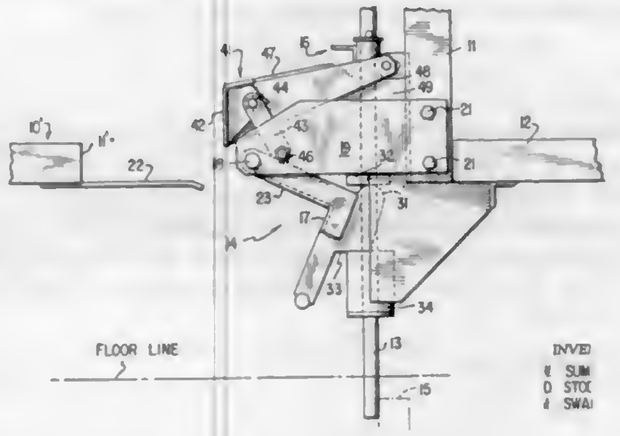
**Vercoe C. Jones, Faribault, Minn., assignor to Nutting Truck and Caster Company, Faribault, Minn., a corporation of Minnesota**
**Continuation-in-part of application Ser. No. 479,464, Aug. 13, 1965. This application Sept. 18, 1967, Ser. No. 683,041**
**Int. Cl. B61b** *13/04, 7/10*
**U.S. Cl. 104—172 17 Claims**



An elongated cylinder mounted generally horizontally below a materials handling truck for longitudinal sliding movement in the direction of movement of the truck, and attached to the truck for pivotal movements about a horizontal axis adjacent the rear portion of the cylinder and perpendicular to the longitudinal movement thereof and for substantial vertical movement of the front end of the cylinder. A tow pin attached adjacent the front end of the cylinder in a generally vertical configuration for engaging dogs in an endless belt, and a generally horizontal bar attached to the cylinder generally perpendicular to the longitudinal axis thereof. A generally ramp-like structure affixed to the underside of the truck having the horizontal bar in sliding engagement therewith and controlling the vertical movement of the cylinder so as to allow vertical upward movement thereof and consequent disengagement of the tow pin and the dog after a predetermined amount of horizontal movement of the longitudinal cylinder. Spring biasing means cooperating with the cylinder to urge the cylinder toward a first position in which the tow pin is engaged in a dog, and a hydraulic cylinder allowing the cylinder and tow pin to return gradually to the first position after the tow pin and cylinder have moved out of the first position toward the disengaged position.

### 3,478,699
### ACCUMULATING AND SAFETY BUMPER FOR TOW TRUCK SYSTEM

**Robert W. Suman, Hatboro, William D. Stoddart, Ambler, and Horace M. Swartz, Doylestown, Pa., assignors to FMC Corporation, a corporation of Delaware**
**Filed July 21, 1966, Ser. No. 566,903**
**Int. Cl. B61b** *7/08, 7/14;* **B61c** *11/02*
**U.S. Cl. 104—178 15 Claims**

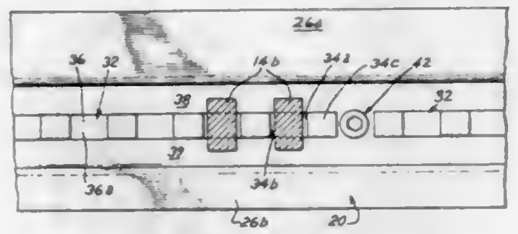


A bumper for a tow truck employed in a tow truck system which provides for the disengagement of the truck from the towing line by the preceding truck when it is desired to accumulate trucks at one section of the tow system and which also provides for disengagement of the truck from the towing line whenever the truck strikes an obstruction. The tow truck includes a first bumper means mounted on the forward end thereof; the first bumper being operatively connected to a tow pin on the truck for moving the pin to an inoperative position whenever the first bumper means engages with a rear bumper on the preceding truck. The tow truck also includes a second bumper means having a manually resettable, spring biased latch mechanism. Whenever the second bumper means contacts an obstruction along the towing line, it is shifted rearwardly to unlatch the latch mechanism allowing the latter to move the tow pin to an inoperative position under the influence of the spring.

### 3,478,700
### FLOOR LATCH STRIP FOR RAILWAY CARS

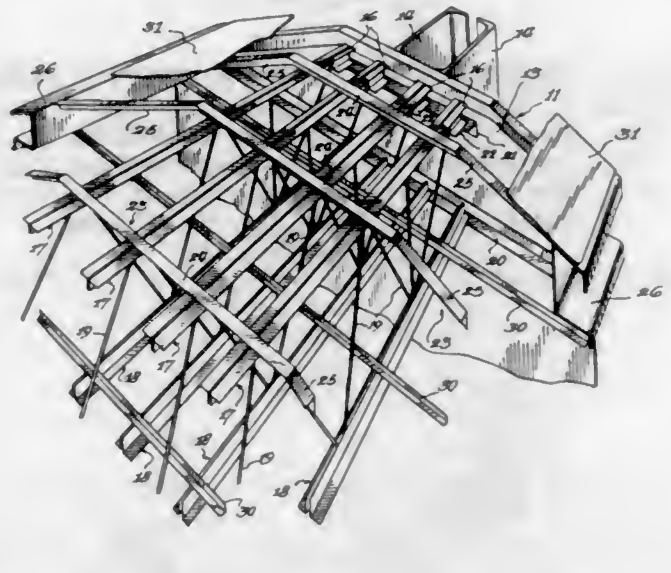
**John S. Lundvall, Park Ridge, Russell M. Loomis, Palos Heights, and Henry D. Breen, Chicago, Ill., assignors to Unarco Industries, Inc., a corporation of Illinois**
**Continuation-in-part of application Ser. No. 599,296, Dec. 5, 1966. This application Feb. 28, 1968, Ser. No. 708,957**
**Int. Cl. B61d** *17/10, 45/00*
**U.S. Cl. 105—369 5 Claims**

A floor latch strip for boxcars is provided with at least one continuous, open-topped, longitudinal channel therein which facilitates cleaning of the entire latch strip. The latch strip provides a series of spaced, transverse recesses that serve the latch-keeping function and which interconnect with and empty into the open-topped longitudinal channel to facilitate cleaning. The latch strip basically is channel-shaped. The transverse recesses are provided by means disposed either on the legs of the channel or on the web of the channel.



### 3,478,701
### BOXCAR CONSTRUCTION

**Howard C. Woodman, Frankfort, Ill., and Lynn J. Harter, Hobart, Ind., assignors to Thrall Car Manufacturing Company, Chicago Heights, Ill., a corporation of Illinois**
**Continuation-in-part of application Ser. No. 624,540, Mar. 20, 1967. This application Jan. 31, 1968, Ser. No. 707,002**
**Int. Cl. B61d** *17/00*
**U.S. Cl. 105—404 12 Claims**



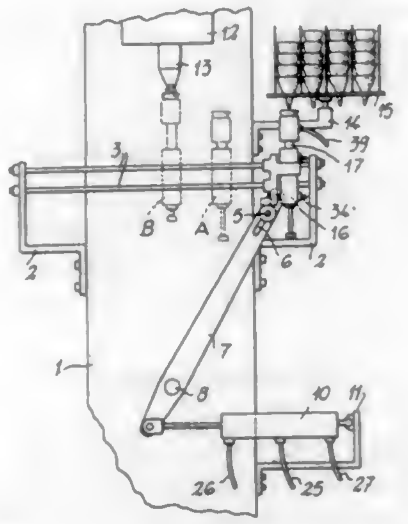
Disclosed is a freight-carrying vehicle having its roof supported only by bulkheads at each end of the vehicle. The roof is carried by beams or joists extending between the bulkheads. The roof supports side doors without further structural members along the sides leaving the floor and sides completely clear of obstructions.

### 3,478,702
### MACHINE FOR DRAWING, FILLING WITH A BULK MATERIAL AND AUTOMATICALLY DISTRIBUTING A CONTAINER

**Mario Simonich, Via Legionari di Polonia 25, Bergamo, Italy**
**Filed Dec. 18, 1967, Ser. No. 691,631**
**Claims priority, application Italy, Jan. 7, 1967, 1,301/67**
**Int. Cl. A23g** *5/02*
**U.S. Cl. 107—1 7 Claims**

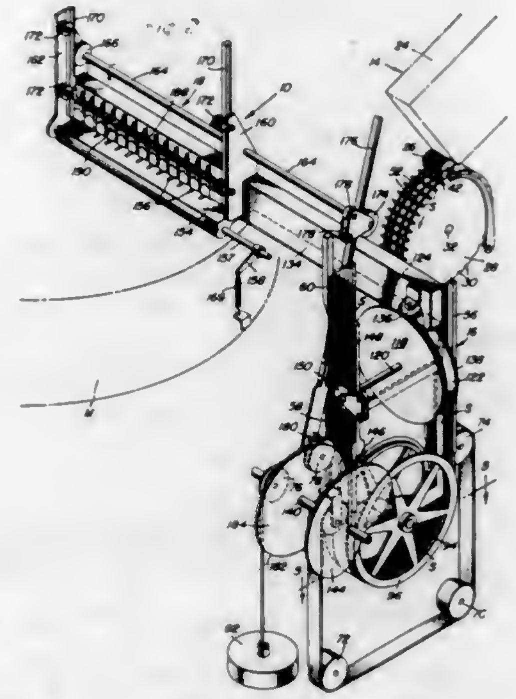
A machine comprising a stationary guide on which a slide is movable, an apparatus for instantaneously and continuously producing a predetermined amount of ice-cream, a magazine containing a plurality of wafers or cones stacked on one another, and a gripping member fast with the slide.

The machine comprises driving means and selectors which, upon an initial operation of a starting control, will control the movement of the slide to below the magazine, the withdrawal of a wafer or cone from the magazine through the gripping member, the movement of the slide along with the gripping member and wafer or cone under the delivering nozzle of the ice-cream producing apparatus, the transport and stop of the wafer or cone at an opening in the machine casing and through which the ice-cream containing wafer or cone can be drawn.



### 3,478,703
### STICK INSERTER FOR CONFECTION MACHINE

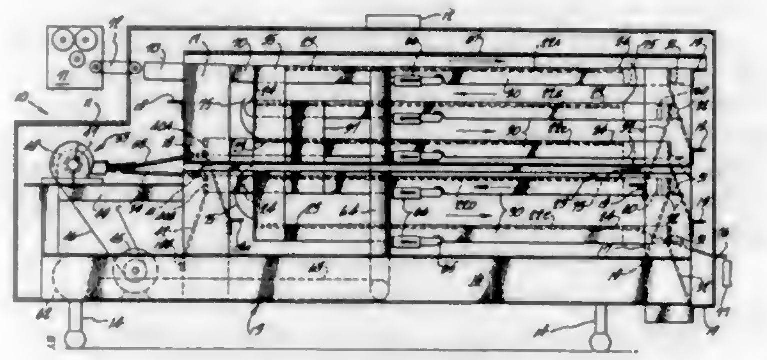
**William S. Peppler, Chappaqua, N.Y., and George N. Bliss, Birmingham, and Norman A. Planck, Jr., Novi, Mich., asssignors to Diamond International Corporation, New York, N.Y., a corporation of Delaware**
**Filed Dec. 11, 1967, Ser. No. 689,566**
**Int. Cl. F25c** *7/22*
**U.S. Cl. 107—8** **17 Claims**



A machine for supplying sticks for insertion into confection by taking the sticks from a bulk supply hopper to a surge supply which orients and accumulates the sticks in a variable volume track from where they are removed to inserting means which place the sticks into the confection.

### 3,478,704
### TORTILLA OVEN

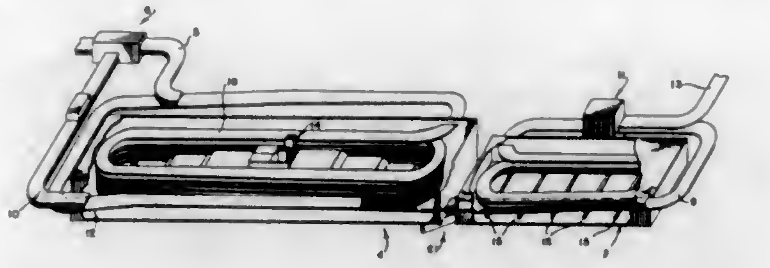
**John C. Ford, Los Angeles, Calif. (548 Monterey Pass Road, Monterey Park, Calif. 91754)**
**Filed Aug. 24, 1967, Ser. No. 662,932**
**Int. Cl. A21b** *1/42;* **B66c** *17/08;* **B65g** *27/00*
**U.S. Cl. 107—55** **16 Claims**



A tortilla oven having a plurality of vibratory or swinging-type conveyor decks disposed in a stack. Vertically adjacent decks move in opposite directions, and guide plates at the deck ends invert and guide tortillas between the decks. The decks are perforated to prevent sticking of tortillas and to provide improved traction. A gas heater is provided under each deck, and a dough dispenser delivers cut portions of tortilla dough to the conveyor.

### 3,478,705
### PROOFERS AND OVENS FOR BREAD PRODUCTS

**William E. Lanham, 3456 Woods Drive, Gene C. Miller, 3540 Woods Drive, and William E. Lanham, Jr., 3044 Katherine Valley Road, all of Decatur, Ga. 30032**
**Continuation-in-part of application Ser. No. 593,504, Nov. 10, 1966. This application Apr. 3, 1967, Ser. No. 627,700**
Int. Cl. A21b *3/07*
**U.S. Cl. 107—57** **4 Claims**

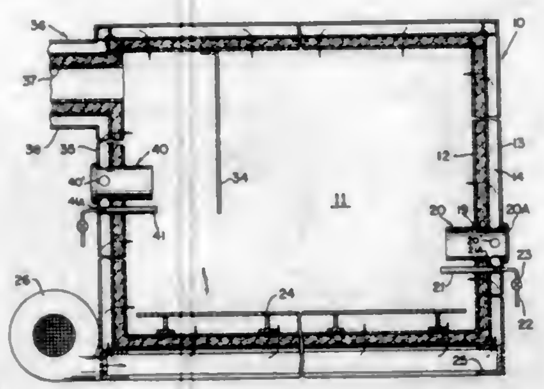


A system is disclosed for proofing and baking bread products upon a continuously moving conveyor which carries the product through a proofer unit, and thence through an oven.

### 3,478,706
### TRANSPIRATION-COOLED INCINERATOR

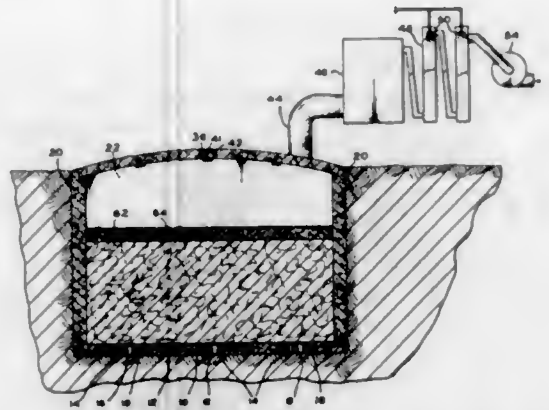
**Alan B. Carson, Tempe, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California**
**Filed Feb. 12, 1968, Ser. No. 704,932**
**Int. Cl. F23g** *3/00;* **F23l** *9/00, 1/00*
**U.S. Cl. 110—8** **10 Claims**

This incinerator has composite walls consisting of an imperforate outer casing enclosing an inner casing formed with perforated walls spaced by a layer of air-pervious fireproof insulating means, such as glass, metallic or mineral fibers. The outer casing is spaced from the inner casing to form a manifold for receiving air under pressure which flows through the walls and insulation of the inner casing to support combustion and prevent outward flow of heat. The fibrous material functions first to reduce radiative heat flux, and second to permit inward air flow from the manifold to reduce heat flux by conduction through the fibers and convection through the wall. Elongated heat dissipating elements yieldably space the inner and outer casings and the walls of the former are relatively movable so that the inner casing may expand and contract in response to thermal variations. Suitable shielding may be provided on or around the inner casing to dissipate the heat and prevent direct heat radiation from the inner casing to the walls of the outer casing. Ignition and smoke burners and an exhaust stack also receive air from the air manifold.



### 3,478,707
### WASTE INCINERATION PROCESS

**William C. Smith and David Free, Vancouver, British Columbia, Canada, assignors to Rader Pneumatics & Engineering Co. Ltd., Municipality of Burnaby, British Columbia, Canada**
**Filed Feb. 26, 1968, Ser. No. 708,046**
**Int. Cl. F23g** *5/02, 7/06;* **F23b** *5/04*
**U.S. Cl. 110—8** **8 Claims**

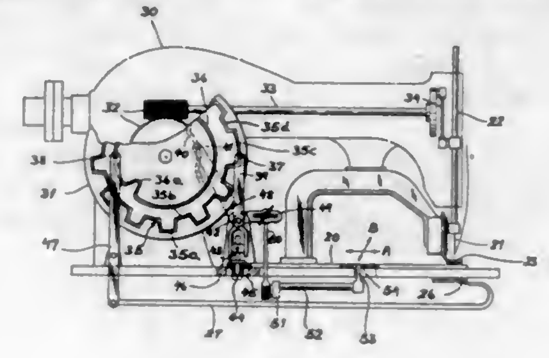


Industrial and residential waste is placed in pit, covered with granular inert material and ignited. Combustion is supported by feeding air beneath waste pile and gases escaping through the inert material are conducted to afterburner to burn combustibles. The inert material layer confines flyash end permits effective destruction of waste by confining heat.

### 3,478,708
### KNOT-TYING MECHANISM FOR SEWING MACHINE

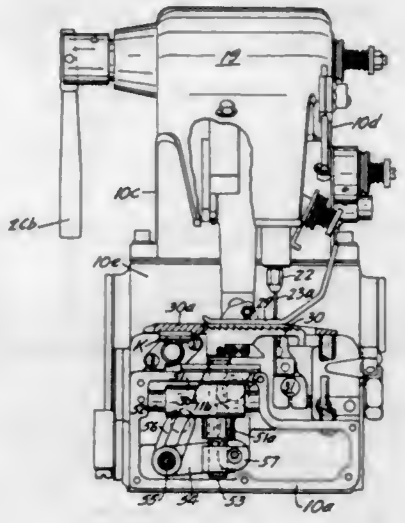
**Kurt Biermann, Brake, near Bielefeld, Germany, assignor to Durkopp Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany**
**Continuation-in-part of application Ser. No. 513,931, Dec. 15, 1965. This application Oct. 16, 1967, Ser. No. 675,638**
**Claims priority, application Germany, Dec. 15, 1964, D 46,066**
**Int. Cl. D05b** *3/04;* **B65h** *69/04*
**U.S. Cl. 112—160** **3 Claims**

Sewing machine, particularly with zig-zag feed, having means for moving a work support in such a way that the needle penetrates the work twice at the same location to tie its thread into a knot, located at the underside of the work, whereupon a further penetration occurs at a location spaced from the previous penetration with entrainment of the underthread across a small portion of the work so that the knot just formed is pulled upwardly into the fabric by the descending needle.



### 3,478,709
### SEWING MACHINE

**Irving George Fischbein, 5115 James Ave. S. 55419, and Harold Fischbein, 5009 Ridge Road 55436, both of Minneapolis, Minn.**
**Filed Nov. 17, 1966, Ser. No. 595,092**
**Int. Cl. D05b** *71/02, 13/02, 3/02*
**U.S. Cl. 12—256** **9 Claims**

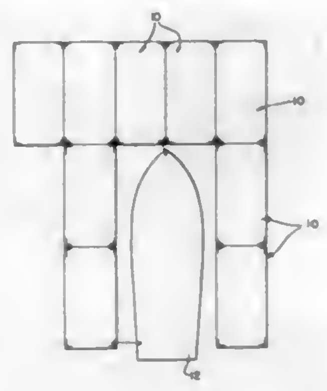


A sewing machine particularly adapted for closing bags and sacks which has the several actuating mechanisms for needle, looper, feed-dog and the like very compactly mounted within a substantially sealed multi-part casing and wherein positive pump-actuated lubricating mechanism is employed to constantly lubricate all working parts, bearings and actuating connections, the construction and mounting of actuating elements for the most part on a common drive shaft disposed in the said housing and this drive shaft has an axial bore which is utilized in the lubricating system as a channel with communication radially to the greater number of actuating parts and bearings. The invention is further characterized by a new and improved looper operating mechanism which involves a minimum number of parts and which is particularly well related to the positive pump-actuated lubricating system.

### 3,478,710
### FLOATING DOCK STRUCTURE

**Jack W. Bethurem, Rock Island, Ill. (7146 Sugarbin St., Orlando, Fla. 32807)**
**Filed July 31, 1968, Ser. No. 749,061**
**Int. Cl. B63c** *1/02*
**U.S. Cl. 114—.5** **10 Claims**

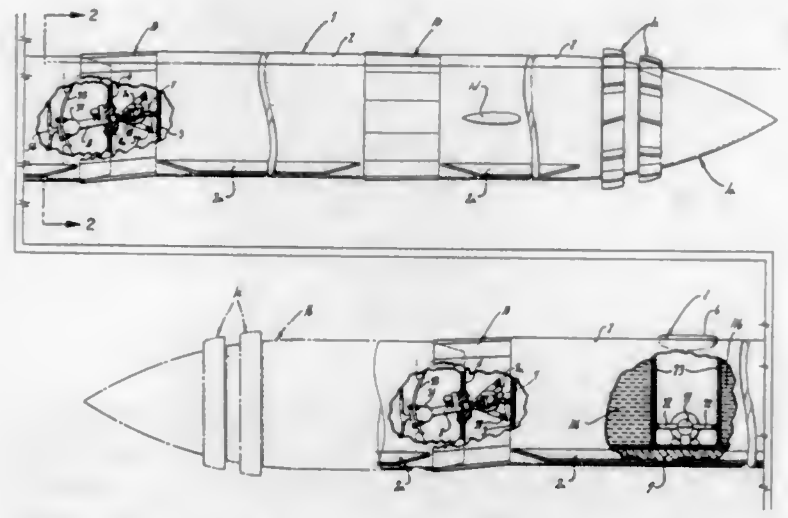
A floating concrete dock is formed by connecting a number of identical, hollow, box-like concrete structures in the desired pattern. The individual structures are formed by providing a rigid welded steel frame having rectangular top, bottom and sides, securing panels to the frame interior to form a core, placing reinforcing wire around the core, and pouring high density concrete around the core, while utilizing the frame elements as the concrete forms.



**3,478,711**

### SUBMERSIBLE SEA TRAIN

**Herbert M. Combs, 540 De Armond Place,**
**Santa Maria, Calif. 93454**
**Filed July 30, 1968, Ser. No. 748,832**
**Int. Cl. B63b** *3/13;* **B63g** *8/22*
**U.S. Cl. 114—16 5 Claims**



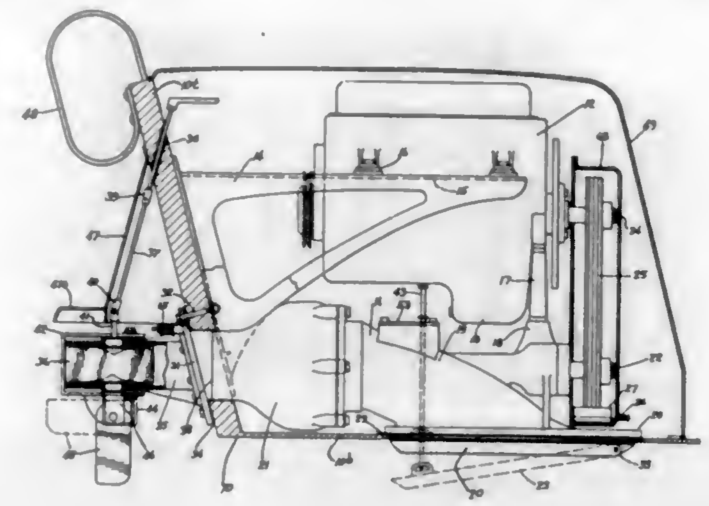
A number of submersible cargo vessels are coupled together and to a towing means after the manner of a string of freight cars and a locomotive. Novel means of coupling and uncoupling units together with an automatic means for maintaining proper relative buoyancy and submergence under varying conditions of operation make possible such an articulated combination.

**3,478,712**

### INBOARD JET PROPULSION UNIT

**Anthony R. Fox, Minneapolis, Minn., assignor, by mesne assignments, to Sports-Jet Industries, Inc.**
**Continuation of application Ser. No. 225,712, Sept. 24, 1962. This application Oct. 16, 1968, Ser. No. 768,967**
**Int. Cl. B63h** *11/10, 25/42*
**U.S. Cl. 115—12 10 Claims**

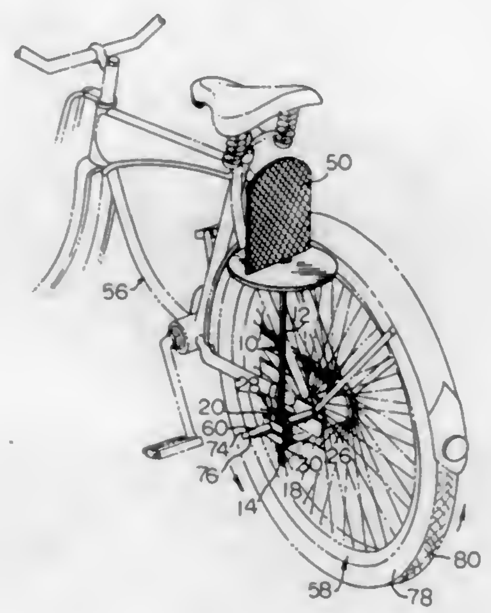
A water craft propulsion system comprises an outlet nozzle formed generally in a fan shape as viewed from above with a jet-directing vane pivoted about a vertical axis within the fan-shaped nozzle at approximately its midpoint, the vane being directed by a control mechanism and direction being given to the jet with the aid of the vane and a door mechanism which is formed in two parts which are pivotally connected to the fan-shaped nozzle with ports formed in the door means at the bottom thereof so that when the door is closed, the jet is directed forwardly to produce a reverse flow of water and when the door mechanism is open, the vane directs the flow of water to control the direction of movement of the jet propulsion device.



**3,478,713**

### WARNING DEVICE

**Byron L. Brames, R.R. 1, Monroeville, Ind. 46773**
**Filed Aug. 15, 1967, Ser. No. 660,801**
**Int. Cl. B60q** *1/26*
**U.S. Cl. 116—56 4 Claims**



A warning device for a wheeled vehicle comprising a horizontally disposed wheel and a flag upstanding therefrom. The wheel is mounted to the vehicle with its peripheral edge engaging the side wall of a tire of the vehicle whereby when the vehicle moves, the wheel rotates and the flag rotates therewith. The flag has oppositely facing surfaces one of which is a light-reflecting surface; the other of which is coated so to have an appearance different from the light-reflecting surface. When the flag is rotated, the flag has an appearance of a flasher. In one embodiment a gear mechanism is used to connect the flag to the wheel for rotating the flag a partial revolution for each full revolution of the wheel whereby the device can be adapted for use with both high speed and low speed vehicles.

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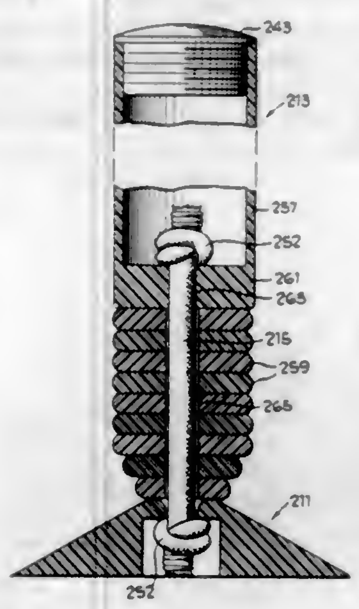
**3,478,714**

### SIGNAL DEVICE

**John B. Keats, Marietta, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Aug. 5, 1968, Ser. No. 750,113**
**Int. Cl. E01f** *9/10*
**U.S. Cl. 116—63 3 Claims**

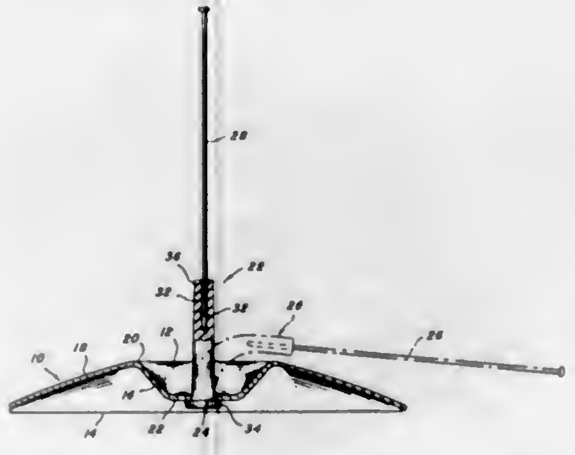


A resiliently supported roadway signal device including a base to be secured to the roadway, an elongated standard adapted to provide a warning signal and a tensioned elastic member connected between the base and the standard to yieldably retain the standard upon the base.

**3,478,715**

### PORTABLE ROADWAY SIGNAL DEVICE

**Edward G. Asbury, Pittsburgh, Pa., assignor to Signal-Lite Road Marker Co., Murraysville, Pa., a corporation of Pennsylvania**
**Filed Feb. 25, 1969, Ser. No. 802,176**
**Int. Cl. E01f** *9/10*
**U.S. Cl. 116—63 5 Claims**

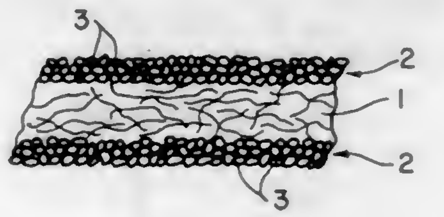


The portable roadway signal device includes a semispherical base member with a planar central recessed portion. A rubber staff support member extends upwardly through an aperture in the base member recessed portion and has an enlarged bottom portion abutting the underside of the base member. A rigid flag carrying staff member is secured in the upper end of the staff support member. The rubber staff support member upon lateral deflection of said staff member flexes from a location adjacent the upper planar surface of the base member central recessed portion.

**3,478,716**

### PRINTABLE PAPER PRODUCT HAVING A CELLULAR COATING CONTAINING PIGMENT AND A REACTION PRODUCT OF PROTEIN AND AN EPOXY RESIN DEFINING THE CELL WALLS

**Robert E. Weber, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware**
**Original application Mar. 7, 1963, Ser. No. 263,660, now Patent No. 3,309,224, dated Mar. 14, 1967. Divided and this application Oct. 3, 1966, Ser. No. 583,730**
**Int. Cl. B44d** *1/14;* **D21h** *1/22*
**U.S. Cl. 117—68 2 Claims**

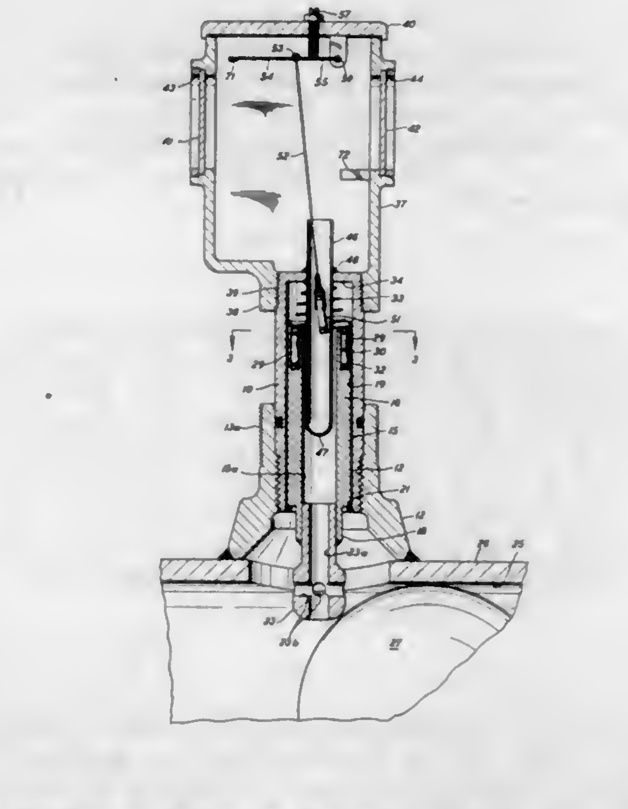


A coated printable paper web of light basis weight in the range of about 22–35 pounds having an opacity of at least 90 and a General Electric brightness of at least 69, the coating being formed of cells of about ½–2 microns in diameter which contribute to the opacity by a high capacity for light scattering, the cells having walls which include a reaction product of a protein binder and an epoxy resin. The product includes pigment to aid printability and the coating is formed from an oil-water emulsion containing mineral pigment and protein as the essential binder constituent although some starch may be included.

**3,478,717**

### PRESSURE BALANCED MECHANICAL DETECTOR WITH PERMANENT MAGNETIC MEANS ACTIVATING INDICATOR MEANS

**Joseph V. Kidd, 201 Shasta, Houston, Tex. 77024**
**Filed Mar. 4, 1968, Ser. No. 710,311**
**Int. Cl. G09f** *9/00;* **H01h** *3/16*
**U.S. Cl. 116—124 8 Claims**



The disclosure relates to indicating detector actuators which are operated by contact of an object with a probe element of the indicator, the probe and object being disposed within a pressure system, the indicator being isolated from the pressure. The invention will be of use in detecting the presence of, or passage of, objects past the location of the detector, for example, for detection of the passing of a ball, sphere or pig separator through a pipeline under pressure, as well as for many other diverse uses.

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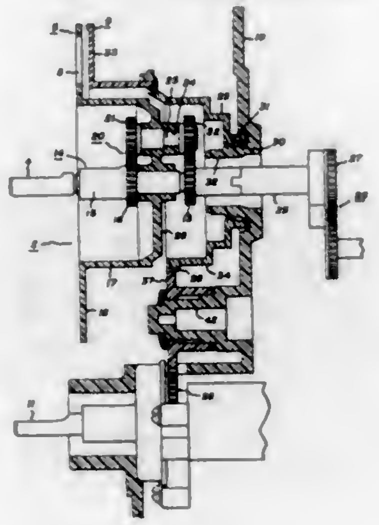
### 3,478,718
### UHF-VHF CHANNEL INDICATING DEVICE

**Donald J. Siebold, North Syracuse, and Michael L. Callahan, Marcellus, N.Y., assignors to General Electric Company, a corporation of New York**
**Filed Dec. 2, 1966, Ser. No. 598,795**
**Int. Cl. H03j** *1/02*
**U.S. Cl. 116—124.1** **4 Claims**



A combination UHF-VHF tuner channel indicating device having concentric indicator discs for indicating both the UHF and VHF channel selection at a single location and including concentric control shafts for effecting both coarse selection and fine tuning of the VHF channels, whereby VHF channel fine tuning can be effected without causing movement of the indicator discs.

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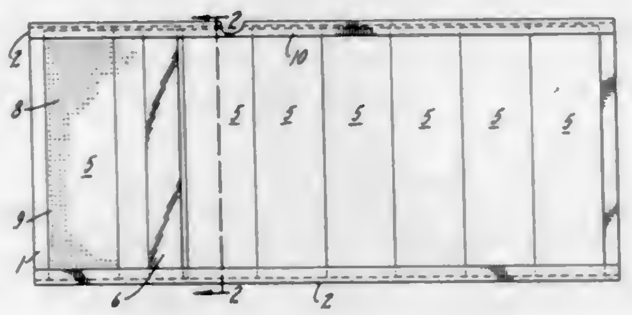
### 3,478,719
### VISUAL SCHEDULING MEANS

**Bernard J. Sadoff, Jr., 3815 Kendale Road, Annandale, Va. 22003**
**Filed Apr. 13, 1967, Ser. No. 630,659**
**Int. Cl. G08b** *5/02*
**U.S. Cl. 116—136** **9 Claims**



Apparatus for scheduling the use of work performing units in which pegs on slidable panels are aligned in vertical rows to represent dates and aligned in horizontal rows to represent the work performing units. Pieces of colored material perforated to receive the pegs represent jobs requiring use of the work performing units. Rotatable caps on the pegs indicate how much time of each work performing unit is taken on each date.

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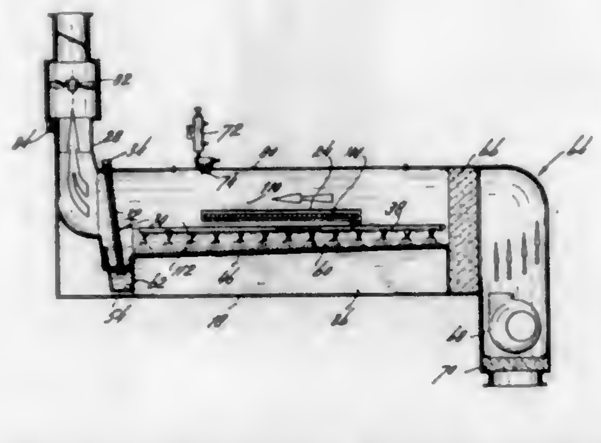
### 3,478,720
### SEALED SPRAYER AND BAFFLE COMBINATION FOR A SPRAY-COATING ENVIRONMENT

**Hendrik F. Bok, 819 Tucker Road, North Dartmouth, Mass. 02747**
**Continuation-in-part of application Ser. No. 676,599, Oct. 19, 1967. This application Feb. 20, 1969, Ser. No. 801,028**
**Int. Cl. B05c** *11/16, 5/02;* **B05b** *3/18*
**U.S. Cl. 118—323** **10 Claims**



A combination sealed sprayer and staggered baffle for use in a laminar air flow spray-coating chamber, the baffle being adapted for flowing spray-coating solvent as a plurality of downwardly extending channels and the sprayer being sealed so as to avoid disturbing the laminar flow of filtered air through the chamber.

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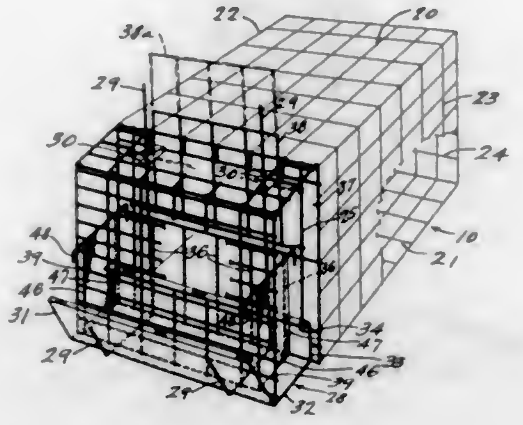
### 3,478,721
### BROODING AND GROWING CAGE

**Robert E. Maxfield, Hicksville, Ohio, assignor to The National Ideal Company, Hicksville, Ohio, a corporation of Ohio**
**Filed May 19, 1967, Ser. No. 639,890**
**Int. Cl. A01k** *31/06*
**U.S. Cl. 119—18** **3 Claims**



A brooding and growing cage for poultry, each cage module being rectangular and having a gate or door in one of its walls. A horizontal feed trough extends horizontally across the front of each cage module and the front cage wall has openings of a preselected size which allows small birds to enter the feed trough but prevents larger birds from entering. Guard means prevent the birds from leaving the trough. In one embodiment the guard means comprises a pivotally mounted barrier wall which extends outwardly from the cage and in one position engages the trough, preventing the smaller birds from leaving the feed trough other than through the front wall cage openings. In another embodiment the guard means comprises a guard screen having a front wall and two sidewalls. The guard screen is positioned in the feed trough adjacent the front cage wall.

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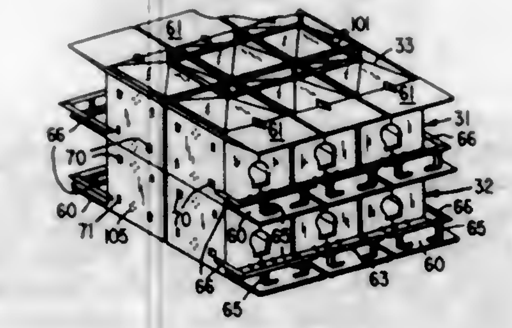
### 3,478,722
### PURPLE MARTIN BIRD HOUSE

**Joseph R. Falcone, 217 Cooper Lane, Dewitt, N.Y., and Anthony Falcone, Jr., 207 Oakridge Drive, Camillus, N.Y. 13031**
**Filed Dec. 1, 1967, Ser. No. 687,196**
**Int. Cl. A01k** *31/12*
**U.S. Cl. 119—23** **20 Claims**



A bird house apartment structure. A plurality of apartments may be joined together in side by side, end to end, or end to side, relation, and in vertical stack formation to provide multiple apartment dwellings of various arrangements. The apartments are joined together in spaced relation to provide proper ventilation. Each compartment may be erected from a one-piece, substantially flat blank, with roof and perch.

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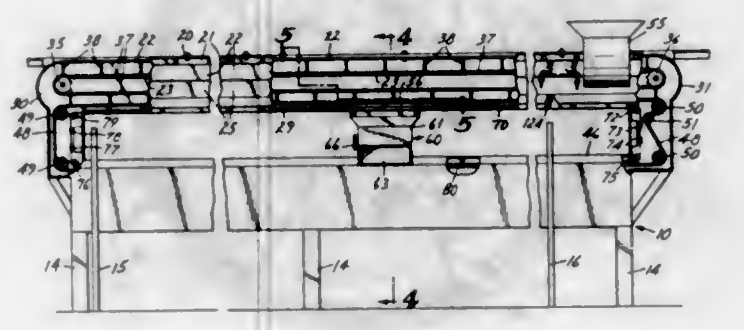
### 3,478,723
### FEED DISTRIBUTING APPARATUS

**Alfred Sheldon Berg, 508 W. Oakland Ave., Austin, Minn. 55912**
**Filed Aug. 30, 1967, Ser. No. 664,520**
**Int. Cl. A01k** *5/00*
**U.S. Cl. 119—52** **2 Claims**



An endless chain having a plurality of flights extending outwardly therefrom mounted for rotary movement above a bunk feeder or the like. The lower portion of the chain is approximately horizontal and a generally flat belt is mounted approximately coextensive therewith and spaced the width of the flights therebelow. The belt has an opening therethrough with a feed chute mounted therebelow adapted to receive feed from the opening in the belt and direct it into the bunk feeder. A hopper empties feed onto the upper surface of the belt and a motor drives the chain continuously so that the flights move the feed toward the opening in the belt. The opening and feed chute are adjustable, by means of a motor and switches, longitudinally along the bunk feeder and/or in any desired increments thereof. Thus, the opening in the belt and the chute move periodically along the bunk feeder, or an increment thereof, and feed is moved through the opening into the chute by the chain and flights thereon.

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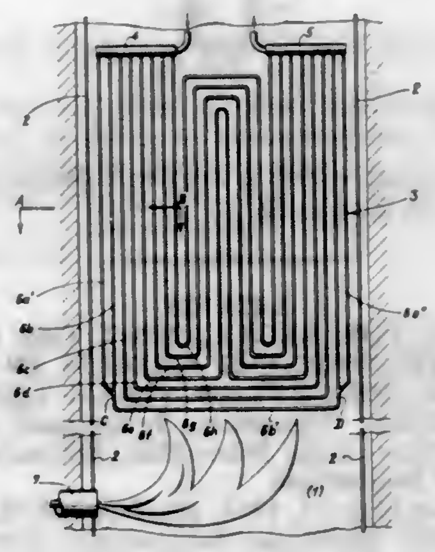
### 3,478,724
### PANEL SHAPED HEATING SURFACE FOR COMBUSTION CHAMBERS

**Alfred Brunner, Winterthur, Switzerland, assignor to Sulzer Brothers, Ltd., Winterthur, Switzerland, a corporation of Switzerland**
**Filed Dec. 26, 1967, Ser. No. 693,580**
**Claims priority, application Switzerland, Dec. 29, 1966, 18,767/66**
**Int. Cl. F22b** *21/24*
**U.S. Cl. 122—235** **10 Claims**



The outermost tube of the panel is connected with either or both of an auxiliary feed tube or discharge tube of the same diameter upstream or downstream of the section exposed to the severest fire radiation. The auxiliary tubes connect with the headers to augment the flow of working medium through this tube section so as to effect the cooling of the tube section and to reduce the wall temperature of the tube section.

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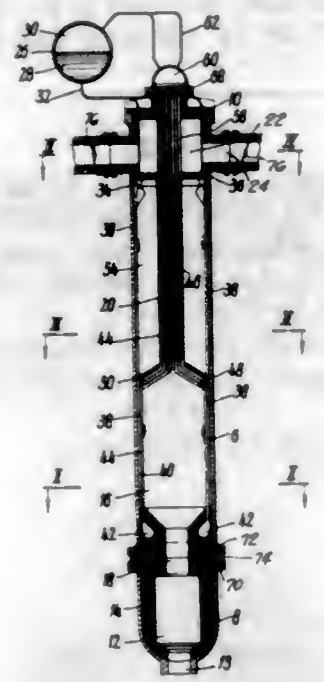
### 3,478,725
### WATER TUBE BOILER

**Josef Munster, Dusseldorf-Oberkassel, Gerd Wellensiek, Hosel, and Gunter Linke, Dusseldorf-Urdenbach, Germany, assignors to Ferdinand Lentjes Dampfkessel- und Maschinenbau, Dusseldorf-Oberkassel, Germany, a corporation of Germany**
**Filed Sept. 14, 1967, Ser. No. 667,766**
**Claims priority, application Germany, Sept. 20, 1966, L 54,593**
**Int. Cl. F22b** *21/30*
**U.S. Cl. 122—333** **8 Claims**

A water tube boiler having a contact heating chamber above a radiation chamber. The water is circulated down through an outer basket of downcomer pipes and up through an inner basket of riser pipes both surrounding the radiation chamber. At the transition between the two chambers the riser pipes are gathered together and merge continuously into a bundle of tubes extending up the centre of the contact heating chamber so that the rising



gases are confined within a smaller cross-section as they flow up through the bundle.

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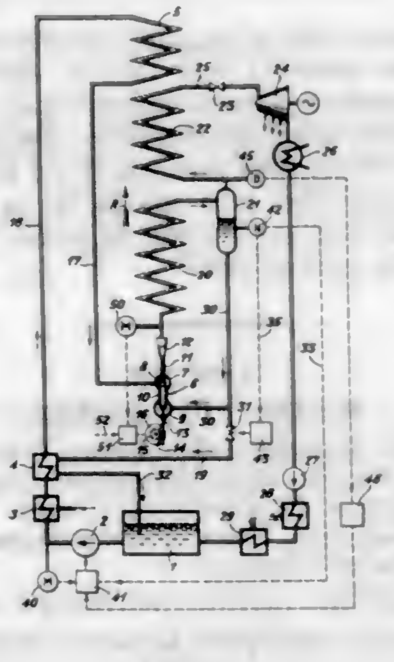
### 3,478,726
### APPARATUS FOR REGULATING THE RECIRCULATION OF WORKING MEDIUM IN A ONCE-THROUGH FORCE-FLOW STEAM GENERATOR

**Alexander Kikinis, Winterthur, Switzerland, assignor to Sulzer Brothers, Ltd., Winterthur, Switzerland, a corporation of Switzerland**
**Filed May 22, 1968, Ser. No. 730,985**
**Claims priority, application Switzerland, May 23, 1967, 7,247/67**
**Int. Cl. F22d** *7/04;* **F22b** *35/10*
**U.S. Cl. 122—406 10 Claims**



An ejector is positioned in the feedwater line downstream of the economiser and includes a hollow tubular needle which communicates with the recirculated working medium. The needle is slidably adjustable in response to the load to vary the flow cross-section of the feedwater so as to effect a variance in the amount of recirculated working medium drawn through the needle and mixed into the feedwater.

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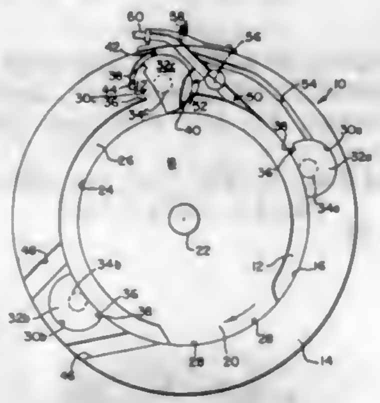
### 3,478,727
### ROTARY COMBUSTION ENGINE

**Vernon F. J. Marcoux, 1617 Morgan Ave., Saskatoon, Saskatchewan, Canada**
**Filed Dec. 19, 1967, Ser. No. 691,879**
**Int. Cl. F02b** *53/06, 53/10, 55/14*
**U.S. Cl. 123—15 6 Claims**



A rotary internal combustion engine having a cylindrical rotor enclosed in a cylindrical chamber to define an annular space therebetween. The rotor has a radial member projecting therefrom which bridges the annular space. Rotary valves, mounted in the housing, periodically bridge the annular space to cooperate with the radial member and form expansible chambers for the intake, compression, power and exhaust strokes of the engine. At higher engine speeds, the rotary valves are blocked in a non-bridging position and the requisite chambering is effected through the inertia of gas in the annular space.

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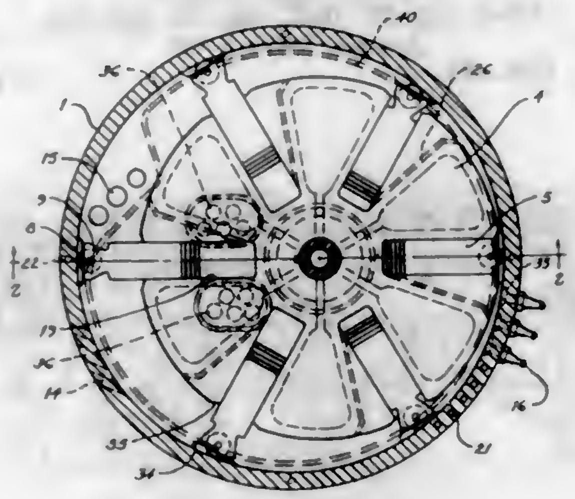
### 3,478,728
### COMPOUND VANE ROTARY INTERNAL COMBUSTION ENGINE

**Donald A. Kelly, 58—06 69th Place, Maspeth, New York, N.Y. 11378**
**Filed Dec. 4, 1967, Ser. No. 687,734**
**Int. Cl. F04b** *1/10;* **F02b** *53/08*
**U.S. Cl. 123—16 9 Claims**



A multiple vane rotary I.C. engine in which the compressed air-volume under the vane is forced radially into multiple holes and into the outer rotary compressed cavity. The engine consists of a slotted rotor, multiple wide piston type vanes which are guided in their radial clearance with the cylindrical housing bore by miniature ball bearings. The inner ends of the vanes are fitted with rectangular sealing rings to seal the compressed air.

The object of the compound type engine is to combine the compressing air volumes formed by the displacing vanes to achieve a high compression ratio for an accentric rotary engine.

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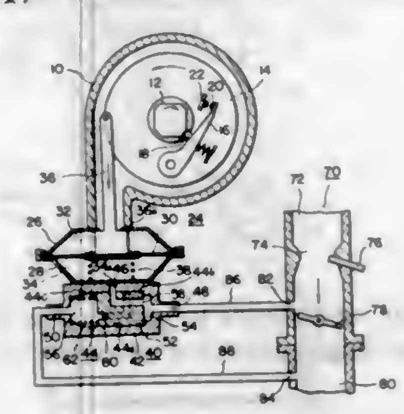
### 3,478,729
### APPARATUS FOR CONTROLLING IGNITION TIME OF AUTOMOBILE ENGINE

**Yasuo Tada, Himeji, Hyogo, Japan, assignor to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan**
**Filed Nov. 20, 1967, Ser. No. 684,332**
**Claims priority, application Japan, Nov. 24, 1966, 41/107,847**
**Int. Cl. F02p** *5/10*
**U.S. Cl. 123—117 8 Claims**



The ignition timing of an internal combustion engine having a throttle valve in a fuel intake passage is controlled by a pressure responsive device to which negative pressure is supplied through a single control valve comprising a cylinder having chambers at opposite ends connected with the intake passage on opposite sides of the throttle valve and a floating piston having two passageways communicating respectively with said chambers. According to the running condition of the engine the piston is movable by fluid pressure to bring one or the other of said passageways into communication with a line leading the pressure responsive device.

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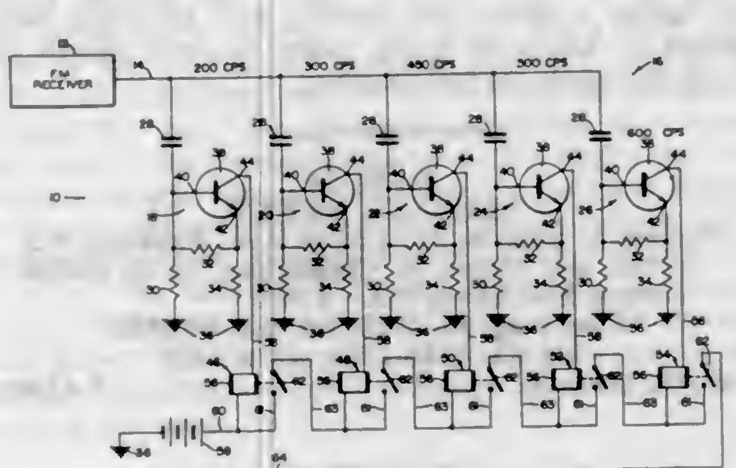
### 3,478,730
### SYSTEM FOR STARTING AN ENGINE FROM A REMOTE LOCATION

**Jeffery C. Bucher, R.D. 1, Aspers, Pa. 17304**
**Continuation-in-part of application Ser. No. 565,194, July 14, 1966. This application Mar. 29, 1968, Ser. No. 724,668**
**Int. Cl. F02n** *11/08, 11/14;* **H02p** *9/04*
**U.S. Cl. 123—179 11 Claims**



A system for starting, from a remote location, a combustion engine having an electric starter motor associated therewith, said system comprising; a stepping-chain switching circuit responsive to a selective series of control signals, means for impressing the control signals onto the switching circuit for closing said circuit, and an actuating means connected to the switching circuit and adapted to be connected to the starter motor for energizing said motor, said actuating means including, a switching mechanism operatively connected to the switching circuit and adapted to be connected to a source of electric potential, said switching mechanism being responsive to and closing upon closing of the switching circuit, a time delay mechanism operatively connected to the switching mechanism and adapted to be operatively connected to the starter motor for connecting the potential source to the motor when the switching mechanism is closed to thereby energize the motor, and a circuit breaker means operatively connected to the time delay mechanism and being responsive to starting of the engine for disconnecting the time delay mechanism from the switching mechanism upon starting of the engine to thereby prevent the time delay mechanism from connecting the potential source to the motor after the engine has started and for reconnecting the time delay mechanism to the switching mechanism if the engine momentarily starts but does not continue to run to thereby allow the time delay mechanism to reconnect the potential source to the motor for re-energizing the motor, said time delay mechanism being operative to prevent the potential source from being reconnected to the motor for a predetermined period of time after the time delay mechanism is reconnected to the switching mechanism so that if the engine momentarily starts but does not continue to run, the motor will not be re-energized until after the engine has stopped.

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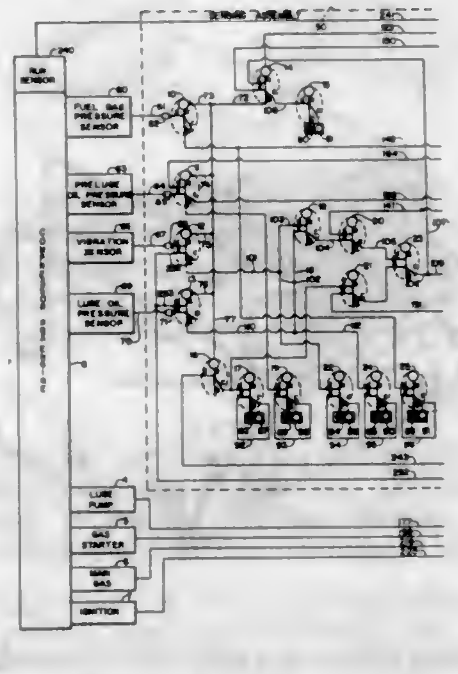
### 3,478,731
### ENGINE STARTUP SEQUENCE CONTROL APPARATUS

**Richard C. Morton, South St. Paul, and Neil C. Sher, St. Paul, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**
**Filed Aug. 8, 1966, Ser. No. 570,833**
**Int. Cl. F02d** *37/00*
**U.S. Cl. 123—198 8 Claims**



A fluidic engine control system which provides automatic startup sequence control. This system also operates to shut down the engine in case a parameter assumes an abnormal value and to indicate the parameter responsible for the shut down. The system comprises a series of fluidic control assemblies, each controlling an engine variable. Operation of succeeding assemblies is intiated by means of signals received from preceding assemblies through signal delay devices.

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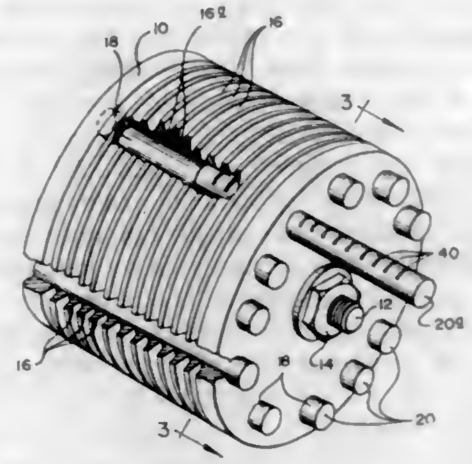
### 3,478,732
### WIRE SAW DRUM

**David J. Clark, Hudson, and Walter T. Bonin, Marlboro, Mass. (Both of 146 Main St., Maynard, Mass. 01754)**
**Filed Mar. 15, 1967, Ser. No. 623,297**
**Int. Cl. B28d** *1/08*
**U.S. Cl. 125—12 14 Claims**

A wear-resistant guide for a moving wire which comprises a circumferentially grooved drum for containing and quiding the moving wire. Wear-resistant rods extending through the drum intercept the groove so that the



moving wire contained therein engages around the rods and does not bottom in the groove.

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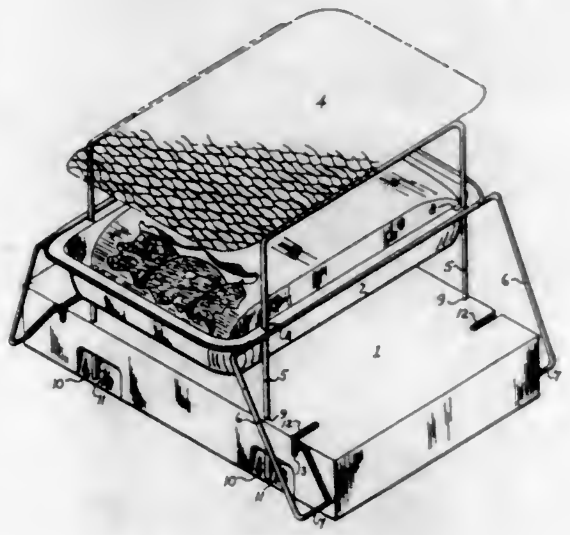
### 3,478,733
### PORTABLE, DISPOSABLE BARBECUE UNIT

**Carl H. Meyerhoefer, 59 Eastwood Ave.,**
**Deer Park, N.Y. 11729**
**Filed May 20, 1968, Ser. No. 730,434**
**Int. Cl. F24c** *1/16;* **F24b** *3/00;* **A47j** *37/07*
**U.S. Cl. 126—9** **4 Claims**



This invention relates to a portable, disposable barbecue unit. A grill with attached folded support rods and a fuel containing pan with attached folded support rods are packed in a box having support receiving openings at each of its four corners in its top and side surfaces. After the contents are removed, the re-closed box becomes the base for the unit, the grill being supported a fixed distance above it and the fuel containing pan supported at either of two elevations between the grill and the base with its unfolded support rods engaged in the box openings.

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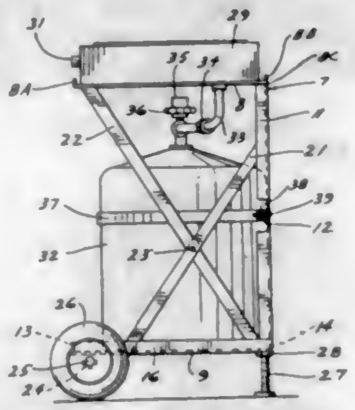
### 3,478,734
### PORTABLE COOKING AND HEATING DEVICE

**Ivan Covey, 5825 Denton Road,**
**Belleville, Mich. 48111**
**Filed Oct. 13, 1967, Ser. No. 675,212**
**Int. Cl. F24c** *5/02*
**U.S. Cl. 126—44** **1 Claim**

This application discloses a portable cooking and heating device, which employs liquid petroleum gas as the heat producing medium. The invention resides in a portable carrier frame having a table like element for mounting a stove, a platform for supporting a can of liquid



petroleum gas, and means to support the frame, including rotatable and height adjusting elements.

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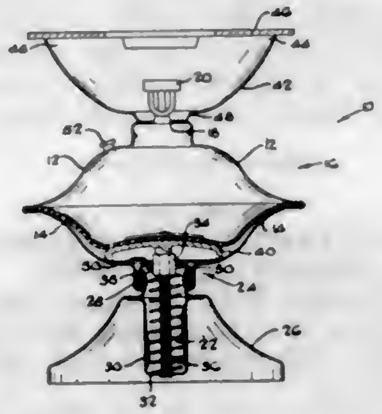
### 3,478,735
### PRESSURE BURNER

**Jacobus Johannes Rautenbach, van Wyks Restante,**
**Muldersdrift, Transvaal, Republic of South Africa**
**Filed Feb. 13, 1968, Ser. No. 705,091**
**Int. Cl. F24c** *5/02*
**U.S. Cl. 126—44** **8 Claims**



A liquid fuel pressure burner which has a fuel chamber having a deformable defining wall resiliently compressed by adjustable spring means to exert pressure on liquid fuel inside the fuel chamber.

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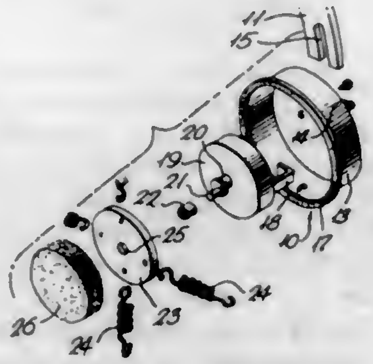
### 3,478,736
### MASSAGE DEVICE

**William A. Roberts, 293 Crooks Ave., Paterson, N.J. 07503, and Morris R. Christadore, 36–23 Stelton Terrace, Fair Lawn, N.J. 07410**
**Filed Aug. 16, 1967, Ser. No. 660,950**
**Int. Cl. A61h** *1/00;* **A61n** *1/00*
**U.S. Cl. 128—36** **7 Claims**



A self-contained and powered lightweight device for gently massaging the temple areas of the head and constructed to be worn on the head in a manner similar to headphones. The device may be utilized at the time of retiring as an aid to relieving simple tension and headache.

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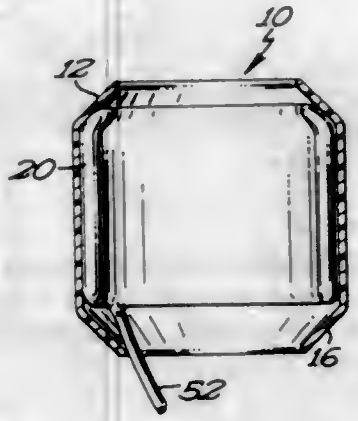
### 3,478,737
### HEART MASSAGER

**William R. Rassman, 2300 Girard Ave. S., Apt. 10,**
**Minneapolis, Minn. 55405**
**Filed Feb. 23, 1967, Ser. No. 617,993**
**Int. Cl. A61h** *31/00, 1/00*
**U.S. Cl. 128—64** **8 Claims**



A cardiac massage device having a cylindrically shaped sleeve member of nonexpansible and pliable material which is tapered at its extremities and with a diametrical dimension slightly less than the size of a mammal's heart on which it is to be used at its tapered extremities and with a length dimension of substantially the same length as the ventricular surface of the heart. The sleeve member has an inflatable bladder positioned on the inner peripheral surface of the same with suitable contact means to cause the inner surface to adhere to the interior of the sleeve member. The bladder is positioned on substantially one-half of the inner cylindrical surface of the sleeve member and extends from a point adjacent the taper at one extremity of the sleeve member to a point approximately two-thirds to three-quarters of the length of the sleeve member and spaced from the taper at the other end of the sleeve member. This bladder has a single conduit or pipe of flexible material connected thereto by means of which fluid may be inserted into the bladder to expand the same and withdrawn therefrom to collapse the same in the massaging operation. The sleeve member with the bladder is readily inserted as a prosthetic device through a thoracotomy insertion and manipulation to slide around the heart without requiring further means for retaining the same on the heart. Rhythmic pulsations caused by sequential inflation and deflation of the bladder will provide systolic support to a partially or totally inactive myocardium through massage of the ventricular area of the heart.

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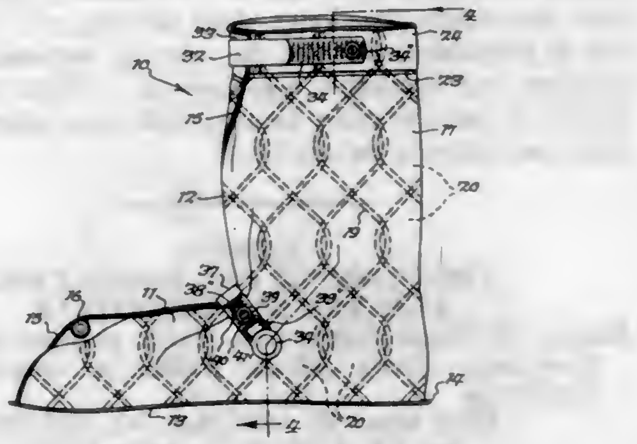
### 3,478,738
### BATHING BOOT WITH MEANS TO MASSAGE FOOT

**Max S. Altman, 362 Knowlton Ave., Kenmore, N.Y. 14217, and James V. Cox, West Seneca, N.Y.; said Cox assignor to said Altman**
**Filed July 15, 1966, Ser. No. 565,531**
**Int. Cl. A61h** *9/00, 35/00;* **A61m** *31/00*
**U.S. Cl. 128—66** **16 Claims**

A boot for bathing a foot including a sole, a lower body portion extending upwardly from the sole and an upper body portion extending upwardly from the lower body portion, a seal in the form of a downwardly extending flap proximate the upper edge of the upper body portion, a removable resilient insole within the boot, a strap for tightening the boot proximate the junction of the lower and upper body portions, and a strap proximate the upper edge of the upper body portion for tightening the upper edge of the upper body portion around the leg.



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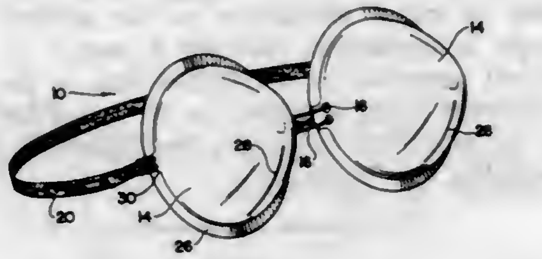
### 3,478,739
### PROTECTIVE BRASSIERE

**Samuel M. Librande, Denver, Colo., assignor, by mesne assignments, to Mary Phyllis Simpson**
**Filed Jan. 23, 1967, Ser. No. 611,063**
**Int. Cl. A61f** *13/15;* **A41c** *3/02*
**U.S. Cl. 128—132** **7 Claims**



A protective brassiere including cups of semi-rigid shock absorbing and deflecting structure to be worn for protection of the female breast during activities having a high incidence of physical contact.

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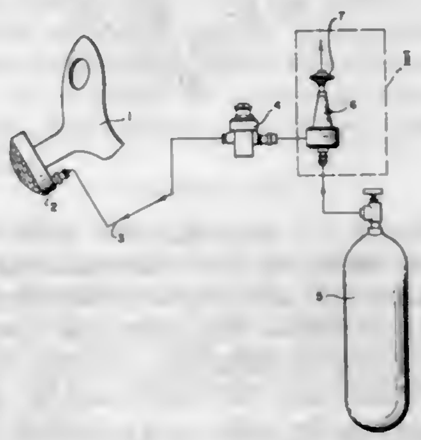
### 3,478,740
### BREATHING APPARATUS WITH PRESSURE REDUCTION WARNING DEVICE

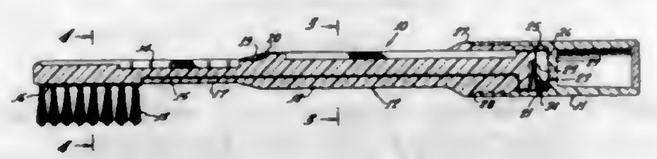
**Karl Fredrik Wennberg, Lidingo, Sweden, assignor to AGA Aktiebolag, Lidingo, Sweden, a corporation of Sweden**
**Filed Dec. 12, 1966, Ser. No. 600,962**
**Claims priority, application Sweden, Dec. 23, 1965, 16,718/65**
**Int. Cl. A62b** *23/06, 7/04*
**U.S. Cl. 128—146.4** **7 Claims**



A breathing apparatus having a breathing mask, a pressure gas container, a conduit leading from the container with a pressure reducing device to the breathing mask, a high pressure valve connected in the conduit, and having a valve chamber with a valve member therein spring-biased towards a valve seat communicating with the pressure gas source. The valve shaft carrying the valve member is movable such that the opening between the valve member and the valve seat assumes a short and limited length so that the valve member will close when the pressure goes below a certain level.

### 3,478,741
### TOOTHBRUSH FOR PRODUCING ELECTRICAL POTENTIALS

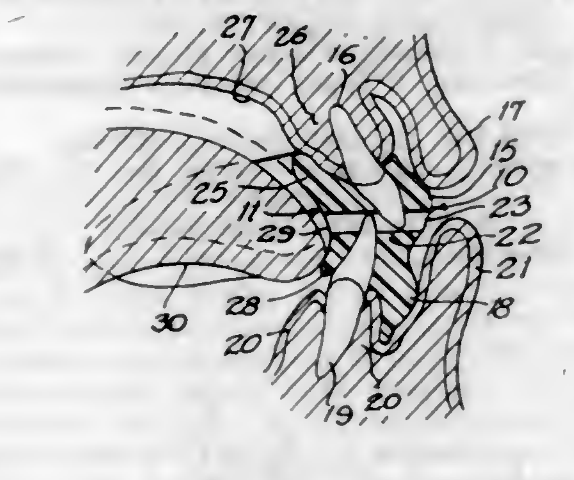
**George G. Simor, Santa Ana, Calif., assignor to The Ion Company, Costa Mesa, Calif., a corporation of California**
**Filed Mar. 30, 1967, Ser. No. 627,056**
**Int. Cl. A61k** *5/00;* **A61c** *17/00*
**U.S. Cl. 128—172.1** **9 Claims**



A toothbrush for topical application of ions of medications or other substances to the surface of a tooth through iontopheresis through a means to provide an electrical potential to attract the ions to the tooth, with an electrode being provided on the brush for engagement with the mouth to provide a low-resistance current path to establish the potential.

### 3,478,742
### ORTHODONTIC MULTIPURPOSE REPOSITIONER AND ORAL HABIT CONDITIONER

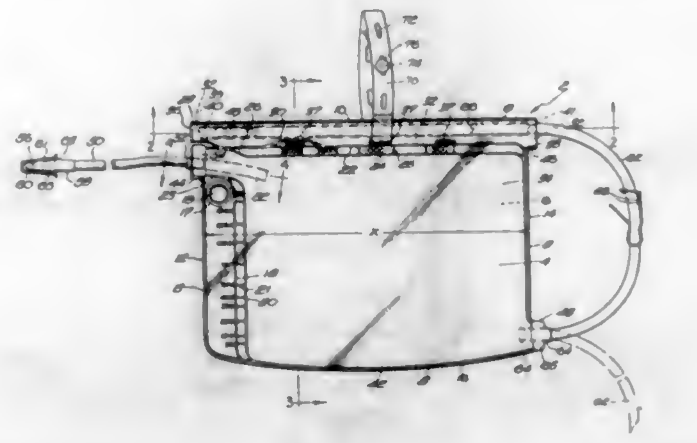
**Edward H. Bohlmann, 12585 Venice Blvd., Los Angeles, Calif. 90066**
**Filed Oct. 23, 1967, Ser. No. 677,263**
**Int. Cl. A61m** *31/00;* **A61c** *7/00*
**U.S. Cl. 128—172.1** **5 Claims**



Disclosed herein is a molded plastic support, guard and barrier device which is fitted between the teeth of a patient for tooth, lip and tongue positioning, the device having sockets to receive the upper and lower teeth, extension parts for lip positioning, a barrier to prevent insertion of a thumb into the mouth and/or protrusion of the tongue between the teeth; and a tongue guide extending upwardly along the roof of the mouth and carrying electrodes to repel the tongue downwardly by galvanic action which stimulates reflex tongue movement.

### 3,478,743
### CLOSED URINARY DRAINAGE SYSTEM

**Richard E. Ericson, Keene, N.H., assignor to Elliot Laboratories, Inc., Fitzwilliam, N.H., a corporation of New Hampshire**
**Filed Sept. 20, 1967, Ser. No. 669,183**
**Int. Cl. A61f** *5/44;* **A61m** *3/00*
**U.S. Cl. 128—275** **32 Claims**



A closed urinary drainage system comprising a disposable, plastic bag made up of a pair of flat, flexible, plastic sheet panels in back-to-back relation sealed along their peripheries, one panel being opaque, preferably white, and the other transparent or translucent. The bag is divided by a horizontal seal line into a lower drainage fluid chamber and an upper elongated pocket, which extends along the width of the top of the bag and which snugly receives a relatively rigid, hollow, stabilizing tube open at both ends. A flexible urinary drainage tube, for draining fluid into the upper part of the fluid chamber, and a flexible draw-off tube, for drawing off fluid from the lower part of the fluid chamber, are hermetically sealed to the upper and lower portions of the bag respectively. The draw-off tube loops laterally outwardly and upwardly and then laterally inwardly from the lower portion of the bag with its end being snugly but removably received in an open end of the stabilizing tube, the other end of such stabilizing tube being open to the atmosphere. A filter is located in the stabilizer tube spaced from the end of the draw-off tube. The fluid chamber is closed to the atmosphere except through the stabilizer tube, filter and draw-off tube. The filter within the stabilizing tube closes this route to micro-organisms. Accordingly, the system is a closed one. The bag may be suspended by means of a highly flexible, plastic hanging strap received in a slit in the bag immediately under the stabilizing tube, and the lower edge of the bag is bowed downwardly, with the lowermost portion being located opposite the slit for balance. The stabilizing tube stabilizes the bag against wrinkle and sag, provides a protective and convenient receptacle for the end of the draw-off tube to reduce danger of contamination thereof and functions with the draw-off tube as a filtered inlet for sterilizing gases and as an overflow.

The drainage tube may be provided with a branched fitting for connection with an irrigating tube connected to a source of irrigating fluid for closed system alternating irrigation and drainage.

The branch of the fitting for connection for irrigation, may be provided with a valve member biased to close seal position and adapted to be forced out of close position by insertion of the tip of an irrigating syringe or a rigid tubular adapter attached to the irrigation tube.

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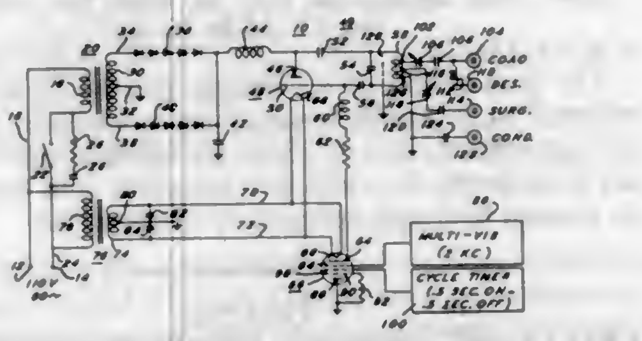
### 3,478,744
### SURGICAL APPARATUS

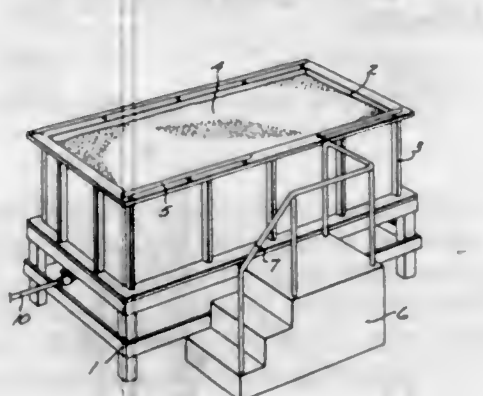
**Harry Leiter, 107 Henley Road, Philadelphia, Pa. 19151**
**Filed Dec. 30, 1964, Ser. No. 422,115**
**Int. Cl. A61b** *17/38;* **A61n** *3/02*
**U.S. Cl. 128—303.14** **17 Claims**



A surgical apparatus comprising means for generating a high frequency signal for use in electrosurgery which signal is provided in the form of a plurality of signal bursts during a cycle having a first period during which the signal bursts are delivered to the output terminal of the apparatus and a second period during which the bursts are not so provided, whereby burning, charring and scarring of tissues during the cutting, coagulating and bonding of living tissue is minimized and better healing and stronger seams are provided.

### 3,478,745
### SAND BATH BATHTUB

**Paul F. De Hate, 629 E. 4th St., Long Beach, Calif. 90812**
**Filed Mar. 27, 1967, Ser. No. 625,997**
**Int. Cl. A61m** *35/00;* **A61h** *33/04, 9/00*
**U.S. Cl. 128—369** **3 Claims**

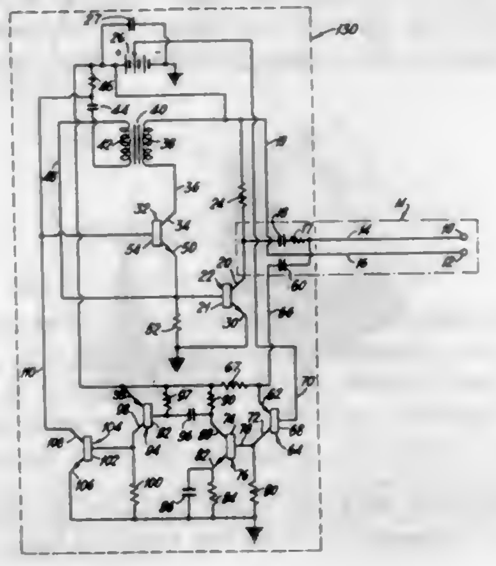


A bathtub containing loose sand is mounted on a platform. The occupant sits or reclines in the bathtub with the sand partially covering him. Hot water is then added to the sand. Screened drain means is also provided in the bottom of the bathtub for removing the excess liquid.

### 3,478,746
### CARDIAC IMPLANTABLE DEMAND PACEMAKER

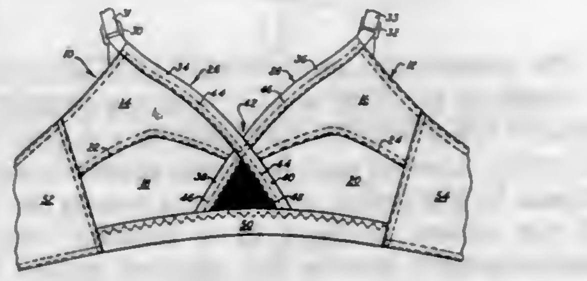
**Wilson Greatbatch, Clarence, N.Y., assignor to Medtronic, Inc., Minneapolis, Minn., a corporation of Minnesota**
**Filed May 12, 1965, Ser. No. 455,132**
**Int. Cl. A61n** *1/36*
**U.S. Cl. 128—421** **4 Claims**

A portable, self-contained, demand cardiac Pacemaker including circuitry which senses each natural heartbeat and resets the Pacemaker pulse generator timing in response to it. The Pacemaker stimulates only skipped beats and does not compete with natural beats. The first generated pulse after a natural beat occurs after a preset time interval slightly longer than the natural interval unless another natural beat has intervened. When a natural beat intervenes, the Pacemaker timer is coordinated with it.



### 3,478,747
### BRASSIERE

**Charles M. Sachs, Teaneck, N.J., assignor to International Playtex Corporation, a corporation of Delaware**
**Original application May 29, 1967, Ser. No. 642,035, now Patent No. 3,381,689. Divided and this application May 3, 1968, Ser. No. 726,280**
**Int. Cl. A41c** *3/00*
**U.S. Cl. 128—483** **3 Claims**

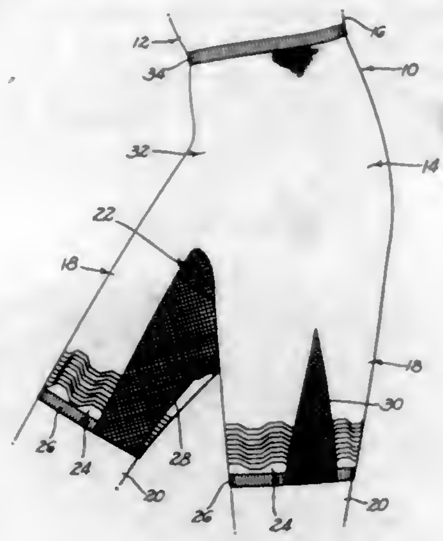


A brassiere that accommodates to chest cavity expansion and contracting particularly with respect to the area of the body just below the breasts. It utilizes a substantially non-stretch, triangular-shaped, mesh-like piece of fabric "on-the-bias" so that when the brassiere experiences girthwise stress, a biasing stretch within said triangular fabric is produced in the girthwise direction which permits the brassiere to accommodate to chest cavity expansion and contraction and maintain it in proper position on the body during use.

### 3,478,748
### PANTY GIRDLE AND STOCKING SUPPORT

**Knut L. Bjorn-Larsen, 128 S. Hacienda Ave., Glendora, Calif. 91740**
**Filed Jan. 12, 1967, Ser. No. 608,829**
**Int. Cl. A41c** *1/02;* **A41f** *11/00;* **A41b** *9/04*
**U.S. Cl. 128—535** **6 Claims**

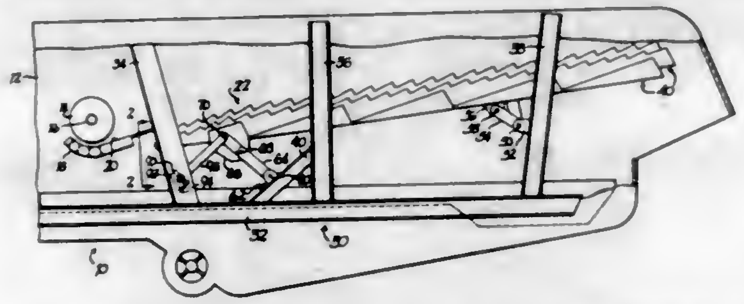
A panty girdle having leg portions terminating at their lower ends in annular stocking-supporting portions of stretchable, elastic, knitted fabric provided on their inner surfaces with inwardly protruding, elastomeric friction elements frictionally engageable with the outer surfaces of the tops of stockings encasing a wearer's legs to support



the stockings with the inner surfaces of the stocking tops in direct engagement with the wearer's legs.

### 3,478,749
### GRAIN SEPARATING MECHANISM FOR THRESHING MACHINES

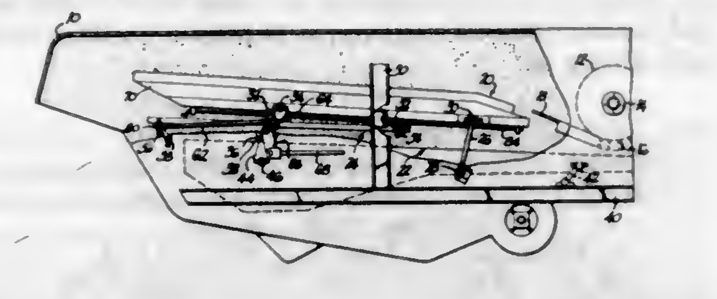
**Martin A. Davidow, Bettendorf, and Maurice Klee, Davenport, Iowa, assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin**
**Filed Dec. 28, 1966, Ser. No. 605,293**
**Int. Cl. A01f** *12/38*
**U.S. Cl. 130—26** **1 Claim**



The present disclosure relates to a grain separator for a threshing machine and in which a plurality of walker sections are pivotally connected to a frame to allow for generally forward and rearward arcuate movement with respect to the frame with driving means for moving one of the walker sections in a forward direction while simultaneously moving the adjacent walker section in a rearward direction.

### 3,478,750
### CROP SEPARATOR

**Robert L. Dahlquist, Rock Island, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin**
**Filed Dec. 28, 1966, Ser. No. 605,349**
**Int. Cl. A01f** *12/30*
**U.S. Cl. 130—26** **6 Claims**



This application relates to a harvesting machine including a crop separator having separating members the angle of which may be adjusted with respect to a support member to produce a more versatile machine.

### 3,478,751
### METHOD FOR PREPARATION OF SMOKING PRODUCT WITH SELECTIVE REDUCTION FOLLOWING SELECTIVE OXIDATION

**Theodore S. Briskin and Geoffrey R. Ward, Beverly Hills, Calif., assignors to Sutton Research Corporation, Los Angeles, Calif., a corporation of Delaware**
**No Drawing. Continuation-in-part of applications Ser. No. 595,622, Nov. 21, 1966, and Ser. No. 674,994, Oct. 12, 1967. This application July 16, 1968, Ser. No. 745,132**
**Int. Cl. A24b** *15/04*
**U.S. Cl. 131—2** **11 Claims**

The preparation of a smoking product of a cellulosic material which has been selectively oxidized by the use of nitrogen dioxide and in which the oxidized reaction product is subjected to a selective reduction with borohydride or nascent hydrogen released by borohydride.

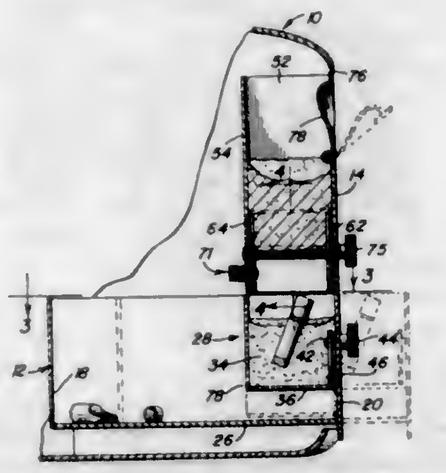
### 3,478,752
### CELLULOSIC SMOKING PRODUCT AND METHOD IN THE PREPARATION OF SAME

**Theodore S. Briskin and Geoffrey R. Ward, Beverly Hills, Calif., assignors to Sutton Research Corporation, Los Angeles, Calif., a corporation of Delaware**
**No Drawing. Continuation-in-part of applications Ser. No. 595,622, Nov. 21, 1966, and Ser. No. 674,994, Oct. 12, 1967. This application July 16, 1968, Ser. No. 745,134**
**Int. Cl. A24b** *15/04;* **A24d** *1/00*
**U.S. Cl. 131—2** **14 Claims**

The preparation of a smoking product in the form of a cellulosic derivative which includes the step of selectively oxidizing a cellulosic material with liquid nitrogen dioxide, with or without water, and the introduction of an oxygen containing gas for control of the oxidation reaction and acceleration thereof.

### 3,478,753
### CIGAR AND CIGARETTE SNUBBER

**Darrell R. Shipley, P.O. Box 2037, and Waldo E. Rassas, 1056 Manning Heights, both of Clarksville, Tenn. 37040**
**Filed Jan. 30, 1968, Ser. No. 701,664**
**Int. Cl. A24f** *13/18, 19/14*
**U.S. Cl. 131—235** **10 Claims**



A receptacle whose bottom is in part defined by a magazine having a rotary metering member communicating with a stored supply of cigar and cigarette snuffing granular material and operative to successively register fresh quantities of cigar and cigarette snuffing granules with the lower end of the receptacle and with an upwardly open granular material container assembly into which the lit end of a cigarette may be inserted for extinguishing, the container having a pivotable bottom wall for dumping spent granular material when desired, into a second larger ashtray and butt receiving receptacle operatively associated therewith within which cigar and cigarette ashes as well as extinguished cigar and cigarette butts may be placed.

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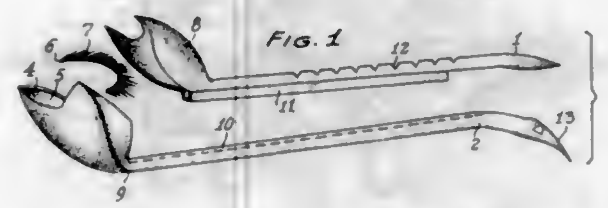
### 3,478,754
### APPLICATOR FOR FALSE EYELASHES

**James B. Martin, Jr., 2760 NE. 58th St., Fort Lauderdale, Fla. 33308**
**Filed Apr. 30, 1968, Ser. No. 725,443**
**Int. Cl. A45d** *44/00, 40/00*
**U.S. Cl. 132—1** **2 Claims**

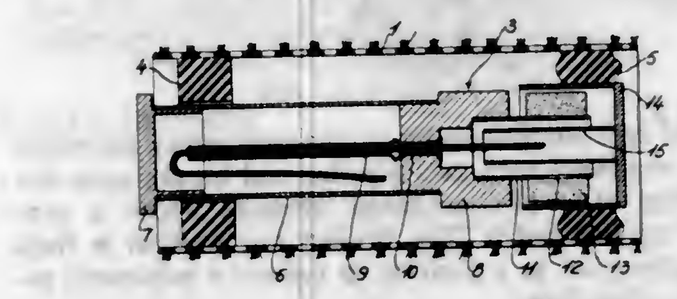


An instrument for applying artificial or false eyelashes to the human eyelid which comprises a pair of intermeshing longitudinally extending handle members having at one end thereof arcuate clamping members adapted to receive the false lash and hold it in position while it is being affixed to the eyelid.

The handle members of the eyelash applicator cooperate to release the pressure of the clamping members on the eyelash to permit its ready disengagement therefrom after the eyelash has been affixed to the human eyelid.

### 3,478,755
### HAIR CURLER

**Niels Christian Jorgensen, Esthersvej 19A, Hellerup, Denmark**
**Filed June 27, 1966, Ser. No. 560,582**
**Claims priority, application Denmark, June 28, 1965, 3,272/65**
**Int. Cl. A45d** *2/12*
**U.S. Cl. 132—33** **12 Claims**



This invention relates to a hair curler device wherein the vapor from fuel stored in the curler contacts a catalyst in the presence of an oxidizing agent such as air to generate exothermic heat. The rate at which the catalyst is exposed to fuel vapor and/or oxidizing agent may be controlled in order to control the heat generated.

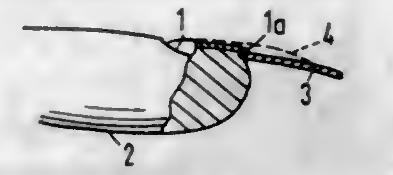
### 3,478,756
### FORMING ARTIFICIAL NAILS

**Gerd Sautter and Erich Möckesch, Heilbronn (Neckar), and Franz Götz, Darmstadt-Eberstadt, Germany, assignors to Inter-Taylor AG, Chur, Switzerland**
**Continuation-in-part of application Ser. No. 296,831, July 22, 1963. This application July 14, 1964, Ser. No. 382,570**
**Claims priority, application Germany, Sept. 18, 1962, 1,467,950; Jan. 29, 1964, 1,467,954**
**Int. Cl. A45d** *29/00;* **A61k** *7/04*
**U.S. Cl. 132—73** **8 Claims**

1. A plastically deformable composition for forming artificial nails which consists essentially of:

(1) a polymeric resin material;
(2) a monomer polymerizable by a redox catalyst system that has an oxidizing component and a reducing component; and
(3) a reducing component of said redox catalyst system,

said composition being chemically stable, said polymeric resin material and said monomer being present in relative proportions such that said composition is plastically deformable and has at least a paste-like viscosity, said polymeric resin material and said monomer being materals such that by a degree of polymerization of said monomer upon contact of the composition with an oxidizing component of the redox catalyst system the composition



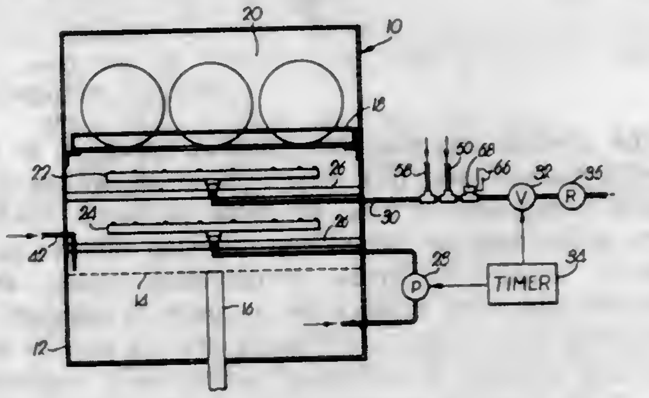
can be converted at the temperature of a human digit to polymeric resin material that has shape-retaining and self-supporting properties in the form of an artificial nail, said reducing component being present in an amount sufficient to cooperate with an oxidizing component of the redox system to effectuate said degree of polymerization, said composition being free of an oxidizing component of said redox catalyst system.

### ERRATUM

For Class 132—75 see:
Patent No. 3,478,763

### 3,478,757
### AUTOMATIC DETERGENT, RINSE ADDITIVE AND STERILIZER DISPENSER FOR DISHWASHERS

**John B. Tuthill, Kansas City, Mo., assignor to American Dish Service of Kansas City, Missouri, Inc., Kansas City, Mo., a corporation of Missouri**
**Filed Feb. 12, 1968, Ser. No. 704,787**
**Int. Cl. B08b** *3/00*
**U.S. Cl. 134—57** **4 Claims**

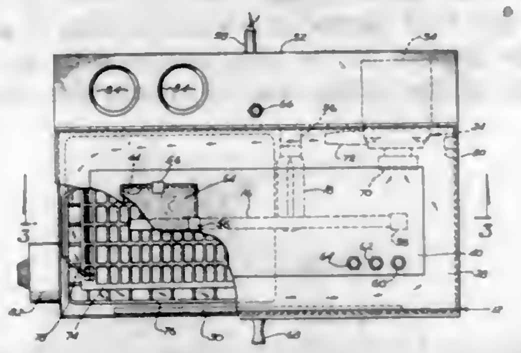


A liquid detergent, a rinse additive, and a sterilizing chemical are automatically introduced into a dishwasher during the rinse period thereof. The rinse additive and the sterilizing chemical are pumped into the rinse line, and the detergent is pumped into the wash water sump beneath the washing and rinsing chamber of the dishwasher. Separate metering pumps are utilized and are individually timed, and the rate of flow of the rinse water is maintained constant to assure that proper, uniform amounts of the three chemicals are discharged during each rinse period.

### 3,478,758
### WASHING AND STERILIZING DEVICE

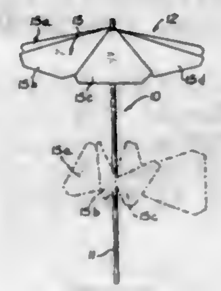
**George W. Davies, 4949 Tyrone Ave., Van Nuys, Calif. 91403**
**Filed Feb. 13, 1967, Ser. No. 615,779**
**Int. Cl. B08b** *3/10*
**U.S. Cl. 134—85** **6 Claims**

An implement washing and sterilizing device having a liquid container for supporting an implement in an initial washing position within the contained liquid and a subsequent sterlizing and drying position above the liquid, wherein the implement is exposed to the direct rays of a germicidal lamp within the container and in the path of drying air circulated through the container by a blower which exhausts ozone gas generated by the lamp to atmosphere through a deodorizing cartridge.



### 3,478,759
### SHELL OR UMBRELLA STRUCTURES

**Ernest W. Ehrman, 444 E. 82nd St.,**
**New York, N.Y. 10028**
**Filed June 5, 1968, Ser. No. 734,620**
**Int. Cl. A45b** *11/00, 19/00*
**U.S. Cl. 135—20** **4 Claims**

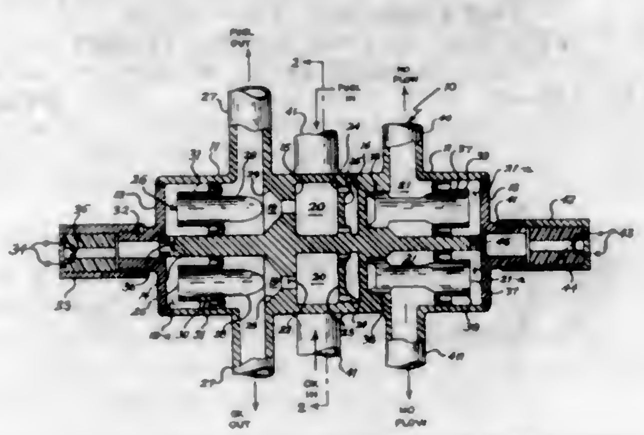


The present invention has specific reference to a collapsible parasol and like shell equipment, which is principally composed of one or more sectional blades or parts which may be moved and adjusted relative to each other in a quasi illimitable or universal manner and simultaneously with respect to a common support. The equipment is so constructed that it may be readily assembled and adjusted or collapsed substantially without the use of any tool or accessory by the operator and may be easily carried or transported from place to place, if desired. The sectional blades are preferably made from a plastic material, or metal or from a substance consisting of a fabric or suitable plastic composition, which, in some instances, carries a pliable metallizing layer or stratum, which is securely stretched across and on a collapsible frame, the parts of which are hingedly connected with each other for facilitating shipping and transporting of the blade frames.

### 9,478,760
### HERMETICALLY SEALED VALVE MEANS

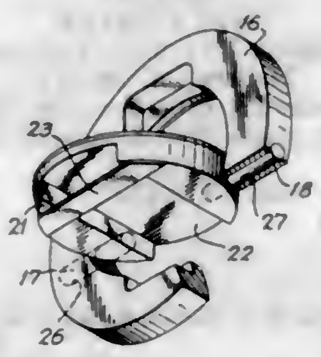
**William S. Hosek, Mount Tabor, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware**
**Filed May 17, 1966, Ser. No. 550,699**
**Int. Cl. F16k** *13/04, 17/14, 17/40*
**U.S. Cl. 137—68** **7 Claims**

A valving apparatus having a single inlet and two outlets, one outlet having a normally open valve which is closed and the other outlet having a normally closed valve which is simultaneously or shortly thereafter opened. The valve actuation is by an explosive device. A parallel noncommunicating flow path is provided in the apparatus which is controlled by identical valves and programming.



### 3,478,761
### FLUID CONTROL DEVICE

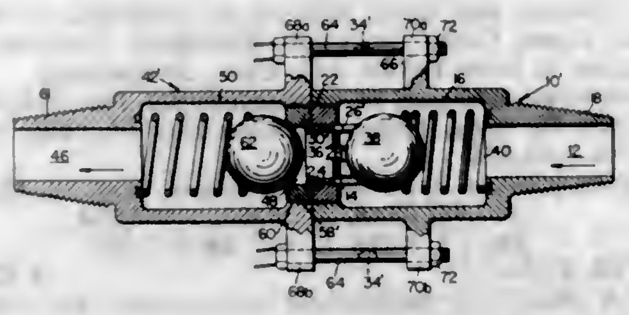
**Zola Fox, Verona, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware**
**Filed Nov. 16, 1966, Ser. No. 594,913**
**Int. Cl. F16k** *17/40*
**U.S. Cl. 137—68** **5 Claims**



A fluid flow control device is presented which normally seals an enclosure such as a pipeline and breaks upon the application of a predetermined pressure about a preformed annular notch. The broken out portion is then held in place but in a position to present a minimum resistance to fluid flow.

### 3,478,762
### COUPLING AND VALVE ASSEMBLY

**Edward E. McCullough, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware**
**Filed Mar. 10, 1967, Ser. No. 622,169**
**Int. Cl. F16l** *29/00, 37/28*
**U.S. Cl. 137—71** **4 Claims**



Two couplings joined by separable means are each provided with a biased poppet that seats against a shoulder in the orifice of the respective coupling when the couplings separate, sealing said orifice. Before coupling disconnection, a positioning member spaces one poppet from its seat and pressure spaces the other poppet from its seat.

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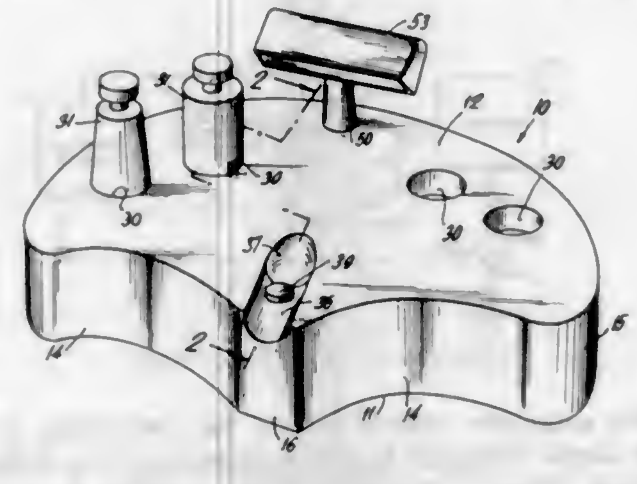
### 3,478,763
### ILLUMINATED MANICURING DEVICE

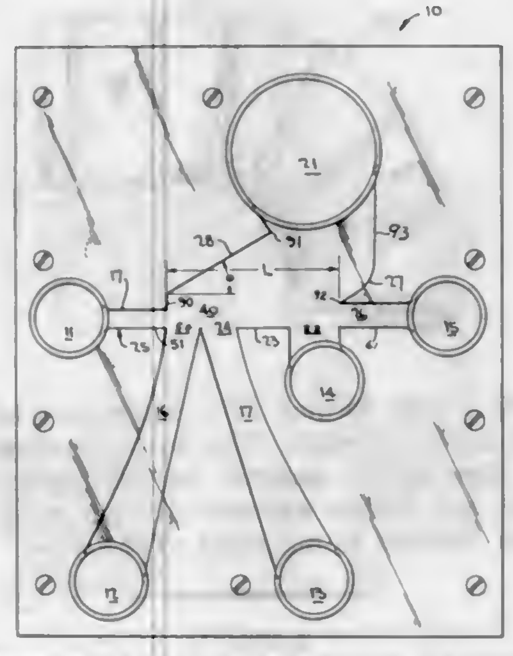
**Miriam Weinstein, 20 Twin Ridges Road,**
**Ossining, N.Y. 10562**
**Filed June 9, 1967, Ser. No. 644,859**
**Int. Cl. A45d** *29/20*
**U.S. Cl. 132—75** **8 Claims**



The device is provided with depressions in which articles used in manicuring fingernails, can be placed. It is provided with a groove for the finger to be manicured and with a lamp, the rays of which are directed towards the groove, to illuminate the finger during manicuring. In the bottom of the groove is a push buttom controlling a switch for the lamp.

### 3,478,764
### LAMINAR FLUID NOR ELEMENT

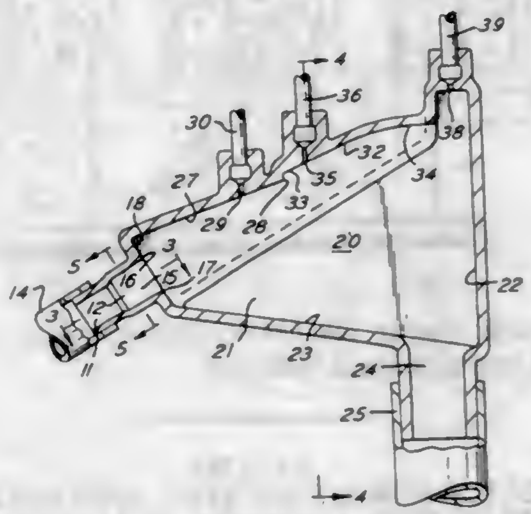
**Roland Pierce Trask II, Mount Rainier, and Silas Katz, Silver Spring, Md., and M. Lucius Walker, Jr., Washington, D.C., assignors to the United States of America as represented by the Secretary of the Army**
**Filed Mar. 20, 1967, Ser. No. 625,563**
**Int. Cl. F15c** *1/14*
**U.S. Cl. 137—81.5** **2 Claims**



This invention provides a fluid NOR element which is designed to operate entirely in the laminar flow regime. A power jet nozzle and a power fluid collector are in alignment with each other. Two signalling means are positioned to direct fluid transversing from the power jet nozzle to the power fluid collector into an atmospheric sink. Because of the geometry of the system it is possible for all flow conditions to be laminar and not rely on a high power fluid jet to accomplish the logic desired.

### 3,478,765
### PILOT VALVE

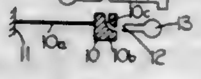
**David B. Kirk, Hilltown Township, Bucks County, Pa., assignor to Moore Products Co., Spring House, Pa., a corporation of Pennsylvania**
**Filed Apr. 18, 1967, Ser. No. 631,779**
**Int. Cl. F15c** *1/14, 3/00*
**U.S. Cl. 137—81.5** **9 Claims**



A liquid flow sensitive pilot valve having no moving parts exposed to the liquid and in which one wall or a plurality of walls in sequence are provided for liquid lock-on dependent on the flow, the walls having control signal ports affected by the flow along the wall in which the port is located.

### 3,478,766
### MEANS FOR PRODUCING PULSATING FLUID FLOW

**Kenneth Percival Palmer, Barford, near Warwick, and Michael Charles Taylor, Sheldon, Birmingham, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England**
**Filed Feb. 1, 1968, Ser. No. 702,460**
**Int. Cl. F15c** *1/14;* **F15b** *21/12*
**U.S. Cl. 137—81.5** **5 Claims**

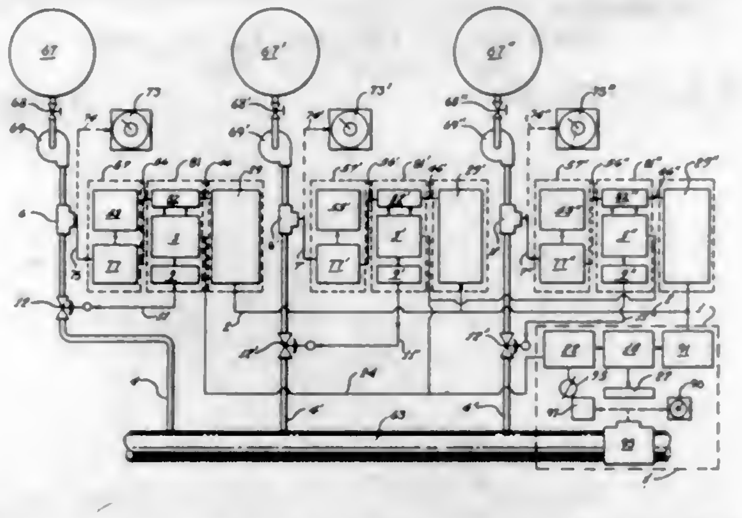


Means for producing pulsating fluid flow in an outlet comprising a fluid pressure driven mechanical oscillator, which has a passage which in one position will transmit fluid from an input to cut a constant supply to the outlet and in another position prevents such transmission so that supply to the outlet is re-established, the passage being shaped to afford, during fluid transmission therethrough, a reaction force to cause oscillation of the device.

### 3,478,767
### GATED OSCILLATOR DIGITAL CONTROLLER

**Dale F. Kister, Thousand Oaks, Calif., assignor to The Foxboro Company, Foxboro, Mass.**
**Filed Jan. 27, 1965, Ser. No. 428,362**
**Int. Cl. G05d** *11/00;* **G05b** *15/00, 19/30*
**U.S. Cl. 137—88** **6 Claims**

Digital signals representing demand rate and volume of flow of a constituent are supplied to a bi-directional accumulator. The output of the accumulator is converted to a control signal, which controls the volume of flow.



When such output reaches a predetermined value, the demand rate signals are inhibited.

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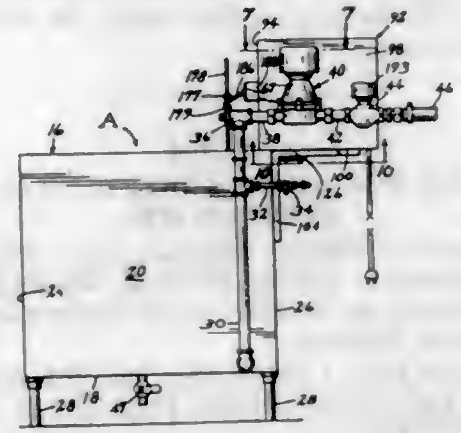
### 3,478,768
### DEVICE FOR MEASURING AND MIXING MEASURED AMOUNTS OF MATERIAL

**Maurice J. Meyer, St. Paul, Minn., assignor to M & M Distributing Company, Incorporated, St. Paul, Minn.**
**Filed Sept. 13, 1965, Ser. No. 486,799**
**Int. Cl. G05d** *11/13*
**U.S. Cl. 137—101.21** **7 Claims**



The disclosure relates to a device for mixing a substance with a liquid in a predetermined ratio including a reservoir, a receptacle for containing a first material, first valving means mounted on the receptacle, a first solenoid for actuating the first valve means, a conduit for supplying a fluid second material to the reservoir, a hydraulic motor interposed in the conduit through which the second material flows and which operates the motor, second valve means positioned in the conduit to control the flow of second material to the motor, a second solenoid for opening the second valve means, a switch for actuating the first solenoid including a disc mounted on a shaft of the motor, said disc having a plurality of annular concentric grooves, each groove being formed with spaced detents in the bottom thereof, a switch arm pivotally connected to the motor and overlying the disc, a contact bar mounted on the motor, a pin carried by the switch arm and extending into one of said grooves adapted to drop into a detent thereof when the disc is rotated and cause the switch arm to contact the contact bar and close the switch to energize the first solenoid and actuate the first valve means, a float in the reservoir, a switch connected to the float for actuation thereby, said switch connected to the second solenoid for deenergizing the same to close the second valve which stops the motor when the mixture of first and second material reaches a predetermined level.

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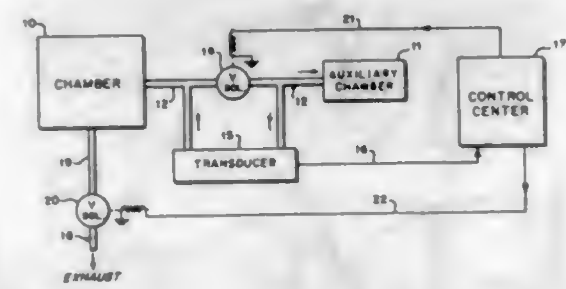
### 3,478,769
### AUTOMATIC CONTROL SYSTEM FOR DECOMPRESSION CHAMBER

**Pierce H. Zavod, King of Prussia, Pa., and John L. Ulrich, Somerdale, N.J., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Nov. 29, 1967, Ser. No. 686,401**
**Int. Cl. B63c** *11/32;* **G05d** *19/02*
**U.S. Cl. 137—118** **8 Claims**



An automatic control system for controlling pressure in a closed container having a plurality of carefully sized exhaust valves automatically operated to decrease the pressure in a predetermined increment when an equalized pressure condition is established between the container and a small chamber connected thereto. An automatically sequenced valve alternately establishes and removes the equalized pressure condition between the container and the chamber.

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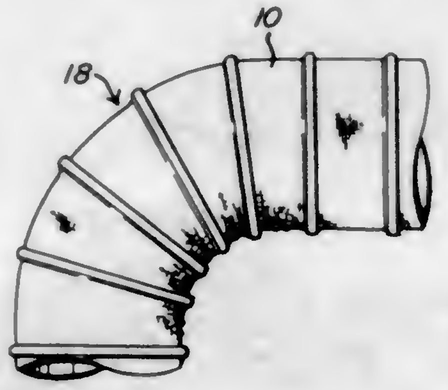
### 3,478,770
### FLEXIBLE TUBING AND METHOD OF MANUFACTURE

**Carroll H. Osborn and Wilson E. Cudd, Waynesville, N.C., assignors to Dayco Corporation, Dayton, Ohio, a corporation of Delaware**
**Filed June 1, 1966, Ser. No. 554,400**
**Int. Cl. F16l** *11/18, 43/00*
**U.S. Cl. 138—135** **8 Claims**



Flexible tubing formed of a continuous helical strip having interlocked edges. The strip is composed of a band of thin flexible material such as plastic, fabric or metal foil, and narrow segments of rigid metal or plastic which are fastened to the edges of the band.

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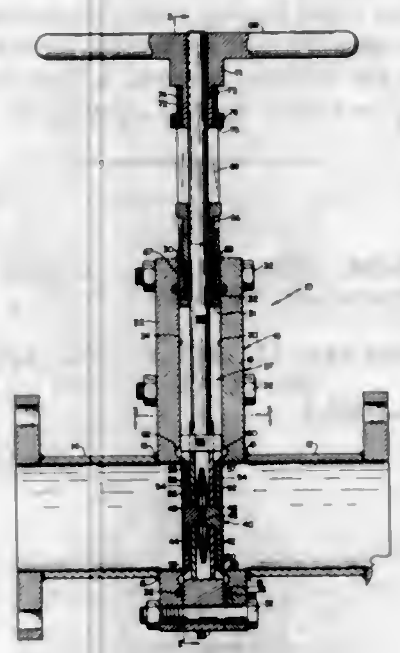
### 3,478,771
### SECTIONAL BODY GATE VALVE WITH SEAT SCRAPING MEANS

**Clarence Johnson, Cleveland, Ohio, assignor to AMCA Pharmaceutical Laboratories Ltd., St. Albert, Alberta, Canada**
**Filed Sept. 15, 1967, Ser. No. 668,060**
**Int. Cl. F16k** *3/16, 25/00*
**U.S. Cl. 137—242** **8 Claims**

A gate valve having a sectional body including a pair of end sections forming opposed seat faces and an intermediate annular section sandwiched between the marginally opposed portions of the seat faces, the abutting faces of the sections being flat and readily accessible and machinable upon disassembly of the body, and a gate composed of a pair of discs spring biased apart to engage the seat faces of the end sections, and formed with bevelled edges forming knife edges to clean the seat faces as the gate moves between open and closed positions.



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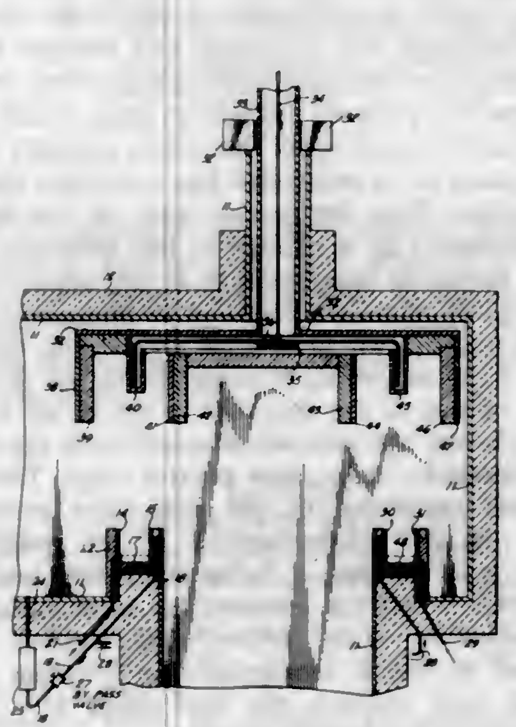
### 3,478,772
### HIGH TEMPERATURE GAS VALVE

**John C. St. Clair, Madison County, Ohio**
**(Box 333, R.R. 2, London, Ohio 43140)**
**Filed Sept. 15, 1967, Ser. No. 668,089**
**Int. Cl. F16k** *25/00*
**U.S. Cl. 137—340** **5 Claims**



An angle valve for stopping the flow of hot gases in which a narrow cooled metal surface is seated against a narrow water covered rubber seat. The rubber seat is in the bottom of a letter U like shaped structure, the walls of the letter U restraining the water over the rubber seat and reducing heat pick up by the water. There are walls on each side of the narrow cooled metal structure that is seated against the rubber seat to reduce heat pick up by the narrow cooled metal surface that rests, when the valve is closed, on the rubber seat. It is like a vertical letter M meshing into a vertical letter U.

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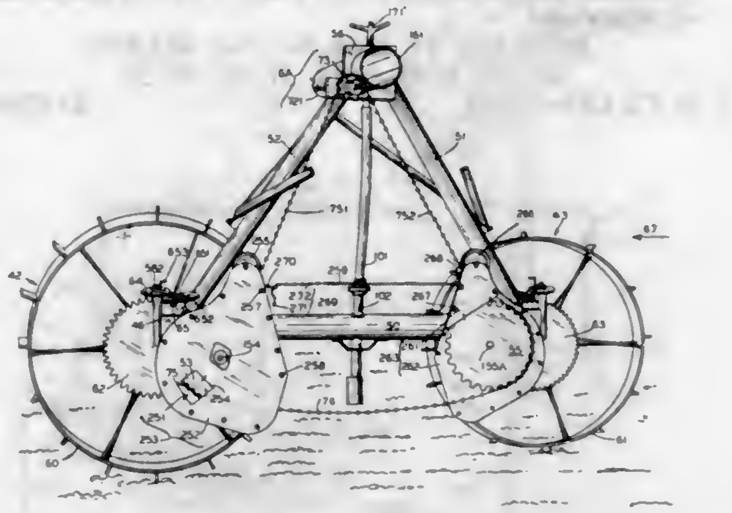
### 3,478,773
### IRRIGATION APPARATUS

**Glover A. Husky, Lubbock, Tex., assignor to Industrial Metalcraft Company, Inc., Lubbock, Tex.**
**Continuation-in-part of application Ser. No. 588,044, Oct. 20, 1966. This application Nov. 21, 1968, Ser. No. 786,528**
**Int. Cl. B05b** *3/18;* **A01g** *25/00*
**U.S. Cl. 137—344** **6 Claims**



A mobile irrigation apparatus for longitudinal and transverse traverse of land comprising a series of like wheeled stations with a continuous length of pipe firmly supported thereon and extending therebetween. Each station is powered with the greatest tractive force on the front wheel thereof during the motion of the station in a direction transverse to the length of the continuous length of pipe, and the wheels of each station are mounted for ready movement thereof to a position for drawing the apparatus parallel to the length of the pipe.

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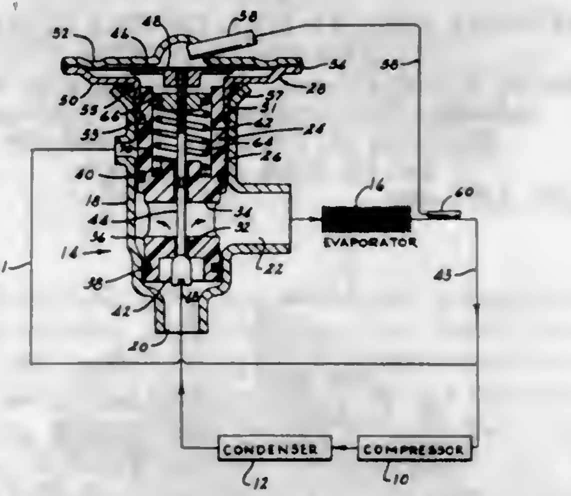
### 3,478,774
### REFRIGERANT EXPANSION VALVE

**Thomas E. Noakes, Detroit, and Leo F. Merchant, Southfield, Mich., assignors to American Standard Inc., New York, N.Y., a corporation of Delaware**
**Filed May 24, 1968, Ser. No. 731,912**
**Int. Cl. G05d** *23/12, 27/00*
**U.S. Cl. 137—454.5** **5 Claims**



This invention proposes a refrigerant expansion valve wherein the valve casing is permanently soldered or otherwise connected into the refrigerant system, as for example directly to the evaporator. The flow control and thermostatic actuator components are formed as a capsule separate from the valve casing, thereby permitting low cost factory fabrication of the system, followed by in-the-field installation of the capsule, as necessary for initial installation or replacement operation.

The removable capsule preferably has screw thread attachment to the valve casing, thereby permitting easy connection or detachment without special tools. Factory superheat calibration is facilitated by a screw driver rotation of the valve element which effects axial movement of a superheat spring seat or nut element.

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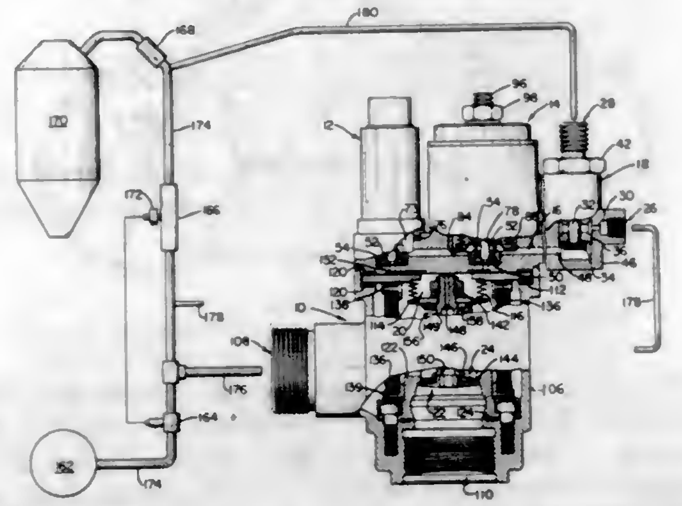
**3,478,775**

### PRESSURE RELIEF VALVE

**Morley V. Friedell, Wheatridge, Colo., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland**
**Filed Aug. 27, 1965, Ser. No. 483,039**
**Int. Cl. F16k** *1/36, 31/06, 31/36*
**U.S. Cl. 137—489.5** **13 Claims**



The pressure relief valve includes a valve poppet and valve seat configured so that at critical pressure, i.e., pressure at which the valve is regulating pressure, sonic flow is confined to the choke flow region at the periphery of the poppet. Also, the configuration provides a pressure affected area for the valve which does not change throughout the operating stroke of the poppet and thereby maintains a constant force on the upstream side of the poppet tending to keep the poppet open. This provides a very stable valve which is capable of operating to provide an accurate narrow band pressure regulation. The pressure relief valve is disclosed in a fluid system which attenuates pressure spikes before they reach the pressure regulating valve.

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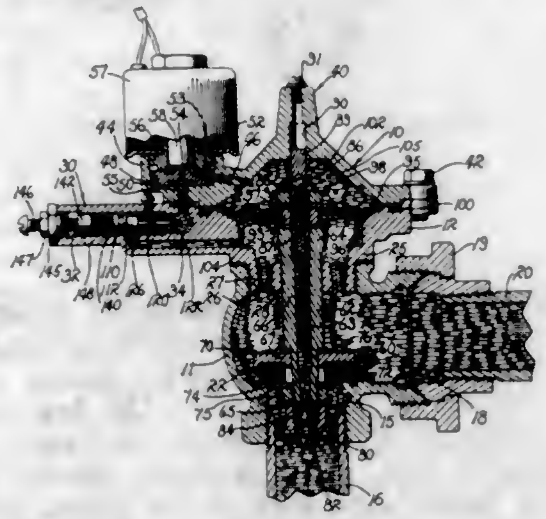
**3,478,776**

### PRESSURE REGULATING DEVICE FOR FLUID DISPENSING SYSTEMS

**John A. Royer, Fresno, Calif., assignor to Buckner Industries, Inc., a corporation of California**
**Filed July 18, 1966, Ser. No. 565,898**
**Int. Cl. F16k** *31/12, 31/36*
**U.S. Cl. 137—491** **2 Claims**



A device including a housing having an inlet port and an outlet port with a passage therebetween. A diaphragm divides the housing into upper and lower chambers and supports a valve for controlling flow through the passage, the valve having a bore interconnecting the inlet port with the upper chamber. A bypass interconnects the upper and lower chambers and disposed in the bypass is a pressure regulating valve having a fluid metering spool pressed by a compressing spring. Adjusting means extended outwardly from the housing serve to adjust the force exerted by the spring to permit limited opening of the spool.

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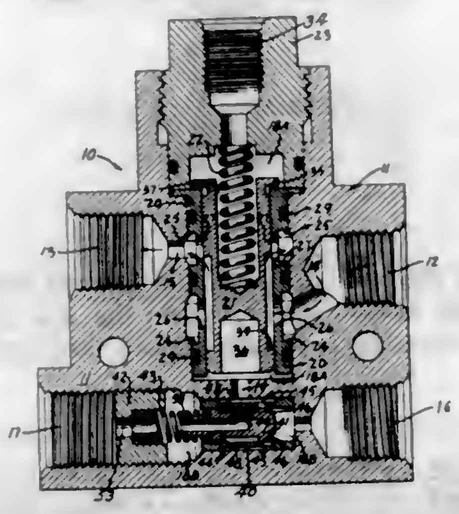
**3,478,777**

### VALVE

**Robert G. Brent, Arlington, Tex., assignor to Bell Aerospace Corporation, Wheatfield, N.Y., a corporation of Delaware**
**Filed May 12, 1967, Ser. No. 637,949**
**Int. Cl. F15b** *21/04*
**U.S. Cl. 137—492.5** **7 Claims**



The embodiment of this invention disclosed in the following specification involves a two stage valve arrangement with internal communication between the two stages. A first stage is a flow control stage in which a spring biased first spool is positioned to affect the size of the restriction through this first stage and thereby affect the pressure drop and flow rate through the first stage. The second stage is a pressure responsive stage which includes a spring biased second spool that when properly balanced by the pressure to be controlled has a position that blocks communication from the second stage to the first stage. When unbalanced by a change in line pressure, the second spool moves in one direction or the other to provide communication between a chamber at one end of the first spool and one of two fluid lines coupled to the second stage. As a consequence, a small charge of fluid either flows into or out of the chamber to move the first spool and thus change the amount of restriction (that is, hydraulic resistance) in the flow control stage. This change in hydraulic resistance in the first stage results in a change in the flow characteristics of the system which brings the pressure that is being controlled back to the control point. When the pressure has been brought back to the desired controlled pressure, the second spool is repositioned to block communication between the two stages and thus stabilize the first spool at a position which maintains the desired pressure.

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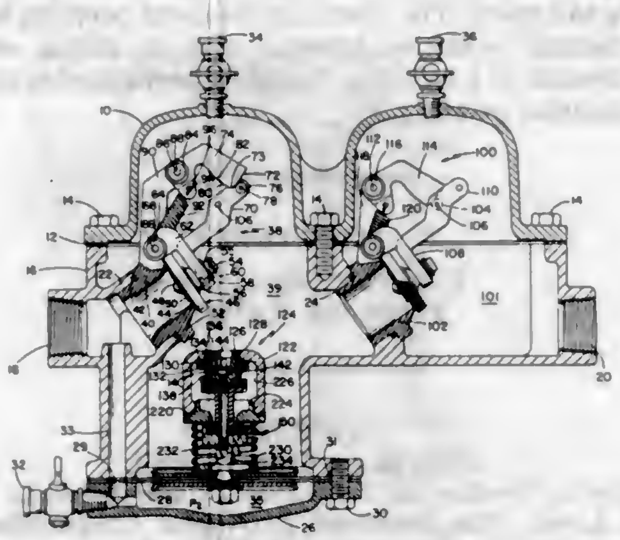
**3,478,778**

### CLAPPER VALVE WITH CHANGING BIAS

**Alan Clarkson Curtiss, Wellesley Hills, and Roger Williams Hood, North Attleboro, Mass., assignors to Hersey-Sparling Meter Company, Dedham, Mass., a corporation of Massachusetts**
**Filed May 25, 1967, Ser. No. 641,337**
**Int. Cl. F16k** *15/00, 17/00, 21/00*
**U.S. Cl. 137—527.4** **15 Claims**

Check valve in which clapper is urged to close by a spring biased pivoted cam having a cam surface with first and second portions oriented so that, after the initial valve opening, the effectiveness with which the force of fluid against the clapper is transmitted through the cam to oppose the spring force is sharply increased. A roller in the pivoted clapper assembly cooperates with the cam surface.



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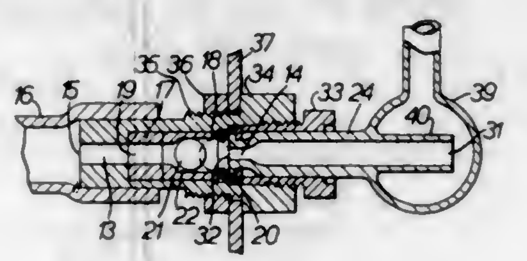
**3,478,779**

### VACUUM GAUGE ASSEMBLY

**Roger Gilmont, Douglaston, and Martin C. Parkinson, Hyde Park, N.Y., assignors to The Virtis Company, Inc., Gardiner, N.Y., a corporation of New York**
**Original application Aug. 19, 1963, Ser. No. 303,061. Divided and this application May 2, 1966, Ser. No. 560,342**
**Int. Cl. F16k** *17/00, 21/04*
**U.S. Cl. 137—615** **3 Claims**



A valve mechanism for use in vacuum gauges and the like having a tubular glass stem received in a conduit. Sealing means seals the glass stem to the conduit while permitting relative rotation of the gauge. A ball member seats against the sealing means to prevent inrush of air into the tubular stem.

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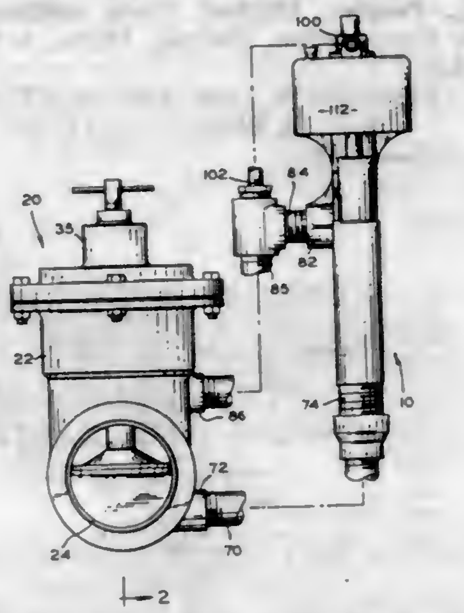
**3,478,780**

### IRRIGATION VALVING

**Lyndle G. Gheen, Eugene, Oreg., assignor to R. H. Pierce Manufacturing Company, Eugene, Oreg., a corporation of Oregon**
**Filed Aug. 7, 1967, Ser. No. 658,851**
**Int. Cl. A01g** *25/00;* **F16k** *11/00*
**U.S. Cl. 137—624.18** **10 Claims**

A stepping valve **10** operable by intermittent cutoffs of water pressure in a water supply opens after a predetermined number of pulses. The stepping valve may be used to directly control water flow of a sprinkler or, for larger sprinkler installations, may be provided with a vent valve **100** cemented to a cap thereof and a valve rod **94** used as a pilot valve to control a large valve **20**. The valve **10** has a semi-soft valve member **80** with a cupped head **136** which acts like a pump leather, and the valve member **80** is stiffened in its central section by a sleeve **150**. The main valve has a hollow valve stem **38** secured to and extending through a rolling diaphragm which normally holds the stem **38** to close off a supply chamber **78**. Normally, when the valve **10** is closed, the vent valve **100** is open and there is no pressure in chamber **88** in the main valve **20** and there is pressure in the chamber **90**. This with spring **32** keeps the valve **20** closed. The stepping valve **10** is stepped by a connection **70** to the supply chamber **78** of the main valve **20**, and is stepped to an actuating condition opening port **82** of the valve **10** and closing the vent valve **100** to connect the chamber **88** in the valve **20** to the supply chamber **78**. This causes the valve **20** to open. Then, on the next cutoff of pressure to the chamber **78** from the supply, the port **82** of the valve **10** is closed and the vent valve **100** thereof is opened. This cuts off pressure to the chamber **88** of the valve **20** and the valve **20** closes.



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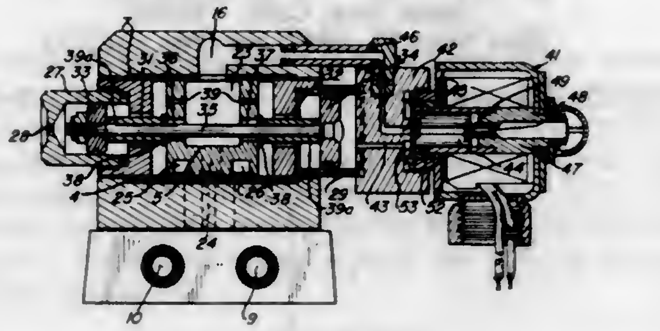
**3,478,781**

### SLIDING BLOCK VALVE AND ACTUATING MECHANISM THEREFOR

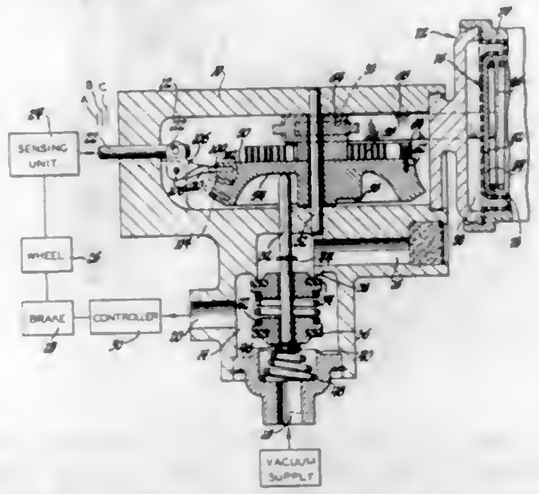
**William I. McLaughlin, Crystal Lake, Ill., assignor to Colorado Manufacturing Corporation, Colorado Springs, Colo.**
**Filed Nov. 16, 1967, Ser. No. 683,653**
**Int. Cl. F16k** *11/06;* **H01j** *1/62*
**U.S. Cl. 137—625.63** **8 Claims**



A sliding block valve is provided with actuating mechanism for moving the sliding block or shuttle back and forth in the chamber in which it is positioned to control the supply of fluid under pressure to, and the exhaust of fluid from, another device, such as a double acting piston. The actuating mechanism comprises a pair of differential cylinders mounted on opposite sides of the valve body with pistons therein connected by a piston rod extending longitudinally through, and being operatively connected to, the shuttle. The inner end of each cylinder is in communication with the shuttle chamber. Fluid under pressure is supplied to the shuttle chamber, and means are provided to equalize the pressure in the chamber at opposite ends of the shuttle. The outer end of the smaller cylinder is continuously vented to the atmosphere. The outer end of the larger cylinder is closed by a pilot valve such as a solenoid valve. The pilot valve is connected to a source of fluid under pressure and may be actuated to connect the outer end of the larger cylinder either to the fluid under pressure or vent it to the atmosphere thereby causing such shuttle to be moved back and forth.

### 3,478,782
### POWERED CONTROL VALVE ASSEMBLY

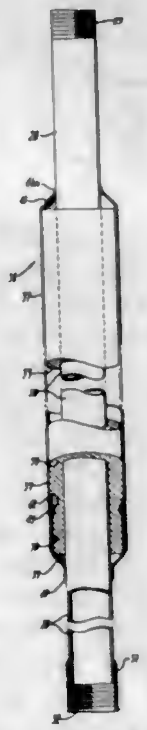
**Denny L. Peeples, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Apr. 1, 1968, Ser. No. 717,656**
**Int. Cl. B60t** *15/10, 13/46*
**U.S. Cl. 137—627.5** **3 Claims**



In order to multiply a short travel, low force signal such as that generated by the sensing unit of a brake anti-lock system, a powered valve assembly is provided to operate a valve arrangement which requires long travel and high forces. A mainspring powered rotatable cam is utilized and the rotatable position of the cam is selected in accordance with the sensing unit output signals and the desired valve positions. A vacuum powered reversing motor is provided to maintain the mainspring with sufficient stored power to operate the cam. The servomotor acts through a windup ratchet mechanism.

### 3,478,783
### THERMALLY INSULATED PIPING SYSTEM

**Robert Redford Doyle, 1600 N. Mabury, Santa Ana, Calif. 92701**
**Filed Mar. 27, 1967, Ser. No. 626,223**
**Int. Cl. F16l** *55/00, 59/16*
**U.S. Cl. 138—103** **9 Claims**



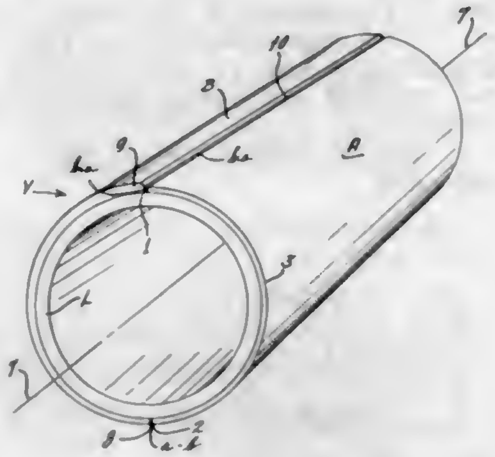
A plurality of sections of thermally insulated pipe connected together by a thermal coupling. Each piping consists of a length of tubing surrounded by a thermal insulating material and telescoping jacket sections. The jacket sections are welded to the tubing and are provided with a longitudinally freely moving O-ring seal to permit the tubing to expand. The thermally insulated coupling bridges the thermal insulation between adjacent piping sections and consists of a jacket surrounding hemicylindrical shells of insulation material.

### ERRATUM

For Class 138—135 see:
Patent No. 3,478,770

### 3,478,784
### MULTI-LAYER VESSEL

**Charles G. Woelfer, St. Louis County, and Albert D. Dohr, St. Louis, Mo., assignors to Nooter Corporation, St. Louis, Mo., a corporation of Missouri**
**Original application Feb. 28, 1966, Ser. No. 530,704, now Patent No. 3,386,162, dated June 4, 1968. Divided and this application Jan. 22, 1968, Ser. No. 699,614**
**Int. Cl. F16l** *9/16, 9/20*
**U.S. Cl. 138—157** **8 Claims**

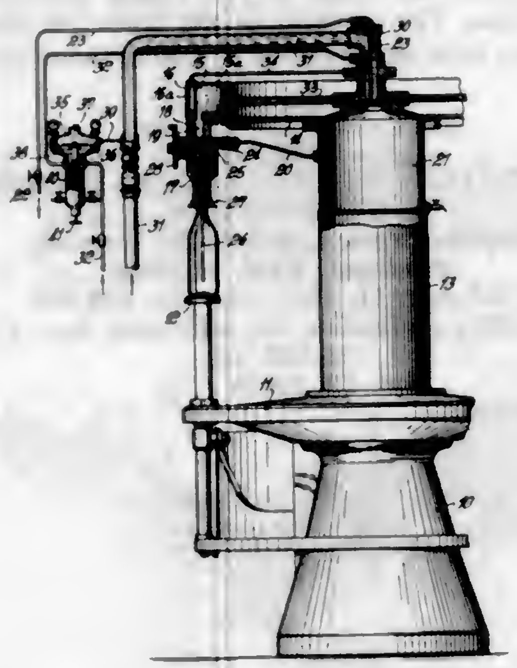


A multi-layer vessel having an inside liner with a truncated segment near said liner so that substantially flat sheets can be applied thereafter in spiral fashion until the vessel has reached the desired wall thickness.

### 3,478,785
### COUNTER PRESSURE FILLING MACHINE WITH A PLURALITY OF CHAMBERS

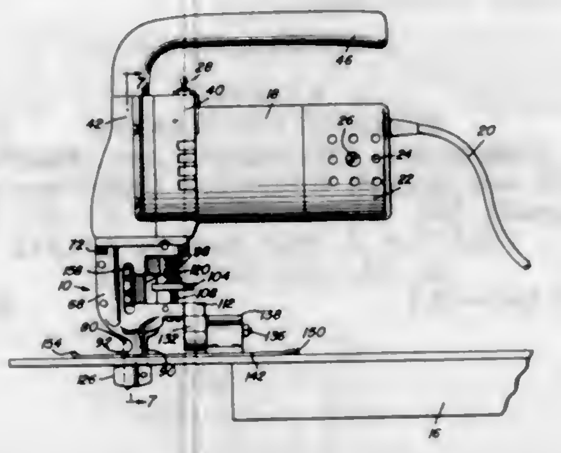
**Rudolf Mallrich and Hermann Kolb, Bad Kreuznach, Germany; said Kolb assignor to Seitz-Werke G.m.b.H., Bad Kreuznach, Germany**
**Filed Apr. 3, 1967, Ser. No. 645,556**
**Claims priority, application Germany, Apr. 1, 1966, S 102,989**
**Int. Cl. B65b** *31/02, 31/04*
**U.S. Cl. 141—39** **6 Claims**

The present invention relates to a counter-pressure filling machine with a preferably annular upper section forming a liquid receiving container, and equipped with a plurality of filling units, said upper section being connected through a central column with a lower section carrying supporting means for the vessels to be filled. The said filling units are connected to separate chambers for respectively receiving liquid, loading gas and a return gas. The arrangement is such that the liquid pressure and the loading pressure are controllable by an adjustable diaphragm valve common to all of said filling units, whereas the return gas pressure for each filling units is individually adjustable by an individual throttle, the throttled return gas from each filling element being conveyed into a chamber communicating with the atmosphere.



### 3,478,786
### ADJUSTABLY CONTROLLED SABER SAW

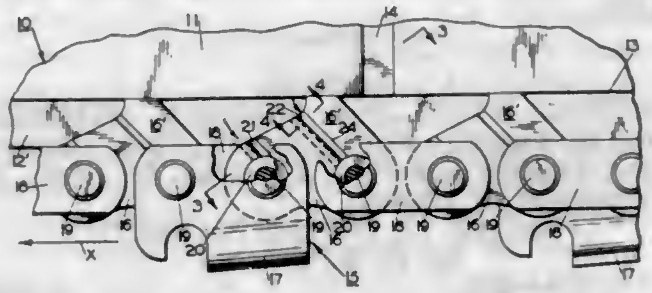
**Otto Hendrickson, P.O. Box 5316, Canyon Crest Station, Riverside, Calif. 92507**
**Filed Feb. 3, 1967, Ser. No. 613,842**
**Int. Cl. B27b** *19/08*
**U.S. Cl. 143—68** **7 Claims**



A saber saw having a lower foot which is adjustable to the thickness of the material being cut so that the saw will not jump out of the cut inasmuch as the foot traveling under the cut through the material will hold the material steady while the saw is moving back up through the cut for another cutting stroke thus keeping the material being cut from bouncing away from the saw when the saw re-enters the cut. The saber saw with the adjustable lower foot also employs a foot which turns with the saw as the saw forms the cut with the foot being rounded to enable it to move in either direction and follow the cut in either direction so that the saw may be backed out of the cut if desired. The structure of the saw also includes a pump arrangement to blow dust away from the saw to enable easier observation of a guide line so that a more accurate cut can be made.

### 3,478,787
### SELF-OILING MEANS FOR SAW CHAIN LINKS

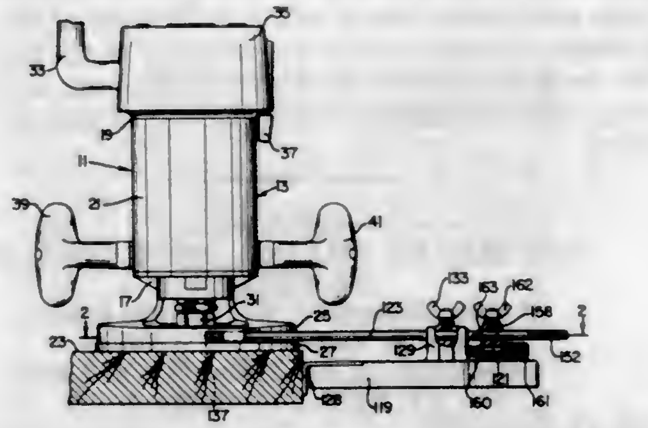
**Jacob P. Miller, Washougal, Wash. 98671**
**Filed Mar. 30, 1967, Ser. No. 627,266**
**Int. Cl. B27b** *33/14, 17/12;* **F16g** *13/07*
**U.S. Cl. 143—135** **2 Claims**



Means through which oil delivered from the bar or blade of a chain saw into the peripheral saw chain channel of the bar will, upon the rapid travel of the saw chain, automatically be caused to pass to the pivot pins in the saw chain links where lubrication need is greatest.

### 3,478,788
### ATTACHING CONSTRUCTION FOR A PORTABLE TOOL EDGE GUIDE

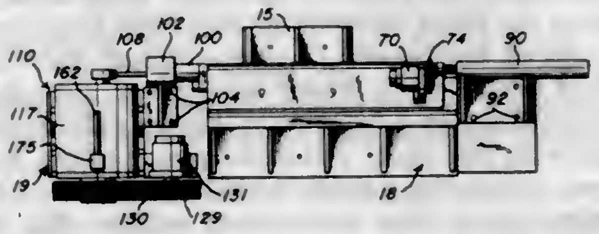
**Hynek J. Zelik, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland**
**Filed May 26, 1967, Ser. No. 641,603**
**Int. Cl. B23c** *1/20;* **B27c** *5/04*
**U.S. Cl. 144—136** **6 Claims**



The device disclosed herein is a portable router which includes an electric motor having a motor shaft coupled to a router bit by a collet. The motor is encased within a composite housing and the latter is supported upon and movable over a workpiece surface by a rigid base. An edge guide is adjustably secured to the base and is adapted to engage a workpiece edge to guide the path of router movement during use.

### 3,478,789
### APPARATUS FOR PRODUCING VENEER

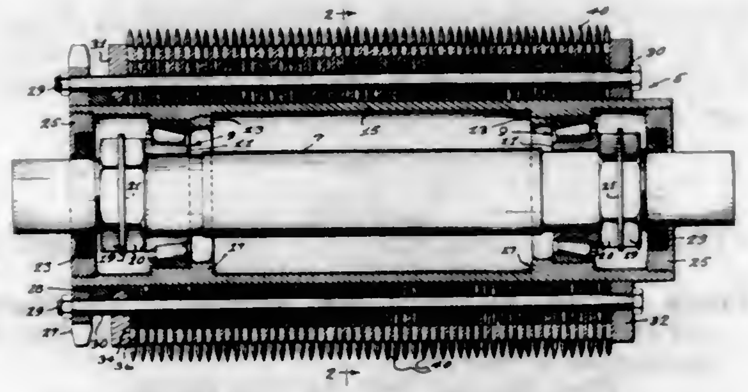
**Albert Palmer and Verne L. Lindberg, Everett, Wash. assignors to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio**
**Filed Nov. 12, 1965, Ser. No. 507,410**
**Int. Cl. B27l** *5/02*
**U.S. Cl. 144—209** **13 Claims**



An elongated knife with serrated teeth each having a longitudinally cutting edge is supported for oscillation betwen laterally adjustable roller bearings. A rod has one end pivotally connected to the knife and the other end eccentrically connected to a spindle which is eccentrically mounted within a driven sleeve, and the spindle is rotatable within the sleeve while the sleeve is rotating for selecting the optimum amplitude of oscillation for the knife.

### 3,478,790
### INCISING DRUM FOR WOODEN MEMBERS

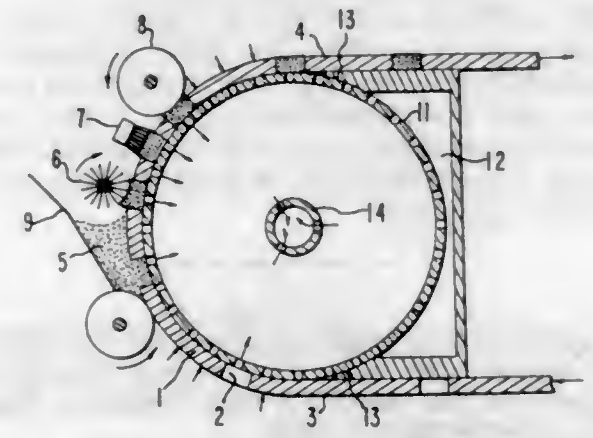
**Verlynn O. Augustin, El Paso County, Colo., assignor to Wood Treating Chemicals Company, St. Louis, Mo., a corporation of Missouri**
**Filed Mar. 13, 1967, Ser. No. 622,797**
**Int. Cl. B27g** *13/08*
**U.S. Cl. 144—233** **3 Claims**



Apparatus for puncturing wooden pieces which are to be treated with preservative having a rotating drum with projecting teeth. The drum is made up of stacked laminations, every other one of which holds some of the teeth in V-shaped notches around the periphery of the lamination. The teeth are secured by the wedging of the tooth in the notch and the sandwiching forces of adjacment laminations.

### 3,478,791
### METHOD OF FILLING OPEN DEFECTS IN VENEER

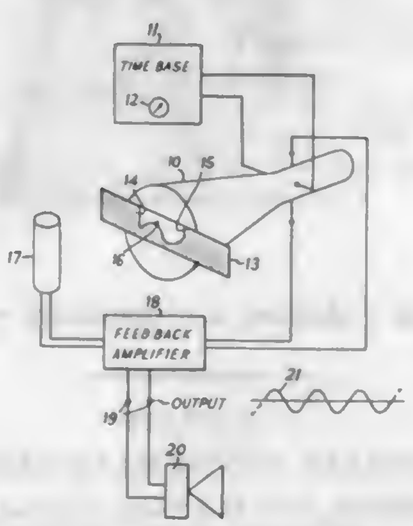
**Armin Elmendorf, 56 Granada Court, Portola Valley, Calif. 94025**
**Filed Aug. 21, 1967, Ser. No. 662,104**
**Int. Cl. B27d** *5/00;* **B05c** *3/132*
**U.S. Cl. 144—310** **10 Claims**



A method of filling open defects in veneer in which veneer strips are stress-relieved and assembled into a continuous band, the width of the band being equal to the length of the strips, moving the band in a direction across the grain of the veneer, forming discrete particles composed of a filler and a binder having tack, assembling the coated particles in a loose mass, bringing the veneer into contact with this mass, withdrawing part of the mass into the open defects by suction, and shearing this part out of the parent mass while maintaining suction. The problem of sliding friction between two foraminous surfaces is eliminated by use of a single foraminous surface in the form of a rotating cylinder, and holding the veneer on the cylinder by suction. The filler portion of the particles can be mineral granules or comminuted ligno-cellulosic particles. Particles are removed from the surface of the veneer between the holes as the veneer emerges from the loose mass. The contents of the holes are then compacted under heat and pressure in a continuous operation.

### 3,478,792
### DIGITALLY CONTROLLED WAVEFORM GENERATORS

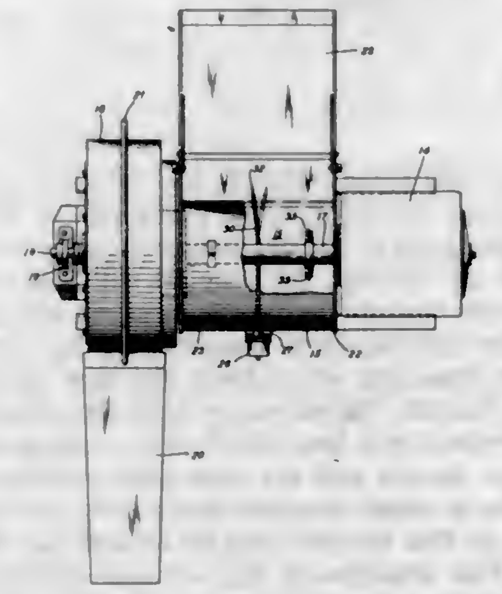
**Daphne Oram, Tower Folly, Fairseat, Wrotham, Kent, England**
**Filed Apr. 11, 1967, Ser. No. 629,998**
**Claims priority, application Great Britain, Apr. 15, 1966, 16,684/66**
**Int. Cl. G05b** *1/01*
**U.S. Cl. 250—202** **5 Claims**



Oscillations are generated by recurrently scanning a graphical representation of a waveform with an electro-optical scanner and the output of the scanner is applied to a transducer. The waveform of the oscillations is determined by the graphical representation and the frequency by the recurrence frequency of scanning. Digital control of frequency is described.

### 3,478,793
### FEEDING MECHANISM

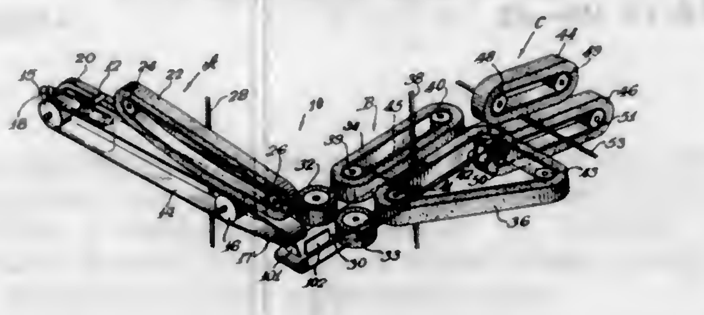
**Walter J. Reinecker, 1231 Martine Ave., Plainfield, N.J. 07060, and David J. Westergard, 1000 Primrose Road, Annapolis, Md. 21403**
**Filed Nov. 3, 1967, Ser. No. 680,512**
**Int. Cl. A01f** *29/00, 17/02*
**U.S. Cl. 146—70.1** **10 Claims**



This invention relates to equipment for dispensing or dispersing material; and more particularly to equipment for controlling the flow rate or feed rate of material into dispensing means such as a blower or the like. The means for controlling the flow rate consists of an independently driven shaft having a bent end portion to tear apart mulch material prior to being dispensed.

### 3,478,794
### BROCCOLI TRIMMER

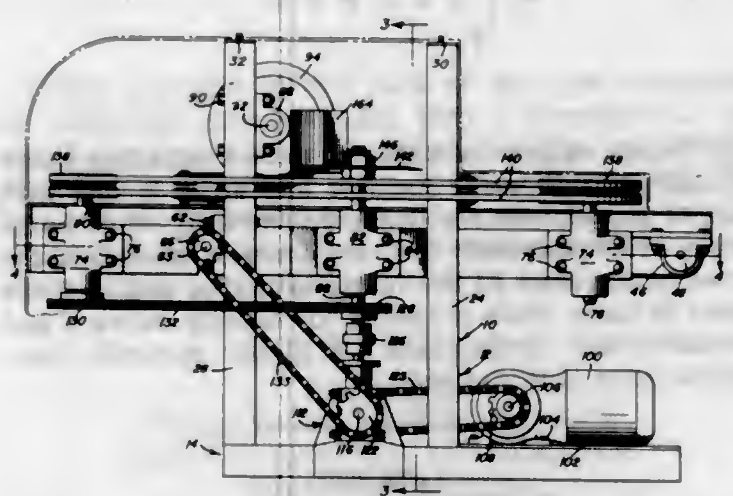
**Cecil W. Alpen, Aptos, Calif., assignor to Green Giant Company, Le Sueur, Minn., a corporation of Minnesota**
**Filed Dec. 13, 1967, Ser. No. 690,115**
**Int. Cl. A23n** *15/04*
**U.S. Cl. 146—78** **11 Claims**



A vegetable cutting machine including three operating stations for cutting elongated vegetables into lengthwise quarters. The vegetable is retained between a pair of cooperating conveyors at a butt cutting station where the end of the vegetable stalk is cut. From the butt cutting station, the vegetable is fed to a vegetable halving station where it is retained between vertically-disposed flights of a pair of cooperating conveyors and the vegetable is cut lengthwise into halves by a cutter operative between the conveyors. The vegetable is then fed to a vegetable quartering station where it is retained by a pair of cooperating conveyors having flights disposed at an angle with respect to a horizontal plane and cut into quarters lengthwise by a cutter operative between the conveyors.

### 3,478,795
### MECHANICAL BROCCOLI CUTTER

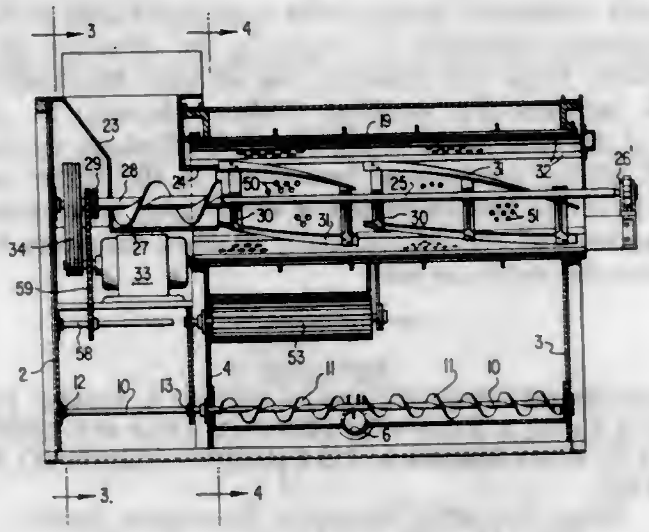
**Herman F. Thornsbery, % T & C Manufacturing Co., P.O. Box 1934, 1601 Mono Drive, Modesto, Calif. 95354**
**Filed Aug. 29, 1968, Ser. No. 756,207**
**Int. Cl. A23p** *1/00;* **B26d** *4/04*
**U.S. Cl. 146—78** **9 Claims**



A generally horizontally disposed conveyor assembly including a horizontal conveyor belt adapted at one end to have broccoli heads placed thereon in head down position and driven at a lineal rate of approximately 100 feet per minute. A plurality of vertically spaced narrow belts are disposed over opposite side portions of the conveyor belt and include corresponding opposing reaches extending along the conveyor belt adapted to embrace the upwardly projecting stalk portions of inverted broccoli heads disposed on the conveyor belt, the mid-portions of the opposing reaches of the narrow belts being yieldably biased toward closely adjacent horizontally aligned positions spaced transversely of the conveyor belt. The narrow belts are driven at a lineal speed approximating the lineal speed of the conveyor belt and a pair of horizontally disposed driven rotary cutter disks are journaled on opposite sides of the conveyor belt and include adjacent peripheral portions disposed in cutting relation with each other spaced approximately five inches above the conveyor belt for cutting the upper ends of the stalks of the broccoli heads from the latter. Also, a vertically disposed driven cutting disk is centered over the conveyor belt and is disposed on the outlet side of the horizontal cutting disks with its lower peripheral portions spaced approximately three above the horizontal conveyor belt for splitting the inverted broccoli heads from above after the base ends of the stalk portions thereof have been removed by the horizontal cutting disks.

### 3,478,796
### JUICE EXTRACTING MACHINE

**Arthur C. Rafanelli, 452 Healdsburg Ave., P.O. Box 848, Healdsburg, Calif. 95448**
**Filed Dec. 7, 1966, Ser. No. 599,901**
**Int. Cl. A01f** *35/22;* **A47j** *19/02*
**U.S. Cl. 146—174** **6 Claims**

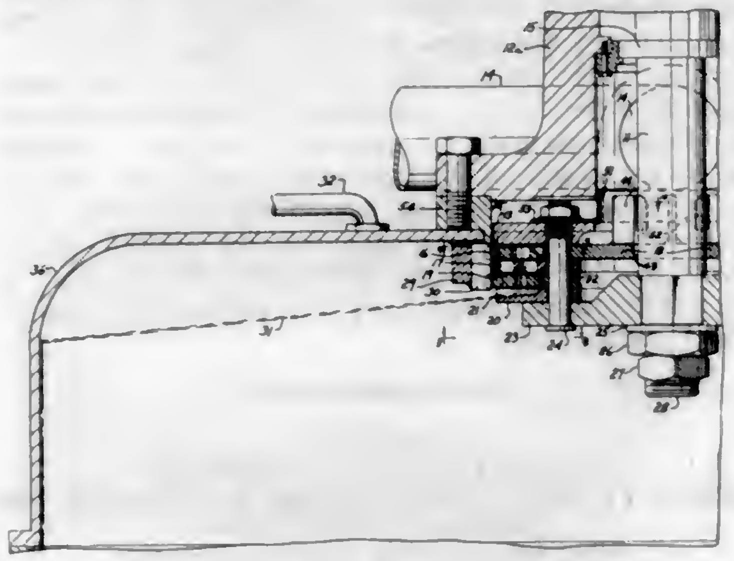


A machine having a rotary drum within which grapes are stemmed and crushed and from which juice and pulp drains through openings in the drum wall into a collection pan beneath the drum. The drum has a primary stemming crushing section and a secondary or final cleaning section. The openings in the primary section are larger than those in the final cleaning section. An additional trough immediately beneath the primary cleaning section mounts in its bottom a pair of squeeze rolls which crush pulp and grapes passed through the large openings of the primary stemming and crushing section and deliver to the main collection pan thereunder.

### 3,478,797
### PREPARING SAUSAGE BATTER FOR COOKING AND COOLING

**Alvin W. Hughes, 4 N. 194 Church Road, Bensenville, Ill. 60106**
**Continuation-in-part of application Ser. No. 401,157, Oct. 2, 1964. This application June 15, 1966, Ser. No. 557,801**
**Int. Cl. A01f** *7/02;* **A23k** *3/02*
**U.S. Cl. 146—192** **17 Claims**

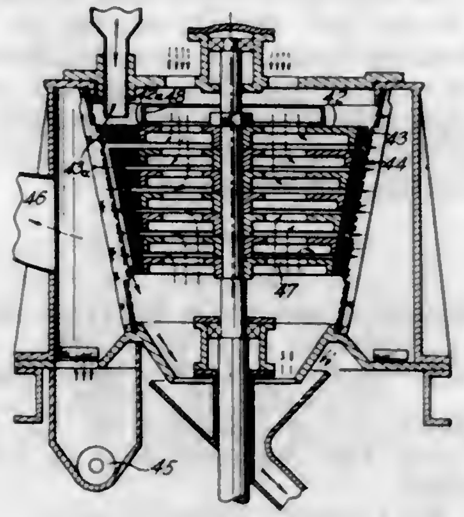
An emulsifier for sausage batter and the like is located in an upper portion of a large vacuum housing but is more efficiently arranged to reduce mechanical heat input into batter by avoiding heat input from direct impact upon a stack or housing wall located close to a discharge ring before the vacuum has had a chance to expand the tiny air particles enough for their release. It has been discovered that the output from a discharge ring of said emulsifier when located in an upper portion of a large vacuum housing possesses enough energy both centrifugal and suction to throw batter particles through the vacuumized environment far enough to increase the thermal conductivity enough and reduce the hazard of the batter "oiling out" during cooking, with the batter density increased to over 1, a previously considered safe level. By the simple expedient of reversing the direction of the rotatable rings, the effective life of said emulsifier has been substantially doubled without having to grind any of the effective shearing edges. Incidentally the better study of the mechanical heat input to the batter under this invention has succeeded in eliminating more than 10 horsepower of energy previously thought necessary to be put into the batter, as heat.



**3,478,798**

### METHOD OF PROCESSING CEREALS, MORE PARTICULARLY FOR WHITENING AND POLISHING RICE, AND APPARATUS FOR PERFORMING THE SAME

**Pierre Carvallo, Amposta, Tarragone, Spain**
**Filed Nov. 16, 1966, Ser. No. 594,881**
**Claims priority, application Spain, Dec. 3, 1965, 320,332, Apr. 28, 1966, 326,102**
**Int. Cl. B02b** *3/12;* **B02c** *9/04*
**U.S. Cl. 146—264** **11 Claims**

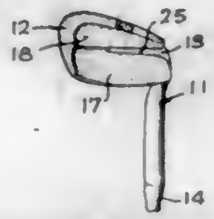


A method and apparatus for processing rice and like cereals, for whitening and polishing same by abrasion with simultaneous action of an air stream, wherein the rice is subjected to the action of an abrasive body the grain size of which will pass through a No. 18 sieve while simultaneously submitting said rice grains and said abrasive body, on the entirety of its active surface, to an air stream the flow of which has an intensity sufficient for eliminating all flour resulting from the abrasion by said surface.

**3,478,799**

### GOLF CLUB IRON COVER

**Dolph G. Hoyt, Jr., 162 Ashdale Ave., Los Angeles, Calif. 90049**
**Filed June 13, 1967, Ser. No. 645,667**
**Int. Cl. B65d** *65/04;* **A63b** *57/00*
**U.S. Cl. 150—52** **4 Claims**

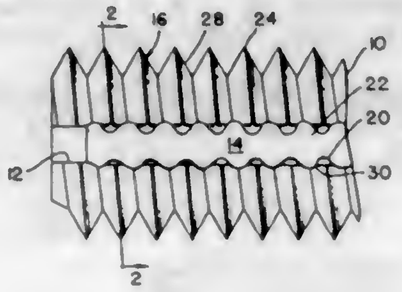


The application discloses a one-piece plastic slipover cover for the head of a golf club iron.

**3,478,800**

### THREADED FASTENER WITH FRICTION LOCK INSERT

**Richard B. Wallace, Bloomfield Hills, Mich., assignor to The Oakland Corporation, Troy, Mich., a corporation of Michigan**
**Filed Mar. 4, 1968, Ser. No. 710,179**
**Int. Cl. F16b** *39/24;* **B23g** *9/00*
**U.S. Cl. 151—7** **6 Claims**



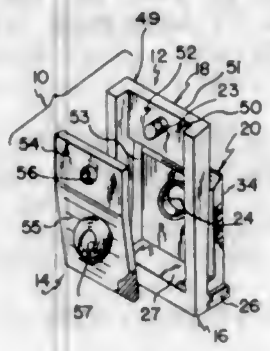
A friction strip is inserted in a recess extending longitudinally of a threaded member and areas in line with pairs of thread ends are depressed inwardly while barbs are sheared downwardly from the crests of the ends of the thread at the sides of the recess to overlie and lock the inserts in place while providing for radially outward and circumferential displacement of plastic material intermediate pairs of thread ends.

**3,478,801**

### FASTENING DEVICE

**Clarence R. Van Niel, North Olmsted, Ohio, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Feb. 27, 1968, Ser. No. 708,650**
**Int. Cl. F16b** *39/00*
**U.S. Cl. 151—41.75** **14 Claims**

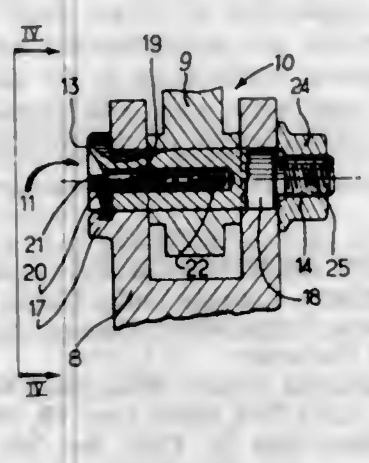
A fastening assembly device including a polymeric support-like fastener member having a pair of resilient legs for receiving therebetween an apertured support panel. One of the legs having a window-like opening and attachment device for attachably supporting a resilient metallic insert-like retainer member in pivotal cantilevered bridging relation in the window-like opening for clamping engagement with the support panel. The retainer member includes a thread-engaging aperture for receiving a threaded element for securement of the fastener member via the retainer member to the support panel.



**3,478,802**

### SAFETY DEVICE FOR AN UNLOSABLE SHAFT

**Jacques Poccard, La Varenne, France, assignor to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France**
**Filed May 16, 1968, Ser. No. 729,786**
**Claims priority, application France, May 17, 1967, 106,716**
**Int. Cl. F16b** *39/00, 43/00*
**U.S. Cl. 151—41.75** **1 Claim**



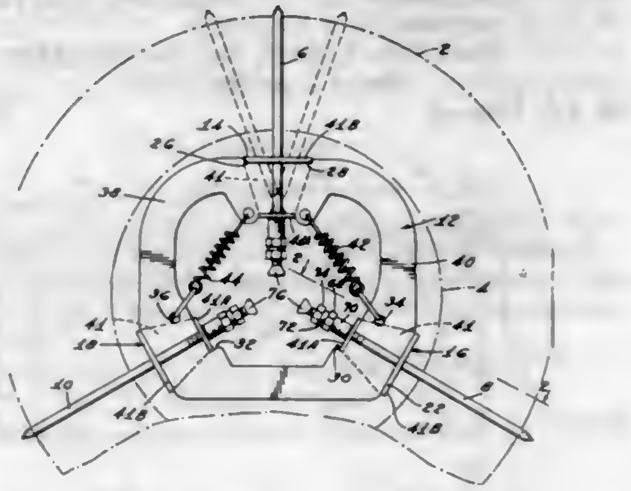
Safety assembly in two parts of the type comprising an unlosable shaft provided with a conventional immobilizing device, the said safety assembly comprising a pawl with a side finger elastically held by a spring and by a pin, the said pawl being axially disposed in a housing made concentrically to said shaft and in a groove made radially in the flattened head of the shaft.

**3,478,803**

### VEHICLE TRACTION DEVICE

**Robert T. Sand, 5220 McClellan Ave., Detroit, Mich. 48213**
**Filed July 21, 1967, Ser. No. 655,049**
**Int. Cl. B60c** *27/04*
**U.S. Cl. 152—225** **14 Claims**

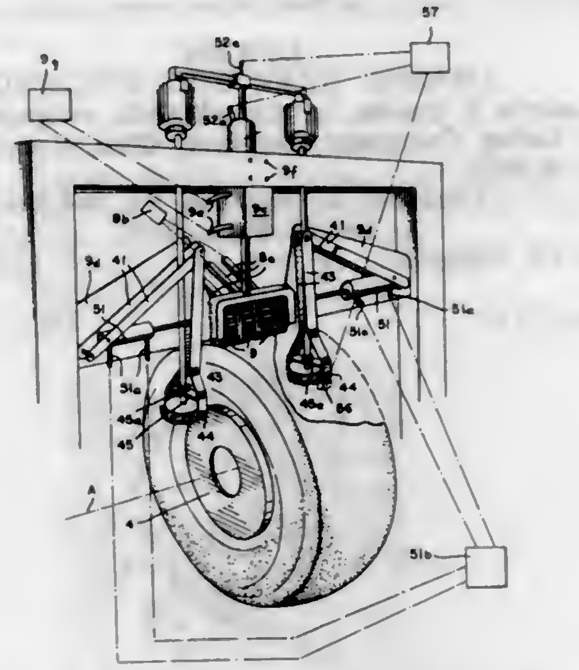
A traction device for temporary attachment to a resilient tire on a vehicle wheel having a body portion with circumferentially spaced locating areas for stabilizing radially extending traction elements moved from storage to an operating position, the traction elements being mounted for limited motion about an axis outside the wheel center to utilize the tire to create a resilient restraining action on the elements when circumferential force is applied.



**3,478,804**

### MACHINE WITH ROTATING TOOLS FOR PREPARING WORN-OFF PNEUMATIC TIRES TO BE RENEWED CIRCUMFERENTIALLY

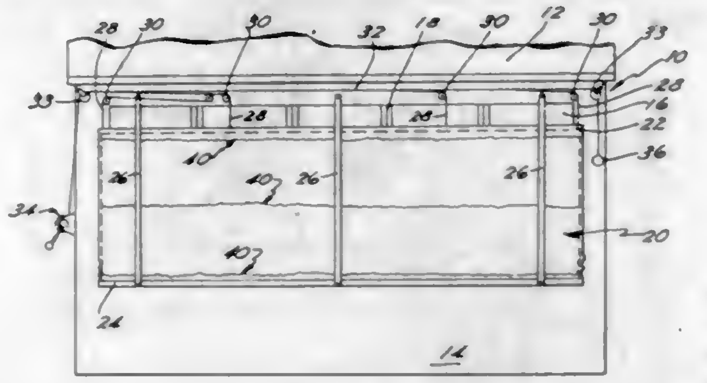
**Otto Meixner, Westpreussenring 108A, Lubeck, Germany**
**Filed Sept. 23, 1966, Ser. No. 581,527**
**Claims priority, application Germany, Sept. 30, 1965, C 37,013**
**Int. Cl. B29h** *21/01*
**U.S. Cl. 157—13** **7 Claims**



A machine for preparing work tires for circumferential renewal having two rotating tools (e.g. brushes) which are engageable with the sidewalls of the tire and a drive roll engageable with the tread of the tire to rotate it. This drive roll is coupled with the tools so that as it descends onto the tire the tools descend next to the tire sidewalls. Each of the tools has a cylinder and is mounted on an articulated arm so that actuation of the respective cylinder moves it against the tire. A further cylinder is provided to reciprocate the tools together up and down radially with respect to the tire-rotation axis automatically.

### 3,478,805
## ANIMAL HOUSE CURTAIN AND METHOD OF PREPARING SAME

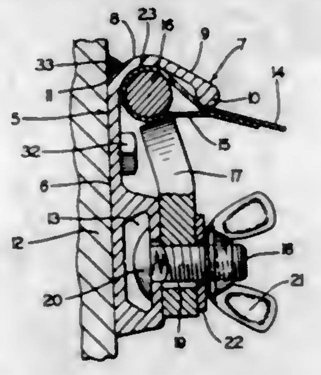
**Richard A. Haggard, Nocogdoches, Tex., assignor, by mesne assignments, to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware**
**Filed Feb. 1, 1968, Ser. No. 702,350**
**Int. Cl. A47h** *23/08*
U.S. Cl. 160—5 **11 Claims**



A curtain of the type which is mounted over the sidewall openings in animal and poultry houses and which may be raised and lowered to control the amount of outside air passing into such house, wherein the curtain is made of a sheet material subject to shrinkage upon exposure to sunlight and the elements and is initially made larger than the sidewall opening it is to cover and then gathered by stitching enough to make it fit its intended opening when initially installed. The stitching is done with a thread material which breaks down under the influence of sunlight and the elements, such that as time passes and the curtain shrinks, the gathering stitches break down and release the gathered portion of the curtain; thus, when the shrinkage of the curtain is complete, the gathering will have been completely released, and the curtain will then continue to fit the opening for which it was intended and over which it is mounted.

### 3,478,806
## AWNING HEAD ROD MOLDING

**Andrew J. Darula, Lakewood, Ohio, assignor to The Astrup Company, Cleveland, Ohio, a corporation of Ohio**
**Filed Oct. 2, 1968, Ser. No. 764,466**
**Int. Cl. E04f** *10/02*
U.S. Cl. 160—45 **6 Claims**



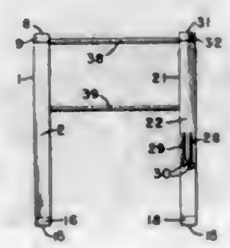
A molding for mounting the head rod of a stationary or patio awning. The molding may be an extrusion of aluminum or the like having a flat rear surface, an overhanging rainproof lip at its upper end and a guideway or track on its front side below said lip.

Finger clips are adjustably mounted upon said track or guideway by means of carriage bolts having thumb nuts thereon and are adapted to be tightened to hold the head of the awning under the overhanging lip.

The rafters of the awning are pivotally attached to jaw ends provided with carriage bolts riding laterally in the same track or guideway on which the finger clips are mounted.

### 3,478,807
## STANCHION SUPPORT APPARATUS FOR A PAIR OF CURTAIN TRAVERSE RODS WITH DRAW CORDS

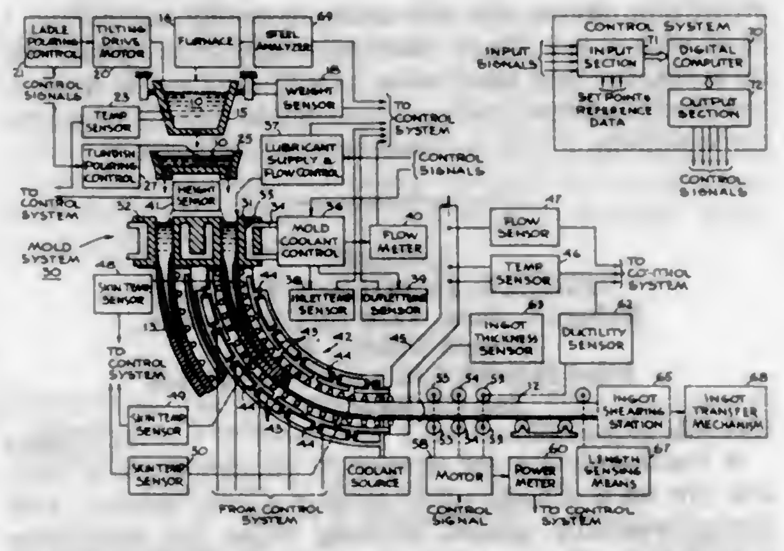
**Samuel Hertzberg, New York, N.Y.**
**(740 Grand Concourse, Bronx, N.Y. 10451)**
**Filed May 22, 1967, Ser. No. 640,220**
**Int. Cl. A47h** *5/00, 1/60*
U.S. Cl. 160—344 **5 Claims**



A hollow stanchion support for positioning and securing on one side a pair of curtain traverse rods with draw cords horizontally one below the other. One end of each traverse rod penetrates into the stanchion interior through a rod opening in the stanchion wall, permitting the draw cords to be suspended in the stanchion interior. An alignment opening permits adjustments in the stanchion interior. In a stanchion of multi-sided longitudinal configuration, the alignment opening consists of one side missing, the sides adjacent the missing side having wing extensions providing the means of attachment to a complementary wall surface. There are draw cord opening means in the stanchion to provide manipulating access to the draw cords consisting either of draw cord opening holes or of longitudinal slit draw cord openings. The latter form includes a tongue at the lower extremity of the stanchion to which are attached pulleys on which the draw cords are held taut and knob means (for manipulating the draw cords) mounted to the longitudinal slit draw cord openings and attached through them to the draw cords. Stanchion material displaced in the formation of the longitudinal slit draw cord openings is bent inward to provide slit tracks for the knob means. Caps of a configuration conforming to the stanchion extremities seal the stanchion ends and permit minor adjustments in the visible length of the stanchion apparatus.

### 3,478,808
## METHOD OF CONTINUOUSLY CASTING STEEL

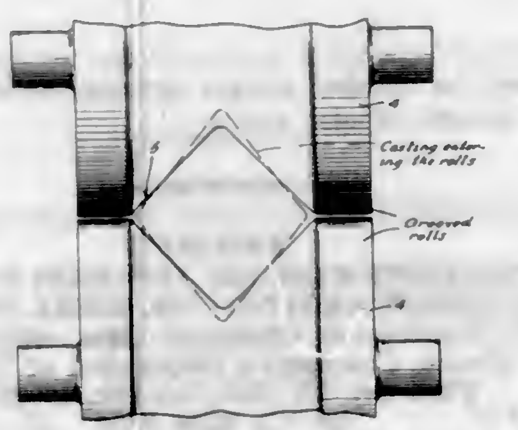
**Robert V. Adams, Canoga Park, Calif., assignor to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware**
**Original application Oct. 8, 1964, Ser. No. 402,440, now Patent No. 3,358,743, dated Dec. 19, 1967. Divided and this application July 21, 1967, Ser. No. 677,809**
**Int. Cl. B22d** *11/14*
U.S. Cl. 164—4 **17 Claims**



Methods for continuous casting, such as the continuous casting of steel, adjust operating setpoints by sensing particular variables computing indirect variables, and adjusting stored operating setpoints referenced to average or typical conditions so as to tend to maintain the indirect variables within selected limits.

### 3,478,809
## PROCESS OF PRODUCING CONTINUOUS CASTINGS OF SQUARE OR CIRCULAR CROSS-SECTION

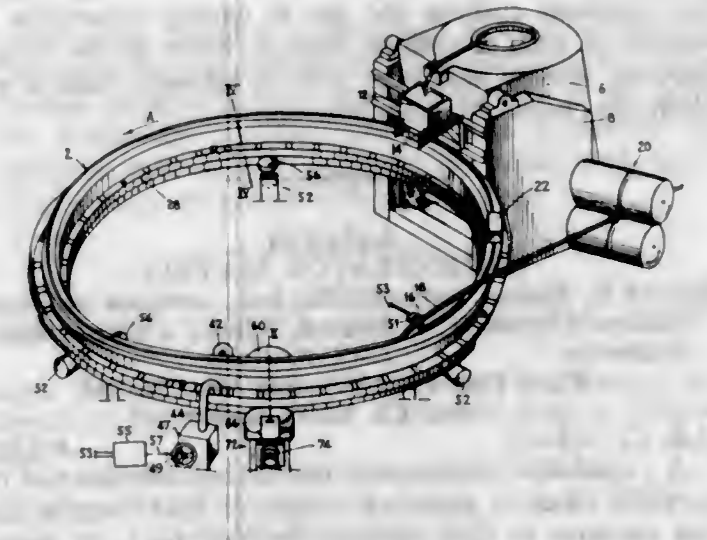
**Bruno Tarmann, Kapfenberg, Albert Bohlergasse 7, and Otmar Kleinhagauer, Kapfenberg, Albert Bohlergasse 12, both of Styria, Austria**
**Filed June 7, 1965, Ser. No. 462,042**
**Claims priority, application Austria, July 3, 1964, A 5,716/64**
**Int. Cl. B22d** *11/12, 11/02*
U.S. Cl. 164—82 **12 Claims**



This disclosure relates to a method of obtaining square or circular cross-sectioned continuous castings by firstly utilizing a mold having a diamond or oval cross-sectional shape, then hot-forming the resultant casting into a respectively square or circular cross-sectional shape by commensurately shaped rolls.

### 3,478,810
## CONTINUOUS COPPER WIRE-MAKING PROCESS

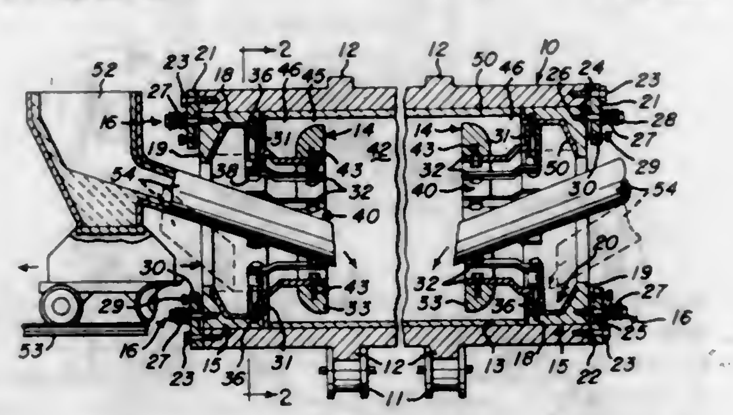
**Jean Carton, Paris, France, assignor to Compagnie Francaise Thomson-Houston, Paris, France, a corporation of France**
**Original application May 27, 1965, Ser. No. 459,202, now Patent No. 3,364,979, dated Jan. 23, 1968. Divided and this application Nov. 20, 1967, Ser. No. 684,105**
**Claims priority, application France, June 9, 1964, 977,539**
**Int. Cl. B22d** *11/06, 15/04*
U.S. Cl. 164—87 **4 Claims**



Molten copper from ladle **6** is continuously poured into a casting groove formed in upper surface of centerless revolving annular ingot mold **2** and solidified cast rod is extracted from groove at extractor **16** and continuously passed through hot rolling mill **20** to form a wire rod. The temperature of the process is precisely regulated by servos **51, 53, 55, 57, 47, 44,** through control of depth of cooling water in annular trough surmounting revolving annular support **28** on which the ingot mold **2** rests by way of a long slender cooling fin depending from massive head of ingot mold and immersed in said cooling water. FIGURE 1.

### 3,478,811
## METHOD AND APPARATUS FOR CASTING AN INTERNALLY FLANGED TUBULAR MEMBER

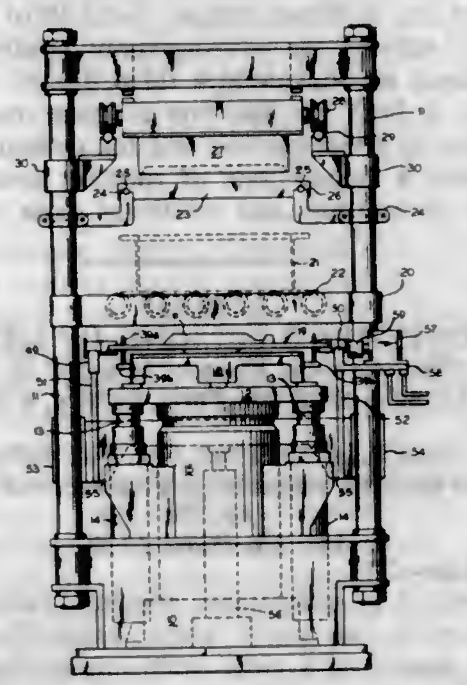
**Willard C. Notbohm, Watertown, N.Y., assignor to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio**
**Filed Aug. 18, 1967, Ser. No. 661,584**
**Int. Cl. B22d** *13/04, 13/10*
U.S. Cl. 164—94 **9 Claims**



Method and apparatus for centrifugally casting a tubular member having internal flanges by utilizing a core case having baffles which separate the interior into central and flange-forming chambers connected by an annular passage at the periphery of the baffle. A first pour of metal is made into the core case and allowed to solidify at least partially to block the passages, and then a second pour of the molten metal is made into the flange-forming chambers to create integral internal flanges when the metal solidifies.

### 3,478,812
## MOLDING MACHINES

**Thomas A. Church, Downers Grove, and George D. Davis, Brookfield, Ill., assignors to International Molding Machine Co., a corporation of Illinois**
**Filed Feb. 9, 1967, Ser. No. 614,860**
**Int. Cl. B22c** *17/08, 15/02*
U.S. Cl. 164—183 **11 Claims**



The foundry machine disclosed herein includes improved and novel facilities for adapting, supporting and inverting a match plate while enabling convenient insertion of and removal of the match plate from the machine as well as novel and improved facilities for elevating, squeezing, and impacting the sand mold formed by the machine.

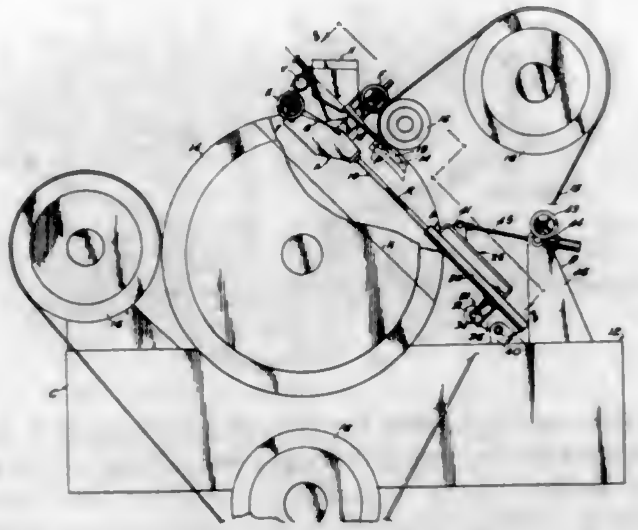
### 3,478,813
## VESSEL POSITIONING MEANS FOR CONTINUOUS CASTING MACHINES

**Daniel B. Cofer and George C. Ward, Carrollton, Ga., and Thomas L. Bray, Birmingham, Ala., assignors to Southwire Company, Carrollton, Ga., a corporation of Georgia**

**Filed June 5, 1967, Ser. No. 643,666**

**Int. Cl. B22d** *11/06*

**U.S. Cl. 164—278** **7 Claims**



What is disclosed herein is an apparatus for positioning the pouring spout extending from a vessel relative to a mold defined by a groove in a casting wheel and by a band which closes the groove. The vessel positioning apparatus is disclosed as including a first linear motion means for moving the pouring spout along a first line of linear motion substantially parallel to a chord of the circle defined by the peripheral surface of the casting wheel, a rotational motion means for simultaneously rotating the first line of linear motion and the pouring spout about a first axis of rotation, a second linear motion means for moving the pouring spout relative to the first line of linear motion along a second line of linear motion transverse to the first line of linear motion, and a third linear motion means for moving the pouring spout relative to the first line of linear motion along a third line of linear motion transverse to both the first line of linear motion and the second line of linear motion and for rotating the pouring spout about a second axis of rotation spaced from the first axis of rotation and relatively close to the vessel.

### 3,478,814
## CONTINUOUS POURING OF METALS

**Michel Laffin, Annecy, France, assignor to Societe Anonyme: Ugine Kuhlmann, Paris, France, a corporation of France**

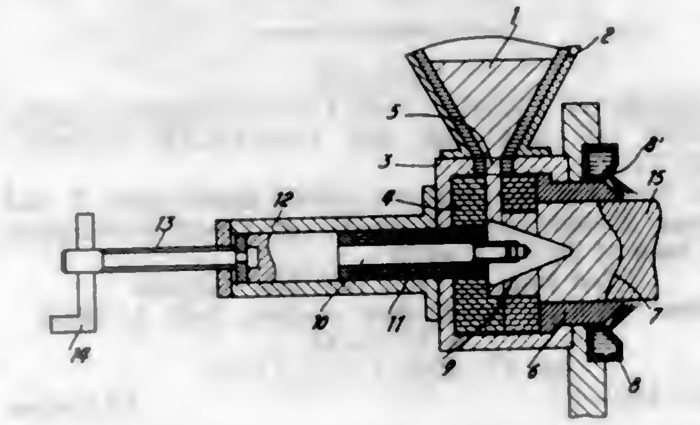
**Filed June 22, 1967, Ser. No. 648,097**

**Claims priority, application France, June 24, 1966, 66,750**

**Int. Cl. B22d** *15/02*

**U.S. Cl. 164—281** **2 Claims**

The method of continuous pouring, particularly horizontal pouring, of metal pipes, especially thin-walled pipes, by means of a chill mold comprising a mandrel at the molten metal inlet, is characterized by the fact that the mandrel is moved along the pouring axis from upstream and within the poured metal so as progressively to attain the desired value of the inner section of the poured article, the intersection of the front surface of solidification and the mandrel surface defining the inner section of the poured tubular article.



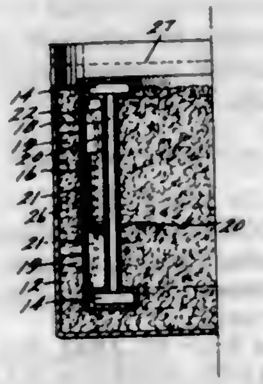
### 3,478,815
## INVESTMENT CASTING APPARATUS WITH A CUSHION AROUND THE SHELL MOLD

**Peter L. Worthington, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York**

**Filed Oct. 27, 1966, Ser. No. 589,972**

**Int. Cl. B22c** *9/00*

**U.S. Cl. 164—361** **6 Claims**



Thin walled investment cast articles, subject to compressive loads during casting, are made from an improved investment casting ceramic shell mold including a surrounding protective compressive load-absorbing temperature resistant cushion for use in casting apparatus. Examples of such a cushion include fibers in the form of padding, loosely held fiber such as asbestos, flexible glass cloth, etc., alone or in combinations.

### 3,478,816
## REGENERATOR MATRIX

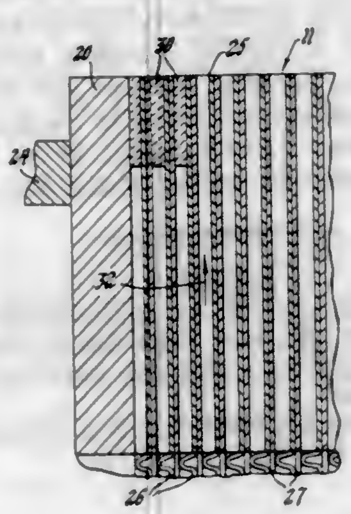
**Harold E. Helms, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Feb. 19, 1968, Ser. No. 706,504**

**Int. Cl. F28f** *19/04*

**U.S. Cl. 165—9** **6 Claims**

A radial-flow regenerator matrix has two coaxial rims between which is mounted a body of heat transfer material pervious to flow radially through the body between the rims. The heat transfer material is defined by flat and corrugated plates which provide separate passages generally parallel to the inner surfaces of the rims. These passages are blocked adjacent the rim to provide a dead air zone and so that the layers of heat transfer material nearest the rim act as a heat block between the hot portions of the matrix and the rim to minimize temperature gradients in the rim.



### 3,478,817
## ENVIRONMENTAL SPACE CONDITIONING CHAMBER

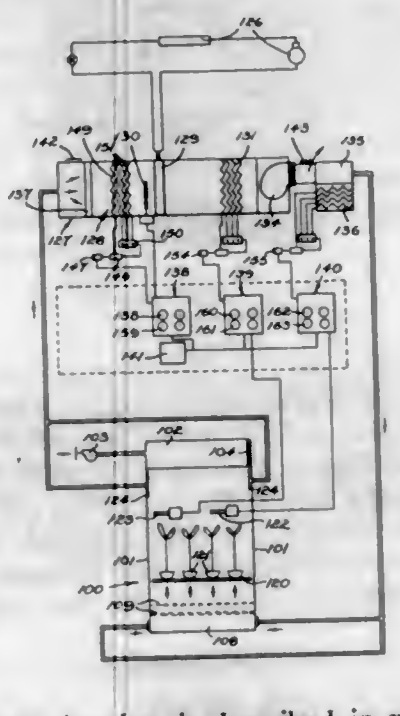
**Allan Shaw, Myrtle Bank, South Australia, Australia**

**Filed Apr. 18, 1966, Ser. No. 543,352**

**Claims priority, application Australia, Apr. 13, 1966, 57,747/66**

**Int. Cl. F24f** *3/14;* **G05d** *22/00*

**U.S. Cl. 165—21** **19 Claims**



A controlled chamber is described in which humidity and temperature are independently controlled, the control means being such as to react to changes in the conditions within the chamber and in such a manner as to maintain substantially constant the total load upon a cooling system associated with the chamber.

### 3,478,818
## AUTOMATIC TEMPERATURE CONTROL TYPE REFRIGERATOR

**Tetsuya Kohya and Mikio Tsuji, Shizuoka, Japan, assignors to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan**

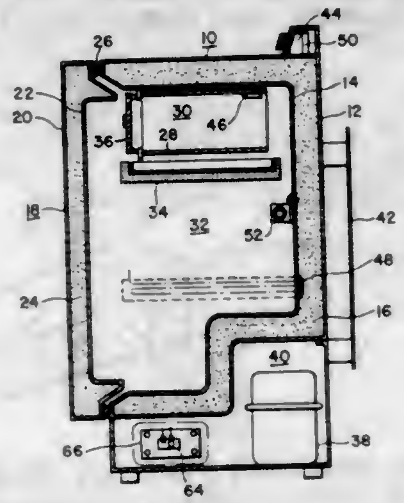
**Filed May 26, 1967, Ser. No. 641,563**

**Claims priority, application Japan, June 1, 1966, 41/51,326, 41/51,327**

**Int. Cl. F25b** *29/00*

**U.S. Cl. 165—30** **5 Claims**

A temperature control of the bellows type responds to a temperature in or adjacent a vaporizer or a freezing chamber to control the operation of the associated compressor for the purpose of maintaining the freezing chamber substantially at a predetermined temperature. Another temperature control of the bellows type is electrically connected to an electric resistance heater serving to prevent a food storage chamber from being excessively cooled and responds to a temperature in the food storage chamber to control energization of the heater. Further a thermally sensitive element responsive to heat to change its internal resistance and put in the influence of the ambient temperature is connected in series to the heater to control a thermal output from the latter in response to the ambient temperature. In this way both chambers are maintained at their predetermined respective temperatures without the necessity of operating the temperature controls by the particular user each time the ambient temperature changes.



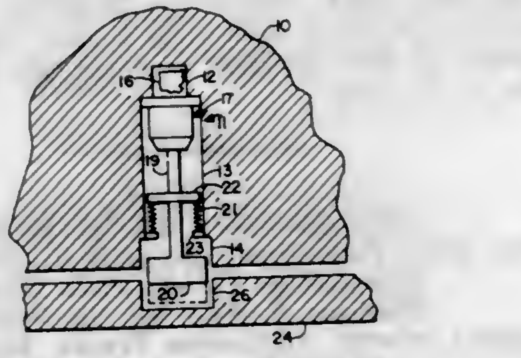
### 3,478,819
## VARIABLE HEAT CONDUCTOR

**Robert F. Reinke, Crystal, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**

**Filed July 18, 1966, Ser. No. 566,116**

**Int. Cl. G05d** *23/00;* **F28f** *27/00*

**U.S. Cl. 165—32** **3 Claims**



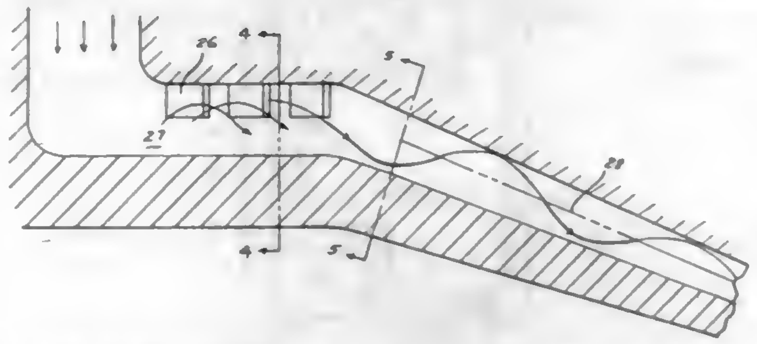
1. In temperature control apparatus for a device for transmitting excessive heat in said device to a heat transmitting excessive heat in said device to a heat sink for cooling purposes, means provided a continuous but variable, heat conducting path between the device and said heat sink, comprising: an operable thermal responsive member responsive to the temperature of said device; a heat transmitting member between the device and heat sink and having a variable area of contact with said heat sink; and operating means between the thermal responsive member and the heat transmitting member to increase the area of contact thereof for higher temperatures of said device, said device comprising a plurality of condition sensors, a special heater arrangement connected to the sensors for varying the temperatures of the sensors, a block, and a thermal resistance between said block and

sensors, with the variable heat conducting path being arranged between the block and the heat sink and controlled by the operating means.

**3,478,820**

### COOLING APPARATUS FOR HIGH HEAT FLUXES

**Franz J. A. Huber, Fairborn, Ohio, assignor to the United States of America as represented by the Secretary of the United States Air Force**
**Filed Sept. 28, 1967, Ser. No. 671,491**
**Int. Cl. F24f** *3/00;* **F28f** *13/00, 19/00*
**U.S. Cl. 165—47** **3 Claims**



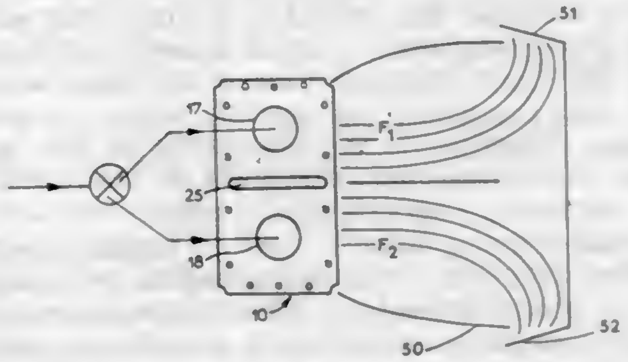
The invention pertains to a structure which is inserted in the flow of a cooling channel, particularly as applied to a De Laval nozzle when the latter is subjected to severe heating conditions. The structure may take the form of inserts of metal plates arranged in one or several rows at the entrance to the cooling passage about the nozzle. These plates have a height as to extend part way across the width of the coolant channel. The plates are arranged in pairs and each plate is canted inwardly toward the other plate of the pair in the downstream direction. As the coolant is passing through a row of plates it is caused to twist around the plates which produces behind each pair of plates a pair of oppositely rotating swirls in the coolant flow. These swirls move swiftly down the coolant channel while maintaining their helical streamlines. The swirls serve to plough the hot coolant layer away from the hot nozzle wall and thus permit the cooler coolant from farther away to flow towards the wall and thus provide a stronger effect as far as the absorption of the heat by the coolant flow is concerned.

The counterrotating swirls can also be generated by streamwise tapes, alternately clockwise and counterclockwise, joined to each other at their sides and having a length in flow direction to cover one or several full turns of the twist.

**3,478,821**

### FINNED HEAT EXCHANGER

**Walter Fieni, Paris, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France**
**Filed Jan. 9, 1967, Ser. No. 607,975**
**Claims priority, application France, Jan. 13, 1966, 45,745; Jan. 15, 1966, 65,521**
**Int. Cl. F28f** *1/30, 1/02;* **B21d** *53/02*
**U.S. Cl. 165—182** **10 Claims**

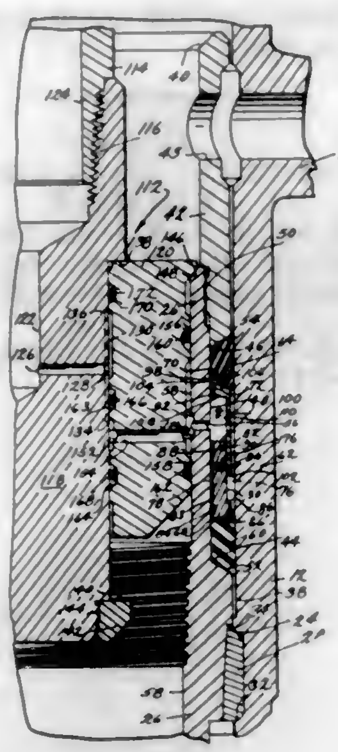


A finned-duct heat exchanger in which each fin is provided with a pair of spaced-apart holes and is connectable with an adjacent fin to define the ducts with the corresponding aligned holes. In addition, each fin, of rectangular configuration, is formed between the holes with a slot extending rectilinearly over at least the major part of the width of the fin, the slots being aligned to define an insulating partition between the ducts. The partition lies in a plane perpendicular to the fins but parallel to the ducts and has a width (equal to the length of the slots) which exceeds the widths of the ducts.

**3,478,822**

### WELLHEAD AND SEAL ARRANGEMENT

**Marvin L. Holbert, Jr., and John Slack, Houston, Tex., assignors to Gray Tool Company, Houston, Tex., a corporation of Texas**
**Filed May 15, 1968, Ser. No. 732,802**
**Int. Cl. E21b** *33/03*
**U.S. Cl. 166—88** **8 Claims**



For sealing the annulus between the head bore and a hanger, two rubber axially spaced seal rings are provided having an expanding unit mounted between them. O-rings seal the expanding unit to the head bore and hanger. The expanding unit comprises a fluid actuated, double acting piston having a circumferential slip, actuated upon extension of the pistons, to maintain the two seal rings compressed.

**3,478,823**

### METHOD OF RECOVERING OIL USING SACRIFICIAL AGENT AND VISCOSIFIER

**Charles L. Murphy, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York**
**Filed June 21, 1968, Ser. No. 738,955**
**Int. Cl. E21b** *43/22*
**U.S. Cl. 166—274** **8 Claims**

This specification discloses a secondary oil recovery process in which an aqueous liquid containing an adsorbing viscosifier is injected into an oil reservoir in order to displace oil therefrom. In addition a sacrificial agent is injected into the reservoir in a total amount sufficient to satisfy the adsorption sites within 0.05 to 0.50 of the displacement zone defined by the injection and production wells. The sacrificial agent preferentially adsorbs on the reservoir rock surfaces with respect to the viscosifier and adsorption of the viscosifier is reduced in a portion of the displacement zone adjacent the injection well. As a result the darcy viscosity of the flooding medium is decreased in this portion and the injectivity is increased.

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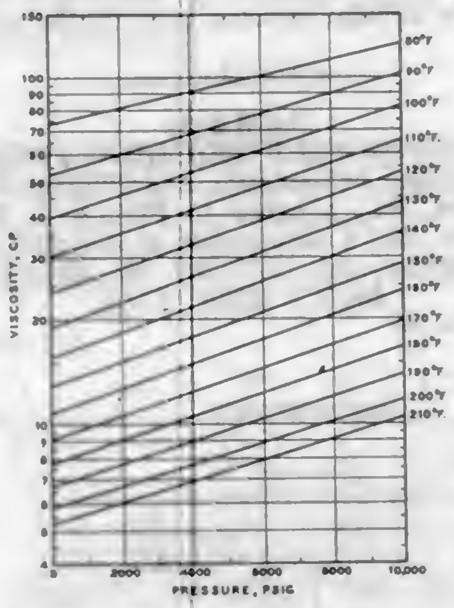
**3,478,824**

### SAND CONSOLIDATION PROCESS

**Patrick H. Hess, Diamond Bar, and Ralph S. Millhone, Brea, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware**
**Filed Apr. 12, 1968, Ser. No. 720,976**
**Int. Cl. E21b** *33/138*
**U.S. Cl. 166—295** **6 Claims**

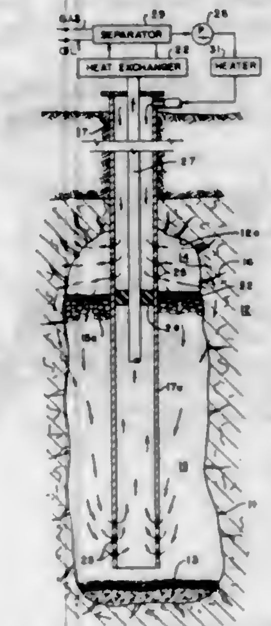


A method for consolidating an unconsolidated earth formation penetrated by a well with an epoxy resin compound or mixture of epoxy compounds suitable over a wide range of temperatures and a permeability flush fluid which gives an optimum combination of strength and permeability retention. The permeability flush fluid comprises a hydrocarbon oil containing a hydrocarbon oil-miscible compound. Immediately following the permeability flush fluid, a dilute solution of a curing agent is injected into the formation to harden the resin. The resin may be blended with a predominantly aromatic hydrocarbon liquid and an epoxy silane prior to injection into the formation.

**3,478,825**

### METHOD OF INCREASING THE VOLUME OF A PERMEABLE ZONE WITHIN AN OIL SHALE FORMATION

**Philip J. Closmann, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed Aug. 21, 1967, Ser. No. 662,110**
**Int. Cl. E21b** *43/26*
**U.S. Cl. 166—299** **10 Claims**

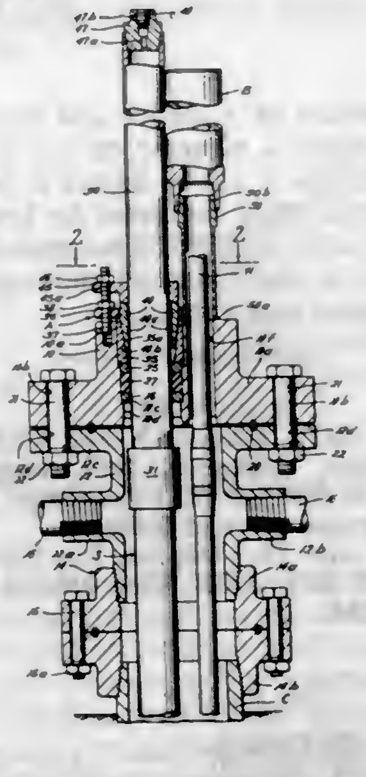


An improved method of increasing the volume of the permeable zone created by detonation of a relatively high energy device within a subterranean oil shale formation by opening a borehole in the substantially void space created by the detonation of the device, opening perforations in the fractured zone surrounding the void space and circulating fluid between the void space and the rubble resulting from the detonation including flow through the perforations.

**3,478,826**

### METHOD AND APPARATUS FOR WASHING SOLIDS AWAY FROM SINGLE OR MULTIPLE TUBING STRINGS IN WELL

**Willard Barnes, P.O. Box 763, New Iberia, La. 70560**
**Continuation-in-part of application Ser. No. 645,140, June 12, 1967. This application Feb. 4, 1969, Ser. No. 796,433**
**Int. Cl. E21b** *41/00, 37/00*
**U.S. Cl. 166—301** **10 Claims**

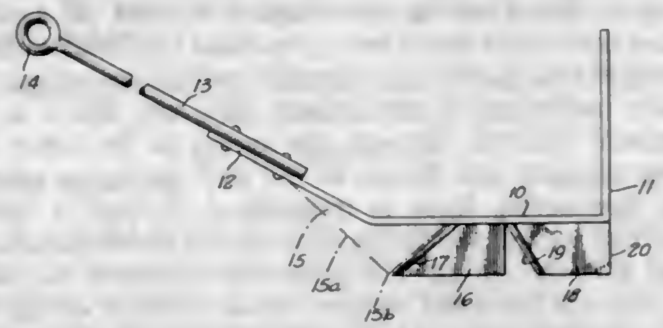


A wellhead workover method and apparatus for performing washing operations in a well casing to wash away solids which are around one or more tubing strings disposed in the well casing. A wash tube is removably mounted alongside the tubing string in the well casing so that washing and pulling on the tubing string may take place simultaneously.

**3,478,827**

### SKI SLOPE GROOMING DEVICE

**Walter Louis Madson, 103 N. Stevens St., Rhinelander, Wis. 54501**
**Filed Mar. 18, 1966, Ser. No. 535,458**
**Int. Cl. A01b** *15/00, 23/00*
**U.S. Cl. 172—379** **1 Claim**



A ski slope grooming device comprised of a drag formed with a transversely disposed trough-shaped base, and a plurality of staggered frontally sharpened blades welded thereunder presenting leading edges of different inclination from the vertical.

### 3,478,828

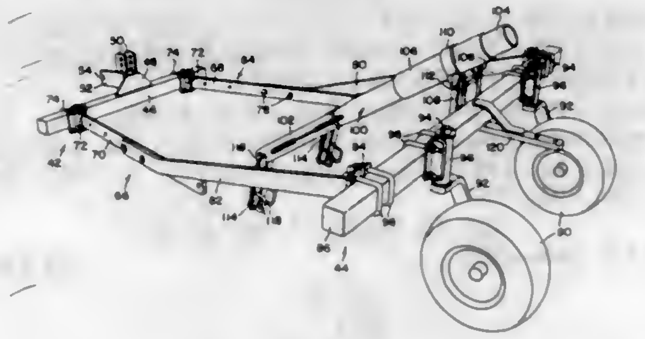
### MINIMUM TILLAGE HITCH DEVICE

**Harold Valentine Hansen, Cordova, Charles Harold Youngberg, Moline, and Perry Ford, Jr., Rock Island, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware**

**Filed Oct. 28, 1966, Ser. No. 590,377**

**Int. Cl. A01b** *49/04, 59/043, 63/102*

**U.S. Cl. 172—669** **5 Claims**



In a combination of a tractor and two drawn implements one of which is mounted on the three-point hitch of the tractor so that it will be limited in its lateral movement and the other being connected for free lateral movement on the tractor drawbar, a connection between the two implements so that the latter implement will also be limited in its lateral movement.

### 3,478,829

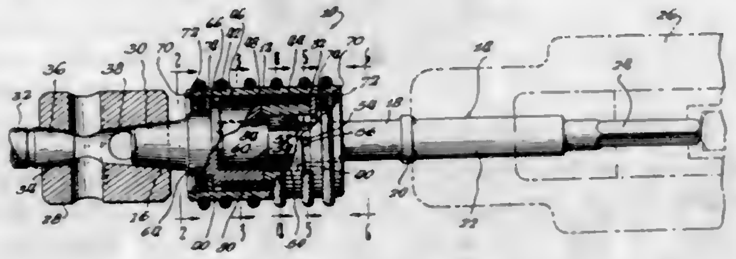
### STOP ROTATION MECHANISM ATTACHMENT

**Thomas G. Bixby, Valparaiso, Ind., assignor, by mesne assignments, to Phillips Drill Company, Inc., Michigan City, Ind., a corporation of Indiana**

**Filed Apr. 29, 1968, Ser. No. 725,009**

**Int. Cl. E21c** *3/32;* **B25d** *9/00, 11/00*

**U.S. Cl. 173—104** **30 Claims**



A stop rotation mechanism attachment to be mounted to a percussion hammer of the type which also rotates to enable the operator to stop the rotary action and permit the hammer to transmit only hammering action, as needed, for example in installing self-drilling anchors. The attachment is mounted in a housing having a shank extending from one end and a tool mounting adapter from the other end, the shank being of configuration to fit a conventional rotary percussion hammer, the tool mounting adapter being of a configuration to enable mounting an anchor installing chuck, for example. There being a clutch within the housing formed of a coiled spring contracted about two cylindrical frictional elements arranged end to end and coaxially within the spring. The rotary movement is transmitted from the shank to one frictional element, through the spring to the other frictional element and thence to the tool mounting adapter. The hammering force is transmitted through a conical nose and socket connection between the elements, also coaxial with the spring. The connection between the shank and the one frictional element causes rotation of the frictional element but is a slide connection so that no percussive force is transmitted to the first frictional element, but instead passes to the second frictional element through the nose and socket connection. The spring is retarded from rotating with the first friction member by grasping the housing in one's hand, the slippage causing the spring to be effectively rotated opposite its normal constricting direction, so that the coils open and disconnect the frictional elements from the spring, thereby permitting transmission of only percussive force.

The mechanism is held in assembly in the housing by sandwich assemblies locked into the ends, each assembly consisting of a sandwich of metal washers with a rubber layer vulcanized between to absorb shock during use. Lock rings in annular grooves back up the sandwich assemblies.

### 3,478,830

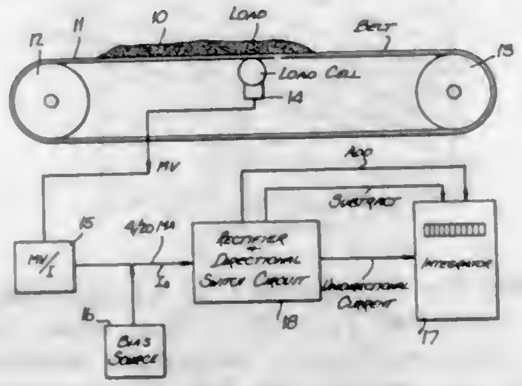
### CONVEYOR BELT WEIGHING SYSTEM

**Peter S. Levesque, Warminster, and William K. Haeflein, Doylestown, Pa., assignor to Fischer & Porter Co., Warminster, Pa., a corporation of Pennsylvania**

**Filed Dec. 15, 1967, Ser. No. 690,913**

**Int. Cl. G01g** *11/14*

**U.S. Cl. 177—16** **5 Claims**



A conveyor belt weighing system in which a load cell is disposed below a section of a belt serving to convey material, the cell producing a voltage proportional to the load imposed by the belt section and the material loaded thereon. This voltage is converted into a current from which is subtracted a bias current whose level is scaled in accordance with the average weight of the belt, the resultant current signal being dependent solely on the instantaneous weight of the material on the belt section. The current signal is applied to an integrator to register the totalized quantity of material. Since the weight of the belt actually varies about its average value, the current signal is sometimes negative, and to afford accurate readings, a bi-directional arrangement is provided to cause the integrator to add on the positive portions of the current signal and to subtract the negative portions thereof.

### 3,478,831

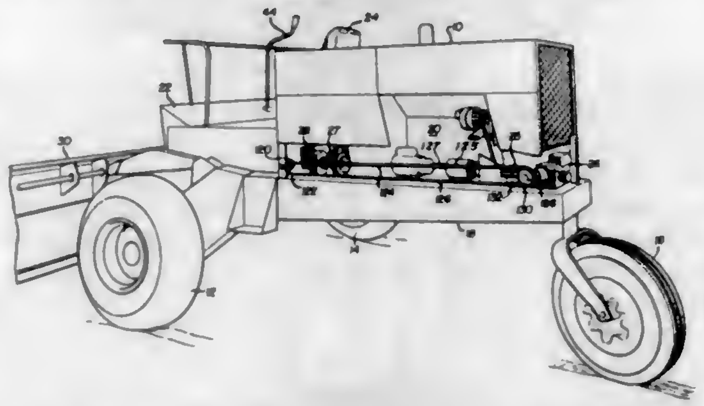
### SELF-PROPELLED WINDROWER

**Gerald V. Auchard, Bettendorf, Iowa, assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin**

**Filed Nov. 22, 1967, Ser. No. 685,148**

**Int. Cl. B62d** *11/00;* **G05g** *9/00*

**U.S. Cl. 180—6.48** **2 Claims**



A drive and control mechanism for a self-propelled vehicle having a pair of hydraulically actuated variable displacement pumps and a pair of variable displacement hydraulic motors for driving the vehicle. The mechanism includes meshing gears, and chain and sprocket drives connected to the hydraulic pumps and responsive to movement of an operator's handle for varying the output of said pumps. The particular gear and sprocket structure and the adjustable linkage connections to the pumps provide control of two hydraulic systems, working individually or together, with finite and precise control for driving and for steering the vehicle.

### 3,478,832

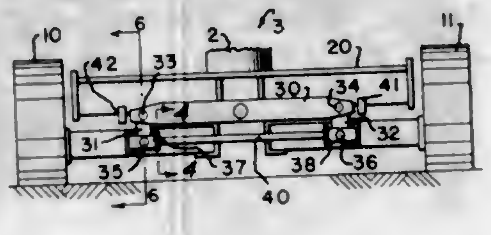
### CRAWLER MOUNTED ROCK DRILL

**Robert W. Hughes and Francis P. Coyne, Easton, Pa., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey**

**Filed Oct. 27, 1967, Ser. No. 678,566**

**Int. Cl. B62d** *55/00*

**U.S. Cl. 180—9.6** **6 Claims**



A rock drill mounting of the crawler type which includes a pair of parallel, spaced apart crawler assemblies. These is a deck pivotally mounted at the rear of each crawler. A beam is mounted on the inside of the forward end of each crawler and extends inwardly and rearwardly. The rear end of each of these beams is pivotally connected to the frame. A cross bar is pivotally connected to the forward end of the deck. A torsion bar is connected between the beams so that as one of the crawlers is raised or lowered relative to the other, some of the energy induced by this movement is stored by the torsion bar.

### 3,478,833

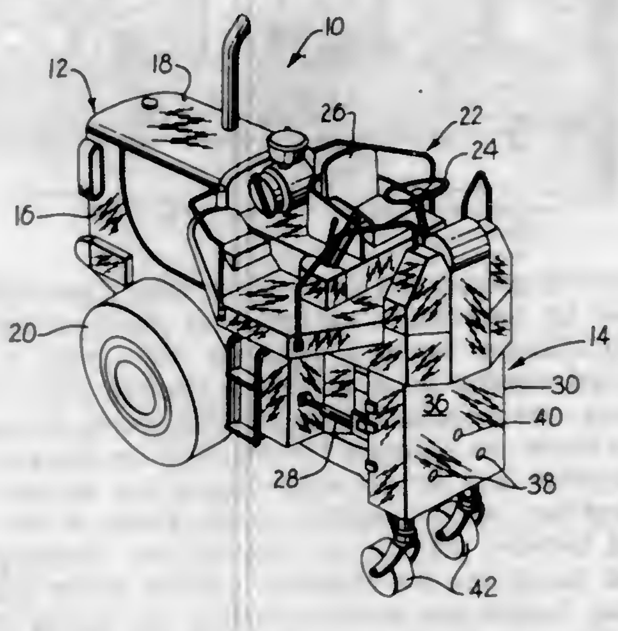
### POWER MODULE FOR A SECTIONALIZED VEHICLE

**Pearl L. Breon, Vernon W. Imes, and Harold R. Johnson, Peoria, and James M. Nutter, Washington, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**

**Filed Nov. 13, 1967, Ser. No. 682,475**

**Int. Cl. B60k** *29/00;* **B60d** *1/00*

**U.S. Cl. 180—12** **3 Claims**



A power module for a sectionalized vehicle and having a wheeled driving section provided with a hydraulically operated steering mechanism, a wheeled steering section being secured to the driving section by an articulated joint, the steering section being connected to the steering mechanism for steering of the power module, the steering section presenting a surface for attachment to a wheeled work tool.

### 3,478,834

### VEHICLE DRIVING UNIT

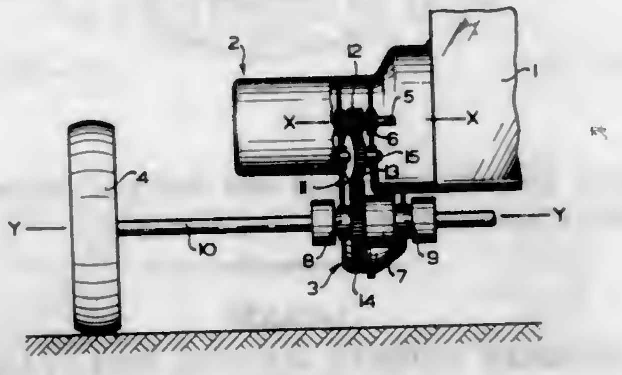
**Richard Hetmann, Tamm, Wurttemberg, Germany, assignor to Dr. Ing. H.c.F. Porsche KG, Stuttgart-Zuffenhausen, Germany**

**Filed Jan. 13, 1967, Ser. No. 609,211**

**Claims priority, application Germany, Feb. 25, 1966, 1,580,519**

**Int. Cl. B60k** *1/00, 17/00;* **F16h** *1/02*

**U.S. Cl. 180—70** **2 Claims**



The present disclosure relates to a driving unit for vehicles wherein an internal combustion engine has a drive shaft connected to a change speed transmission that has an output shaft concentrically arranged about the drive shaft. A particularly advantageous quiet gear train is provided between the transmission and the differential for driving the vehicle driven wheels having axles parallel to the drive shaft and output shaft. The gear train comprises two parallel outer gears and an intermediate skewed gear. Preferably, the axes of the three gears are arranged in three mutually parallel planes and the intermediate gear axis is skewed at an angle within the range of 10 to 15°.

### 3,478,835

### CONTROL SYSTEM FOR FLUID-CUSHION DEVICES

**Jean H. Bertin, Neuilly-sur-Seine, France, assignor to Societe Bertin & Cie, Paris, France, a company of France**

**Continuation-in-part of application Ser. No. 165,634, Jan. 11, 1962. This application Oct. 23, 1965, Ser. No. 502,934**

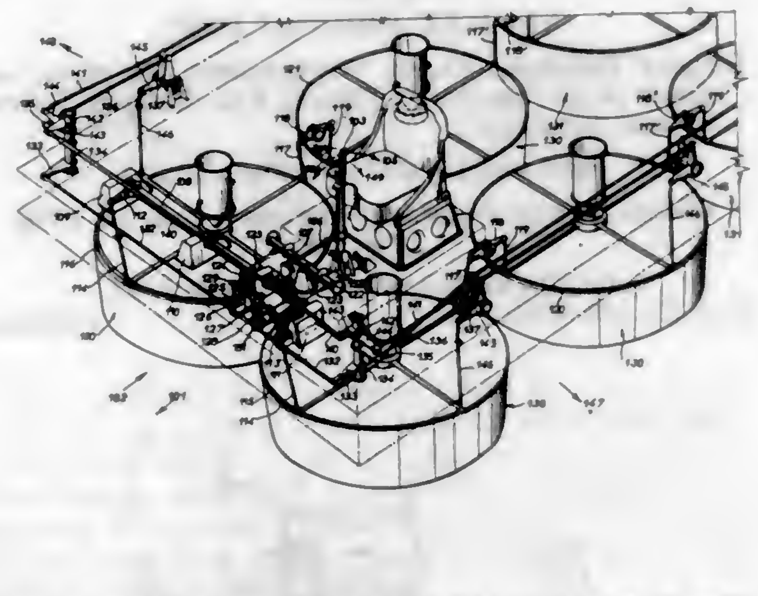
**Claims priority, application France, Jan. 17, 1961, 849,877, Patent 1,310,483**

**Int. Cl. B60v** *1/16*

**U.S. Cl. 180—121** **11 Claims**

1. A ground effect machine movable along a bearing surface in narrow spaced relation therewith, of the kind comprising a platform and support frame and at least one plenum chamber carried by said support frame and cooperating with said surface to form thereagainst a fluid cushion sustaining said machine, said plenum chamber being laterally bounded by a side wall exposed inwardly to said cushion and outwardly to surrounding medium and having a lower free end designed, in operation, to move above but adjacent to said surface and an upper portion

attached to said support frame and substantially fluid-tightly connected to said platform, wherein the improvement comprises means mounting said support frame and attached portion of said plenum chamber side wall for bodily tilting the latter with respect to said platform, and controllable means operable from said platform for selectively tilting said plenum chamber side wall bodily,



thereby selectively inclining said free end thereof with respect to said surface.

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### 3,478,836

## CUSHION VEHICLE HAVING INFLATABLE SKIRT

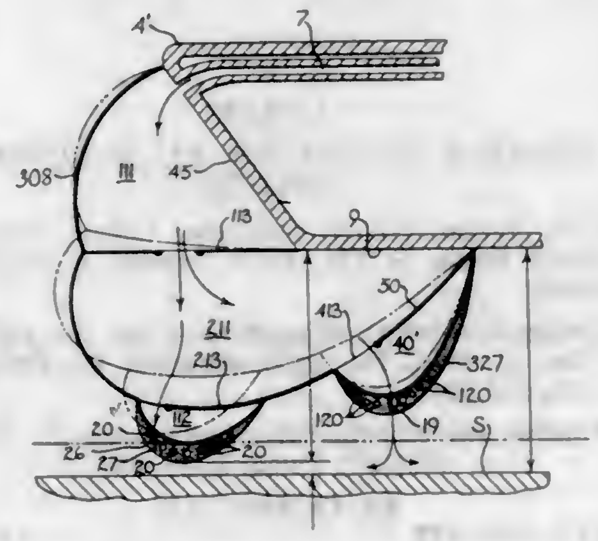
**Thomas Harald Eckered, Stockholm, Ove Sviden, Linkoping, and Olle Ljungström, Lidingo, Sweden, assignors to Saab Aktiebolag, Linkoping, Sweden, a corporation of Sweden**

**Filed Apr. 3, 1967, Ser. No. 627,691**

**Claims priority, application Sweden, Apr. 4, 1966, 4,466/66**

**Int. Cl. B60v** *1/16;* **B63b** *1/34*

**U.S. Cl. 180—128** **1 Claim**



An inflatable skirt depending from the hull of an air cushion vehicle is divided into vertically superimposed compartments, whereby its distension under inflation is so controlled that the skirt has small thickness at its bottom, resulting in low drag upon water contact. Air outlets in the bottom of the inflatable skirt are arranged to direct a film of air along its surface to lubricate it, minimize water contact and improve sustentation efficiency.

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### 3,478,837

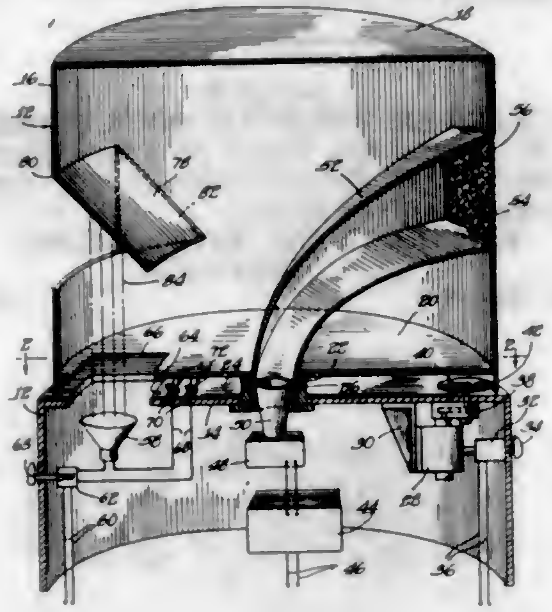
## ROTARY SOUND SOURCE WITH OPTICALLY ENHANCED VIBRATO

**Charles A. Ross, Chanute, Kans., assignor to Kustom Electronics, Inc., Chanute, Kans., a corporation of Kansas**

**Filed Nov. 27, 1967, Ser. No. 685,786**

**Int. Cl. G10k** *13/00, 11/10*

**U.S. Cl. 181—31** **9 Claims**



A fixed loudspeaker operating in conjunction with a rotating horn to produce a Doppler effect vibrato in combination with a synchronized flashing light source, the light optically enhancing the vibrato.

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### 3,478,838

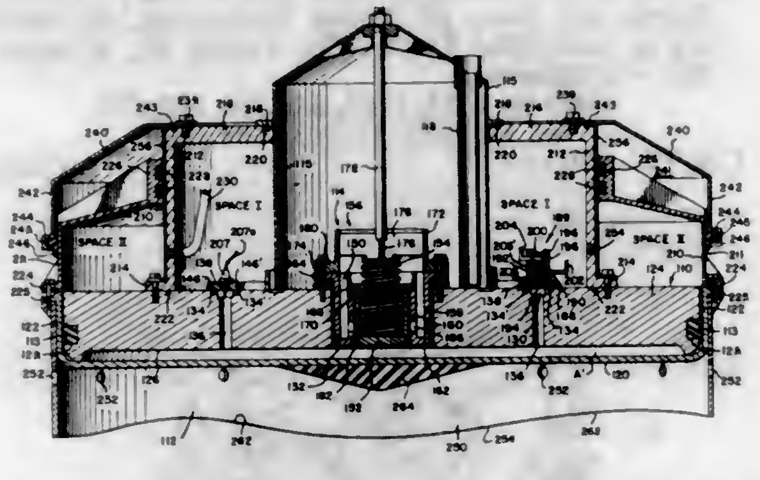
## GAS EXPLODER SEISMIC SOURCE WITH CAVITATION EROSION PROTECTION

**Lauren G. Kilmer, Tulsa, Okla., assignor to Sinclair Oil Corporation, a corporation of New York**

**Filed Sept. 13, 1968, Ser. No. 759,675**

**Int. Cl. G01v** *1/00;* **G10k** *11/00*

**U.S. Cl. 181—.5** **17 Claims**



A seismic prospecting device comprising a gas exploder adapted for underwater use including an expansible explosion chamber having a rigid top and a rigid bottom connected together by an extensible sidewall and resilient fastening means including air cushion spring means arranged above the chamber for attaching the top and bottom together and for normally biasing the top and bottom together, resilient sealing means inside of the joint formed between the top and bottom, gas charging and ignition means for the chamber, exhaust means for the chamber, bubble cap means including cap sealing means above the air cushion spring means to protect it against cavitation erosion, and cavitation erosion shield means on the underneath side of the rigid bottom.

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### 3,478,839

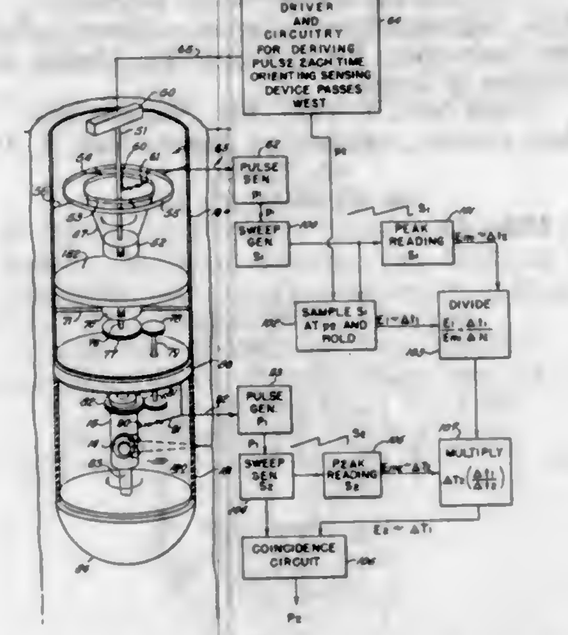
## ORIENTATION SENSING SYSTEM FOR WELL LOGGING TOOL FOR USE IN DEVIATED BOREHOLES

**Joseph Zemanek, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York**

**Filed Oct. 11, 1968, Ser. No. 766,892**

**Int. Cl. G10k** *11/00;* **G01v** *1/40*

**U.S. Cl. 181—.5** **15 Claims**



The specification discloses a directional acoustic transducer supported for rotation in a borehole tool and operated periodically to transmit acoustic pulses to the borehole wall and to detect reflected acoustic energy. In one embodiment, there is disclosed a gimbal-mounted magnetic north sensing device rotated independently of the acoustic transducer. Reference signals are generated each time the magnetic sensing device and the transducers are rotated past known points on the tool. In addition, a directional signal is generated each time the magnetic sensing device rotates past a known geographic orientation. These signals are employed to produce an orienting signal each time the transducer is rotated to magnetic north.

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### 3,478,840

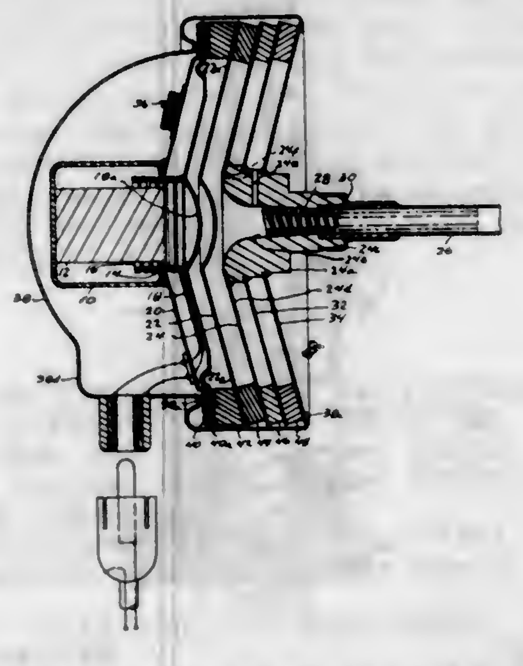
## SOUND REPRODUCER

**John A. Victoreen, 350 N. Maltland Ave.,**
**Maitland, Fla. 32751**

**Filed Nov. 7, 1968, Ser. No. 774,087**

**Int. Cl. G10k** *13/00;* **H04r** *7/16*

**U.S. Cl. 181—31** **17 Claims**



A reproducer which may be used for generating sound pressures for testing hearing or as a hearing aid which has a substantially flat response curve from 100 to 9000 cycles includes a diaphragm, vibrated by a voice coil, in front of which is a closely spaced rigid damping plate having sound passages at its periphery. Beyond the damping plate in spaced relation is a rigid manifold plate having a central sound outlet which may be connected to an ear or other place where the sound is to be utilized. Means is provided for eliminating the resonant peaks inherent in a diaphragm-type reproducer which includes controlling the sound pressure leakage to the rear of the cone, and providing chambers by additional plates in front of manifold plate which communicate with the chamber formed by the manifold and damping plate to reduce or eliminate resonant peaks.

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### 3,478,841

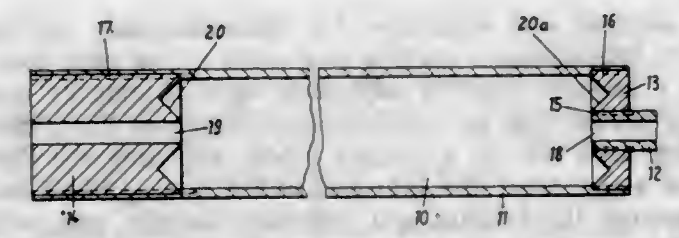
## SILENCER FOR FIREARMS DISCHARGING GASSES AT SUPERSONIC VELOCITY

**Siegfried Hubner, Stuttgart-Heumaden, Germany, assignor to Carl Walther Sportwaffenfabrik, a limited-liability corporation of Germany**

**Filed July 7, 1967, Ser. No. 651,958**

**Int. Cl. F01n** *1/06*

**U.S. Cl. 181—47** **8 Claims**



A silencer for gasses discharged at supersonic velocity from the muzzle of a firearm and having a hollow cylindrical casing with end walls. There are aligned openings in the end walls defining a passage therethrough with the inner face of the exit end wall being convex to form a compression wave when discharged gasses impinge on the convex surface.

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### 3,478,842

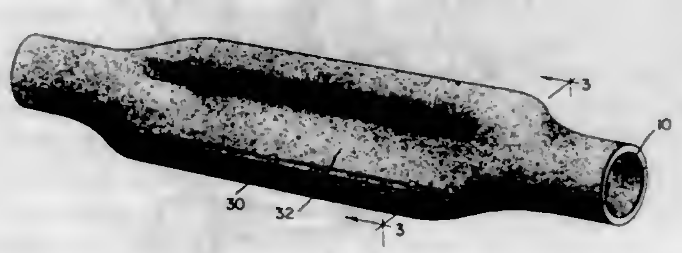
## MUFFLER HAVING TWO PARALLEL BORES WITH SLOTTED BAFFLES

**Eugene A. Mattie, Metacomett Road,**
**Scituate, Mass. 02060**

**Filed Dec. 29, 1967, Ser. No. 694,594**

**Int. Cl. F01n** *1/08*

**U.S. Cl. 181—56** **6 Claims**

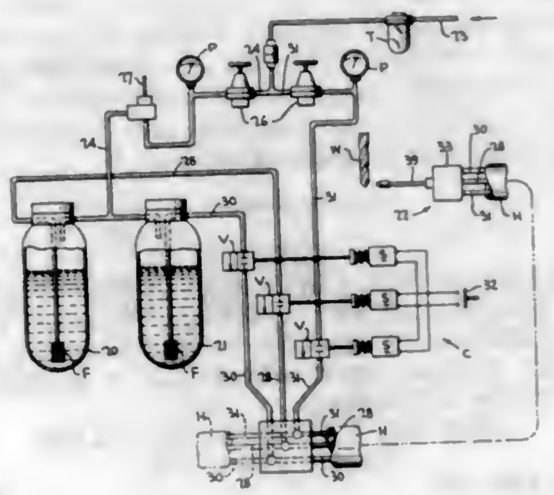


A muffler is made using precise specific dimensions varying for different sizes. The muffler is made in two parts each of which can be die-cast. When assembled the muffler consists of two parallel tubes each having eleven baffles therein, each baffle being slightly inclined and having a plurality of slots therethrough aligned with corresponding slots in the other baffles in the tube, the inlet and outlet of the muffler each having a cross-sectional area no greater than the combined areas of the apertures in the initial baffles in the two tubes.

**3,478,843**

### MIST TYPE COOLANT SPRAY UNIT

**Fred H. Eckardt, Stirling, N.J., assignor to Daystar Corporation, Roselle, N.J., a corporation of New Jersey**
**Filed June 6, 1968, Ser. No. 735,111**
**Int. Cl. F01m** *1/00;* **F16n** *29/00, 7/32*
**U.S. Cl. 184—6** **12 Claims**

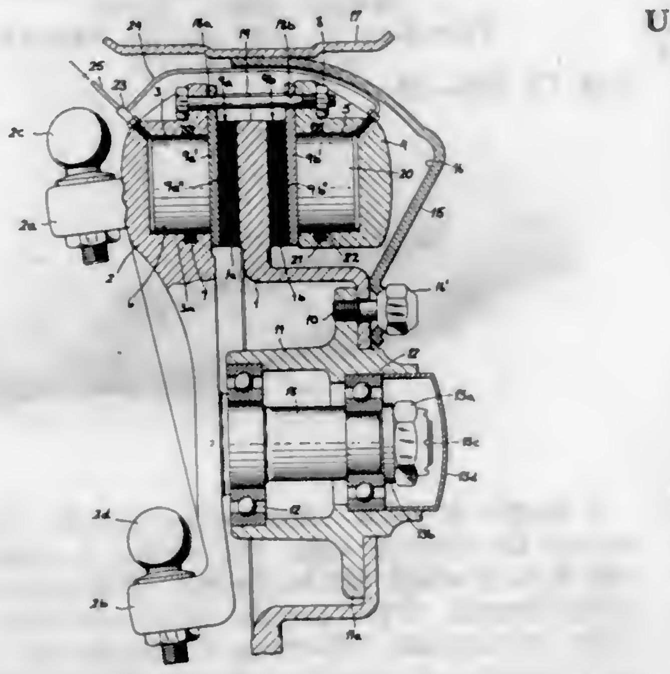


A method and apparatus for simultaneously cooling and/or lubricating a cutting tool with a fine mist spray from a unitary, variably adjustable spray nozzle by providing pressurized air, coolant and lubricant lines, conducting each line to a mixing block, adjusting the flow rate of air, coolant and lubricant at the mixing block and intermixing the coolant and lubricant therein, and, with the air, atomizing the mixture at the point of delivery with the cutting tool.

**3,478,844**

### FIXED-YOKE DISK BRAKE

**Friedrich Beuchle, Frankfurt am Main, Germany, assignor to Alfred Teves GmbH, Frankfurt am Main, Germany, a corporation of Germany**
**Filed Jan. 10, 1968, Ser. No. 696,805**
**Claims priority, application Germany, Jan. 20, 1967, T 33,028**
**Int. Cl. B60t** *1/06;* **F16d** *55/228*
**U.S. Cl. 188—18** **2 Claims**

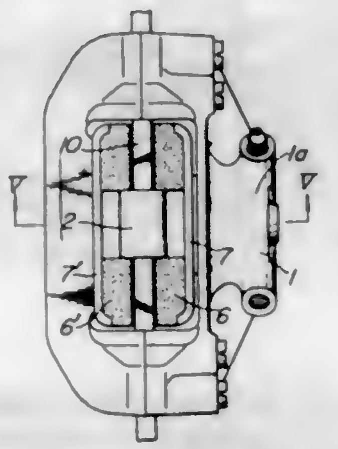


A fixed-yoke disk brake in which a pair of yoke halves flank opposite faces of the brake disk which is fixed to the tire-carrying wheel disk, preferably of a steerable vehicle wheel, and are formed with wheel-brake cylinders receiving respective pistons which displace brakeshoes against opposite annular faces of the disk, one yoke half being formed unitarily (i.e. in a single monolithic piece) with a nonrotatable portion of the vehicle body of preferably, the axle-carrying steering knuckle of the wheel.

**3,478,845**

### CALIPER TYPE DISC BRAKE

**Yasuo Kita, Nishinomiya-shi, Japan, assignor to Sumitomo Electric Industries, Ltd., Higashi-ku, Osaka, Japan, a corporation of Japan**
**Filed Nov. 7, 1967, Ser. No. 681,164**
**Claims priority, application Japan, Nov. 9, 1966, 41/73,245**
**Int. Cl. F16d** *55/224*
**U.S. Cl. 188—73** **9 Claims**

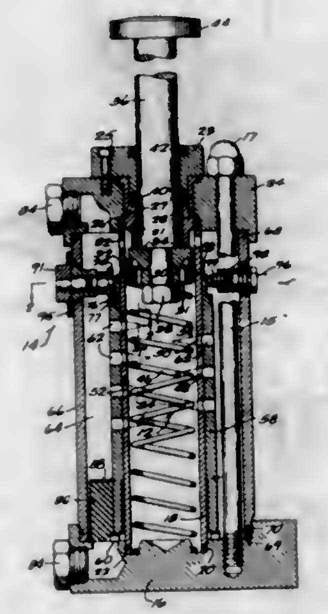


A disc brake having two pairs of spaced friction pads disposed on opposite sides of a rotatable brake disc, and a restraining member which extends into the space defined between the pads of the pad pairs. The restraining member acts to restrain the frictionally rotating movement of the friction pads integrally with the brake disc when the braking force is applied to the brake disc by the friction pads.

**3,478,846**

### ADJUSTABLE SHOCK ABSORBER

**Henry S. Germond IV, Evanston, Ill., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin**
**Filed May 2, 1968, Ser. No. 726,187**
**Int. Cl. F16d** *57/00*
**U.S. Cl. 188—97** **2 Claims**

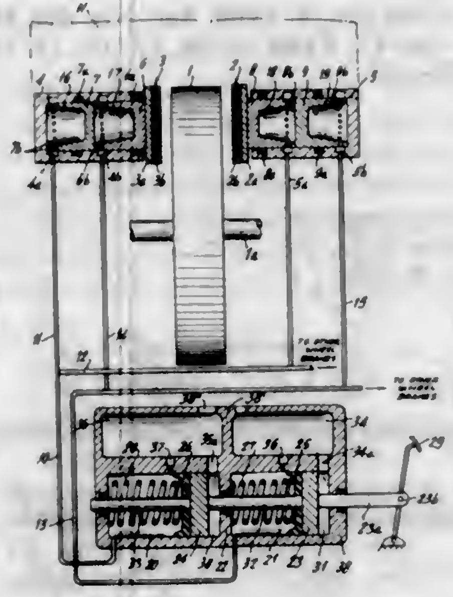


An adjustable hydraulic shock absorber having circumferentially elongated fluid passage means extending through the walls of a pair of concentrically disposed cylinders. The cylinders are relatively rotatable to vary the effective cross-sectional flow area of the passage means. Relative rotation of the cylinders is effected by means of a pair of mating gear elements, one of which is integral with one of the cylinders; and the other of which is attached to a turning mechanism extending externally of the shock absorber. An indicator, calibrated on the basis of the pitch diameter of one of the gear elements, is operatively associated with the turning mechanism to externally register the relative angular position of the cylinders and therefore the rated loading of the shock absorber corresponding to that relative angular position.

**3,478,847**

### DUAL-NETWORK DISK BRAKE

**Alfred Bender, Hofheim, Taunus, and Wilhelm Knapp, Bad Homburg, Germany, assignors to Alfred Teves G.m.b.H., Frankfurt am Main, Germany**
**Filed Dec. 7, 1967, Ser. No. 688,844**
**Claims priority, application Germany, Jan. 14, 1967, T 32,977; Apr. 28, 1967, T 33,747**
**Int. Cl. B60t** *11/24;* **F16d** *55/228*
**U.S. Cl. 188—152** **4 Claims**

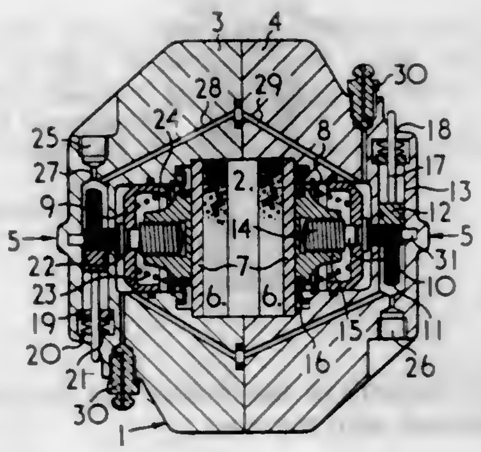


A dual-network disk brake having a yoke and a pair of cylinders formed in the yoke on opposite sides of the brake disk, each of these cylinders being provided with a piston relatively proximal to a respective brakeshoe and a further piston relatively distal therefrom, the master cylinder having respective compartments feeding fluid behind each of the pistons on each side of the yoke. The transmission lines are so arranged that the distal piston of one side of the yoke is connected in parallel with the proximal piston of the other side; means are provided for transmitting force between the distal pistons and the proximal pistons to the brakeshoes.

**3,478,848**

### DUAL CIRCUIT DISC BRAKE WITH HYDRAULIC ADJUSTING MEANS THEREFOR

**Hermann Seip, Bad Vilbel, Germany, assignor to The Dunlop Company Limited, London, England, a corporation of Great Britain**
**Filed June 17, 1968, Ser. No. 737,583**
**Claims priority, application Germany, June 15, 1967, T 34,105**
**Int. Cl. B60t** *11/24;* **F16d** *55/228*
**U.S. Cl. 188—152** **10 Claims**

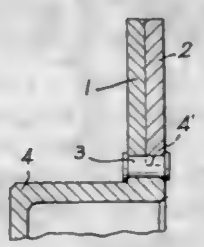


A disc brake for operation by two fluid pressure lines, comprising two brake operating mechanisms, each brake operating mechanism comprising a fluid pressure operated thrust mechanism associated with a friction element on one side of the brake disc and in fluid pressure communication therewith, a fluid pressure operated adjustment mechanism to provide adjustment for a friction element on the other side of disc.

**3,478,849**

### LOW-NOISE DISK-BRAKE ASSEMBLY

**Heinz Günther Hahm, Frankfurt am Main, Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany**
**Filed Dec. 22, 1967, Ser. No. 692,886**
**Claims priority, application Germany, Dec. 23, 1966, T 32,849**
**Int. Cl. F16d** *65/12, 69/02*
**U.S. Cl. 188—218** **8 Claims**



A disk for a low-noise disk-brake assembly having its opposite annular braking faces formed by two planar coaxial rings in back-to-back and coextensive relationship rotatably entrained by the disk hub and composed of material different from that of the hub. At least one of the rings can be composed of beryllium, ductile bronze or sintered metal oxide while the other may be formed unitarily with the hub or may be independent thereof, the rings being connected by rivets or the like with at least one ring having bores larger than the rivet shanks to accommodate different coefficients of thermal expansion of the rings. The rings may also cooperate with brake linings of different material.

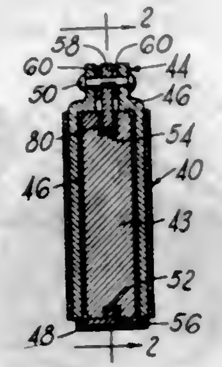
**3,478,850**

### ROTATING INERTIA REDUCING MEANS FOR A BRAKE DISC

**Abdulhadi K. Abu-Akeel, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware**
**Filed June 10, 1968, Ser. No. 735,593**
**Int. Cl. F16d** *65/10, 65/82;* **B64c** *25/36*
**U.S. Cl. 188—218** **15 Claims**

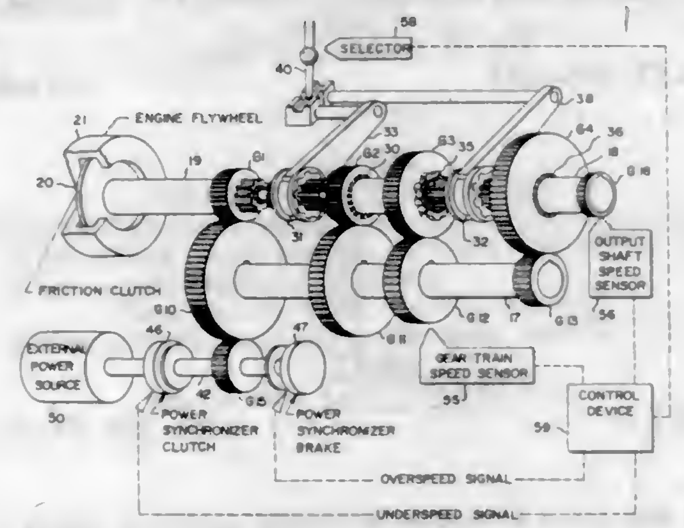
The following relates to a friction disc element construction for a disc brake which is formed of a hollow annular retainer having a floating heat sink core therein.

The core is arranged within the retainer so that it has unlimited rotational freedom relative to the walls of the retainer until the walls of the retainer are forced into frictional engagement with the core.



## 3,478,851
## AUTOMOTIVE TRANSMISSION

**Robert R. Smyth, Lincoln, Mass., William B. Smyth, Valley Forge, Pa., and Ralston B. Smyth, Brewster, Mass.; said Ralston B. Smyth assignor, by mesne assignments of four-tenths each to said Robert R. Smyth, and said William B. Smyth, and two-tenths to John A. Lahive Jr., Hingham, Mass.**
**Filed Aug. 9, 1967, Ser. No. 659,352**
**Int. Cl. F16d** *67/00;* **F16k** *3/38*
**U.S. Cl. 192—3.5** **14 Claims**

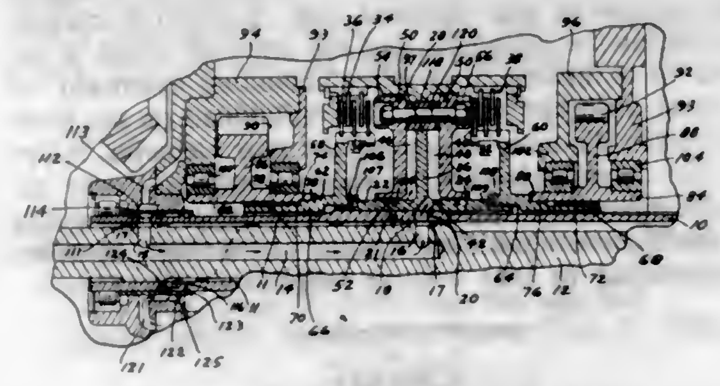


An automotive transmission which employs sensing transducers to determine the relative speeds of gear elements on the output shaft and transmission shaft. In order to shift from one gear ratio to another the outputs of these transducers are compared with the resultant signal used to control a separate power source to speed up or slow down the transmission shaft while the transmission is in neutral until the elements to be meshed are matched in speed.

## 3,478,852
## RADIAL SUPPORT STRUCTURE FOR CLUTCH HUBS

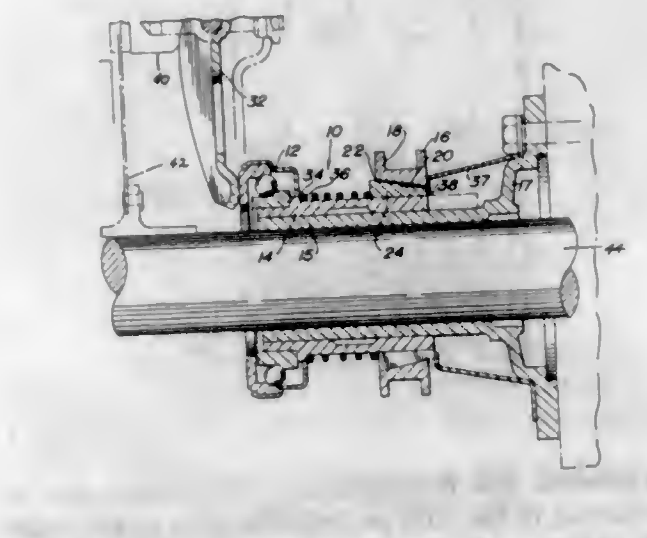
**Reece R. Fuehrer, Danville, and James C. Polak, Indianapolis, Ind., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army**
**Filed Jan. 4, 1968, Ser. No. 695,665**
**Int. Cl. F16d** *11/00, 13/68, 21/08*
**U.S. Cl. 192—110** **3 Claims**

A forward-reverse hydraulically operated clutch having clutch hubs which are radially supported by individual output gears. The clutch hubs each include an axially extending sleeve to provide a registering diametral fit between the clutch hub and its respective output gear. The output gears are journaled in the clutch housing.



## 3,478,853
## AUTOMATIC WEAR ADJUSTER FOR FRICTION DEVICE

**Robert C. Kraeplin, Beloit, Wis., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Jan. 8, 1968, Ser. No. 696,388**
**Int. Cl. F16d** *11/04, 11/10, 13/58*
**U.S. Cl. 192—111** **4 Claims**

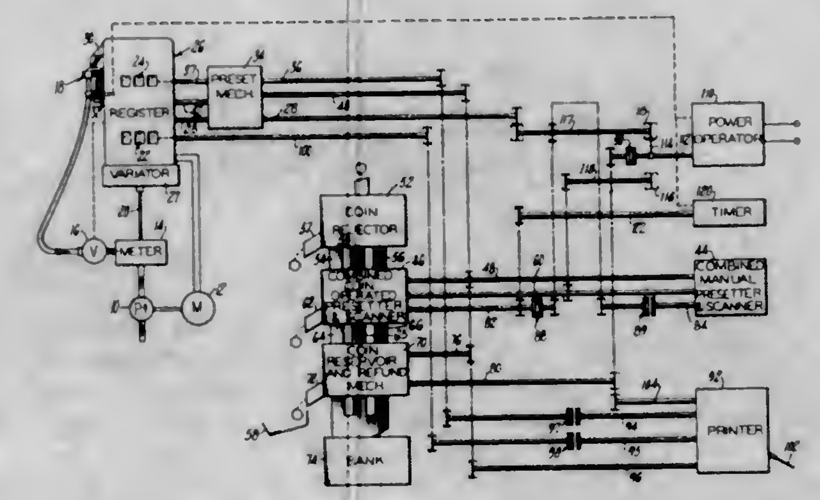


An adjustment mechanism to compensate for wear of friction facing material in an axially engageable clutch mechanism.

## 3,478,854
## FUEL DISPENSING APPARATUS CONTROL SYSTEM

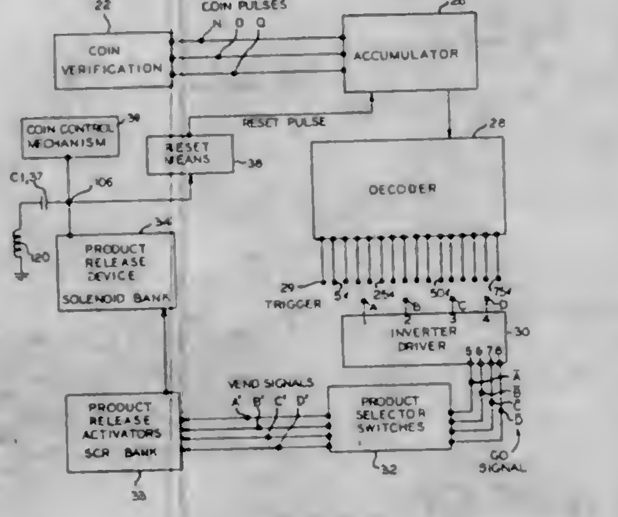
**Lawrence Dilger, South Croydon, and Ernest Stanley Ashford, Felbridge East Grinstead, England, assignors to Veeder Industries Inc., Hartford, Conn., a corporation of Connecticut**
**Filed Mar. 28, 1967, Ser. No. 626,565**
**Claims priority, application Great Britain, Jan. 24, 1967, 14,529/67**
**Int. Cl. G07f** *15/00, 13/02, 9/04*
**U.S. Cl. 194—3** **46 Claims**

Fuel dispensing apparatus having both coin operated and push button preselecting mechanisms for preselecting the amount of fuel to be delivered. An electrical drive motor is energized when the fuel nozzle is removed from its storage receptacle to reset the register of the dispensing apparatus and to set up a preset mechanism in accordance with the preselected amount in the coin operated or push button preselecting mechanism. A coin refund mechanism is provided for returning coins approximately the amount of fuel paid for and not delivered at the end of the delivery and a printer is provided for recording the amount of fuel delivered, and when the fuel nozzle is returned to its storage receptacle the electric drive motor is energized to operate the refund mechanism and printer and to reset the coin operated push button preselecting mechanisms. An interlock mechanism is provided for setting up the apparatus for manual preselection with the push button preselecting mechanism or for coin operation with the coin operated preselecting mechanism. The coin refund mechanism has a rotary refund controller with refund control cams which are mechanically coupled to the preset mechanism to continually provide for setting the refund mechanism for refunding coins having a total value approximating the amount of fuel paid for and not delivered.



## 3,478,855
## MULTIPRICE VENDING MACHINE COIN OPERATED CONTROL

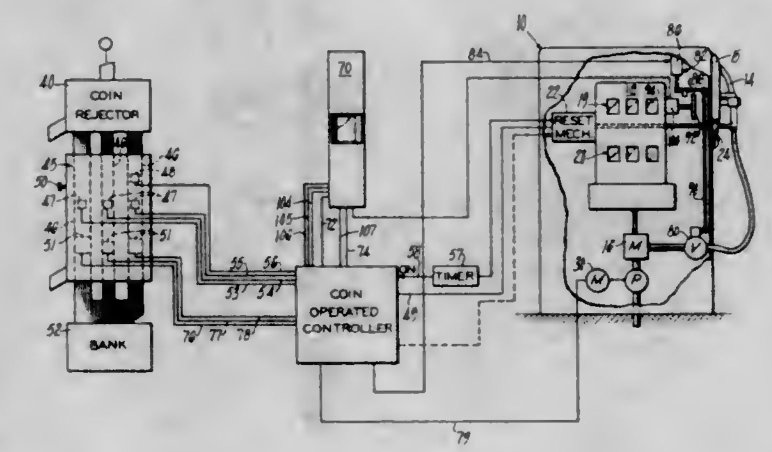
**Gordon F. Seversen, Elmhurst, Ill., assignor to Televiso Electronics, Division of Doughboy Industries, Inc., Wheeling, Ill., a corporation of Wisconsin**
**Filed Sept. 11, 1967, Ser. No. 666,748**
**Int. Cl. G07f** *5/16*
**U.S. Cl. 194—9** **24 Claims**



A coin operated vending machine capable of providing multiproducts at different pre-set prices. A drive signal is generated when coins totaling any one of the pre-set product prices are inserted into the vending machine. The drive signal becomes a vend signal when a product selection is made which triggers the product release means of the vending machine causing the selected product to be dispensed.

## 3,478,856
## FLUID DELIVERY CONTROL SYSTEM

**Donald A. Bly, West Simsbury, Conn., assignor to Veeder Industries Inc., Hartford, Conn., a corporation of Connecticut**
**Filed Oct. 5, 1967, Ser. No. 673,100**
**Int. Cl. G07f** *13/02, 15/00*
**U.S. Cl. 194—13** **14 Claims**

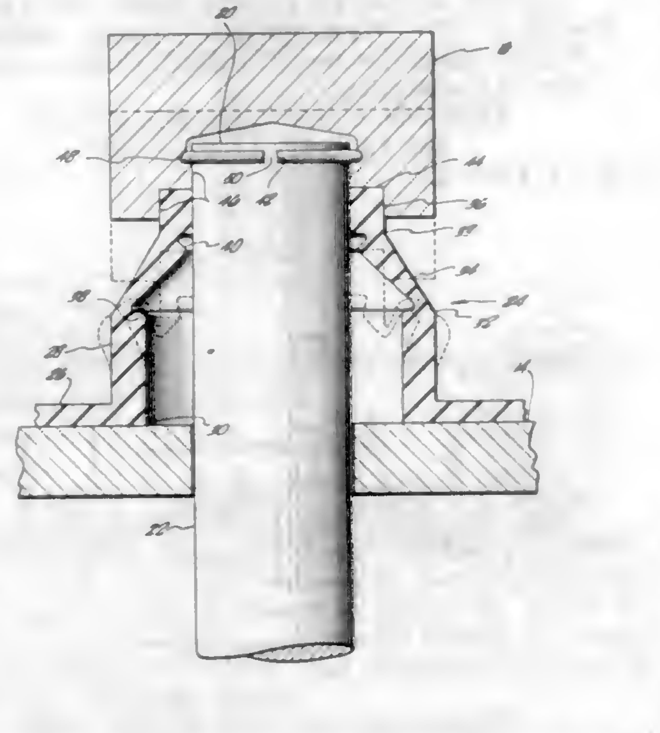


A coin operated self-service fuel dispensing system having a coin rejector for accepting three denominations of coins, a coin magazine for storing the deposited coins of each denomination accepted by the rejector, a coin sensor for sensing the presence of a coin in each magazine and a coin collecting device for selectively collecting a single coin from each magazine. The coins are "held in escrow" in the magazines and a control circuit activated by the coin sensors provides for collecting the highest value coin available from the respective magazine and for activating fuel dispensing apparatus for delivering a corresponding monetary amount of fuel. The control circuit operates to de-energize a holding solenoid of a valve closure mechanism for closing a fuel delivery control valve after the corresponding monetary amount of fuel is delivered, and a stepping switch indexed by a pulse generator operated by the dispensing apparatus is connected for de-energizing the holding solenoid in accordance with the value of the collected coin. The system is "cycled" for each collected coin and after the holding solenoid is de-energized to permit the closure mechanism to close the delivery control valve, the stepping switch is reset to "0" and a succeeding coin, if any, is collected to re-energize the holding solenoid and thereby permit the delivery of an additional monetary amount of fuel corresponding to the value of the succeeding coin. A minimum control relay is employed for activating the fuel delivery apparatus when a minimum monetary amount has been deposited, and the coin magazines are provided with coin return means for returning coins remaining in the coin magazines.

## 3,478,857
## KEYBOARD PUSHBUTTON RETURN SPRING

**John T. Linker, Garden Grove, Calif., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware**
**Filed July 19, 1967, Ser. No. 654,646**
**Int. Cl. B41j** *7/26, 25/00;* **F16f**
**U.S. Cl. 197—98** **6 Claims**

A positive action tactile pushbutton and combined return spring is disclosed which is constructed of a resilient material having a base including an aperture and a generally frusto-conically shaped tubular protrusion integrally constructed with and extending away from the base coaxially with the aperture. An end of the protrusion is cylindrical and engages a plunger which is manually operated. Upon depression of the plunger with force slightly in excess of a breakover amount, a positive snap action is sensed. Upon release of the plunger the return spring snaps back to its original position thereby returning the plunger to its normally nonoperated position.



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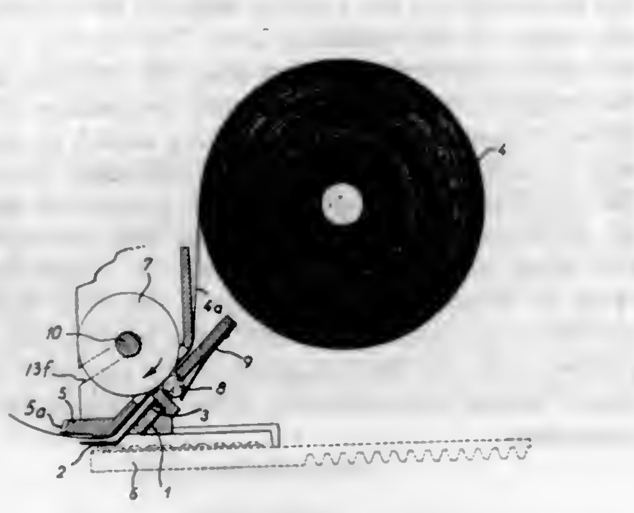
### 3,478,858
## INKING MECHANISM FOR CALCULATORS AND LIKE MACHINES

**Tibor Arvai, Paris, France, assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**

**Filed Feb. 28, 1967, Ser. No. 619,376**
**Claims priority, application France, Mar. 24, 1966, 54,901**
**Int. Cl. B41j** *33/14*
**U.S. Cl. 197—151** **1 Claim**



An ink retaining member in an interchangeable cartridge feeds ink by capillary action to an inking ribbon projecting therefrom into a position between a platen and type bars whereby printing may be effected on paper fed between the ribbon and the platen by paper feeding apparatus utilizing detented ratchet means to rotate a shaft predetermined discreet amounts upon each ratchet actuation whereby paper engaging means on the shaft moves the paper a predetermined distance.

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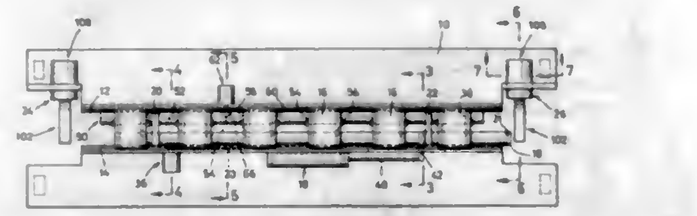
### 3,478,859
## CONVEYING APPARATUS

**Fritz Krempel, Metzingen-Neugreuth, and Theodor Stoferle, Ludwigsburg-Pflugfelden, Germany, assignors to Karl Huller GmbH, Ludwigsburg, Wurttemberg, Germany**

**Filed Oct. 30, 1967, Ser. No. 678,949**
**Int. Cl. B23q** *7/00*
**U.S. Cl. 198—19** **15 Claims**



A conveying apparatus for stepwise moving elements or work pieces between and exactly locating elements in a plurality of spaced working stations arranged along guide means of the conveying apparatus, in which a plurality of plates adapted to support the elements are guided by the guide means, in which the plates are stepwise moved by engaging members mounted on a reciprocable rod and brought in engagement with the plates during movement of the rod in one direction and disengaged from the plates during movement of the rod in the opposite direction, and in which the plates are engaged by positioning means in the respective positions to which they are moved by the engaging members to maintain the plates in fixed exact positions during return movement of the rod and while the engaging members are disengaged from the plates.

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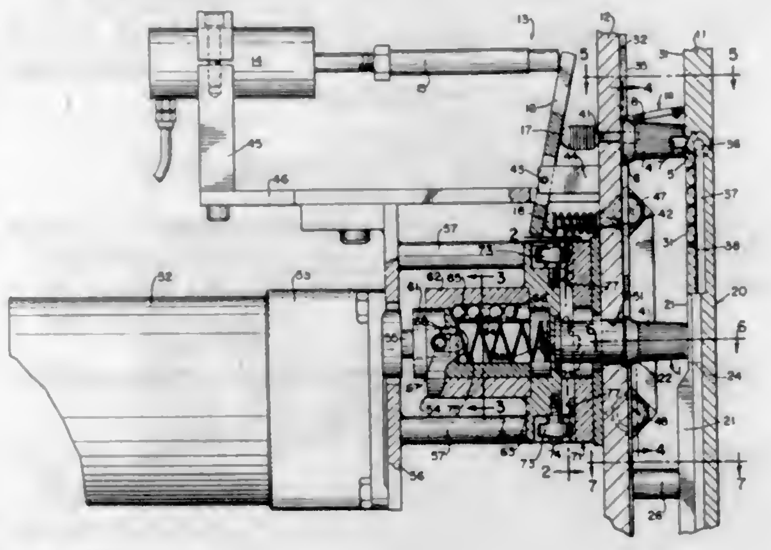
### 3,478,860
## APPARATUS FOR ORIENTING ARTICLES

**Henry W. Schick, Commack, N.Y., assignor to Gilbert Manufacturing Company, Inc., Long Island City, N.Y., a corporation of New York**

**Filed May 1, 1967, Ser. No. 635,230**
**Int. Cl. B65g** *47/24*
**U.S. Cl. 198—33** **13 Claims**

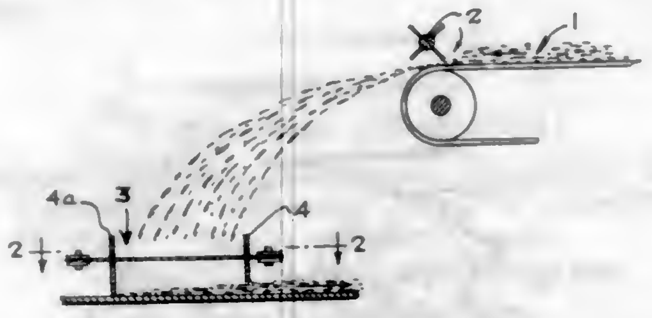


Apparatus for angularly orienting articles moving along a predetermined path in which articles are sequentially rotated to a predetermined angular position by aligning the articles with an index means.

### 3,478,861
## ORIENTING WOOD STRANDS

**Armin Elmendorf, 860 Charleston Road, Palo Alto, Calif. 94303**

**Filed July 31, 1967, Ser. No. 657,366**
**Int. Cl. B65g** *47/24*
**U.S. Cl. 198—33** **5 Claims**



A method is described for making board products consisting of wood strands bonded together in substantial parallelism in which binder coated wood strands are allowed to fall freely onto parallel linear supports and adjacent supports are moved alternately in opposite directions so that the strands which come to rest on the supports are rotated through an arc until they slide off the supports and fall down onto a moving caul. The invention includes an apparatus for practicing the method which provides a plurality of parallel spaced linear supports that move in opposite directions, an orienting zone determined by the plane of the supports and lateral walls through which the supports pass, and fixed parallel vertical partition plates.

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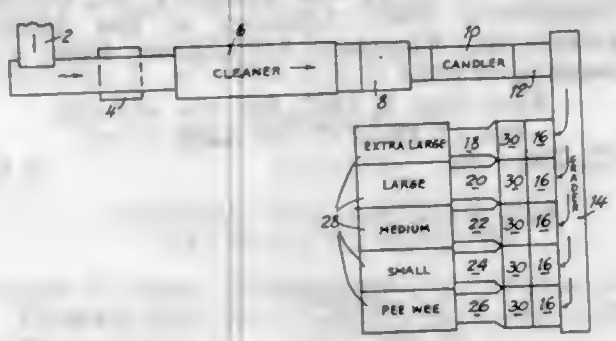
### 3,478,862
## EGG ORIENTING EQUIPMENT

**Otto C. Niederer, Bear Tavern Road, Titusville, N.J. 08560**

**Filed Oct. 5, 1967, Ser. No. 673,193**
**Int. Cl. B65g** *47/24*
**U.S. Cl. 198—33** **10 Claims**



Equipment for conveying, arranging, orienting and otherwise handling eggs wherein egg receiving channels are provided with egg supporting means along which eggs are movable. Egg moving means having transversely yieldable spaced egg lifting members located on opposite sides of said egg supporting members. The egg moving means is preferably elongated to engage a plurality of eggs and is movable in a cyclic path to engage the opposite sides of the eggs so as to cooperate with the egg supporting means to at least partially raise and move the eggs lengthwise of the channels and/or into predetermined arrangements or similarly oriented positions within the channels.

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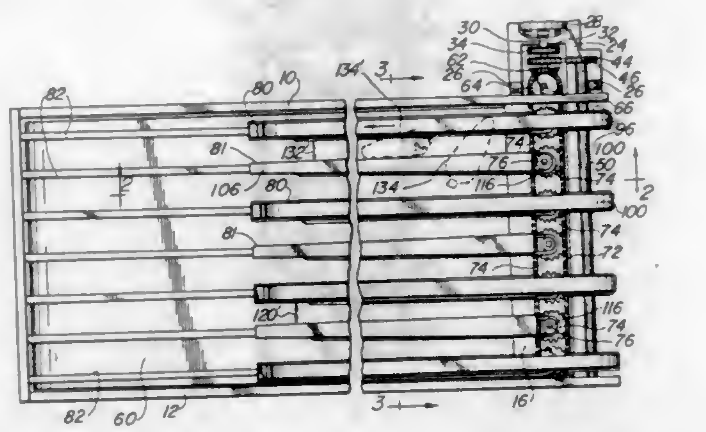
### 3,478,863
## CORN EAR ORIENTING DEVICE

**Bernard P. Fuchs, R.R. 3, Rochelle, Ill. 61068**

**Filed Oct. 9, 1967, Ser. No. 673,549**
**Int. Cl. B65g** *47/24*
**U.S. Cl. 198—33** **15 Claims**

The disclosure describes a device adapted to axially and end-to-end orient and convey elongated objects of the same or different sizes and in one embodiment shows a first series of belts with their upper surfaces in a substantially horizontal plane and in spaced relationship cooperating with a second series of belts with their outer surfaces substantially vertical to and under said horizontal plane whereby the objects are aligned with their axes substantially parallel to the first belt surfaces and then are moved along in cooperation with the second belts to be dropped in a desired position or end-to-end orientation upon a third conveyor belt or into a receptacle or a processing machine. In one embodiment the horizontal distance between the vertical belts is changed so that the position of release of the objects is established at a desired point in relation to the effective diameters of the objects. Other embodiments are disclosed, including a conveyor system adapted to receive a truck load of corn ears, gradually and continuously orient the ears with their axis coincident with the direction of travel on the conveyor system, allow the ears to assume a substantially vertical position with the lower ends contiguous to a flat horizontal conveyor belt thereunder, traveling in the same direction but at greater or less speed whereby the ears are turned and fall thereon in a desired end-to-end orientation.



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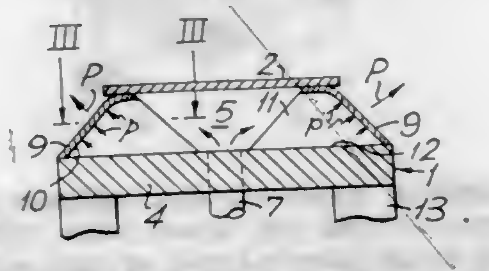
### 3,478,864
## APPARATUS FOR SUPPORTING STRIP MATERIAL ON A GAS CUSHION

**Leslie Arthur Hopkins, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company**

**Filed Nov. 16, 1967, Ser. No. 683,541**
**Claims priority, application Great Britain, Nov. 24, 1966, 52,749/66**
**Int. Cl. B65g** *15/60*
**U.S. Cl. 198—204** **8 Claims**

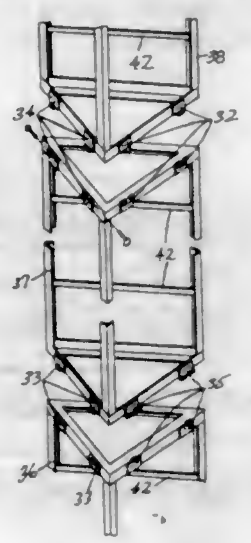


An air-cushion pad for providing support to strip material for a conveyor belt using the flexible "skirt" to contain the air cushion. The skirt is attached to the base of the pad and inclines away from the base in a direction inwardly relative to the air cushion whereby movement of the strip or belt towards and away from the base results in collapse or extension respectively of the free edge of the flexible wall means so as to vary the effective area of the air cushion.

Preferably the flexible skirt is of the form disclosed in copending application Ser. No. 566,948 now Patent No. 3,420,330.

### 3,478,865
### APPARATUS FOR THE HARVESTING OF TOBACCO

**Clifford Vogel, 2818 Joyce Ave., Apt. C, Columbus, Ohio 43211**
**Continuation-in-part of application Ser. No. 458,697, May 25, 1965. This application May 24, 1968, Ser. No. 731,820**
**Int. Cl. B65g** *21/06, 15/60*
**U.S. Cl. 198—204** **4 Claims**



Vertical coveyor comprising a tower having a plurality of sections hingedly secured together and including a conveyor element extending the full length of said tower and having means carried by the conveyor for releasably engaging a tobacco stalk.

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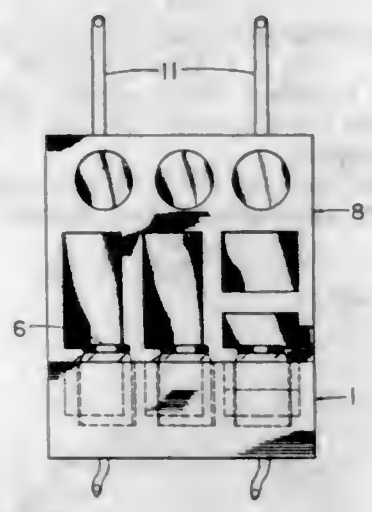
### 3,478,866
### INSULATED CONTAINER FOR INFANT FOOD

**Lois B. Beaty, Rte. 3, Harrison Pike, Cleveland, Tenn. 37311**
**Filed Apr. 3, 1968, Ser. No. 718,591**
**Int. Cl. A45c** *11/20;* **B65d** *81/38*
**U.S. Cl. 206—4** **1 Claim**



An insulated compartmented container for keeping food warm, or cold, for several hours while traveling, especially for an infant's bottles of milk and water, jars of baby food, a feeding spoon, a bib and a washcloth.

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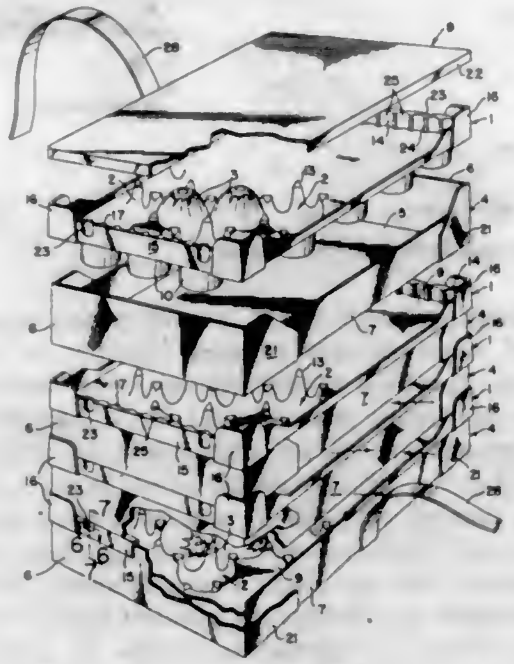
### 3,478,867
### STACKABLE TRAYS AND PACKAGE FORMED THEREFROM

**Hugh R. Weiss, Montclair, N.J., assignor to The Pantasote Company of New York, Inc., New York, N.Y., a corporation of New York**
**Filed Oct. 26, 1967, Ser. No. 678,353**
**Int. Cl. B65d** *1/00, 25/02, 71/00*
**U.S. Cl. 206—44** **10 Claims**

The present invention relates to stackable multicompartment trays formed from thin sheets of thermoplastic resinous materials and adapted to receive and separate articles such as fruit, candy, delicate electronic items and the like. It particularly relates to such one-piece trays which have a peripheral rib of inverted U-shaped section and which may be stacked together with inexpensive interposed, open top boxlike spacers formed of scored and folded cardboard or corrugated paper and having the upper edges thereof disposed within the groove of said peripheral rib to form a multitray shipping, storage or display container without requiring a surrounding and expensive box.



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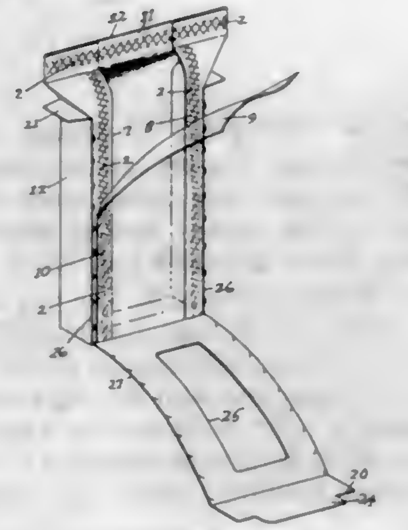
### 3,478,868
### STERILIZABLE CONTAINERS

**Robert W. Nerenberg and Richard P. W. Reynolds, Middletown, Ohio, assignors to The Interstate Folding Box Company, Middletown, Ohio, a corporation of Ohio**
**Filed Sept. 1, 1967, Ser. No. 665,156**
**Int. Cl. B65d** *85/50;* **A61b** *19/02*
**U.S. Cl. 206—46** **9 Claims**



This invention relates to paperboard cartons and more particularly to lined carton structures in which the liner is, in part at least, formed from a gas permeable material which permits sterilization of the contents subsequent to the sealing of the liner. The carton structures are particularly suited for the packaging of products which must be maintained in a sterilized condition, such as surgical instruments, syringes, intravenous tubes, and the like. A principal feature of the invention lies in the provision of a lined carton structure of the character described in which the carton and liner may be opened in such a way that the contents may be removed without chance contact with unsterilized outer portions of the carton or liner.

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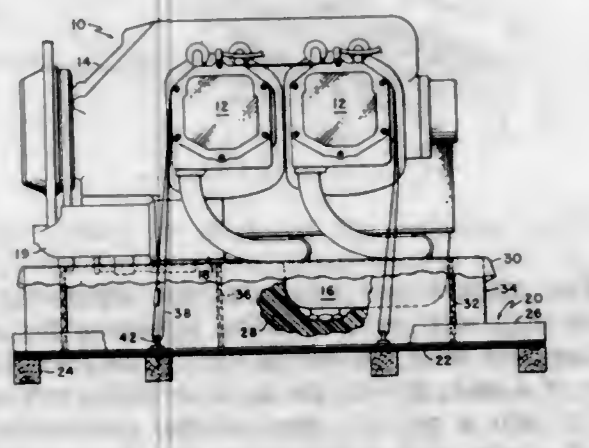
### 3,478,869
### SHIPPING APPARATUS

**Richard E. Walters, Williamsport, Pa., assignor to Avco Corporation, Williamsport, Pa., a corporation of Delaware**
**Filed Apr. 22, 1968, Ser. No. 722,900**
**Int. Cl. B65d** *81/02*
**U.S. Cl. 206—46** **12 Claims**



The disclosure illustrates shipping apparatus for an opposed cylinder aircraft engine. The central portion of the engine rests on a rigid foam plastic material that conforms to the irregular contours of the engine and overlies a relatively rigid base member. Straps, secured to the base member, extend over the outer ends of the engine cylinders to hold the engine against the rigid foam material which supports the engine with a sufficient degree of resiliency to minimize effects of adverse handling.

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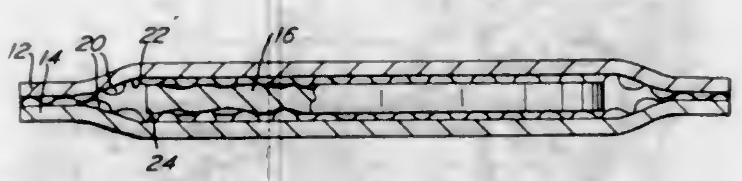
### 3,478,870
### METHOD AND ARTICLE FOR PACKAGING OBJECTS

**Joseph M. Segel, Philadelphia, Pa., assignor to The Franklin Mint, Inc., Yeadon, Pa., a corporation of Pennsylvania**
**Filed Aug. 8, 1968, Ser. No. 751,263**
**Int. Cl. B65d** *85/58, 83/04;* **B32b** *7/14*
**U.S. Cl. 206—46** **11 Claims**



A method is disclosed for packaging objects such as coins or the like between layers of paper in a manner whereby the surface contour of the objects is not ascertainable by tracing through the layers. The article comprises a package formed of layers of sheet material having discrete spaced beads of thermoplastic material on inside faces thereof, the beads providing thermoplastic adhesive for forming the package and preventing tracing through the layers.

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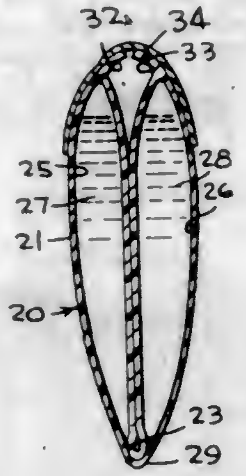
### 3,478,871
### BURST PACKAGE WITH FOLD SEAL

**Thomas Sager, Plymouth Valley, Pa., assignor to Kleer-Vu Industries, Inc., New York, N.Y.**
**Filed Apr. 29, 1968, Ser. No. 724,824**
**Int. Cl. B65d** *79/00*
**U.S. Cl. 206—47** **1 Claim**



A package for separating two component substances or fluids such as epoxies and the like for storage, and wherein at the same time there is provided a mixing chamber for use when the materials are to be used, and wherein it is not necessary to open the package until the actual time of applying or using the materials or fluids.

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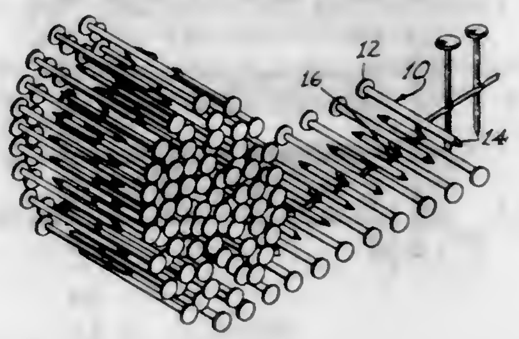
### 3,478,872
### NAIL PACKAGE

**Carl T. Becht, Cincinnati, Ohio, assignor to Senco Products, Incorporated, Cincinnati, Ohio, a corporation of Ohio**
**Continuation of application Ser. No. 541,177, Apr. 8, 1966. This application Oct. 3, 1967, Ser. No. 672,630**
**Int. Cl. B65d** *83/02, 71/00*
**U.S. Cl. 206—56** **5 Claims**



Nail package including a plurality of nails arranged in side-by-side relation with their shanks in substantially parallel planes and with points of adjacent nails extending in opposite directions and including flexible, extensible means secured to the shank of each of the nails.

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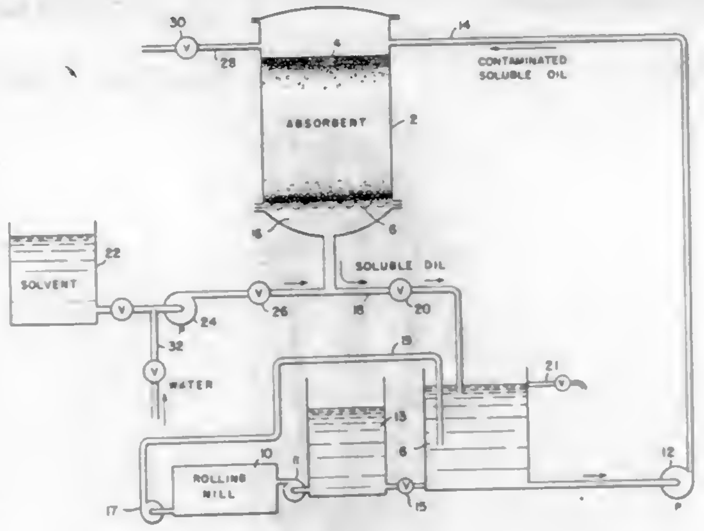
### 3,478,873
### METHOD AND APPARATUS FOR SEPARATION OF TRAMP OIL FROM OIL-IN-WATER EMULSIONS

**John O. McLean, Varina, Va., assignor to De Laval Turbine Inc., Trenton, N.J., a corporation of Delaware**
**Filed Mar. 3, 1965, Ser. No. 436,789**
**Int. Cl. B01d** *23/10*
**U.S. Cl. 210—23** **11 Claims**

Method and apparatus for the separation of nonemulsified suspended oil droplets from an emulsion of an oil as the dispersed phase in an aqueous continuous phase involving the passing of the emulsion through a bed of a material, preferably in the form of granules, providing flow passages bounded by surfaces of an oil-retaining water-repellent material such as, for example, a polymeric resin or polytetrafluoroethylene.



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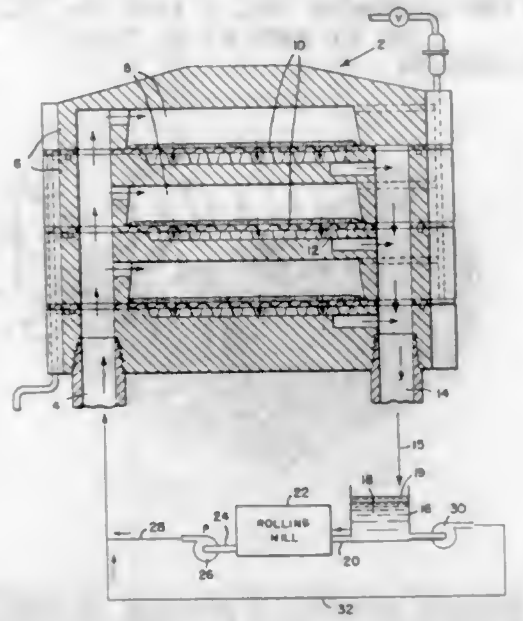
### 3,478,874
### METHOD FOR SEPARATION OF TRAMP OIL FROM OIL-IN-WATER EMULSIONS

**John O. McLean, Varina, Va., and John R. Schneider, Belvedere, Calif., assignors to De Laval Turbine Inc., Trenton, N.J., a corporation of Delaware**
**Filed Mar. 3, 1965, Ser. No. 436,791**
**Int. Cl. B01d** *13/00*
**U.S. Cl. 210—23** **4 Claims**



A method for the separation of nonemulsified suspended oil droplets from an emulsion of an oil as the disperse phase in an aqueous continuous phase, without degradation of the emulsion. The emulsion containing the nonemulsized droplets is passed through a separating medium providing numerous flow passages. The flow passages in the separating medium are of a short length in the direction of flow so that oil after accumulation in the passages flows therefrom in the form of droplets of a size larger than those in the original liquid. The method then involves effecting, in the effluent from the separating medium, gravity flotation of the larger droplets.

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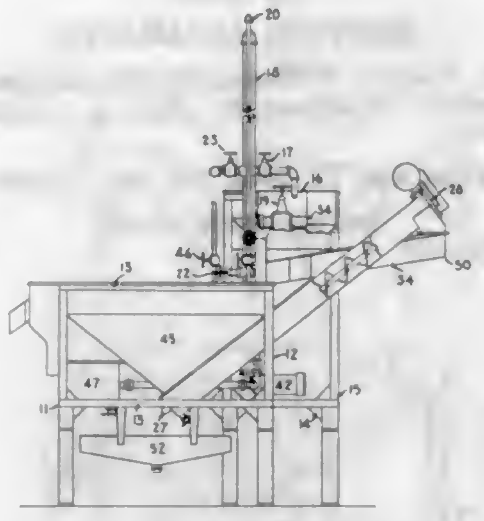
### 3,478,875
### METHOD AND APPARATUS FOR SEPARATING NUT MEATS FROM SHELLS

**James H. Roberts, 126 Verdant, San Antonio, Tex. 78209**
**Filed Sept. 27, 1966, Ser. No. 582,306**
**Int. Cl. B03l** *9/00*
**U.S. Cl. 209—2** **8 Claims**



The method and apparatus for separating nutmeats from shell mixture comprising siphoning the mixture in an aqueous fluid, deflecting the discharge along the surface of a tank, flowing the aqueous fluid carrying buoyant meats into a pervious meat chute, recovering the separated meats and recirculating the fluid, conveying the non-buoyant mixture from the tank and depositing the mixture along the surface of an aqueous fluid in a second tank; flowing the fluid and buoyant nut meats into a pervious meat chute, recovering the nut meats, recirculating and maintaining the fluid in the secondary tank at an elevated temperature, and conveying the non-buoyant shells from the secondary tank.

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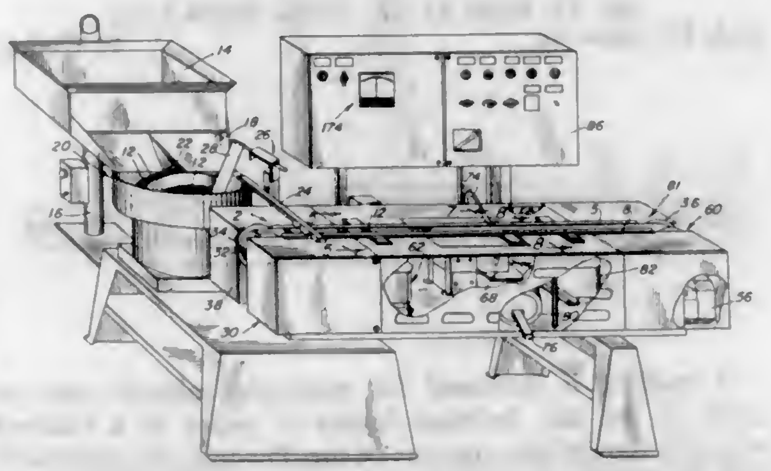
### 3,478,876
### MAGNETIC PARTS SORTER

**Arthur K. Littwin, Lincolnwood, and Donald F. Littwin, Chicago, Ill., assignors to Arthur K. Littwin, Robert L. Littwin, Donald F. Littwin and Horace A. Young, trustees of Littwin Family Trust No. 1**
**Filed Jan. 12, 1965, Ser. No. 424,912**
**Int. Cl. B07c** *5/34;* **G01r** *33/00*
**U.S. Cl. 209—73** **11 Claims**



Magnetizable articles are sorted according to the degree of magnetization of the articles. The articles are conveyed along a path at a controlled speed, magnetized at a station along the path, and then evaluated for level of magnetism at a subsequent testing station. The articles are subsequently sorted in accordance with the testing.

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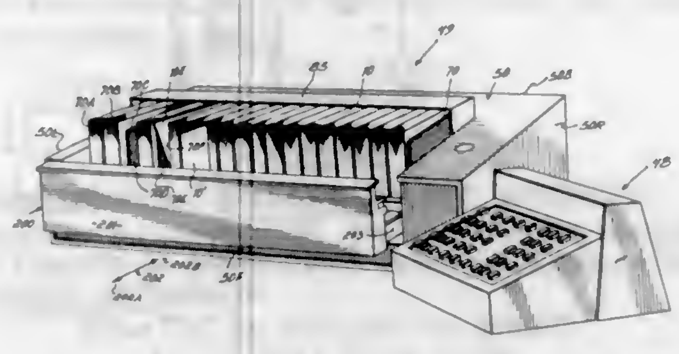
### 3,478,877
### ARTICLE SELECTION SYSTEM

**Robert D. Parry, Cincinnati, Ohio, assignor of ninety per cent to O.K. Partnership, Cincinnati, Ohio, a limited partnership, and ten percent to Access Corporation, Cincinnati, Ohio, a corporation of Ohio**
**Filed Aug. 4, 1967, Ser. No. 661,758**
**Int. Cl. B07c** *5/00, 9/00*
**U.S. Cl. 209—80.5** **52 Claims**



A retrieval system is disclosed for selecting one or more articles having a code-notched sorting edge from a plurality of similar articles stored with their sorting edges aligned. The system includes means for selectively engaging sorting bars disposed transversely of the stored articles with the aligned code-notched article edges, separating means for relatively limitedly moving and partially separating, in a direction parallel to their sorting edges, articles notched in conformity with the engaged sorting bars and those not conformingly notched, and lock means for positively locking nonconformingly notched articles to permit further separation of the conformingly and nonconformingly notched articles by continued relative movement in the same direction used to effect partial separation of the articles.

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## ERRATUM

For Class 209—334 see:
Patent No. 3,478,406

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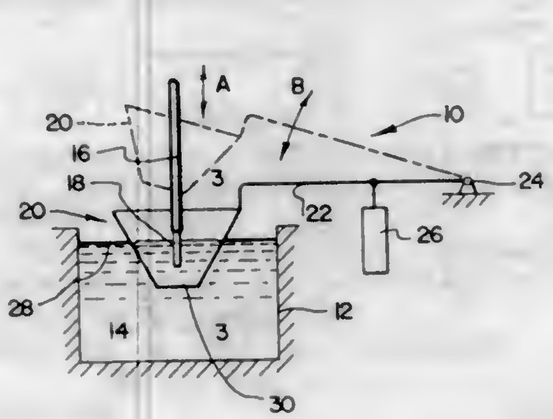
### 3,478,878
### SOLDERING APPARATUS

**Ralph H. Swaisgood, Fort Collins, Colo., assignor to Storm Products Company, Los Angeles, Calif., a corporation of California**
**Filed Nov. 18, 1966, Ser. No. 595,465**
**Int. Cl. B01d** *33/00*
**U.S. Cl. 210—70** **11 Claims**



Dross removal apparatus and method for removal of dross from a portion of a liquid bath comprising a container of a material non-wettable by the liquid having sidewalls tapering from a larger upper opening to a lower smaller opening and means for lowering and raising the container into and out of the liquid bath to provide a dross-free surface on the liquid when positioned within the container.

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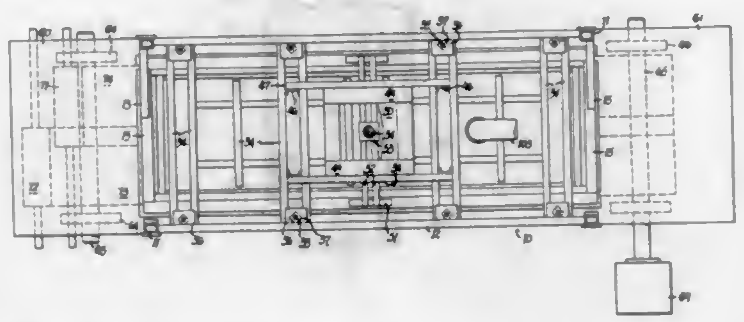
### 3,478,879
### METHOD AND APPARATUS FOR FILTERING WITH OVERLAPPED FILTER MEDIUM

**Gene Hirs, 6865 Meadow Lake, Birmingham, Mich. 48010**
**Filed Aug. 24, 1967, Ser. No. 662,942**
**Int. Cl. B01d** *29/04*
**U.S. Cl. 210—77** **13 Claims**



A filtering apparatus is provided with a filter medium comprised of a plurality of strips of liquid pervious material having overlapping edge portions contacting each other so that the width of the filter medium is greater than the width of any of the individual strips. The filter medium extends through a chamber defining a space for incoming liquid on one side of the filter medium and a space for outgoing liquid on the other side of the filter medium, and the apparatus has a peripheral seal for sealing the filter medium peripherally thereof to the chamber and a further seal or equivalent holding structure for holding the overlapping portions of the filter strips together.

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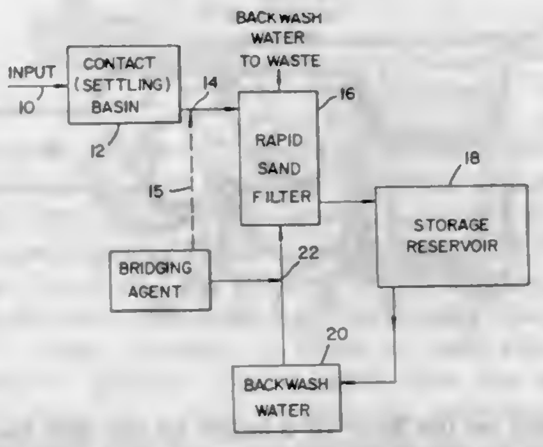
### 3,478,880
### PROCESS FOR WATER TREATMENT FILTER CONDITIONING

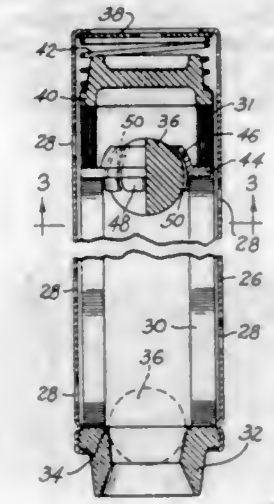
**William Leslie Harris, Concord, Calif., assignor to Contra Costa County Water District, Concord, Calif., a corporation of California**
**Filed July 10, 1967, Ser. No. 652,069**
**Int. Cl. C02c** *1/18*
**U.S. Cl. 210—80** **3 Claims**



A method of improving the filtering characteristics of a rapid sand filter in which approximately 0.01 to 0.10 p.p.m. of a polyelectrolyte bridging agent is added to the water used to backwash the filtering medium.

### 3,478,881
### SHUT-OFF VALVE FOR FUSE FILTER

**John W. Bozek, Madison Heights, Mich., assignor to The Bendix Corporation, a corporation of Delaware**
**Filed July 3, 1967, Ser. No. 650,951**
**Int. Cl. B01d** *35/14, 33/38*
**U.S. Cl. 210—96** **12 Claims**



A positive shut-off valve for interrupting the flow of fuel through a fuse filter element of a fuel-monitoring device in the event such fuel contains free water. The fuse-filtering element is formed of a lower compressible section and an upper non-compressible section between which is sandwiched a valve retainer. A valve member which is engaged by the valve retainer is moved into the outlet port when the resultant forces acting on the valve member exceed a predetermined value. The resultant forces acting on the valve member will exceed the predetermined value only when the fuel contains water contaminants and not when the fuel contains only solid contaminants.

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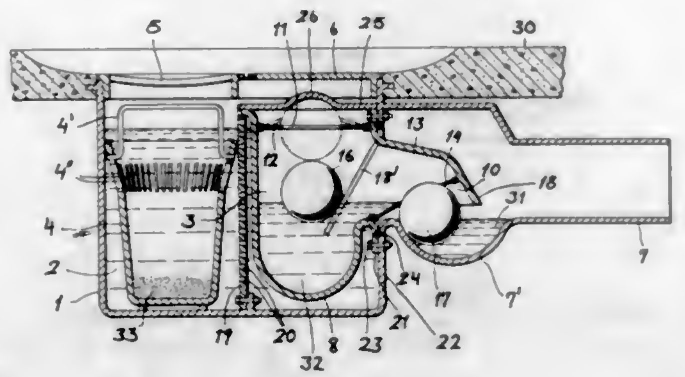
### 3,478,882
### ANTI-BACKFLOW DRAINAGE SYSTEM

**Arno Hörnemann, In der Luft 27, Obrighoven, Wesel, Germany**
**Filed Jan. 31, 1968, Ser. No. 701,978**
**Claims priority, application Germany, Jan. 31, 1967, H 61,706**
**Int. Cl. B01d** *33/38*
**U.S. Cl. 210—104** **10 Claims**



A drain on the floor of a cellar or the like has a screen overlying an overflow compartment of a container which opens into a chamber with a relatively elevated inlet, closable from within by a first floating ball valve, and with a relatively depressed outlet normally closed from without by a second valve floating on a pool of liquid formed in an adjoining discharge pipe.

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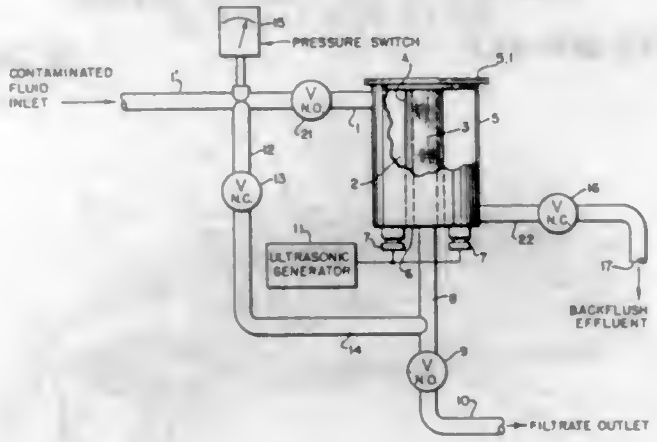
### 3,478,883
### ACOUSTIC FILTRATION APPARATUS

**Frank P. Deluca, Jr., Encino, Calif., assignor to Amsalco, Inc., Los Angeles, Calif., a corporation of California**
**Filed Apr. 13, 1967, Ser. No. 630,738**
**Int. Cl. B01d** *41/00*
**U.S. Cl. 210—108** **6 Claims**



A flow-line liquid filter system is disclosed having means for increasing the soil retention capability and cleaning accumulated solids off the filter element with the aid of elastic wave irradiation applied to the liquid in the filter chamber. Electromechanical transducers are actuated, intermittently, continuously, in the drain cycle or on back-flush only, or in combination of these steps, to clean solids of the filter and aid in their collection subsequently. An electrically-operated control system sets either the irradiation and/or the back-flush system into operation when the back-pressure at the input of the filter system indicates a clogged or nearly clogged filter.

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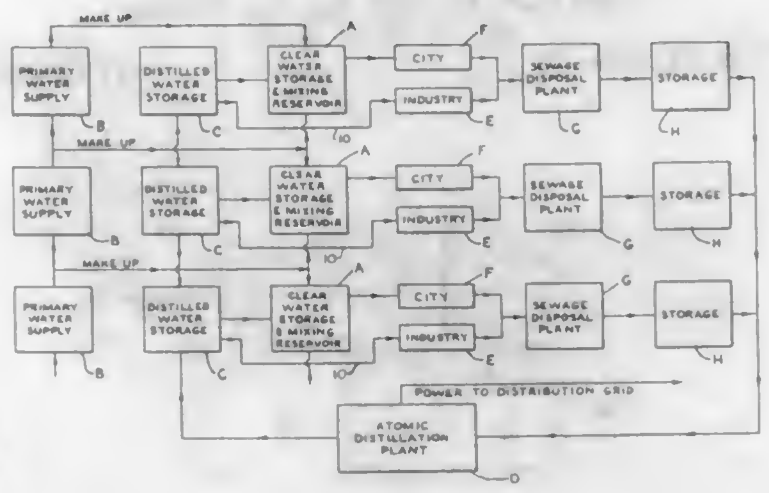
### 3,478,884
### COMBINED WATER DISTRIBUTION AND REGENERATION SYSTEM

**George Bruce McPherson, 408 S. Main St., and Granville P. Patterson, Calhoun Towers, both of Greenville, S.C. 29601**
**Filed Mar. 8, 1968, Ser. No. 711,553**
**Int. Cl. C02c** *3/00*
**U.S. Cl. 210—152** **2 Claims**



A combined water distribution and regeneration system for a metropolitan area wherein, a distillation plant

is provided for supplying distilled water to a plurality of distilled water storage reservoirs which, in turn, feed the water to a clear water storage reservoir which also receives make-up water from a natural supply. Water from the distilled water storage reservoir is supplied to selected consumers within the metropolitan area, while other consumers within the area are supplied with water from the mix water reservoir. Each of the metropolitan areas has a sewage disposal plant which receives water from the consumers after such has been used for removing solids therefrom. The water from the sewage disposal plant is then fed back to the distillation plant via a storage reservoir to be distilled and reinserted within the water distribution system. The distillation plant also generates electricity during the distilling process for use in the metropolitan areas.

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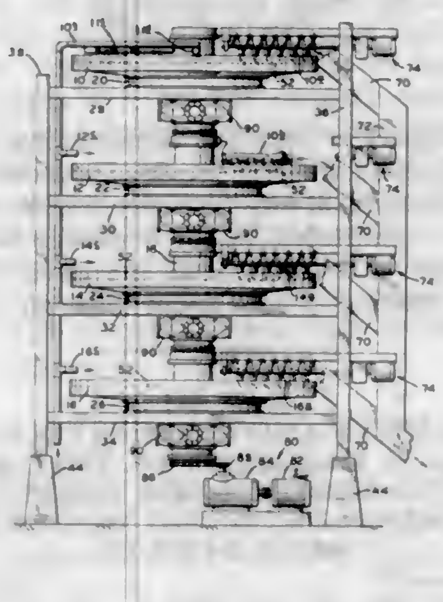
### 3,478,885
### HORIZONTAL ROTARY FILTER ASSEMBLY

**Clifford E. Jackson, Orillia, Ontario, Canada, assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware**
**Filed Jan. 10, 1967, Ser. No. 608,297**
**Int. Cl. B01d** *25/32, 25/02*
**U.S. Cl. 210—194** **8 Claims**



A vertically stacked assembly of horizontal filter pans mounted on a vertical central hollow shaft having internal transverse partitions subdividing the interior of the shaft into vertical ducts each having upper filtrate openings communicating with each pan and lower filtrate discharge openings for each pan, and stationary valve means surrounding the shaft and each set of filtrate discharge openings for controlling the filtration cycle.

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### 3,478,886
### GRAFT-COPOLYMER COLUMN SUPPORT MATERIAL FOR LIQUID-LIQUID PARTITION CHROMATOGRAPHY

**Robert F. Hornbeck, Livermore, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Mar. 31, 1967, Ser. No. 628,249**
**Int. Cl. B01d** *23/10*
**U.S. Cl. 210—198** **9 Claims**

A graft copolymer chromatography column substrate material or column packing material, comprising polytrifluorochloroethylene powder having copolymerized and crosslinked polyethylene glycol and styrene chemically bonded to the powder particle surfaces to confer upon the material hydrophilic and organophilic properties for improved retention and transmission of organic and aqueous eluant phases in chromatographic columnar and nonchromatographic liquid-liquid partitions.

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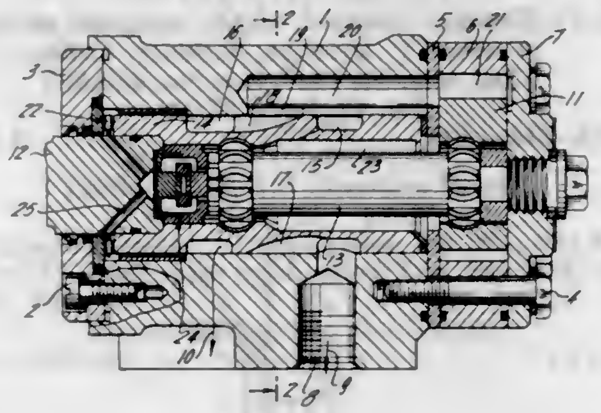
### 3,478,887
### COMBINATION CENTRIFUGAL AND MAGNETIC SEPARATOR DEVICE

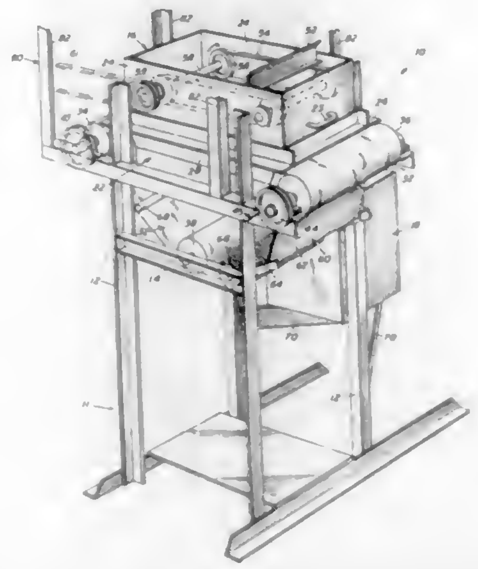
**Carl V. Ohrberg, Nordborg, Denmark, assignor to Danfoss A/S., Nordborg, Denmark, a company of Denmark**
**Filed July 18, 1967, Ser. No. 654,213**
**Claims priority, application Germany, July 19, 1966, D 50,616**
**Int. Cl. B03c** *1/02*
**U.S. Cl. 210—223** **3 Claims**



A separator device for separating solid contaminants from a lubricating fluid in rotary apparatus comprising a centrifugal separator and a magnetic separator internally of a common housing driven rotationally jointly in which centrifugal force and the position of the magnetic separator and the flow of leakage fluid lubricating the working parts of a rotary machine is along at path effective to allow flow of metallic contaminants over the magnetic separator and along a path rendering the centrifugal separator also more effective. The magnetic separator is self-cleaning because of its rotation and the flow path of the lubricating fluid and any contaminants leaving it are then retained by the centrifugal separator. The separator device is particularly applicable to fluid motors and pumps having commutating valves in which a rotary driven slide valve houses the separator device.

### 3,478,888
### SUCTION FILTERING MACHINE

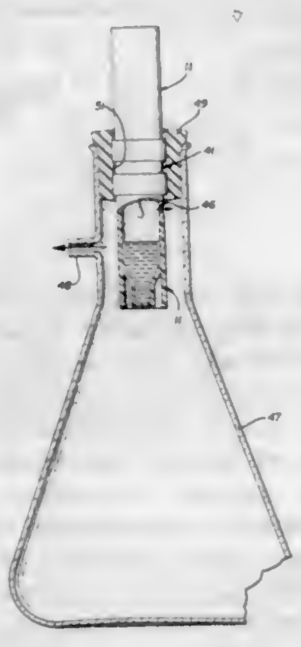
Joe D. Moore, 2715 Homewood Drive,
Albany, Ga. 31705
Filed Feb. 6, 1967, Ser. No. 614,124
Int. Cl. B01d *29/02*
U.S. Cl. 210—255 4 Claims



A filter apparatus having a continuous web filter clampingly engaged transversely through a container to divide it into upper and lower compartments. The upper comparment receives fluid which has been pre-filtered by a gravity flow through a series of nested trough sections. The lower compartment has a partial vacuum imposed therein by a suction pump and the fluid is filtered through the web from the upper compartment into the lower compartment. The upper compartment is movable out of clamping engagement so that a different portion of the web may be used.

### 3,478,889
### FILTER APPARATUS

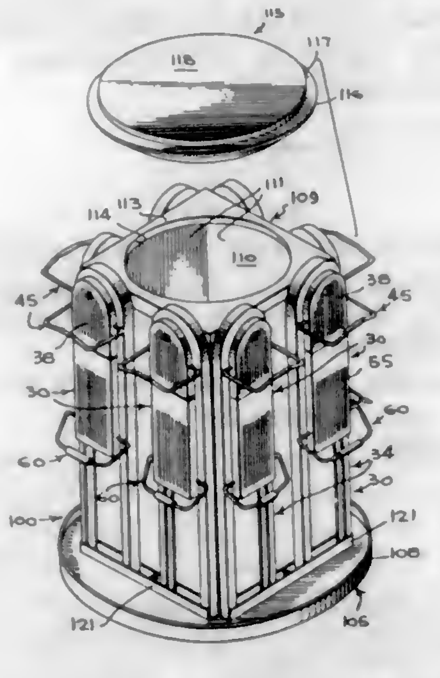
Julius H. Fessler, Oakland, Calif., assignor of one-half to Albert P. Krueger, Berkeley, Calif.
Filed Aug. 31, 1967, Ser. No. 664,807
Int. Cl. B01d *27/08*
U.S. Cl. 210—406 3 Claims



Filter apparatus comprising a body having a fluid chamber therein open on at least one end and a cap removably closing the open end, the cap having a passage therein with a filter pad mounted at one end of the passage for filtering fluid passing from the chamber and through said passage.

### 3,478,890
### LAZY SUSAN SHOE SUPPORT

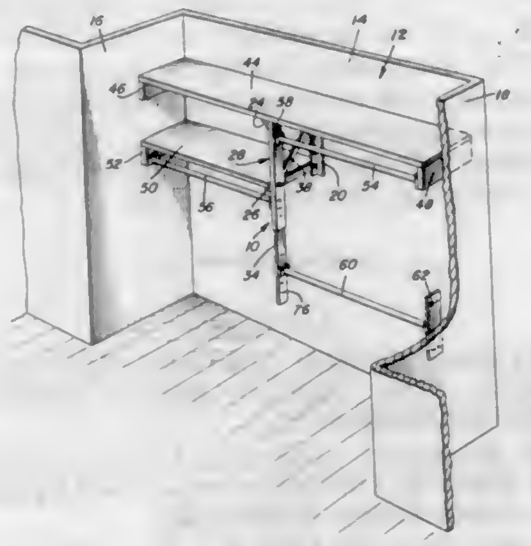
Ivor John Allsop, 2194 N. Shoe Road,
Bellingham, Wash. 98225
Filed Nov. 9, 1967, Ser. No. 681,645
Int. Cl. A47f *7/08, 5/02*
U.S. Cl. 211—37 3 Claims



A shoe support or rack for straightening and holding shoes, and wherein there is provided a means that automatically adjusts to fit any type and size of men's shoes, there being a removable lid for a storage area for shoe polishing gear or slippers, and the device supports a plurality of shoes at a convenient finger-tip location.

### 3,478,891
### VERTICAL SHELF AND CLOTHES POLE SUPPORT

Oscar E. Kaeslin, 1444 SW. 27th Court,
Fort Lauderdale, Fla. 33315
Filed June 14, 1967, Ser. No. 645,970
Int. Cl. A47f *5/08*
U.S. Cl. 211—90 14 Claims



A support bracket assembly mounted on the back wall of a closet space to support shelves and garment poles on either side. The bracket assembly includes a vertical rail spaced from a mounting rail, to which pole supports are secured below shelves resting on ledges of shelf supports interconnecting the rails.

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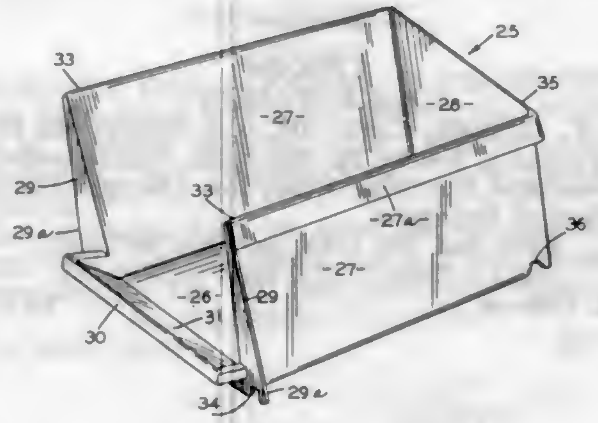
### 3,478,892
### NESTING AND STACKING UTILITY BIN

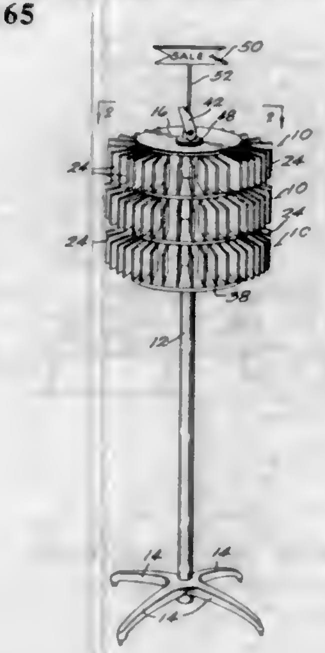
Warren H. Lockwood, 1329 Granvia Altamira,
Palos Verdes Estates, Calif. 90274
Filed Feb. 6, 1968, Ser. No. 703,461
Int. Cl. A47f *3/14;* A47j *47/00*
U.S. Cl. 211—126 17 Claims



A molded plastic utility bin has a bottom, two opposed side walls, an end wall and means for access to the bin at the opposite end. In one embodiment the access end is entirely open so that one bin can be moved horizontally through the open end of a like bin to nested position. In another embodiment a partial end wall is provided at the access end which terminates short of the upper edge of the bin so a user can reach in. In all cases two like bins can be nested, and where there is a partial end wall it will nest with a like wall of a bin above or below it. In all cases the bins can be stacked vertically in line. Each side wall is reinforced by a buttress member extending laterally outwardly and downwardly at its forward end. A lip extends forwardly at the front end of the bin between the buttress members and this strengthens the structure and adds to its usefulness. Where a stack of nested bins gradually gets out of vertical line, or a stack of tiered bins stepped back for display purposes gets out of vertical line, a line bin is utilized as a base unit to bring the stack back to the vertical.

### 3,478,893
### THEFTPROOF MERCHANDISE DISPLAY

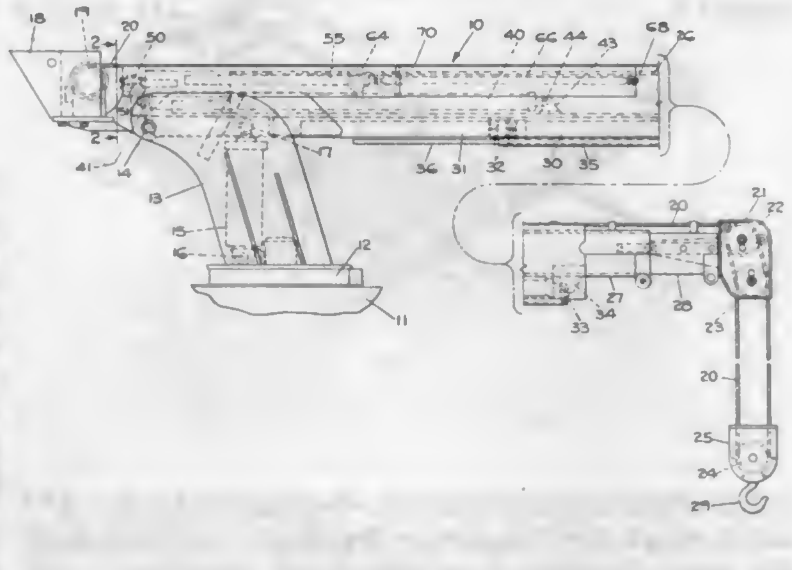
Louis John Crosslen, Grafton, Wis., assignor to Frank Mayer & Associates, Inc., Grafton, Wis., a corporation of Wisconsin
Filed Nov. 2, 1967, Ser. No. 680,174
Int. Cl. A47f *5/02, 7/024*
U.S. Cl. 211—165 11 Claims



A display device having a plurality of merchandise receiving and display spindles which are simultaneously locked against displacement by a common locking mechanism to prevent unauthorized removal of the merchandise and which may be readily released for removal of the displayed merchandise by authorized personnel.

### 3,478,894
### EXTENSIBLE AND RETRACTABLE BOOM CONSTRUCTION FOR CRANES

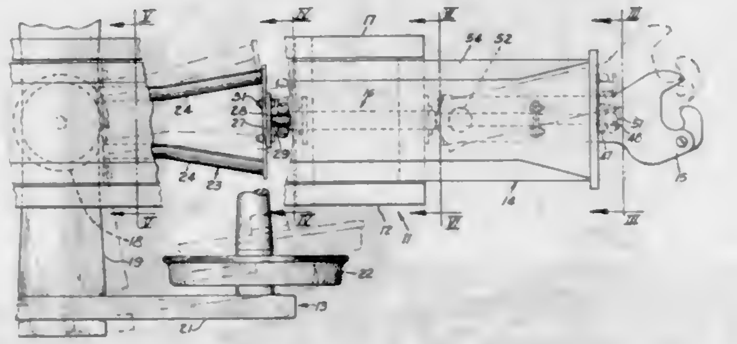
Robert E. Stauffer, Galion, Ohio, assignor to Jeffrey Galion Manufacturing Company, a corporation of Ohio
Filed Nov. 27, 1967, Ser. No. 685,913
Int. Cl. B66c *23/06;* E02f *3/00*
U.S. Cl. 212—55 8 Claims



A crane with a boom that has three boom sections. The second and third boom sections are extensible and retractable relatively to the first boom section and relatively to each other. There is a hydraulic cylinder to extend and to retract the third boom section relatively to the second boom section. The hydraulic cylinder travels with the second and third boom sections. A storage length of hydraulic hose may be drawn out and returned to maintain the hydraulic fluid connections to the cylinder as it travels.

### 3,478,895
### COUPLING DEVICE

Zoltan Cseri, 419 Sheridan Road,
Winnetka, Ill. 60093
Continuation-in-part of application Ser. No. 631,975, Apr. 19, 1967. This application Aug. 28, 1968, Ser. No. 767,885
Int. Cl. B61g *7/06, 7/12, 9/20*
U.S. Cl. 213—15 15 Claims



A steerable coupling device for a railroad car having a bar lever means which transmits the turning movement of the car truck to the pivotally connected coupler so that the coupler and the truck move in the same direction.

In one embodiment, the bar lever means includes a clutch which allows the coupler to be disconnected from the car truck to allow independent pivotal movement.

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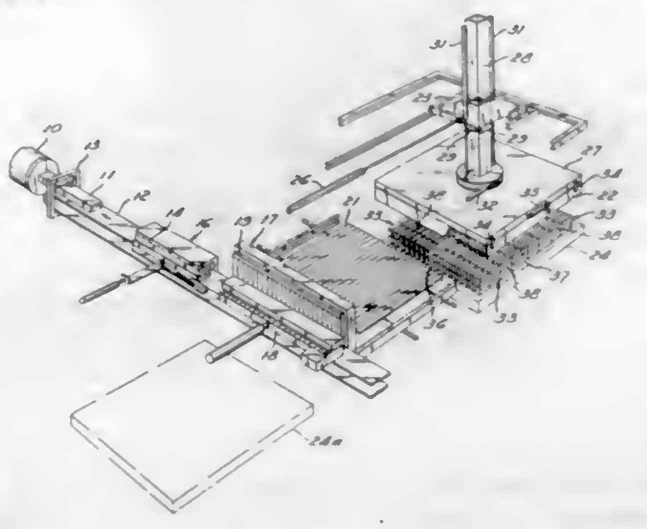
### 3,478,896
### APPARATUS FOR TYING BRICK STACKS

**Frank S. Pearne, San Gabriel, Calif., assignor to Pearne & Lacy Machine Company, Inc., Los Angeles, Calif., a corporation of California**
**Filed June 6, 1967, Ser. No. 644,024**
**Int. Cl. B65g** *57/00, 57/16*
**U.S. Cl. 214—6** **6 Claims**



A method and apparatus for stacking bricks on a kiln car in which selected rows in the stack are shifted to tie the stack together. A gripper frame operates to grip grids consisting of two superposed layers or tiers of brick each of which includes a plurality of spaced, parallel rows with each row formed of aligned and abutting bricks. The gripper is mounted on a movable carriage which operates repeatedly to move the gripper frame to a position over the kiln car to sequentially position grids thereon and thereby form a stack of grids on such car. The carriage operates to turn the gripper frame so that the superposed rows of each grid are perpendicular to the superposed rows of the adjacent grids in the stack. Tiering of the stack is provided by shifting the frame relative to the carriage so that lower rows in predetermined grids are shifted lengthwise before the lower rows are placed in the stack.

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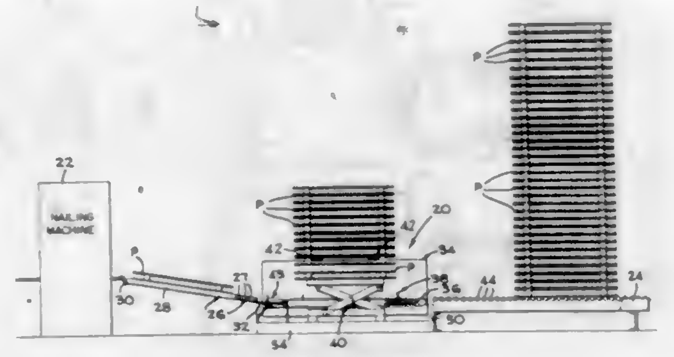
### 3,478,897
### PALLET STACKING APPARATUS

**Edgar G. M. Dykeman, Riverside, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware**
**Filed Oct. 12, 1967, Ser. No. 674,860**
**Int. Cl. B65g** *57/16, 15/12*
**U.S. Cl. 214—6** **8 Claims**



A series of pallets are moved by laterally adjustable endless conveyors over a lift which sequentially lifts each pallet off of the conveyors and carries it upwardly past opposed sets of supporting dogs which are pivoted outwardly by the upwardly moving pallet and are spring-urged inwardly between the decks of the pallet to support it when the lift is lowered. When a predetermined number of pallets have been stacked upon the dogs in the afore-described manner, the dogs are locked in their outwardly pivoted positions to allow the stack to descend with the lift and be carried out of the apparatus by the conveyors.

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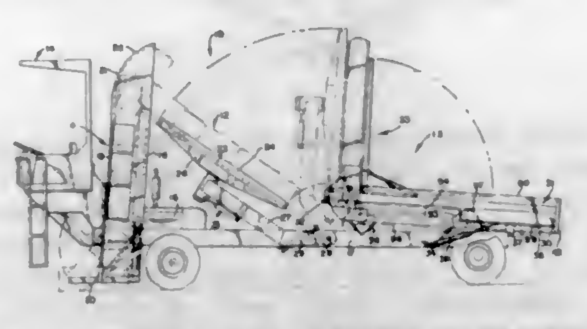
### 3,478,898
### BALE WAGON

**Robert L. Graham, Crete, Ill., and Robert M. Fachini and Fenton L. Kenna, Jr., Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware**
**Filed Jan. 15, 1968, Ser. No. 697,663**
**Int. Cl. B65g** *57/28;* **B66f** *9/08, 9/18*
**U.S. Cl. 214—6** **10 Claims**



A self-propelled bale wagon having an elevator, a bale accumulator, and a bale supporting bed. The accumulator functions to accumulate bales delivered by the elevator into a tier comprising ten bales, and to deposit the same in a vertical disposition onto the bed. Gripping jaws mounted on opposite sides of the bed function to squeeze the first tier into a self-sustaining wall, the wall and gripping jaws being movable rearwardly as a load is accumulated on the bed. The bale wagon includes means for pivoting the load of bales to an upended position wherein the jaws are selectively operative to deposit the load on the ground or to deposit the load on an elevated platform.

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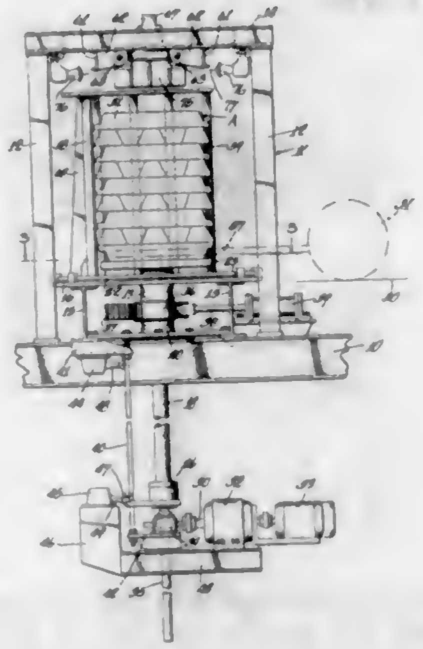
### 3,478,899
### METAL CHARGING APPARATUS

**Irvin M. Pitchford, Warren, and Robert H. Messerly, Newton Falls, Ohio, assignors to Wean Industries, Inc., Warren, Ohio, a corporation of Ohio**
**Filed Apr. 18, 1967, Ser. No. 631,639**
**Int. Cl. B65g** *59/02;* **B65h** *7/18*
**U.S. Cl. 214—8.5** **9 Claims**



A metal slab feeding machine for feeding slabs which are stacked in superimposed layers with adjoining layers movable horizontally in different directions and fed a layer at a time to slab melting furnace. The stacked slabs are carried on a platform which is movable vertically to horizontally align the topmost layer of slabs with a fixed feeding path and which is rotated about a vertical axis to angularly position the line of movement of the topmost layer of slabs in coincidence with the fixed feeding path.

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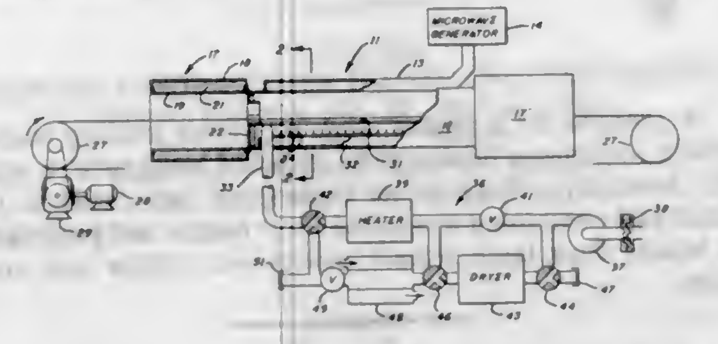
### 3,478,900
### APPARATUS FOR TREATING FOOD PRODUCTS AND THE LIKE WITH MICROWAVE ENERGY

**Morris R. Jeppson, Danville, Calif., assignor to Cryodry Corporation, San Ramon, Calif., a corporation of California**
**Original application Nov. 28, 1966, Ser. No. 604,106, now Patent No. 3,409,477, dated Nov. 5, 1968. Divided and this application Jan. 10, 1968, Ser. No. 696,899**
**Int. Cl. H05b** *9/06, 5/00*
**U.S. Cl. 219—10.55** **10 Claims**



The blanching or cooking of a food product preceding preservative treatment is accomplished by microwave irradiation combined with exposure to a controlled hot gas flow in a continuous process chamber. By programming the gas humidity from an initially high value to a low value, fast controlled heating is effected without leaching solids from the product or adding to the moisture content thereof. A partial drying is accomplished thereby reducing the energy requirements and processing times for the subsequent preservation steps such as freezing, drying or the like.

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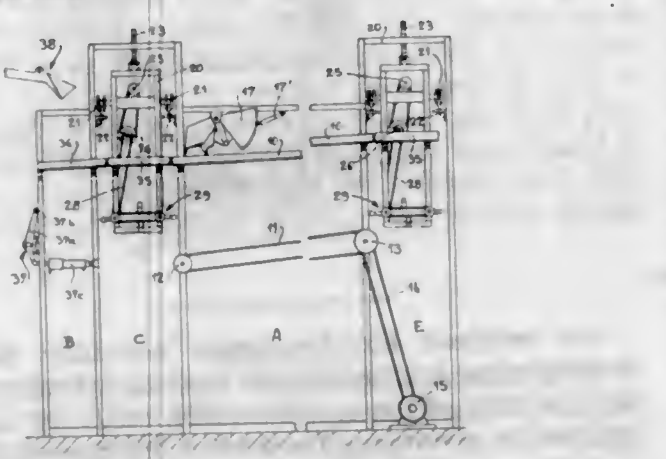
### 3,478,901
### PACKING OF PASTE PRODUCTS

**René Bardet-Neyrin, Avenue Jean-Jaures, Saint-Didier-au-Mont d'Or, Rhone, France**
**Filed Apr. 14, 1967, Ser. No. 631,063**
**Claims priority, application France, Apr. 19, 1966, 47,178**
**Int. Cl. B65g** *1/00*
**U.S. Cl. 214—16** **10 Claims**



This system comprises a series of silos adapted to receive long paste products from the lower end of a filling mechanism. The system has two parallel corridors each having an outlet and an inlet and receiving empty silos and filled silos respectively. Means are provided in each corridor to urge the silos toward the outlet end of the silos. Two carriages are provided transversely reciprocable in relation to the corridor. Means are provided on each carriage to take the silos one by one from one end of one of the corridors and to move same to the end adjacent to the opposite corridor. Two handling stations are provided, one disposed above and the other below the path of movement of the carriages so as to enable loading of the empty silos and discharging of the filled silos respectively.

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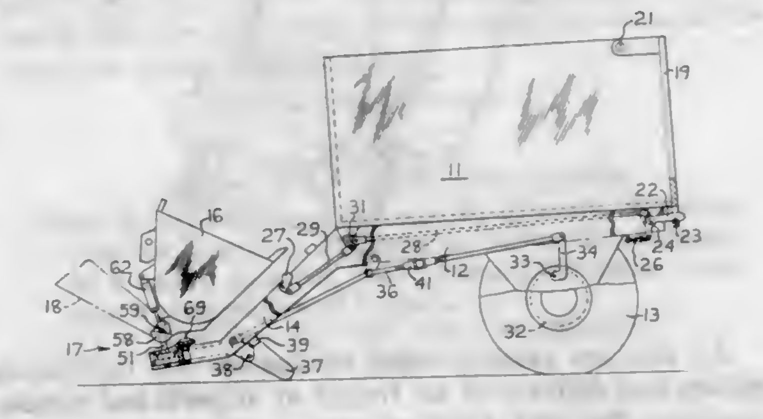
### 3,478,902
### TRANSPORT VEHICLE FOR BUCKET LOADERS

**Norman L. Anderson, Peoria, Millard K. Darnall, East Peoria, William C. Morgan, Chillicothe, Laurel L. Peterson, East Peoria, and Robert N. Stedman, Chillicothe, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Mar. 11, 1968, Ser. No. 712,135**
**Int. Cl. E02f** *3/40, 3/64*
**U.S. Cl. 214—38** **7 Claims**



A two-wheel transport vehicle to be loaded by a bucket loader and then engaged by the loader bucket assembly to permit the loader to transport the vehicle to an unloading site and dump it. The vehicle has a tailgate which is opened for unloading by forward tilting of the bucket and automatically engaged in a closed position after unloading. Brakes on the transport vehicle are automatically set by disengagement of the transport vehicle from the loader.

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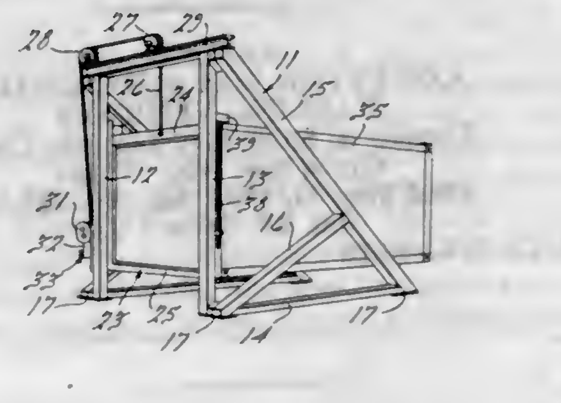
### 3,478,903
### CONTAINER STANCHION

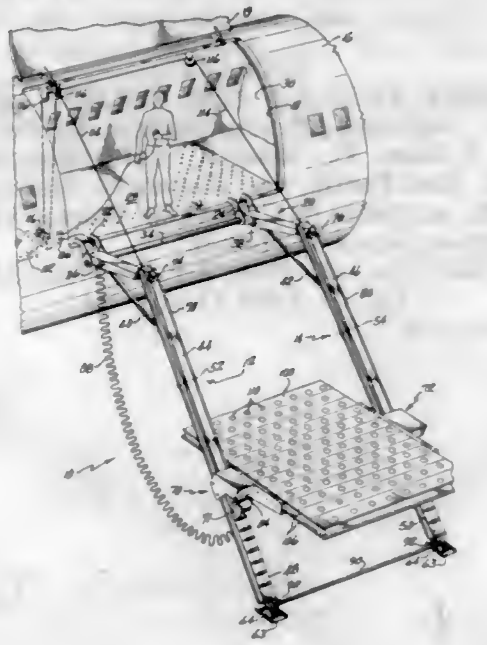
**Keith W. Tantlinger, Grosse Pointe Shores, Mich., assignor to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan**
**Filed Feb. 26, 1968, Ser. No. 708,118**
**Int. Cl. B65q** *67/02*
**U.S. Cl. 214—38** **6 Claims**



The stanchion has vertical uprights on which a frame is vertically movable having a pair of forwardly projecting pins at the bottom which are engageable with the apertures facing rearwardly at the bottom of the container. Vertically movable heads on the frame have downwardly extending pins which are movable into the upwardly presenting apertures at the top rear corners of the container to have the four pins secure the container on the uprights for vertical adjustment.

### 3,478,904
### CARGO LOADING MECHANISM

**Jack P. Courter, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware**
**Filed May 17, 1967, Ser. No. 639,242**
**Int. Cl. B60p** *1/46;* **B66p** *9/20*
**U.S. Cl. 214—75** 5 Claims



An airplane cargo loading mechanism for facilitating pickup and delivery of air freight at airports and remote locations that lack airplane ground support equipment, and adapted to be stored in the cargo compartment of the plane during flight without occupying valuable storage space. The loading mechanism includes a pair of parallel rails which, in the operating position of the mechanism, extend from the plane's cargo compartment to the ground, and a pair of motor-driven carriage assemblies which ride up and down the rails between the ground and the cargo compartment. A loader platform adapted to carry cargo pallets is mounted on the carriage assemblies by roller means which permit the platform to slide off the carriages and into the cargo compartment of the plane when the platform reaches the upper ends of the rails. The rails are pivotably connected to the plane and are comprised of upper and lower hinged sections adapted to fold up into the cargo compartment and lie on either side of the loader platform when the plane is in flight. One or more motor and winch assemblies are provided for driving the carriages and the loader platform up and down the rails and for extending and retracting the rails for use or storage.

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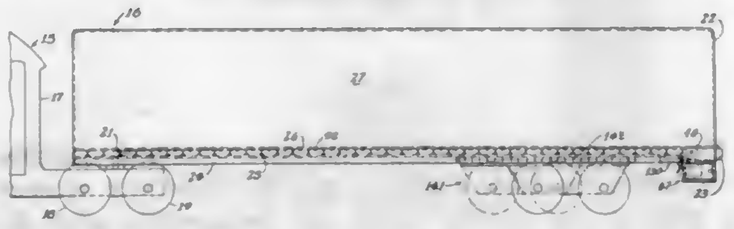
### 3,478,905
### CONVEYOR FOR BULK GRAIN HAULING VEHICLES

**Thomas A. Strid, 2349 Jourdain Lane, Green Bay, Wis. 54301**
**Filed May 31, 1968, Ser. No. 733,513**
**Int. Cl. B60p** *1/38*
**U.S. Cl. 214—83.18** 11 Claims



A conveyor built into the floor of bulk hauling vehicles, having deflector plates for receiving leakage grain from the upper working run of the belt, deflecting such grain away from the lower return run of the belt, and depositing such grain into a receptacle for disposal.

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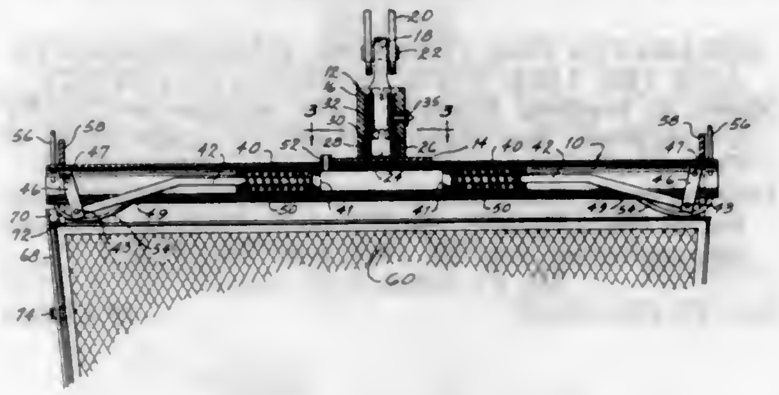
### 3,478,906
### GRAPPLE

**Willard C. Smith, Dade City, Fla., assignor to Pasco Packing Company, Dade City, Fla., a corporation of Florida**
**Filed Oct. 19, 1967, Ser. No. 676,431**
**Int. Cl. B65b** *69/00;* **B65g** *65/40;* **B66c** *1/10*
**U.S. Cl. 214—304** 6 Claims



A grapple for a basket, such as a fruit loading basket, which includes a horizontally disposed hoist tube, a spindle assembly affixed to its center and connected to the hoist and containing a rotation limit means and preferably a basket door latch release mechanism within said hoist tube.

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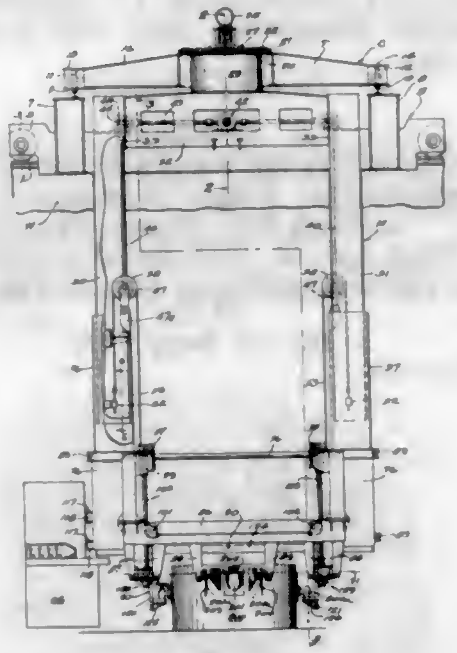
### 3,478,907
### OVERHEAD, RIGID MAST CRANE FOR POURING CRUCIBLES

**Max J. Dechantsreiter, Milwaukee, Wis., assignor to Harnischfeger Corporation, Milwaukee, Wis., a corporation of Wisconsin**
**Filed Oct. 31, 1967, Ser. No. 679,447**
**Int. Cl. B65g** *65/36;* **B66c** *19/00*
**U.S. Cl. 214—313** 18 Claims



An overhead traveling crane especially for pouring molten metal into molds and the like, whereby the pouring spout lip of the crucible which holds the metal is the fulcrum or pivot point for the crucible during the pouring operation.

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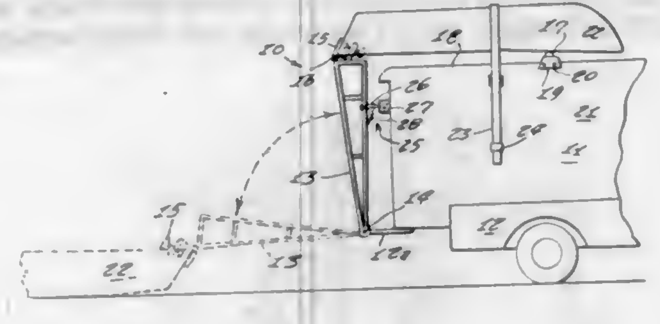
### 3,478,908
### PICKUP CAMPER AND TRAILER TOP BOAT LOADER

**Howard R. Clark, 1025 S. 24th, Saginaw, Mich. 48601**
**Filed Jan. 29, 1968, Ser. No. 701,435**
**Int. Cl. B60r** *9/04;* **B60p** *3/10*
**U.S. Cl. 214—450** 1 Claim

A pickup camper and trailer top having a boat loading device for placing a boat upon the top thereof and transporting it, the boat loading device including a winch and frame for raising the boat, and in another form including a pivotable frame.



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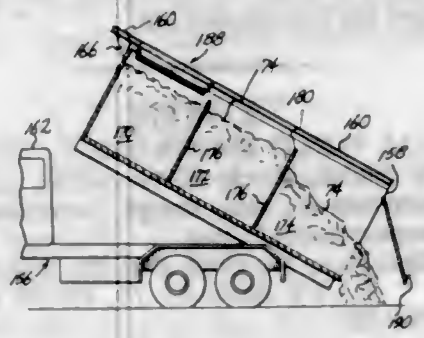
### 3,478,909
### REFUSE COMPACTION HANDLING EQUIPMENT

**Ray E. Charles, 605 W. Mercer Place, Seattle, Wash. 98119**
**Filed Dec. 9, 1966, Ser. No. 600,645**
**Int. Cl. B60p** *1/00;* **B30b** *5/02*
**U.S. Cl. 214—501** 8 Claims



Refuse compaction handling equipment is used to compact refuse where it is first received, as it is prepared to be hauled away, as it is loaded to be hauled away, and/or as it is prepared for final disposal. This equipment utilizes variable fluid pressure expanding and contraction compaction assemblies which primarily are operated with compressed air, and which are removably or permanently related to a refuse handling volume defining container and/or containers which may be associated with transportation equipment. These expanding and contraction assemblies include a reference structure adapted to be maintained in a substantially fixed location, a movable fluid tight structure to be variably positioned at least in part, to and from the reference structure, and fluid pressure generating and regulating apparatus interrelated to both the reference structure and the movable fluid tight structure to expand and to contract the volume defined by them.

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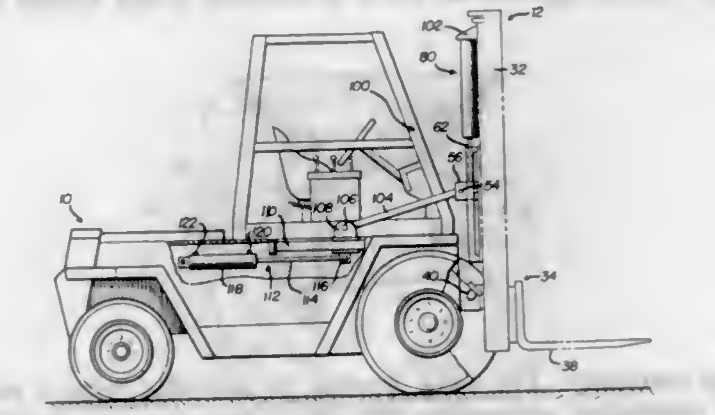
### 3,478,910
### TILT MECHANISM FOR MAST ASSEMBLY

**John M. Avis, Terre Haute, Ind., and Hugh H. Dorman, Huntington, N.Y., assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin**
**Filed Feb. 1, 1968, Ser. No. 702,263**
**Int. Cl. B66f** *9/08*
**U.S. Cl. 214—672** 4 Claims

A vehicle having an article support assembly pivoted on a horizontal axis adjacent one end of the vehicle. The support assembly is pivoted on the horizontal axis through a control mechanism incorporating a vertical slide block having a fixed element carried by the assembly and a movable element connected to a pivoted link supported on the vehicle. The movable member in one embodiment is power driven through drive means interposed between the member and the support assembly while in another embodiment the member is moved along the slide by pivoting the link on the vehicle and providing drive means adjacent the vehicle end of the link.



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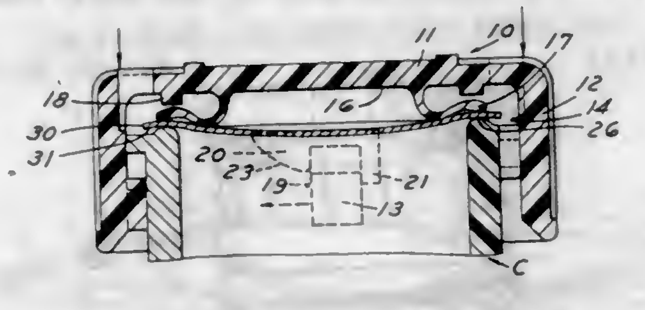
### 3,478,911
### SAFETY CAP AND CONTAINER

**Peter Hedgewick and George E. Howell, Windsor, Ontario, Canada, assignors to Reflex Corporation of Canada Limited, Amherstburg, Ontario, Canada, a corporation of Canada**
**Filed Dec. 22, 1967, Ser. No. 692,833**
**Int. Cl. B65d** *55/02*
**U.S. Cl. 215—9** 4 Claims



The container disclosed herein comprises a cylindrical plastic body which is molded in one piece and has circumferentially spaced radially extending projections on the upper end thereof that have notches therein. The cap comprises a one-piece plastic body having a base and a peripheral flange with circumferentially spaced lugs extending radially inwardly for engagement with the notches. An annular integral flexible web is provided on the inner surface of the base and extends downwardly and outwardly. An annular integral rib on the inner surface of the base overlies the annular flexible web and serves as a stop to prevent overflexing of the web. A liner having a deformable outer surface is interposed between the annular flexible web and the lugs for engagement with the upper end of the container. The base of the cap includes circumferential openings which facilitate its manufacture as a one-piece plastic cap but do not interfere with the sealing action of the annular web. The cap is applied to the container by a rotating movement. The cap can only be removed from the container by applying an axial force on the periphery of the cap and thereafter rotating the cap.

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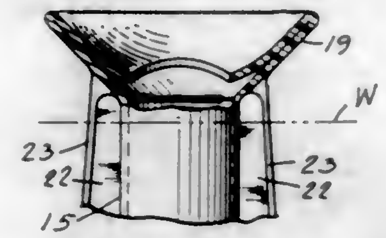
### 3,478,912
### CONTAINER

**Bernhard Seiler, Zurich, Switzerland, assignor of one-half to Emil Hartmann, Zurich, Switzerland**
**Filed Dec. 20, 1966, Ser. No. 603,288**
**Claims priority, application Switzerland, Dec. 22, 1965, 17,723/65**
**Int. Cl. B65d** *1/02, 47/02*
**U.S. Cl. 215—31** 2 Claims

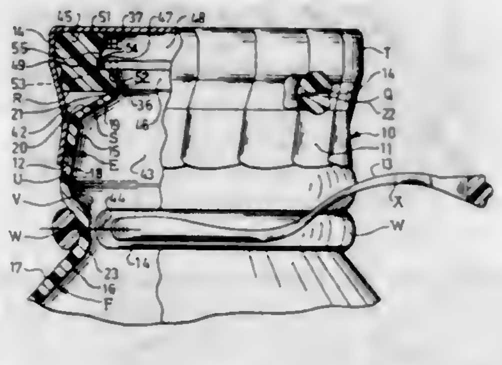
A plastic container having a body portion connected by a neck portion to a filling head which comprises a first funnel portion and a reversed funnel portion having an opening to the interior of the container. During the filling operation, the reverse funnel portion collapses into the first funnel portion to form a stiffened filling funnel for the container. The neck portion is provided with a pair of oppositely extending ribs which increase the rigidity of the container and which prevent welding dies from contacting each other as the neck portion is crimped and welded together to seal the container.



**3,478,913**

### ALL-PLASTIC BOTTLES

**Paul G. Kemp, London, Ontario, Canada, assignor, by mesne assignments, to Kemp Products Incorporated, Cleveland, Ohio**
**Filed Jan. 3, 1967, Ser. No. 606,615**
**Claims priority, application Canada, June 11, 1966, 962,690**
**Int. Cl. B65d** *1/02, 23/12, 41/02*
**U.S. Cl. 215—100 22 Claims**



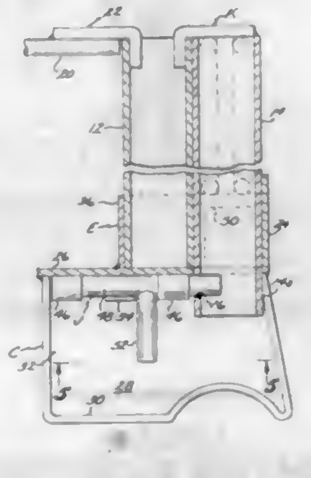
A plastic bottle having a finish, characterized by a neck structure including the finish, which includes the combination of an annular, relatively wide, hood-attaching band, the neck embodying an annular, inwardly projecting apical flange surmounting and co-terminus with the band, the external undersurface of the finish overlying the flange to provide therebetween a relatively deep annular cleft, and a relatively thin narrow connecting ring in the trough of the cleft between the upper edge of the flange and the lower inner edge of the finish for uniting the finish to the flange, and in which the neck structure includes an annular, inwardly restricted throat below said band, the lower edge of the throat being coterminus with an outwardly and downwardly inclining surrounding shoulder of the bottle.

**3,478,914**

### BIN STRUCTURE

**Archie T. Williams, 153 Paseo de los Delicias, Redondo, Calif.**
**Filed July 29, 1968, Ser. No. 748,455**
**Int. Cl. B65d** *7/14, 7/20, 7/42*
**U.S. Cl. 220—4 9 Claims**

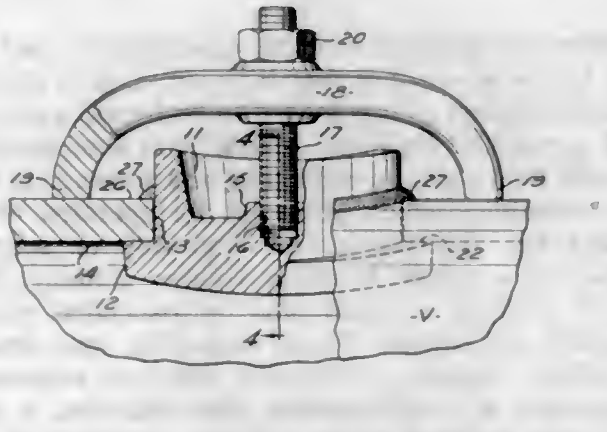
A bin including a leg-supported rectangular frame in the corners of which wells are defined that removably receive end portions of end walls and side walls, with the end walls and side walls interlocking when mounted on the frame. At least a portion of the end walls and side walls include wire mesh panels which cooperate with a bottom supported from the frame to define a confined space in which articles may be stored and remain visible, even when the bins are stacked one above the other. Frame-supported movable members removably engage either the end walls or side walls, bottom and frame together as an integral unit. One of the side walls includes a pivotally supported upper horizontal section that may be moved to overlie a lower section of the side wall to permit access to the interior of a bin when the bin is in a stacked position. When the side walls and end walls are separated from the frame they may be stacked on the frame-supported bottom to minimize the space required to ship or store the dismantled bin.



**3,478,915**

### SEAL WELD HAND HOLE COVER

**Ellsworth M. Smith, Rocky River, Ohio, assignor to The Steel Improvement and Forge Company, Cleveland, Ohio, a corporation of Ohio**
**Filed Nov. 15, 1967, Ser. No. 683,211**
**Int. Cl. B65d** *45/10, 49/00*
**U.S. Cl. 220—25 4 Claims**



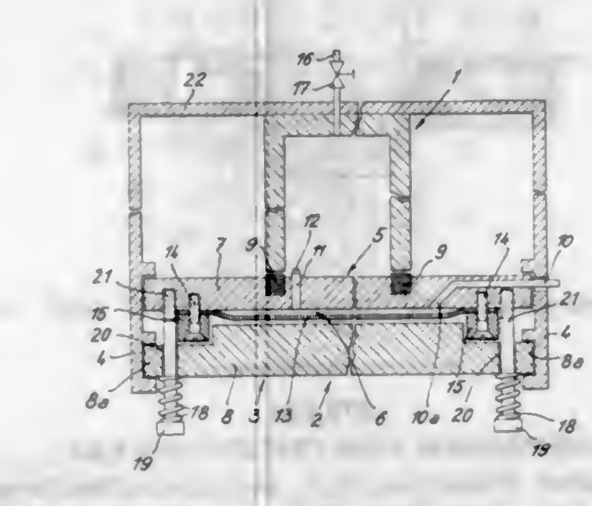
A hand hole cover of the seal weld type having a flange that engages the internal surface of the boiler or other pressure vessel with which it is used, the flange being curved to conform to the inner surface of the pressure vessel so that the need for machining a seat for the cover in the interior surface of the pressure vessel is eliminated.

**3,478,916**

### SLIDING CLOSURE FOR PRESSURE VESSELS AND AUTOCLAVES

**Fritz Linder, Skarhamn, Sweden**
**Filed Oct. 1, 1968, Ser. No. 764,073**
**Claims priority, application Germany, Mar. 29, 1967, L 57,983**
**Int. Cl. B65d** *43/12, 53/00;* **B01j** *3/02*
**U.S. Cl. 220—41 9 Claims**

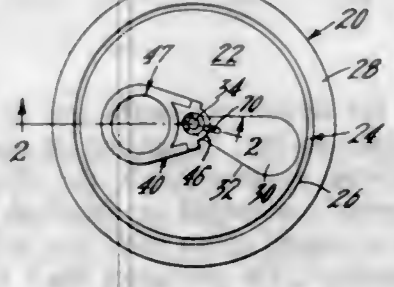
The invention provides a closure for a pressure vessel, particularly an autoclave, fitted with a door, or with a similar closure resembling a door, comprising two plates jointly slidably movable across the opening of the pressure vessel and forming an intermediate pressure chamber between them which is sealed in relation to the outside, said intermediate pressure chamber and the interior of said pressure vessel being in communication, and sealing means provided between the closure and the interior of said pressure vessel, the pressure medium being admitted into the interior of the pressure vessel through said intermediate pressure chamber and the connection between said intermediate pressure chamber and the interior of the pressure vessel having at least one constriction of a cross section less than the cross section of the admission of said pressure medium into said intermediate pressure chamber.



**3,478,917**

### REINFORCED BEAD FOR A TAB OPENING CAN

**John Wilson Rouse, Ramsey, N.J., and Harley Earl Simmons, Stamford, Conn., assignors to American Can Company, New York, N.Y., a corporation of New Jersey**
**Filed May 1, 1967, Ser. No. 635,059**
**Int. Cl. B65d** *17/24*
**U.S. Cl. 220—54 6 Claims**



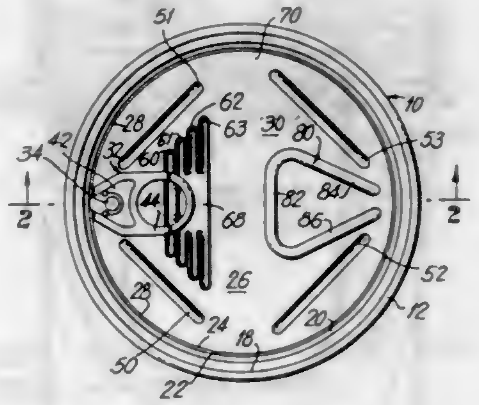
A tab opening can having a removable section which tends to bend or crease to an extent likely to result in fracture when it is being torn from the can, is provided with a reinforcing bead at the location where said crease or fold is likely to occur to thereby prevent the crease or fold from becoming sharp enough to result in fracture.

**3,478,918**

### FULL OPEN END CLOSURE

**Arthur Philip Zundel, Cary, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey**
**Filed Aug. 14, 1968, Ser. No. 752,715**
**Int. Cl. B65d** *17/20, 51/20*
**U.S. Cl. 220—54 9 Claims**

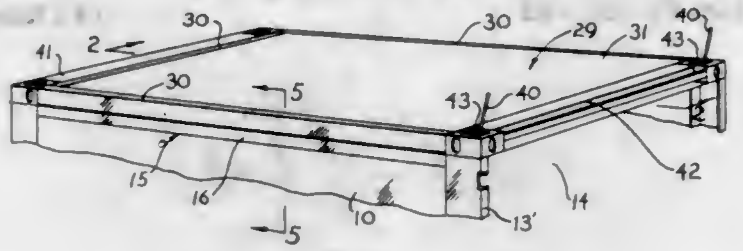
A full open end which is seamed onto a can body to provide a can which is easily opened without splattering the product retained on the bottom of the removable section when that section is detached. The removable section is provided with reinforcement at its rear portion to limit flexing of that portion during the opening operation, and the subsequent springing action when that section becomes detached to thereby prevent splattering of the product retained on the underside of the removable section.



**3,478,919**

### COVER FASTENER MEANS FOR A CARGO CONTAINER

**Russell L. Turpen, North Richmond, Calif., assignor to Compass Container Company, Inc., Richmond, Calif., a corporation of California**
**Filed Feb. 28, 1968, Ser. No. 708,983**
**Int. Cl. B65j** *1/02;* **B65d** *45/12;* **E05f** *11/00*
**U.S. Cl. 220—55 16 Claims**



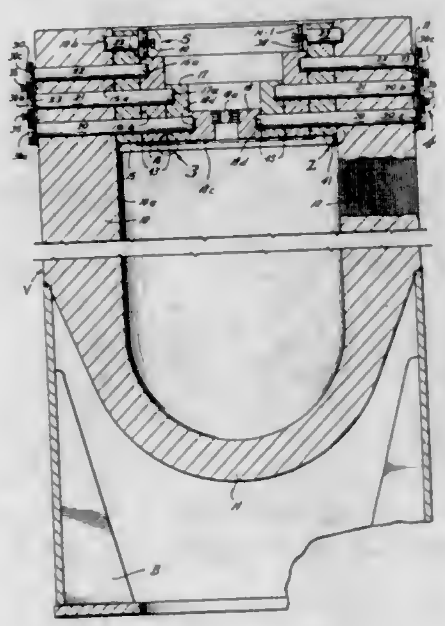
A box-like container of large capacity for storing cargo and for transporting the same as by ship, rail and truck. The cargo container includes bottom, side and end walls defining a compartment therewithin, and it further includes a cover removably secured to the side and end walls adjacent the upper edges thereof. The cover is rigid and seats upon frame structure provided therefor adjacent the upper edges of the side and end walls, and it is releasably secured to such frame structure by latch mechanism that may include clamping means effective to urge the cover toward tight abutment with the frame structure to sealingly close the container.

**3,478,920**

### PRESSURE VESSEL CLOSURE

**Raymond E. Pechacek, Houston, Tex., assignor to Hahn & Clay, a corporation of Texas**
**Filed Oct. 14, 1968, Ser. No. 767,119**
**Int. Cl. B65d** *45/28*
**U.S. Cl. 220—55 12 Claims**

A pressure vessel closure formed of a plurality of concentric rings or sections adapted to extend into the bore of a pressure vessel and close same; such ring being heat treated for substantially uniform strength throughout each ring; and said rings being releasably secured to the wall of the pressure vessel by circumferentially disposed radially extending retaining pins, whereby shear forces acting on the rings are transmitted to all or a substantial part of the layers or other material forming the wall of the vessel.



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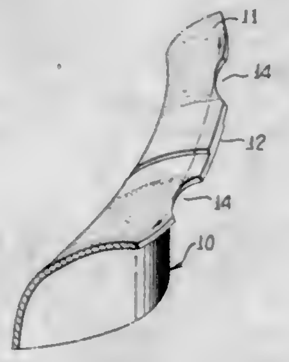
### 3,478,921
### NOTCHED CAN BODY

**Herbert D. Bartels, Palo Heights, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York**
**Filed May 25, 1967, Ser. No. 642,670**
**Int. Cl. B65d** *7/04, 7/36*
**U.S. Cl. 220—62** **14 Claims**



This disclosure relates to a metal can body having a welded side seam and wherein the ends of the can body are flanged preparatory to the double seaming of cans thereto. In the flanging of the can body the extreme ends thereof are circumferentially tensibly stressed and the can bodies are subject to cracking. The undue stressing of the extreme ends of the can body during flanging is prevented by a notching arrangement which relieves the circumferential tensile stresses.

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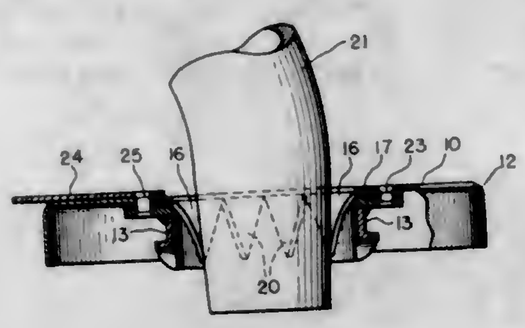
### 3,478,922
### SELF-CLOSING VAPOR CONTROLLING CAP

**Philip J. Mole, 2517 N. 78th Ave., Elmwood Park, Ill. 60635**
**Filed Jan. 15, 1968, Ser. No. 697,746**
**Int. Cl. B65d** *51/18*
**U.S. Cl. 220—86** **2 Claims**

A self-closable cap or cover for gas tanks with a self-closing flexible valve means auxiliary to and normally below a pivoted manually operated rigid closure to prevent escape of volatile gases from gas tanks during fuel filling operations, and having a separate rigid upper closure.



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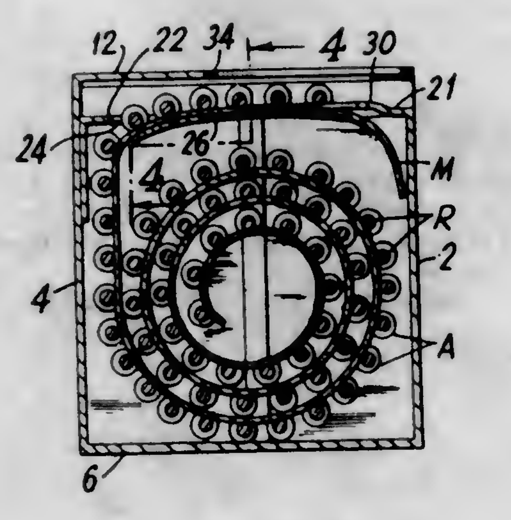
### 3,478,923
### DISPENSER FOR COTTON SWABS

**Robert Fisher, Whitestone, N.Y., assignor to Chesebrough-Pond's Inc., New York, N.Y., a corporation of New York**
**Filed Jan. 30, 1968, Ser. No. 701,678**
**Int. Cl. B65h** *5/28*
**U.S. Cl. 221—70** **8 Claims**



A dispenser for dispensing swabs one at a time from within a container so that dispensing of one swab automatically positions another swab for dispensing. The swabs are adhesively mounted or attached to a strip of material which is wound about itself and positioned within a box or container. The container has a top surface or panel with first and second openings. The first and second openings are arranged so that the strip of material with the swabs attached thereto pass through the first opening and are directed towards the second opening. The top surface or panel of the container is arranged so that the swabs are removed from the strip as the strip and the swabs pass from the first to the second opening. The first opening is constructed so that the swabs after pasing therethrough from the container do not regress into the container. The top panel and a top cover are cooperatively arranged to prevent contamination of the swab ends.

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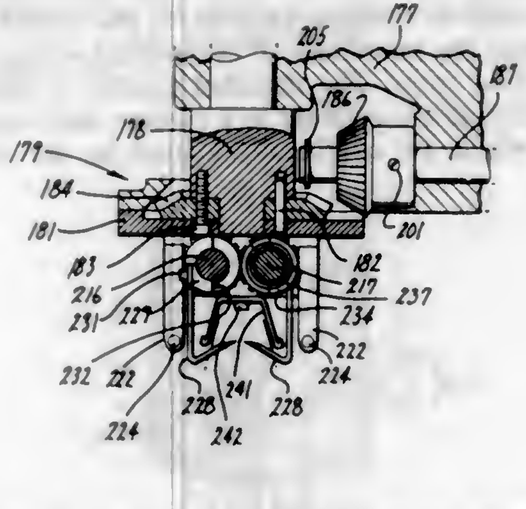
### 3,478,924
### EGG CARTON AND TRAY DISPENSING MACHINE

**Alfred E. Comstock, Frontenac, Minn. 55026**
**Filed Nov. 6, 1967, Ser. No. 680,817**
**Int. Cl. B65h** *3/26*
**U.S. Cl. 221—213** **14 Claims**

Egg carton and dispensing machine having means which

denests the trays or cartons, one by one, from a stack of such trays or cartons in the dispensing machine and which delivers them in a straight line or rotates them through 90 degrees.



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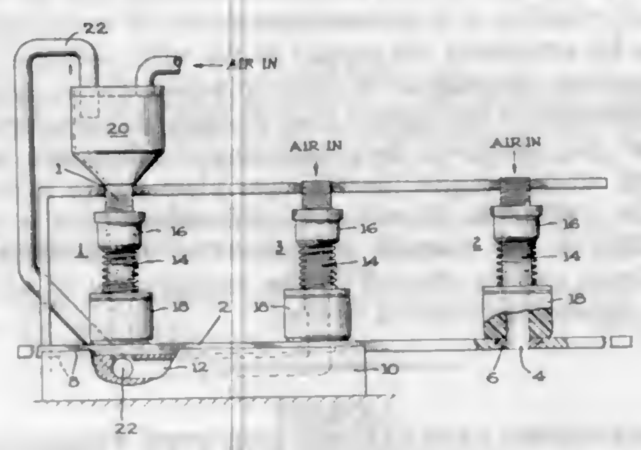
### 3,478,925
### VISCOUS DISPENSING SYSTEM

**Larry E. Austin, Burlington, and Francis R. Titcomb, Middlebury, Vt., assignors to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York**
**Filed Nov. 13, 1967, Ser. No. 682,163**
**Int. Cl. B67b** *7/00;* **B67d** *1/08, 5/54*
**U.S. Cl. 222—1** **4 Claims**



A viscous dispenser having a slidably mounted carrier member with a cavity therein adapted to be positioned at a first station wherein the cavity is filled, with the excess viscous material being discharged into an underlying channel. The carrier is then positioned under a second station for discharging the charge in the cavity by means of air pressure, whereupon the carrier is positioned under a third station wherein the cavity is cleaned of any excess charge, this excess being transmitted to the underlying channel in which the excess from the loading operation is contained and thereupon, by means of air pressure, the total excess of viscous material is transmitted by means of a return conduit back to the loading station.

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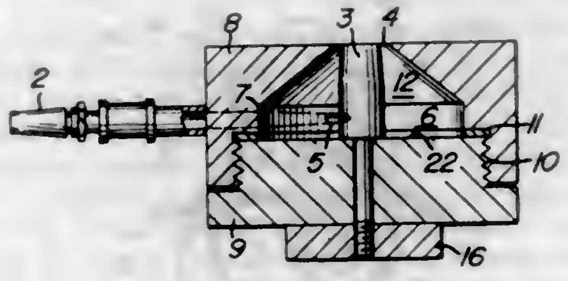
### 3,478,926
### APPARATUS AND METHOD FOR BLOWING POWDER

**Albert Pfeiffer, Joppatowne, Richard V. Cogswell, Belcamp, Charles W. Lynch, Bel Air, and Herbert B. Kunert, White Marsh, Md., assignors to the United States of America as represented by the Secretary of the Army**
**Filed Mar. 26, 1968, Ser. No. 717,488**
**Int. Cl. B05b** *7/00;* **B67d** *5/58, 5/54*
**U.S. Cl. 222—1** **21 Claims**

Apparatus and method of operating for disseminating material in an aerosol cloud in the atmosphere comprising a base means, chamber means, gas inlet means, convergent-divergent nozzle means, conical shape means, knife edge means, and orifice means.



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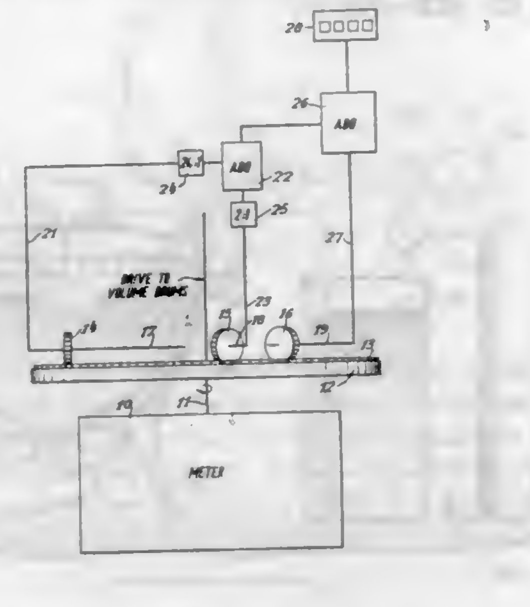
### 3,478,927
### PRICE COMPUTING DEVICES FOR LIQUID DISPENSING APPARATUS

**Eric W. Absolon, Chessington, and George H. Bowman, London, England, assignors to Avery-Hardoll Limited and Beck & Company (Meters) Limited, London, England**
**Filed Nov. 28, 1967, Ser. No. 686,182**
**Int. Cl. B67d** *5/22;* **F16h** *37/06*
**U.S. Cl. 222—31** **9 Claims**



A price computing device for liquid dispensing apparatus comprises a disc driven by a liquid meter or meters and wheels rotatable about axes radial to the disc to which rotation is transmitted by rotation of the disc, the distances of the respective wheels from the centre of the disc being separately adjustable so that the rotation of each of them for a given angle of rotation of the disc can be adjusted, the rotations of the said wheels being added together and applied to driving means for a price indicating mechanism.

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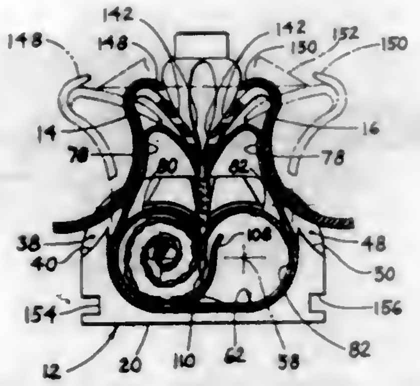
### 3,478,928
### DISPENSING DEVICE FOR COLLAPSIBLE TUBES

**Edgar W. Caldwell, 419 E. LaSalle, Royal Oak, Mich. 48073**
**Filed Nov. 16, 1967, Ser. No. 683,610**
**Int. Cl. B65d** *35/28*
**U.S. Cl. 222—103** **12 Claims**

A dispensing device having a body provided with an elongated slot, has a pair of manually actuated lever members pivotally supported on the body. The lever members are adapted to engage a collapsible tube situated between the levers, when the levers are rotated toward the tube, so as to both at least partially collapse the tube and thereby expell a portion of the contents of the tube and to drive the tube into the elongated slot so as to cause the slot to further collapse the tube and expel additional quantities of the contents of the tube.



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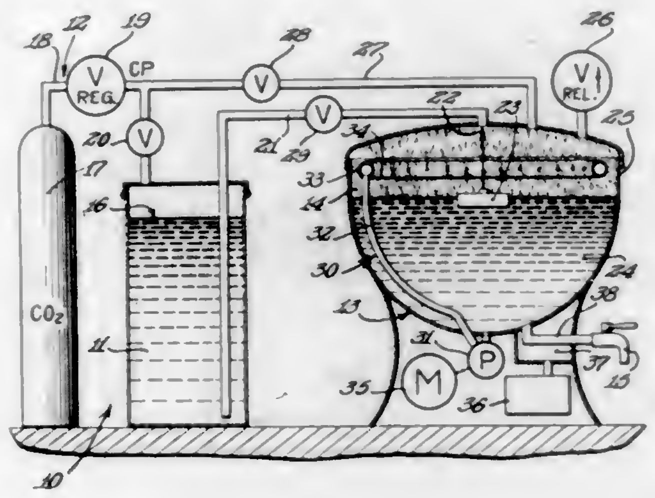
### 3,478,929

### MEANS FOR DECARBONATING AND DISPENSING A BEVERAGE

**Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota**
**Continuation-in-part of abandoned application Ser. No. 352,051, Mar. 16, 1964. This application Mar. 5, 1965, Ser. No. 446,450**
**Int. Cl. B67d** *5/56, 5/54;* **A23l** *3/00*
**U.S. Cl. 222—129.1** **6 Claims**



A method and apparatus for preserving and dispensing fresh fruit juice which includes continually recirculating a previously-carbonated quantity of the juice so as to decarbonate the same within the dispenser, the quantity of juice being decarbonated, prior to being dispensed, being subject to an atmosphere of carbon dioxide or nitrogen obtained independently of the carbonated juice, the transfer to the decarbonating chamber being automatic.

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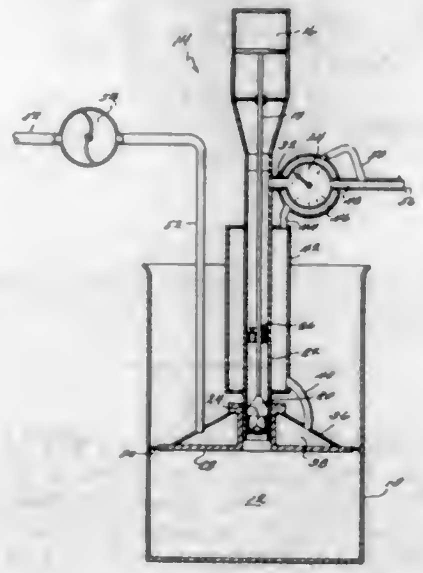
### 3,478,930

### APPARATUS FOR DISPENSING VISCOUS MATERIALS SUCH AS HOP EXTRACT

**Francis L. Rigby, Yakima, Wash., assignor to John I. Haas, Inc., Washington, D.C., a corporation of Delaware**
**Filed Dec. 5, 1967, Ser. No. 688,032**
**Int. Cl. B67d** *5/62, 1/08;* **G01f** *11/00*
**U.S. Cl. 222—146** **6 Claims**

Viscous materials, such as hop extracts used in breweries, are dispensed from a container in a ready-to-use liquefied form. A reciprocating pump is positioned above the contents of the container. A disc-like follower plate is attached to the base of the pump cylinder. Hot brewer's wort from a brew kettle is circulated through a hollow, inverse-cone shaped retaining wall seated on the follower plate, thereby heating the plate, which conductively heats and liquefies a thin layer in the uppermost level of the extract which is situated adjacent to the heated follower plate, while the remainder of the extract retains its solid or semi-solid form. The liquefied extract is pumped upwardly through the cylinder to a volume measuring meter, both of which are continually heated by the circulating wort. The extract is then dispensed directly into an adjacent brew kettle, or it is conducted to one or more remote kettles by entraining the extract in the wort and pumping the resultant emulsification through tubing to the kettles. The remnants of the extract may be flushed from the bottom of the container by circulating the brewer's wort through an opening in the follower plate where it mixes with the extract to form an emulsification which is then dispensed in the normal manner. The dispensation of the extract can be effected by the employment of an entirely automatic system if desired.



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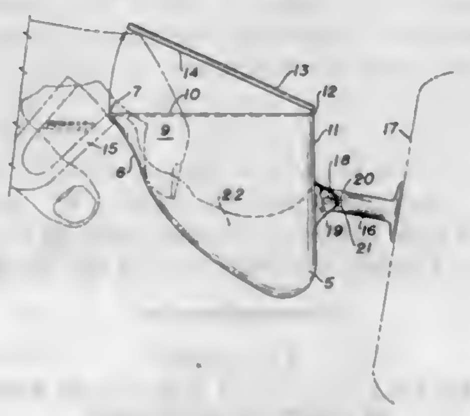
### 3,478,931

### DISPENSING CONTAINER FOR PIPE TOBACCO

**David Lynn, 1725 Santa Cruz Ave., Menlo Park, Calif. 94025**
**Filed June 30, 1967, Ser. No. 650,440**
**Int. Cl. B67d** *5/64;* **A47f** *5/12*
**U.S. Cl. 222—166** **7 Claims**



A container for pipe tobacco adapted to permit the filling of a smoking pipe held in the hand entirely by said hand, comprising a bowl, open at the top, having a rear sump and an upwardly and forwardly inclined dispensing spout with side walls spaced apart by a distance slightly greater than the width of a finger, to permit tobacco to be pulled by the finger from the sump through the spout into the pipe.

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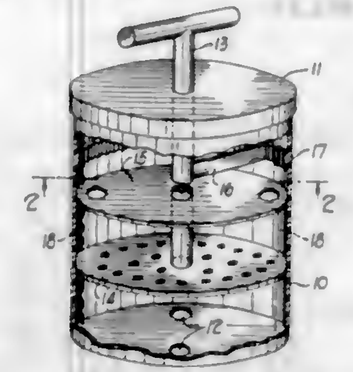
### 3,478,932

### DISPENSER FOR GRANULAR CONDIMENT HAVING A NOISEMAKER

**William G. Phillips, Berea, Ohio, assignor, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York**
**Filed Mar. 20. 1967, Ser. No. 624,541**
**Int. Cl. B67d** *5/06*
**U.S. Cl. 222—192** **3 Claims**



An inexpensive, disposable, non-refillable dispenser for granular condiment comprising a permanently closed container having a rotor mounted for rotation with respect thereto, each of the container and rotor having apertured sections cooperating to provide a metered flow of the condiment therethrough as a result of their relative rotation. All parts of the dispenser are preferably made from inexpensive, non-metallic, organic materials, such as paperboard or a polymeric resin or plastic, so that the container is readily disposable after use. In the preferred embodiment, the container includes a noise-maker to simulate a grinding sound, such as upon turning the rotor.

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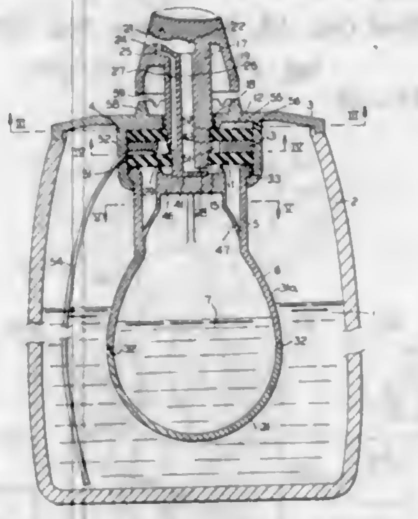
### 3,478,933

### VALVE AND PROPELLANT CARTRIDGE ASSEMBLY FOR PUSHBUTTON AEROSOL DISPENSER

**Felix Rousselot, St. Benoit, France, assignor to Geigy Chemical Corporation, Ardsley, N.Y.**
**Filed Jan. 23, 1968, Ser. No. 699,908**
**Claims priority, application France, Jan. 27, 1967, 92,713**
**Int. Cl. B67d** *5/54;* **B65d** *83/14;* **A62c** *13/38*
**U.S. Cl. 222—193** **6 Claims**



A valve and cartridge assembly for aerosol type dispensers of fluid products adapted to be attached to a product container for containing the fluid product to be dispensed and accommodate the propellant cartridge within the product container, said assembly comprising a hollow valve stem, a pushbutton actuator on the upper end of said stem and having a nozzle therein communicating with said hollow stem, a cap member adapted to fit over a product container and having an aperture therein through which the hollow stem is movable, a collar depending from the under side of the cap, a valve assembly in the collar comprising two annular flexible gaskets having a rigid ring between them, the inside diameter of the ring being greater than the inside diameter of the gaskets so that the stem which engages the inner peripheries of the gaskets can flex the gaskets when the stem is depressed, a dip tube opening into the assembly and communicating with a flow path for the fluid product through the assembly and the stem, and a propellant cartridge having a mouth held by the collar against the lowermost of the gaskets and holding the gaskets and rings tightly together, the mouth of the cartridge being open to a propellant flow path through the valve assembly and the hollow of the stem, said assembly also having an air flow path therethrough for admitting air to the container, the gaskets obturating the respective flow paths and opening them when the hollow stem is depressed.

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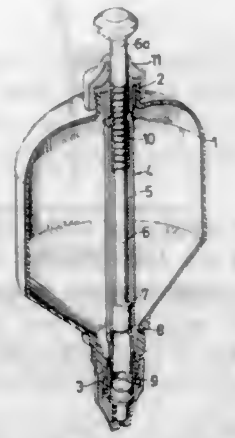
### 3,478,934

### METERING APPARATUS

**Arne M. Lindquist, Alvsjo, Sweden, assignor to Aktiebolaget Helios Kemisk-Tekniska Fabriker, Stockholm, Sweden, a corporation of Sweden**
**Filed Dec. 13, 1967, Ser. No. 690,133**
**Claims priority, application Sweden, Dec. 15, 1966, 17,212/66**
**Int. Cl. G01f** *11/34;* **B67d** *5/40*
**U.S. Cl. 222—309** **5 Claims**



A liquid dispensing apparatus for discharging a metered amount of liquid. The apparatus includes a container with a metering pump. The stroke of the pump can be controlled to vary the amount of liquid dispensed. At its lower end the container includes a valve that permits the apparatus to be drip-free when it is at rest.

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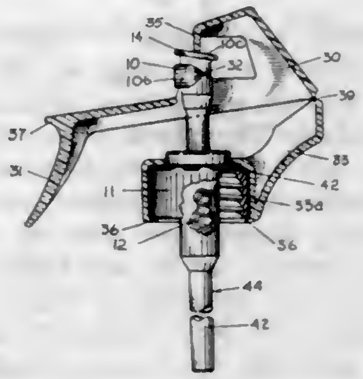
### 3,478,935

### DISPENSING DEVICE

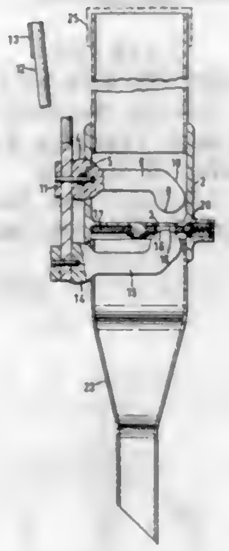
**Ray G. Brooks, Irving, Tex., assignor to Texize Chemicals, Inc., a corporation of Delaware**
**Filed Feb. 16, 1968, Ser. No. 706,138**
**Int. Cl. G01f** *11/06*
**U.S. Cl. 222—321** **2 Claims**



In a device for activating vertical plunger-type pumps for dispensing liquids from hand-held containers a hinged trigger for converting trigger squeezing motion to vertical motion, has an operating portion extending forwardly of the dispensing orifice of the container pump, and is hinged to the closure assembly of the container at a side thereof remote from said orifice.

### 3,478,936
## APPLICATOR FOR GRANULAR INSECTICIDES, FERTILIZERS AND SEEDS

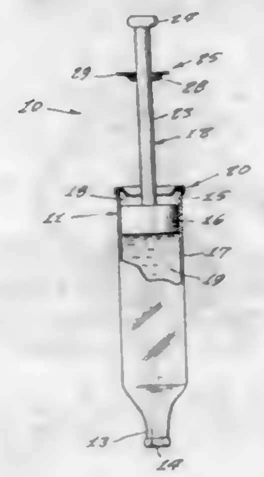
**Horstine Farmery, York, England, assignor to Horstine Farmery Limited, York, England, a British company**
**Filed Oct. 9, 1967, Ser. No. 673,822**
**Claims priority, application Great Britain, Oct. 29, 1966, 48,597/66**
**Int. Cl. G01f** *11/06, 11/28*
**U.S. Cl. 222—340** **10 Claims**



An applicator for applying small quantities of granular materials and seeds on the ground comprising a hollow body having a discharge orifice. A pair of spaced closure surfaces, located on opposite sides of the orifice respectively, are carried by a spring-loaded elongated member associated with a part rockable with respect to said body. The elongated member is operated manually to cause a discharge of the contents of the body by movement of one of said closure surfaces away from said orifice and the other of said closure surfaces toward said orifice.

### 3,478,937
## DISPOSABLE SINGLE UNIT-DOSE SYRINGE WITH LOCKING PLUNGER

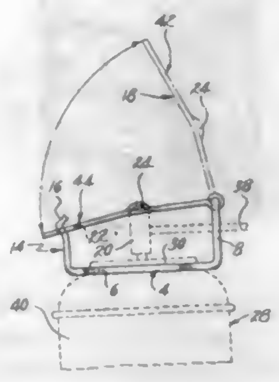
**Ida Solowey, P.O. Box 34, Fresh Meadows Station, Flushing, N.Y. 11365**
**Filed Jan. 22, 1968, Ser. No. 699,484**
**Int. Cl. B67d** *5/42;* **G01f** *11/00*
**U.S. Cl. 222—386** **2 Claims**



A single use syringe including a barrel with slidable plunger therein, the plunger being not returnable outwardly after being once depressed.

### 3,478,938
## ACTUATING DEVICE FOR PRESSURIZED CONTAINERS

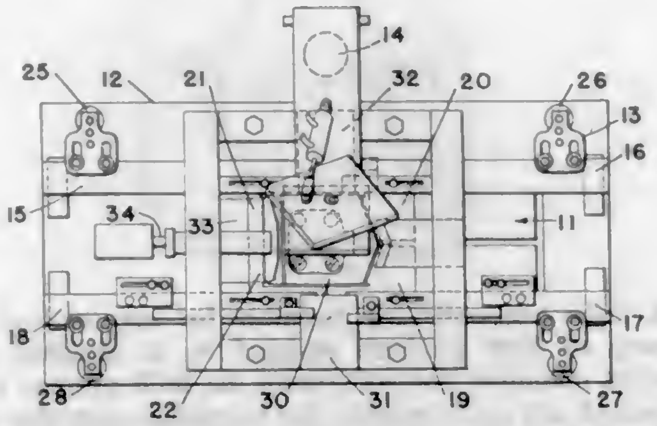
Walter H. Krause, Chicago, Ill., assignor, by mesne assignments, to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 24, 1968, Ser. No. 700,077
Int. Cl. B65d *83/14;* F16k *31/60*
U.S. Cl. 222—402.14 5 Claims



An actuating device for a depressible valve of a pressurized container, comprising: an expandable mounting member, conveniently formed of a continuous rod or bar, having an arcuate section for gripping the top of the container and provided with an upwardly extending locking member and an opposed offset section bent upwardly to form a raised transverse support rotatably supporting a lever which is adapted to engage and depress the container valve and be locked in place by the upwardly locking member.

### 3,478,939
## APPARATUS FOR FOLDING AND PRESSING GARMENT PARTS

**Albert P. Denault, Troy, N.Y., Lawrence H. Gruber, Sinking Spring, Pa., and Kenneth O. Morton, Troy, N.Y., assignors to Cluett, Peabody & Co., Inc., Troy, N.Y., a corporation of New York**
**Filed Oct. 15, 1968, Ser. No. 767,646**
**Int. Cl. A41h** *33/00*
U.S. Cl. 223—38 5 Claims



Improved apparatus for forming fabric pieces such as garment parts, including a movable fence located in the press bed which cooperates with an upper die plate for folding and which is pushed down to the level of the bed surface during pressing.

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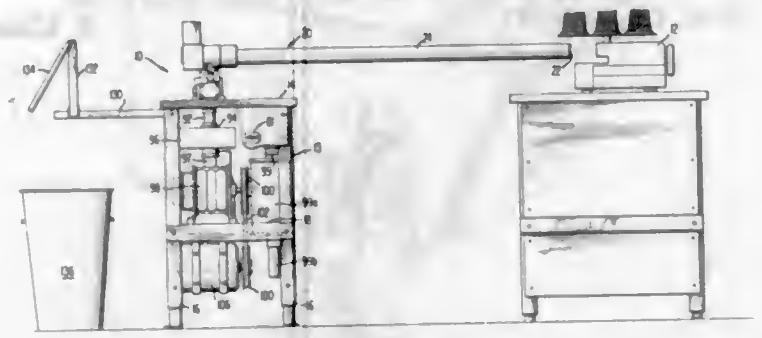
### 3,478,940
## HOSIERY INSPECTING AND BAGGING APPARATUS

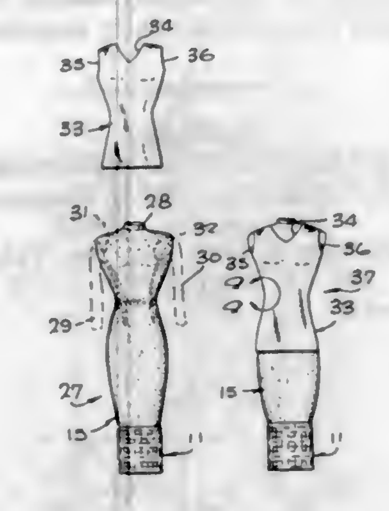
**Predrag V. Sredl, Paducah, Ky., assignor to Southern Textile Machinery Company, Incorporated, Paducah, Ky., a corporation of Kentucky**
**Filed May 20, 1968, Ser. No. 730,242**
**Int. Cl. A41h** *43/00*
**U.S. Cl. 223—43** **11 Claims**



A hosiery inspecting and bagging apparatus of the type in which hosiery inspected on an elongated form is everted through an inlet into a passage extending longitudinally through the form and discharged therefrom through an outlet by inducing a flow of air through the form from the inlet. Sufficient velocity is imparted to the hosiery moving through the passage to impel the hosiery out of the opening through influence of its own inertia.

### 3,478,941
## INFLATABLE GARMENT FORM

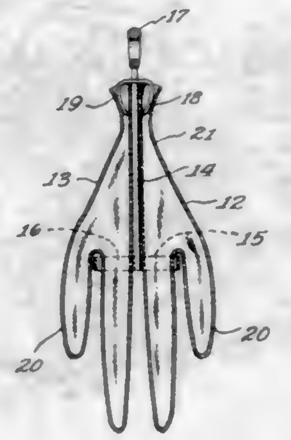
**Gertrude E. Dayton and Wayne B. Dayton, San Bernardino County, Calif. (both of 952-D Springfield St., Upland, Calif. 91786)**
**Filed Nov. 14, 1968, Ser. No. 775,811**
**Int. Cl. A41h** *5/02*
**U.S. Cl. 223—67** **9 Claims**



An expandable garment form is disclosed herein having a base adapted to house a pressurized gas system and an inflatable member in fluid communication therewith. A decorative lid is provided enclosing the inflatable form in its stored condition and is removable so that the inflatable member can be selectively expanded by release of the pressurized gas in the system whereby the base serves as an anchor for the expanded form. A preformed pattern member confines the inflatable member so that the inflatable member assumes the contour of the pattern member. Expansion of the inflatable member may take the form of inflating the entire interior of the member or by inflating a chamber defined by a double wall construction.

### 3,478,942
## GLOVE DISPLAY DEVICE

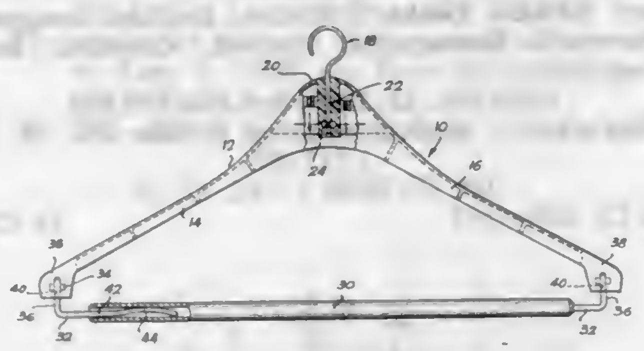
**Alfred C. English, Galva, Ill., assignor to Boss Manufacturing Company, a corporation of Delaware**
**Filed Nov. 24, 1967, Ser. No. 685,643**
**Int. Cl. A47j** *51/00*
**U.S. Cl. 223—85** **7 Claims**



A glove support and display assembly formed of a supporting arm and a pair of rings which hold and suspend a pair of gloves on a support while enabling a prospective purchaser to try the gloves for size.

### 3,478,943
## GARMENT HANGER

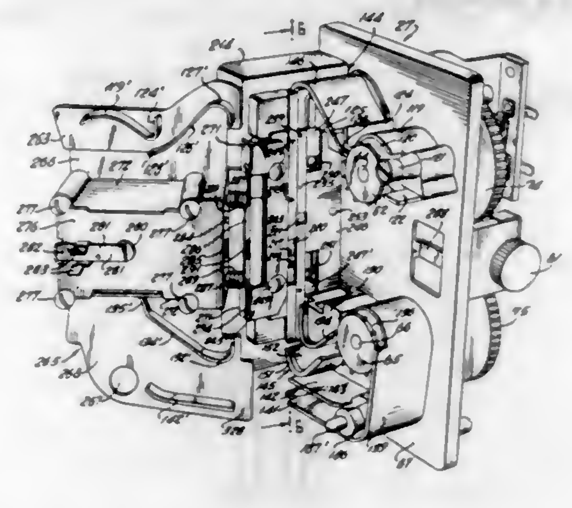
**Lucien Bobrow, Long Beach, N.Y., assignor to Mr. Hanger, Inc., Long Island City, N.Y., a corporation of New York**
**Filed Feb. 29, 1968, Ser. No. 714,158**
**Int. Cl. A41d** *27/22*
**U.S. Cl. 223—88** **1 Claim**



A garment hanger of generally a framed inverted V shaped frame. At the apex of the inverted V a support element is insertable in the frame which is adapted to be inserted in the frame in a heated condition such that a plurality of protuberances on a leg of the support element will create a race within the frame permitting rotation of the support element while being permanently fixed against being pulled out of the frame. Lateral support elements are provided at the outer extremities of the legs of the frame to support a cross bar member. Each of the lateral support elements is generally L shaped the vertical leg having thereon a number of protuberances to form a race in the legs of the frame while the transverse leg of the lateral supports are insertable in the ends of the cross bar member longitudinally of its long axis.

### 3,478,944
### SELF-THREADING MOTION PICTURE PROJECTOR

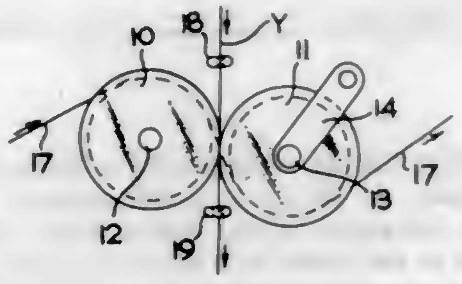
**Raymond Herman, North Bellmore, N.Y., assignor to Richmond Research Corporation, Richmond Hill, N.Y., a corporation of New York**
**Original application Oct. 1, 1964, Ser. No. 400,704, now Patent No. 3,333,915, dated Aug. 1, 1967. Divided and this application July 21, 1967, Ser. No. 655,155**
**Int. Cl. E03b** *1/56;* **B65h** *17/42*
U.S. Cl. 226—67 7 Claims



Improved loop-forming mechanism for a motion picture projection, said mechanism including loop-forming members positioned in advance of and beyond the film frame projecting gate. The said members are separated when the projector is initially threaded, there being tension sensitive means engaging the film strip which, when the film strip is subjected to tension upon the completion of the film threading operation, causes the loop-forming members to be retracted toward each other so that they are withdrawn from contact with the film loops. The loop-forming mechanism automatically turns the projector lamp on and a room illuminating lamp off upon the retraction of the loop-forming members.

### 3,478,945
### YARN SUPPLYING MEANS FOR KNITTING MACHINES

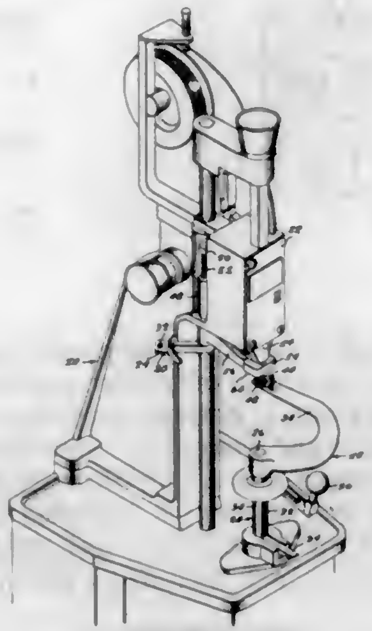
**Albert Edward Cooke, Leicester, England, assignor to Newmark Instruments Limited, Croydon, Surrey, England**
**Filed Jan. 23, 1968, Ser. No. 699,858**
**Claims priority, application Great Britain, Jan. 25, 1967, 3,717/67**
**Int. Cl. B65h** *17/42, 17/20*
U.S. Cl. 226—109 10 Claims



A yarn feeding means for effecting positive feed of yarn for supply to a point of consumption and having a pair of rollers between peripheral parts of which a yarn is fed, the rollers being drivable simultaneously in opposite directions by a common endless flexible driving element wrapping around driving portions or members formed on or coupled to the respective rollers and engaging opposite sides thereof along a wavy path, said driving portions or members being of less diameter than the yarn engaging periphery of the rollers and being urged towards one another by the tension of the flexible driving element.

### 3,478,946
### MEANS FOR SUPPORTING FOOTWEAR AND PRESSING THE SOLEPIECE THEREOF

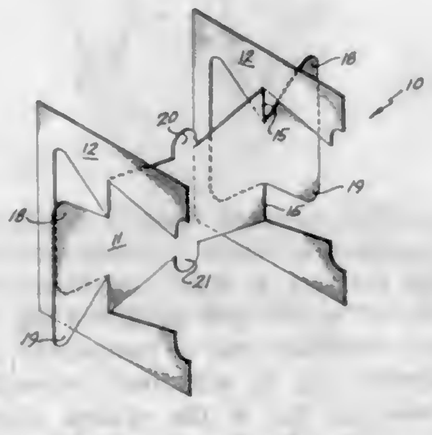
**Henry R. Padovani, Austell, and John G. Wright, Atlanta, Ga., assignors to Auto-Soler Company, Atlanta, Ga., a corporation of Georgia**
**Filed Feb. 28, 1967, Ser. No. 619,410**
**Int. Cl. A43d** *69/04;* **B25c** *7/00;* **B27f** *7/04*
U.S. Cl. 227—97 8 Claims



A horn member of the gooseneck type which is capable of use in the usual fashion for supporting footwear in fastener forming and inserting machines, while being additionally adapted for anvil use either separately in jack fashion or as a pressing element operated by such machines in relation to an opposing press plate member. The horn member is characterized by a top supporting face at which a circular clinching element of conventional form is arranged in an encompassing triangular area having two sides lying substantially tangent to the clinching element.

### 3,478,947
### PARTITIONING MEMBER

**Joseph F. Schillinger, 5029 S. Ridgeway Ave., Chicago, Ill. 60625**
**Filed Mar. 4, 1968, Ser. No. 710,119**
**Int. Cl. B65d** *25/04, 25/10*
U.S. Cl. 229—15 4 Claims



A divider for separating a number of articles in a package. The divider is formed from a single piece of material and is cut and scored to form longitudinal end transverse divider elements within the package.

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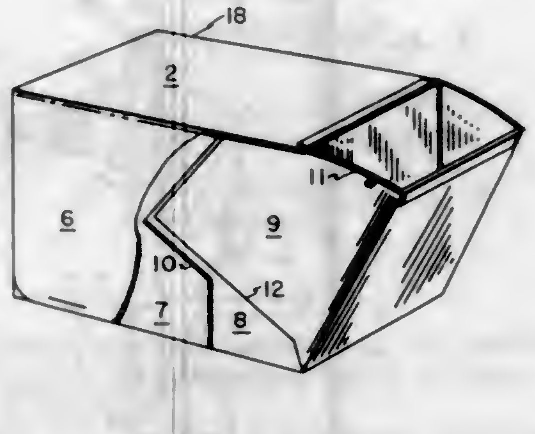
### 3,478,948
### DISPENSING CONTAINER

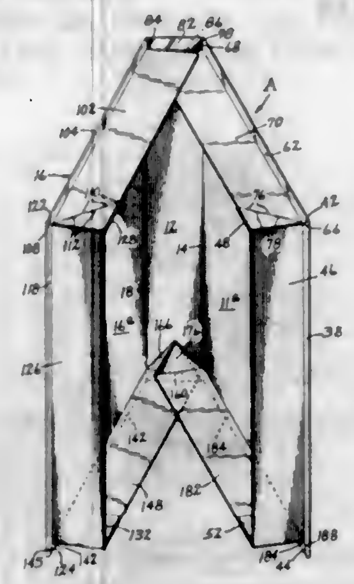
**Ross J. Dornbush, Jenison, Mich., assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio**
**Filed Feb. 26, 1968, Ser. No. 708,080**
**Int. Cl. B65d** *5/72*
U.S. Cl. 229—17 9 Claims



A foldably constructed dispensing container provided with a non-reclosable dispensing bin. Non-reclosure is achieved by sandwiching each of a pair of bin flaps between a side flap and an outer flap and in surface contact with a locking flap. Upon opening the bin, the bin flaps assume an edgewise alignment with the locking flaps thereby abuttingly preventing bin reclosure. Other features are disclosed for sealing the container and for achieving a locked-open condition.

### 3,478,949
### ONE-PIECE COLLAPSIBLE BOOK-TYPE BOX

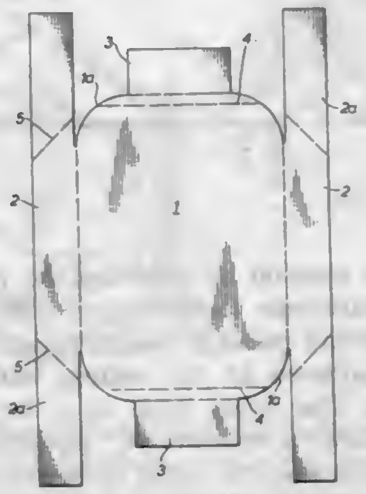
**Eugene Richgels, West St. Paul, Minn., assignor to Kaplan Paper Box Co., St. Paul, Minn., a corporation of Minnesota**
**Filed Mar. 18, 1968, Ser. No. 713,726**
**Int. Cl. B65d** *5/24*
U.S. Cl. 229—31 10 Claims



A book-type box having two sections each with a cover and an end and side walls issuing therefrom and each hingedly connected to a backbone. A marginal flange portion of the covers extends outwardly beyond the side and end walls as well as the backbone of the box. An outer hinge structure at the outer corners of each section comprises a triangular tab on each side wall which is glued to a flap on the end wall and permits collapsing or erecting the sections of the box at the outer corners while an inner hinge structure at the ends of the backbone consisting of three triangular tabs hingedly connected to the facing ends of the side walls and backbone and to each other permits collapsing or erecting the sections of the at the locality of the backbone.

### 3,478,950
### TRAYS FOR PACKAGING JARS, CANS AND SIMILAR ARTICLES

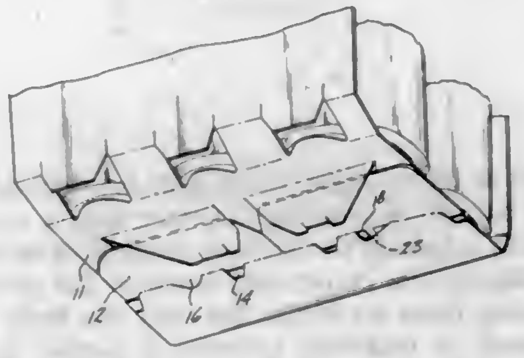
**Roy A. Stevens, 1 Hythe Road, Thornton Heath, Surrey, England**
**Filed Nov. 14, 1967, Ser. No. 682,853**
**Int. Cl. B65d** *5/26, 5/36, 65/16*
U.S. Cl. 229—32 7 Claims



A round-cornered cardboard tray or like structure for "shrink-wrap" and like packaging and in which extensions on the side walls are bent round to follow the curvature of the corners and are attached to the end walls, includes at each end of the base panel an additional transverse fold or crease line spaced from the end of the base panel and about which the end wall structure can flat-fold onto the base panel.

### 3,478,951
### AUTOMATICALLY SELECTIVE LOCK DEVICE

**Earl J. Graser, Monroe, La., assignor to Olinkraft, Inc., a corporation of Delaware**
**Filed May 14, 1968, Ser. No. 729,062**
**The portion of the term of the patent subsequent to Aug. 6, 1985, has been disclaimed**
**Int. Cl. B65d** *5/12, 5/26*
U.S. Cl. 229—40 4 Claims



Improved lock means for fastening overlapping margins of a blank utilized to generate a wrap-around article carrier or package where the lock means of the blank includes at least two selectively operable locks accommodating at least two different package perimeter dimensions; one lock corresponding to a "long" perimeter dimension in the finished package and the other lock corresponding to a "short" perimeter dimension in the finished package.

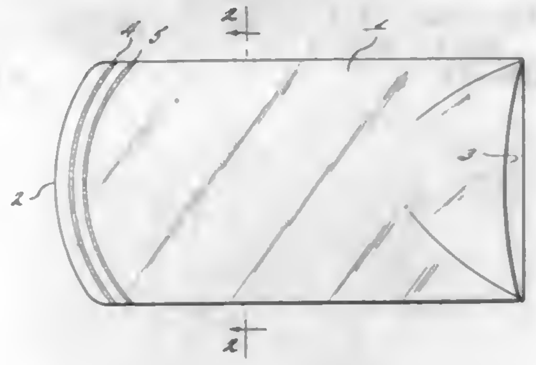
### 3,478,952
## BAG BOTTOM

**Sol J. Perlman, Baltimore, Md., assignor to Vac Pac Manufacturing Company, Inc., Baltimore, Md., a corporation of Maryland**

**Filed Apr. 14, 1967, Ser. No. 630,961**

**Int. Cl. B65d** *33/22*

**U.S. Cl. 229—57** **3 Claims**



An improved method of adhering the bottom of heat shrinkable polyalkylene terephthalate film bags, such as those used to shrink package frozen turkeys, is disclosed. The bags are adhered at the bottom with two distinct adhesive bands. The inner band is a thermoplastic adhesive which allows a measure of "peelability and shock absorbability," whereas the outer adhesive band is a high strength thermosetting adhesive. The contained product may even be cooked within the bag.

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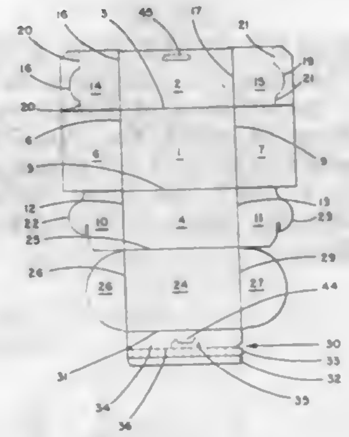
### 3,478,953
## RECLOSABLE CARTON

**Homer W. Forrer, Jonesboro, and James R. Chapman, Atlanta, Ga., assignors to The Mead Corporation, a corporation of Ohio**

**Filed Jan. 19, 1968, Ser. No. 699,113**

**Int. Cl. B65d** *17/20, 17/24, 5/54*

**U.S. Cl. 229—51** **7 Claims**



A carton of the so-called trunk style is disclosed wherein a body portion is provided together with a cover portion hingedly adjoined to the body portion. A sealing flap forms a disjointable connection between the part of the cover remote from its hinge line and the body portion of the carton. A reclosing aperture is formed in a wall of the body portion and receives a reclosing tab formed in the sealing panel. The reclosing tab is defined by the upper edge of a pull strap struck from the sealing flap and foldably secured thereto at its ends by fold lines, the lower edge of the pull strap being defined by the upper edge of the tear strip. Thus when the tear strip is removed, the carton may be opened by manually engaging and manipulating the pull strap. The carton is maintained in closed condition by the locking tab which is inserted into the adjacent coincidental locking aperture.

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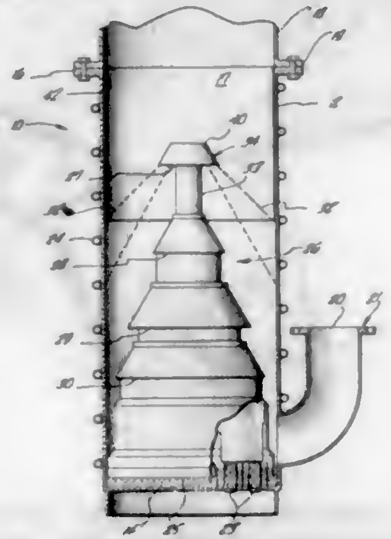
### 3,478,954
## VACUUM PUMP

**Roy C. Gauger, Rochester, N.Y., assignor, by mesne assignments, to The Bendix Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Nov. 30, 1967, Ser. No. 686,953**

**Int. Cl. F04b** *9/02;* **F28f** *13/18*

**U.S. Cl. 230—101** **8 Claims**



An oil diffusion pump is provided with a fluorocarbon material on the outer surface and portions of the interior surface of the first stage nozzle assembly and/or the interior surface of the portion of the pump casing extending between the vapor jet and the pump inlet. The material may be a plastic of the fluorocarbon resin family which forms a contact angle of 35° or greater with the pump oil to prevent the creep or spread of oil on such surfaces for reducing backstreaming of oil molecules into the container being evacuated.

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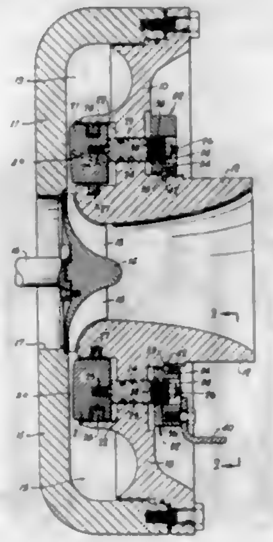
### 3,478,955
## VARIABLE AREA DIFFUSER FOR COMPRESSOR

**Fred K. Kunderman, Olean, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware**

**Filed Mar. 11, 1968, Ser. No. 712,114**

**Int. Cl. F04d** *27/02;* **F04f** *5/48*

**U.S. Cl. 230—114** **9 Claims**



A centrifugal compressor having a vaneless diffuser, one wall of which is defined by an annular member movable relative to the other wall to reduce or increase the width of the diffuser passage. The annular wall is mounted on four posts which extend through openings in the compressor casing and guide the reciprocating movement of the wall. The opposite ends of the posts are operatively coupled to helical cams in an annular control member mounted for rotation on the casing. Oscillation of the control member, by means of any suitable control mechanism, effects corresponding reciprocating movement of the movable annular wall.

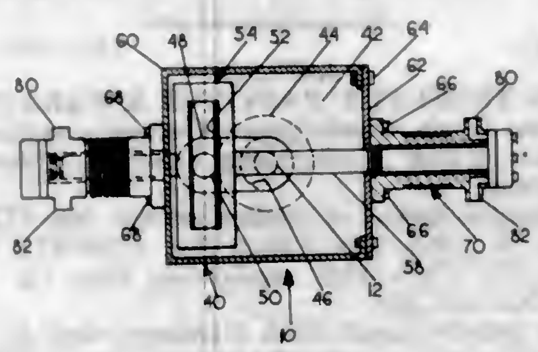
### 3,478,956
## COMPRESSOR

**Charles E. Gosha, 131 Church St., Ashland, Oreg. 97520**

**Filed Mar. 25, 1968, Ser. No. 715,624**

**Int. Cl. F04b** *27/02, 39/12*

**U.S. Cl. 230—185** **1 Claim**



A compressor, designed chiefly for air conditioning and/or refrigeration, is operated from a rotary shaft through a Scotch yoke.

The Scotch yoke drive makes possible a compact arrangement of cylinders in which the operating stroke is made of the order of four times as great as the cylinder diameter. The drive shaft can operate at slow speed without sacrifice of output, a feature which greatly reduces wear and noise.

The ratio of maximum to minimum working space is very high, of the order of 350 to 1 or even more, and the efficiency is correspondingly high. The pistons and yoke combine to form a long, continuous, rigid structure which maintains perfect alignment of pistons with cylinders, so that very fine tolerances may be provided for sealing against leakage of gas past the pistons. This effect is promoted by providing inner anti-friction facing for the cylinders, and neoprene U-rings in ring grooves of the pistons.

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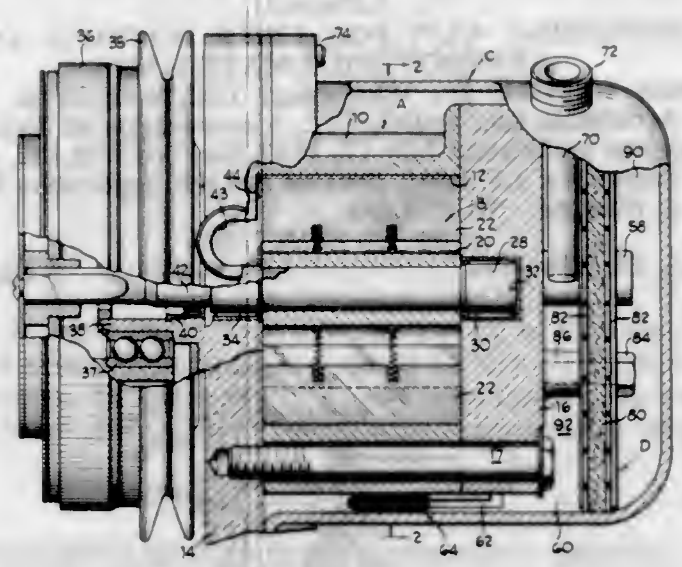
### 3,478,957
## OIL SEPARATOR FOR ROTARY COMPRESSOR

**Lester E. Harlin and Walter C. Moore, York, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware**

**Filed Mar. 26, 1968, Ser. No. 716,067**

**Int. Cl. F04c** *29/02, 17/00;* **F04d** *29/06*

**U.S. Cl. 230—207** **5 Claims**



Apparatus for separating oil entrained by the refrigerant in the discharge gas of a rotary compressor. This discharge gas, comprising refrigerant and oil, is delivered to a chamber defined in part by a shell enclosing the compressor casing and an oil coalescing medium extending across the shell. This discharge gas sweeps back through substantially the entire surface of the coalescing medium so that the oil droplets are coalesced and returned to the sump. The refrigerant gas passes out of the shell through a conventional discharge line.

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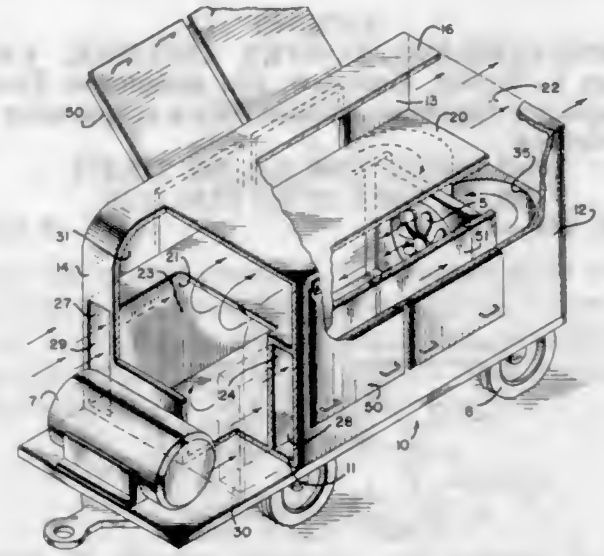
### 3,478,958
## HOUSING FOR PORTABLE MACHINES

**Ernest C. Hinck III, Skillman, and John T. Bowen, Princeton, N.J., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey**

**Filed Jan. 11, 1968, Ser. No. 697,106**

**Int. Cl. F04b** *39/00*

**U.S. Cl. 230—232** **10 Claims**



A housing for a portable machine such as a compressor which is designed to muffle the noise produced by the machine. The housing includes a shell having a base, sidewalls, end walls and a top. A pair of ducts, parallel to the sidewalls conduct cooling air from outside the shell to the inside of the shell. A fan driven by the engine blows the air through a radiator system and through a chamber in which the compressor and compressor engine are housed. The cooling air then flows into a second or exhaust duct having its inlet at the opposite end of the shell from which it exits to the outside of the shell. Doors are provided in the housing to permit access to the machine. Each of the walls is covered with a sound absorbing material.

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### 3,478,959
## CONTROLS FOR BUSINESS MACHINES SUCH AS BOOKKEEPING MACHINES AND THE LIKE

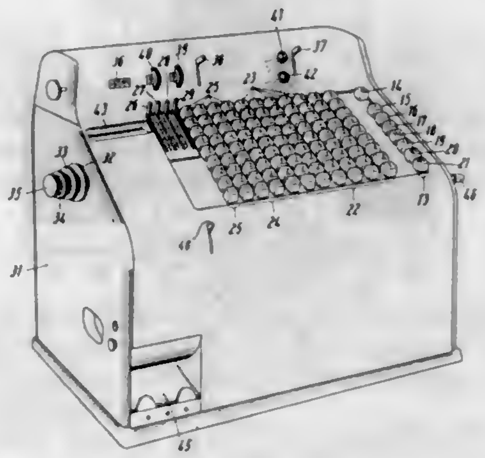
**Gerhard Rethmeier, Oldentrup, Germany, assignor to Anker-Werke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany**

**Filed Dec. 15, 1967, Ser. No. 690,857**

**Claims priority, application Germany, Dec. 24, 1966, A 54,474**

**Int. Cl. G07g** *5/00;* **G06c** *29/00, 23/00*

**U.S. Cl. 235—3** **8 Claims**



A business machine such as a bookkeeping machine or the like having keyboard devices for posting values and other items of business transactions as well as control keys for selecting the particular machine operation desired, it also equipped with an accumulator for storing other value and information items. A key means is available to the operator of the machine for causing its calculating mechanisms to carry out various calculations by coacting at sequential machine runs with the keyboard means and with the accumulator respectively, so that item taken from both are processed and thus involved in the voucher printed by the machine.

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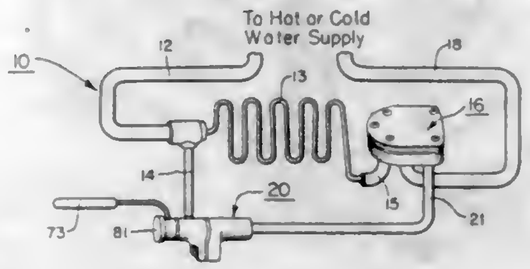
### 3,478,960
### HEATING-COOLING VORTEX CONTROL VALVE

**Wesley L. Taylor, Glenview, Ill., assignor to Power Regulator Company, Skokie, Ill., a corporation of Delaware**
**Filed June 10, 1968, Ser. No. 735,874**
**Int. Cl. G05d** *23/00;* **F15c** *1/16*
**U.S. Cl. 236—1** **9 Claims**



A control device for a heating-cooling system includes a fluid amplifier and a thermostatic valve to regulate the flow rate of either hot or cold fluid so that a preselected temperature setting is established and maintained. A portion of the circulating fluid is shunted to the control inlet of the fluid amplifier by way of thermostatic valve to modulate the primary flow through the amplifier and to totally preclude such flow when the desired temperature is attained. A preferred thermostatic valve construction which automatically reverses its flow control characteristics with a change of the system from a heating to a cooling mode or vice versa is also disclosed.

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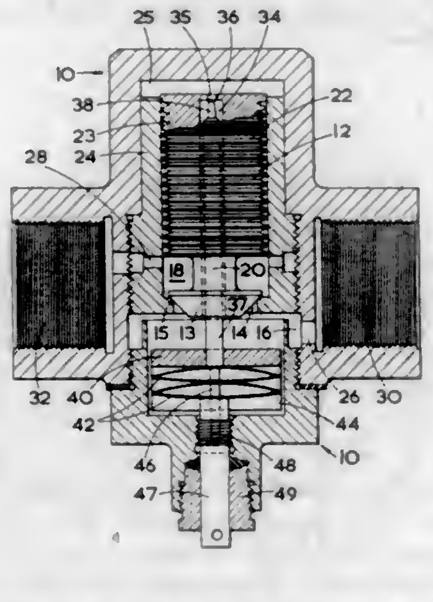
### 3,478,961
### STEAM TRAP

**Malcolm Frederick Bradly, Hilltop, Glenvale Road, Ringwood, Victoria, Australia**
**Filed Dec. 29, 1967, Ser. No. 694,677**
**Claims priority, application Australia, Jan. 13, 1967, 16,424/67**
**Int. Cl. F16t** *1/08*
**U.S. Cl. 236—54** **9 Claims**



A steam trap, including a main valve for controlling the flow of fluid through the trap, the main valve having an orifice-type bypass therethrough whose opening is varied by operation of a pilot valve which, in turn, is operated by a thermostat, and the main valve is opened and closed by fluid pressure in the same manner as a thermodynamic steam trap.. The thermostat and consequently the pilot valve close or almost close the orifice opening under the influence of cold condensate. When the condensate becomes hot, the pilot valve opens and remains open at all times during the normal operation of the main valve by pressure.

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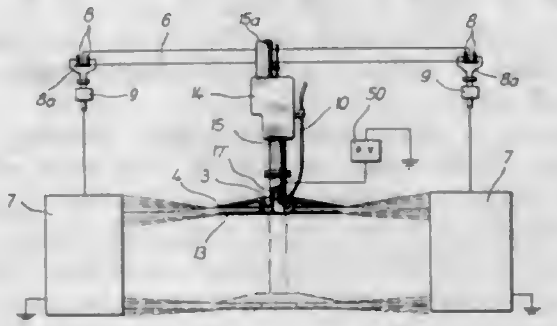
### 3,478,962
### ELECTROSTATIC PAINTING APPARATUS

**Hermann Wirth, Gundelfingen, Germany, assignor to Robert Bosch Hausgeraete G.m.b.H., Stuttgart, Germany**
**Continuation-in-part of application Ser. No. 472,650, July 16, 1965, now Patent No. 3,358,971, dated Dec. 19, 1967. This application June 12, 1967, Ser. No. 645,300**
**Claims priority, application Germany, Oct. 4, 1966, B 89,190**
**The portion of the term of the patent subsequent to Dec. 19, 1984, has been disclaimed**
**Int. Cl. B05b** *5/08*
**U.S. Cl. 239—15** **10 Claims**



An atomizer array for use in electrostatic painting apparatus. Includes two annular sprayers which are rotated about a common vertical axis and whose spraying edges may but need not be spaced axially from each other. The annular surfaces which deliver paint to the respective spraying edges converge radially outwardly so that the distance between the radially outermost portions of such surfaces is less than between the radially innermost portions.

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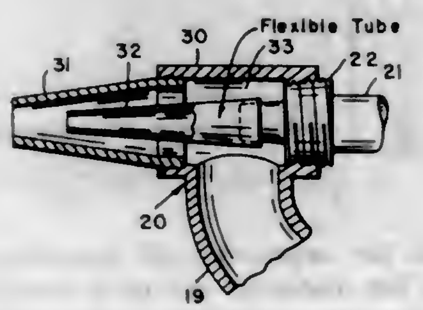
### 3,478,963
### DISPENSING GUN FOR FIBER ROVINGS AND CEMENTITIOUS MATERIALS

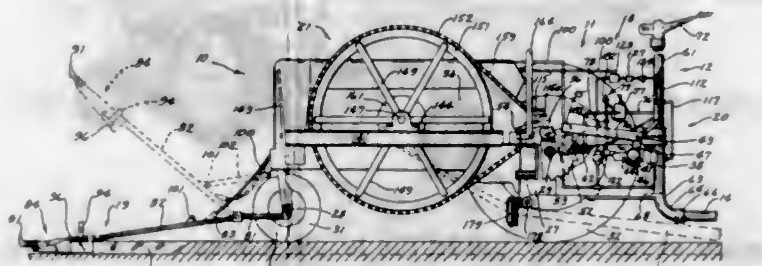
**James B. Winn, Jr., Wimberley, Tex., assignor to The Archilithic Co., Dallas, Tex., a corporation of Texas**
**Original application July 17, 1967, Ser. No. 660,149, now Patent No. 3,375,541. Divided and this application Sept 6, 1968, Ser. No. 774,556**
**Int. Cl. B05b** *7/04*
**U.S. Cl. 239—102** **5 Claims**



Glass fiber strands are deposited on a receiving surface coated with a cementitious material by forcefully projecting the fluid coating material from a projection source while centrally entraining the continuous fiber strand in the coating material for propelling the strand and the coating material for deposit onto the receiving surface.

### 3,478,964
### TRAVELING IRRIGATION SPRINKLER APPARATUS

**Thomas R. Karmann, 6441 McKinley St., Omaha, Nebr. 68112**
**Continuation-in-part of application Ser. No. 569,159, Aug. 1, 1966, now Patent No. 3,415,451. This application Oct. 31, 1967, Ser. No. 679,489**
**Int. Cl. B05b** *3/18*
**U.S. Cl. 239—191** **13 Claims**



This invention pertains to a self-propelled traveling irrigation sprinkler apparatus which is mounted on a wheeled frame; the apparatus having a sprinkling unit operable to spray an area of land, a hydraulic mechanism operable to drive the wheeled frame, a furrow follower for guiding the wheeled frame along a preformed furrow which is operable to stop the flow of fluid to the sprinkling head and the hydraulic mechanism when the furrow follower leaves the furrow, a fluid pressure sensing device which is operable to stop the flow of fluid to the sprinkling head and the hydraulic mechanism in the event the hydraulic mechanism becomes inoperative, and a hose guiding device which is operable to assist an operator in winding the hose upon a reel mounted on the wheeled frame.

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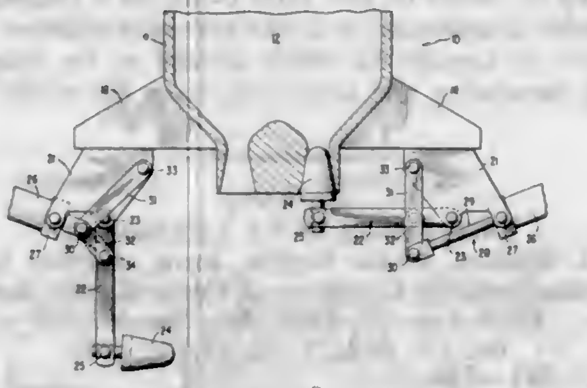
### 3,478,965
### VARIABLE THRUST ROCKET ENGINE

**Thomas E. Llewellyn, 222 Beattie Ave., Lockport, N.Y. 14094**
**Filed Oct. 19, 1966, Ser. No. 587,739**
**Int. Cl. B64c** *15/10;* **F02k** *1/24*
**U.S. Cl. 239—265.25** **4 Claims**



A variable thrust rocket engine having a plurality of thrust nozzles which may be closed to vary the thrust of the engine. The nozzles each have a fixed throat area, and are closed selectively to produce the desired thrust level.

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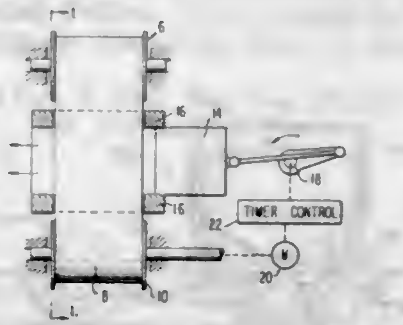
### 3,478,966
### HYPERVELOCITY JET PRODUCING SYSTEM EMPLOYING AN IMPACT CUMULATION PROCESS

**William C. Cooley, Bethesda, Md., assignor to Exotech Incorporated, Rockville, Md.**
**Continuation-in-part of application Ser. No. 728,273, May 10, 1968. This application July 25, 1968, Ser. No. 747,545**
**Int. Cl. A62c** *13/52, 35/18, 31/18*
**U.S. Cl. 239—302** **7 Claims**

A device for producing hypervelocity pulsed fluid jets in which a pair of spaced moving carrier members is coated with a gel-like material. An impact head member is adapted to be propelled between the carrier members to impact the edges of the coating of charge material thereby generating a shock wave therein and converting the charge material into a fluid jet along a central plane



between the carrier members. The impact head member is mounted for reciprocating motion and the carrier members are incrementally advanced to thereby present a fresh charge for each thrust of the impact head between the carrier members.

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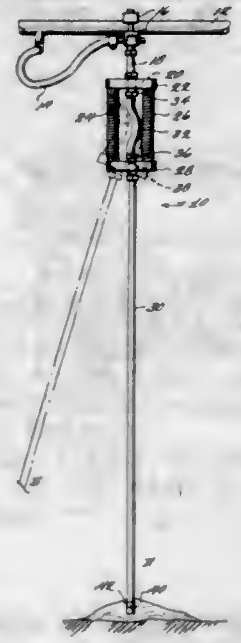
### 3,478,967
### ROW CROP DROP

**Donelson B. Horton, Madison, and Earnest W. Nunn, Huntsville, Ala., assignors to John Blue Company, a Division of Subscription Television, Inc., New York, N.Y., a corporation of Delaware**
**Filed Sept. 18, 1967, Ser. No. 668,386**
**Int. Cl. B05b** *15/08*
**U.S. Cl. 239—588** **2 Claims**



The invention discloses double coil spring means to dampen and hold a row crop drop relatively free from vibration while maintaining sufficient flexibility so that said drop may yield rather than bend or break upon forceful contact with a solid object regardless of the angle of deflection.

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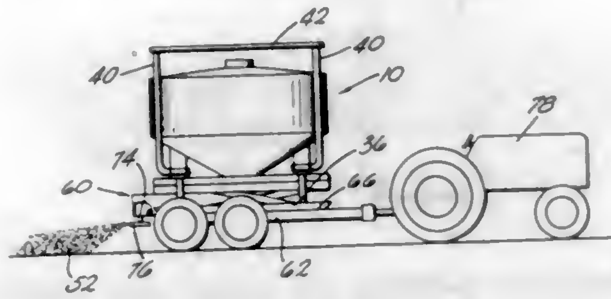
### 3,478,968
### BULK MATERIAL HANDLING SYSTEM

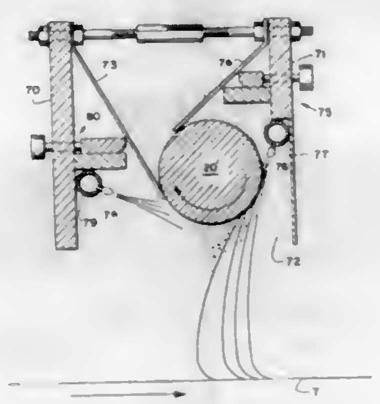
**Ralph E. McKinney, Beatrice, Nebr., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan**
**Filed Nov. 8, 1967, Ser. No. 681,532**
**Int. Cl. B66f** *9/00*
**U.S. Cl. 239—650** **5 Claims**

A system for moving bulk material, such as fertilizer, from a storage area to a distributed position on a field wherein the material is first placed in large ground supported bin assemblies which function as bulk storage units for the material, shipping containers for the material, and discharge hoppers for the material during distribution. A vehicle, such as a truck, provided with bin engageable lift units transports the bin assemblies from the storage area to the field on which fertilizer is to be distributed. At the field, the bin assemblies are returned to ground supported positions and then to positions supported on a fertilizer distributor vehicle which is moved across the field to be fertilized. When the bin assembly is supported on the fertilizer distributor vehicle, the bin functions as a fertilizer container and discharge hopper from which the fertilizer is distributed to the field.



### 3,478,969
### PNEUMATIC PRECIPITATING POWDER APPLYING APPARATUS

**Frederick J. Lund, 215 N. Prairie Ave.,**
**Mundelein, Ill. 60060**
**Continuation of application Ser. No. 444,103, Mar. 24, 1965. This application Mar. 9, 1966, Ser. No. 540,134**
**Int. Cl. A01c** *15/04*
**U.S. Cl. 239—654 2 Claims**

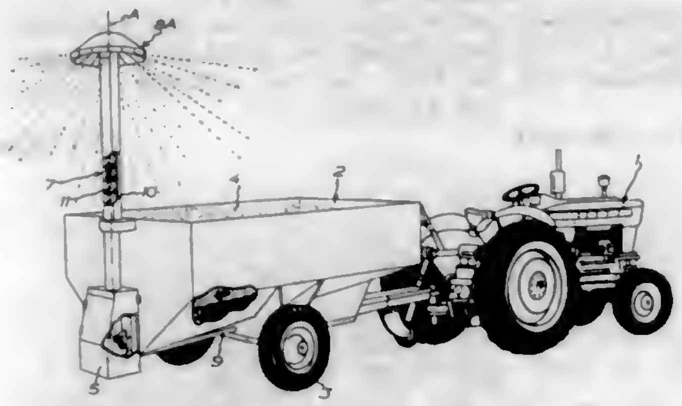


An anti-offset powder dispensing apparatus for distributing powder on an object to be protected comprising an elongated powder container having opposed blade members defining a powder dispensing opening, a cylindrical feed roller having a roughened metallic surface and positioned parallel and adjacent to said container at said opening and which is adapted to hold powder, means for driving said roller through said container opening whereby powder is removed onto said roughened surface and a plurality of jet means positioned closely adjacent to and extending along said roller to transfer the powder from said surface to the object to be protected.

### 3,478,970
### MANURE SPREADERS

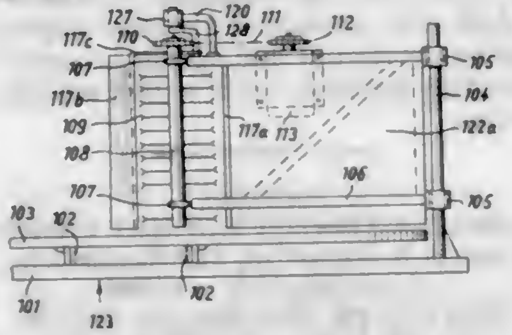
**Olle Lennart Siwersson, Gartnergatan 4, and Karl Gunnar Tell, Malmogatan 3, both of Halsingborg, Sweden**
**Filed Apr. 1, 1968, Ser. No. 717,692**
**Int. Cl. A01c** *17/00*
**U.S. Cl. 239—687 6 Claims**

A spreader for manure having a conveyor extending upwardly beyond a supply container, said conveyor consisting of a screw and a rotatable housing, and spreading means at the upper end of the housing to be carried along by the housing in the rotation thereof.



### 3,478,971
### PROCESS AND APPARATUS FOR BREAKING UP A HEAP OF CEREAL OR LEAF CROP

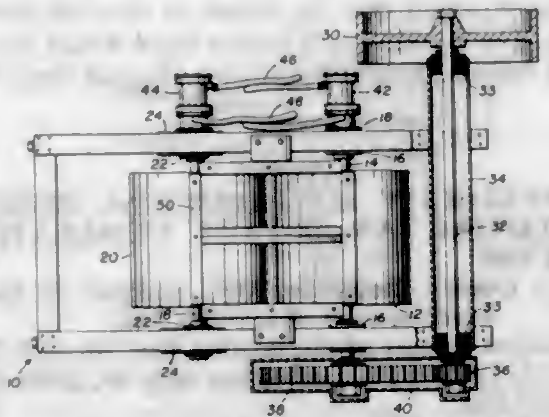
**Ernst Weichel, Bahnhofstrasse 1, Heningen uber Goppingen, Germany**
**Filed Oct. 2, 1967, Ser. No. 672,070**
**Claims priority, application Germany, Oct. 3, 1966, W 42,510**
**Int. Cl. B02c** *7/02, 18/00, 23/00*
**U.S. Cl. 241—24 20 Claims**



The present invention discloses a process and apparatus for gradually breaking up a heap of cereal or leaf crop, the heap of cereal or leaf crop being on a rotating turntable with a separator or cutter arranged together with a conveyor to engage the outer surface of the heap, thus cutting, separating and conveying away the cereal or leaf crop.

### 3,478,972
### DRIVE FOR ROLL CRUSHERS

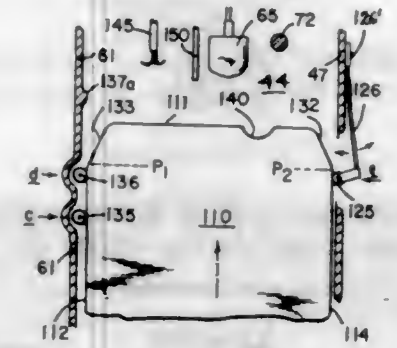
**Hans I. Hansen, Cedar Rapids, Iowa, assignor to Iowa Manufacturing Company of Cedar Rapids, Iowa**
**Filed Aug. 27, 1965, Ser. No. 483,037**
**Int. Cl. B02c** *1/08, 15/00, 4/00*
**U.S. Cl. 241—230 5 Claims**



A roll type crusher in which the drive roll incorporates a hydraulic pump driven thereby and the driven roll a hydraulic motor driven by the pump. Finger gears and other similar forms of interconnection between the rolls for driving one from the other are thereby eliminated, adjustment of roll spacing is more readily accommodated, and wear greatly reduced.

### 3,478,973
### COMPACT PLAYER FOR MAGNETIC TAPE CARTRIDGES

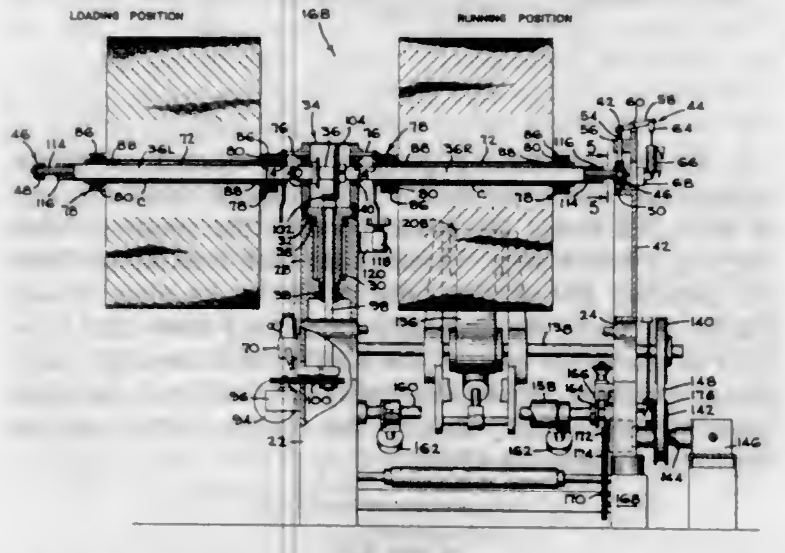
**William P. Lear, Wichita, Kans., and Samuel H. Auld, Newport Beach, Calif., assignors to Lear Jet Industries, Inc., Wichita, Kans., a corporation of Delaware**
**Filed Apr. 5, 1966, Ser. No. 540,289**
**Int. Cl. B65h** *17/48;* **G11b** *5/00, 25/06*
**U.S. Cl. 242—55.19 3 Claims**



The tape player contains a tunnel with side walls spaced apart little more than the cartridge width. A pair of rollers are vertically oriented in one tunnel wall and ride on the adjacent side wall of the cartridge. A detent member is biased into the tunnel, and coacts with its other side wall. The member snaps into a V-notch of the cartridge, and presses it laterally against the roller pair. One of the rollers is opposite the detent member. The resultant arrangement facilitates smooth entry of the cartridge and its close orientation for quality transcription even when in mobile use.

### 3,478,974
### ROLL STAND FOR CONVERTING EQUIPMENT

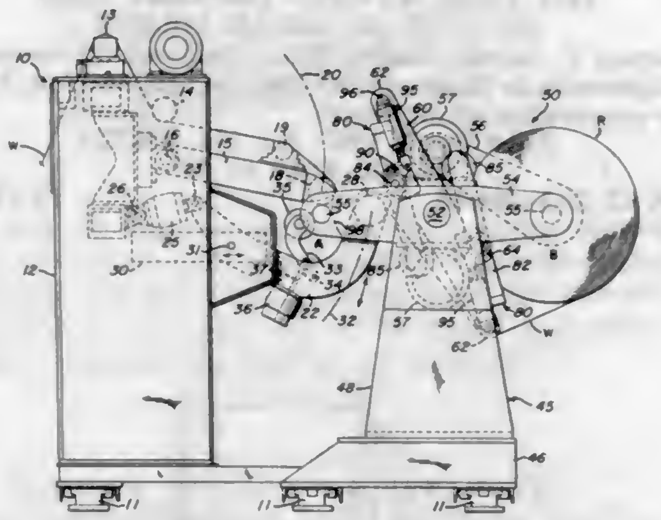
**Howard E. Roscoe, Brown County, Wis., and Edgar L. Nelson, Menominee County, Mich., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware**
**Filed Jan. 2, 1968, Ser. No. 695,077**
**Int. Cl. B65h** *19/30*
**U.S. Cl. 242—58 14 Claims**



An elongate shaft has its mid portion mounted in a support which is rotatable about a vertical axis. The shaft is in a horizontal plane and each portion of the shaft extending from the support carries a mill web roll. The support is mounted so that each portion of the shaft carrying a mill roll can be aligned with the running line of a converting machine. When the roll on one shaft portion is exhausted, the operator rotates the support positioning the other end of the shaft carrying a full mill roll in running position. While one mill roll is being unwound the operator then mounts another mill roll on the other end of the shaft.

### 3,478,975
### WEB WINDING APPARATUS

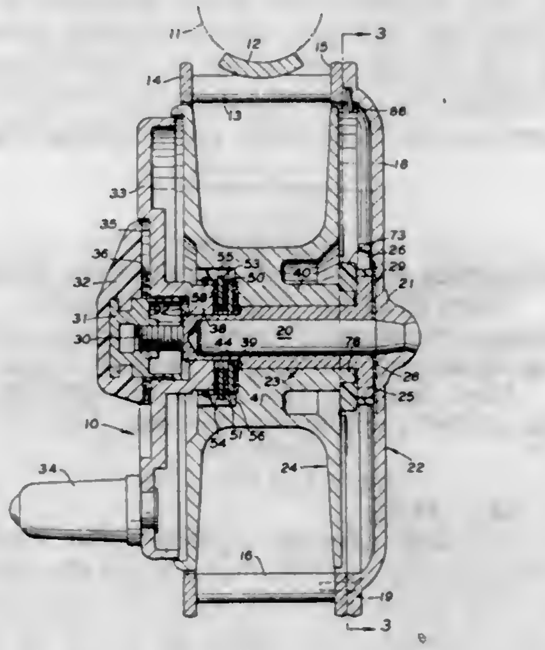
**William R. Penrod, Fulton, N.Y., assignor to The Black-Clawson Company, Hamilton, Ohio, a corporation of Ohio**
**Filed Oct. 2, 1967, Ser. No. 672,101**
**Int. Cl. B65h** *67/04*
**U.S. Cl. 242—64 8 Claims**



In a continuous winder, a turret supports a plurality of cores each having a rider roll supported by a frame pivotally mounted on the turret, and each frame includes a pair of parallel spaced arms connected by a beam which serves to counterbalance the rider roll and to maintain close parallelism between the rider roll and its corresponding core. Fluid cylinders are mounted on the turret for rotating the frames so that each counterbalanced rider roll is effective to produce a constant pressure against a winding roll on its corresponding core while indexing of the turret.

### 3,478,976
### FLY REEL HAVING SELECTIVE AND ALTERNATE DRAG AND BRAKE MEANS

**Thomas F. Sarah, Akron, Ohio, assignor, by mesne assignments, to Shakespeare Company, Kalamazoo, Mich., a corporation of Delaware**
**Filed Jan. 3, 1967, Ser. No. 606,676**
**Int. Cl. A01k** *89/02*
**U.S. Cl. 242—84.45 13 Claims**

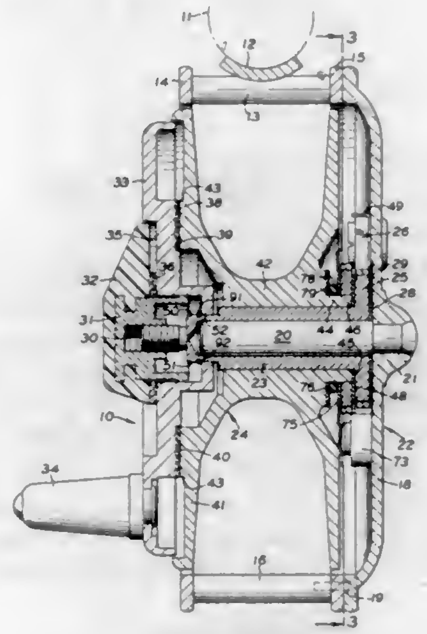


A fly reel frame provides a journal for a crank-operated shaft on which a spool is rotatably mounted and connected thereto by an adjustable friction drag. A pawl is pivoted on the frame and when engaged with a ratchet on the shaft, prevents unwinding rotation of the spool except against the slipping of the drag. A suitable friction brake is carried by the frame and biased toward engagement with the spool. A manual operator is also carried by the frame to selectively permit engagement of the pawl and ratchet and thereby the action of the drag or engagement of the friction brake with the spool.

### 3,478,977

### FLY REEL HAVING PRIMARY AND SECONDARY DRAG MEANS

**Thomas F. Sarah, Akron, Ohio, assignor, by mesne assignments, to Shakespeare Company, Kalamazoo, Mich., a corporation of Delaware**
**Filed Jan. 3, 1967, Ser. No. 606,723**
**Int. Cl. A01k** *89/02*
**U.S. Cl. 242—84.45** **12 Claims**



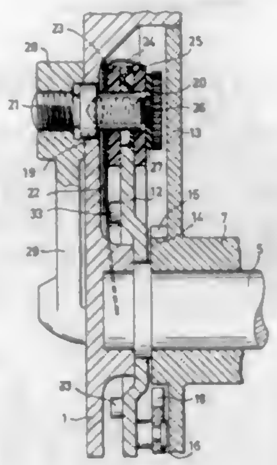
This reel uses both a selectively releasable primary drag means and a continuously applied secondary drag means. The reel spool is supported for rotation in the winding direction by a suitable crank means. The primary drag means includes friction elements engaging the spool with an adjustable force and connected through a pawl and ratchet arrangement to the frame to retard unwinding of the line, e.g., by the pull of a fish. Lever operated cam means on the frame is manually actuated to disconnect the pawl and ratchet to permit unwinding of the line, e.g., by the user. However, the secondary drag means remains operative between the frame and spool to prevent the line from being unwound too freely.

### 3,478,978

### BRAKING DEVICE FOR FISHING REELS, ESPECIALLY FOR FLY FISHING

**Karl Nurmse, Svangsta, Sweden, assignor to ABU Aktiebolag, Svangsta, Sweden, a Swedish corporation**
**Filed June 12, 1967, Ser. No. 645,420**
**Claims priority, application Sweden, June 15, 1966, 8,176/66**
**Int. Cl. A01k** *89/02*
**U.S. Cl. 242—84.51** **3 Claims**

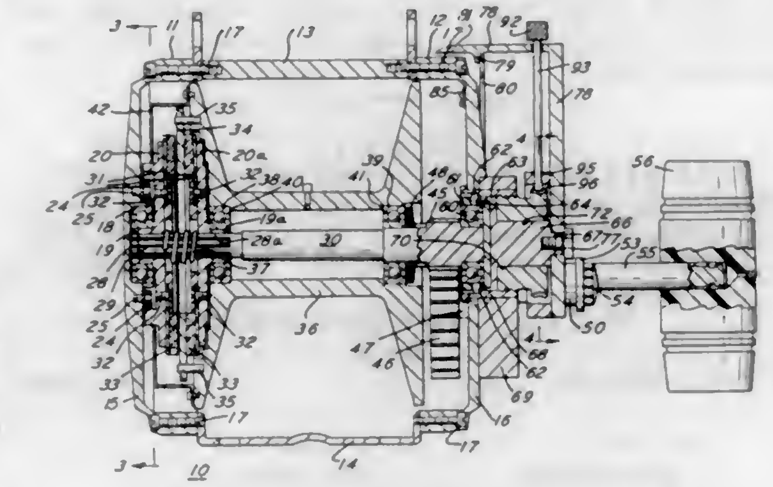
A braking device for fishing reels with rotatable line spool, especially fly reels, having a brake disc coaxial with the line spool and with brake blocks on both sides of the brake disc located at the outer periphery of the brake disc. A rapid-adjustment lever outside the reel permits regulating the braking force within settable limits by adjusting the force with which the brake blocks are pressed against the brake disc. A ratchet device has the double function of preventing braking during reeling in and of giving an acoustic signal during reeling out.



### 3,478,979

### FISHING REEL

**Herbert O. Henze, Philadelphia, Pa., assignor to Penn Fishing Tackle Mfg. Co., Philadelphia, Pa., a corporation of Pennsylvania**
**Filed July 29, 1966, Ser. No. 568,784**
**Int. Cl. A01k** *89/02*
**U.S. Cl. 242—84.54** **6 Claims**



A fishing reel having positive lever control of brake application with a location for free spool operation and an indicated range for brake control, the spool slidably carrying a brake plate. Drive plates with braking portions are disposed at opposite sides of the brake plate at one end of the shaft, the braking action being controlled by a lever at the other end of the shaft which through interposed operating connections shifts the shaft and the spool thereon longitudinally axially. An electric motor may be employed to drive the shaft.

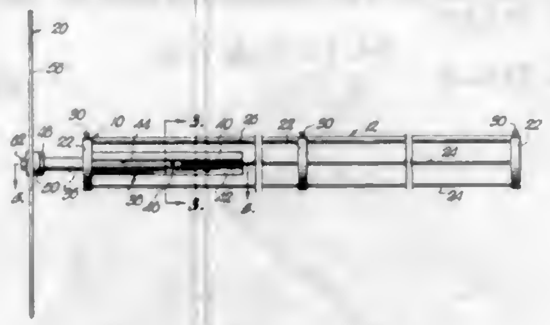
### 3,478,980

### ROLLER FOR TRUCK COVER

**Robert A. Raasch, Rte. 3, Norborne, Mo. 64668**
**Filed Sept. 13, 1968, Ser. No. 759,581**
**Int. Cl. B65h** *75/20*
**U.S. Cl. 242—86.52** **8 Claims**

Apparatus for wrapping a flexible cover for a body such as a truck bed, including an elongated, rigid skeletal spool and a handle comprising a wheel of greater diameter than the spool. The wheel is secured at one end of the

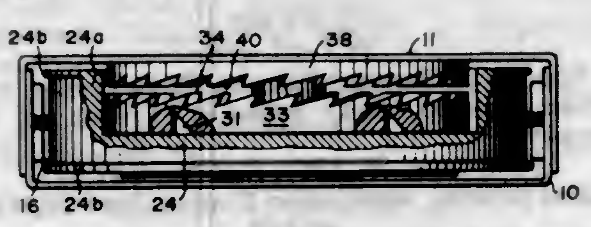
spool by relatively telescoping members to permit outward shifting of the handle. The wheel includes a spoke extending along the diameter of the wheel and releasable clamping means securing the spoke to the telescoping members so that the wheel may be shifted in any direction radially of the spool.



### 3,478,981

### VEHICULAR SAFETY REEL

**Chester J. Barecki, Bror W. Henrikson, and Walter E. Nordmark, Grand Rapids, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of Delaware**
**Filed Nov. 14, 1967, Ser. No. 682,907**
**Int. Cl. B65h** *75/48*
**U.S. Cl. 242—107.4** **5 Claims**



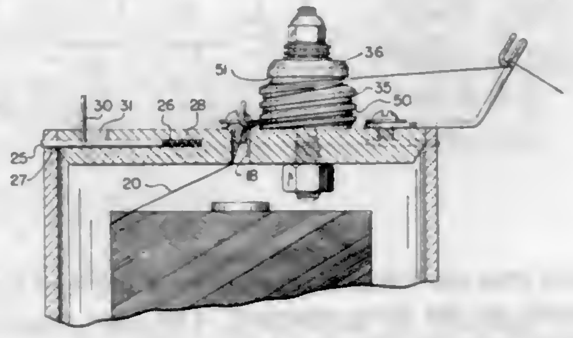
A reel, which is adapted to be secured to the top or roof of a vehicle, comprises a hollow casing provided with a fixed plate having depending teeth and a vertically-movable inertia disk below the fixed plate and having upwardly-extending teeth normally spaced from the depending teeth of the fixed plate, the disk being guided on a vertical pin in the casing. A drum also guided by the pin extends below the inertia plate and has an upwardly-extending peripheral sleeve which encloses the inertia plate and the space between the teeth. A flat strap is mounted on the wide periphery of the drum and extends through the casing and downwardly about an occupant of the vehicle seat, the lower end of the strap being secured to a lower portion of the vehicle. Cooperating members are provided on the drum and inertia disk for raising the inertia disk in the case of a collision or sudden stopping of the vehicle so that the strap engages the shoulder of the occupant and restrains him against forward movement. After checking of the strap movement, the disk is allowed to fall under its own weight and free the strap and enable the occupant to move normally within the vehicle. The wide strap which engages the shoulder of the occupant and which is utilized within the reel presents no hazard to forward movement of the occupant or other occupants in the car, while at the same time the wide drum receiving the strap is effective in enclosing and sealing the operating teeth of the engaging parts.

### 3,478,982

### STRAND TENSIONING DEVICE

**Raymond Paulson, Fremont, Ohio, assignor to Samuel Moore and Company, Mantua, Ohio, a corporation of Ohio**
**Filed July 18, 1967, Ser. No. 654,163**
**Int. Cl. B65h** *59/18*
**U.S. Cl. 242—129.8** **12 Claims**

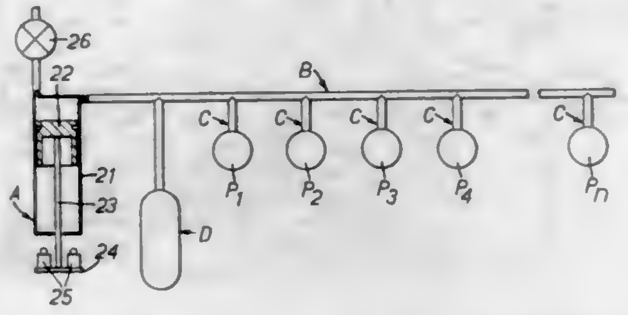
A device for controlling the tension of a fibrous strand as it travels from a spool to a machine. The device comprises a rotatable reactionary member in the form of a capstan around which the strand is wrapped after it leaves the spool. Control is effected by varying the resistance of the reactionary member to rotation. A stationary guide member or capstan having a spiral peripheral groove merges with an annular groove in the rotating capstan whereby the strand can move smoothly from one groove to the other. An adjustably mounted guide bar controls the direction of the movement of the strand as it passes from the reactionary member to the machine.



### 3,478,983

### THREAD TENSIONING APPARATUS

**Pierre Charles Eppendahl, Lyon, and Pierre Maurin, Caluire, France, assignors to Thermiguides S.A., Lyon, France, a company of France**
**Filed Mar. 16, 1966, Ser. No. 534,729**
**Claims priority, application France, May 14, 1965, 45,988**
**Int. Cl. B65h** *59/12*
**U.S. Cl. 242—154** **8 Claims**



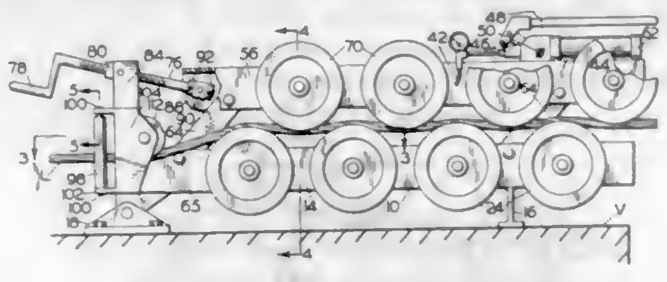
Thread tension control mechanism in which a tension applying device is actuated by tension sensitive means on which the thread acts in opposition to pressure in a pneumatic system and wherein the pressure in the pneumatic system is maintained by a movable part subject to such pressure and having applied to it a determined but adjustable force to maintain such pressure.

### 3,478,984

### LINE REELING CONTROL MEANS

**Perry E. Landsem, 4525 S.E. River Drive, Milwaukie, Oreg. 97222**
**Continuation-in-part of application Ser. No. 424,258, Feb. 12, 1965. This application Sept. 19, 1967, Ser. No. 677,819**
**Int. Cl. B65h** *59/12*
**U.S. Cl. 242—154** **10 Claims**

The line reeling control means has a base member on which is rotatably supported a plurality of lower friction sheaves. A carrier frame is pivotally supported on the base member by pivotal links and this frame carries a plurality of upper braking sheaves aligned edgewise with the lower sheaves but longitudinally offset therefrom. The carrier frame is movable longitudinally and arcuately by its link connection with the base, such movement being accomplished by screw drive means. The sheaves receive their braking function by disc brake means connected thereto and operated by hand pressure means. Line is directed into the friction sheaves by a fairlead mechanism connected to the base member. The base member has a mounting bracket therefor which allows it to pivot on a horizontal axis as well as on a vertical axis.



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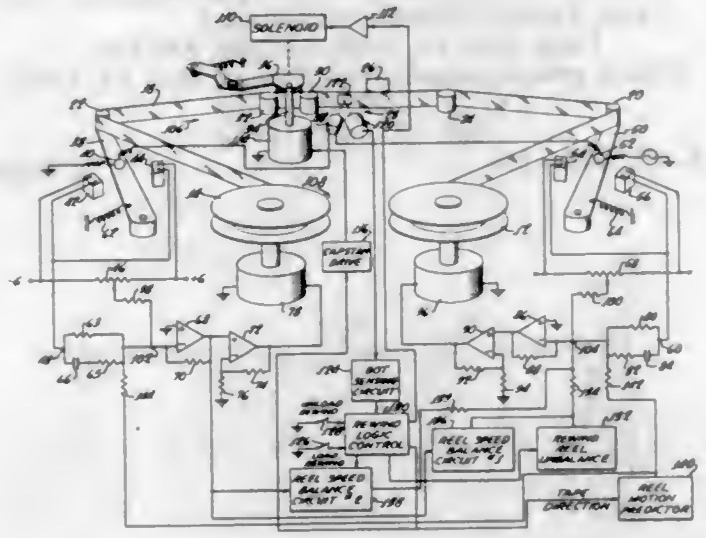
### 3,478,985
### TAPE TRANSPORT

**Richard Tobey, Tustin, Calif., assignor to Tally Corporation, a corporation of Washington**
**Filed Feb. 5, 1968, Ser. No. 703,056**
**Int. Cl. G11b** *15/44*
U.S. Cl. 242—184 13 Claims



A tape transport wherein tape is loaded and unloaded at high speed from a take-up to a supply tape reel by an unbalance drive signal applied to the supply reel. A reel servo means, responsive to a buffer tape storage means which indicates the tape supply between the reels, generates a drive signal to the take-up reel to maintain a predetermined tape supply between the reels. A first reel speed balancing means reduces the drive signal to the supply reel when the drive signal supplied to the take-up reel from its reel servo is excessive, indicative that the supply reel is demanding tape from the take-up reel faster than it can supply. A second reel speed balancing means protects the tape when the unbalance signal is removed, resulting in rapid deceleration of the supply reel. This second means responds to an excessive drive signal supplied to the take-up reel, indicative that the take-up reel is not decelerating as rapidly as the supply reel, and supplies a drive signal to the supply reel to wind up the excess tape. A control means automatically switches from high speed, reel powered tape transport to capstan drive during loading and unloading of the tape transport. A reel motion predicting means varies the torque on the tape reels momentarily to effectively increase the tape storage capacity in anticipation of a reversal of the tape capstan drive.

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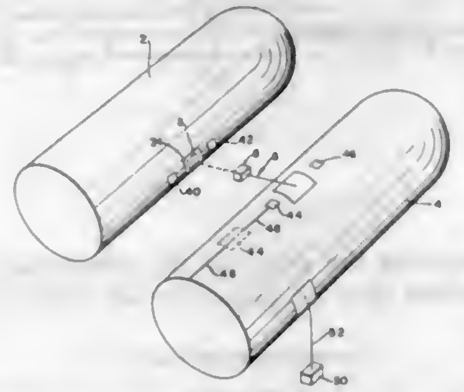
### 3,478,986
### SPACE DELIVERY SYSTEM

**Charles P. Fogarty, 218 Townline Road, Commack, N.Y. 11725**
**Continuation-in-part of application Ser. No. 487,194, Sept. 14, 1965. This application Dec. 6, 1967, Ser. No. 691,107**
**Int. Cl. B64g** *1/00*
U.S. Cl. 244—1 20 Claims



The present disclosure relates to a space delivery system for delivering items between space vehicles or for coupling space vehicles. The device involves a flexible extensible cable fed from a reel and through which is delivered gas to the front of the cable where it is directed backwardly to propel the front end of the cable forwardly.

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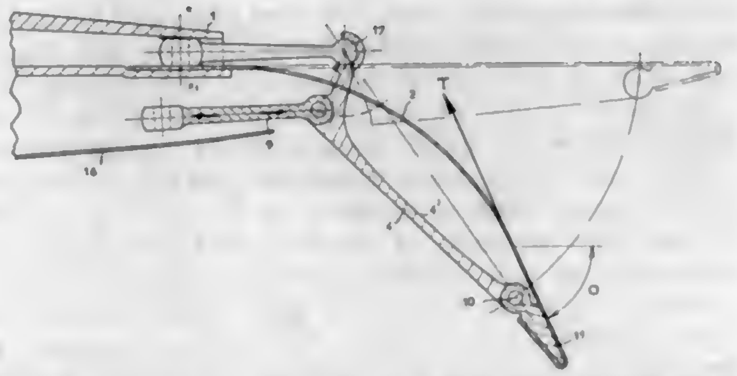
### 3,478,987
### JET FLAPS

**Pierre René Léon Bernard Dorand, Paris, France, assignor to Giravions Dorand, Suresnes, France, a French company**
**Filed June 20, 1967, Ser. No. 647,513**
**Claims priority, application France, June 20, 1966, 66,165**
**Int. Cl. B64c** *9/38*
U.S. Cl. 244—42 14 Claims



This invention relates to jet flaps and controllable means for varying the deflection of the jetstream thereof, applicable to aerofoils. It resides in means for controllably varying the effective contour of an aerodynamic surface behind the jet slit, so that the stream can be deflected either up or down to provide lift control. It is applicable to wings of aircraft or helicopter rotor blades, in which there is a supply of gas or air to constitute a jet stream from a spanwise elongated jet slit.

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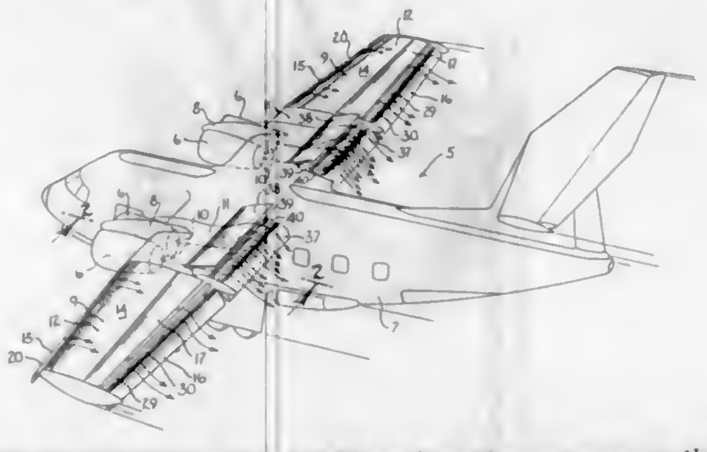
### 3,478,988
### STOL AIRCRAFT HAVING BY-PASS TURBOJET ENGINES

**Age Eilef Röed, Linkoping, Sweden, assignor to SAAB Aktiebolag, Linkoping, Sweden, a corporation of Sweden**
**Filed Nov. 28, 1967, Ser. No. 686,225**
**Claims priority, application Sweden, Nov. 29, 1966, 16,332/66**
**Int. Cl. B64c** *3/50, 15/06, 9/10*
U.S. Cl. 244—42 6 Claims

In an aircraft powered by turbojet engines of the by-pass type mounted beneath inboard wing sections, the

latter have trailing edge flaps spaced rearwardly from the fixed part of the wing, the chordwise gap being normally closed by upper and lower medial flaps. The outboard wing sections have retractable lift augmentation means and differential spoilers. Simplified controls coordinate positions of movable wing elements according to operating regime. For ground roll braking, the inboard flaps cooperate to deflect engine exhaust upward and forward. For glide slope control the upper intermediate flaps function as spoilers.



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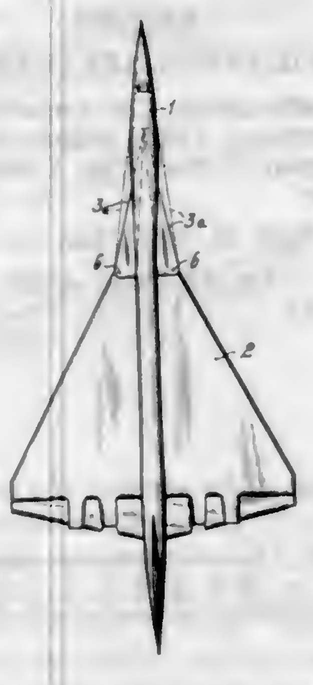
### 3,478,989
### SUPERSONIC AIRCRAFT

**Ernst-August Bielefeldt, Hamburg, Germany, assignor to Hamburger Flugzeugbau GmbH, a corporation of Germany**
**Filed Nov. 14, 1966, Ser. No. 593,822**
**Int. Cl. B64c** *3/54, 9/36*
U.S. Cl. 244—43 6 Claims



Supersonic aircraft equipped with one or more auxiliary airfoils forwardly of its wing structure movable to counteract shifts in the neutral point of the craft upon an increase in speed beyond Mach 1.

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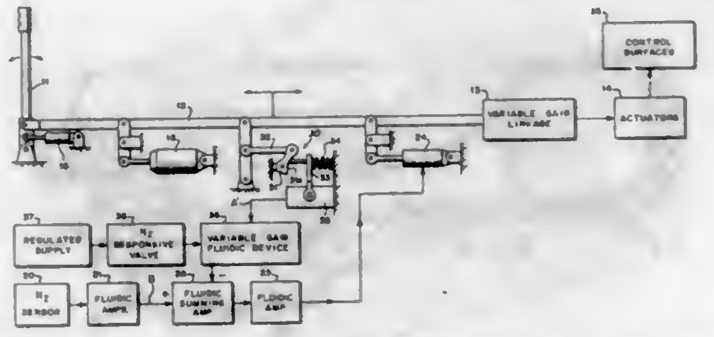
### 3,478,990
### APPARATUS FOR RESISTING CONTROL STICK DEFLECTION

**Walter W. Kaniuka, Philadelphia, Pa., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Oct. 31, 1967, Ser. No. 679,343**
**Int. Cl. B64c** *13/36, 13/46*
U.S. Cl. 244—85 17 Claims

Apparatus for an aircraft and responsive to normal acceleration and also, in some embodiments, to pitching angular velocity and/or pitching angular acceleration for providing predetermined resistance to deflection of an aircraft control stick. The apparatus includes a spring-actuated first force producer, a device providing a first fluidic signal indicative of the force imposed by the first force producer and a second force producer responsive to a fluidic signal which is the difference between the first fluidic signal as partially inhibited by the existing condition of either normal acceleration or pitching angular velocity and an opposed second fluidic signal which is indicative of additional desired resistive force produced in response to a combination of the existing conditions of some or all of normal acceleration, pitching angular velocity and pitching angular acceleration.



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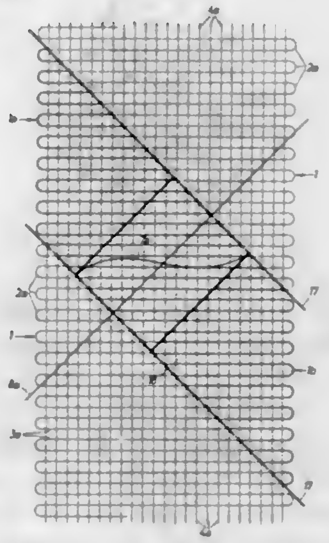
### 3,478,991
### FABRIC SLEEVE AND METHOD OF MAKING

**Christian Schiel and Günther Bischoff, Heidenheim (Brenz), Germany, assignors to J. M. Voith G.m.b.H. and F. Oberdorfer K.G., Heidenheim (Brenz), Germany**
**Filed May 13, 1966, Ser. No. 549,930**
**Claims priority, application Germany, May 17, 1965, 1,461,183; Nov. 6, 1965, 1,461,141**
**Int. Cl. B21f** *31/00, 15/06*
U.S. Cl. 245—10 18 Claims



The disclosure concerns a fabric sleeve and a method of making the sleeve, the said sleeve being adapted for mounting on a roll. The disclosure proposes cutting a parallelogram shaped piece from a length of fabric and wrapping the piece around the cylinder so that two edges of the piece are in adjacent relation. The threads of the fabric include threads perpendicular to the adjacent edges and turn backwardly at the edges and the edges are joined to complete the cylinder by a pin-like element which is threaded through the loops.

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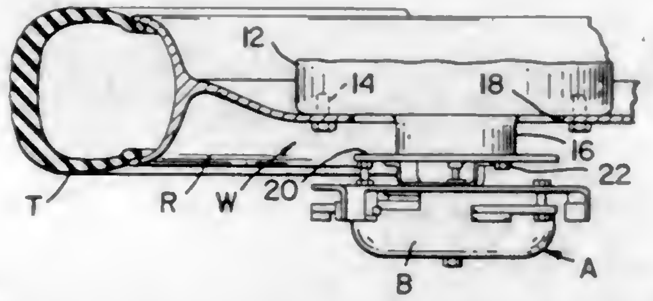
### 3,478,992
### QUICK RELEASE MOUNT FOR WHEEL MOUNTED APPLIANCE

**Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.**
**Filed Nov. 21, 1967, Ser. No. 684,753**
**Int. Cl. A47f** *5/00;* **B60q** *1/26;* **B60b** *7/00*
U.S. Cl. 248—205 3 Claims

A mechanism for mounting an appliance on the hub of a wheel such that the appliance can be removed quickly to permit removal of the wheel for tire repair and the like. The mechanism includes two parts; one of the parts is permanently mounted on the hub and the other carries the appliance. The permanently mounted part is of sufficiently small size that it does not obstruct removal of the wheel. The other part is of sufficient size to carry properly the appliance. The mechanism for joining the two parts is fast acting and is secure in that it has provisions for spring biased axial movement to effect locking against rotative movement.



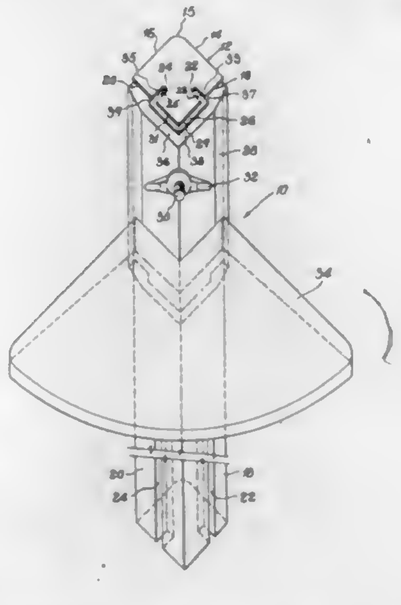
### 3,478,993
### VERTICALLY ADJUSTABLE SHELF

**Ronald M. Wyeroski, Newfoundland, and Mindert P. Bokma, Oakland, N.J., assignors to Victory Shelving Co., Oakland, N.J., a partnership**

**Filed Oct. 31, 1967, Ser. No. 679,494**

**Int. Cl. A47f** *5/00, 5/100;* **A47b** *9/00*

**U.S. Cl. 248—245 2 Claims**



A vertically adjustable shelf movable on a support column wherein the column is mounted in a vertical position and is provided with a channel therein, the shelf is infinitely adjustable in a vertical direction and is provided with a pair of clamp members which are drawn together when tightened such that the inner clamp member is within the channel and engages an interior surface of the column and the outer clamp member engages a portion of the outer surface of the column.

### 3,478,994
### TRAFFIC SIGNAL PLUMBING APPARATUS

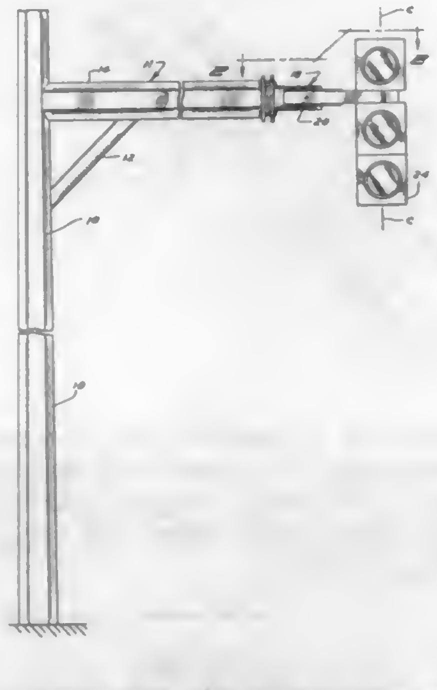
**Neil E. Ryall, 3208 Florida Ave. S., Minneapolis, Minn. 55426**

**Filed Oct. 6, 1967, Ser. No. 673,514**

**Int. Cl. G09f** *9/34*

**U.S. Cl. 248—276 12 Claims**

A signal unit mounting assembly that mounts signal units is mounted on a mast arm assembly on a standard with adjacent flanges of the assemblies bolted together, the bolts being extended through arcuate slots in one flange. Bias cut adjustment rings on a tube of the mast arm assembly are clamped between the flanges whereby adjustably rotating one or both of the adjustment rings and the signal unit flange, the signal units are plumbed. The signal unit assembly includes a box mounting member that is generally triangular in plan and arms extending outwardly of said member to mount the signal units.



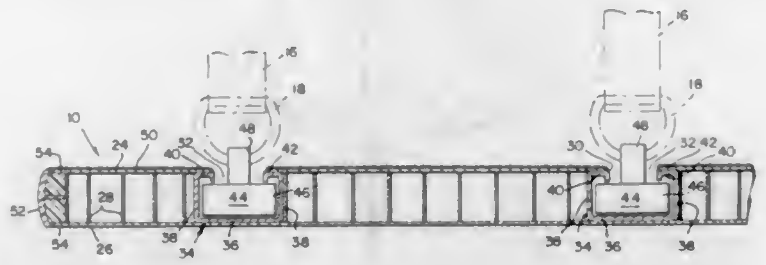
### 3,478,995
### TIE-DOWN APPARATUS

**Robert L. Lautzenhiser, Los Angeles, and James D. Michel, Torrance, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**

**Filed Sept. 21, 1967, Ser. No. 669,446**

**Int. Cl. B61d** *45/00*

**U.S. Cl. 248—361 12 Claims**



A tie-down apparatus includes a honeycomb panel in which a tie-down channel is secured to the upper and lower plates and the honeycomb structure and cooperates with a male or female attachment and straps for tying down electronic equipment, containers for goods, machinery and the like.

### 3,478,996
### SHAVING MIRROR ACCESSORY

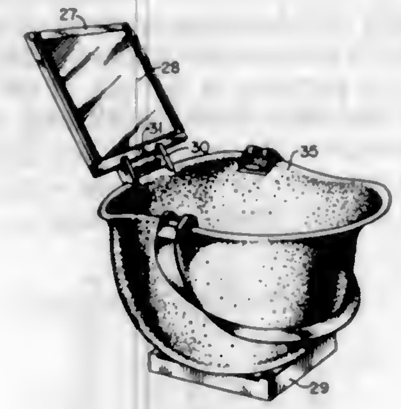
**John C. Gunn, Baton Rouge, La. (2616 E. Cavett, Shreveport, La. 71104)**

**Filed Jan. 5, 1968, Ser. No. 695,921**

**Int. Cl. A47g** *1/16;* **A47b** *97/04*

**U.S. Cl. 248—473 7 Claims**

A military, field shaving accessory comprising, in combination a mirror, a mirror support engageable with a steel helmet, and a helmet support means, the accessory parts being assembleable into a unitary, essentially watertight box-like structure for easy carrying, the mirror support being enclosed therein.



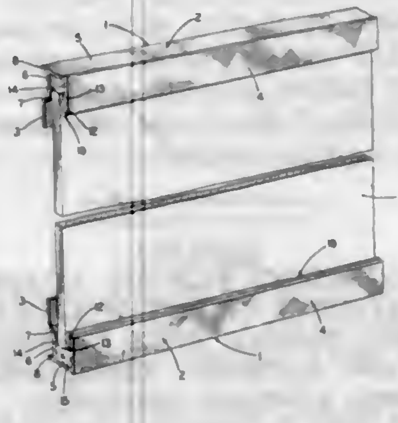
### 3,478,997
### MIRROR HANGER AND MOLDING COMBINATION

**James W. Goss, 410 South St. SW., Warren, Ohio 44483**

**Filed Nov. 30, 1967, Ser. No. 687,044**

**Int. Cl. A47g** *1/04*

**U.S. Cl. 248—488 4 Claims**



A mirror hanger and molding combination having similar horizontally disposed upper and lower molding strips. Each molding strip comprises a channel portion open toward the other to receive the adjacent edge portion of the mirror, and a rearwardly offset flange adapted to be attached to a wall or similar supporting surface. Beads are formed in the inner surfaces of the channel portion a plastic spacer block is located in the lower channel to support and cushion the lower edge of the mirror, and plastic moisture seal strips are inserted between the mirror and the outer wall of each channel. An end cap is connected to each end of each molding strip. Each end cap has two tongues, one inserted between the channel portion of the molding and the wall, and the other inserted between the rearwardly offset attaching flange and the back of the mirror.

### 3,478,998
### BAKING PAN

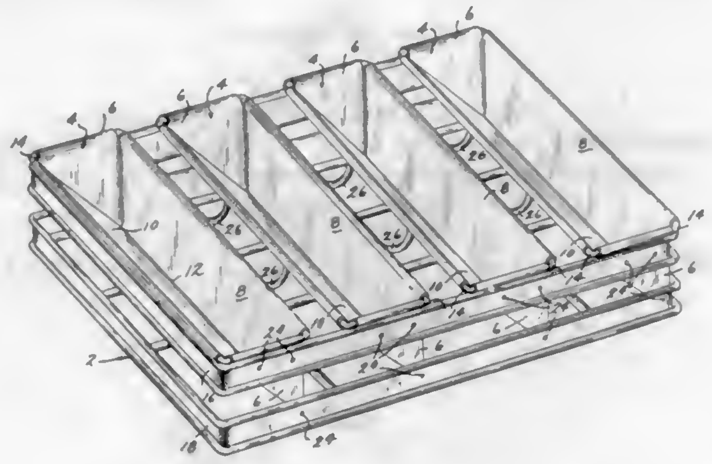
**Charles E. Burford, 2330 Republic Bank Tower, Dallas, Tex. 75201**

**Filed June 29, 1967, Ser. No. 649,987**

**Int. Cl. B28b** *7/24*

**U.S. Cl. 249—120 14 Claims**

A baking pan assembly includes a plurality of pans each of which has a triangular transverse cross section defined in part by a vertical side wall and another side wall which is inclined at approximately a forty-five degree angle.



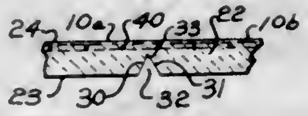
### 3,478,999
### REFRACTORY PANEL UNIT WITH HINGE MEANS AND FRANGIBLE PORTIONS

**Walter M. Charman, Jr., Shaker Heights, and George J. Middaugh, Jr., Chesterland, Ohio, assignors to Oglebay Norton Company, Cleveland, Ohio, a corporation of Delaware**

**Continuation-in-part of application Ser. No. 636,072, May 4, 1967. This application Apr. 29, 1968, Ser. No. 724,923**

**Int. Cl. B22d** *7/10*

**U.S. Cl. 249—201 10 Claims**



A two part insulating lining for a hot top comprised of a refractory panel insert unit and a bottom ring of the same type of material where the insert unit comprises a plurality of highly insulating refractory panels which are integrally connected by frangible refractory connecting portions. A wire mesh netting is embedded at least partially in the back of the panels and provides a hinge interconnection between the panels upon breaking of the frangible connecting portions. The entire insert unit is manufactured by making a slurry of sand, a resin binder, an inorganic fibrous material, and water, and depositing the slurry on a filter screen in a frame over a vacuum box, and embedding the wire netting in the layer of slurry. Applying a vacuum under the filter screen in the vacuum box effects removal of part of the water from the slurry and leaves a wet mat in which is embedded wire netting. The wet mat is then dried and hardened to form the highly insulating refractory panel insert unit. The ring is similarly manufactured.

### 3,479,000
### CLAMPS

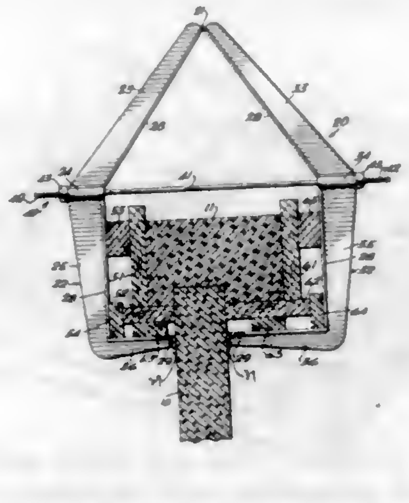
**Robert P. Powell, P.O. Box 281, Fort Lauderdale, Fla. 33302**

**Filed Nov. 24, 1967, Ser. No. 685,442**

**Int. Cl. E04g** *17/00;* **B25b** *5/14*

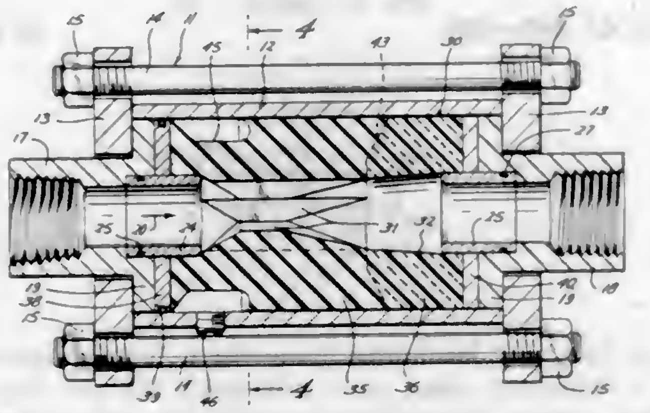
**U.S. Cl. 249—219 1 Claim**

The disclosure comprises a hinged clamp which may be positioned in series on a sea-wall to provide supports for forms into which a concrete cap for the sea-wall may be poured. After the setting of the cap and removal of the forms, the clamps in series may be disengaged and relocated for further operations.



### 3,479,001
### CLOSURE MEMBER AND APPARATUS FOR CONTROLLING FLUID FLOW THROUGH A CONDUIT

**Ethell J. Dower, Houston, Tex., assignor to Warren Automatic Tool Company, Houston, Tex., a corporation of Texas**
**Filed July 3, 1967, Ser. No. 650,854**
**Int. Cl. F16l** *55/14;* **F16k** *51/00, 15/14*
**U.S. Cl. 251—4** **4 Claims**

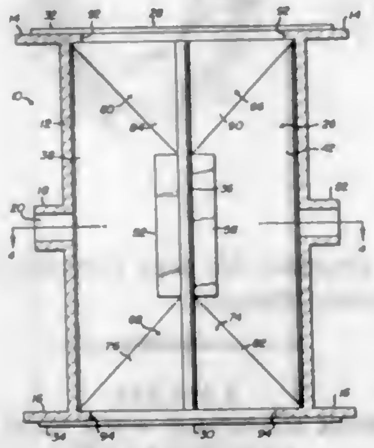


A closure member and apparatus for controlling fluid flow through a conduit. The apparatus includes an elastic body defining a passageway for fluid flow and means for deforming the body to selectively enlarge and restrict the passageway. The body member is arranged to be easily deformed in one area and to resist deformation in another area. It is particularly useful in controlling fluid flow through the mud return line of an oil well drilling rig, for example.

### 3,479,002
### RESILIENT TUBULAR VALVE

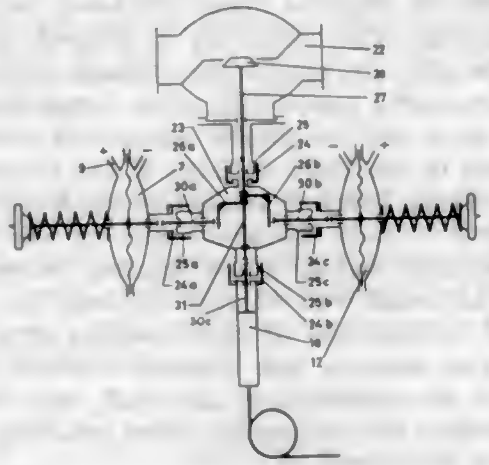
**Gene Hirs, 6865 Meadowlake,**
**Birmingham, Mich. 48010**
**Filed May 11, 1967, Ser. No. 637,670**
**Int. Cl. F16l** *55/12;* **F16k** *7/07*
**U.S. Cl. 251—5** **13 Claims**

A valve is provided including a rigid tubular casing, and an essentially tubular valve member made of resilient flexible material and having an axial passage extending through the valve member. The valve member is coaxial with the casing and has circular end portions which are sealed to said casing, so that the space between said valve member and said casing is sealed off. The material of the valve member between its circular end portions is folded to double thickness, and the folds extend axially of the valve member and radially to the axis of the valve member, so that the folds normally meet at the axis to close the passage through the valve member. The valve member, as formed, thus has cusp portions of segmental conical configuration between the folds slanting inwardly from the circular end portions to the axis of the valve member to provide a transition from the circular end portions to the folded portions. The cusp portions are reinforced by rigid backing members adhered to the exterior of the valve member and closure blocks are located at the juncture of the fold lines. The folds are expandable when the pressure inside the valve member exceeds the pressure outside the valve member to open the axial passage, the backing members and the closure blocks moving outwardly with the valve member. There is at least one inlet leading through the casing for introducing fluid under pressure into the casing on the outside of the valve member to apply pressure to the valve member to close the axial passage by virtue of the folds meeting at the axis of the valve member. The rigid backing members and the closure blocks control the folding of the tubular valve member to insure full closing of the valve member.



### 3,479,003
### ARRANGEMENT FOR AN AUTOMATIC ADJUSTMENT OF PHYSICAL VALUES

**Rudolf Vollmer, Neuburg, Pfalz, Germany, assignor to Industrie-Werke Karlsruhe Aktiengesellschaft, Karlsruhe, Germany, a German corporation**
**Filed Sept. 2, 1966, Ser. No. 576,974**
**Int. Cl. F16k** *31/12, 17/38*
**U.S. Cl. 251—58** **6 Claims**



A combination fixture having a single housing provided with four adjusting members of which one is adjusted by the other three within predetermined limits for adjusting the temperature, pressure and quantity of a streaming fluid medium. The adjusting member adjusted by the other three comprises a shaft which extends slidably outwardly of the housing for actuating a valve in a pipe through which flows said fluid medium.

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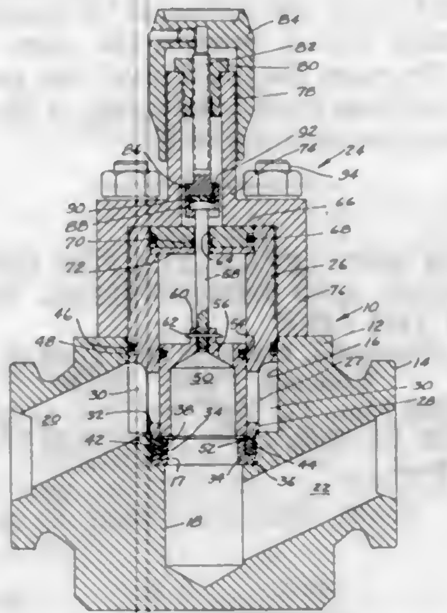
### 3,479,004
### VALVE CONSTRUCTION

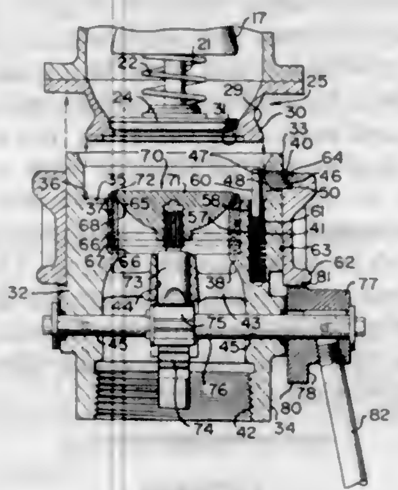
**Richard S. Brumm, El Cerrito, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California**
**Continuation-in-part of application Ser. No. 426,171, Jan. 18, 1965. This application May 11, 1967, Ser. No. 637,794**
**Int. Cl. F16k** *3/00, 31/50, 5/04*
**U.S. Cl. 251—118** **7 Claims**



A valve construction wherein a receptacle in a housing body receives a self-contained valve sub-assembly. The cover portion of the sub-assembly is of a selected height so that the sub-assembly penetrates the housing an amount necessary to control a flow passage at a particular depth within the housing, in some instances there being flow passages at various depths. A low friction coupling in the valve stem enables the stem to be threaded during operation without transmitting rotation to the valve plunger.

### 3,479,005
### FUELING NOZZLE STRUCTURE

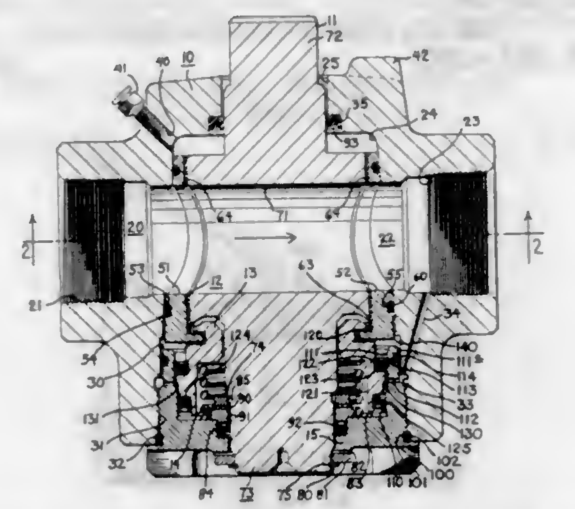
**Paul A. de Graaf, Los Angeles, Calif., assignor to Parker-Hannifin Corporation, Cleveland, Ohio, a corporation of Ohio**
**Filed July 22, 1966, Ser. No. 567,225**
**Int. Cl. F16l** *29/00, 37/28;* **F16k** *31/50*
**U.S. Cl. 251—149.9** **16 Claims**



This disclosure relates to means for securely interlocking nozzles to adaptors whereby accidental disengaging of nozzles from adaptors is precluded during fuel flow through the nozzles. The nozzle includes latching means carried in a normally unlatched position and being movable to an operative engaging position with an adaptor neck member. The nozzle further includes a single means for controlling the flow of fluid through the assembly and also for moving a locking means into a locking position with the latching means, the single means functioning to lock the latching means before permitting flow of fluid through the assembly.

### 3,479,006
### BALANCED ROTARY VALVE

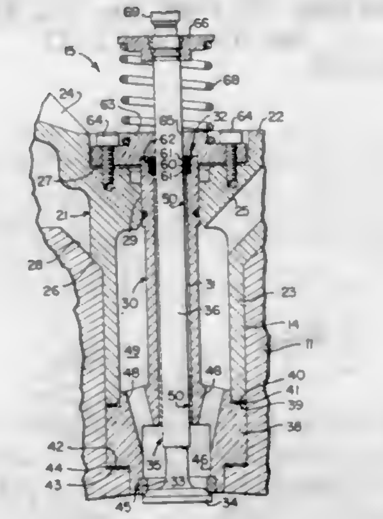
**Norman F. Brown, Dallas, Tex., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware**
**Filed Nov. 12, 1964, Ser. No. 410,523**
**Int. Cl. F16k** *25/02, 5/04, 5/18*
**U.S. Cl. 251—174** **18 Claims**



A rotary plug valve having tapered bearing and seal insert members normally biased into sealing engagement with the housing and plug for sealing between the plug and the housing, and having a pressure area balance ring connected with said tapered sealing and bearing insert members controlling or counter-balancing the effect of fluid pressure in the housing of the valve to reduce the wedging force of the tapered insert members with the plug and housing, so providing for low torque turning operation of the valve plug.

### 3,479,007
### NON-LUBRICATED INJECTION VALVE ASSEMBLY

**Robert O. Buell, Bolivar, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware**
**Filed Aug. 18, 1966, Ser. No. 573,372**
**Int. Cl. F16k** *1/04, 25/00*
**U.S. Cl. 251—214** **7 Claims**

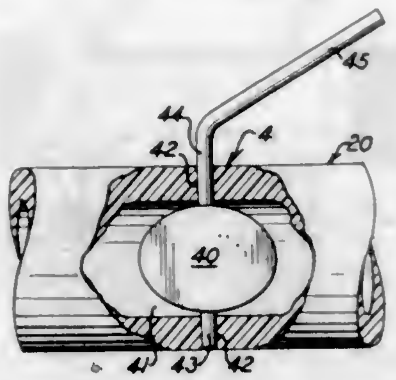


A valve assembly, adapted for non-lubricated operation of an engine valve having a head and an elongated stem, includes an elongated valve guide body having axially spaced bushings for guiding the valve stem. The valve guide body supports valve seat means at one end and annular seal means for the stem at the other end so that the valve member is entirely supported only by the single valve guide body. The bushings include a stem engaging layer composed of a mixture of tetrafluoroethylene and lead powder, an intermediate layer of porous bronze impregnated with that mixture, and an outer reinforcing band layer.

### 3,479,008

### SELF-CLEANING VALVE FOR VACUUM MILKING SYSTEM

**Lloyd P. Duncan, Washington, Mo., assignor to Zero Manufacturing Company, Washington, Mo., a corporation of Missouri**
**Continuation-in-part of application Ser. No. 372,492, June 4, 1964. This application June 7, 1967, Ser. No. 657,445**
**Int. Cl. F16k** *5/04, 31/60, 15/14*
**U.S. Cl. 251—297** **8 Claims**

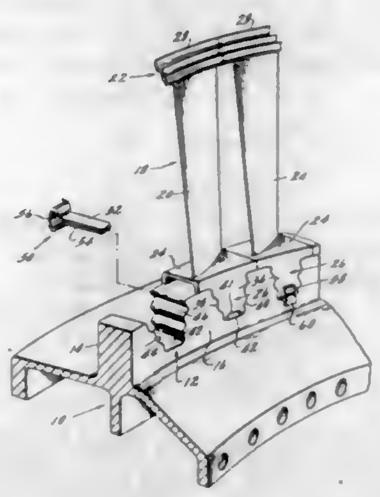


A valve for resilient rubber or plastic tubing in a pipeline milking system which is circular or elliptical in shape and turns about a stem that is received in opposed openings drilled in the tubing. One end of the stem is bent sufficiently to turn the valve from outside the tubing. The valve and stem are integral and removable from the interior of the tubing. When vacuum is applied, the tubing compresses around the opening to give a tight seal. However, in the washing cycle without the application of vacuum, the area around the openings is washed—particularly with the elliptical valve. To prevent inadverent opening or closing of the valve, shallow indentations may be provided in the tubing to hold the valve in opened or closed positions.

### 3,479,009

### BLADE RETAINER

**Fredrick D. Bean, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York**
**Filed May 15, 1968, Ser. No. 729,153**
**Int. Cl. F01d** *5/32*
**U.S. Cl. 416—216** **4 Claims**

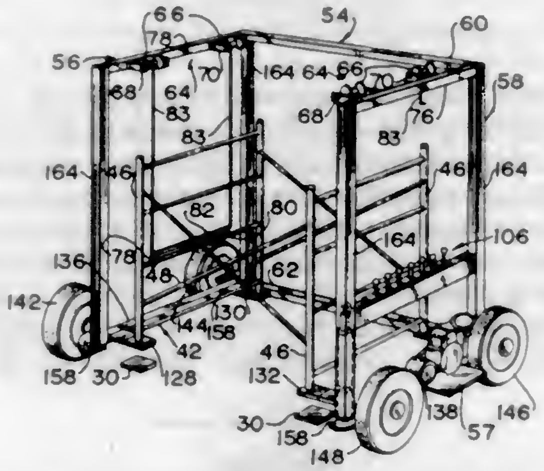


A device for axially retaining a blade root within a slot formed in the periphery of a supporting rotor disc and having a pair of strips joined at one end by an integrally formed loop or head. The strips are adapted to be inserted within a passage extending across the disc between the blade root and the bottom surface of the slot. After insertion into the passage and with the loop abutting portions of one end of the disc and the blade root, the projecting ends of the strips are formed into generally oppositely extending tabs which abut portions of the other end of the disc and blade root to thereby axially lock the blade within its slot. The bottom surface of the blade root may be formed with a channel for engaging the strips and preventing contact between the strips and the slot side walls. The strips may be formed with means to yieldingly urge the blade radially outwardly of the slot and into radial locking abutment therewith.

### 3,479,010

### SYSTEM AND APPARATUS FOR ERECTING MOVING AND DISMANTLING SHORING AND THE LIKE

**Howard I. Harmon, 419 Todd St., Concord, Calif. 94520**
**Filed Mar. 17, 1967, Ser. No. 624,044**
**Int. Cl. B60p** *1/14, 1/22;* **E04g** *7/00*
**U.S. Cl. 254—4** **11 Claims**



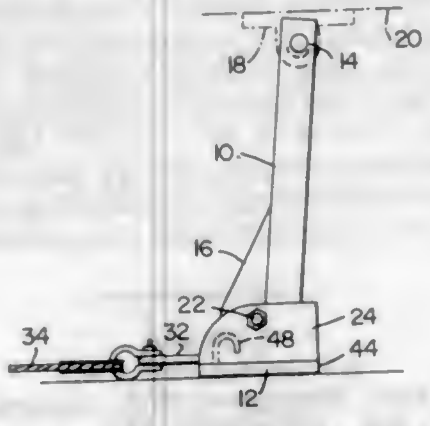
Apparatus for erecting, moving and dismantling modular sections of shoring and the like including a pair of oppositely disposed vertical side frames with interconnecting members at one end, the entire apparatus being transportable on wheels in contact with the ground and having a hydraulic tractive drive coupled thereto to propel and steer the apparatus from one work area to another. Each side frame is provided a pair of hoist drums with depending hooks driven by hydraulic motors powered through flow metering and regulating valves so that the hooks may be moved in unison and in registry with each other. In addition each of the four carriage wheels may be elevationally positioned selectively to maintain the entire apparatus plumb in respect to the ground. The coordinated hoist control and plumb alignment of the apparatus provides stability of an entire shoring column comprised of a plurality of modular section which may thereby be maintained in stable vertical alignment.

### 3,479,011

### JACK FOR RAISING MOTOR VEHICLE WHEELS

**Daniel C. Miller, 195 Alhambra Way, Apt. 5, San Francisco, Calif. 94123**
**Filed May 9, 1967, Ser. No. 637,288**
**Int. Cl. B66f** *7/24*
**U.S. Cl. 254—94** **7 Claims**

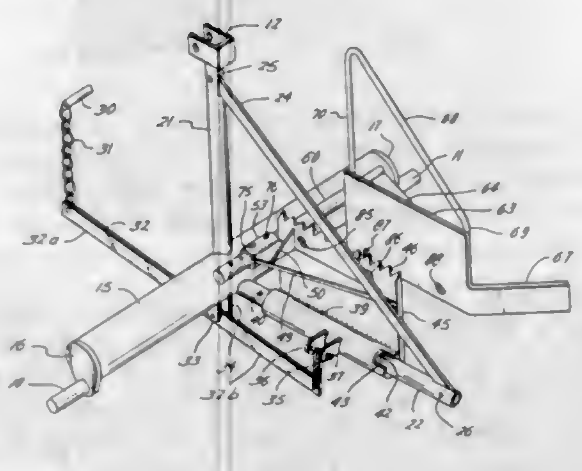
A jack for raising the wheels on one side of a motor vehicle by moving the vehicle under its own power, having a leg, one end of which is pivotally mounted on a base and the other end of which is to be pivotally affixed to the underframe of the vehicle, and a releasable connection between the base and a drive wheel of the vehicle.



### 3,479,012

### APPARATUS FOR PULLING FENCE POSTS AND THE LIKE

**Joseph E. Korczynski, 2907 Park Oak Lane, Houston, Tex. 77017**
**Filed Aug. 16, 1967, Ser. No. 661,121**
**Int. Cl. B66f** *3/06;* **E21b** *19/02*
**U.S. Cl. 254—132** **7 Claims**

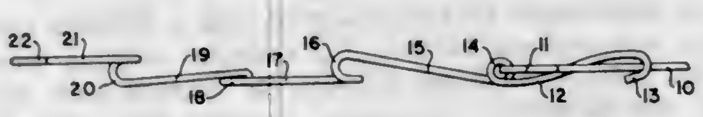


The disclosure is of apparatus for pulling fence posts and the like. Apparatus is described adapted for pulling, or uprooting, both wood posts and metal posts, and the like. The apparatus in both forms includes opposed adjustable jaws for engagement with opposite sides of a post. The apparatus is normally used connected to the three-point power lift of a conventional tractor, the apparatus being lifted to lift the posts out of the ground, and thereby pull them, and the pulling action may be repeated for posts which are buried a considerable distance in the ground.

### 3,479,013

### CONNECTOR MEANS FOR FISH TAPES OR THE LIKE

**Frank H. Williams, Little Rock, Ark., assignor of one-third to Milford A. Juten, Washington, D.C.**
**Original application Nov. 21, 1962, Ser. No. 239,182, now Patent No. 3,224,732, dated Dec. 21, 1965. Divided and this application Sept. 15, 1965, Ser. No. 508,178**
**Int. Cl. B66c** *23/62*
**U.S. Cl. 254—134.3** **14 Claims**

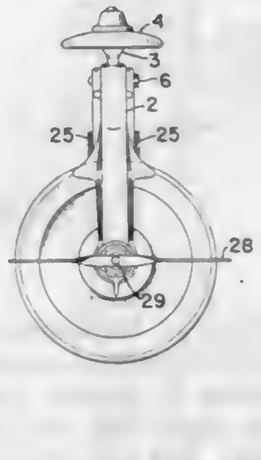


A device for connecting two ends of wires and particularly fish tapes in which the one wire is provided with a hook and the other wire is provided with a hook at its end and an eye spaced from the hook so that the hook of the first wire may extend into the eye of the other wire and the other wire may be wrapped around the first wire with its hook engaging the shank, thereby providing a connection between the two wires and such connection is particularly useful to connect a device having a plurality of additional hooks for engaging the hook of a third wire particularly where the third wire is a fish tape of the type conventionally used in electrical work for drawing electric wires through a conduit.

### 3,479,014

### VERSATILE SHEAVE BLOCK

**Frank Ward Reilly, Lookout Mountain, and Hoyt William Bozeman, Chattanooga, Tenn., assignors to Sherman & Reilly, Inc., Chattanooga, Tenn., a corporation of Tennessee**
**Filed Oct. 28, 1963, Ser. No. 319,429**
**Int. Cl. B66d** *1/36*
**U.S. Cl. 254—193** **1 Claim**

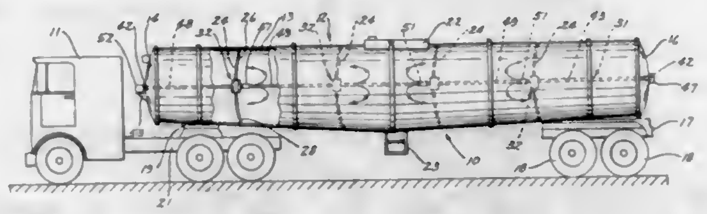


1. A wire stringing block comprising a frame having an open side, a guard pivoted at one end to the frame, means associated with the guard to hold it in open position, a pin supported by the frame which pin is hollow throughout its length and has a sheave journaled thereon, a mandril received in said pin, the mandril supporting a wire guiding member at one end and a block stabilizing bar at the other end.

### 3,479,015

### FLUID BLENDING APPARATUS

**Leland P. Jensen, 378 Little Harrison St., Council Bluffs, Iowa 51501**
**Filed Feb. 16, 1968, Ser. No. 705,988**
**Int. Cl. B01f** *7/06, 5/12*
**U.S. Cl. 259—110** **5 Claims**



This invention pertains to a fluid blending apparatus which is mountable in either a stationary tank or in an over-the-road tank trailer. The apparatus includes a propeller installation which is mounted in a baffle, or wall, that sectionalizes the interior of the tank into compartments. A plurality of openings are formed through the baffle to allow fluid communication between the sections. The propeller installation is operable to cause the contents of the tank to flow from one compartment to another compartment thus causing either a blending, or continuous agitation of the contents therein. This invention is particularly adapted to blend liquid feeds, such as molasses and vitamin additives, or liquid fertilizers.

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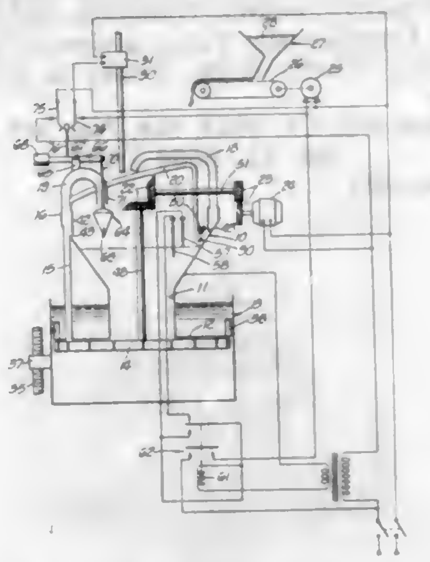
### 3,479,016

### METHOD OF PREPARING, MAINTAINING AND CONTROLLING THE SUPPLY AND CONSISTENCY OF HARDFACING SLURRY

**Herbert J. Woock, 420 California St.,**
**Arcadia, Calif. 91006**
**Filed Mar. 8, 1968, Ser. No. 711,669**
**Int. Cl. B28c** *7/04;* **B01f** *5/14*
**U.S. Cl. 259—149 30 Claims**



A method of preparing hardfacing slurry for use in coating metallic articles to protect coated areas from wear and abrasion including a method for maintaining the ingredients dispersed, controlling the viscosity, the supply level, the temperature and the pressure of the slurry. The method includes also a mode of storing the slurry between periods of use, as well as a method for replenishing the supply from separate supply sources of the liquid and solid slurry ingredients.

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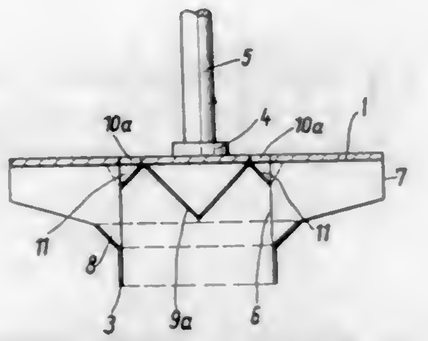
### 3,479,017

### APPARATUS FOR CHARGING LIQUIDS WITH GASES

**Klaus Hermann Thikötter, Frankfurt am Main, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany**
**Filed Feb. 10, 1967, Ser. No. 615,242**
**Claims priority, application Germany, Feb. 10, 1966, M 68,348; Sept. 1, 1966, M 70,775**
**Int. Cl. B01f** *7/16*
**U.S. Cl. 261—91 1 Claim**



An impeller for charging a liquid with gas, particularly for aerating sewage in the activated sludge process, comprises a flat, circular impeller disc which is adapted to be rotated on a vertical axis in a body of liquid to be charged with gas. A plurality of impeller blades are carried by said disc and depend from its undersurface. The blades extend from adjacent to said outer rim inwardly over only part of the radius of the disc. The height of each impeller blade decreases from its leading inner edge to its trailing outer edge so that the cross-sectional area of each flow channel defined by said blades and undersurface is substantially constant throughout the length of the impeller blades. The leading edges of the blades are spaced from the center of the disc to form a liquid intake opening having a cross-sectional area as large as the total cross-sectional area of the flow channels. Gas intake openings are positioned exactly radially inwardly from the leading edges of the blades and shielding means are secure to the disc to prevent liquid from entering the openings.

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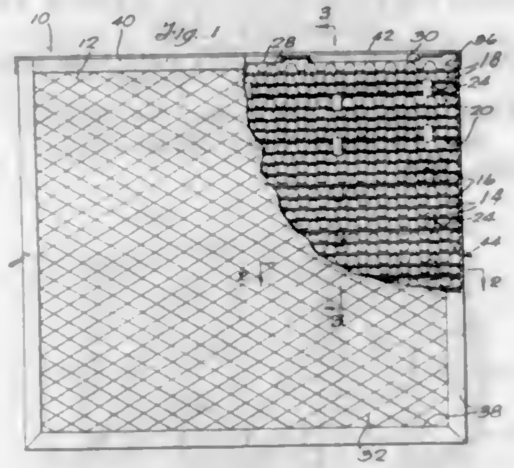
### 3,479,018

### EVAPORATOR PAD

**Richard C. Jaye, Watertown, Wis., assignor to Western Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin**
**Filed Mar. 5, 1968, Ser. No. 710,492**
**Int. Cl. B01d** *1/00*
**U.S. Cl. 261—103 9 Claims**



A humidifier pad or evaporator having a body comprised of a plurality of corrugated strips of fibrous material arranged in laminated formation with securing strips interposed between selected laminae to prevent lateral displacement thereof, the body being surrounded by a peripheral frame to provide a unitary structure.

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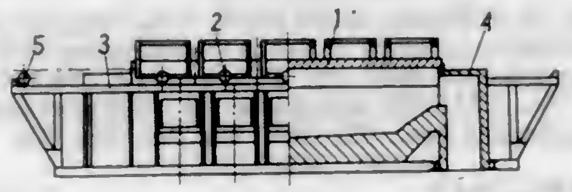
### 3,479,019

### OPEN-HEARTH FURNACE

**Kazimierz Budzynski, Ul. Francuska 49/5, and Leopold Juszczyk, Ul. Powstancow 35, both of Katowice, Poland; Zdzislaw Bonenberg, Ul. Brodzinskiego 5, Zabrze, Poland; Daniel Dybal, Wybrzeze Wojska Polskiego 4, Gliwice, Poland, and Stanislaw Zakrawacz, Ul. R. Sliwy 11, Zabrze, Poland**
**Filed June 19, 1967, Ser. No. 691,076**
**Claims priority, application Poland, June 18, 1966, P 115,197**
**Int. Cl. F27d** *1/00;* **F23m** *5/06, 7/00*
**U.S. Cl. 263—46 1 Claim**



An open-hearth furnace equipped with a shiftable one-piece, non-sectional furnace roof over the working space of the furnace, enabling charging the furnace from top. The non-sectional, single-piece furnace roof may be shifted to one side, whereby the hearth is uncovered completely, or placed in two opposite end positions, whereby in each end position of the roof more than a half of the hearth of the furnace is uncovered.

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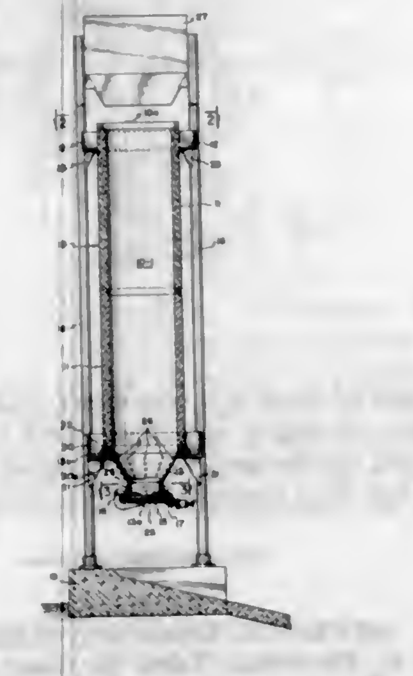
### 3,479,020

### APPARATUS FOR PRECIPITATING METAL VALUES FROM A SOLUTION PREGNANT WITH SUCH VALUES

**Clarence Arthur Lefler, Kearny, Ariz., and Gerald D. Mittelstadt, Republic, Mich., assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York**
**Filed July 11, 1966, Ser. No. 564,112**
**Int. Cl. C22b** *3/02;* **B08b** *3/04*
**U.S. Cl. 266—22 8 Claims**



Apparatus for contacting massed discrete solids with a liquid, especially for the precipitation of metallic values from solution and particularly for the cementation of copper on metallic iron as a precipitant. The disclosure is of maintaining of a column of solids on mutually spaced supporting means and forcibly injecting the liquid against the solids in the lower portion of the column, preferably solely from the periphery of the column, to wash the solids free of reaction products. Massive quantities of liquid, carrying some solid matter, are dropped periodically from the bottom of the column into the atmosphere. It is preferred that the spacing of the supporting means be variable for controlling the discharge of solids during the massive drops of material from the bottom of the column.

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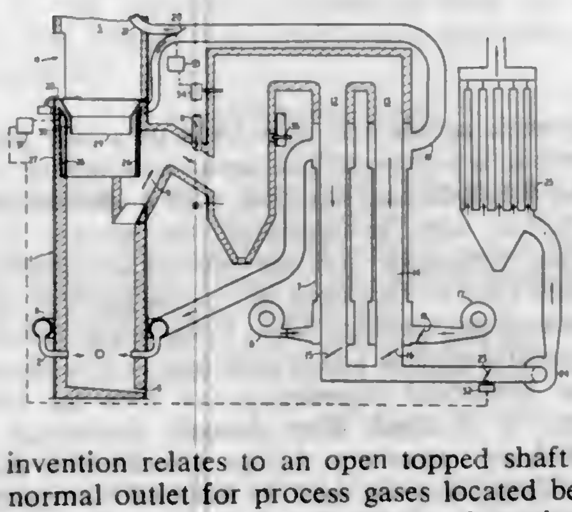
### 3,479,021

### GAS EXTRACTION SYSTEM FOR OPEN TOP SHAFT FURNACES

**Hans Escher, 19 Trentino Road, Turramurra,**
**New South Wales, Australia**
**Filed Dec. 27, 1966, Ser. No. 605,029**
**Claims priority, application Australia, Jan. 6, 1966, 144/66**
**Int. Cl. C21b** *7/00;* **F27b** *1/26;* **F27d** *19/00*
**U.S. Cl. 266—31 7 Claims**



The invention relates to an open topped shaft furnace with a normal outlet for process gases located below the furnace top. To control the discharge of portion of the process gases through the open top or the entry of air through the open top, pressure measuring means are provided near the open top and the discharge through the normal outlet is varied according to variations in the pressure so measured.

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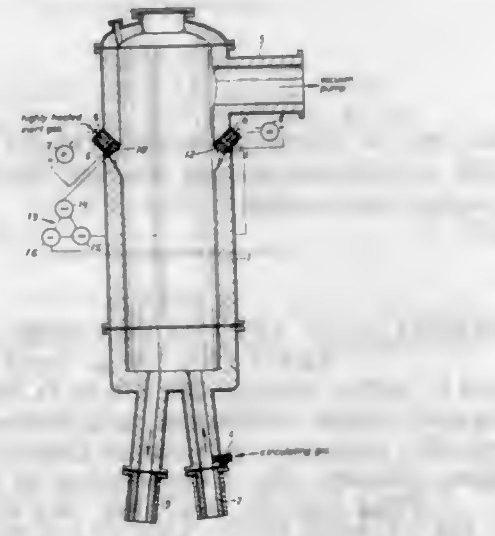
### 3,479,022

### APPARATUS FOR VACUUM TREATING LIQUID STEEL ACCORDING TO THE CIRCULATION METHOD

**Werner Coupette, Wattenscheid-Eppendorf, Germany, assignor to Standard-Messo Duisburg Gesellschaft für Chemie-Technik mbH & Co., Duisburg, Germany**
**Filed June 27, 1966, Ser. No. 560,651**
**Claims priority, application Germany, July 1, 1965, St 24,067**
**Int. Cl. C21c** *7/10;* **B01l** *7/00*
**U.S. Cl. 266—34 3 Claims**



A degasifying vessel with two pipes extending into molten metal, especially steel melt, for vacuum treating according to the circulating degasifying method. Metallurgical reaction is made more versatile and intensive by providing the degasifying vessel with at least one adjustable plasma burner for blowing in a highly heated reactive gas able to flow around molten metal droplets due to splashing in the vessel. Heat energy of multi-atom inert gases is extremely high since the specific heat due to the increase in temperature is increased by dissociation and ionization energy; due to high temperatures at the phase borders, an intensive and quick reaction of the metal droplets is obtained. Heat losses occurring during the vacuum treatment are simultaneously obviated by radiation of the high temperatures, very favorable in a vacuum.

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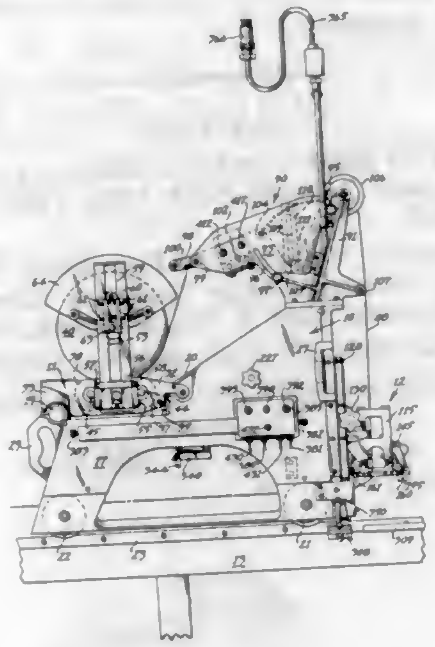
### 3,479,023

### DRIVE CONTROL MEANS FOR CLOTH SPREADING MACHINE

**Thomas W. Martin, Sr., and Asa Scobey Rogers, Jr., Nashville, and Shirley B. Ashton, Lavergne, Tenn., assignors to Cutters Machine Company, Inc., Nashville, Tenn., a corporation of Tennessee**
**Original application Apr. 4, 1966, Ser. No. 540,026, now Patent No. 3,400,927, dated Sept. 10, 1968. Divided and this application May 28, 1968, Ser. No. 739,948**
**Int. Cl. B65h** *29/46*
**U.S. Cl. 270—31 9 Claims**

A cloth spreading machine including a catcher mechanism and a reciprocably movable frame carrying a spreader unit adapted to cooperate with the catcher mechanism, and having an automatic drive control mechanism for changing the speed of the frame approaching the catcher mechanism from high to low at a first station, for reversing the motion of the frame at the catcher mechanism, and for changing the speed of the frame from low to high at a second station between the first station and the catcher mechanism.



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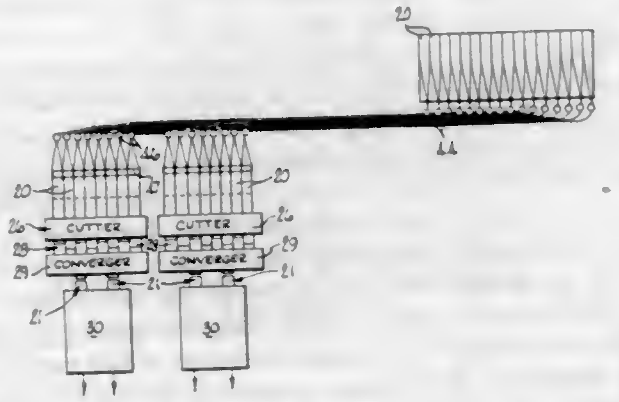
### 3,479,024
### METHOD AND APPARATUS FOR ARRANGING ARTICLES IN A ROW

**Roland E. Miller, Orangeville, Clyde D. Wayne, Wilmette, Edgar C. Olson, Waukegan, and Robert J. Piatek, Chicago, Ill., assignors to National Dairy Products Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Feb. 23, 1967, Ser. No. 621,095**
**Int. Cl. B65h** *39/02;* **A01j** *27/00;* **B65q** *47/26*
**U.S. Cl. 270—58** **24 Claims**



Method and apparatus for converging a given number of adjacent rows of closely spaced individual units into a lesser number of rows of individual units. In moving from an adjacent row to a converged row, the units are accelerated to a velocity at least equal to the product of the given number of adjacent rows and the velocity of the individual units in the adjacent rows.

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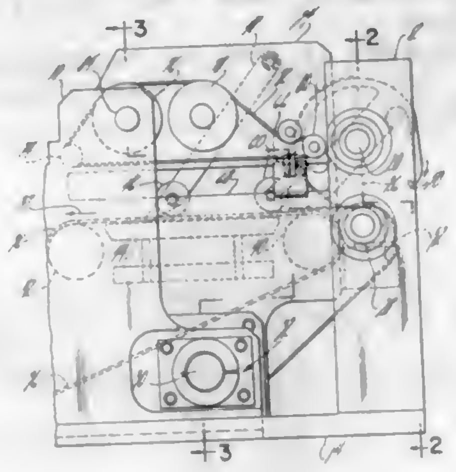
### 3,479,025
### BLANK SHINGLING MECHANISM FOR ENVELOPE FORMING MACHINE

**Frank T. Knapp, Chicopee Falls, Mass., assignor to United States Envelope Company, Springfield, Mass., a corporation of Maine**
**Filed Oct. 9, 1967, Ser. No. 673,770**
**Int. Cl. B65h** *29/60*
**U.S. Cl. 271—2** **9 Claims**

In an envelope forming machine wherein folded blanks are advancing at high speed a pair of belt conveyors engage the marginal side edges of the underside of each successive blank to decelerate it, and a rotating finger lifts the trailing top flaps of the most recently decelerated blanks so that the next succeeding blank is fed therebeneath. A pair of deadplates are provided adjacent the upstream ends of these belt conveyors, and a pair of snubber wheels are adjustably mounted above each belt conveyor to hold the decelerated blanks against the conveyors so that the top flaps thereof can be so lifted by the rotating finger.



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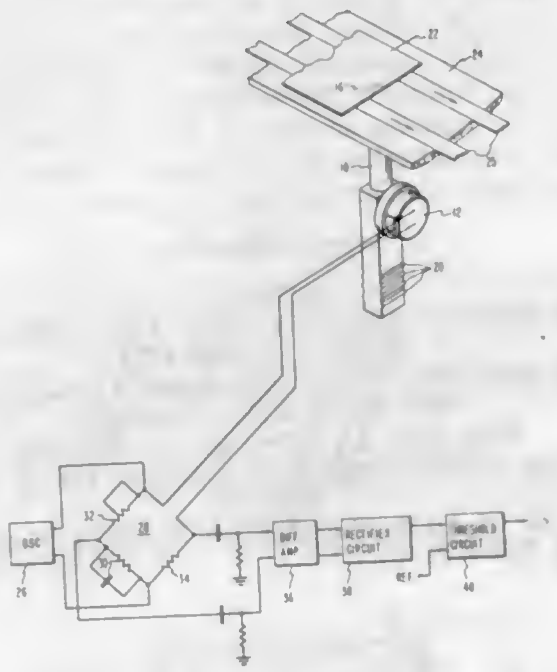
### 3,479,026
### ACOUSTIC DOCUMENT SENSOR

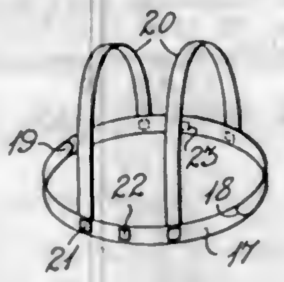
**William B. Plummer, Taco H. Van den Honert, and Melvin G. Wilson, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Mar. 26, 1968, Ser. No. 716,182**
**Int. Cl. B65h** *9/20*
**U.S. Cl. 271—58** **9 Claims**



An acoustic sensor acts as a front or a side gauge for documents in a transport. The sensor is a hollow tube attached to the document bedplate with a speaker attached to the hollow tube. In operation, the speaker is driven at constant frequency and the acoustical impedance of the hollow tube is measured by measuring the electrical impedance of the speaker. When a document moves along the transport bedplate and covers one end of the hollow tube, the acoustical impedance and thus the electrical impedance is changed. The changed impedance is detected with an impedance bridge circuit. The detection of the change may be used to control the position of the document as it is transported along the bedplate.

### 3,479,027
### GAME PLAYING APPARATUS

**Robert Howard Fryer, Aberfoyle Mill, Aberfoyle, Ontario, Canada**
**Filed May 27, 1968, Ser. No. 732,235**
**Int. Cl. A63f** *9/00*
**U.S. Cl. 273—1** **5 Claims**



Game apparatus comprising in combination a short garment or shoulder and chest harness capable of accommodating three Velcro or the like adhesive patches on the front thereof and three on the back thereof, and a set of playing pieces with different indicia each also having a complementary Velcro adhesive patch whereby the playing pieces may be attached to said garment or harness.

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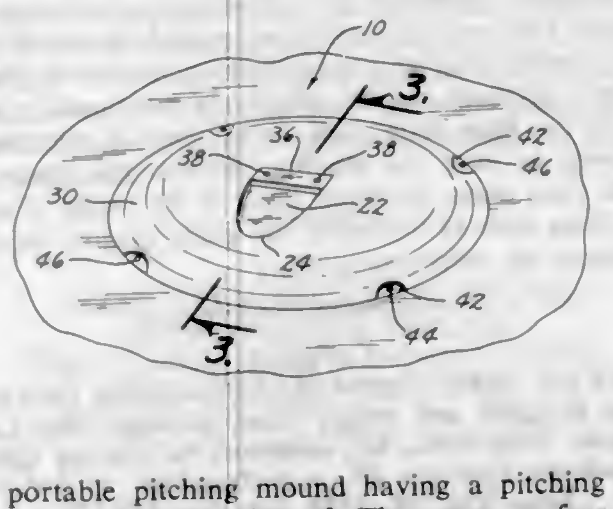
### 3,479,028
### PORTABLE PITCHING MOUND

**John J. Goeders, 705 2nd Ave. SE., Altoona, Iowa 50009**
**Filed Nov. 14, 1966, Ser. No. 594,107**
**Int. Cl. A63b** *65/12, 69/00*
**U.S. Cl. 273—25** **4 Claims**



A portable pitching mound having a pitching rubber on the upper surface thereof. The upper surface of the mound is provided with a flat depression area, forwardly of the pitchers rubber, which merges smoothly with the upper surface area toward the front end of the pitchers mound. The ends and sides of the mound slope downwardly to the supporting surface to form an inclined surface. The mound is secured to the supporting surface at its periphery.

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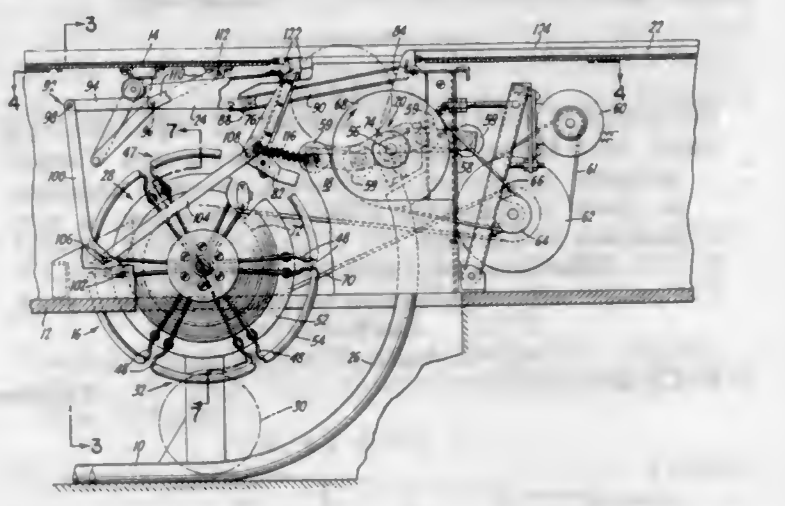
### 3,479,029
### BOWLING BALL RETURN AND STORAGE MECHANISM

**John Zuercher, Mansfield, and Stanley Condon, Plymouth, Ohio, assignors to American Machine & Foundry Company, a corporation of New Jersey**
**Filed Sept. 1, 1967, Ser. No. 664,997**
**Claims priority, application Great Britain, Sept. 23, 1966, 42,714/66**
**Int. Cl. A63d** *1/08*
**U.S. Cl. 273—49** **9 Claims**

Apparatus for raising a ball from a first level to a second level comprising a curved track, a resilient rotary member for raising the ball along the track from the first level to a transfer position, and a rotatable member for engaging the ball at the transfer position and raising it to the second level.



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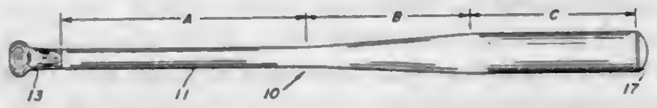
### 3,479,030
### HOLLOW, METAL BALL BAT

**Anthony Merola, 957 Wellesley Road, Pittsburgh, Pa. 15206**
**Filed Jan. 26, 1967, Ser. No. 612,765**
**Int. Cl. A63b** *59/06*
**U.S. Cl. 273—72** **6 Claims**



This invention relates to a ball bat comprising a hollow metal body portion formed by swaging a tube of uniform diameter and thickness to a tube of varying diameters and thicknesses in a manner such that the body has a substantially uniform weight per unit of length, and rubberous plugs disposed inside the body at each end thereof to deaden sound and to impart desired weight characteristics to the bat. The plug at the handle end is disposed wholly within the tube and a separate handle member inserted thereafter. The plug at the opposite end forms a cap over that end of the bat. Both rubberous plugs and the handle member are preferably secured in place with an epoxy resin, the resin being applied to the interior of the tube and the plugs inserted by spinning to distribute the epoxy evenly. Both plugs are preferably tapered to reduce the piston effect, i.e., prevent the epoxy from being pushed ahead of the plugs.

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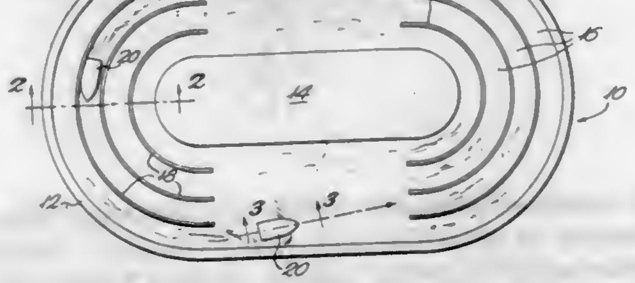
### 3,479,031
### BOAT RACING GAME

**Garfield A. Wood, Jr., 4565 Sabal Palm Road, Bay Point, Miami, Fla. 33137**
**Filed Dec. 12, 1967, Ser. No. 689,843**
**Int. Cl. A63f** *9/14;* **A63h** *23/02*
**U.S. Cl. 273—86** **6 Claims**



A boat racing game including an elongated oval shaped tank filled with water having a plurality of racing lanes formed by ribs on the bottom of the tank. Battery powered, motor driven boats are raced in the racing lanes and the ribs are interrupted along straight-a-way portions of the lanes to allow the boats to change lanes.

### 3,479,032
### GUNNERY PRACTICE SCORING APPARATUS

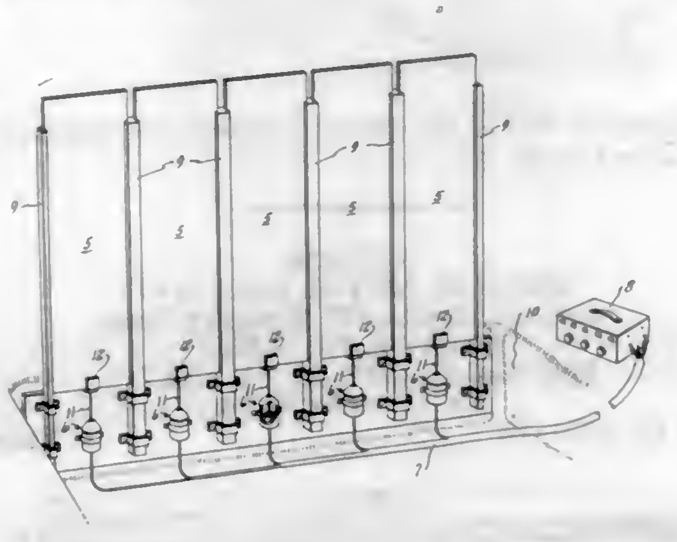
**John Alex Ingvar Öhlund, Huskvarna, and Torsten Wilhelm Andersson, Jonkoping, Sweden, assignors to Saab Aktiebolag, Linkoping, Sweden, a corporation of Sweden**

**Filed June 14, 1966, Ser. No. 557,481**

**Claims priority, application Sweden, June 17, 1965, 8,005/65**

**Int. Cl. A63b** *69/00, 63/00*

**U.S. Cl. 273—102.2** **7 Claims**



An upright target plate of, e.g., hardboard, is connected with a transducer in a protected location by means of an elongated member capable of transmitting vibrations along its length. The transducer axis of sensitivity is parallel to the target plate surface, and the elongated member has its axis substantially in the plane of said surface and has vibration transmitting connections at its opposite ends with the target plate and the transducer, respectively. The transducer thus responds only to edgewise traveling shock waves in the target plate due to missile hits.

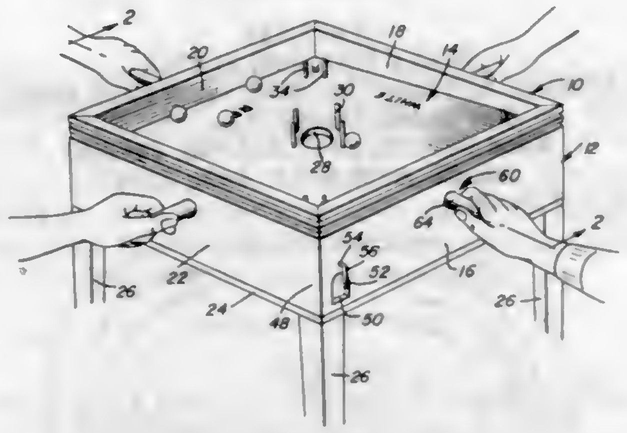
### 3,479,033
### MOVABLE SURFACE GAME

**Angelo J. Crisafulli, 1520 N. Kendrick, and Warren Skinner, Box 271, both of Glendive, Mont. 59330**

**Filed May 12, 1967, Ser. No. 638,120**

**Int. Cl. A63d** *13/00;* **A63f** *9/02*

**U.S. Cl. 273—113** **3 Claims**



A combined movable surface and ball game played by a plurality of players usually four in number. The players operate radial rods that extend through peripheral walls of the game board to move the surface. These rods, which may be either rotated or moved in an out, have an eccentrically mounted cam member to contact the underside of the surface. By proper manipulation any three of these cam members may lift the surface. There is also an opening to pocket the rolling ball and obstacles on the surface.

### 3,479,034
### DEVICE FOR AMUSEMENT OR EDUCATIONAL PURPOSES COMPRISING MAGNETICALLY ATTRACTABLE MARKER MEANS

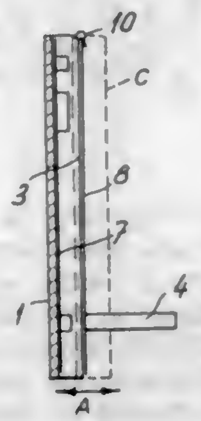
**Heinz Wagner, 16 Kapfsteig, 8032 Zurich, Switzerland**

**Filed Dec. 20, 1966, Ser. No. 603,188**

**Claims priority, application Switzerland, Dec. 24, 1965, 17,835/65**

**Int. Cl. A63f** *3/02;* **A63n** *33/26*

**U.S. Cl. 273—131** **10 Claims**



An amusement game or educational device incorporating a board or base plate upon which markers in the form of game pieces, figures, indicators or the like are placed. Both the base plate and the markers are formed at least partially of magnetic material, the base plate or the markers consisting at least partially of ferromagnetic material and the other element(s) at least partially of permanent magnetic material. Disposed over the base plate and at a distance therefrom is a cover plate of transparent material. The markers can be displaced by means of an external guide magnet acting through the cover plate so that such markers can be selectively positioned with respect to the base plate. The cover plate is mounted for movement to vary the spacing between the cover plate and the base plate, the outer limit of the range of adjustment being such as to render the guide magnet incapable of moving the markers.

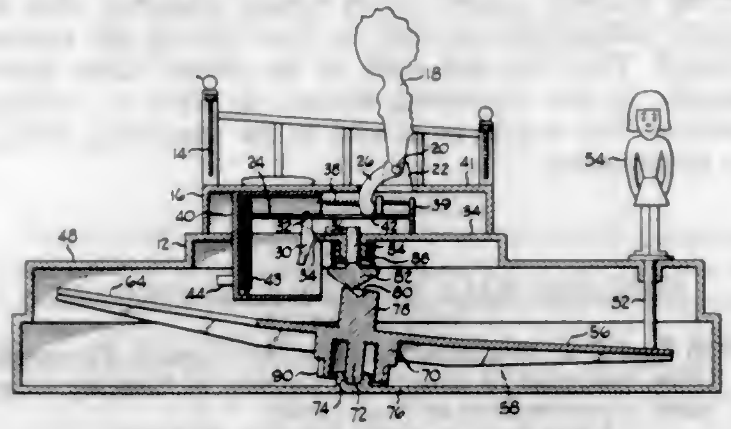
### 3,479,035
### PLAYER ACTUATED CHANCE GAME DEVICE

**Marvin I. Glass and Henry Stan, Chicago, and Leonid Kripak, Villa Park, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership**

**Filed Feb. 24, 1966, Ser. No. 529,771**

**Int. Cl. A63f** *9/00, 1/00*

**U.S. Cl. 273—138** **1 Claim**



Game apparatus comprising a three-dimensional board having an upper playing surface supporting a movably mounted figure which is surrounded by a plurality of openings, playing pieces including portions adapted to be inserted in the openings, and mechanism beneath the playing surface which provides for movement of the figure, by chance, as a playing piece is inserted in the openings. The chance mechanism includes a rotatable member having arms disposed for movement through a path underlying the openings and supported for tilting movement as a playing piece strikes one of the arms. The tilting of the rotatable member trips latch mechanism to operate a sound device and effect movement of said figure on the playing surface.

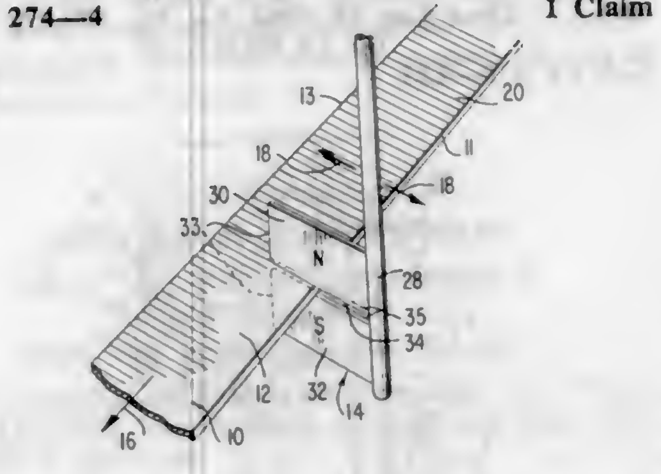
### 3,479,036
### NONELECTRONIC MAGNETIC RECORDING SYSTEM

**William C. Carroll, Poughkeepsie, and Howard T. Johnston, Jr., La Grange, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Sept. 30, 1966, Ser. No. 583,224**

**Int. Cl. G11b** *5/02*

**U.S. Cl. 274—4** **1 Claim**



A nonelectric, portable, magnetic recording system. A magnetic tape carries a prerecorded high-frequency magnetic signal. The tape moves past a mechanically oscillating permanent magnet stylus which has oscillations controlled by some external forces such as sound waves. As the stylus moves over the tape, it partially erases the prerecorded magnetic signal, thereby recording, for example, the sound waves.

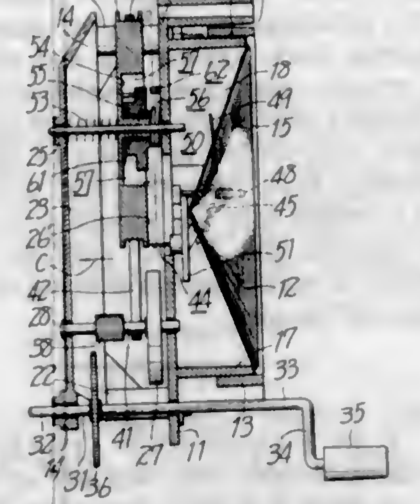
### 3,479,037
### MANUALLY OPERATED SOUND REPRODUCING DEVICE

**Eijiro Tomiyama, 10, 9, 7-chome, Tateishi, Katsushika-ku, Tokyo, Japan**

**Filed Mar. 15, 1967, Ser. No. 623,275**

**Int. Cl. G11b** *25/04, 25/06*

**U.S. Cl. 274—9** **6 Claims**



A manually operated sound reproducing device is formed of a turntable supporting a record disc mounted within a frame. A sound cone is supported within the frame and a tone-arm is disposed in contact with the apex of the sound cone and has a stylus arranged to trace a sound groove in the record disc. The tone-arm is biased to return the stylus to the starting point of the sound groove after completely tracing the groove in the record disc. The turntable is driven by a gear and shaft arrangement arranged to rotate the turntable in one direction only.

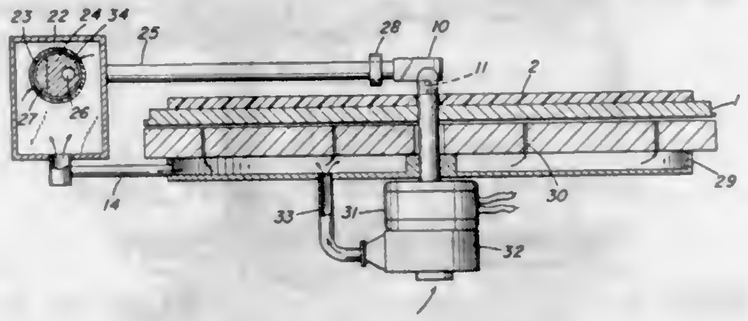
### 3,479,038
### RADIAL PHONOGRAPH PICKUP ARM AND TURNTABLE COMBINATION USING AIR BEARINGS

**Ira Leonard Eisner, 93 Woodridge Drive, Stamford, Conn. 06905**

**Continuation-in-part of application Ser. No. 510,162, Nov. 24, 1965. This application Oct. 4, 1967, Ser. No. 672,806**

**Int. Cl. G11b** *3/10*

**U.S. Cl. 274—23** **4 Claims**



A radial phonograph pickup arm along which a carriage carrying the pickup head can slide or rotate about the longitudinal axis of the arm. Means are provided for introducing air or other gas through tiny perforations to maintain an air cushion between the carrage and the supporting arm, or supporting track, so that solid to solid contact between carriage and supporting track is prevented. The pickup arm is associated with a turntable or other means for producing relative movement between pickup arm and a record. The turntable may also be supported by an air-bearing supplied from the same source as that for the arm.

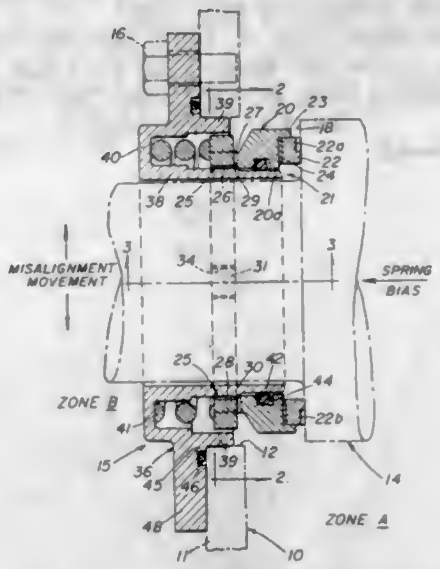
### 3,479,039
### ROTARY SEALS

**Peter F. Pinkas, Cleveland, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**

**Filed Aug. 24, 1967, Ser. No. 663,134**

**Int. Cl. F16j** *15/34, 15/54*

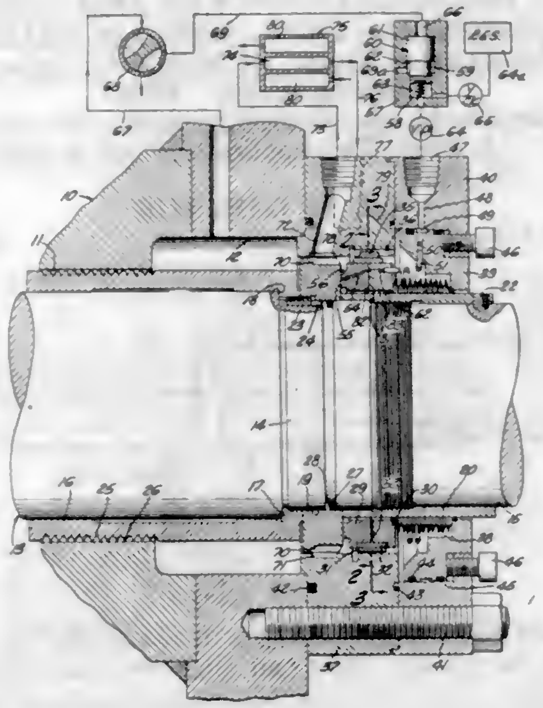
**U.S. Cl. 277—30** **3 Claims**



An improved seal assembly, adapted for use with a fluid pump drive shaft to effect isolation of respective zones through which the shaft extends, while permitting a limited amount of axial misalignment of the drive shaft by providing a pivotal O-ring support substantially at the interface between the drive shaft and the seal assembly.

### 3,479,040
## MECHANICAL SEAL CONSTRUCTION

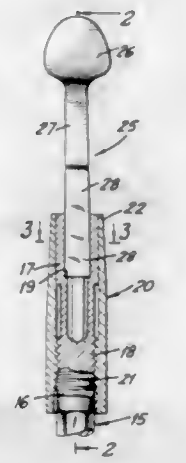
**Herbert E. Tracy, Alhambra, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**
**Original application July 6, 1965, Ser. No. 469,700. Divided and this application July 18, 1967, Ser. No. 662,246**
**Int. Cl. F16j** *15/34, 15/54*
**U.S. Cl. 277—81 2 Claims**



A mechanical seal assembly having a sealing ring carried by a shaft and being rotatable relative to a stationary sealing ring supported against a backing ring sealed to a portion of the housing by a bellows. The assembly includes: (1) means for locking the stationary sealing ring and the backing ring to the housing, (2) means for lubricating the opposed sealing faces of the rotary and stationary sealing rings, and (3) means for varying the force with which the stationary sealing ring is pressed toward the rotary sealing ring.

### 3,479,041
## QUICKLY ENGAGEABLE AND DISENGAGEABLE COUPLING OR CHUCK

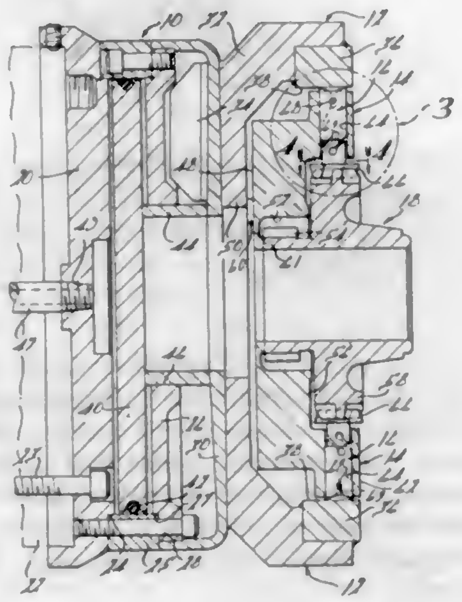
**Abraham W. Ward, 1037 Polk St., San Francisco, Calif. 94109, and Raymond T. Whipple, Paradise, Calif.; said Whipple assignor to said Ward**
**Original application Aug. 4, 1965, Ser. No. 477,135, now Patent No. 3,384,386, dated May 21, 1968. Divided and this application Sept. 6, 1967, Ser. No. 675,728**
**Int. Cl. B25g** *3/02*
**U.S. Cl. 279—42 8 Claims**



Dental surgical blades having flat shanks are interchangeably secured in handles by a quickly releasable and lockable chuck arrangement. The flat shanks are tapered so their greatest width is at their outer ends. A handle is formed with a split sleeve which has a substantially oval cross section at its outer end. The major axis of the oval is that at least equal to the major width of the shank. An outer sleeve is fitted on the handle and embraces the split sleeve. With the split sleeve "released," the shank of the tool is inserted thereinto. The outer sleeve is then threaded inwardly along the handle, and the outer sleeve and the split sleeve are so formed that the split sleeve is compressed to reduce its major diameter to grip the side edges of the shank to releasably lock the shank in the split sleeve. The coupling or chuck is not limited to use with dental tools.

### 3,479,042
## GEAR PIN WITH PULL-BACK ACTION

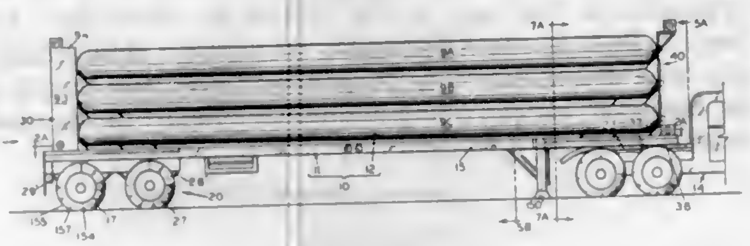
**George Hohwart, Farmington, Mich., assignor to N. A. Woodworth Company, Ferndale, Mich., a corporation of Michigan**
**Filed Aug. 19, 1966, Ser. No. 573,627**
**Int. Cl. B23b** *5/22*
**U.S. Cl. 279—123 2 Claims**



A gear clamping pin for rotatable chucks, the pin having a shank portion and a work engaging portion at one end of the shank, the shank portion being formed intermediate its ends with a pair of longitudinally spaced substantially parallel slots extending diagonally therein from opposite sides thereof and in overlapping relation so that an axially compressive force applied to the pin causes the work engaging end thereof to move laterally with respect to the shank and, when the pin is properly mounted in a chuck, in a direction to pull a gear shaped workpiece engaged thereby back against the end stop of the chuck. Also, an annular gear cage provided with apertures holding and slidably supporting a plurality of radially disposed substantially equi-spaced gear pins of the above type, the pins extending both inwardly and outwardly from the apertures in which they are mounted and clearance being provided between the slotted portions of the pins and the apertures to permit lateral shifting of the work engaging portions of the pins.

### 3,479,043
## GAS TRANSPORT APPARATUS

**Bill Piehl, Amarillo, Tex., assignor of fifty percent to Jack B. Kelley, Amarillo, Tex.**
**Filed June 19, 1968, Ser. No. 738,151**
**Int. Cl. B60p** *3/22;* **B61d** *5/00*
**U.S. Cl. 280—5 5 Claims**



A tank transport trailer comprising a semi-flexible wheeled trailer frame with one upright support at its front and another at its rear, supporting a plurality of long thin tanks, each tank extending longitudinally of the trailer frame, one end of each tank relatively fixedly attached to and supported at one end of the frame and there attached to manifold piping, the other end of the tank rotates in another upright relatively flexibly supported on the frame, the tanks being spaced apart vertically and laterally whereby the stresses concomitant on road travel applied to such elongated containers used as carriers for gas at high pressure are minimized.

### 3,479,044
## DEVICE FOR HOLDING SKIS

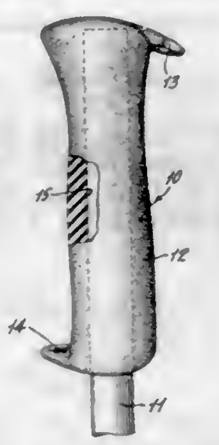
**Günter Peis, Richard-Wagner-Strasse 9, Innsbruck, Austria**
**Filed Mar. 9, 1967, Ser. No. 621,922**
**Claims priority, application Austria, Mar. 14, 1966, A 2,382/66; June 8, 1966, A 5,447/66; Sept. 26, 1966, A 8,976/66**
**Int. Cl. A63c** *11/00, 11/02*
**U.S. Cl. 280—11.13 9 Claims**

Skis are constructed with at least one permanent magnet fixed inside one ski and at least one ferromagnetic element fixed in the same zone of the other ski of the pair such that when the pair are placed together with their running surfaces face to face, the skis will hold together without the use of straps or other external holding devices.

### 3,479,045
## INSTANT GRIP OR HANDLE FOR A SKI POLE

**Earl A. Miller, Orem, Utah 84057**
**Filed Oct. 20, 1967, Ser. No. 676,792**
**Int. Cl. A63c** *11/22;* **A47j** *45/00*
**U.S. Cl. 280—11.37 8 Claims**

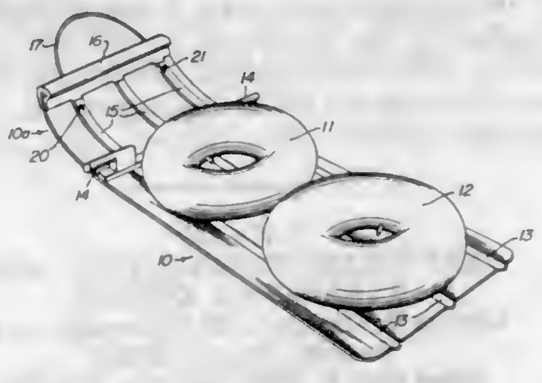
A handle or grip for a ski pole comprising a body adapted to be grasped by the hand having means substantially fitting above the top of the hand and means for supporting the bottom of the hand with the first mentioned



means being resilient for moving away from the hand for enabling the automatic release of the ski pole.

### 3,479,046
## ALL-SEASONS SLED

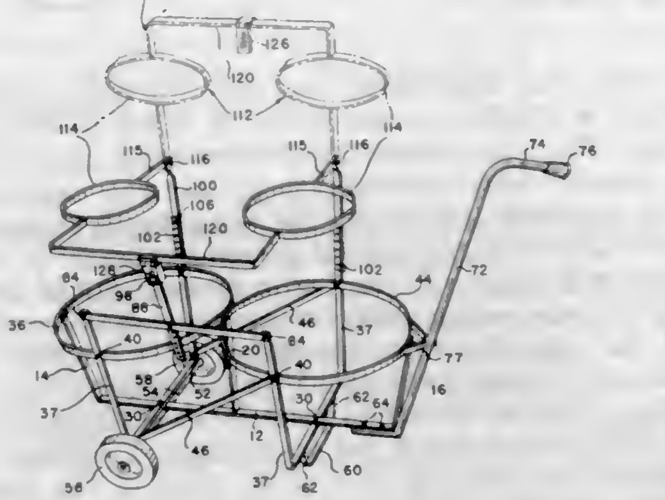
**Ray N. Thompson, 4096 West 5010 South, Kearns, Utah 84118**
**Filed Aug. 7, 1967, Ser. No. 658,669**
**Int. Cl. B62b** *15/00, 17/00*
**U.S. Cl. 280—18 6 Claims**



A steerable sled for use on snow, water, or the like, including a base of strong, but lightweight and flexible sheet material having guide runners on its bottom and a resilient, shock-absorbing riding surface fixed to its top.

### 3,479,047
## DOUBLE REFUSE CAN HOLDER

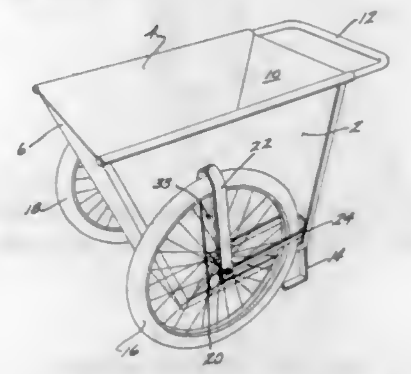
**Charles R. Bailey, Charleston Heights, S.C., assignor to F. F. Murphy, Cainhoy, S.C.**
**Filed June 3, 1968, Ser. No. 734,058**
**Int. Cl. B62b** *1/18, 1/26*
**U.S. Cl. 280—47.19 8 Claims**



A portable multiple refuse can holder of a generally wheelbarrow-like construction and having transversely hinged refuse can cover securing means latchable to prevent access by animals and accidental spillage of the contents of the refuse cans while transporting the cans by means of the holder.

### 3,479,048
### CART

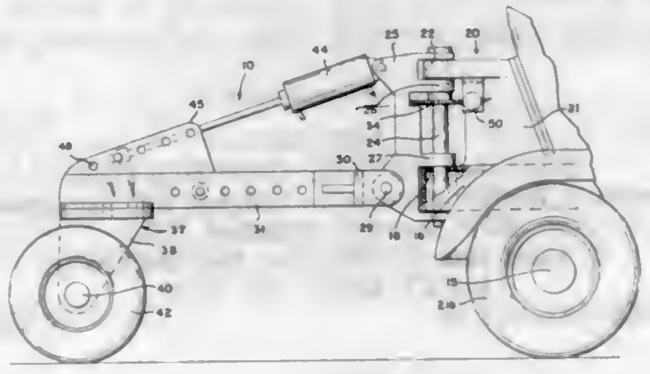
**Emil M. Carlson, 851 Wendover,**
**Muskegon, Mich. 49441**
**Filed Oct. 9, 1967, Ser. No. 673,644**
**Int. Cl. B62b** *1/10, 1/18, 5/00*
**U.S. Cl. 280—47.23** **7 Claims**



This disclosure relates to a cart for refuse and the like, wherein a unitary construction is provided with at least two opposite side walls. Wheels are attached to the side walls preferably spaced from the edges thereof through at least one, and preferably two, U-shaped brackets which are attached at one leg thereof to the side walls of the cart and to axles which extend through the wheels. The U-shaped brackets are preferably disposed at right angles to each other on either side of the cart.

### 3,479,049
### AXLE LOAD DISTRIBUTING AND BALANCING DEVICE

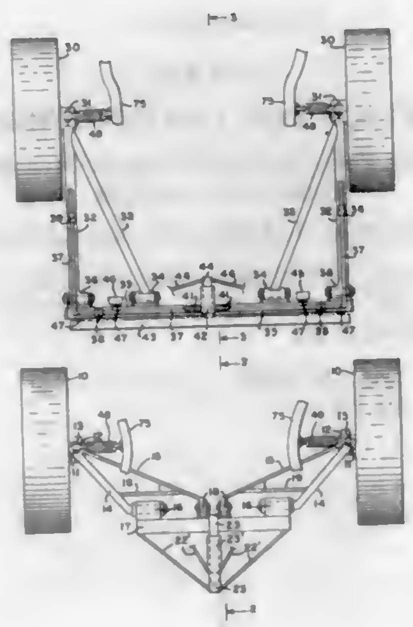
**George P. Duecy, 6300 Glenwood Ave.,**
**Everett, Wash. 98201**
**Filed Oct. 9, 1967, Ser. No. 673,896**
**Int. Cl. B62d** *61/12, 53/02;* **B62b** *1/08*
**U.S. Cl. 280—81** **7 Claims**



Axle load distributing and load balancing apparatus which is attached to and towed by heavy mobile equipment. The load balancing and distributing apparatus has a castered wheel assembly at its rear end mounted for free rotational movement. The apparatus is designed for both horizontal and vertical pivotal movement at its forward end where it is attached to the rear end of the towing or main vehicle. The connection at the forward end of the apparatus is in the nature of a universal joint. Actuator means are provided for swinging the apparatus down about its horizontal pivot to shift weight not only to the castered wheels but to distribute a portion of the vehicle load from the rear to the front of the main vehicle. Additionally, actuator means are provided for swinging the apparatus about its vertical axis to provide for load balancing. Movement of the apparatus about a vertical axis, which in effect swings the outer end having the castered wheel to one side or the other, is made in response to load sensor means located between the main vehicle frame and its rear axle. If the load carried by the main vehicle has a shift in its center of gravity toward one side or the other, then the sensor means will actuate the horizontal pivoting actuator and swing or pivot the apparatus to that side of the vehicle to which there has been a shift in the load center of gravity. Additionally, the load distributor may be pivoted outwardly to act as an outrigger for providing additional support to the main vehicle when in a stationary position.

### 3,479,050
### WHEEL SUSPENSION AND STEERING MECHANISM

**George N. Bloise, 3740 Elston Drive,**
**San Bruno, Calif. 94066**
**Filed Apr. 24, 1967, Ser. No. 640,768**
**Int. Cl. B62d** *3/02*
**U.S. Cl. 280—95** **9 Claims**

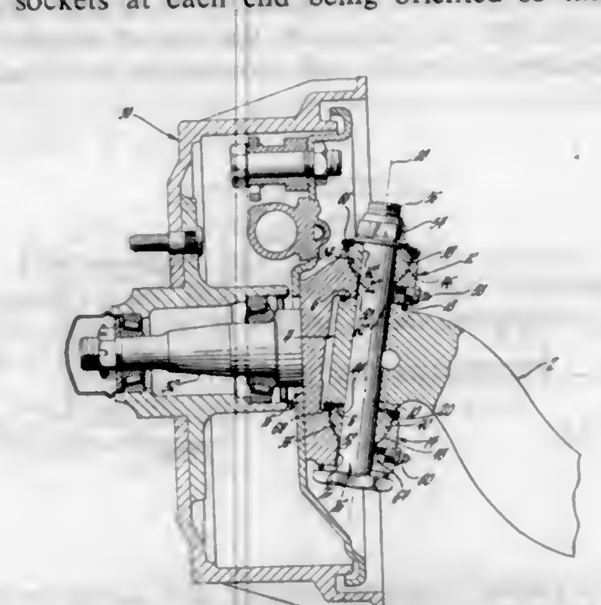


A wheel suspension and steering system in which pivot mounting bars are aligned parallel to the road and the wheels are joined by trailing links to transverse pivot mounts on these bars. Each mounting bar, in turn, is attached to the vehicle chassis by a longitudinal pivot mount. Thus, each wheel moves independently in a plane perpendicular to the road, and the chassis may lean or roll without affecting the camber of the wheels. The wheels are steered by a one-piece tie rod activated by the longitudinal movement of a two-piece pitman arm. The ends of the two pieces of the pitman arm are hinged or joined so that motion of the chassis or suspension system is taken up by rotation of the hinge, and thus such motion does not cause any steering feedback or deviation in the toe-in setting of the wheels.

### 3,479,051
### SPHERICAL BEARING KING PIN STEERING KNUCKLE ASSEMBLY

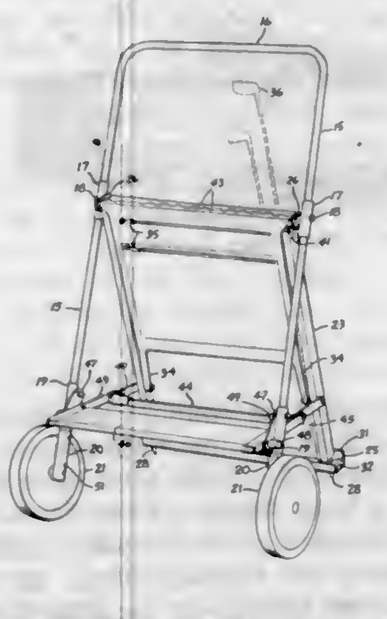
**Irwin K. Weiss, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Jan. 11, 1968, Ser. No. 697,149**
**Int. Cl. B62d** *7/18, 7/06*
**U.S. Cl. 280—96.1** **5 Claims**

A king pin type steering knuckle assembly for a vehicle axle in which semi-spherical bearing portions are arranged around a king pin in vertically spaced relation for engagement with cooperating vertically spaced sockets formed in a knuckle, the bearing portions and associated sockets at each end being oriented so that load imposed on the axle effects compressive loading of one, while compressive loading of the other is selectively adjustable by means associated with the king pin.



### 3,479,052
### HAND-PULLED GOLF CART

**James F. Spielman, North Road,**
**Bantam, Conn. 06750**
**Filed Aug. 7, 1967, Ser. No. 658,812**
**Int. Cl. B62d** *1/18, 1/26*
**U.S. Cl. 280—41** **3 Claims**

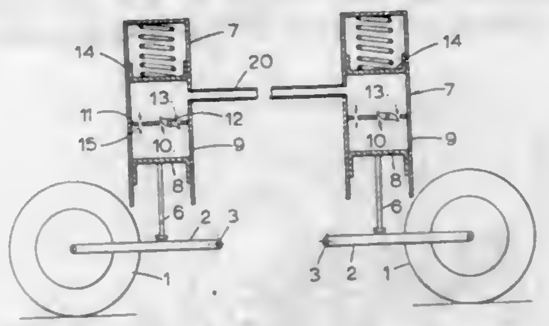


The invention relates to a novel and useful hand-pulled cart for transporting golf clubs along a golf course, and reveals certain new basic characteristics and desirable features not found in golf carts in use before this time.

### 3,479,053
### VEHICLE SUSPENSIONS

**Alexander Eric Moulton, Bradford-on-Avon, England, assignor to Moulton Developments Limited, Wiltshire, England, a British company**
**Filed June 19, 1967, Ser. No. 647,169**
**Int. Cl. B60g** *21/06, 11/58*
**U.S. Cl. 280—104** **6 Claims**

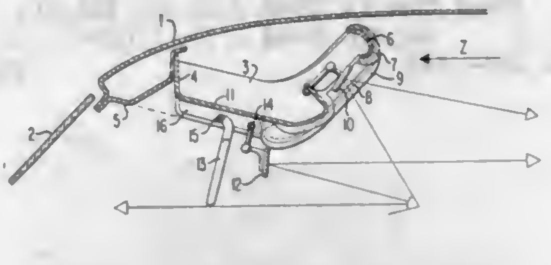
The vehicle wheel suspension system includes two hydraulically interconnected displacer units at each respective side of the vehicle, each displacer unit comprises a housing with a partition wall therein dividing the housing into first and second subchambers. A flexible diaphram closes the bottom end of the housing and forms a wall of the first subchamber. A piston member, connected for movement with an associated wheel, bears against the diaphragm. The partition carries valve controlled means opening into the second subchamber thereabove.



A thick annular body of rubber forms a resilient wall for the second subchamber. A fluid interconnecting pipe connects the first subchamber of one displacer unit with a similar displacer unit associated with another wheel of the vehicle on the same side.

### 3,479,054
### HEAD PROTECTION FOR VEHICLE PASSENGERS

**Béla Barényi, Stuttgart-Vaihingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany**
**Filed July 6, 1967, Ser. No. 651,479**
**Claims priority, application Germany, July 7, 1966, D 50,502**
**Int. Cl. B60r** *21/04, 21/06*
**U.S. Cl. 280—150** **14 Claims**

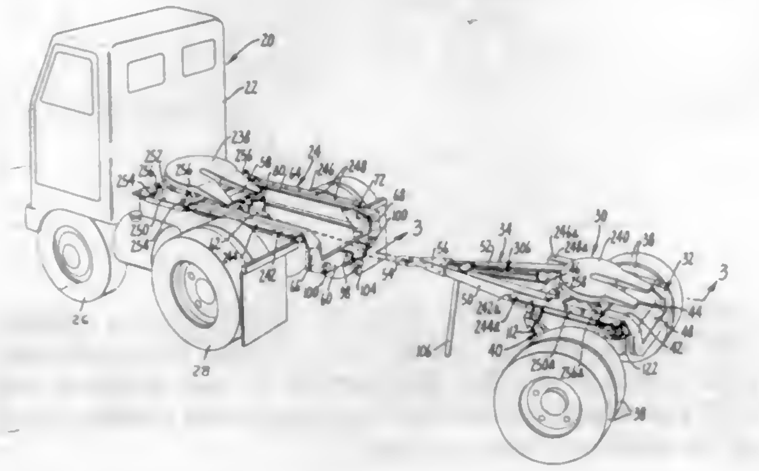


A protective structure for the heads of the passengers in motor vehicles which essentially consists of a plastically deformable body of approximately half-shell shape; the head protective body is secured to the forward roof section only along the forward and/or lateral portions thereof. The bottom of the protective body structure is provided with recesses within which are pivotally mounted the rearview mirror and sun visors in such a manner as to be pivotal forwardly into these recesses and therewith out of the way. An auxiliary rearview mirror may be provided within a recess or aperture in the upwardly directed rear wall portion of the body which serves as assist in parking the vehicle.

### 3,479,055
### LOAD DISTRIBUTING ASSEMBLY FOR WHEEL SUPPORTED VEHICLES

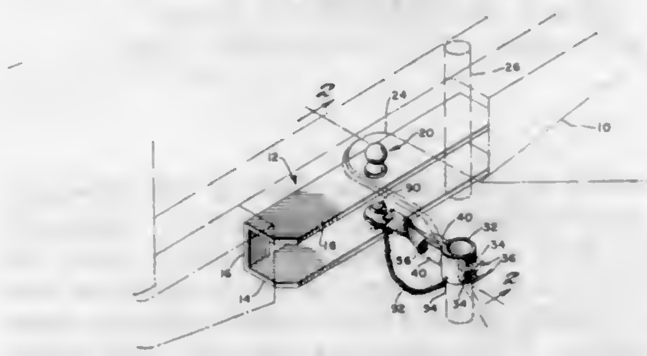
**Joseph J. Cunha and Thomas E. Conlon, Castro Valley, Calif., assignors to Cunha Products Incorporated, Castro Valley, Calif., a corporation of California**
**Filed Nov. 16, 1967, Ser. No. 683,575**
**Int. Cl. B60d** *1/00;* **B62d** *53/02;* **F16k** *43/00*
**U.S. Cl. 280—407** **12 Claims**

A load distributing assembly for selectively adding a support axle to the chassis of a tractor. The assembly comprises, as its basic component, a dolly having a chassis with a wheel supported axle suspended therefrom by an air suspension system. In operation, the function of the assembly is effected by coupling the respective chassis together in load sharing relationship. This, in effect, adds the axle suspended from the chassis of the dolly to the chassis of the tractor. When the respective chassis are coupled, the air suspension system provides for selective varying of the load carried by the axle suspended from the chassis of the dolly. Mutually engageable socket and probe elements on the respective chassis maintain the chassis in load sharing relationship when coupled. The preferred embodiment of the assembly also comprises a roller support to facilitate shifting of a fifth wheel over the respective chassis, when coupled, and a service connection to automatically connect service lines on the respective chassis.



### 3,479,056
### TRAILER SAFETY HITCH

**William J. Peters, P.O. Box 152,**
**Grass Valley, Calif. 95945**
**Filed Apr. 12, 1968, Ser. No. 720,813**
**Int. Cl. B60d** *1/12, 1/06*
**U.S. Cl. 280—461** **10 Claims**

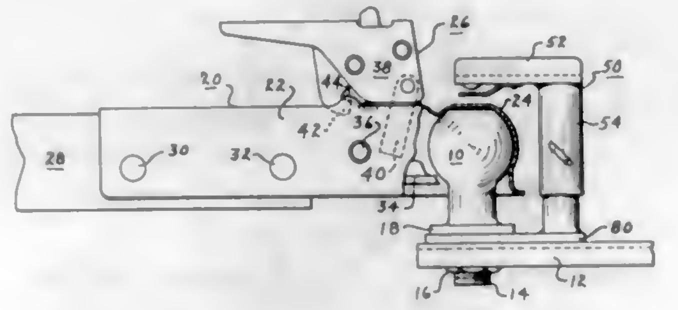


A tubular portion is adapted to receive the stand pipe of a trailer and threaded locking members are manually operable to securely connect the tubular portion to a stand pipe. A connector means is pivotally interconnected at one end thereof to the tubular portion and is pivotally interconnected at the opposite end thereof to a portion which is fixed with respect to an associated vehicle. A locking pin extends through a hole in the outer end of the connector means and an aligned hole in the fixed portion of the vehicle so that the device provides an auxiliary connection between a trailer and a vehicle.

### 3,479,057
### TRAILER HITCH SAFETY DEVICE

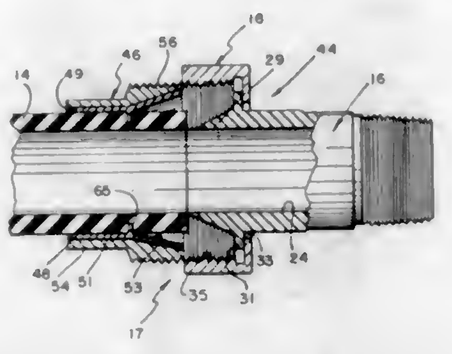
**Lester D. Miller, Ligonier, Ind., assignor to Bangor**
**Punta Operations, Inc., Goshen, Ind.**
**Filed May 4, 1967, Ser. No. 636,167**
**Int. Cl. B60b** *7/00;* **B60q** *1/00;* **G08b** *21/00*
**U.S. Cl. 280—511** **4 Claims**

A signal device for use with an automobile and trailer hitch assembly having a ball member and a socket member, in which a signal switch is supported above the socket member of the assembly, normally in spaced relation thereto, so that in the event the socket member becomes loosened from the ball member the switch will be closed by partial disengagement of the socket member from the ball member. The switch is mounted on a support having sufficient rigidity to prevent the socket member from becoming accidentally fully disengaged from the ball member.



### 3,479,058
### HOSE COUPLING ASSEMBLY

**Kenneth H. Chandler, 614 Chase,**
**Wichita, Kans. 67213**
**Filed Aug. 12, 1968, Ser. No. 752,051**
**Int. Cl. F16l** *33/22*
**U.S. Cl. 285—16** **3 Claims**

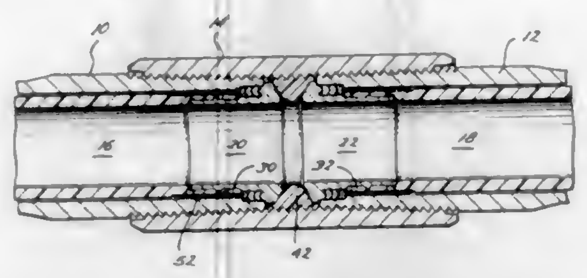


This invention is a hose coupling assembly providing positive vapor and fluid seal interconnecting a hose member normally transferring volatile fuel. More particularly, this invention is a hose coupling assembly having an attachment nipple adapted to be threaded upon a storage reservoir; a coupling nut mounted about the attachment nipple having internal threads for securing the same to a compression member; and the coupling nut and compression member adapted to receive a hose member therebetween for sealing under compression. Additionally, this invention is a hose coupling assembly readily connected to a hose member and having an anchor and wear sleeve member having inwardly extending teeth member adapted to engage hose member in a secure manner and provide for a compression surface in combination with an attachment nipple.

Numerous types of hose connection devices are known to the prior art adaptable to connect and disconnect hose ends transferring fluid therethrough. However, the prior art devices are generally difficult to attach and detach, expensive in structure through machining required to achieve a positive vapor and fluid seal, and are difficult to use. In the present day hose end connections, there is usually a sleeve or tubular portion that slips into the end of the hose and is secured thereto by a clamp member that surrounds the hose end to securely clamp the hose end to a tubular sleeve therein. However, in this arrangement, the inside diameter of the sleeve is less than the diameter of the hose and therefore amounts to an impedance and reduction in the volume of flow that the hose is capable of handling which slows down the time of transferring the liquid which is undesirable.

### 3,479,059
### LINED PIPE SECTIONS AND JOINTS

**William B. Taylor, Rte. 11, Box 154, East Houston Road 77016, and Joseph M. Taylor, 10239 Tarrington 77034 both of Houston, Tex.**
**Filed July 19, 1968, Ser. No. 746,019**
**Int. Cl. F16l** *55/00, 59/16, 9/14*
**U.S. Cl. 285—55** **11 Claims**

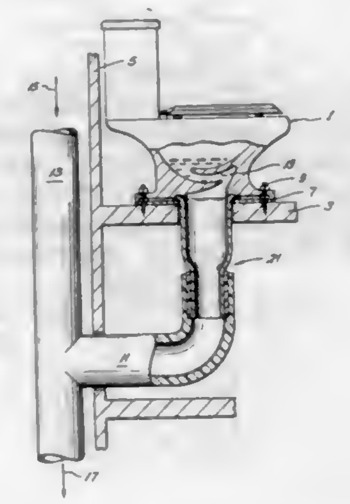


Lined pipe sections each having a generally tubular, corrosion resistant liner, preferably formed of a thermoplastic material, disposed in and extending throughout the length of the pipe sections short of but adjacent to each of its ends. The liner has an outer diameter smaller than the internal diameter of the pipe section for easy insertion into the pipe section. A corrosion resistant ferrule having a generally tubularly shaped body and an inner diameter substantially the same as that of the liner and an outer diameter greater than the inner diameter of the liner and smaller than the inner diameter of the pipe section is inserted into each end of the liner at each end of the pipe section and a clamp ring is clamped about the liner clamping it to the ferrule which holds the liner in the pipe section. A nose portion is provided on each ferrule at its outer end which extends beyond the outer diameter of the liner adjacent each end of the pipe section. Packing is wedged and deformed between the outer body of the ferrule and the inner surface of the pipe beyond the end of the liner but within the pipe sealing the space between the liner and the pipe section. The outer surface of the nose portion of the ferrule may be provided with a frusto-conical sealing surface and a generally tubular deformable gasket having an internal diameter at least as large as that of the liner is deformed by and between opposite frusto-conical sealing surfaces and into the threads of a coupling securing the ends of the pipe section together thereby providing sections of pipe and joints connecting them together with a corrosion resistant liner which is pressure tight and which will not leak under normal conditions of use and which will not impede flow through the pipe sections and joints.

### 3,479,060
### PLUMBING CONNECTION

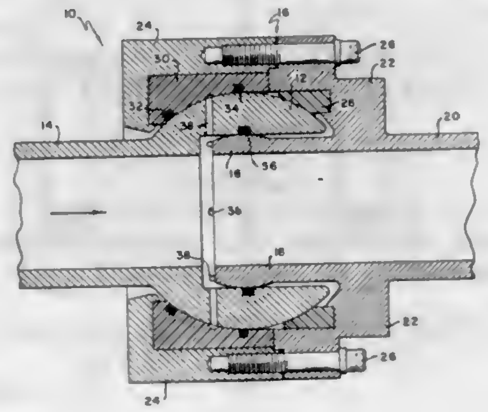
**Sidney O. Westbrook, 522 Bizerte 77022, and Lewis D. Mickley, Jr., 5095 Cedar Creek 77027, both of Houston, Tex.**
**Filed May 13, 1966, Ser. No. 550,009**
**Int. Cl. F16l** *55/00, 47/00*
**U.S. Cl. 285—58** **2 Claims**

This application discloses a connection arrangement as used for coupling the waste drain of a toilet to a plastic pipe beneath the floor. The connection includes a section of lead pipe having a reduced diameter at its lower end with a plastic sleeve surrounding the reduced-diameter portion. The plastic pipe receives the reduced-diameter portion at its upper end, this pipe being of standard OD but having a section of increased ID at the upper end to receive the plastic sleeve. The lower end of the lead pipe is flanged out to hold the plastic sleeve in place. The upper end of the lead pipe may be turned down over a flange.



### 3,479,061
### PARTIALLY BALANCED FLEXIBLE PIPE JOINT

**Arthur L. Smookler, Rte. 4, Box 367, Annapolis, Md. 21401, and Floyd E. Gruber, 5004 Lindsay Road, Baltimore, Md. 21219**
**Continuation-in-part of application Ser. No. 364,039, Apr. 30, 1964. This application Sept. 23, 1966, Ser. No. 592,696**
**Int. Cl. F16l** *19/02, 21/00*
**U.S. Cl. 285—94** **10 Claims**

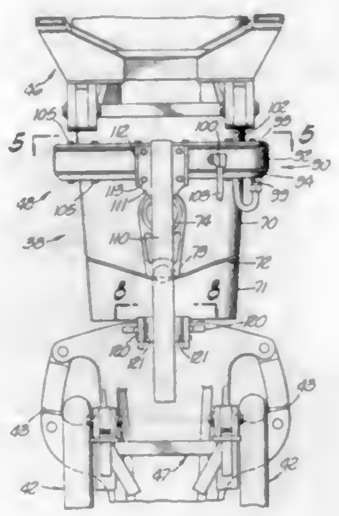


A flexible pipe joint of the ball and socket type in which flexibility is provided by the use of two concentric ball and socket pairs and fluid passages are provided between the interior of the pipes and the joint between the outer ball and socket pair, the axial area acted on by the fluid in these passages being selected to provide a partial pressure balance across the joint.

### 3,479,062
### FLUID CONDUCTOR MEANS FOR HOOK-MOUNTED ELEVATOR

**Edward J. McFadden, Houston, Tex., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware**
**Filed Dec. 4, 1967, Ser. No. 687,829**
**Int. Cl. F16l** *27/00, 33/16*
**U.S. Cl. 285—98** **10 Claims**

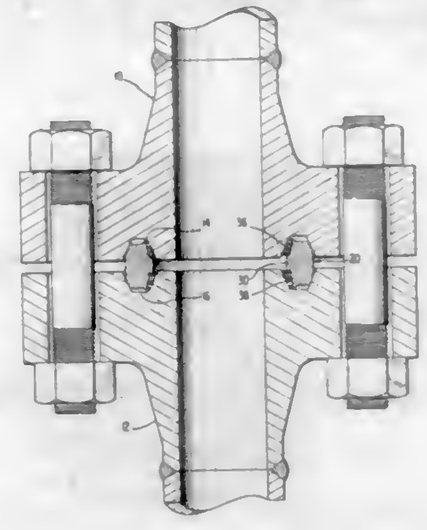
A device for conducting fluid from a swiveling hook to a fluid-operated elevator suspended therefrom, the device including a swiveling fluid-conducting manifold



to preclude entanglement of fluid lines extending from the hook to the elevator during their relative rotation.

### 3,479,063
### FLUID PRESSURE TIGHTENED JOINT

**Clarence Leo Raver, Houston, Tex., assignor to Flex-Float Engineering Company, Houston, Tex., a corporation of Texas**
**Continuation-in-part of application Ser. No. 495,521, Oct. 13, 1965. This application Dec. 24, 1968, Ser. No. 787,307**
**Int. Cl. F16l** *33/16*
**U.S. Cl. 285—108** **9 Claims**

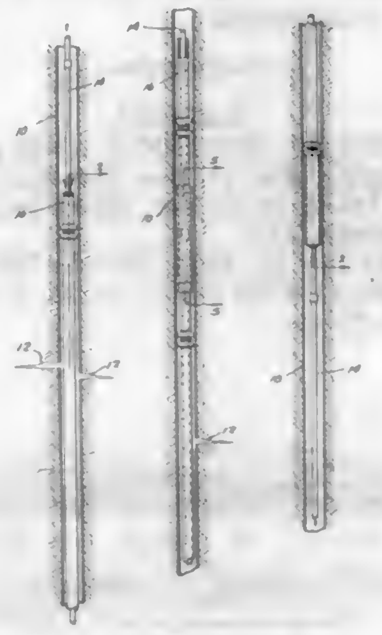


In a fluid pressure tightened joint between two hollow members having opposed grooved flanges and means to prevent separation of the flanges, an annular carrier member is provided, the peripheral surfaces of which carry sealing rings which sealingly mate with such surfaces and the peripheral surfaces of the grooves.

### 3,479,064
### RETRIEVABLE VENTED PACKER FOR OIL WELLS

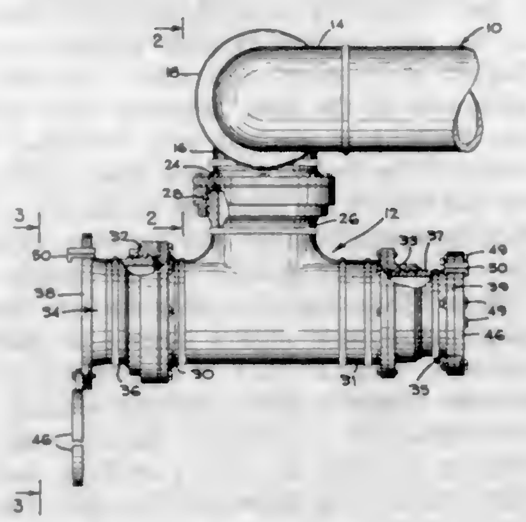
**Weldon W. Hickey, 401 W. Fowler, Medicine Lodge, Kans. 67104**
**Filed July 7, 1967, Ser. No. 651,727**
**Int. Cl. F16l** *17/00, 33/16, 47/00*
**U.S. Cl. 285—111** **5 Claims**

Concentric tubes spaced and secured together by radial teeth extending therebetween to provide concentric passageways for gas and oil. The inner tube exceeds the outer tube in length. The outer tube has at one end a slidably mounted sleeve for engagement with a similar outer tube of an adjacent unit. The outer tube has external sealing rings adjacent to but spaced from each end. The inner tubes of adjacent units are spliced together and the splice is covered by said slidable sleeve.



### 3,479,065
### COUPLING DEVICE FOR FLUID CONDUCTING CONDUITS

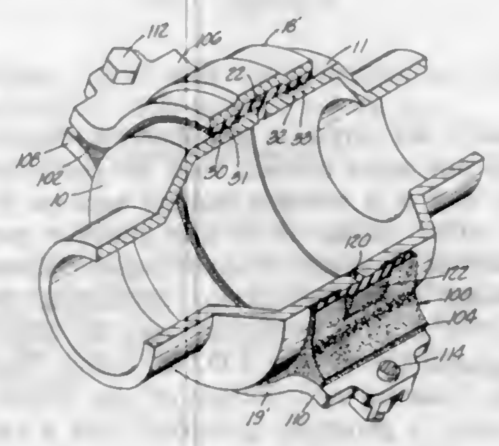
**Allan R. Bahlke, Fullerton, and George W. Bloomquist, Long Beach, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware**
**Filed Jan. 3, 1968, Ser. No. 695,374**
**Int. Cl. F16l** *39/00, 41/00*
**U.S. Cl. 285—151** **5 Claims**



A coupling device for conduits, which makes it possible to connect a conduit to other conduits having terminal flanges of a different size, without need to interpose adaptors, and which comprises a first conduit section, a second conduit section with one of its ends disposed coaxially with and adjacent to one end of said first conduit section, coacting means on the adjacent ends of said first and second conduit sections to establish a swivel connection therebetween, a plurality of conduits branching off radially from said second conduit section, annular connection flange structures of different diametrical sizes arranged adjacent the open ends of said branch conduits coaxially therewith, and coacting means on the open ends of said branch conduits and their respective flange structures to establish swivel connections therebetween. Pivotally supported from the edge of each of said flange structures is a closure disc which may be swung from a position wherein it is completely withdrawn from the central opening of the annular flange structure to a position wherein it completely covers said central opening.

### 3,479,066
### PIPE COUPLING

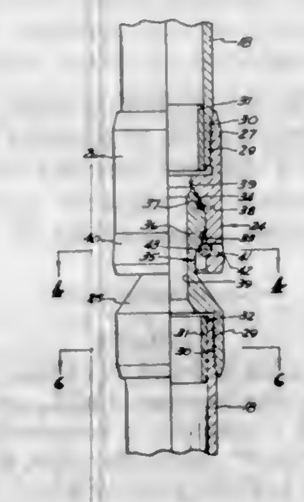
**Morris Gittleman, 8232 Blackburn Ave., Los Angeles, Calif. 90048**
**Continuation-in-part of application Ser. No. 602,744, Dec. 19, 1966. This application July 3, 1967, Ser. No. 650,705**
**Int. Cl. F16l** *21/00, 21/02, 19/00*
**U.S. Cl. 285—236** **13 Claims**



A pipe coupling particularly adapted for coupling together the ends of pipes that may or may not have annular end ribs, i.e. spigots. The coupling embodies a gasket into which the ends of the pipes are fitted and rigid clamping members clamp around the gasket. The gasket has diametrically opposed extending ears which are clamped between mating lugs on the clamping members. The gasket is made with an integral external annular rib or separate bands which fit into a shallow internal annular recess in the clamping members to compensate for the absence of end ribs on the pipes.

### 3,479,067
### FLEXIBLE COUPLING

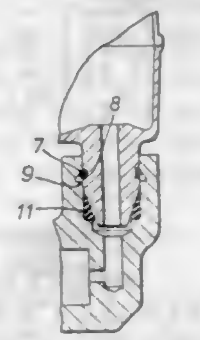
**Ernest L. Potts, Houston, Tex., assignor to Cicero C. Brown, Houston, Tex.**
**Filed May 6, 1968, Ser. No. 726,696**
**Int. Cl. F16l** *27/04, 37/00*
**U.S. Cl. 285—261** **4 Claims**



A flexible coupling for connecting together lengths of injector tubing which may be wound about a reel. The coupling is formed of a male member and a female member, one being attached to each end of the tubing. The female member has a socket portion receiving a generally ball-shaped pin portion of the male member. A sealing element estatblishes a seal between them. A flexible locking strip is inserted in an aperture of the socket portion and extends around an internal groove therein to secure the coupling together.

### 3,479,068
### PERMANENTLY COUPLED ASSEMBLIES

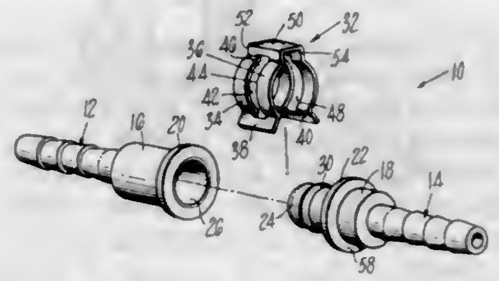
**Frank Eustace Brittain, Birmingham, England, assignor to Girling Limited, Tyseley, Birmingham, England**
**Continuation of application Ser. No. 576,484, Aug. 31, 1966. This application Oct. 31, 1968, Ser. No. 772,437**
**Claims priority, application Great Britain, Sept. 3, 1965, 37,869/65**
**Int. Cl. F16l** *39/00, 35/00*
**U.S. Cl. 285—321** **3 Claims**



The invention resides in a permanent sealed coupling for an hydraulic master cylinder and a reservoir therefor. The reservoir has a spigot with a conical nose portion which is received in a socket in the master cylinder. The socket has an outwardly facing shoulder at its inner end. The parts are locked together by a resilient split ring engaged in confronting grooves in the spigot and socket, and are sealed by an annular sealing member of resiliently compressible material surrounding the nose portion and held in compressed condition between the nose portion and the socket shoulder. Preferably, the sealing member is of rectangular cross-section in its free condition.

### 3,479,069
### CONNECTOR ASSEMBLY

**Jason K. Sedam, Atlanta, Ga., assignor to Amseco Corporation, Long Island City, N.Y., a corporation of New York**
**Filed Oct. 20, 1967, Ser. No. 676,845**
**Int. Cl. F16l** *37/08, 19/00*
**U.S. Cl. 285—364** **4 Claims**



An assembly including a pair of radially flanged fittings and a snap-on spring clip for maintaining the same in coupled engagement, the spring clip being formed of a single strap of resilient sheet material precisely slotted to form a pair of integrally joined retaining arms having spaced opposed inner edges for effecting edge contact engagement with exposed faces of the flanged fittings, the arms each being of generally flat rectangular cross section dimensioned to extend axially of the fittings a sufficient distance to effectively resist high intensity longitudinal stresses.

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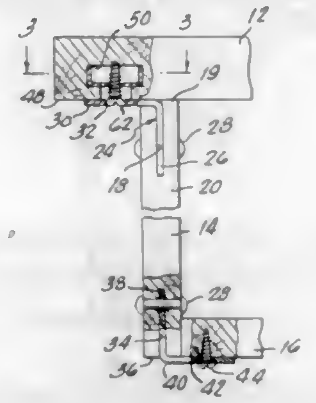
### 3,479,070
### STRUCTURE FORMED OF JOINED PANELS

**Jack M. Marateck, 785 Mace Ave. 10467, and Harold Marateck, 1075 Nelson Ave. 10452, both of Bronx, N.Y.**

**Filed May 22, 1967, Ser. No. 643,016**
**Int. Cl. F16b** *7/00, 5/00, 9/00*
**U.S. Cl. 287—20.92** **3 Claims**



Means joining two panels set at an angle to one another comprising an angle bar, a groove formed in a face of one of the panels, fastener means engaging means held in the groove; one side of the angle bar having openings for fastener means formed therein in register with the engaging means; said side of the angle bar disposed over said groove, with fastener means passed through the openings and engaged in the engaging means; the other side of the angle bar secured to the other of the panels in the same or similar manner.

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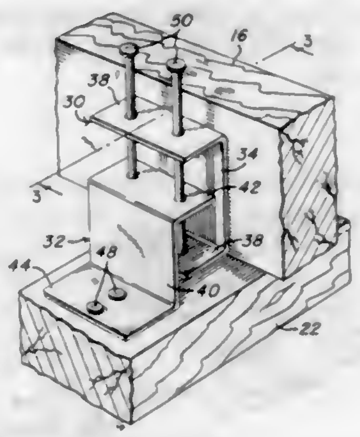
### 3,479,071
### CONNECTOR UNIT

**Wilbur H. Downing, 921 Porter Ave., Dayton, Ohio 45407**

**Filed Sept. 23, 1965, Ser. No. 489,634**
**Int. Cl. F16b** *7/00, 5/00, 9/00*
**U.S. Cl. 287—20.94** **3 Claims**



Connector device for connecting a pair of adjacent members together so that relative motion therebetween can take place in one direction only in which pin means is fixed to one member and extends therefrom in said one direction while and element reciprocable on the pin means is fixed to the other member in spaced relation to said one member and the pin means has head means thereon spaced from the said element.

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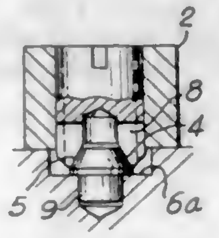
### 3,479,072
### POSITIVE LOCKING, NONMARRING SET SCREW

**John Kosar, % Anchor Engineering Co., 29—09 Bridge Plaza N., Long Island City, N.Y. 11101**

**Continuation-in-part of applications Ser. No. 259,454, Feb. 18, 1963, and Ser. No. 860,816, Dec. 21, 1959. This application June 20, 1966, Ser. No. 558,929**
**Int. Cl. F16d** *1/06;* **B60b** *27/06;* **F16c** *3/10*
**U.S. Cl. 287—52.08** **9 Claims**



Applicant's set screw is non-marring because it generally does not make contact with the peripheral surface of a shaft, and it is positive locking because it indirectly locks the collar to the shaft in a positive manner, i.e. without play or backlash. The shaft generally is provided with a bored radial recess for permitting the end of screw to enter it an amount sufficient for allowing a full thread engagement at the I.D. of collar without contacting the diameter and bottom of the recess. The bottom of recess is generally provided with a central hole for a press-fit or wedging engagement of one end of a locking pin whose other end is usually made conical for engagement of a conical cavity provided in screw end. Tightening of screw locks the pin to the screw or to both the shaft and the screw.

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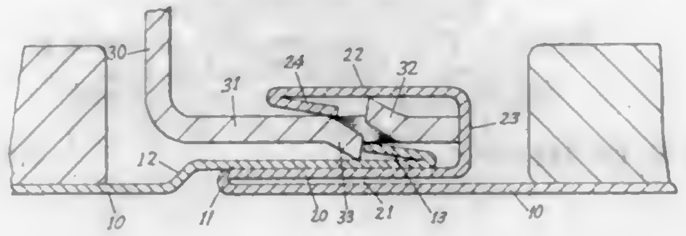
### 3,479,073
### BUILDING PANEL SYSTEM

**Howard W. Collins, % Armco Steel Corporation, Middletown, Ohio 45042**

**Filed Feb. 16, 1966, Ser. No. 527,881**
**Int. Cl. F16b** *1/00, 5/00, 7/00*
**U.S. Cl. 287—189.36** **2 Claims**



Building panel system including panel members having adjacent edges configured to fit together in interdigitating relationship, with a support member extending between interdigitated portions of adjacent panels and locking them together against forces acting in any of three directions.

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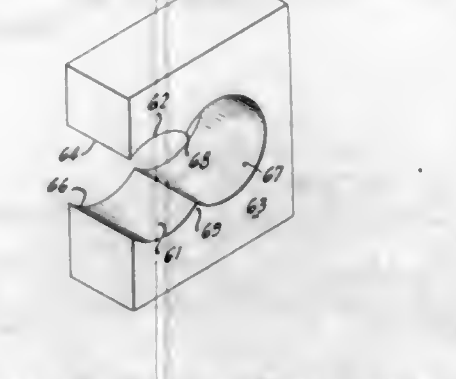
### 3,479,074
### LOCK MOUNTING

**Ernest L. Schlage, Burlingame, Calif., assignor to Schlage Lock Company, a corporation**

**Filed Feb. 15, 1967, Ser. No. 616,328**
**Int. Cl. E05b** *9/08;* **E05c** *21/00*
**U.S. Cl. 292—1** **1 Claim**

A lock mounting to receive a lock set in a door stile having parallel usually upright side surfaces and a usually upright end surface merging with the side surfaces, the mounting including surfaces that can be characterized by the movement of a generatrix such as a right line always moving parallel to itself and normal to said side surfaces and travelling through said end surface to afford break-out edges, all of said surfaces together defining a socket to receive at least part of a lock set.



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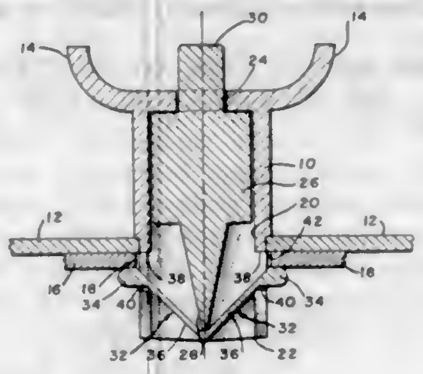
### 3,479,075
### LATCHING DEVICE

**Joel E. Swanno, Aloha, Oreg., assignor to Tektronix Inc., Beaverton, Oreg., a corporation of Oregon**

**Filed Dec. 19, 1966, Ser. No. 602,870**
**Int. Cl. E05c** *19/06;* **A44b** *17/00*
**U.S. Cl. 292—19** **9 Claims**



A latching device for a closure member or lid of a cabinet includes a plastic body attached to the closure member and within which a longitudinally movable latch member is slidably carried. The latch member supports resilient arms extending through side apertures in the body for engaging the underside of the cabinet surface in a locking position. The resilient arms provide shear sections under the cabinet's surface between the cabinet surface and edges of the aforementioned apertures for preventing undesired opening of the closure member. The body of the latching device is provided with hand gripping means which may be grasped for opening the closure member, while at the same time one end of the latch member is depressed for moving the resilient arms out of locking position.

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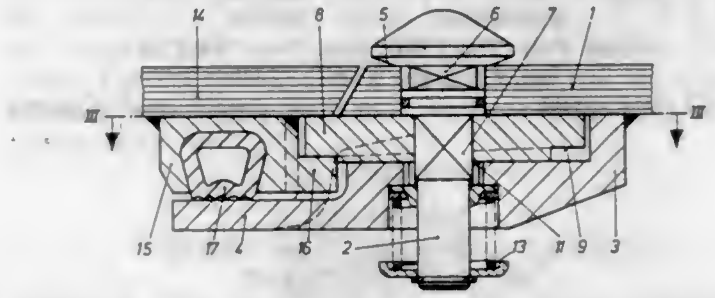
### 3,479,076
### LOCK FOR GAS AND WATERTIGHT CLOSING OF FLAPS, GATES, DOORS AND THE LIKE

**Hans-Georg Schallehn, Kassel, Germany, assignor to Rheinstahl Henschel Aktiengesellschaft, Kassel, Germany**

**Filed June 10, 1968, Ser. No. 735,650**
**Claims priority, application Germany, June 10, 1967, R 46,221**
**Int. Cl. E05c** *5/02;* **B65d** *45/00*
**U.S. Cl. 292—67** **7 Claims**

Locking device for locking a closure member in closed relation to an aperture and a wall in which a disc is rotatably mounted on the wall and has an inclined surface on the side facing away from the wall for engaging a lip projecting from a rigid member forming a part of the closure member. The disc is non-rotatably mounted on a bolt which is reciprocable against a spring force in the wall. When the bolt is released to the spring force it engages a hole in a support housing therefor which is fixed to the wall and is locked against rotation. When the bolt is pushed toward the wall against the force of the spring, it is released from the hole and can be rotated to rotate the disc between locking and unlocking positions.



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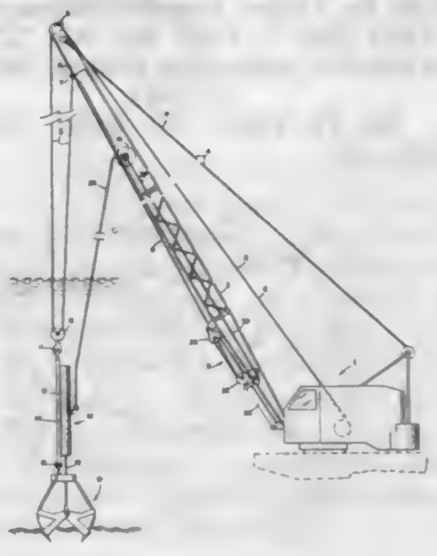
### 3,479,077
### HYDRAULICALLY ACTUATED BUCKET CLOSING MEANS

**Robert W. Martin, 7102 NE. 63rd Ave., Vancouver, Wash. 98661, and John R. Spears, 9 McCain St., Astoria, Oreg. 97103**

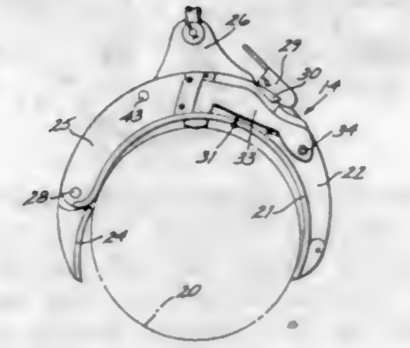
**Continuation-in-part of application Ser. No. 653,460, July 14, 1967. This application Sept. 24, 1968, Ser. No. 767,913**
**Int. Cl. B66c** *3/16*
**U.S. Cl. 294—70** **16 Claims**



A hydraulically actuated cylinder adapted for suspension from the hoisting line of a crane and having its piston rod attached to a closing pennant of a clam shell bucket, to permit closing force to be exerted on the clam shell bucket in place of the usual drum powered closing line which conventionally is reeved through a block and tackle closing arrangement. The crane's closing line instead actuates a second hydraulic cylinder to cause pressurized fluid to be directed to the first mentioned hydraulic closing cylinder. The closing cylinder is supported within a housing carried by the crane's hoisting line, the housing being hingedly connected to the bucket to permit proper bucket positioning relative to the dredged material and regardless of obstructions or incline of the dredging area. The invention may alternately be used for precise hoisting or discharging of other heavy loads through remote control of the closing cylinder. An engine driven source of hydraulic pressure may be put in circuit with the closing cylinder to permit dispensing with the normal closing line of the crane and wherein closing of the clam shell bucket will be through a valve control.

### 3,479,078
### AUTOMATIC LATCH AND LOCKING TONGS

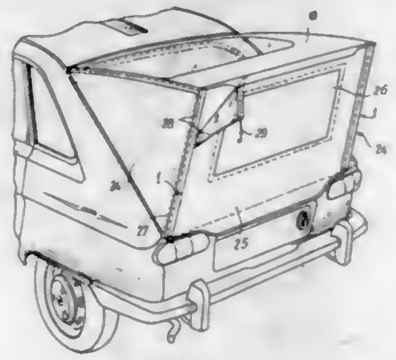
**John T. Doty, 9936 East Ramona Ave.,**
**Bellflower, Calif. 90706**
**Filed Feb. 28, 1968, Ser. No. 708,934**
**Int. Cl. B66c** *1/62, 3/10*
**U.S. Cl. 294—104 7 Claims**



When handling large cylindrical objects in order to raise or lower them a means is provided to engage or disengage the tongs from the cylindrical object by means of a mechanism engaged by the cylindrical object when the tongs strike the same, also resting the weight of the tongs on the cylindrical object it is not possible to disengage them without a manual manipulation.

### 3,479,079
### DEVICES FOR CONVERTING A PASSENGER AUTOMOBILE INTO A UTILITY VEHICLE

**Roger Coursault, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France**
**Filed May 7, 1968, Ser. No. 727,243**
**Claims priority, application France, May 19, 1967, 107,083**
**Int. Cl. B60j** *7/10;* **B62d** *33/04*
**U.S. Cl. 296—26 4 Claims**

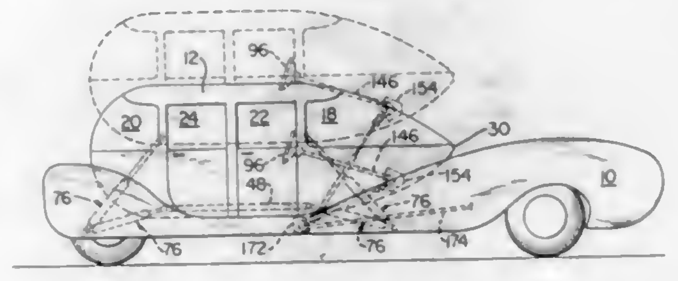


A movable frame structure comprising two substantially triangular rod assemblies mounted on the lower edge of the opening of the rear luggage compartment of the vehicle and holding the rigid vertical panel thereof in its substantially horizontal raised position, and flexible panels tensioned on this frame structure and closing the rear of the vehicle.

### 3,479,080
### SAFETY CONSTRUCTION FOR VEHICLES

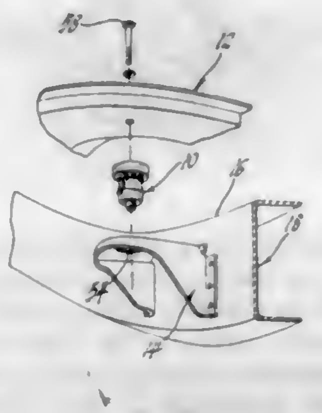
**Harlan D. Hilfiker, 12195 W. Ohio Place,**
**Denver, Colo. 80228**
**Filed Mar. 8, 1967, Ser. No. 621,694**
**Int. Cl. B60r** *21/02;* **B62d** *1/18*
**U.S. Cl. 296—35 2 Claims**

The invention is a safety construction for automobiles in which the body is detachably mounted to the chassis, the body resting on a cradle-shaped upper surface of the chassis so that upon a high speed impact of the vehicle with another object the body separates completely from the forward end of the chassis traveling in an upward direction to gradually decelerate the body and passengers. The forward end of the body is of bullet-shaped design to provide deflection of the body from its line of travel if another object is contacted by the curving surfaces of the bullet-shaped forward end, thus preventing instantaneous deceleration to zero as occurs in head-on collisions. The vehicle may be operated with the body at different elevations and is provided with a safety oriented collapsible steering mechanism.



### 3,479,081
### BODY MOUNT

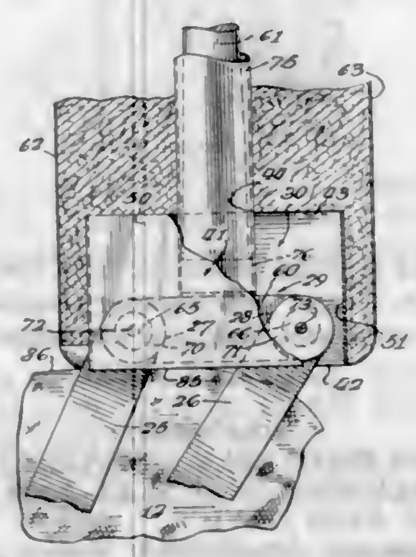
**Henry W. Schaaf, Ortonville, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Apr. 22, 1968, Ser. No. 722,963**
**Int. Cl. B62d** *23/00, 27/04*
**U.S. Cl. 296—35 4 Claims**



A body mount includes an annular elongated metal member having a series of expandable ribs adjacent an internally threaded end thereof. An annular body of elastomeric material surrounds the annular member and includes an annular flange adjacent the other end of the elongated member. Wear plates are bonded to the surfaces of the flange and one of the plates includes depending lateral tabs which are bonded to thin upper portions of integral elastomeric ribs extending from the flange. The lower portions of the ribs taper axially and circumferentially and extend over the portion of the elastomeric body covering the expandable ribs. The flange fits between the frame and the body and the tabs are received within slots opening to the aperture in the frame through which the expandable ribs extend. When a bolt is threaded into the threaded end of the elongated member to expand the ribs, the portion of the elastomeric body covering the ribs is compressed against the frame and the tabs block rotational movement of the mount as it is being expanded. The one wear plate, the tabs, and the upper edges of the lower portions of the ribs provide for reverse usage when there is no access to the bolt through the body.

### 3,479,082
### ENCLOSED BACK REST COUPLING FOR WALK-OVER SEAT

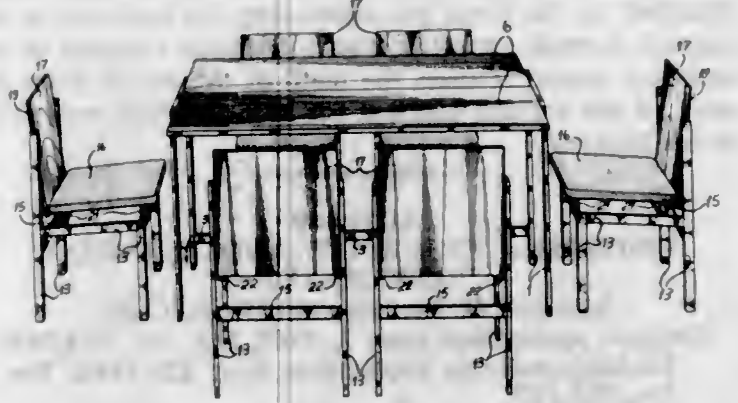
**Raymond A. Bilancia, Palatine, Ill., assignor to Coach and Car Equipment Corporation, Elk Grove Village, Ill., a corporation of Illinois**
**Filed Mar. 6, 1968, Ser. No. 710,928**
**Int. Cl. B60n** *1/06*
**U.S. Cl. 297—103 6 Claims**



Walk-over seat having back rest movable between front end and rear end of seat cushion. Back rest coupled to upper ends of two pairs of levers, one pair extending vertically on each side of seat cushion, with each lever having lower end pivotally connected to seat base. Coupling at upper ends of levers engaging back rest and enclosed entirely within back rest. Back rest has recess at bottom corner into which lever upper ends extend. Coupling has lower portion in recess and upper portion within higher part of back rest. Both coupling portions are substantially vertically aligned with no offsets therebetween. Entire bottom surface of back rest lies in one plane extending from side end to side end of back rest. Bottom surface of back rest abuts top surface of seat cushion when back rest is at either end of seat cushion.

### 3,479,083
### CONVERTIBLE WOODEN FURNITURE

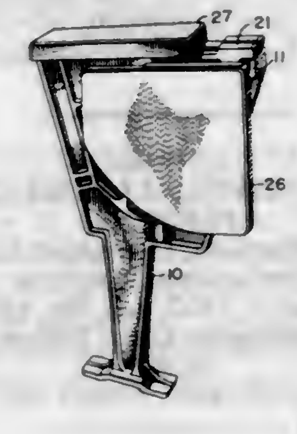
**Percival Lafer, Sao Paulo, Brazil, assignor to Movels Lafer Ltda., Sao Paulo, Brazil, a sociedade por quotas de responsabilidada limitada of Brazil**
**Filed July 10, 1967, Ser. No. 652,160**
**Claims priority, application Brazil, Oct. 13, 1966, 183,622**
**Int. Cl. A47c** *13/00, 3/04;* **A47b** *83/02*
**U.S. Cl. 297—118 8 Claims**



A combination table and chair unit that converts into a buffet unit. The table-top board comprises two halves, one of which is pivotally attached to a supporting frame structure, with the two halves being hinged together. The two halves lie in a coplanar relationship to form a table-top, but in the buffet position, the two halves fold together and pivot to a position within the outline of the supporting frame structure. An even number of chairs are provided, each having a folding back and a folding seat. The seat and the back swing rearwardly and downwardly until the back lies within the outline of a pair of vertical back support members and the seat rests against the back. In the buffet position, the folded chairs are stacked in pairs in a side-by-side relationship beneath the folded top board. A first folded chair of each pair is inverted and superimposed over the second folded chair. The rearward face of the back of the lower chair of each pair forms part of a vertical front face of the buffet unit.

### 3,479,084
### CHAIR AND FOLDING TABLET ARM STRUCTURE

**Arthur L. Van Ryn, Grand Rapids, Mich., assignor to American Seating Company, Grand Rapids, Mich., a Corporation of Delaware**
**Filed Jan. 12, 1968, Ser. No. 697,382**
**Int. Cl. A47b** *39/00, 83/02*
**U.S. Cl. 297—162 6 Claims**

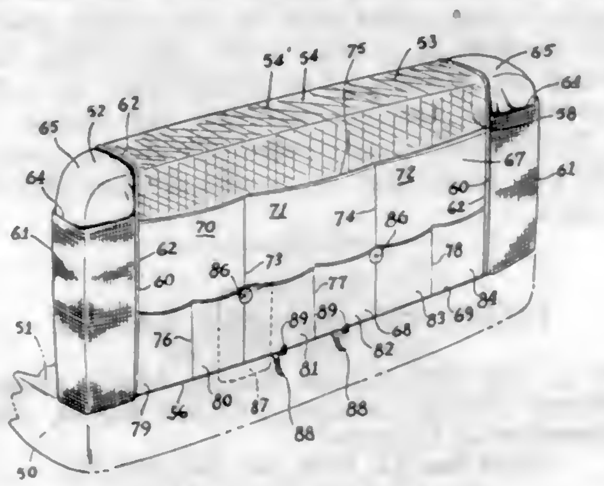


In a chair and folding tablet arm assembly, a standard pivotally carries a tablet arm support for movement to upper and lower positions, and a cross pivot maintains the table arm upon the arm support for movement to and from a horizontal position over the standard. A spring-urged finger, preferably formed of nylon, is energized when the support is initially moved upward, but a cam inactivates the spring finger when the tablet arm is in the raised position, the cam, however, being shaped to release the finger when the arm support is lowered, thus permitting the energized finger to push the tablet arm positively into stored and unobstructing position.

### 3,479,085
### SLIP COVER TYPE OF ARTICLE CARRIER

**Elaine Weinstein, 218 McKinley Ave.,**
**Kenmore, N.Y. 14217**
**Continuation-in-part of application Ser. No. 621,040, Mar. 6, 1967. This application Feb. 7, 1968, Ser. No. 710,423**
**Int. Cl. A47c** *31/00, 7/62*
**U.S. Cl. 297—219 4 Claims**

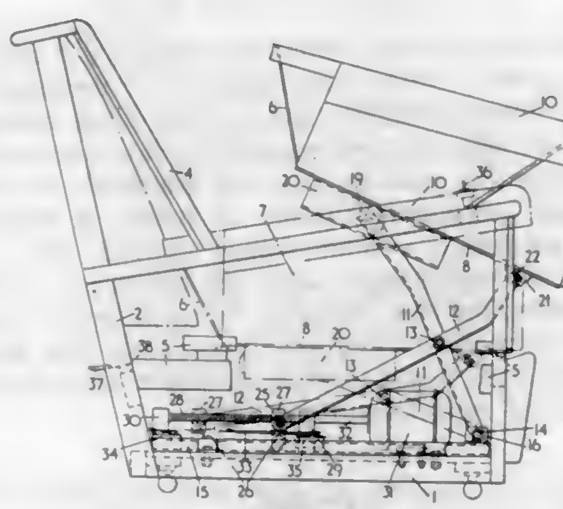
An universal slip cover type of article carrier for mounting and demounting on the back of an automobile seat formed of a first flexible panel of substantially rectangular configuration which has opposite sides and opposite ends and which is folded over on itself so as to provide a front and a back, an elastic side panel having its edges sewn to each pair of adjacent edges of the front and back with said elastic side panels terminating short of said fold for leaving open spaces at said fold to permit said slip cover to snugly fit various corner configurations of automobile seat backs, a second panel of substantially rectangular configuration extending across the entire width of said back and being of a first height, a third substantially rectangular panel extending substantially across the entire width of said back and being of a second height which is less than said first height, first seams attaching said elastic panels and said second and third rectangular panels to said edges of said back, and a plurality of second seams extending substantially parallel to said first seams for dividing said second and third rectangular panels into a plurality of pockets, and buttons sewn on said back of removably holding disposable litter bags.



**3,479,086**

### CHAIR FOR PHYSICALLY HANDICAPPED PERSONS

**Vernon Arthur Sheridan, Houseboat Works, Radlett, Hertfordshire, England**
**Filed Dec. 4, 1967, Ser. No. 687,657**
**Claims priority, application Great Britain, Dec. 20, 1966, 56,883**
**Int. Cl. A47c** *3/20, 1/00*
**U.S. Cl. 297—330** **2 Claims**



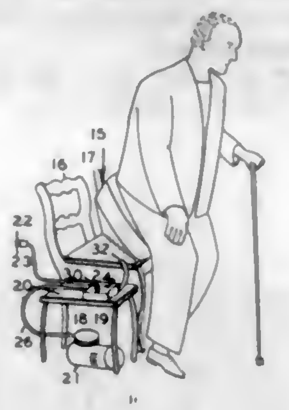
The invention consists in a chair characterized in having a frame and seat supported from the frame and lifting means for raising and tilting the seat while occupied by a person.

**3,479,087**

### PNEUMATIC POWERED SEAT ERECTOR FOR AN INVALID

**Wilbur A. Burke, 5901 Reeds Road, Mission, Kans. 66202**
**Filed Aug. 28, 1967, Ser. No. 663,690**
**Int. Cl. A47c** *7/00, 3/00;* **A61g** *7/10*
**U.S. Cl. 297—339** **3 Claims**

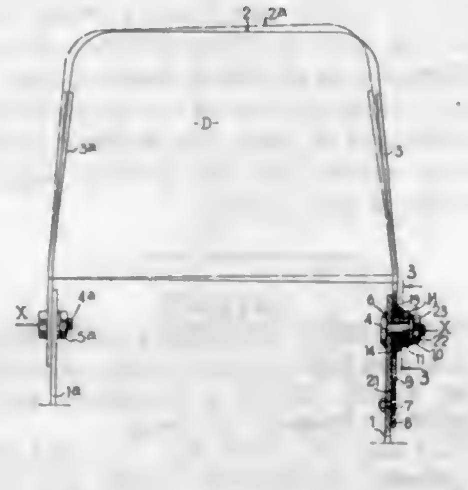
A pneumatic tube with sealed flattened end portions to act as hinges secured to respective end portions of opposed faces of seat plates. Hinges connecting the opposite end portions of the seat plates. Selective means to inflate or deflate and fold the pneumatic tube through the midlength portion thereof with a spring actuated roller. Stop members to space seat plates for the folded tube.



**3,479,088**

### DEVICE FOR PIVOTABLY MOUNTING IN INCLINABLE BACKREST OF A SEAT AND A SEAT INCLUDING SAID DEVICE

**Michel Bonnaud, Montbeliard, France, assignor to Automobiles Peugeot, a France body corporate, Paris, France, and Regie Nationale des Usines Renault, a French body corporate**
**Filed Dec. 26, 1967, Ser. No. 693,219**
**Claims priority, application France, Jan. 9, 1967, 90,363**
**Int. Cl. B60n** *1/06*
**U.S. Cl. 297—373** **7 Claims**



A pivotal device for pivoting an inclinable backrest to the fixed support of a seat, the device including a toothed sector engageable with a toothed locking element fixed to the support, the toothed sector being mounted on the pivot pin connecting the backrest to the support through eccentric means whereby rotation of the eccentric means releases the teeth of the sector from the teeth of the locking element for adjusting the inclination of the backrest.

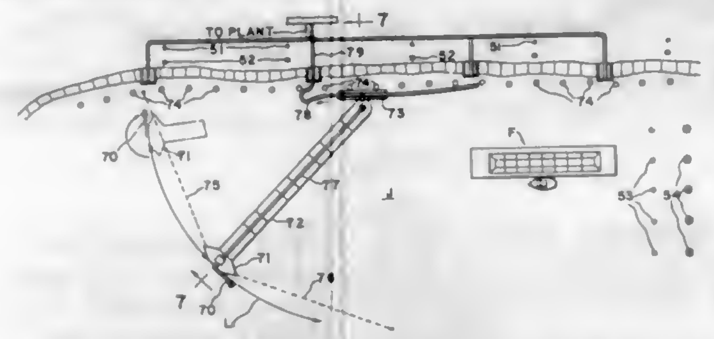
**3,479,089**

### UNDERSEA STOCKPILE AND BLENDING APPARATUS

**Manfred G. Krutein, San Diego, Calif.**
**Original application June 7, 1965, Ser. No. 461,785. Divided and this application Apr. 22, 1968, Ser. No. 723,187**
**Int. Cl. E02f** *7/00, 3/88;* **B65g** *57/00*
**U.S. Cl. 299—9** **8 Claims**

Apparatus is disclosed for reclaiming and blending material in an underwater mineral stockpile including a patterned area, a dredging means and means for moving the dredging means across the patterned area for reclaiming

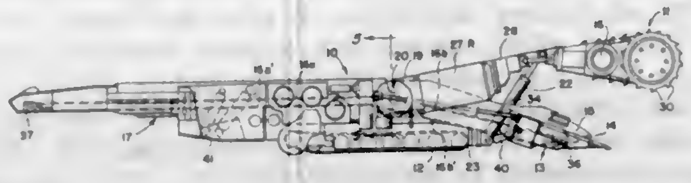
minerals from underwater stockpile. The means for transporting the dredging means can be a plurality of dolphins at the side of the stockpile, a platform adapted for floatable attachment to a pair of dolphins with a floatable pontoon attached thereto and supporting the dredging means.



**3,479,090**

### CONTINUOUS MINING MACHINE WITH PIVOT STRUCTURE FOR MINING HEAD, GATHERING HEAD AND CONVEYOR BOOM

**William E. McCracken, Groveport, Ohio, assignor to Jeffrey Galion Manufacturing Company, a corporation of Ohio**
**Filed Apr. 8, 1968, Ser. No. 719,385**
**Int. Cl. E21c** *25/14, 35/02*
**U.S. Cl. 299—64** **10 Claims**

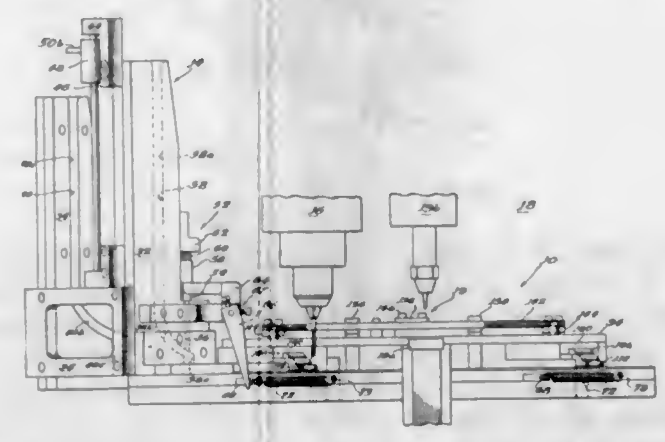


A continuous mining machine that has a mining head and a gathering head at the front of the machine, and a conveyor that extends longitudinally of the machine from the gathering head to the rear end of the machine. The mining head, the gathering head and the discharge boom of the conveyor are mounted and supported on the machine main frame on a pivot structure with a common transverse axis for the elements. Each of the mining head, the gathering head and the conveyor boom is adjustable upwardly and downwardly on the pivot structure.

**3,479,091**

### BRUSH BLANK FEEDING APPARATUS

**Harold J. Hazelton, Batavia, Ill., assignor to Carlson Tool & Machine Co., a corporation of Illinois**
**Filed Mar. 15, 1967, Ser. No. 623,373**
**Int. Cl. A46b** *3/08;* **B65g** *47/04, 11/20*
**U.S. Cl. 300—3** **18 Claims**

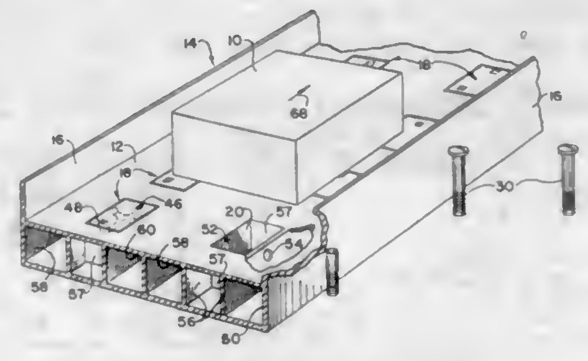


A brushmaking machine wherein brush blanks are successively fed to fabricating stations between the jaws of a chain-like conveyor. The brush blanks are normally loosely gripped except at the fabricating stations where members move from a retracted position to embrace the brush blanks and positively hold them in registration at the fabricating stations. Also, an improvement in the brush blank feeding means wherein the opposite ends of the brush blanks are held in stacked array in channels, one of which follows a more tortuous path than the other for absorbing dimensional differences in the different ends of the brush blanks.

**3,479,092**

### CONVEYING APPARATUS

**Alan Ward, 160 Clearview Drive, East Greenwich, R.I. 02818**
**Filed Feb. 7, 1968, Ser. No. 703,656**
**Int. Cl. B65g** *51/02*
**U.S. Cl. 302—29** **11 Claims**

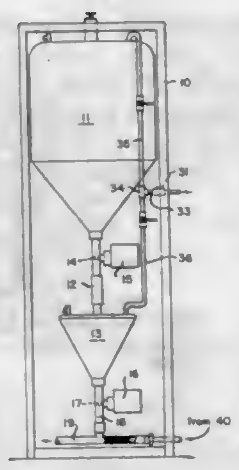


Apparatus involving no moving parts for supporting an article above a surface and enabling it to be easily moved from one position to another. When the article is positioned over an actuating device located beneath the surface, pressurized fluid is introduced into a zone between the article and the surface for supporting the article but the flow of fluid into the zone ceases when the article is moved to a position beyond the actuating device.

**3,479,093**

### INOCULATION FEEDERS

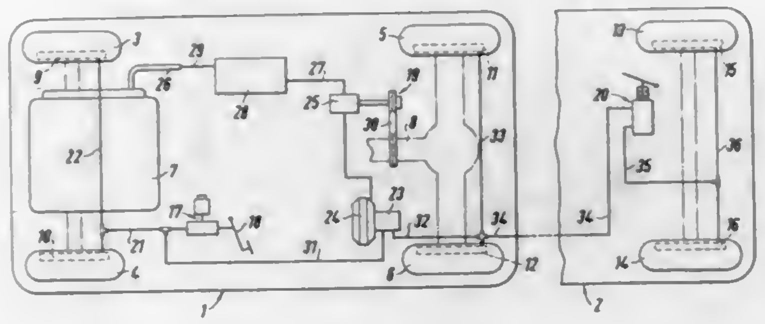
**Everett W. Hale, Falconer, N.Y., assignor to Blackstone Corporation, a corporation of New York**
**Filed Apr. 27, 1967, Ser. No. 634,171**
**Int. Cl. B65g** *53/12*
**U.S. Cl. 302—40** **8 Claims**



An inoculation feeder for feeding solid finely divided materials into a molten metal bath including a storage receptacle for fine particle materials, a pressure batch injection receptacle connected to the storage receptacle and receiving particles from said storage, a first valve means between the two receptacles controlled by a timed valve controller to meter a preselected quantity into the batch injector, a second valve means at the outlet of the batch ejector connecting to an injection line, a source of fluid pressure connected to and acting to regulate the pressure of the two receptacles and a third valve between the source of fluid pressure and the injector line whereby material entering the injector line is carried by a moving stream of pressure fluid into the molten metal bath.

### 3,479,094
### FLUID PRESSURE BRAKING SYSTEMS FOR TRACTOR-TRAILER VEHICLES

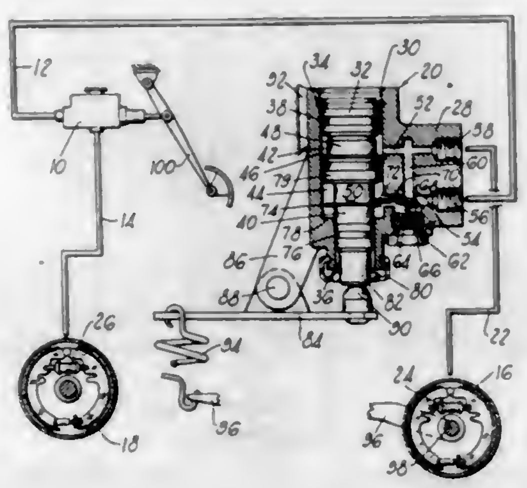
**Leslie C. Chouings, Leamington Spa, England, assignor to Automotive Products Company Limited, Leamington Spa, England**
**Filed Apr. 4, 1967, Ser. No. 628,460**
**Claims priority, application Great Britain, Apr. 7, 1966, 15,635/66**
**Int. Cl. B60t** *8/12, 8/22*
**U.S. Cl. 303—7 9 Claims**



A hydraulic or pneumatic braking system for a tractor-trailer combination vehicle, said system incorporating sensing devices for controlling the supply of pressure fluid to the brakes of selected wheels of the tractor and trailer, one of said sensing devices being responsive to change in motion of a wheel or wheels, for example rapid deceleration which is likely to be followed by wheel locking, the other sensing device being responsive to vehicle loading.

### 3,479,095
### PROPORTIONING VALVE

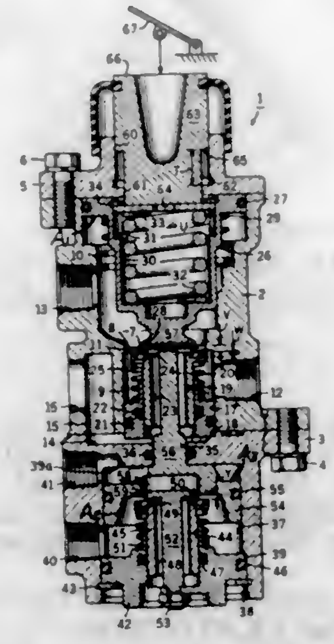
**Richard L. Lewis, St. Joseph, and Donald W. Smith, Williamston, Mich., assignors to The Bendix Corporation, a corporation of Delaware**
**Filed Dec. 29, 1967, Ser. No. 694,544**
**Int. Cl. B60t** *8/22*
**U.S. Cl. 303—22 5 Claims**



A hydraulic brake pressure modifying device interposed between a pressure generating device and a fluid motor having pressure responsive means with a different area exposed to the actuating pressure than that which is exposed to the pressure of the motor controlling a tilt valve regulating the bypass of fluid through the device.

### 3,479,096
### CONTROL VALVE

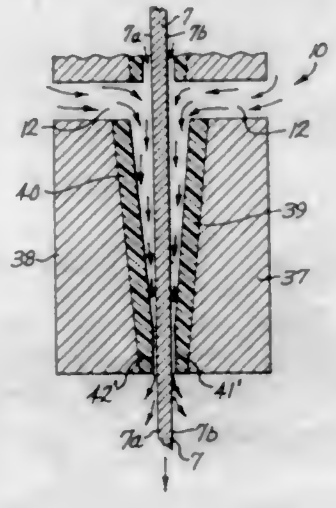
**Oliver B. Cruse, Florissant, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware**
**Filed May 31, 1968, Ser. No. 733,467**
**Int. Cl. B60t** *15/04*
**U.S. Cl. 303—54 10 Claims**



A control valve having a force responsive member movable to apply service air to the service portion of a spring set braking mechanism to effect the normal service braking effort thereof and another member driven by the force responsive member upon failure of the service air to exhaust emergency air from the emergency portion of the spring set braking mechanism to effect the spring setting or emergency braking effort thereof, and means for limiting the movement of the force responsive member to controllably proportion the service and emergency braking effort of the spring set brake mechanism upon the simultaneous delivery of the service air to the service portion and the exhaustion of the emergency air from the emergency portion.

### 3,479,097
### FLUID GUIDE MEANS

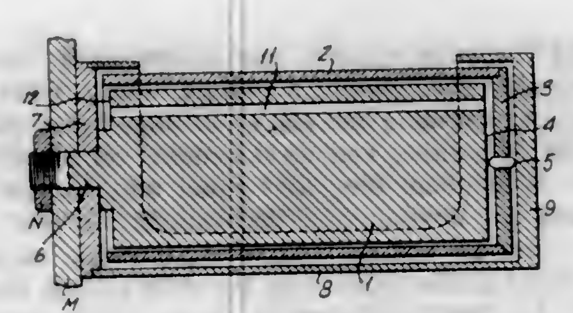
**Thomas A. McLauchlan and Louis R. Fairfield, Jr., Longview, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington**
**Filed Dec. 27, 1966, Ser. No. 604,724**
**Int. Cl. F16c** *1/24, 33/10;* **B26d** *1/54*
**U.S. Cl. 308—5 6 Claims**



Disclosed is a means for guiding moving planar surfaces such as circular or band saws. Sloping guiding surfaces are positioned opposite surfaces of the moving band to form guiding regions. The friction of the moving band forces a fluid which is supplied to the guiding region into the decreasing area between the surfaces and thereby increases the fluid pressure with a maximum being reached at the point of minimum clearance. The fluid dampens band vibration and imposes centering forces on the band to guide it without mechanical contact with the guide.

### 3,479,098
### HYDRODYNAMIC GAS BEARING ASSEMBLY

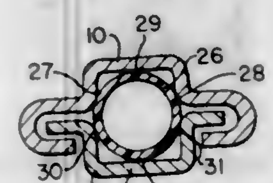
**John Kerr and Duncan Gay, Glasgow, Scotland, assignors to National Research Development Corporation, London, England, a British corporation**
**Filed Jan. 19, 1968, Ser. No. 699,083**
**Claims priority, application Great Britain, Jan. 26, 1967, 4,045/67**
**Int. Cl. F16c** *7/04, 17/16, 29/02*
**U.S. Cl. 308—9 6 Claims**



A hydrodynamic gas bearing assembly comprising a fixed shaft and a glass sleeve surrounding with clearance the fixed shaft and rotatable about the shaft. Axial movement of the glass sleeve is limited by an arrangement comprising a wall secured to the glass sleeve; the wall having projections located on the axis of rotation and directed, in opposite directions, towards the adjacent shaft end and a fixed wall supported by an arm secured to the shaft at the remote end of the shaft.

### 3,479,099
### SEAT SLIDE STRUCTURES

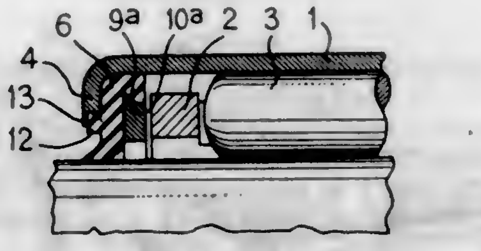
**Herbert Krause, Rockford, Ill., assignor to Atwood Vacuum Company, Rockford, Ill., a corporation of Illinois**
**Filed Nov. 20, 1967, Ser. No. 684,183**
**Int. Cl. F16c** *29/02*
**U.S. Cl. 308—3 17 Claims**



This seat slide structure has, in lieu of the usual balls and/or rollers for anti-friction bearing support of one channel on the other, a cylindrical elongated tube of plastic material, like nylon, having a slippery surface and which provides line bearing contact substantially its full length on opposed walls and on the web of the movable channel for easier seat adjustment by virtue not only of the special material used but also the lower unit bearing pressure. This construction also enables increased seat travel. Elongated bowed spring strips under the nylon tubes insure their return to cylindrical form when deformed to oval cross-section. Similar results are obtainable if the hollow plastic bearing member is of U-shaped cross-section. Also, while full length bearing members are preferred, it is possible to use two longitudinally spaced elongated bearing members. Also, the flexibility of these plastic bearing members makes them suitable for use in seat slides of arcuate channel form, high at the mid-point of length and low at opposite ends, such slides giving automatically a desirable forward inclination of the seat back with forward adjustment and rearward inclination with rearward adjustment, without the necessity for means for tilting adjustment.

### 3,479,100
### JOURNAL ROLLING BEARING HAVING A BUILT-IN SEALING ELEMENT

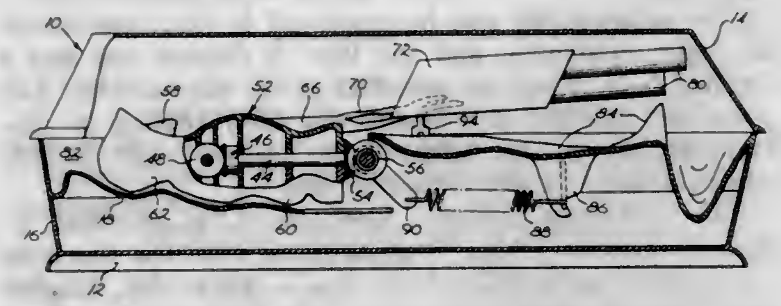
**Alfred Pitner, Paris, France, assignor to Nadella S.A., Malmaison, France, a French body corporate**
**Continuation-in-part of application Ser. No. 559,209, June 21, 1966. This application Sept. 13, 1968, Ser. No. 759,559**
**Claims priority, application France, Sept. 15, 1967, 121,096**
**Int. Cl. F16c** *1/24, 33/78;* **F16j** *15/00*
**U.S. Cl. 308—187.2 6 Claims**



A journal needle bearing with sealing elements. A shaft is surrounded by a thin steel cylindrical jacket having radially inward end flanges. Between the jacket and the shaft are roller needles held by a cage. A washer and seal having an axial flange are between the ends of the cage and the flanges of the jacket. The flange of the seal is compressed by the washer against the jacket without deforming the jacket. The washer can be rigid or can be a split ring. The washer, jacket and seal can have interlocking counter-tapers to avoid displacement and ensure sealing.

### 3,479,101
### AUTOMATIC DISPENSER

**John H. Poor, Northridge, Calif. (3252 Crete Road, Laguna Niguel, Calif. 92677), and Charles H. Logan, 4828 Tilden Ave., Sherman Oaks, Calif. 91403**
**Filed Apr. 19, 1967, Ser. No. 632,020**
**Int. Cl. B65g** *57/20;* **A47f** *1/00;* **A63h** *13/16*
**U.S. Cl. 312—73 10 Claims**



An automatic cigarette dispenser in the form of a miniature coffin having a hinged cover which is linked to support means within the coffin which carries a cigarette holder, the support means including a transverse rockshaft supporting a rotatable structure resembling the head and torso or body portion of a recumbent cowled skeletonlike figure and having arms which carry the cigarette holder, gearing operable to rotate the structure with rocking of the rockshaft, and creaking sound-making means operable upon opening of the cover; whereby opening of the cover actuates the sound-making means and rocks the rockshaft for causing the body portion of the cowled skeleton to rise from the recumbent position and turn to present the cigarette holder to the opener of the cover with accompanying weird sound effects.

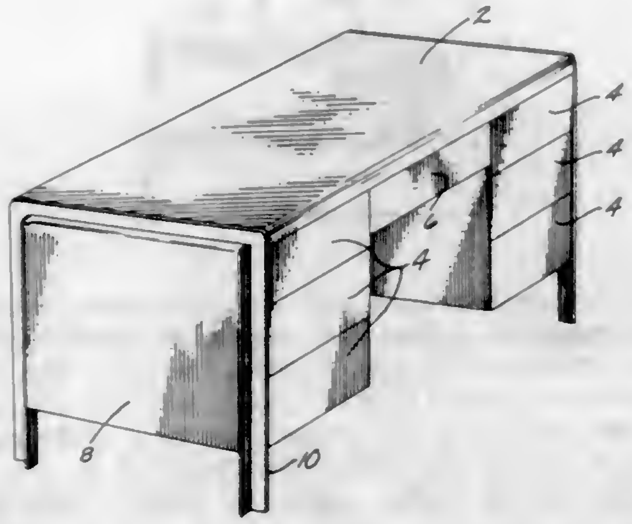
### 3,479,102
### FURNITURE CONSTRUCTION

**Mark K. Wallach, Grand Rapids, Mich., and Alexis M. Yermakov, San Francisco, Calif., assignors to Stow & Davis Furniture Company, Grand Rapids, Mich., a corporation of Michigan**

**Filed Aug. 29, 1967, Ser. No. 664,071**

**Int. Cl. A47b** *17/00, 96/20, 87/00*

**U.S. Cl. 312—195** **6 Claims**



This disclosure relates to furniture construction in which a novel end structure is attached to a rigid furniture construction comprising, for example, a rigid three box construction. In one embodiment there is formed a subassembly comprising a sub-top, back, bottom, four upstanding bulkhead members positioned along and perpendicular to the sub-top and back, and a centrally located fifth bulkhead member which is parallel to the back. The back and the sub-top can be grooved to receive the four upstanding bulkheads. The subassembly has three aligned, interconnected, rigid boxes. The two end boxes have an open side.

The subassembly can be employed in the construction of desks, credenzas, and the like. A finished top and a finished back panel are attached to the subassembly. Leg units and finished side panels are then applied to substantially cover the subassembly. Drawers and shelves can be added to make a finished unit.

The novel end structure comprises a flat, inverted, U-shaped member which is coextensive with the furniture top and two sides thereof and has a pair of flat, longitudinal bars attached to the legs of the U-shaped members. The bars are substantially perpendicular to the plane of the U-shaped members and preferably contain a finished filler therebetween.

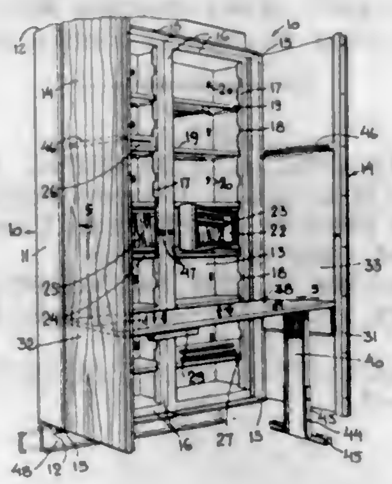
### 3,479,103
### WALL FURNITURE CABINET UNIT

**Frank W. Geier, Vineland Station, Ontario, Canada**

**Filed Oct. 2, 1967, Ser. No. 672,051**

**Int. Cl. A47b** *57/10, 63/04, 83/04*

**U.S. Cl. 312—198** **8 Claims**



A wall furniture cabinet unit comprises a vertically-extending elongated modular cabinet, with a front opening door and movable shelves, so arranged that the units are usable with either end up depending on the direction the door is to open; the front panel of the door is exchangeable for flexibility of decoration; the rear of the door is recessed and a modular, adjustable table unit can be stored in the recess with the door closed; the table unit can accommodate uneven floors when employed; special accessories provide storage for small items and effective drawer storage.

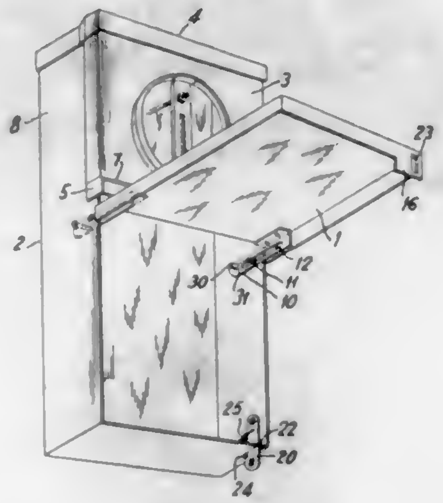
### 3,479,104
### DOOR HINGING ARRANGEMENT IN RAINTIGHT ENCLOSURES

**Herman H. Kobryner, Forest Hills, N.Y., assignor to Murray Manufacturing Corporation, Brooklyn, N.Y., a corporation of New York**

**Filed Dec. 1, 1967, Ser. No. 687,343**

**Int. Cl. A47b** *81/00;* **A47f** *9/00;* **H02g** *3/14*

**U.S. Cl. 312—229** **8 Claims**



A vertically opening lower access door for a two-compartment raintight electrical distribution box. The door is attached to the sides of the enclosure in a manner permitting it to be slid up and under the upper cover panel of the box to the closed position. Slotted brackets mounted on the inside of the door cooperate with supporting pins extending from the sides of the box adjacent the door to permit the door to be pivoted vertically about an axis above the door, to a locked open position. A latch is provided to hold the door up under the lower edge of the upper cover panel in the closed position.

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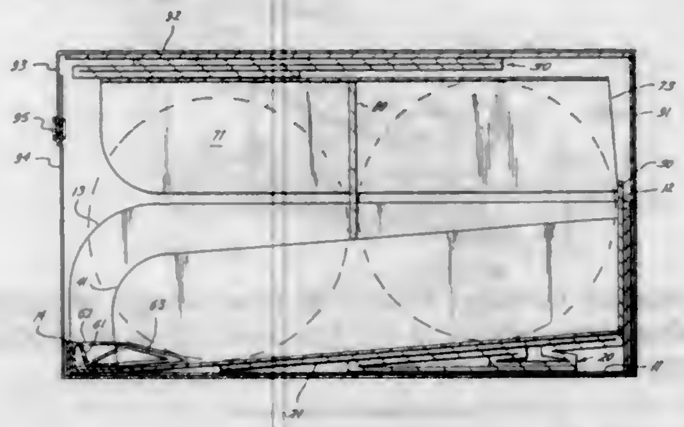
### 3,479,105
### REEL STORAGE DEVICE

**Paul L. Farren, 5603 S. Rice Ave., Houston, Tex. 77036**

**Filed Nov. 1, 1967, Ser. No. 679,893**

**Int. Cl. A47b** *96/00;* **A47g** *29/00;* **B65d** *85/67*

**U.S. Cl. 312—261** **8 Claims**



A modular container having a tray with vertical partitions dividing the tray into reel-receiving compartments. Similar portitions are inserted in an inverted manner over the reels to fix the reels within an outer container during shipment. Wedge-like members are inserted under the tray to bias the reels downwardly.

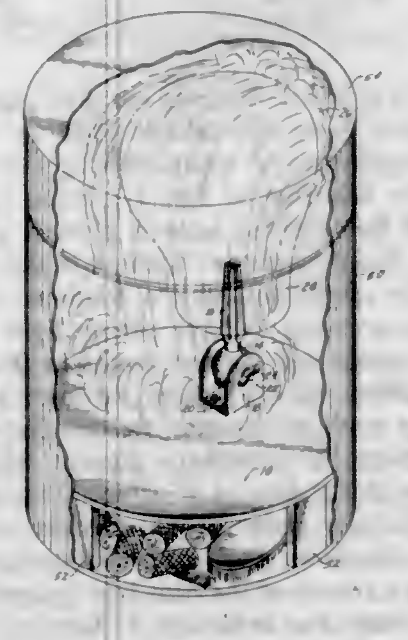
### 3,479,106
### WIG STAND

**Philip Bohannon, 2802 W. Sitka St., Tampa, Fla. 33614**

**Filed Nov. 1, 1967, Ser. No. 679,900**

**Int. Cl. A47b** *81/00;* **A41g** *3/00*

**U.S. Cl. 312—351** **1 Claim**



A stand for a wig in which the wig is worn by an artificial head fastened to a base by a swivel joint locked in place with a pressure clamp, said base fitting within a travel case.

### 3,479,107
### APPARATUS FOR SCANNING AN AREA WITH AN OSCILLATORY SCANNING ELEMENT

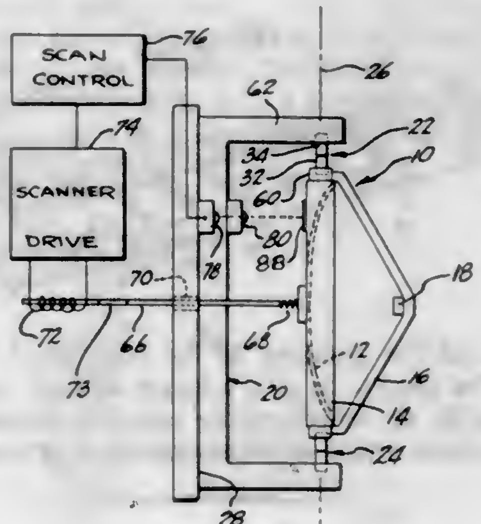
**Richard Blythe and Edgar A. Work, Jr., Ann Arbor, Mich., assignors to The Bendix Corporation, a corporation of Delaware**

**Filed Dec. 15, 1966, Ser. No. 603,402**

**Int. Cl. G02b** *17/06*

**U.S. Cl. 350—6** **5 Claims**

A radiation scanning apparatus including a pivotally mounted and spring driven radiation scanning element activated by a drive means imparting oscillatory movement to the element and having a flexible coupling device connecting the driving means to the scanning element.



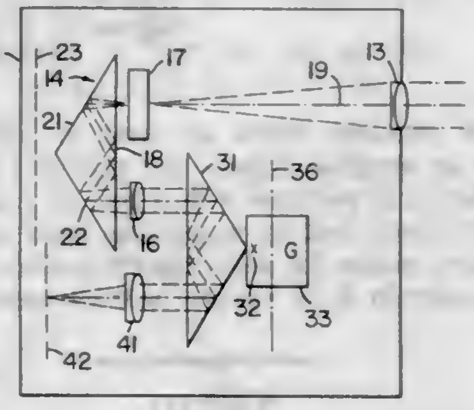
### 3,479,108
### DISPLACED IMAGE REFLECTING OPTICAL STABILIZED SYSTEM

**William E. Humphrey, Oakland, Calif., assignor to Optical Research and Development Corporation, Oakland, Calif., a corporation of California**

**Filed Sept. 4, 1968, Ser. No. 757,305**

**Int. Cl. G02b** *23/00, 23/02*

**U.S. Cl. 350—16** **3 Claims**



An image stabilizing device having an objective lens and a display screen upon which an image is formed by the objective lens and is viewed on the obverse side thereof by collimating optics whereby stabilization then occurs by an inertially stabilized reflecting media mounted within the collimated optical path.

### 3,479,109
### OPTICAL PHASE MODULATOR

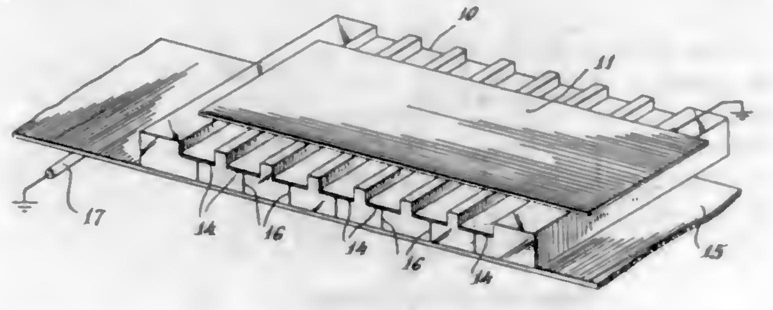
**Kendall Preston, Jr., New Haven, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York**

**Filed Dec. 16, 1964, Ser. No. 418,719**

**Int. Cl. G02f** *1/16*

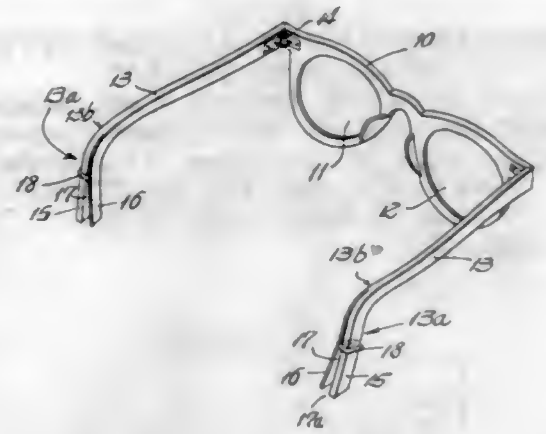
**U.S. Cl. 350—161** **6 Claims**

A device adapted to phase modulate a beam of light. A reflective and conductive film is stretched across a plurality of ridges which make up the top side of a nonconductive support. Electrical charges are established in the areas between the ridges by means of a dielectric tape which has on it a pattern of electrical charges. The tape is positioned adjacent the support, and is in communication with the areas between the ridges. These charges cause a downward deflection of the portions of the film which are located between the ridges. In use, a beam of light impinging on the film will, on reflection, be phase modulated at those portions which strike deflected portions of the film.



### 3,479,110
### SPECTACLES HAVING TEMPLES WITH ADJUSTABLY BIASED ENDS

**Stanley M. Fromm, 551 Joan Drive, Fairfield, Conn. 06430**
**Filed Aug. 17, 1967, Ser. No. 661,358**
**Int. Cl. G02c** *5/14, 5/16*
**U.S. Cl. 351—123** **3 Claims**

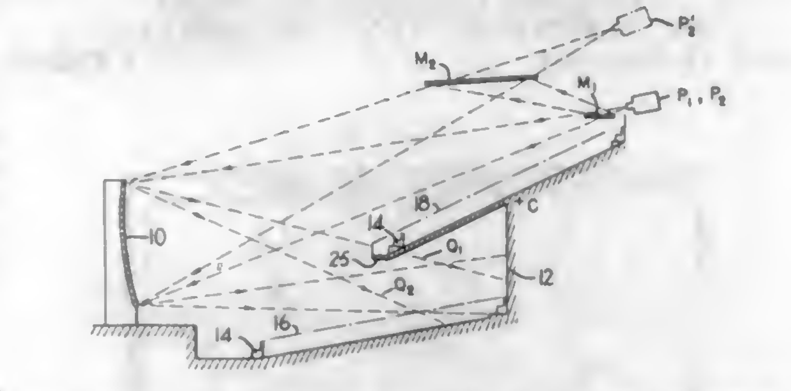


Temple members which are used in connection with spectacle or eyeglass frames are provided at their free ends or terminal portions with a pair of inner and outer leaves, the inner leaf to engage the head and the outer leaf to carry means for adjusting the position of the inner leaf to maintain it in proper holding contact with the head.

### 3,479,111
### THREE-DIMENSIONAL PICTURE PROJECTION

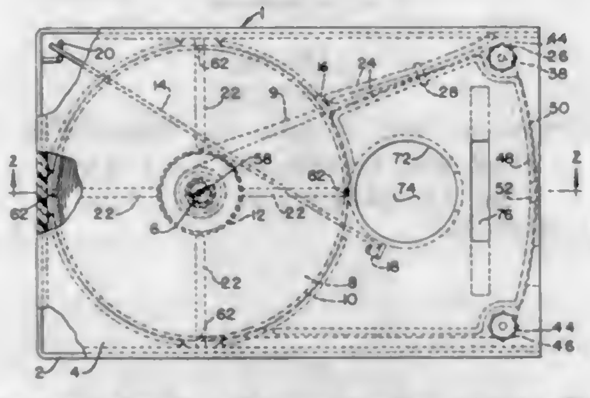
**Dennis Gabor, London, England, assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York**
**Filed Aug. 24, 1967, Ser. No. 663,098**
**Claims priority, application Great Britain, Sept. 8, 1966, 40,202/66**
**Int. Cl. G03b** *19/18, 35/00, 21/32*
**U.S. Cl. 352—44** **42 Claims**

A projection screen for a three dimensional projection system including a photosensitive medium on a curved supporting substrate and coated with a black protective layer. The photosensitive medium has an optical characteristic capable of resolution equalling the wavelength of light and has a thickness exceeding that wavelength. The photosensitive medium is processed by exposing it to a first wave of coherent radiation convergent toward an image representing the position of the projector with which the screen is to be used, and to a second wave of coherent radiation issuing from images of zones in which viewing of the screen is to take place. The exposure process is similarly carried out with a first wave of coherent radiation convergent toward an image representing the position of a second projector; and with a second wave of coherent radiation emanating from images of second viewing zones related to the first zones so as to produce a three-dimensional effect when viewed.



### 3,479,112
### FILM CARTRIDGE FOR CONTINUOUS SHOWING OF MOTION PICTURE FILM

**Dan A. Lester, 522 Fairway Blvd., Wichita Falls, Tex. 76310**
**Filed Apr. 11, 1967, Ser. No. 630,020**
**Int. Cl. G03b** *23/02*
**U.S. Cl. 352—78** **6 Claims**

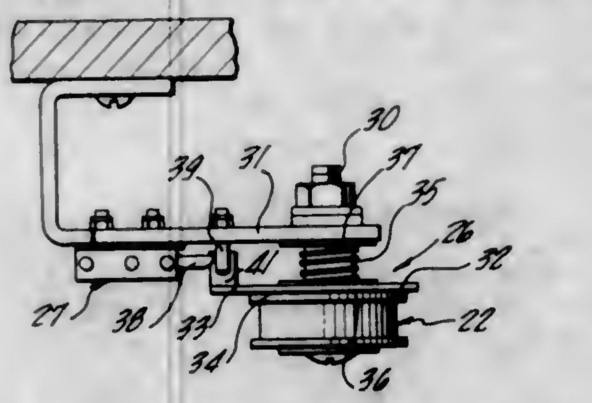


A film cartridge for showing motion picture film continuously which is so constructed that the film cartridge may be dropped into a complementary receptacle in a motion picture machine so that a tubular member in the cartridge will be received onto a motion picture projection lamp so that an aperture formed in the tubular member will be in alignment with a filament in the motion picture projector lamp so as to permit light to pass therethrough, and through a picture frame in the film so as to project a motion picture image through a lens system. Provisions are made to drive an endless film in the motion picture cartridge by sprockets therein which sprockets are engaged with the film at all times. The sprockets each have a non-circular hole formed therein to complementary register with drive shafts of a motion picture machine so as to bring a frame of the film into proper register with the aperture when the cartridge is dropped into the motion picture machine.

### 3,479,113
### MOTION PICTURE PROJECTOR WITH VISCOUS SWITCH FOR CONTROLLING PROJECTION LAMP

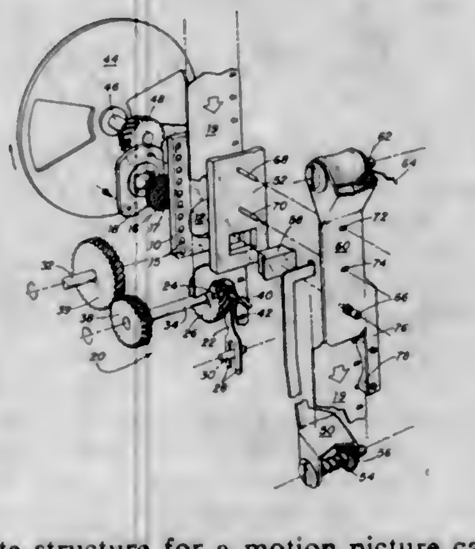
**Patrick J. Cunningham, Fullerton, Calif., assignor, by mesne assignments, to Bell & Howell Company, Chicago, Ill., a corporation of Illinois**
**Filed Jan. 6, 1967, Ser. No. 607,720**
**Int. Cl. G03b** *1/00*
**U.S. Cl. 352—167** **1 Claim**

A projection lamp energization cut-off device for a motion picture projector has a belt-driven film advance mechanism, the belt passing around a rotatable pulley, and includes a spring-loaded switch in the lamp energization circuit and a drag plate engaged with a face of the pulley via a viscous fluid and mounted for angular motion about the pulley axis when the pulley is rotated by the belt. The drag plate moves against the switch bias to operate the switch into an ON state when the pulley is rotated, thereby to monitor the operation of the film advance mechanism and turn the lamp off when the advance mechanism ceases to operate.



### 3,479,114
### INTERMITTENT FILM CONTACT PRESSURE APPARATUS FOR CINEMATOGRAPHIC CAMERAS

**Russell M. Heinonen, Jr., Hudson, Mass., assignor to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware**
**Filed Dec. 28, 1967, Ser. No. 694,172**
**Int. Cl. G03b** *1/48*
**U.S. Cl. 352—225** **6 Claims**

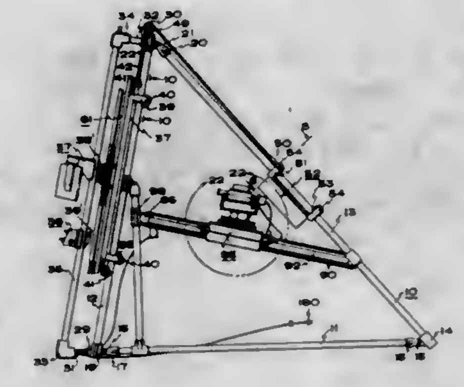


A film gate structure for a motion picture camera has an intermittent film presser member and a diffraction grating. The diffraction grating is mounted in the exposure aperture with its grating surface in the image plane of the objective lens and forming a surface against which the film is pressed. The presser member is a stainless steel insert approximately the size of the exposure aperture and is pressed against the film by a spring biased arm. The spring biased arm has a cam shaped extension in a position to be engaged by the film advancing claw each time the claw penetrates the film apertures. By this engagement the claw releases the pressure on the film during the interval in which the film is advanced.

### 3,479,115
### APPARATUS FOR DETAILING TOPOGRAPHIC MAPS IN ACCORDANCE WITH AERIAL PHOTOGRAPHS OF TOPOGRAPHY

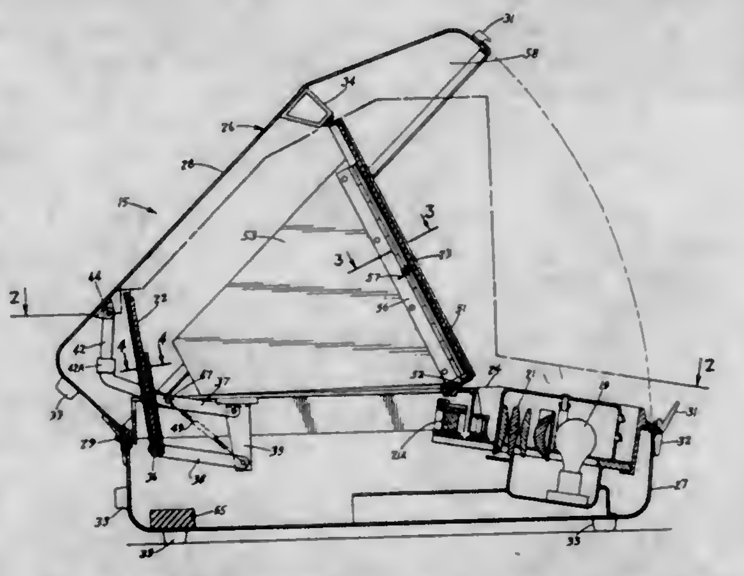
**James B. Lindsay, 328 South 10th East, Salt Lake City, Utah 84102**
**Filed Nov. 10, 1966, Ser. No. 593,413**
**Int. Cl. G03b** *21/00*
**U.S. Cl. 353—6** **7 Claims**

An apparatus for relating and detailing topographic maps in accordance with aerial photographs of topography. The apparatus has a pair of projectors having three degrees of pivotal freedom and being constructed to move toward or away from a translucent panel. The translucent panel includes on its surface a topographic map. The user is provided with controls at his drawing position whereby he can selectively pivot the projectors about one or more axes and also translate the projectors so that the projected image is registered with a corresponding portion of a topographic map he is detailing. Then by stereoscopically viewing stereoscopically related images of a given portion of terrain being studied and detailed the user may trace and detail for effective depth perception the topographic map being worked upon. The respective orientations of the projectors are controlled electrically and are conveniently adjusted to provide for exact registration of one projected image with a corresponding portion of the topographic map, and an exact adjustment of the remaining image so that the user may see both images in exact stereoscopic registry.



### 3,479,116
### FILM VIEWER

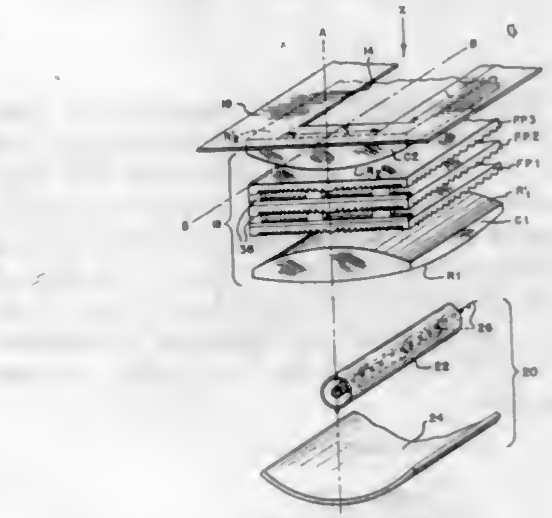
**Kermit V. Anderson, Delano, Minn., assignor to Washington Scientific Industries, Inc., Minnetonka, Minn., a corporation of Minnesota**
**Filed July 14, 1967, Ser. No. 653,435**
**Int. Cl. G03b** *21/28, 21/00*
**U.S. Cl. 353—77** **13 Claims**



A portable film reader having a light source directing light through a lens system and film onto a mirror used to reflect the light onto a rear projection screen. The reader is mounted on a frame located in the bottom of a carrying case. Parallel linkage connect the mirror with the cover of the carrying case so that the mirror moves up and down with the cover. The screen pivotally attached to the frame has folding side shields which cooperate with the cover to enclose the space between the mirror and screen eliminating outside light on the rear of the screen. The cover projects forward from the screen to function as a light visor. In the storage position the screen and side shields fold down adjacent the frame and the mirror moves down into the case with the closing of the cover. Spring applied cam release brakes are used to simultaneously brake the spindles carrying the film reels. A common control rod carries separate springs to apply pivoted brake levers. A lever pivoted on the frame and connected to the control rod is selectively moved by a cam and finger to release the brakes. The cam is connected to a dual switch operable to selectively control motors for driving the spindles.

### 3,479,117
### OPTICAL CONDENSER SYSTEM

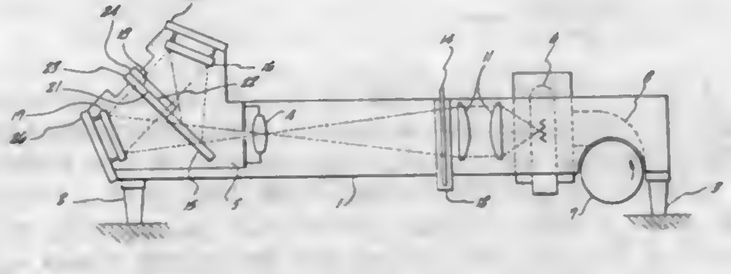
**Albrecht W. Tronnier, Goettingen, Germany, and Helmuth M. Jeremias, Bronx, and Arthur H. Gottesman, Yonkers, N.Y., assignors to Farrand Optical Co., Inc., Bronx, N.Y., a corporation of New York**
**Filed June 2, 1966, Ser. No. 554,768**
**Int. Cl. G03b** *21/20*
**U.S. Cl. 353—102** **9 Claims**



A condensing lens system for use in optical image projection systems. The condenser lens system is adapted to uniformly illuminate objects having a relatively large ratio of length to width. The system comprises a plurality of air-spaced lenses, at least one of which has unequal dioptric power in two perpendicular meridians and a plurality of Fresnel plates of positive power disposed between the two air-spaced lenses.

### 3,479,118
### IMAGE PROJECTION APPARATUS

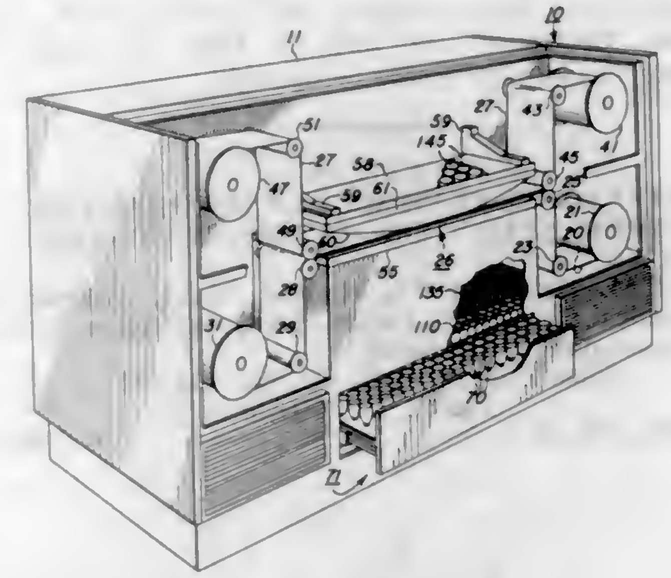
**Walter Griffin Paige, Pasadena, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**
**Filed Nov. 9, 1966, Ser. No. 593,032**
**Int. Cl. G03b** *27/32, 27/52*
**U. S. Cl. 355—26** **10 Claims**



An image projection apparatus that splits a single image projecting beam of light into two portions and projects the two portions onto opposite surfaces of a sheet of material in a mirror image relationship. To split the beam, a pellicle is employed having a partially reflective surface. The two portions, after being split, are reflected from adjustable mirrors to the opposite surfaces of the sheet of material. One portion experiences an even number of reflections while the other portion experiences an odd number of reflections. The sheet of material is supported in a holder comprising two parts held together by magnetic force.

### 3,479,119
### EXPOSURE CONTROL APPARATUS

**William E. Miller, Salem, Ohio, and Douglas E. Webb, Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York, and Miller-Holzworth, Inc., Salem, Ohio, a corporation of Ohio**
**Filed June 2, 1966, Ser. No. 554,837**
**Int. Cl. G03b** *27/76*
**U.S. Cl. 355—80** **12 Claims**

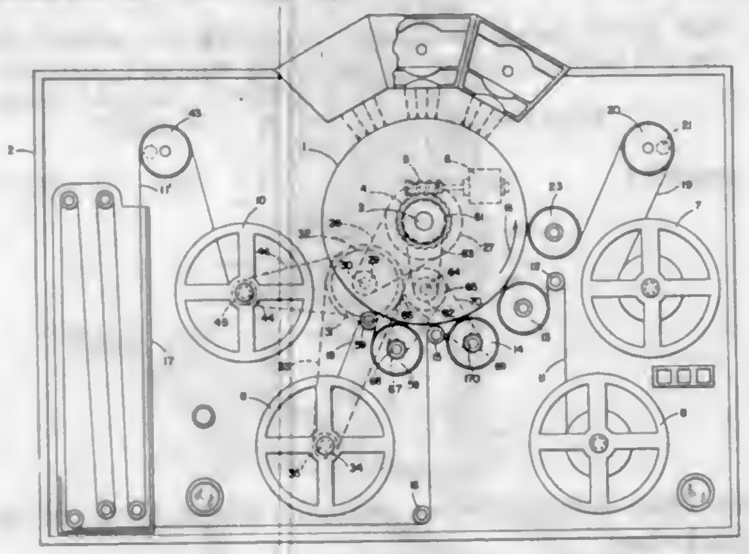


A contact printer having an automatic exposure control circuit utilizing a multitude of lamps each of which radiate onto a very small assigned incremental area of a negative while in contact with the sensitized duplicating material and which are extinguished separately and automatically after proper exposure is made for each incremental area. The printer has an optical arrangement intermediate the lamps and the negative for directing the illumination from the lamps along the predetermined incremental area, and a plurality of photocells each in spatial alignment with one of the lamps and positioned relative to the incremental area. Each of the photocells and lamps are electrically coupled to one another by a control circuit having a capacitance therein. The capacitance has a stored voltage which is a function of the value of the transmissivity of the incremental area being exposed to thereby terminate the illumination of the area when a uniform exposure thereof has been made.

### 3,479,120
### APPARATUS FOR DUPLICATING REELABLE FILM

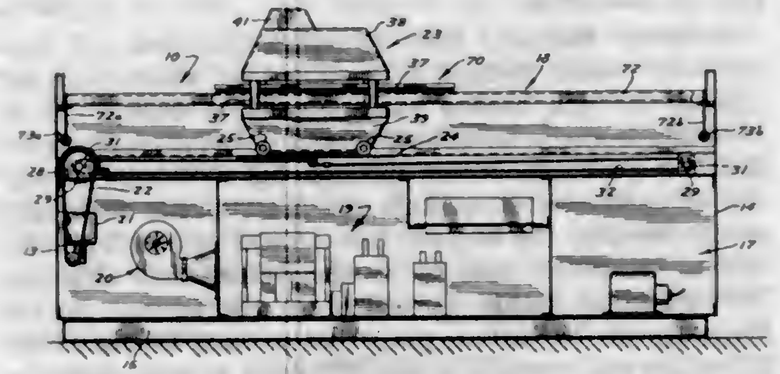
**Ronald N. Davis, Bethesda, Md., assignor, by mesne assignments, to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York**
**Filed Oct. 5, 1964, Ser. No. 401,399**
**The portion of the term of the patent subsequent to Nov. 18, 1985, has been disclaimed**
**Int. Cl. G03b** *27/04, 27/22*
**U.S. Cl. 355—85** **13 Claims**

A photographic duplicating machine in which an original film and duplicating film are supplied in superimposed relationship to the periphery of a printing drum. A plurality of light sources are arranged together with lens system or parabolic reflectors for directing the light rays from the sources in a non-parallel beam that is substantially radial to the drum at locations where the rays impinge on the original film. An optical system is also disclosed for directing light radially outwardly with respect to the surface of the drum when the light source is located within the drum.



### 3,479,121
### EXPOSURE DEVICE

**Dennis A. Burgess, Minneapolis, Minn., assignor to Colight, Inc., Minneapolis, Minn., a corporation of Minnesota**
**Filed Feb. 28, 1968, Ser. No. 708,829**
**Int. Cl. G03b** *27/04*
**U.S. Cl. 355—85** **12 Claims**

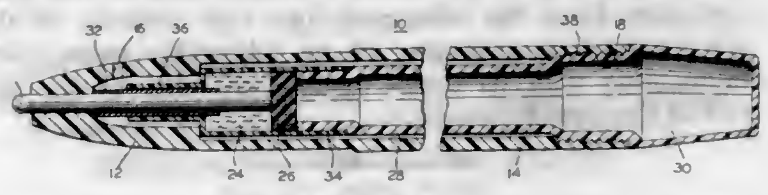


Exposure equipment particularly suited for exposing plates which will be exposed to chemical etching processes where it is necessary to etch both sides of, for example, a printed circuit plate. The device includes a first vacuum clamping frame for holding the negatives and the plate to be exposed, such unit having transparent sides to permit the passage of the exposure light therethrough and a light unit consisting of a pair of exposure light sources disposed on opposite sides of said clamping frame with means for moving the exposure light sources across the frame at predetermined rates of speed. The device includes a vacuum system for positively holding the negatives to the plate and safety means which will prevent operation of the unit unless all systems are in a safe operable position. The exposure light arrangement is arranged in opposite sides of the holding frame to permit exposure of both sides of the plate at the same time and therefore eliminate a two step operation when it is necessary to expose both sides of a plate.

### 3,479,122
### WRITING INSTRUMENT

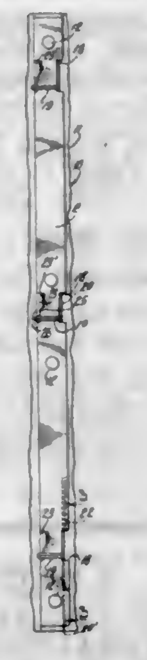
**Takaji Funahashi, 1, 2-chome, Kitatakajo-machi, Nishi-ku, Nagoya, Japan**
**Filed Feb. 21, 1968, Ser. No. 707,177**
**Claims priority, application Japan, Mar. 14, 1967, 42/21,629**
**Int. Cl. B43k** *5/14*
**U.S. Cl. 401—199** **1 Claim**

The disclosed writing instrument comprises a hollow pen holder, and an ink cartridge having a pen tip integral with the holder and a capillary structure disposed between the pen tip and the cartridge to control an amount of ink supplied from the cartridge to the pen tip. In the assembled state, the pen tip slightly projects beyond one end of the holder and the cartridge extends from the other end of the holder to close that end. When the cartridge is empty, a fresh cartridge including the associated pen tip can be substituted for the empty one.



### 3,479,123
### LOOSELEAF BINDER AND LOCKING MEANS THEREFOR

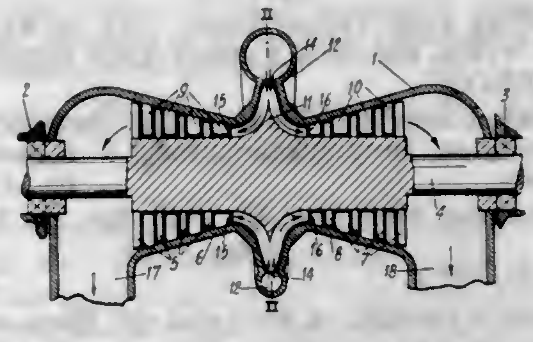
**Frank Pettit, Union, N.J., assignor to Richard Metals Corp., Hillside, N.J., a corporation of New Jersey**
**Filed Sept. 26, 1967, Ser. No. 670,529**
**Int. Cl. B42f** *13/00, 3/02*
**U.S. Cl. 402—21** **1 Claim**



A multi-ring binder for looseleaf notebooks and the like having improved means for releasably locking the rings in the closed position.

### 3,479,124
### TURBINE

**Rudolf Hendriks, Hengelo, Netherlands, assignor to N.V. Koninklijke Machinefabriek Stork, Hengelo, Netherlands, a Dutch limited-liability company**
**Filed Sept. 20, 1967, Ser. No. 669,139**
**Claims priority, application Netherlands, Sept. 22, 1966, 6613385**
**Int. Cl. F01d** *3/02*
**U.S. Cl. 415—159** **4 Claims**



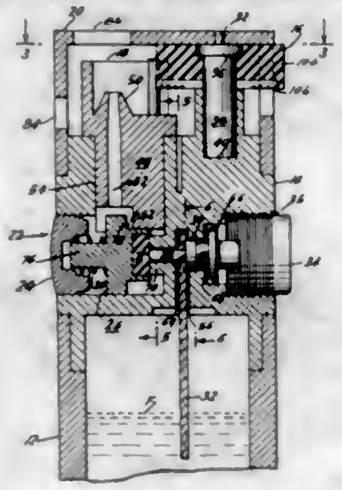
A turbine with a centripetal stage which is surrounded by one or more distribution ducts. The driving fluid enters the duct with a high velocity, then flows through said duct with the same high velocity and enters the centripetal wheel along its whole circumference with said high velocity without passing any obstructions as guide vanes or the like. The cross sectional area of the duct decreases from the inlet end. The high velocity of the driving fluid is generated in an adjustable valve communicating with its outlet opening directly to the inlet end of the distribution duct.

**3,479,125**

### CIGARETTE LIGHTER

**Stanley H. Newman, % Schwartz & Frolich,**
**19 E. 70th St., New York, N.Y. 10021**
**Filed Nov. 28, 1966, Ser. No. 597,256**
**Int. Cl. F23q** *2/04*
**U.S. Cl. 431—254** **2 Claims**

A cigarette lighter characterized by the use of a supporting body member for mounting a fuel valve and burner, a valve activator and a sparkwheel and flint with the burner and valve activator being formed integrally, with the valve activator being operable independently of the sparkwheel.



## CHEMICAL

**3,479,126**

### PHTHALOCYANINE TYPE DYESTUFFS

**Bernhard Kramer, Cologne-Braunsfeld, and Paul Weber, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed May 2, 1966, Ser. No. 546,595**
**Int. Cl. D06p** *1/38, 1/02, 1/68*
**U.S. Cl. 8—26** **13 Claims**

A process for dyeing fibers comprising applying a two-component dyestuff wherein the first component comprises a 3-imino-isoindolenine capable of forming metal-containing phthalocyanine-type dyestuff and a metal compound capable of providing the metal for said dyestuff and wherein the second component comprises a mixture of a neutrally splittable diazo compound and an ice color coupling component.

**3,479,127**

### PROCESS FOR THE UNHAIRING OF SKINS AND HIDES WITH PERACIDS OR THEIR SALTS

**Fritz Hahn and Peter Ney, Frankfurt am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany**
**No Drawing. Filed July 6, 1966, Ser. No. 563,060**
**Claims priority, application Germany, July 10, 1965, D 47,709**
**Int. Cl. C14c** *1/06*
**U.S. Cl. 8—94.16** **3 Claims**

Hair bearing skins and hides are treated with an aqueous solution of a peracid or salt to degrade the hair and render it soluble in aqueous neutral salts, and weak to strongly acting alkaline acting salts and bases.

**3,479,128**

### PROCESS FOR IMPROVING THE STRENGTH OF WOOL OR SILK FIBERS AND PRODUCTS THEREOF

**Peter Jochen Borchert, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana**
**No Drawing. Filed Dec. 27, 1965, Ser. No. 516,659**
**Int. Cl. D06m** *15/04*
**U.S. Cl. 8—127.6** **6 Claims**

The tensile strength of wool and silk fibers can be increased by treating such fibers with an aqueous dispersion of a dialdehyde polysaccharide.

**3,479,129**

### NOVEL PROCESS FOR MODIFICATION OF FIBERS

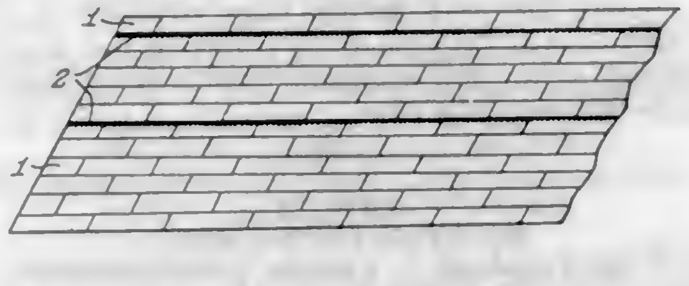
**Herbert N. Friedlander, Raleigh, and Virginia C. Menikheim, Chapel Hill, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**No Drawing. Filed Jan. 6, 1966, Ser. No. 519,000**
**Int. Cl. D06m** *3/36;* **B01j** *1/10*
**U.S. Cl. 8—115.5** **6 Claims**

Synthetic filaments such as nylon filaments are continuously passed through a reaction zone where they are exposed to light having wave lengths of from 2700 to 4800 angstroms in an atmosphere of chlorine and oxygen. Reaction probably occurs through light initiated formation of chlorine free radicals which attack the methylene groups causing the organic free radical containing polymer to selectively take up oxygen rather than chlorine. The chemical change is limited to the surface of the filament and the surface properties relating to static-electrification and wettability are enhanced without degradation of the bulk tensile properties of the filament.

**3,479,130**

### MICROBE GROWTH RETARDATION IN SHINGLE ROOFS

**Stanley L. Rapaport, 260 Highway 17—92, Casselberry, Fla. 32707**
**Continuation-in-part of application Ser. No. 398,624, Sept. 23, 1964, now abandoned. This application Nov. 17, 1967, Ser. No. 689,219**
**Int. Cl. A61l** *3/00;* **B27k** *3/16, 3/22*
**U.S. Cl. 21—61** **8 Claims**



A bimetallic strip for attachment to shingle roofs to prevent discoloration by biological action. The two metals employed in the strip are selected to form an electrical couple to increase ionic release. At least one of the metals is selected on the basis of the biocidal effect of its ionic solutions.

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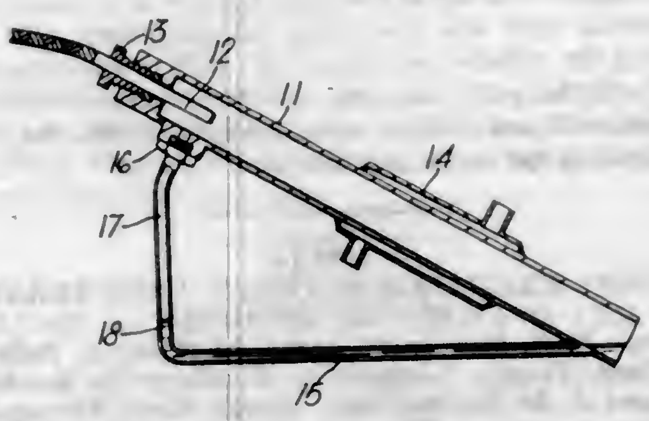
**3,479,131**

### AIR-DETECTING DEVICE FOR STEAM STERILIZERS

**Eric George Scoffield and David Christopher Love, Nottingham, England, assignors to Manlove, Alliott & Company Limited, Nottingham, England**
**Filed Nov. 4, 1966, Ser. No. 592,081**
**Int. Cl. A61l** *3/02*
**U.S. Cl. 21—103** **6 Claims**

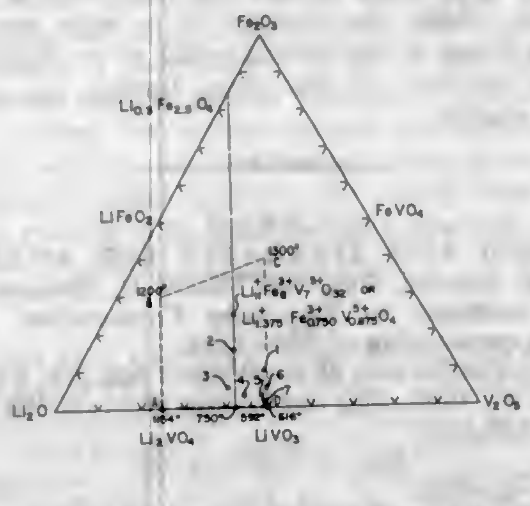


An air-detecting device for use with steam sterilizers comprising an upwardly-extending water-cooled condensing tube and an upwardly-extending air-collecting tube, these being joined in communication with one another at their upper ends. Air-stream mixture exhausting from the sterilizing chamber, upon entry of sterilizing steam to that chamber after its prior evacuation, is admitted to the lower end of the condensing tube. The air-collecting tube has extending horizontally from its lower end a condensate collecting passage which has its end remote from the air-collecting tube connected in communication with the lower end of the condensing tube. If the level of air collected within the air-collecting tube rises above, a tolerable level, a temperature sensor within the device becomes bathed in this air and signals out a warning of an unsatisfactory sterilizing cycle.

**3,479,132**

### TRANSPARENT MAGNETIC SPINEL CRYSTAL OF MIXED OXIDE OF LITHIUM IRON AND VANADIUM

**Donald G. Wickham, Malibu, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California**
**Filed Aug. 10, 1967, Ser. No. 659,743**
**Int. Cl. C01d** *11/02;* **C01g** *31/00*
**U.S. Cl. 23—51** **4 Claims**



A transparent magnetic compound having a spinel crystal structure and the formula $Li_{11}Fe_6V_7O_{32}$ is described. It is prepared by mixing lithium carbonate, iron oxide and vanadium pentoxide, heating the mixture to at least 800° C. and cooling the resulting melt at a rate of at least 200° C. per hour. Soluble impurities are extracted with water leaving the orange colored compound.

**3,479,133**

### PRODUCTION OF SODA ASH FROM TRONA

**Fred M. Warzel, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Jan. 19, 1967, Ser. No. 610,421**
**Int. Cl. C01d** *7/10*
**U.S. Cl. 23—63** **8 Claims**

A method for producing soda ash from natural crude trona ore including the following steps: crushing crude trona ore into granules, calcining the crushed crude trona at an elevated temperature to form sodium carbonate and to remove organic materials, dissolving the calcined trona in liquid recycled from the process and make-up water, clarifying and filtering the resulting solution to remove insolubles, adding carbon dioxide to the resulting solution to precipitate sodium sesquicarbonate crystals therefrom, separating the sodium sesquicarbonate crystals from the liquid from which the crysals have precipitated, recycling the liquid to the dissolution step and calcining the separated sesquicarbonate crystals to produce a soda ash product.

**3,479,134**

### PRODUCTION OF DENSE SODA ASH FROM TRONA

**Fred M. Warzel, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Jan. 19, 1967, Ser. No. 610,409**
**Int. Cl. C01d** *7/12*
**U.S. Cl. 23—63** **22 Claims**

A process for producing soda ash having a density in excess of 80 pounds per cubic foot by the following steps and sequence: crushing and screening the trona ore; dissolving the crushed trona in water and liquid recycled from a point downstream in the process under elevated pressures and temperatures, carbon dioxide is added simultaneously during this dissolving step to increase the concentration of dissolved sodium bicarbonate in solution; removing insolubles, such as shale, from the resulting solution; removing carbon dioxide from the solution by reducing system pressure so that anhydrous sodium carbonate crystals precipitate; separating the crystals from the liquid; and drying the crystals to remove remaining water and produce the soda ash product. In one embodiment the crushed ore is calcined prior to dissolving to preclude the otherwise necessary step of removing organic materials from the solution by contacting same with an adsorbent material, such as activated carbon.

**3,479,135**

### PRODUCTION OF HIGH PURITY $MgCl_2$ FROM SPENT HCl PICKLE LIQUOR

**Ralph E. Pray, Hammond, and Norman T. Mills, Highland, Ind., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed June 9, 1967, Ser. No. 644,829**
**Int. Cl. C01f** *5/30*
**U.S. Cl. 23—91** **6 Claims**

A method for producing solutions of magnesium chloride which are essentially iron free, by treating spent hydrochloric acid pickle liquor with a stoichiometric excess of magnesium oxide, removing the solids, treating the remaining liquid with more magnesium oxide, and recovering a pure magnesium chloride solution.

### 3,479,136
### IRON FREE ALUMINUM SULFATE

**Aubrey W. Michener, Jr., Rockaway, and Emery J. Carlson, Chatham, N.J., and Raymond H. Koo, Hong Kong, assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York**

**Continuation-in-part of application Ser. No. 372,954, June 5, 1964, which is a continuation-in-part of application Ser. No. 234,463, Oct. 31, 1962. This application July 26, 1968, Ser. No. 757,173**

**Int. Cl. C01f** *7/74*

**U.S. Cl. 23—123** **6 Claims**

In accordance with the present invention aqueous aluminum sulfate containing as impurities iron, zirconium, titanium and chromium may be treated to produce substantially impurity free aluminum sulfate by (1) adding chlorine as an oxidizing agent to the aluminum sulfate liquor to convert ferrous iron in the aluminum sulfate liquor to ferric iron, (2) admixing the oxidized aluminum sulfate with a water insoluble amine anion exchanger preferably in the form of a solution thereof in an organic solvent to extract the iron, titanium, zirconium and chromium impurities from the aqueous aluminum sulfate, (3) separating and recovering the purified aqueous aluminum sulfate, (4) reactivating the amine anion exchanger containing the impurities extracted from the aqueous aluminum sulfate by intimate contact with an aqueous solution of sulfuric acid containing about 6% to 30% sulfuric acid, preferably 10–15% sulfuric acid to remove the iron, zirconium, titanium and chromium from the amine anion exchanger, (5) treating the resultant reactivated exchanger, preferably by water washing, to reduce the sulfate content to a value of no more than 25% based on the weight of amine anion exchanger, and (6) returning the thus treated activated amine for further contact with impure aluminum sulfate liquor for removal of impurities from the aluminum sulfate liquor.

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### 3,479,137
### METHOD FOR IMPROVING PHYSICAL PROPERTIES OF BORIC OXIDE

**George W. Campbell, Jr., Tustin, Nelson P. Nies, Laguna, Beach, and Johnny C. Atteberry, Lakewood, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada**

**No Drawing. Filed June 22, 1966, Ser. No. 559,391**

**Int. Cl. C01b** *35/00*

**U.S. Cl. 23—149** **7 Claims**

Solid, finely divided boric oxide having dissolved therein from 1 to about 10%, by weight, of inorganic oxide which can be an alkali metal oxide, alkaline earth metal oxide, a refractory oxide or mixtures of the various oxides. The compositions have a much lower rate of moisture pickup than finely divided pure boric oxide and they are easier to grind to a small particle size.

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### 3,479,138
### PROCESS FOR THE RECOVERY OF $P_2O_5$ FROM PHOSPHATIC ORES

**Walter C. Saeman, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation**

**Continuation-in-part of application Ser. No. 398,306, Sept. 22, 1964. This application Mar. 18, 1968, Ser. No. 727,115**

**Int. Cl. C01b** *25/12;* **B01j** *6/00*

**U.S. Cl. 23—165** **11 Claims**

Phosphorus values in the form of $P_2O_5$ are recovered from phosphate ores reacted with carbon and oxygen-containing gas in a rotary furnace having a vitreous lining held in place centrifugally.

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### 3,479,139
### PURIFYING PHOSPHORIC ACID

**Ernest L. Koerner, Jr., Oklahoma City, Okla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 442,801, Mar. 25, 1965. This application May 1, 1968, Ser. No. 725,905**

**Int. Cl. C01b** *25/18*

**U.S. Cl. 23—165** **13 Claims**

A process is described for purifying phosphoric acid with respect to iron impurities by reducing trivalent iron impurities contained in the phosphoric acid to the divalent oxidation state and contacting the phosphoric acid containing the reduced iron impurities with a water-insoluble amine extractant in amounts sufficient to extract the phosphoric acid and form a water-insoluble extractant phase comprising the amine and the phosphoric acid.

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### 3,479,140
### ISOTOPE EXCHANGE BETWEEN A DEUTERATED GAS AND AMMONIA

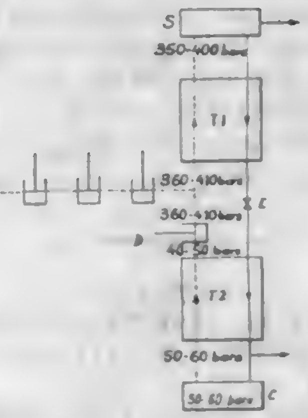
**Etienne Roth, Sevres, and Bernard Lefrancois, Bully-les-Mines, France, assignors to Houilleres du Bassin du Nord & du Pas-de-Calais, Douai, Nord, France, and Commissariat a l'Energie Atomique, L'Air Liquide, Societe pour l'Etude et l'Exploitation des Procedes Georges Claude, and Compagnie de Construction Mecanique Procedes Sulzer, all of Paris, France, all companies of France**

**Filed July 21, 1967, Ser. No. 655,221**

**Claims priority, application France, July 27, 1966, 71,024; June 15, 1967, 110,501**

**Int. Cl. C01c** *1/00;* **C01b** *1/00*

**U.S. Cl. 23—193** **4 Claims**



Process of isotope exchange between a deuterated gas and ammonia by the monothermal process in which the isotope exchange takes place in two towers between which there is an inlet for the feed gases which pass between an ammonia cracking reactor and an ammonia synthesis reactor in which the pressure in at least one isotope exchange tower is maintained equal to or slightly lower than the pressure of the gases leaving the ammonia cracking reactor.

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### 3,479,141
### METHOD AND APPARATUS FOR ANALYSIS

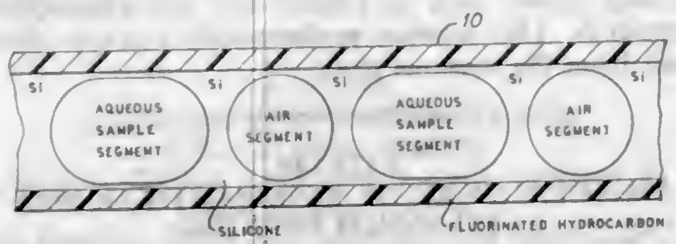
**William J. Smythe, Rye, and Morris H. Shamos, Bronx, N.Y., assignors to Technicon Corporation, Ardsley, N.Y., a corporation of New York**

**Continuation-in-part of application Ser. No. 542,488, Apr. 14, 1966. This application May 17, 1967, Ser. No. 639,100**

**Int. Cl. G01n** *31/08*

**U.S. Cl. 23—230** **14 Claims**

A transport system for an automatic analysis apparatus for a series of aqueous liquid samples processed as a flowing stream with no or minimal contamination between samples is provided by a fluorinated hydrocarbon conduit and intersample segments of silicone. The silicone wets and adheres to the fluorinated hydrocarbon conduit, while the aqueous liquid samples do not so wet and adhere. Where wetting and contacting of the conduit by the samples is required, as in dialysis, glass and/or cellophane are used, which the aqueous liquid samples wet, and the silicone does not.



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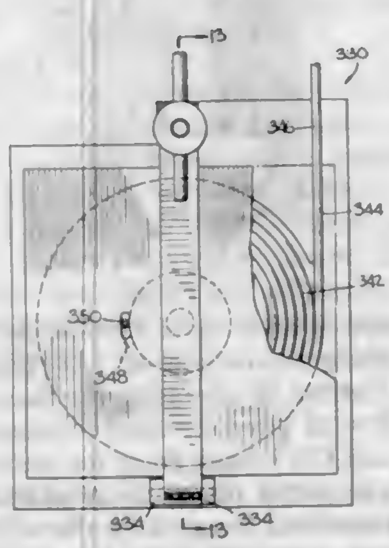
### 3,479,142
### VOLUME-ADJUSTABLE CONDUIT FOR LIQUID ANALYSIS APPARATUS

**Jack Isreeli, Mamaroneck, N.Y., and Leonard T. Skeggs, Kirtland, Ohio, assignors to Technicon Corporation, a corporation of New York**

**Continuation-in-part of application Ser. No. 529,366, Feb. 23, 1966. This application Oct. 13, 1966, Ser. No. 586,410**

**Int. Cl. G01n** *31/00*

**U.S. Cl. 23—253** **7 Claims**



Apparatus for effecting a plurality of analytical tests on successive liquid samples. Each liquid sample is broken up into fractional portions, or quotients, each of which is treated with an appropriate reagent at a treatment stage to provide a color reaction indicative of the concentration of a particular constituent under test. Each treatment stage is connected along a conduit means to a corresponding flow cell in a colorimeter. To insure that portions of each fraction portion have a maximum optical density during read-out, the conduit means are provided with telescoping sections for continuously varying the volume of the conduit means to phase the arrival time of each fractional portion at its corresponding flow cell.

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### 3,479,143
### MEANS FOR CONDUCTING ENDOTHERMIC CATALYTIC REACTIONS, INCLUDING ELECTRICAL HEATING MEANS

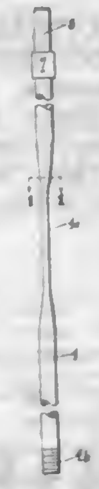
**Avery Crowell Kelsall, Louisville, Ky., assignor to Girdler Corporation, Louisville, Ky., a corporation of Ohio**

**Filed July 13, 1964, Ser. No. 382,209**

**Int. Cl. B01j** *9/04*

**U.S. Cl. 23—288** **9 Claims**

In means for conducting endothermic catalytic reactions, an elongated vessel to contain catalyst, with means at its respective ends for the entrance of gaseous reactants and for the exit of gaseous reaction products. At least one elongated electrical heating element located within the vessel and surrounded by the catalyst. Means for supplying current to the heating element to produce heat for the endothermic reaction, the heating element being configured in different portions of its length to produce different quantities of heat and having a necked-down portion within the section surrounded by catalyst.



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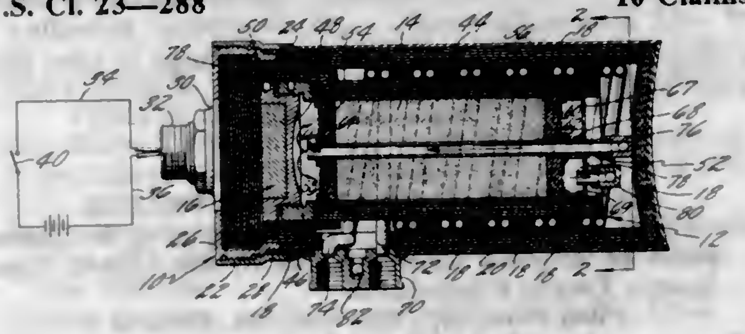
### 3,479,144
### CATALYTIC BURNER

**Harlan F. Brose, Longmeadow, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**

**Filed Sept. 22, 1964, Ser. No. 398,449**

**Int. Cl. F23g** *7/06;* **F23d** *13/18;* **F24j** *3/00*

**U.S. Cl. 23—288** **10 Claims**



Catalytic burner in which a catalyst bed is centrally disposed in an enclosed container and a regenerative tubular-type heat exchanger surrounds the catalyst. Super insulation lines the container and the regenerative heat exchanger is embedded therein.

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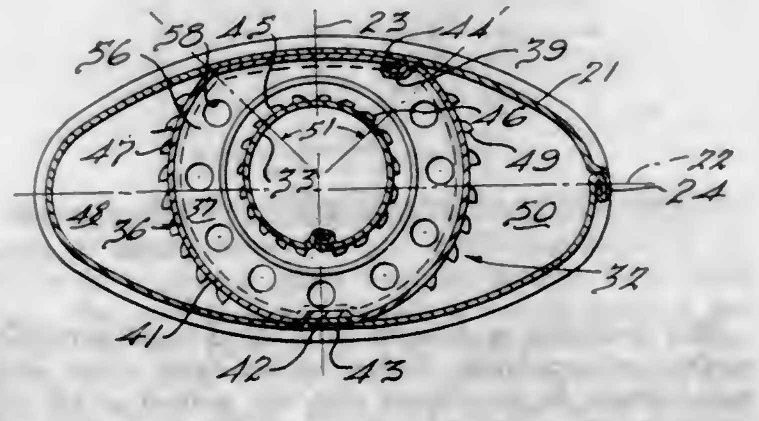
### 3,479,145
### EXHAUST SYSTEM

**Ervin C. Lentz, Jackson, Mich., assignor to Walker Manufacturing Company, a corporation of Delaware**

**Filed May 19, 1965, Ser. No. 457,097**

**Int. Cl. B01j** *9/04*

**U.S. Cl. 23—288** **13 Claims**



A low profile catalytic converter has an oval outer housing and a pair of concentric inner cylindrical members which define a radial flow catalyst bed having an axis displaced upwardly from the housing axis and including an oval segment contacting a segment of the oval housing.

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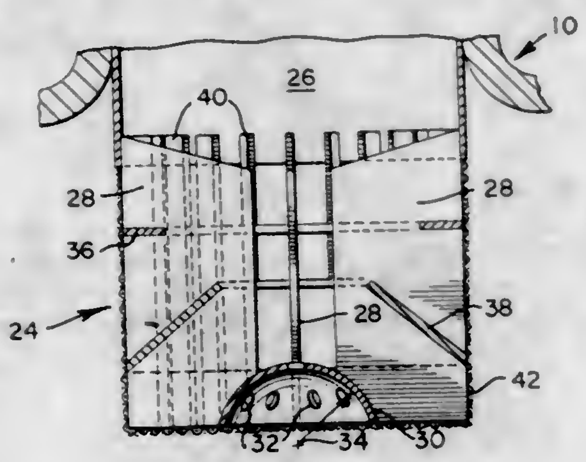
### 3,479,146
### FLUID FLOW DISTRIBUTOR

**Jack M. Hochman, Boonton, and Wesley J. Loboda, Somerset, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**
**Filed Oct. 28, 1966, Ser. No. 590,340**
**Int. Cl. B01j** *9/00;* **B05b** *1/14*
**U.S. Cl. 23—288** **8 Claims**



A fluid flow distributor including a dished lower baffle, a conical section intermediate baffle upstream of said dished lower baffle, and an upper annular baffle upstream of said intermediate baffle, said distributor providing a uniform velocity gradient over a large range of inlet flow velocities.

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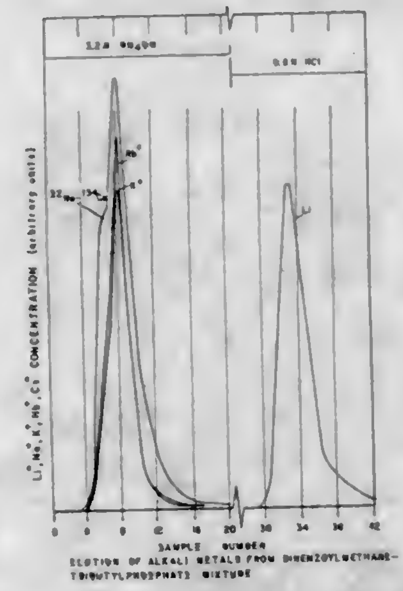
### 3,479,147
### EXTRACTION OF LITHIUM VALUES

**De Wayne A. Lee, Knoxville, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Nov. 22, 1966, Ser. No. 596,342**
**Int. Cl. B01d** *11/04;* **C22b** *27/00*
**U.S. Cl. 23—312** **4 Claims**



This invention is directed to a liquid-liquid extraction method of separating lithium values from other alkali metal values. In accordance with this method an alkaline aqueous phase containing lithium values together with other alkali metal values is contacted with an organic solvent containing a mixture of (1) a chelating agent selected from β-diketones and analogs thereof wherein the oxygen atoms in the β-diketones have been replaced with nitrogen, phosphorus, or sulfur atoms, and (2) a solvating ligand such as amines and organophosphorus compounds. This mixture preferentially extracts lithium values from the aqueous phase.

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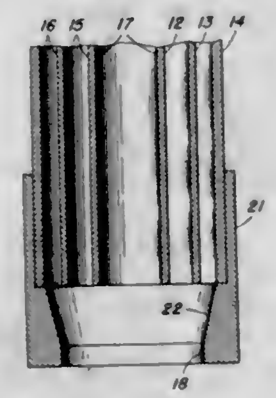
### 3,479,148
### MANUFACTURE OF FINE PARTICLE SIZE TITANIUM DIOXIDE

**Peter Tillmann, deceased, late of Leverkusen, Germany, by Margarete Tillmann, sole heir, Cologne-Deutz, Germany, and Achim Kulling and Gerhard Hitzemann, Leverkusen, Germany, assignors to Titangesellschaft m.b.H., Leverkusen, Germany, a corporation of Germany**
**Original application Apr. 10, 1964, Ser. No. 358,961, now Patent No. 3,355,253, dated Nov. 28, 1967. Divided and this application June 23, 1966, Ser. No. 571,354**
**Claims priority, application Germany, Apr. 13, 1963, T 23,838**
**Int. Cl. C01g** *23/04*
**U.S. Cl. 23—202** **1 Claim**



The disclosure is of a novel multi-tube burner for use in the vapor phase production of $TiO_2$ pigmentary material; and to a method of operating the burner wherein the directions of flow of three separate concentric gas streams i.e. $TiCl_4$, $O_2$ and CO issuing from the burner at velocities within a predetermined range are modified at a distance within a predetermined range from the end of the burner to form a single gas stream the cross-sectional area of which is at most 0.85 the free cross-sectional area of the burner.

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### 3,479,149
### PROCESS FOR REDUCING CARBON DIOXIDE WITH HYDROGEN TO CARBON MONOXIDE

**Vincent J. Frilette, Delaware Township, Camden County, N.J., assignor to Mobil Oil Corporation, a corporation of New York**
**No Drawing. Filed Sept. 10, 1963, Ser. No. 307,785**
**Int. Cl. C01b** *31/18, 33/26, 33/24*
**U.S. Cl. 23—204** **4 Claims**

1. In a process for converting carbon dioxide by a reduction reaction wherein carbon dioxide is reacted with hydrogen gas to produce carbon monoxide and water according to the equation

$$CO_2+H_2\rightleftarrows CO+H_2O$$

wherein the improvement comprises carrying out the reaction in an atmosphere of reactable gases consisting essentially of carbon dioxide, hydrogen, carbon monoxide and water vapor at a temperature of about 700° F.–1400° F. and at a pressure between subatmospheric and 500 atmospheres in the presence of a solid porous crystalline aluminosilicate catalyst having an ordered internal structure and substantially uniform pores with a pore diameter of about 5 to 13 angstrom units so that the production of carbon monoxide and water predominates over the competing reaction to produce carbon dioxide and hydrogen, and recovering the gaseous reaction products.

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### 3,479,150
### CARBONIZATION METHOD FOR CELLULOSIC FIBERS

**Carlos L. Gutzeit, Long Beach, Calif., assignor to Hitco, Gardena, Calif.**
**No Drawing. Filed July 14, 1965, Ser. No. 472,043**
**Int. Cl. C01b** *31/07*
**U.S. Cl. 23—209.1** **25 Claims**

Fibrous cellulosic materials are carbonized in the presence of an acidic oxidizing gas at a temperature between about 300° F. and below a temperature which results in substantial impairment of the integrity of the fibrous materials until the exothermic reaction between the oxidizing gas and materials is substantially completed. The resulting material is thereafter heated at a higher temperature in the essential absence of oxygen and preferably in the presence of halogen or an alkaline reducing gas until carbonization is substantially completed.

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### 3,479,151
### METHOD OF CARBONIZING FIBROUS CELLULOSIC MATERIALS

**Carlos L. Gutzeit, Long Beach, Calif., assignor to Hitco, a corporation of California**
**No Drawing. Filed Jan. 3, 1966, Ser. No. 517,951**
**Int. Cl. C01b** *31/07*
**U.S. Cl. 23—209.5** **8 Claims**

An improved method of carbonizing fibrous cellulosic materials comprises impregnating the fibrous material with a selected hydrate-forming, hygroscopic halide capable of increasing the yield of carbon fiber, initially carbonizing the impregnated material at a temperature not in excess of about 50° F. higher than the minimum initial carbonizing temperature and thereafter increasing the temperature to at least about 600° F. until carbonization is substantially completed.

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### 3,479,152
### CHELOMETRIC ZINC TITRATION

**Charles J. Overbeck and James J. Hickey, Chicago, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed Sept. 3, 1965, Ser. No. 485,121**
**Int. Cl. C09k** *3/00;* **G01n** *33/20, 31/16*
**U.S. Cl. 23—230** **4 Claims**

Analysis for small amounts of zinc in waters which also contain high hardness levels may be made by using as a titrant diethylenetriaminopentaacetic acid and a dithizone indicator.

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### 3,479,153
### METHOD FOR THE QUALITATIVE IDENTIFICATION OF POLYBUTADIENE ELASTOMER

**Panagiotis L. Panagoulias, Highland Park, Mich., assignor to the United States of America as represented by the Secretary of the Army**
**No Drawing. Filed Mar. 2, 1967, Ser. No. 621,105**
**Int. Cl. G01n** *33/44, 31/06*
**U.S. Cl. 23—230** **7 Claims**

A method for the qualitative identification of polybutadiene comprising the steps of: reacting a test sample with a hydrazine; oxidizing the product of the first step; and adding nitric acid to said reacted and oxidized test sample; said method yielding an unstable polybutadiene diazonium nitrate when said test sample contains polybutadiene alone or in a compound.

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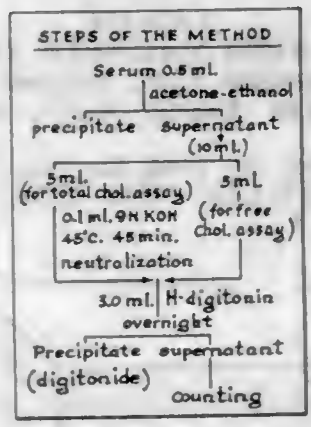
### 3,479,154
### METHOD FOR CHOLESTEROL DETERMINATION

**Earl Victor Cardinal, Lake Bluff, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois**
**Filed Mar. 24, 1967, Ser. No. 625,858**
**Int. Cl. G01n** *33/00*
**U.S. Cl. 23—230** **5 Claims**



A simplified method for determining the amount of total cholesterol in a sample of serum, plasma or tissue comprising the steps of solvent extracting the cholesterol from the sample, adding to the solution so obtained to precipitate the cholesterol, a cholesterol-precipitant which has been labelled with a radioactive isotopic material, measuring the radiation level of the supernatant, and comparing this measurement against a standard curve of known cholesterol concentration versus counts per minute of the supernatant to ascertain the amount of cholesterol present in the sample.

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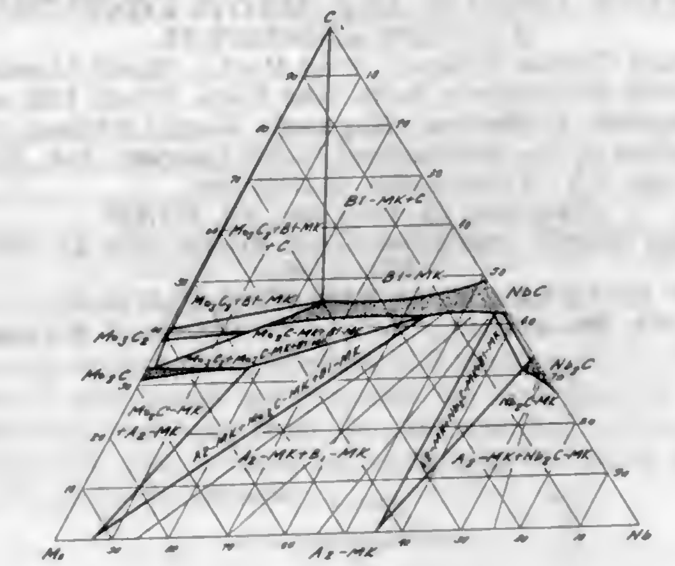
### 3,479,155
### HEAT-SHOCK RESISTANT SHAPED HIGH TEMPERATURE METAL CERAMIC BODIES

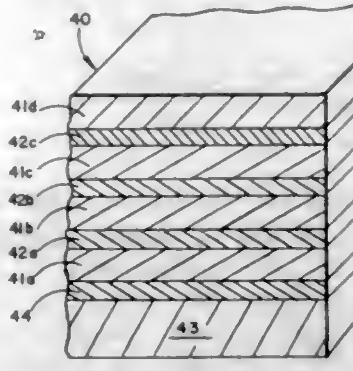
**Erwin Rudy, Carmichael, Sacramento, Calif., assignor to Schwarzkopf Development Corporation, New York, N.Y., a corporation of Maryland**
**Continuation-in-part of application Ser. No. 324,803, Nov. 19, 1963. This application Nov. 7, 1966, Ser. No. 600,330**
**Claims priority, application Austria, Nov. 20, 1962, A 9,113/62**
**Int. Cl. C22c** *29/00;* **B22f** *3/26*
**U.S. Cl. 29—182.7** **4 Claims**



Homogeneous sintered, heat-shock resistant bodies consisting of homogeneous particles combining 10 to 95 wt. percent of a carbide phase with the balance of a metal phase. The carbide phase consists of one or more of the carbides of Nb, Ta with up to 40 mol percent of a Mo- and/or W-carbide and with the ingredients of these carbide and metal phases falling within the fields between points **21**, **22**, **23** and **24** of the ternary diagrams of FIGS. 2 through 5. All these homogeneous particles should be free of subcarbides and consist of pulverized particles of a hard structure obtained by sintering or melting particle mixtures of their respective ingredients Nb, Ta, C, Mo and W in the specified proportions. Up to 90 mol percent of the specified Nb- and Ta-carbides may consist of one or more of the Hf-, Zr- or Ti-carbides.

### 3,479,156
### MULTILAYER MAGNETIC COATING

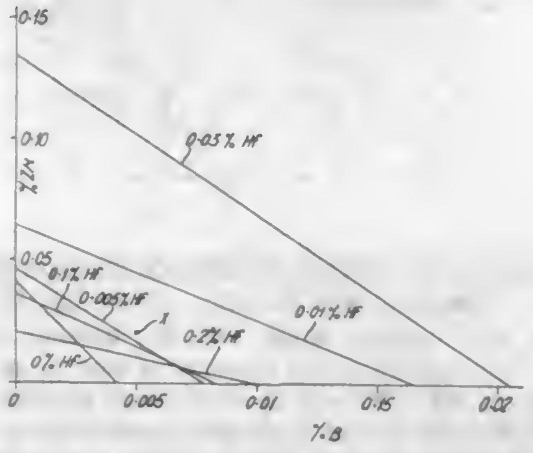
**Paul Ginder, Lakewood, Calif., assignor to Burton Silverplating Co., Los Angeles, Calif., a corporation of California**
**Filed Oct. 20, 1966, Ser. No. 592,961**
**Int. Cl. C23c** *17/00;* **C23b** *5/50*
**U.S. Cl. 29—183.5** **17 Claims**



A multilayer magnetic coating comprising a plurality of high coercivity ferromagnetic thin films alternately disposed with, and separated by, a plurality of nonmagnetic barrier layers. Each barrier layer preferably comprises a metal of the platinum group and, to insure layer continuity, has a minimum thickness of 500 A. The thickness of each ferromagnetic film is less than 14,000 A., and preferably about 3,000 A. Being isolated by the barrier layers, each ferromagnetic film exhibits single magnetic domain characteristics of high coercivity and high hysteresis loop squareness. The inventive coating exhibits an overall coercivity and loop squareness commensurate with that of an individual single domain magnetic film, and a remanence considerably greater than that of such an individual film.

### 3,479,157
### WELDED ARTICLES AND ALLOYS CONTAINING HAFNIUM AND NICKEL

**Edward Gordon Richards, West Hagley, David Marshall Ward, Birmnigham, Keith John Hales, Brierly Hill, and Norman Stephenson, Haywards Heath, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware**
**Filed June 22, 1966, Ser. No. 559,456**
**Claims priority, application Great Britain, June 25, 1965, 27,074/65**
**Int. Cl. B23k** *35/30;* **B32b** *15/20;* **C22c** *19/00*
**U.S. Cl. 29—194** **9 Claims**



Weldable age-hardenable nickel-containing alloys and welded articles made from such alloys are provided wherein the alloys have additions of boron and/or zirconium therein as strengtheners and also include a hafnium .001% to 0.5% addition to improve weldability.

### 3,479,158
### PROCESS FOR ZIRCONIDING AND HAFNIDING BASE METAL COMPOSITIONS

**Newell C. Cook, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**No Drawing. Filed Nov. 10, 1966, Ser. No. 593,274**
**Int. Cl. C23b** *5/24, 5/32, 5/18*
**U.S. Cl. 29—194** **12 Claims**

A zirconide or hafnide coating is formed on specified base metal compositions by making the base metal the cathode joined through an external electrical circuit to a zirconium or hafnium anode in an electric cell having a specified fused salt electrolyte at a temperature of at least 900° C., but below the melting point of the metal composition. Such a combination is a self-generating cell producing electricity, but an external E.M.F. may be impressed providing the current density does not exceed 10 amperes/dm.². The process is useful in making tight adherent coatings composed of zirconium or hafnium and the base metal on the surface of the substrate.

### 3,479,159
### PROCESS FOR TITANIDING BASE METALS

**Newell C. Cook, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**No Drawing. Filed Nov. 10, 1966, Ser. No. 593,275**
**Int. Cl. C23b** *5/06, 5/08, 5/30*
**U.S. Cl. 29—194** **11 Claims**

A titanide coating is formed on specified base metal compositions by forming an electric cell containing said metal composition as a cathode joined through an external electrical circuit to a titanium anode using a specified fused salt electrolyte maintained at a temperature of from 900° C. up to the melting point of the metal composition. This cell generates electricity, but, if desired, and external E.M.F. may be impressed providing the current density does not exceed 10 amperes/dm.². The titanium diffuses into the base metal to form a tight, adherent coating composed of titanium and the base metal. This process is useful for forming such coatings on the base metal.

### 3,479,160
### METAL PLATING OF PLASTIC MATERIALS

**Kenneth A. Klinger, Belpre, Ohio, and John J. Randall and Joseph M. Sakach, Jr., Washington, W. Va., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**
**No Drawing. Filed Oct. 11, 1965, Ser. No. 494,859**
**Int. Cl. B44c** *1/22*
**U.S. Cl. 29—195** **4 Claims**

To improve the adhesion between a substrate, which includes an acrylonitrile-butadiene-styrene graft polymer, and a layer of metal electrolytically deposited thereon, the surface of the substrate is treated with methanol.

### 3,479,161
### OXIDATION RESISTANT TUNGSTEN AND MOLYBDENUM ALLOY BODIES

**Dain Stedman Evans, Hemel Hempstead, England, assignor to The General Electric Company, Limited, London, England, a British company**
**No Drawing. Filed Feb. 1, 1966, Ser. No. 523,907**
**Int. Cl. C22c** *31/00*
**U.S. Cl. 29—195** **4 Claims**

A metal body which consists mainly of tungsten and/or molybdenum, and which is resistant to oxidation at elevated temperatures, includes, at least as a constituent of a surface layer of the body, a minor proportion of at least one metal, preferably chromium, which is preferentially oxidizable in relation to tungsten and molybdenum, and preferably also a minor proportion of at least one of the metals cobalt, nickel, ruthenium, rhodium, palladium, platinum, palladium being preferred, and the metal body has formed on its surface an adherent, oxidation-resistant, protective coating including an oxide of the preferentially oxidizable metal derived from the surface layer.

### 3,479,162
### CHROMIUM PLATED STEEL SHEET HAVING AN ALMOST COLORLESS AND TRANSPARENT CHROMATE FILM

**Osamu Yanabu, Takashi Hada, and Kazuyuki Doi, Himeji-shi, Japan, assignors to Fuji Iron & Steel Co., Ltd., Tokyo, Japan**
**No Drawing. Filed Mar. 23, 1967, Ser. No. 625,306**
**Claims priority, application Japan, Mar. 28, 1966, 41/19,141; Mar. 15, 1967, 42/16,287**
**Int. Cl. C23b** *9/00;* **C22c** *39/00*
**U.S. Cl. 29—195** **9 Claims**

A process for surface treating chromium plated steel sheet obtained by applying chromium plating directly on a single sheet or strip of carbon steel which comprises: electrolytically contacting said chromium plated steel as the cathode with an aqueous solution of chromic anhydride as the main ingredient and a hydroxide or carbonate of an alkali metal, calcium, magnesium or strontium to form an almost colorless and transparent chromate film on the chromium plating. The film enhances corrosion resistance and does not interfere with any subsequent painting of the plated steel.

### 3,479,163
### STABILIZATION OF PETROLEUM DISTILLATE FUELS BY OXIDATIVE TREATMENT

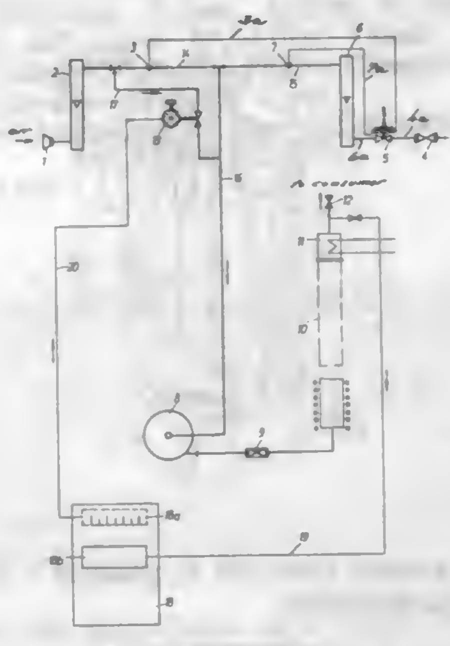
**Elliot A. Vogelfanger, Edison, and Thomas J. Wallace, Elizabeth, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**
**No Drawing. Filed Jan. 3, 1966, Ser. No. 518,033**
**Int. Cl. C10l** *1/10;* **B01j** *1/16*
**U.S. Cl. 44—64** **12 Claims**

Solids free petroleum distillate fuels which are resistant to further atmospheric oxidation are obtained by treating petroleum distillate fuels which originally contained olefinic unsaturated components and molecular oxygen, i.e., air, with at least one metallocene and at least one aryl hydrazone followed by the removal of at least the resultant solid gum formed thereby by any suitable means such as settling, decantation, centrifugation, filtration and/or distillation.

### 3,479,164
### METHOD OF AND ARRANGEMENT FOR CONTROLLING A GAS-AIR MIXTURE

**Karl Heinz Edler, Rindern Uber Kleve, Germany, assignor to Ipsen Industries, International Gesellschaft mit beschrankter Haftung, Kleve, Germany**
**Filed Dec. 28, 1965, Ser. No. 516,843**
**Claims priority, application Germany, Dec. 29, 1964, J 27,271**
**Int. Cl. F17b** *1/02*
**U.S. Cl. 48—190** **5 Claims**

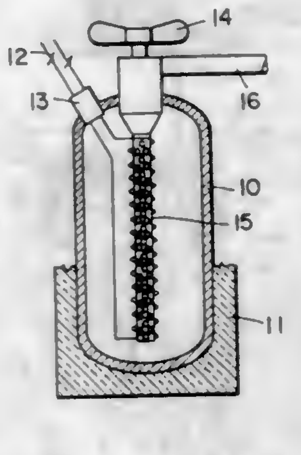
A system for gas-air mixture control based upon maintaining a constancy of moisture condition of the final mixture by having air passing thereto varied to maintain the particular moisture condition. A fixed restrictor in the gas conduit means having a diaphragm control valve interposed therewith and a variable restrictor in the air conduit means provides a proportional gas-air supply for endothermic reaction. The reaction product is cooled and tested for moisture condition whereupon adjustment to



the air supply is made in response to a predetermined moisture condition.

### 3,479,165
### HYDROGEN STORAGE SYSTEM

**Richard K. Lyon, Elizabeth, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware**
**Filed June 28, 1966, Ser. No. 561,168**
**Int. Cl. F17c** *5/06*
**U.S. Cl. 48—190** **10 Claims**

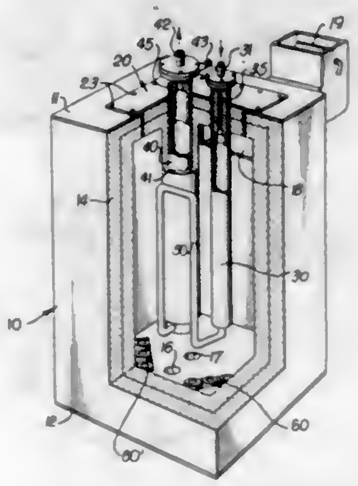


Process and apparatus for storing and supplying hydrogen. In the process, $MgH_2$ is decomposed at temperatures ranging about 530° F.–1200° F. to yield hydrogen at pressures that range from about 15 to 3000 p.s.i.g. The residual Mg, in activated form, can be readily converted back to $MgH_2$ by contacting same with additional or fresh hydrogen. The apparatus comprises a storage container within which is disposed a $MgH_2$ compound, and means are provided for decomposing and delivering hydrogen from the decomposing compound. Means are also provided for recharging by adding fresh hydrogen to the container.

### 3,479,166
### APPARATUS FOR PRODUCING GASES OF PREDETERMINED CHARACTERISTICS

**John H. Hirt, 1100 Ridgeside Drive,**
**Monterey Park, Calif. 91754**
**Filed May 1, 1964, Ser. No. 364,208**
**Int. Cl. C10k** *3/02;* **B01j** *9/00*
**U.S. Cl. 48—196** **6 Claims**

An endothermic gas generator for continuously producing gases from air and hydrocarbon gases including means for preheating the intermixed gas and air to a selected temperature and including in a separate chamber a catalyst to which the heated gaseous mixture is exposed for reaction therewith to produce a gas of predetermined characteristics.



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3,479,167

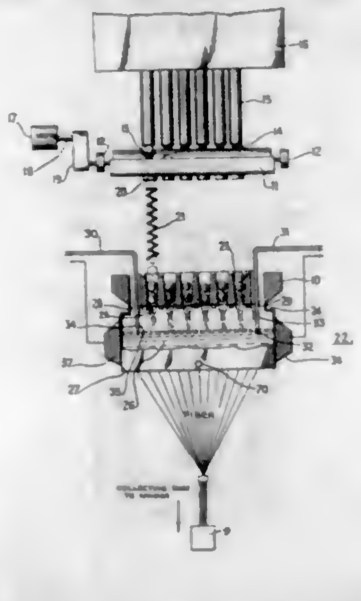
### APPARATUS FOR MAKING GLASS FIBERS

**Leland E. Ashman, Belmont, Mass., assignor to Arthur D. Little Inc., Cambridge, Mass., a corporation of Massachusetts**

**Filed May 2, 1966, Ser. No. 546,706**

**Int. Cl. C03b** *37/02*

**U.S. Cl. 65—1** **4 Claims**



A constant feed of glass marbles is furnished by a rotary feeder to a heated low capacity pre-melter with funnel shaped conical rapid melting cups thereby minimizing holdup of the marbles at the feeder. The melted glass is discharged from the pre-melter cups into a bushing which is heated separately from and independently of the pre-melter. Additionally, the level of the melted glass in the heated bushing may be controlled by a pair of safety probes in the bushing, to give warning if the level of glass is too low and to shut down the feeder and pre-melter if the level is too high.

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3,479,168

### METHOD OF MAKING METALLIC POLARIZER BY DRAWING FUSION

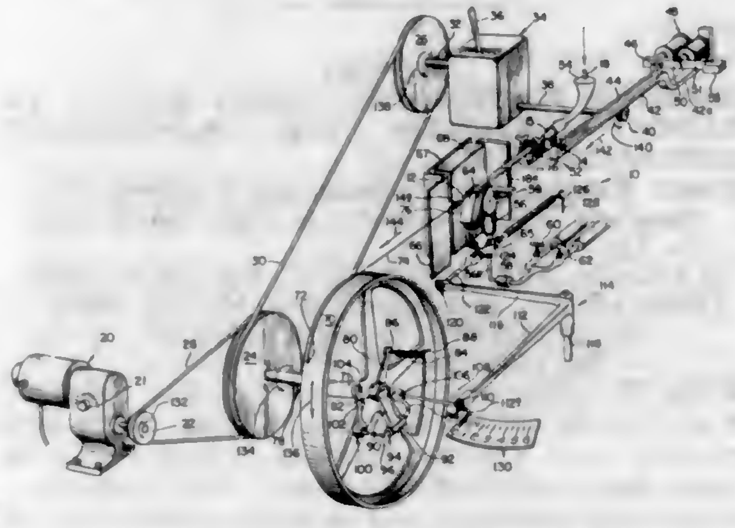
**George R. Bird, Concord, and Maxfield Parrish, Jr., Lexington, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware**

**Filed Mar. 9, 1964, Ser. No. 350,266**

**Int. Cl. C03c** *25/02*

**U.S. Cl. 65—3** **9 Claims**

The present application is concerned with a method of manufacturing an extremely stable and efficient light polarizer in which a multiplicity of microscopic metallic filaments encased in glass are disposed in parallel relation in a generally planar array so as to constitute, for example, a sheet polarizer. The method, in brief, comprises the introduction of a metal in a solid state into a small bore or bores formed lengthwise of a glass sheath, e.g., a tube or plate, the metal being of a type having a melting point which is lower than that at which the glass softens to a ductile state. This is followed by a several-times-repeated procedure comprising the heating, drawing, severing into sections, and grouping of the sections to produce ever-larger areas of a metallic grid encased in glass, comprising repeatedly finer diameters and spacings of its filamentous components, it being understood that with each drawing, the filaments are reduced both as to diameter, side-by-side separation and periodicity. After a suitable number of repetitions of the aforesaid procedures, the desired overall area and physical and light polarizing characteristics are achieved.



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3,479,169

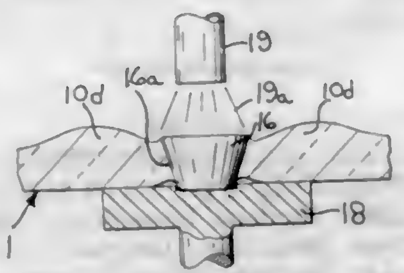
### METHOD FOR SEALING AN ANODE BUTTON TO A GLASS CATHODE RAY TUBE FUNNEL

**Warren Ernst Wilburn, 474 Rumsey Road, Columbus, Ohio 43207**

**Filed June 20, 1966, Ser. No. 558,835**

**Int. Cl. C03c** *29/00*

**U.S. Cl. 65—59** **3 Claims**



This invention relates specifically to sealing a metallic anode button into an aperture in the sidewall of the body portion of an essentially all-glass cathode-ray tube envelope, by axially elevating said button and its closely surrounding glass on a support member moving in a direction towards and in axial alignment with said aperture. The method provides an improved seal with less re-entrancy to provide a durable glass-to-metal seal in the sidewall of an evacuated glass envelope.

3,479,170

### METHOD OF SEALING ZIRCONIUM HYDRIDE COATED NIOBIUM END CAPS TO ALUMINA CERAMIC ENVELOPES

**William C. Louden, South Euclid, Ohio, assignor to General Electric Company, a corporation of New York**

**Filed Oct. 31, 1966, Ser. No. 590,569**

**Int. Cl. C04b** *35/18, 35/48;* **C03c** *27/00*

**U.S. Cl. 65—59** **2 Claims**

In sealing niobium end caps to alumina tubes with a sealing composition of alumina and calcia, a problem encountered in the increase in hardness which occurs in the niobium making it brittle and fragile. This is prevented by coating zirconium hydride on the outside of the niobium end cap prior to sealing to the alumina by vacuum firing.

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3,479,171

### METHOD AND APPARATUS TO PRODUCE TRANSVERSE SURFACE FLOW OF THE FLOAT GLASS BATH METAL

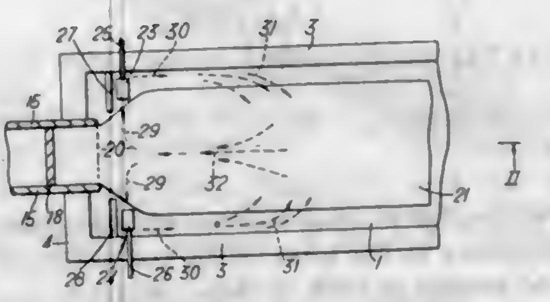
**Albert Sidney Robinson, Southport, and Jack Lawrenson, St. Helens, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain**

**Filed Nov. 15, 1966, Ser. No. 594,425**

**Claims priority, application Great Britain, Nov. 19, 1965, 49,341/65**

**Int. Cl. C03b** *18/02*

**U.S. Cl. 65—99** **7 Claims**



The transverse temperature distribution in a molten glass layer established on a molten metal bath in the upstream region of the bath is controlled by employing linear electromagnetic induction motors to produce transverse surface flows in the molten metal supporting that glass layer and by employing baffles upstream of the motors to deflect the transverse surface flows down the marginal sides of the bath.

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3,479,172

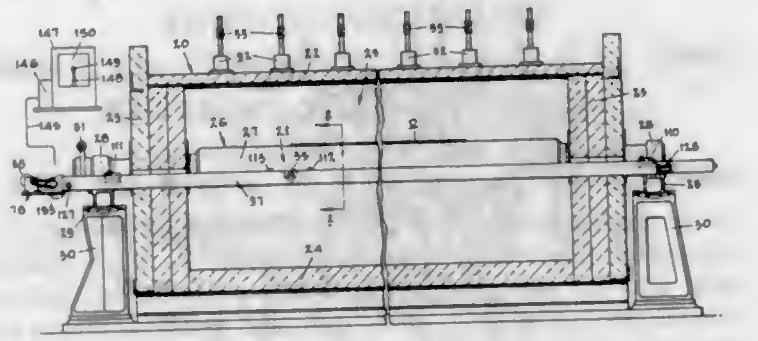
### APPARATUS FOR CONTROLLING GLASS TEMPERATURES

**William E. McCown, Toledo, Robert E. Maltby, Jr., Perrysburg, and Carey M. Allen, Toledo, Ohio, assignors to Libbey-Owens-Ford Glass Company, Toledo, Ohio, a corporation of Ohio**

**Filed Aug. 22, 1966, Ser. No. 574,035**

**Int. Cl. C03b** *25/04*

**U.S. Cl. 65—158** **4 Claims**



Measuring the temperature of a glass sheet as it is conveyed through a lehr. A radiation pyrometer is reciprocated transversely of the sheet along a path parallel to and spaced from the sheet to directly sense its temperature, and the observed temperature profile is transmitted to conventional recording and lehr temperature control apparatus.

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3,479,173

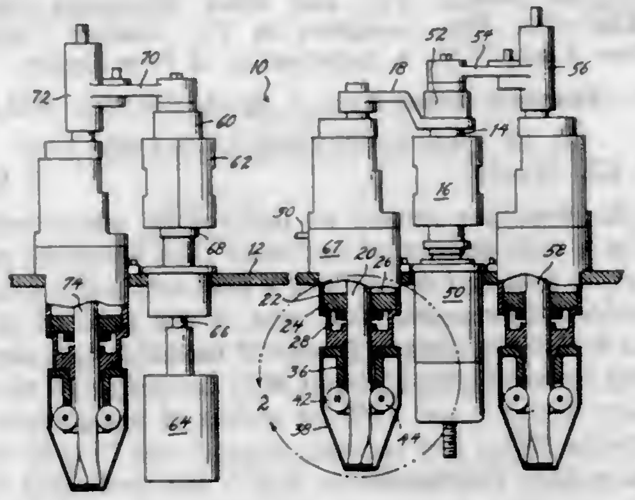
### GLASSWARE FORMING MACHINE

**Robert S. Bracken, Vineland, N.J., assignor to Maul Bros. Inc., Millville, N.J., a corporation of New Jersey**

**Filed Apr. 29, 1966, Ser. No. 547,075**

**Int. Cl. C03b** *9/40, 11/16*

**U.S. Cl. 65—229** **9 Claims**



A piston rod connected to a support arm is caused to rotate as it reciprocates by means of at least one helical cam surface on the outer periphery of the piston rod cooperating with a cam follower supported by a surrounding casing. The support arm may be a baffle arm, funnel arm or blowhead arm.

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3,479,174

### APPARATUS FOR THE AUTOMATIC PRODUCTION OF GLASS BOTTLES

**Jakob Dichter, 93 Sachsendamm, 1 Berlin 62, Schoneberg, Germany**

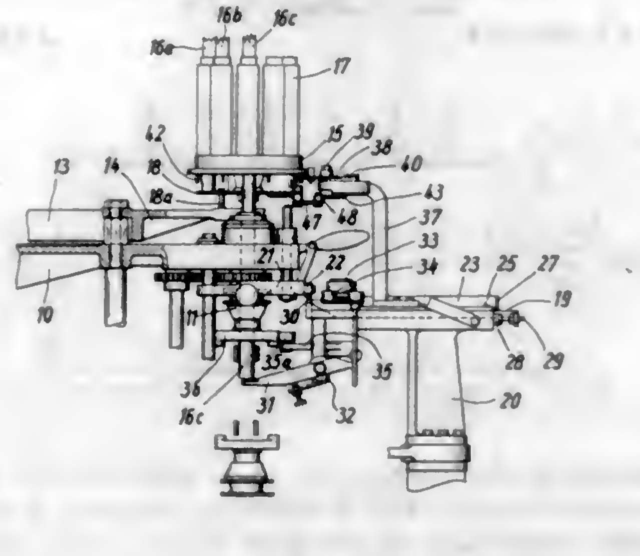
**Filed May 21, 1965, Ser. No. 457,687**

**Claims priority, application Germany, May 26, 1964, D 44,527**

**Int. Cl. C03b** *9/40, 11/16*

**U.S. Cl. 65—323** **5 Claims**

A glass working machine of the type including several chucks fed with glass tubes stored in rotatable magazines each mounted over a chuck is disclosed. Means are disclosed for guaranteeing that the magazine also comes to rest in a clearly defined chuck feeding position when feeding an empty chuck. This means includes a locking device for each machine which, at the end of a switching phase, locks the magazine in a precisely indexed position



and prevents rotation of the magazine. This locking device guarantees that the axis of the axis of the chuck and the axis of the vertically oriented glass tube in the associated magazine are correctly aligned during feeding of the tube from the magazine to the chuck.

### 3,479,175

### METHOD OF MAKING A LIGHTWEIGHT FERTILIZER CONTAINING UREA AND FORMALDEHYDE

**Allen Milton Murphy, Jr., and Franklin Albert Retzke, Virginia Beach, Va., and John Raymond Johnson, Bradenton, Fla., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey**

**No Drawing. Filed Nov. 7, 1966, Ser. No. 592,291**

**Int. Cl. C05c** *9/02;* **C05d** *1/00;* **C05g** *1/00*

U.S. Cl. 71—29 6 Claims

This invention relates to lightweight plant fertilizers having a bulk density of not more than about 40 pounds per cubic foot and comprising a urea and a dry source of formaldehyde reactive with urea in the ratio of at least about 6 moles of urea to 1 mole of formaldehyde and containing between about 20 and 40% by weight of nitrogen, between about 5 and 45% by weight of phosphorus (calculated as $P_2O_5$) and between about 5 and 25% by weight of potassium (calculated as $K_2O$), the combined weight of the nitrogen, phosphorus and potassium content of the fertilizer being at least 40% of the total weight of the fertilizer and to the method of making such fertilizers by extrusion as hereinafter more specifically described.

### 3,479,176

### METHOD AND MULTIPHASE COMPOSITION FOR CONTROLLING PESTS

**Forrest Arthur Wilson, San Antonio, Tex., assignor to Stull Chemical Company, San Antonio, Tex.**

**No Drawing. Filed Mar. 23, 1966, Ser. No. 536,607**

**Int. Cl. A01n** *17/10, 9/36, 9/24*

**U.S. Cl. 71—94 18 Claims**

A pest-treating composition of the invert (water-in-oil) emulsion type where the internal or discontinuous portion of the invert emulsion comprises a multiphase aqueous system, such as a conventional (oil-in-water) emulsion, and at least one pesticide is contained in at least one of the several discrete multiple phases of the invert emulsion.

### 3,479,177

### PROCESS FOR REMOVING ARSENIC FROM ARSENIC-CONTAINING IRON MINERALS

**Giacinto Veronica, Giuseppe Sironi, and Ariano Colombini, Novara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy**

**Filed Oct. 19, 1967, Ser. No. 676,422**

**Claims priority, application Italy, Oct. 21, 1966, 29,095/66**

**Int. Cl. C21b** *1/02;* **C22b** *33/00*

U.S. Cl. 75—7 5 Claims

Described is a process for removing arsenic from iron minerals or pyrite cinders. Lime or limestone is added to ore which is then subjected to heating in an oxidizing atmosphere. This results in a shift of.the granulometric distribution of As in the ore with the finer fraction containing most or the arsenic. The fines are treated with a mineral acid to remove the As leaving Fe. The coarse fraction is subjected to magnetizing reduction and magnetic enrichment.

### 3,479,178

### METHOD OF PREHEATING AND CHARGING SCRAP TO A BOF

**James J. Bowden, P.O. Box 127, Cortland, Ohio 44410**

**Filed May 24, 1966, Ser. No. 552,593**

**Int. Cl. C21c** *5/28*

U.S. Cl. 75—60 1 Claim

Preheating scrap before it is charged into a basic oxygen vessel by placing the scrap on cars which are driven through a tunnel-type furnace. A non-oxydizing atmosphere is maintained in the furnace and radiant heat is utilized to minimize the addition of objectionable oxides to the scrap. The scrap is heated to a temperautre just short of the point where it loses its magnetism, and a magnet is used to lift the scrap from the cars and deliver it to the vessel.

### 3,479,179

### PROCESS FOR THE SELECTIVE CONTINUOUS REFINING OF TIN, ANTIMONY, ZINC, AND ARSENIC IMPURITIES FROM LEAD

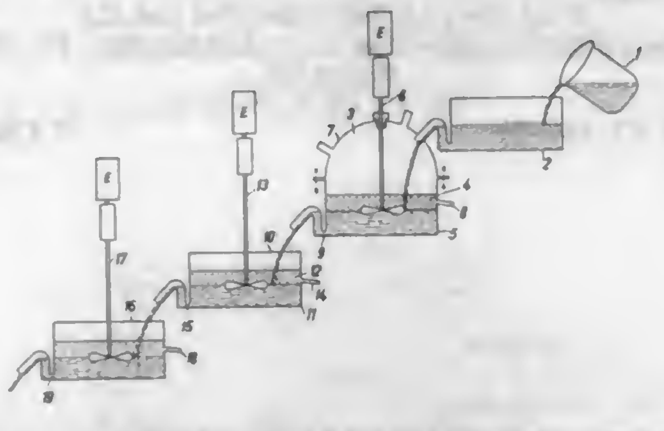
**Peter Paschen, Schellerweg 80, Stolberg, Germany, and Helmut Winterhager, Gut Steeg 24, Aachen, Germany**

**Filed July 26, 1966, Ser. No. 567,933**

**Claims priority, application Germany, July 30, 1965, St 24,208**

**Int. Cl. C22b** *13/06*

**U.S. Cl. 75—78 14 Claims**



A process of refining lead for the separation therefrom of impurities in the form of tin and antimony and either zinc or arsenic or both of these metals or oxides thereof, the said process comprising a three-stage operation,

in the first stage the impure molten lead being subjected to the action of caustic alkali at an elevated temperature and upon exclusion of oxygen followed by withdrawal of the formed slag containing the zinc or arsenic compounds formed by the action of said caustic alkali or both of these compounds;

thereafter in the second stage subjecting the molten lead received from the first stage to the action of caustic alkali at an elevated temperature in the presence of oxygen and withdrawing the slag containing the formed tin compound;

and finally in the third stage subjecting the remaining molten lead received from the second stage to the action of caustic alkali in the presence of oxygen at an elevated temperature higher than that used in the second stage and withdrawing the formed slag containing the antimony compounds, the concentration of oxygen in the second and third stage being limited to that amount required for the impurities which it is desired to eliminate in the corresponding stage;

and recovering the purified lead.

The invention also embraces an apparatus for carrying out the method comprising three vessels arranged in series and means to pass the lead from one vessel to the other and heating means and stirring means for each vessel and means for withdrawing the slag from each vessel.

### 3,479,180

### PROCESS FOR MAKING CHROMIUM ALLOYS OF DISPERSION-MODIFIED IRON-GROUP METALS, AND PRODUCT

**John B. Lambert, Wilmington, Del., and Harold G. Marsh, Severna Park, Md., assignors, by mesne assignments, to Fansteel Metallurgical Corporation, a corporation of Delaware**

**No Drawing. Filed May 24, 1967, Ser. No. 640,811**

**Int. Cl. B22f** *9/00, 3/12;* **C22c** *1/04*

U.S. Cl. 75—206 7 Claims

Difficulties in obtaining a uniform product have hitherto been encountered when making, by powder-blending powder-metallurgy processes, alloys having as metal constituents, by weight, at least 50% of an iron-group metal and 10 to 35% of chromium and optionally, lesser amounts of other metals, said alloys being dispersion-strengthened with particles of a very refractory metal oxide such as thoria. These difficulties are now overcome (1) using a chromium powder in which at least 95% of the particles have a size smaller than 20 microns, (2) using as the powder containing the iron-group metal a powder in which the particulate refractory oxide dispersion-strengthening agent is dispersed as particles having a number average particle size in the 3 to 50 millimicron range, and (3) milling the powder blend, preferably in a liquid medium in an attrition mill, until at least 95% of the powder particles have a size less than 5 microns. Optionally, there is distributed in the milled powder a sufficient amount of carbonaceous material to reduce any metal oxide occlusions, other than the refractory oxide dispersion-strengthening agent, upon treatment with dry hydrogen at elevated temperatures.

### 3,479,181

### PROCESS FOR THE PRODUCTION OF BIMETALLIC MATERIAL WITH HIGH RESISTANCE TO TRANSCRYSTALLINE STRESS CORROSION IN A CHLORIDE ENVIRONMENT

**Arne Ivar Backstrom, Sture Henrikson, and Per Erik Levin, Avesta, Sweden, assignors to Avesta Jernverks Aktiebolag, Avesta, Sweden, a Swedish joint-stock company**

**Filed Feb. 14, 1968, Ser. No. 705,490**

**Claims priority, application Sweden, Feb. 16, 1967, 2,168/67**

**Int. Cl. C22c** *33/02;* **B22f** *1/00*

**U.S. Cl. 75—212 5 Claims**

A process for the production of bimetallic austenitic stainless steel alloys having a resistance to transcrystalline stress corrosion in a chloride environment comprises plating an austenitic stainless steel in powder form with nickel, or nickel in combination with other corrosion resistant metals, in layers virtually coating each powder grain. The powder material is then heated to sinter it and is densified and stretched, such as by rolling, forging or extrusion such that the layers coated onto the powdered grains form corrosion impeding barriers oriented primarily in planes coinciding with the tensile stresses imposed on the material.

### 3,479,182

### LITHOGRAPHIC PLATES

**Simon L. Chu, 30 Monroe St., New York, N.Y. 10002**

**Filed May 12, 1965, Ser. No. 455,073**

**Int. Cl. G03f** *7/08;* **G03c** *1/54*

**U.S. Cl. 96—33 15 Claims**

Presensitized plates are disclosed which have a bimetallic base, a hardened light or heat-hardenable first coating containing a diazonium compound on said base and a light sensitive second coating containing a diazonium compound on said first coating, said first coating serving as a barrier layer between said bimetallic base and said second coating, which plates can be exposed to light through an image transparency, developed and etched to form bimetallic printing plates.

### 3,479,183

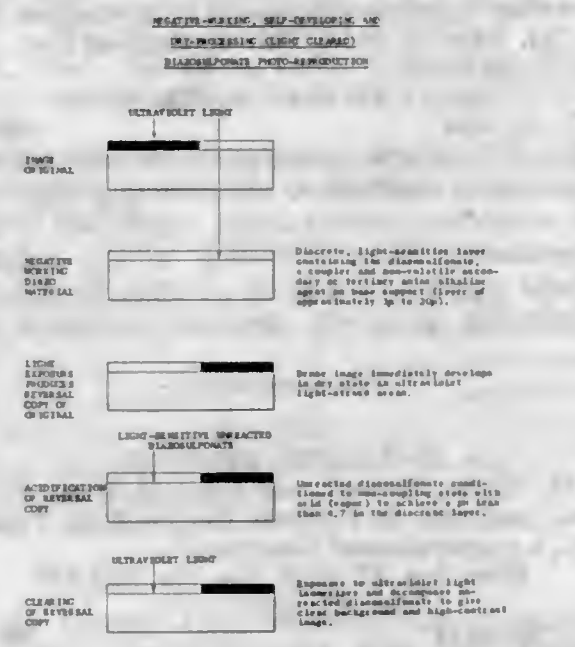
### NEGATIVE-WORKING DIAZOSULFONATE REPRODUCTION PROCESS

**David P. Habib, West Springfield, Robert S. Allard, Chicopee Falls, and Eugene J. Zabik, South Hadley Falls, Mass., assignors to Tecnifax Corporation, Holyoke, Mass., a corporation**

**Filed June 16, 1965, Ser. No. 464,447**

**Int. Cl. G03c** *1/58, 5/34*

**U.S. Cl. 96—49 27 Claims**


NEGATIVE-WORKING, SELF-DEVELOPING AND
DRY-PROCESSING (LIGHT CLEARED)
DIAZOSULFONATE PHOTO-REPRODUCTION
ULTRAVIOLET LIGHT
IMAGE ORIGINAL
NEGATIVE WORKING DIAZO MATERIAL
LIGHT EXPOSURE PRODUCES REVERSAL COPY OF ORIGINAL
LIGHT-SENSITIVE UNREACTED DIAZOSULFONATE
ACIDIFICATION OF REVERSAL COPY
ULTRAVIOLET LIGHT
CLEARING OF REVERSAL COPY

Negative-working self-developing diazo photoreproduction process and product employing a para-amino benzene diazosulfonate and coupler in the presence of a non-volatile amine alkaline agent creating pH environment of between 6.2 and 11.5 for exposure under imagewise actinic illumination to convert the diazosulfonate into a diazonium compound which, in the form of a print-out azo dye-coupled image, is thereafter acidified to a pH below 4.7 and light-cleared by exposure to overall actinic illumination to clear away the background and produce colorless products of decomposition outside of the azo dye image areas.

**3,479,184**

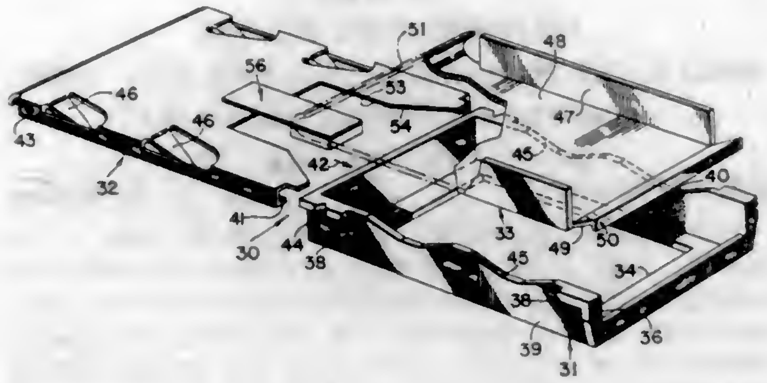
### MULTILAYER FILM PACK

**Edwin H. Land, Cambridge, and Otto E. Wolff, Wayland, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware**

**Filed Sept. 3, 1963, Ser. No. 306,384**

**Int. Cl. G03c** *3/00, 5/54*

**U.S. Cl. 96—76** **4 Claims**



A photographic film package which utilizes a diffusion transfer process to form photographic images by using multilayered photographic film. The film is stored in flat rather than roll form and means are employed for controlling the movement of one layer with respect to the other film layer, said means consisting of a web between the film layers, a properly sized exit opening and a polyurethane foam block mounted on the film container.

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**3,479,185**

### PHOTOPOLYMERIZABLE COMPOSITIONS AND LAYERS CONTAINING 2,4,5-TRIPHENYLIMIDAZOYL DIMERS

**Vaughan Crandall Chambers, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 531,784, Mar. 4, 1966. This application Dec. 7, 1967, Ser. No. 688,703**

**Int. Cl. G03c** *1/70;* **C08f** *29/10*

**U.S. Cl. 96—84** **15 Claims**

Photopolymerizable compositions or layers containing an ethylenically unsaturated compound, at least one free-radical producing electron donor agent, and a 2,4,5-triphenylimidazolyl dimer consisting of two iophine radicals bound together by a single covalent bond, and process comprising imagewise photopolymerization of said layers.

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**3,479,186**

### EMULSION BINDERS

**Lloyd D. Taylor, Everett, and Peter H. Roth, Needham, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware**

**Filed Jan. 27, 1966, Ser. No. 523,379**

**Int. Cl. G03c** *1/72*

**U.S. Cl. 96—114** **10 Claims**

A photosensitive silver halide emulsion wherein the emulsion binder comprises a copolymer of vinyl alcohol and vinyl pyrrolidone.

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**3,479,187**

### PROCESS OF PREPARING A THIXOTROPIC MILK SHAKE

**Wendell S. Arbuckle, College Park, Md., assignor to Charles W. Lease, Mount Airy, Md.**

**No Drawing. Filed Apr. 26, 1965, Ser. No. 451,066**

**Int. Cl. A23g** *5/00*

**U.S. Cl. 99—60** **9 Claims**

A thixotropic milk shake composition is prepared by mixing fat, nonfat milk solids, 15 to 25% sweeteners and where the sweeteners contain at least 50% by weight of 6-carbon atom sugars, a stabilizer, and at least 66% water in a freezer with air, and whipping in the air to about 10 to 30% overrun.

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**3,479,188**

### COOKING PROCESS AND PRODUCT

**Roman J. Thelen, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware**

**Filed Dec. 30, 1964, Ser. No. 422,246**

**Int. Cl. A21d** *13/08*

**U.S. Cl. 99—86** **7 Claims**

A process for cooking a bakery product of the type that is normally fried in deep fat by first subjecting it to microwave energy for a sufficient period of time to allow it to expand and to set the crumb structure of the dough without the presence of a crust, thereafter removing the product from the microwave energy and subjecting it to deep fat frying to brown its surfaces.

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**3,479,189**

### BAKING AUXILIARY

**Carl Vrang, Skade per Hojbjerg, Niels Krog, Brabrand, and Jens Birk Lauridsen, Horret per Marslet, Denmark, assignors to Aktieselskabet Grendstedvaerket, Arhus, Denmark**

**No Drawing. Filed May 12, 1965, Ser. No. 455,325**

**Claims priority, application Great Britain, May 15, 1964, 20,357/64**

**Int. Cl. A21d** *13/08, 13/00;* **A23d** *5/00*

**U.S. Cl. 99—118** **6 Claims**

A baking auxiliary for use in sugar-containing bakery products containing glycerol monoesters of saturated fatty acids and propylene glycol monoesters of saturated fatty acids and water, the weight proportions of glycerol monoester to propylene glycol monester being 65–75 to 35–25 together with 20–60% water and 10–40 percent of selected organic liquids as solvent and 1–8% of co-emulsifier.

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**3,479,190**

### EDIBLE COMPOSITIONS AND PROCESS

**Alexander J. Ganz, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed May 23, 1966, Ser. No. 551,912**

**Int. Cl. A23g** *3/00*

**U.S. Cl. 99—139** **7 Claims**

A topping composition comprising a fat, an emulsifier, and hydroxypropyl cellulose or carboxymethyl hydroxypropyl cellulose.

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**3,479,191**

### METHOD FOR COATING DEHYDRATED FOOD

**Morton S. Cole, Minneapolis, Minn., assignor to Archer Daniels Midland Company, Minneapolis, Minn., a corporation of Delaware**

**No Drawing. Filed July 30, 1965, Ser. No. 476,174**

**Int. Cl. A23b** *1/10, 7/16*

**U.S. Cl. 99—166** **8 Claims**

A method for protecting food products, and particularly dehydrated food products, against oxidative degradation, mold attack and moisture penetration, which comprises coating said food products with separate layers of an amylose ester of a fatty acid having from 12 to 26 carbon atoms, said amylose having at least 70% of the available hydroxyl groups esterified, and a fusible protein.

**3,479,192**

### DYE COMPOSITION

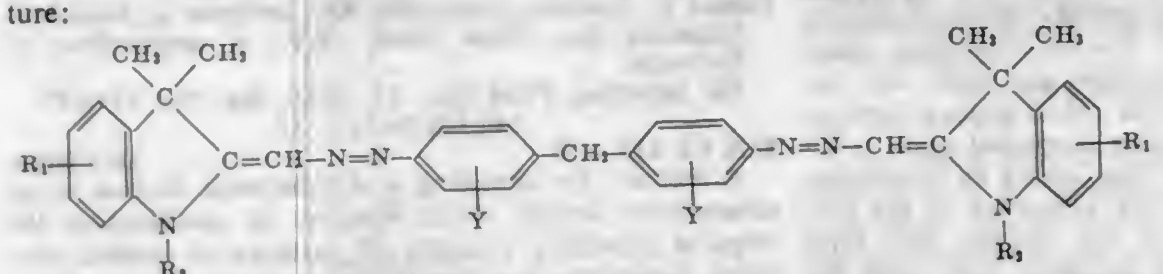
**Ray Allen Clarke, Pitman, and Dale Miller Griffin, Jr., Woodstown, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Original application Nov. 23, 1964, Ser. No. 413,310, now Patent No. 3,399,188, dated Aug. 27, 1968. Divided and this application Nov. 30, 1967, Ser. No. 686,850**

**Int. Cl. C09d** *11/02;* **C09b** *31/30*

**U.S. Cl. 106—22** **5 Claims**

Yellow dyes which in free base form have the structure:



wherein $R_1$ is selected from the group consisting of H, F, Cl, Br, methoxy and ethoxy; $R_2$ is selected from the group consisting of methyl and phenyl; and Y is selected from the group consisting of H, F, Cl, Br, $C_{1-4}$ alkyl, methoxy and ethoxy, and the acid salts of these dyes are mixed with basic dyes of the triarylmethane series to form black dyes and hectographic inks.

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**3,479,193**

### METHOD AND SODA-LIME BATCH FOR MAKING MOLYBDENUM DISULFIDE COLORED GLASS

**Clarence Edward Seeley and Charles Myron Smith, Lancaster, Ohio, assignors to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware**

**No Drawing. Filed Mar. 11, 1965, Ser. No. 439,102**

**Int. Cl. C03c** *3/04*

**U.S. Cl. 106—52** **5 Claims**

A method of producing bright gold to yellow colored soda-lime glasses by adding from about 0.03 to about 0.04 percent by weight of molybdenum disulfide to the glass batch as the coloring agent.

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**3,479,194**

### CHEMICALLY BONDED MAGNESITE BRICK

**Ben Davies and George F. Carini, Pittsburgh, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware**

**Continuation-in-part of application Ser. No. 607,983, Jan. 9, 1967. This application Aug. 15, 1968, Ser. No. 756,727**

**Int. Cl. C04b** *35/04, 35/20*

**U.S. Cl. 106—58** **6 Claims**

Chemically bonded magnesite brick having a soluble sodium phosphate binder and extremely high tensile strength as a result of the formation in service of a calcium sodium silicophosphate bond.

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**3,479,195**

### OIL PAINTING MEDIUM

**Lee K. Parkinson, 3725 Washington Blvd.,**
**Ogden, Utah 84403**

**No Drawing. Filed Oct. 14, 1966, Ser. No. 586,657**

**Int. Cl. C09d** *3/26;* **C08h** *9/00*

**U.S. Cl. 106—159** **2 Claims**

An oil painting medium comprising lead monoxide, boiled linseed oil, a solution of egg yolks in water and vinegar, and turpentine.

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**3,479,196**

### METHOD AND MEANS FOR PROCESSING TISSUE

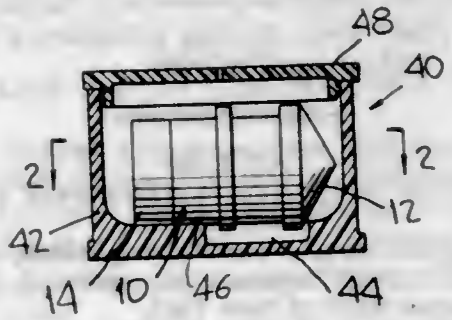
**Richard H. Heimann, Flushing, N.Y., assignor to Technicon Corporation, Ardsley (Chauncey), N.Y., a corporation of New York**

**Filed June 10, 1966, Ser. No. 556,764**

**Int. Cl. A01n** *1/00;* **B05c** *3/00*

**U.S. Cl. 117—3** **16 Claims**

Apparatus and process for treating and fixing solid animal and plant tissue samples includes a sample container having snapped-interlocked telescoping portions, the respective ends being apertured to allow passage of a fixative liquid. The sample jar is disposed within a beaker containing fixative liquid, the beaker being oscillated to produce a flow of fixative liquid, through the sample container. Also, the sample container can be telescoped so as to circulate, or pump, the fixative liquid through the sample container.



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**3,479,197**

### PROCESS FOR APPLYING DECORATIVE COATING TO HARDBOARD

**Alfred N. Mork, Arlington, Calif., assignor to Celanese Coatings Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Original application June 9, 1966, Ser. No. 556,264. Divided and this application Feb. 12, 1969, Ser. No. 798,798**

**Int. Cl. B44d** *1/12, 1/46*

**U.S. Cl. 117—12** **2 Claims**

Decoratively coated hardboard is provided by applying to the hardboard a multicoat coating system which can be dried and cured in one baking operation. The coating system is made of a filler coat, a pigmented base coat, an undertone printing coat, a toptone printing coat, and a clear protective coat superposed on and applied in sequence to the hardboard.

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**3,479,198**

### TREATED VINYL AND POLYESTER AND METHODS AND COMPOSITIONS FOR THE PRODUCTION AND USE THEREOF

**Julius O. Barth, Aurora, Ill., assignor to The Permalux Company, Aurora, Ill., a corporation of Illinois**

**No Drawing. Continuation-in-part of application Ser. No. 395,331, Sept. 9, 1964, and Ser. No. 447,075, Apr. 9, 1965. This application Sept. 14, 1967, Ser. No. 667,647**

**Int. Cl. B44d** *1/12;* **C09d** *3/48*

**U.S. Cl. 117—15** **12 Claims**

Vinyl and polyester materials are provided with a surface film consisting of a vinyl chloride-acetate copolymer, said copolymer being applied in a solvent solution.

Upon drying of the film, inks and coatings of virtually any composition can be applied whereby printed vinyl and polyester can be produced. In a preferred form of the invention, acrylic polymers and alkyd-acrylic copolymers are combined with the vinyl chloride-acetate copolymers in the formation of the film.

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### 3,479,199
### METHOD OF MANUFACTURING JEWELRY PARTS

**Elsie J. Boucher, Box 26, Colville, Wash. 99114**
**No Drawing. Filed Nov. 3, 1966, Ser. No. 591,671**
**Int. Cl. B44c** *1/08*
**U.S. Cl. 117—19** **8 Claims**

A method of manufacturing jewelry parts comprising the following successive steps: coating rigid base pieces with a layer of congealable varnish; and while the varnish is tacky, depositing the base pieces onto a layer of finely divided decorative particles supported upon a flat pliant sheet; then agitating the base pieces by manipulating the said sheet so as to cause adherence of the particles to the tacky surface of the varnish; and after removal of any excess of the particles, and upon the coated surface becoming sufficiently dry and before complete congelation of the varnish, pressing the adhering particles into the congealing varnish by further manipulation of the pliant sheet, thereby producing a smooth surface on the resultant jewelry parts.

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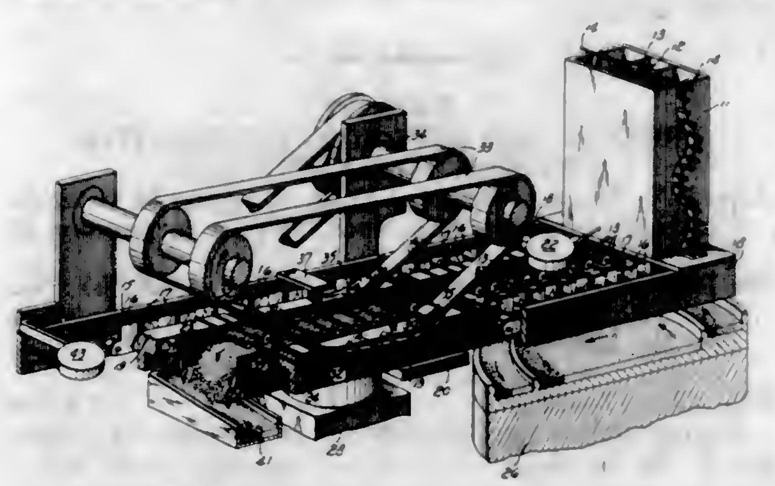
### 3,479,200
### METHOD OF AND APPARATUS FOR COATING ARTICLES

**David A. Estabrooks, Newburyport, Mass., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed Mar. 12, 1965, Ser. No. 439,176**
**Int. Cl. B44d** *1/094*
**U.S. Cl. 117—21** **7 Claims**



Component bodies are heated, then partially submerged into and advanced with a vibratory flow of particles moving along a channel. Additional channels complete a closed path for the vibratory flow. The components are advanced by chains engaging leads extending axially from the component bodies while the leads are supported on a pair of guides. Moving belts engage the leads on the guides to rotate the advancing components. Fused particles coat the heated, rotating component bodies during their advance along the flow of particles. The coatings are then cured.

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### 3,479,201
### COLOR-COATED ROOFING GRANULES

**Robert J. Sloan, White Bear Lake, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**
**No Drawing. Filed Jan. 18, 1966, Ser. No. 521,446**
**Int. Cl. B44c** *1/06;* **B44d** *1/46*
**U.S. Cl. 117—27** **6 Claims**

Artificially color-coated roofing granules and a process for preparing the same wherein an alkali silicate, used to bind coloring pigment to mineral granules, is insolubilized by heat firing the coated granules to cause the alkali silicate to co-react with any two of cryolite, an oxygen containing boron compound, and calcium carbonate without fusing the reactants. The calcium carbonate, when present, is included in a precoat, while the other two reactants, when present, are included with the coloring pigment in the top coating of the granules.

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### 3,479,202
### SKID-RESISTANT SURFACES

**Daniel E. Groteke, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Dec. 17, 1965, Ser. No. 514,687**
**Int. Cl. B44d** *1/52*
**U.S. Cl. 117—38** **16 Claims**

A method for imparting a skid-resistant surface to an enamelware article, which involves in combination the steps of providing a supply of particles of ceramic material, fusing the particles in an arc plasma, imparting a linear velocity to the fused particles, and impinging the fused particles on a surface of an enamelware article to be coated therewith.

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### 3,479,203
### METHOD OF REINFORCING PERFORATIONS IN PAPER

**Charles J. Broadhurst, Ideal Works, Botley Road, Oxford, England**
**No Drawing. Filed Sept. 16, 1966, Ser. No. 579,824**
**Int. Cl. B05c** *1/16;* **B44d** *1/02*
**U.S. Cl. 117—44** **5 Claims**

This disclosure relates to a method of making perforated sheets with reinforced perforations by stacking a plurality of paper sheets with the perforations thereof in substantial alignment to form a tubular cavity defined by boundary edges of the aligned perforations, introducing a strengthening agent in liquid form into the tubular cavity whereby at least a portion thereof is absorbed by the boundary edges of the perforations, and draining off any excess of the strengthening agent not absorbed by the boundary edges, and the strengthening agent being of such nature as to form a coating which when dry is not sticky.

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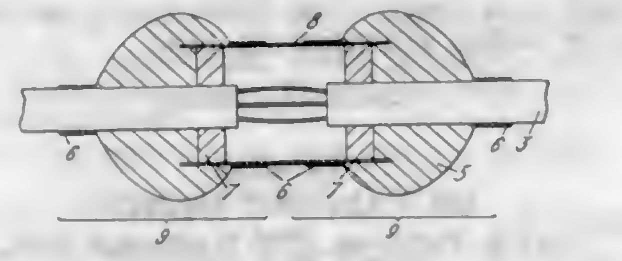
### 3,479,204
### EPOXIDE RESIN SEALS

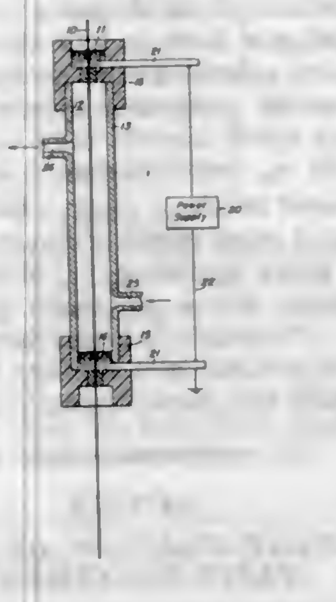
**Leonard Robert Lovelock, Kenneth Richard Way, and Robert Henry Wren, Aldwych, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware**
**Filed Oct. 4, 1965, Ser. No. 492,590**
**Claims priority, application Great Britain, Nov. 6, 1964, 45,298/64**
**Int. Cl. B44d** *1/14, 1/28*
**U.S. Cl. 117—46** **19 Claims**



A moisture retardant seal is formed on a surface by treating the surface to chemically bond with a primer, applying the primer including an epoxide resin and curing agent, applying a putty to said primer including a second epoxide resin and curing agent, and then curing both said resins.

### 3,479,205
### PROCESS FOR PRODUCING BORON FILAMENT

**Charles R. Morelock, Ballston Spa, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Oct. 14, 1966, Ser. No. 586,809**
**Int. Cl. C23c** *9/06;* **B44c** *1/02*
**U.S. Cl. 117—46** **1 Claim**



A process is disclosed for the continuous coating of boron by the thermal decomposition of boron trichloride on the surface of a continuous filament of pyrolytic carbon coated fused filament. In order to be able to ohmically heat the filament to a temperature at which the boron trichloride is efficiently decomposed, the thickness of the pyrolytic graphite coating is increased by thermally decomposing acetylene diluted with nitrogen by ohmic heating, thereby increasing the current carrying capacity of the filament.

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### ERRATUM

For Class 117—68 see:
Patent No. 3,478,716

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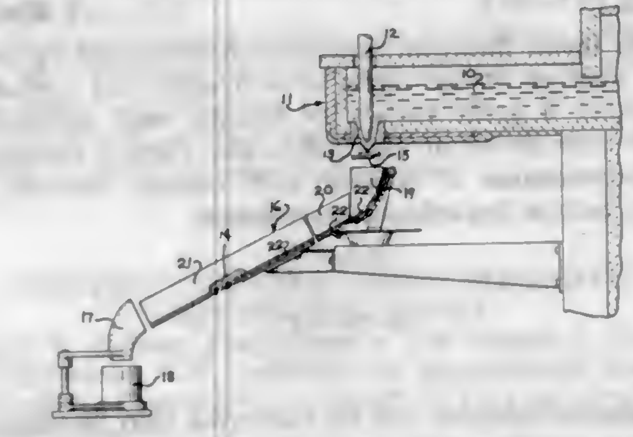
### 3,479,206
### METAL CHUTE COATED WITH FLUOROCARBON POLYMER CONTAINING BORON NITRIDE PLATELETS

**John L. Patterson, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio**
**Filed Mar. 7, 1966, Ser. No. 532,466**
**Int. Cl. B44d** *1/36, 1/14*
**U.S. Cl. 117—75** **8 Claims**



A metal chute adapted to carry molten "gobs" of glass from one place to another due to having on its upper surface a fused coating of a fluorocarbon containing distributed therethrough, also in substantially covering relationship with the surface of the chute, flat crystals or platelets of boron nitride.

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### 3,479,207
### NEOPRENE-GLASS FIBER STRUCTURES AND METHOD FOR PREPARATION

**Alfred Marzocchi, Cumberland, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware**
**No Drawing. Original application Dec. 5, 1962, Ser. No. 242,349, now Patent No. 3,311,528, dated Mar. 28, 1967. Divided and this application Oct. 7, 1966, Ser. No. 612,062**
**Int. Cl. C03c** *25/02;* **B44d** *1/12*
**U.S. Cl. 117—76** **12 Claims**

Glass fibers, prior to their combination with elastomeric material such as neoprene, are coated with zinc oxide, magnesium oxide or a mixture thereof. The oxide coating strongly anchors to the glass fiber surfaces and bonds the elastomeric material to the glass fiber surfaces. The oxides also serve as a curing agent for the elastomeric material.

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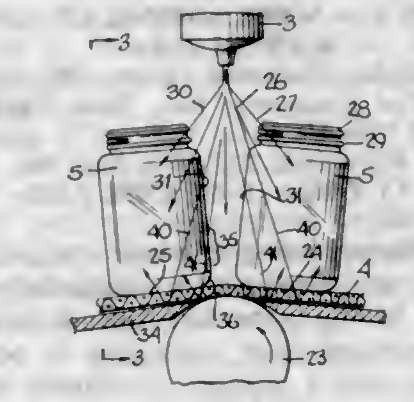
### 3,479,208
### METHOD AND MEANS FOR SURFACE COATING GLASSWARE

**Roger D. Dubble, Lancaster, Ohio, and Erby Orton, Salem, N.J., assignors to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware**
**Filed Sept. 13, 1966, Ser. No. 579,098**
**Int. Cl. B05b** *13/02, 13/06;* **B05c** *7/02*
**U.S. Cl. 117—94** **10 Claims**



A method and means for surface coating of glassware moving on a conveyor. The glassware is tilted successively backwardly and forwardly as it moves beneath the spray coating nozzle by an enlarged roller beneath the conveyor and this tilting motion insures complete coating of the glassware side walls. Reflecting means is positioned beneath the perforate conveyor to redirect spray onto the lower surfaces of the glassware.

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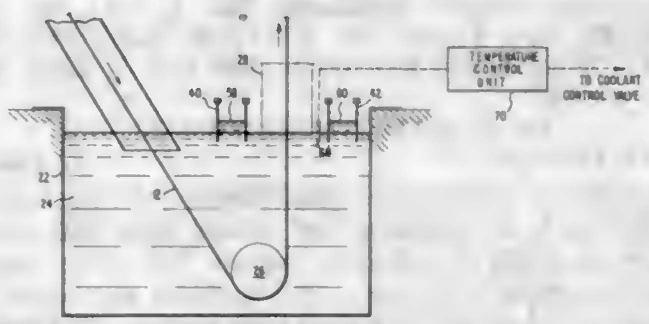
### 3,479,209
### MECHANICAL PLATING

**Erith T. Clayton, Baltimore, Md., assignor to Peen Plate, Inc., Baltimore, Md., a corporation of Maryland**
**No Drawing. Filed July 22, 1966, Ser. No. 567,087**
**Int. Cl. C23c** *3/02*
**U.S. Cl. 117—109** **12 Claims**

A mechanical plating process wherein a metallic coating is applied to an object by subjecting finely divided metallic particles to mechanical energy in an aqueous medium is improved by incorporating into the aqueous medium a water insoluble oxygen-substituted lubricious aromatic compound having a relatively high volatility and a relatively low viscosity.

### 3,479,210
### METHOD AND APPARATUS FOR CONTROLLING COATING METAL TEMPERATURE IN A HOT-DIP COATING BATH

**George P. Ross, Steubenville, Ohio, assignor to National Steel Corporation, a corporation of Delaware**
**Continuation-in-part of application Ser. No. 607,968, Jan. 9, 1967. This application Dec. 4, 1968, Ser. No. 797,300**
**Int. Cl. C23c** *1/14*
**U.S. Cl. 117—114** **8 Claims**

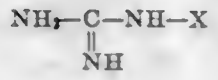


Method and apparatus for controlling coating metal temperature in a hot-dip coating bath utilizing an open top trough structure which may have an open bottom immersed in the hot-dip bath so as to confine a liquid coolant in heat exchange with a portion of the exposed upper surface of the bath. Flow of liquid coolant into the trough is regulated to control coating metal temperature. Automatic control of liquid coolant flow can be exercised by sensing coating metal temperature, comparing sensed coating metal temperature to desired coating metal temperature, and responsively controlling liquid coolant flow.

### 3,479,211
### METHOD OF FLAMEPROOFING CELLULOSIC MATERIALS

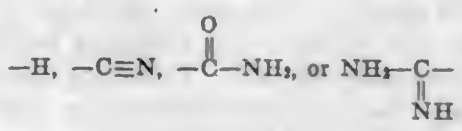
**Irving S. Goldstein, Downers Grove, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York**
**No Drawing. Filed Oct. 27, 1967, Ser. No. 678,523**
**Int. Cl. D06m** *15/64;* **C09k** *3/28*
**U.S. Cl. 117—136** **6 Claims**

A method of flameproofing cellulosic materials wherein the material is impregnated with a substantially insoluble thermoset resin having a particle size of less than 50 microns, the thermoset resin containing in polymerized form phosphorus and a nitrogen compound having the structural formula



$$NH_2-\underset{\underset{\displaystyle NH}{\|}}{C}-NH-X$$

wherein X is either



$$-H,\ -C{\equiv}N,\ -\overset{\overset{\displaystyle O}{\|}}{C}-NH_2,\ \text{or}\ NH_2-\underset{\underset{\displaystyle NH}{\|}}{C}-$$

### 3,479,212
### PROCESS FOR TREATING POLYESTER SHAPED ARTICLES WITH POLYMERIC COMPOUND CONTAINING POLYESTER GROUP AND ACTIVE GROUP IN THE PRESENCE OF SWELLING AGENT FOR POLYESTER

**Michael Mundie Robertson and Geoffrey Alan Horsfall, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain**
**No Drawing. Filed June 28, 1965, Ser. No. 467,745**
**Claims priority, application Great Britain, July 22, 1964, 29,581/64**
**Int. Cl. B44d** *1/22;* **C08d** *13/24*
**U.S. Cl. 117—138.8** **18 Claims**

A process for providing a shaped article made from an essentially linear crystallized polyester with a durable, modified surface comprising treating the shaped article with a water-insoluble crystallizable polymeric compound, said polymeric compound being characterized in that (A) it has a crystalline melting point above 100° C., measured by the temperature of disappearance of birefringence, (B) it contains crystallizable segments of repeat units identical with the repeat units forming the crystallizable portions of the polyester shaped article, and (C) it contains at least one active group serving to modify the surface of the shaped article, the said active group being selected from at least one of the following: an acidic group, a basic group, an ionisable salt group, a water-solvatable polymeric group, an anti-oxidant group, a group which absorbs ultra-violet light of wavelength 290–400 mμ and dissipates it in a manner harmless to the shaped article, a group which contains silicon- or fluorine-based water-repellent groups, a dyestuff group, a polymeric group containing a plurality of alcoholic hydroxyl radicals, and a polymeric group containing a plurality of —CO–NH— radicals; the process being carried out in the presence of a swelling agent for the poly ester from which the shaped article is made.

### 3,479,213
### MIXED SOLVENT SOLUTION OF POLYMER FOR PAPER TREATMENT

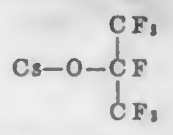
**Keiichi Takeda, Tokyo, Japan, assignor, by mesne assignments, to Momotoshi Watanabe, Tokyo, Japan**
**No Drawing. Filed Dec. 16, 1965, Ser. No. 514,390**
**Claims priority, application Japan, Dec. 29, 1964, 39/74,228**
**Int. Cl. C08f** *33/02;* **D21h** *3/40, 3/80*
**U.S. Cl. 117—155** **5 Claims**

The method for waterproofing and adhesion strengthening comprising: coating a paper or cardboard with a composition comprising a synthetic resin dissolved in a solvent, said solvent consisting of xylene and one of the following, methylene chloride, methyl ethyl ketone and perchloroethylene, the proportion of xylene to the other being 5 to 1–2.

### 3,479,214
### ENHANCING REPELLENCY OF FIBROUS MATERIALS WITH FLUOROALKYL ACRYLATES

**Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture**
**No Drawing. Original application Jan. 9, 1967, Ser. No. 623,483, now Patent No. 3,419,602, dated Dec. 31, 1968. Divided and this application Jan. 11, 1968, Ser. No. 704,208**
**Int. Cl. C09d** *5/00;* **D06m** *13/02*
**U.S. Cl. 117—161** **2 Claims**

Alkali metal fluorocarbinolates, characterized by containing fluorine on the alpha carbon atom, are prepared by reacting a great variety of ketones and substituted ketones with an alkali metal fluoride. Typical example: Hexafluoroacetone is reacted with cesium fluoride to produce cesium heptafluoroisopropylate:



$$Cs-O-\underset{\underset{\displaystyle CF_3}{|}}{\overset{\overset{\displaystyle CF_3}{|}}{C}}F$$

The fluorocarbinolates can be converted into fluorinated esters by reaction with an acid halide. By using an unsaturated halide in the reaction—for example, acryloyl chloride—the resulting esters can be made into homo- or copolymers which are useful in rendering textiles resistant to water, oil, and soils.

### 3,479,215
### COATED PAPER HAVING ELECTROCONDUCTIVE PROPERTIES AND PROCESS OF MAKING THE SAME

**Giancarlo Cavagna, Adelphi, Md., and William C. Walker, New York, N.Y., assignors to Westvaco Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Oct. 14, 1966, Ser. No. 586,615**
**Int. Cl. B32b** *27/10;* **H01b** *1/06;* **C08g** *41/00*
**U.S. Cl. 117—201** **9 Claims**

Polyethylenimine is quaternized to produce an electroconductive polymer. The quaternized polyethylenimine is applied to paper to produce a recording element having an electroconductive surface adapted for electrographic printing.

### 3,479,216
### CERMET RESISTANCE ELEMENT

**William E. Counts, Anaheim, Calif., and Donald A. Bruhl, Jr., Austin, Tex., assignors to Beckman Instruments, Inc., a corporation of California**
**Filed Nov. 4, 1964, Ser. No. 408,897**
**The portion of the term of the patent subsequent to June 19, 1984, has been disclaimed**
**Int. Cl. H01b** *1/02;* **C23c** *9/00*
**U.S. Cl. 117—227** **7 Claims**

A cermet resistance element formed of a non-conductive base member having deposited thereon a single layer of resistance material formed of 50 to 95% by weight of solidified glass and 5 to 50% by weight of a conductive constituent comprising iridium and at least one of the metals selected from the group consisting of platinum, silver, ruthenium, rhodium and palladium, the conductive metal constituent being in finely divided particulate form and uniformly dispersed in electrically conductive relationship throughout the solidified glass.

### 3,479,217
### COPPER-COATED GLASS ARTICLE

**Louis Spanoudis, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio**
**No Drawing. Filed May 31, 1967, Ser. No. 642,315**
**Int. Cl. C03c** *17/06, 3/04*
**U.S. Cl. 117—227** **6 Claims**

A composition of matter consisting of a vitreous, alkali-aluminosilicate glass with an expansion of 70 to $80\times10^{-7}$ cm./cm./° C. and having fused into the outer surface network and extending over extensive areas of said glass surface a conductive metallic copper layer.

### 3,479,218
### METHOD OF TREATING INSULATED WIRE

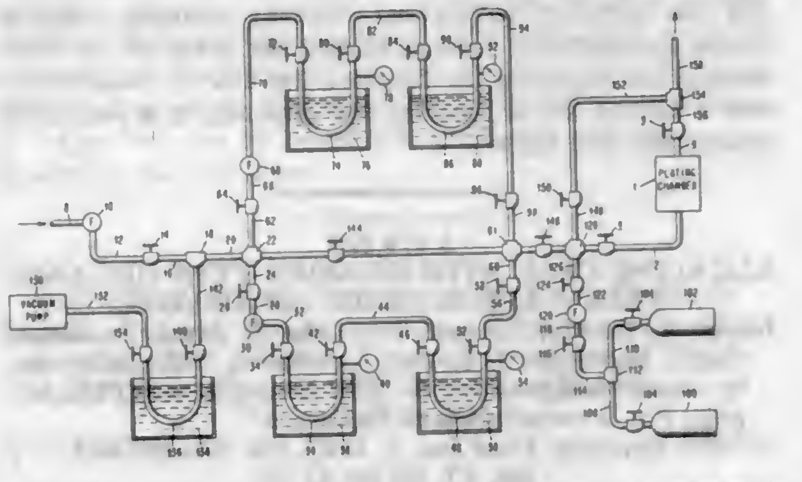
**Kenneth N. Mathes, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Aug. 24, 1966, Ser. No. 574,746**
**Int. Cl. B44d** *1/42, 1/44;* **C08k** *1/82*
**U.S. Cl. 117—231** **3 Claims**

1. A method for improving the breakdown voltage of glass fiber insulated wire at cryogenic operating temperatures comprising providing a wire insulated with glass fiber, immersing said insulated wire in water, and subjecting said wire to a liquid nitrogen environment.

### 3,479,219
### METHOD OF FABRICATING MAGNETIC RECORDING MEDIA

**Robert S. Haines, Poughkeepsie, and Joseph S. Vranka, Clintondale, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Jan. 17, 1966, Ser. No. 521,057**
**Int. Cl. G03g** *19/00;* **G11b** *5/62*
**U.S. Cl. 117—235** **7 Claims**

A method of gas plating ferromagnetic alloys having coercivities greater than 100 oersteds in which the gas subject to decomposition includes a decomposable compound of a ferromagnetic metal and sufficient decomposable dopant to cause the plated material to have a semi-particulate aggregate form.



### 3,479,220
### ACID-MODIFIED STARCHES AND FLOURS AND METHOD OF MAKING THE SAME

**Peter J. Ferrara, New York, N.Y., assignor to Keep Chemical Company, New York, N.Y., a corporation**
**No Drawing. Filed Mar. 24, 1966, Ser. No. 536,957**
**Int. Cl. C13l** *1/08*
**U.S. Cl. 127—38** **6 Claims**

Acid modified starch or cereal flour is prepared by intimately contacting flour or starch with a concentrated mineral acid applied onto a dry inert finely divided carrier.

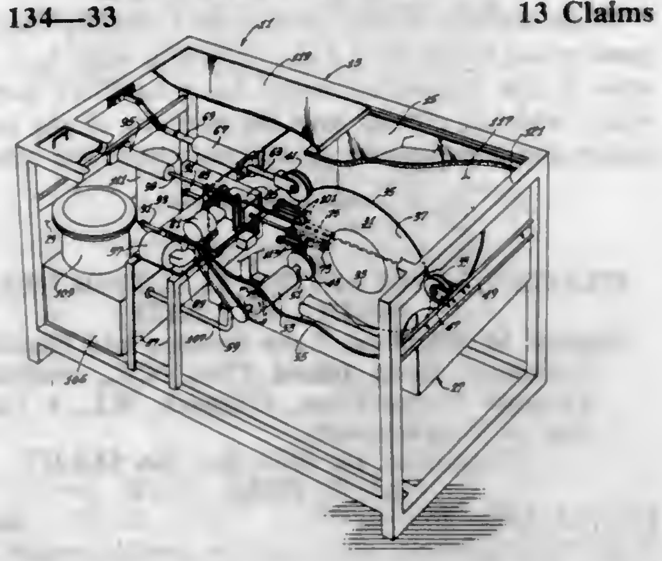
### 3,479,221
### SUGAR PURIFICATION

**Frank C. Buhl, Birmingham, Mich., and Ronald D. Lees and Daniel J. Monagle, Wilmington, Del., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware**
**No Drawing. Filed Nov. 15, 1966, Ser. No. 594,357**
**Int. Cl. C13d** *3/00, 3/14*
**U.S. Cl. 127—46** **13 Claims**

Process of purifying an aqueous sugar slurry employing an acrylamide-beta methacrylyloxyethyltrimethylammonium methyl sulfate copolymer as an aid in flocculating and settling suspended solids.

### 3,479,222
### APPARATUS FOR AND METHOD OF CLEANING MEMORY DISCS

**Charles W. David, Marina del Rey, and Eugene A. Munson, Torrance, Calif., assignors, by mesne assignments, to Disc Pack Corporation, Hawthorne, Calif., a corporation of California**
**Filed June 22, 1966, Ser. No. 559,611**
**Int. Cl. B08b** *7/00, 11/00*
**U.S. Cl. 134—33** **13 Claims**



Cleaning apparatus and method particularly adapted for the cleaning of annular articles such as memory discs. The cleaning apparatus includes a housing having a cleaning chamber therein, mounting means for mounting a disc for rotation within the cleaning chamber, nozzle means for directing solvent against the faces of the disc, brushes for engaging the faces of the disc to clean them, and a second set of nozzles for directing a drying fluid against the disc faces.

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### 3,479,223
### ALKALINE CELL WITH BARRIER-TYPE ORGANIC POLYSULFIDE RESIN SEPARATOR

**Joseph C. Duddy, Trevose, Pa., John T. Arms, Pasadena, Calif., and John J. Kelley, Levittown, N.J., assignors, by mesne assignments, to ESB Incorporated, Philadelphia, Pa., a corporation of Delaware**
**No Drawing. Filed Jan. 6, 1967, Ser. No. 607,661**
**Int. Cl. H01m** *43/00*
**U.S. Cl. 136—6** **8 Claims**

A barrier-type separator containing an organic polysulfide resin which is useful in alkaline cells, particularly cells employing a silver oxide active material. The polysulfide resin reacts with active material metallic ions or particles present in the electrolyte to prevent them from short-circuiting the cell. The separator may also contain a cation exchange resin to improve its permeability. The organic polysulfide resin composition may be formed into a self-supporting thin film or it may be used to coat a supporting member.

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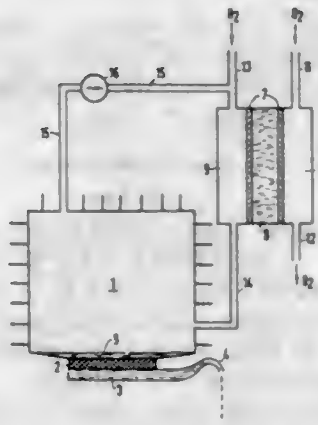
### 3,479,224
### VALVE FOR CONTINUOUS REMOVAL OF REACTION WATER FROM A FUEL CELL

**Philipp Jäger, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany**
**Filed June 29, 1965, Ser. No. 468,079**
**Claims priority, application Germany, June 30, 1964, S 91,775**
**Int. Cl. H01m** *27/02*
**U.S. Cl. 136—86** **6 Claims**



A porous disc in the bottom of a cooling container for condensing water from a gas including water in a vaporous state in the cooling container has a capillary pressure for water which is greater than the pressure of gas in the container and functions to drain water from the container.

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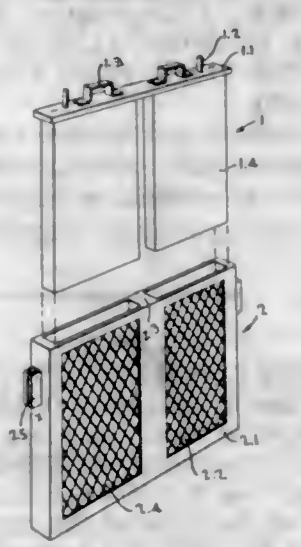
### 3,479,225
### OXYGEN DEPOLARIZED ELECTROCHEMICAL MODULAR UNITS

**Stewart M. Chodosh, Lake Success, and Emanuel G. Katsoulis, Long Island City, N.Y., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts**
**Filed Mar. 15, 1966, Ser. No. 534,377**
**Int. Cl. H01m** *27/04*
**U.S. Cl. 136—86** **10 Claims**

1. An improved metal/or or metal/oxygen electrochemical unit comprising an envelope cathode comprising a hydrophobic membrane and a conductive catalytic coating on the inner surface of said membrane, a replaceable modular anode positioned within said cathode, an electrolyte between the anode and cathode, said cathode comprising at least 4 individual surfaces, at least two of said surfaces being electrically insulated from the second two surfaces, and said modular anode comprising two anode units integral with a common non-conductive top portion, and means for retaining said cathode, anode, and electrolyte in operable association.



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### 3,479,226
### METHOD OF CHEMICALLY REGENERATING AIR DEPOLARIZED CELL WITH HYDROGEN

**Harry G. Oswin, Chauncey, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts**
**Filed July 22, 1966, Ser. No. 567,264**
**Int. Cl. H01m** *27/04*
**U.S. Cl. 136—86** **9 Claims**

1. A method of chemically recharging a metal/air battery during off-load comprising a consumable metal anode, a composite cathode, said anode and cathode being spaced apart and electronically separated from each other and defining an electrolyte chamber therebetween. and an electrolyte in said electrolyte chamber, said composite cathode comprising an air permeable and electrolyte impermeable hydrophobic surface having a layer of electrochemically active catalyst thereon which is active with respect to oxidation of hydrogen and reduction of oxygen comprising the steps of (1) electrically connecting the composite cathode of the cell to the consumable anode; and (2) sweeping the cathode with hydrogen.

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### 3,479,227
### RECHARGEABLE TAPE FUEL CELL

**Bernard A. Gruber, Boxford, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware**
**No Drawing. Continuation of application Ser. No. 538,190, Mar. 29, 1966, which is a continuation-in-part of application Ser. No. 232,144, Oct. 22, 1962. This application Feb. 20, 1968, Ser. No. 706,993**
**The portion of the term of the patent subsequent to July 12, 1983, has been disclaimed**
**Int. Cl. H01m** *27/04*
**U.S. Cl. 136—86** **7 Claims**

A rechargeable tape fuel cell employing a mobile tape separator of electrolytically permeable material carrying the active components of the cell, including active anode and cathode material and providing two sets of active electrode sites or active electrode zones one of which is adapted for collection of current and the other, for supply of current to the tape and means for moving the tape alternately between the active electrode sites or zones which are merely electrically conductive surfaces, which respectively transmit current to and from the tape surfaces.

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### 3,479,228
### PROCESS FOR THE PREPARATION OF ELECTRODE MATERIAL FROM NICKEL SALT AND BORON CONTAINING COMPOUND

**Jean Foucry, Montlhery, France, assignor to Compagnie Generale d'Electricite, Paris, France, a corporation of France**
**No Drawing. Filed May 26, 1964, Ser. No. 370,370**
**Claims priority, application France, June 7, 1963, 937,377**
**Int. Cl. H01m** *43/04, 13/00*
**U.S. Cl. 136—120** **17 Claims**

The present disclosure relates to a catalytically active mass made from a nickel salt and boric acid or boron oxide. A mixture of the nickel and boron derivatives is heated under hydrogen to between 400° and 500° C., the temperature is lowered to less than 150° C. but above ambient temperature, the hydrogen atmosphere is replaced with a mixture of hydrogen and an inert gas while the temperature of the mass falls to ambient temperature and then an inert gas is passed through the resultant material. A preferred nickel salt used in the preparation is nickel carbonate. The obtained mass may be further treated by mixing it with nickel having a larger particle size than that in the mass and then compressing and sintering the mixture under hydrogen at between 350° and 550° C., the mixture of the originally obtained mass and the nickel containing about 10 to 50% by weight of the originally obtained mass. A hydrogen electrode may be prepared by homogenizing a nickel salt, boric acid or boron oxide and a conductive support material, compressing and heating the obtained mixture under hydrogen at a temperature below 500° C., eliminating excess boric acid or boron oxide, and reheating the compressed mixture under hydrogen.

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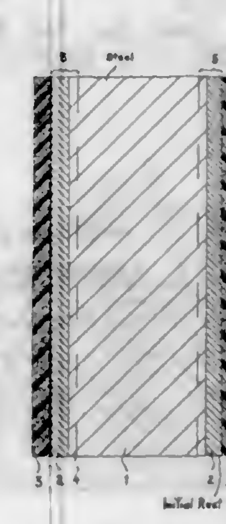
### 3,479,229
### STRUCTURAL STEEL MEMBERS AND METHOD OF MAKING SAME

**Gerhard Becker, Essen, Germany, assignor to Firma Hüttenwerk Oberhausen AG, Oberhausen, Germany, a corporation of Germany**
**Filed July 26, 1966, Ser. No. 568,046**
**Claims priority, application Germany, Feb. 18, 1966, H 58,591**
**Int. Cl. C23f** *7/00, 5/00*
**U.S. Cl. 148—6.24** **10 Claims**



A method of making a steel facing in which a steel body having up to 0.12% carbon, 0.25 to 0.75% silicon, 0.20 to 0.50% manganese, 0.07 to 0.15% phosphorus, up to 0.05% sulphur, 0.25 to 0.55% copper, 0.3 to 1.25% chromium, up to 0.65% nickel, balance iron, is prerusted with an aqueous solution of copper sulphate or nickel sulphate and iron nitrate. After drying of the prerust solution and after-moisturizing, a film-forming layer of elastomer, synthetic resin, cellulose, wax or a film-forming silicate is applied. The film-forming layer is penetrable by vapor but not by liquid and gradually weathers away to expose the rust layer.

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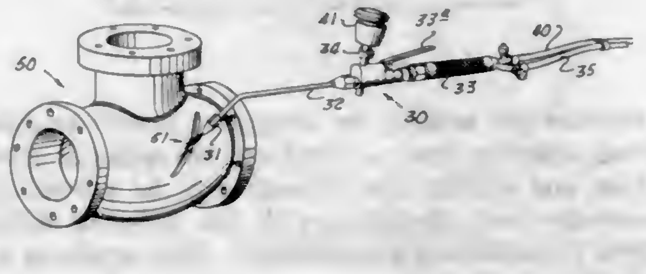
### 3,479,230
### WELDING FLUX FOR NODULAR CAST IRON

**Dan T. Roberts, Corsicana, Tex., assignor to Iron City Iron Works, Corsicana, Tex., a corporation of Texas**
**Filed Dec. 5, 1966, Ser. No. 599,159**
**Int. Cl. B23k** *35/36*
**U.S. Cl. 148—24** **5 Claims**



Method and materials for welding nodular cast iron including melting modular iron filler metal having substantially the same characteristics as the parent metal in the presence of a flux of defined proportions including cerium, calcium, silicon, magnesium, and borax to provide a weld transition zone of nodular iron.

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### 3,479,231
### WELDING PRODUCT AND PROCESS

**David A Joseph, New Canaan, Conn., assignor to Eutectic Welding Alloys Corporation, New York, N.Y., a corporation of New York**
**No Drawing. Filed Nov. 12, 1965, Ser. No. 507,548**
**Int. Cl. B23k** *35/36, 35/22;* **C22c** *39/44*
**U.S. Cl. 148—24** **9 Claims**

A consumable particle product comprising a mixture of resin flux coated metal particles and refractory carbide particles.

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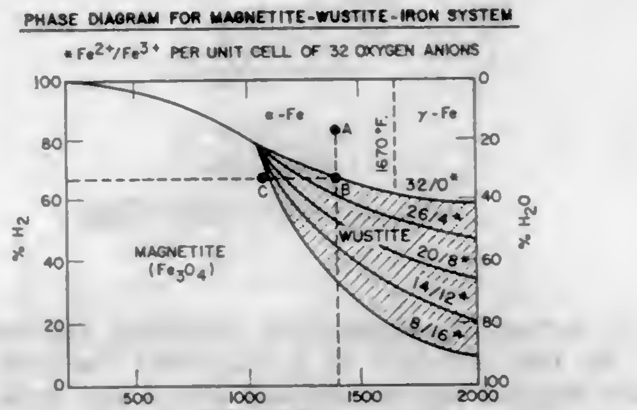
### 3,479,232
### PASSIVATION OF METALS

**Leo Broussard, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware**
**Filed Sept. 20, 1966, Ser. No. 580,725**
**Int. Cl. C23f** *9/02*
**U.S. Cl. 148—31.5** **4 Claims**



Iron obtained by the direct reduction of oxidic iron ore is passivated to prevent oxidation by forming a surface film of inverse spinel form of magnetite. The film is formed by a two-step mild oxidation process.

### 3,479,233

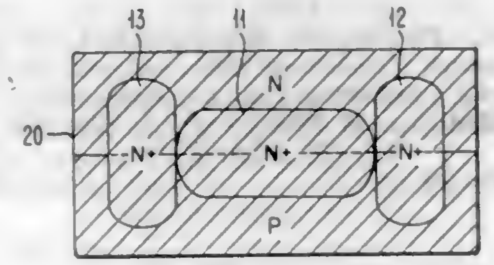
## METHOD FOR SIMULTANEOUSLY FORMING A BURIED LAYER AND SURFACE CONNECTION IN SEMICONDUCTOR DEVICES

**Robert H. F. Lloyd, Sunnyvale, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Jan. 16, 1967, Ser. No. 609,438**

**Int. Cl. H01l** *7/36*

**U.S. Cl. 148—174** **2 Claims**



A method for making an integrated circuit transistor. A buried collector layer is produced by epitaxial growth. The base and emitter are diffused into the grown layer. The collector uses impurities with two different diffusion constants (arsenic and phosphorus). This produces a U-shaped buried collector.

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### 3,479,234

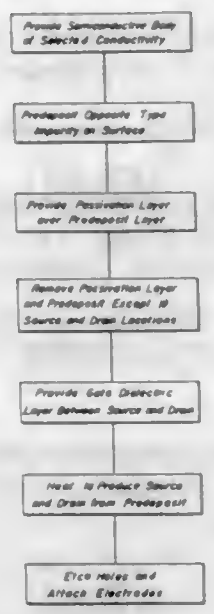
## METHOD OF PRODUCING FIELD EFFECT TRANSISTORS

**Peter V. Gray, Scotia, N.Y., assignor to General Electric Company, a corporation of New York**

**Filed May 1, 1967, Ser. No. 634,985**

**Int. Cl. H01l** *7/44*

**U.S. Cl. 148—187** **1 Claim**


Provide Semiconductive Body of Selected Conductivity
Predeposit Opposite Type Impurity on Surface
Provide Passivation Layer over Predeposit Layer
Remove Passivation Layer and Predeposit Except in Source and Drain Locations
Provide Gate Dielectric Layer Between Source and Drain
Heat to Produce Source and Drain from Predeposit
Etch Holes and Attach Electrodes

A method of automatically registering the gate region of the thin dielectric of a field effect transistor with a short channel between diffused source and drain regions which includes defining the extent of the gate dielectric simultaneously with the source and drain regions. This definition is accomplished by an etch step which also removes a predeposited impurity source layer except at the source and drain locations which are then produced by a subsequent diffusion.

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### 3,479,235

## BERYLLIUM-CONTAINING POLYMERIC PROPELLANT COMPOSITIONS

**Gaetano F. D'Alelio, South Bend, Ind., assignor to Dal Mon Research Co., Cleveland, Ohio, a corporation of Delaware**

**No Drawing. Continuation of applications Ser. No. 751,107, July 28, 1958; Ser. No. 761,484, Sept. 17, 1958; and Ser. No. 762,227, Sept. 22, 1958. This application Sept. 27, 1961, Ser. No. 141,015**

**Int. Cl. C06c** *5/02*

**U.S. Cl. 149—19** **20 Claims**

1. A polymeric composition useful as a solid propellant fuel consisting essentially of 5–95 percent by of weight of an oxidizer selected from the class consisting of solid and liquid oxidizers and 95–5 percent by weight of a polymer having a plurality of repeating units in the polymer molecule thereof having a formula —Be—Y— wherein Y is a polyvalent radical consisting of hydrocarbon and ether portions, said valencies being connected to hydrocarbon portions thereof.

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### 3,479.236

## PROCESS FOR THE PREPARATION OF PENTAERYTHRITOL TETRANITRATE FREE FROM ACID AND EXPLOSIVE COMPOSITIONS HAVING AN IMPROVED SENSITIVITY AND COMPRISING SUCH PENTAERYTHRITOL TETRANITRATE

**Joseph A. Wyler, Pinellas, Fla., assignor to Commercial Solvents Corporation, Terre Haute, Ind., a corporation of Maryland**

**No Drawing. Filed Feb. 7, 1968, Ser. No. 703,556**

**Int. Cl. C06b** *3/00*

**U.S. Cl. 149—93** **18 Claims**

A process is provided for the preparation of pentaerythritol tetranitrate that is substantially free from acid by dissolving or dispersing acid-containing pentaerythritol nitrate in a liquid explosive of low sensitivity in the presence of an excess of water or aqueous alkali. The process is capable of producing pentaerythritol tetranitrate containing less than 0.005% $HNO_3$.

The invention also provides explosive compositions having an exceptionally high sensitivity and composed of such pentaerythritol tetranitrate and an explosive of low sensitivity. Such compositions can contain less than 0.005% $HNO_3$, and from about 0.25 to about 10 parts of explosive of low sensitivity per part of pentaerythritol tetranitrate.

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### 3,479,237

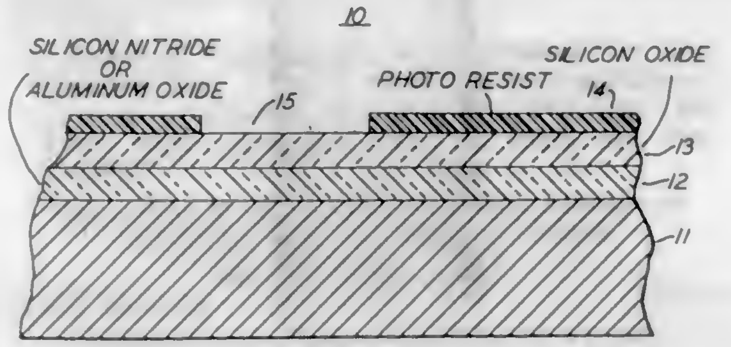
## ETCH MASKS ON SEMICONDUCTOR SURFACES

**Arpad A. Bergh, Bethlehem, and Willem van Gelder, Allentown, Pa., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**

**Filed Apr. 8, 1966, Ser. No. 541,173**

**Int. Cl. C23f** *1/02;* **H01l** *7/00*

**U.S. Cl. 156—11** **3 Claims**



Patterns are etched in coatings of silicon nitride, aluminum oxide, or aluminum silicate by forming phosphoric acid resistant masks in silicon oxide, molybdenum or platinum using conventional photoresist procedures.

### 3,479,238

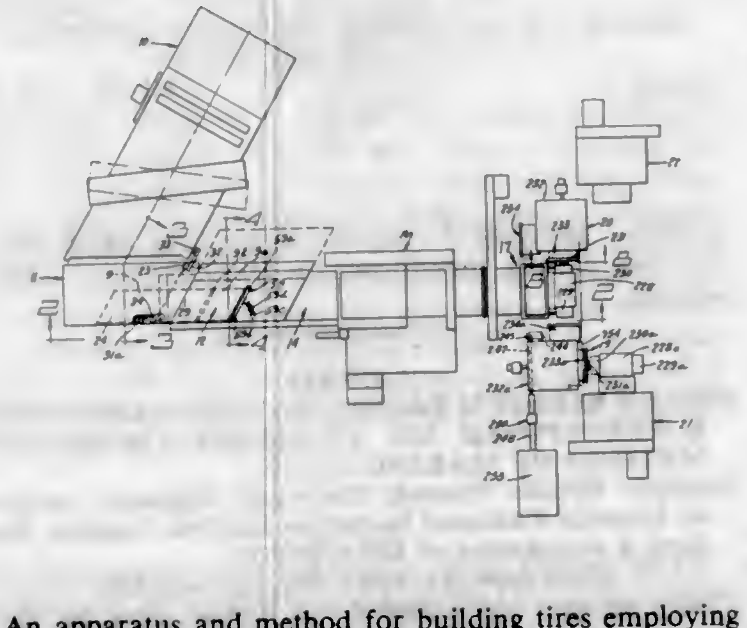
## APPARATUS AND METHOD FOR SUPPLYING SHEET MATERIALS AND BEADS TO AND ASSEMBLYING THE SAME ON A TIRE BUILDING DRUM

**Norman T. Kehoe, Detroit, and Elwood A. Stiegler, Grosse Pointe Park, Mich., assignors to Uniroyal, Inc., a corporation of New Jersey**

**Filed Jan. 8, 1964, Ser. No. 336,495**

**Int. Cl. B29h** *17/04, 17/24*

**U.S. Cl. 156—111** **38 Claims**



An apparatus and method for building tires employing a pair of tire building drums constructed and arranged for alternate movement between a common first position, at which tire components including liners, plies, toe strips and bead rings are applied to the drums, and separate second positions, at which tire tread is applied to the tire components previously mounted on the drums at the first position. Suitable mechanisms are incorporated for cutting the liner material, plies and toe strips to predetermined dimensions, for supplying the same to the drum at the common first position and for assembling these components and suitable beads on the drums at such first position.

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### 3,479,239

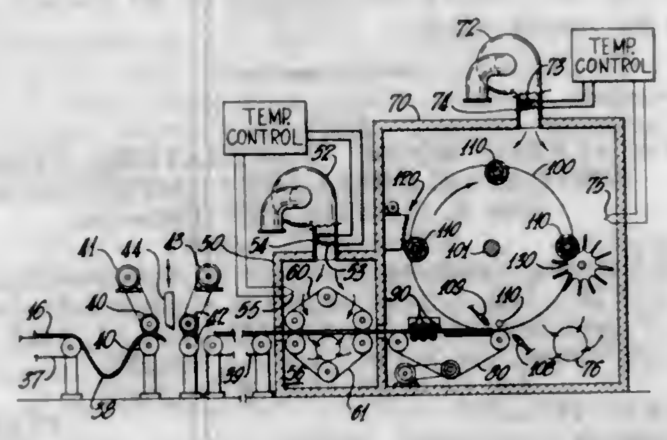
## METHOD AND APPARATUS FOR PRODUCING TUBULAR FIBROUS BODIES

**William B. Hullhorst, Granville, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware**

**Filed Nov. 24, 1965, Ser. No. 509,575**

**Int. Cl. B29d** *23/01;* **B32b** *1/08*

**U.S. Cl. 156—184** **13 Claims**



A preferred embodiment of the method and apparatus is described herein in which the cure of a binder in a pelt is initiated before the pelt is wrapped on a mandrel. The resultant tubular body is provided with a high density inner surface, low density intermediate wraps for high insulating values, and a high density outer surface. The body is rotated with respect to the mandrel before the binder cure is completed to free the body for stripping from the mandrel.

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### 3,479,240

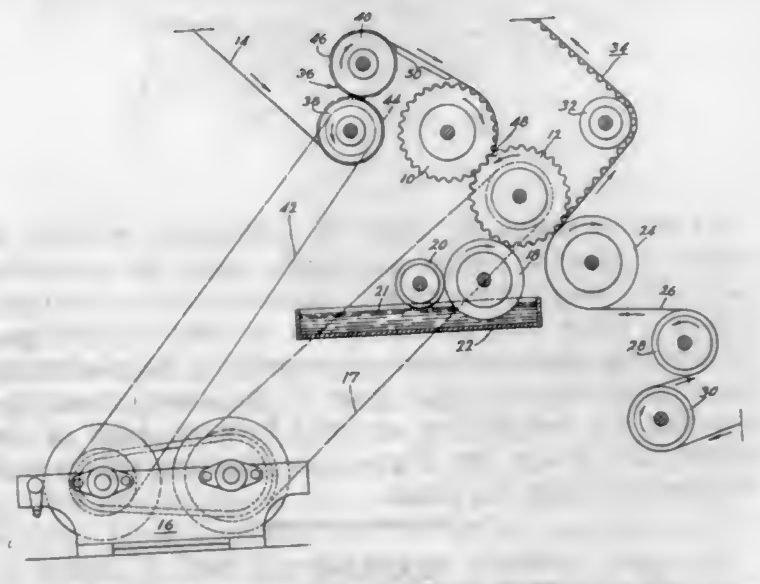
## PREFEEDER MECHANISM FOR SINGLE FACER MACHINES

**Henry W. Moser, Haddonfield, N.J., assignor to Harris-Intertype Corporation, a corporation of Delaware**

**Filed Aug. 3, 1964, Ser. No. 386,887**

**Int. Cl. B65h** *23/18;* **B31f** *1/28*

**U.S. Cl. 156—205** **8 Claims**



Prefeeder rolls are positioned ahead of and adjacent to the corrugating rolls of a single-facer for prefeeding the medium to the corrugating rolls with a light, substantially constant tension with an automatic control on the prefeeding with the paper medium being fed into the corrugating rolls at a speed greater than the speed of the corrugating rolls.

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### 3,479,241

## APPARATUS FOR MAKING NONWOVEN PILE CARPETS

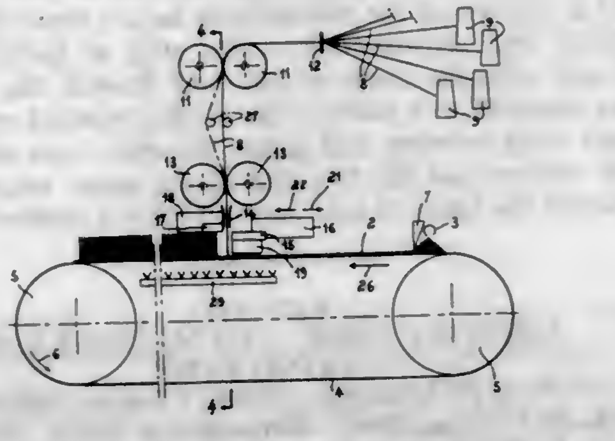
**Pierre Jean Marc Partensky, Lyon, France, assignor to B.T.B. Benoit-Le Tapis Brosse, Lyon, France**

**Filed Mar. 18, 1966, Ser. No. 535,373**

**Claims priority, application France, Mar. 24, 1965, 45,800**

**Int. Cl. B32b** *31/18;* **D04h** *11/08*

**U.S. Cl. 156—435** **1 Claim**



Nonwoven pile carpet is produced by spreading a layer of plastic on a conveyor belt, and while it is still tacky, pushing the edge of a sheet of fiber into the plastic. A knife cuts off the fiber to the desired pile depth, and a heel on the knife presses the cut-off fibers against a previously inserted row.

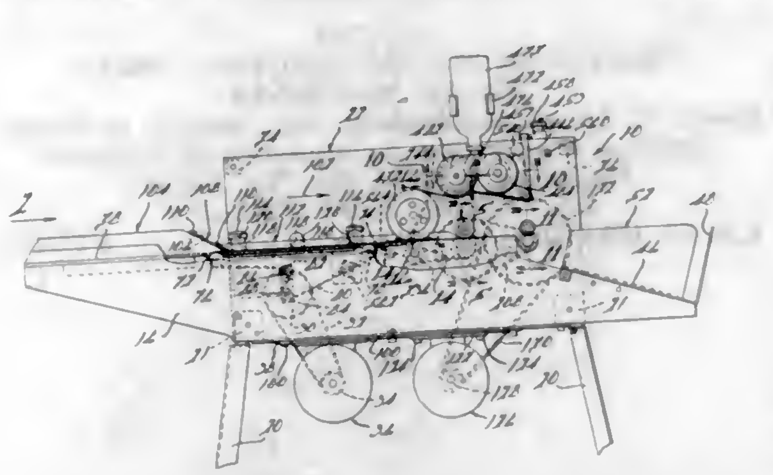
### 3,479,242
### REINFORCING MACHINE

**Joe Scott, Southfield, Mich., assignor to Scott Equipment Company, Inc., Detroit, Mich., a corporation of Michigan**

**Filed July 18, 1966, Ser. No. 565,802**

**Int. Cl. B32b** *31/18;* **B31f** *7/00*

**U.S. Cl. 156—522** **33 Claims**



In an apparatus for applying reinforcing material to sheets of paper or similar workstock, means for conveying successive sheets through the apparatus, means for providing a space between the sheets as they are conveyed through the apparatus, means for applying the reinforcing material to predetermined areas of the sheets, means for shearing the reinforcing material between each of the sheets, and means for aligning the shearing means with the space between the sheets.

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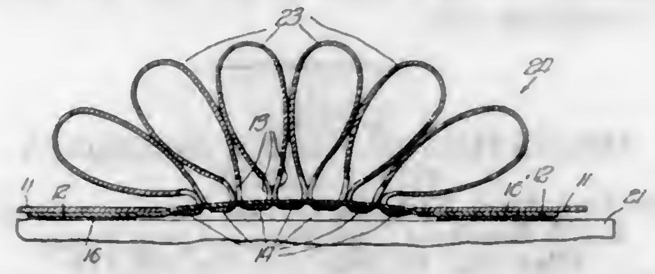
### 3,479,243
### MEANS FOR FORMING AND APPLYING RIBBON BOWS

**Stuart H. Doig, Marengo, Ill. 60152**

**Filed Oct. 18, 1965, Ser. No. 496,828**

**Int. Cl. D04d** *7/10;* **A41d** *25/02*

**U.S. Cl. 161—9** **6 Claims**



A decorative ribbon slidably mounted by transverse loops to a paper strip having pairs of closely spaced adhesive areas relatively widely separated therealong so that a portion of the ribbon may be cut from the length thereof with its associated paper strip to include a pair of said adhesive areas at one end thereof, the endmost area attached to a surface, the ribbon bunched up on said paper strip between said areas, the other area secured to said surface and the free end of the paper strip torn off adjacent the inner of said areas to form a decorative bow.

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### 3,479,244
### LINKED FABRIC AND METHOD FOR MAKING SAME

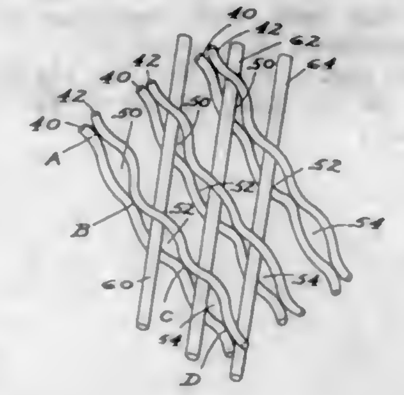
**Peter P. A. Burnett, Mount Clemens, Mich.**
**(5645 Forman Drive, Birmingham, Mich. 48010)**

**Filed Oct. 19, 1965, Ser. No. 497,797**

**Int. Cl. D04h** *3/05, 3/12*

**U.S. Cl. 161—58** **5 Claims**

A linked unwoven fabric and process for making the same which comprises a plurality of parallel strands crossed by a second set of strands and overlaid by a third set of strands parallel to the first strands wherein the first and third set of strands are arranged in pairs and joined at junction points between the second set of strands to form a plurality of relatively large loops which entrap the cross strands, thus forming a fabric material without weaving.



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### 3,479,245
### WOVEN STRETCH FABRIC HAVING YARN CRIMP SUPERIMPOSED ON FILAMENT CRIMP AND METHOD OF MAKING SAME

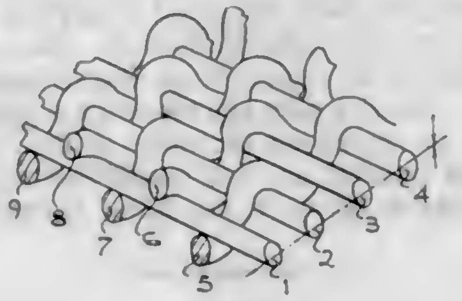
**Geoffrey Windle Manock, Harrogate, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain**

**Filed Nov. 25, 1964, Ser. No. 413,886**

**Claims priority, application Great Britain, Nov. 25, 1963, 46,440/63**

**Int. Cl. D03d** *15/08, 17/00*

**U.S. Cl. 161—77** **10 Claims**



A woven fabric having stretch properties in a given direction as a result of the presence of stretch yarns containing crimped thermoplastic filaments is treated to increase the stretch properties by tensioning the fabric in the other direction to increase the magnitude undulations in the stretch yarns, heat setting the increased undulations in the stretch yarns and releasing the tension whereby the yarn crimp is superimposed on the filament crimp in the stretch yarns.

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### 3,479,246
### CATALYZED ROOM TEMPERATURE CURING SHELF STABLE SEALANT COMPOSITIONS

**John R. Stapleton, 1017 Elmwood, Wilmette, Ill. 60091**

**No Drawing. Continuation-in-part of application Ser. No. 524,211, Feb. 1, 1966, which is a continuation-in-part of application Ser. No. 517,321, Dec. 29, 1965. This application Aug. 8, 1967, Ser. No. 659,020**

**Int. Cl. C09j** *3/14;* **B32b** *15/02*

**U.S. Cl. 161—218** **17 Claims**

Sealant composition containing liquid room temperature reactive monomer-peroxide mixtures such as polyethylene glycol dimethacrylate and di t-butyl diperphthalate mixtures which form a strong adhesive bond between closely facing metal surfaces at room temperature and yet are stable under storage conditions and which can also contain accelerators and co-accelerators such as ethoxyethoxyethoxypropyl amine and saccharin; method of bonding metal surfaces and the resulting bonded structure using the sealant composition.

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### 3,479,247
### RESINS PREPARED FROM AMINO COMPOUNDS, ALDEHYDES, POLYHYDROXYL COMPOUNDS AND MONOHYDRIC ALCOHOLS

**Francis A. Bonzagni, Springfield, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**

**No Drawing. Filed May 23, 1966, Ser. No. 551,913**

**Int. Cl. B32b** *27/42, 27/10*

**U.S. Cl. 161—263** **7 Claims**

Disclosed herein is a process for producing solution stable resins which comprises the steps of reacting together under alkaline conditions a resin forming amino compound and an aldehyde, the molar ratio of aldehyde to amino compound being at least 1:1, further reacting the resulting solution in the presence of a polyhydroxyl-containing compound under acid conditions with a monohydric alcohol and then adjusting the pH of the resulting solution to 8.5–10.5 This process produces resins which may be dissolved to form laminating syrups and to laminates prepared therefrom.

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### 3,479,248
### PROCESS FOR SOLUBILIZING THE HEMICELLULOSE OF VEGETABLE MATERIALS AND FOR RECOVERING THE SUGARS FROM THE SOLUBILIZED HEMICELLULOSE

**Luciano Nobile, Milan, Italy, assignor to Ledoga S.p.A., Milan, Italy**

**No Drawing. Filed Oct. 7, 1965, Ser. No. 493,896**

**Claims priority, application Italy, July 30, 1965, 17,383/65**

**Int. Cl. D21c** *11/00*

**U.S. Cl. 162—16** **9 Claims**

A process for the production from ligno-cellulose of a cellulose pulp (suitable for the manufacture of hardboard, paper and the like), containing the desired percentage of hemicellulose, adjustable within wide limits, and a liquor containing only pentosans, from which pure xylose can be crystallized. The process is characterized by a controlled attack of ligno-cellulose material with steam at 150°–180° C. for 1–30 minutes and by the fact that the steam-treatment as well as the successive treatments of the cellulose pulp are performed at a pH of the liquor comprised between 3.2 and 5. The hydrolysis of the pentosans containing liquor is performed, after defecation, concentration and purification, by hot treatment at a pH lower than 2, thus avoiding any degradation to furfural.

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### 3,479,249
### PRETREATMENT OF WOOD PULPS WITH AN ALKALINE SOLUTION OF FORMALDEHYDE

**John H. Kalisch, Hawkesbury, Ontario, Canada, assignor to Canadian International Paper Company, Montreal, Quebec, Canada**

**Filed Apr. 4, 1966, Ser. No. 539,683**

**Int. Cl. D21c** *3/26*

**U.S. Cl. 162—18** **4 Claims**

A process for making pulps of high unbleached brightness and increased pulp yield from coniferous wood comprising pretreating the wood with an alkaline solution of formaldehyde at a temperature of between 20° C. and 50° for 90 to 120 minutes, the alkaline solution containing from 2.5% to 3.5% sodium hydroxide and from 0.15% to about 0.4% formaldehyde, and the proportion of solution to wood being 5 to 1 by weight. A conventional sulfite cook then results in a pulp of improved yield and brightness.

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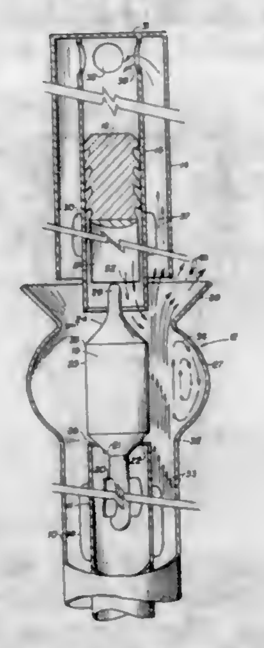
### 3,479,250
### IN-REACTOR CONTROL DRIVE SYSTEM

**Charles C. Ripley, San Jose, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission**

**Filed Dec. 29, 1967, Ser. No. 694,728**

**Int. Cl. G21c** *7/16*

**U.S. Cl. 176—36** **6 Claims**



Nuclear reactor control drive system in which a fluidic amplifier for switching a force-transmitting fluid is located at the base of a piston-driven control rod assembly in a nuclear reactor having two tubes, one communicating with the bottom of the control rod and piston, and the other communicating with the top of the control rod and piston. A fluid signal into the amplifier diverts the flow of a force-transmitting fluid from one tube to the other to either raise or lower the control rod by hydraulic pressure of the flowing force-transmitting fluid against the piston.

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### 3,479,251
### PROCESS FOR THE PRODUCTION OF MOLDED OBJECTS

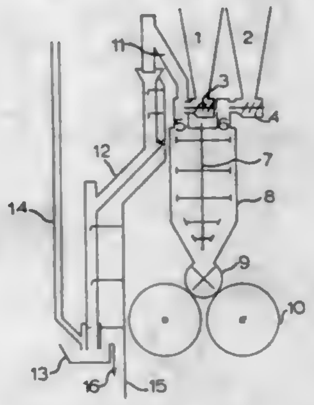
**Georg Kardaun, Stein, and Hubertus H. Smeets, Spaubeek, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands**

**Filed Aug. 13, 1965, Ser. No. 479,588**

**Claims priority, application Netherlands, Aug. 18, 1964, 6409480**

**Int. Cl. C10l** *5/02;* **C10b** *55/04, 45/02*

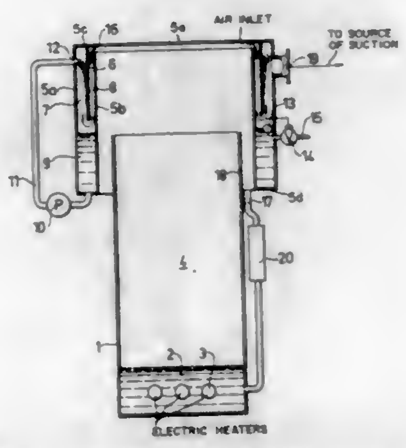
**U.S. Cl. 201—5** **5 Claims**



In a process for the production of molded fuel briquettes and the like, the evolved gases are objectionable owing to deposit formation and consequent clogging of the lines through which said gases are removed. The gases issuing from the mixing vessel are brought into direct contact with the hot, nonsoftening, or hardly softening material being fed to the mixing vessel. This has the advantage of converting the tar in the gases into products which do not form deposits and hence do not clog the lines.

### 3,479,252
### APPARATUS FOR THE DEGREASING OF ARTICLES BY MEANS OF A SOLVENT

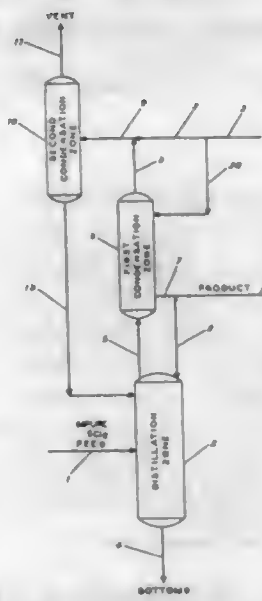
**Kurt Anders Holm, Skoghall, and Rune Einar Hansson, Karlstad, Sweden, assignors to Uddeholms Aktiebolag, Uddeholm, Sweden, a company of Sweden**
**Filed Nov. 3, 1967, Ser. No. 680,584**
**Claims priority, application Sweden, Nov. 14, 1966, 15,569/66**
**Int. Cl. B01d** *3/42, 3/00*
**U.S. Cl. 202—170** **4 Claims**



The invention is concerned with an apparatus for degreasing articles by means of a boiling solvent or vapour originating therefrom. The apparatus has double walls, and cooling means are provided between said double walls. The cooling means comprise water spraying means, and means for passing ventilation air through the space defined by said double walls. Consequently, the ventilation air has the double function of withdrawing solvent vapour and cooling the wall of the apparatus.

### 3,479,253
### CONTINUOUS DISTILLATION OF SULFUR DICHLORIDE-SULFUR MONOCHLORIDE TO RECOVER PURE SULFUR DICHLORIDE

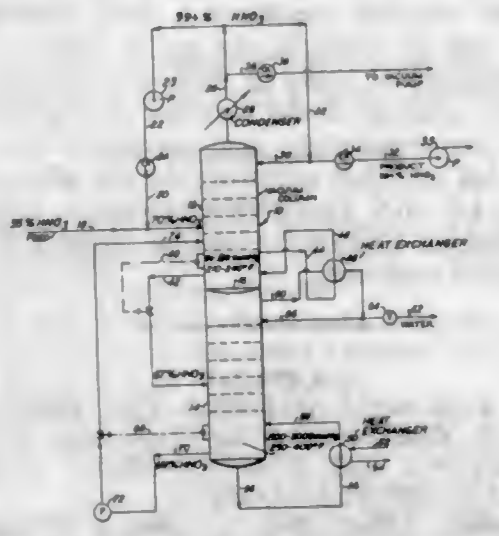
**Robert J. Hinds, Orinda, and Paul M. Premo, Mill Valley, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware**
**Filed Mar. 29, 1967, Ser. No. 626,790**
**Int. Cl. B01d** *3/34, 5/00*
**U.S. Cl. 203—6** **7 Claims**



Separation of a mixture containing about 50 to 70 weight percent sulfur dichloride, sulfur monochloride and at least about 1 part of chlorine per 100 parts of sulfur dichloride into a sulfur monochloride enriched phase and an essentially pure sulfur dichloride phase by distilling the mixture in the presence of a sulfur dichloride stabilizer in a distillation column at superatmospheric pressure and an overhead temperature of about 150 to 200° F., withdrawing the sulfur monochloride phase as bottoms, partially condensing the overhead vapors in a first condenser at 130 to 160° F., 10 to 20 p.s.i.a., withdrawing the essentially pure sulfur dichloride phase as condensate from the first condenser, passing the uncondensed portion of the overhead to a second condenser at 40 to 120° F., 10 to 20 p.s.i.a. and returning the condensate from the second condenser to the distillation column.

### 3,479,254
### NITRIC ACID CONCENTRATION

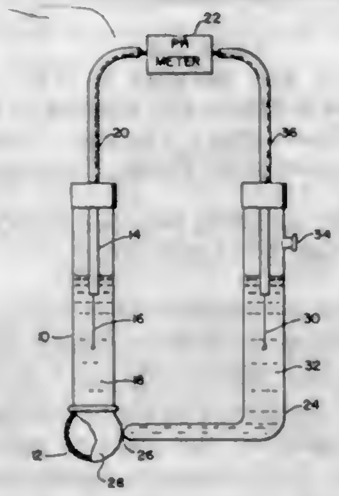
**Constantine D. Miserlis, Arlington, Mass., assignor, by mesne assignments, to The Badger Company, Inc., Cambridge, Mass., a corporation of Delaware**
**Filed May 22, 1967, Ser. No. 640,254**
**Int. Cl. C01b** *21/44;* **B01d** *3/10, 3/02*
**U.S. Cl. 203—13** **11 Claims**



Method and apparatus for concentrating nitric acid by using a first vacuum distillation stage and a second super-atmospheric pressure stage, or columns, with heat interchange therebetween, operating the first stage with a normal dilute acid feed fortified to concentrate it above the azeotropic by recycle of sufficient of its 99% plus concentrated acid overhead, and producing a first stage azeotrope bottoms product, feeding the first stage bottoms product to the second stage super-atmospheric distillation, taking off water as second stage overhead and a more concentrated acid bottoms product for recycle as partial feed to the first stage.

### 3,479,255
### ELECTROCHEMICAL TRANSDUCER

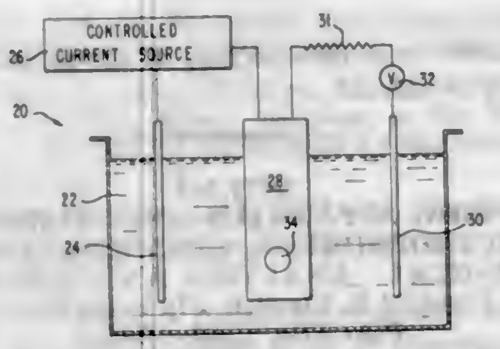
**Edwin P. Arthur, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California**
**Filed Jan. 27, 1964, Ser. No. 340,145**
**Int. Cl. G01n** *27/26;* **A62c**
**U.S .Cl. 204—1** **2 Claims**



An electrochemical transducer for detecting in a sample a factor which inhibits biological activity such as poisonous materials. The transducer includes an ion sensitive surface coated with a material which is capable of supporting biological activity. When the sample containing a factor which inhibits biological activity contacts the coated ion sensitive surface, the electrochemical characteristics of the coating are changed. The changed characteristics are electrolytically sensed at the ion sensitive surface of the transducer.

### 3,479,256
### PROCESS FOR TESTING THE CORROSION RESISTANCE OF A METALLIC SURFACE

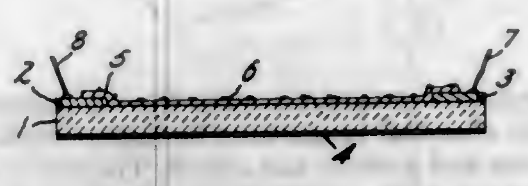
**John R. Smith, Steubenville, and James A. Bray, Bergholz, Ohio, assignors to National Steel Corporation, a corporation of Delaware**
**Filed Sept. 8, 1965, Ser. No. 485,790**
**Int. Cl. B01k** *3/00*
**U.S. Cl. 204—1** **10 Claims**



Method for determining corrosion rate of a metallic surface under dynamic and aerated conditions comprising establishing a current between an anode and a specimen acting as cathode and sensing the potential or the current between the specimen cathode and a reference electrode with respect to time to indicate corrosion rate of the metallic surface as it would be under deaerated conditions.

### 3,479,257
### METHODS AND APPARATUS FOR MEASURING THE CONTENT OF HYDROGEN OR REDUCING GASES IN AN ATMOSPHERE

**Paul J. Shaver, Scotia, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Nov. 25, 1966, Ser. No. 603,698**
**Int. Cl. C23b** *5/50;* **B01k** *3/00*
**U.S. Cl. 204—1** **13 Claims**



The content of hydrogen or reducing gases in an atmosphere is quantitatively determined by measuring the change in resistance of a thin film of metal oxide whose surface has been activated by the deposition of a catalyst.

### 3,479,258
### METHOD FOR COATING STEEL WITH NICKEL

**Thomas Brian Ashcroft, Birmingham, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware**
**No Drawing. Filed June 27, 1966, Ser. No. 560,893**
**Claims priority, application Great Britain, July 1, 1965, 27,925/65; Mar. 14, 1966, 11,084/66**
**Int. Cl. C23f** *17/00;* **C23b** *5/50, 5/06*
**U.S. Cl. 204—38** **11 Claims**

Nickel coated steel strip having a sound dense nickel coating is produced by applying to the surface of steel strip an aqueous slurry containing nickel powder, drying the slurry, warm working the dried layer at a temperature between about 200° C. and 650° C., annealing the warm worked strip at about 600° C. to about 700° C. and cold rolling the annealed strip to achieve final densification of the coating.

### 3,479,259
### BRIGHT, LEVEL TIN PLATING

**Raymond F. Nambride, Paris, France, assignor to Enthone Incorporated, New Haven, Conn., a corporation of Connecticut**
**No Drawing. Filed Oct. 2, 1967, Ser. No. 671,986**
**Claims priority, application France, Dec. 30, 1966, 89,625**
**Int. Cl. C23b** *5/46, 5/14*
**U.S. Cl. 204—54** **14 Claims**

This invention concerns improved aqueous acid tin electrodepositing baths containing, as a brightening and levelling agent, a cyclohexylsulfamate.

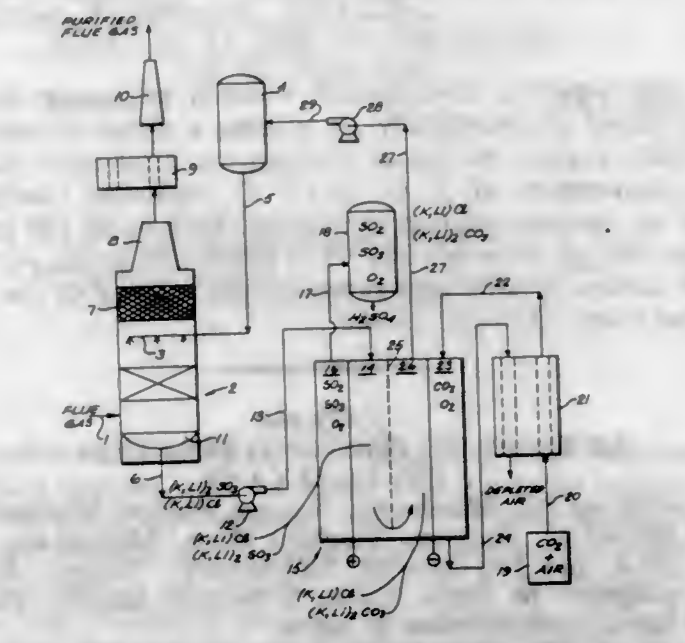
### 3,479,260
### TREATMENT FOR FERROUS SURFACES

**Stewart E. Rauch, Jr., and Carlton E. Roberts, Bethlehem, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware**
**Filed Mar. 7, 1966, Ser. No. 532,202**
**Int. Cl. C23b** *5/50, 3/02, 5/06*
**U.S. Cl. 204—56** **7 Claims**

In a method of forming a protective coating on a ferrous article, the article is immersed in an aqueous electrolyte containing not less than 50 grams per liter of chromic acid, and phosphoric acid wherein the ratio of chromic acid to phosphoric acid is between 1.7:1 and 3:1. The immersed article is electrolyzed anodically for a brief interval of seconds or a fraction of a second, and then electrolyzed cathodically for a similar interval at a current density of not less than 200 amp. per sq. ft.

### 3,479,261
### ELECTROCHEMICAL METHOD FOR RECOVERY OF SULFUR OXIDES

**Laszlo A. Heredy, Canoga Park, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware**
**Filed May 15, 1967, Ser. No. 638,364**
**Int. Cl. B01k** *1/00*
**U.S. Cl. 204—61** **5 Claims**



A method for removing sulfur dioxide from flue gas by (1) absorption of the sulfur dioxide in a molten salt mixture containing alkali metal carbonate to form alkali metal sulfite and (2) electrochemical conversion of the formed sulfite to sulfur oxides and oxygen with simultaneous regeneration of the alkali metal carbonate.

### 3,479,262
## OLEFIN OXIDATION PROCESS

**Alexander F. MacLean and Adin L. Stautzenberger, Corpus Christi, Tex., assignors to Celanese Corporation of America, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Jan. 3, 1966, Ser. No. 517,900**

**Int. Cl. B01k** *1/00;* **C07b** *3/00*

**U.S. Cl. 204—80** **13 Claims**

In a process for oxidizing an olefiin to a carbonyl compound in the presence of a thallium salt, efficiency of the process is improved by combining the thallium salt with a noble metal and an oxidizing agent, especially a cerium salt, and by maintaining in the reactor two liquid phases, one aqueous and containing the catalyst and the other non-aqueous and containing the olefin. The carbonyl compound is recovered from the non-aqueous phase, which may contain an $\alpha,\omega$-dihaloalkane to improve extraction of the carbonyl compound from the aqueous reactor phase into the non-aqueous phase.

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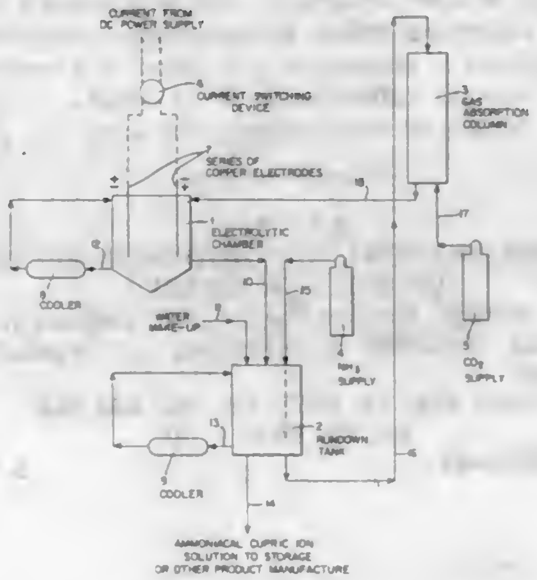
### 3,479,263
## ELECTROLYTIC PROCESS FOR PREPARING AN AQUEOUS AMMONIACAL SOLUTION OF CUPRIC ION

**Joseph B. Heitman, Pierce, Wash., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania**

**Filed Apr. 12, 1967, Ser. No. 630,423**

**Int. Cl. B01k** *1/00*

**U.S. Cl. 204—86** **6 Claims**



An aqueous ammoniacal solution of cupric ion is prepared electrolytically by passing a direct current between copper electrodes through an electrolyte having a temperature of 5° C. to 25° C. consisting essentially of an aqueous solution containing about 80 to 200 grams per liter of ammonia and 65 to about 130 grams per liter of carbon dioxide, and reversing the polarity of the current every 10 to 600 seconds.

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### 3,479,264
## METHOD OF PHOTONITROSATION OF CYCLOALKANE

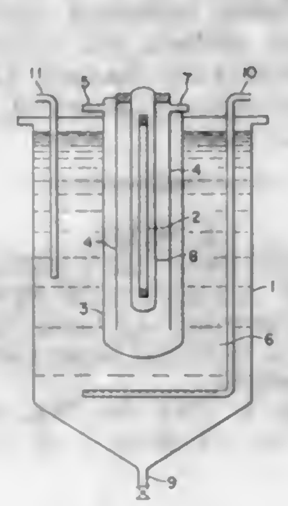
**Yoshikazu Ito, Mizuho-ku, Nagoya, Shigeru Wakamatsu, Midori-ku, Nagoya, Yoichiro Hara, Minami-ku, Nagoya, and Jiro Morino, Shijyomachi, Nagoya, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan**

**Filed Apr. 28, 1965, Ser. No. 451,481**

**Int. Cl. B01j** *1/10*

**U.S. Cl. 204—162** **4 Claims**

An improved process for the photonitrosation of cycloalkanes which comprises reacting a cycloalkane with a form of nitrosyl chloride under the irradiation of a thallium lamp in which a thallium halide is enclosed. The process allows for an improved yield of product unit of electric power with the checking of the formation of significant by-products.



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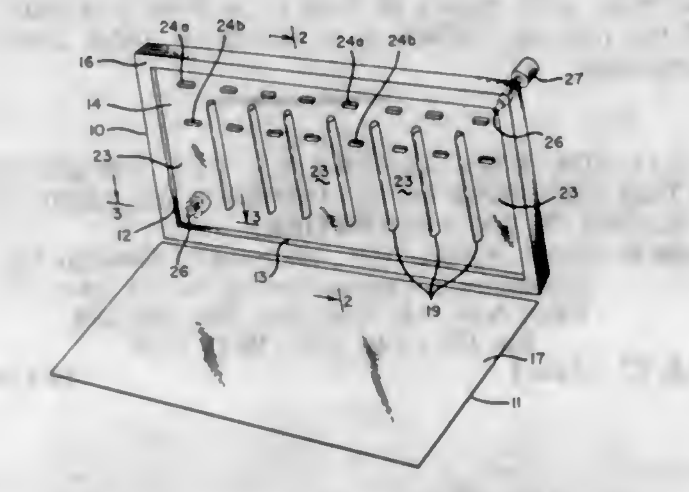
### 3,479,265
## THIN FILM APPARATUS AND METHOD FOR ELECTROPHORESIS, CHEMICAL AND BIOCHEMICAL ANALYSES AND THE LIKE

**Franklin R. Elevitch, 476 Ferne Drive, Palo Alto, Calif. 94306**

**Continuation-in-part of applications Ser. No. 300,341, Aug. 6, 1963, and Ser. No. 579,089, Sept. 13, 1966. This application Aug. 29, 1967, Ser. No. 664,133**

**Int. Cl. B01k** *5/00*

**U.S. Cl. 204—180** **11 Claims**



The apparatus employs a thin film of permeable gel into which chemical reagents or biological fluids such as blood serum and proteins can diffuse. The film has a thinness of not more than about one millimeter or less and it is characterized by uniformity of thickness such that voltage gradients and current densities through the film are uniform when it is used as an electrophoresis medium and such that diffusion of chemical reagents or of biological fluids into the film occurs uniformly. The thinness of the film allows rapid dissipation of heat when the apparatus is employed for electrophoresis and it economizes on the use of chemical or biological reagents which are incorporated in the film. The apparatus may be supplied by the manufacturer to the user as a two-piece mold having a first section to which the gel is adherent and a second section to which the gel is non-adherent. When the customer is ready to use the film, the first mold section (to which the thin film of gel is adherent) is stripped from the second section, thus exposing the thin film supported on the first mold section. This film may be formed with wells for the introduction of reagents, unknown specimens, or the like.

### 3,479,266
## INORGANIC ION EXCHANGE MEMBRANES FOR USE IN ELECTRICAL SEPARATORY PROCESSES

**Krishnaswamy S. Rajan, Chicago, Ill., and Angelo J. Casolo, Franklin, Mass., assignors to the United States of America as represented by the Secretary of the Interior**

**No Drawing. Filed Nov. 30, 1967, Ser. No. 686,796**

**Int. Cl. B01j** *1/08;* **B01d** *13/02;* **B01k** *3/10*

**U.S. Cl. 204—180** **8 Claims**

Inorganic ion exchange membranes, suitable for use in electrical separatory processes such as transport depletion and electrodialysis, are prepared from a hydrous oxide of an element from the group of alkaline earth metals, the actinide series, the lanthanide series, aluminum, zirconium, chromium and tin.

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### 3,479,267
## INORGANIC ION EXCHANGE MEMBRANES FOR USE IN ELECTRICAL SEPARATORY PROCESSES

**Krishnaswamy S. Rajan, Chicago, Ill., and Angelo J. Casolo, Franklin, Mass., assignors to the United States of America as represented by the Secretary of the Interior**

**No Drawing. Filed Nov. 30, 1967, Ser. No. 686,829**

**Int. Cl. B01j** *1/08;* **B01d** *13/02;* **B01k** *3/10*

**U.S. Cl. 204—180** **7 Claims**

Inorganic ion exchange membranes, suitable for use in electrical separatory processes such as transport depletion and electrodialysis, are prepared from insoluble complexes of a chelating agent and a metal from Group IV–B of the Periodic Table and the actinide series.

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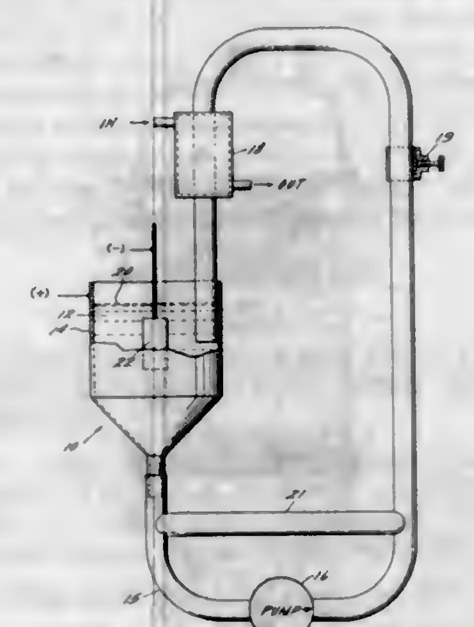
### 3,479,268
## METHOD OF APPLYING A BINDER TO ELECTROPHORETICALLY DEPOSITED POROUS MATRIX

**Ellis John Airola, Lynn, Mass., assignor to General Electric Company, a corporation of New York**

**Filed Aug. 1, 1966, Ser. No. 569,387**

**Int. Cl. C23f** *17/00;* **C23b** *13/00;* **B01k** *5/02*

**U.S. Cl. 204—181** **4 Claims**



A uniform coating is applied and bonded to the surface of the article by first electrophoretically depositing a porous coating matrix and then dispersing through the matrix and curing a liquid non-metallic binder in the form of finely divided droplets while maintaining around the droplets substantially the same solvent balance of the binder.

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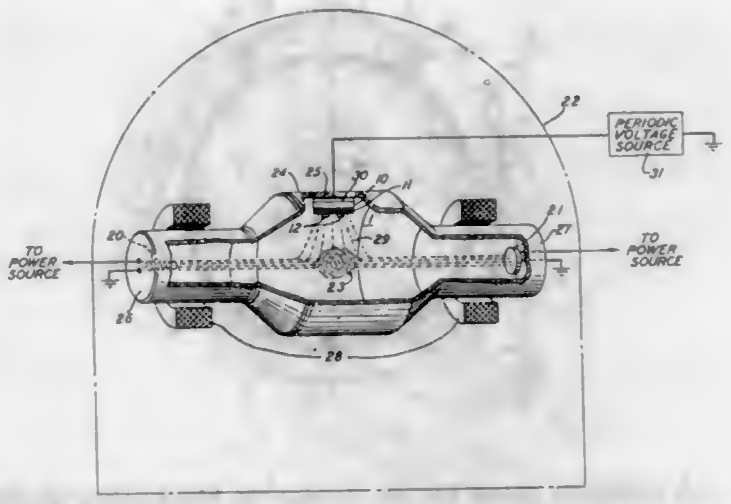
### 3,479,269
## METHOD FOR SPUTTER ETCHING USING A HIGH FREQUENCY NEGATIVE PULSE TRAIN

**Peter A. Byrnes, Jr., Bridgewater Township, Somerset County, and Martin P. Lepselter, New Providence, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**

**Filed Jan. 4, 1967, Ser. No. 607,203**

**Int. Cl. C23c** *15/00*

**U.S. Cl. 204—192** **9 Claims**



Thin films of material are etched or cleaned by placing them in a low pressure gas ambient, forming a plasma in the ambient, and establishing a periodic voltage between the films and the plasma. When one or more dielectric layers are present among the thin films, the waveform of the periodic voltage is chosen to produce etching without breakdown of the dielectric layers. A negative pulse voltage with its peak value chosen with reference to the etching yield curve of the material is a particularly useful waveform. One application of the process is the formation of an atomically clean bond between two layers of material. Apparatus for producing etching and for forming atomically clean bonds is also described.

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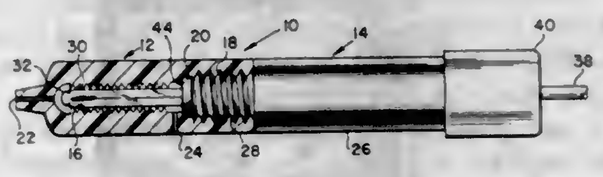
### 3,479,270
## FLOW CELL ASSEMBLY

**Arne J. Petersen, Balboa, and John T. Taylor, Orange, Calif., assignors to Beckman Instruments, Inc., a corporation of California**

**Filed Dec. 22, 1966, Ser. No. 603,909**

**Int. Cl. B01k** *3/00*

**U.S. Cl. 204—195** **11 Claims**

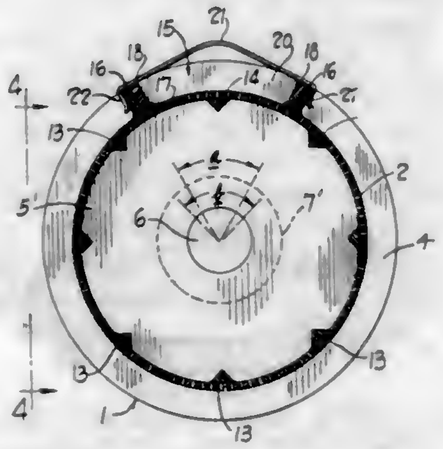


A flow cell assembly for analyzing very small volumes of liquid samples, such as blood. The assembly includes a liquid analyzing electrode, such as a glass electrode, having a cylindrical member which is longitudinally positioned within a cylindrical recess of a nonconductive body. The cylindrical member has a sensing portion for analyzing the condition of the liquid sample in the recess. A helical thread is formed between the cylindrical member of the electrode and the wall of the recess to provide a predetermined path which the sample must follow from one end of the cell over the sensing portion of the electrode to the other end of the cell.

### 3,479,271

## DRUM FOR PLATING, BLACKENING, PICKLING AND THE LIKE

**Paul W. Sandrock, Cleveland, Ohio**
**(4668 Windfall Road, Medina, Ohio 44256)**
**Filed July 7, 1965, Ser. No. 470,090**
**Int. Cl. C23b** *5/78*
**U.S. Cl. 204—213** **3 Claims**

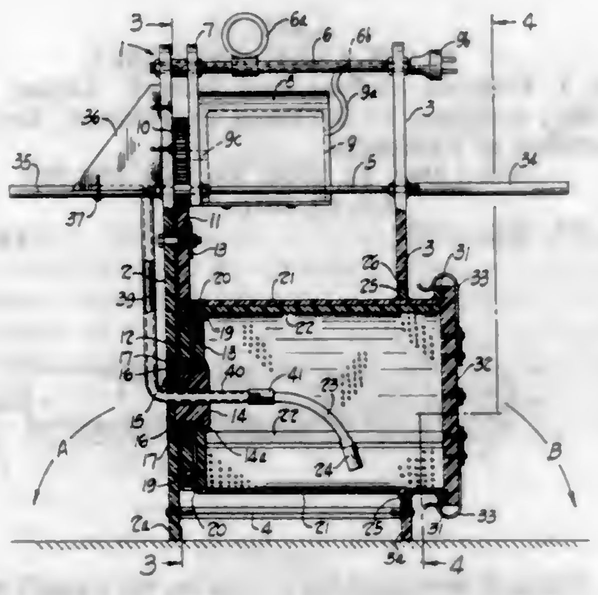


A rotatable drum for use in plating, blackening, pickling and the like. The drum is immersed in a liquid bath and turned while carrying the items to be treated. It is fabricated of a synthetic resin and has rigid integral circumferential and longitudinal stiffening elements which reinforce the drum walls to enable the drum to accommodate unusually heavy loads.

### 3,479,272

## APPARATUS FOR PLATING, BLACKENING, PICKLING, STRIPPING AND THE LIKE

**Paul W. Sandrock, Cleveland, Ohio**
**(4668 Windfall Road, Medina, Ohio 44256)**
**Filed Aug. 9, 1966, Ser. No. 571,248**
**Int. Cl. C23b** *5/78*
**U.S. Cl. 204—213** **3 Claims**

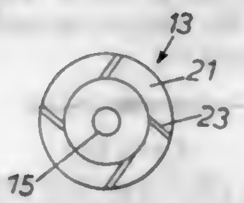


Apparatus for use in plating comprised of two substantially parallel sidepieces of the nature of panels, a prime mover and power train supported therefrom, a drum the axis of which extends transversely thereto, a circular opening in one of said sidepieces through which the drum projects, cut-away areas adjoining said circular opening, and synthetic resin bearings in said cut-away areas with internally located bearing surfaces for engagement by peripheral parts of the drum.

### 3,479,273

## APPARATUS FOR ELECTRO-CHEMICAL MACHINING WITH A ROTATING GROOVED ELECTRODE TOOL

**John Taylor and Ronald Purcell, Derby, England, assignors to Rolls-Royce Limited, Derby, Derbyshire, England, a British company**
**Filed Nov. 23, 1966, Ser. No. 596,513**
**Claims priority, application Great Britain, Dec. 9, 1965, 52,380/65**
**Int. Cl. B23p** *1/16, 1/14*
**U.S. Cl. 204—224** **8 Claims**

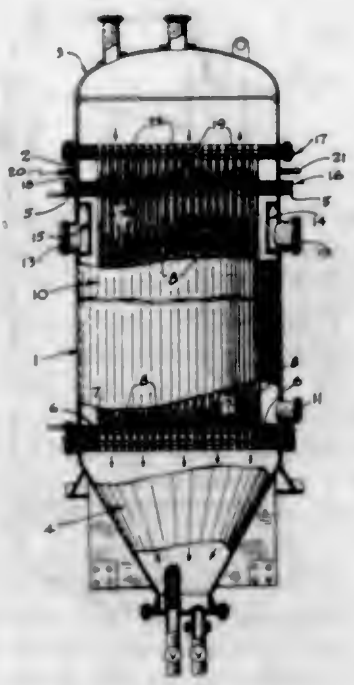


Apparatus and method for electro-chemically machining a workpiece utilizing a cathode placed adjacent a workpiece and forming a gap of predetermined length therebetween, said gap being adjustable as the machining operation proceeds. Electrolyte is supplied to the gap via a chamber centrally disposed within the cathode, the electrolyte being supplied to the chamber at a relatively low pressure. The chamber is rotated at a speed sufficiently high to cause the electrolyte to pass radially outwardly through the gap at a high centrifugal pressure.

### 3,479,274

## ELECTROCHEMICAL CELL HAVING CERAMIC-LINED TUBULAR CATHODES

**Lawrence L. Bott, Oak Park, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware**
**Filed Mar. 27, 1967, Ser. No. 625,992**
**Int. Cl. B01k** *3/10;* **C22d** *1/02*
**U.S. Cl. 204—260** **5 Claims**

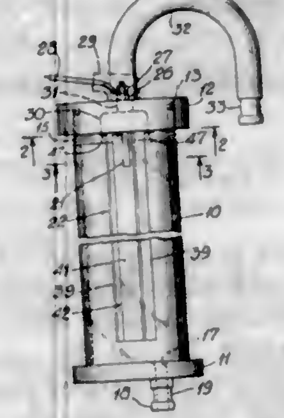


An improved electrochemical cell wherein the anode is a particulate material which is contained in a hollow container which acts as a cathode and the anode is separated from the cathode by a porous, nonconductive ceramic material.

### 3,479,275

## ELECTROLYTIC CELL

**Ross M. Gwynn, 4724 Donnie Lyn Way, and Tim Themy, 5735 Hesper Way, both of Carmichael, Calif. 95608**
**Filed June 1, 1967, Ser. No. 642,951**
**Int. Cl. C23b** *5/68*
**U.S. Cl. 204—275** **14 Claims**



An electrolytic cell for flow-through type operation having general applicability to semi-continuous electrolytic processes including in particular corrosive chlorinating, hypochlorinating and similar treatments of water for sterilization purposes. An electrode assemblage is detachably supported within an elongated transparent pressure resistant casing by means of an end closure having an enlarged manifold for collecting and discharging electrolyte and products of electrolysis. The electrode assemblage supports closely spaced electrodes with all electrode surfaces except the juxtaposed surfaces enveloped in insulating plastic material, and providing a fluid passage and electrolysis chamber through the assemblage having a cross section at least as great as the cross section of fluid inlet and outlet means of the cell.

The cell is intended for direct current operation with polarity being reversed at frequent intervals, and build-up of solid products of electrolysis is further minimized by providing in the collecting manifold a cross section substantially greater than, and oriented angularly to, that of the electrolysis chamber and unobstructed communication between said manifold and the fluid outlet. Detection of dangerous solids accumulation in the cell is facilitated by employing transparent plastic material in the end closures and electrode supports; and the parts of the cell are readily disassembled for cleaning and servicing.

### 3,479,276

## SILVER-CONTAINING CATALYTICALLY ACTIVE PARTICULATE MATERIAL AND ELECTRODE THEREFROM

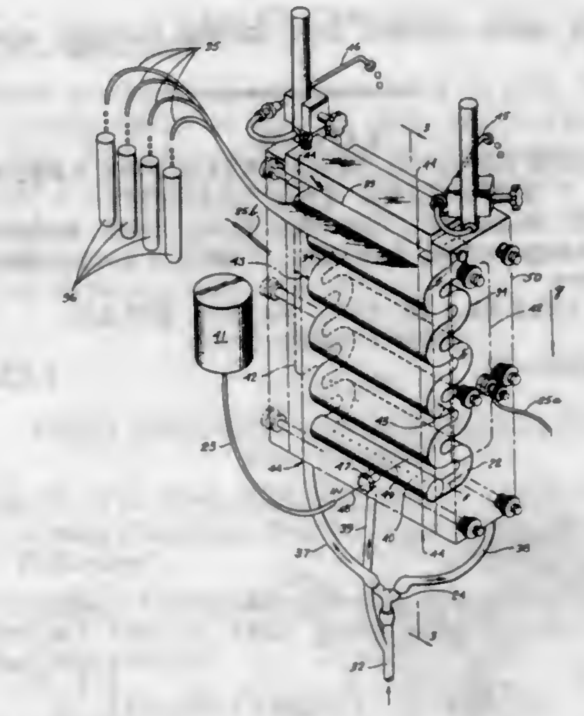
**Margarete Jung, Nieder-Eschbach, and Harald Becker and Hans von Doehren, Frankfurt am Main, Germany, assignors to Varta Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany**
**Filed Sept. 14, 1966, Ser. No. 579,408**
**Claims priority, application Germany, Sept. 18, 1965, V 29,351**
**Int. Cl. B01k** *3/04*
**U.S. Cl. 204—290** **18 Claims**

A catalytically active particulate material for use as an oxygen electrode whose particles comprise a core of at least one metal which is capable of sorbing hydrogen and a layer coating, most of the surface of the core consisting essentially of metallic silver or metallic silver and the metal which is contained in the core.

### 3,479,277

## ELECTROPHORETIC FRACTIONATING APPARATUS

**Alexander Kolin, Los Angeles, and Paul A. Cox, Pacific Palisades, Calif., assignors to The Regents of the University of California, a corporation of California**
**Filed Mar. 29, 1965, Ser. No. 443,307**
**Int. Cl. B01k** *5/00;* **C23b** *13/00*
**U.S. Cl. 204—299** **8 Claims**



Improved electrophoretic apparatus is provided in which electrically charged particles suspended in a fluid move under the influence of an electric field, and which is used for the continuous flow electrophoretic separation of components of the fluid. The particular apparatus to be described herein has a serpentine column for the fluid which is stabilized against thermal convection.

### 3,479,278

## SOLVENT DEWAXING WITH HYDROGENATED POLYMERIC DEWAXING AIDS

**Albert N. DeVault, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**No Drawing. Filed June 7, 1967, Ser. No. 644,067**
**Int. Cl. C10g** *43/12, 21/14*
**U.S. Cl. 208—33** **8 Claims**

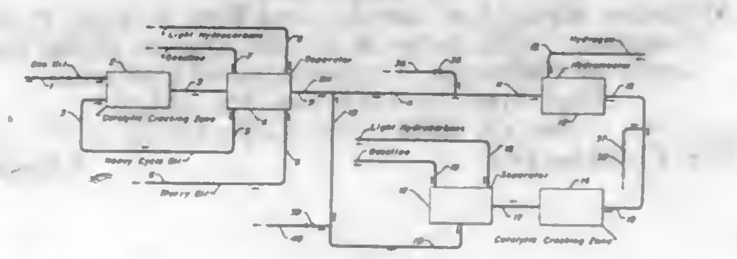
Mineral oils are dewaxed by adding to the oil a dewaxing agent selected from hydrogenated polybutadiene, hydrogenated carboxylated polybutadiene, hydrogenated carboxylated butadiene-styrene copolymer, and combinations thereof. Polymerized pentadecylmethacrylate can be added to any of the above dewaxing agents as a synergistic supplemental dewaxing aid. After addition of the dewaxing aid, the oil is chilled to precipitate the wax therefrom.

### 3,479,279

## GASOLINE PRODUCING PROCESS

**Jack B. Pohlenz, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**Filed Aug. 22, 1966, Ser. No. 574,214**
**Int. Cl. C10g** *37/00, 23/02*
**U.S. Cl. 208—56** **6 Claims**

Mass spectrometric characterization of aromatics contained in a light refractory oil allows control of hydrotreating conditions so that catalytic cracking of said oil results in high yields of superior gasoline at high conversion rates. These principles are utilized in a process for making a gasoline having a higher octane number



and lower olefin content than normal catalytic cracked gasoline.

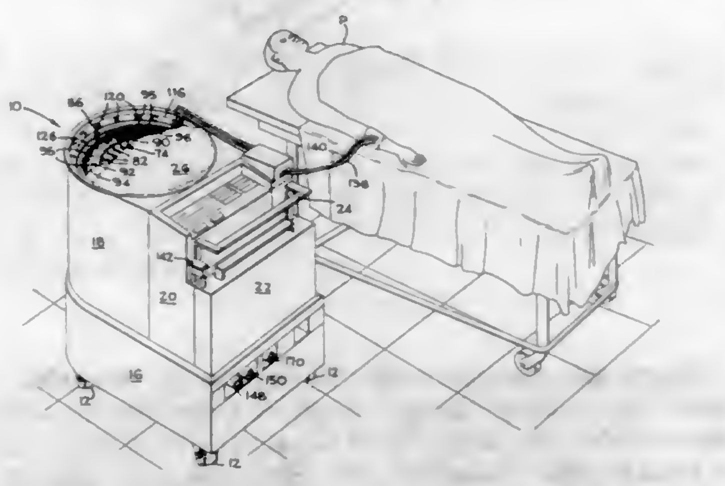
### 3,479,280
### METHOD OF AND APPARATUS FOR LIQUID HANDLING AND DIALYSIS

**Mathew G. Boissevain, Los Altos Hills, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware**

**Filed Jan. 15, 1968, Ser. No. 697,837**

**Int. Cl. B01d** *13/00*

**U.S. Cl. 210—22** **8 Claims**



An elongated rectangular conduit, made of a colloidal semipermeable membrane, is connected in flow communication with a source of liquid to be treated and positioned in a tank. Nozzles within the tank direct a pair of jet streams of dialysate against one side of the conduit, forcing the conduit against a backup support and pinching off a vertical pocket of liquid therein. These dialysate jet streams slowly move from the inlet to the outlet of the conduit, forcing the liquid within the pocket to travel through the conduit. The dialysate, after impinging against the conduit, is circulated thereabout so that dialysis takes place through the conduit membrane as the liquid travels through the conduit.

### ERRATA

For Class 210—23 see:
Patent No. 3,478,873

For Class 210—23 see:
Patent No. 3,478,874

### 3,479,281
### METHOD AND APPARATUS FOR THE SEPARATION OF PHASES BY GASEOUS FLOTATION

**Tivadar Kikindai, Bourg-la-Reine, and Jean Loup Burgaud, Paris VIIIeme, France, assignors to Saint-Gobain Techniques Nouvelles, Courbevoie, France**

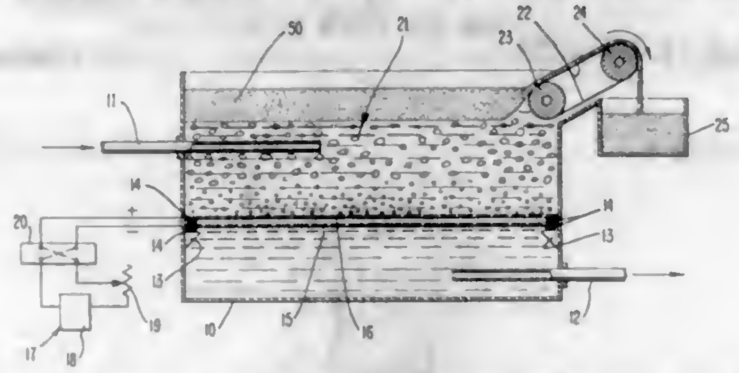
**Filed Oct. 13, 1967, Ser. No. 675,192**

**Claims priority, application France, May 23, 1967, 107,318**

**Int. Cl. C02c** *1/26;* **C02b** *1/10*

**U.S. Cl. 210—44** **6 Claims**

Insoluble suspended matters such as residual materials, chemical organic or mineral precipitates, oils and other immiscible liquids, dusts, fibers, and organisms are removed from water by floating the insoluble particles by means of gas bubbles rising through the liquid. The bubbles are generated in the liquid itself, preferably electrolytically, are very small and attach themselves to the fine insolubles which they carry to the surface where they form a sludge which is readily removed. The process may be in batches or continuous and novel apparatus is provided for the continuous process including a vat, foraminous electrodes which occupy the whole section of the vat, an inlet for the untreated water above the electrodes, an outlet for treated water below the electrodes, and a sludge removal system.



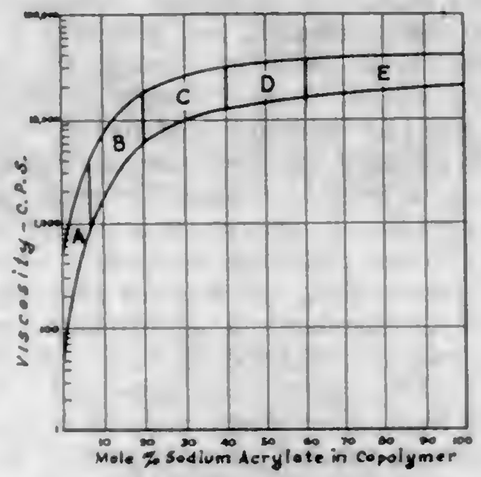
### 3,479,282
### METHOD OF FLOCCULATING SUSPENDED SOLIDS USING COPOLYMERS AS FLOCCULATING AGENTS

**Walter M. Chamot, Brookfield, and John T. Burke, La Grange, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware**

**Filed July 1, 1964, Ser. No. 379,665**

**Int. Cl. B01d** *21/01*

**U.S. Cl. 210—54** **6 Claims**



An optimum method of separating suspended particles in aqueous liquids through the use of acrylamide-acrylic acid salt copolymers. The copolymers used in a given suspended particle aqueous system are defined by their mole percent of sodium acrylate in the copolymers. Specific copolymers having a specific mole percent sodium acrylate content are found to be more efficient in certain suspended particle aqueous systems as flocculating additives.

### 3,479,283
### SEWAGE TREATMENT

**John R. Harrison, West Chester, Pa., and Daniel J. Monagle, Wilmington, Del., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Nov. 15, 1966, Ser. No. 594,400**

**Int. Cl. C02c** *1/00, 5/02*

**U.S. Cl. 210—54** **7 Claims**

The present invention relates to a process of removing suspended solids from raw influent sewage slurry wherein an acrylamide-acrylate copolymer is employed as a flocculating agent and settling aid.

### 3,479,284
### SEPARATION OF FINELY DIVIDED SOLIDS FROM LIQUID SUSPENSIONS THEREOF

**Ronald D. Lees, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Mar. 30, 1967, Ser. No. 626,942**

**Int. Cl. C02b** *1/20*

**U.S. Cl. 210—54** **5 Claims**

The present invention relates to a process of separating finely divided predominantly inorganic solids from liquid suspensions thereof wherein an acrylamide-acrylate copolymer is employed as a coagulant separating aid.

### 3,479,285
### FOAM PRODUCING MATERIALS AND METHOD FOR ATMOSPHERE CONTROL WITH HIGH EXPANSION FOAM

**Gerald L. Barthauer, Bridgeville, Pa., assignor to Safety Development Corporation, Greensburg, Pa., a corporation of Ohio**

**No Drawing. Continuation of application Ser. No. 448,906, Mar. 29, 1965. This application Oct. 31, 1966, Ser. No. 591,031**

**Int. Cl. A62d** *1/00;* **A62c** *1/12*

**U.S. Cl. 252—3** **14 Claims**

Foam producing liquid concentrates are described which comprise a water soluble alkoxylated alkyl sulfate salt, a $C_{12}$ to $C_{16}$ alcohol and preferably a water soluble solvent which is chemically inert to the components of the composition. These compositions when mixed with either fresh or salt water produce a high expansion foam having outstanding water-retentiveness, stability and mobility which is useful with an appropriate apparatus for fighting fires, decontamination operations and the like.

### 3,479,286
### FLAME-EXTINGUISHING COMPOSITIONS

**Gian Paolo Gambaretto, Padova, Paolo Rinaldo, Venice, and Mario Palato, Padova, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Milan, Italy**

**No Drawing. Filed Sept. 19, 1966, Ser. No. 580,212**

**Claims priority, application Italy, Sept. 22, 1965, 21,090/65**

**Int. Cl. A62d** *1/00*

**U.S. Cl. 252—8** **2 Claims**

A flame-extinguishing composition containing a completely halogenated alkane, having at least two fluorine atoms and at least one bromine atom per molecule and a fluorohydrocarbon having at least one hydrogen atom per molecule. The composition can include, optionally, a propellant such as sulfur-hexafluoride and carbon dioxide. The molar ratio of the fluoro-hydrocarbon to the completely halogenated alkane ranges between substantially 0.2 and 5.

### 3,479,287
### DRILLING FLUIDS AND ADDITIVES THEREFOR

**James C. Floyd, Alvin, Tex., and Francis J. Shell, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed Sept. 30, 1965, Ser. No. 491,830**

**Int. Cl. E21b** *21/04;* **C10m** *3/32, 3/04*

**U.S. Cl. 252—8.5** **19 Claims**

An aqueous drilling fluid to which has been added a first agent which is a sulfoalkylated tannin in the form of its alkali metal or ammonium salt or a heavy metal or aluminum complex thereof and a second agent selected from water soluble inorganic compounds of chromium, aluminum, vanadium, titanium, zinc, and manganese, said agents being added to control at least one of the yield point, gel strength, and water loss of the drilling fluid.

### 3,479,288
### COMPOSITION AND METHOD FOR WATERPROOFING LEATHER AND FUR

**Hans Markert and Rudi Heyden, Dusseldorf, Germany, assignors to Bohme Chemie Gesellschaft mit beschrankter Haftung, Dusseldorf, Germany, a corporation of Germany**

**No Drawing. Filed Aug. 18, 1965, Ser. No. 480,803**

**Claims priority, application Germany, Oct. 10, 1964, B 78,868**

**Int. Cl. C14c** *9/00*

**U.S. Cl. 252—8.57** **6 Claims**

Novel compositions comprised of 1 to 25% by weight of a partial amide or ester of citric acid having at least one free carboxyl and having in the amide or ester portion a saturated branched aliphatic radical of 12 to 20 carbon atoms in an organic solvent and the method of waterproofing furs and leather therewith and leather and fur skins resulting therefrom.

### 3,479,289
### HIGH STRENGTH, SELF-LUBRICATING MATERIALS

**Jan W. Van Wyk, Kirkland, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 499,367, Oct. 21, 1965. This application Oct. 16, 1967, Ser. No. 675,328**

**Int. Cl. C10m** *7/06;* **F16d** *69/02*

**U.S. Cl. 252—12** **18 Claims**

Compositions of matter, and methods for their fabrication by hot pressing, comprising a self-lubricating component of molybdenum disulfide; a carbonaceous component present in the form of metallic carbides, solid solutions of carbon, or both; and a carbide-forming metallic compound selected from the group consisting of molybdenum, niobium, tantalum, and tungsten. Other compositions of matter having, in addition, a strength enhancement compound of boron present in the form of a solid solution or a metallic compound which acts as a lubricant during the fabrication process selected from the group comprising iron, nickel, chromium and cobalt.

### 3,479,290
### PHOSPHOROUS-CONTAINING ORGANOPOLYSILOXANE LUBRICANT

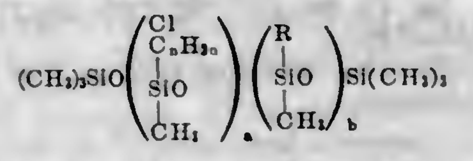
**Edgar D. Brown, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**

**No Drawing. Filed Dec. 12, 1966, Ser. No. 600,757**

**Int. Cl. C10m** *1/44, 1/50*

**U.S. Cl. 252—49.9** **7 Claims**

An organopolysiloxane lubricating composition comprising (A) an organopolysiloxane having the formula:



$$(CH_3)_3SiO\left(\begin{array}{c}Cl\\C_nH_{2n}\\|\\SiO\\|\\CH_3\end{array}\right)_a\left(\begin{array}{c}R\\|\\SiO\\|\\CH_3\end{array}\right)_bSi(CH_3)_3$$

and (B) from 1 to 15 percent by weight, based on the weight of said organopolysiloxane, of tricresyl phosphate, where R is an alkyl radical containing from 8 to 18 carbon atoms, inclusive, *n* has a value of from 2 to 6, inclusive, *a* has an average value of at least 1, *b* has an average value of at least about 2.9, the sum of *a* plus *b* is equal to from about 4 to 40, inclusive, and the ratio of *a* to the sum of *a* plus *b* is equal to from 0.1 to 0.4, inclusive.

### 3,479,291

### LUBRICATING OIL COMPOSITION CONTAINING CONDENSATION PRODUCT OF POLYAMINE AND POLYMERIC KETONE

**Thomas J. Clough, Glenwood, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Apr. 17, 1967, Ser. No. 631,163**

**Int. Cl. C10m** *3/26, 3/28*

**U.S. Cl. 252—51.5** **9 Claims**

Alpha-monoalkenes are addition polymerized by using an acyl halide (e.g., acetyl chloride)-Friedel Crafts catalyst complex and a monochloroalkane solvent (e.g., ethyl chloride); the acyl halide reacts in situ with the monomer to yield a polymeric ketone. The polymeric ketone is subsequently reacted with an aliphatic polyamine (e.g., tetraethylenepentamine) to yield a condensation product which is useful as a lube oil detergent.

### 3,479,292

### MANUFACTURE OF GARNET CERAMIC

**Raymond A. Chegwidden, Chatham, N.J., and Howard M. Cohen and William F. Gilbert, Jr., Allentown, Pa., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**

**Filed Dec. 20, 1965, Ser. No. 514,880**

**Int. Cl. C04b** *35/40;* **H01f** *1/08*

**U.S. Cl. 252—62.57** **1 Claim**

Ceramic magnetic yttrium-iron garnet and related compositions of controlled stoichiometry have been difficult to make because of the iron contribution made by ball milling apparatus. Improved stoichiometry results from the use of iron-deficient initial ingredients coupled with removal of a sample during ball milling with the sample yielding a measured parameter, such as density, which serves as an indicator of required additional ball milling to attain stoichiometry.

### 3,479,293

### PROCESS AND COMPOSITION FOR ETCHING FERROUS METAL SURFACES

**Kenneth P. Bellinger, Rockville, and Le Verne Verzier, Cheshire, Conn., assignors to Conversion Chemical Corporation, Rockville, Conn., a corporation of Connecticut**

**No Drawing. Filed Sept. 26, 1966, Ser. No. 581,736**

**Int. Cl. C09k** *3/00;* **C23f** *1/00*

**U.S. Cl. 252—79.4** **9 Claims**

A dry powder composition upon addition to water provides an acid bath for etching ferrous surfaces and consists essentially of urea nitrate, a water-soluble auxiliary dry acidic component and optionally a finely divided inert filler. The acidic components may be organic or inorganic acids or the acid salts thereof but do not include reducing agents or film forming radicals.

### 3,479,294

### BORON EXTRACTANT COMPOSITIONS

**Friedrich J. Weck, Trona, Calif., assignor, by mesne assignments, to American Potash & Chemical Corporation, a corporation of Delaware**

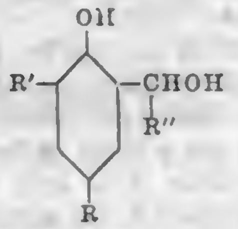
**No Drawing. Filed June 21, 1961, Ser. No. 118,526**

**Int. Cl. B01d** *15/00;* **C07c** *39/27*

**U.S. Cl. 252—182** **2 Claims**

1. A composition consisting essentially of a compound having the formula

(II)



wherein one of R and R′ is halogen and the other is selected from the group consisting of alkyl groups having from 4 to 24 carbon atoms per group and aryl groups having from 6 to 24 carbon atoms per group, and R″ is a group selected from the group consisting of hydrogen, alkyl groups having from 1 to 7 carbon atoms per group and aryl groups having from 6 to 10 carbon atoms per group, and an organic carrier for said compound selected from the group consisting of kerosene and octane.

### 3,479,295

### METHOD OF REDUCING A RADIOACTIVE WASTE SOLUTION TO DRYNESS

**Thomas K. Thompson, Idaho Falls, Idaho, assignor to the United States of America as represented by the United States Atomic Energy Commission**

**Filed Sept. 22, 1967, Ser. No. 669,956**

**Int. Cl. F26b** *11/00*

**U.S. Cl. 252—301.1** **4 Claims**

A method of reducing a radioactive waste solution to dryness comprising evaporating the solution and calcining the resulting solids in a fluidized bed wherein the fluidized bed is heated by burning a hydrocarbon fuel in the bed in the presence of nitrate ion.

### 3,479,296

### YTTRIUM VANADATE EUROPIUM PHOSPHOR PREPARATION BY PRECIPITATION

**Herbert J. Kauders, Euclid, Ohio, assignor to General Electric Company, a corporation of New York**

**No Drawing. Filed July 18, 1966, Ser. No. 565,737**

**Int. Cl. C09k** *1/44*

**U.S. Cl. 252—301.4** **6 Claims**

Yttrium vanadate phosphor activated with europium is produced by preparing a solution of $Y_2O_3$ and $Eu_2O_3$ in nitric acid and water and adding $V_2O_5$ or related compounds to the solution, forming a slurry. Ammonium hydroxide is then added to produce a mixed precipitate of yttrium vanadate containing europium and a vanadium compound, the precipitate is separated from the reaction mixture, and the mixed precipitate is heated to produce well-crystallized $YVO_4$:Eu phosphor.

### 3,479,297

### ROOM DEODORANTS

**Horst Rutzen, Dusseldorf-Holthausen, and Albert Lowenstein, Dusseldorf, Germany, assignors to Bohme Fettchemie G.m.b.H., Dusseldorf-Holthausen, Germany**

**No Drawing. Continuation-in-part of application Ser. No. 387,775, Aug. 5, 1964. This application July 14, 1966, Ser. No. 565,099**

**Claims priority, application Germany, Aug. 8, 1963, B 73,038**

**Int. Cl. C09k** *3/30;* **A61k** *9/00;* **C07d** *13/00*

**U.S. Cl. 252—305** **3 Claims**

A room deodorant consisting of 60% to 80% by weight propellant, 20% to 40% by weight solvent, and ½% to 5% by weight active ingredient. The active ingredient is a cyclic acetal or ketal of a monounsaturated aldehyde or ketone having at least 3 carbon atoms and an aliphatic alcohol. The aliphatic alcohol is a 1,2-diol or 1,3-diol having 8 to 24 carbon atoms. The deodorant is maintained under pressure in a suitable container.

### 3,479,298

### PRODUCTION OF HYDROGEN

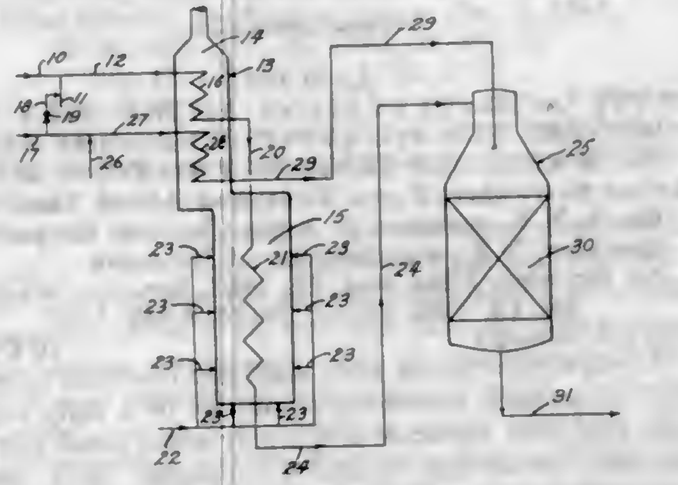
**Morgan C. Sze, Garden City, N.Y., and Donald B. Stewart, Towaco, N.J., assignors to The Lummus Company, New York, N.Y., a corporation of Delaware**

**Filed Aug. 4, 1964, Ser. No. 387,292**

**Int. Cl. C01b** *1/16*

**U.S. Cl. 252—373** **8 Claims**

Process for producing a hydrogen-containing gas from a light hydrocarbon, such as natural gas, wherein a natural gas-steam mixture (mole ratio of steam to natural gas of 3.0–3.8:1) is reacted in a primary reformer, maintained at a pressure above 400 p.s.i.g. and a temperature above 1450° F., to partially convert the natural gas. The effluent from the primary reformer is mixed with a mixture of steam and a free oxygen-containing gas, preheated to a temperature of 1000°–1500° F., in a secondary reformer to produce a hydrogen rich effluent, containing less than 0.5% natural gas.



### 3,479,299

### CARBON BASED CATALYSTS AND COMPOSITIONS PRODUCIBLE THEREFROM

**Donald Rivin, Framingham, Mass., and Jerome Aron, Providence, R.I., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware**

**No Drawing. Filed Oct. 22, 1965, Ser. No. 502,474**

**Int. Cl. C01b** *31/12;* **C08c** *11/18*

**U.S. Cl. 252—426** **30 Claims**

The present invention provides novel catalytic carbons, carbon based compositions and processes for the production thereof. Broadly speaking, the catalytic carbons of the present invention comprise carbon particles, such as carbon black, the surfaces of which have been treated so as to provide electron rich (anion) sites thereon associated directly with carbon atoms. The production of such catalytic carbon is effected by treating carbon particles with strong Lewis base compounds in an organic solvent medium. The resulting anion-site-containing carbon catalyst can then be reacted with various compounds comprising electrophilic organic radicals to form stable carbon based compositions.

### 3,479,300

### CARBONACEOUS PRODUCTS

**Donald Rivin, Framingham, Mass., and Jerome Aron, Providence, R.I., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware**

**No Drawing. Filed Oct. 22, 1965, Ser. No. 502,600**

**Int. Cl. B01j** *11/06*

**U.S. Cl. 252—430** **34 Claims**

The present invention provides novel carbon catalyst compositions and a process for the production thereof. Broadly speaking, the catalyst compositions of the present invention comprise negatively charged carbon particles, the surfaces of which have electron rich portions (anion sites) and portions having free unpaired electrons (free radical sites). Additionally, the compositions comprise a solvating ether. The production of the catalytic compositions of the invention can be effected by treating carbon particles with an alkali or alkaline earth metal and subsequently treating the resulting carbon/metal composition with a solvating ether. The carbon portions of the catalytic compositions of the present invention can be reacted with various reagents to produce carbon compositions heretofore thought unavailable.

### 3,479,301

### PERFUME COMPOSITIONS INCLUDING ETHER-KETONES

**Arno Cahn, Pearl River, N.Y., and Allan H. Gilbert, West Englewood, N.J., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine**

**No Drawing. Original application July 26, 1962, Ser. No. 212,706, now Patent No. 3,316,305, dated Apr. 25, 1967. Divided and this application July 25, 1966, Ser. No. 615,858**

**Int. Cl. C11b** *9/00*

**U.S. Cl. 252—522** **7 Claims**

Perfume compositions including novel ether-ketones having desirable fragrances.

### 3,479,302

### PRODUCTION OF HARDENABLE COMPOSITIONS BASED ON TRIGLYCIDYL ISOCYANURATE

**Herbert Saran, Dusseldorf-Holthausen, Germany, assignor to Henkel & Cie GmbH, Dusseldorf-Holthausen, Germany, a corporation of Germany**

**No Drawing. Filed Nov. 16, 1967, Ser. No. 683,459**

**Claims priority, application Germany Nov. 18, 1966, H 61,017**

**Int. Cl. C08g** *51/84, 51/22*

**U.S. Cl. 260—2** **9 Claims**

A process for the preparation of stable solutions of hardenable epoxide resins which comprises the steps of reacting crystalline triglycidyl isocyanurate with an epoxide resin hardener until said reaction is about 15% to 30% complete, immediately cooling the reaction mixture, dissolving said reaction mixture in an organic solvent, and recovering said stable solutions, particularly when said epoxide resin hardener is diaminodiphenyl sulfone.

The hardenable mixtures render in economical production of laminated articles possible by impregnation and molding of fiber strands.

### 3,479,303

### PROCESS FOR THE PRODUCTION OF MOLDED FOAM BODIES OF POLYESTERS

**Helmut Wiescholiek and Walter Gumlich, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany**

**No Drawing. Filed July 2, 1965, Ser. No. 469,318**

**Claims priority, application Germany, July 25, 1964, C 33,504**

**Int. Cl. C08g** *53/08, 51/70*

**U.S. Cl. 260—2.5** **4 Claims**

The invention relates to a process of making lightweight molded bodies of polyester which comprises mixing a solution of a hardening accelerator and an acid to an emulsion comprising an unsaturated polyester resin, copolymerizable monomer, a peroxide catalyst, a blowing agent and water which results in foaming and hardening of the resin.

### 3,479,304

### PREPARATION OF FLAME-RESISTANT FLEXIBLE FOAMS FROM HALOGENATED TOLYLENE DIISOCYANATE

**Howard Emil Holmquist, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, a corporation of Delaware**

**No Drawing. Filed Mar. 31, 1966, Ser. No. 538,961**

**Int. Cl. C08g** *22/46;* **C09k** *3/28*

**U.S. Cl. 260—2.5** **1 Claim**

A method for making flame-resistant polyurethane foam by mixing a polyalkylene ether polyol, water and an aromatic diisocyanate, which is a mixture of toluene diisocyanate and undistilled ring-halogenated tolylene diisocyanate, in the presence of urea and a catalyst containing tin.

### 3,479,305

### PROCESS FOR PRODUCING FOAMS FROM CARBOXYLIC ACID DERIVATIVES AND ISOCYANATES BY WATER CATALYSIS

**Stanley T. Kus, Griffith, and Fred W. Koenig, Highland, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana**

**No Drawing. Continuation-in-part of application Ser. No. 448,254, Apr. 15, 1965. This application Jan. 17, 1968, Ser. No. 698,406**

**Int. Cl. C08g** *20/20*

**U.S. Cl. 260—2.5 7 Claims**

Novel thermally stable foams and prepolymers are prepared by reacting at temperatures in excess of 200° F. polyfunctional aromatic carboxylic acid derivatives comprising a benzene nucleus substituted by members selected from the group consisting of anhydride and carboxyl with a polyarylpolyisocyanate in the presence of a sufficient amount of water to catalyze the reaction. The foams are useful for insulation of walls, for fireproofing buildings and the like, and the prepolymers are useful to prepare molded products such as pipe molds.

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### 3,479,306

### WATER SOLUBLE EPOXY ESTERS

**John C. Safranski, Jr., Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Filed Aug. 24, 1965, Ser. No. 482,280**

**Int. Cl. C08g** *51/72, 51/34*

**U.S. Cl. 260—18 9 Claims**

A water soluble coating material, useful for electrodeposition, is prepared by esterifying an epoxy resin with a combination of a drying oil fatty acid and an aromatic monocarboxylic acid then reacting the unsaturated epoxy ester with an $\alpha,\beta$-unsaturated carboxylic acid followed by reaction with ammonia or an amine, then solubilized by a water soluble coupling agent such as a glycol, glycol ether or a ketone.

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### 3,479,307

### PHENOL FORMALDEHYDE CONTAINING OIL FREE POLYESTER INSULATING VARNISH

**Deno Laganis, Schenectady, N.Y., assignor to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York**

**No Drawing. Continuation-in-part of application Ser. No. 314,633, Oct. 8, 1963. This application Aug. 2, 1967, Ser. No. 657,775**

**Int. Cl. C08g** *39/04;* **H01b** *3/42*

**U.S. Cl. 260—20 15 Claims**

An insulating varnish is made from an oil-free alkyd resin which is an ester of a plurality of polyhydric alcohols with isophthalic acid or terephthalic acid and up to 60% of an aliphatic dicarboxylic acid. One of the polyhydric alcohols contains two hydroxyl groups and another at least three hydroxyl groups. There is also included an oil soluble phenol-aldehyde resin. The aliphatic dicarboxylic acid is preferably a dimerized fatty acid. A portion of the phenolic resin can be replaced by an aminotriazine aldehyde resin.

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### 3,479,308

### ANTIFOGGING FILM COMPRISING VINYL CHLORIDE POLYMER AND FATTY ACID ESTERS

**Miles N. Gattenby, Jr., Lowell, and Anthony S. D'Amato, Chelmsford, Mass., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey**

**No Drawing. Filed Dec. 11, 1964, Ser. No. 417,776**

**Int. Cl. C08f** *29/18, 45/58, 47/14*

**U.S. Cl. 260—23 13 Claims**

This invention relates to polymerized polymeric vinyl films containing a minor proportion of an antifogging and antitackifying agent, said agent being a combination of a partial ester of a water soluble $C_{2-6}$ polyol with a $C_{12-18}$ aliphatic monocarboxylic acid and a polyalkoxylated derivative of a partial ester of a water-soluble $C_{2-6}$ polyol and a $C_{12-18}$ aliphatic monocarboxylic acid the alkoxy groups therein having each 2–3 carbon atoms and the number of alkoxy groups being about 3–30 per molecule of said alkoxylated partial ester.

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### 3,479,309

### FATTY ACID-POLYVALENT METAL SALT STABILIZERS FOR POLYVINYL CHLORIDE RESINS WITH REDUCED TENDENCY TO FORM BLOOM

**Arthur C. Hecker, Forest Hills, and Alfred Thee, Long Beach, N.Y., assignors to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of Delaware**

**No Drawing. Filed Sept. 11, 1967, Ser. No. 666,920**

**Int. Cl. C08f** *45/36, 29/18;* **C08k** *1/66*

**U.S. Cl. 260—23 20 Claims**

A polyvinyl chloride resin stabilizer lubricant composition is provided, consisting essentially of a fatty acid or fatty acid ester lubricant and a polyvalent metal salt of a naturally occurring saturated aliphatic fatty monocarboxylic acid or mixture thereof having from about eight to about twenty-four carbon atoms, of which a major proportion is fatty acid having from about sixteen to about eighteen carbon atoms, the lubricant and polyvalent metal salt together having a strong tendency to form bloom, and a naturally occurring unsaturated fatty acid or polyvalent metal salt thereof having from about eight to about twenty-four carbon atoms in an amount to inhibit the formation of bloom when in the presence of the resin, and bring the iodine value to within the range from about 2.5 to about 20.

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### 3,479,310

### POLYURETHANE PLASTICS

**Dieter Dieterich and Otto Bayer, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation**

**No Drawing. Filed Sept. 15, 1964, Ser. No. 396,701**

**Claims priority, application Germany, Sept. 19, 1963, F 40,799**

**Int. Cl. C08g** *41/00, 51/24*

**U.S. Cl. 260—29.2 7 Claims**

A polyurethane ester is prepared by dispersing in water a polyurethane containing from about 0.02 to about 1% by weight salt groups. The polyurethane can be dispersed without the aid of additional emulsifying agent.

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### 3,479,311

### PRESSURE-SENSITIVE CHLOROPRENE POLYMER ADHESIVES

**John Joseph Gorman, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 611,573, Jan. 25, 1967. This application Jan. 3, 1968, Ser. No. 695,350**

**Int. Cl. C08g** *51/24;* **C09d** *5/02*

**U.S. Cl. 260—29.3 8 Claims**

Preparation of pressure-sensitive adhesive from chloroprene polymers of 0.1 to 2 wt. percent sulfur, a monomer such as $CH_2{=}CR{-}COOH$ in amounts to provide 0.25 to 1 wt. percent —COOH groups and another monomer such as 2,3-dichloro-1,3-butadiene, by peptizing the polymer in a 10 to 60 wt. percent solution in a hydrocarbon/ketone solvent (e.g., toluene, MEK and hexane) with about $7\times10^{-5}$ to $3\times10^{-2}$ moles per 100 parts of polymer, of a mercapto acid (e.g., about 0.01 to 4 phr. 3-mercaptopropionic acid or thiomalic acid) and a water/lower alkyl alcohol viscosity stabilizing system, with subsequent addition of 0.1 to 20 phr. of MgO and a tackifying resin. Excellent creep resistance and adequate "quick stick" properties are obtained without resorting to a heat cure.

### 3,479,312

### CONTINUOUS SOLUTION-POLYMERIZATION OF ACRYLONITRILE

**Saburo Fujii and Masatoshi Yoshida, Kitajima-machi, Japan, assignors to Toho Beslon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan**

**No Drawing. Filed Dec. 3, 1965, Ser. No. 511,315**

**Claims priority, application Japan, Dec. 9, 1964, 39/68,800; Dec. 10, 1964, 39/69,126**

**Int. Cl. C08f** *1/06, 1/08, 3/76*

**U.S. Cl. 260—29.6 9 Claims**

A process in which an acrylic polymer solution is made from a monomer solution comprising at least 85% acrylonitrile in a concentrated aqueous salt solution of zinc chloride. In the process, the monomer solution is precooled to 5–15° C. and continuously fed with a polymerization initiator into the first of series of reactors each maintained at 35°–65° C., but with each successive reactor at a higher temperature than its predecessor. Each reactor is also provided with cooling means set at above 15° C. and also at a temperature which is within 30° C. of its associated reactor. Polymerization is effected in the first reactor to the extent of 60–85% and the product is transferred to at least a second reactor to continue polymerization to a final conversion of at least 92%.

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### 3,479,313

### OIL EXTENSION OF LATICES

**Robert W. Kreider, Hudson, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio**

**No Drawing. Filed May 6, 1964, Ser. No. 365,488**

**Int. Cl. C08d** *7/00*

**U.S. Cl. 260—29.7 23 Claims**

This invention comprises a method for introducing an extending oil into rubbery polymer particles in a latex whereby an oil with an electric charge opposite to the electrostatic charge on the polymer particles is mixed into the latex which is heated at least 20° F. above the glass transition temperature of the polymer while the latex-oil mixture is kept stable by keeping the initial charge on the latex particles preponderant. The invention also comprises the resulting product.

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### 3,479,314

### OXYMETHYLENE POLYMER COMPOSITION AND FIBER PRODUCED THEREFROM

**Albert G. Williams, West Orange, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Original application July 22, 1960, Ser. No. 44,543. Divided and this application Dec. 7, 1965, Ser. No. 528,666**

**Int. Cl. C08g** *43/00, 51/52, 51/34*

**U.S. Cl. 260—30.4 2 Claims**

A polymer composition and high tenacity fibers formed therefrom, which composition comprises an oxymethylene polymer containing up to 50 weight percent of a material which is miscible with a melt of the polymer and which reduces the viscosity of the melt.

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### 3,479,315

### ABS RESIN AND LUBRICANT

**Lewis B. Weisfeld, Highland Park, N.J., assignor to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio**

**No Drawing. Filed Jan. 19, 1967, Ser. No. 610,227**

**Int. Cl. C08f** *45/46, 41/10*

**U.S. Cl. 260—30.8 10 Claims**

ABS resins are lubricated with organotin mercapto compounds which at the same time impart color stability.

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### 3,479,316

### METHODS FOR PREPARING ORGANOPOLYSILOXANES AT NEUTRAL CONDITIONS

**Leon Levene, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio**

**No Drawing. Continuation-in-part of application Ser. No. 652,721, July 12, 1967. This application Dec. 9, 1968, Ser. No. 782,434**

**Int. Cl. C08g** *31/36*

**U.S. Cl. 260—33.4 20 Claims**

Methods for hydrolyzing trifunctional organic silanes such as methyltrialkoxysilane, phenyltrialkoxysilane, or mixtures thereof at neutral conditions using a vanadium containing hydrolysis catalyst such as trialkylvanadate. The resultant heat curable, solvent-soluble prepolymer is used to prepare excellent laminates, moldings, and hard, clear, flexible coatings.

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### 3,479,317

### ADHESIVE ADDITIVES FOR CURABLE LIQUID RESINS

**Thomas E. Ferington, Sandy Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut**

**No Drawing. Filed Dec. 19, 1966, Ser. No. 602,488**

**Int. Cl. C08g** *51/06, 51/10*

**U.S. Cl. 260—37 5 Claims**

Curable liquid resin compositions are produced by admixing a liquid resin, 0.5 to 10% by weight of said resin of a curing agent and 1 to 15% by weight of said resin of an adhesive additive consisting essentially of (a) a particulate group member comprising asbestos fibers and irradiation polymerized polyoxymethylene in combination with (b) 50 to 95% by weight of the adhesive additive of an organic filler, said adhesive additive being formed by jet milling together said particulate group member and filler in a fluid medium at superatmospheric pressure and temperatures ranging from ambient to 350° F. until the particulate group member has a major dimension of not more than 500 microns and a length to diameter ratio of at least 10 to 1 and thereafter separating the fluid from the adhesive additive.

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### 3,479,318

### MOULDABLE POLYESTER COMPOSITIONS CONTAINING FINELY DIVIDED PYROPHYLLITE

**John Brian Jackson, Francis Raymond Sherliker, and Hamish Arthur Long, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain**

**No Drawing. Filed Nov. 24, 1967, Ser. No. 685,257**

**Claims priority, application Great Britain, Dec. 9, 1966, 55,305/66**

**Int. Cl. C08g** *51/06*

**U.S. Cl. 260—40 6 Claims**

A composition comprising poly(ethylene terephthalate) containing a small amount of finely divided pyrophyllite, preferably from 0.2 to 1% by weight of the polymer, and a method of forming shaped articles therefrom.

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### 3,479,319

### POLYETHYLENE TEREPHTHALATE STABILIZED WITH SODIUM PYROPHOSPHATE

**William L. Hergenrother, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio**

**No Drawing. Filed Sept. 19, 1967, Ser. No. 668,945**

**Int. Cl. C08g** *51/56*

**U.S. Cl. 260—45.7 8 Claims**

This invention comprises a process for stabilizing polyethylene terephthalate against thermal decomposition, and the thermally stabilized composition produced thereby. This stabilization is effected by dispersing sodium pyrophosphate in the polyethylene terephthalate in an amount of 0.05–1% by weight, preferably about 0.3%

by weight. This invention is particularly useful with polyethylene terephthalate having a molecular weight of at least 10,000. This dispersion can be effected by any appropriate means but is advantageously effected by applying a suspension of sodium pyrophosphate dispersed in a liquid medium to particles of polyethylene terephthalate and thereafter evaporating the liquid suspension medium therefrom. Preferred liquid suspension media are water, mineral oil, etc., and the vaporization is preferably effected under vacuum.

### 3,479,320

## POLYMERIZATION OF CYCLIC ORGANOSILOXANES WITH GROUP II–A METAL COMPLEXES

**Edgar E. Bostick, Scotia, N.Y., assignor to General Electric Company, a corporation of New York**

**No Drawing. Filed June 24, 1968, Ser. No. 739,162**

**Int. Cl. C08g** *31/34;* **C08f** *7/18*

**U.S. Cl. 260—46.5** **11 Claims**

Cyclic organosiloxanes are polymerized with a Group II–A metal compound complex to give essentially linear polydiorganosiloxane homopolymeric and copolymeric fluids, gums, and thermoplastic resins. The fluid organopolysiloxanes which are prepared in accordance with the process of this invention are useful as lubricants, damping fluids, etc. The rubbery and thermoplastic polymers produced in accordance with this process are useful as gasketing materials, coatings, for producing molded articles, hoses, wire insulation, and dielectric materials, etc.

### 3,479,321

## NITRATED POLYESTERS AND POLYBENZOXAZOLES PREPARED FROM SAME

**Leo R. Belohlav, Berkeley Heights, and John R. Costanza, Plainfield, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Oct. 19, 1966, Ser. No. 587,702**

**Int. Cl. C08g** *33/02, 23/20*

**U.S. Cl. 260—47** **17 Claims**

A process is provided for the efficient production of polybenzoxazoles which utilizes a novel class of nitrated polyester intermediates. Certain bisphenols are condensed with certain aromatic dicarboxy compounds to form a polyester, the polyester is nitrated, and the nitro groups of the polyester are reduced and cyclized to form a polybenzoxazole. Fabricated articles can be formed from either the nitrated polyester intermediate or the resulting polybenzoxazole.

### 3,479,322

## CATIONIC ION EXCHANGE RESIN CATALYSTS AND PROCESS FOR THEIR PRODUCTION AND USE

**Alan H. Peterson, Littleton, Colo., assignor to Marathon Oil Company, Findley, Ohio, a corporation of Ohio**

**No Drawing. Filed Feb. 14, 1966, Ser. No. 527,053**

**Int. Cl. C08g** *7/00;* **C07c** *3/54;* **B01j** *11/82*

**U.S. Cl. 260—67** **14 Claims**

The present invention comprises in chemical processes conventionally utilizing mild Friedel-Crafts catalysts, the improvement of substituting for conventional mild Friedel-Crafts catalysts a catalytic amount of a cationic ion exchange resin in which the cation present is selected from cations having valences of at least 2.

### 3,479,323

## ADHESIVES FROM OLEFINICALLY UNSATURATED POLYESTERS AND POLYTHIOLS

**Faber B. Jones, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed Oct. 10, 1966, Ser. No. 585,240**

**Int. Cl. C08g** *17/12, 33/10;* **C09j** *3/16*

**U.S. Cl. 260—75** **8 Claims**

Olefinically unsaturated polyesters of polyhydric alcohols or phenols are contacted with a polythiol for a time sufficient to form an adhesive composition in the absence of an oxidizing atmosphere, and in the presence of an amine salt. The novel composition of matter which results is useful as an adehsive.

### 3,479,324

## DIRECT ESTERIFICATION METHOD OF PREPARING POLYETHYLENE TEREPHTHALATE WITH AN AMMONIUM OR METAL SALT OF ETHYLENEDIAMINETETRAACETIC ACID

**Mary E. Carter, Philadelphia, and John A. Price, Swarthmore, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 575,251, Aug. 26, 1966. This application Sept. 17, 1968, Ser. No. 760,101**

**Int. Cl. C08g** *17/013*

**U.S. Cl. 260—75** **10 Claims**

Process of preparing polyethylene terephthalate resin comprising carrying out a direct esterification reaction between terephthalic acid and ethylene glycol in the presence of a suitable ammonium or metal salt of ethylenediaminetetraacetic acid as an esterification additive to form a polyester prepolymer and then to polycondense the said prepolymer.

### 3,479,325

## PROCESS FOR PREPARING SUBSTANTIALLY ANHYDROUS POLYURETHANE COMPOSITIONS USING AN ORGANIC SULFONYL MONOISOCYANATE

**Friedrich Blomeyer, Cologne-Stammheim, and Gunter Oertel, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

**No Drawing. Filed Dec. 29, 1966, Ser. No. 605,564**

**Claims priority, application Germany, Dec. 30, 1965, F 48,060**

**Int. Cl. C08g** *22/04*

**U.S. Cl. 260—77.5** **7 Claims**

A method is provided for preparing a substantially anhydrous polyurethane composition from components which contain water wherein an organic sulfonyl monoisocyanate is mixed with one or more of the components containing the water.

### 3,479,326

## PROCESS AND CATALYSTS FOR POLYMERIZATION AND COPOLYMERIZATION OF OLEFINS AND THE RESULTANT POLYMERS AND COPOLYMERS

**Andre Delbouille, Auderghem-Brussels, and Henri Toussaint, Schaerbeek-Brussels, Belgium, assignors to Solvay & Cie, Brussels, Belgium, a company of Belgium**

**Filed Feb. 23, 1967, Ser. No. 618,146**

**Claims priority, application France, Feb. 24, 1966, 50,945**

**Int. Cl. C08f** *1/56, 1/36*

**U.S. Cl. 260—80.78** **11 Claims**

Olefins are polymerized and copolymerized in the presence of a catalyst constituted of the reaction product of a compound of an element of Group IV*b* of the Periodic Table, a compound of an element of Group V*b* of the Periodic Table and a copolymer of vinyl alcohol containing 1 to 20 mol percent of polymerized vinyl alcohol and an activator which is a metal of Groups I to III of the Periodic Table or a hydride or organometallic compound of the Groups I to III metals.

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### 3,479,327

## POLYMERS OF VINYL ESTERS AND N-VINYL-3-ALKYL-LACTAMS

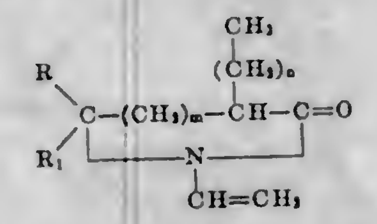
**Ashot Merijan, Clark, and Frederick Grosser, Midland Park, N.J., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Nov. 19, 1965, Ser. No. 508,828**

**Int. Cl. C08f** *19/00, 7/14;* **A61k** *7/14*

**U.S. Cl. 260—85.7** **6 Claims**

Polymers of vinyl esters and N-vinyl-3-alkyl-lactams are provided in which the said lactams have the formula:



wherein R and $R_1$ are either hydrogen, methyl or ethyl, *m* is an integer of from 1 to 3 and *n* is an integer of from 5 to 41.

### 3,479,328

## NOVEL MONOMERS AND POLYMERS

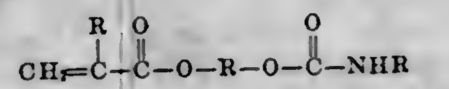
**John David Nordstrom, Bloomington, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky**

**No Drawing. Filed Nov. 18, 1966, Ser. No. 595,333**

**Int. Cl. C08f** *19/10, 3/64, 15/16*

**U.S. Cl. 260—86.1** **7 Claims**

Homo- or interpolymers of carbamyloxy carboxylates of the formula



$$CH_2{=}\overset{R}{\overset{|}{C}}-\overset{O}{\overset{\|}{C}}-O-R-O-\overset{O}{\overset{\|}{C}}-NHR$$

are useful as coatings which are mar-resistant and resistant to acids, bases and many types of solvents.

### 3,479,329

## POLYMERIZATION OF BI-SECONDARY MONO-OLEFINS

**Yves Chauvin, Orsay, and Gilles Lefebvre, Rueil-Malmaison, France, assignors to Institut Francaise du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, France**

**Filed Nov. 19, 1964, Ser. No. 412,366**

**Claims priority, application France, Nov. 21, 1963, 954,608**

**Int. Cl. C08f** *15/04, 3/12*

**U.S. Cl. 260—88.2** **38 Claims**

Polymerization of bi-secondary mono-olefins such as butene-2, pentene-2 and 4-methyl-pentene-2 etc., to form polymers having the same structure as those polymers obtained by the polymerization of α-olefins of the same number of carbon atoms, the polymerization being conducted in the presence of a catalyst comprising:

(I) An anionic coordination catalyst composed of (a) a compound of a transition metal selected from the group consisting of Groups IV–B and V–B of the Periodic Table, and (b) an activator or reducing agent which is a member of the group consisting of a metal, a metal hydride and an organometallic compound, said metal being selected from the group consisting of Groups I–A, II, III–A, and IV–A of the Periodic Table; and

(II) A compound of the metal selected from the group consisting of Groups VI and VIII of the Periodic Table.

### 3,479,330

## 1-OLEFIN POLYMERIZATION PROCESS AND CATALYST

**Gerald R. Kahle and Lawrence M. Fodor, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed Feb. 14, 1966, Ser. No. 527,056**

**Int. Cl. C08f** *3/02*

**U.S. Cl. 260—93.7** **10 Claims**

An increased yield of 1-olefin polymers is obtained by carrying out the polymerization in the presence of an organometal modified catalyst system formed by admixing (A) an organoaluminum compound of the formula $R_nAlX_{3-n}$ wherein R is alkyl, cycloalkyl, aryl or combinations thereof having up to 20 carbon atoms, X is a halogen and *n* is 1, 1.5, 2 or 3; (B) a titanium trichloride-aluminum trichloride complex resulting from the reaction of titanium tetrachloride and aluminum and having the approximate formula $TiCl_3 \cdot \frac{1}{3}AlCl_3$; and (C) a phosphonitrilic halide of the formula $(PNX_2)_m$ wherein X is a halogen, preferably chlorine and *m* has a value of 3 to 100.

### 3,479,331

## CATALYTIC PROCESS FOR PREPARING A HIGH MOLECULAR WEIGHT CIS-1,4-POLYISOPRENE

**Kan Mori, Taro Suminoe, Tamotu Yamazaki, Tunezo Ishikawa, and Akira Kogure, Yokkaichi-shi, Japan, assignors to Japan Synthetic Rubber Co., Ltd., Tokyo, Japan, a corporation of Japan**

**No Drawing. Filed Dec. 18, 1967, Ser. No. 691,161**

**Claims priority, application Japan, Dec. 26, 1966, 41/84,450**

**Int. Cl. C08d** *1/14*

**U.S. Cl. 260—94.3** **4 Claims**

High molecular weight cis-1, 4-polyisoprene is produced by contacting isoprene in a hydrocarbon solvent with a catalyst obtained by admixing (A) a titanium tetrahalide, (B) a complex of boron trifluoride with a phenol, and (C) a trialkylaluminium. Preferred catalyst is prepared by adding (A), optionally in the presence of isoprene, to a reaction mixture of (B) with (C), the proportions of the three components being such that Ti:Al is 1:05 to 1:10, and Al:B is 3:1 to 15:1.

### 3,479,332

## DISAZO DYESTUFFS CONTAINING AN N,N-DICYANOETHYL GROUP

**Marcel Jirou, Sotteville-les-Rouen, and Jean Marie Louis Leroy, Rouen, France, assignors to Kuhlmann, Ugine, Paris, France, a French corporation**

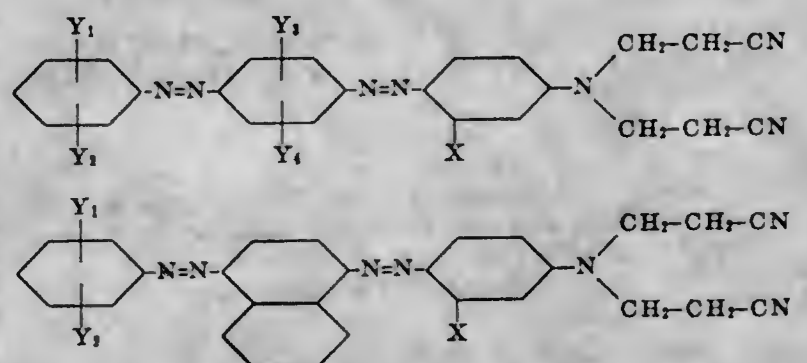
**No Drawing. Filed July 12, 1965, Ser. No. 471,447**

**Claims priority, application France, July 16, 1964, 981,845**

**Int. Cl. C09b** *31/04*

**U.S. Cl. 260—186** **2 Claims**

Disazo dyestuffs having one of the following formulae



in which $Y_1$, $Y_2$, $Y_3$ and $Y_4$ each represents a hydrogen or halogen atom or a methyl, methoxy or ethoxy group and X represents a hydrogen or chlorine atom or a methyl or methoxy group. These disazo dyestuffs are suitable for dyeing synthetic fibers and more especially polyesters and cellulose triacetate fibers.

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### 3,479,333

### D-PHE$^7$-$\alpha^{1-10}$-A.C.T.H. AND DERIVATIVES AND COMPLEXES THEREOF

**Hendrik Maria Greven, Heesch, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey**

**No Drawing. Filed July 1, 1966, Ser. No. 562,079**
**Claims priority, application Netherlands, July 28, 1965, 6509727**
**Int. Cl. C07g** *7/00;* **C07c** *103/52;* **C08h** *1/00*
**U.S. Cl. 260—112.5 3 Claims**

The invention concerns new biologically active decapeptides having the sequence of the first 10 amino acid residues of the adrenocorticotropic hormone molecule, counted from the N-terminal, and in which at least the phenylalanine residue occurs in the D-form, their salts, esters, carboxylamides, and N-acylates, and their sparingly soluble compounds with salts, oxides and hydroxides of zinc, nickel, cobalt, copper and iron, and possessing greatly enhanced fat mobilizing activity. Among the peptides disclosed are: D-Phe$^7$, D-Phe$^7$-D-Arg$^8$,

D-Tyr$^2$-D-Phe$^7$-

D-Ser$^1$-D-Tyr$^2$-D-Phe$^7$- and

D-Ser$^1$-D-Tyr$^2$-D-Phe$^7$-D-Arg$^8$-$\alpha^{1-10}$=A.C.T.H.

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### 3,479,334

### PROCESS FOR SELECTIVELY PREPARING LINCOMYCIN 7 - ACYLATES AND 7-CARBONATES

**Ronald L. Houtman, Parchment, and Walter Morozowich and Anthony A. Sinkula, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware**

**No Drawing. Filed Sept. 29, 1967, Ser. No. 671,591**
**Int. Cl. C07g** *3/00*
**U.S. Cl. 260—210 8 Claims**

Process for producing lincomycin 7-acylates which comprises:

(1) silylating lincomycin to produce 2,3,4,7-tetrakis-O-(trimethylsilyl)lincomycin;
(2) hydrolyzing 2,3,4,7 - tetrakis-O-(trimethylsilyl)lincomycin to 2,3,4-tris-O-(trimethylsilyl)lincomycin;
(3) acylating 2,3,4-tris-O-(trimethylsilyl)lincomycin to produce 2,3,4-tris - O - (trimethylsilyl)lincomycin 7-acylate; and
(4) hydrolyzing 2,3,4-tris-O-(trimethylsilyl)lincomycin 7-acylate to produce lincomycin 7-acylate.

Lincomycin 7-carbonates can be made by the same process except for the substitution of a carbonation step for the acylation step. Lincomycin 7-acylates and lincomycin 7-carbonates are antibacterial agents.

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### 3,479,335

### REACTION PRODUCTS OF RIBOFLAVIN WITH FORMALDEHYDE AND PROCESS FOR PREPARING SAME

**Joseph W. Blaszczak, 34–43 60th St.,
Woodside, N.Y. 11377**

**No Drawing. Continuation-in-part of application Ser. No. 256,539, Feb. 6, 1963. This application May 25, 1965, Ser. No. 458,759**
**Int. Cl. C07d** *57/32;* **A61k** *27/00*
**U.S. Cl. 260—211.3 6 Claims**

Valuable reaction products of riboflavin and formaldehyde are produced under non-alkaline reaction conditions. They have a normalizing effect on abnormal cell metabolism.

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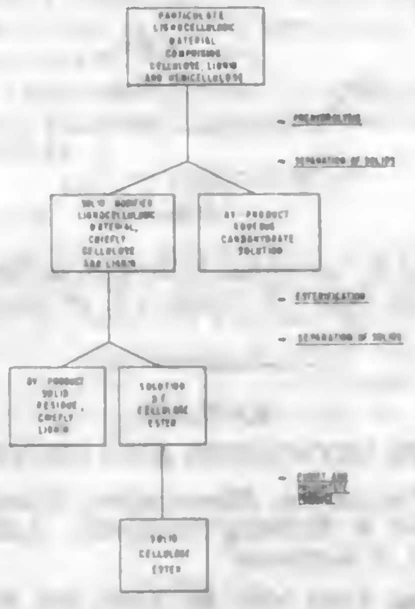
### 3,479,336

### PRODUCTION OF CELLULOSE ESTERS FROM PARTICULATE LIGNOCELLULOSIC MATERIAL

**Richard Perry Taylor, North Vancouver, British Columbia, and Derek Abson, Vancouver British Columbia, Canada, assignors to Columbia Cellulose Company Limited, St. Vancouver, British Columbia, Canada, a Canadian corporation**

**Filed May 13, 1966, Ser. No. 558,167**
**Int. Cl. C08b** *3/06, 1/02, 3/16*
**U.S. Cl. 260—225 12 Claims**



The process for the production of cellulose organic acid esters comprising hydrolyzing in an aqueous solution a particulate lignocellulosic material which initially comprises cellulose, lignin and hemicellulose, separating out solid modified lignocellulosic material, esterifying the solid modified lignocellulosic material and finally recovering cellulose ester.

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### 3,479,337

### AZIRIDINYL DERIVATIVES OF POLYFUNCTIONAL EPOXIDES

**George F. Bulbenko and Riad H. Gobran, Levittown, and Elizabeth A. Blommers, Abington, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware**

**No Drawing. Original application Nov. 1, 1963, Ser. No. 320,856, now Patent No. 3,329,674, dated July 4, 1967. Divided and this application Mar. 1, 1967, Ser. No. 632,869**
**Int. Cl. C07d** *23/04*
**U.S. Cl. 260—239 1 Claim**

Aziridinyl derivatives of polyfunctional epoxides, which are the reaction products of alkylenimines and polyfunctional epoxides, exhibit great effectiveness in curing or cross linking, at room or ambient temperatures, polymers containing or terminating by carboxyl groups.

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### 3,479,338

### PROCESS FOR THE PREPARATION OF ANHYDROUS AMPICILLIN USING SILYLATED AMPICILLIN ACID SALT

**Arthur C. Adams, West Chester, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Oct. 2, 1967, Ser. No. 671,965**
**Int. Cl. C07d** *99/14*
**U.S. Cl. 260—239.1 5 Claims**

Anhydrous ampicillin is prepared in high yields without the need to isolate and use crystalline hydrated forms or complex, insoluble salts as precursors by a process comprising (A) alcoholyzing a silylated ampicillin hydrohalide; and (B) reacting the intermediate of Step (A) with a tri(lower)alkylamine to form ampicillin base; or ($A^1$) reacting a silylated ampicillin hydrohalide with a tri(lower)alkylamine to form a silylated ampicillin base; and ($B^1$) alcoholyzing the intermediate of Step ($A^1$) to form ampicillin base; (C) preparing a mixture comprising (1) the ampicillin base from Step (B) or Step ($B^1$) and (2) an at least partially water-miscible organic solvent with a controlled amount, i.e., at least about 10% by weight of water, based on solids and total water, bound and free, present; and (D) heating the mixture of 50–100° C. to obtain crystalline anhydrous ampicillin.

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### 3,479,339

### 6-($\alpha$-3 - ACYLUREIDOPHENYLACETAMIDO)- AND 6-($\alpha$ - 3 - ACYLUREIDOTHIENYLACETAMIDO)-PENICILLANIC ACIDS

**Charles Truman Holdrege, Camillus, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed June 13, 1968, Ser. No. 736,608**
**Int. Cl. C07d** *99/16;* **A61k** *21/00*
**U.S. Cl. 260—239.1 34 Claims**

6 - ($\alpha$-3-acylureidophenylacetamido)- and 6-($\alpha$-3-acylureidothienylacetamido)-penicillanic acids are valuable as antibacterial agents, nutritional supplements in animal feeds, therapeutic agents in poultry and animals, including man, and are especially useful in the treatment of infectious diseases caused by Gram-positive and Gram negative bacteria, most particularly those caused by the Pseudomonas genus. 6-{D-$\alpha$-[3-(2′-furoyl)ureido]-3-thienylacetamido}-penicillanic acid, a preferred embodiment of the invention, is prepared by the treatment of 6-(D-$\alpha$-amino-3-thienylacetamido)-penicillanic acid with 2-furoyl isocyanate.

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### 3,479,340

### PROCESS FOR THE PREPARATION OF STEROIDAL 1,4-DIENES UNSUBSTITUTED IN THE 3-POSITION

**Richard W. Rees, St. Davids, Theodore J. Foell, King of Prussia, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Aug. 1, 1967, Ser. No. 657,507**
**Int. Cl. C07c** *167/00, 173/00;* **A61k** *27/00*
**U.S. Cl. 260—239.55 10 Claims**

Novel steroidal 1,4-dienes unsubstituted in the 3-position (I), which are hormonally-active, are prepared by a new process comprising selectively with alkali metals or alkaline earth metals in excess in a liquid amine a 3-di-(lower)alkylmercaptole of a 1,4-diene steroid (II) until conversion of the 3-di(lower)alkylmercaptole group to a 3-methylene group is substantially complete.

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### 3,479,341

### AMIDINOHYDRAZONES OF 4-HALO-3-KETO-STEROIDS AND INTERMEDIATES

**Kurt W. Ledig, Philadelphia, and Gerhard R. Wendt, Havertown, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Jan. 23, 1968, Ser. No. 699,793**
**Int. Cl. C07c** *173/00, 169/08, 167/26*
**U.S. Cl. 260—239.55 13 Claims**

4-halo-13-alkyl-17$\alpha$-substituted-17 -hydroxygon-4-en-3-one, amidinohydrazones, and 17-esters thereof and their salts (I) are prepared by condensing the corresponding 4-halo-13-alkyl-17$\alpha$-substituted-17 -hydroxygon-4-en-3-one (II) with a salt of an aminoguanidine (III). Compounds of Formula I are pharmacologically active, antimicrobially, especially against bacteria, protozoa and amebae.

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### 3,479,342

### 6,6-ETHYLENE PREGNENES

**Vlasios Georgian, Belmont, Mass., and James F. Kerwin, Broomall, Pa., assignors to Smith, Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Continuation-in-part of application Ser. No. 442,784, Mar. 25, 1965. This application July 14, 1965, Ser. No. 472,055**
**Int. Cl. C07c** *169/34, 173/00;* **A61k** *27/00*
**U.S. Cl. 260—239.55 5 Claims**

6,6-ethylene pregnenes optionally substituted in the 11, 15, 16, 17, 20 and 21 positions as well as 1-dehydro derivatives have progestational and anabolic activity. The compounds are generally prepared from 6-methylene pregnenes by reaction with dimethylsulfoxonium methylide.

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### 3,479,343

### NOVEL CARBAZATES

**James D. Johnston, New London, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 3,984, Jan. 22, 1960. This application Jan. 9, 1961, Ser. No. 76,088**
**Int. Cl. C09b** *23/00;* **C07d** *5/16*
**U.S. Cl. 260—240 10 Claims**

New carbazates useful as antimicrobial agents; especially the $\beta$-hydroxyethyl-, $\beta$-chloroethyl- and $\beta$-acetoxyethyl-5-nitro-2-furfurylidene carbazates.

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### 3,479,344

### 13$\beta$-ALKYL-6-OXAGONANES

**Gordon Alan Hughes, Wayne, Pa., and Herchel Smith, 500 Chestnut Lane, Wayne, Pa. 19087; said Hughes assignor to said Smith**

**Continuation-in-part of application Ser. No. 348,952, Mar. 3, 1964. This application Aug. 30, 1965, Ser. No. 483,528**
**Int. Cl. C07d** *101/00;* **A61k** *17/00*
**U.S. Cl. 260—240 23 Claims**

13$\beta$ - lower alkyl-6-oxagona-1,3,5(10),8,14-pentaenes are prepared by treating a 7-alkoxy-chroman-4-one with a vinyl Grignard reagent to form a 7-alkoxy-4-vinyl-chroman-4-ol, condensing the chromanol with a 2-alkyl-cyclopentane-1,3-dione to form a 7-alkoxy-4-[2-(1-alkyl-2,5-dioxocyclopentyl)ethylidene]-chromane, and cyclizing said chromane under acidic conditions. The pentaene is selectively hydrogenated to form a 13$\beta$-lower algyl-6-oxagona-1,3,5(10),8-tetraene which may be isomerized to form the corresponding 1,3,5(10),9-tetraene which in turn is hydrogenated to form a 13$\beta$-lower alkyl-6-oxagona-1,3,5(10)-triene. The triene is reduced to form a 13$\beta$-lower alkyl-6-oxagona-2,5(10)-diene, which is hydrolyzed to form a 13$\beta$-lower alkyl-6-oxagon-4-ene. The 6-oxa steroids produced possess estrogenic, metrotropic, antilipemic, androgenic and progestational activity.

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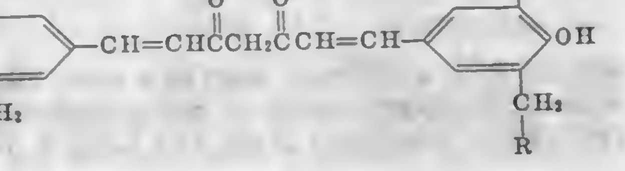
### 3,479,345

### CURCUMIN DERIVATIVES

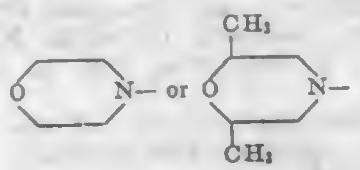
**Charles F. Geschickter, Lorton, Va., and Jacob R. Meadow, Lexington, Ky., assignors to The Geschickter Fund for Medical Research, Inc., Washington, D.C., a corporation of New York**

**No Drawing. Filed July 1, 1966, Ser. No. 562,128**
**Int. Cl. C09b** *23/00*
**U.S. Cl. 260—240 4 Claims**

Novel di-Mannich derivatives of curcumin having the formula



wherein R is $(C_4H_9)_2N—$



and therapeutically useful acid addition salts thereof have utility for prevention of dribbling, irritable colon and in the treatment of nocturia.

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### 3,479,346
## N-ACYL-N- (AND N,N-BIS-) [(1-PIPERIDYL)-LOWER-ALKYL]AMINES

**Bernard L. Zenitz, Colonie, and Alexander R. Surrey, Albany, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 432,845, Feb. 15, 1965. This application Nov. 25, 1966, Ser. No. 596,811**
**Int. Cl. C07d** *29/30, 29/12, 51/64*
**U.S. Cl. 260—240** **39 Claims**

N-acyl-N- (and N,N-bis-) [(1-piperidyl)-lower-alkyl] amines, for example N-benzoyl-N,N-bis-[3-(4-cyclohexylmethyl-1-piperidyl)propyl]amine, having chemotherapeutic and pharmacodynamic, particularly anti-inflammatory, coronary dilator, hypotensive, anti-fungal, anti-viral, anthelmintic, and psychomotor depressant activities, prepared by acylation of the corresponding N- (and N,N-bis-) [(1-piperidyl)-lower-alkyl]amines.

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### 3,479,347
## 3,4-DIHYDRO-2-QUINOXALINOL-6-CARBOXYLIC ACID DERIVATIVES

**Gerhard R. Wendt, Havertown, and Kurt W. Ledig, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed May 22, 1967, Ser. No. 640,394**
**Int. Cl. C07d** *51/78*
**U.S. Cl. 260—240** **10 Claims**

The compound of the class of 3,4 - dihydro - 2-quinoxalinol - 6 - carboxylic acid derivatives useful as diuretic, anti-inflammatory and pituitary blocking agents.

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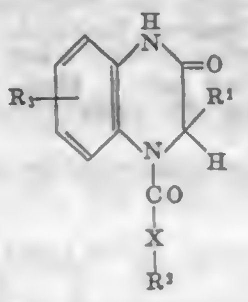
### 3,479,348
## QUINOXALINE DERIVATIVES

**Hisao Yamamoto, Nishinomiya, Masaru Nakao, Osaka, and Isamu Maruyama, Minoo, Japan, assignors to Sumitomo Chemical Co., Ltd., Osaka, Japan**
**No Drawing. Filed Nov. 14, 1967, Ser. No. 683,003**
**Claims priority, application Japan, Nov. 16, 1966, 41/75,624; Dec. 13, 1966, 41/81,925; Dec. 15, 1966, 41/82,479; Aug. 28, 1967, 42/55,419; Aug. 29, 1967, 42/55,684, 42/55,685, 42/55,687**
**Int. Cl. C07d** *51/78;* **A61k** *27/00*
**U.S. Cl. 260—240** **11 Claims**

Novel 4-acyl-3,4-dihydro-2(1H)-quinoxalinone derivatives of the formula:



wherein $R^1$ is a hydrogen atom or a lower alkyl, $R^2$ is an aromatic or oxygen-, sulfur- or nitrogen-containing heterocyclic group substituted or not with halogen, alkoxy, nitro or alkyl, $R^3$ is a hydrogen atom, an alkoxy, an alkylthio, a halogen atom or an alkyl, and X is a saturated or unsaturated aliphatic hydrocarbon chain having not more than four carbon atoms.

The compounds indicate excellent anti-inflammatory action with low toxicity.

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### 3,479,349
## POLYSULFONATED BIS-S-TRIAZINYLAMINO-STILBENE-2,2'-DISULFONIC ACIDS

**Robert Corwin Allison, Yonkers, N.Y., and Franz Fischer, Basel, and Heinrich Hausermann, Riehen, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York**
**No Drawing. Filed Aug. 3, 1967, Ser. No. 658,019**
**Int. Cl. C09b** *23/00*
**U.S. Cl. 260—240** **11 Claims**

New polysulfonated bis-s-triazinylamino-stilbene-2,2'-disulfonic acids and their salts, in the molecules of which each triazine ring is substituted at a first ring carbon atom by disulfophenyl-amino, and at a second ring carbon atom by a substituted amino group the substituents of which are free from sulfonic acid radicals; these compounds are useful especially as brighteners in the surface coating of paper, imparting high white maxima thereto; paper surface-coated with coating mixtures containing such novel compounds, a method for optical brightening of cellulosic fibers, especially cotton, by continuous pad dyeing type processes with or without the use of precondensates for wash-and-wear resin finish in the pad liquor; and compositions containing such compounds, for use in the above brightening methods.

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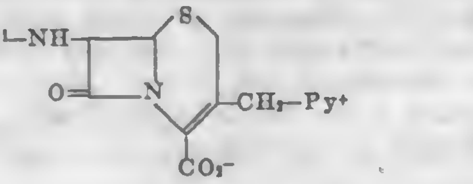
### 3,479,350
## PROCESS FOR THE MANUFACTURE OF DERIVATIVES OF CEPHALOSPORIN C

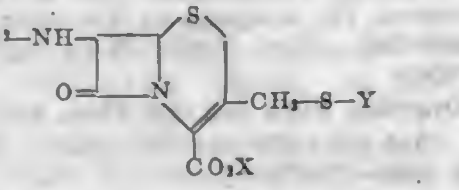
**Stephen Eardley, Ruislip, and Gordon Ian Gregory, Chalfont St. Peter, England, John Kevin Lazenby, Grangemouth, Scotland, and Alan Gibson Long, Greenford, England, assignors to Glaxo Laboratories Limited, Greenford, England, a British company**
**No Drawing. Continuation of application Ser. No. 435,331, Feb. 25, 1965. This application Dec. 5, 1966, Ser. No. 599,323**
**Int. Cl. C07c** *99/24;* **A61k** *21/00*
**U.S. Cl. 260—243** **10 Claims**

A process for the preparation of a compound of the formula



(IV)

in which $R^1$ is thienylacetyl or phenylacetyl and Py is pyridine or a substituted pyridine which includes the step of reacting a compound of the formula



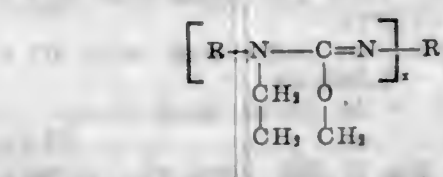
(V)

in which $R^2$ is hydrogen, thienylacetyl or phenylacetyl, the moiety —S—Y is the residue of a nucleophile Y—S—H and X is cation, with a compound Py at least partially dissolved in a halogenated hydrocarbon or a cyclic ether in the presence of a dissolved salt of mercury, silver or gold.

### 3,479,351
## TETRAHYDRO-2-IMINO-1,3-OXAZINES

**Sidney H. Metzger, Jr., New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware**
**No Drawing. Filed Mar. 2, 1966, Ser. No. 531,093**
**Int. Cl. C07d** *87/38*
**U.S. Cl. 260—246** **7 Claims**

Organic oxazines having the formula



$$\left[R-\underset{\substack{|\\CH_2\\|\\CH_2}}{N}-\underset{\substack{|\\O\\|\\CH_2}}{C}=N\right]_x-R'$$

wherein *x* is an integer of 1 or 2, R is alkyl having 1 to 18 carbon atoms, aryl having 6 to 14 carbon atoms or cycloalkyl having 3 to 12 carbon atoms, when *x* is 1, R' is obtained by removing one —NCO or —NCS group from an organic monoisocyanate or organic monoisothiocyanate and when *x* is 2, R' is a divalent radical obtained by removing two —NCO or —NCS groups from an organic diisocyanate or an organic diisothiocyanate. The invention also contemplates a process for a preparation of these compounds wherein an iminooxazine is reacted with an organic isocyanate or isothiocyanate to yield compounds of the above formula. The compounds are useful for the stabilization of various polymers containing ester groups.

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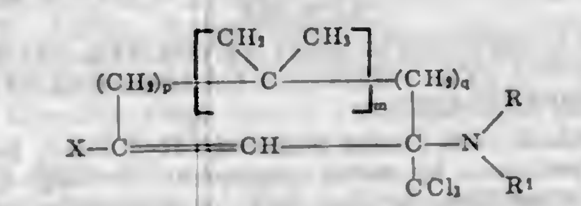
### 3,479,352
## TRICHLOROMETHYL-TERTIARY AMINO SUBSTITUTED CYCLOALKENES AND THEIR PREPARATION

**Gerhard H. Alt, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**No Drawing. Filed May 23, 1966, Ser. No. 551,930**
**Int. Cl. C07c** *87/34;* **C07d** *87/54*
**U.S. Cl. 260—247** **9 Claims**

Compounds of the formula



wherein *m* is an integer from zero to one; *p* and *q* are each integers from one to three; X is selected from the group consisting of hydrogen, methyl and chlorine; and R and $R^1$ are selected from the group consisting of alkyl having a maximum of 12 carbon atoms or together are a divalent radical selected from the group consisting of

$—CH_2CH_2CH_2—$
$—CH_2(CH_2)_2CH_2—$
$—CH_2(CH_2)_3CH_2—$
$—CH_2(CH_2)_4CH_2—$
$—CH_2CH_2OCH_2CH_2—$

These compounds are useful as intermediates in the formation of compounds which are useful as feed additives, providing growth stimulation and for controlling populations of parasitic helminths.

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### 3,479,353
## PREPARATION OF 6-AMINO-2,4-BIS(DIMETHYLAMINO)-s-TRIAZINE

**Max L. Petzold and Thomas W. Brooks, Gainesville, Fla., and John M. Bane, Jr., Parchment, Mich., assignors, by mesne assignments, to Calgon Corporation, a corporation of Delaware**
**No Drawing. Filed Dec. 26, 1967, Ser. No. 693,142**
**Int. Cl. C07d** *55/24;* **A01n** *9/22*
**U.S. Cl. 260—249.6** **6 Claims**

The title compound, which is known to be useful as a fly sterilant, is made by reacting four moles of dimethylamine with cyanuric chloride in a medium of chloroform, to yield a high-purity reaction product of 2,4-bis(dimethylamino)-6-chloro-s-triazine which, without further purification, is reacted preferably in a dimethyl sulfoxide solution with ammonia.

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### 3,479,354
## DERIVATIVES OF 5-HYDROXYQUINOXALINE-1,4-DIOXIDE

**Ronald Hilson Begg Galt, Macclesfield, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain**
**No Drawing. Filed Feb. 19, 1968, Ser. No. 706,650**
**Claims priority, application Great Britain, Mar. 21, 1967, 13,252/67**
**Int. Cl. C07d** *51/78;* **A61k** *27/00*
**U.S. Cl. 260—250** **4 Claims**

Novel 5 - hydroxyquinoxaline - 1,4 - dioxide derivatives which possess antibacterial and growth promoting activity.

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### 3,479,355
## 1,2,8,9-TETRAAZAPHENALENES

**Karl J. Doebel, Ossining, and John E. Francis, Pleasantville, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York**
**No Drawing. Continuation-in-part of application Ser. No. 715,528, Mar. 25, 1968. This application Oct. 15, 1968, Ser. No. 767,819**
**Int. Cl. C07d** *51/10*
**U.S. Cl. 260—250** **8 Claims**

1,2,8,9-tetraazaphenalenes optionally substituted in the 4, 5, 6, 7 and/or 9 positions and their salts, which are cardiovascular agents, are prepared by treatment of 2,6-disubstituted benzoic acid derivatives with hydrazine.

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### 3,479,356
## 5H - DIBENZO [a,d]-CYCLOHEPTATRIENE 10 OR 11-(1,2,3,6-TETRAHYDRO-4-PYRIDYL) AND DERIVATIVES THEREOF

**Jean Clement Louis Fouche, Bourg-la-Reine, Hauts-de-Seine, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate**
**No Drawing. Filed Feb. 1, 1967, Ser. No. 613,096**
**Claims priority, application France, Feb. 4, 1966, 48,522**
**Int. Cl. C07d** *31/50, 31/28;* **A61k** *27/00*
**U.S. Cl. 260—253** **8 Claims**

The invention provides new dibenzo[a,d]cycloheptatrienes carrying a substituted tetrahydro pyridyl residue and their salts. These compounds are active on the central nervous system especially as neuroleptics and tranquilizers and have the valuable pharmacological effects.

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### 3,479,357
## (6 - PHENYLPYRIMIDINE)MONO/BIS[1H - 1,2,3-TRIAZOLE-4,5-DICARBOXYLIC ACID] LOWER ALKYL ESTERS

**Hans A. Wagner, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed Oct. 20, 1967, Ser. No. 676,737**
**Int. Cl. C07d** *55/08, 57/18*
**U.S. Cl. 260—256.4** **12 Claims**

Preparation of the captioned compounds such as dimethyl 1 - (4 - azido - 5 - methyl - 6 - phenyl - 2 - pyrimidinyl) - 1H - 1,2,3 - triazole - 4,5 - dicarboxylate and tetramethyl 1,1' - (5 - methyl - 6 - phenyl - 2,4 - pyrimidinediyl)[1H - 1,2,3 - triazole - 4,5 - dicarboxylate], plus their valuable pharmacological properties, including antiulcerogenic and anti-inflammatory activity, are disclosed.

### 3,479,358

### HEXAHYDRO-9,4a - IMINOETHANO-4a-H-XANTHENES AND PROCESS FOR THEIR PRODUCTION

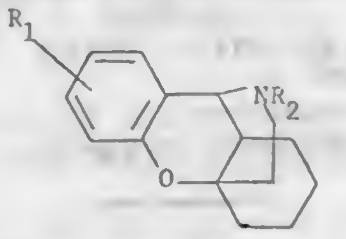
**Holgar V. Hansen, Morris Plains, Sylvester Klutchko, Hackettstown, and Robert I. Meltzer, Rockaway, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware**

**No Drawing. Filed Sept. 19, 1966, Ser. No. 580,177**

**Int. Cl. C07d** *7/42*

**U.S. Cl. 260—286** **18 Claims**

Hexahydro - 9,4a - iminoethano-4aH-xanthenes of the formula:



are disclosed, wherein $R_1$ is a functional group, such as hydroxy, lower alkoxy, etc.; $R_2$ is hydrogen, lower alkyl, aralkyl, etc. These compounds are useful as hypotensive agents.

### 3,479,359

### DIHYDROQUINIDINE GALACTURONATES

**Alfred Halpern, Great Neck, N.Y., assignor to Synergistics, Inc., New York, N.Y., a corporation of New York**

**No Drawing. Continuation-in-part of application Ser. No. 535,736, Mar. 21, 1966. This application Sept. 23, 1968, Ser. No. 761,819**

**Int. Cl. C07d** *43/24;* **A61k** *27/00*

**U.S. Cl. 260—284** **3 Claims**

Dihydroquinidine polygalacturonate and dihydroquinidine galacturonate are described together with the method for their preparation and method for achieving a therapeutic effect.

### 3,479,360

### 2-METHYL OR PHENYL-7- OR 8-CHLOROQUINOLINES

**Andre Allais, Les Lilas, France, assignor to Roussel UCLAF, Paris, France, a corporation of France**

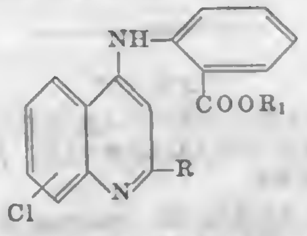
**No Drawing. Filed Feb. 19, 1968, Ser. No. 706,658**

**Claims priority, application France, Feb. 22, 1967, 96,043**

**Int. Cl. C07d** *33/52;* **A61k** *27/00*

**U.S. Cl. 260—286** **9 Claims**

A chloroquinoline of the formula



wherein  is a member selected from the group consisting of methyl and phenyl, $R_1$ is a member selected from the group consisting of alkyl having 1 to 18 carbon atoms and substituted alkyl having 1 to 18 carbon atoms, and the chlorine atom is present in the molecule in a position selected from the group consisting of the 7 position and the 8 position, as well as its therapeutically compatible acid salts; the process of preparing the chloroquinolines and the method of therapy utilizing the chloroquinolines. These chloroquinolines of the invention have a noteworthy anti-inflammatory action.

### 3,479,361

### 1-TETRAHYDRONAPHTHYL- AND 1-INDANYL-4-SUBSTITUTED PHENYL-4-CARBOXYALKYL PIPERIDINES

**Alex Meisels, Rolf Denss, and Hugo Ryf, Basel, Switzerland, assignors, by mesne assignments, to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware**

**No Drawing. Continuation of application Ser. No. 304,656, Aug. 26, 1963. This application May 19, 1967, Ser. No. 639,912**

**Claims priority, application Switzerland, Mar. 30, 1962, 3,862/62**

**Int. Cl. C07d** *29/24, 29/34;* **A61k** *27/00*

**U.S. Cl. 260—293.4** **17 Claims**

The compounds are of the class of 1-tetrahydronaphthyl- or 1-indanyl-4-aryl-4-carboxyalkyl piperidine derivatives which are useful as analgetics or antitussives. Illustrative compounds are 1-[1′-methyl-1-1′,2′,3′,4′-tetrahydronaphthyl-(2′)]-4-phenyl-4-carbethoxy - piperidine and 1-[1′-ethoxyindanyl-(2′)] - 4 - phenyl-4-carbethoxy-piperidine.

### 3,479,362

### SULFOALKYLATION OF ENAMINES

**John R. Norell, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 513,113, Dec. 10, 1965. This application June 7, 1968, Ser. No. 735,525**

**Int. Cl. C07d** *29/34, 87/46, 27/04*

**U.S. Cl. 260—293.4** **4 Claims**

Sulfoalkylated enamines are prepared by reacting under suitable reaction conditions an enamine with a sultone in the presence of a suitable solvent and recovering the sulfoalkylated enamine product from the reaction mixtures. The sulfoalkylated enamine has particular utility as a rust inhibitor additive for lubricating oils.

### 3,479,363

### 1-NAPHTHENYL- AND 1-INDENYL-4-SUBSTITUTED PHENYL-4-CARBOXYALKYL PIPERIDINES

**Alex Meisels, Rolf Denss, and Hugo Ryf, Basel, Switzerland, assignors, by mesne assignments, to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York**

**No Drawing. Original application Aug. 26, 1963, Ser. No. 304,656. Divided and this application May 19, 1967, Ser. No. 663,905**

**Claims priority, application Switzerland, Mar. 30, 1962, 3,862/62**

**Int. Cl. C07d** *29/24, 29/34;* **A61k** *27/00*

**U.S. Cl. 260—294.3** **7 Claims**

The compounds are of the class of 1-tetrahydronaphthyl- and 1-indanyl-4-aryl-4-carboxyalkyl piperidine derivatives which are useful as analgetics or antitussives. Illustrative compounds are 1-[1′-methyl-1′,2′,3′,4′-tetrahydronaphthyl-(2′)]-4-phenyl-4-carbethoxy-piperidine and 1 - [1′-ethoxyindanyl-(2′)]-4-phenyl-4-carbethoxy-piperidine. Corresponding dihydronaphthyl and indenyl intermediates are also described.

### 3,479,364

### PYRIDINECARBOXYLIC ACID ESTERS OF BENZENEHEXOL

**Carl Peter Krimmel, Wauconda, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware**

**No Drawing. Filed July 17, 1967, Ser. No. 653,685**

**Int. Cl. C07d** *31/36;* **A61k** *9/04*

**U.S. Cl. 260—295** **3 Claims**

Esterification of benzenehexol with a pyridinecarboxylic acid halide gives the corresponding hexa-esters which are useful because of their anti-atherogenic activity.

### 3,479,365

### NEW ISOTHIAZOLE SYNTHESIS

**Takayuki Naito and Susumu Nakagawa, Tokyo, Japan, assignors to Bristol-Banyu Research Institute, Ltd., Tokyo, Japan, a Japanese corporation**

**No Drawing. Filed May 19, 1967, Ser. No. 639,623**

**Int. Cl. C07d** *91/12;* **A61k** *21/00*

**U.S. Cl. 260—302** **5 Claims**

The synthesis of valuable isothiazole intermediates has been achieved by a new process, an illustrative example of which would be the reaction of 1-amino-2-cyano-1-phenyl-1-butene with thionyl chloride to produce 4-cyano-5-methyl-3-phenylisothiazole.

This compound is readily hydrolyzed to the corresponding 4-isothiazolecarboxylic acid and is subsequently coupled with 6-aminopenicillanic acid to produce valuable antibacterial agents.

### 3,479,366

### HYDRAZINO-THIAZOLIDINES

**Robert Burns Woodward, 12 Oxford St., Cambridge, Mass. 02138**

**No Drawing. Filed Aug. 22, 1966, Ser. No. 573,816**

**Claims priority, application Switzerland, Sept. 10, 1965, 12,623/65; Dec. 9, 1965, 16,969/65; Jan. 13, 1966, 446/66**

**Int. Cl. C07d** *91/18;* **A61k** *27/00*

**U.S. Cl. 260—306.7** **9 Claims**

5-hydrazino-thiazolidines, in which the hydrazino group is N,N′-disubstituted by esterified carboxyl groups, and a process for their preparation wherein a saturated cyclic thioether which is unsubstituted in at least one $\alpha$-position is reacted with an azo-dicarboxylic acid ester. The 5-hydrazino-thiazolidines are useful as intermediates for the synthesis of 7-amino-cephalosporanic acid and derivatives thereof.

### 3,479,367

### 1-SUBSTITUTED-2-ALKYL-5-NITROIMIDAZOLES

**Max W. Miller, North Stonington, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Oct. 3, 1966, Ser. No. 583,945**

**Int. Cl. C07d** *49/36;* **A61k** *27/00*

**U.S. Cl. 260—309** **4 Claims**

Novel 1-substituted-2-alkyl-5-nitroimidazoles, useful in combatting trichomonal infections.

### 3,479,368

### TRISUBSTITUTED METHYLBENZIMIDAZOLES

**Eva Lea Samuel, Bentleigh, Victoria, and Brian Colwell Ennis, Mount Waverley, Victoria, Australia, assignors to Monsanto Chemicals (Australia) Limited, West Footscray, Victoria, a company of Victoria**

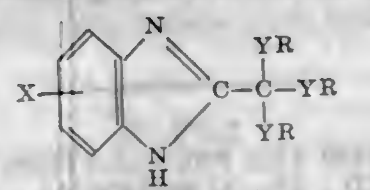
**No Drawing. Filed Sept. 18, 1967, Ser. No. 668,701**

**Claims priority, application Australia, Sept. 19, 1966, 11,197/66**

**Int. Cl. C07d** *49/38;* **A01n** *9/22*

**U.S. Cl. 260—309.2** **4 Claims**

Trisubstituted methylbenzimidazoles of the formula:



wherein X represents hydrogen or a nuclear substituent or substituents selected from chlorine, bromine, nitro, alkyl radical having from one to four carbon atoms, and alkoxy radical having from one to four carbon atoms; wherein Y is selected from sulfur and oxygen; wherein R is selected from alkyl radical having from one to twelve carbon atoms, hydroxyalkyl radical having from one to twelve carbon atoms, phenyl, benzyl, substituted phenyl wherein the substituent or are as specified for X, and substituted benzyl wherein the substituent or substituents is or are as specified for X, and wherein two of the YR groups may constitute a ring having from two to four carbon atoms; exhibit insecticidal activity, the compounds in which Y is sulfur also exhibiting rubber-vulcanization accelerator activity.

### 3,479,369

### ALKYL- OR ARYL-4-ANTIPYRYLMONOSULFIDES AND METHOD FOR PREPARING SAME

**Zaven S. Ariyan, Woodbury, Conn., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey**

**No Drawing. Filed Apr. 5, 1967, Ser. No. 628,545**

**Int. Cl. C07d** *49/04*

**U.S. Cl. 260—310** **13 Claims**

This invention relates to a fungicidal composition of alkyl- or aryl-4-antipyrylmonosulfides, and the method of preparing same by reacting a sulfenyl halide with antipyrine.

### 3,479,370

### ESTERS OF 1-SUBSTITUTED-3-DISUBSTITUTED-PYRROLIDINEMETHANOLS

**Carl D. Lunsford, Grover C. Helsley, and John A. Richman, Jr., Richmond, Va., assignors to A. H. Robins Company, Incorporated, Richmond, Va., a corporation of Virginia**

**No Drawing. Filed Aug. 8, 1966, Ser. No. 570,722**

**Int. Cl. C07d** *27/04;* **A61k** *27/00*

**U.S. Cl. 260—326.3** **18 Claims**

Lower alkyl esters of 1-substituted-$\alpha$,$\alpha$-disubstituted-3-pyrollidinemethanols having pharmacological activity as analgetics are described.

### 3,479,371

### 3-[(1-CYANO-2-LOWER ALKYL)AMINO]-2-HYDROXYPROPOXYINDOLES

**Franz Troxler and Albert Hofmann, Bottmingen, Switzerland, assignors to Sandoz Ltd., also known as Sandoz A.G., Basel, Switzerland**

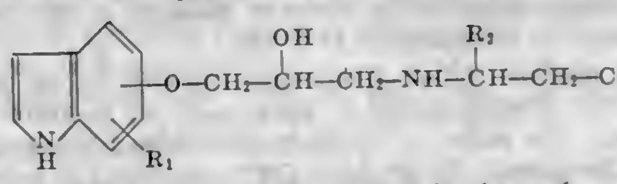
**No Drawing. Filed Dec. 11, 1967, Ser. No. 689,346**

**Claims priority, application Switzerland, Dec. 13, 1966, 17,757/66**

**Int. Cl. C07d** *27/56;* **A61k** *27/00*

**U.S. Cl. 260—326.15** **6 Claims**

The invention provides a compound of the formula:



in which $R_1$ is hydrogen or methyl in the ortho position relative to the oxygen atom, either the 5 or 6 position of the indole structure being occupied by hydrogen when $R_1$ is methyl, and $R_2$ is lower alkyl of 1 to 4 carbon atoms, and a pharmaceutically acceptable acid addition salt thereof.

In general, the compounds have a blocking effect on the $\beta$ receptors of the sympathetic nervous system.

### 3,479,372

### DIMERIC PEROXIDE OF n-BUTYL LEVULINATE AND PROCESS OF MAKING THE SAME

**Yun G. Chang and Philip S. Bailey, Austin, Tex., assignors to Reichhold Chemicals, Inc., White Plains, N.Y.**

**No Drawing. Filed Oct. 11, 1966, Ser. No. 585,744**

**Int. Cl. C07d** *19/00;* **C08f** *1/60*

**U.S. Cl. 260—340.6** **1 Claim**

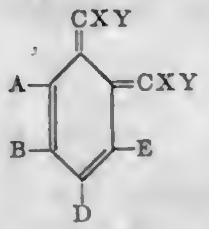
A method of making a dimeric peroxide of a keto ester which comprises reacting n-butyl levulinate with hydrogen peroxide in a mineral acid medium selected from a group consisting of hydrochloric and sulfuric acids at temperatures within the range of about −10° C. to +80° C., the hydrogen peroxide having a concentration between 25 and 95 percent by weight. The resulting product is

4,4-bis(butyl pentanoate) diperoxide, which has a high boiling point and is relatively stable at high temperatures. This novel compound has been found to be useful as a cross-linking agent and as a catalyst or initiator of polymerization reactions, such as the polymerization of styrene, vinyl acetate, methyl methacrylate, and the like.

## 3,479,373
## QUINONE BIS(DIHALOMETHYLENES)

**Angelo John Speziale and Kenneth Wayne Ratts, Creve Coeur, Mo., assignors to Monsanto Chemical Company, St. Louis, Mo., a corporation of Delaware**
**No Drawing. Filed Feb. 20, 1963, Ser. No. 260,030**
**Int. Cl. C07c** *49/62, 49/64, 49/68*
**U.S. Cl. 260—384** **8 Claims**

1. A bis(dihalomethylene) quinone selected from the group consisting of



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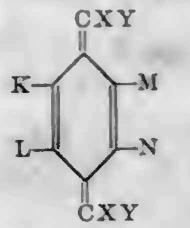
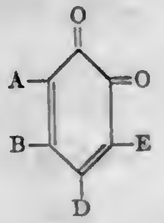


wherein X is halogen of atomic weight in the range of 18 to 80, wherein Y is halogen of atomic weight in the range of 35 to 80, wherein A, B, D, E, K, L, M and N respectively are selected from the group consisting of:

(1) hydrogen,
(2) halogen of atomic weight in the range of 35 to 80, and
(3) wherein each of (a) A and B together, (b) D and E together, (c) K and L together, and (d) M and N together, form a carbocyclic radical selected from the group consisting of the benzo radical $C_6H_4=$ and said benzo radical having from 1 to 4 halogen substituents wherein halogen is of atomic weight in the range of 35 to 80.

6. A method which comprises reacting in an anhydrous inert organic liquid at about —5° C. to about 20° C. about two moles of triphenylphosphinedihalomethylene of the formula $(C_6H_5)_3P=CXY$ wherein X is halogen of atomic weight in the range of 18 to 80 and wherein Y is halogen of atomic weight in the range of 35 to 80 with about one mole of a quinone selected from the group consisting of



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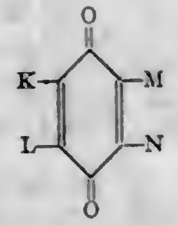
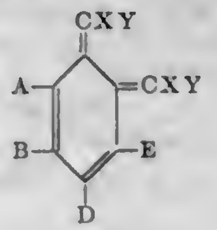


wherein A, B, D, E, K, L, M and N, respectively, are selected from the group consisting of:

(1) hydrogen,
(2) halogen of atomic weight in the range of 35 to 80, and
(3) wherein each of (a) A and B together, (b) D and E together, (c) K and L together, and (d) M and N together, form a carbocyclic radical selected from the group consisting of the benzo radical $C_6H_4=$ and said benzo radical having from 1 to 4 halogen substituents wherein halogen is of atomic weight in the range of 35 to 80, which method provides for a bis (dihalomethylene)quinone selected from the group consisting of



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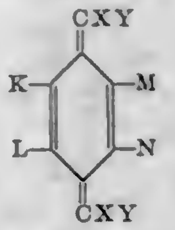


wherein X, Y, A, B, D, E, K, L, M and N, respectively, have the aforedescribed significances.

## 3,479,374
## PREPARATION OF QUINONES

**Charles W. Hargis and Howard S. Young, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**No Drawing. Filed Sept. 29, 1966, Ser. No. 583,066**
**Int. Cl. C07c** *49/66*
**U.S. Cl. 260—396** **16 Claims**

A method for the production of completely dehydrogenated quinones which comprises contacting a hydroquinone, or a quinone or hydroquinone which is at least partially ring-hydrogenated, with an arsenic oxide, antimony oxide and/or bismuth oxide contact agent at an elevated temperature of about 150° C. to 600° C. to effect oxidative dehydrogenation.

## 3,479,375
## NOVEL 19-NOR-TESTOSTERONE ESTERS

**Jacob de Visser and Pieter Modderman, Oss, Netherlands, assignors to Organon Inc., West Orange, N.J., a corporation of New Jersey**
**No Drawing. Filed Oct. 14, 1966, Ser. No. 586,617**
**Claims priority, application Netherlands, Oct. 28, 1965, 6513946**
**Int. Cl. C07c** *169/22, 167/28;* **A61k** *17/00*
**U.S. Cl. 260—397.4** **4 Claims**

Therapeutic steroid compounds having a very favorable ratio between anabolic and androgenic activity, and also having prolonged activity, are provided by the dicarboxylic acid diesters of 19-nor-testosterone which may also be substituted in the 4-position by halogen or an alkyl group.

## 3,479,376
## PROCESS FOR THE PREPARATION OF 17-SUBSTITUTED - 13 - ALKYLGONA - 1,3,5(10),6,8-PENTAENES

**George C. Buzby, Jr., Philadelphia, Robert C. Smith, King of Prussia, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed July 7, 1967, Ser. No. 651,703**
**Int. Cl. C07c** *167/14, 169/08;* **A61k** *17/00*
**U.S. Cl. 260—397.45** **8 Claims**

17-substituted-13-alkylgona-1,3,5(10),6,8-pentaenes (I) are prepared by a process comprising dehydrogenating with a noble metal catalyst and, optionally, a hydrogen

acceptor, an appropriately substituted gona-1,3,5(10),8-tetraene. With 17-hydroxymethylene-substituted starting materials, 14β-gona-1,3,5(10),6,8-pentaen-17-ones are formed in all cases. With other 17-substituted tetraenes, the 14β-pentaene is formed in the absence of, and the 14α-pentaene is formed in the presence of, a hydrogen acceptor. Compounds I, particularly equilenin, are useful estrogenic agents.

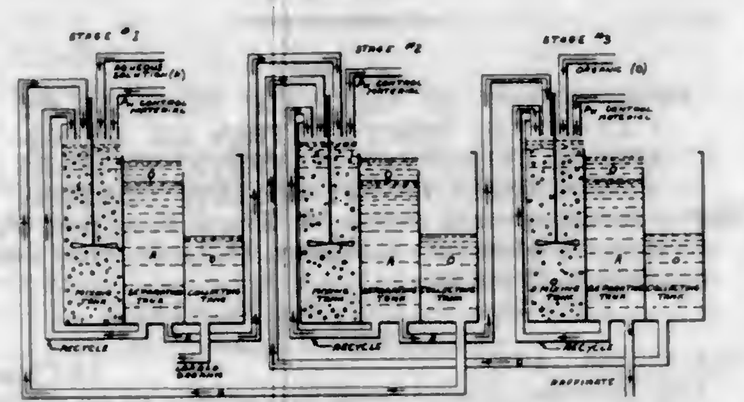
## 3,479,377
## HYDROXY PHENYL FATTY AMIDES AND POLYMERS THEREOF, THEIR PREPARATION AND USE

**Victor L. Larimer, Morristown, Tenn., assignor, by mesne assignments, to Ashland Oil and Refining Company, a corporation of Kentucky**
**No Drawing. Continuation-in-part of application Ser. No. 445,741, Apr. 5, 1965. This application Dec. 20, 1965, Ser. No. 515,209**
**Int. Cl. C07c** *103/12*
**U.S. Cl. 260—404** **1 Claim**

A novel class of hydroxy phenyl substituted fatty amides are provided particularly adapted for condensing with an aldehyde to prepare resinous compositions having utility in adhesive and surface coating applications.

## 3,479,378
## LIQUID ION EXCHANGE PROCESS FOR METAL RECOVERY

**Bruno Orlandini and Kenneth K. Kirkpatrick, Kellogg, Idaho, assignors to Bunker Hill Company, a corporation of Delaware**
**Filed Nov. 6, 1967, Ser. No. 680,635**
**Int. Cl. C07f** *3/06, 1/08;* **C22b** *15/08*
**U.S. Cl. 260—429** **16 Claims**



The disclosure describes a process for separating and recovering metallic values such as copper, zinc, manganese, cobalt and nickel from an aqueous solution. The solution is mixed with an aqueous insoluble organic phase containing an organic ion exchange extractant that is selective to the desired metallic value to extract the desired metallic value from the solution. The composite phase mixtures are permitted to separate to physically remove the metallic values from the solution. A portion of the aqueous phase is recycled back to the mixture to increase the exposure of the metallic values to the extractant. A pH control material is added to the recycled aqueous phase to maintain the pH of the aqueous solution substantially constant during the extraction reaction.

## 3,479,379
## PROCESS FOR PREPARING PALLADIUM-π-ALLYL COMPLEXES

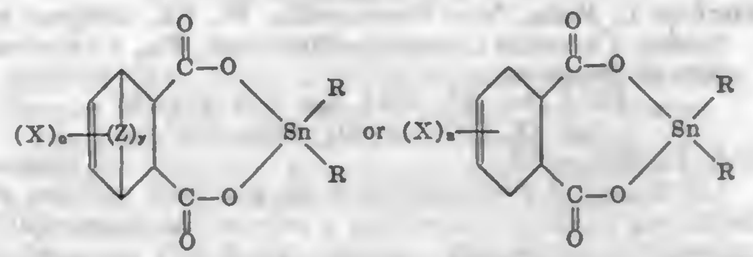
**Arthur D. Ketley, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut**
**No Drawing. Filed Dec. 26, 1967, Ser. No. 693,088**
**Int. Cl. C07f** *15/00;* **B01j** *11/12;* **C08d** *1/12*
**U.S. Cl. 260—429** **10 Claims**

In abstract this invention is directed to a process for preparing a palladium-π-allyl complex, said process comprising agitating a mixture of a stoichiometric excess of a weakly basic sodium salt and a palladium (II) salt-olefin complex.

## 3,479,380
## DIALKYLTIN, 1,4-ENDOALKYLENE-2,3-DIHYDROPHTHALATES AND -1,2,3,6 - TETRAHYDROPHTHALATES

**Pasquale P. Minieri, Woodside, N.Y., assignor to Tenneco Chemicals, Inc., a corporation of Delaware**
**No Drawing. Filed Mar. 3, 1967, Ser. No. 620,251**
**Int. Cl. C07d** *103/00;* **C07f** *7/22;* **A01n** *9/24*
**U.S. Cl. 260—429.7** **5 Claims**

Organotin compounds, which have the structural formula



wherein each R represents phenyl or an alkyl group having from 4 to 8 carbon atoms; X represents an alkyl group having from 1 to 4 carbon atoms, an alkenyl group having from 4 to 8 carbon atoms, halogen, or phenyl; Z represents methylene, ethylene, chloromethylene, chloroethylene, or oxy; *y* represents an integer in the range of 0 to 1, and *n* represents an integer in the range of 0 to 4, effectively control the growth of fungi, and particularly plant pathogens, without causing appreciable injury to the host plant. Illustrative of these fungicides are di-n-butyl tin 1,4,5,6,7,7-hexachloro-1,4-endomethylene-2,3-dihydrophthalate and di-n-butyl tin 3,4-dimethyl-6-isobutenyl-1,2,3,6-tetrahydrophthalate.

## 3,479,381
## PREPARATION OF METAL ALKOXIDES

**Maurice M. Mitchell, Jr., Wallingford, Pa., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania**
**No Drawing. Filed May 23, 1967, Ser. No. 640,557**
**Int. Cl. C07f** *5/06, 3/00;* **C07c** *31/28*
**U.S. Cl. 260—448** **5 Claims**

Metal alkoxides are prepared by reaction of alcohols and metal hydroxides in the presence of zeolitic materials which establish a favorable shift of equilibrium by removing water from the reaction system.

## 3,479,382
## PREPARATION OF TERTIARY ALKYLAMINE ALANES

**Gottfried J. Brendel, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia**
**No Drawing. Continuation of application Ser. No. 390,225, Aug. 17, 1964. This application Apr. 4, 1968, Ser. No. 718,956**
**Int. Cl. C07f** *5/06*
**U.S. Cl. 260—448** **8 Claims**

The preparation of an amine alane by heating a tertiary alkylamine alkylaluminum hydride complex containing alkyl groups having from 1 to 6 carbon atoms per group to a temperature less than the temperature of decomposition of the alane in a non-oxidizing atmosphere to effect redistribution of the teritary alkylamine alkylaluminum hydride complex whereby the corresponding amine alane is produced along with aluminum compounds as a by-product.

3,479,383

### CYCLIC SILYL AMIDES

**Johann F. Klebe, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**

**No Drawing. Filed Jan. 2, 1968, Ser. No. 694,820**

**Int. Cl. C07f** *7/10*

**U.S. Cl. 260—448.2** **9 Claims**

Dihalosilanes are reacted with primary amides in the presence of an aliphatic tertiary amine base to produce cyclic silyl amides as new compositions of matter. These cyclic silylated amides are useful as silylating agents, and in the production of organo-polysiloxanes which are useful as oils, lubricants, elastomers, etc.

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3,479,384

### CRUDE POLYISOCYANATE COMPOSITIONS AND PREPARATION THEREOF

**Herbert L. Heiss, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware**

**Filed Dec. 28, 1964, Ser. No. 421,433**

**Int. Cl. C07c** *119/04;* **C08g** *22/18*

**U.S. Cl. 260—453** **7 Claims**

Crude, liquid polyisocyanates are prepared utilizing an extracting medium comprising a solvent for substantially the entire product and a solvent which is a non-solvent for only the high boiling higher polymeric products of a phosgenation reaction product.

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3,479,385

### PROCESS FOR THE PRODUCTION OF AROMATIC NITRILES

**Derk Th. A. Huibers, Berkeley Heights, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware**

**Filed Oct. 29, 1965, Ser. No. 505,651**

**Int. Cl. C07c** *121/02, 121/58*

**U.S. Cl. 260—465** **7 Claims**

A process for producing a polynitrile from an aromatic hydrocarbon containing at least two alkyl substituent groups, the alkyl group having 1–3 carbon atoms, wherein the hydrocarbon is contacted in the gaseous phase with ammonia in the presence of an oxide catalyst at a temperature of 400–500° C., a contact time of 0.01–30 seconds and a catalyst-on-stream time of less than 30 minutes. The process is particularly applicable to producing terephthalonitrile from p-xylene.

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3,479,386

### PROCESS FOR THE REDUCTIVE DIMERISATION OF ALPHA,BETA-OLEFINIC NITRILES

**Peter John Gregory, Toorak, Victoria, Australia, assignor to Imperial Chemical Industries of Australia and New Zealand Limited, Melbourne, Victoria, Australia, a company of Victoria**

**Filed Apr. 10, 1967, Ser. No. 629,518**

**Claims priority, application Australia, Apr. 18, 1966, 4,351/66**

**Int. Cl. C07c** *121/20, 121/32*

**U.S. Cl. 260—465.8** **11 Claims**

A process of continuous reductive dimerisation of alpha,beta-olefinic nitriles and esters of aliphatic alpha, beta-olefinic carboxylic acids and alpha,beta-olefinic carboxamides under steady state conditions in an aqueous medium providing reactive hydrogen by reacting a metal amalgam with said medium in the presence of alkylated cations wherein the aqueous phase contains a quantity of sodium bicarbonate in excess of that required to convert all of the sodium reacted in the reactor to sodium carbonate, and the sodium taken up during the reaction is precipitated with $CO_2$ as sodium bicarbonate outside the reactor.

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3,479,387

### PROCESS FOR PREPARING N-METHYLGLYCINONITRILE

**David A. Daniels, Catonsville, James L. Harper, Laurel, and Thomas R. Steadman, Kensington, Md., assignors to W.R. Grace & Co., New York, N.Y., a corporation of Connecticut**

**No Drawing. Filed Sept. 26, 1967, Ser. No. 670,749**

**Int. Cl. C07c** *121/42, 99/10*

**U.S. Cl. 260—465.5** **10 Claims**

This invention is directed to a process for preparing N-methylglycinonitrile by reacting 1,3,5-trimethylhexahydro-s-triazine with liquid hydrogen cyanide in the presence of an acidic substance selected from the group consisting of sulfuric acid, a toluenesulfonic acid, hydrogen chloride, and sulfonic acid resins, separating, and recovering the N-methylglycinonitrile.

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3,479,388

### PROCESS FOR PREPARING N-METHYLGLYCINONITRILE

**David A. Daniels, Catonsville, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut**

**No Drawing. Filed Dec. 26, 1967, Ser. No. 693,174**

**Int. Cl. C07c** *121/42, 101/04*

**U.S. Cl. 260—465.5** **8 Claims**

In abstract this invention is directed to a process for forming N-methylglycinonitrile by; (a) forming a first mixture by mixing hydrogen cyanide and methylamine at about 0–25° C. in a mole ratio of about 0.01–0.20:1; (b) adding glycolonitrile to the first mixture while maintaining the temperature thereof at about 0–10° C., the glycolonitrile being added at a rate to supply about 0.50–0.95 mole of glycolonitrile per mole of methylamine present in the first mixture; and (c) recovering the N-methylglycinonitrile, all as recited hereinafter.

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3,479,389

### PRODUCTION OF OLEFINIC NITRILES BY CATALYTIC DEHYDRATION OF MONOHYDROXYLATED PARAFFINIC NITRILES AND SUBSEQUENT FLASH DISTILLATION

**Roy J. Eisenhauer and Phillip W. Evans, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**

**Filed Mar. 16, 1967, Ser. No. 623,583**

**Int. Cl. C07c** *121/30*

**U.S. Cl. 260—465.9** **13 Claims**

This invention relates to the preparation of an olefinic nitrile by catalytically dehydrating a liquid hydroxylated paraffinic nitrile and flash distilling a mixture of the dehydration reaction effluent and steam.

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3,479,390

### CATALYSIS OF AN ESTERIFICATION WITH A PERMEABLE MEMBRANE OF SULFONATED POLY(2,6-DIALKYLPHENOL)

**Paul E. Blatz, Laramie, Wyo., and Sam R. Faris, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York**

**Filed Mar. 12, 1965, Ser. No. 439,397**

**Int. Cl. C07c** *69/00, 69/14*

**U.S. Cl. 260—468** **6 Claims**

1. In a method of carrying out an esterification reaction between a carboxylic acid and an alcohol, which reaction is subject to catalysis by a sulfonic acid group; the improvement which comprises flowing said acid and alcohol into a reaction chamber defined at least in part by a permeable membrane of sulfonated poly (2,6-dialkyl phenol) wherein the alkyl groups are selected from the class consisting of methyl, ethyl, and n-propyl groups, contacting said membrane with said acid and alcohol to effect catalysis of said reaction, and establishing a pressure gradient across said membrane from the interior of

said reaction chamber to the exterior thereof whereby unreacted acid is selectively restricted from passage through said membrane and unreacted alcohol and the ester and water produced by said reactants are selectively passed through said membrane.

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3,479,391

### $\Delta^{3,14}$-17$\alpha$-HYDROXY-NORPROGESTERONE AND ESTERS

**Pacifico Principe, South River, and Seymour D. Levine, North Brunswick, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Oct. 3, 1966, Ser. No. 583,956**

**Int. Cl. C07c** *69/12, 49/46, 69/00*

**U.S. Cl. 260—488** **4 Claims**

$\Delta^{3,14}$-17$\alpha$-hydroxy-A-norprogesterone and esters which are anti-androgenic agents.

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3,479,392

### PRODUCTION OF UNSATURATED ETHERS AND ESTERS

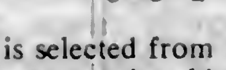
**Eric W. Stern, East Orange, and Marshall L. Spector, Livingston, N.J., assignors, by mesne assignments, to W. R. Grace & Co., New York, N.Y., a Connecticut corporation**

**Filed Dec. 23, 1960, Ser. No. 78,111**

**Int. Cl. C07c** *67/04, 41/10, 69/62*

**U.S. Cl. 260—497** **8 Claims**

2. A process which comprises reacting an unsaturated compound having at least one aliphatic



$$-\overset{|}{C}=\overset{|}{C}-Z$$

group in which Z is selected from the group consisting of hydrogen and halogen and in which the remainder of the molecule consists of up to twenty carbon atoms and hydrogen, and acetic acid in the presence of palladium chloride and disodium hydrogen phosphate under substantially anhydrous conditions to produce an ethylenically unsaturated ester.

5. A process which comprises reacting a hydrocarbon olefin having up to 22 carbon atoms with an alcohol having the formula R—OH in which R is a hydrocarbon radical containing from 1 to about 20 carbon atoms under substantially anhydrous conditions in the presence of a palladium halide and disodium hydrogen phosphate to produce an ethylenically unsaturated ether.

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3,479,393

### STABILIZED ORGANIC ISOCYANATE COMPOSITIONS

**Robert L. Sandridge, Proctor, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware**

**No Drawing. Filed Dec. 20, 1966, Ser. No. 603,095**

**Int. Cl. C07c** *119/04, 87/04;* **C08g** *51/60*

**U.S. Cl. 260—453** **9 Claims**

A stabilizing amount of a trialkylamine borane as a stabilizer against the discoloration of organic isocyanates.

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3,479,394

### PROCESS FOR THE OXIDATION OF CYCLOALKANES

**Jean Claude Brunie and Noel Crenne, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate**

**No Drawing. Filed Dec. 2, 1966, Ser. No. 598,635**

**Claims priority, application France, Dec. 10, 1965, 41,807**

**Int. Cl. C07f** *5/04;* **C07c** *35/08, 49/30*

**U.S. Cl. 260—462** **7 Claims**

Cycloalkanols and cycloalkanones are prepared by contacting a cycloalkane having 6 to 12 ring carbon atoms with a tri(organoperoxy)borane.

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3,479,395

### OXIDATION OF OLEFINS WITH TELLURIUM COMPOUNDS

**Juan Luis Huguet, Corpus Christi, Tex., assignor to Celanese Corporation, a corporation of Delaware**

**No Drawing. Filed May 2, 1966, Ser. No. 546,618**

**Int. Cl. C07c** *67/04, 69/16*

**U.S. Cl. 260—497** **11 Claims**

Olefins are oxidized to derivatives such as glycols and glycol esters by contact with tellurium dioxide solutions which are prepared by employing a halide salt to solubilize the tellurium dioxide. The oxidizing capabilities of the solution can be maintained by injecting molecular oxygen, especially in conjunction with a redox agent. Particularly effective results are obtained when the halide salt is lithium chloride and the solution comprises acetic acid.

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3,479,396

### SUBSTITUTED ARYLACETOHYDROXAMIC ACIDS

**Nguyen P. Buu-Hoi, Hue, Vietnam, and Georges Lambelin, Constan Lepoivre, Claude Gillet, and Jacques Thiriaux, Brussels, Belgium, assignors to Madan AD., Chur, Switzerland, a company of Switzerland**

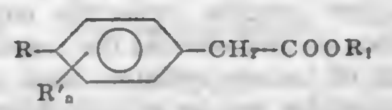
**No Drawing. Continuation-in-part of application Ser. No. 458,396, May 24, 1965. This application Aug. 12, 1968, Ser. No. 751,710**

**Claims priority, application Belgium, June 5, 1964, 648,892; Mar. 17, 1965, 661,226**

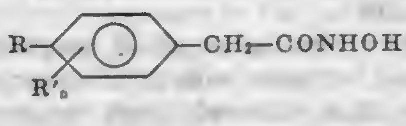
**Int. Cl. C07c** *103/30;* **A61k** *27/00*

**U.S. Cl. 260—500.5** **5 Claims**

A new group of substituted arylacetohydroxamic acids are prepared by reacting with hydroxylamine and alkyl aryl acetate of the formula:



wherein R and R′ represent an alkyl $C_1$–$C_8$, cycloalkyl $C_5$–$C_6$, alkyloxy $C_1$–$C_8$, alkenyloxy $C_2$–$C_8$, cycloalkenyloxy $C_5$–$C_6$, alkylthio $C_1$–$C_8$, cycloalkyloxy $C_5$–$C_6$, cycloalkylalkyloxy (with cycloalkyl $C_5$–$C_6$ and alkyl $C_1$–$C_8$), or arylalkyloxy $C_1$–$C_8$, R and R′ being the same or different, R′ can also represent hydrogen, and *n* is an integer of 0 to 2, and $R_1$ represents an alkyl radical. These new compounds, represented by the formula:



wherein R, R′ and *n* are as defined above, possess an interesting combination of antipyretic, anti-inflammatory, antispasmodic and analgesic properties indicating therapeutic application in rheumatoid conditions. They are also useful as antihystaminics and antiserotonics and are cortico-stimulating.

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3,479,397

### PREPARATION OF SULFONATES BY THE REACTION OF OLEFINS AND BISULFITE

**Charles J. Norton, Denver, and Ned F. Seppi, Littleton, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio**

**Filed Sept. 9, 1965, Ser. No. 486,137**

**Int. Cl. C07c** *139/12*

**U.S. Cl. 260—503** **7 Claims**

The present invention comprises a method for the production of organic sulfonates from unsaturated organic compounds and soluble noninterfering bisulfite comprising in combination the steps of reacting a soluble noninterfering bisulfite with unsaturated organic compounds having from 2 to about 40 carbon atoms, said reaction being conducted at a temperature of from about 50 to 300° C. in the conjoint presence of from 0.5 to about 10 mole percent oxygen in the vapor phase and a catalyst comprising a soluble compound containing cations chosen from the group consisting of alkali metals and their ammonium and alkyl ammonium and aryl ammonium analogues; and metals of subgroups II–A, III–A, IV–A, I–B, II–B, III–B, and first row "transition series" metals excluding copper, and a solvent containing at least about 1% water wherein there are present from 0.1 to about 10 moles of bisulfite per mole of double bond in the unsaturated hydrocarbon, from about 0.01 to about 1.0 mole of catalyst per mole of unsaturated hydrocarbon, and from about 0.25 to about 10 volumes of solvent per volume of unsaturated hydrocarbon and wherein the pH is maintained in the range of from about 4 to about 9.

3,479,398

### NITROGEN OXIDE COMPOUNDS AS SULFOXIDATION PROMOTERS

**Howard W. Bost and Charles F. Cook, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed Dec. 30, 1965, Ser. No. 517,815**

**Int. Cl. C07c** *143/02*

**U.S. Cl. 260—513** **6 Claims**

Organic compounds containing hydrocarbon linkages are sulfoxidized in the presence of a sulfoxidizing agent comprising sulfur dioxide and at least one reaction promoting compound selected from $HNO_3$, $NO_2$, NO, $N_2O_3$, and $N_2O_4$. Preferred products obtained from hydrocarbon reactants and conversion rates are accelerated where the sulfoxidizing agent contains molecular oxygen in addition to sulfur dioxide and wherein the reaction is initiated by the presence of known initiators such as ozone, peroxides, hydroperoxides and/or actinic radiation.

3,479,399

### PROCESS FOR THE PRODUCTION OF ALKALI METAL TEREPHTHALATES

**Tamotsu Murase, Ichiro Mikami, and Moriyosi Tamura, Tokyo, Japan, assignors to Ube Industries Ltd., Yamaguchi-ken, Japan**

**No Drawing. Filed Aug. 14, 1964, Ser. No. 389,795**

**Int. Cl. C07c** *51/14, 63/28*

**U.S. Cl. 260—515** **7 Claims**

A process for producing an alkali terephthalate by the reaction of alkali benzoate with alkali carbonate and carbon monoxide at a relatively high temperature under high pressure in the presence of a catalyst, while avoiding the presence of oxygen and water in the reaction system.

3,479,400

### OXIDATION OF 1,1-DIARYLALKANES

**Henri K. Lese, McKeesport, and Johann G. D. Schulz and Arthur C. Whitaker, Pittsburgh, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware**

**Filed Nov. 24, 1964, Ser. No. 413,490**

**Int. Cl. C07c** *65/20*

**U.S. Cl. 260—517** **7 Claims**

A process for converting a 1,1-diarylalkane to the corresponding diarylketone which involves oxidizing the 1,1-diarylalkane in a first reaction zone with nitric acid, reacting the solid product obtained in the first reaction zone with nitric acid in a second reaction zone under conditions more sever than those in the first reaction zone to obtain the desired diarylketone and thereafter, in a preferred embodiment, recycling an aqueous solution containing nitric acid to the first reaction zone.

3,479,401

### GUANIDINOARYL AND GUANIDINOMETHYLARYL COMPOUNDS

**Arthur A. Patchett, Cranford, and Edward F. Rogers, Middletown, N.J., and William J. Leanza, Staten Island, N.Y., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**No Drawing. Continuation-in-part of application Ser. No. 477,629, June 18, 1965. This application June 28, 1966, Ser. No. 561,052**

**Int. Cl. C07d** *99/14;* **C07c** *101/44, 101/48*

**U.S. Cl. 260—518** **7 Claims**

Quanidinoaryl or guanidinomethylaryl substituted organic acids and their corresponding acid halides are used as acylating agents in the preparation of novel substituted penicillins. The penicillins produced thereby are useful in the therapy of infections particularly those due to gram positive bacteria.

3,479,402

### PREPARATION OF [(2-METHYLENEALKANOYL) PHENOXY]ALKANOIC ACIDS

**Edward J. Cragoe, Jr., Lansdale, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**No Drawing. Filed Jan. 14, 1966, Ser. No. 520,670**

**Int. Cl. C07c** *65/02, 43/20, 49/76*

**U.S. Cl. 260—520** **13 Claims**

A method for the preparation of [(2-methylenealkanoyl)phenoxy]alkanoic acid products and the salts, esters and amide derivatives thereof. The products are prepared by treating a [[2-(organothiomethyl)alkanoyl]-phenoxy]alkanoic acid under basic conditions with a reagent which is capable of eliminating an organomercaptan radical therefrom as, for example, with mercuric oxide, lead oxide or silver nitrate. Said products are diuretic and saluretic agents which can be used in the treatment of edema and hypertension.

3,479,403

### CATALYTIC OXIDATIONS WITH RUTHENIUM

**Alexander F. MacLean, Corpus Christi, Tex., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Jan. 3, 1966, Ser. No. 517,901**

**Int. Cl. C07c** *51/28, 45/16, 45/04*

**U.S. Cl. 260—530** **8 Claims**

Disclosed herein is a novel oxidation catalyst. The activity of ruthenium as an oxidation catalyst is enhanced by maintaining the oxidation potential of the ruthenium catalyst at less than the oxidizing potential of Ru(VIII) to greater than that of Ru(IV).

3,479,404

### FLUORIMINO-CYCLO-ALKANES AND ALKENES

**Harry F. Smith, Wayne, and Joseph A. Castellano, North Brunswick, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware**

**No Drawing. Filed Oct. 14, 1966, Ser. No. 588,242**

**Int. Cl. C09b** *57/00;* **C07c** *119/06;* **A01n** *9/20*

**U.S. Cl. 260—566** **5 Claims**

The compounds of this invention are 1,4-difluoriminocyclohexene-2, 1,2-difluoriminocyclohexane, cyclohexylidenefluorimine, and 1,2-difluoriminocyclohexene-3. The compounds are useful as dyes, photochromic agents and biocides.

3,479,405

### 2-METHYL-2-NITROBICYCLO[2.2.1]HEPTAN-3-ONE N-METHYLCARBAMOYLOXIME

**Linwood K. Payne, Jr., Charleston, W. Va., and Mathias H. J. Weiden, Raleigh, N.C., assignors to Union Carbide Corporation, a corporation of New York**

**No Drawing. Original application Sept. 23, 1964, Ser. No. 398,744, now Patent No. 3,400,153, dated Sept. 3, 1968. Divided and this application May 31, 1968, Ser. No. 733,237**

**Int. Cl. C07f** *9/16;* **C07c** *131/00*

**U.S. Cl. 260—566** **1 Claim**

2-nitro or cyano alkanaldoxime and cycloalkanone ketoxime carbamates are disclosed as novel compounds useful as pesticides, especially as broad spectrum insecticides and miticides.

3,479,406

### CRYSTALLINE ALKYL DIMETHYL PSEUDOCUMINYL AMMONIUM CHLORIDES

**Reginald L. Wakeman, Philadelphia, Pa., assignor to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York**

**No Drawing. Filed Aug. 16, 1966, Ser. No. 572,683**

**Int. Cl. C07c** *87/30;* **A61k** *27/00*

**U.S. Cl. 260—567.6** **2 Claims**

Crystalline, non-hygroscopic, water-soluble alkyl dimethyl pseudocuminyl ammonium chlorides wherein the alkyl contains 8 to 18 carbon atoms and especially useful as microbiocides having wide application in the treatment of water systems.

3,479,407

### SULFURIZATION OF 2,6-DI-TERT-BUTYLPHENOL

**Robert J. Laufer, Pittsburgh, Pa., assignor to Consolidation Coal Company, Pittsburgh, Pa., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 600,744, Dec. 12, 1966. This application Nov. 6, 1968, Ser. No. 773,944**

**Int. Cl. C07c** *149/16, 149/10*

**U.S. Cl. 260—608** **3 Claims**

In a process for sulfurizing 2,6-di-t-butylphenol by the use of sulfur monochloride to make 4,4′-dithiobis(2,6-di-t-butylphenol), the improvement which comprises the use of catalytic amounts of iodine.

3,479,408

### $\beta,\beta'$-THIODIETHYL SULFONES

**Albert C. Perrino, Cranston, and Michael G. Israel, East Providence, R.I., assignors to I.C.I./Organics/Inc., Providence, R.I., a corporation of Rhode Island**

**No Drawing. Filed Oct. 26, 1966, Ser. No. 589,529**

**Int. Cl. C07c** *147/02, 149/06*

**U.S. Cl. 260—607** **5 Claims**

$\beta$-thioethyl sulfones, especially $\beta,\beta'$-dithioethyl sulfones, produced by the reaction of vinyl sulfones with mercaptans, and stabilized polyolefin compositions containing $\beta$-thioethyl sulfones.

3,479,409

### PROCESS FOR THE CHLORINATION OF AROMATIC COMPOUNDS

**Walter L. Hall, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**

**No Drawing. Filed Feb. 1, 1967, Ser. No. 613,130**

**Int. Cl. C07c** *43/20, 39/24*

**U.S. Cl. 260—612** **5 Claims**

This disclosure is concerned with a process of chlorinating an aromatic compound, such as aromatic ethers and phenols, whereby the chlorine is added to the activated aromatic ring by the reaction of the aromatic compound with chlorine containing compound of the class of phosgene or thionyl chloride and an aryl sulfoxide. The process described in this disclosure also produces the aryl sulfide as a by-product of the chlorination reaction. The aryl ethers which are chlorinated include both monoaryl ethers and polyaryl ethers. The chlorinated aromatic ethers and phenols have a wide variety of uses such as solvents for chemical reaction, plasticizers, lubricants, etc.

A number of methods for chlorinating aromatic compounds are known in the art. For example, one can chlorinate aromatic compounds by the reaction of chlorine with the aromatic compound in the presence of a ferric chloride as a catalyst. The processes of the prior art had the disadvantage in that there was relatively little specificity of the reaction; that is, chlorination could take place in the benzene ring and could be greater than mono-chlorination or it could take place in the aryl or alkyl side groups.

3,479,410

### SELECTIVE VAPOR PHASE METHYLATION OF PHENOLS

**Stephen B. Hamilton, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**

**No Drawing. Filed May 18, 1967, Ser. No. 639,282**

**Int. Cl. C07c** *39/06, 37/12*

**U.S. Cl. 260—621** **5 Claims**

This disclosure is concerned with a process for the vapor phase methylation of phenols having at least one o-hydrogen by passing a mixture of such phenols together with 2,4,6-trimethylphenol, over a magnesuim oxide or calcium phosphate catalyst bed at a catalyst bed temperature of from about 475° C. to 600° C. The methylated phenols produced in accordance with the process of this invention are useful in the preparation of polyphenylene oxides as described in U.S. Patent 3,306,874 and 3,306,-875.

3,479,411

### HYDROGENATION OF ALKYNOLS AND ALKYNEDIOLS

**Karl Adam and Erich Haarer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany**

**No Drawing. Filed June 23, 1967, Ser. No. 648,222**

**Claims priority, application Germany, June 29, 1966, 1,285,992**

**Int. Cl. C07c** *29/00, 31/18, 33/04*

**U.S. Cl. 260—635** **10 Claims**

Hydrogenation of alkynols and alkynediols to the corresponding saturated alcohols at elevated temperature and at superatmospheric pressure in the presence of catalysts which contain nickel and/or cobalt and additions of copper and manganese and/or chromium in the ratio of nickel/cobalt:copper:manganese/chromium of 40–89:10–40:1–20% by weight with reference to the metal content of the catalysts, and also a pyroacid or polyacid in free form and/or in the form of at least one salt of the said metals. The products are suitable as solvents or as starting materials for high polymers.

3,479,412

### PROCESS FOR THE CONDENSATION OF PRIMARY ALCOHOLS

**Gianfranco Pregaglia, Guglielmo Gregorio, and Francesco Conti, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy**

**No Drawing. Filed July 19, 1967, Ser. No. 654,337**

**Claims priority, application Italy, July 21, 1966, 16,798/66**

**Int. Cl. C07c** *31/02, 31/14*

**U.S. Cl. 260—642** **4 Claims**

Process for condensation of primary alcohols of the formula R—$CH_2$—$CH_2$—OH wherein R is alkyl, cycloalkyl, or aryl, mixtures of said alcohols, or mixtures of said alcohol(s) with an alcohol branched in the alpha position with respect to the carbon atom bound to the hydroxy group. The condensation is carried out at 80 to 220° C. and the alcohol contains alkaline material dissolved therein. Catalyst used is soluble metal compound wherein the metal is of the platinum series, along with a ligand which is an organic compound of phosphorus, arsenic, or antimony.

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3,479,413

### 1-HALO-1-NITRO-ALKYLSULFENYL HALIDES AND THEIR 1-NITRO-ALKYLDISULFIDE PRECURSORS

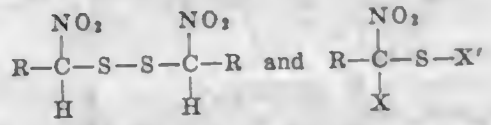
**Gustave K. Kohn, Berkeley, and Joseph G. E. Fenyes, Oakland, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 442,812, Mar. 25, 1965. This application Mar. 8, 1968, Ser. No. 711,510**

**Int. Cl. C07c** *149/14, 149/12, 145/00*

**U.S. Cl. 260—543** **6 Claims**

Compounds of the formula



$$R-\underset{H}{\overset{NO_2}{C}}-S-S-\underset{H}{\overset{NO_2}{C}}-R \quad \text{and} \quad R-\underset{X}{\overset{NO_2}{C}}-S-X'$$

wherein X and X' are chlorine or bromine and R is a hydrocarbon radical of 1 to about 15 carbon atoms which is free of aliphatic unsaturation and is bonded to the carbon atom bonded to the sulfur by an aliphatic carbon atom. These compounds are useful as intermediates for preparing fungicidal compounds.

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3,479,414

### STABILIZED CHLORINATED HYDROCARBON COMPOSITIONS AND PROCESS THEREFOR

**André Ryckaert and Julien Mulders, Brussels, Belgium, assignors to Solvay & Cie, Brussels, Belgium, a corporation of Belgium**

**No Drawing. Filed Oct. 19, 1967, Ser. No. 676,620**

**Claims priority, application Belgium, Oct. 28, 1966, 35,235, Patent 689,003**

**Int. Cl. C07c** *17/42*

**U.S. Cl. 260—652.5** **5 Claims**

The stabilized chlorinated hydrocarbon compositions contain chlorinated hydrocarbon and a diaziridine compound, and are prepared by mixing chlorinated hydrocarbon with a diaziridine compound.

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3,479,415

### ISOMERIZATION OF OLEFINIC HYDROCARBONS

**Samuel E. Shull, Media, Pa., assignor to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware**

**No Drawing. Filed May 12, 1967, Ser. No. 637,917**

**Int. Cl. C07c** *11/08, 5/30*

**U.S. Cl. 260—680** **8 Claims**

Olefinic hydrocarbons having 4 or more carbon atoms are selectively isomerized to effect shifting of the double bond by contact at elevated temperature with a macroporous silica catalyst which is essentially free of alkali metal ions. Thus, from a charge stock consisting essentially of cis- and transbutene-2 (98+%), over 25% conversion of the charge to butene-1 is obtained at a selectivity of 98% or more. Preferred operating conditions include temperatures in the range of about 800–850° F. at liquid hourly space velocity of about 5.

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3,479,416

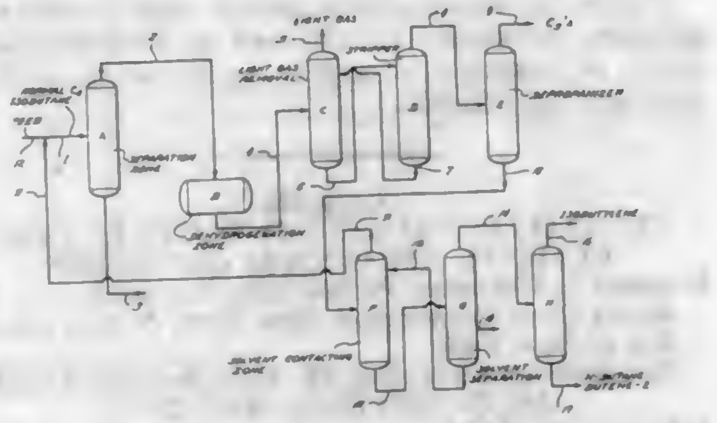
### PRODUCTION OF ISOBUTYLENE FROM ISOBUTANE

**Lloyd D. Tschopp, Humble, and Rudolph C. Woerner, Houston, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware**

**Filed May 19, 1967, Ser. No. 640,096**

**Int. Cl. C07c** *5/18, 11/08*

**U.S. Cl. 260—683.3** **7 Claims**



In an integrated process for dehydrogenation of isobutane to prepare high-purity isobutylene containing a minimum of the inseparable butene-1, the fresh feed (and recycled isobutane if necessary) is distilled to remove nearly all the n-butane and higher boiling constituents. Reactor effluent contains more straight-chain $C_4$ than feed due to some isomerization (and limited cracking) in reactor, but should contain less than 2.5 mols (preferably less than 0.004 mol) butene-1 per 100 mols of isobutylene. The butylenes content of effluent is separated from unreacted butanes in a selective solvent such as furfural, usually after removal of the $H_2$–$C_3$ gases. Diolefin acetylenes content of the isobutylene product may be minimized by taking off butadiene etc. as a side stream from the solvent stripping tower. For 99% isobutylene, product may be re-distilled to remove high boilers, n-butane and 2-butenes.

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3,479,417

### GRAFT COPOLYMERS OF α-OLEFINS AND PREFORMED, WATER-INSOLUBLE, HOMOPOLYMER OF N-VINYL-2-PYRROLIDONE

**Marvin R. Leibowitz, Edison, and Frederick Grosser, Midland Park, N.J., assignors to G A F Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Nov. 16, 1966, Ser. No. 594,654**

**Int. Cl. C08f** *19/00, 33/08*

**U.S. Cl. 260—878** **8 Claims**

Process of preparing novel polymeric materials by polymerizing α-olefins in the presence of water-insoluble homopolymers of n-vinyl-2-pyrrolidone using a Ziegler catalyst.

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3,479,418

### MANUFACTURE OF PHOSPHONOTHIOATES

**Thomas M. Melton, Richmond, Va., assignor to Mobil Oil Corporation, a corporation of New York**

**No Drawing. Filed June 16, 1966, Ser. No. 557,895**

**Int. Cl. C07f** *9/40;* **A01n** *9/36;* **C08f** *45/50*

**U.S. Cl. 260—973** **11 Claims**

Phosphonothioates can be manufactured by reacting phosphonodichlorothioates with alcohols in the presence of at least a catalytic amount of a mercaptan. The phosphonothioates are useful as solvents, plasticizers and insecticides.

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3,479,419

### PROCESS AND APPARATUS FOR CURING MATERIAL BY INDUCTION HEATING

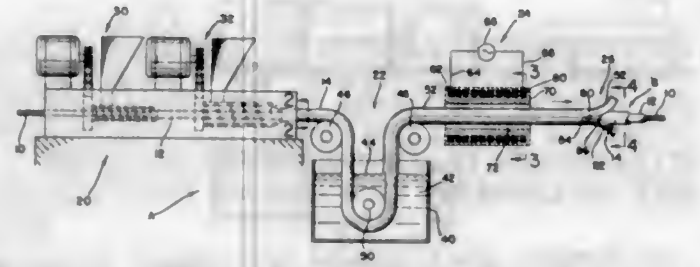
**Irving Hochhauser, 158 Diamond Ave.,
East Meadow, N.Y. 11554**

**Filed May 3, 1965, Ser. No. 535,255**

**(Filed under Rule 47(b) and 35 U.S.C. 118)**

**Int. Cl. B29h** *5/01*

**U.S. Cl. 264—25** **5 Claims**



Method and apparatus for vulcanizing the rubber covering on the outer surface of a cable-like element wherein a lead-based alloy is coated over the covering and is inductively heated while the element is moving through an induction heating coil.

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3,479,420

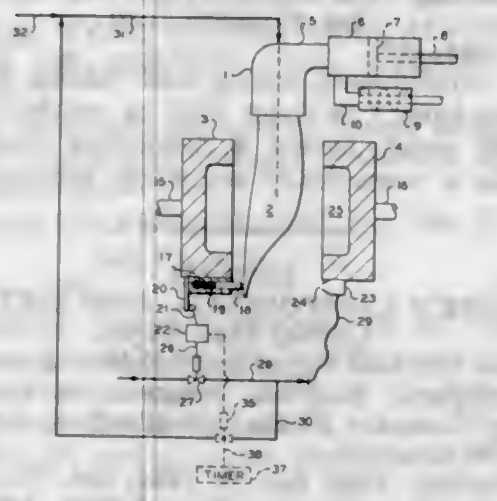
### BLOW MOLDING PARISONS USING FLUID SEALING

**Newton R. Wilson and Thomas J. Nave, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**Filed May 29, 1967, Ser. No. 641,812**

**Int. Cl. B29d** *23/03*

**U.S. Cl. 264—89** **6 Claims**



An open ended parison to be molded is closed adjacent its open end by use of at least one fluid stream.

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3,479,421

### METHOD OF MOLDING HOLLOW BODIES

**Fritz Armbruster, Stuttgart-Stammheim, and Martin Rudolph, Velbert, Rhineland, Germany; said Armbruster assignor to Diener & Roth, Stuttgart, Germany, a German firm**

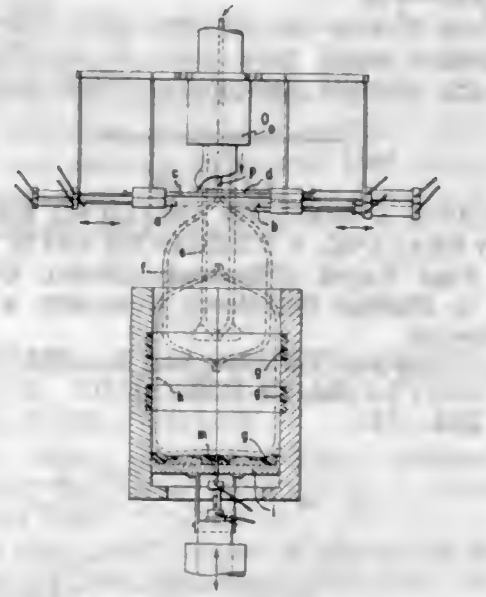
**Original application Aug. 5, 1965, Ser. No. 483,902. Divided and this application Nov. 16, 1967, Ser. No. 701,500**

**Claims priority, application Germany, Aug. 5, 1964, A 46,773**

**Int. Cl. B29c** *17/07;* **B29h** *7/02;* **B29d** *31/00, 23/03*

**U.S. Cl. 264—98** **1 Claim**

A method of manufacturing symmetrical hollow plastic containers provided with reinforcements which are disposed on at least one of the end faces of the container, in which a hose is extruded from an extruder and a piece of hose, having a length corresponding to that of the container being manufactured, is closed, which piece of hose is introduced into a divided blowing mold and is then inflated. The piece of hose is preliminarily inflated and is separated from the consecutive hose thereby to provide an independent gastight preliminary molding piece, which piece is then introduced into the open, reinforcements carrying blowing mold. After the mold is closed, the piece is further inflated for imparting to it its final shape.



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3,479,422

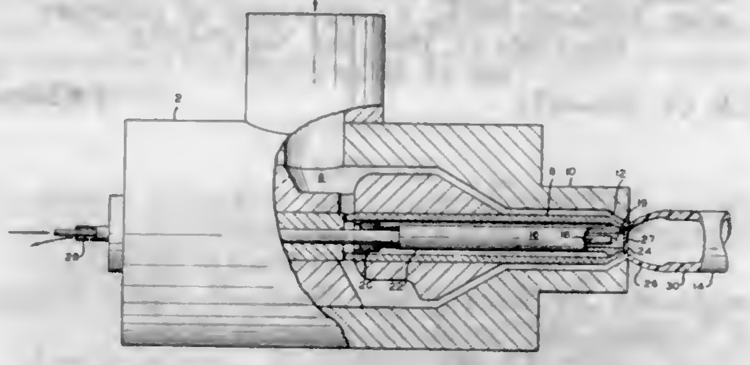
### TUBULAR EXTRUSION HAVING INTEGRAL WEB

**Frederick J. Zavasnik, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**

**Filed Oct. 27, 1966, Ser. No. 589,976**

**Int. Cl. B29d** *23/02*

**U.S. Cl. 264—98** **9 Claims**



A parison with an integral closed end is formed by extruding a tube from a die having a mandrel with a movable core. After the desired length of tubular extrudate has been formed, the movable core is retracted and a plug of plastic extruded into the space in front of the movable core. The movable core is then advanced to its original position, thus injecting the plug of plastic into the tubular extrudate where it fuses to the inner surface of the tubular extrudate to form a web across the diameter of the tubular extrudate. This process lends itself to forming a continuous tubular extrudate with a series of webs across its diameter which extrudate is then severed radially through the midpoint of each web and through the midpoint of each tubular section.

### 3,479,423
### METHOD OF FORMING COMPACTED GRAPHITE BODIES

**Cornel Wohlberg, Greensburg, Pa., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**No Drawing. Filed Dec. 11, 1967, Ser. No. 689,298**
**Int. Cl. C04b** *35/54*
**U.S. Cl. 264—122** **1 Claim**

A method of forming coherent solid bodies of graphite in which a small mole ratio of transition metal is added to the graphite, thoroughly mixed, and compacted.

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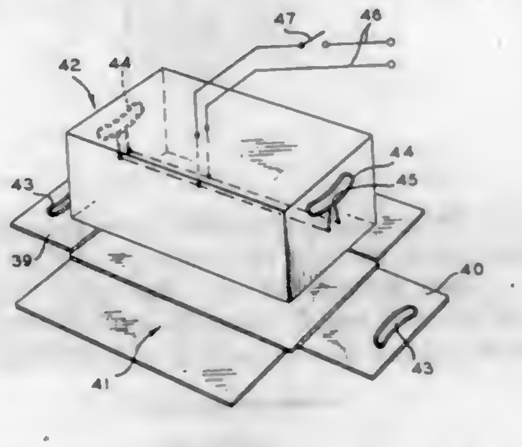
### 3,479,424
### PRODUCING A HOLLOW MOLDING BY FOLDING AND SEALING A THERMOPLASTIC SHEET

**Thomas Paul Engel, Offenbach (Main), Germany, assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Jan. 24, 1966, Ser. No. 522,728**
**Int. Cl. B29d** *23/10*
**U.S. Cl. 264—151** **6 Claims**



A hollow molding of a thermoplastic sheet is produced by producing a heat softened sheet and moving hinged portions of a die member to fold the sheet around a core so that excess material forms folds extending outwardly and the supported parts of the sheet are brought into contact and fused together.

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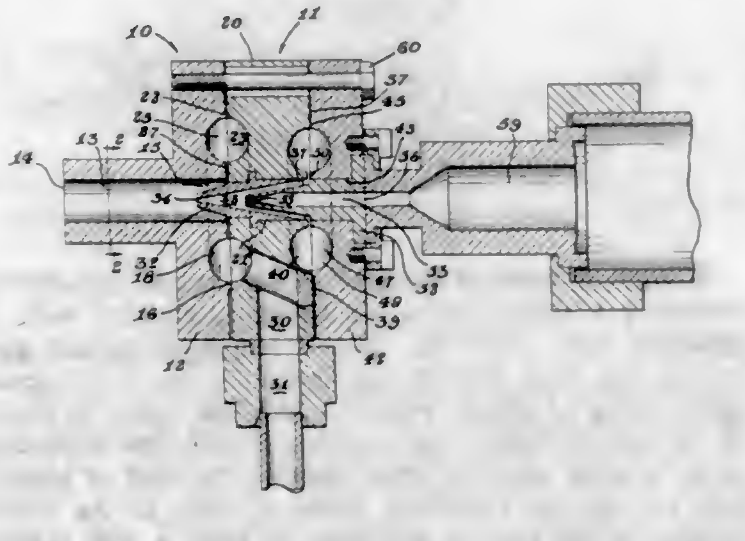
### 3,479,425
### EXTRUSION METHOD

**Lloyd Edward Lefevre, Bay City, and Peter Breidt, Jr., Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed July 22, 1965, Ser. No. 474,094**
**Int. Cl. B32b** *27/00*
**U.S. Cl. 264—171** **6 Claims**



A method is disclosed for the formation of simultaneously extruded laminar film wherein a composite stream consisting of coaxial streams of plastic is provided, passed to the sheeting die wherein the coaxial stream is deformed to provide a layered sheet.

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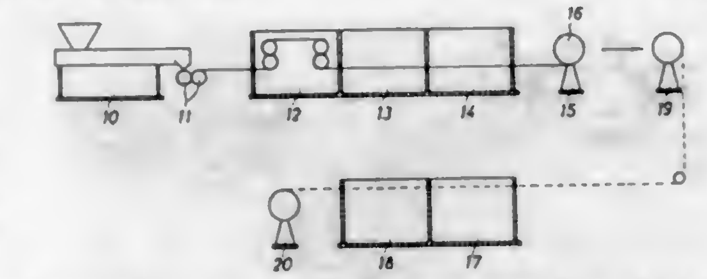
### 3,479,426
### PROCESS FOR MAKING ISOTROPIC POLYMERIC FILM

**Felix Frederik De Smedt, Wilrijk-Antwerp, Belgium, assignor to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company**
**Filed Nov. 25, 1966, Ser. No. 597,082**
**Claims priority, application Great Britain, Nov. 26, 1965, 50,443/65**
**Int. Cl. B29d** *7/24*
**U.S. Cl. 264—289** **5 Claims**



A biaxially oriented linear polyester film which after biaxial stretching is heat treated while moving in one linear direction and restrained against shrinkage, is heat set at a temperature at least 10° higher than the heat treatment temperature while moving in the opposite linear direction and restrained against shrinkage, the reverse direction of the heat setting step counteracting at least in part the variation in film properties caused by the tendency of the center region of the film to lag the edge regions thereof during heat treatment and resulting in a film having more uniform properties across its width.

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### 3,479,427
### COMPOSITION FOR APPLICATION TO HAIR

**George Lieberman, Pacoima, Milton Palmer, Santa Monica, and Samuel B. Prussin, Los Angeles, Calif., assignors to Dart Industries Inc., a corporation of Delaware**
**No Drawing. Filed Oct. 22, 1965, Ser. No. 502,426**
**Int. Cl. A61k** *7/10*
**U.S. Cl. 424—47** **1 Claim**

A hair conditioning, setting and holding composition comprising from 1 to about 10% by weight of hydrated dialdehyde starch having a dialdehyde number of at least 50 in a cosmetically acceptable vehicle.

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### 3,479,428
### SUNSCREEN COMPOSITION AND METHOD OF USING THE SAME

**Douglas Maxwell Bryce and Michael Brian Rooke, Nottingham, England, assignors to Boots Pure Drug Company Limited, Nottingham, England, a British company**
**No Drawing. Filed July 8, 1964, Ser. No. 381,244**
**Claims priority, application Great Britain, July 12, 1963, 27,750/63**
**Int. Cl. A61l** *23/00*
**U.S. Cl. 424—60** **15 Claims**

This invention relates to a sunscreen composition comprising a sunscreening agent in castor oil.

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### 3,479,429
### MULTI-COLORED COSMETIC PREPARATION

**Fred S. Morshauser, Pompton Plains, N.J., Samuel Kalish, New York, N.Y., Alfred R. Biamonte, Westfield, N.J., and Albert L. Borstlap and Albert C. Weber, Jr., Lancaster, Pa., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware**
**Original application Jan. 26, 1965, Ser. No. 428,172, now Patent No. 3,228,662, dated Jan. 11, 1966. Divided and this application Oct. 7, 1965, Ser. No. 493,730**
**Int. Cl. A61k** *7/00*
**U.S. Cl. 424—63** **5 Claims**

The present invention describes a method for preparing multi-colored cosmetic preparations wherein differently colored masses are heterogeneously associated in the form of a unitary product. This method comprises adding a multiple number of colored agents to multiple portions of a suitable base formulation separately transporting the base formulation in molten form to corresponding channels within a rotating shaft and then mixing the transported base formulation in a stationary chamber and thereafter allowing the combined molten color base to congeal into a solid mass.

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### 3,479,430
### INDIRECT PASSIVE IMMUNIZATION AGAINST TRANSMISSIBLE GASTROENTERITIS VIRUS IN NURSING PIGLETS AT BIRTH BY ACTIVE IMMUNIZATION OF SOWS PRIOR TO FARROWING WITH TRANSMISSIBLE GASTROENTERITIS VACCINE AND METHOD OF PRODUCING THE SAME

**Clarence J. Welter, Des Moines, Iowa, assignor to Diamond Laboratories, Inc., Des Moines, Iowa, a corporation of Iowa**
**No Drawing. Original application Sept. 22, 1964, Ser. No. 398,398. Divided and this application Aug. 24, 1967, Ser. No. 671,526**
**Int. Cl. A61k** *23/00;* **C12k** *5/00*
**U.S. Cl. 424—89** **2 Claims**

Transmissible gastroenteritis virus is grown and propagated in tissue cultures by inoculating virulent virus particles into a first tissue culture, allowing the virus to grow, introducing the viral particles into other tissue cultures until a continuated virus is obtained. A final virus culture can be harvested and combined with a stabilizer and further incubated to inactivate the virus. Sows and their nursing pigs can be immunized by injecting into the pregnant sow before farrowing the vaccine thus produced.

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### 3,479,431
### FUNGICIDAL COMPOSITION CONTAINING THE Ba-SALTS OF PHENOL AND CHLORINATED PHENOLS

**Yasumori Momotari, Miyagi-ken, Japan, assignor to Tohoku Kyodo Kagakukogyo Kabushiki Kaisha, Miyagi-ken, Japan**
**No Drawing. Filed Dec. 24, 1963, Ser. No. 333,181**
**Int. Cl. A01n** *9/26*
**U.S. Cl. 424—159** **4 Claims**

A composition which is effective as an insecticide, fungicide, and weed killer and is constituted by a Ba-salt of phenol or chlorinated phenol, a mixture of rosin and rosin alkali soap in an amount between 0.5 and 5 times the Ba-salt, and a carrier consisting essentially of slaked lime.

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### 3,479,432
### N-METHYLGLUCAMMONIUM POLYGALACTURONATE DEMULCENT COMPOSITIONS AND METHODS OF TREATMENT THEREWITH

**Ernest J. Sasmor, Yonkers, N.Y., assignor to The Purdue Frederick Company, Yonkers, N.Y., a corporation of New York**
**No Drawing. Original application Feb. 14, 1963, Ser. No. 258,613, now Patent No. 3,316,242, dated Apr. 25, 1967. Divided and this application Aug. 25, 1966, Ser. No. 574,913**
**Int. Cl. A61k** *7/00, 27/00*
**U.S. Cl. 424—180** **9 Claims**

Pharmaceutical compositions containing N-methylglucammonium polygalacturonate, which are useful to achieve demulsant action in the gastro-intestinal tract and on inflamed skin, the methods for preparing the same and the methods for utilizing the new compositions in the therapy of humans and animals.

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### 3,479,433
### METHODS FOR STIMULATING GROWTH OF ANIMALS WITH PHOSPHOCREATININE

**Gerard Paul Marie Henri Loiseau, Sceaux, France, assignor to Ugine Kuhlman, Paris, France**
**No Drawing. Filed Feb. 13, 1967, Ser. No. 615,393**
**Claims priority, application France, Feb. 11, 1969, 49,259**
**Int. Cl. A61k** *27/00*
**U.S. Cl. 424—200** **2 Claims**

The present invention relates to an animal feed composition comprising an animal feed and a growth-promoting amount of phosphocreatinine. It also relates to a method of stimulating growth of animals which comprises feeding said animals an animal feed composition comprising animal feed and an effective amount of phosphocreatinine for growth stimulation.

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### 3,479,434
### PHARMACEUTICAL COMPOSITION AND METHOD CONTAINING 5 - METHYL - 5-(4-PYRIDYL)-2-OXIDE-1,3,2-DIOXATHIANE

**Winthrop E. Lange, Needham, Mass., assignor to Synergistics, Inc., New York, N.Y., a corporation of New York**
**No Drawing. Continuation-in-part of application Ser. No. 424,122, Jan. 7, 1965. This application May 16, 1967, Ser. No. 638,761**
**Int. Cl. A61k** *27/00*
**U.S. Cl. 424—230** **17 Claims**

Pharmaceutical compositions comprising 5-methyl-5-(4-pyridyl)-2-oxide-1,3,2-dioxathiane and its pharmaceutically acceptable salts for use as germicidal agents together with the method for reducing the microbial flora of the skin and as germicidal agents.

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### 3,479,435
### DITHIOKETALS OF $\Delta$-4,9-3-KETOSTEROIDS

**Gordon A. Hughes, Haverford, and Herchel Smith, Wayne, Delaware, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Dec. 1, 1966, Ser. No. 598,231**
**Int. Cl. C07c** *173/00*
**U.S. Cl. 424—241** **4 Claims**

3,3-dithioketal derivatives of 13$\beta$-polycarbonalky-17$\beta$-hydroxygon-4,9-dien-3-ones, and pharmaceutical compositions containing them, are provided. They are powerful progestational agents with little or no anabolic or androgenic activity.

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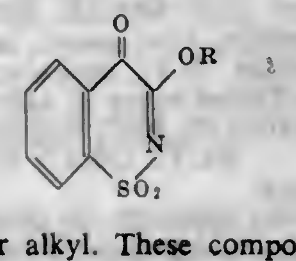
### 3,479,436
### 3-LOWER ALKOXY - 2H-1,2-BENZOTHIAZIN-4(3H)-ONE 1,1-DIOXIDE FOR TREATING AMMONEMIC STATES IN MAMMALS

**Harold Zinnes, Rockaway, John Shavel, Jr., Mendham, and Martin S. Sternberg, Chester, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware**
**No Drawing. Filed Sept. 11, 1967, Ser. No. 666,949**
**Int. Cl. A61k** *27/00;* **C07d** *93/02*
**U.S. Cl. 424—246** **2 Claims**

A 3-lower alkoxy-1,2-benzothiazin of the formula:



wherein R is lower alkyl. These compounds are useful as an inhibitor of the enzyme urease.

### 3,479,437
## GUANIDINE COMPLEXES AS FUNGICIDES

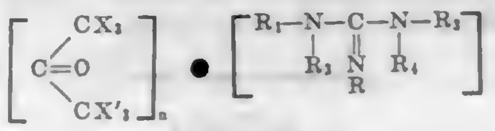
**Karoly Szabo, Syracuse, N.Y., and Ashley H. Freiberg, Santa Clara, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Application Aug. 26, 1963, Ser. No. 304,607, now Patent No. 3,320,229, dated May 16, 1967, which is a continuation-in-part of abandoned application Ser. No. 191,432, May 1, 1962. Divided and this application Mar. 24, 1967, Ser. No. 625,627**

**Int. Cl. A61k** *9/20*

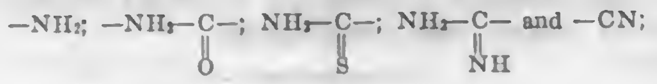
**U.S. Cl. 424—304** **18 Claims**

The method of inhibiting the growth of fungi by applying thereto an effective amount of a guanidine complex of a completely halogenated acetone having the following formula:



$$\left[ \mathrm{C{=}O} \begin{matrix} \diagup CX_3 \\ \diagdown CX'_3 \end{matrix} \right]_n \bullet \left[ \underset{R_3}{R_1-N}-\underset{\underset{R}{N}}{\overset{}{C}}-\underset{R_4}{N}-R_2 \right]$$

wherein the substituents R, $R_1$, $R_2$, $R_3$ and $R_4$ are each selected from the class consisting of hydrogen; an alkyl radical of from 1 to 20 carbon atoms, a cycloalkyl radical of from 5 to 6 carbon atoms, a benzyl radical; a phenethyl radical, an aryl radical of the benzene and naphthalene series;



$$-NH_2;\ -NH_2-\underset{\underset{O}{\|}}{C}-;\ NH_2-\underset{\underset{S}{\|}}{C}-;\ NH_2-\underset{\underset{NH}{\|}}{C}-\ \text{and}\ -CN;$$

it being understood that the number of non-hydrocarbon R groups attached to the same nitrogen atom does not exceed 1, X and X′ are selected from the class consisting of chlorine and fluorine, it being understood that at least 3 fluorines are always present and *n* is an integer of from 1 to 2.

# ELECTRICAL

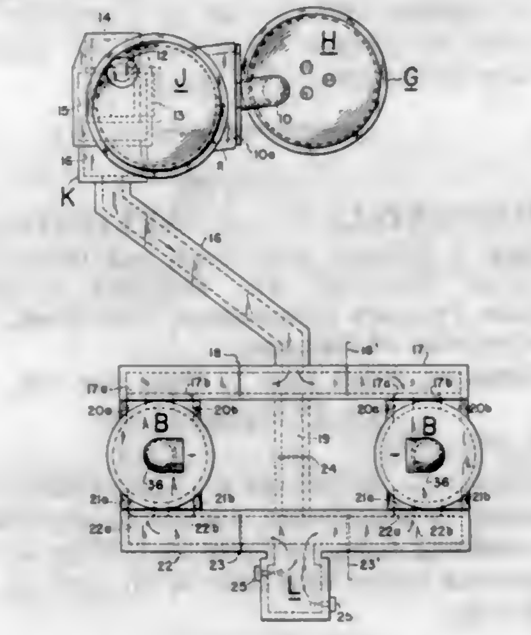
### 3,479,438
## APPARATUS AND METHOD FOR PREHEATING OF METAL SCRAP FOR FURNACE CHARGING

**Levi S. Longenecker, 61 Mayfair Drive, Pittsburgh, Pa. 15228**

**Continuation-in-part of application Ser. No. 660,095, Aug. 11, 1967. This application Nov. 25, 1968, Ser. No. 778,680**

**Int. Cl. H05b** *7/18*

**U.S. Cl. 13—9** **25 Claims**



Procedure and apparatus are provided for utilizing hot furnace exhaust gases that are continuously taken off from a metal melting and refining furnace and used as a primary source of preheat for the scrap metal portion of a furnace charge. Cold scrap is preheated by an upward flow of hot gases through a silo-like container which is tiltable to enable it to be charged and for removing a hotter or lower portion of the scrap for charging into a furnace. Auxiliary means is also provided for supplementing exhaust gas heat.

### 3,479,439
## BEAM FORMING TECHNIQUE AND IMPLEMENTATION FOR SONAR SIMULATION

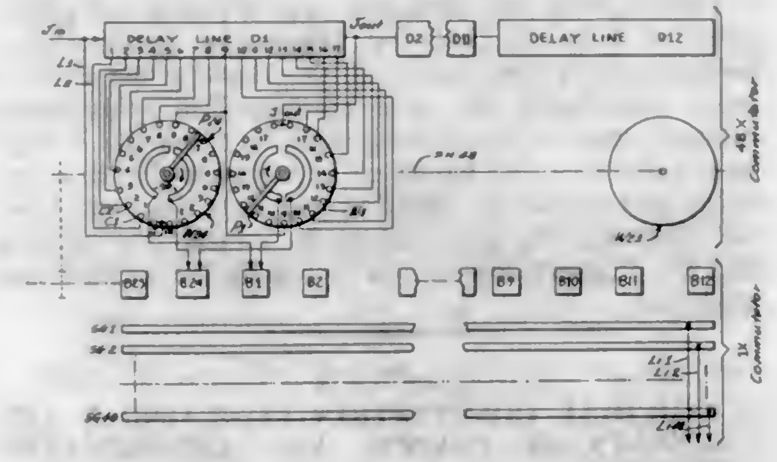
**Myron N. Kaufman, Massapequa, and Melvin Lindner, West Hempstead, N.Y., assignors, by mesne assignments, to the United States of America**

**Filed June 29, 1967, Ser. No. 650,139**

**Int. Cl. G01s** *9/66*

**U.S. Cl. 35—10.4** **4 Claims**

A technique and apparatus for developing an electrical analog of an underwater sound wave as sensed by a circular array of hydrophones comprising a delay line with multiple taps scanned reversibly by a first higher speed commutator which furnishes an output to a second lower speed commutator, the commutated output of which is said analog.



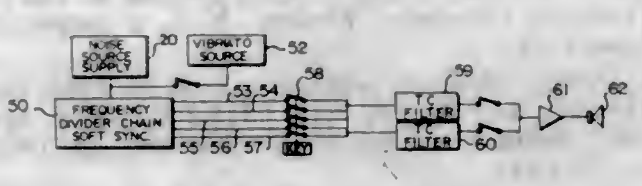
### 3,479,440
## RANDOMLY-PERTURBED, LOCKED-WAVE GENERATOR

**Daniel W. Martin and Alexander B. Bereskin, Cincinnati, Ohio, assignors to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio**

**Filed Aug. 15, 1966, Ser. No. 572,481**

**Int. Cl. G10h** *1/04, 1/06, 5/04*

**U.S. Cl. 84—1.25** **16 Claims**



A tone generator for an electronic organ, employing frequency divider chains for generating octavely related tones, in which each stage of a divider chain is perturbed independently of the others on a per cycle basis while maintaining an average locked synchronism among the frequency divider stages of the divider chain.

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### 3,479,441
## CONDUCTOR SPACERS FOR MULTICONDUCTOR ELECTRICAL OVERHEAD TRANSMISSION LINES

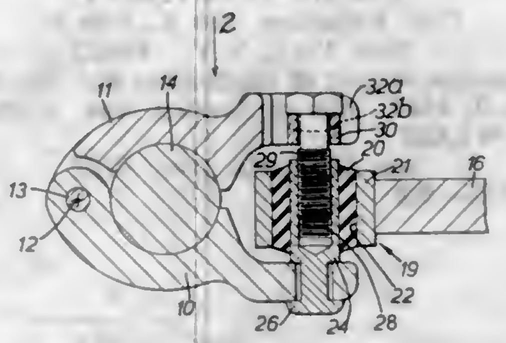
**Edwin Barclay Moore, Evington, England, assignor to The Dunlop Company Limited, London, England, a British company**

**Filed Mar. 6, 1968, Ser. No. 710,856**

**Claims priority, application Great Britain, Mar. 22, 1967, 13,411/67**

**Int. Cl. H02g** *7/14*

**U.S. Cl. 174—42** **5 Claims**



In a conductor spacer for multi-conductor electrical overhead transmission lines having a conductor clamp composed of two jaw parts hinged together and connected to a spacer frame by a flexible joint, a single means serves to draw the jaw parts together to clamp a conductor between the jaw parts and to connect the clamp to the flexible joint.

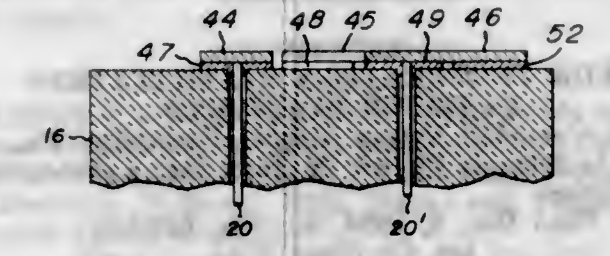
### 3,479,442
## LEAD CONNECTION MEANS FOR VOLTAGE TUNABLE MAGNETRONS

**Richard Gray Detro, Scotia, N.Y., assignor to General Electric Company, a corporation of New York**

**Original application Jan. 21, 1965, Ser. No. 426,893. Divided and this application Sept. 20, 1967, Ser. No. 677,821**

**Int. Cl. H05k** *5/06;* **H01j** *5/00*

**U.S. Cl. 174—50.58** **2 Claims**



Lead members are joined to the contacts of a voltage tunable magnetron which are positioned in a ceramic base plate by the use of tab members that are joined to the contacts and to a spaced metallized area. Lead means are then welded to the tab members at a distance between the contacts and the metallized area to minimize deleterious heating of the contacts.

### 3,479,443
## CAPACITIVELY GRADED MODULAR POTHEAD FOR H–V CABLE

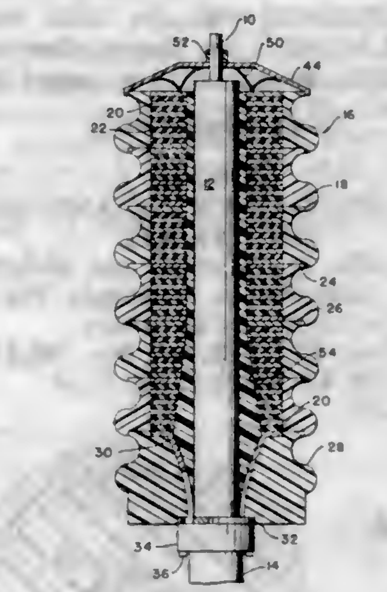
**Matthew S. Mashikian, Ann Arbor, James K. Kelley, Carleton, and William C. McMurray, St. Clair Shores, Mich., assignors to The Detroit Edison Company, Detroit, Mich., a corporation of New York**

**Filed May 9, 1968, Ser. No. 727,946**

**Int. Cl. H02g** *3/06, 15/02*

**U.S. Cl. 174—73** **17 Claims**

A pothead is assembled from modules each comprising an annular insulator body having tightly packed therein a multiplicity of flat alternately conducting and insulating rings. A stress cone connects the metal ring at one end of the pothead to a conducting sheath on the cable and a metal cap connects the conducting ring or washer at the other end to the bared conductor of the H–V cable.



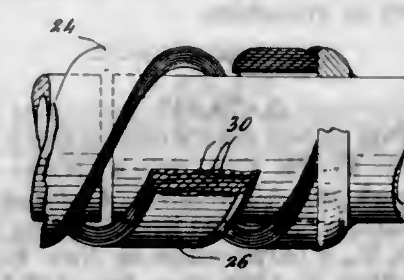
### 3,479,444
## ELECTRICAL CONNECTION BETWEEN MOVABLE PARTS

**Johannes Hus, Trumbull, Conn., assignor to Burndy Corporation, a corporation of New York**

**Filed July 27, 1967, Ser. No. 656,571**

**Int. Cl. H02g** *15/08*

**U.S. Cl. 174—86** **1 Claim**



An electrical connector in the form of a helical strip adapted to be coupled at its opposite ends to the substantially aligned, axially spaced apart end portions of two electrical conductors. The helical strip being formed in one embodiment, from a laminated cylindrical body having a helical slot cut intermediate the ends thereof.

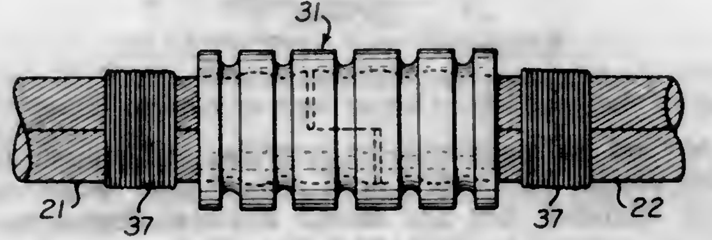
### 3,479,445
## ELECTRICAL CABLE CONNECTION AND CONNECTOR SLEEVE

**Jack Jerome, 453 Roslyn Road, East Williston, N.Y. 11596**

**Original application July 2, 1964, Ser. No. 379,810, now Patent No. 3,320,659, dated May 23, 1967. Divided and this application Feb. 20, 1967, Ser. No. 617,097**

**Int. Cl. H02g** *15/08*

**U.S. Cl. 174—94** **7 Claims**



Cable connector sleeve of metal for receiving with a loose fit the cable ends to be connected, the inner surface of the sleeve being roughened and the outer surface having a plurality of circumferentially continuous indents spaced from each other and from the ends of the sleeve for engagement by a split compression die for pressing the metal of the sleeve under the indents radially inwardly into firm engagement with the cable ends; and the cable connection in which the sleeve, after being pressed onto the cable ends, is machined to barrel shape.

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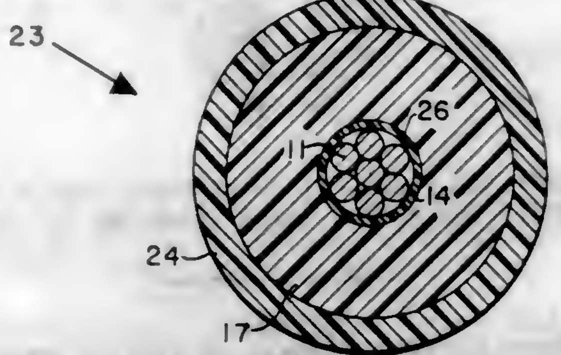
### 3,479,446
### STRAND SHIELDED CABLE AND METHOD OF MAKING

**Edwin H. Arnaudin, Jr., Marion, and Robert M. Wade, Wabash, Ind., assignors to Anaconda Wire and Cable Company, a corporation of Delaware**
**Filed June 27, 1968, Ser. No. 740,536**
**Int. Cl. H01b** *7/02, 7/34*
**U.S. Cl. 174—120** **7 Claims**



In a cable the strand-shield is thoroughly vulcanized on the outside but has the degree of vulcanization decreasing inwardly. The cable is formed by extending a semiconductive layer without a vulcanizing agent, extruding a layer of insulation with a vulcanizing agent heating to diffuse the vulcanizing agent into a semiconductive layer and then heating to vulcanize.

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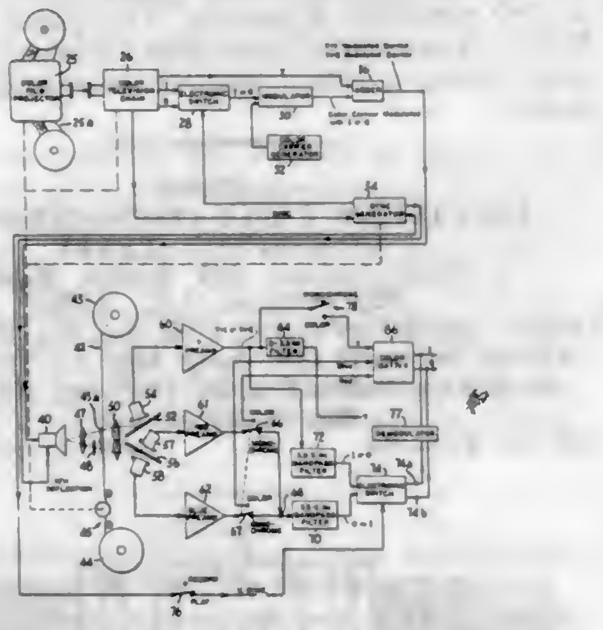
### 3,479,447
### RECORDING AND REPRODUCING COLOR PICTURE INFORMATION

**Peter C. Goldmark and Abraham A. Goldberg, Stamford, Conn., assignors to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York**
**Filed May 5, 1966, Ser. No. 547,956**
**Int. Cl. H04n** *1/46, 9/32*
**U.S. Cl. 178—5.2** **20 Claims**



Method and apparatus for recording and reproducing color picture information on a monochrome record medium including first and second displaced frames each having a pictorial record of brightness information in the original scene. Superimposed on the brightness record is a record of a carrier signal whose amplitude is modulated according to a color information signal. In the first frame the carrier signal is modulated with a first color information signal, while the carrier in the second frame is modulated with a different, second signal, with the two frames together representing all color information in the original scene. During reproduction, the two frames are scanned simultaneously to derive the modulated carrier signals and a brightness signal.

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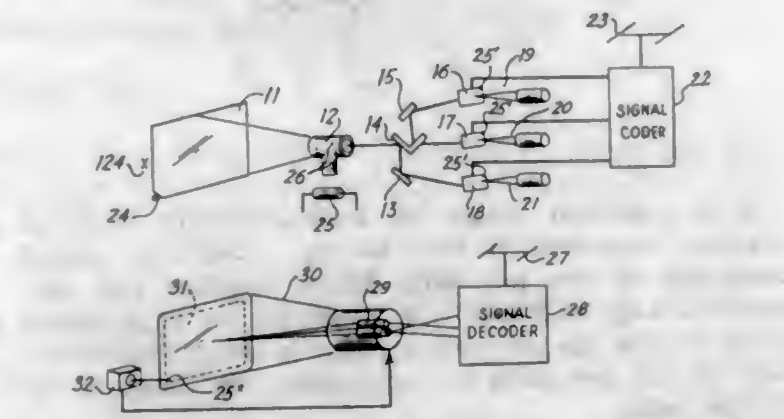
### 3,479,448
### AUTOMATIC COLOR BALANCE FOR COLOR TELEVISION

**Paul Kollsman, 100 E. 50th St., New York, N.Y. 10022**
**Continuation-in-part of application Ser. No. 577,002, Sept. 2, 1966. This application Nov. 3, 1966, Ser. No. 591,812**
**Int. Cl. H04n** *1/46, 9/02*
**U.S. Cl. 178—5.2** **34 Claims**



The present improvement involves the maintenance of color balance by appropriate, preferably automatic, adjustment of at least two color beams, for example electron beams, in a receiver or of the relative intensity levels of the three color signals transmitted by a transmitter in such a manner that a comparison standard ratio is matched. This is accomplished by comparing a comparison signal to the standard. The comparison signal may be a multicolor test spot and is transmitted at intervals. The correction is made either in an individual receiver or at the transmitter monitored by a receiver.

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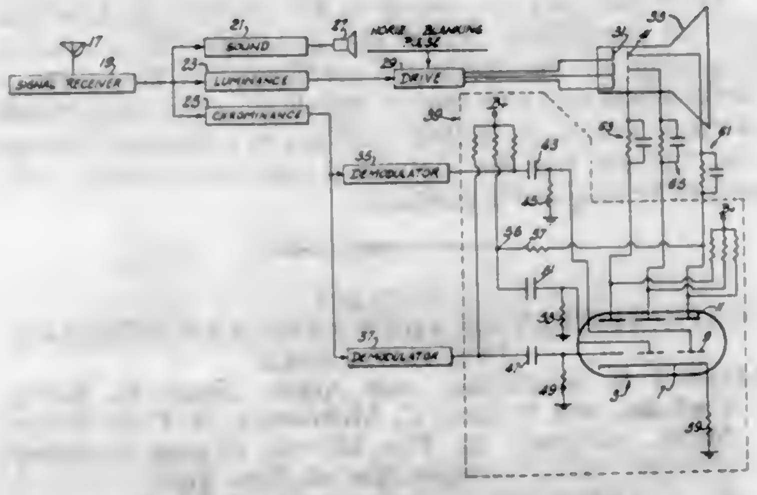
### 3,479,449
### COLOR TEMPERATURE STABILIZATION IN COLOR RECEIVERS

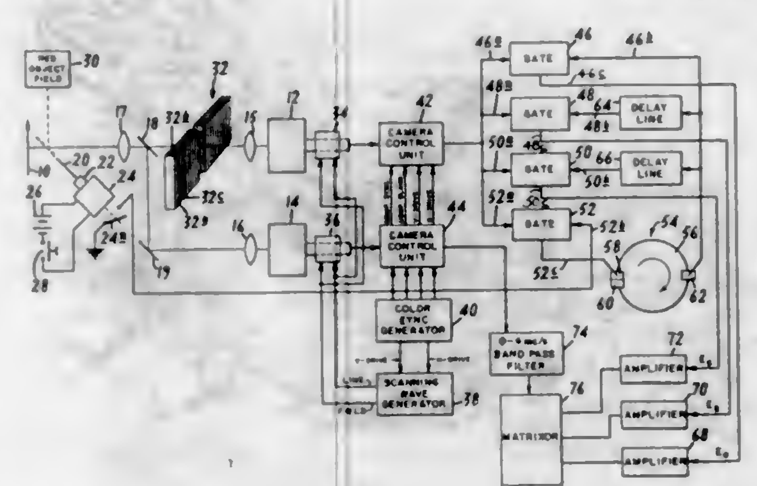
**Victor H. Campbell, Sylvan Heights, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware**
**Filed Dec. 8, 1966, Ser. No. 600,182**
**Int. Cl. H04n** *5/44*
**U.S. Cl. 178—5.4** **6 Claims**



A color temperature stabilization device wherein a plurality of demodulated signals are applied to a device having a plurality of signal input electrodes, a plurality of signal output electrodes, and a cathode common to all of the signal input and signal output electrodes.

### 3,479,450
### SAMPLING APPARATUS FOR TELEVISION SYSTEMS EMPLOYING ONE AND TWO PICK-UP TUBES

**Renville H. McMann, Jr., New Canaan, Conn., assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York**
**Filed Dec. 19, 1966, Ser. No. 602,907**
**Int. Cl. H04n** *5/38, 5/44*
**U.S. Cl. 178—5.4** **10 Claims**



A system for pickup and transmission of simultaneous color television signals requiring only one camera tube for derivation of the color information signals is described. The object field being viewed is separated into its respective primary color components with a color strip filter interposed between the object field and the camera target. The filter consists for example, of a sequence of successive red, green, and blue filter strips arranged in a parallel manner and at right angles to the lines of the camera scanning raster. In operation, the signal output from the camera represents a sequential series of segments of the respective primary color components present in the object field. These color components are aligned in time to produce a simultaneous output by gating the components through the use of delay lines and a delay recording means. Detailed luminance information may be added by employing an additional camera tube to derive a luminance signal which is then combined with the primary color signals in a matrix.

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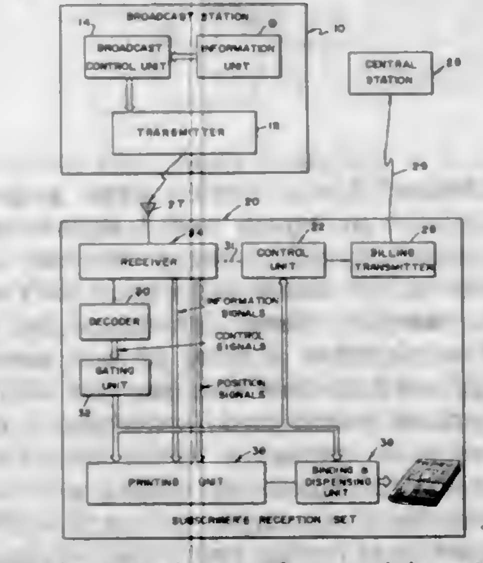
### 3,479,451
### FACSIMILE NEWSPAPER TRANSMISSION SYSTEM

**Jerome Regunberg, % Queen City News Co., 136 Parker Ave., Poughkeepsie, N.Y. 12601, and Wolfgang H. Liepmann, Wellesley Hills, Mass.; said Liepmann assignor to said Regunberg**
**Filed Nov. 15, 1966, Ser. No. 594,427**
**Int. Cl. H04n** *5/76*
**U.S. Cl. 178—6.6** **25 Claims**



An electronic reception set for receiving electrical signals identifying printed matter and for reproducing the original document is described, together with the operation of the reception set in an electronic news distributing system.

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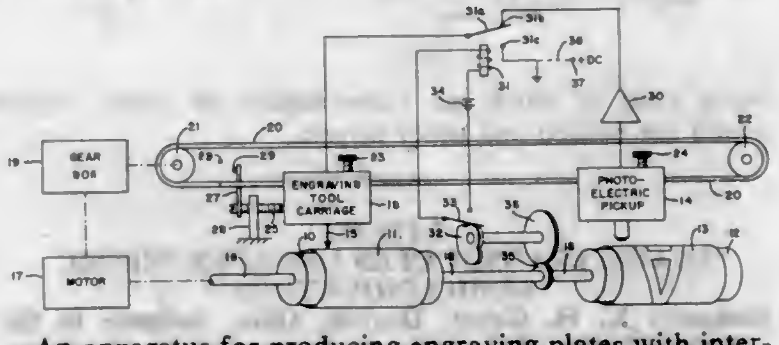
### 3,479,452
### MACHINE FOR PRODUCING ENGRAVING PLATES FOR STEREOSCOPIC REPRODUCTIONS

**John R. Hancock, Garden City, and Harold Sigler, Brooklyn, N.Y., assignors to Fairchild Camera and Instrument Corporation, a corporation of Delaware**
**Filed Dec. 19, 1966, Ser. No. 602,640**
**Int. Cl. H04m** *5/76;* **G03c** *9/00*
**U.S. Cl. 178—6.6** **10 Claims**



An apparatus for producing engraving plates with interlaced images of two different copy subjects. Two detachable drums with different copy subjects mounted on each drum and an engraving drum on which the interlaced engraving is made are provided. A cam rotated in synchronism with the common mounting shaft of the detachable and engraving drums operates a switch which intermittently disables the output of the scanning mechanism during every other line of the copy subject scanned. The mounting positions of the first and second copy drums, relative to the engraving drum are dispaced one line scan from each other. By intermittent scanning of the two drums an interlaced engraving of the two copies is reproduced.

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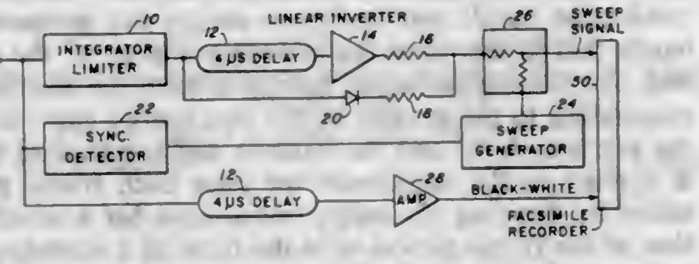
### 3,479,453
### FACSIMILE RESOLUTION IMPROVEMENT BY UTILIZATION OF A VARIABLE VELOCITY SWEEP SIGNAL

**Stephen E. Townsend, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**
**Filed Jan. 4, 1965, Ser. No. 423,070**
**Int. Cl. H04n** *5/84*
**U.S. Cl. 178—6.7** **5 Claims**



A facsimile recorder, wherein the two-level video signal is combined with the linear sweep signal to provide a modified variable velocity sweep signal, the modified sweep signal providing improved resolution by slowing down the sweep when the printing level of the video signal is detected.

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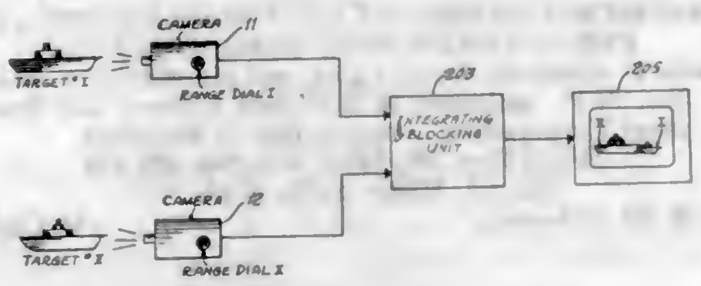
### 3,479,454
### ELECTRONIC SYNTHESIZER

**Hanns H. Wolff, Huntington, N.Y., assignor to the United States of America as represented by the Secretary of the Navy**
**Continuation-in-part of application Ser. No. 526,322, Feb. 8, 1966. This application Mar. 14, 1966, Ser. No. 535,659**
**Int. Cl. H04n** *5/38*
**U.S. Cl. 178—6.8** **7 Claims**

An apparatus for synthesizing the electrical signals separately derived from a plurality of targets, including a range-control means for producing signals indicative of the range of the targets, said range-control signals



being used to block the video signals of those targets which are behind any other targets.

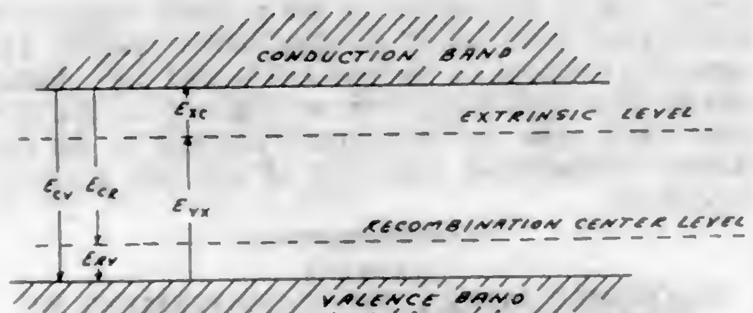
### 3,479,455
## IMAGE TRANSDUCERS USING EXTRINSIC SEMICONDUCTORS

**Radames K. H. Gebel, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force**

**Filed Apr. 1, 1966, Ser. No. 540,161**

**Int. Cl. H04n** *5/38*

**U.S. Cl. 178—7.2 5 Claims**



An image transducer for low quantum energy radiation having periodic erasure of the information carriers and quanta collection for all or substantially all of the frame period. The image is received by a semiconductor having an extrinsic energy level intermediate the valence and conduction bands and having an energy gap to one of the bands that is less than the quantum energy of the radiation. An erasing radiation having a quantum energy corresponding to the greater of the two energy gaps between the extrinsic level and the valence and conduction bands, is applied to the semiconductor once each frame period, either by flooding the entire image area for a small fraction of the frame period or in the form of a scanning spot, to cause the information carriers to fall back from the conduction band to the valence band giving off radiation of quantum energy corresponding to the gap between the two bands. This radiation is converted to a video signal by a suitable photoelectric transducer.

### 3,479,456
## SYNCHRONIZING MECHANISM FOR ENCRYPTING TELEGRAPH TRANSMITTER

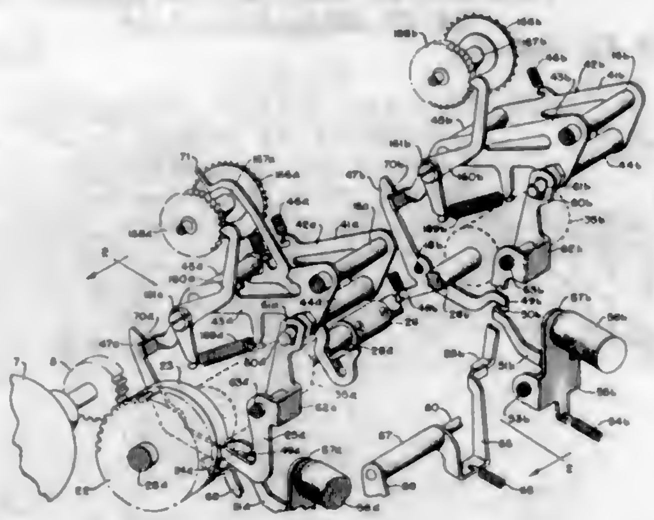
**Roger I. Oslund, Glenview, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware**

**Filed Feb. 24, 1965, Ser. No. 434,884**

**Int. Cl. H04l** *9/00, 15/00, 5/24*

**U.S. Cl. 178—22 6 Claims**

In an encrypting telegraph device of the type including two tape controlled transmitters, one for transmitting message tapes and the other for transmitting encrypted tapes, and a pair of electromagnetically controlled latches for selectively permitting and preventing operation of the transmitters, a lever system operated by the encrypted tape transmitter upon the initiation of a cycle of operation thereof for tripping the latch of the message tape



transmitter thereby preventing a termination of the operation of the message tape transmitter prior to a termination of the operation of the encrypted tape transmitter.

### 3,479,457
## METHOD AND APPARATUS FOR THE DEMODULATION OF ELECTRIC WAVES PHASE- OR FREQUENCY-MODULATED BY HIGH-SPEED CODED SIGNALS

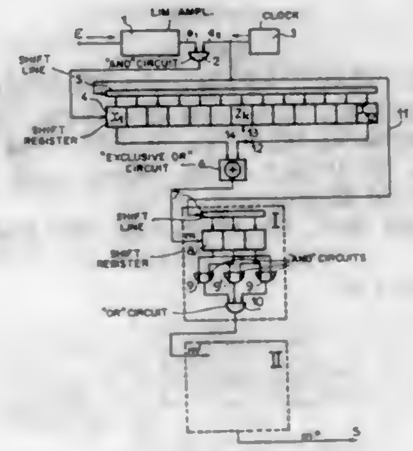
**Jacques Oswald, Versailles, France, assignor to C.I.T.-Compagnie Industrielle des Telecommunication, Paris, France**

**Filed May 7, 1965, Ser. No. 454,048**

**Claims priority, application France, May 8, 1964, 973,743**

**Int. Cl. H04l** *1/00, 7/08*

**U.S. Cl. 178—67 17 Claims**



A demodulator for a carrier wave phase- or frequency-modulated by binary coded signals of constant duration, comprising means for periodically taking polarity samples out of said wave, a main shift register for storing said samples, means for comparing with each other the two elements of pairs of said samples taken at predetermined time intervals and for deriving from their comparison uncorrected demodulated binary signals, and an error correcting device including at least one auxiliary shift register for storing said uncorrected signals, means for comparing in pairs a plurality of latter said signals taken at further predetermined time intervals and means for deriving therefrom corrected demodulated signals.

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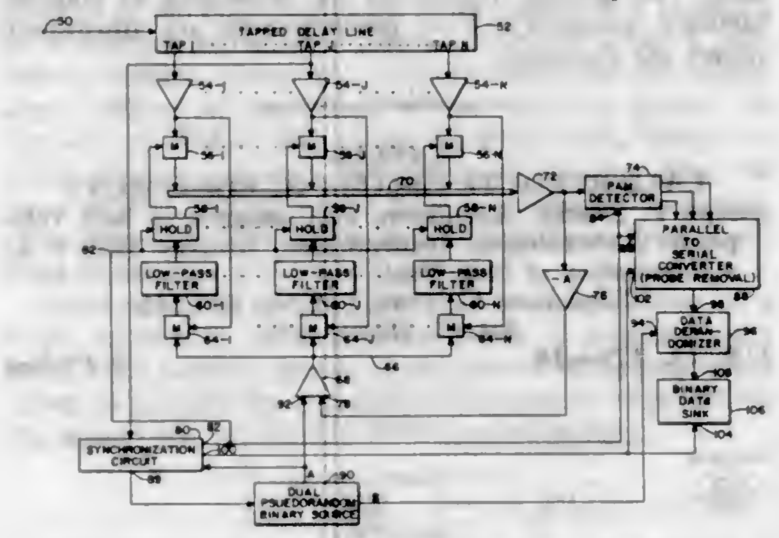
### 3,479,458
## AUTOMATIC CHANNEL EQUALIZATION APPARATUS

**John B. Lord, Edmonds, and Dean W. Lytle, Seattle, Wash., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**

**Filed Mar. 6, 1967, Ser. No. 620,993**

**Int. Cl. H04l** *25/02;* **G08b** *29/00;* **H04b** *1/00*

**U.S. Cl. 178—69 10 Claims**



Apparatus for and the method of automatically equalizing a data channel while data is being transmitted therethrough. This is accomplished by using the data itself, which is randomized, to adjust the receiving apparatus to reduce or eliminate the degrading effects of channel induced inter-symbol interference upon the reception of multilevel pulse amplitude or pulse code modulation.

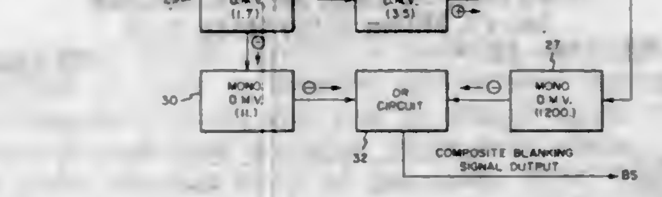
### 3,479,459
## METHOD OF GENERATING A COMPOSITE BLANKING SIGNAL FROM A COMPOSITE SYNC SIGNAL

**Alfred S. Scipione, Stamford, Conn., assignor to Singer-General Precision, Inc., a corporation of Delaware**

**Filed Dec. 1, 1966, Ser. No. 598,390**

**Int. Cl. H04l** *7/04*

**U.S. Cl. 178—69.5 5 Claims**



A composite sync signal is applied to a delay thereby developing an identical sync signal offset in time from the original sync signal. The delayed sync signal is used to control a television system. The original and delayed signals are combined for producing coincident signals among which is a precisely positive 0.5 microsecond pulse. The 0.5 microsecond pulse is isolated and used to generate a 1200 microsecond vertical blanking pulse. The original sync signal is also used to actuate pulse forming circuitry for generating a precisely positioned 11 microsecond horizontal blanking pulse. The 11 microsecond and the 1200 microsecond pulses are combined to form a blanking signal in proper phase synchronism with the delay sync signal, the two signals conforming to the standard RETMA television control signals.

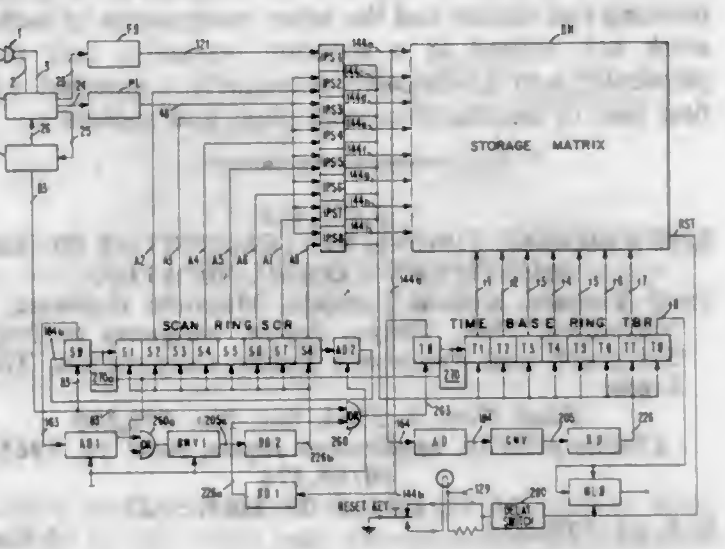
### 3,479,460
## SPEECH ANALYSIS SYSTEM

**Genung L. Clapper, Raleigh, N.C., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Dec. 29, 1966, Ser. No. 605,646**

**Int. Cl. G10l** *1/02*

**U.S. Cl. 179—1 8 Claims**



A speech analyzer for the synchronous location of harmonics in each pitch period of a sound spectrum. Data is provided to a storage matrix by employing a time measurement which begins with the "glottal impulse" of each first local maximum in the complex input waveform. The input waveform is split into three parts by the fricative selector, which selects high frequencies, the harmonic locator, which selects medium frequencies, and the envelope peak detector, which selects the low frequencies. These three selectors control the scan ring and the time base ring which in turn control the storage matrix. The storage matrix stores the sound characteristics extracted from the waveform to produce bit characteristics defining the structure of the sound wave.

### 3,479,461
## DETACHABLE ELECTRICAL SWITCHING APPARATUS FOR MULTICHANNEL RADIO COMMUNICATION SYSTEMS

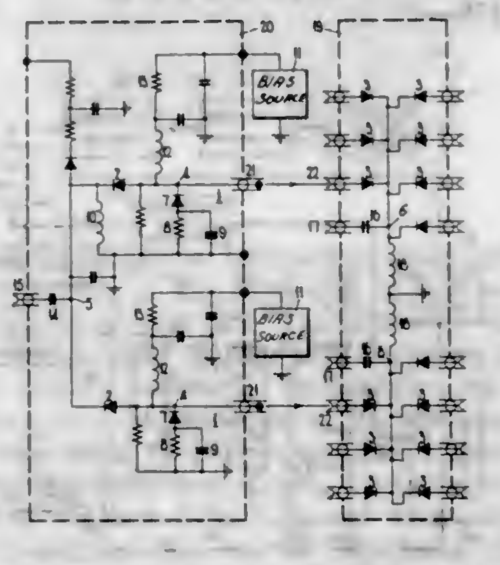
**Dennis R. Bester, Coventry, and Geoffrey Pratt, Bulkington, near Nuneaton, England, assignors to The General Electric Company Limited, London, England, a British company**

**Filed Nov. 9, 1965, Ser. No. 506,981**

**Claims priority, application Great Britain, Nov. 13, 1964, 46,317/64**

**Int. Cl. H04j** *1/02, 3/02*

**U.S. Cl. 179—15 1 Claim**

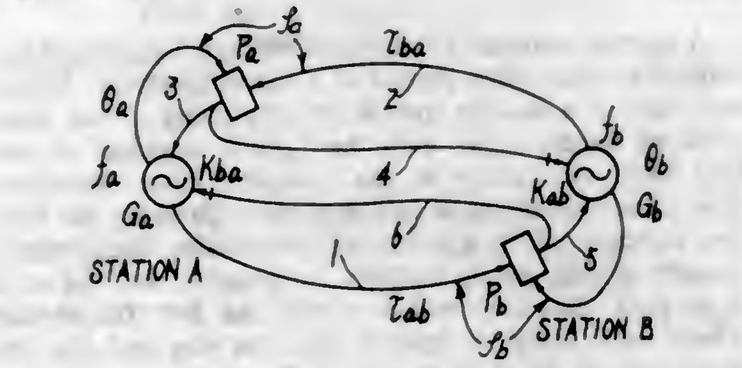


Switching apparatus for a radio communication system having a plurality of transmitters and receivers linking two stations, and one or more standby transmitters and receivers to which traffic can be diverted by way of the transmitter or receiver. The switching apparatus comprises a respective switching network for each channel that is to be connected to a standby transmitter or receiver, each network comprising a T network of diodes with biasing means to control the impedance presented by the diodes. One diode from each network is located in a central unit to which the standby apparatus is connected while the remaining two diodes and the other components of each network are housed in a separate respective unit that is physically and electrically detachably connected to the first unit by means of coaxial plugs and sockets.

### 3,479,462
## EQUATIONAL TIMING SYSTEM IN TIME DIVISION MULTIPLEX COMMUNICATION

**Junji Yamato, Keiichi Tsukada, Masaichi Kajiwara, and Masamichi Ono, Tokyo, Japan, assignors to Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan**

**Filed Nov. 4, 1966, Ser. No. 592,160**
**Claims priority, application Japan, Nov. 10, 1965, 40/68,474**
**Int. Cl. H04j** *3/00;* **H04l** *5/22*
**U.S. Cl. 179—15** **7 Claims**

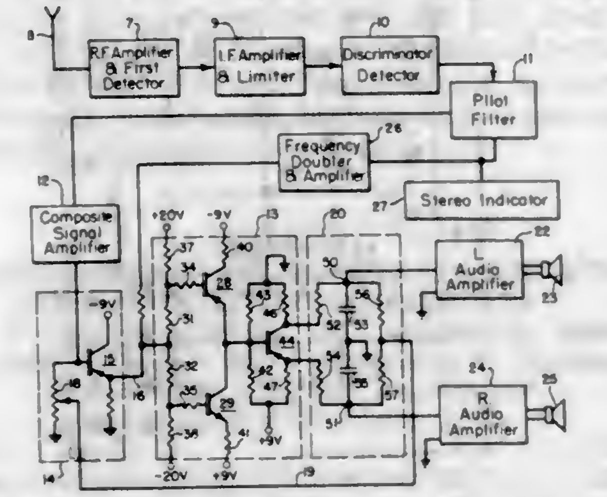


A timing system for synchronizing a plurality of time division multiplex communication switching centers by retuning the frequency of a local oscillation source associated with each switching center in accordance with timing difference signals obtained from the comparison of the propagation delay of signals received from an associated center with signals generated from the switching center being retuned in such a manner so as to reduce the timing difference between the received signals and the transmitted signals.

### 3,479,463
## WAVE SIGNAL RECEIVER

**Fleming Dias, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware**

**Filed Mar. 28, 1967, Ser. No. 626,482**
**Int. Cl. H03d** *9/00*
**U.S. Cl. 179—15** **11 Claims**

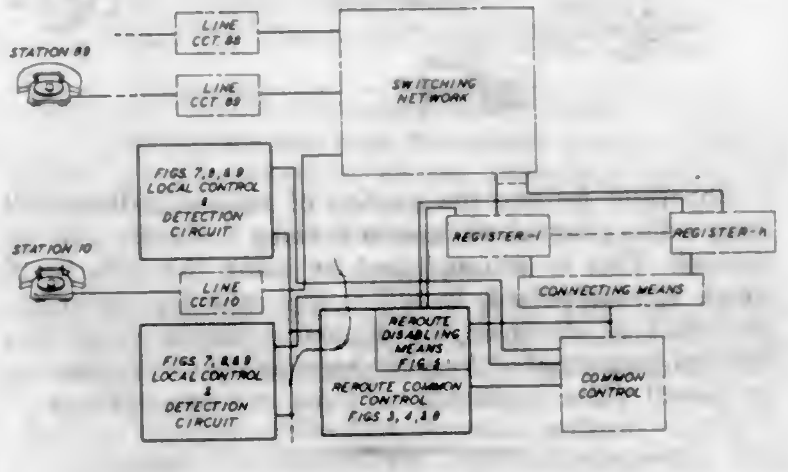


Receivers for NTSC compatible color television and F.C.C. approved stereo-FM transmissions having detectors for the subcarrier modulation components of these transmissions which detectors do not employ any filter networks but still effectively reject substantially all input information other than the subcarrier information to be detected. A pair of detector transistors share a common load impedance across which the detected information is developed in the same phase by both transistors while all other signal components applied to the transistors are developed in an opposite phase and cancel across this load. The detector transistors are preferably of complementary symmetry. Five embodiments are illustrated; others are discussed.

### 3,479,464
## CALL REROUTE DISABLING EQUIPMENT

**Joseph P. Sitarik, Allentown, Pa., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**

**Filed June 14, 1966, Ser. No. 557,545**
**Int. Cl. H04m** *3/00*
**U.S. Cl. 179—18** **9 Claims**

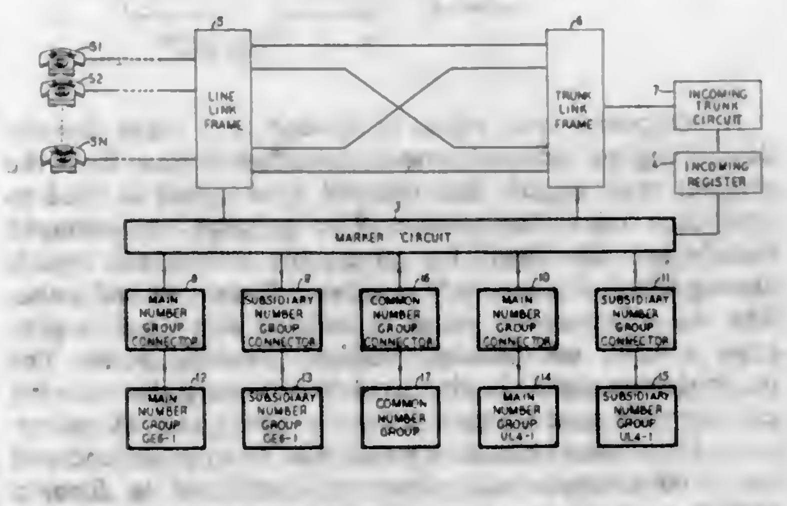


Equipment is disclosed which is controllable by a subscriber for causing incoming calls addressed to the subscriber number to be automatically rerouted to a preselected different station. Apparatus is also included which may be activated by a calling subscriber for disabling the equipment to temporarily cancel call reroute and to permit extension of a call to the called subscriber station instead of the different station.

### 3,479,465
## TELEPHONE LINE HUNTING SYSTEM

**Eugene D. Masucci, Columbus, Ohio, assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**

**Filed Dec. 28, 1965, Ser. No. 516,868**
**Int. Cl. H04m** *3/02;* **H04q** *3/00*
**U.S. Cl. 179—18** **13 Claims**



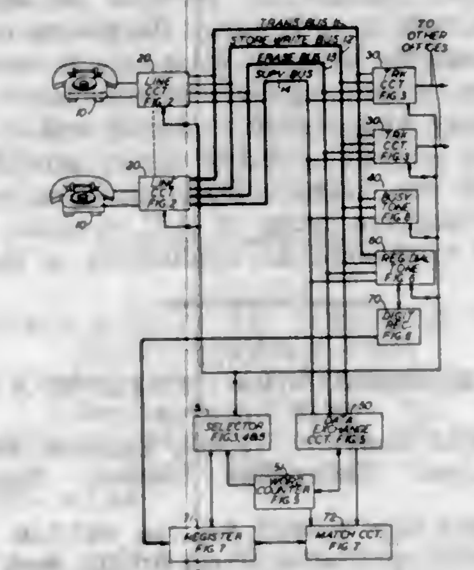
In a telephone switching system, the stations are divided into two groups. The first group consists of stations representing the usual cross-section of classes of service. The second group consists of one block of 100 stations in a PBX group. The directory numbers which are assigned to the individual PBX stations in the second group are also assigned to stations in the first group with the exception of the published PBX group directory number. The marker is arranged to respond to the registration of any called directory number by interrogating the main directory-number-to-equipment - address - translator (number group). If the called directory number is the published number of the PBX group, the main translator is arranged to so inform the marker which thereupon seizes a subsidiary number group and receives therefrom the equipment address corresponding to the directory number of the selected PBX station within the PBX block. Where the called directory number received by the marker does not have related stations served by the subsidiary translator, the main translator is arranged to return the equipment address translation in the usual manner.

Another aspect of the disclosure is the provision of a single additional number group which is supplementary to all main number groups in the central office and which serves to provide the translation information required for the second line of two-line PBX hunting groups.

### 3,479,466
## COMMUNICATION SYSTEM WITH CONTROL SIGNAL DELAY MEANS

**Henry Damiano, Keyport, and Louis C. Rainone, Matawan, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**

**Filed Feb. 3, 1966, Ser. No. 524,917**
**Int. Cl. H04m** *3/00;* **H04j** *3/16*
**U.S. Cl. 179—18** **35 Claims**



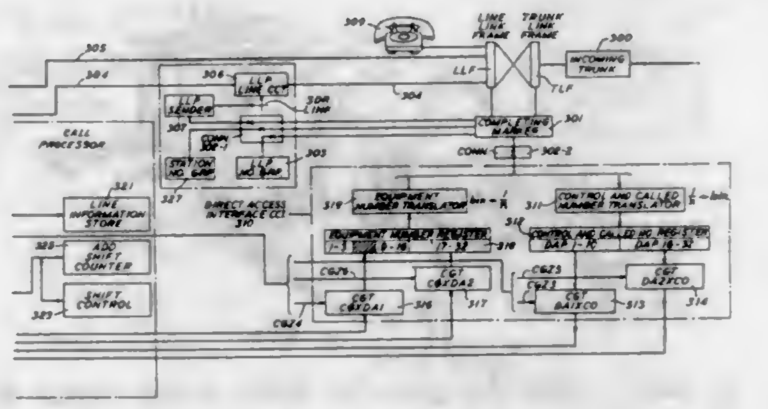
A communication system is disclosed in which the identities of lines establishing connections through a switching network are indicated by control signals transmitted through time multiplex channels in selected control paths common to all of the system lines. The line identities corresponding to the control signals are circulated in common control apparatus and utilized to interconnect lines engaged in communication through the switching network.

### 3,479,467
## PBX IN-DIALING

**Ralph W. Kirby, South Burlington, Vt., and Philip C. Richards, Geneva, Ill., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**

**Filed Oct. 21, 1966, Ser. No. 588,379**
**Int. Cl. H04m** *3/00*
**U.S. Cl. 179—18** **7 Claims**

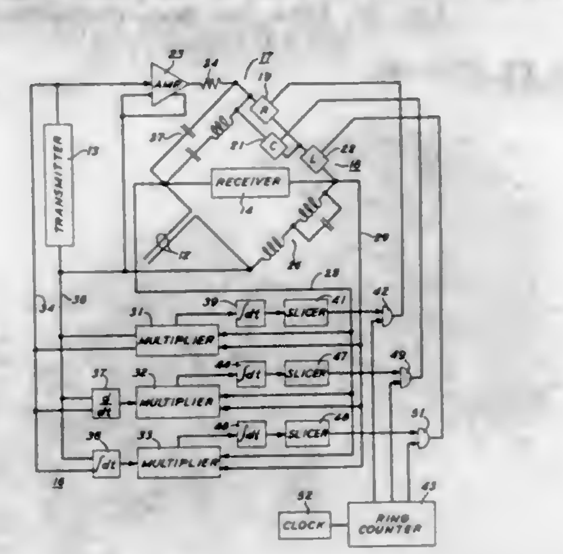
An arrangement is disclosed for providing direct in-dialing telephone service from a conventional, marker-controlled telephone office to the extensions of a PBX whose stations are served by a switch unit remote from the central office and controlled by a central control unit located in the central office. A circuit is provided at the central office which is called into operation on calls directed to such stations to associate the control unit instead of the conventional number group translator with central office marker to furnish the marker the identity of an idle trunk to the switch unit. Simultaneously, the control unit instructs the remote switch unit to establish a connection between the idle trunk and the station corresponding to the called number digits. In this manner the called number digits need not first be outpulsed to the switch unit by the central office and then returned to the control unit for translation.



### 3,479,468
## CIRCUIT FOR ENABLING SIMULTANEOUS TRANSMISSION IN BOTH DIRECTIONS ON A TWO-WIRE LINE

**Ernest R. Kretzmer, Holmdel, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**

**Filed Mar. 10, 1967, Ser. No. 622,195**
**Int. Cl. H04m** *1/19*
**U.S. Cl. 179—81** **8 Claims**

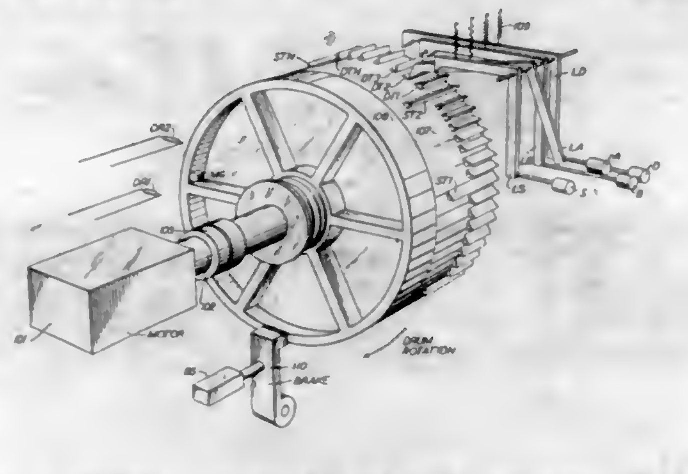


A Wheatstone bridge for connecting a data transmitter and a data receiver to the same end of a two-wire line with a minimum of crosstalk. The two-wire line is one arm of the bridge while the opposite one is an adjustable impedance. Signals across the transmitter and receiver are processed in a circuit including an integrator, a differentiator and three multipliers to provide adjusting signals for the adjustable impedance. The two other arms of the bridge are each formed by one of a pair of dual reactive impedances. The source impedance of devices across the diagonals of the bridge are arranged so that the impedance terminating the two-wire line is constant notwithstanding changes in the adjustable impedance.

### 3,479,469
### TELEPHONE REPERTORY DIALER

**James L. Fischer, Carmel, and Lawrence A. Strommen, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**

**Filed Mar. 28, 1966, Ser. No. 537,897**
**Int. Cl. H04m** *1/26*
**U.S. Cl. 179—90 2 Claims**



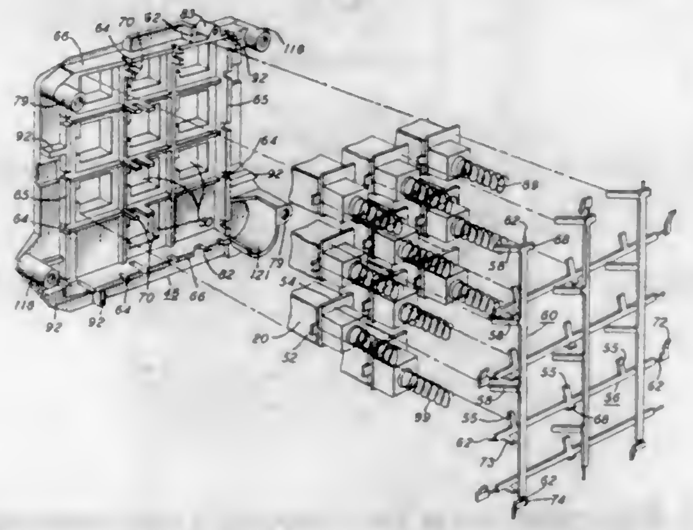
In a telephone repertory dialer a magnetic storage medium is driven in incremental steps during both the record and reproduce modes by a continuously operating motor coupled to the medium by a slip-clutch and spring arrangement. Mechanical wear and shock are reduced by selecting motor speed, storage medium mass and information packing density to achieve a mechanically resonant system.

### 3,479,470
### CODE TRANSMITTER

**James H. Ham, Jr., Indianapolis, Ind., assignor to Bell Telephone Laboratories, Inc., Murray Hill, Berkeley Heights, N.J., a corporation of New York**

**Application May 24, 1966, Ser. No. 552,457, which is a division of application Ser. No. 291,770, July 1, 1963, now Patent No. 3,274,345, dated Sept. 20, 1966. Divided and this application Nov. 1, 1966, Ser. No. 591,210**

**The portion of the term of the patent subsequent to Apr. 25, 1984, has been disclaimed**
**Int. Cl. H04m** *1/26*
**U.S. Cl. 179—90 4 Claims**

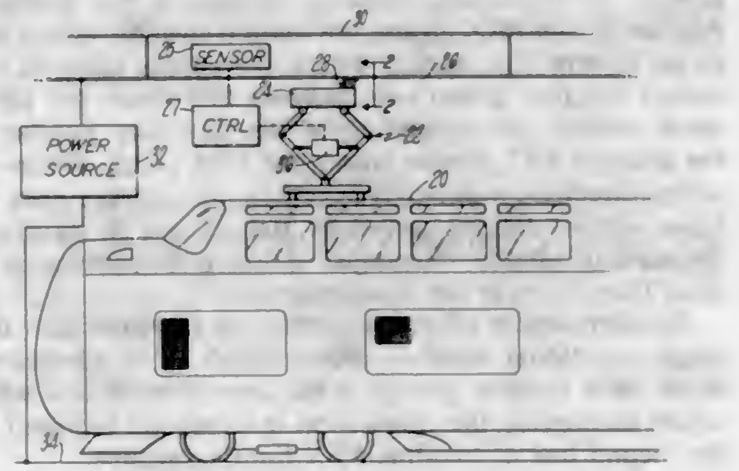


A pushbutton call transmitter including a multifrequency signal generator comprises a plurality of longitudinal and transverse rotatable shafts journaled in a cover member wherein an individual shaft extends along one side of each of an array of columns and rows of pushbuttons. Each shaft has a plurality of projecting levers whereby the depression of an individual pushbutton results in the rotation of a unique pair of shafts thereby closing two pairs of frequency selecting spring contacts and displacing a displaceable member to operate switching means for the frequency signal generator.

### 3,479,471
### ELECTRIC PLASMA MOVING CURRENT COLLECTOR

**Russell R. Smith and George Sonnemann, Avon, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**

**Filed Nov. 1, 1967, Ser. No. 679,685**
**Int. Cl. B60l** *5/00;* **B23k** *9/00*
**U.S. Cl. 191—45 8 Claims**

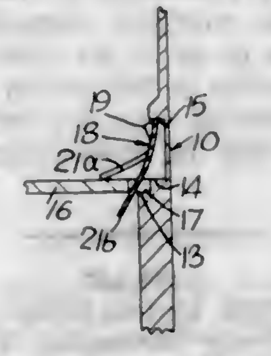


Physical contact between the catenary wire and the shoe for conducting electricity to a moving vehicle is replaced by a conducting plasma across an intentionally maintained gap. The vehicle-mounted electrode may comprise an oscillating or endlessly cycling belt or track or a rotary disc having an axis perpendicular to the catenary wire. To rapidly displace, wobble or oscillate the point on the wire at which the plasma impinges so as to prevent erosion while the vehicle is stationary, surface projections or raised patterns are provided on the vehicle-mounted electrode so as to attract the plasma to different points; alternatively, magnetic fields may be used to force the plasma to oscillate rapidly between different positions on the catenary wire. A high frequency coil in combination with low ionization electrodes may provide a starting avalanche for initiating D.C. operation, as well as reinitiating successive cycles of A.C. operaton. Isotopes may be used to enhance the conductivity of the plasma.

### 3,479,472
### IGNITION DISTRIBUTORS UTILIZING A SPRING CLIP MEANS

**William Harold Cooksey, Walsall, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England**

**Filed Sept. 8, 1967, Ser. No. 667,326**
**Claims priority, application Great Britain, Sept. 9, 1966, 40,306/66**
**Int. Cl. H01h** *9/02*
**U.S. Cl. 200—19 4 Claims**



An ignition distributor wherein the casing of the distributor is formed internally with a circumferential shoulder with which the plate which carries the contact breaker assembly of the distributor is engaged, said plate being maintained in engagement with said shoulder by spring clips acting between the casing and the plate.

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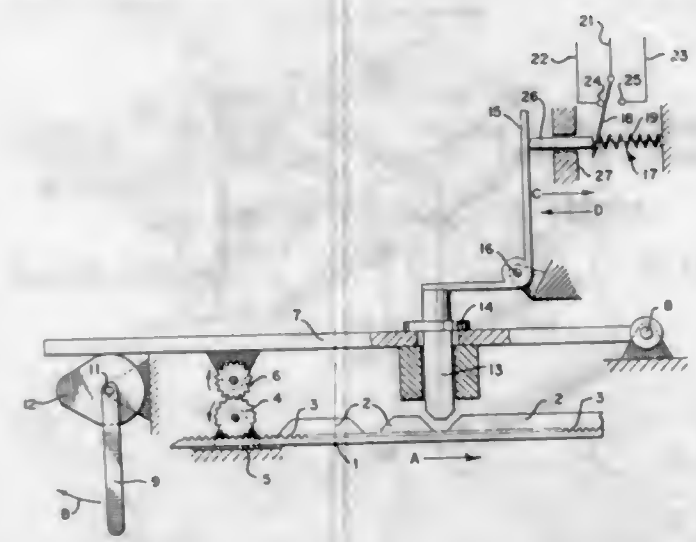
### 3,479,473
### MECHANICAL SCANNING DEVICE HAVING DISENGAGEABLE SCANNING AND DRIVING MEANS FOR PROGRAM CONTROL CARDS

**Otto Ramstetter, 22 Prinzeneiche, 813 Starnberg, Germany**

**Filed Mar. 1, 1967, Ser. No. 619,842**
**Claims priority, application Austria, May 9, 1966, A 4,347/66**
**Int. Cl. H01h** *43/08*
**U.S. Cl. 200—46 8 Claims**

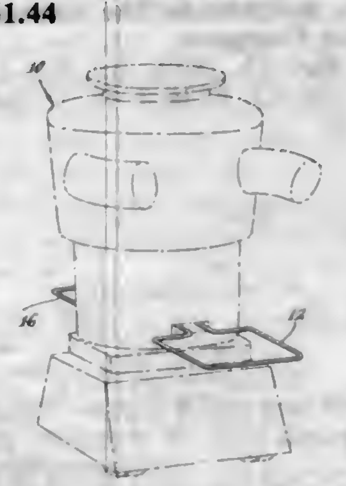


A mechanical scanner for scanning information-bearing protuberances of a program control card is mounted on a movably mounted support member in operative proximity with the program control card for scanning engagement with the protuberances of the card. A driving device is mounted on the support member for coupling engagement with the drive teeth on the card for moving the card relative to the mechanical scanner. The support member is pivotally mounted for movement relative to the card whereby movement of the support member in a predetermined direction simultaneously disengages the mechanical scanner from the card and the driving device from the teeth on the card.

### 3,479,474
### TOY FORCE-BALANCED PUSH-ROD TOGGLE SWITCH MECHANISM

**Witold Pajak, Lyndhurst, N.J., assignor to Remco Industries, Inc., Harrison, N.J.**

**Filed July 30, 1968, Ser. No. 748,758**
**Int. Cl. H01h** *3/16*
**U.S. Cl. 200—61.44 5 Claims**

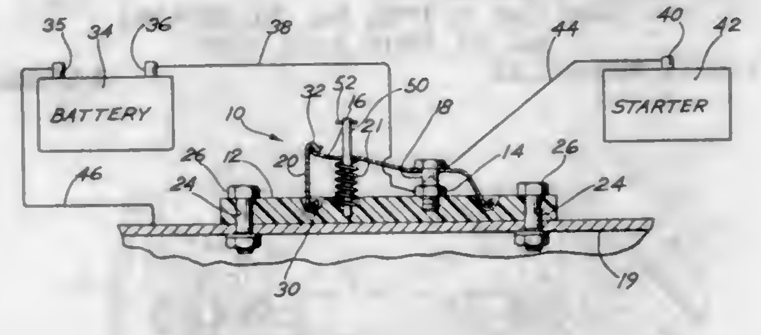


The present invention provides a push-rod actuated switch mechanism for controlling the direction of movement of a mobile toy operated by an electrically powered motor. When the push-rod is pushed in one direction, the motor is caused to rotate in one direction, whereby the toy moves in a corresponding direction. Conversely, when the push-rod is pushed in an opposite direction, the motor is caused to reverse its rotation, and thus, the toy moves in an opposite direction.

### 3,479,475
### SAFETY SWITCH

**Charles D. Buck, 8113 N. Manhattan Ave., Tampa, Fla. 33614**

**Filed Mar. 16, 1967, Ser. No. 623,753**
**Int. Cl. H01h** *35/02*
**U.S. Cl. 200—61.45 7 Claims**

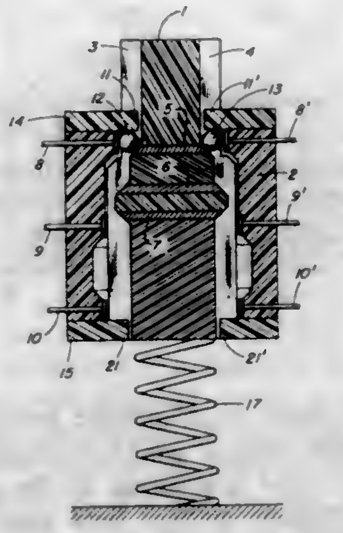


A safety switch which includes, generally, a base, a contact affixed to the base, a contact bar, a contact affixed to the contact bar, a contact bar lock, and biasing means. The contact bar is affixed at one of its ends to the base and is normally bent or tensed to releasably lock its other end with the contact bar lock. In this position, the two contacts are closed and effective to maintain the ignition system operative. If the vehicle in which the safety switch is installed is struck with sufficient force, such as would generally occur in an accident, the contact bar is released from the contact bar lock and opens the two contacts, partly as a result of its own stressed configuration and partly by the action of the biasing means. When the two contacts are opened, the ignition system is rendered inoperative.

### 3,479,476
### ACCELERATION RESPONSIVE ELECTRICAL SWITCH

**Frank H. Swaim, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy**

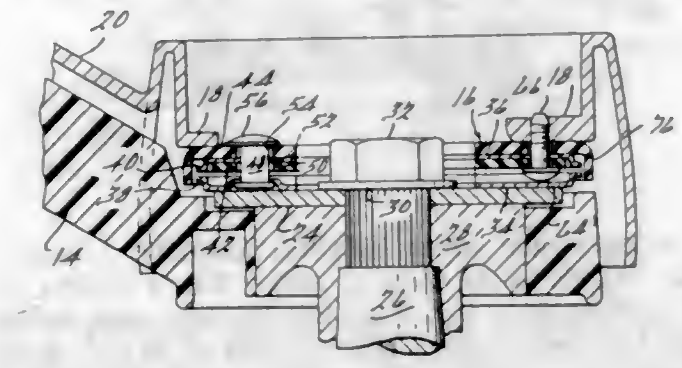
**Filed Sept. 7, 1967, Ser. No. 666,562**
**Int. Cl. H01h** *35/14*
**U.S. Cl. 200—61.45 10 Claims**



An acceleration actuated inertia switch having a spring biased acceleration sensing member slideably mounted in a switch body. Diametrically opposed grooves in the sensing member hold a pair of metal balls. Acceleration of the switch causes the sensing member to slide axially in the switch body and causes the metal balls to make electrical contact between two opposed sets of radially aligned, axially spaced contacts in the switch body wall and a set of axially spaced conductors through the sensing member.

### 3,479,477
### HORN ACTUATING SWITCH

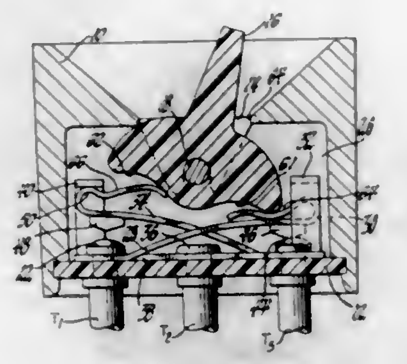
**Robert E. Caldwell and Louis G. Cass, Detroit, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware**
**Filed Dec. 5, 1966, Ser. No. 599,303**
**Int. Cl. H01h** *9/00, 3/00*
**U.S. Cl. 200—61.55** **4 Claims**



A switch contact mechanism having two contact plates normally separated by resilient means and provided with spacing members for maintaining the contact plates in operable relationship. The spacing members and contact plates are a unitary assembly and the spacing members define and limit the gap between the contact plates with great dimensional accuracy. Being a unitary assembly, the mechanism can be incorporated into a steering wheel assembly without altering the predetermined spacing between the contact plates.

### 3,479,478
### CANTILEVERED CONTACT BLADE AND RETURN SPRING WITH REVERSELY BENT PORTION

**Samuel B. Robbins, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Aug. 9, 1967, Ser. No. 659,355**
**Int. Cl. H01h** *3/02*
**U.S. Cl. 200—153** **3 Claims**



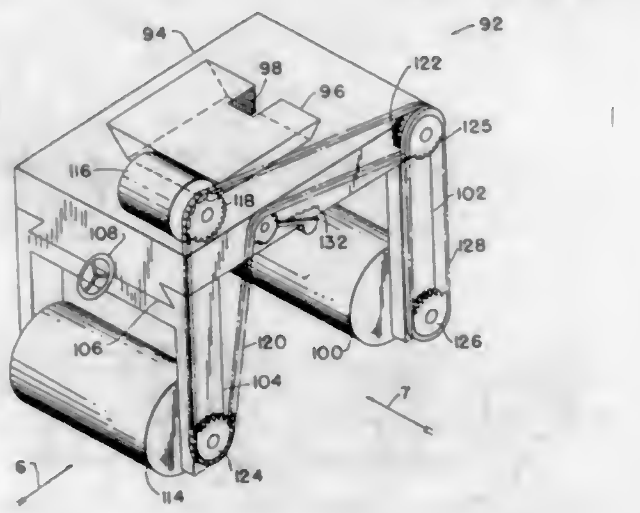
This closure relates to an electric switch of the double pole, double throw variety which is adapted for use in a circuit bringing about a reversal of the direction of rotation of a permanent magnet field motor. This double pole, double throw switch has a neutral position and utilizes a pair of leaf spring conductors for centering the actuator in a neutral position, said leaf springs completing a circuit to the motor armature at both extremes of deflection.

### ERRATUM

For Class 219—10.55 see:
Patent No. 3,478,900

### 3,479,479
### QUICK-CHANGE TOOL FOR SPARK CUTTING APPARATUS

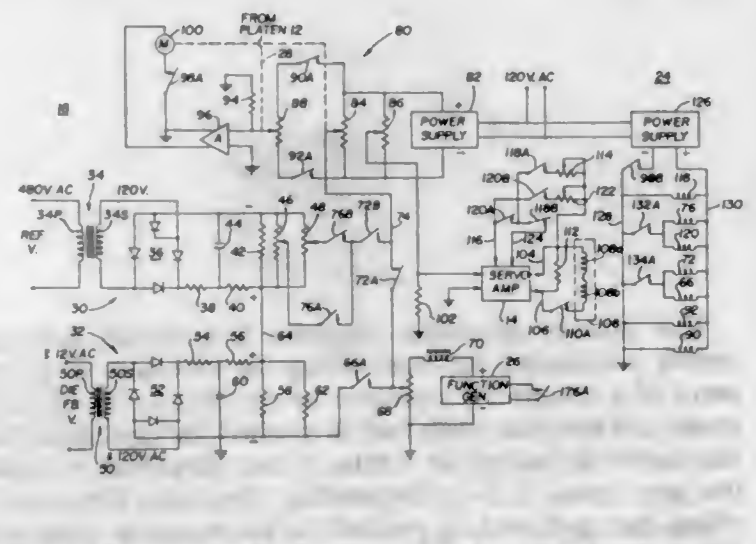
**Thomas J. O'Connor, 100 Morgan Road, Ann Arbor, Mich. 48104**
**Continuation-in-part of application Ser. No. 504,971, Oct. 24, 1965. This application June 20, 1966, Ser. No. 558,695**
**Int. Cl. B23k** *9/16;* **B23p** *1/00;* **B24b** *7/00*
**U.S. Cl. 219—69** **4 Claims**



A plurality of separate electrode carrying tools adapted to be quickly and accurately secured by dovetail connection to the chuck are disclosed, including means for moving at least one of two parallel electrodes toward each other and for simultaneously rotating the electrodes, moving wire means for cutting thin slots having a predetermined contour, cam means for rotating an axially moving electrode, means for moving electrodes toward opposite sides of a workpiece simultaneously on movement of the ram toward the workpiece, means for providing rotation of the electrodes as they are simultaneously moved toward opposite sides of a workpiece on movement of the ram toward the workpiece, means for machining a large arc with a rotating electrode having a smaller arc, means for universally positioning a plurality of separate electrodes, a plurality of thread or spline cutting structures, and tracing structure.

### 3,479,480
### FLASH WELDER

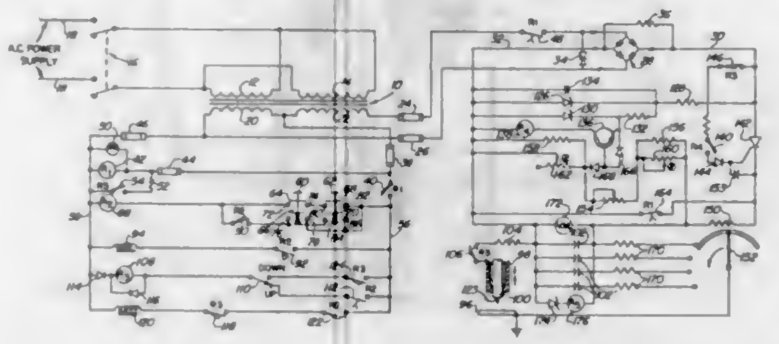
**Kenneth L. Erwin, Reno, Nev., and Ross W. Lodwick, Poland, Ohio, assignors to The American Welding and Manufacturing Company**
**Filed Oct. 23, 1967, Ser. No. 677,174**
**Int. Cl. B23k** *9/00, 11/04*
**U.S. Cl. 219—97** **48 Claims**



Rate of movement of a movable workpiece toward a fixed workpiece during a pre-flash and/or a pre-heat portion of a flash welding cycle is controlled by feedback signals proportional to voltage drop between the two workpieces. During a flash portion of the cycle, motion of the movable workpiece is controlled by a function generator. Duration of the pre-flash portion of the cycle is controlled as a function of distance moved by the movable workpiece; duration of the pre-heat portion is controlled as a function of time; duration of the flash portion of the cycle is controlled as a function of distance moved by the movable workpiece.

### 3,479,481
### WELDING CIRCUIT

**Johan L. Van Gulik, Lake Oswego, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon**
**Filed May 20, 1965, Ser. No. 457,346**
**Int. Cl. B23k** *9/20, 9/22*
**U.S. Cl. 219—98** **14 Claims**

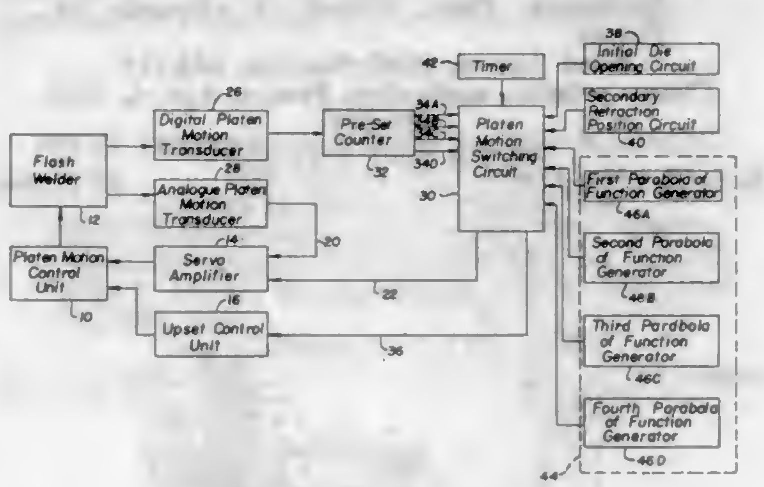


A welding circuit is described for a percussive stud welder which may be of the gravity drop type. The welding circuit includes a charging circuit for charging the welding capacitor to a predetermined voltage, a control circuit for moving the stud holder to cause a welding stud to strike a workpiece and be welded thereto after connecting such holder to the welding capacitor and clamping the workpiece, and an overvoltage protection circuit for disconnecting the welding circuit from its power supply and preventing movement of the stud holder toward the workpiece when the welding capacitor voltage exceeds a maximum value. The charging circuit disconnects the welding capacitor from its source of charging current with a silicon controlled rectifier operated by a relay which is energized by a comparator transistor connected to a reference voltage and to the capacitor voltage through a voltage divider, by switching such rectifier off when the voltage on such capacitor reaches the predetermined voltage. The overvoltage protection circuit includes a Zener diode connected in series with a relay winding across the welding capacitor to actuate the relay when the capacitor voltage exceeds the reverse breakdown voltage of the diode, thereby disconnecting the welding circuit from its power supply.

### 3,479,482
### FLASH WELDER

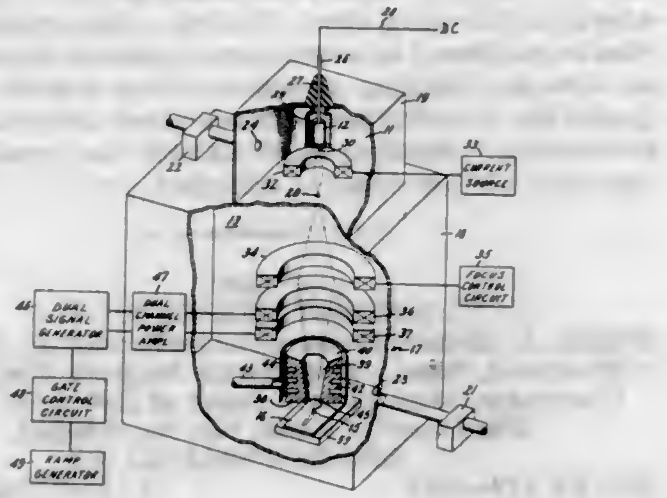
**Kenneth L. Erwin, Newton Falls, and Ross W. Lodwick, Poland, Ohio, assignors to The American Welding & Manufacturing Company**
**Filed June 8, 1966, Ser. No. 556,090**
**Int. Cl. B23k** *11/04*
**U.S. Cl. 219—100** **8 Claims**

Digital signals are provided that are related to movement of a movable platen holding a workpiece. The digital signals direct production of analogue control signals that control movement of the platen. During a flashing operation, a plurality of analogue signals are consecutively utilized, each analogue signal having an exponential waveshape. The times at which the various exponential analogue signals assume and relinquish platen control are determined by counting the digital signals produced as the platen moves and changing from analogue signal to analogue signal at predetermined counts.


Timer
42
38
Initial Die Opening Circuit
Secondary Retraction Position Circuit
40
26
Digital Platen Motion Transducer
Pre-Set Counter
32
34A
34D
Platen Motion Switching Circuit
30
Flash Welder
12
28
Analogue Platen Motion Transducer
First Parabola of Function Generator
46A
20
14
Platen Motion Control Unit
10
Servo Amplifier
22
Second Parabola of Function Generator
46B
16
Upset Control Unit
36
Third Parabola of Function Generator
46C
Fourth Parabola of Function Generator
46D
44

### 3,479,483
### ELECTRON BEAM WELDER

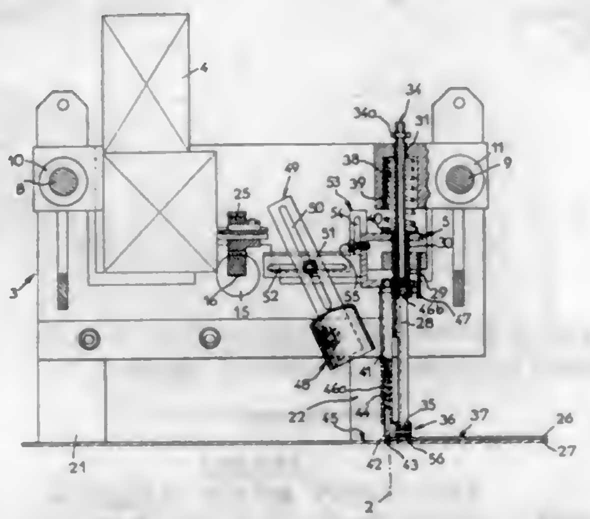
**Kenneth L. Boring, Scotia, N.Y., and Robert D. Downing, Mentor, Ohio, assignors to General Electric Company, a corporation of New York**
**Filed July 31, 1968, Ser. No. 749,071**
**Int. Cl. B23k** *9/00*
**U.S. Cl. 219—121** **10 Claims**



Automatic control of the welding intensity of an electron beam welder is achieved by periodically deflecting the beam from the weld to a water cooled copper absorbing surface utilizing simultaneous phase displaced signals applied to *x* and *y* beam deflection coils. The application period of the welding beam to the workpiece preferably is controlled by a ramp signal generator to permit an initial gradual increase in the welding period per unit length of the workpiece fed beneath the beam thereby inhibiting workpiece damage upon a startup with the weld interval per unit length of workpiece feed becoming constant after an initial span approximately equal to the work piece thickness. Preferably the welding beam is gradually removed from the workpiece at a rate symmetrical with the initial application signal allowing highly uniform circular welds to be fashioned by an overlapping of the increasing and decreasing weld interval upon a fixed workpiece area. Automatic control of welding power can be achieved by sensing either cathode voltage or beam intensity and subsequently varying the welding period of the beam per unit length of workpiece feed thereby assuring a uniform weld notwithstanding cathode power variations.

### 3,479,484
### METHOD AND APPARATUS FOR GUIDING A TORCH IN LAP WELDING

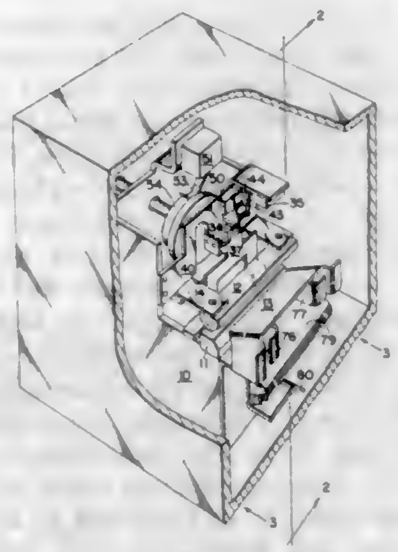
**Jean Alleaume, Saint-Cloud, France, assignor to Technigaz, Paris, France, a company of France**
**Filed Apr. 4, 1967, Ser. No. 628,318**
**Claims priority, application France, Apr. 6, 1966, 56,676**
**Int. Cl. B23k** *9/12, 9/00*
**U.S. Cl. 219—125** **17 Claims**



Method and apparatus for joining by automatic welding a pair of respectively covering and covered metal-sheets. The sheets are first prepared so as to provide a linear lap joint by means of a tack-welding device having a pressing-down member which enables engagement with the end edge of the covering sheet. Thereafter the welding of the joint is performed in a continuous operation by means of an automatic welding apparatus having a welding torch guided for direction and distance along the joint by the oscillations imparted to feeler members in permanent engagement with the edges of said sheet.

### 3,479,485
### HEAT SEALER

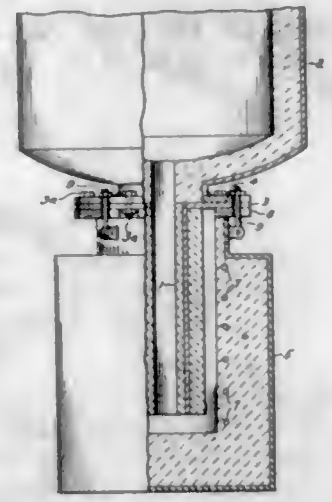
**William L. Hanna, Foxboro, and Christian C. Petersen, Westwood, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware**
**Filed Oct. 12, 1966, Ser. No. 586,271**
**Int. Cl. H05b** *3/02*
**U.S. Cl. 219—243** **10 Claims**



A heat sealing apparatus having a base, a sealer block and an opposed heater arm mounted on the base. The heater arm is provided with a resistance heater element. The heater arm is movable relative to the sealer block by a motor driven cam. A control circuit is provided for the apparatus which includes a motor for driving the cam and a material-actuated start switch for starting the motor. The motor is provided with a dynamic breaking circuit to terminate rotation of the cam at the completion of one cycle.

### 3,479,486
### PREHEATING AND SEALING DEVICE FOR A CONDUIT CONNECTED TO THE VACUUM CHAMBER OF A METAL DEGASSING APPARATUS

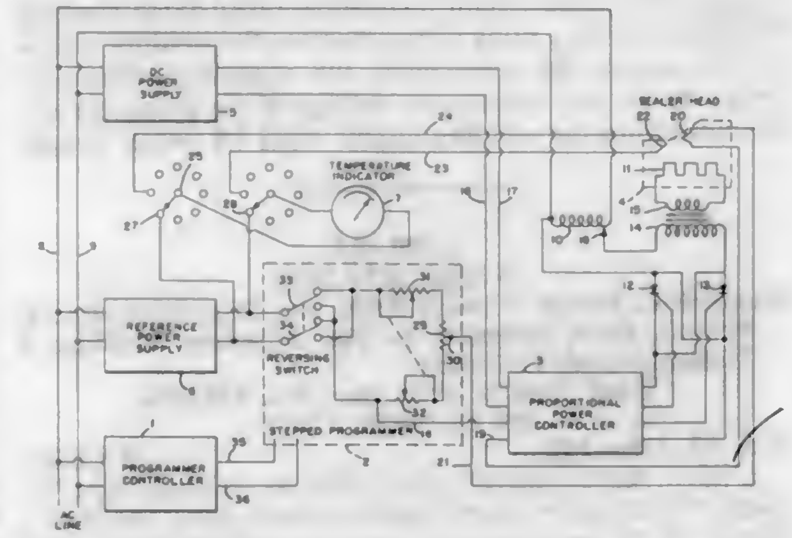
**Joseph V. Marsilio, Allentown, and Richard F. Reihman, Quakertown, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware**
**Filed Nov. 14, 1967, Ser. No. 684,902**
**Int. Cl. F27d** *11/00;* **C21c** *5/42, 7/00*
**U.S. Cl. 219—385** **2 Claims**



A preheating and sealing device comprising a shell having refractory insulation containing heating elements secured to its interior, and which encloses in a substantially airtight manner a conduit connected to the vacuum chamber of a metal degassing apparatus, thereby heating the conduit prior to a degassing operation and sealing the conduit between degassing operations.

### 3,479,487
### TEMPERATURE CONTROLLER EMPLOYING CLOSED LOOP FEEDBACK AND INCREMENTAL PROGRAMMING

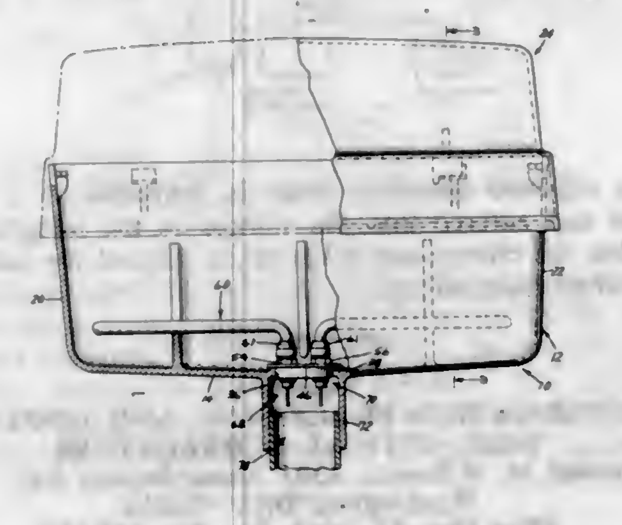
**Milton Stoll, 14—19 212th St., Bayside, N.Y. 11360**
**Continuation-in-part of application Ser. No. 558,142, June 16, 1966. This application May 4, 1967, Ser. No. 642,627**
**Int. Cl. H05b** *1/02*
**U.S. Cl. 219—494** **20 Claims**



A programmed controller means employing a closed feedback loop and an incremental programmer particularly applied to a heat sealing machine in which packages to be sealed have a complex heat profile. The temperature of the heating means, at any period in time, is sensed by a temperature responsive means and the information is fed back and compared with the programmed demand signals. The heater is than adjusted by means of the device acting to reduce the error between the demand temperature and the sensed temperature.

### 3,479,488
### COOKING APPARATUS

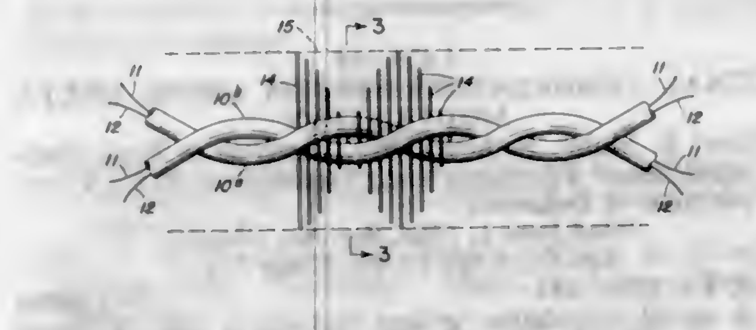
**Robert E. Klemm, 2504 Silverleaf Drive, Fort Wayne, Ind. 46806**
**Filed July 6, 1967, Ser. No. 651,543**
**Int. Cl. H05b** *3/06;* **F27d** *11/00*
**U.S. Cl. 219—536** **3 Claims**



A cooking apparatus comprising a pan-shaped base having an opening in its bottom, a plug received in the opening and held above the top surface of the bottom, the plug being provided with a pair of threaded openings, and a hollow screw received in each of the threaded openings. An electric heating element is carried in the base, one end of the element being received in one hollow screw and the other end of the element being received in the other screw. Each screw is arranged as a part of a compressive fitting so that, when it is threaded its respective threaded opening and the fitting is properly assembled, a weather-tight seal is provided between the screw and the end of the heating element received therein. In addition, the plug is welded or otherwise secured to the base to provide a weather-tight seal between the plug and the base.

### 3,479,489
### HEAT EXCHANGER CONSTRUCTION

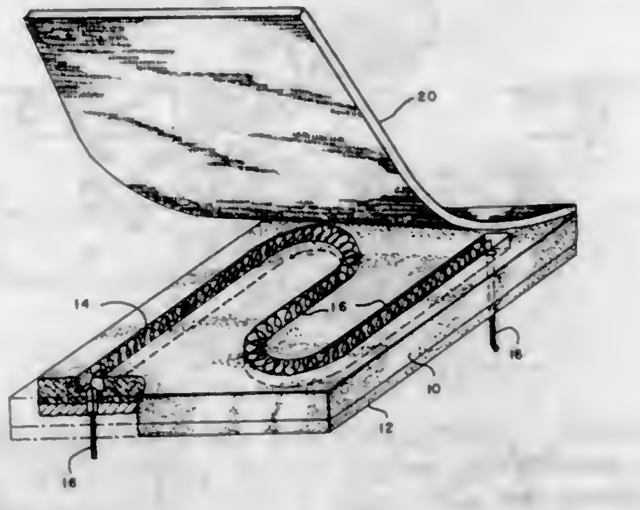
**Peter N. Renzi, Basking Ridge, N.J., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware**
**Filed June 28, 1967, Ser. No. 649,505**
**Int. Cl. H05b** *3/06, 3/50;* **H01c** *1/08*
**U.S. Cl. 219—540** **15 Claims**



This invention employs, in one of its forms, a heating device having a spirally twisted pair of conductors each constructed of resistance heating wire for electrical applications or of tubes for conducting fluids for fluid thermal applications; and, interleaved between the spiral twists, there are a multitude of radially extending heat conductors which are in thermal contact with the twisted pairs; and the radial conductors serve to dissipate heat generated or transmitted by the twisted conductors.

### 3,479,490
### HIGH TEMPERATURE INFRARED RADIANT HEATING DEVICE

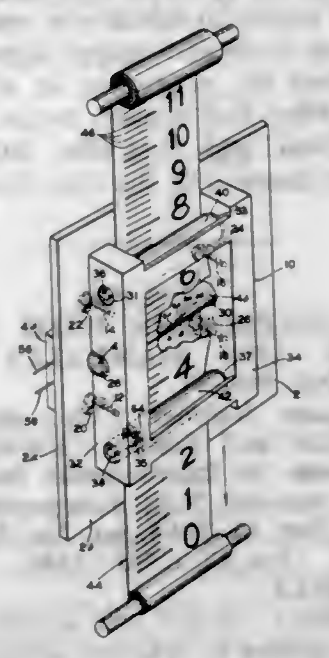
**Norman H. Stark, Cedarburg, Wis.**
**(8810 W. Bornuwell Road, Mequon, Wis. 53092)**
**Continuation-in-part of application Ser. No. 562,352, July 1, 1966. This application Feb. 6, 1969, Ser. No. 801, 236**
**Int. Cl. H05b** *3/44, 3/50, 3/10*
**U.S. Cl. 219—544** **14 Claims**



A heating device including a dielectric high temperature insulating board formed from an amphibole asbestos and an inorganic silicate binder, an infrared radiating heating element embedded within the board and electric terminals connected to the heating element and extending through the board.

### 3,479,491
### ELECTROSTATIC READER HEAD

**Alfred L. Levine, Waldwick, N.J., and Peter P. M. Yee, Woodside, N.Y., assignors to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware**
**Filed Nov. 18, 1964, Ser. No. 412,102**
**Int. Cl. G06k** *7/00;* **H04l** *15/12*
**U.S. Cl. 235—61.11** **4 Claims**



A reader head for use with a voltage sensing device and including a base having a plurality of capacitor elements arranged in cooperative relation with electrically conductive metallic channels on a longitudinally moving tape. Means are provided for guiding the tape to move over the base so that the capacitance of the capacitor elements is varied whereby a voltage pattern is provided which is sensed by the sensing device.

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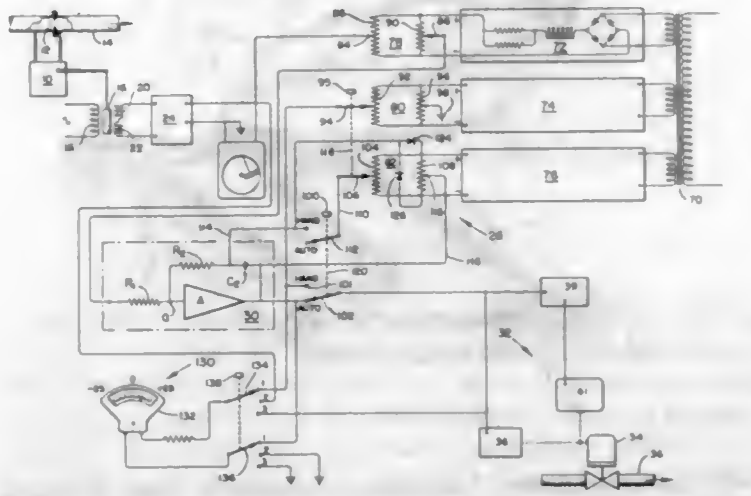
### 3,479,492
### CONTROL SYSTEM

**Anthony J. Hornfeck, South Euclid, and Harold H. Koppel and John R. Louis, Cleveland, Ohio, assignors to Bailey Meter Company, a corporation of Delaware**
**Original application Apr. 8, 1959, Ser. No. 805,019. Divided and this application June 6, 1963, Ser. No. 286,896**
**Int. Cl. G06g** *7/48*
**U.S. Cl. 235—151.1** **9 Claims**



1. In an electric control system, the combination comprising, means responsive to a variable for establishing a first electric signal proportional to the deviation of the variable from a predetermined value, an electric controller responsive to said first signal having a feedback circuit including an impedance producing a controller output signal varying in accordance with the time integral of said first signal, electrically operative control means responsive to said output signal for varying the magnitude of the variable, means for establishing a second electric signal, transfer means having a first position for applying said controller output signal to said control means and a second position for applying said second electric signal to said control means to selectively operate said control means from said controller output signal or said second signal and means for producing an electrical effect in said controller when said transfer means is in said second position to inhibit said controller output signal from varying in accordance with the time integral of said first signal.

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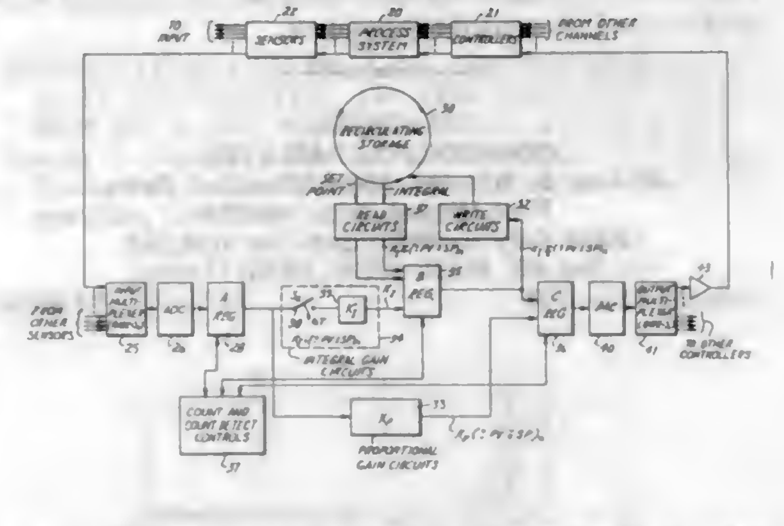
### 3,479,493
### DIGITAL CONTROLLER WITH AUTOMATIC BALANCE AND MANUALLY ADJUSTED OPERATING POINT

**James O. Jacques, Boulder, Colo., and David Montgomery, Felton, and Paul A. Kuckein, Burlingame, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Jan. 17, 1966, Ser. No. 521,013**
**Int. Cl. G06f** *15/46*
**U.S. Cl. 235—151.1** **6 Claims**

Transfer between manual and automatic modes in a process control system is achieved without disturbing the process by substituting a manually chosen operating point for a stored integral term in a digital system. When operating in the manual mode, the manually adjusted operating point provides direct control. When operating in the automatic mode, the system utilizes a recirculating loop containing a storage for maintenance of an integral term in generating the control signal. To effect bumpless transfer between the manual and automatic modes, the manually adjusted operating point is converted to a digital value and entered into the storage as the integral term so that the changeover takes place without the introduction of transient effects.



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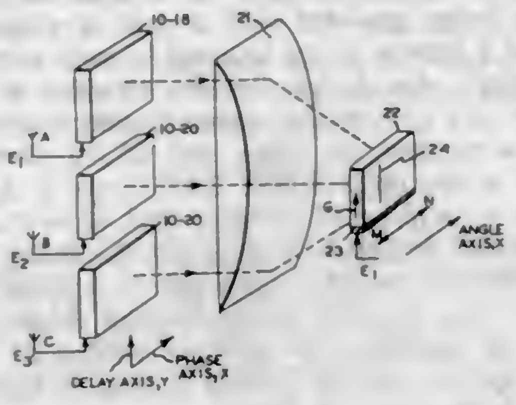
### 3,479,494
### INFORMATION PROCESSING AND DISPLAY WITH OPTICAL CORRELATION

**Raymond M. Wilmotte, 4301 Massachusetts Ave. NW., Washington, D.C. 20016**
**Filed Dec. 12, 1963, Ser. No. 330,158**
**Int. Cl. G06f** *15/34;* **G06g** *7/19*
**U.S. Cl. 235—181** **12 Claims**



An optical correlation technique is disclosed. A plurality of signals are each converted into separate modulated light patterns. These optical patterns are then superimposed and optically correlated with a signal. The correlation output denotes areas of correlation between all the signals and affords a spatial indication of a parameter of the signals. The technique may be employed, for example, to derive bearing information from an antenna array in a radar system.

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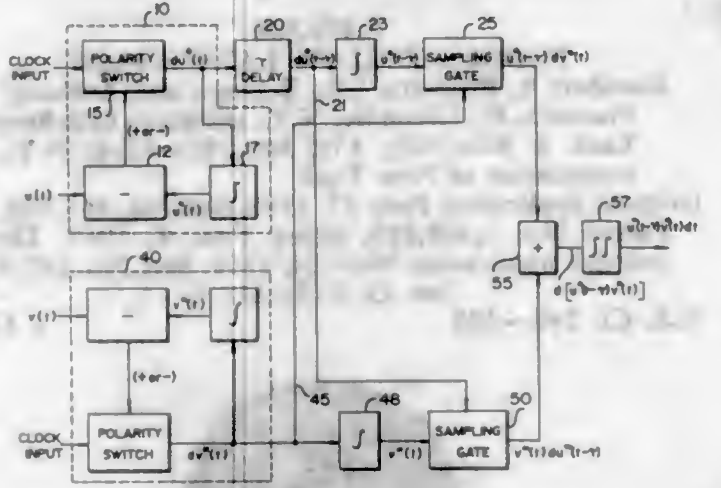
### 3,479,495
### SIGNAL CORRELATION SYSTEM USING DELTA MODULATION

**Robert E. Malm, Bethesda, Md., assignor to Page Communications Engineers, Inc., Washington, D.C., a corporation of Delaware**
**Filed June 1, 1966, Ser. No. 554,561**
**Int. Cl. G06f** *15/34;* **G06g** *7/19*
**U.S. Cl. 235—181** **6 Claims**

A signal correlation system includes a pair of signal processing channels, each of which is responsive to a respective incoming time-varying signal for encoding that signal in a pulse format in which successive pulse polarities are representative of the variation of the respective

input signal amplitude with time, relative to a reference level. The reference level is not constant, being obtained from a summing unit within the encoder responsive to the pulse format. In one channel the pulse format constituting the encoder output is delayed and then intergrated, while in the other channel it is simply integrated. The



integration waveform of each channel is then multiplied by the pulse format entering the integrator of the other channel (delayed in oen channel) and the resulting two product waveforms are added together. The summed product waveforms are subjected to double integration to obtain the correlation function of the input signals.

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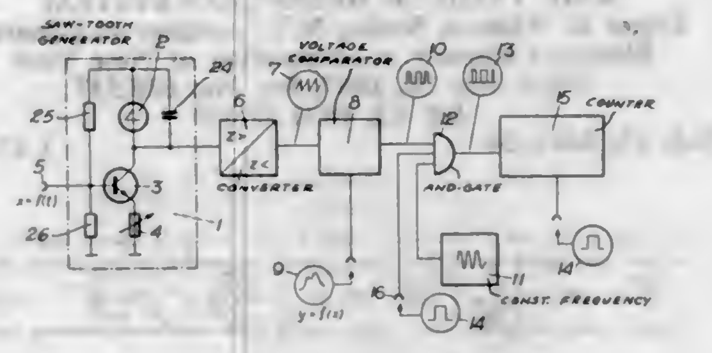
### 3,479,496
### SWITCHING ARRANGEMENT FOR THE INTEGRATION OF INDIVIDUAL HIGH-SPEED OPERATIONS

**Siegfried Buesch and Reimar Germann, Graz, Austria, assignors to Hans List, Graz, Austria**
**Filed Nov. 10, 1965, Ser. No. 507,193**
**Claims priority, application Austria, Nov. 13, 1964, A 9,624/64**
**Int. Cl. G06g** *7/18;* **G06f** *7/38*
**U.S. Cl. 235—183** **4 Claims**



A switching device for the integration of single high-speed operations depending on time and having a saw-tooth generator supplying a voltage of variable frequency and having an input for receiving a time function. The device includes a voltage comparator and a recording device as a counter.

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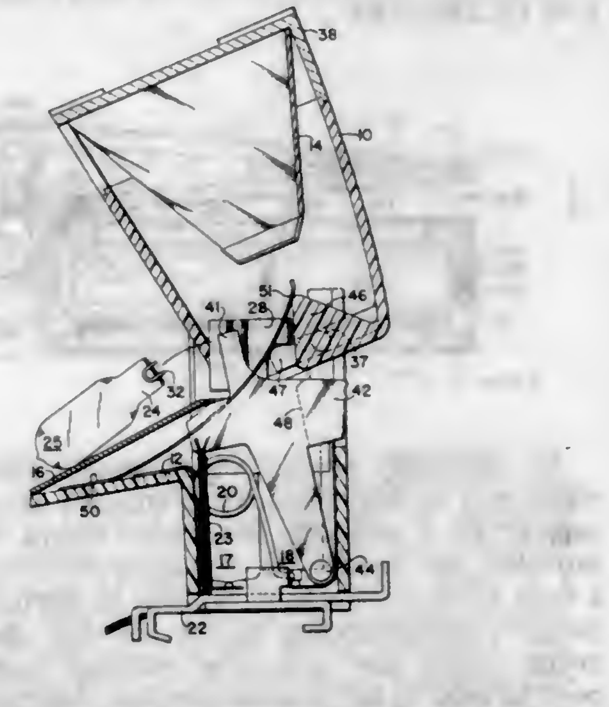
### 3,479,497
### PHOTOGRAPHIC FLASHGUN WITH DIVIDED REFLECTOR AND FLASHBULB EJECTING MEANS

**Otto E. Wolff, Lexington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware**
**Filed Nov. 30, 1966, Ser. No. 598,092**
**Int. Cl. G03b** *15/035*
**U.S. Cl. 240—1.3** **8 Claims**

A photoflash unit for use with a camera having a separable casing a socket for receiving a photoflash bulb, a reflector associated with the socket having separate portions which are movable with respect to one another, and a device for simultaneously ejecting a used flashbulb from the socket and for opening the casing of the unit to provide access to the socket so that a fresh flashbulb may be inserted. The reflector portions are movable from a



first position in which they cooperate to form a substantially concave reflecting surface to a second position in which the portions are spaced apart from one another to thereby provide increased access to the bulb socket. One of the reflector portions is mounted in the upper half of the casing and is moved to the second position in response to operation of the ejecting device.

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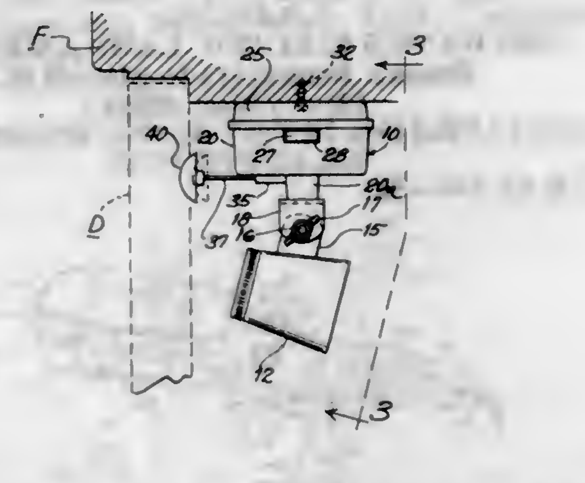
### 3,479,498
### AUTOMATIC CLOSET LIGHT

**Albon J. Lasseigne, Elgin, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York**
**Filed Mar. 16, 1967, Ser. No. 623,704**
**Int. Cl. F21v** *33/00;* **F21s** *1/14*
**U.S. Cl. 240—2** **7 Claims**

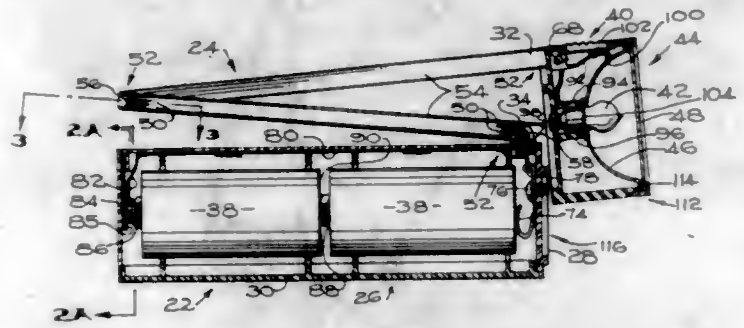


An automatic closet light as a compact unit adapted to be mounted on a door frmae for actuation by opening the door, the latter releasing a spring-loaded switch control member which moves to close an electrical illumination circuit. Reversely, on closing, the door acts on the switch control member to open the circuit. The unit has a small compact housing containing switch and wiring and one or more subhousings, each containing a lamp and reflector unit, swivelly mounted on the housing to permit manually directing the light where desired in the inclosure. The housing is preferably of molded non-conductive material.

### 3,479,499

## POSITIONALLY ADJUSTABLE TROUBLE LAMP MEANS

**Frank L. Dahl, 5248 W. 119th Place,**
**Inglewood, Calif. 90304**
**Continuation-in-part of applications Ser. No. 565,823, July 18, 1966, and Ser. No. 486,048, Sept. 9, 1965. This application June 28, 1968, Ser. No. 740,998**
**Int. Cl. F21l** *7/00, 9/00, 11/00*
**U.S. Cl. 240—10.6 14 Claims**

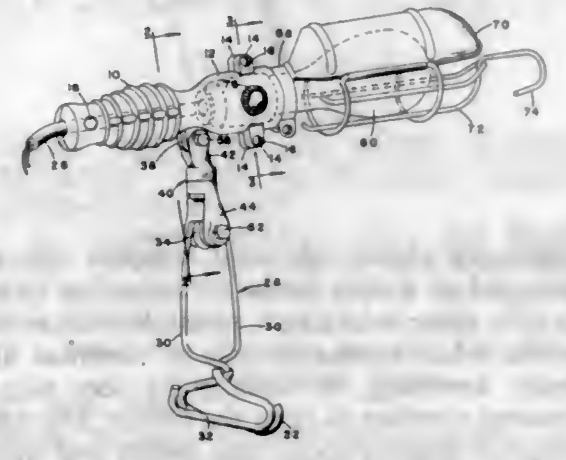


An electrically energized lamp structure having a base which may be held manually or attached or mounted to a support by a magnetic attachment means. The base is provided with means for delivering electrical energy to a head which is detachably secured to the base by an adjustable interconnecting means carrying electrical conductor means and possessing sufficient rigidity to support the head in any selected position away from the base. The adjustable interconnecting means, in one preferred form, includes two or more longitudinal rigid members and a plurality of longitudinally spaced hinge means interconnecting ends of said rigid members to each other, to said base at one end of said interconnecting means, and to said head at the other end of said interconnecting means, with said hinge means being frictionally interengaged to a degree sufficient to firmly support the head in any selected extended position. In one preferred form, the rigid members of the interconnecting means are adapted, when completely collapsed, to form a portion of the outer peripheral surface of the base. Also in one preferred form, a control switch is carried by the head in a conveniently manually accessible and operable position completely independent of the base.

### 3,479,500

## MECHANICS ELECTRIC LAMP ASSEMBLY

**James J. Duddy, 514 N. Metcalf St.,**
**Lima, Ohio 45801**
**Filed Feb. 23, 1967, Ser. No. 617,969**
**Int. Cl. F21l** *15/08*
**U.S. Cl. 240—52 4 Claims**



A mechanic's electric lamp assembly having an integral axially aligned handle and socket provided with lug means integrally connected thereto intermediately of the ends thereof and pivotally connected to a swivel which is also pivotally connected to a clamp-type support and thereby permit pivoted and swiveled adjustment of an electric lamp mounted in said socket by means of said handle while said clamp type support is attached to selected supporting means without danger of the operator being burned or discomforted.

### 3,479,501

## POROUS HOLLOW LAMP SHADE

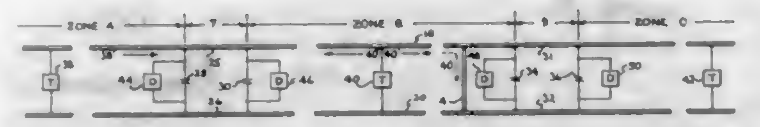
**Humbert A. Pisciotta, Islip Terrace, and Anthony T. Pisciotta, Jr., Glendale, N.Y., assignors to Jefferson Tank & Seat Mfg. Co., Inc., Brooklyn, N.Y., a corporation of New York**
**Original application June 17, 1965, Ser. No. 465,240, now Patent No. 3,368,013, dated Feb. 6, 1968. Divided and this application Nov. 14, 1966, Ser. No. 643,743**
**Int. Cl. F21v** *11/06*
**U.S. Cl. 240—108 1 Claim**

A hollow article comprises wall portions as a single piece of nonhomogeneous mass constituting a great number of thermoplastic particles each autogeneously bonded to adjacent particles at surface contacting areas and having irregularly shaped vents extending through the wall portions. The wall portions have parts in planes at an angle to one another, with one of the wall portions extending to define a space with the other wall portion. A light source fits in the space and the wall portions pass light through the vents and circulate air therethrough to cool the space.

### 3,479,502

## RAIL VEHICLE DETECTION SYSTEM

**James R. Whitten, Scotia, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed June 30, 1967, Ser. No. 650,537**
**Int. Cl. B61l** *21/00*
**U.S. Cl. 246—34 1 Claim**



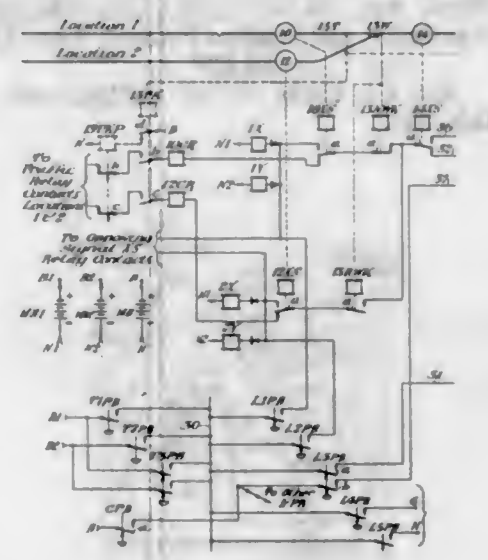
A rail vehicle detection system wherein a transmitter is located near the center of each zone and a detector adjacent each end thereof. The border between adjacent zones is established by a pair of capacitors connected across the rails in a predetermined spaced relation from one another, with one of the detectors being connected across each capacitor.

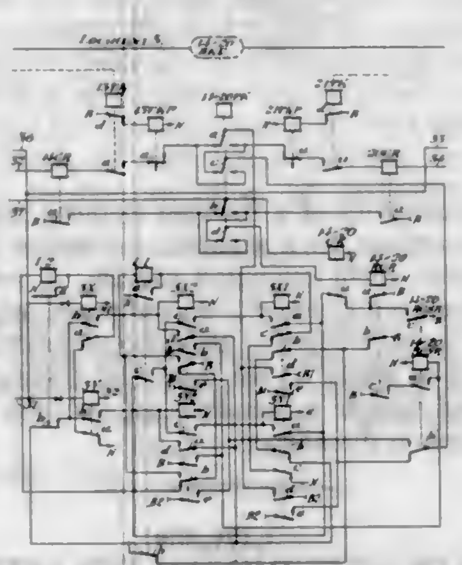
### 3,479,503

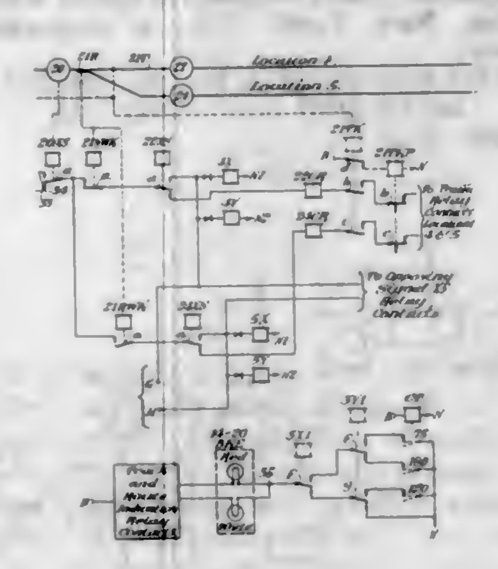
## TRAIN IDENTIFICATION SYSTEM

**Donald D. Huffman and Arthur P. Jackel, Penn Hills Township, Allegheny County, Pa., assignors to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania**
**Filed Oct. 17, 1967, Ser. No. 675,888**
**Int. Cl. B61l** *25/02, 19/06*
**U.S. Cl. 246—124 11 Claims**

Apparatus for storing, transferring, and displaying the class identity of a train in the control machine for a route interlocking or consolidated traffic control system. Train class is manually entered at the machine location corresponding to the point of entrance of the train into the system. Stored class is automatically transferred and displayed in the machine at each location occupied by the train as it traverses the established route. Storage transfer is controlled within the machine by route and traffic relays and by track occupancy indication relays responsive to the field location of the train. Class storage is cancelled as train leaves each track location. Second train class storage and/or reverse direction transfer is provided where required.



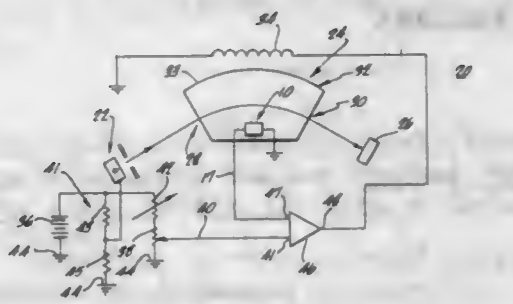




### 3,479,504

## MASS SPECTROMETER CONTROL SYSTEM UTILIZING AUXILIARY MASS SPECTROMETER AS A REFERENCE STANDARD

**Charles W. Hull, Sierra Madre, Calif., assignor, by mesne assignments, to Bell & Howell Company, Chicago, Ill., a corporation of Illinois**
**Filed Nov. 22, 1968, Ser. No. 778,284**
**Int. Cl. H01j** *39/34*
**U.S. Cl. 250—41.9 13 Claims**

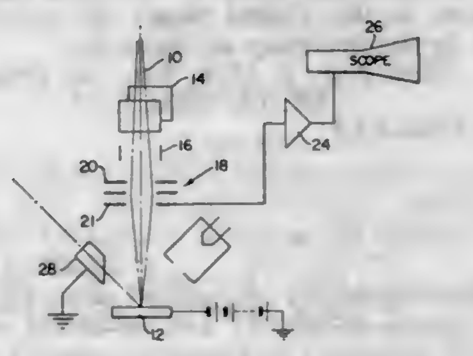


A mass spectrometer control system for controlling the magnetic field of the controlled mass spectrometer to select the mass in register at the collector. A reference ion transducer operating on the principle of separation of masses according to their mass to charge ratio in a magnetic field is provided utilizing the magnetic analyzing field of the mass spectrometer to be controlled. The reference ion transducer is equipped with a source of reference ions and a pair of long collectors located at the entrance and exit ends of the analyzing field. Any imbalance in the signal detected at the pair of collectors produces a reference control signal which is transmitted through suitable control circuitry to the winding of the electromagnet used to generate the magnetic field in the controlled mass spectrometer. An adjustable voltage divider connected in series with a source of accelerating voltage and the ion source of the controlled mass spectrometer is also connected to the electromagnet control circuitry. Adjustment of the setting of the divider provides a mechanism for obtaining mass scanning.

### 3,479,505

## METHOD OF OPERATING AN ION MICROPROBE USING SECONDARY ELECTIONS

**Helmut J. Liebl, Goleta, Calif., assignor to Applied Research Laboratories, Inc., Glendale, Calif., a corporation of Delaware**
**Filed June 30, 1966, Ser. No. 561,997**
**Int. Cl. H01j** *37/26*
**U.S. Cl. 250—49.5 3 Claims**

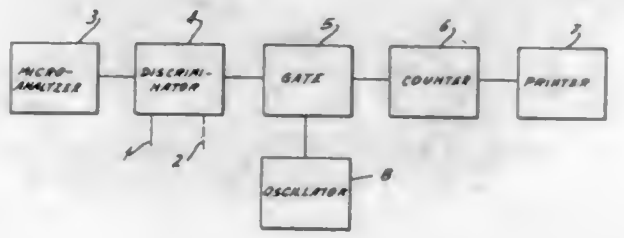


Secondary electrons emitted by a specimen in an ion microprobe are used to produce an electrical signal to be displayed on a kinescope. The ion beam is scanned in a raster pattern across the specimen, and the kinescope scanning is synchronized with the ion beam. Comparison of the kinescope display with an optical image of the specimen enables quick determination of the instantaneous position of the ion beam on the specimen.

**3,479,506**

### APPARATUS FOR A LINEAR ANALYSIS OF SURFACES OF A STRUCTURALLY HETEROGENEOUS SUBSTANCE COMPRISING PHASES GIVING DIFFERENT RESPONSES TO THE INCIDENCE OF AN ELECTRON BEAM

**Gerhard Dörfler, Kapfenberg, Austria, assignor to Gebr. Bohler & Co. Aktiengesellschaft, Vienna, Austria**
**Filed July 6, 1966, Ser. No. 563,191**
**Claims priority, application Austria, July 14, 1965, A 6,449/65**
**Int. Cl. H01j** *37/26*
**U.S. Cl. 250—49.5** **1 Claim**



An apparatus and a method for linear analysis of surfaces of a structurally hetereogeneous substance, such as a metal having different phases which give different responses to the incidence of an electron beam. The apparatus includes a micro-analyzer which is adapted to scan a surface area of the heterogeneous substance along a straight line at a known uniform velocity with an electron beam generated by the apparatus. Due to the reflection of the incident electron beam voltages are generated in the apparatus which can be derived from any desired property of the phase in the scanned surface of the heterogenous substance. These generated voltages are passed through analyzing means which comprise a discriminator which is adapted to select a preselected voltage, the latter being characteristic of the phase to be analyzed. The selected voltage range after having passed through the discriminator opens a gate. A pulse-emitting oscillator is connected in parallel to the gate and transmits pulses of constant frequency thereto via an electronic switch. The latter transmits these pulses as long as the electron beam incides on the phase to be measured, so that the ratio of the number of transmitted pulses to the total number of pulses which would be generated during analysis if the gate were permanently open, indicates the proportion of the phase to be measured in the scanned surface.

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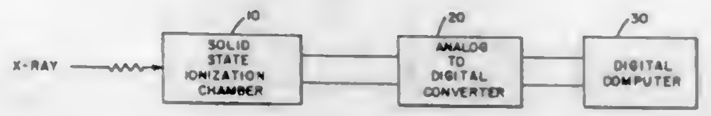
**3,479,507**

### X-RAY SPECTRAL MEASURING SYSTEM UTILIZING A SOLID STATE IONIZATION CHAMBER

**Dale R. Koehler and John T. Grissom, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army**
**Filed Nov. 2, 1966, Ser. No. 591,658**
**Int. Cl. G01t** *1/24*
**U.S. Cl. 250—83.3** **5 Claims**



A system for measuring X-ray spectra, utilizing a solid state ionization chamber, an analog-to-digital converter and a digital computer. A pulse of X-ray radiation impinging upon the ionization chamber causes a voltage pulse to be generated by the chamber. This voltage pulse is passed to the converter, the output thereof being fed to the computer which records the pulses representing the input spectrum.

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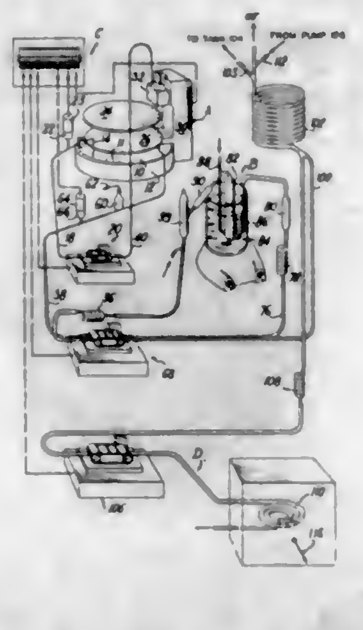
**3,479,508**

### PROCESS AND APPARATUS FOR ANALYSIS OF NEUTRON ACTIVATION OF AN ELEMENT IN LIQUID SAMPLES

**Dominique Comar, Eures-sur-Yvette, and Claude Le Poec, Orsay, Essonne, France, assignors to Commissariat a l'Energie Atomique, Paris, France**
**Filed Apr. 14, 1966, Ser. No. 542,608**
**Claims priority, application France, Apr. 22, 1965, 14,129**
**Int. Cl. H01j** *39/00;* **G21h** *5/00*
**U.S. Cl. 250—83** **7 Claims**



The radioactivity of a halogen element present in samples is determined by a separate extraction of a halogen element from each irradiated sample. A volume of the extracted halogen element is accumulated and moved into a loop. A counter adjacent the loop measures the activity of the sample while in the loop and thereafter the next accumulated sample passes through the loop and the preceding sample is discharged.

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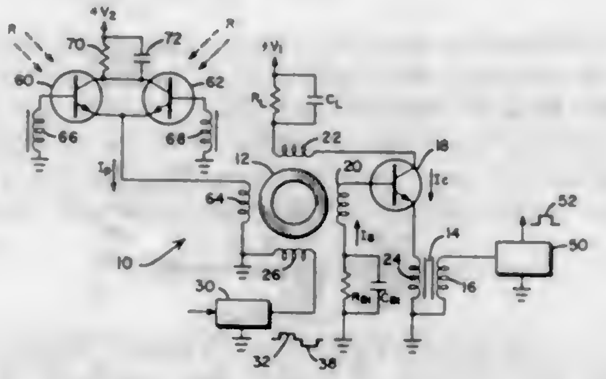
**3,479,509**

### METHOD OF DETERMINING THE INTENSITY OF A NUCLEAR-RADIATION BURST

**Gary L. Grundy, St. Paul, and Robert J. Herickhoff, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Sept. 19, 1966, Ser. No. 586,587**
**Int. Cl. H01j** *39/00;* **G01t** *1/16*
**U.S. Cl. 250—83.3** **4 Claims**

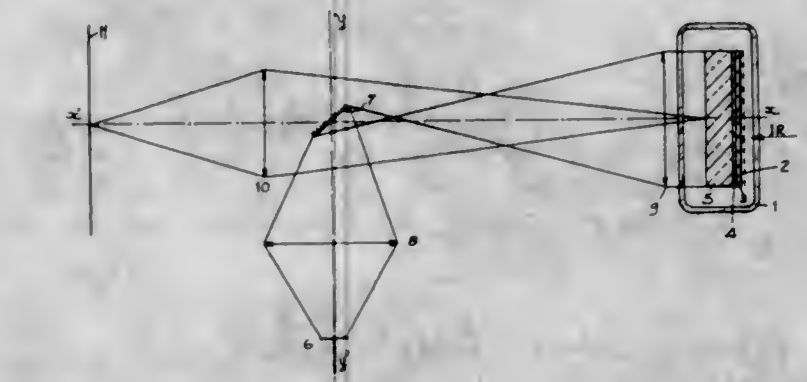


A method of determining the intensity, or dose rate in roentgens per second, of a radiation burst pulse by measuring the time delay between the radiation burst pulse and an output pulse that is generated by a pulse generating circuit by ionization currents which are induced in a semiconductor device by the radiation burst pulse.

**3,479,510**

### FERROELECTRIC INFRARED IMAGE TRANSLATOR

**Clement F. Baumberger and Francois Micheron, Paris, France, assignors to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France**
**Filed Apr. 16, 1968, Ser. No. 721,792**
**Claims priority, application France, Apr. 21, 1967, 103,751**
**Int. Cl. H01j** *39/02*
**U.S. Cl. 250—83.3** **16 Claims**



A system for providing on a screen a visible image of an object emitting infrared radiation comprising a body of ferroelectric material at a temperature near its Curie point, which is submitted to this radiation. Optical means are provided for directing luminous rays upon said body and, therefrom, on said screen through an arrangement responsive to the variation of refraction indices of said body.

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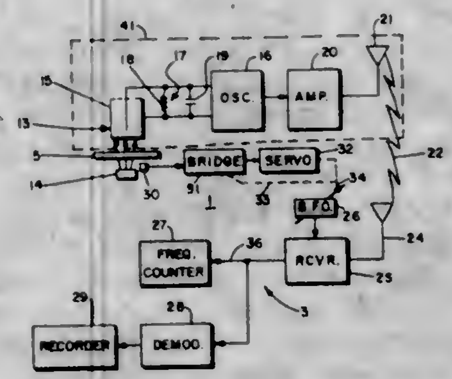
**3,479,511**

### NUCLEAR RADIATION GAUGE SYSTEM

**Milton C. Clerc, Worthington, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio**
**Filed June 1, 1965, Ser. No. 460,178**
**Int. Cl. G01t** *1/18*
**U.S. Cl. 250—83.6** **11 Claims**



In one embodiment the present invention is a measuring system with a scanning gauge to be mounted for movement across a traveling sheet of material formed or treated in some way by an industrial process. The scanning comprises a sensor having a condition which varies with a property of the sheet material. The gauge includes means for generating a radio-frequency signal and electromagnetically radiating the signal to a location remote from the gauge position. The sensing means condition causes the frequency of the signal to vary, converting the property variation into a proportional change in the radiated signal. At a remote location, means is provided for receiving the electromagnetically radiated signal, measuring the frequency change, and converting the frequency change into a corresponding indication of the property.

In another embodiment of the present invention there is apparatus and method for compensating a nuclear radiation gauge for changes in air-gap condition. A nuclear radiation gauge produces a pulse train having a frequency determined by the radiation received from the material. The material property to be measured affects the radiation intensity. The method includes the steps of comparing the frequency of the gauge pulse train with a reference pulse train of a predetermined frequency to measure the property, and varying the reference pulse train frequency to compensate the measurement for changes due to air-gap condition.

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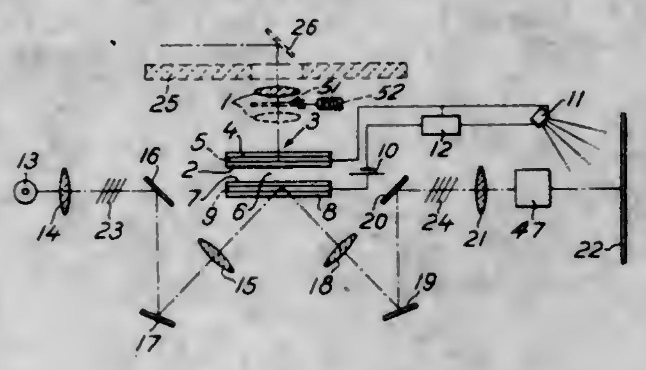
**3,479,512**

### VIEWING AND OBSERVATION DEVICE

**Gustav Weissenberg, Wetzlar, Germany, assignor to Ernst Leitz, Wetzlar, Germany, a corporation of Germany**
**Filed Nov. 14, 1966, Ser. No. 594,188**
**Claims priority, application Germany, Nov. 16, 1965, L 52,155**
**Int. Cl. G01j** *1/20*
**U.S. Cl. 250—201** **13 Claims**



An optical viewing and observation apparatus comprising an objective lens system for forming an image on a photoelectrically sensitive layer pertaining to an image converter including a deformable layer which reflects the light from a light source prior to reaching a projection screen. A rotatable filter means is disposed in the ray path of the objective lens system and the light source to form colored images on the projection screen. A plurality of different photosensitive layers are interchangeable for response to the radiation from the objective lens system. Use of the apparatus corrects any distortions produced by the projection system.

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### ERRATUM

For Class 250—202 see:
Patent No. 3,478,792

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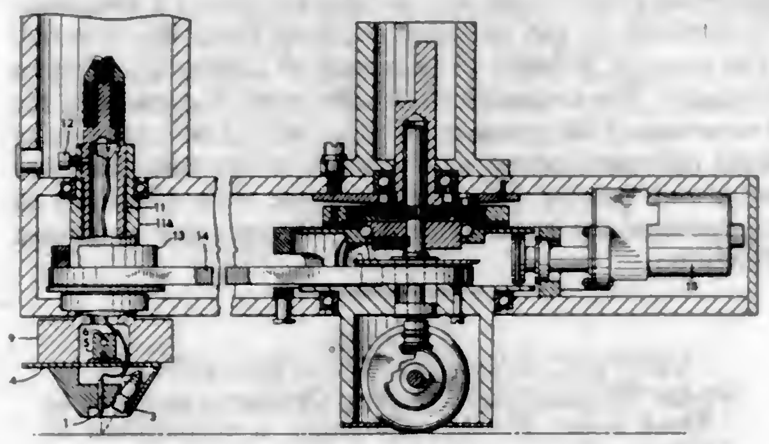
**3,479,513**

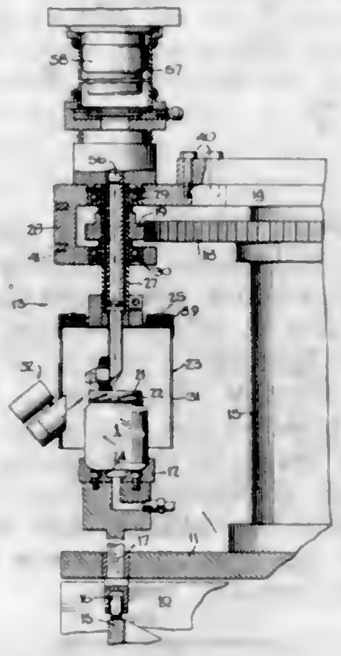
### PATTERN FOLLOWER CONFINING FIELDS OF VIEW OF TWO SCANNING PHOTOCELLS WITHIN CONICAL SURFACES OVERLAPPING AT PATTERN

**Robert G. Simpson, Burlington, Ontario, Ronald J. Luker, Hamilton, Ontario, and George S. Jewell, Ancaster, Ontario, Canada, assignors to Canadian Westinghouse Company Limited, Hamilton, Ontario, Canada, a Canadian company**
**Filed Oct. 19, 1965, Ser. No. 497,993**
**Claims priority, application Canada, Apr. 17, 1965, 928,435**
**Int. Cl. G05b** *1/01*
**U.S. Cl. 250—202** **4 Claims**

A line tracer including a two photcell tracing head steered by a direct current motor. The viewing angles of the photocells overlap and provide a continuous signal indicative of the relative overlap of the viewing angles and the line. The signals are used to control a controlled rectifier and transistor bridge which in turn controls the direction and speed of rotation of the direct current steering motor.



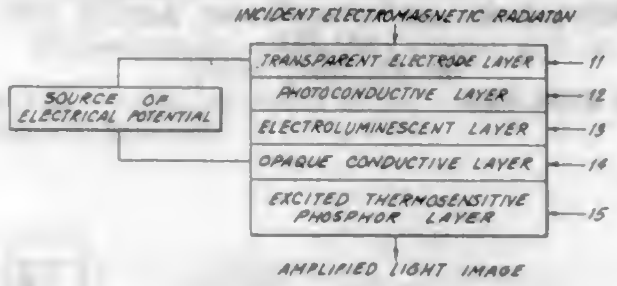
### 3,479,514
### METHOD AND MEANS FOR INSPECTING GLASS ARTICLES
**Jay F. Kidwell, Lancaster, Ohio, assignor to Anchor Hocking Corporation, a corporation of Delaware**
**Filed Sept. 23, 1966, Ser. No. 581,549**
**Int. Cl. G01n** *21/32;* **G01b** *11/30, 19/60*
**U.S. Cl. 250—223** **23 Claims**



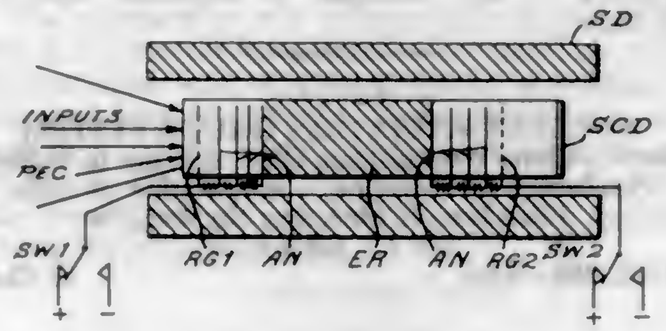
A machine for automatically inspecting glassware. A rotatable inspection head is situated around the upper portion of the glassware and contains the light directing and receiving means. The light is directed inwardly through the glassware and is picked up by the receiving means. A fault beam sensor records defects which are present in the glassware.

### 3,479,515
### THERMALLY COUPLED IMAGE AMPLIFIER USING INTERNAL FEEDBACK
**Benjamin B. Snavely, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**Filed Mar. 25, 1965, Ser. No. 442,695**
**Int. Cl. H01j** *39/12, 39/00, 31/50*
**U.S. Cl. 250—213** **9 Claims**

A method and device in which a photoconductor is used to convert an electromagnetic-radiation image (e.g., in the visible, or near-visible spectrum) to patterns of electric current, the heat generated by the current pattern thereafter being used to quench or stimulate the fluoresence of an externally-excited phosphor to reform the original image in fluorescent light. Increased contrast is obtained in the fluorescent image by means of an internally positioned electroluminescent material which responds to the electric current to "feed-back" additional luminescence to the photoconductor, providing a further increase in current and, thereby providing an intensification of the image-quenching (or -intensifying) heat patterns.


INCIDENT ELECTROMAGNETIC RADIATON
SOURCE OF ELECTRICAL POTENTIAL
TRANSPARENT ELECTRODE LAYER
PHOTOCONDUCTIVE LAYER
ELECTROLUMINESCENT LAYER
OPAQUE CONDUCTIVE LAYER
EXCITED THERMOSENSITIVE PHOSPHOR LAYER
11
12
13
14
15
AMPLIFIED LIGHT IMAGE

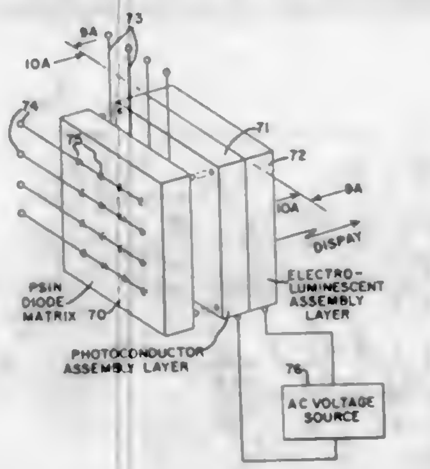
### 3,479,516
### ELECTRON STREAM TRANSMISSION DEVICE
**James Dwyer McGee, London, John Beesley, High Barnet, and Anthony David Berg, London, England, assignors to National Research Development Corporation, London, England, a British corporation**
**Filed Nov. 26, 1965, Ser. No. 509,805**
**Claims priority, application Great Britain, Nov. 27, 1964, 48,262/64**
**Int. Cl. H01j** *39/12*
**U.S. Cl. 250—213** **9 Claims**



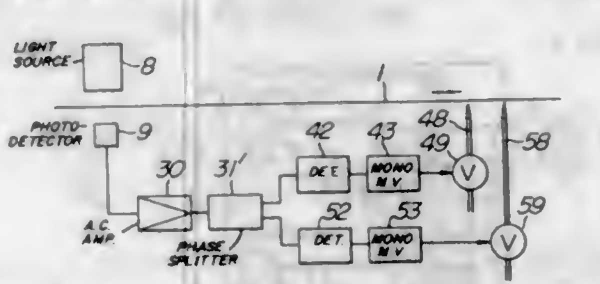
A vacuum tube device suitable for timing, information-storage, information-translation and for detection and display of high-speed transients essentially comprising a vacuum envelope, an input electrode for responding to one or a multiplicity of signals and for transmitting one or a parallel multiplicity of electron streams in response thereto, a spaced pair of mesh screens spaced to provide an electron stream path of nano- or micro-second transmission length, a tubular electrode surrounding the electron stream path between the mesh screens, magnetic focussing means surrounding the vacuum space, and control circuits for controlling the mesh screens to act alternatively as electron gates and reflectors so that electron streams can be allowed to enter and leave the electron path between the screens at will and to reciprocate between the screens for up to millisecond periods for storage purposes, it being possible to selectively extract electron streams from a stored multiplicity.

### 3,479,517
### SOLID STATE LIGHT EMITTING DISPLAY WITH MEMORY
**Thomas E. Bray, Clay, and Robert E. Clusick, North Syracuse, N.Y., assignors to General Electric Company, a corporation of New York**
**Filed Oct. 17, 1966, Ser. No. 587,318**
**Int. Cl. H01j** *31/50*
**U.S. Cl. 250—213** **9 Claims**

A solid state display comprising a matrix of bistable light emitting diode elements optically coupled to an array of light emissive-photoresponsive elements, electrical input signals applied to said matrix for selectively operating said diode elements in a first light emissive state or a second non light emissive state and thereby controlling the light output of said light emissive-photoresponsive elements.



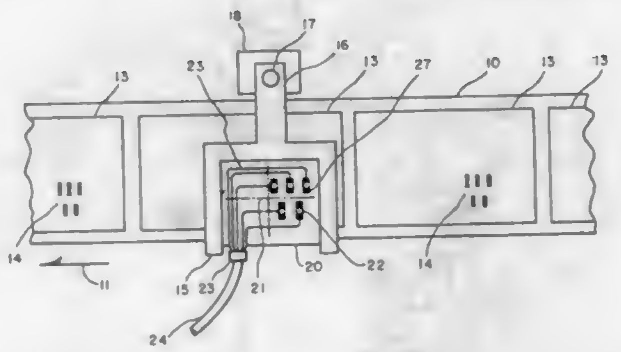
### 3,479,518
### SYSTEM FOR PHOTO-ELECTRICALLY DETECTING AND MARKING DEFECTS IN A MOVING SHEET WITH TWO DISTINGUISHABLE MARKING MATERIALS
**Hiroo Akamatsu, Takatsuki-shi, and Takanobu Morita, Mikio Kamei, and Yasuhiro Nozoe, Kyoto, Japan, assignors to Tateisi Electronics Co., Ukyo-ku, Kyoto, Japan, a corporation of Japan**
**Filed Feb. 17, 1965, Ser. No. 433,406**
**Claims priority, application Japan, Feb. 18, 1964, 39/8,462; Feb. 19, 1964, 39/8,897, 39/8,898; Oct. 7, 1964, 39/57,205, 39/57,207**
**Int. Cl. G01n** *21/30*
**U.S. Cl. 250—219** **5 Claims**



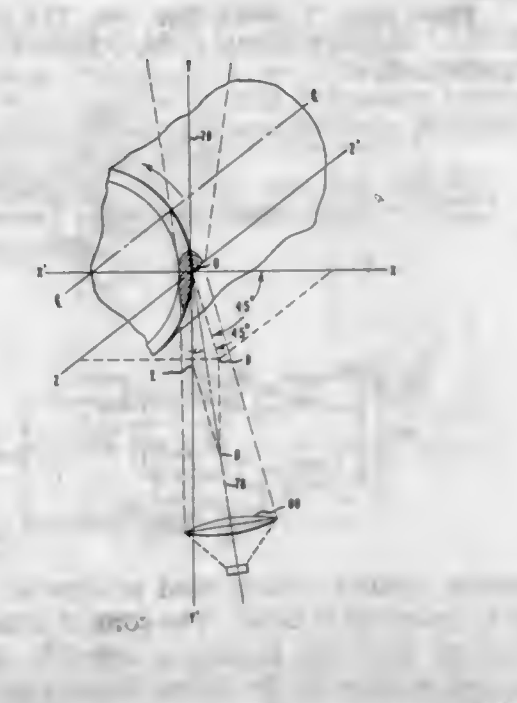
System for photo-electrically detecting and marking defects in a moving sheet including a source of light positioned on one side of said moving sheet and a photo-electrical detector positioned on the opposite side of said moving sheet for receiving light from said light source through said moving sheet, an alternating current amplifier connected to said photo-electrical detector for amplifying only alternating current components of the signal generated by the photo-electrical detector, means for detecting components of the amplified signal above a predetermined level and for generating an output signal in response thereto, and marking means for applying a suitable marking material to the moving sheet in response to said output signal.

### 3,479,519
### PHOTOELECTRIC CODE READING APPARATUS ENABLING IN-USE FOCUSING AND POSITIONING
**John F. Keidel, Colwyn, Pa., assignor to General Atronics Corporation, Wyndmoor, Pa., a corporation of Pennsylvania**
**Filed Oct. 27, 1965, Ser. No. 505,326**
**Int. Cl. G01n** *21/30*
**U.S. Cl. 250—219** **7 Claims**

Accurate positioning of the photoelectric sensors employed for bar code reading is facilitated by mounting these sensors in a supporting material which is light transmissive and also, at least in part, light diffusing. An image of the bar code pattern is focused on this diffusing supporting surface, thereby permitting viewing of the bar code pattern through that surface.



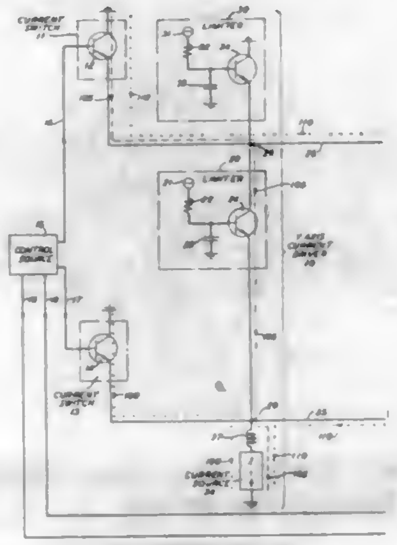
### 3,479,520
### YARN PACKAGE SUPPORT INSPECTOR
**John Albert Masino, Eugene J. Sturdevant, and Stanley Victor Williams, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed Oct. 18, 1967, Ser. No. 676,158**
**Int. Cl. G01n** *21/48, 21/32*
**U.S. Cl. 250—222** **2 Claims**



A process and apparatus for simultaneously detecting defects on adjacent areas of contiguous end and peripheral surfaces of a rotating opaque cylinder wherein a beam of light is directed substantially tangent to a point at which the surfaces meet. The reflected light in a nonspecular plane common to both surfaces is monitored by photosensitive means which is able to simultaneously detect defects in the illuminated areas of both surfaces through variations in the intensity of the reflected light.

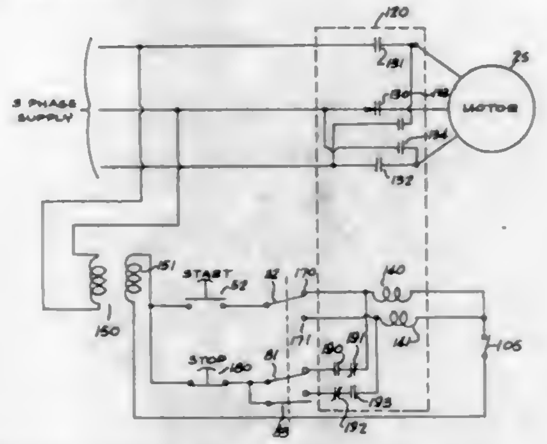
### 3,479,521
### CURRENT DRIVER ORGANIZATION
**Ronald C. Snare, Columbus, Ohio, assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Mar. 25, 1966, Ser. No. 537,499**
**Int. Cl. H03k** *4/00*
**U.S. Cl. 307—88** **5 Claims**

The invention is a circuit arrangement which supplies a trapezoid-shaped current pulse to a selected magnetic core access switch in a memory. The arrangement includes switches that connect a constant direct current source to a parallel combination of the collector-emitter path of a transistor and a selected magnetic access switch. A resistance-capacitance network supplies a monotonically decreasing potential to the base of the transistor for controlling formation of corners of the trapezoid-shaped current pulse without ringing.



### 3,479,522
### POSITION CONTROL SYSTEM

**Alan H. Joseph, Highland Park, Ill., assignor to Handy Manufacturing Company, Chicago, Ill., a corporation of Illinois**
**Filed Mar. 7, 1968, Ser. No. 711,306**
**Int. Cl. H02b** *1/24, 35/26*
U.S. Cl. 307—119 **9 Claims**

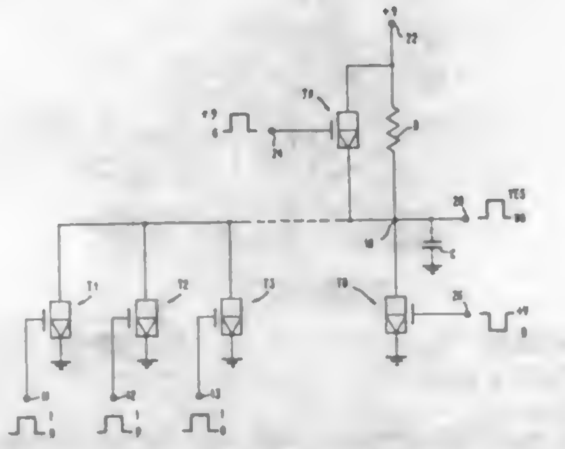


A position control system used to control a clamping machine is described in detail. The control system includes a mechanical analogue having a movable element duplicating the motion of the clamp being controlled. The movable element cooperates with a plurality of switches to stop and start an electric motor which drives the clamping element. The movable element in the embodiment described is the edge of a plate which is driven by a chain system to duplicate the motion of the clamp on a reduced scale. The plurality of switches are simple microswitches which attach directly to well-known starter circuits. A hydraulic cylinder is used together with the motor control system to permit application of the proper pressure against the element being clamped.

### 3,479,523
### INTEGRATED NOR LOGIC CIRCUIT

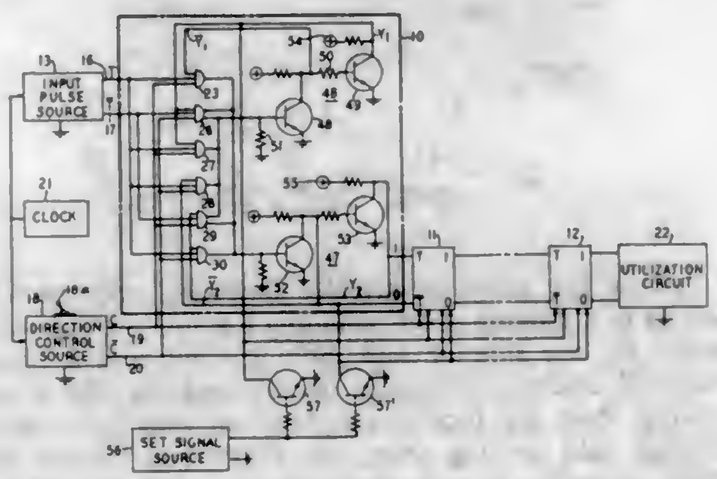
**Peter Pleshko, Waldwick, N.J., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Sept. 26, 1966, Ser. No. 581,997**
**Int. Cl. H03k** *19/08*
U.S. Cl. 307—205 **1 Claim**

A field effect transistor NOR logic circuit including a high resistance load resistor, one or more logic input elements which can be controlled to inhibit an output signal, a transistor connected in parallel with said load resistor to allow a fast transistion in the output signal when the output is being sensed, and another transistor which is connected in parallel with said logic input elements to inhibit the output signal whenever the output is not being sensed.



### 3,479,524
### MULTIPLE COUNTER STAGE USING COINCIDENCE GATES TO COORDINATE INPUT SIGNALS AND FEEDBACK SIGNALS WITHIN THE STAGE

**William J. Lawless, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**
**Filed June 29, 1966, Ser. No. 561,632**
**Int. Cl. H03k** *23/22, 19/24*
U.S. Cl. 307—222 **16 Claims**

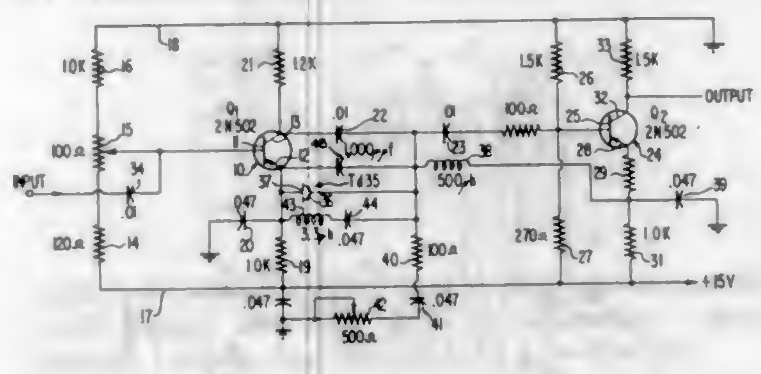


A multistable counter stage is formed by a set of coincidence gates supplying input signals to a pair of two-stage common emitter amplifiers in coordination with output feedback from each amplifier to inputs of both amplifiers. Control signals are also applied through the gates for electrically changing the counting direction for the stage. Coincidence gates in the form of multiple-emitter transistors are shown for integrated circuit applications.

### 3,479,525
### LOGARITHMIC SIGNAL COMPRESSOR

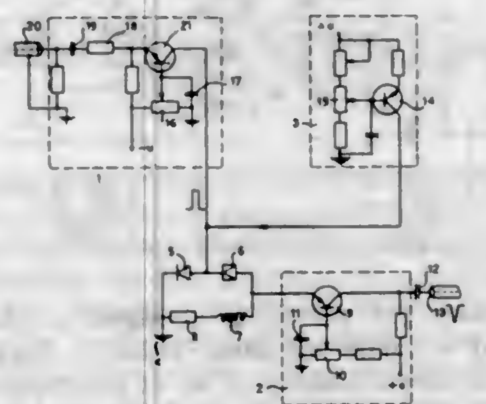
**Jack R. Harford, Boonton, N.J., assignor to Aircraft Radio Corporation, Boonton, N.J., a corporation of New Jersey**
**Filed Nov. 5, 1965, Ser. No. 506,464**
**Int. Cl. H03k** *5/20*
U.S. Cl. 307—235 **8 Claims**

A logarithmic signal compressor circuit featuring a negative resistance tunnel diode biased by the differential direct current voltages between emitters of a pair of transistor amplifiers to its negative resistance region. The tunnel diode acts as a non-linear load on the collector of the first transistor stage. Sufficient parallel resistance or impedance is connected across the tunnel diode to balance the negative resistance for the alternating current signal and a tuned circuit is also connected across the diode to eliminate the effect of stray circuit reactances and parasitic oscillations. Consult the specification for other features and details.



### 3,479,526
### ELECTRICAL DISCRIMINATOR UNIT

**Luciano A. Stanchi, Gavirate, Italy, assignor to European Atomic Energy Community (Euratom), Brussels, Belgium**
**Filed Aug. 22, 1966, Ser. No. 574,001**
**Claims priority, application Germany, June 9, 1966, E 31,825**
**Int. Cl. H03k** *5/20*
U.S. Cl. 307—235 **5 Claims**

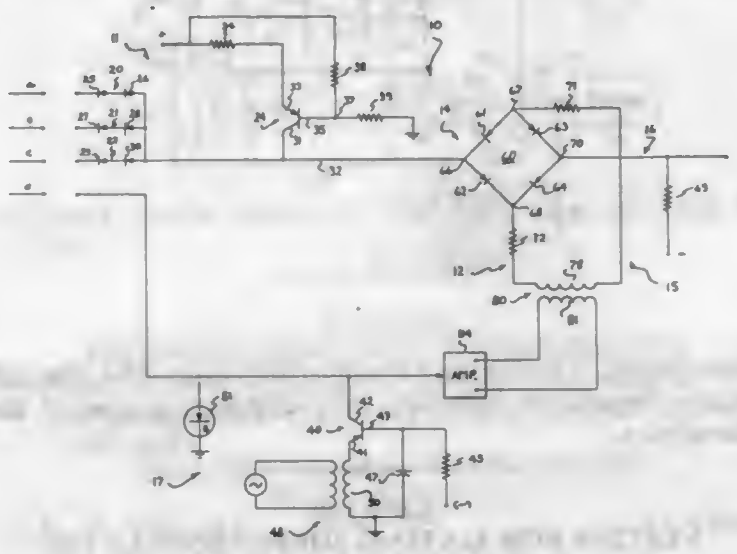


A tunnel diode discriminator using the dynamic characteristic of a self-oscillating tunnel diode. The characteristic of the tunnel diode comprises three positive slopes. A bipolar discrimination is thus realized with only one tunnel diode.

### 3,479,527
### MINIMUM QUANTITY SELECTOR WITH FAIL-SAFE OVERRIDE

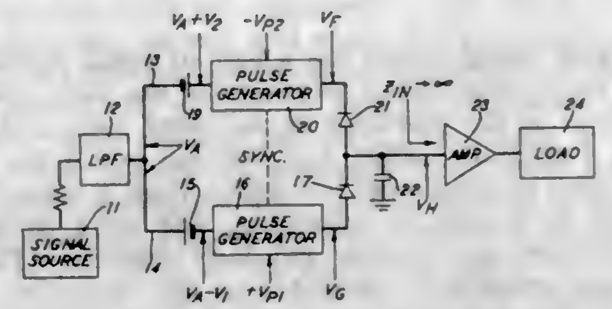
**Gerald J. Michon, Waterford, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Mar. 1, 1967, Ser. No. 619,672**
**Int. Cl. H03k** *17/00, 5/20*
U.S. Cl. 307—235 **4 Claims**

A minimum quantity selector arrangement wherein an alternating current output signal is provided from a number of available unidirectional voltage signals and wherein the maximum value of the A-C output signal never exceeds that determined by a preselected one of the available signals. All of the signals, except the preselected signal, are applied to the input of a minimum signal level selector which provides an output containing only the smallest of such signals. The preselected signal is converted to an A-C voltage signal having an amplitude determined by the magnitude of the preselected signal. The output signal from the minimum signal level selector is applied to one input and the A-C signal is applied to the other input of a controlled gate circuit means, including a diode bridge, and operates to produce an A-C voltage output signal having an amplitude determined by the input signal having the smaller value.



### 3,479,528
### HIGH SPEED SAMPLE AND HOLD CIRCUIT

**Reed E. Fisher, Parsippany-Troy Hills Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed Feb. 13, 1967, Ser. No. 615,702**
**Int. Cl. H03k** *5/20*
U.S. Cl. 307—231 **7 Claims**

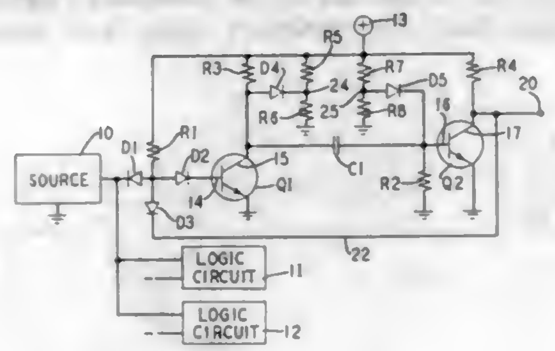


An analog signal is transmitted on first and second parallel paths. A positive D-C voltage and negative pulses are added in series to the signal on the first path; a negative D-C voltage and positive pulses are added in series to the signal on the second path. When the negative pulses extend below a threshold, a diode in the first path is forward-biased and a sample is taken and held by a capacitor; when the positive pulses extend above the threshold, a diode in the second path is forward-biased and another sample is held by the capacitor.

### 3,479,529
### SEMICONDUCTOR MULTIVIBRATOR

**Gilbert A. van Dine, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Dec. 27, 1965, Ser. No. 516,359**
**Int. Cl. H03k** *3/284*
U.S. Cl. 307—273 **8 Claims**

There is described a fast recovery monostable multivibrator circuit which includes two transistors and which produces output pulses having a constant pulse width regardless of power supply voltage variation and short input pulse width. When the circuit is triggered into its output state, a limiter arrangement terminates charging of a timing capacitor at the end of a predetermined exact time period. The timing capacitor discharges fast through a low impedance provided by a conducting one of the transistors.



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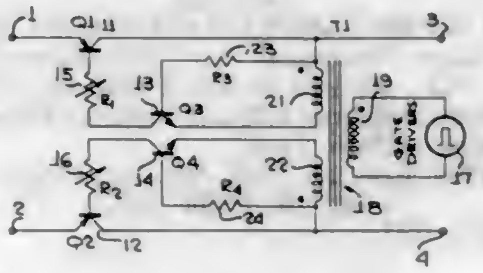
## 3,479,530
## SYSTEM FOR GATING DIFFERENTIAL OR SINGLE-ENDED SIGNALS

**Bernard H. France, Melbourne, Fla., assignor to Radiation Incorporated, Melbourne, Fla., a corporation of Florida**

**Continuation of application Ser. No. 259,870, Feb. 20, 1963. This application May 24, 1968, Ser. No. 734,175**

**Int. Cl. H03k** *17/60*

**U.S. Cl. 307—254 11 Claims**



A signal gating circuit has a pair of signal translation paths, each containing a transistor of the same conductivity type as the transistor in the other path, and each having a respective drive path through which the transistors may be simultaneously driven from a normal cutoff state to a state of saturation. The drive paths are isolated from one another and each contains a further transistor operatively connected to the respective transistor in the associated signal path and of opposite conductivity type relative to the signal path transistors. Gating voltage supplied to the drive paths is effective to turn on the transistors therein, and as a result, to drive the signal path transistors into their saturation states. Equalization of the saturation drops of the signal path transistors is accomplished by adjusting the value of a variable resistance in one of the drive paths.

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## 3,479,531
## RELAY COMPRISING COMPLEMENTARY SYMMETRY-CONNECTED TRANSISTORS WITH ISOLATED INDUCTANCE-RECTIFIER INPUT NETWORKS

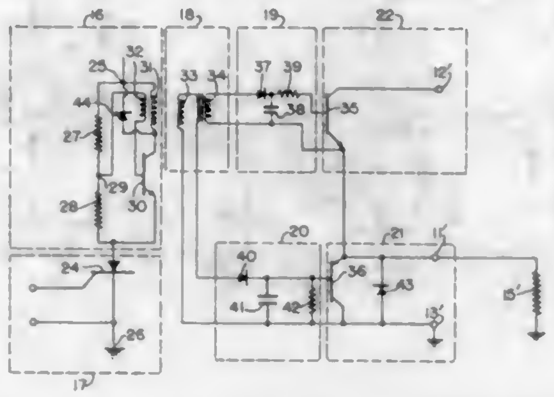
**Godfrey R. Gauld, Richmond, Ind., assignor to Avco Corporation, Richmond, Ind., a corporation of Delaware**

**Filed Oct. 7, 1966, Ser. No. 585,001**

**Int. Cl. H03k** *17/00*

**U.S. Cl. 307—255 4 Claims**

This is an electronic relay comprising a pair of transistors connected in complementary symmetry and having their emitters connected to a common central teminal. One of the transistors is normally non-conductive so as effectively to disconnect the central terminal from one of the end terminals. The other transistor is normally conductive so as effectively to connect the central terminal to the other end terminal. The driving means comprising a blocked oscillator with a transformer output is coupled to inductance-rectifier networks feeding said tansistors. One of these networks comprises a first transformer output winding connected in series with a first rectifier, between the base and emitter of the first transistor. The other network comprises a second transformer output winding connected in series with a second rectifier between the base and collector of the other transistor. Responsive to an output pulse developed by the blocking oscillator, the first transistor is rendered conductive effectively to connect the central terminal to the first-mentioned end terminal and the second transistor is rendered non-conductive.



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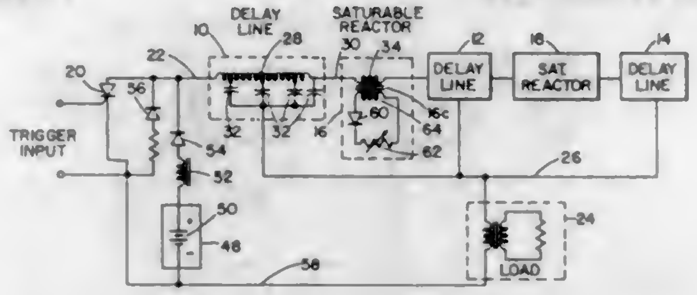
## 3,479,532
## MULTIPLE POWER PULSE GENERATION

**Howard L. Kennedy, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois**

**Filed Aug. 15, 1966, Ser. No. 572,332**

**Int. Cl. H03k** *5/159*

**U.S. Cl. 307—260 8 Claims**



A generator for providing a sequence of pulses in response to a single actuating pulse is disclosed. The generator utilizes a number of series combinations of delay lines and saturable reactors with the saturable reactors controlling the discharge times of the corresponding delay lines. Thus, the resultant pulse sequence can be substantially shorter in duration than the switching time of the single actuating means.

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## 3,479,533
## THYRISTOR SWITCH CIRCUIT FOR PRODUCING PULSES OF VARIABLE WIDTHS AND HAVING DIODE MEANS FOR SHORTENING THE FALL TIMES OF THE PULSES

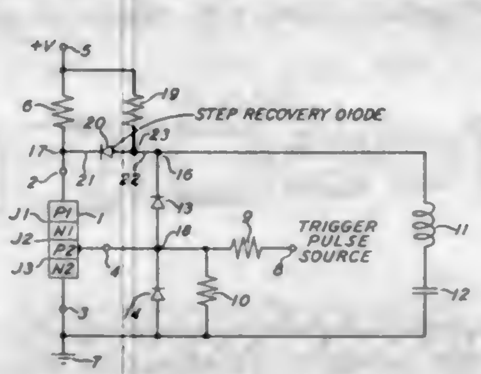
**William B. Harris, Bernardsville, and Richard P. Massey, Westfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**

**Filed Apr. 10, 1967, Ser. No. 629,713**

**Int. Cl. H03k** *5/12*

**U.S. Cl. 307—265 23 Claims**

The fall time of a rectangular pulse produced by a switch circuit employing a single thyristor can be materially shortened by connecting across the load a circuit comprising a resistor in series with a step recovery diode. The conventional reverse current turn-off circuit has its connections modified so that one of its leads extends to the junction between the serially connected diode and resistor. This switch circuit can be adapted for producing pulses having variable widths by connecting a second thyristor between the load and the first thyristor.



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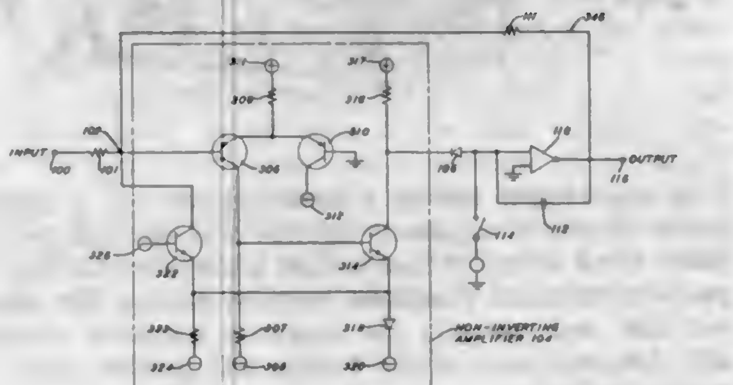
## 3,479,534
## PULSE STRETCHER-DISCRIMINATOR WHOSE COMPONENT ELECTRONICS EXHIBIT CONSTANT POWER DISSIPATION

**Gabriel L. Miller, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**

**Filed July 1, 1966, Ser. No. 562,376**

**Int. Cl. H03k** *5/04*

**U.S. Cl. 307—267 4 Claims**



A circuit configuration is disclosed for providing constant power dissipation of component transistors in a pulse stretcher-discriminator. The circuit configuration provides for maintaining the first transistor of a common-emitter configuration transistor input pair in the ON condition following the application of an input pulse and during the so-called rundown time of the stretcher-discriminator. (The second transistor of the input pair remains on as a matter of course.) An auxiliary transistor and diode are arranged to form a closed loop around the input pair during the rundown period thereby to prevent the first transistor from shutting off.

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## 3,479,535
## SYMMETRICAL PULSE GENERATOR CONTROLLED BY SELF-RESETTING SNAP DIODES

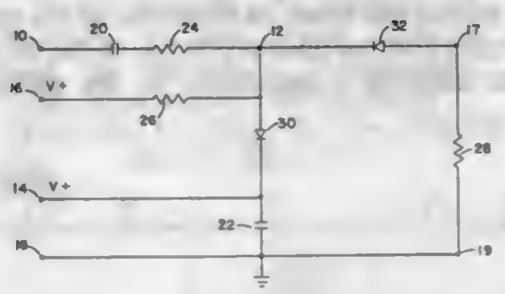
**Ying-Chen Hwang, Liverpool, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army**

**Filed Nov. 23, 1966, Ser. No. 596,739**

**Int. Cl. H03k** *3/26*

**U.S. Cl. 307—319 3 Claims**

A self-resetting pulse generator that provides a variable width bipolar pulse train. A snap diode in parallel with an output circuit conducts for a predetermined time to control the portion of an input signal that is applied to the generator output. Another snap diode in series with the output circuit is activated when the parallel diode ceases conduction and thereby allows current to flow through the load circuit. The series connected diode cuts off when a stored charge therein is dissipated, thus resetting the circuit.



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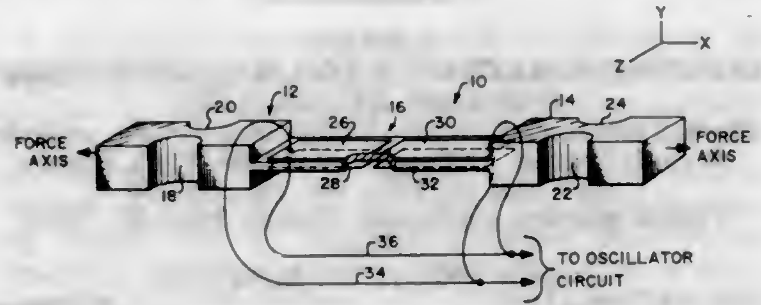
## 3,479,536
## PIEZOELECTRIC FORCE TRANSDUCER

**Frank A. Norris, Franklin Lakes, N.J., assignor to Singer-General Precision, Inc., a corporation of Delaware**

**Filed Mar. 14, 1967, Ser. No. 622,988**

**Int. Cl. H04r** *17/10*

**U.S. Cl. 310—8.5 11 Claims**



A force transducer, adaptable for use in accelerometers and the like instruments, comprises a thin, elongated, piezoelectric, vibratory beam member mounted to receive compressive and tensile forces along its length and which affect its natural frequency of vibration. To drive the beam, longitudinally spaced, oppositely directed, alternating electric fields are impressed across the beam along the thickness thereof and these fields are produced by pairs of electrodes placed on opposite sides of the beam and electrically excited to produce oppositely directed electric fields through the beam. The beam is oriented crystallographically so that such fields cause oppositely directed body shear strains, causing bending of the beam. Such electrical excitation at any frequency causes vibration of the beam at the same frequency.

By exciting the beam with an electrical oscillator, the oscillator "follows" the instantaneous natural frequency of vibration of the beam and thus, the output of the oscillator is a digital representation of axial force applied to the beam.

Two transducers as described may be mounted in a push-pull arrangement in an accelerometer whereby an acceleration impresses tension in one beam and compression in the other. The difference frequency of the oscillators driving such beams is a nearly linear output of the force of acceleration.

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## 3,479,537
## MAGNETOHYDRODYNAMIC MACHINE

**Ernst Jenny, Baden, and Lang Shuen Dzung, Wettingen, Aargau, Switzerland, assignors to Aktiengesellschaft Brown Boveri & Cie, Baden, Switzerland, a joint-stock company**

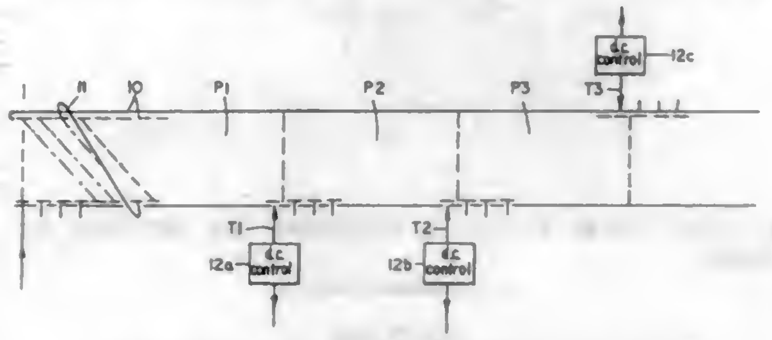
**Filed July 6, 1966, Ser. No. 563,171**

**Claims priority, application Switzerland, July 19, 1965, 10,085/65**

**Int. Cl. H02k** *45/00*

**U.S. Cl. 310—11 2 Claims**

A process for operating an MHD generator wherein the overall efficiency of the generator is increased by splitting it into parts located along the direction of the gas flow, a portion of the part-generator's electric output-current is tapped off from an electrode at the exit of each part generator and the absolute value of the characteristic load factor exhibits a maximum in the vicinity of the entrance to each part generator and a minimum in the vicinity of the exit. The maximum is set by regulating the tapped-off currents and varying the length of the part-generators in the direction in which working medium flows.



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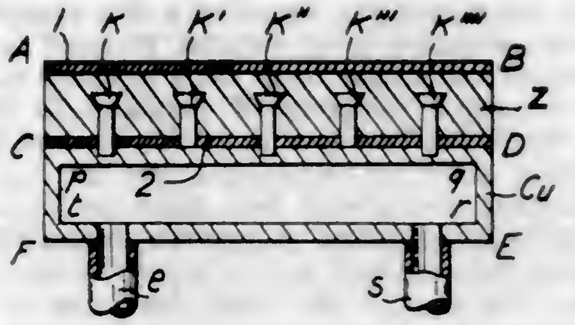
### 3,479,538
### COMPOSITE-ELECTRODE FOR MAGNETOHYDRODYNAMIC GENERATOR

**David Yerouchalmi, Issy-les-Moulineaux, France, assignor to Commissariat a l'Energie Atomique, Paris, France**
**Filed May 18, 1966, Ser. No. 551,150**
**Claims priority, application France, May 25, 1965, 18,233**
**Int. Cl. H02k** *45/00;* **G21d** *7/02*
**U.S. Cl. 310—11** **9 Claims**



An electrode for an MHD generator has a refractory oxide surface in contact with the heated zone which surface is mounted on a thermally and electrically conductive metal box which is cooled by water. The metal box has a discontinuous upper surface and the refractory oxide is bonded thereto by a bonding layer and by fitting into the discontinuities of the surface, thus providing a mechanical connection and an electrical path.

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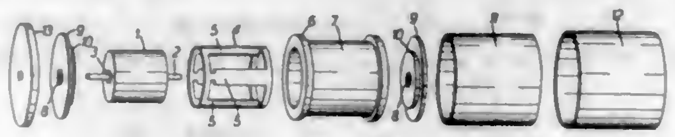
### 3,479,539
### ROTARY STEPPING MOTOR WITH PERMANENT MAGNET ROTOR HAVING ASYMMETRICAL POLES

**Stanley A. Brion, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company**
**Filed Oct. 27, 1967, Ser. No. 678,605**
**Claims priority, application Great Britain, Oct. 31, 1966, 48,794/66**
**Int. Cl. H02k** *37/00*
**U.S. Cl. 310—49** **10 Claims**

A stepping motor comprising a rotor which presents around its periphery an even number of interdigitated alternate north and south magnetic poles which are asymmetrical about the radii of the rotor through their centres, a stator coaxial with the rotor having interdigitated stator poles which are in shape preferably symmetrical about the radii through their centres excited in operation by winding coaxial with the rotor and arranged in such manner that in the absence of current the poles of the rotor are regularly offset with respect to at least half of the stator poles and that when the stator poles are energised either by means of alternating current or unidirectional pulses of current a torque is exerted on the rotor.



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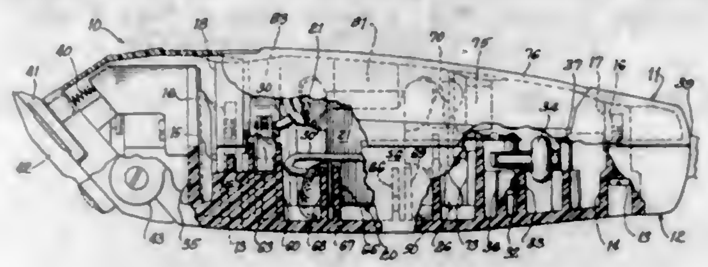
### 3,479,540
### MOTOR AND LONGITUDINALLY SPLIT HOUSING STRUCTURE FOR HAIR CLIPPER

**James H. Fox, Torrance, Calif., assignor to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois**
**Filed Sept. 11, 1967, Ser. No. 666,657**
**Int. Cl. H02k** *7/08*
**U.S. Cl. 310—50** **8 Claims**



A hair clipper having a rotary motor and a housing made of two components abutted and secured to each other has a structure that utilizes a modified housing for performing plural functions, namely, enclose the motor, establish and maintain the necessary operative relationship between parts of the motor, and provide paths for motor-cooling air.

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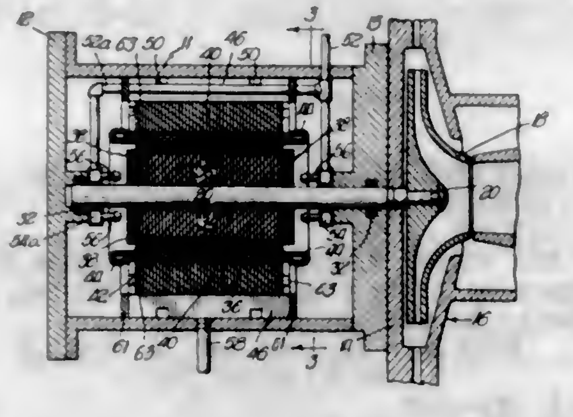
### 3,479,541
### HIGH SPEED LIQUID COOLED MOTORS

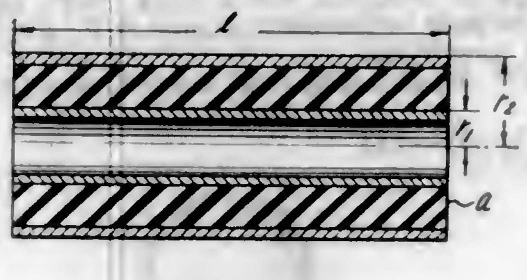
**Russell I. Robinson, Thiensville, Wis., assignor, by mesne assignments, to The Louis Allis Company, Milwaukee, Wis., a corporation of Delaware**
**Filed Sept. 11, 1962, Ser. No. 222,896**
**Int. Cl. H02k** *9/20, 9/00*
**U.S. Cl. 310—54** **9 Claims**



End rings capable of receiving and distributing a coolant spray are positioned adjacent the ends of the rotor of an electric motor. The rings are fashioned to provide good heat conduction, coolant distribtuion and coolant retention for greater cooling time.

### 3,479,542
### VIBRATOR

**Shinobu Makino, Tokyo, Japan, assignor to Shinko Electric Co., Ltd., Toba, Mie-ken, Japan, a company**
**Filed Sept. 13, 1967, Ser. No. 667,519**
**Claims priority, application Japan, Sept. 13, 1966, 41/60,623**
**Int. Cl. H02k** *7/00, 7/06*
**U.S. Cl. 310—81** **6 Claims**



A vibrator for producing linear vibratory motion of an object such as a transfer trough for the purpose of transporting material in the transfer trough comprises a base member on which is mounted a pair of cylindrical rubber springs and driving means that are adapted to generate oscillatory motion. The components of each of the cylindrical springs comprise a hollow outer cylinder, a hollow resilient elastomeric cylinder disposed within the outer cylinder and an inner member, with the components proportioned so that the elastomeric cylinder is in a state of radial precompression. The outer cylinder is fastened to the base and the inner member is fastened to the transfer trough. The stiffness of the springs in shear is lower than the stiffness of the springs in compression. The base and the transfer trough form a two mass vibration system. The drive means are used to generate an oscillatory force at a frequency preferably slightly below the natural frequency of the two mass system in the shearing mode of the cylindrical springs with the result that the transfer trough experiences substantially linear vibratory motion.

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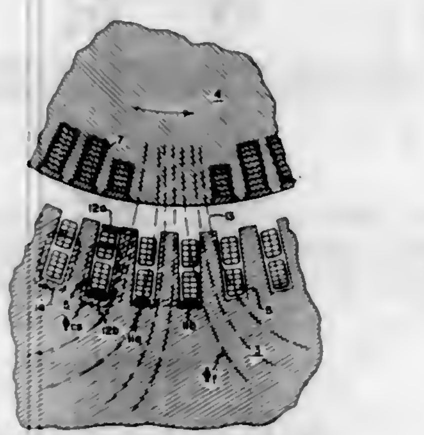
### 3,479,543
### COMPOUND EXCITATION SYSTEM

**Karl F. Drexler, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Dec. 11, 1967, Ser. No. 689,601**
**Int. Cl. H02k** *19/00, 19/26*
**U.S. Cl. 310—162** **7 Claims**



A static excitation system for a self-excited generator having a compound excitation winding which is self-contained within the generator. The winding has a one portion disposed to link with the armature current-responsive leakage flux and another portion disposed to link with the field current-responsive synchronous rotor flux.

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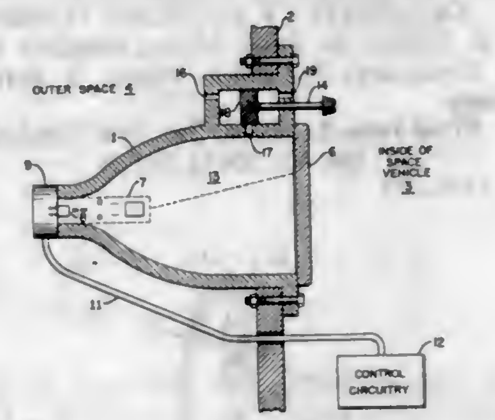
### 3,479,544
### CATHODE-RAY TUBE WITH A REMOVABLE FACE FOR SPACE VEHICLES

**Omer F. Hamann, La Jolla, Calif., assignor, by mesne assignments, to Stromberg Datagraphix, Inc., San Diego, Calif., a corporation of Delaware**
**Filed Dec. 11, 1963, Ser. No. 329,678**
**Int. Cl. H01j** *7/16*
**U.S. Cl. 313—7** **3 Claims**



1. In a space vehicle having a wall for defining the inside of the vehicle which contains gas under pressure, an aperture in said wall, a hollow body projecting outwardly from said inside of the vehicle having a first end portion remote from said aperture and a second end portion adjacent to said aperture, an electron gun capable of being plugged into an electrical receptacle, an electrical receptacle at said first end portion of said hollow body for receiving said electron gun, a cable coupled to said electrical receptacle for supplying electrical energy to said electron gun, means for connecting said hollow body to said wall, a transparent pressure plate coated with a cathodoluminescent material removably mounted across said aperture to seal the second end portion of said hollow body from the inside of said space vehicle and valve means for selectively causing the inside of said hollow body to communicate with the vacuum of interstellar space at the outside of said space vehicle or with the gas under pressure at the inside of said space vehicle.

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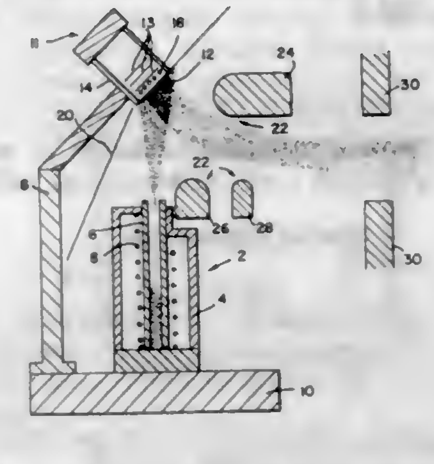
### 3,479,545
### SURFACE IONIZATION APPARATUS AND ELECTRODE MEANS FOR ACCELERATING THE IONS IN A CURVED PATH

**Robert G. Wilson, Canoga Park, George R. Brewer, Malibu, and Douglas M. Jamba, Woodland Hills, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**
**Filed May 16, 1967, Ser. No. 640,441**
**Int. Cl. H01j** *39/34;* **H05h** *7/08*
**U.S. Cl. 313—63** **4 Claims**



An ion beam forming apparatus comprising an atomic beam generator, a surface ionizing element on which the ion beam impinges and whereby the atoms in said beam are ionized, and an electrode system adjacent the ionizing surface for establishing an electric field having a predetermined arrangement of equipotential force lines to cause the ion beam formed to follow a curved path away from the ionizing surface.

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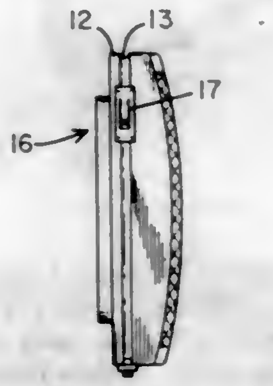
### 3,479,546
### SELF-SUPPORTING SHADOW MASK FOR COLORED TV PICTURE TUBES

**Norman B. Mears, St. Paul, Minn., assignor to Buckbee-Mears Company, St. Paul, Minn., a corporation of Minnesota**
**Filed June 11, 1968, Ser. No. 736,192**
**Int. Cl. H01j** *29/46*
**U.S. Cl. 313—85 8 Claims**



A shadow mask for colored TV picture tubes is constructed with the conventional translucent area formed by a multitude of tiny apertures in a slightly bowed-out metal sheet through which the electron beams pass from the electron guns at the rear of the tube to the viewing face at the front of the tube. Integrally formed with the translucent area is a circumambient imperforate rim which has a strengthening bead to make it quite rigid. An inward flaring flange extends around the edge of the rim to form a haze shield. The mask is mounted to the glass bulb of the picture tube by metal spring-like members which are attached at one end to the outside of the rim and at the other end are secured to the envelope of the tube.

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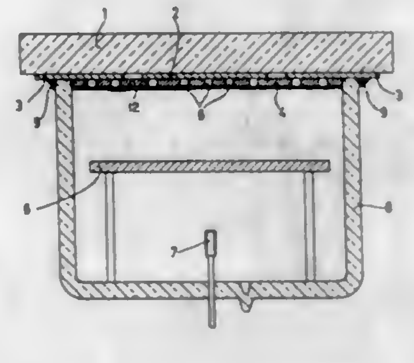
### 3,479,547
### DEVICE HAVING A GLOW-DISCHARGE INDICATOR TUBE FOR REPRODUCING SIGNS AND GLOW-DISCHARGE TUBE FOR USE IN SUCH A DEVICE

**Henri Jean Gerard Marie van Daelen, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware**
**Filed Nov. 17, 1967, Ser. No. 683,992**
**Claims priority, application Netherlands, Nov. 22, 1966, 6616395**
**Int. Cl. H01j** *7/42;* **H01k** *1/60*
**U.S. Cl. 313—109.5 10 Claims**



A glow discharge tube for displaying various indicia comprises a cathode, an anode, and a plurality of conductive segments positioned adjacent the display window. A body of opaque insulation material having holes therein is interposed between the anode and the segments and is arranged to form a plurality of ducts ending on the segments. The segments are selectively energized to produce a plurality of luminous column discharges in accordance with the indicia to be viewed.

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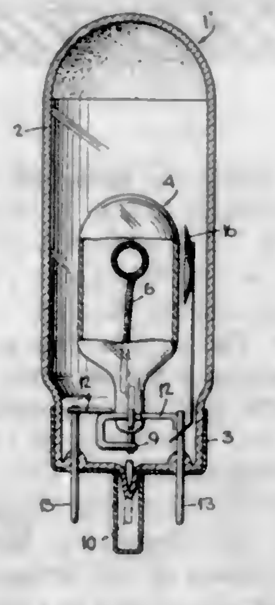
### 3,479,548
### ENVELOPED QUARTZ IODINE LAMP

**Joseph H. Schlessel, Great Neck, N.Y., assignor to Airequipt Inc., New Rochelle, N.Y., a corporation of New York**
**Filed July 6, 1966, Ser. No. 563,243**
**Int. Cl. H01j** *5/16, 61/40*
**U.S. Cl. 313—113 1 Claim**



A tubular quartz iodine projection lamp that has a halogen regenerant, which is surrounded by a protective glass envelope and which has a reflector element in the space between the lamp and envelope, said space being either partially evacuated or filled with an inert gas.

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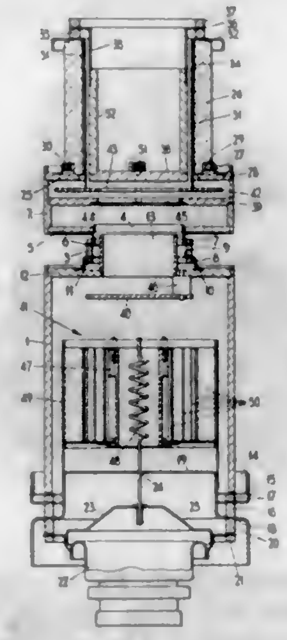
### 3,479,549
### GAS-FILLED ELECTRIC DISCHARGE DEVICES

**Basil Offor Baker, Croxley Green, England, assignor to The M-O Valve Company Limited, London, England, a British company**
**Filed Oct. 9, 1967, Ser. No. 673,793**
**Claims priority, application Great Britain, Oct. 10, 1966, 45,114/66**
**Int. Cl. H01j** *17/12, 61/04*
**U.S. Cl. 313—195 6 Claims**



A gas-filled electric discharge device having an apertured control electrode and a correspondingly apertured electrode between the control electrode and the anode which serves to prevent deterioration of the performance of the device under hold-off conditions due to erosion of the anode.

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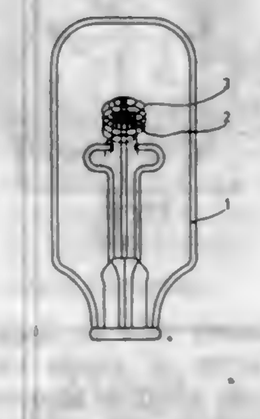
### 3,479,550
### DEVICE AND METHOD FOR REDUCING BLACKENING IN A LAMP

**Klaus Fröhner, Geesthacht, Horst Hörster, Rotgen, and Hans Jurgen Lydtin, Stolberg, Germany, and Otto Reifenschweiler, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware**
**Filed June 20, 1966, Ser. No. 558,824**
**Claims priority, application Germany, June 29, 1965, N 26,964**
**Int. Cl. H01j** *17/04, 61/04*
**U.S. Cl. 313—205 13 Claims**



A sealed, gas-filled device such as an incandescent lamp, has therein a heated filament which partially vaporizes, thus blackening the interior of the bulb, and a grid surrounding the filament and electrically heated to establish a radiometric force that will impede the flow of vaporized metal to the bulb walls.

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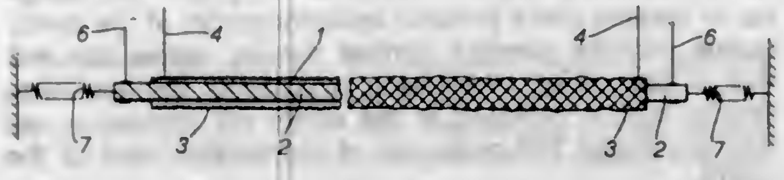
### 3,479,551
### ELECTRON EMITTING CATHODES HAVING A FLEXIBLE GRAPHITE FILAMENT WITH AN EMISSIVE COATING THEREON

**John David McCann, Abingdon, and Robin Walter Ellecker Fuller, Wantage, England, assignors to United Kingdom Atomic Energy Authority, London, England**
**Filed Sept. 25, 1967, Ser. No. 670,263**
**Claims priority, application Great Britain, Sept. 26, 1966, 42,956/66**
**Int. Cl. H01j** *5/50*
**U.S. Cl. 313—334 4 Claims**



An electron emitting cathode comprises a flexible graphite filament having a coating of a material which emits electrons when heated. The filament may be tubular and loosely supported on a metal core wire.

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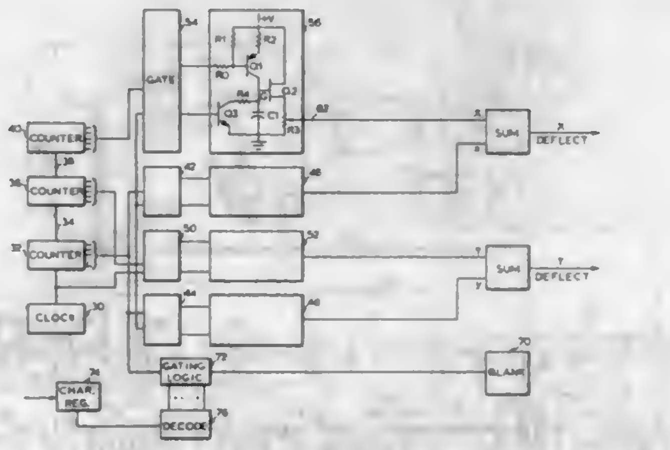
### 3,479,552
### DEFLECTION CIRCUITS

**Carlos A. Tomaszewski, Canoga Park, and Robert L. Scarlett, Torrance, Calif., assignors to Wyle Laboratories, El Segundo, Calif., a corporation of California**
**Filed June 4, 1968, Ser. No. 734,320**
**Int. Cl. H01j** *29/70*
**U.S. Cl. 315—18 7 Claims**

A cathode ray tube character display system utilizing charge storage deflection circuits. The system includes gross deflection circuitry for causing the beam to trace a plurality of successive lines. Fine deflection circuitry causes the beam to trace a composite stroke pattern at several positions along each line. Blanking means blank selected strokes of the composite pattern to form characters. The gross and fine deflection circuitry, for both the horizontal and vertical axes, utilizes a capacitor which is selectively charged to a level substantially porportional to the desired deflection.



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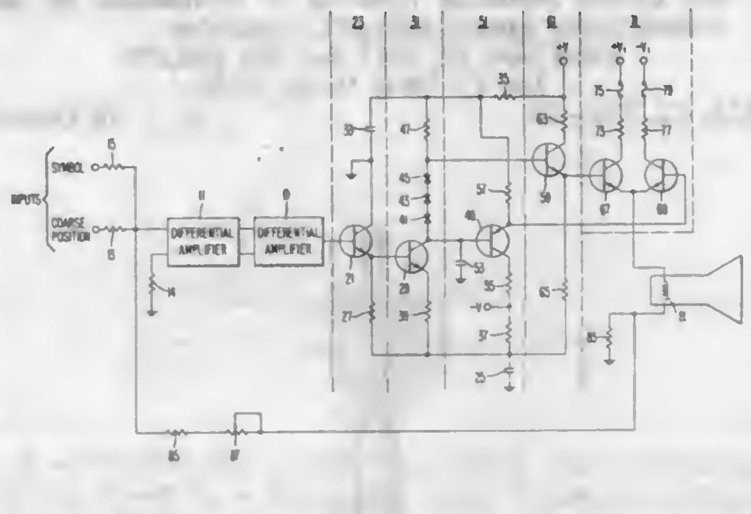
### 3,479,553
### DEFLECTION AMPLIFIER

**Gilbert Yanishevsky, Philadelphia, Bruce J. Miller, Malvern, and Stanley J. Savinese, Ridley Park, Pa., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**
**Continuation of application Ser. No. 669,848, Sept. 22, 1967. This application Nov. 5, 1968, Ser. No. 774,593**
**Int. Cl. H01j** *29/10*
**U.S. Cl. 315—18 10 Claims**



A deflection amplifier including cascaded differential amplifiers is connected through a buffer to the input of an inverting amplifier. The output of the inverting amplifier is connected to separate plus and minus drivers which in turn drive a deflection yoke through a push-pull output stage. Series connected, forward biased diodes are included in the inverting amplifier circuit for maintaining a constant compensating voltage difference between the inputs to the drivers. The gain and frequency response of the amplifier are controlled by a degenerative feedback path.

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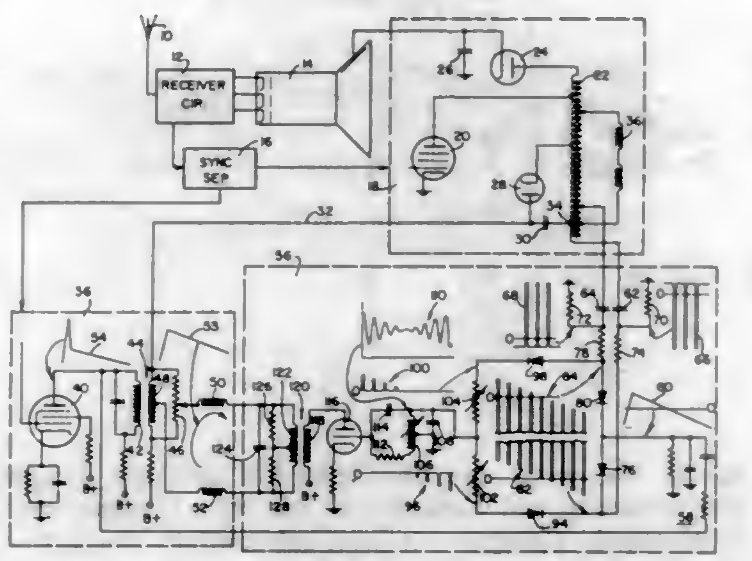
### 3,479,554
### RASTER DISTORTION CORRECTION CIRCUIT

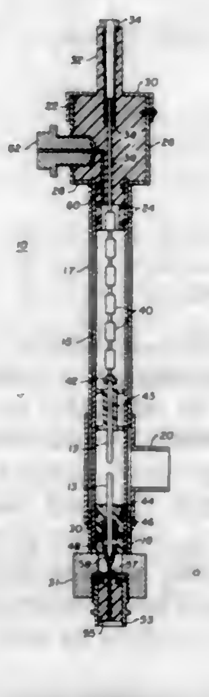
**Don A. Kramer, Rolling Meadows, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois**
**Filed Aug. 14, 1967, Ser. No. 660,304**
**Int. Cl. H01j** *29/70*
**U.S. Cl. 315—24 4 Claims**

The circuit includes a gating network the conduction of which is changed at a vertical rate. Oppositely phased pulses at the horizontal frequency are applied to the network to provide a pair of oppositely phased pulsating signals with amplitudes which vary throughout the vertical deflection period. The portion of one of the pulsating signals which occurs during an initial part of the vertical period and the portion of the other signal which occurs during a terminal part of the period are coupled by a switching network through amplitude control devices to provide a correction signal for the vertical yoke.



## 3,479,555
## COAXIAL LIGHT SOURCE WITH SERIES IMPEDANCE WITHIN THE ENVELOPE

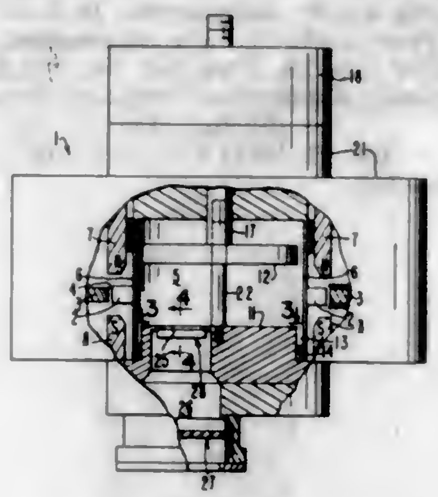
**Edward L. Garwin, Los Altos Hills, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Nov. 22, 1967, Ser. No. 685,179**
**Int. Cl. H01j** *19/80, 7/46*
**U.S. Cl. 315—39** **10 Claims**



Electrical discharge lamp light source including a transparent tubular envelope containing superatmospheric gas, and having discharge electrodes in one end serially connected to resistive elements disposed along the axis in the other end of the envelope to cooperate with a coaxial shield outside said envelope, constituting resistive-capacitive components providing nanosecond relaxation oscillatory light-producing discharges across said electrodes on application of high voltage therethrough.

## 3,479,556
## REVERSE MAGNETRON HAVING AN OUTPUT CIRCUIT EMPLOYING MODE ABSORBERS IN THE INTERNAL CAVITY

**Alfred W. Cook, East Brunswick, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey**
**Filed Sept. 27, 1967, Ser. No. 671,062**
**Int. Cl. H01j** *25/50*
**U.S. Cl. 315—39.51** **5 Claims**

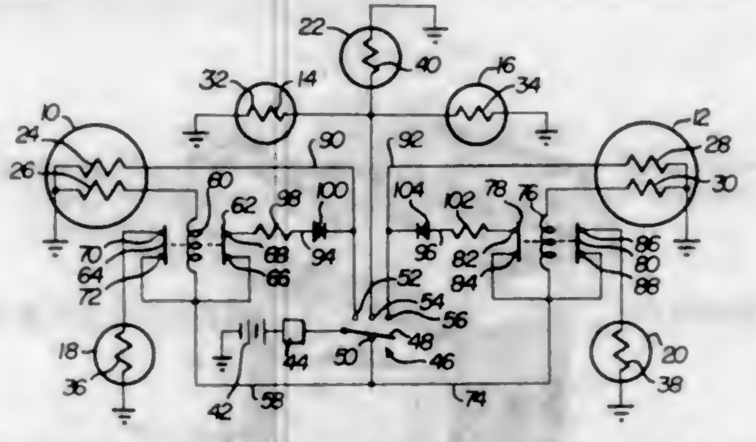


A reverse magnetron tube is disclosed. The tube includes a circular array of anode vane resonators surrounded by a cathode emitting structure to define annular magnetron interaction region in the space between the vanes and the surrounding cathode emitter. The vane array is arranged around the outside of a circular electric mode cavity resonator. A circular array of axially directed elongated coupling slots communicate through the walls of the circular electric mode cavity with alternate ones of the vane resonators for locking the π-mode of vane resonator system to the dominant circular electric mode in the internal cavity resonator. A tuning structure is provided in the internal cavity for tuning the output frequency of the tube. The circular electric mode resonator includes a fixed end wall having an elongated radially directed coupling slot communicating therethrough for coupling output wave energy from the circular electric mode of the cavity to a rectangular waveguide and thence through a wave permeable vacuum window to a load. A quarter-wave impedance matching transformer is provided between the coupling slot and the rectangular waveguide for impedance matching the coupling slot to the waveguide. An annular groove is provided within the cavity, encircling the end wall of the cavity, and a lossy mode absorbing ring is disposed in the groove for damping or loading down possible resonant modes of the cavity having radially directed current flowing across the end wall of the cavity. In addition, a centrally disposed conductive post is provided in the cavity for moving a certain interfering TM mode out of the tunable band of the cavity.

## 3,479,557
## AUTOMOTIVE HEADLAMP SAFETY SYSTEM WITH THE ALTERNATE SUBSTITUTION OF FILAMENT

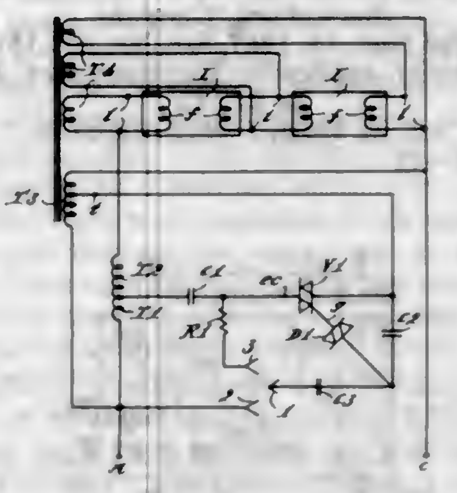
**Rudd Schultz, 611 SE. 18th Ave., Pompano Beach, Fla. 33062**
**Filed Dec. 31, 1968, Ser. No. 788,163**
**Int. Cl. B60g** *1/02*
**U.S. Cl. 315—83** **11 Claims**

One or more lamps of an automotive vehicle having at least two filaments is provided with a control system which operates when one of the filaments burns out to keep the lamp lit at a safe intensity. The two filaments of a given lamp may be a low beam filament and a high beam filament, and in this case, the control circuit includes a current limiting element and a switching device connected to provide switching from the low beam filament to the high beam filament if the low beam filament burns out and to simultaneously limit current flow through the high beam filament to reduce its brightness to a safe level. Alternatively, the lamp may have two low beam filaments plus at least one high beam filament, and in this case the control circuit provides switching from one low beam filament to the other if the first low beam filament burns out. If two high beam filaments are provided in the same lamp, the circuit controls them in the same manner as the low beam filaments.



## 3,479,558
## HIGH VOLTAGE ARC DISCHARGE LAMP WITH LOW VOLTAGE CONTROL CIRCUIT

**Sandford C. Peek, Ipswich, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware**
**Filed June 23, 1967, Ser. No. 648,346**
**Int. Cl. H05b** *41/14*
**U.S. Cl. 315—98** **4 Claims**

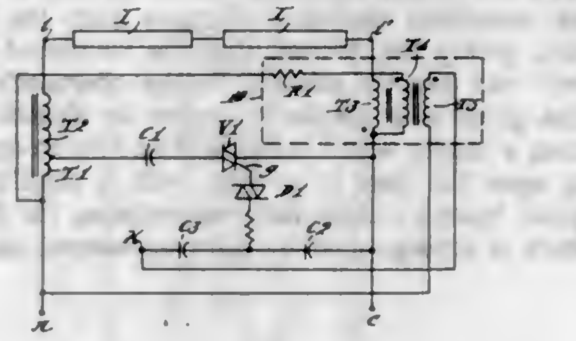


An electronic circuit for applying periodic ionizing pulses and discharge current to a fluorescent lamp rated for operation from a 240 volt alternating current supply and having heated filaments, the circuit including a semiconductor valve for applying the pulses and rated for operation at 120 volts applied. A transformer whose primary is connected to the 240 volt supply, has secondaries for supplying heating current to the lamp filaments and also has a primary tap for supplying 120 volts to the semiconductor.

## 3,479,559
## FLUORESCENT LAMP CURRENT REGULATING CIRCUIT

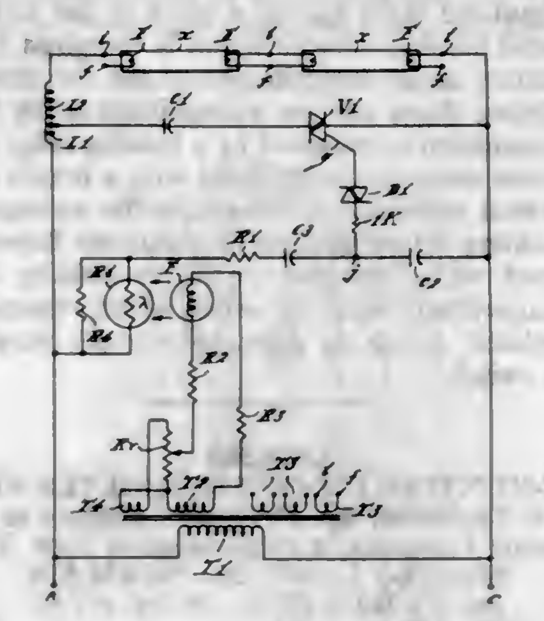
**Fredrick W. Paget, Rockport, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware**
**Filed July 3, 1967, Ser. No. 650,667**
**Int. Cl. H05b** *41/14*
**U.S. Cl. 315—105** **10 Claims**

An electronic circuit having a semiconductor pulse generating circuit for applying periodic ionizing pulses to a fluorescent lamp, and a transformer with a primary sensing current drawn by the lamp, a secondary sensing line voltage as a reference, and a tertiary providing a control voltage for phasing the ionizing pulses to oppose deviations in the lamp current.



## 3,479,560
## ARC DISCHARGE REGULATING DEVICE HAVING MEANS TO COMPENSATE FOR SUPPLY VOLTAGE VARIATIONS

**Fredrick W. Paget, Rockport, and Ned Scott Van Buren, Belmont, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware**
**Filed Dec. 29, 1967, Ser. No. 694,653**
**Int. Cl. H05b** *41/18*
**U.S. Cl. 315—105** **4 Claims**

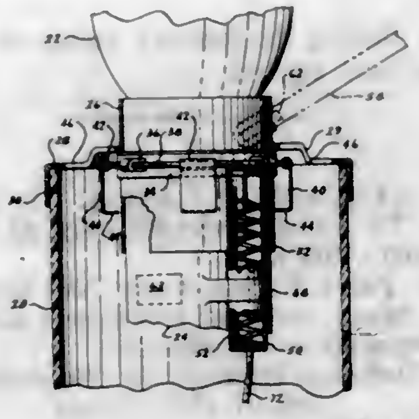


A semi-conductor circuit for starting and controlling current drawn by a fluorescent lamp includes a voltage pulse discharge valve triggered by another electronic valve which breaks down once each half cycle of applied alternating current, the time of breakdown limiting the degree of ionization of the lamp by the voltage pulse and hence the current conducted each half cycle. To compensate for line current variations a photoconductor in the time constant circuit of the breakdown valve senses emission from lamp inductively coupled to the alternating current terminals by a filament transformer.

## 3,479,561
## BREATH OPERATED DEVICE

**John L. Janning, Dayton, Ohio, assignor of one-third each to H. Talman Dybvig and Roger S. Dybvig, both of Kettering, Ohio**
**Filed Sept. 25, 1967, Ser. No. 670,255**
**Int. Cl. H05b** *37/02, 41/36*
**U.S. Cl. 315—119** **18 Claims**

An electrical apparatus which simulates a burning element such as a candle, includes a switch that is responsive to an operator's breath. The switch is placed adjacent the simulated burning element and, with associated circuitry, controls the operation of the simulated burning element. The apparatus is so arranged that a breathing activity, such as blowing toward the simulated flame, actuates the breath operated switch. In response, the switch and associated electrical circuitry alter the burning element, giving the illusion that the simulated burning element was directly affected by the operator's breath. Devices given as examples comprise an electric lamp simulating a candle which is extinguished by an operator blowing upon the base of a light bulb; a simulated cigarette lighter having a light bulb representing the flame thereof which is extinguished by blowing toward the light bulb; and a simulated cigar having a lamp at one end thereof to represent burning tobacco which is energized by operator inhalation at the opposite end of the simulated cigar. In simulating flame devices extinguished as by blowing, lamp illumination is sustained by a holding relay and simulated flame extinction is achieved with a breath operated switch which momentarily interrupts the voltage applied to the holding relay. Ignition of simulated flame devices is achieved with a magnet carrier resembling a match and a magnetically sensitive switch which responds when the simulated match is presented to the magnetically sensitive switch.



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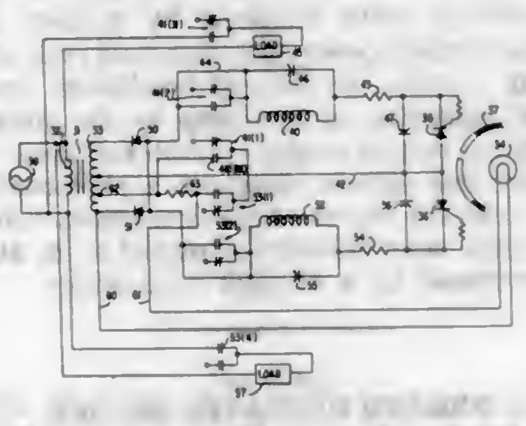
**3,479,562**

### ANTI-HUNTING CIRCUIT FOR METER RELAY

**Donald S. Cleveland, Beverly, Mass., assignor to General Electric Company, a corporation of New York**
**Filed May 5, 1967, Ser. No. 636,513**
**Int. Cl. H05b** *37/02, 39/04, 41/36*
**U.S. Cl. 315—159** **3 Claims**



A stabilized meter relay having a light-activated switching device controlling a load relay, a light source and means for controlling the passage of light from the source to the light-sensitive switching means includes a resistor in series between the power supply and the light source. Normally-open relay contacts in parallel with the resistor short the resistor when the load is energized.

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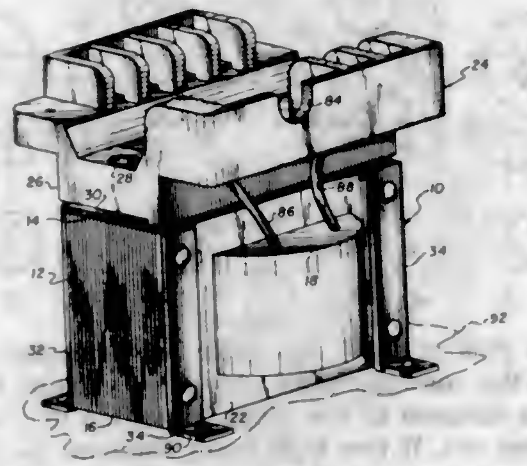
**3,479,563**

### TRANSFORMER WITH FUSE

**Wayne C. Roy, Springfield, N.J., assignor to Federal Pacific Electric Company, a corporation of Delaware**
**Filed Aug. 15, 1968, Ser. No. 752,863**
**Int. Cl. H02h** *7/14;* **H01h** *9/00*
**U.S. Cl. 317—15** **8 Claims**



A transformer is combined with a fuse. An insulating block with channels serves as a barrier to protect the terminals of the transformer. The block also has a space for the retention by clip means of the fuse of the transformer.

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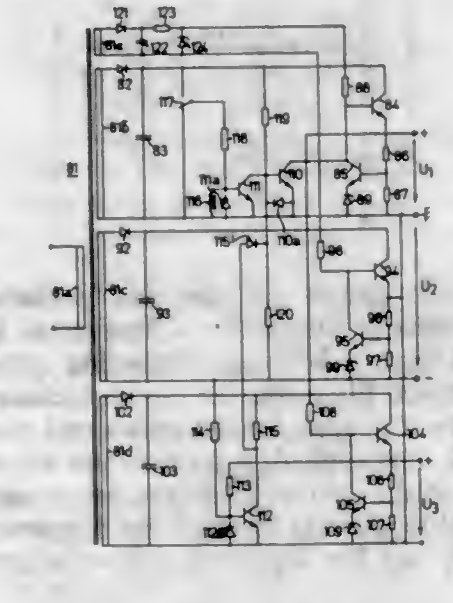
**3,479,564**

### CONTROL CIRCUIT FOR TURNING OFF STABILIZED STARTING VOLTAGES IN CASE OF SHORT CIRCUIT

**Günther Bausch, Fischbach, Germany, assignor to Diehl, Nuremburg, Germany**
**Filed Nov. 13, 1967, Ser. No. 682,151**
**Claims priority, application Germany, Nov. 23, 1966, D 51,613**
**Int. Cl. H02h** *5/00, 3/28, 3/00*
**U.S. Cl. 317—22** **13 Claims**



A circuit for supplying a plurality of stabilized voltages and operable for interrupting the supply of all thereof when any one of the loads supplied thereby is shorted or otherwise becomes excessive in which a load or series transistor supplies a voltage divider for each stabilized voltage while a regulating transistor controls the bias on the base of each series transistor to maintain the voltage across the respective voltage divider constant. A normally nonconductive transistor is connected to the base of one series transistor and is connected to be

sensitive to a voltage drop across any of the voltage dividers of the other series transistors for making said one series transistor nonconductive. The base of the series transistors other than said one are connected to be sensitive to loss of voltage across the voltage divider of said one series transistor for making their respective series transistor nonconductive.

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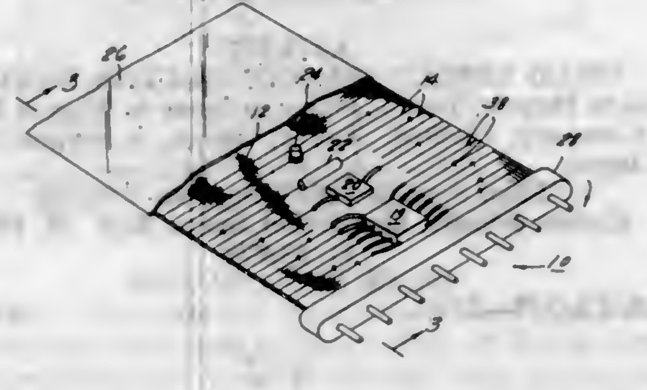
**3,479,565**

### WOVEN CIRCUIT DEVICE

**Edgar A. Ross, Greenville, S.C., and Stanley Rask, New York, N.Y., assignors to Southern Weaving Company, Greenville, S.C.**
**Filed Sept. 6, 1967, Ser. No. 665,840**
**Int. Cl. H02b** *1/04*
**U.S. Cl. 317—101** **16 Claims**



The woven circuit device has a central layer of warp wires, two layers of insulating fabric, one on each side of the warp wire layer, and two layers of fill wires, one on each of the outer surfaces of the fabric layers. Selected warp wires are woven through one or both layers of the insulating fabric, over one or more selected fill wires, and back into the central portion of the structure so as to form nodal points in a woven matrix circuit arrangement. The provision of multiple levels of fill wires increases the density of circuit connections available in a given surface area of the device. The whole structure is held together by insulating binder threads which pass through both layers of insulating fabric and around the fill wires and between the warp wires so as to insulate the wires from one another. All of the insulating fabric and wires are woven together in a single continuous weaving process so as to form a tightly bound, integral circuit structure. Electrical circuit components can be mounted on portions of the structure from which the conductors have been removed and can be electrically connected directly to the wires to form a unitary matrix circuit structure with components integrally attached. The device also can be used as a shielded woven cable when no connections are made between the warp wires and the fill wires.

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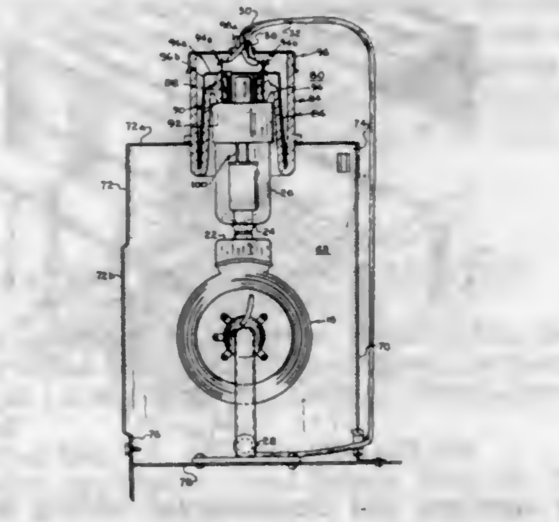
**3,479,566**

### SHIELD

**Neal W. Hursh and Ronald R. Mooreland, Indianapolis, Ind., assignors to RCA Corporation, a corporation of Delaware**
**Filed Mar. 11, 1968, Ser. No. 712,173**
**Int. Cl. H02b** *1/20, 11/06;* **H05k** *9/00*
**U.S. Cl. 317—103** **11 Claims**

An enclosure and mounting socket assembly is used for a high voltage rectifier in a television receiver. A metallic box-shaped shield surounds the horizontal deflection output transformer and associated high voltage rectifier. A sleeve of insulating material is mounted within a hole in the shield. An inner wall of insulating material is joined at one end to the sleeve and supports at its opposite end a terminal receiving socket in which the rectifier is mounted. A cup-shaped member of X-radiation absorptive material is mounted within the sleeve over a portion of the socket remote from the rectifier and overlaps the portion of the shield adjacent the sleeve mounting hole so as to preclude emission outside the shield of X-radiation from the rectifier.



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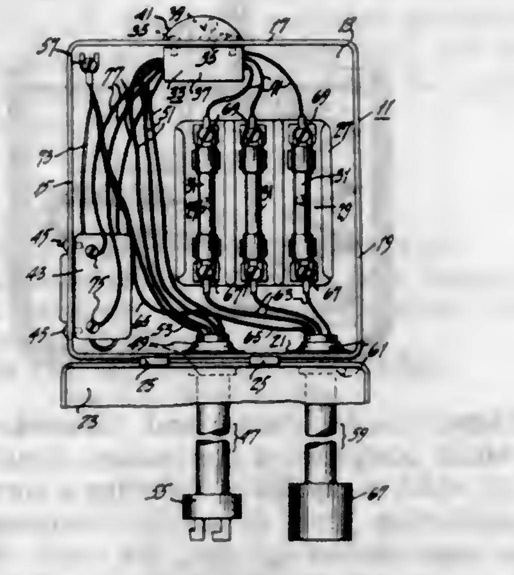
**3,479,567**

### MODULAR ELECTRICAL SWITCH AND FUSE BOX HAVING MEANS FOR CONNECTING TO LIKE BOXES

**Aaron Glassman, Scranton, Pa., assignor to Pennsylvania Sewing Research Corporation, a corporation of Pennsylvania**
**Continuation-in-part of application Ser. No. 518,135, Jan. 3, 1966. This application Oct. 23, 1968, Ser. No. 769,837**
**Int. Cl. H02b** *1/04, 9/00*
**U.S. Cl. 317—114** **4 Claims**



A modular electrical unit comprised of a metal box having therein a fuse mounting, a wall-mounted switch and a wall-mounted jumper receptacle. A flexible cable, having a plug at the external end thereof, enters the box and connects to the line side of the switch. The load side of the switch is connected to the line side of the fuse mounting. Means for connecting a load enters the box and connects to the load side of the fuse mounting, and the jumpers receptacle is connected to the line side of the switch.

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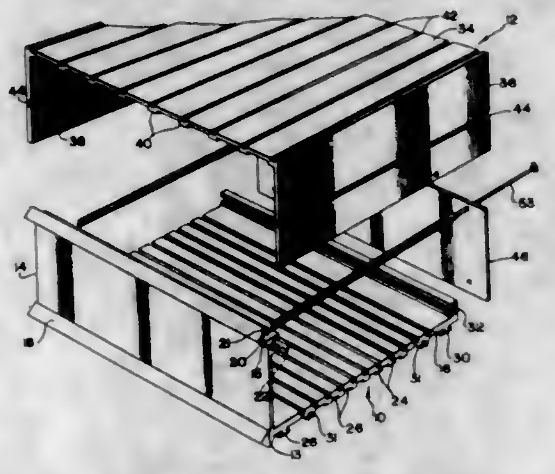
**3,479,568**

### INSTRUMENT HOUSING

**Laban D. Shapiro, Lincoln, Peter A. Latham, Concord, Paul E. Brefka, Framingham, and Paul J. La Brie, Woburn, Mass., assignors, by direct and mesne assignments, to Aerospace Research, Inc., Boston, Mass., a corporation of Massachusetts**
**Filed May 13, 1968, Ser. No. 728,713**
**Int. Cl. H02b** *1/08, 9/00, 1/04*
**U.S. Cl. 317—120** **12 Claims**

A housing is especially suited for electronic circuitry and formed of first and second extruded unitary members. Fittings for the mounting of circuitry and for interlocking the two members are formed integrally with these members, and the assembled housing is extremely rugged and yet attractive in appearance.



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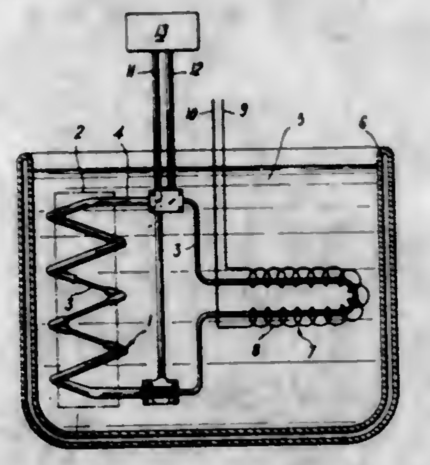
### 3,479,569

### METHOD AND APPARATUS FOR RELEASING ELECTRIC ENERGY

**Gérard Prost, Paris, and Jean Sole, Clamart, France, assignors to Commissariat à l'Energie Atomique, Paris, France**

**Filed Nov. 9, 1966, Ser. No. 593,133**
**Claims priority, application France, Nov. 9, 1965, 37,843**
**Int. Cl. H01h** *47/22*
**U.S. Cl. 317—123** **15 Claims**



An apparatus for storing and releasing electrical energy which comprises a conducting circuit made of a material which is capable of assuming a normal state or a superconducting state, means for bringing said circuit to the superconducting state, an outer metallic sheet which covers said circuit over a part of its length, said sheet being in electrical contact with said circuit and having a low electrical resistance compared with the resistance of said circuit in the normal state, a switching means placed in said circuit in a zone which is not covered by said sheet, means for controlling said switch for opening said circuit, means for introducing an electrical current into said circuit and terminal conductors for coupling said sheet directly to a load circuit.

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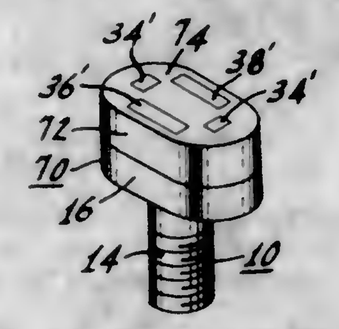
### 3,479,570

### ENCAPSULATION AND CONNECTION STRUCTURE FOR HIGH POWER AND HIGH FREQUENCY SEMICONDUCTOR DEVICES

**George J. Gilbert, Whitehouse Station, N.J., assignor to RCA Corporation, a corporation of Delaware**

**Filed June 14, 1966, Ser. No. 557,499**
**Int. Cl. H01l** *3/00, 5/00*
**U.S. Cl. 317—234** **7 Claims**

A transistor pellet is mounted on a support member or substrate together with a plurality of electrically conductive terminal members or blocks. Means are provided for electrically connecting different portions of the pellet to different ones of the blocks. The pellet, a portion of the substrate on which the pellet is mounted, the connecting means, and the blocks, with the exception of substantially no more than a surface of each of the terminal members, are encapsulated in an encapsulating material.



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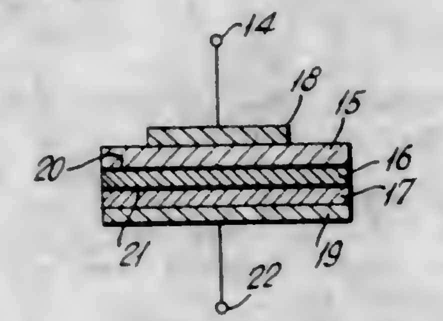
### 3,479,571

### FIELD EFFECT SEMICONDUCTOR DEVICE

**Yuichi Haneta, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan**

**Filed Sept. 25, 1967, Ser. No. 670,082**
**Claims priority, application Japan, Sept. 28, 1966, 41/63,978**
**Int. Cl. H01l** *3/04, 5/00*
**U.S. Cl. 317—234** **2 Claims**



A field effect semiconductor device in which a dielectric substance is sandwiched between two semiconductor materials, whereby a capacitance variation is obtained by impressing either a positive or a negative potential to one of the semiconductor materials.

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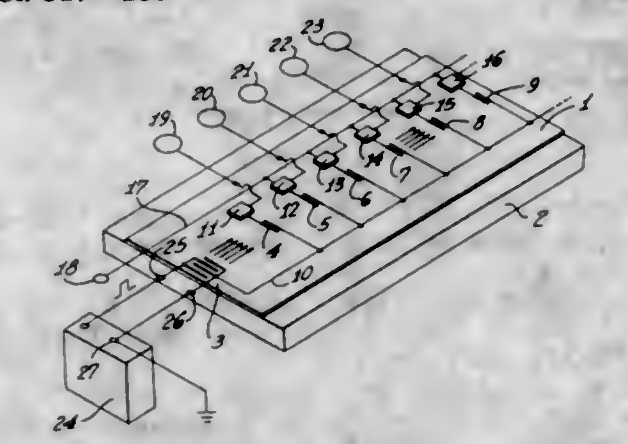
### 3,479,572

### ACOUSTIC SURFACE WAVE DEVICE

**Gerold E. Pokorny, San Mateo, Calif., assignor to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware**

**Filed July 6, 1967, Ser. No. 651,510**
**Int. Cl. H01l** *11/00, 15/00*
**U.S. Cl. 317—235** **4 Claims**



A multitaped acoustic delay line uses an acoustic surface wave for permitting multiple spaced outputs. Input signals, for example, of high or microwave frequency are converted into an acoustic surface wave which travels along the surface of a piezoelectric medium at acoustic velocities. Each of a plurality of spaced transducers coupled to the medium detects the acoustic wave and converts it back into an electrical signal of the same frequency. Compatible with intgerated circuits, the delay line is integral with a plurality of spaced semiconductor switches in one embodiment.

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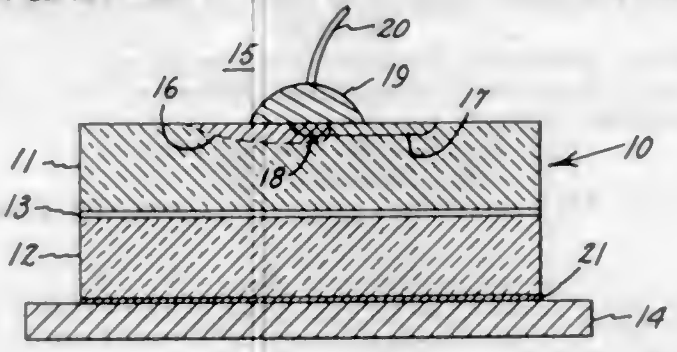
### 3,479,573

### WIDE BAND GAP SEMICONDUCTOR DEVICES HAVING IMPROVED TEMPERATURE INDEPENDENT NON-RECTIFYING CONTACTS

**Walter Garwacki, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**

**Filed Feb. 15, 1967, Ser. No. 616,366**
**Int. Cl. H01l** *3/00, 5/00, 11/00*
**U.S. Cl. 317—237** **6 Claims**



Improved semiconductor bodies useful as light emitting diodes and solar cells include a body of P-type compound semiconductor of the II–VI class such as zinc telluride and an ohmic or non-rectifying contact made to one surface of the body. The contact includes a first region containing an alkali metal such as lithium surface diffused therein, a second region overlapping the first region and comprising chemically reacted gold at the surface of the wafer, and a wetted contact to first and second regions and to the overlapped region made by an alloy of a conductive metal having non-rectifying or P-conductivity type characteristics as for example, an alloy of indium and silver. The semiconductor body may be entirely P-type or may contain a P-N junction.

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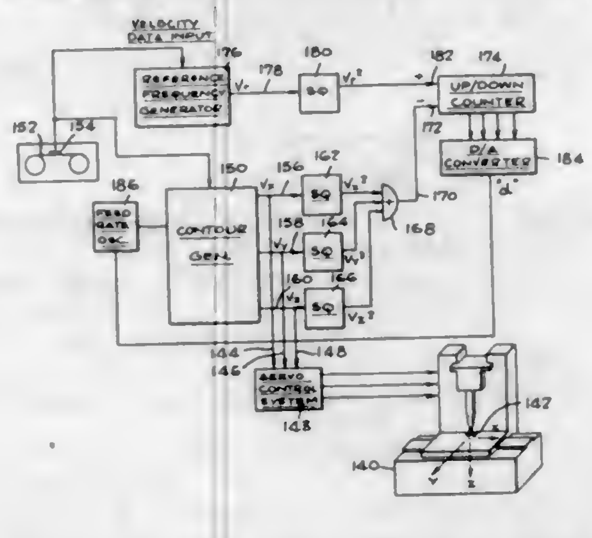
### 3,479,574

### FEED RATE COMPUTER AND SQUARING CIRCUIT FOR A PULSE RESPONSIVE MULTIAXES SERVO SYSTEM

**Marion Kosem, Willoughby Hills, Ohio, assignor to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware**

**Filed Nov. 18, 1966, Ser. No. 595,500**
**Int. Cl. H02p** *7/42;* **G05b** *19/14*
**U.S. Cl. 318—18** **10 Claims**



In a numerically controlled machine tool, the feed rate number, for each axis which determine the velocity at which a cutting tool is to operate, is recorded on magnetic or punched tape. In accordance with this invention, the velocity ordered by the feed rate number for each axis is carefully monitored and maintained by generating the sum of the squares of the velocities ordered by the feed rate generator of the machine tool for the respective X, Y and Z axes and comparing this number with the square of the velocity generated directly from the feed rate control numbers recorded on the tape. Any difference between these two numbers is used to correct the frequency of oscillation of the feed rate oscillator for the feed rate generator.

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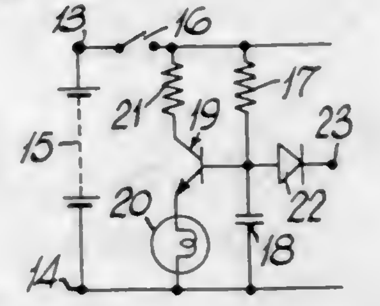
### 3,479,575

### INDICATING DEVICE FOR A BATTERY CHARGING SYSTEM

**Maurice James Wright, Harborne, Birmingham, and Roger William Nolan, Redditch, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England**

**Filed Mar. 10, 1967, Ser. No. 622,280**
**Claims priority, application Great Britain, Mar. 25, 1966, 13,261/66**
**Int. Cl. H02j** *7/04, 7/16*
**U.S. Cl. 320—48** **5 Claims**



Transistor circuits for illuminating a warning lamp on a road vehicle when the generator is not producing an output. The transistor can be in series with the warning lamp and turned off when the generator produces an output, or in parallel with the warning lamp and turned on to short-circuit the warning lamp when the generator produces an output.

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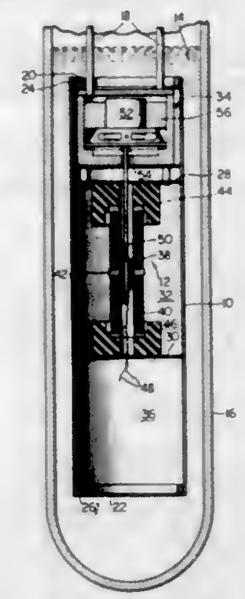
### 3,479,576

### SUPERCONDUCTING AMPLIFIER

**Cameron B. Satterthwaite and Roger P. Ries, Urbana, Ill., assignors to University of Illinois Foundation, Urbana, Ill., a corporation of Illinois**

**Filed Jan. 20, 1966, Ser. No. 521,934**
**Int. Cl. H03f** *19/00*
**U.S. Cl. 321—8** **6 Claims**



A superconducting amplifier for transforming a low level input signal into an amplified alternating output signal including a coaxially wound solenoid, the coils each formed of superconducting wire and disposed in close inductive coupling with the low level input signal being applied to one of the solenoid coils, and a vibrating mechanism for vibrating one of the coils with respect to the other so as to cause a periodic variation in the mutual inductance coupling the input and output coils to provide an amplified alternating output signal in the output coil having an amplitude corresponding to the level of the input signal, the combination enabling the amplification of input signals in the picovolt region.

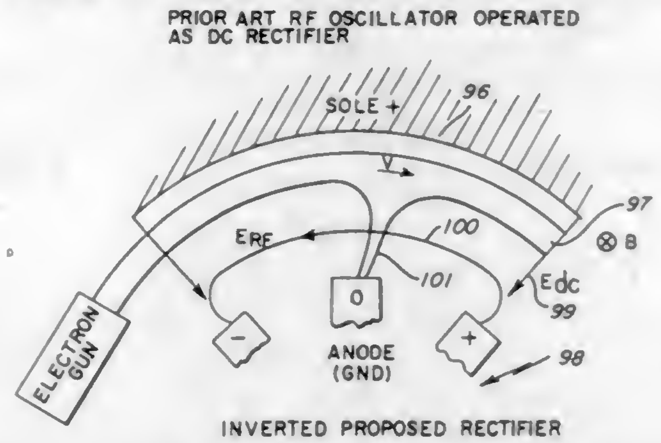
### 3,479,577
## CROSSED FIELD MICROWAVE RECTIFIER

**Thomas E. Ruden, Newton Highlands, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware**

**Filed May 19, 1967, Ser. No. 639,668**

**Int. Cl. H02m** *7/02*

**U.S. Cl. 321—8** **13 Claims**


PRIOR ART RF OSCILLATOR OPERATED AS DC RECTIFIER
SOLE +
96
V
97
⊗ B
ERF
100
101
0
Edc
99
−
+
ANODE (GND)
98
ELECTRON GUN
INVERTED PROPOSED RECTIFIER

The invention relates to a device for conversion of high power radio frequency electromagnetic energy in the microwave spectrum into direct current energy. An inverted tube geometry comprising electron generation or confining means of substantially large curvature together with an internal slow wave periodic delay line structure provides the basic structure for optimum electron-radio frequency wave interaction to result in a significantly high efficiency energy converter. Various electron beam sources are disclosed as well as auxiliary electrode configurations to achieve appropriate space charge conditions essential to achieve high DC power and efficient operation.

### 3,479,578
## RECTIFIER ARRANGEMENT UTILIZING SEMICONDUCTOR ELEMENTS

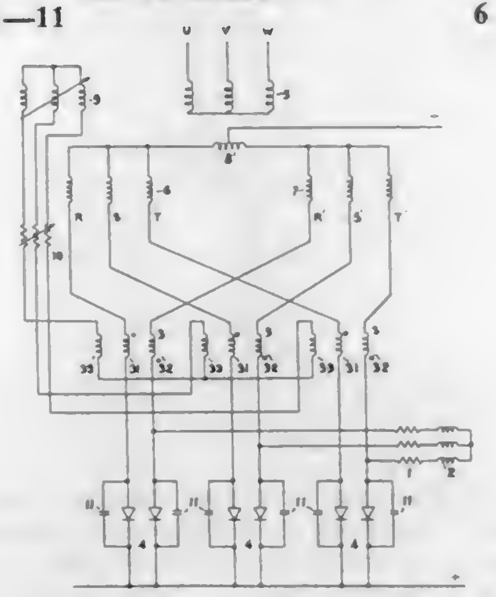
**Hans Blatter and Rolf Wüthrich, Wettingen, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company**

**Filed Feb. 23, 1968, Ser. No. 707,549**

**Claims priority, application Switzerland, Mar. 17, 1967, 3,865/67**

**Int. Cl. H02m** *1/18*

**U.S. Cl. 321—11** **6 Claims**



A three-phase rectifier arrangement connected to a three-phase alternating current supply source uses semiconductors as the rectifier elements. Capacitors are connected in parallel with the semiconductor elements for dissipating excess voltages and premagnetized transductor control choke coils for voltage regulation are connected in series with the parallel connections of the semiconductor elements and their capacitors. Ohmic-inductive reactance circuits are connected between the choke coils and the semiconductor elements to prevent undesired reverse magnetization of the choke coils which otherwise would occur as a result of the charging currents taken by the capacitors.

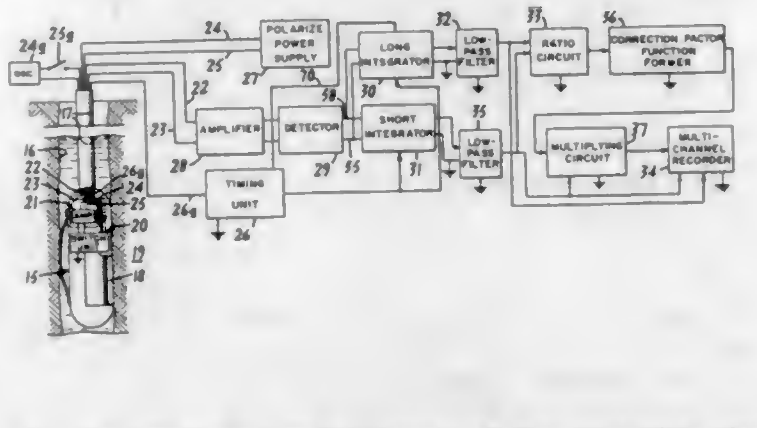
### 3,479,579
## NUCLEAR MAGNETISM SIGNAL ANALYZING SYSTEM

**John H. Baker, Jr., Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas**

**Filed Dec. 6, 1966, Ser. No. 599,527**

**Int. Cl. G01n** *27/72*

**U.S. Cl. 324—.5** **8 Claims**



In the particular embodiment of the invention described herein, an instrument disposed in a well bore has a coil positioned adjacent to the surrounding well formation. A control circuit first energizes the coil with polarizing field current and then connects the coil to two integrators which integrate a signal detected from the formation during a long period of time and a short period of time, respectively, to provide an indication of the signal decay rate.

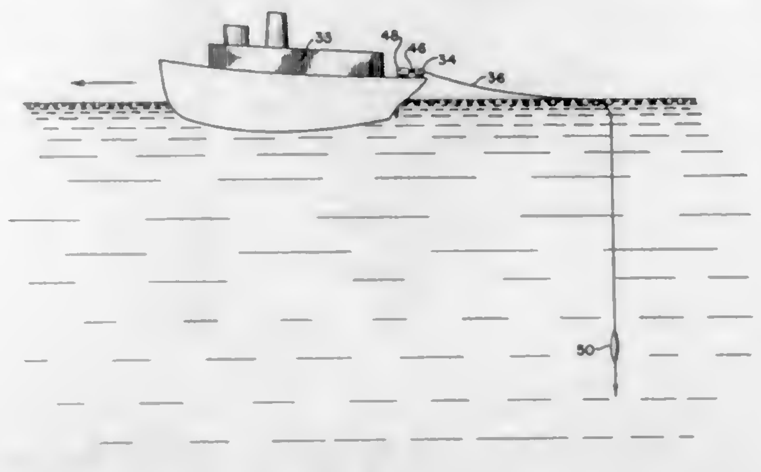
### 3,479,580
## APPARATUS INCLUDING A CONDUCTIVITY PROBE FOR DETERMINING THE SALINITY OF WATER

**Hoyt Clarke Hottel, Jr., Marion, Mass., assignor, by mesne assignments, to The Buzzards Corporation, Marion, Mass., a corporation of Massachusetts**

**Filed Apr. 22, 1965, Ser. No. 450,147**

**Int. Cl. G01v** *3/02*

**U.S. Cl. 324—1** **1 Claim**



An apparatus for the determination of the salinity of a body of water including recording and measuring equipment aboard a vessel and a probe containing a sensing device, the probe being launched from the vessel into the water and penetrates the sea to various depths and measures the conductivity of the sea water on a confined path and communicates with the shipboard equipment through a single wire or through a plurality of wires, the probe itself being in electrical contact with the sea water.

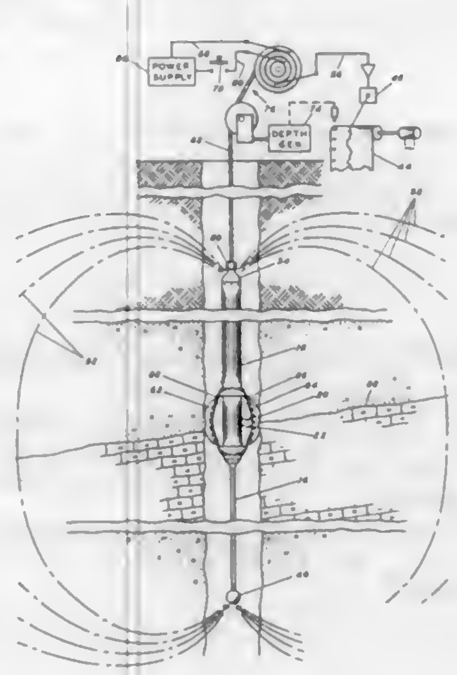
### 3,479,581
## VERTICAL RESISTIVITY LOGGING BY MEASURING THE ELECTRIC FIELD CREATED BY A TIME-VARYING MAGNETIC FIELD

**Richard J. Runge, Anaheim, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware**

**Filed Aug. 24, 1967, Ser. No. 662,981**

**Int. Cl. G01v** *3/12*

**U.S. Cl. 324—6** **11 Claims**



A vertical resistivity borehole logging system using an elongated current dipole to create a time-varying magnetic field in earth formations traversed by the borehole that induces a uniform electric field varying in accordance with the vertical (across the bedding) conductivity or resistivity of the earth formations which is measured by potential electrodes. As distinguished from (1) conventional electrical logging (using low frequency or D.C.), or (2) induction logging (using high frequency) both of which inherently measure only the horizontal resistivity perpendicular to the borehole, the present method measures vertical resistivity in the direction parallel to the axis of the borehole.

### 3,479,582
## ARRANGEMENT FOR TOUCH-FREE MEASUREMENT OF DISPLACEMENTS

**Dietrich Meyer, Hamburg, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware**

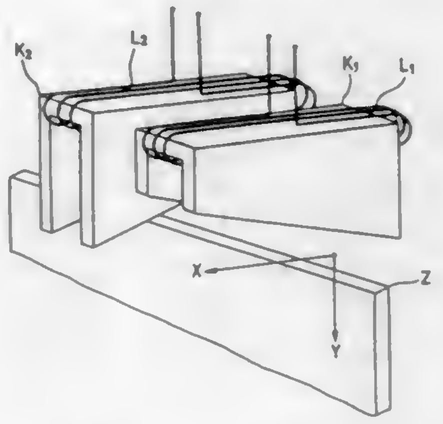
**Filed Nov. 3, 1967, Ser. No. 680,385**

**Claims priority, application Germany, Nov. 16, 1966, P 40,810**

**Int. Cl. G01r** *33/02*

**U.S. Cl. 324—34** **15 Claims**

A device for measuring the displacement of a body movable in two orthogonal directions. The device includes a ferromagnetic element secured to the body and a pair of ferromagnetic cores arranged adjacent said element to define a pair of air gaps therewith that vary in opposite sense with the displacement of said body. The coils are energized to derive first and second currents proportional to the admittances thereof. The currents are combined to produce first and second signals proportional to the sum and difference thereof. The signals are a measure of the body movement in the two orthogonal directions, and each is independent of the body movement in the other orthogonal direction.



### 3,479,583
## LINE VOLTAGE FLUCTUATION INSENSITIVE DETECTOR FOR PHASE FAILURES ON THREE PHASE TRANSFORMERS

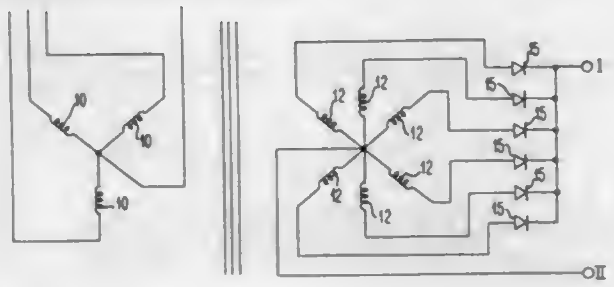
**Horst J. Hemprich, Sindelfingen, Walter F. Schneider, Gartringen, Hans W. Spiro, Boblingen, and Joachim O. Zehr, Herrenberg, Germany, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Dec. 11, 1967, Ser. No. 689,717**

**Claims priority, application Germany, Feb. 4, 1967, J 32,926**

**Int. Cl. G01r** *31/02*

**U.S. Cl. 324—51** **5 Claims**



A circuit arrangement for the detection of power failures in supplies with three-phase transformers. First and second signals related to the mean D.C. voltage and the peak A.C. voltage of the combined outputs of full-wave rectifiers connected to the transformer secondary windings are derived. Failure of a phase is indicated by applying these first and second signals to a compare circuit comprising a differential amplifier and a zero indicator. An amplifier and associated hysteresis means are provided at the zero indicator output to eliminate "fluttering."

### 3,479,584
## SYSTEM FOR ADJUSTING OPERATING AND RELEASE SENSITIVITIES OF MAGNETICALLY BIASED RELAY ARMATURES

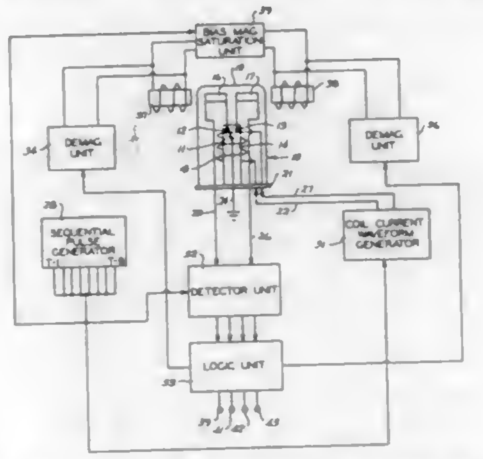
**John B. Casey, Lee's Summit, Mo., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**

**Filed Sept. 20, 1966, Ser. No. 580,771**

**Int. Cl. G01r** *31/02;* **G01c** *25/00;* **H01f** *13/00*

**U.S. Cl. 324—28** **3 Claims**

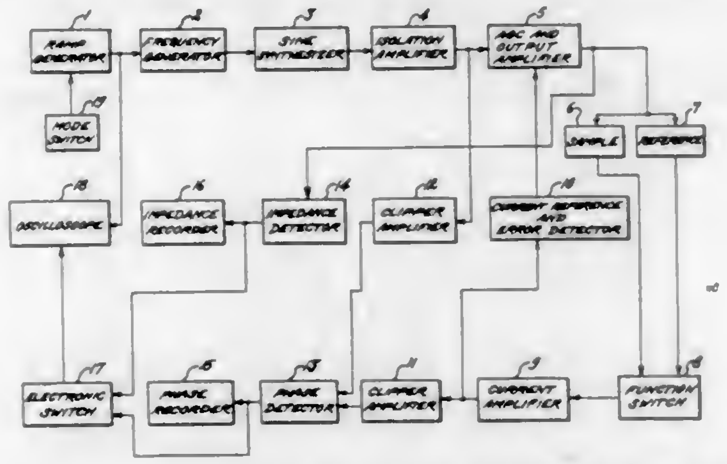
A relay armature biased by first and second bias magnets is adjusted by applying a series of four discrete force levels with a current step waveform generator in conjunction with a coil encircling the relay armature. A detector unit samples the state of the armature by sensing electrical continuity between the armature and a normally opened and normally closed contact. A bias applied to the armature is altered by selectively demagnetizing the bias magnets using exponentially decaying sinusoidal pulses.


BIAS MAG. SATURATION UNIT
DEMAG UNIT
DEMAG UNIT
SEQUENTIAL PULSE GENERATOR
COIL CURRENT WAVEFORM GENERATOR
DETECTOR UNIT
LOGIC UNIT

### 3,479,585
### SYSTEM FOR MEASURING THE IMPEDANCE AND PHASE OF A SOLID PROPELLANT INCLUDING A CONSTANT CURRENT SOURCE

**Bruce W. Liebel, Chino, and Howard C. Edgington and Philip J. Meredith, Covina, Calif., assignors to the United States of America as represented by the Secretary of the Air Force**

**Filed Aug. 2, 1967, Ser. No. 658,313**
**Int. Cl. G01r** *27/00;* **H03k** *5/08*
**U.S. Cl. 324—57** **3 Claims**



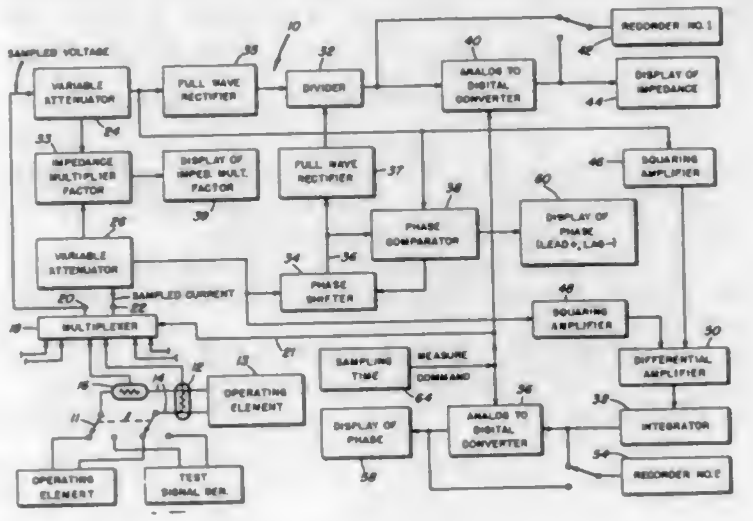
A system for the non-destructive testing of a solid propellant sample by sweeping the sample with a precisely controlled sinusoidal voltage of varying frequency and amplitude. The system includes feedback means to regulate the amplitude of the signal to the sample so as to maintain a constant current therethrough. This current is compared to a reference thus generating an error signal for application to the feedback means with the error signal being a measure of the impedance. Phase means are provided to compare the error signal to the sinusoidal voltage for phase measurement.

### 3,479,586
### DYNAMIC IMPEDANCE ANALYZER INCLUDING MAGNITUDE AND PHASE DISPLAYING MEANS

**Frank M. Perra, Laurel, Md., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware**

**Continuation-in-part of application Ser. No. 644,681, June 8, 1967. This application Oct. 16, 1967, Ser. No. 675,474**
**Int. Cl. G01r** *27/00, 23/12*
**U.S. Cl. 324—57** **10 Claims**

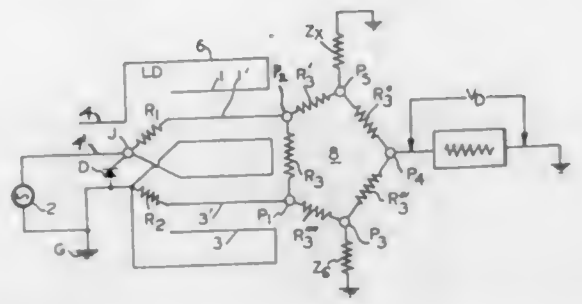
A dynamic impedance analyzer for rapidly determining the impedance characteristics of line conditions or electrical elements without disturbing the operational line network including line voltage and current sampling probes feeding an analog divider, through a phase shifter control circuit, at zero phase to obtain a signal value representative of instantaneous V absolute/I absolute ratio and also feeding an impedance phase discriminator to obtain a signal value representative of phase between sampled V and I the sign (representing phase lag or lead) of which is obtained from an auxiliary output of the phase shifter.



### 3,479,587
### REFLECTION-COEFFICIENT MEASURING APPARATUS

**Thomas E. MacKenzie, West Acton, and Donald B. Sinclair, Concord, Mass., assignors to General Radio Company, Concord, Mass., a corporation of Massachusetts**

**Filed June 14, 1967, Ser. No. 646,102**
**Int. Cl. G01r** *27/04*
**U.S. Cl. 324—58** **17 Claims**



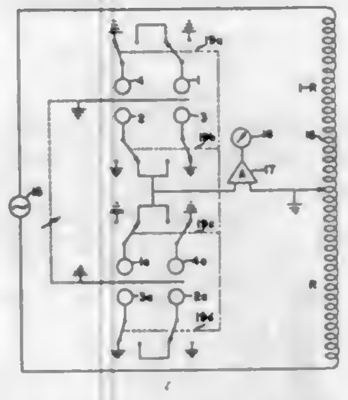
The problem of variation with frequency in the calibration factor of reflection-coefficient measurements, and related disadvantages in combined balun and multi-port power-divider network reflection-coefficient measuring apparatus are largely obviated by employing a novel lumped-circuit resistor chain network in substitution for the power divider network.

### 3,479,588
### DISPLACEMENT MEASURING DEVICE INCLUDING A SPACED FOUR-CORNER ELECTRODE ARRAY

**David M. Makow, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada**

**Filed May 12, 1967, Ser. No. 637,952**
**Int. Cl. G01r** *27/26*
**U.S. Cl. 324—61** **6 Claims**

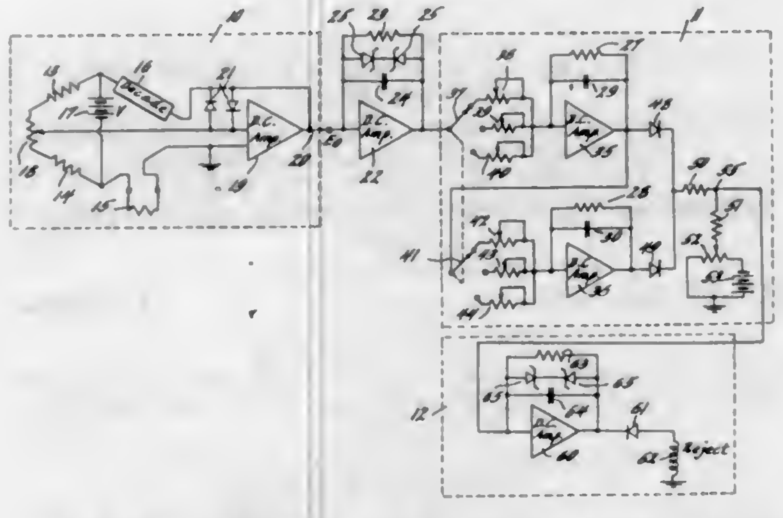
A linear or angular displacement measuring device comprising two sets of at least two extended electrically capacitive electrode structures with each set mounted in fixed, substantially parallel relation, a movable shielding member of predetermined size interposed between the two sets of electrode structures such that when the shield moves in relation to the electrode structures, the electrical capacitance between the said electrodes increases on one set and decreases on the other, and means for measuring the cross-capacitance values of said electrodes, said capacitance values being a function of the displacement of the shield in relation to the said fixed electrode structures.



### 3,479,589
### RESISTANCE MEASURING BRIDGE CIRCUIT HAVING OUTPUT MEANS PROVIDING A SINGLE POLARITY VOLTAGE

**James Loyd Owens, Clemmons, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**

**Filed Feb. 21, 1967, Ser. No. 617,594**
**Int. Cl. G01r** *27/02*
**U.S. Cl. 324—62** **3 Claims**



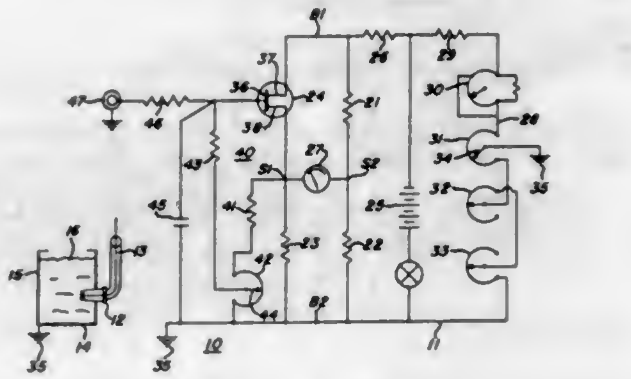
A bridge circuit for sensing a resistance that is greater or less than a standard resistance by more than a predetermined amount. Unidirectional conducting circuitry connected to the outputs of two serially connected D.C. inverter amplifiers which are connected to the bridge output produces a single polarity voltage having a magnitude proportional to the deviation of the unknown resistance from the known resistance. Circuitry responsive to the single polarity voltage indicates whether the unknown resistance comes within the predetermined tolerance.

### 3,479,590
### BRIDGE FOR MEASURING MOISTURE CONTENT HAVING FIELD EFFECT TRANSISTOR IN ONE ARM WITH GATE ELECTRODE RESISTIVELY CONNECTED THROUGH TEST LIQUID

**Leonard L. Henderson, 1014 Central Parkway, Warren, Ohio 44484**

**Filed Dec. 4, 1967, Ser. No. 687,678**
**Int. Cl. G01r** *27/02*
**U.S. Cl. 324—65** **11 Claims**

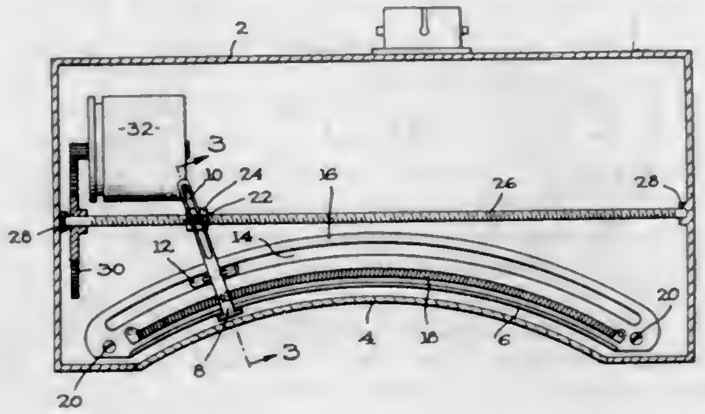
A conductivity measuring apparatus useful for determining moisture content of non-conductive liquids in which a field effect transistor is used for high sensitivity with low test potentials. The FET is connected in one arm of a four arm bridge and its gate electrode is resistively connected through the test liquid to ground. A compensating circuit in shunt with the FET provides for operation over a wide-range of liquid conductivities.



### 3,479,591
### INDICATOR HOUSING WITH A POINTER DRIVING MEANS HAVING A FRONT FACE CONCAVE SCALE MEMBER

**Edward C. Mathews, Yorktown Heights, N.Y., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York**

**Filed Sept. 29, 1965, Ser. No. 491,168**
**Int. Cl. G01r** *17/06*
**U.S. Cl. 324—99** **4 Claims**



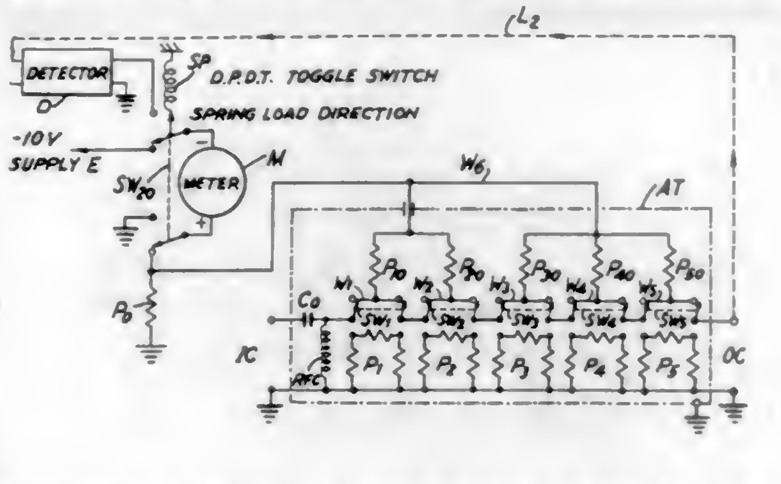
An indicating device utilizing a curved scale, the convex surface of which faces the interior of a housing. A pointer rides along the scale and is driven by a lead screw mechanism located within the interior of the housing, the latter being equipped with a lost motion connection for translating straight line motion to curved line motion.

### 3,479,592
### FIELD STRENGTH METERS HAVING A PLURALITY OF SCALES AND INCLUDING MEANS FOR INDICATING THE SCALE TO BE OBSERVED AND THE MULTIPLYING FACTOR TO BE APPLIED

**John A. Nardontonia, Pennsauken, N.J., assignor to Jerrold Electronics Corporation, Philadelphia, Pa., a corporation of Delaware**

**Filed Aug. 23, 1966, Ser. No. 574,355**
**Int. Cl. G01r** *1/38, 15/08*
**U.S. Cl. 324—115** **4 Claims**

A field intensity meter is described wherein the intensity of an A.C. wave is easily determined by selectively interposing selected attenuators in series with the wave and in synchronism with said interposition adjust a resistive network. The resistive network and the attenuated detected A.C. wave being alternately applied to a meter for



respectively indicating a multiplication factor and the relative intensity level of the A.C. wave.

### 3,479,593
## CURRENT METER EMPLOYING A LOGARITHMIC AMPLIFIER HAVING COMPENSATION FOR TWO COMPONENTS OF TEMPERATURE INDUCED ERROR

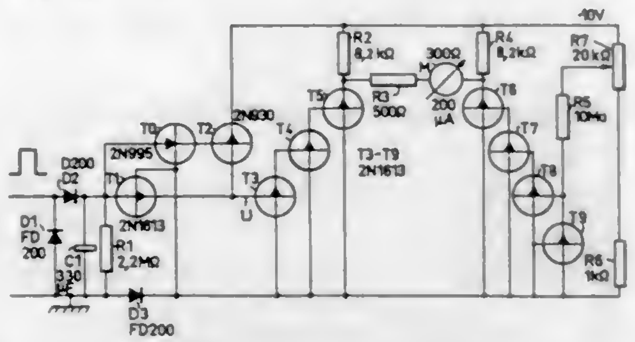
**Erik Dissing, Nykoping, and Anders Gustaf Lydén, Jakobsberg, Sweden, assignors to Aktiebolaget Atomenergi, Stockholm, Sweden, a corporation of Sweden**

**Filed Feb. 17, 1966, Ser. No. 528,255**

**Claims priority, application Sweden, Feb. 19, 1965, 2,191/65**

**Int. Cl. G01r** *1/30*

**U.S. Cl. 324—123 1 Claim**



A logarithmic current amplifier includes a feedback transistor between input and output and an output stage which includes two cascades of transistors connected as emitter followers. The first transistor in the first cascade is fed from the output of the amplifier and the first transistor of the second cascade is provided with an auxiliary transistor connected as a diode. The voltage of the auxiliary transistor is fed to the first transistor of the second cascade and the emitter of the diode connected transistor is fed by way of a resistor with an adjustable current for compensating a first component of the temperature drift of the feedback transistor. An instrument which measures the output current of the amplifier is connected between the two cascades in series with a resistor having a suitably selected temperature coefficient for compensating a second component of the temperature drift of the feedback transistor.

### 3,479,594
## INDICATOR HAVING NONLINEAR DAMPING

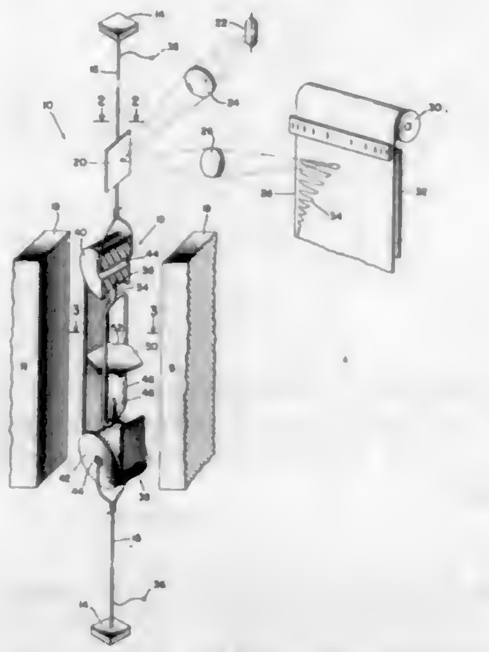
**Harry R. Allen, Littleton, and Alfred C. Mercier, Englewood, Colo., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**

**Filed July 6, 1967, Ser. No. 651,533**

**Int. Cl. G01r** *1/14*

**U.S. Cl. 324—125 6 Claims**

A nonlinear galvanometer having a signal coil suspended within a magnetic field by a suspension system to which a mirror is attached. The mirror reflects a beam of light from a light source toward a light sensitive recording medium for providing an indication of an input signal applied to the signal coil. The signal coil is positioned at an acute angle with respect to the magnetic field for producing a nonlinear coil deflection in response to the input signal applied thereto. A damping coil, arranged at at an acute angle with respect to the magnetic field for plying a nonlinear damping to the galvanometer. The arrangement of the coils is such that the angular relationship between one coil and the magnetic field increases as the angular relationship of the other decreases.



### 3,479,595
## ELECTRICAL CORE-MAGNET MEASURING INSTRUMENT

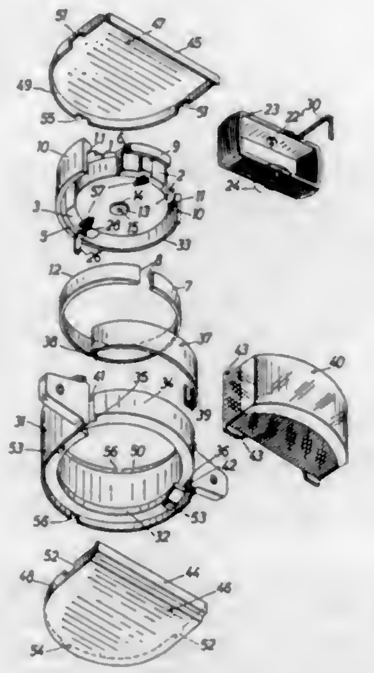
**Fritz Ruempelein, Munich, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany**

**Filed Mar. 26, 1965, Ser. No. 442,879**

**Claims priority, application Germany, Apr. 24, 1964, 1,466,624**

**Int. Cl. G01r** *1/16*

**U.S. Cl. 324—151 12 Claims**



A core-magnet electrical measuring instrument wherein the circular chamber of an open-ended housing accommodates an annular magnetic core surrounding the hub of a plastic holder having two jaws provided with arcuate slots for a ring-shaped magnetic yoke which surrounds the core. The moving coil has coaxial arbors mounted in sockets respectively provided on the boss and on a shaft which is threadedly connected to the holder. The pointer of the coil is movable in front of an arcuate scale-bearing member which is detachably supported by a back support of the housing and is located behind a transparent cap secured to the housing by two end walls.

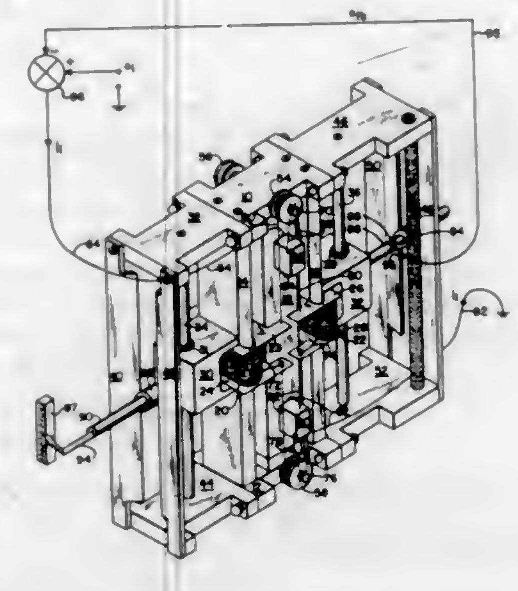
### 3,479,596
## LINEAR METER MOVEMENTS

**Thomas W. Carlson, St. Paul, and John R. Ivers, Fridley, Minn., assignors to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware**

**Filed Sept. 12, 1966, Ser. No. 578,526**

**Int. Cl. G01r** *5/06*

**U.S. Cl. 324—151 4 Claims**



A meter movement with two coil assemblies which move linearly within a magnetic field. The coil assemblies are tied together with ribbon-like wires and pulleys in a counterbalanced configuration; the wires also serving to conduct current to the coils. One of the coil assemblies is connected to a feedback potentiometer which develops a signal used to null the input signal to the meter.

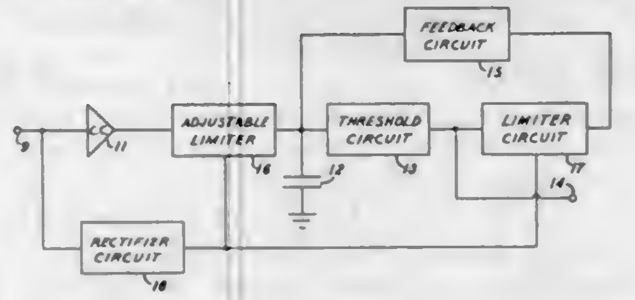
### 3,479,597
## DICODE DECODER

**Donald E. Mack, West Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**

**Filed Dec. 17, 1964, Ser. No. 419,151**

**Int. Cl. H04b** *1/16*

**U.S. Cl. 325—321 4 Claims**



A decoder circuit for a dicode, or three-level signal. The input dicode signal is peak rectified, amplified and inverted to provide symmetrical pulse and minus voltages which are proportional to the peak level of the pulse input. The input signal is also applied to a reversible polarity integrator which integrates between limiting levels established by the plus and minus supply voltages at a rate-proportional to the supply voltage difference. Black-white decision is made on the basis of the potential on the integrating capacitor passing through zero, which is indicative of half the energy of an average amplitude input pulse. Once a decision has been made, a feedback loop gives the circuit additional immunity to the effects of successive narrow noise pulses of a particular polarity, which might otherwise be integrated to a value sufficient to cause erroneous black-white decisions to be made.

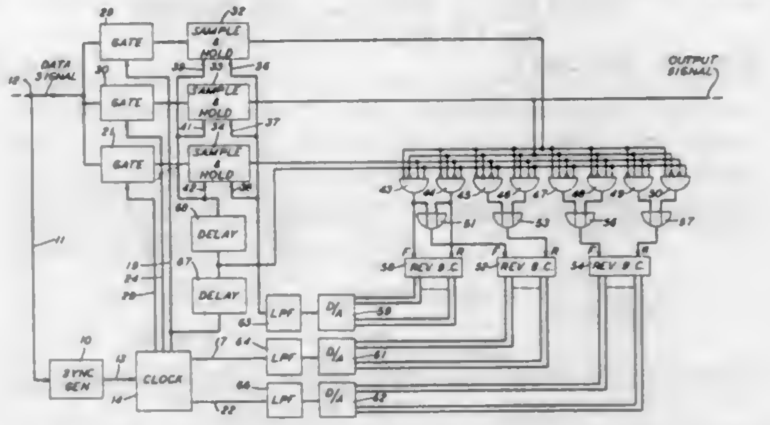
### 3,479,598
## SYSTEM FOR PHASE LOCKING TWO PULSE TRAINS

**David C. Weller, West Newbury, Mass., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**

**Continuation-in-part of application Ser. No. 610,561, Jan. 20, 1967. This application Apr. 17, 1967, Ser. No. 631,521**

**Int. Cl. H04b** *1/66*

**U.S. Cl. 325—321 17 Claims**



A system for optimizing the time and amplitude at which a first gated slicing circuit samples a received data signal includes two additional gated slicing circuits to provide "one" or "zero" output signals in accordance with the amplitude of the digital data signal at equal times leading and lagging the sampling time of the first gated slicing circuit. The output signals of the three gated slicing circuits are fed through logic gates to provide three control signals one of which phase shifts all three samples relative to the data signal, another of which adjusts the time interval between the first sample and the leading and lagging samples and the third adjusts the slice amplitude of the gated slicers. The first control signal is also fed back to a voltage controlled oscillator which generates a demodulating carrier used to demodulate a received carrier signal to provide the received data signal.

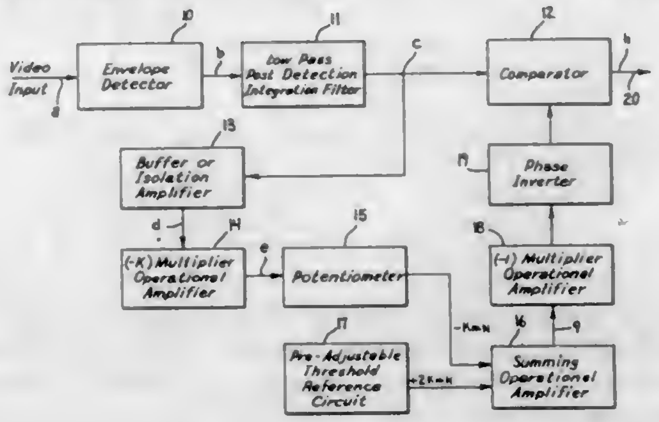
### 3,479,599
## SIGNAL SENSITIVE DEPRESSED THRESHOLD DETECTOR

**Ronald E. Molik, Palos Verdes Peninsula, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**

**Filed Apr. 5, 1967, Ser. No. 628,788**

**Int. Cl. H04b** *1/10*

**U.S. Cl. 325—323 5 Claims**


Video Input
a
10
Envelope Detector
b
11
Low Pass Post Detection Integration Filter
c
12
Comparator
h
20
13
Buffer or Isolation Amplifier
d
14
(-K) Multiplier Operational Amplifier
e
15
Potentiometer
19
Phase Inverter
18
(-1) Multiplier Operational Amplifier
17
Pre-Adjustable Threshold Reference Circuit
16
Summing Operational Amplifier
-Kmn
2Kmn
g

A signal responsive depressed threshold detector circuit having a sampling network to sample the target and noise signals received to produce a mean voltage thereof for summing in a network with a preadjusted threshold voltage to produce an adaptively depressing threshold voltage setting on the output of the summing network in proportion to the signal strength for comparison in a comparator circuit with the received target and noise signals to pass only the target signals.

### 3,479,600

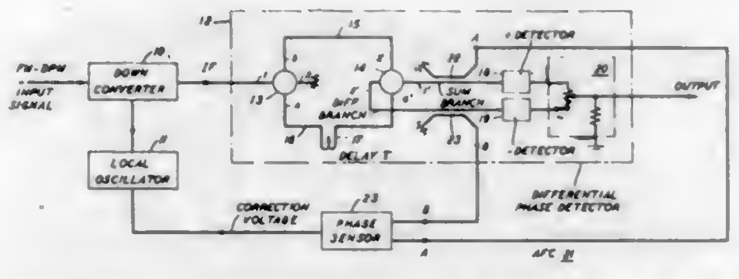
### AUTOMATIC FREQUENCY CONTROL SYSTEM FOR CONTROLLING THE FREQUENCY OF THE LOCAL OSCILLATOR USED IN A DIFFERENTIAL PHASE MODULATED PCM RECEIVER

**Stewart E. Miller, Locust, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**

**Filed Oct. 5, 1966, Ser. No. 584,597**

**Int. Cl. H04b** *1/12, 1/26*

**U.S. Cl. 325—423 3 Claims**



An automatic frequency control system for use in a differential phase modulated PCM signal receiver in which an error signal produced in the sum branch and/or the difference branch of a differential phase detector is used to generate a correction voltage for the receiver local oscillator. The AFC circuit includes means for determining the phase of the error signal and means for minimizing the effects of information content upon the phase of the correction voltage.

### 3,479,601

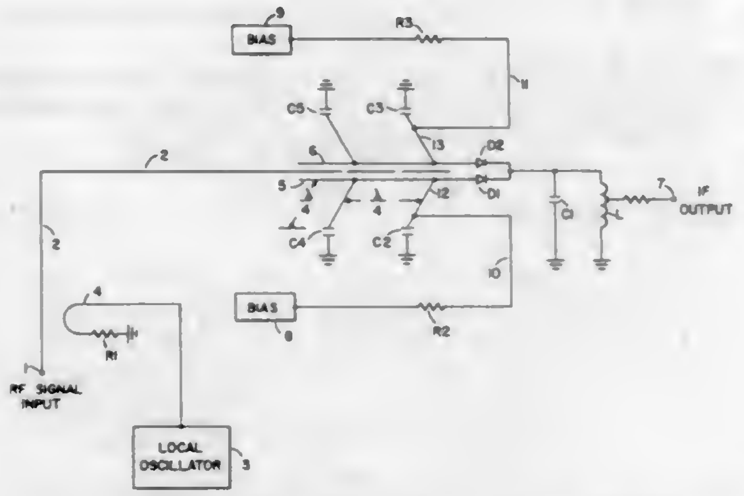
### BALANCED SQUARE-LAW MICROWAVE MIXER

**John Mattern, Baltimore, Md., assignor to the United States of America as represented by the Secretary of the Army**

**Filed Oct. 5, 1966, Ser. No. 584,613**

**Int. Cl. H04b** *1/26*

**U.S. Cl. 325—449 7 Claims**



Two semiconductor diodes (each having a square-law characteristic of voltage vs. current) are employed in the invention. The diodes are operated in parallel and with differential forward biases. The biases are such as to place each of the diodes and its source resistance in the square-law region. The biases of the diodes are slightly different, in order to extend the square-law region and give a good approximation to a square-law characteristic.

### ERRATUM

For Class 325—473 see:
Patent No. 3,479,628

### 3,479,602

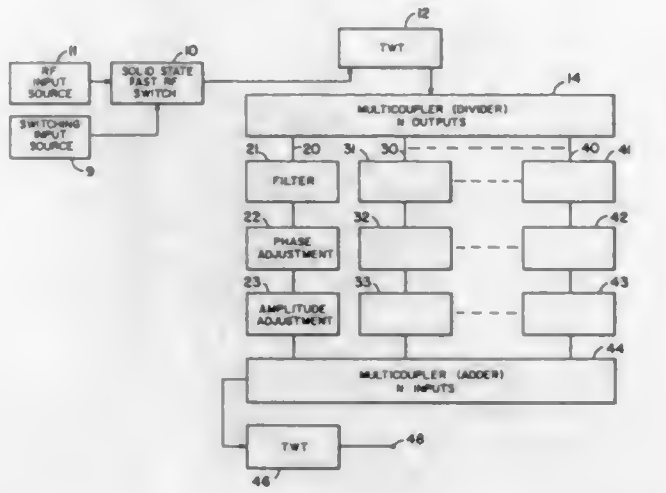
### APPARATUS FOR COHERENT GENERATION OF A RADIO FREQUENCY SPECTRUM IN AMPLITUDE AND PHASE

**Donald T. Morar, Woodbine, Md., assignor to the United States of America as represented by the Secretary of the Army**

**Filed Aug. 8, 1966, Ser. No. 571,142**

**Int. Cl. H03b** *19/06*

**U.S. Cl. 328—14 2 Claims**


RF INPUT SOURCE
SOLID STATE FAST RF SWITCH
SWITCHING INPUT SOURCE
TWT
MULTICOUPLER (DIVIDER) N OUTPUTS
FILTER
PHASE ADJUSTMENT
AMPLITUDE ADJUSTMENT
MULTICOUPLER (ADDER) N INPUTS
TWT

A system for generating a complex radio frequency spectrum of arbitrary frequency and/or time function. The radio frequency spectrum is obtained by an initial spectrum amplified in a relatively flat traveling wave tube and supplied to a wide band multicoupler with various outputs having frequency stability to isolate the various spectral lines. Each of these various channels may then have its phase and/or amplitude adjusted so as to produce the desired total response at the output of the adder multicoupler.

### 3,479,603

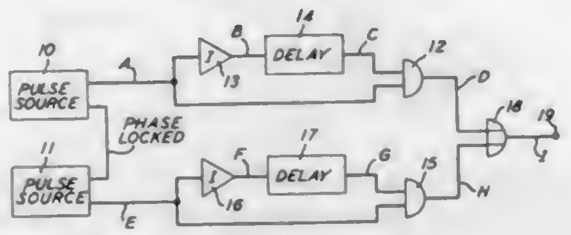
### A PLURALITY OF SOURCES CONNECTED IN PARALLEL TO PRODUCE A TIMING PULSE OUTPUT WHILE ANY SOURCE IS OPERATIVE

**Robert L. Overstreet, Jr., Burlington, N.C., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**

**Filed July 28, 1966, Ser. No. 568,464**

**Int. Cl. H03k** *1/12*

**U.S. Cl. 328—61 7 Claims**



The output of each of a plurality of pulse sources is applied to a respective logic circuit which produces alternating binary ONE and ZERO outputs in synchronism with its source when the source is functioning correctly and a constant ZERO output when its source fails. The logic circuit outputs, in turn, are applied to an OR gate which produces alternating ONE and ZERO outputs as long as any one of the sources is functioning correctly.

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### 3,479,604

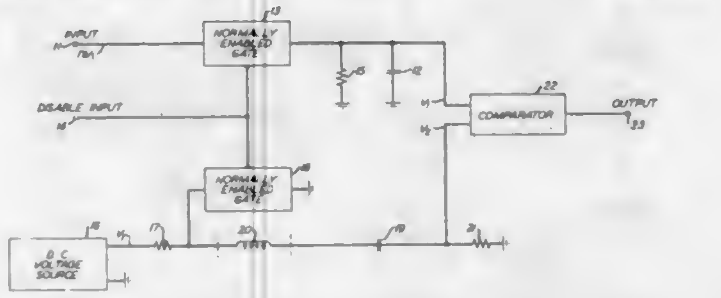
### VOLTAGE AMPLITUDE-TO-TIME DURATION CONVERTER

**John L. Abernathy, Orlando, Fla., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**

**Filed May 22, 1967, Ser. No. 640,199**

**Int. Cl. H03k** *17/02*

**U.S. Cl. 328—151 4 Claims**



A first nonlinear circuit is charged by an input voltage. Gating circuitry causes the first nonlinear circuit to begin to discharge and a second nonlinear circuit to begin to charge from a reference source. A comparator produces an output pulse when the output levels of the two nonlinear circuits are equal to one another. The time of occurrence of the output pulse is linearly related to the amplitude of the input voltage.

### 3,479,605

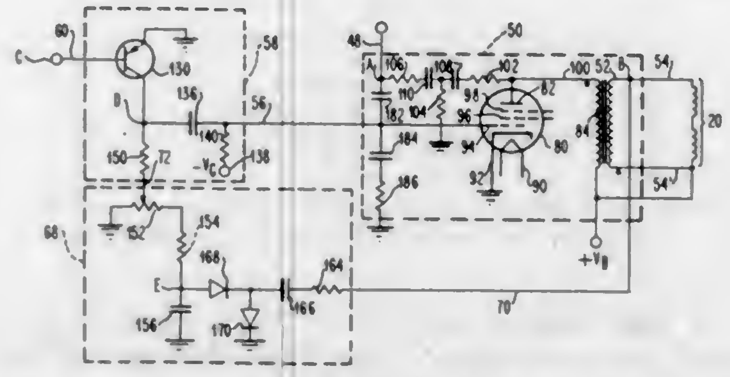
### DISPLAY FORMATING CONTROL

**Donald D. Tech, Red Hook, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Mar. 30, 1966, Ser. No. 538,680**

**Int. Cl. H03k** *3/53*

**U.S. Cl. 328—186 10 Claims**



In the raster scan deflection circuits of a CRT display, non-linearity in the deflection amplifier leading to overall distortion in a staircase ramp is compensated for by feedback from the output of the amplifier to the basic ramp signal. However, non-linearity of the amplifier with respect to its amplification of the staircase modulation superimposed on the basic ramp is overcome, not by feedback, but by a separate shaping of the amplitude of the modulating signal to define an envelope which is complimentary to the non-linearity to be corrected. This shaping is provided by an additional saw tooth generator which is operated by and in synchronism with the amplifier output and serves as a power supply for the modulation generator.

### 3,479,606

### PHASE SYNCHRONIZATION CIRCUIT

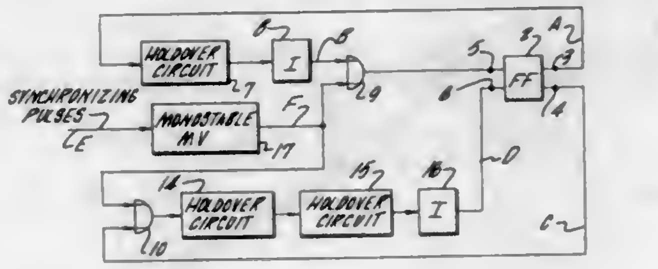
**Frank W. Weber, Duarte, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**

**Filed May 31, 1966, Ser. No. 554,128**

**Int. Cl. H03k** *3/06*

**U.S. Cl. 328—201 5 Claims**

A flip-flop to be synchronized has first and second output terminals in complementary states and first and second input terminals each effective to introduce a different change in the state of the flip-flop. A first holdover circuit is connected from the first output terminal of the flip-flop to the first input terminal and a second holdover circuit is connected from the second output terminal of the flip-flop to the second input. As a result of these connections, the flip-flop operates astably. Synchronizing pulses are applied to the second holdover circuit and directly to the first input terminal of the flip-flop. Consequently, the flip-flop is synchronized to the synchronizing pulses.



### 3,479,607

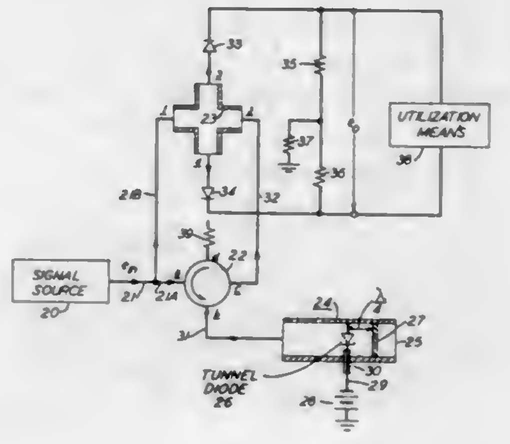
### FREQUENCY DISCRIMINATOR WITH INJECTION-LOCKED OSCILLATOR

**Clyde L. Ruthroff, Holmdel, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**

**Filed Dec. 22, 1966, Ser. No. 603,847**

**Int. Cl. H03d** *3/18*

**U.S. Cl. 329—124 4 Claims**



A frequency discriminator in which an oscillator is injection locked to a received FM signal, the locked oscillator output being multiplied by the received signal, and filtered, to duplicate baseband.

### 3,479,608

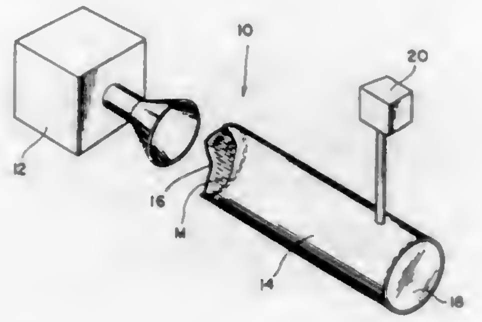
### METHOD AND MEANS FOR STORING AND RELEASING ENERGY BY STIMULATED EMISSION OF ELECTROMAGNETIC RADIATION

**Melvin P. Ehrlich, Hicksville, N.Y., assignor to NRA, Inc., New Hyde Park, N.Y., a corporation of New York Continuation-in-part of application Ser. No. 52,247, Aug. 26, 1960. This application Oct. 15, 1964, Ser. No. 406,214**

**Int. Cl. H01s** *1/06*

**U.S. Cl. 330—4 5 Claims**

An arrangement for providing coherent energy outputs by means of transitions between "spin states" of hydrogen molecules. The invention utilizes thermodynamic techniques to pump diatomic hydrogen so that a large majority of such hydrogen molecules are in their metastable energy-storing state. In such a state, these molecules may be subjected to appropriate short wavelength radiation to thereby stimulate them and controllably cause the molecules to make the energy-releasing transition from their higher to their lower energy states.



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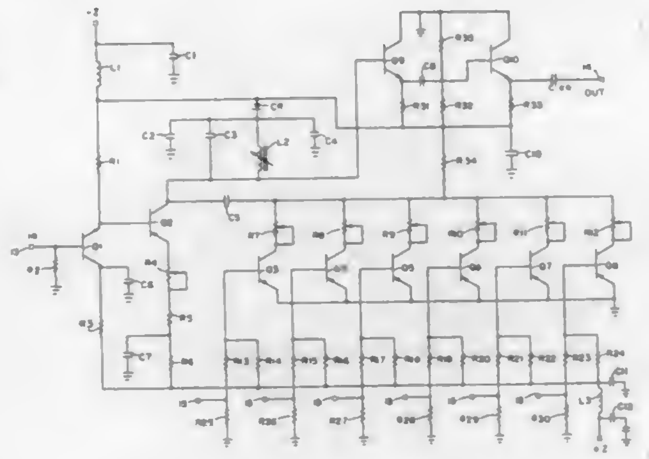
### 3,479,609

### ATTENUATION CIRCUIT USING A TUNED AMPLIFIER WHOSE Q IS VARIED BY SHUNTING RESISTORS

**Joseph N. Castelli, Hull, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army**
**Filed June 13, 1966, Ser. No. 557,863**
**Int. Cl. H03f** *3/04, 3/68*
**U.S. Cl. 330—21** **4 Claims**



A plurality of resistors are each respectively connected in a series arrangement with respective ones of a plurality of transistors. Each series arrangement is connected across a tuned circuit portion of a tuned amplifier. When ones of the transistors are conducting, the series resistors decrease the Q of the tuned circuit, causing a corresponding decrease in amplification, or increase in attenuation.

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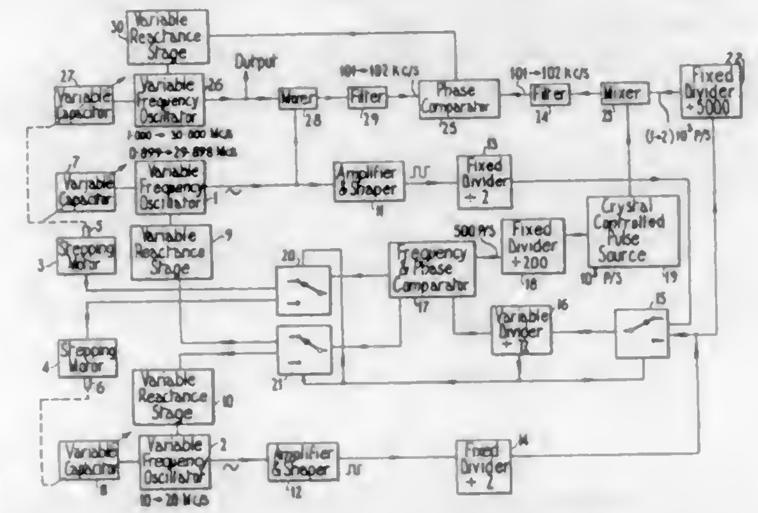
### 3,479,610

### FREQUENCY SYNTHESISERS

**Reginald Gordon Wicker, Coventry, England, assignor to The General Electric Company Limited, London, England, a British company**
**Filed Jan. 5, 1968, Ser. No. 696,090**
**Claims priority, application Great Britain, Jan. 5, 1967, 695/67**
**Int. Cl. H03b** *3/04*
**U.S. Cl. 331—2** **10 Claims**

A frequency synthesiser of the interpolation type wherein both the main and interpolation frequencies are derived from slave oscillators whose frequencies are controlled via control loops of the kind incorporating a variable factor divider whose output is compared in a comparator with a train of pulses of reference frequency. A single variable factor divider and comparator may be used in both control loops on a time sharing basis.



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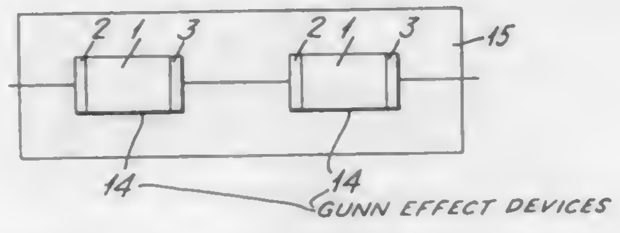
### 3,479,611

### SERIES OPERATED GUNN EFFECT DEVICES

**Carl Peter Sandbank, Bishop's Stortford, and George King and Stanley Bruce Marsh, Harlow, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware**
**Filed Jan. 18, 1967, Ser. No. 610,115**
**Claims priority, application Great Britain, Jan. 21, 1966, 2,892/66**
**Int. Cl. H03b** *5/14, 7/14, 11/10*
**U.S. Cl. 331—52** **5 Claims**



A high voltage, high power Gunn effect device in which two two-terminal Gunn effect structures are connected in series and a voltage is applied across the series combination sufficient to cause Gunn oscillations in both devices. Means are provided for synchronizing the Gunn oscillations produced by the two devices.

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### ERRATUM

For Class 331—94.5 see:
Patent No. 3,479,620

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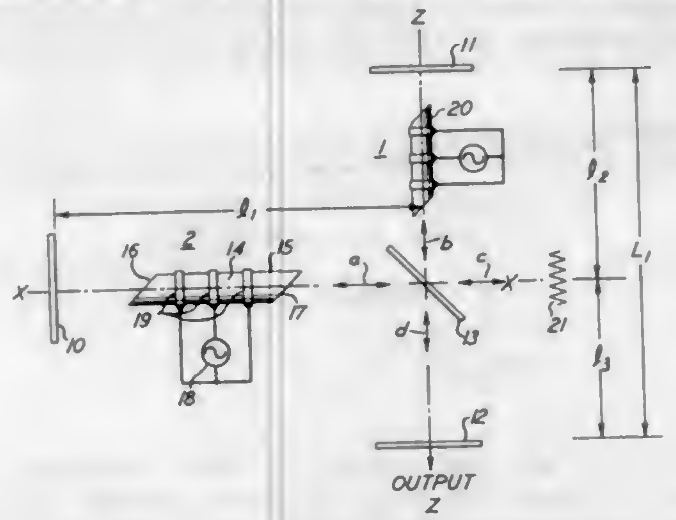
### 3,479,612

### MODE CONTROL IN HIGH POWER LASER BY MEANS OF A LOW POWER LASER

**Harold Seidel, Fanwood, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**
**Filed Nov. 18, 1966, Ser. No. 595,401**
**Int. Cl. H01s** *3/10*
**U.S. Cl. 331—94.5** **4 Claims**

A "weak link" principle is set forth in which a low power, high integrity device superimposes a "template" action on a high power, low integrity device. The template action results in the weaker unit imprinting its preferred characteristics upon the stronger unit. In the illustrative embodiment disclosed, an asymmetric laser interferometer structure is employed to permit a weak laser to dominate a stronger laser. It is an advantage of such an arrangement that an otherwise broad spectrum laser can be confined to oscillate in a single mode.



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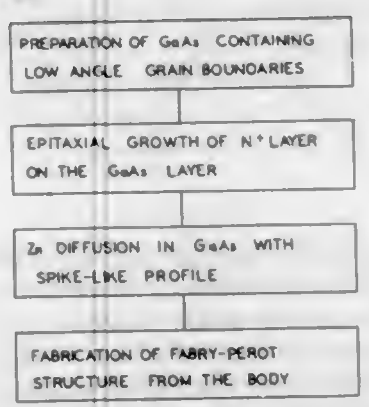
### 3,479,613

### LASER DIODE AND METHOD

**Hans Stephan Rupprecht, Yorktown Heights, N.Y., and Manfred Pilkuhn, Braunschweiz, Germany, assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Apr. 28, 1967, Ser. No. 635,955**
**Int. Cl. H01s** *3/18*
**U.S. Cl. 331—94.5** **5 Claims**


PREPARATION OF GaAs CONTAINING LOW ANGLE GRAIN BOUNDARIES
EPITAXIAL GROWTH OF N+ LAYER ON THE GaAs LAYER
Zn DIFFUSION IN GaAs WITH SPIKE-LIKE PROFILE
FABRICATION OF FABRY-PEROT STRUCTURE FROM THE BODY

The invention disclosed herein relates to an improved laser device consisting of a substrate have a first N type layer on one side and a P type layer on the other side with a spike-like projection grown through the substrate to form the PN junction.

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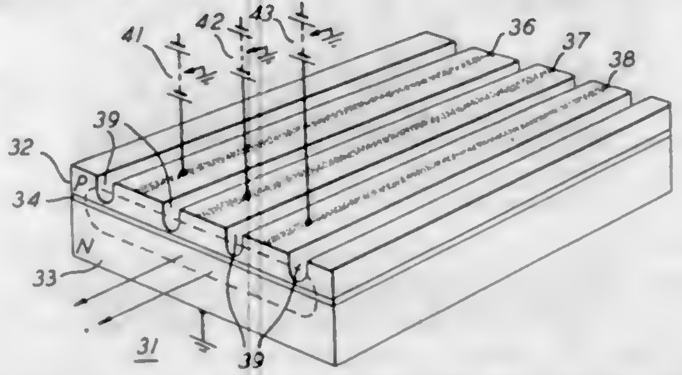
### 3,479,614

### TUNABLE SEMICONDUCTOR OPTICAL MASERS

**Arthur Ashkin, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**
**Continuation-in-part of application Ser. No. 287,957, June 14, 1963. This application Mar. 23, 1967, Ser. No. 625,439**
**Int. Cl. H01s** *3/18*
**U.S. Cl. 331—94.5** **3 Claims**



A tunable p-n junction type optical maser has two or more current sources connected to one side of the junction. The current density in the junction and hence the frequency of oscillation is varied by varying the amount of current supplied to each connection.

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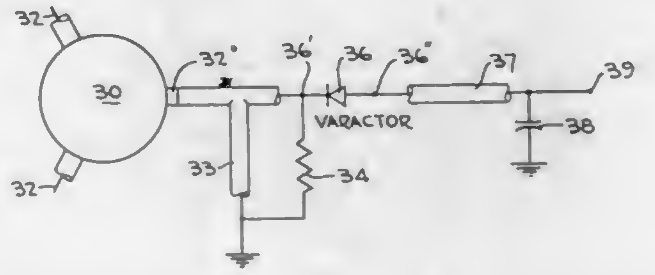
### 3,479,615

### VARACTOR CONTINUOUS PHASE MODULATOR HAVING A RESISTANCE IN PARALLEL WITH THE VARACTOR

**Robert V. Garver, Boyds, Md., assignor to the United States of America as represented by the Secretary of the Army**
**Filed Oct. 20, 1966, Ser. No. 588,693**
**Int. Cl. H03c** *3/20*
**U.S. Cl. 332—30** **14 Claims**



A varactor diode modulator is used to provide high frequency phase modulation without degradation of phase linearity or efficiency. The varactor diode reactants is adjusted by selecting diode parameters that will approximate a tan θ curve as the voltage is varied. The diode is then attached to one part of circulator or similar plural channel device to provide an approximate linear relationship between voltage and phase shift. A resistor is connected in parallel with the varactor diode to produce a reflection coefficient that remains constant with variations of input voltage, thereby overcoming the problem of change in attenuation with change in phase. A 360 degree modulation is achieved without the use of a second circulator by connecting a second varactor in parallel with the first and separating the two varactors by a quarter wavelength line.

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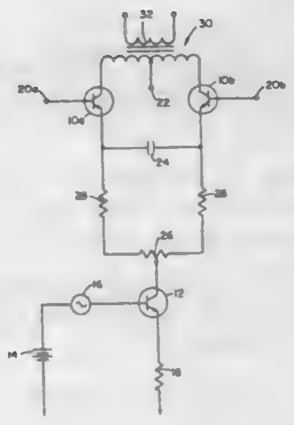
### 3,479,616

### DIFFERENTIAL MODULATOR

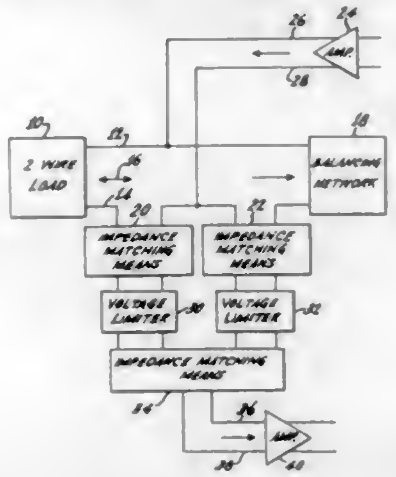
**Frank C. Hazzard, Orlando, Fla., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army**
**Filed Aug. 1, 1966, Ser. No. 569,529**
**Int. Cl. H03c** *1/54*
**U.S. Cl. 332—43** **4 Claims**



A device for providing an A.C. signal whose amplitude is proportional to the difference between two D.C. signals. An A.C. modulating signal is applied to the base of a transistor connected as an amplifier, the output thereof being fed through a balance network to each of two transistors connected as amplifiers, their outputs being compared by a transformer with two primary windings connected in series opposition. The output of the first amplifier splits between each of the two second mentioned amplifiers, the amount of current through each being determined by the D.C. bias applied to the bases thereof.

### 3,479,617
### HYBRID CIRCUIT ARRANGEMENT

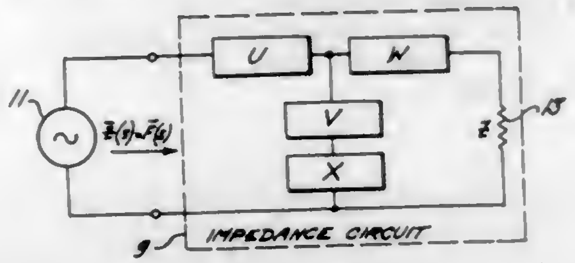
**Orville T. Rhyne, Merritt Island, Fla., assignor to RCA Corporation, a corporation of Delaware**
**Filed May 6, 1968, Ser. No. 726,822**
**Int. Cl. H01p** *5/12*
**U.S. Cl. 333—11** **8 Claims**



An arrangement for coupling a two wire transmit-receive system to a four wire transmit-receive system in which there is substantially no coupling between the two sides of the four wire transmit-receive system even when the two wire transmit-receive system is variably loaded.

### 3,479,618
### RESISTIVELY TERMINATED SINGLE TEE AND PI ONE PORT NETWORK HAVING A PRESCRIBED POSITIVE REAL BI-ORDER-N IMMITTANCE AND UTILIZING A NEGATIVE IMMITTANCE

**Kurt H. Haase, Watertown, Mass., assignor to the United States of America as represented by the Secretary of the Air Force**
**Filed Nov. 29, 1967, Ser. No. 686,587**
**Int. Cl. H03h** *5/12*
**U.S. Cl. 333—24** **6 Claims**

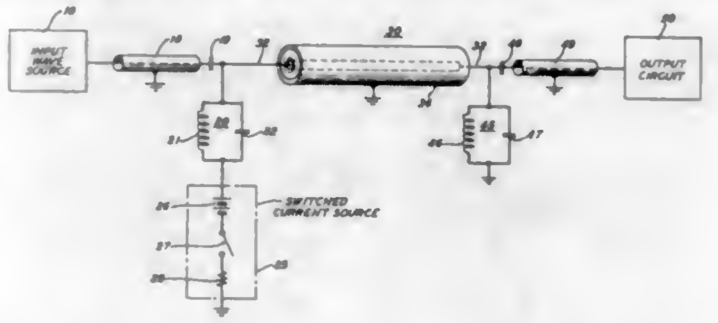


Circuits realizing decomposable bi-order-n impedance or admittance functions in which for the impedance function a single T section is terminated with a resistance and has a series positive and negative branch impedances and a shunt positive branch impedance interposed between said series branch impedances.

### 3,479,619
### WAVE SWITCHING ARRANGEMENT

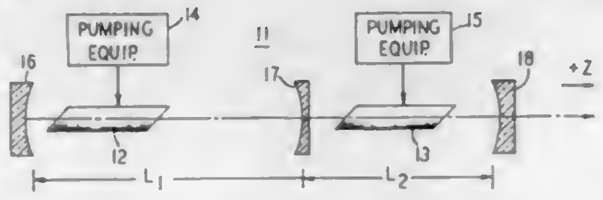
**Dinh Tuan Ngo, Somerset, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Oct. 28, 1965, Ser. No. 505,567**
**Int. Cl. H03j** *3/16;* **H03h** *7/38*
**U.S. Cl. 333—31** **8 Claims**

Anisotropic magnetic film coating on one conductor of a two-conductor wave propagating structure has its hard axis oriented parallel to the magnetic field component of the wave to produce attenuation of a wave having a frequency corresponding to the frequency of ferromagnetic resonance of the film. Application of an external magnetic field parallel to the hard axis rotates film magnetization toward that axis and reduces the wave attenuation. A direct current on the coated conductor provides the external field required when the easy axis is parallel to the direction of wave propagation.



### 3,479,620
### LASER WITH SERIALLY COUPLED MODE SELECTING RESONATOR SECTIONS

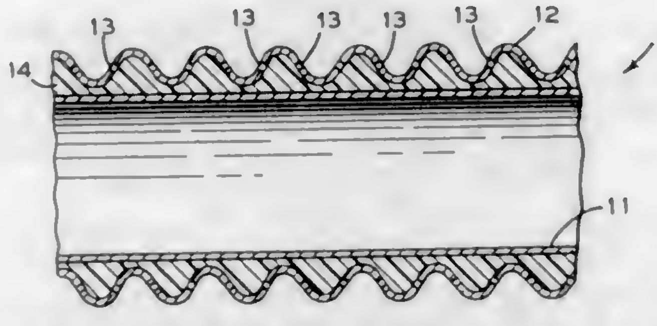
**William W. Rigrod, Millington, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Mar. 16, 1966, Ser. No. 534,816**
**Int. Cl. H01s** *3/08, 3/09*
**U.S. Cl. 331—94.5** **7 Claims**



The laser disclosed employs a mode-selecting resonator having serially coupled resonant portions in which a plurality of sections of the active medium are disposed. The resonator portions are adapted to have coincident resonant frequencies that are separated by more than the oscillation bandwidth of any resonator portion in combination with its section of active medium. The intermediate reflector or reflectors preferably have transmittances that are between 40 percent and 60 percent. Each resonator portion and its included section of active medium supports oscillation only very weakly, or not at all, at frequencies not shared in common by the other combinations of resonator portions and active media.

### 3,479,621
### FORM STABILIZED WAVE GUIDES

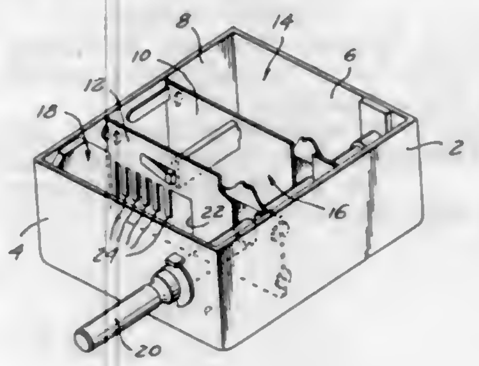
**Helmut Martin, Hannover, Germany, assignor to Kabel- und Metallwerke Gutehoffnungshutte Aktiengesellschaft, Hannover, Germany**
**Filed May 29, 1967, Ser. No. 642,024**
**Int. Cl. H01p** *3/12*
**U.S. Cl. 333—95** **4 Claims**



Wave guide constructions having form stability to avoid discontinuities including bends and the like, to eliminate undesired wave modes in use.

### 3,479,622
### MULTI-COMPARTMENT TUNER CONSTRUCTION FACILITATING ELECTROMAGNETIC HIGH-FREQUENCY COUPLING AND MINIMIZING ELECTROSTATIC LOW-FREQUENCY COUPLING

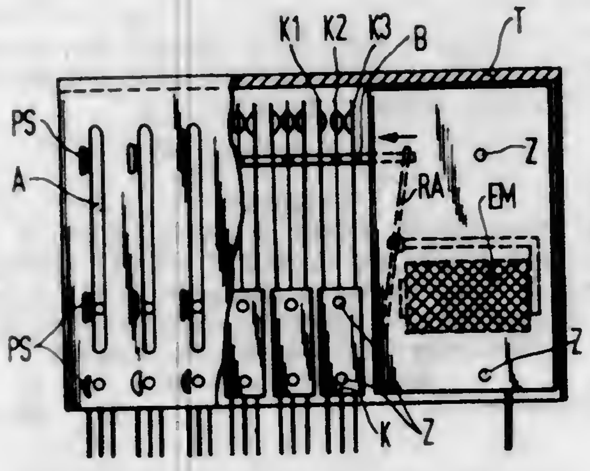
**Walter Freer, Derry, N.H., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey**
**Filed Apr. 11, 1966, Ser. No. 541,725**
**Int. Cl. H03j** *3/02;* **H01p** *7/06*
**U.S. Cl. 334—85** **9 Claims**



In a high-frequency tuner having an iris window in a wall between tuning sections, the provision of a plurality of conductive fingers extending across the iris window, the fingers being electrically connected at one end and disconnected at the other end, providing for appropriate electromagnetic coupling at high frequencies, while at low frequencies coupling is minimized.

### 3,479,623
### ELECTROMAGNETIC RELAY WITH MULTIPLE CONTACT SPRING SETS

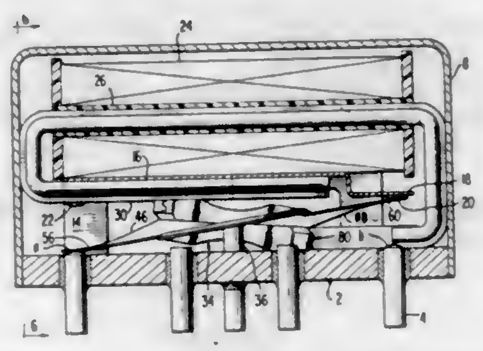
**Werner Lindner, Neuried, and Herbert Krautwald and Helmut Schedele, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany**
**Continuation of application Ser. No. 546,693, May 2, 1966. This application Dec. 16, 1968, Ser. No. 800,021**
**Claims priority, application Germany, May 5, 1965, S 96,947**
**Int. Cl. H01h** *67/02*
**U.S. Cl. 335—129** **4 Claims**



An electromagnetic relay assembly having a plurality of individual contact units which are actuated together by a single member and are supported in a carrier which also supports the electromagnetic system. The carrier has a U-shape transverse cross section and has a plurality of holes or slots spaced along it walls to cooperate with projections on each of the contact units and the electromagnetic system to position the units in a predetermined spaced relationship in the carrier.

### 3,479,624
### MAGNETICALLY OPERATED SWITCHING APPARATUS

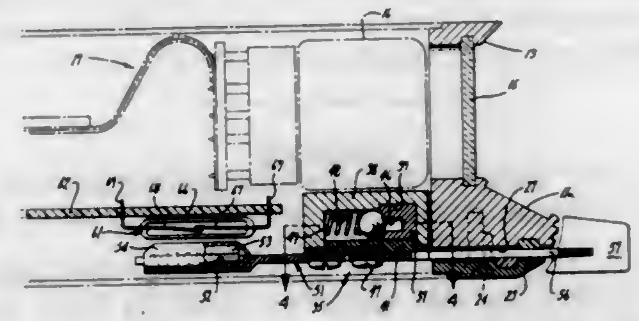
**Donald F. Wilkes, Albuquerque, N. Mex., assignor to Rolamite Technology, Incorporated, San Francisco, Calif., a corporation of California**
**Filed Mar. 29, 1968, Ser. No. 717,113**
**Int. Cl. H01h** *5/02*
**U.S. Cl. 335—188** **11 Claims**



A relay having elongated pole elements between which is positioned a tiltable armature connected to a resilient snapper element having a pair of bi-stable segments. Tilting movements of the armature in response to coil energization cause the snapper segments to snap back and forth between their stable positions to make and break electrical contact with stationary contact elements.

### 3,479,625
### SLIDE SWITCH ASSEMBLY

**Donald V. Walker and Richard F. Hall, Concord, Calif., assignors to Systron-Donner Corporation, Concord, Calif., a corporation of California**
**Filed Mar. 1, 1968, Ser. No. 709,637**
**Int. Cl. H01h** *15/02, 9/54, 1/66*
**U.S. Cl. 335—206** **13 Claims**

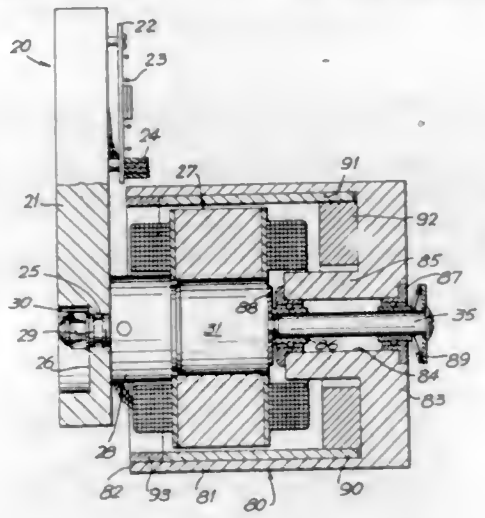


Slide switch assembly having at least one reed switch and a magnet carrier slidably movable to a position to cause operation of the reed switch.

### 3,479,626
### ELECTROMECHANICAL READ-OUT DEVICE

**Alvin J. Silverman, Massapequa, and Albert Diamond, Plainview, N.Y., assignors to Vernitron Corporation, Farmingdale, N.Y., a corporation of New York**
**Filed Dec. 12, 1967, Ser. No. 689,961**
**Int. Cl. H01f** *7/08, 5/04*
**U.S. Cl. 335—266** **10 Claims**

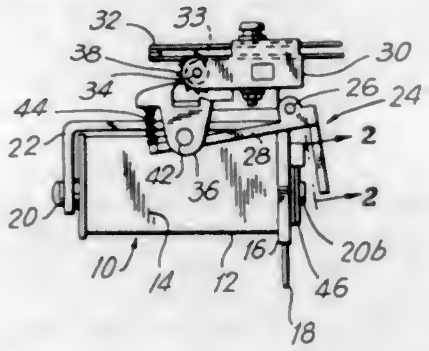
This invention is essentially concerned with read-out devices of the type including a central stator surrounded by a rotary drum carrying information at angularly spaced positions, on its exterior surface, and interacting



electromagnetic means on the stator and drum for selectively positioning the latter.

### 3,479,627
### ELECTROMAGNETIC RELAY AND METHOD OF MANUFACTURE THEREOF

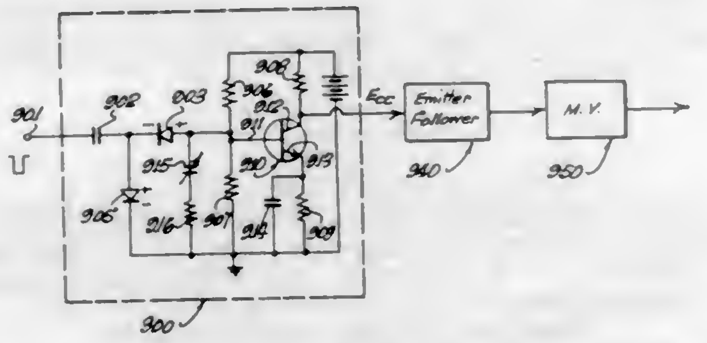
**George C. Underwood, Raleigh, N.C., assignor to Cornell-Dubilier Electric Corporation, a corporation of Delaware**
**Filed Sept. 15, 1966, Ser. No. 579,771**
**Int. Cl. H01f** *7/08, 3/00*
**U.S. Cl. 335—271** **6 Claims**



Electromagnetic relay having improved life characteristics wherein a cushioned non-magnetic layer is interposed between the armature and the pole face to cushion the closing of the armature against the pole face and to avoid fatigue of the non-magnetic layer.

### 3,479,628
### LORAN RECEIVING SYSTEM

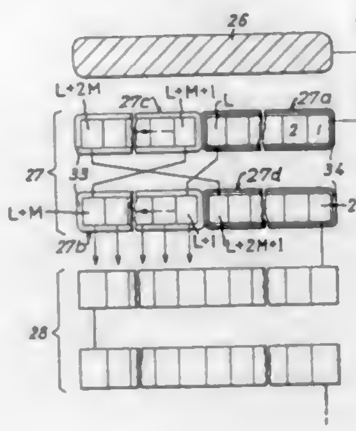
**Wayne E. De Vaul, 3217 W. 180th St., Torrance, Calif. 90504**
**Original application Apr. 21, 1967, Ser. No. 632,655. Divided and this application June 14, 1968, Ser. No. 765,715**
**Int. Cl. H04b** *1/10*
**U.S. Cl. 325—473** **2 Claims**



Receiving system for indicating the time interval between received pulses produced in a known time relationship, such as loran signals. The apparatus selects from the received pulses those recurring at the desired repetition rate, generates a marker pulse one-half the pulse period after the first selected pulse, and measures the time interval between the marker pulse and the second selected pulse, regardless of which occurs first. Marker pulses are generated one-half the pulse period after alternate ones of the subsequently selected pulses so the measurements can be continuously repeated.

### 3,479,629
### WINDING ARRANGEMENT FOR DISTRIBUTING SURGE VOLTAGE

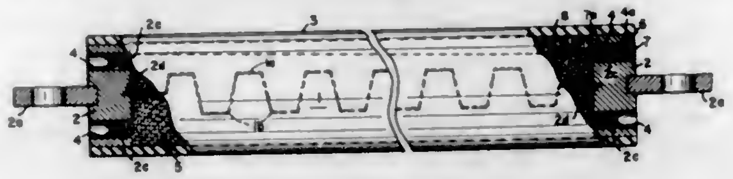
**Gottfried Broszat, Hegnach, Germany, assignor to Licentia Patent-Verwaltungs G.m.b.H., Frankfurt am Main, Germany**
**Continuation of application Ser. No. 540,265, Apr. 5, 1966. This application Aug. 22, 1968, Ser. No. 755,512**
**Int. Cl. H01f** *15/14, 15/04*
**U.S. Cl. 336—70** **11 Claims**



A winding arrangement, for use in transformers and choke coils which has a minimum number of soldering junctions between individual coils and which flattens the applied voltage waveform so that the surge voltage stress between the coils is reduced. The winding arrangement comprises a plurality of normally wound main coils and at least two, but not more than three, specially wound so-called preliminary coils connected in series with the main coils. The main coils have windings which spiral in one direction only, the winding ends terminating at the beginning and end of the spiral and being connected together with a soldering junction so that the main coils are connected in series. The preliminary coils, which effect the flattening of the voltage wavefront, are connected so that a portion of a first coil is in series with a portion of a second coil. The first coil is arranged on the outside of the winding arrangement and the second coil immediately inside of the first.

### 3,479,630
### HIGH VOLTAGE FUSE PARTICULARLY FOR CIRCUITS INCLUDING SOLID STATE DEVICES

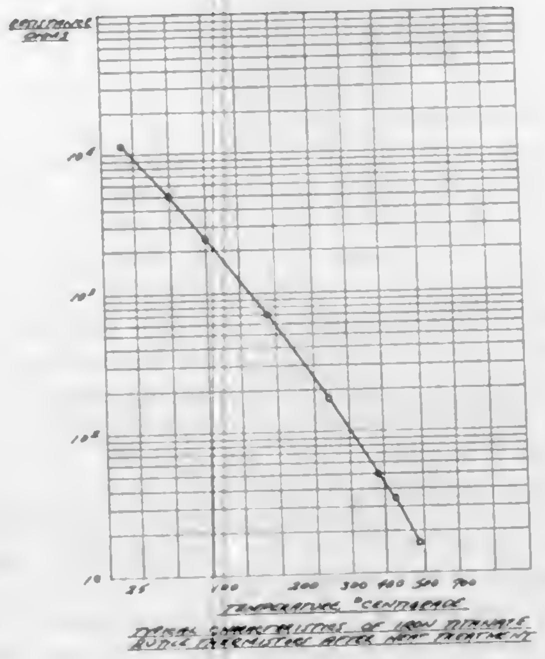
**Frederick J. Kozacka, South Hampton, N.H., assignor to The Chase-Shawmut Company, Newburyport, Mass.**
**Filed May 14, 1968, Ser. No. 736,909**
**Int. Cl. H01h** *85/04*
**U.S. Cl. 337—159** **10 Claims**



Sub-assembly for making high-voltage fuses includes a ribbon fuse-link pre-bent 90 degrees at points of relatively large cross-sectional area alternating with intermediate points of reduced cross-sectional area to form an undulatory pattern. The fuse link means has extension spring characteristics, and its length exceeds substantially the shortest distance between its ends. It is stretched and mounted under longitudinal stress between a pair of terminal elements, and is self-supporting due to its spring characteristics, even if of considerable length, as required for circuits having circuit voltages in the order of kilovolts. Disclosed is also a high-voltage fuse resulting from the aforementioned sub-assembly.

### 3,479,631
### THERMISTORS

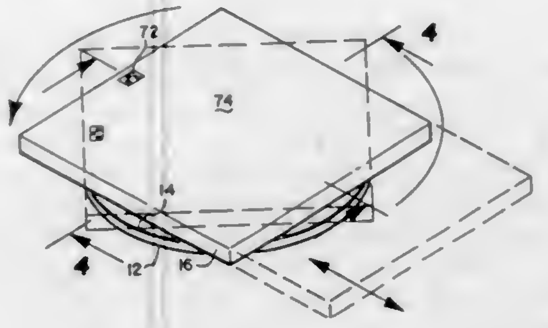
**Paul J. Harget, Ann Arbor, Mich., and Dennis T. Sturgill, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio**
**Original application Dec. 22, 1965, Ser. No. 515,676, now Patent No. 3,393,448, dated July 23, 1968. Divided and this application Nov. 29, 1967, Ser. No. 716,245**
**Int. Cl. H01c** *7/04*
**U.S. Cl. 338—22** **2 Claims**



A ferric titanate thermistor device in which a body of ferric titanate is enclosed in a glass envelope. The device is capable of stable operation at temperatures in excess of 600° F.

### 3,479,632
### MOVABLE SUPPORT MEANS

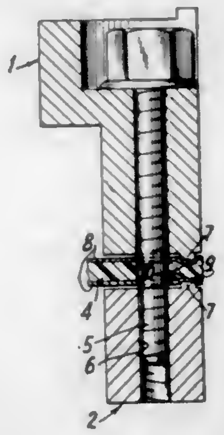
**Gilbert V. Galles, 4522 N. 22nd St., Phoenix, Ariz. 85016**
**Filed Jan. 11, 1968, Ser. No. 697,139**
**Int. Cl. H01r** *39/00;* **A47b** *91/00*
**U.S. Cl. 339—5** **4 Claims**



A movable support table means comprising a stationary base member and first supporting table rotatably supported on a base member to rotate about a vertical axis; and a second supporting table supported to slide radially relative to said vertical axis, and wherein slip ring conductor means coupled to an electrical energy source are secured to the base and to the tables so that a business machine supported on a table may derive electrical energy while the tables are rotated about a vertical axis, and one of them is reciprocated horizontally relative to the base member and the other of said tables; said base and tables being invertible to provide a fixed rectilinear track and rotatable table means for production assembly work relative to articles of manufacture, such as electronic components or other devices.

### 3,479,633
### ELECTRICAL CIRCUIT BOARD RETAINER

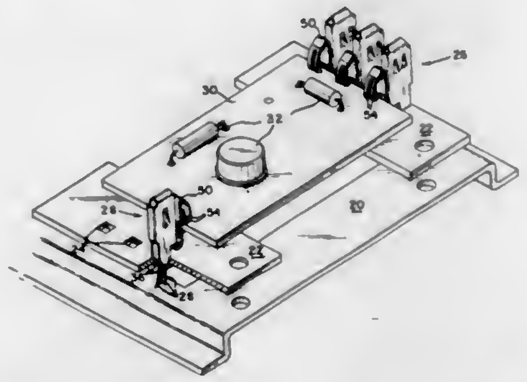
**Eric Winston, Melrose Park, Pa., and Maqbool Qurashi, Pennsauken, N.J., assignors to Jerrold Electronics Corporation, Hatboro, Pa., a corporation of Delaware**
**Filed Dec. 28, 1967, Ser. No. 694,137**
**Int. Cl. H01r** *3/04;* **H05k** *1/18*
**U.S. Cl. 339—14** **7 Claims**



A modular electronic circuit board retaining framework to hold a circuit board in proper contact with connecting circuitry. The framework is comprised basically of two overlying frames, between which a modular circuit board is clamped. The components of the frames correspond generally to the peripheral dimensions of the circuit board but may also include supporting cross members. The frames are intended for use with circuit boards with ground contacts disposed about the periphery thereof and under the supporting cross members of the frames. A multitude of slightly raised projections disposed upon the frames in the vicinity of the screws holding them together provide multiple contact points for the circuitry.

### 3,479,634
### PRINTED CIRCUIT BOARD CONNECTORS

**James Pritulsky, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.**
**Filed Oct. 25, 1967, Ser. No. 678,001**
**Int. Cl. H05k** *1/07;* **H01r** *13/50, 11/08*
**U.S. Cl. 339—17** **5 Claims**



An interconnection system is disclosed with various connector designs for electrically connecting conductors to printed circuit boards or the like. In one form the connector receives wire conductors and endwise receives a printed circuit board to function as an edge connector for the board. In another form the connector receives wire conductors and is either receivable within an aperture in a printed circuit board or may receive two printed circuit boards end to end to function as edge connectors for each board.

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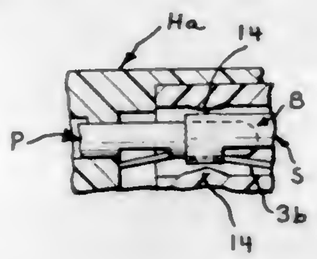
### 3,479,635
### ELECTRICAL CONNECTORS

**Frank Benjamin Stark, Wormleysburg, and Roydon William Merry, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.**
**Continuation-in-part of application Ser. No. 654,752, July 20, 1967. This application Feb. 23, 1968, Ser. No. 707,572**
**Int. Cl. H01r** *13/04*
**U.S. Cl. 339—64** **6 Claims**



An electrical connector comprises a dielectric housing having a passageway therethrough, an electrical terminal disposed therein, the electrical terminal including a body portion and a connecting section; the connecting section connected to a conductor member, means on the body portion and in the passageway to prevent the terminal from moving out of the passageway in one direction, and projection means extending outwardly from the body portion and along the body portion in the same direction as an insertion axis of the electrical terminal, the projection means engaging the means in the passageway thereby preventing the terminal from moving out of the passageway in a direction opposite to the one direction and to stabilize the terminal in the passageway. Protrusion means are also disposed along the passageway adjacent the body portion of the terminal to prevent the terminal from being cocked to one side of the insertion axis.

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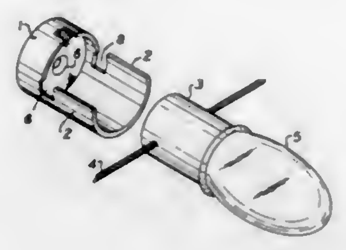
### 3,479,636
### LAMP UNIT MOUNTING RECEPTACLE

**Anthony V. McBride, East Northport, N.Y. (% Emil C. Herrmann, 158 3rd St., Mineola, N.Y. 11501)**
**Filed May 12, 1967, Ser. No. 637,983**
**Int. Cl. H02b** *1/02;* **H01r** *33/08;* **A47h** *1/10*
**U.S. Cl. 339—125** **1 Claim**



A method of holding electric light bulb sockets such as Christmas lights which can be readily inserted and removed without the removal of the mounting fixture, such fixture being comprised of a base and a partially walled cylinder affixed or made a part of such base to receive the light socket, with a slot through the cylindrical portion of the fixture to receive the electrical wiring.

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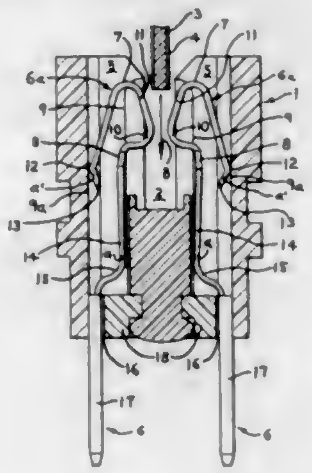
### 3,479,637
### PRINTED CIRCUIT CONNECTOR

**Herman Petrus Johannes Gilissen, Vlijmen, Netherlands, assignor to AMP Incorporated, Harrisburg, Pa.**
**Continuation-in-part of application Ser. No. 561,942, June 30, 1966. This application Sept. 20, 1966, Ser. No. 580,776**
**Claims priority, application Netherlands, Sept. 23, 1965, 6512390**
**Int. Cl. H01r** *13/50, 19/16*
**U.S. Cl. 339—176** **9 Claims**



A printed circuit connector comprises electrical contact element having a contact portion protruding into a channel of a dielectric housing for making electrical contact with a conductive portion of a printed circuit board when the board is inserted into the channel. The contact element also is provided with a loop, the bite of which is directed outwardly of the channel and it terminates in a free end remote from the bite and the free end lies within a pocket in the housing and it is freely movable therein. The free end is provided with a bowed portion defining an essentially U-shaped bite provided with a crest to resiliently engage the wall of the pocket thereby maintaining the loop in a prestressed condition to spring load the contact section.

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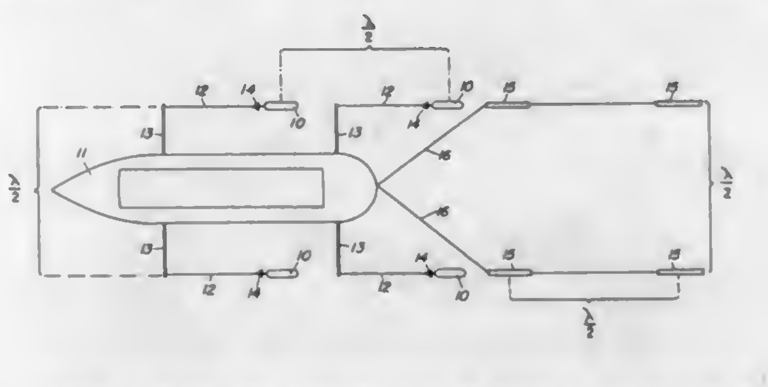
### 3,479,638
### BEAMFORMING IN SEISMIC SURVEYING

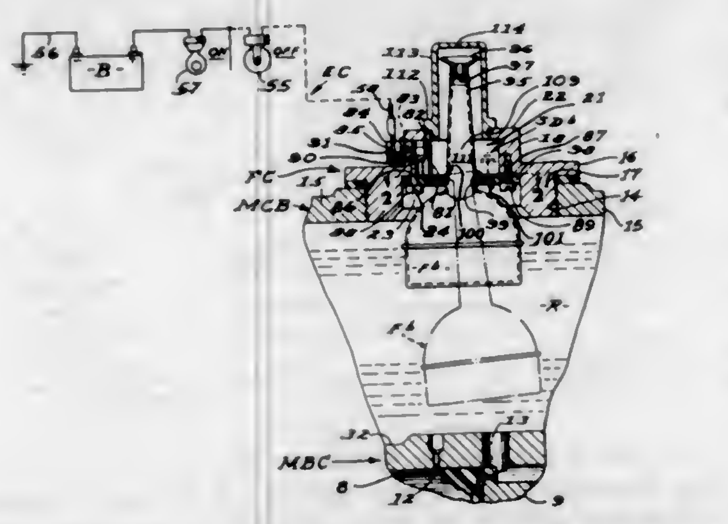
**Gene A. Rusnak, Mountain View, Calif., assignor to the United States of America as represented by the Secretary of the Interior**
**Filed July 29, 1968, Ser. No. 748,394**
**Int. Cl. H04b** *13/00*
**U.S. Cl. 340—7** **8 Claims**



Signal strength and resolution in seismic surveying are enhanced while side reflections and energy requirements are reduced by employing a plurality of acoustic sources spaced at even half wave lengths of the desired frequency response.

### 3,479,639
### FLUID-LEVEL INDICATOR FOR MASTER BRAKE CYLINDERS

**Glenn T. Randol, P.O. Box 275, Loch Lynn Heights, Md. 21550**
**Original application Oct. 20, 1965, Ser. No. 498,329, now Patent No. 3,451,051, dated June 17, 1969. Divided and this application Sept. 4, 1968, Ser. No. 757,397**
**Int. Cl. B60q** *1/00*
**U.S. Cl. 340—59** **8 Claims**



An apparatus for signalling the level of fluid in the supply reservoir of a master brake cylinder, which includes a float for automatically controlling a switch in an electric circuit to energize a signal device (warning light) upon substantial loss of float buoyancy as a function of an abnormally low level of fluid.

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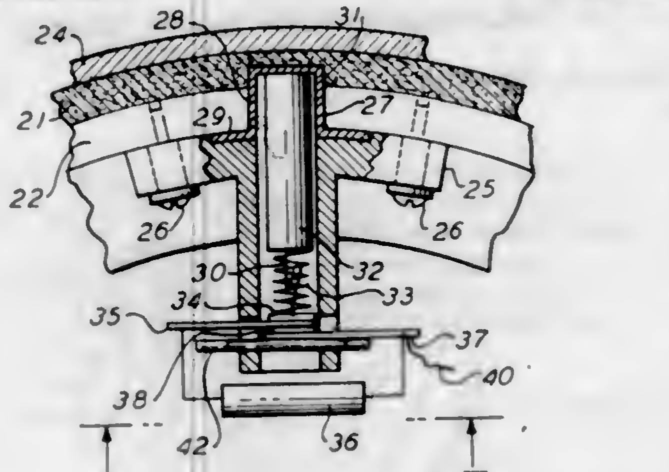
### 3,479,640
### BRAKE LINING WEAR DETECTOR

**John Puma, 65 Davenport Ave., Newark, N.J. 07107**
**Continuation-in-part of application Ser. No. 630,740, Apr. 13, 1967. This application Nov. 8, 1967, Ser. No. 685,232**
**Int. Cl. B60q** *1/44*
**U.S. Cl. 340—69** **15 Claims**



Apparatus for indicating when the brakes on a motor vehicle need relining, using one holder having an electrical contact means reciprocable therein, and a resistor, in one embodiment; a second holder having an electrical contact means reciprocable therein in another embodiment; a terminal or electrical contact holder means having stationary and bridging terminals, double electrical contact means and a resistor in still another embodiment; corresponding single and double depth penetration plugs fitted within blind or thru openings in a brake shoe lining, an electrical circuit having one indicating lamp for the contact means embodiments and an electrical circuit having two indicating lamps for the terminal holder and double electrical contact means, but each circuit being adaptable to any embodiment, so that a first "leeway" or "leisure change" indication is given to the operator upon lining wear to a first predetermined but still serviceable extent, and an urgent second or "must change" indication is given upon continued lining wear to a second predetermined extent.

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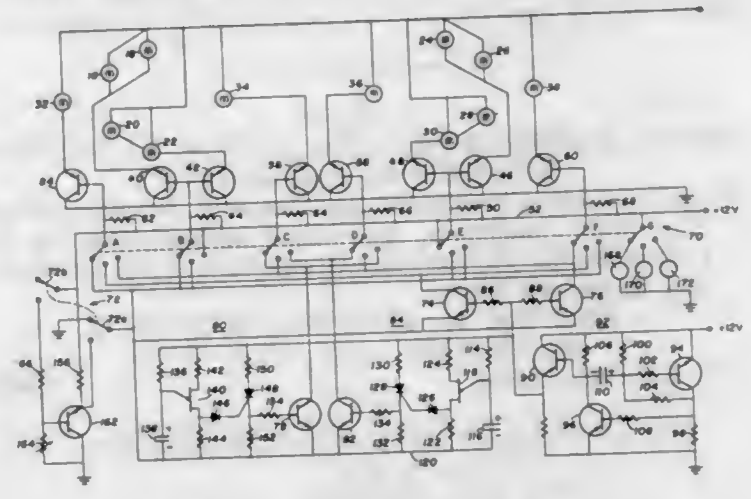
### 3,479,641
### SEQUENTIAL DIRECTION INDICATOR

**Gerald C. Summers, Dallas, Tex., assignor to Simplee Manufacturing Company, Inc., Dallas, Tex., a corporation of Texas**
**Filed Mar. 11, 1968, Ser. No. 712,126**
**Int. Cl. B60q** *1/24*
**U.S. Cl. 340—109** **15 Claims**



A single or dual direction indicator including light sets arranged in opposed arrowhead configurations and an arrow shaft common to both arrowheads. Each light set in the arrangement is energized by means of individual switching transistors having base drive voltages coupled through a three-position switch to timing signals. The timing signals are generated by a timing module and unijunction transistor multivibrator slave modules. To indicate one of two opposed directions, one of the arrowhead light arrangements is continuously energized and the arrowshaft sequentially energized. For dual direction signaling, the complete light arrangement is coupled to the timing module and flashes at periodic intervals.

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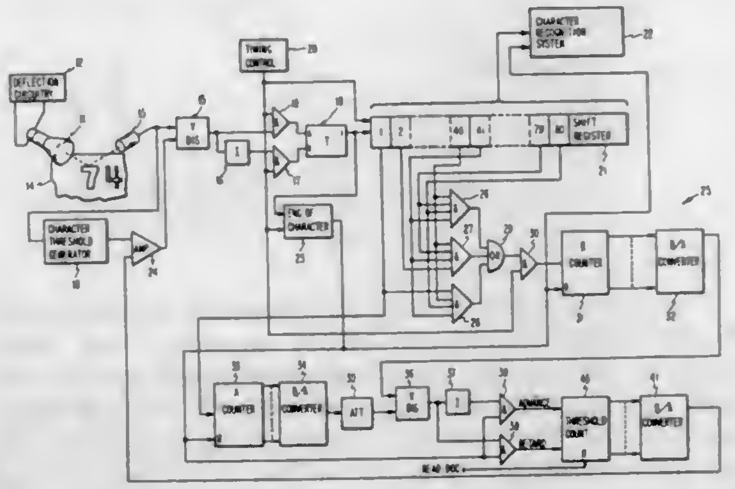
### 3,479,642
### THRESHOLD SYSTEM

**Maurice R. Bartz, Rochester, Minn., assignor to International Business Machines, Armonk, N.Y., a corporation of New York**
**Filed Feb. 21, 1966, Ser. No. 529,090**
**Int. Cl. G06k** *9/00;* **G06f** *7/38;* **G06g** *7/00*
**U.S. Cl. 340—146.3** **6 Claims**



A threshold system for a character recognition machine is provided which includes both a character line width and a character contrast threshold generator. Bits entering the first position of a shift register receiving digitized video data advances an area counter while other shift register positions are applied to AND circuits which when satisfied advance a group counter. Changes in character line width are obtained by converting the counter values to analog signals, attenuating the area analog signal and applying the signals to a voltage discriminator. The output of the voltage discriminator is applied via an inverter to one AND gate and directly to another control the advance and retard of a preset bi-directional threshold counter. The threshold counter output is converted to an analog signal which is combined by an operational amplifier with the output of a character contrast threshold generator. The output of the operational amplifier is applied as a threshold level to a voltage discriminator which also receives the analog video signal.

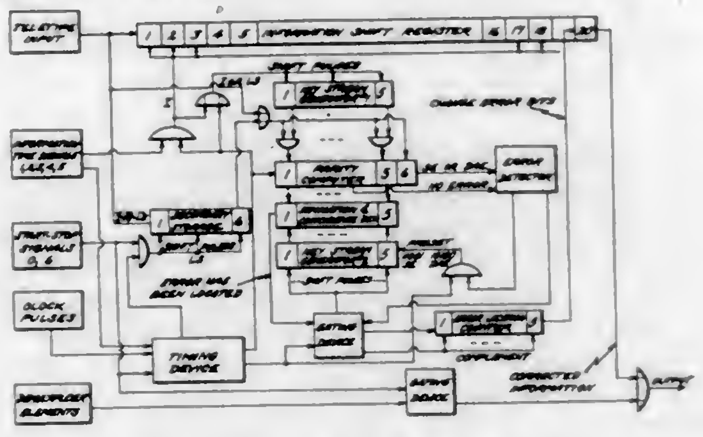
### 3,479,643
## ERROR CORRECTING AND ERROR DETECTING RECORDING APPARATUS

**Ralph M. Heller, Baltimore, and James R. Bowen, Ellicott City, Md., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force**

**Filed Jan. 26, 1967, Ser. No. 611,971**

**Int. Cl. G08b** *29/00;* **H04l** *15/34*

**U.S. Cl. 340—146.1** **1 Claim**



Apparatus for detecting and correcting errors in encoded transmissions in radio teleprinter communication systems.

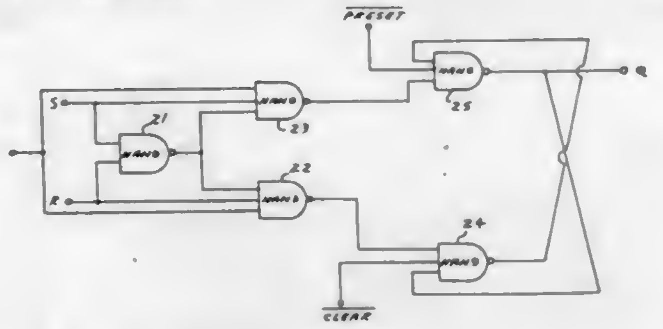
### 3,479,644
## BINARY NUMBER COMPARATOR CIRCUIT

**William L. Spaid, Cedarville, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force**

**Filed Nov. 29, 1966, Ser. No. 597,810**

**Int. Cl. G08c** *9/00*

**U.S. Cl. 340—146.2** **2 Claims**



The comparator circuit of this invention determines the relative magnitude of two binary numbers. Two binary numbers are fed into the comparator circuit one bit at a time, starting with the least significant bit of each binary number. The instantaneous output of the comparator circuit indicates by its state (either "zero" or "one") which bit of each set of bits is the larger. When the comparison between the most significant bits is completed, the output state of the comparator circuit indicates which binary number is larger.

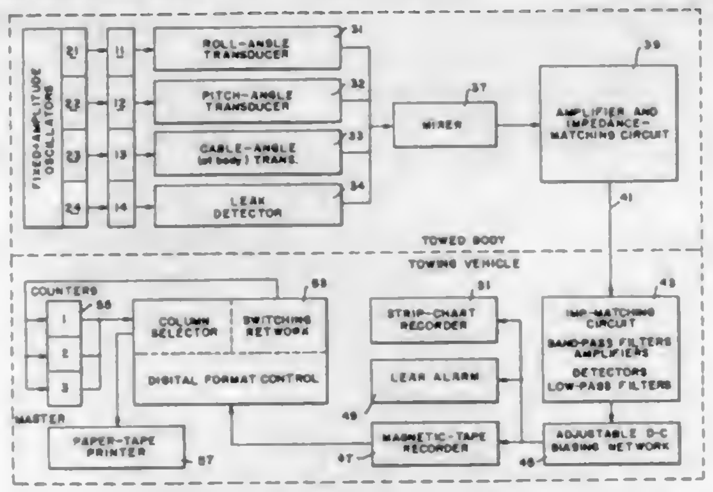
### 3,479,645
## ELECTRONIC MEASUREMENT SYSTEM FOR USE WITH CABLE TOWED BODIES

**Robert J. Singleton, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Navy**

**Filed Mar. 31, 1966, Ser. No. 540,153**

**Int. Cl. H04g** *9/02*

**U.S. Cl. 340—150** **7 Claims**



A data transmission system having a plurality of voltage controlled oscillators connected through respective calibrating circuits to drive respective transducers which feed their output signals into a mixer for transmitting the signal with or without the calibrating signal to a remote system for sorting and recording the data from the respective transducers. The calibrating circuit for each transducer including a plurality of resistors selectively connected by a rotary switch into the circuits between the respective oscillator and the transducers to present a constant load to the oscillator but a variable resistance between the output of the transducer and ground.

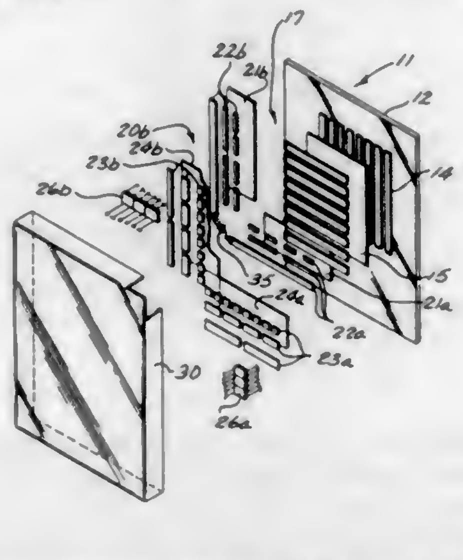
### 3,479,646
## DIGITALLY ADDRESSED SOLID STATE ELECTROLUMINESCENT DISPLAY DEVICE

**Stanley C. Requa, Northridge, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California**

**Filed June 10, 1968, Ser. No. 735,835**

**Int. Cl. G08b** *5/22*

**U.S. Cl. 340—166** **8 Claims**



An electroluminescent matrix display panel is formed on a transparent substrate, such as glass, by means of a first plurality of parallel conductive strips and a second plurality of parallel conductive strips oriented normal to the first group of strips, a layer of electroluminescent material being sandwiched between the two groups of strips. The matrix thus formed by the strips and the electroluminescent phosphor is excited to produce luminescence of a single matrix element at a time by means of an electro-optical commutator which is capable of electrically energizing any matrix element in a random fashion

in response to digital control signals. This commutator is formed with separate commutator units for each of the groups of conductive strips, each such commutator unit comprising a photoconductive member interposed between the power source and the associated strips, and an electroluminescent member for exciting each photoconductive member in response to the digital control signals.

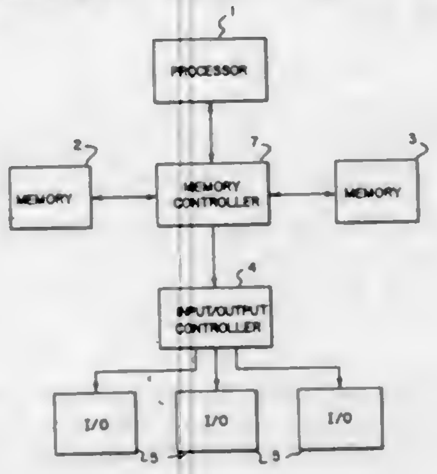
### 3,479,647
## DATA PROCESS SYSTEM INCLUDING MEANS RESPONSIVE TO PREDETERMINED CODES FOR PROVIDING SUBSYSTEM COMMUNICATION

**Robert Cohen, John F. Couleur, and Richard L. Ruth, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York**

**Filed June 3, 1966, Ser. No. 555,166**

**Int. Cl. G11b** *13/00*

**U.S. Cl. 340—172.5** **5 Claims**



A data processing system including a data processor for directing a code and an address to a memory controller. The memory controller is connected to a memory device and is responsive to the code received from the data processor for providing the address to memory. The data retrieved at this address from memory is received by the memory controller, which includes means responsive to this data for selecting one of a plurality of communicating devices connected thereto. A signal is provided to the selected communicating device which generates a second address and executes the instruction located at that address.

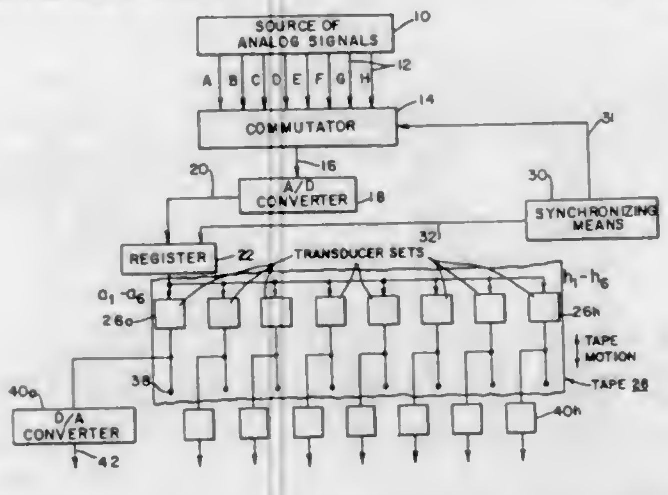
### 3,479,648
## RECORDING METHOD AND APPARATUS

**Marvin Sleven, Joseph Kleiman, and Daniel Hobel, Los Angeles, Calif., assignors to Whittaker Corporation, Los Angeles, Calif., a corporation of California**

**Continuation-in-part of application Ser. No. 213,442, July 30, 1962. This application July 11, 1966, Ser. No. 564,288**

**Int. Cl. G11b** *13/00*

**U.S. Cl. 340—172.5** **14 Claims**



A method of recording information and thereafter reproducing such information in a substantially shorter time period than that required for recording, includes the steps of serially recording successive transverse tracks of information blocks across a tape storage medium while moving the tape at a first rate of speed in a direction transverse to such tracks, and thereafter simultaneously retrieving all of the information stored in a single one of the transverse tracks while moving the tape at a rate of speed substantially higher than the recording rate.

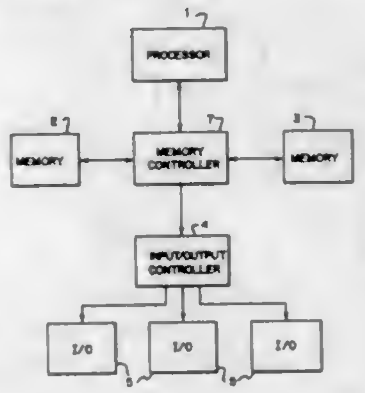
### 3,479,649
## DATA PROCESSING SYSTEM INCLUDING MEANS FOR MASKING PROGRAM INTERRUPT REQUESTS

**David L. Bahrs, Liverpool, N.Y., and John F. Couleur, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York**

**Filed July 22, 1966, Ser. No. 567,222**

**Int. Cl. G06f** *13/00, 15/16*

**U.S. Cl. 340—172.5** **9 Claims**



A data processing system including a plurality of subsystems, each connected for intercommunication exclusively through a memory controller. The subsystems include input/output devices or controllers, memory, and the data processor. The processor, when performing operations under the control of a program, may be interrupted through the receipt of a program interrupt request signal from the memory controller. The memory controller includes a plurality of interrupt cells, each having a corresponding mask and each receptive to an interrupt request from a subsystem connected to the memory controller. The interrupt cells store the existence of a program interrupt request and are arranged in a predetermined priority which will be altered in accordance with the condition of corresponding masking flip-flop.

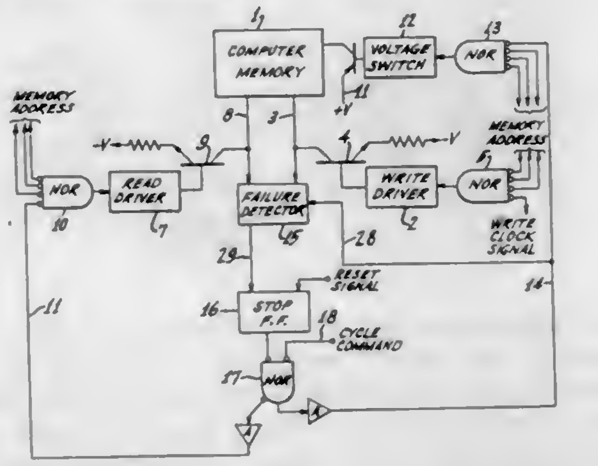
### 3,479,650
## MEMORY DRIVER MONITORING CIRCUIT

**Donald H. Montgomery, Woodbury, N.J., assignor to RCA Corporation, a corporation of Delaware**

**Filed June 30, 1966, Ser. No. 561,994**

**Int. Cl. G11b** *9/00, 5/00, 13/00*

**U.S. Cl. 340—173** **5 Claims**



A memory protection circuit comprising failure detector circuits arranged to monitor the data "read" and data "write" drivers coupled to the computer memory.

Following each "read" and "write" cycle, the operation of the drivers is sensed and in the event of a failure, the memory address circuits are immediately inhibited until the malfunction is corrected.

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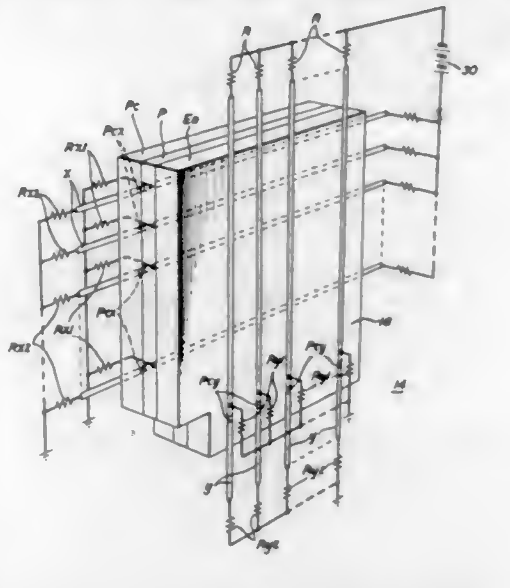
### 3,479,651
### LAMINATE OPTICAL MEMORY WITH SELECTIVE ERASE

**Klaus D. Bowers, Summit, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Mar. 24, 1966, Ser. No. 537,095**
**Int. Cl. G11b** *9/00;* **G02f** *1/26;* **G01n** *21/30*
**U.S. Cl. 340—173** **12 Claims**



An optical store comprising a photoconducting layer, a polarizing layer, and an electrooptic layer along with means for selectively applying voltage across selected positions in the electrooptic layer for rotating accessing polarized light for passage through the polarizing layer is adapted to selective erasure. An erase circuit includes X and Y conductors which operate to reduce the voltage across the electrooptic layer selectively.

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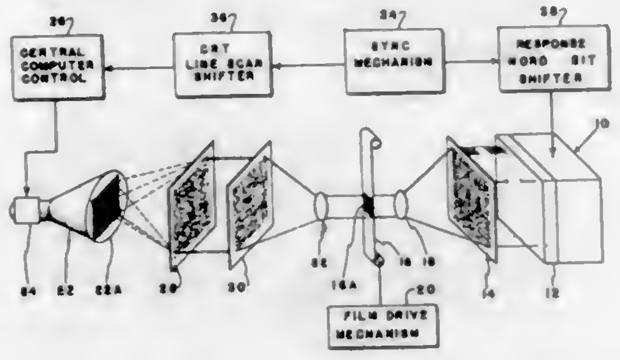
### 3,479,652
### PARALLEL INPUT MECHANISM FOR MEMORY UNIT

**Caxton C. Foster, 100 Heatherstone Road, Amherst, Mass. 01003**
**Filed June 27, 1966, Ser. No. 565,337**
**Int. Cl. G11b** *7/00*
**U.S. Cl. 340—173** **6 Claims**



The invention relates to a parallel input mechanism for a memory unit which comprises a technique to achieve fast loading of an associative memory storage bank. An array of light sensitive elements equal in number to the number of words in the memory storage bank are electrically connected to each core of a respective word with which they are associated. A film strip is backlighted and includes information contained thereon as opaque or clear portions thereof so that the backlighting illuminates the light sensitive elements to transfer the information in parallel to respective common bits of every word in the memory storage bank. The backlighting is provided by a CRT scan so as to accurately backlight only selected areas of the film strip so that the proper information is transferred into the memory storage bank, and so that great quantities of information can be stored on a single film strip and transfer of the information into the storage bank can be accomplished without movement of the film strip, but by the proper control of the light emanating from the CRT face.

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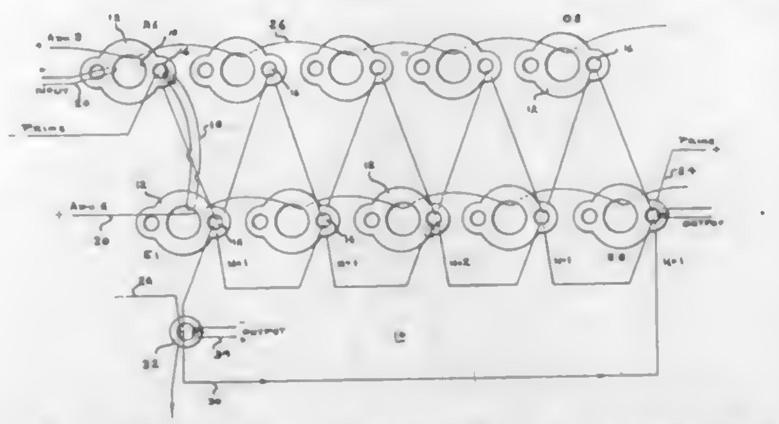
### 3,479,653
### BINARY BIT COUNTER

**Earl Wilbert Eshenauer, Jr., Steelton, Pa., assignor to AMP Incorporated, Harrisburg, Pa.**
**Filed July 14, 1964, Ser. No. 382,618**
**Int. Cl. G11b** *5/12*
**U.S. Cl. 340—174** **3 Claims**



A binary code pattern detector is disclosed including a chain of multiaperture magnetic cores linked by an input winding to be driven to store the bits of a pulse train. An auxiliary magnetic core is linked by an output winding common to a series of the multiaperture magnetic cores which winding is made to thread such multiaperture cores in a manner to respond to flux switched therein to set the auxiliary core only when a certain bit pattern is stored in the multiaperture cores. A detector output winding linking the auxiliary core senses flux switched therein to provide an output only when the given pattern is stored in the multiaperture cores.

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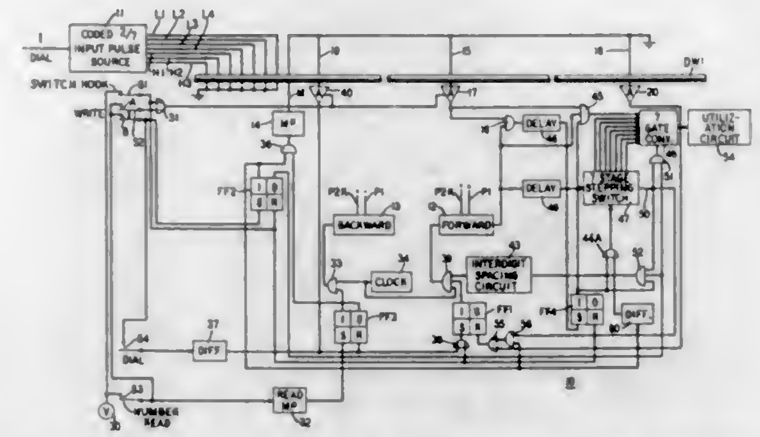
### 3,479,654
### DOMAIN PROPAGATION MEDIA ORGANIZED FOR REPERTORY DIALER OPERATION

**Andrew H. Bobeck, Chatham, and James L. Smith, Bedminster, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed May 16, 1966, Ser. No. 550,389**
**Int. Cl. G11b** *5/62*
**U.S. Cl. 340—174** **12 Claims**



Domain propagation media are organized, for repertory dialer operation, to effect writing of like information into an input area of each medium responsive to each input signal. The information so stored is subsequently moved into a storage area associated with an input area in only a selected medium. Any subsequent write or read operation clears all the input areas of spurious information. The arrangement reduces accessing requirements making the organization attractive for small memories.

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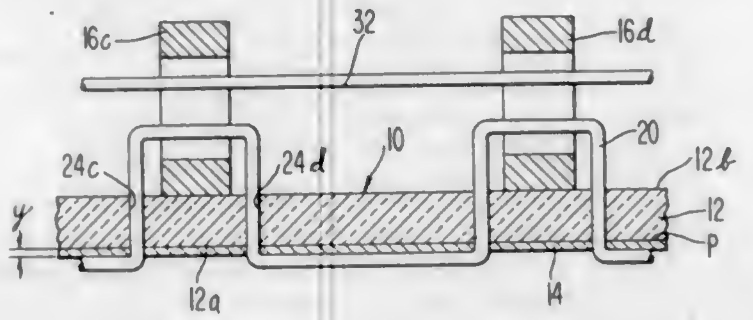
### 3,479,655
### MAGNETIC STORAGE DEVICES WITH SHIELDING BETWEEN INPUT AND OUTPUT

**Hubert F. Quinn, Ossining, N.Y., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**
**Filed Oct. 26, 1964, Ser. No. 406,272**
**Int. Cl. G11c** *5/02, 11/06*
**U.S. Cl. 340—174** **15 Claims**



A magnetic storage device utilizing elements of magnetic storage material such as toroidal magnetic cores and thin films, for example, is provided with a shielding means and with input and output conductors so positioned that capacitively and inductively coupled noises between input and output conductors are effectively reduced to reasonable minima.

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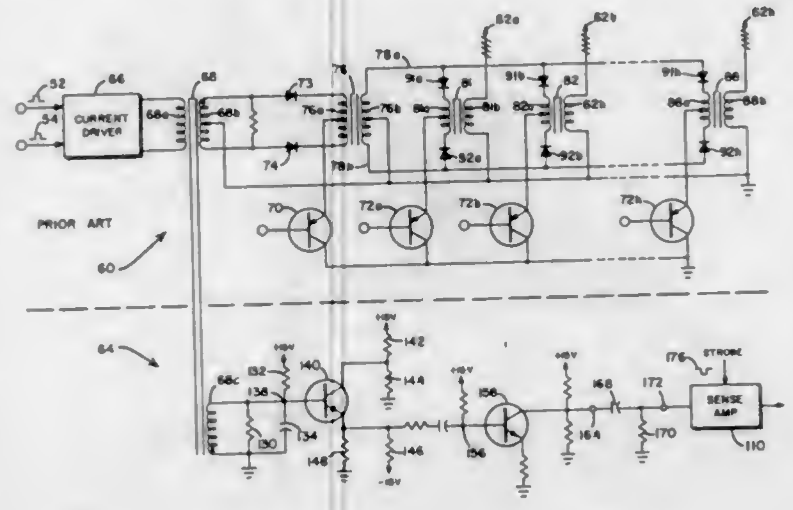
### 3,479,656
### COINCIDENT CURRENT MEMORY APPARATUS AND METHOD

**Raymond H. Moberg, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Dec. 2, 1965, Ser. No. 511,172**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174** **17 Claims**



A two-wire memory system comprising a matrix array of memory elements including a plurality of intersecting drive lines, selected intersections of which define unique memory element addresses. Sequentially timed selection drive current signals concurrently coupled to intersecting drive lines select the memory element thereat causing an output signal to be induced in the first driven intersecting drive line.

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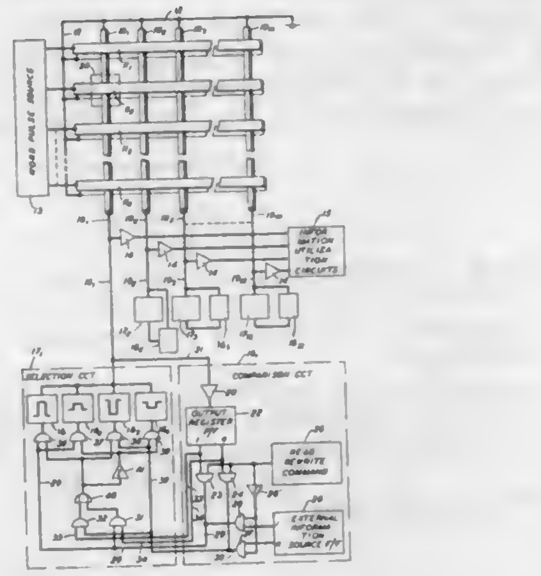
### 3,479,657
### THIN FILM MEMORY CIRCUIT

**Peter I. Bonyhard, Newark, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed Sept. 12, 1966, Ser. No. 578,758**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174** **11 Claims**



Bit circuit current for writing in a cylindrical magnetic thin film memory after destructive readout is controlled in magnitude in accordance with a comparison between information just read out and information which is to be stored. Where bits of the two information sets differ, a bit drive current is employed which is large enough to reverse film magnetization. However, where the bits are the same, a smaller bit drive current is employed to aid the film anisotropy to restore the information readout and to do so with reduced risk of generating a hard writing of the information.

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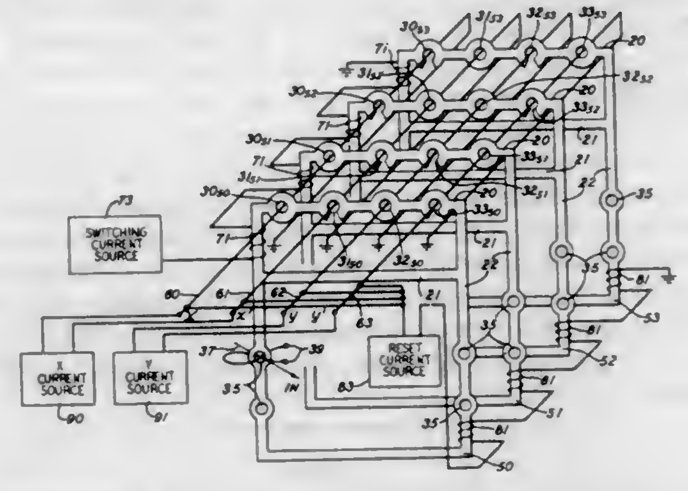
### 3,479,658
### MAGNETIC CORE SELECTION ARRANGEMENT

**Edmunde E. Newhall, Brookside, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Continuation-in-part of application Ser. No. 241,375, Nov. 30, 1962. This application Sept. 19, 1966, Ser. No. 580,542**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174** **33 Claims**



An arrangement for selectively energizing one of a plurality of switching devices includes an array of multiapertured magnetic cores. Each core has a set of selection windings and a switching winding coupled thereto, each such winding extending through a different aperture. Selected sections of the magnetic material extending between the periphery of an aperture and the outer extremity of the core are removed contiguous to certain apertures of each core, no two of the cores having identical patterns of removed sections. A core is selected by coincidentally energizing the switching winding coupled to the core and specified ones of the selection windings. Only one of the cores includes a removed section associated with each aperture through which an energized selection winding extends. This selected core is therefore not inhibited from switching. Accordingly, the selected core is switched from one to another magnetic flux condition while the remaining cores are blocked from switching and therefore do not have their initial conditions altered.

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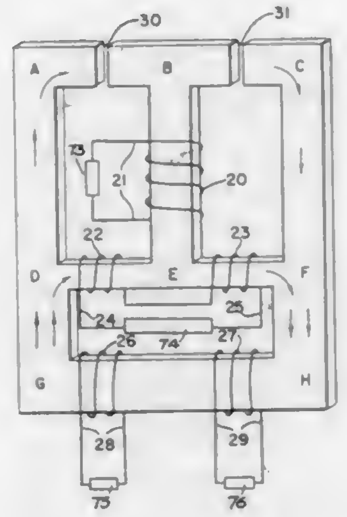
### 3,479,659
### MAGNETIC DEVICE

**Joseph Chedaker, Glenside, and George Gilbert Hoberg, Devon, Pa., and Eugene Arthur Sands, Chapaqua, N.Y., assignors to Burroughs Corporation, a corporation of Michigan**

**Continuation of application Ser. No. 248,716, Sept. 28, 1951. This application June 20, 1966, Ser. No. 596,352**
**(Filed under Rule 47(a) and 35 U.S.C. 116)**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174** **60 Claims**



A multi-aperture magnetic memory core which can be nondestructively sensed having the following aspects: (1) The sensing flux is generally localized. (2) The remanent flux through one path of the core determines the amount of coupling between two windings coupled to another path. (3) The core is a composite core with high remanence characteristics in the path about one aperture and low remanence characteristics in the paths about two other apertures, and the high remanent path of the core serves to maintain a residual flux level through the low remanent paths. (4) The core serves as a logical OR circuit since either of two windings can control its remanent state. (5) The remanent magnetic flux in the first magnetic path or circuit can be used to control the flux level in the second magnetic circuit, and the remanent flux of the first circuit sensed by sensing the flux condition of the second circuit. (6) The core can serve as a pick-up head.

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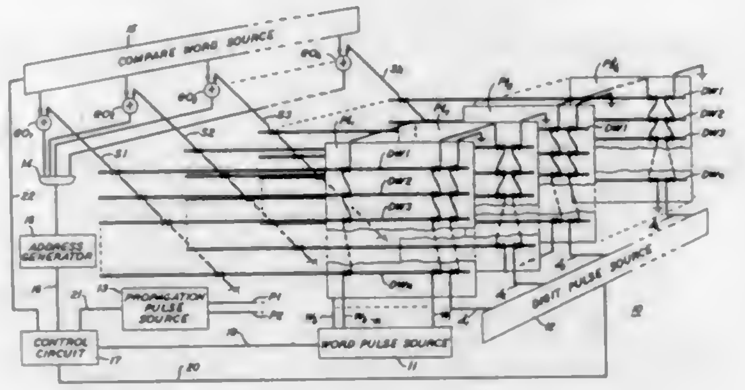
### 3,479,660
### PARALLEL ADDRESS MAGNETIC DOMAIN WALL MEMORY

**Umberto F. Gianola, Florham Park, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed Dec. 14, 1966, Ser. No. 601,692**
**Int. Cl. G11b** *5/74*
**U.S. Cl. 340—174** **7 Claims**

7. A magnetic memory comprising a plurality of domain wall wires arranged in planes, means including a plurality of first conductors coupled alike to corresponding ones of said wires of said planes, said first conductors being coupled to the wires of each plane in a coded manner such that a sequence of pulses applied to said first conductors advances a domain wall only in a selected wire in each of said planes from first to second positions therein, means including conductors coupled to each of said wires for moving all walls in second positions along corresponding wires, means comprising a plurality of sense conductors each coupled to the wires of one of said planes at consecutively offset positions therealong, said sense conductors providing consecutive parallel indications of the presence and absence of moving domain walls in said corresponding wires, means responsive to each of said consecutive parallel indications and to a first coded signal for providing an indication when a parallel indication and said first coded signal match, and means returning all so moved walls to corresponding second positions.



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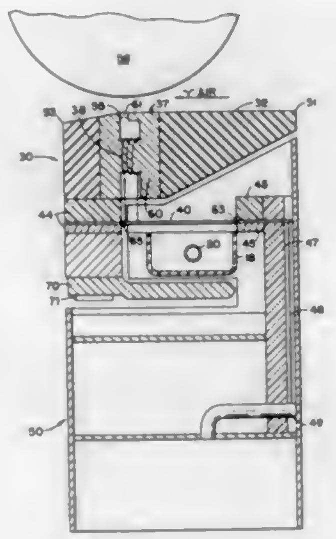
### 3,479,661
### HYDRODYNAMICALLY SUPPORTED MAGNETIC HEAD

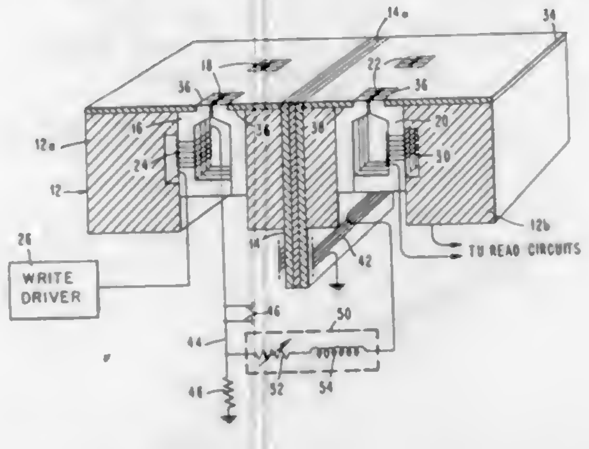
**Richard D. Scott, Camden, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army**
**Filed Oct. 20, 1966, Ser. No. 588,694**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174.1** **1 Claim**



A system for achieving high resolution of recorded signals on rigid magnetic recording media by means of a compressed air film between the magnetic head assembly and the magnetic disc recording member. This system includes a compressed air port and rubber bladder device for retracting the magnetic head from the magnetic disc recording member. The system possesses high stability for use in radar computers at video frequencies.

### 3,479,662
### FEEDTHROUGH ELIMINATION IN MAGNETIC TRANSDUCERS

**Rex C. Bradford and Richard E. Braun, Boulder, Colo., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Oct. 6, 1966, Ser. No. 584,870**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174.1** **10 Claims**



A magnetic transducer in which feedthrough noise between heads thereof is reduced by providing means capable of producing a feedthrough cancelling field in the area of the working gaps of heads which are subject to feedthrough reception. The cancelling field is produced by the same energizations that produce feedthrough, but is arranged to have an opposing phase. In an embodiment of the invention, the center shield of the transducer is used as the cancelling field emitter and is driven by a winding coupled thereto and activated in response to activation of the writing head of the transducer.

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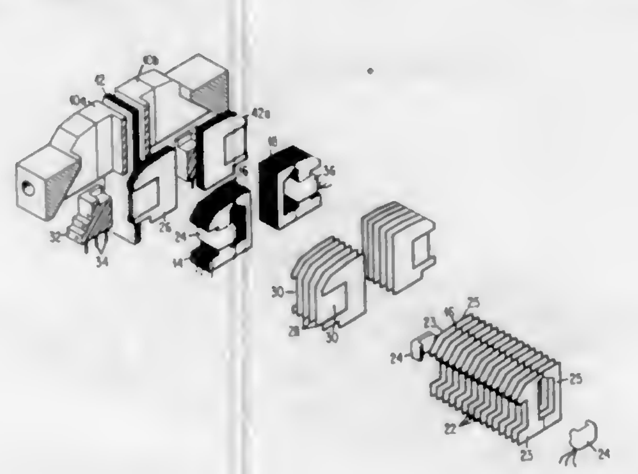
### 3,479,663
### MAGNETIC TRANSDUCER

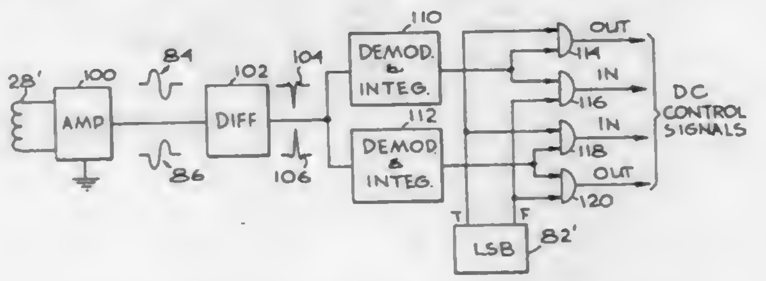
**John R. Morrison and Dennis E. Speliotis, Boulder, Colo., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Dec. 28, 1966, Ser. No. 605,242**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174.1** **9 Claims**



A modified structure of the writing head elements of a magnetic transducer assembly which provides self-compensation of fringing fields. Each head includes at the side edges which define a track edge during the writing operation, one or more head portions effective to have large eddy currents induced therein by the energizing signal applied to the head. These eddy currents, in turn, induce magnetic fields at the side edges of the head which are in opposition to the main writing flux and which effectively cancel the fringing fields at those edges, thus providing a sharp cut-off of the writing field at the track edge to write a clean track edge and eliminate interference fields.

### 3,479,664
### SERVO POSITIONING SYSTEM

**Raymond Stuart-Williams, Pacific Palisades, and Sung Pal Chur, Inglewood, Calif., assignors to Data Products Corporation, Culver City, Calif., a corporation of Delaware**
**Filed Dec. 28, 1965, Ser. No. 517,050**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174.1** **5 Claims**



A magnetic disc storage system including a servo system for accurately positioning read heads. The servo system employs a positioning surface defining different reference rows thereon, each row storing a signal of the same frequency. Preferably, signals stored in adjacent rows are of opposite phase with the signal in one row being characterized by a larger positive slope than negative slope, and the signal in an adjacent row being characterized by a large negative slope than positive slope. The signal components read by the reference head adjacent the positioning surface are differentiated and compared.

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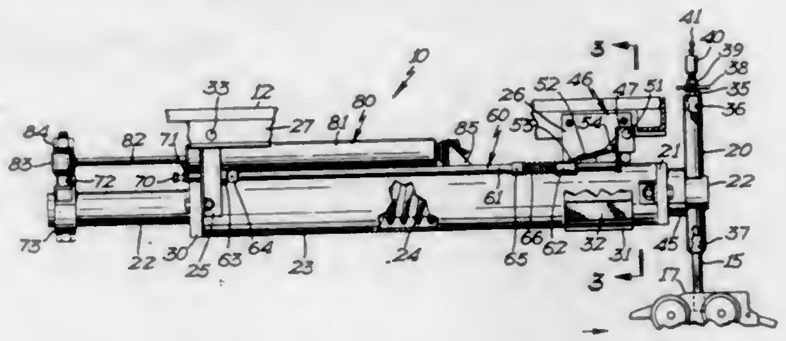
### 3,479,665
### SELF-CONTAINED ACCELERATION CONTROL MECHANISM

**Vercoe C. Jones, Faribault, Minn., assignor to Nutting Truck and Caster Company, Fairbault, Minn., a corporation of Minnesota**
**Continuation-in-part of application Ser. No. 683,041 Sept. 18, 1967. This application Apr. 10, 1969, Ser. No. 815,046**
**Int. Cl. B65g** *17/42;* **B61g** *11/02*
**U.S. Cl. 104—172** **16 Claims**

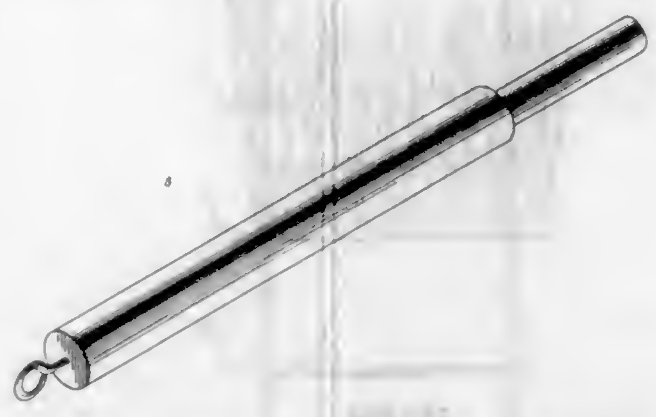


A self-contained acceleration control or overload release mechanism particularly adapted for use in coupling an industrial or material handling truck to a sub-floor drag line conveyor. The control mechanism is characterized by an elongated member pivotally mounted beneath the industrial truck for sliding movement relative to the industrial truck, along its longitudinal axis in the direction of travel of the truck. The elongated member serves to mount a tow pin which extends downwardly to engage a dog in the drag line conveyor. When a velocity differential occurs between the truck and the drag line conveyor, the elongated member slides forward against the compressive force of a spring and, if the differential continues to increase to reach an upper limit, the tow pin is released from the drag line. Release of the tow pin from the drag line is accomplished without a camming action by utilizing the vertical force component acting upon the mechanism.

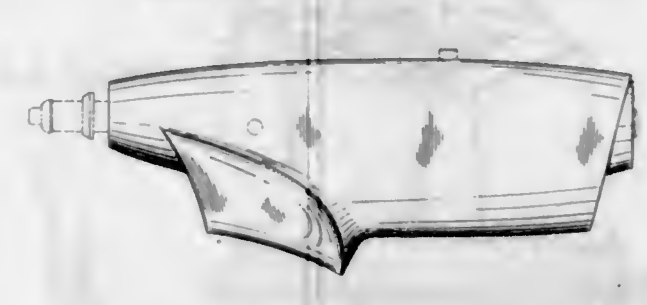
# DESIGNS

## NOVEMBER 18, 1969

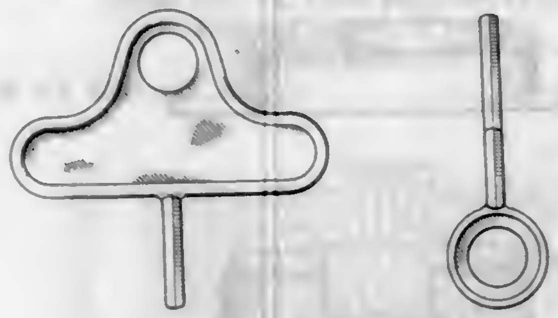
**215,997**
**TOOL FOR INSTALLING OR REMOVING DUAL TRUCK WHEELS**
**Ray McCoy, 112 Cambridge Ave.,**
**New Port Richey, Fla. 33552**
**Filed Sept. 17, 1968, Ser. No. 13,565**
**Term of patent 14 years**
**Int. Cl. D8—*02***
**U.S. Cl. D8—31**



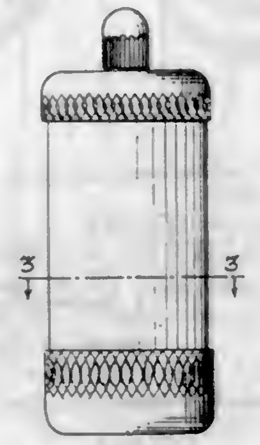
**215,998**
**HAND HELD POWER TOOL OR THE LIKE**
**Dallas R. Humphrey, North St. Paul, and Logan W. Johnson, Minnetonka, Minn., assignors to Kroy Industries Inc., Stillwater, Minn., a corporation of Minnesota**
**Filed Aug. 9, 1968, Ser. No. 13,078**
**Term of patent 14 years**
**Int. Cl. D8—*02***
**U.S. Cl. D8—61**



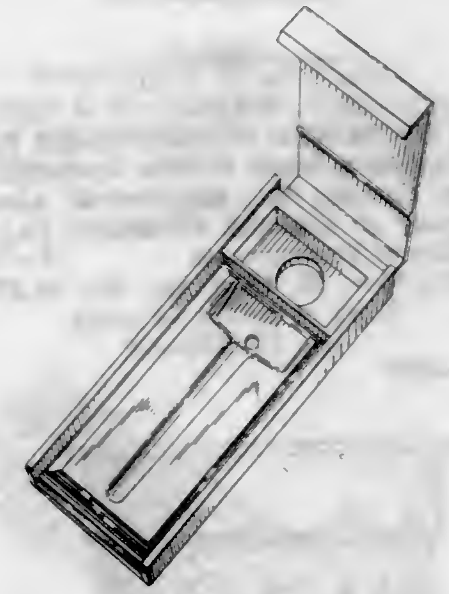
**215,999**
**GARMENT HANGER CARRIER**
**Charles H. Borten, Towers of Windsor Park, Kyoto Building, Suite 1–6, Cherry Hill, N.J. 08034**
**Filed Jan. 28, 1969, Ser. No. 15,543**
**Term of patent 14 years**
**Int. Cl. D8—*03***
**U.S. Cl. D8—154**



**216,000**
**COMBINATION CONTAINER FOR A PILL AND WATER**
**Florabel Maben, 3632 Park Blvd., Apt. E,**
**Visalia, Calif. 92103**
**Filed Mar. 26, 1969, Ser. No. 16,451**
**Term of patent 14 years**
**Int. Cl. D9—*01***
**U.S. Cl. D9—169**

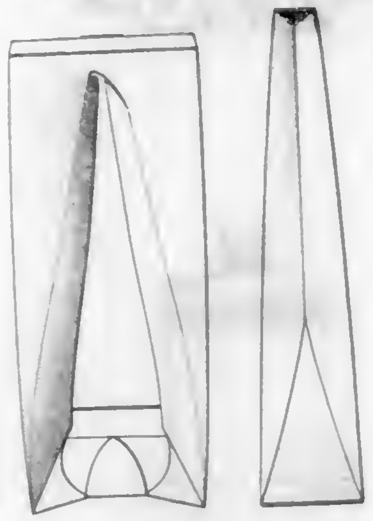


**216,001**
**CASE FOR CONTAINING A SAFETY RAZOR**
**Kenneth H. Grange, Highgate, London, England, assignor to Wilkinson Sword Limited, London, England, a British company**
**Filed Oct. 3, 1968, Ser. No. 13,826**
**Claims priority, application Great Britain Apr. 11, 1968**
**Term of patent 14 years**
**Int. Cl. D9—*04***
**U.S. Cl. D9—186**



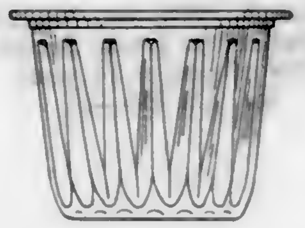
### 216,002
### PACKAGING CONTAINER FOR A BOTTLE OR THE LIKE
Orison W. Stone, Valley Cottage, N.Y., assignor to R. A. Jones & Company, Inc., Covington, Ky., a corporation of Kentucky
Filed Apr. 30, 1968, Ser. No. 11,706
Term of patent 14 years
Int. Cl. D9—*04*

U.S. Cl. D9—193



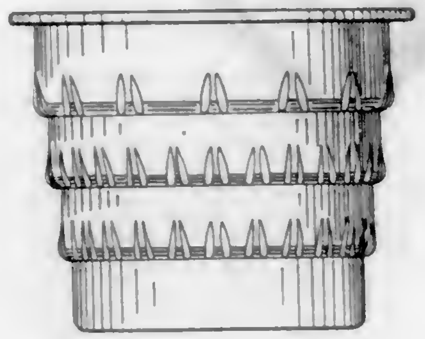
### 216,003
### PORTION CONTAINER FOR FOOD OR BEVERAGE
James D. Smith, South Buffalo Township, Armstrong County, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1968, Ser. No. 14,558
Term of patent 14 years
Int. Cl. D9—*04*

U.S. Cl. D9—220



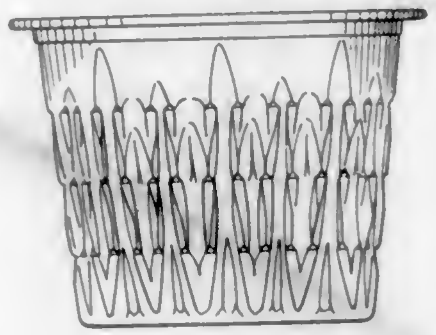
### 216,004
### PORTION CONTAINER FOR FOOD OR BEVERAGE
James D. Smith, South Buffalo Township, Armstrong County, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1968, Ser. No. 14,570
Term of patent 14 years
Int. Cl. D9—*04*

U.S. Cl. D9—220



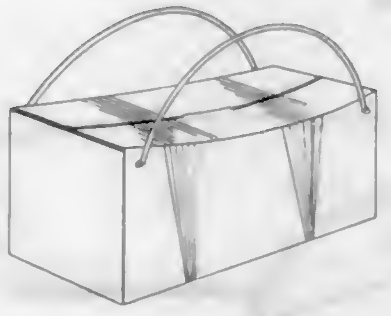
### 216,005
### PORTION CONTAINER FOR FOOD OR BEVERAGE
James D. Smith, South Buffalo Township, Armstrong County, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 21, 1968, Ser. No. 14,571
Term of patent 14 years
Int. Cl. D9—*04*

U.S. Cl. D9—220



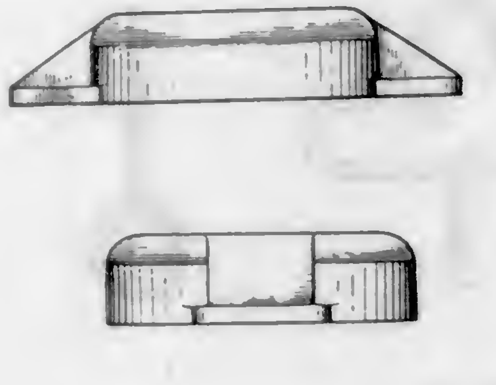
### 216,006
### CARTON OR SIMILAR ARTICLE
Jacques Schier, Deerfield, Ill., assignor to McDonald's Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 30, 1968, Ser. No. 13,340
Term of patent 14 years
Int. Cl. D9—*04*

U.S. Cl. D9—232



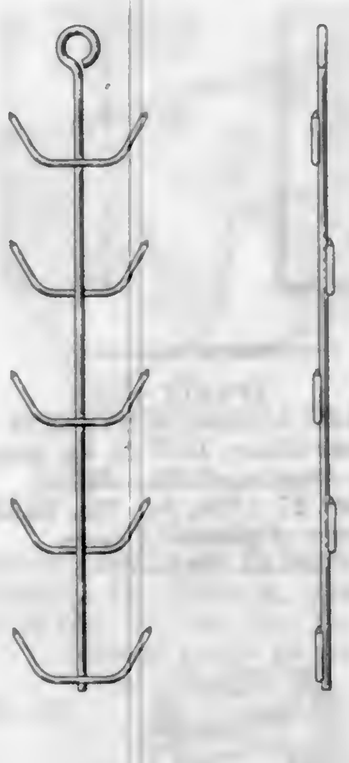
### 216,007
### BOTTLE CAP
Patrick Kearney, 38—11 217th St., Bayside, N.Y. 11361
Filed Aug. 8, 1968, Ser. No. 13,064
Term of patent 14 years
Int. Cl. D9—*02*

U.S. Cl. D9—281



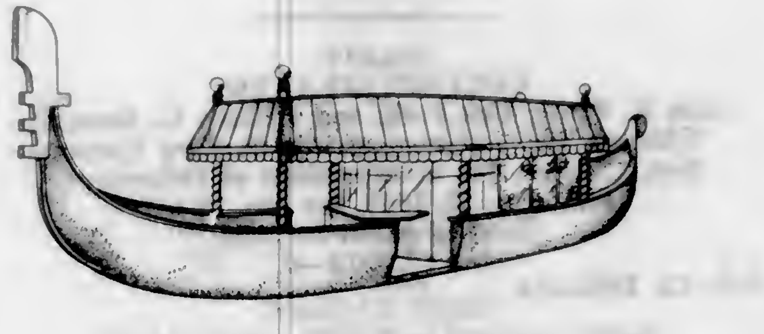
### 216,008
### MEAT TREE
George F. Dennison, Evergreen Park, Ill., assignor to Smeco Industries, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 3, 1968, Ser. No. 13,358
Term of patent 14 years
Int. Cl. D15—*99*

U.S. Cl. D11—1



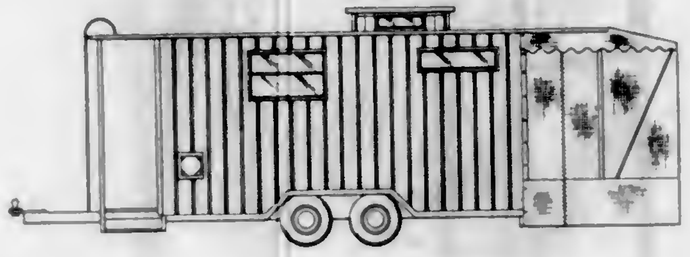
### 216,009
### RESTAURANT BUILDING
Domenico Spano, Long Beach, Calif., assignor to Domenico's Gondola, Inc., Long Beach, Calif., a corporation of California
Filed Mar. 24, 1969, Ser. No. 16,396
Term of patent 14 years
Int. Cl. D25—*04*

U.S. Cl. D13—1



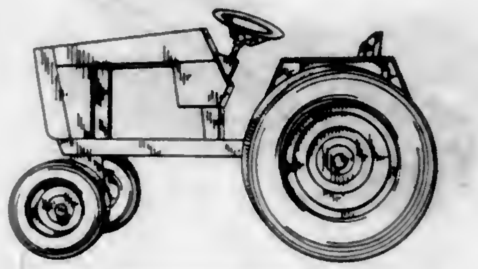
### 216,010
### TRAILER
Robert S. Hudson, Fridley, Minn., assignor to K-Boose, Inc., St. Paul, Minn., a corporation of Minnesota
Filed July 24, 1968, Ser. No. 12,872
Term of patent 14 years
Int. Cl. D12—*10*

U.S. Cl. D14—3



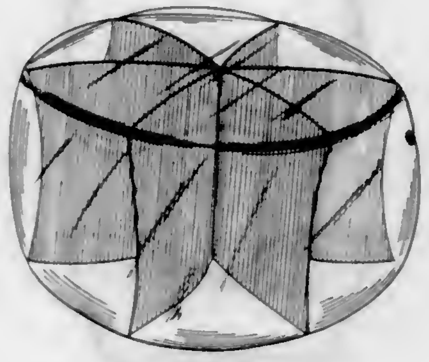
### 216,011
### GARDEN TRACTOR
Edward J. Lazzeroni, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Sept. 17, 1968, Ser. No. 13,567
Term of patent 14 years
Int. Cl. D12—*09*

U.S. Cl. D14—3



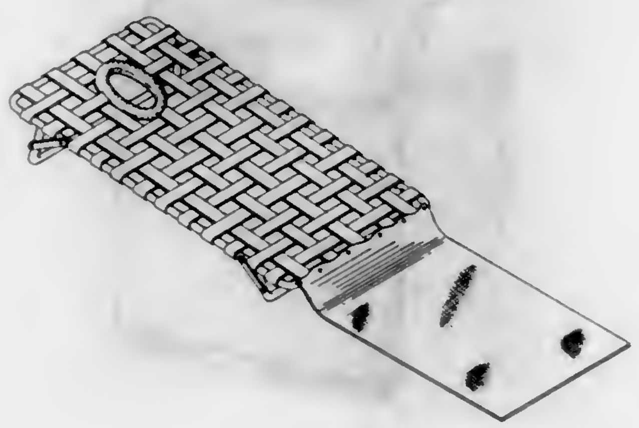
### 216,012
### HASSOCK OR THE LIKE
Alan Buchsbaum, 30 E. 13th St., New York, N.Y. 10003, and Kazz Morimoto, 3-8-18 Roppongi, Minato-ku, Tokyo, Japan
Filed Nov. 6, 1968, Ser. No. 14,332
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D15—8



### 216,013
### PORTABLE BEACH MAT
Joseph A. Evans, 117 W. Calhoun St., Anderson, S.C. 29621
Filed Sept. 6, 1968, Ser. No. 13,437
Term of patent 14 years
Int. Cl. D6—*01*

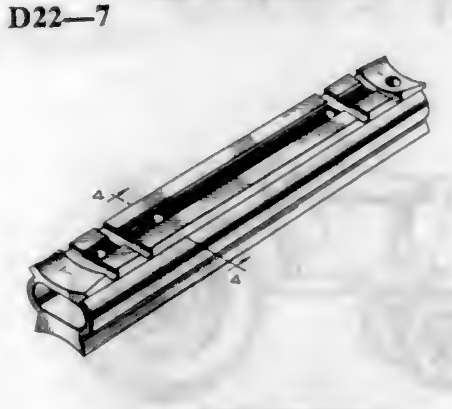
U.S. Cl. D15—8



### 216,014
### BASE FOR A RIFLE TELESCOPIC MOUNT

Norman O. Dupont, 2557 N. Nicolet Road,
Green Bay, Wis. 54301
Filed Apr. 16, 1968, Ser. No. 11,476
Term of patent 14 years
Int. Cl. D22—*02*

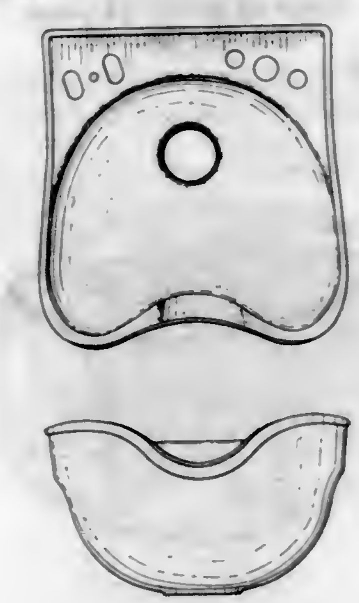
U.S. Cl. D22—7



### 216,015
### SHAMPOO BASIN

Nellie Fidel, New York, N.Y., assignor to Modecraft Company, Inc., Brooklyn, N.Y., a corporation of New York
Filed Oct. 30, 1968, Ser. No. 14,231
Term of patent 14 years
Int. Cl. D23—*02*

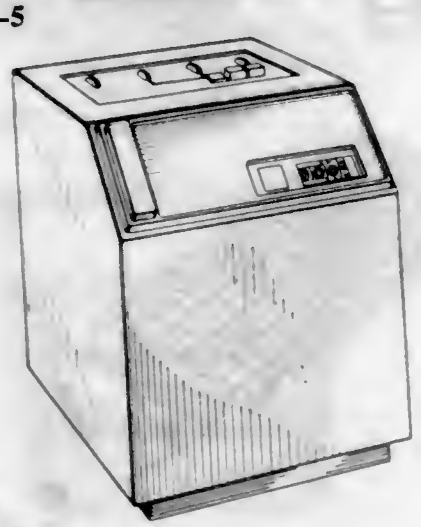
U.S. Cl. D23—64



### 216,016
### DATA READER

Gordon J. Waligorski, Lombard, Ill., assignor to Perkin-Elmer Corporation
Filed May 20, 1968, Ser. No. 12,009
Term of patent 14 years
Int. Cl. D14—*02*

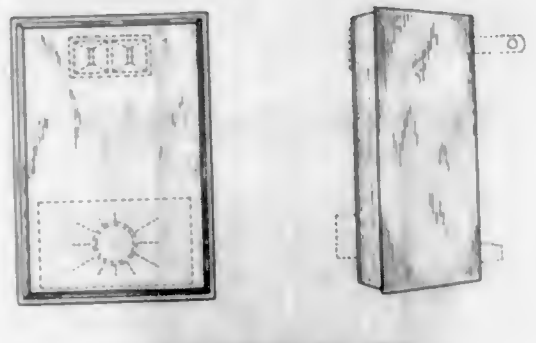
U.S. Cl. D26—5



### 216,017
### CASE FOR A TIME SWITCH OR THE LIKE

Robert Podall, Chicago, Ill., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Dec. 8, 1967, Ser. No. 9,711
Term of patent 14 years
Int. Cl. D13—*03*

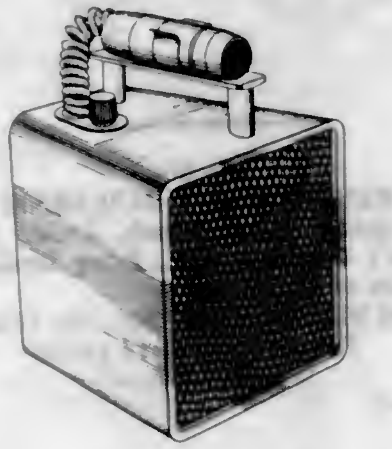
U.S. Cl. D26—13



### 216,018
### PUBLIC ADDRESS SYSTEM

G. Jerome Sieler, 1037 N. La Brea,
Los Angeles, Calif. 90038
Filed Nov. 27, 1968, Ser. No. 14,689
Term of patent 14 years
Int. Cl. D14—*03*

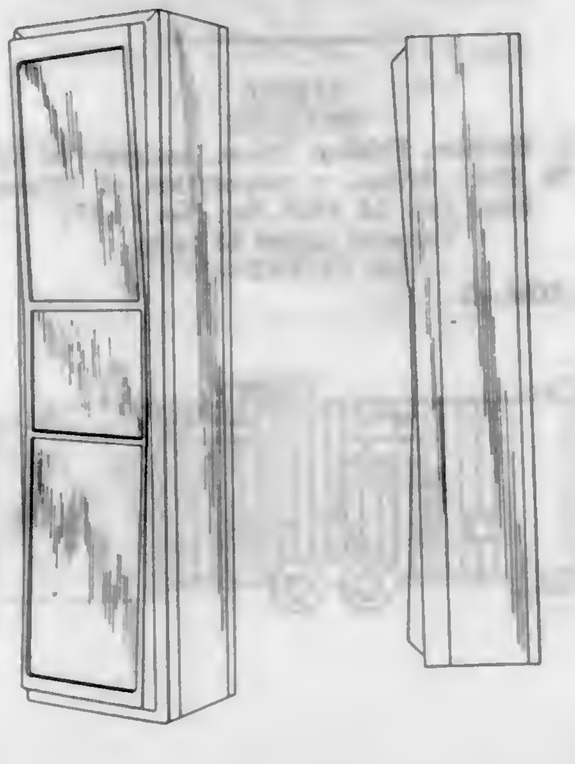
U.S. Cl. D26—14



### 216,019
### COLUMN SPEAKER

Alan R. Patch, Oak Park, and William G. Broman, Chicago, Ill., assignors to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 22, 1969, Ser. No. 15,447
Term of patent 14 years
Int. Cl. D14—*01*

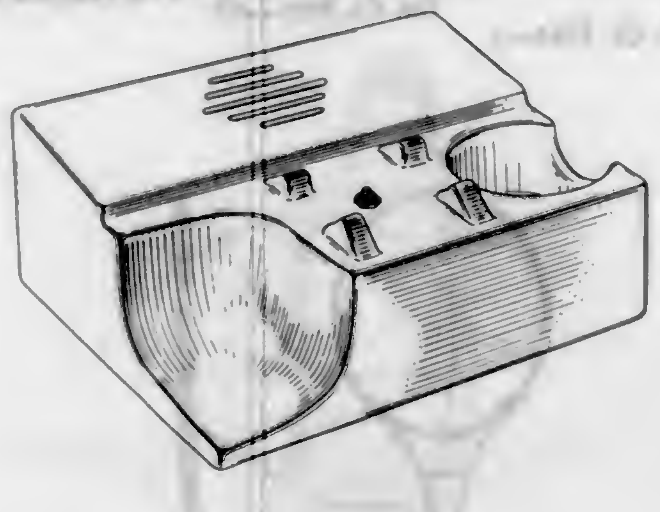
U.S. Cl. D26—14



### 216,020
### TELEPHONE VOICE AMPLIFIER

James F. Divietro, R.R. 3, Box 151,
Elkhart, Ind. 46517
Filed Feb. 28, 1969, Ser. No. 15,975
Term of patent 7 years
Int. Cl. D14—*03*

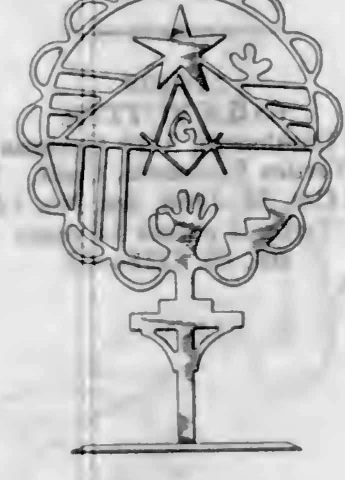
U.S. Cl. D26—14



### 216,021
### FRATERNAL STANDARD OR THE LIKE

George M. Wallace, 64 Clinton St., Paterson, N.J. 07501
Filed May 19, 1969, Ser. No. 17,222
Term of patent 14 years
Int. Cl. D11—*99*

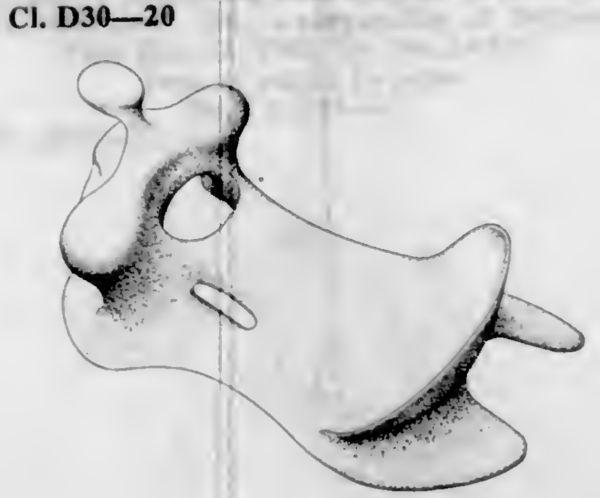
U.S. Cl. D29—23



### 216,022
### SADDLE TREE

Carl J. Queen, 5300 New Peachtree Road,
Chamblee, Ga. 30005
Filed Oct. 31, 1968, Ser. No. 14,246
Term of patent 7 years
Int. Cl. D30—*03*

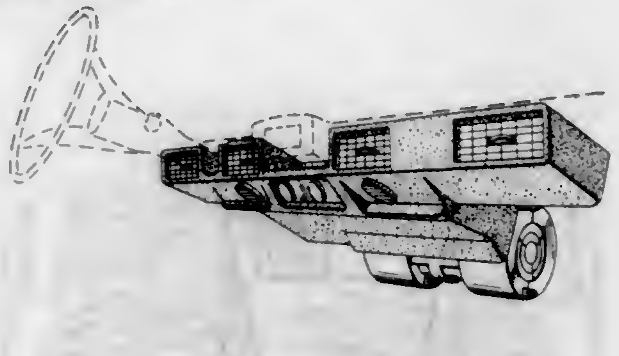
U.S. Cl. D30—20



### 216,023
### COMBINED OUTLET AND CONTROL PANEL FOR AN AUTOMOBILE AIR CONDITIONER

Don P. Dixon, 2011 Sable Lane,
San Antonio, Tex. 78217
Filed Nov. 8, 1968, Ser. No. 14,363
Term of patent 14 years
Int. Cl. D23—*04*

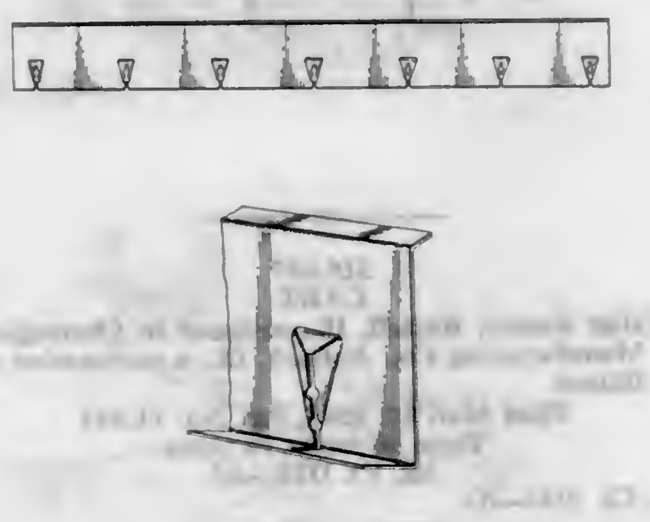
U.S. Cl. D23—142



### 216,024
### GARMENT HANGER BAR

Carl E. Gingher, 304–328 Depot St.,
Scranton, Pa. 18509
Filed Feb. 3, 1969, Ser. No. 15,601
Term of patent 14 years
Int. Cl. D6—*99*

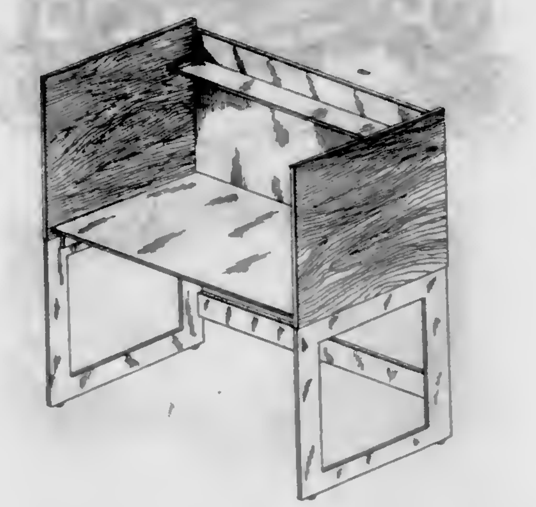
U.S. Cl. D33—8



### 216,025
### SINGLE STUDY CARRELL UNIT

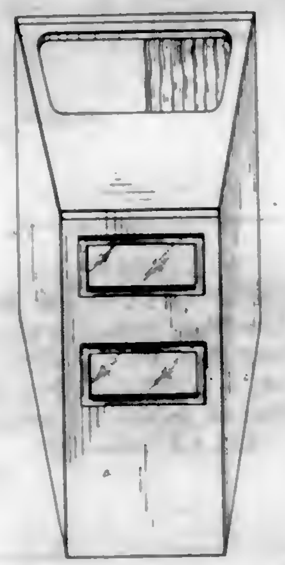
John L. Gianfagna, 102 Crestwood Circle,
Marietta, Ohio 45750
Continuation-in-part of design application Ser. No. 9,035, Oct. 18, 1967. This application July 17, 1968, Ser. No. 12,807
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D33—11



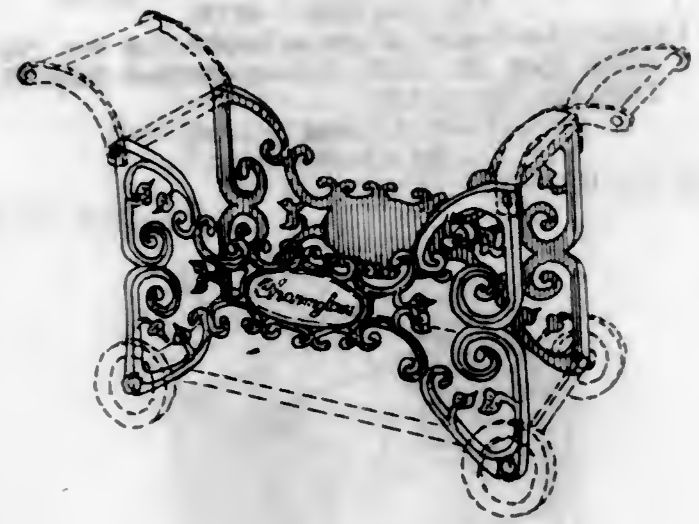
**216,026**
**CARRELL FOR STUDENT INSTRUCTION**
Judson E. Cornish, 3211 Tallywood Drive, Apt. 1,
Fayetteville, N.C. 28303
Filed Oct. 8, 1968, Ser. No. 13,886
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D33—11



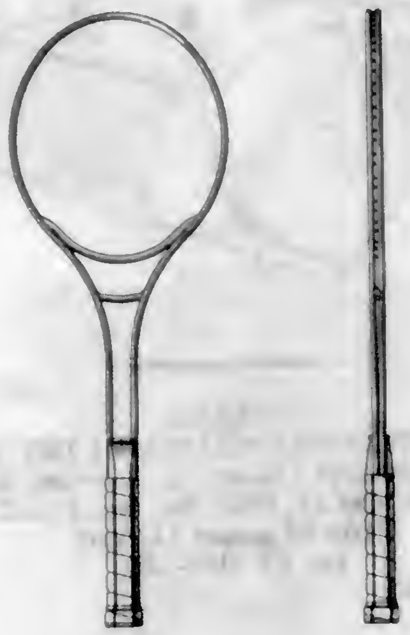
**216,027**
**CART**
Walter Koziol, Russell, Ill., assignor to Charmglow Manufacturing Co., Antioch, Ill., a corporation of Illinois
Filed Mar. 20, 1968, Ser. No. 11,051
Term of patent 14 years
Int. Cl. D12—*13*

U.S. Cl. D33—14



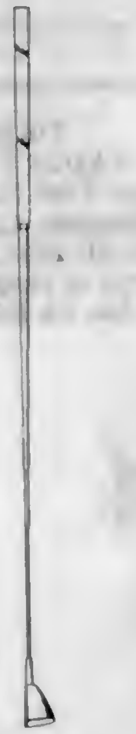
**216,028**
**TENNIS RACKET FRAME**
Maynard H. Cheris, Chicago, Aloise A. Bigos, Berwyn, and Dana W. Mox, Glenview, Ill., assignors, by mesne assignments, to Charger Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 28, 1968, Ser. No. 10,777
Term of patent 14 years
Int. Cl. D21—*03*

U.S. Cl. D34—5



**216,029**
**GOLF PUTTER**
Samuel Lombardo, 3419 Corinna Drive,
Palos Verdes Peninsula, Calif. 90274
Filed Oct. 28, 1968, Ser. No. 14,203
Term of patent 14 years
Int. Cl. D21—*03*

U.S. Cl. D34—5



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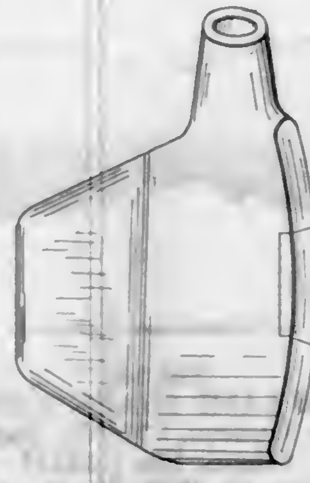
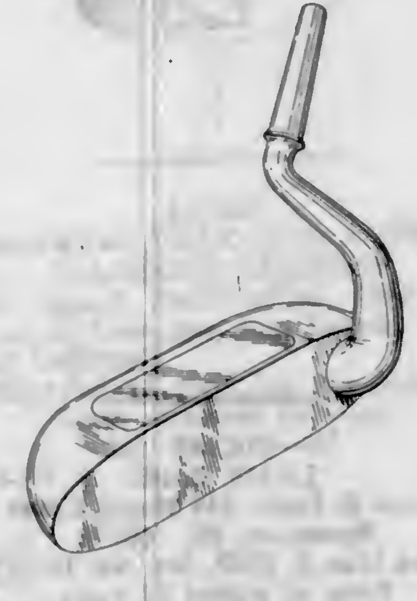
**216,030**
**GOLF CLUB HEAD**
Wallace E. Wigley, 1515 6th Ave. W.,
Tuscaloosa, Ala. 35401
Filed Dec. 18, 1968, Ser. No. 15,038
Term of patent 14 years
Int. Cl. D21—*03*

U.S. Cl. D34—5



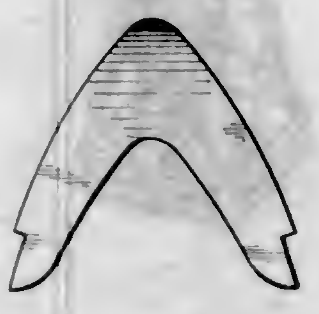
**216,031**
**HEAD OF A GOLF CLUB**
Minden Vaughan Blake, Carnanton, Woodlands Road E., Virginia Water, Surrey, England
Filed Feb. 10, 1969, Ser. No. 15,720
Term of patent 14 years
Claims priority, application Great Britain Sept. 9, 1968
Int. Cl. D21—*03*

U.S. Cl. D34—5



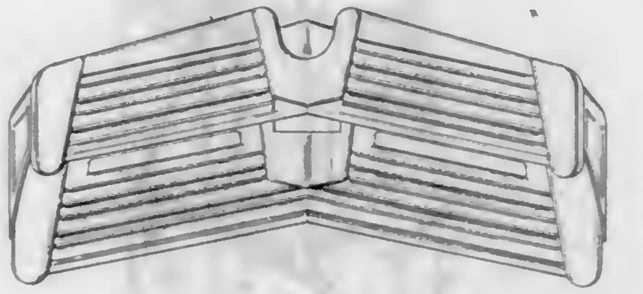
**216,032**
**SKI TIP PROTECTOR**
John G. Howe, Baltimore, Md., assignor to Head Ski Co., Inc., Timonium, Md., a corporation of Delaware
Filed Dec. 12, 1968, Ser. No. 14,935
Term of patent 14 years
Int. Cl. D21—*03*

U.S. Cl. D34—14



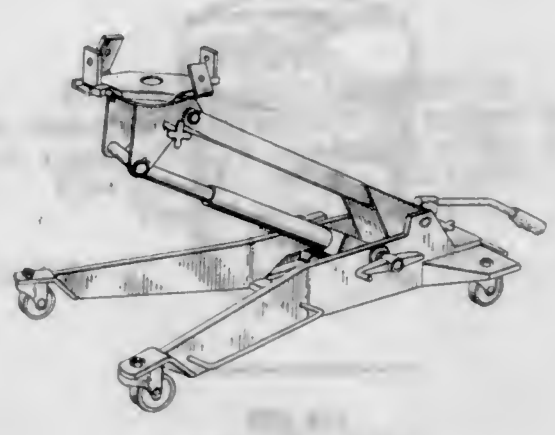
**216,033**
**REAR STEP DECK FOR TRICYCLE**
Allen M. Brandenburger, Clinton, Iowa, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Feb. 20, 1969, Ser. No. 15,857
Term of patent 14 years
Int. Cl. D12—*11*

U.S. Cl. D34—15



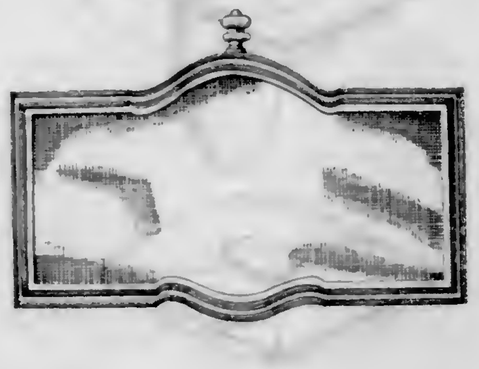
**216,034**
**TRANSMISSION JACK**
Gilbert W. Gaarder and Elmont E. Hollingsworth, St. Joseph, Mo., assignors to Gray Manufacturing Company, Inc., St. Joseph, Mo., a corporation of Missouri
Filed Dec. 27, 1968, Ser. No. 15,134
Term of patent 14 years
Int. Cl. D12—*05*

U.S. Cl. D41—1



**216,035**
**CLOCK CASING**
Siro R. Toffolon, Meriden, Conn., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Dec. 23, 1968, Ser. No. 15,094
Term of patent 14 years
Int. Cl. D10—*01*

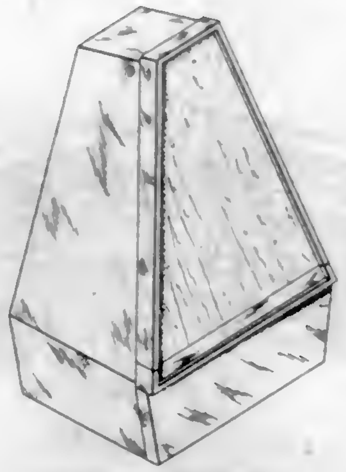
U.S. Cl. D42—7



### 216,036
### METRONOME CASING

Monte L. Levin, New York, N.Y., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed May 12, 1969, Ser. No. 17,116
Term of patent 14 years
Int. Cl. D10—*05*

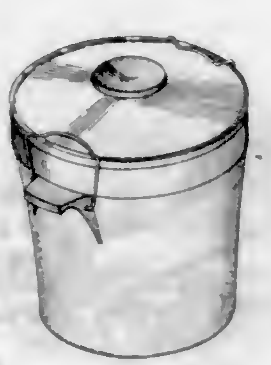
U.S. Cl. D42—7



### 216,037
### INSULATED FOOD KEEPER

David Douglas, 1332 S. 26th St.,
Manitowoc, Wis. 54220
Filed Feb. 19. 1969, Ser. No. 15,829
Term of patent 14 years
Int. Cl. D7—*99*

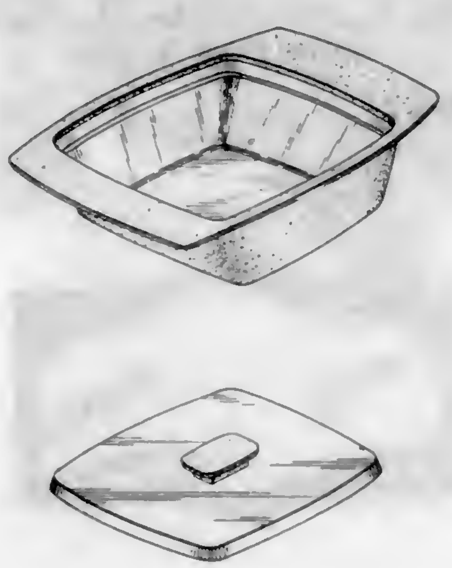
U.S. Cl. D44—1



### 216,038
### BUTTER DISH

David Douglas, 1332 S. 26th St.,
Manitowoc, Wis. 54220
Filed July 5, 1968, Ser. No. 12,645
Term of patent 14 years
Int. Cl. D7—*01*

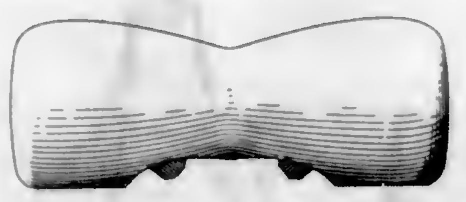
U.S. Cl. D44—5



### 216,039
### COMBINED SALT AND PEPPER SHAKER

Richard A. Measell, 3056 E. Ashcroft,
Fresno, Calif. 93726
Filed Jan. 30, 1969, Ser. No. 15,573
Term of patent 14 years
Int. Cl. D7—*01*

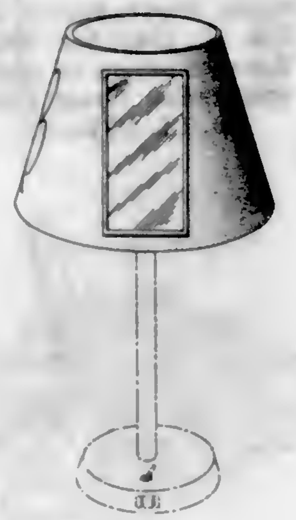
U.S. Cl. D44—22



### 216,040
### COMBINED LAMP SHADE AND MIRROR

Aime Trudeau, 227 NE. 26th St.,
Miami, Fla. 33137
Filed Jan. 15, 1969, Ser. No. 15,362
Term of patent 14 years
Int. Cl. D26—*06*

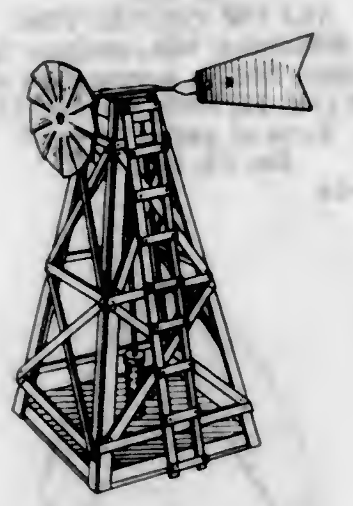
U.S. Cl. D48—16



### 216,041
### LAMP BASE

Frank E. Luby, 344 Mason Court,
Sycamore, Ill. 60178
Filed Mar. 5, 1969, Ser. No. 16,037
Term of patent 14 years
Int. Cl. D26—*02*

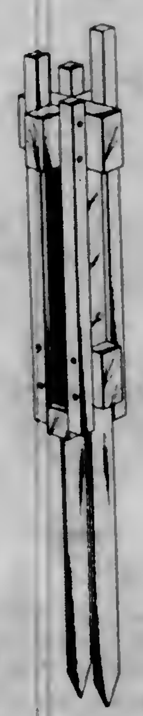
U.S. Cl. D48—20



### 216,042
### OUTDOOR LANTERN

John F. Myhre, 3500 Annette St.,
Los Angeles, Calif. 90065
Filed Dec. 16, 1968, Ser. No. 14,998
Term of patent 3½ years
Int. Cl. D26—*03*

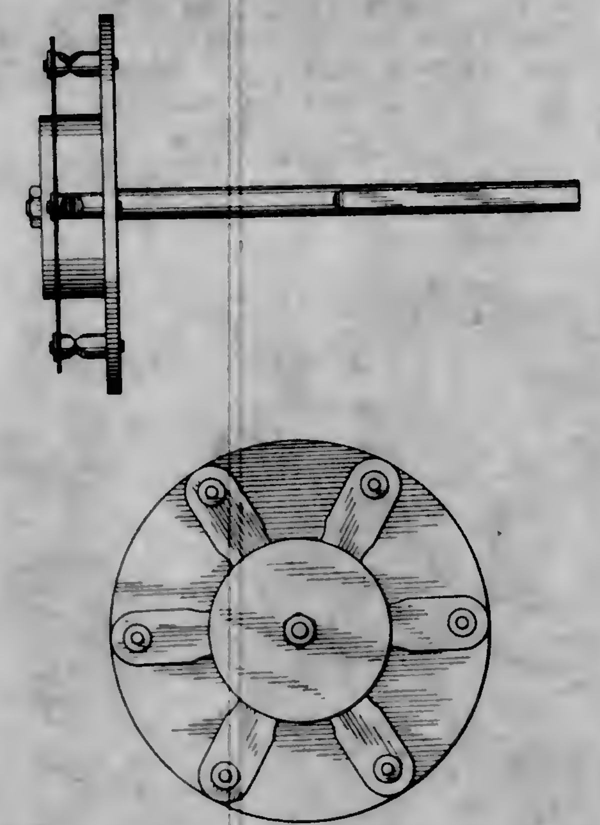
U.S. Cl. D48—31



### 216,043
### MARKING HEAD FOR A WIRE MARKING MACHINE

Ralph H. Swaisgood, Fort Collins, Colo., assignor to Storm Products Company, Los Angeles, Calif., a corporation of California
Filed Jan. 15, 1968, Ser. No. 10,167
Term of patent 14 years
Int. Cl. D15—*05*

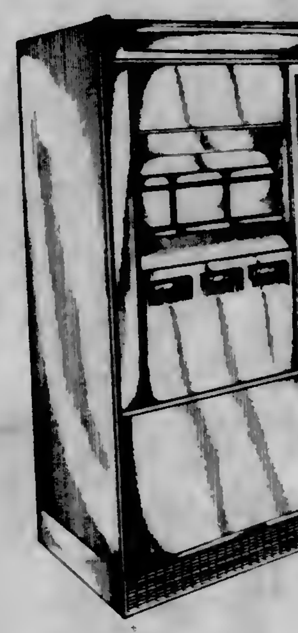
U.S. Cl. D55—1



### 216,044
### ICE CREAM MERCHANDISER

Walter E. Moore, Bel-Nor, Mo., assignor to UMC Industries, Inc., St. Louis, Mo., a corporation of Delaware
Filed June 20, 1968, Ser. No. 12,453
Term of patent 7 years
Int. Cl. D20—*01*

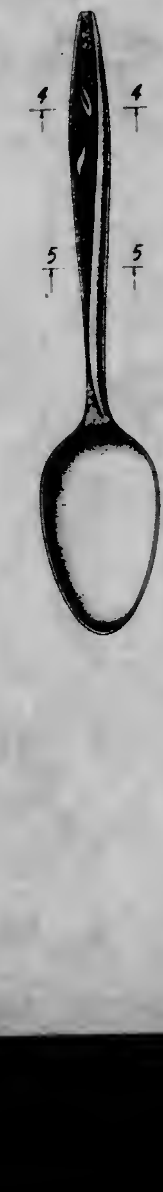
U.S. Cl. D52—3



### 216,045
### SPOON OR SIMILAR ARTICLE

Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Feb. 25, 1969, Ser. No. 15,907
Term of patent 14 years
Int. Cl. D7—*03*

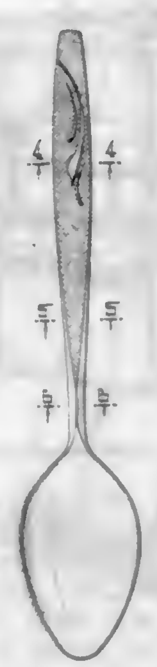
U.S. Cl. D54—12



### 216,046
### SPOON OR SIMILAR ARTICLE

Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Feb. 25, 1969, Ser. No. 15,896
Term of patent 14 years
Int. Cl. D7—*03*

U.S. Cl. D54—12



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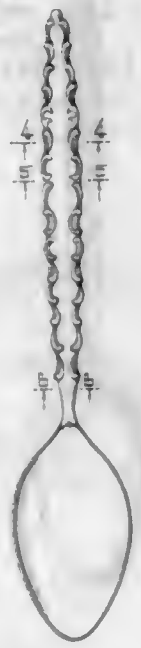
### 216,047
### SPOON OR SIMILAR ARTICLE

Melvin A. Lea, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Feb. 25, 1969, Ser. No. 15,905
Term of patent 14 years
Int. Cl. D7—*03*

U.S. Cl. D54—12



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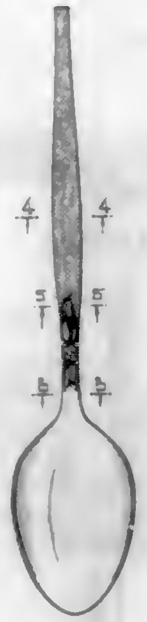
### 216,048
### SPOON OR SIMILAR ARTICLE

Robert S. Conland, Vernon, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Feb. 26, 1969, Ser. No. 15,933
Term of patent 14 years
Int. Cl. D7—*03*

U.S. Cl. D54—12



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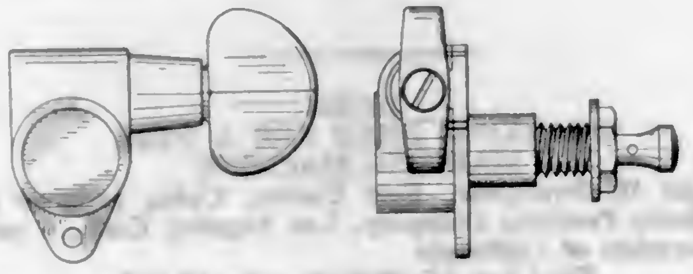
### 216,049
### GUITAR MACHINE

Leonard Dreyer, South Euclid, Ohio, assignor to Grover Musical Products, Inc., Cleveland, Ohio
Filed Aug. 14, 1968, Ser. No. 13,131
Term of patent 14 years
Int. Cl. D17—*03*

U.S. Cl. D56—1



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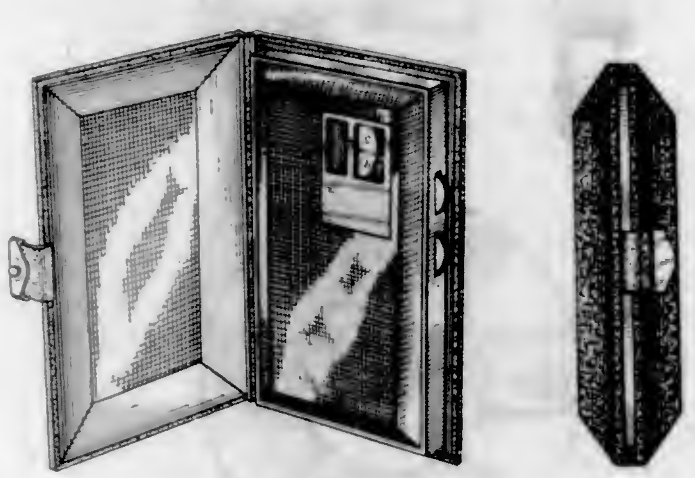
### 216,050
### PORTABLE RADIO

Francis J. Gerb, Chicago, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 18, 1968, Ser. No. 13,587
Term of patent 14 years
Int. Cl. D14—*03*

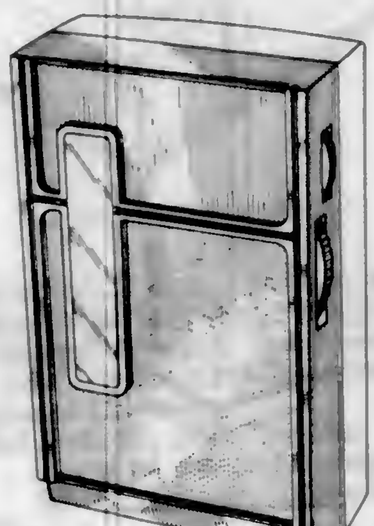
U.S. Cl. D56—4



### 216,051
### PORTABLE RADIO CABINET

Melvin H. Boldt, Glenview, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 29, 1968, Ser. No. 14,213
Term of patent 14 years
Int. Cl. D14—*03*

U.S. Cl. D56—4



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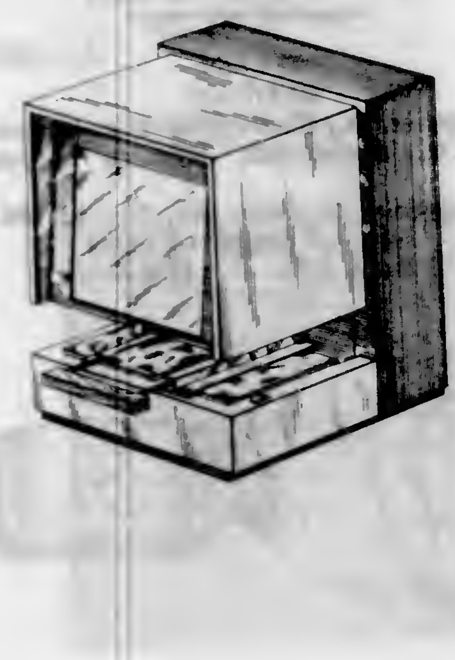
### 216,052
### MICROFILM READER

John L. Gianfagna and Eric G. Jansons, Marietta, Ohio, assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 9, 1968, Ser. No. 14,845
Term of patent 14 years
Int. Cl. D16—*04*

U.S. Cl. D61—1



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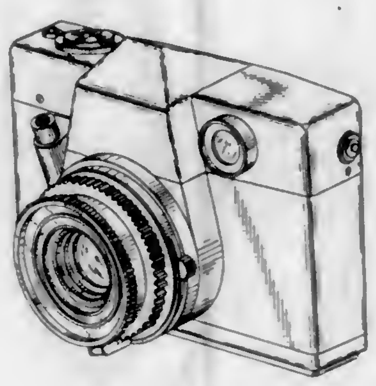
### 216,053
### CAMERA OR SIMILAR ARTICLE

Helmut Ettischer, Ruit, Kreis, Esslingen, and Kurt Steiblinger, Stuttgart-Hedelfingen, Germany, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Feb. 28, 1969, Ser. No. 15,970
Term of patent 14 years
Claims priority, application Germany Aug. 30, 1968
Int. Cl. D16—*01*

U.S. Cl. D61—1



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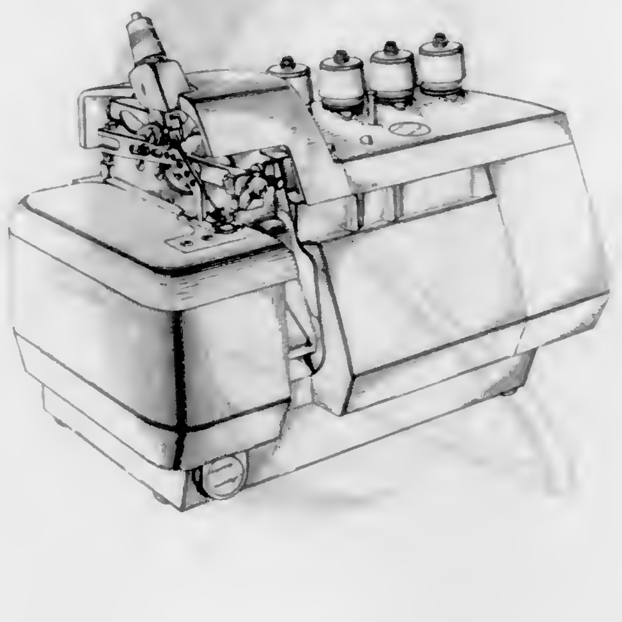
### 216,054
### SEWING MACHINE FRAME OR SIMILAR ARTICLE

George Rosenfeld, Great Neck, N.Y., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 23, 1968, Ser. No. 13,251
Term of patent 14 years
Int. Cl. D15—*08*

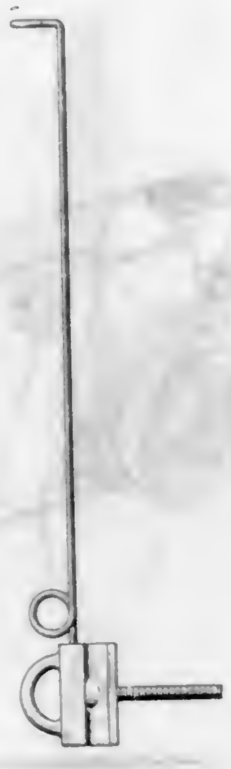
U.S. Cl. D70—1



### 216,055
### HOLDER FOR TOW ROPE

James F. Power, 603 Warren St., and John J. Kauffman, 907 Lincoln St., both of Chenoa, Ill. 61726, and Charles M. Payne, 1504 E. Grove St., Bloomington, Ill. 61701
Filed Oct. 15, 1968, Ser. No. 13,966
Term of patent 14 years
Int. Cl. D8—*03*

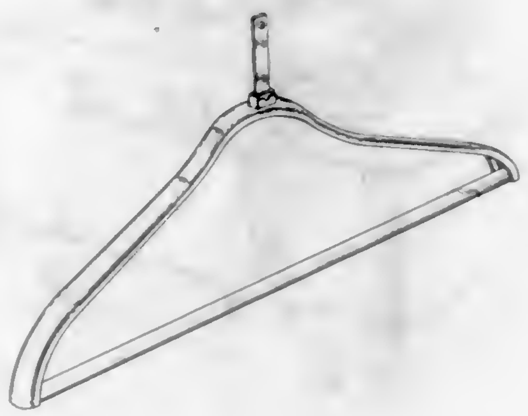
U.S. Cl. D71—1



### 216,056
### GARMENT HANGER

Carl E. Gingher, 304–328 Depot St., Scranton, Pa. 18509
Filed Dec. 9, 1968, Ser. No. 14,853
Term of patent 14 years
Int. Cl. D6—*07*

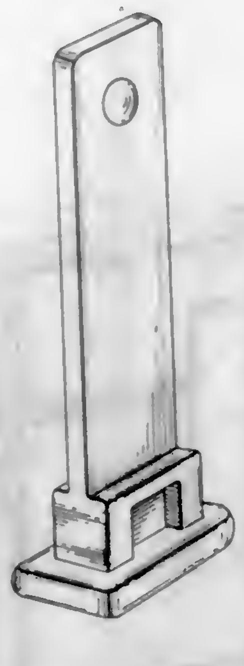
U.S. Cl. D80—8



### 216,057
### GARMENT HANGER STEM

Carl E. Gingher, 304–328 Depot St., Scranton, Pa. 18509
Filed Dec. 9, 1968, Ser. No. 14,854
Term of patent 14 years
Int. Cl. D6—*07*

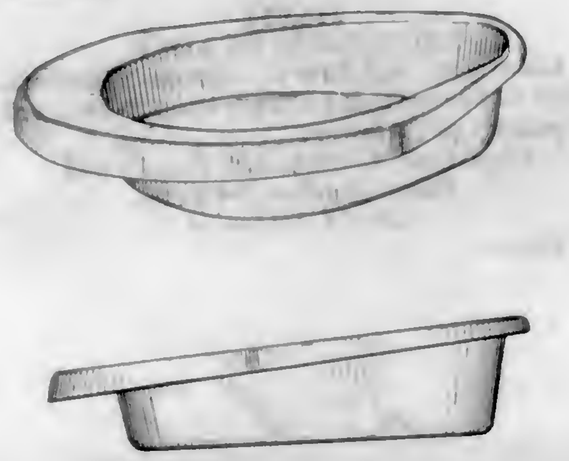
U.S. Cl. D80—8



### 216,058
### BEDPAN

David L. Painter and Charles M. Crabtree, Glenview, Ill., assignors to Premium Plastic, Inc., a corporation of Illinois
Filed Oct. 7, 1968, Ser. No. 13,880
Term of patent 14 years
Int. Cl. D24—*02;* D28—*01*

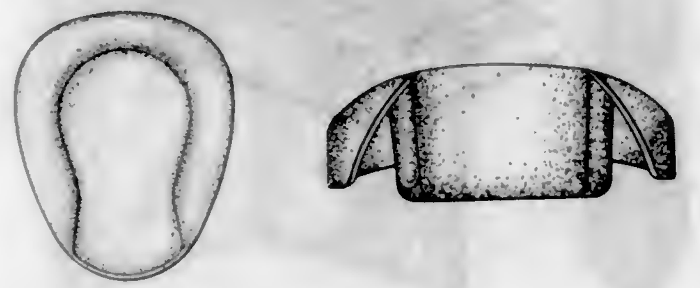
U.S. Cl. D83—1



### 216,059
### BEDPAN

Carl H. Rickmeier, Jr., Sheboygan, Wis., assignor to The Vollrath Co., Sheboygan, Wis., a corporation of Wisconsin
Filed Feb. 12, 1969, Ser. No. 15,756
Term of patent 14 years
Int. Cl. D24—*02;* D28—*01*

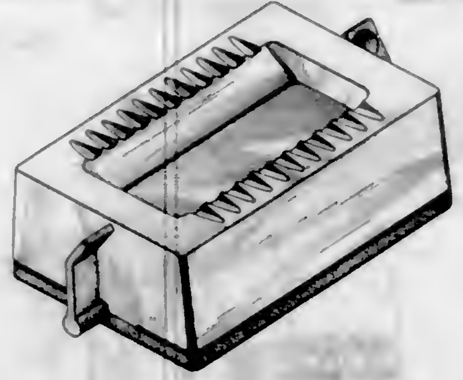
U.S. Cl. D83—1



### 216,060
### ASHTRAY

Jean-Luc Vincent, 6 Avenue de Thonex, Geneva, Switzerland
Filed Mar. 14, 1969, Ser. No. 16,255
Term of patent 14 years
Int. Cl. D27—*03*

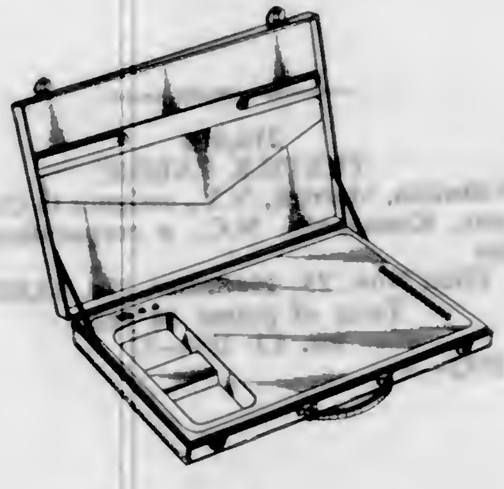
U.S. Cl. D85—2



### 216,061
### PORTABLE ENCLOSURE FOR A TELEPHONE TRANSMITTER AND RECEIVER

Willard A. Hughes, Newhall, and Norman A. Kusche, Glendale, Calif., assignors to American Systems, Inc., a corporation of California
Filed Feb. 17, 1969, Ser. No. 15,821
Term of patent 14 years
Int. Cl. D3—*01;* D14—*03*

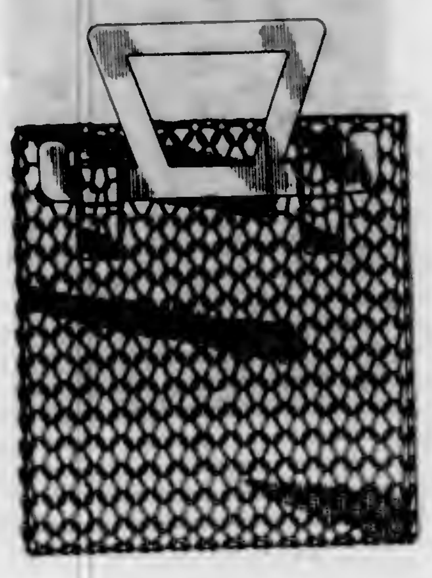
U.S. Cl. D87—1



### 216,062
### HANDBAG

Evelyn L. Domingo, 2219 Mondocino, San Diego, Calif. 92107
Filed Apr. 10, 1968, Ser. No. 11,405
Term of patent 14 years
Int. Cl. D3—*02*

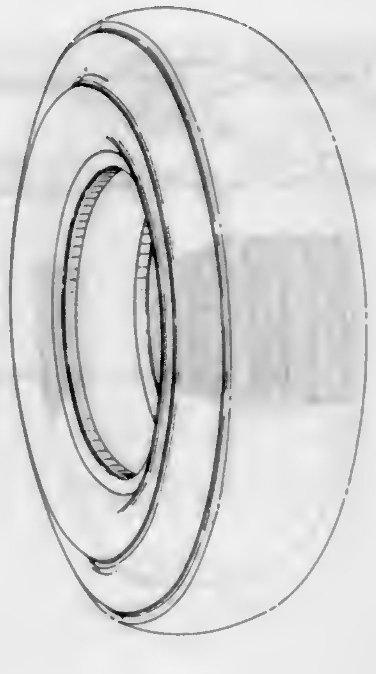
U.S. Cl. D87—3



### 216,063
### TIRE

Aristides Makris, 12 Olmstead Court, New Canaan, Conn. 06840, and Cooper C. Woodring, 2 Peter Cooper Road, New York, N.Y. 10010
Filed July 1, 1968, Ser. No. 12,559
Term of patent 14 years
Int. Cl. D12—*14*

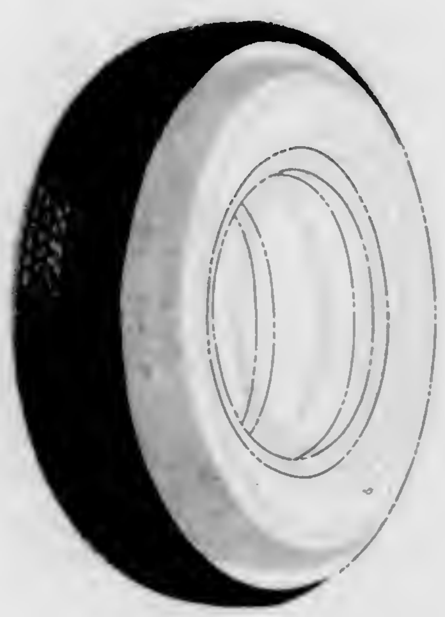
U.S. Cl. D90—20



### 216,064
### TIRE

Harold D. Fetty, Birmingham, Mich., assignor, by mesne assignments, to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Nov. 5, 1968, Ser. No. 14,315
Term of patent 14 years
Int. Cl. D12—*14*

U.S. Cl. D90—20



### 216,065
### TIRE

**Brian H. Holmes, Yardley, Birmingham, England, assignor to The Dunlop Company Limited, Erdington, Birmingham, England, a British corporation**

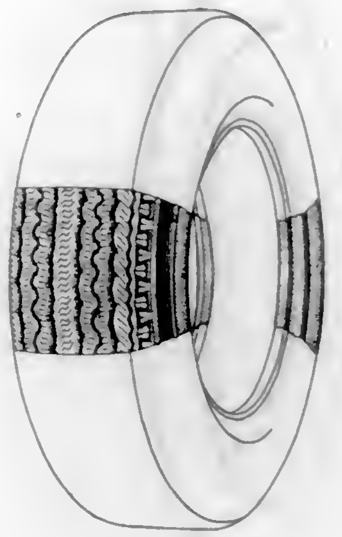
**Filed Mar. 11, 1969, Ser. No. 16,179**

**Term of patent 14 years**

**Claims priority, application Great Britain Sept. 19, 1968**

**Int. Cl. D12—*14***

**U.S. Cl. D90—20**



### 216,066
### TIRE

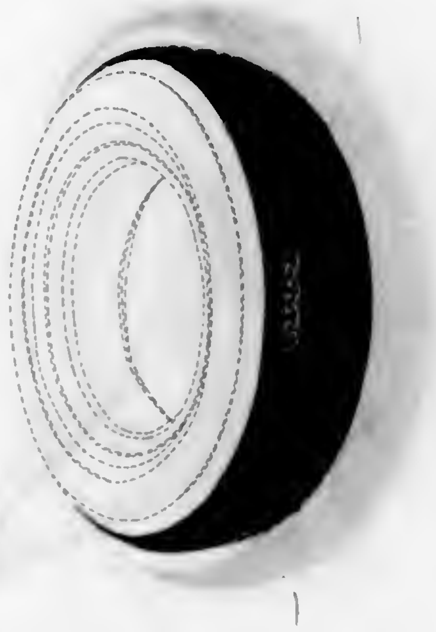
**Jacques Boileau, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, France**

**Filed Jan. 5, 1968, Ser. No. 10,096**

**Term of patent 14 years**

**Int. Cl. D12—*14***

**U.S. Cl. D90—20**



### 216,067
### TIRE

**Arthur Sam Ravenhall, Solihull, England, assignor to The Dunlop Company Limited, Erdington, Birmingham, England**

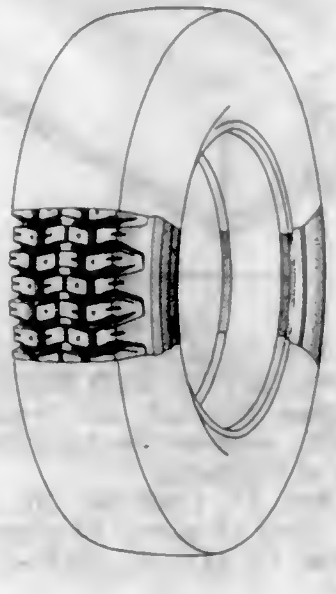
**Filed Jan. 22, 1969, Ser. No. 15,451**

**Term of patent 14 years**

**Claims priority, application Great Britain Aug. 20, 1968**

**Int. Cl. D12—*12***

**U.S. Cl. D90—20**



### 216,068
### TEXTILE FABRIC

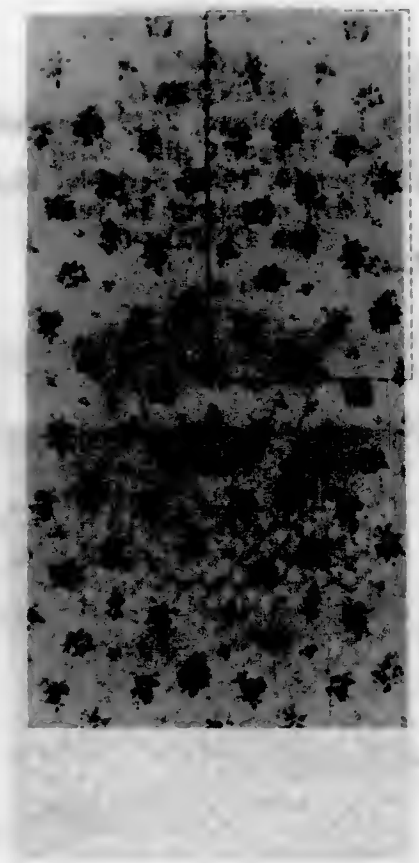
**Joseph Weinstein, Merrick, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina**

**Filed Nov. 25, 1968, Ser. No. 14,655**

**Term of patent 14 years**

**Int. Cl. D5—*02***

**U.S. Cl. D92—1**



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### 216,069
### TUFTING MACHINE

**William S. Hasler, Blackburn, England, assignor to Singer-Cobble Limited, Blackburn, England, a company**

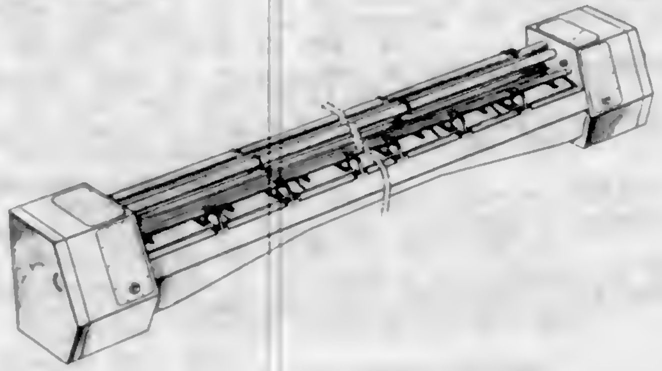
**Continuation of design applications Ser. No. 7,892, July 20, 1967, and Ser. No. 7,930, July 21, 1967. This application Mar. 13, 1968, Ser. No. 10,957**

**Term of patent 14 years**

**Claims priority, application Great Britain Apr. 1, 1967**

**Int. Cl. D15—*08***

**U.S. Cl. D92—15**



### 216,070
### COMBINED RAZOR BLADE AND MOUNT

**Bernard S. Hansom, Langley, England, assignor to Wilkinson Sword Limited, London, England, a British company**

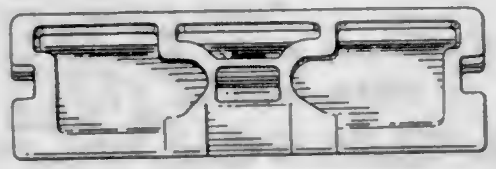
**Filed Oct. 22, 1968, Ser. No. 14,109**

**Term of patent 14 years**

**Claims priority, application Great Britain, Apr. 24, 1968**

**Int. Cl. D28—*03***

**U.S. Cl. D95—3**



# LIST OF DEFENSIVE PUBLICATIONS

APPLICANTS TO WHOM

## DEFENSIVE PUBLICATIONS WERE ISSUED ON THE 18TH DAY OF NOVEMBER, 1969

"Published at the request of the applicant or owner in accordance with the Notice of April 11, 1968, 849 O.G. 1221. Identification is by serial number of the application."

- Avila, Arthur J., and T. E. Torok, to Western Electric Co., Inc. Methods of and apparatus for treating articles. 667,231, 11–18–69, Cl. 204—28.
- Bristol, John E. Preparation of hydrolyzed copolymers in the solid form. 841,605, 11–18–69, Cl. 260—87.3.
- Davis, Robert B., and R. B. McFall. Method of making plastic book covers. 832,247, 11–18–69, Cl. 264—151.
- Eastman Kodak Co.: *See*—
  - Hagemeyer, Hugh J., Jr., and Johnson. 729,834.
- Fintel, William A. Valve for producing pressurized fluid pulses. 814,213, 11–18–69, Cl. 137—624.13.
- Hagemeyer, Hugh J., Jr., and J. M. Johnson, to Eastman Kodak Co. Liquid polyester composition and method of preparation. 729,834, 11–18–69, Cl. 260—31.6.
- Hercules Inc.: *See*—
  - Johnstone, Paul L., and Wagner. 687,450.
- Ibrahim, Salim M. Covered elastic yarn and method of making same. 778,096, 11–18–69, Cl. 57—152.
- Jarrett, Charles A.: *See*—
  - Yantz, Robert C., and Jarrett. 840,133.
- Johnson, Jon M.: *See*—
  - Hagemeyer, Hugh J., Jr., and Johnson. 729,834.
- Johnstone, Paul L., and R. L. Wagner, to Hercules Inc. Lithographic plate. 687,450, 11–18–69, Cl. 101—455.
- Lappin, Gerald R., J. C. Martin, and R. H. Meen. Basic-dyeable polyesters containing an alkali metal salt of a sulfodiphenyl ether dicarboxylic acid or its ester. 835,295, 11–18–69, Cl. 260—49.
- Leesona Corp.: *See*—
  - Walden, Richard I. 749,501.
- Martin, James C.: *See*—
  - Lappin, Gerald R., Martin, and Meen. 835,295.
- McFall, Robert B.: *See*—
  - Davis, Robert B., and McFall. 832,247.
- Meen, Ronald H.: *See*—
  - Lappin, Gerald R., Martin, and Meen. 835,295.
- Shutack, John B. Personal dust sampler holder. 789,577, 11–18–69, Cl. 55—337.
- Torok, Theodore E.: *See*—
  - Avila, Arthur J., and Torok. 667,231.
- Wagner, Richard L.: *See*—
  - Johnstone, Paul L., and Wagner. 687,450.
- Walden, Richard I., to Leesona Corp. Drive control means for a yarn traverse roll mechanism. 749,501, 11–18–69, Cl. 242—18.1.
- Western Electric Co., Inc.: *See*—
  - Avila, Arthur J., and Torok. 667,231.
- Yackel, Edward C. Lithographic printing plate. 825,262, 11–18–69, Cl. 96—33.
- Yantz, Robert C., and C. A. Jarrett. Process for producing heather yarn. 840,133, 11–18–69, Cl. 264—103.

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## PATENTS WERE ISSUED ON THE 18TH DAY OF NOVEMBER, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Andex Corp.: *See*—
  - Cirrincione, Vincent W. Re. 26,716.
- Banas, Henry C., to McDonnell Douglass Corp. Emergency opening latch. Re. 26,711, 11–18–69, Cl. 292—21.
- Cirrincione, Vincent W., to Andex Corp. Filter retaining device. Re. 26,716, 11–18–69, Cl. 99—312.
- Devienne, André: *See*—
  - Mirtain, Henri, and Devienne. Re. 26,713.
- Dudek, Elmer D.: *See*—
  - Huchinson, Elmer R. Re. 26,717.
- Harwood, Leopold A., to RCA Corp. Linear frequency modulation system including an oscillating transistor, an internal capacity of which is varied in accordance with a modulating signal. Re. 26,715, 11–18–69, Cl. 332—19.
- Huchinson, Elmer R., ½ to E. D. Dudek. Conduit saw. Re. 26,717, 11–18–69, Cl. 30—90.3.
- Kelley, Leon O. Tractor mounted cable laying device. Re. 26,718, 11–18–69, Cl. 61—72.6.
- Komarnitsky, Rostislaw S., to North American Rockwell Corp. Method of making taper leaf springs. Re. 26,714, 11–18–69, Cl. 29—173.
- McDonnell Douglas Corp.: *See*—
  - Banas, Henry C. Re. 26,711.
- Minnesota Mining and Mfg. Co.: *See*—
  - Sorensen, David P., and Shepard. Re. 26,719.
- Mirtain, Henri, and A. Devienne, to Uniroyal-Englebert France. Asymmetric pneumatic tires. Re. 26,713, 11–18–69, Cl. 152—353.
- North American Rockwell Corp.: *See*—
  - Komarnitsky, Rostislaw S. Re. 26,714.
- RCA Corp.: *See*—
  - Harwood, Leopold A. Re. 26,715.
- Reynolds Metals Co.: *See*—
  - Whitaker, William C., and Thomas. Re. 26,712.
- Shepard, Joseph W.: *See*—
  - Sorensen, David P., and Shepard. Re. 26,719.
- Sorensen, David P., and J. W. Shepard, to Minnesota Mining and Mfg. Co. Print-out process and image reproduction sheet therefor. Re. 26,719, 11–18–69, Cl. 96—63.
- Thomas, Joseph Y.: *See*—
  - Whitaker, William C., and Thomas. Re. 26,712.
- Uniroyal-Englebert France: *See*—
  - Mirtain, Henri, and Devienne. Re. 26,713.
- Whitaker, William C., and J. Y. Thomas, to Reynolds Metals Co. Cigarette package construction or the like. Re. 26,712, 11–18–69, Cl. 229—51.

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- Ponchalek, Joseph J., to Stark Bro's Nurseries & Orchards Co. Peach tree. 2,941, 11–18–69, Cl. 43.
- Russo, Mariano B., and E. E. Slaybaugh, to Slaybaugh Bros. Nursery, a partnership composed of E. E. and R. I. Slaybaugh. Peach tree. 2,940, 11–18–69, Cl. 43.
- Slaybaugh Bros. Nursery: *See*—
  - Russo, Mariano B., and Slaybaugh. 2,940.
- Slaybaugh, Earl E.: *See*—
  - Russo, Mariano B., and Slaybaugh. 2,940.
- Stark Bro's Nurseries & Orchards Co.: *See*—
  - Ponchalek, Joseph J. 2,941.

# LIST OF DESIGN PATENTEES

- Aluminum Co. of America: *See*—
  - Smith, James D. 216,003.
  - Smith, James D. 216,004.
  - Smith, James D. 216,005.
- American Machine & Foundry Co.: *See*—
  - Podall, Robert. 216,017.
- American Systems, Inc.: *See*—
  - Hughes, Willard A., and Kusche. 216,061.
- Bigos, Aloise A.: *See*—
  - Cheris, Maynard H., Bigos, and Mox. 216,028.
- Blake, Minden V. Head of a golf club. 216,031, 11–18–69, Cl. D34—5.

Boileau, Jacques, to Compagnie Generale des Etablissements Michelin-raison sociale Michelin & Cie. Tire. 216,066, 11–18–69, Cl. D90—20.
Boldt, Melvin H., to Zenith Radio Corp. Portable radio cabinet. 216,051, 11–18–69, Cl. D56—4.
Borten, Charles H. Garment hanger carrier. 215,999, 11–18–69, Cl. D8—154.
Broman, William G.: *See*—
  Patch, Alan R., and Broman. 216,019.
Buchsbaum, Alan, and K. Morimoto. Hassock or the like. 216,012, 11–18–69, Cl. D15—8.
Cannon Mills Co.: *See*—
  Weinstein, Joseph. 216,068.
Case, J. I., Co.: *See*—
  Lazzeroni, Edward J. 216,011.
Charger Corp.: *See*—
  Cheris, Maynard H., Bigos, and Mox. 216,028.
Charmglow Mfg. Co.: *See*—
  Koziol, Walter. 216,027.
Cheris, Maynard H., A. A. Bigos, and D. W. Mox, to Charger Corp. Tennis racket frame. 216,028, 11–18–69, Cl. D34—5.
Compagnie Generale des Etablissements Michelin-raison sociale Michelin & Cie: *See*—
  Boileau, Jacques. 216,066.
Conland, Robert S., to Oneida Ltd. Spoon or similar article. 216,048, 11–18–69, Cl. D54—12.
Cornish, Judson E. Carrell for student instruction. 216,026, 11–18–69, Cl. D33—11.
Crabtree, Charles M.: *See*—
  Painter, David L., and Crabtree. 216,058.
Dennison, George F., to Smeco Industries, Inc. Meat tree. 216,008, 11–18–69, Cl. D11—1.
Divietro, James F. Telephone voice amplifier. 216,020, 11–18–69, Cl. D26—14.
Dixon, Don P. Combined outlet and control panel for an automobile air conditioner. 216,023, 11–18–69, Cl. D23—142.
Domenico's Gondola, Inc.: *See*—
  Spano, Domenica. 216,009.
Domingo, Evelyn L. Handbag. 216,062, 11–18–69, Cl. D87—3.
Douglas, David. Insulated food keeper. 216,037, 11–18–69, Cl. D44—1.
Douglas, David. Butter dish. 216,038, 11–18–69, Cl. D44—5.
Dreyer, Leonard, to Grover Musical Products, Inc. Guitar machine. 216,049, 11–18–69, Cl. D56—1.
Dupont, Norman O. Base for a rifle telescopic mount. 216,014, 11–18–69, Cl. D22—7.
Eastman Kodak Co.: *See*—
  Ettischer, Helmut, and Steiblinger. 216,053.
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Evans, Joseph A. Portable beach mat. 216,013, 11–18–69, Cl. D15—8.
Fetty, Harold D., to The Goodyear Tire & Rubber Co. Tire. 216,064, 11–18–69, Cl. D90—20.
Fidel, Nellie, to Modecraft Co., Inc. Shampoo basin. 216,015, 11–18–69, Cl. D23—64.
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General Time Corp.: *See*—
  Levin, Monte L. 216,036.
  Toffolon, Siro R. 216,035.
Gerb, Francis J., to Zenith Radio Corp. Portable radio. 216,050, 11–18–69, Cl. D56—4.
Gianfagna, John L. Single study carrell unit. 216,025, 11–18–69, Cl. D33—11.
Gianfagna, John L., and E. G. Jansons, to Sperry Rand Corp. Microfilm reader. 216,052. 11–18–69, Cl. D61—1.
Gingher, Carl E. Garment hanger bar. 216,024, 11–18–69, Cl. D33—8.
Gingher, Carl E. Garment hanger. 216,056, 11–18–69, Cl. D80—8.
Gingher, Carl E. Garment hanger stem. 216,057, 11–18–69, Cl. D80—8.
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  Fetty, Harold D. 216,064.
Grange, Kenneth H., to Wilkinson Sword Ltd. Case for containing a safety razor. 216,001, 11–18–69, Cl. D9—186.
Gray Mfg. Co., Inc.: *See*—
  Gaaeder, Gilbert W., and Hollingsworth. 216,034.
Grover Musical Products, Inc.: *See*—
  Dreyer, Leonard. 216,049.
Hansom, Bernard S., to Wilkinson Sword Ltd. Combined razor blade and mount. 216,070, 11–18–69, Cl. D95—3.
Hasler, William S., to Singer-Cobble Ltd. Tufting machine. 216,069, 11–18–69, Cl. D92—15.
Head Ski Co., Inc.: *See*—
  Howe, John G. 216,032.
Howe, John G., to Head Ski Co., Inc. Ski tip protector. 216,032, 11–18–69, Cl. D34—14.
Hollingsworth, Elmont E.: *See*—
  Gaaeder, Gilbert W., and Hollingsworth. 216,034.
Holmes, Brian H., to The Dunlop Co. Ltd. Tire. 216,065, 11–18–69, Cl. D90—20.
Hudson, Robert S., to K-Boose, Inc. Trailer. 216,010, 11–18–69, Cl. D14—3.
Hughes, Willard A., and N. A. Kusche, to American Systems, Inc. Portable enclosure for a telephone transmitter and receiver. 216,061, 11–18–69, Cl. D87—1.
Humphrey, Dallas R., and L. W. Johnson, to Kroy Industries Inc. Handheld power tool or the like. 215,998, 11–18–69, Cl. D8—61.
Jansons, Eric G.: *See*—
  Gianfagna, John L., and Jansons. 216,052.
Johnson, Logan W.: *See*—
  Humphrey, Dallas R., and Johnson. 215,998.
Jones, R. A., & Co., Inc.: *See*—
  Stone, Orison W. 216,002.
Kauffman, John J.: *See*—
  Power, James F., Kauffman, and Payne. 216,055.
Kearney, Patrick. Bottle cap. 216,007, 11–18–69, Cl. D9—281.
Koziol, Walter, to Charmglow Mfg. Co. Cart. 216,027, 11–18–69, Cl. D33—14.
Kroy Industries Inc.: *See*—
  Humphrey, Dallas R., and Johnson. 215,998.
Kusche, Norman A.: *See*—
  Hughes, Willard A., and Kusche. 216,061.
Lazzeroni, Edward J., to J. I. Case Co. Garden tractor. 216,011, 11–18–69, Cl. D14—3.
Lea, Melvin A., to Oneida Ltd. Spoon or similar article. 216,047, 11–18–69, Cl. D54—12.
Levin, Monte L., to General Time Corp. Metronome casing. 216,036, 11–18–69, Cl. D42—7.
Lombardo, Samuel. Golf putter. 216,029, 11–18–69, Cl. D34—5.
Luby, Frank E. Lamp base. 216,041, 11–18–69, Cl. D48—20.
Maben, Florabel. Combination container for a pill and water. 216,000, 11–18–69, Cl. D9—169.
Makris, Aristides, and C. C. Woodring. Tire. 216,063, 11–18–69, Cl. D90—20.
Manderfield, Ellen B., to Oneida Ltd. Spoon or similar article. 216,045, 11–18–69, Cl. D54—12.
Manderfield, Ellen B., to Oneida Ltd. Spoon or similar article. 216,046, 11–18–69, Cl. D54—12.
McCoy, Roy. Tool for installing or removing dual truck wheels. 215,997, 11–18–69, Cl. D8—31.
McDonald's Corp.: *See*—
  Schier, Jacques. 216,006.
Measell, Richard A. Combined salt and pepper shaker. 216,039, 11–18–69, Cl. D44—22.
Modecraft Co., Inc.: *See*—
  Fidel, Nellie. 216,015.
Moore, Walter E., to UMC Industries, Inc. Ice cream merchandiser. 216,044, 11–18–69, Cl. D52—3.
Morimoto, Kazz: *See*—
  Buchsbaum, Alan, and Morimoto. 216,012.
Mox, Dana W.: *See*—
  Cheris, Maynard H., Bigos, and Mox. 216,028.
Myhre, John F. Outdoor lantern. 216,042, 11–18–69, Cl. D48—31.
Oneida Ltd.: *See*—
  Conland, Robert S. 216,048.
  Lea, Melvin A. 216,047.
  Manderfield, Ellen B. 216,045.
  Manderfield, Ellen B. 216,046.
Painter, David L., and C. M. Crabtree, to Premium Plastic, Inc. Bed pan. 216,058, 11–18–69, Cl. D83—1.
Patch, Alan R., and W. G. Broman, to The Seeburg Corp. Column speaker. 216,019, 11–18–69, Cl. D26—14.
Payne, Charles M.: *See*—
  Power, James F., Kauffman, and Payne. 216,055.
Perkin-Elmer Corp.: *See*—
  Waligorski, Gordon J. 216,016.
Podall, Robert, to American Machine & Foundry Co. Case for a time switch or the like. 216,017, 11–18–69, Cl. D26—13.
Power, James F., J. J. Kauffman, and C. M. Payne. Holder for tow rope. 216,055, 11–18–69, Cl. D71—1.
Premium Plastic, Inc.: *See*—
  Painter, David L., and Crabtree. 216,058.
Queen, Carl J. Saddle tree. 216,022, 11–18–69, Cl. D30—20.
Ravenhall, Arthur S., to The Dunlop Co. Ltd. Tire. 216,067, 11–18–69, Cl. D90—20.
Rosenfeld, George, to The Singer Co. Sewing machine frame or similar article. 216,054, 11–18–69, Cl. D70—1.
Schier, Jacques, to McDonald's Corp. Carton or similar article. 216,006, 11–18–69, Cl. D9—232.
Seeburg Corp., The: *See*—
  Patch, Alan R., and Broman. 216,019.
Sieler, G. Jerome. Public address system. 216,018, 11–18–69, Cl. D26—14.
Singer Co., The: *See*—
  Rosenfeld, George. 216,054.
Singer-Cobble Ltd.: *See*—
  Hasler, William S. 216,069.
Smeco Industries, Inc.: *See*—
  Dennison, George F. 216,008.
Smith, James D., to Aluminum Co. of America. Portion container for food or beverage. 216,003, 11–18–69, Cl. D9—220.
Smith, James D., to Aluminum Co. of America. Portion container for food or beverage. 216,004, 11–18–69, Cl. D9—220.
Smith, James D., to Aluminum Co. of America. Portion container for food or beverage. 216,005, 11–18–69, Cl. D9—220.
Spano, Domenico, to Domenico's Gondola, Inc. Restaurant building. 216,009, 11–18–69, Cl. D13—1.
Sperry Rand Corp.: *See*—
  Gianfagna, John L., and Jansons. 216,052.
Steiblinger, Kurt: *See*—
  Ettischer, Helmut, and Steiblinger. 216,053.
Stone, Orison W., to R. A. Jones & Co., Inc. Packaging container for a bottle or the like. 216,002, 11–18–69, Cl. D9—193.
Storm Products Co.: *See*—
  Swaisgood, Ralph H. 216,043.
Swaisgood, Ralph H., to Storm Products Co. Marking head for a wire marking machine. 216,043, 11–18–69, Cl. D55—1.
Toffolon, Siro R., to General Time Corp. Clock casing. 216,035, 11–18–69, Cl. D42—7.

Trudeau, Aime. Combined lamp shade and mirror. 216,040, 11–18–69, Cl. D48—16.
UMC Industries, Inc.: *See*—
  Moore, Walter E. 216,044.
Vincent, Jean-Luc. Ash tray. 216,060, 11–18–69, Cl. D85—2.
Waligorski, Gordon J., to Perkin-Elmer Corp. Data reader. 216,016, 11–18–69, Cl. D26—5.
Wallace, George M. Fraternal standard or the like. 216,021, 11–18–69, Cl. D29—23.
Weinstein, Joseph, to Cannon Mills Co. Textile fabric. 216,068, 11–18–69, Cl. D92—1.
Wigley, Wallace E. Golf club head. 216,030, 11–18–69, Cl. D34—5.
Wilkinson Sword Ltd.: *See*—
  Grange, Kenneth H. 216,001.
  Hansom, Bernard S. 216,070.
Woodring, Cooper C.: *See*—
  Makris, Aristides, and Woodring. 216,063.
Zenith Radio Corp.: *See*—
  Boldt, Melvin H. 216,051.
  Gerb, Francis J. 216,050.

# LIST OF PATENTEES

### TO WHOM

## PATENTS WERE ISSUED ON THE 18TH DAY OF NOVEMBER, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- Abbott, Earl: *See—*
  - Lickeliter, Robert P., Abbott, Earl, and Reeves, John F. 3,478,678.
- Abbott Laboratories: *See—*
  - Cardinal, Earl Victor, 3,479,154.
- Abcor Inc.: *See—*
  - Modell, Michael, 3,478,574.
- Abernathy, John L., to Bell Telephone Laboratories, Incorporated. voltage amplitude-to-time duration converter. 3,479,604, Cl. 328-151.
- Absolon, Eric W., and Bowman, George H., to Avery-Hardoll Limited, and Beck & Company (Meters) Limited. Price computing devices for liquid dispensing apparatus. 3,478,927, Cl. 222-031.
- Abson, Derek: *See—*
  - Taylor, Richard Perry, and Abson, Derek 3,479,336.
- Abu-Akeel, Abdulhadi K., to Bendix Corporation, The. Rotating inertia reducing means for a brake disc. 3,478,850, Cl. 188-218.
- ABU Aktiebolag: *See—*
  - Nurmse, Karl, 3,478,978.
- Access Corporation: *See—*
  - Parry, Robert D., 3,478,877.
- Achler, Howard S., and Kaufmann, Harold, to Kaufmann Tool and Engineering Corporation. Two-roll machine for rolling sheet metal. 3,478,555, Cl. 072-166.
- Acme Markets, Inc.: *See—*
  - Robison, Fred E., and Cochran, Kenneth C., 3,478,386.
- Adam, Karl, and Haarer, Erich, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. . 3,479,411, Cl. 260-635.
- Adams, Arthur C., to American Home Products Corporation. Process for the preparation of anhydrous ampicillin using silylated ampicillin acid salt. 3,479,338, Cl. 260-239.1
- Adams, Robert V., to Bunker-Ramo Corporation, The. Method of continuously casting steel. 3,478,808, Cl. 164-004.
- Aerospace Research, Inc.: *See—*
  - Shapiro, Laban D., Latham, Peter A., Brefka, Paul E., and LaBrie, Paul J., 3,479,568.
- Aetna Casualty and Surety Company: *See—*
  - Jazbutis, Anatolijus, and Swanson, Richard T., 3,478,442.
- AGA Aktiebolag: *See—*
  - Wennberg, Karl Fredrik, 3,478,740.
- Agfa Aktiengesellschaft: *See—*
  - Ruempelein, Fritz, 3,479,595.
- Aichinger, Harry H., to Boeing Company, The. Electronic method for rigging airplane control surfaces. 3,478,569, Cl. 073-001.
- Air Products and Chemicals, Inc.: *See—*
  - Shull, Samuel E., 3,479,415.
- Aircraft Radio Corporation: *See—*
  - Harford, Jack R., 3,479,525.
- Airequipt Inc.: *See—*
  - Schlessel, Joseph H., 3,479,548.
- Airola, Ellis John, to General Electric Company. Method of applying a binder to electrophoretically deposited porous matrix. 3,479,268, Cl. 204-181.
- Akamatsu, Hiroo, Morita, Takanobu, Kamei, Mikio, and Nozoe, Yasuhiro, to Tateisi Electronics Co. System for photo-electrically detecting and marking defects in a moving sheet with two distinguishable marking materials. 3,479,518, Cl. 250-219.
- Aktiebolaget Atomenergi: *See—*
  - Dissing, Erik, and Lyden, Anders Gustaf, 3,479,593.
- Aktiebolaget Helios Kemisk-Tekniska Fabriker: *See—*
  - Lindquist, Arne M., 3,478,934.
- Aktiebolaget Svenska Precisionsverktyg: *See—*
  - Lind, Carl Eric Gottfrid, 3,478,688.
- Aktiengesellschaft Brown, Boveri & Cie: *See—*
  - Blatter, Hans, and Wuthrich, Rolf, 3,479,578.
  - Jenny, Ernst, and Dzung, Lang Shuen, 3,479,537.
- Aktieselskabet Grendstedvaerket: *See—*
  - Vrang, Carl, Krog, Niels, and Lauridsen, Jens Birk, 3,479,189.
- Allais, Andre, to Roussel UCLAF. 2-Methyl or phenyl-7-or 8-chloroquinolines. 3,479,360, Cl. 260-286.
- Allard, Robert S.: *See—*
  - Habib, David P., Allard, Robert S., and Zabik, Eugene J. 3,479,183.
- Alleaume, Jean, to Technigaz. Method and apparatus for guiding a torch in lap welding. 3,479,484, Cl. 219-125.
- Allen, Carey M.: *See—*
  - McCown, William E., Maltby, Robert E., Jr., and Allen, Carey M. 3,479,172.
- Allen, Harry R., and Mercier, Alfred C., to Honeywell Inc. Indicator having nonlinear damping. 3,479,594, Cl. 324-125.
- Allied Chemical Corporation: *See—*
  - Michener, Aubrey W., Jr., Carlson, Emery J., and Koo, Raymond H., 3,479,136.
- Allis, Louis Company: *See—*
  - Robinson, Russell I., 3,479,541.
- Allison, Robert Corwin, Fischer, Franz, and Hausermann, Heinrich, to Geigy Chemical Corporation. Polysulfonated bis-s-triazinylamino-stilbene- 2,2'-disulfonic acids. 3,479,349, Cl. 260-240.
- Allsop, Ivor John. Lazy susan shoe support. 3,478,890, Cl. 211-037.
- Alpen, Cecil W., to Green Giant Company. Broccoli trimmer. 3,478,794, Cl. 146-078.
- Alsop, Charles Francis, to Davy and United Instruments Limited. Control systems. 3,478,551, Cl. 072-008.
- Alt, Gerhard H., to Monsanto Company. Trichloromethyl-tertiary amino substituted cycloalkenes and their preparation. 3,479,352, Cl. 260-247.
- Altman, Max S., and Cox, James V. Bathing boot with means to massage foot. 3,478,738, Cl. 128-066.
- Aluminum Company of America: *See—*
  - Demsey, John N., and Heffran, Vernon C., 3,478,554.
- Ambrose, John J.: *See—*
  - Fuqua, Norman L., and Ambrose, John J. 3,478,671.
- AMCA Pharmacutical Laboratories Ltd.: *See—*
  - Johnson, Clarence, 3,478,771.
- American Can Company: *See—*
  - Rouse, John Wilson, and Simmons, Harley Earl, 3,478,917.
  - Zundel, Arthur Philip, 3,478,918.
- American Dish Service of Kansas City Missouri, Inc.: *See—*
  - Tuthill, John B., 3,478,757.
- American Home Products Corporation: *See—*
  - Adams, Arthur C., 3,479,338.
  - Buzby, George C., Jr., Smith, Robert C., and Smith, Herchel, 3,479,376.
  - Hughes, Gordon A., and Smith, Herchel, 3,479,435.
  - Ledig, Kurt W., and Wendt, Gerhard R., 3,479,341.
  - Rees, Richard W., Foell, Theodore J., and Smith, Herchel, 3,479,340.
  - Wendt, Gerhard R., and Ledig, Kurt W., 3,479,347.
- American Machine & Foundry Company: *See—*
  - Bogle, Tommy G., 3,478,576.
  - Zuercher, John, and Condon, Stanley, 3,479,029.
- American Potash & Chemical Corporation: *See—*
  - Weck, Friedrich J., 3,479,294.
- American Radiator & Standard Sanitary Corporation: *See—*
  - Renzi, Peter N., 3,479,489.
- American Seating Company: *See—*
  - Barecki, Chester J., Henrikson, Bror W., and Nordmark, Walter E., 3,478,981.
  - Hoven, Alfred C., 3,478,473.
  - Van Ryn, Arthur L., 3,479,084.
- American Standard Inc.: *See—*
  - Groteke, Daniel E., 3,479,202.
  - Noakes, Thomas E., and Merchant, Leo F., 3,478,774.
- American Welding and Manufacturing Company, The: *See—*
  - Erwin, Kenneth L., and Lodwick, Ross W., 3,479,480.
- American Welding & Manufacturing Company, The: *See—*
  - Erwin, Kenneth L., and Lodwick, Ross W., 3,479,482.
- AMP Incorporated: *See—*
  - Eshenauer, Earl Wilbert, J., 3,479,653.
  - Gilissen, Herman Petrus Johannes. 3,479,637.
  - Pritulsky, James, 3,479,634.
  - Stark, Frank Benjamin, and Merry, Roydon William, 3,479,635.
- Ampex Corporation: *See—*
  - Wickham, Donald G., 3,479,132.
- Amsalco, Inc.: *See—*
  - Deluca, Frank P., Jr., 3,478,883.
- Amsco Packaging Machinery, Inc.: *See—*
  - Sylvester, John D., and Keenan, John D., Jr., 3,478,490.
- Amseco Corporation: *See—*
  - Sedam, Jason K., 3,479,069.
- Anaconda Wire and Cable Company: *See—*
  - Arnaudin, Edwin H., Jr., and Wade, Robert M., 3,479,446.
- Anchor Hocking Corporation: *See—*
  - Dubble, Roger D., and Orton, Erby, 3,479,208.
  - Kidwell, Jay F., 3,479,514.
  - Seeley, Clarence Edward, and Smith, Charles Myron, 3,479,193.
- Anderson, Kermit V., to Washington Scientific Industries , Inc. Film viewer. 3,479,116, Cl. 353-077.
- Anderson, Norman L., Darnall, Millard K., Morgan, William C., Peterson, Laurel L., and Stedman, Robert N., to Caterpillar Tractor Company. Transport vehicle for bucket loaders. 3,478,902, Cl. 214-038.

- Anderson, Winfield S., Jr., to Owens-Illinois, Inc. Method and apparatus for decorating hollow plastic articles. 3,478,680, Cl. 101-032.
- Andersson, Torsten Wilhelm: *See—*
  - Ohlund, John Alex Ingvar, and Andersson, Torsten Wilhelm 3,479,032.
- Andres, Rudolf, to Daimler-Benz Aktiengesellschaft. Actuating mechanism for a pivotal window of a motor vehicle. 3,478,470, Cl. 049-337.
- Andy, Albert, 1/4 each to Andy, Anthony, and Andy, William, and Andy, Victor. Method for filling abandoned mines. 3,478,520, Cl. 061-035.
- Andy, Anthony: *See—*
  - Andy, Albert, 3,478,520.
- Andy, Victor: *See—*
  - Andy, Albert, 3,478,520.
- Andy, William: *See—*
  - Andy, Albert, 3,478,520.
- Anker-Werke Aktiengesellschaft: *See—*
  - Rethmeier, Gerhard, 3,478,959.
- Antkiewicz, Walter D.: *See—*
  - Siemietkowski, John S., and Antkiewicz, Walter D. 3,478,580.
- Anvil Products, Inc.: *See—*
  - Stnker, Eugene, 3,478,377.
- Appel, Mel, to Buddy L Corporation. Toy toll booth. 3,478,464, Cl. 046-012.
- Applied Research Laboratories, Inc.: *See—*
  - Liebl, Helmut J., 3,479,505.
- Arbeitlang, Erich, to Bolkow Gesellschaft mit beschrankter Haftung. Device for transmitting rotary motion. 3,478,607, Cl. 074-018.1
- Arbuckle, Wendell S., to Lease, Charles W. Process of preparing a thixotropic milk shake. 3,479,187, Cl. 099-060.
- Archer Daniels Midland Company: *See—*
  - Cole, Morton S., 3,479,191.
- Archilithic Co., The: *See—*
  - Winn, James B., Jr., 3,478,963.
- Argus Chemical Corporation: *See—*
  - Hecker, Arthur C., and Thee, Alfred, 3,479,309.
- Ariyan, Zaven S., to Uniroyal, Inc. Alkyl- or aryl-4-antipyrylmonosulfides and method for preparing same. 3,479,369, Cl. 260-310.
- Armbruster, Fritz, and Rudolph, Martin, said Armbruster assor to Diener & Roth. Method of molding hollow bodies. 3,479,421, Cl. 264-098.
- Armco Steel Corporation: *See—*
  - Hoffman, Floyd C., and Miller, Theodore W., 3,478,558.
- Arms, John T.: *See—*
  - Duddy, Joseph C., Arms, John T., and Kelley, John J. 3,479,223.
- Arnaudin, Edwin H., Jr., and Wade, Robert M., to Anaconda Wire and Cable Company. Strand shielded cable and method of making. 3,479,446, Cl. 174-120.
- Aron, Jerome: *See—*
  - Rivin, Donald, and Aron, Jerome 3,479,299.
  - Rivin, Donald, and Aron, Jerome 3,479,300.
- Aronson, David, to Worthington Corporation. Absorption refrigeration system. 3,478,530, Cl. 062-112.
- Arthur, Edwin P., to Beckman Instruments, Inc. Electrochemical transducer. 3,479,255, Cl. 204-001.
- Arvai, Tibor, to Sperry Rand Corporation. Inking mechanism for calculators and like machines. 3,478,858, Cl. 197-151.
- Asbury, Edward G., to Signal-Lite Road Marker Co. Portable roadway signal device. 3,478,715, Cl. 116-063.
- Ashcroft, Thomas Brian, to International Nickel Company, Inc., The. Method for coating steel with nickel. 3,479,258, Cl. 204-038.
- Ashford, Ernest Stanley: *See—*
  - Dilger, Lawrence, and Ashford, Ernest Stanley 3,478,854.
- Ashkin, Arthur, to Bell Telephone Laboratories, Incorporated. Tunable semiconductor optical masers. 3,479,614, Cl. 331-094.5
- Ashland Oil and Refining Company: *See—*
  - Larimer, Victor L., 3,479,377.
- Ashland Oil & Refining Company: *See—*
  - Nordstrom, John David, 3,479,328.
- Ashman, Leland E., to Little, Arthur D., Inc. Apparatus for making glass fibers. 3,479,167, Cl. 065-001.
- Ashton, Shirley B.: *See—*
  - Martin, Thomas W., Sr., Rogers, Asa Scobey, Jr., and Ashton, Shirley B. 3,479,023.
- Astrup Company, The: *See—*
  - Darula, Andrew J., 3,478,806.
- Atlantic Richfield Company: *See—*
  - Mitchell, Maurice M., Jr., 3,479,381.
- Atteberry, Johnny C.: *See—*
  - Campbell, George W., Jr., Nies, Nelson P., and Atteberry, Johnny C. 3,479,137.
- Atwood Vacuum Company: *See—*
  - Krause, Herbert, 3,479,099.
- Auchard, Gerald V., to Case, J. I., Company. Self-propelled windrower. 3,478,831, Cl. 180-006.48
- Auckland, Wayne James, to SWECO Inc. Screening separator. 3,478,406, Cl. 209-334.
- Audette, Anita A.: *See—*
  - Audette, Michael L., and Audette, Anita A. 3,478,696.
- Audette, Michael L., and Audette, Anita A. Pumping container. 3,478,696, Cl. 103-236.
- Augustin, Verlynn O., to Wood Treating Chemical Company. Incising drum for wooden members. 3,478,790, Cl. 144-233.
- Auld, Samuel H.: *See—*
  - Lear, William P., and Auld, Samuel H. 3,478,973.
- Austin, Larry E., and Titcomb, Francis R., to Simmonds Precision Products, Inc. Viscous dispensing system. 3,478,925, Cl. 222-001.
- Auto-Soler Company: *See—*
  - Padovani, Henry R., and Wright, John G., 3,478,946.
- Automobiles Peugeot: *See—*
  - Bonnaud, Michel, 3,479,088.
- Automotive Products Company Limited: *See—*
  - Chouings, Leslie C., 3,479,094.
- Avco Corporation: *See—*
  - Gauld, Godfrey R., 3,479,531.
  - Walters, Richard E., 3,478,869.
- Avery-Hardoll Limited: *See—*
  - Absolon, Eric W., and Bowman, George H., 3,478,927.
- Avesta Jernverks Aktiebolog: *See—*
  - Backstrom, Arne Ivar, Henrikson, Sture, and Levin, Per Erik, 3,479,181.
- Avis, John M., and Dorman, Hugh H., to Case, J. I., Company. Tilt mechanism for mast assembly. 3,478,910, Cl. 214-672.
- B.T.B. Benoit-Le Takis Brosse: *See—*
  - Partensky, Pierre Jean Marc, 3,479,241.
- Backstrom, Arne Ivar, Henrikson, Sture, and Levin, Per Erik, to Avesta Jernverks Aktiebolog. Process for the production of bimetallic material with high resistance to transcrystalline stress corrosion in a chloride environment. 3,479,181, Cl. 075-212.
- Bacon, Roger J., to FMC Corporation. Snow caster. 3,478,448, Cl. 037-043.
- Bada Company, The: *See—*
  - Bonessa, Vick G., 3,478,603.
- Badger Company, Inc.: *See—*
  - Miserlis, Constantine D., 3,479,254.
- Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See—*
  - Adam, Karl, and Haarer, Erich, 3,479,411.
  - Daeuble, Manfred, Dieck, Klaus, Heinrich, Hans, and Witsch, Guenter, 3,478,376.
- Bahlke, Allan R., and Bloomquist, George W., to FMC Corporation. Coupling device for fluid conducting conduits. 3,479,065, Cl. 285-151.
- Bahrs, David L., and Couleur, John F., to General Electric Company. Data processing system including means for masking program interrupt requests. 3,479,649, Cl. 340-172.5
- Bailey, Charles R., to Murphy, F. F. Double refuse can holder. 3,479,047, Cl. 280-047.19
- Bailey Meter Company: *See—*
  - Hornfeck, Anthony J., Koppel, Harold H., and Louis, John R., 3,479,492.
- Bailey, Philip S.: *See—*
  - Chang, Yun G., and Bailey, Philip S. 3,479,372.
- Baker, Alfred. Excavating bucket digging blade. 3,478,449, Cl. 037-141.
- Baker, Basil Offor, to M-O Value Company Limited, The. Gas-filled electric discharge devices. 3,479,549, Cl. 313-195.
- Baker, James G., to Polaroid Corporation. Multiple-axis folded optical system for a photographic camera. 3,478,662, Cl. 095-015.
- Baker, John H., Jr., to Schlumberger Technology Corporation. Nuclear magnetism signal analyzing system. 3,479,579, Cl. 324-000.5
- Baker, Robert A. Panel filter construction. 3,478,483, Cl. 052-658.
- Baldwin, D. H., Company: *See—*
  - Conklin, Harold A., Jr., 3,478,635.
  - Martin, Daniel W., and Bereskin, Alexander B., 3,479,440.
- Ball, Rowland E., to Borg-Warner Corporation. Circulating pump. 3,478,689, Cl. 103-087.
- Bane, John M., Jr.: *See—*
  - Petzold, Max L., Brooks, Thomas W., and Bane, John M., Jr. 3,479,353.
- Bangor Punta Operations, Inc.: *See—*
  - Miller, Lester D., 3,479,057.
- Bangs, Walter J., to Tuthill Pump Company. Lobe gear pump. 3,478,693, Cl. 103-126.
- Bardet-Neyrin, Rene. Packing of paste products. 3,478,901, Cl. 214-016.
- Barecki, Chester J., Henrikson, Bror W., and Nordmark, Walter E., to American Seating Company. Vehicular safety reel. 3,478,981, Cl. 242-107.4
- Barenyi, Bela, to Daimler-Benz Aktiengesellschaft. Head protection for vehicle passengers. 3,479,054, Cl. 280-150.
- Barlow, Paul D., and Marshall, John L., Jr., to Monsanto Company. Yarn jet apparatus. 3,478,398, Cl. 028-001.
- Barnes, Clair E. Jig master. 3,478,436, Cl. 033-170.
- Barnes, Willard. Method and apparatus for washing solids away from single or multiple tubing strings in well. 3,478,826, Cl. 166-301.
- Barr, Thomas A., Jr., and Cason, Charles M., III, to United States of America, Army. Plasma driven shroud wind tunnel. 3,478,583, Cl. 073-147.
- Bartels, Herbert D., to Continental Can Company, Inc. Notched can body. 3,478,921, Cl. 220-062.
- Barth, Julius O., to Permadlux Company, The. Treated vinyl and polyester and methods and compositions for the production and use thereof. 3,479,198, Cl. 117-015.
- Barthauer, Gerald L., to Safety Development Corporation. Foam producing materials and method for atmosphere control with high expansion foam. 3,479,285, Cl. 252-003.
- Bartz, Maurice R., to International Business Machines Corporation. Threshold system. 3,479,642, Cl. 340-146.3

- Battelle Development Corporation: *See—*
  - Sorensen, Svend E., and McHale, William L., 3,478,651.
- Bauer, William Charles: *See—*
  - Merigold, Charles Reynolds, and Bauer, William Charles 3,478,597.
- Baumberger, Clement F., and Micheron, Francois, to CSF-Compagnie Generale de Telegraphie Sans Fil. Ferroelectric infrared image translator. 3,479,510, Cl. 250-083.3
- Baumgartner, John R., and Bouchard, Arthur J., to Rota Forg Corporation. Forging apparatus. 3,478,556, Cl. 072-185.
- Bausch, Gunther, to Diehl. Control circuit for turning off stabilized starting voltages in case of short circuit. 3,479,564, Cl. 317-022.
- Bauserman, Howard M., to Stearns-Roger Corporation. Pulp deliquifying press. 3,478,679, Cl. 100-117.
- Bayer, Otto: *See—*
  - Dieterich, Dieter, and Bayer, Otto 3,479,310.
- Bean, Fredrick D., to General Electric Company. Blade retainer. 3,479,009, Cl. 253-077.
- Beaty, Lois B. Insulated container for infant food. 3,478,866, Cl. 206-004.
- Becht, Carl T., to Senco Products, Incorporated. Nail package. 3,478,872, Cl. 206-056.
- Beck & Company (Meters) Limited: *See—*
  - Absolon, Eric W., and Bowman, George H., 3,478,927.
- Becker, Gerhard, to Firma Hiithenwerk Oberhausen AG. Structural steel members and method of making same. 3,479,229, Cl. 148-006.24
- Becker, Harald: *See—*
  - Jung, Margarete, Becker, Harald, and von Doehren, Hans 3,479,276.
- Beckman Instruments, Inc.: *See—*
  - Arthur, Edwin P., 3,479,255.
  - Counts, William E., and Bruhl, Donald A., Jr., 3,479,216.
  - Petersen, Arne J., and Taylor, John T., 3,479,270.
- Beesley, John: *See—*
  - McGee, James Dwyer, Beesley, John, and Berg, Anthony David 3,479,516.
- Beindorf, Lucian J., to Dayco Corporation. Belt drive. 3,478,609, Cl. 074-229.
- Bell Aerospace Corporation: *See—*
  - Brent, Robert G., 3,478,777.
- Bell & Howell Company: *See—*
  - Cunningham, Patrick J., 3,479,113.
  - Hull, Charles W., 3,479,504.
- Bell Telephone Laboratories, Incorporated: *See—*
  - Abernathy, John L., 3,479,604.
  - Ashkin, Arthur, 3,479,614.
  - Bergh, Arpad A., and van Gelder, Willem, 3,479,237.
  - Bobeck, Andrew H., and Smith, James L., 3,479,654.
  - Bonyhard, Peter I., 3,479,657.
  - Bowers, Klaus D., 3,479,651.
  - Chegwidden, Raymond A., Cohen, Howard M., and Gilbert, William F., Jr., 3,479,292.
  - Damiano, Henry, and Rainone, Louis C., 3,479,466.
  - Fischer, James L., and Strommen, Lawrence A., 3,479,469.
  - Fisher, Reed E., 3,479,528.
  - Gianola, Umberto F., 3,479,660.
  - Ham, James H., Jr., 3,479,470.
  - Harris, William B., and Massey, Richard P., 3,479,533.
  - Kirby, Ralph W., and Richards, Philip C., 3,479,467.
  - Kretzmer, Ernest R., 3,479,468.
  - Lawless, William J., 3,479,524.
  - Masucci, Eugene D., 3,479,465.
  - Miller, Gabriel L., 3,479,534.
  - Miller, Stewart E., 3,479,600.
  - Newhall, Edmunde E., 3,479,658.
  - Ngo, Dinh Tuan, 3,479,619.
  - Overstreet, Rogert L., Jr., 3,479,603.
  - Rigrod, William W., 3,479,620.
  - Ruthroff, Clyde L., 3,479,607.
  - Rymes, Peter A., Jr., and Lepselter, Martin P., 3,479,269.
  - Seidel, Harold, 3,479,602.
  - Seidel, Harold, 3,479,612.
  - Sitarik, Joseph P., 3,479,464.
  - Snare, Ronald C., 3,479,521.
  - Van Dine, Gilbert A., 3,479,529.
  - Weller, David C., 3,479,598.
- Bellinger, Kenneth P., and Verzier, Le Verne, to Conversion Chemical Corporation. Process and composition for etching ferrous metal surfaces. 3,479,293, Cl. 252-079.4
- Belohlav, Leo R., and Costanza, John R., to Celanese Corporation. Nitrated polyesters and polybenzoxazoles prepared from same. 3,479,321, Cl. 260-047.
- Bender, Alfred, and Knapp, Wilhelm, to Teves, Alfred, GmbH. Dual-network disk brake. 3,478,847, Cl. 188-152.
- Bendix Corporation, The: *See—*
  - Abu-Akeel, Abdulhadi K., 3,478,850.
  - Blythe, Richard, and Work, Edgar A., Jr., 3,479,107.
  - Bozek, John W., 3,478,881.
  - Gauger, Roy C., 3,478,954.
  - Levine, Alfred L., and Yee, Peter P. M., 3,479,491.
  - Lewis, Richard L., 3,478,649.
  - Lewis, Richard L., and Smith, Donald W., 3,479,095.
  - Stafford, Henry R., 3,478,624.
- Benoit, Roland A., and Tripodi, Joseph, to Royalmetal Corporation. Adjustable bed. 3,478,372, Cl. 005-063.
- Bereskin, Alexander B.: *See—*
  - Martin, Daniel W., and Bereskin, Alexander B. 3,479,440.
- Berg, Alfred Sheldon. Feed distributing apparatus. 3,478,723, Cl. 119-052.
- Berg, Anthony David: *See—*
  - McGee, James Dwyer, Beesley, John, and Berg, Anthony David 3,479,516.
- Berg, Robert E., to Fairchild Hiller Corporation. Target marking device. 3,478,686, Cl. 102-035.
- Bergh, Arpad A., and van Gelder, Willem, to Bell Telephone Laboratories, Incorporated. Etch masks on semiconductor surfaces. 3,479,237, Cl. 156-011.
- Bergwerksverband GmbH: *See—*
  - Rieschel, Hans, 3,478,522.
- Berr et Cie: *See—*
  - Golberine, Boris, and Berr, Roger, 3,478,537.
- Berr, Roger: *See—*
  - Golberine, Boris, and Berr, Roger 3,478,537.
- Bertin, Jean H., to Societe Bertin & Cie. Control system for fluid-cushion devices. 3,478,835, Cl. 180-121.
- Bester, Dennis R., and Pratt, Geoffrey, to General Electric Company Limited, The. Detachable electrical switching apparatus for multichannel radiocommunication systems. 3,479,461, Cl. 179-015.
- Bethlehem Steel Corporation: *See—*
  - Marsilio, Joseph V., and Reihman, Richard F., 3,479,486.
  - Rauch, Stewart E., Jr., and Roberts, Carlton E., 3,479,260.
- Bethurem, Jack W. Floating dock structure. 3,478,710, Cl. 114-000.5
- Betz, Rudolf. Apparatus for packing ampules into cartons or like containers. 3,478,484, Cl. 053-026.
- Beuchle, Friedrich, to Teves, Alfred, GmbH. Fixed-yoke disk brake. 3,478,844, Cl. 188-018.
- Biamonte, Alfred R.: *See—*
  - Morshauser, Fred S., Kalish, Samuel, and Biamonte, Alfred R. 3,479,429.
- Bidwell, Robert E., and Mishkin, Sidney. Visual aid for golf. 3,478,452, Cl. 040-068.
- Bielefeldt, Ernst-August, to Hamburger Flugzeugbau GmbH. Supersonic aircraft. 3,478,989, Cl. 244-043.
- Biermann, Kurt, to Durkopp Aktiengesellschaft. Knot-tying mechanism for sewing machine. 3,478,708, Cl. 112-160.
- Bilancia, Raymond A., to Coach and Car Equipment Corporation. Enclosed back rest coupling for walk-over seat. 3,479,082, Cl. 297-103.
- Bird, George R., and Parrish, Maxfield, Jr., to Polaroid Corporation. Method of making metallic polarizer by drawing fusion. 3,479,168, Cl. 065-003.
- Birken, Karl, to RC-Ninty Five Incorporated, and 25% to Musumec, Alfred, mesne. Dielectric variable capacitor. 3,478,589, Cl. 073-362.
- Birlain Schafler, Armando, and Lombardo, Allan. Planographic printing plates. 3,478,684, Cl. 101-453.
- Bischoff, Gunther: *See—*
  - Schiel, Christian, and Bischoff, Gunther 3,478,991.
- Bishop, Lewis H., to Pierce Specialized Equipment Company. Apparatus for rocking a photographic tray. 3,478,666, Cl. 095-099.
- Bixby, Thomas G., to Phillips Drill Company, Inc., mesne. Stop rotation mechanism attachment. 3,478,829, Cl. 173-104.
- Bjorksten Research Laboratories, Inc.: *See—*
  - Paquette, Elmer Gordon, 3,478,393.
- Bjorn-Larsen, Knut L. Panty girdle and stocking support. 3,478,748, Cl. 128-535.
- Black and Decker Manufacturing Company, The: *See—*
  - Zelik, Hynek J., 3,478,788.
- Black Clawson Company, The: *See—*
  - Notbohm, Willard C., 3,478,811.
  - Palmer, Albert, and Lindberg, Verne L., 3,478,789.
  - Penrod, William R., 3,478,975.
- Blackstone Corporation: *See—*
  - Hale, Everett W., 3,479,093.
- Blaszczak, Joseph W. Reaction products of riboflavin with formaldehyde and process for preparing same. 3,479,335, Cl. 260-211.3
- Blatter, Hans, and Wuthrich, Rolf, to Aktiengesellschaft Brown, Boveri & Cie. Rectifier arrangement utilizing semiconductor elements. 3,479,578, Cl. 321-011.
- Blatz, Paul E., and Faris, Sam R., to Mobil Oil Corporation. Catalysis of esterification with a permeable membrane of sulfonated poly(2,6-dialkylphenol). 3,479,390, Cl. 260-468.
- Blaw-Knox Company: *See—*
  - Karnofsky, George B., 3,478,531.
  - Stelmach, George A., 3,478,626.
- Bleckmann & Co.: *See—*
  - Jagersberger, Adolf, 3,478,423.
- Bliss, George N.: *See—*
  - Peppler, William S., Bliss, George N., and Planck, Norman A., Jr. 3,478,703.
- Bloise, George N. Wheel suspension and steering mechanism. 3,479,050, Cl. 280-095.
- Blomeyer, Friedrich, and Oertel, Gunter, to Farbenfabriken Bayer Aktiengesellschaft. Process for preparing substantially anhydrous polyurethane compositions using an organic sulfonyl monoisocyonate. 3,479,325, Cl. 260-077.5

- Blommers, Elizabeth A.: *See—*
  - Bulbenko, George F., Gobran, Riad H., and Blommers, Elizabeth A. 3,479,337.
- Bloomquist, George W.: *See—*
  - Bahlke, Allan R., and Bloomquist, George W. 3,479,065.
- Blue, John, Company: *See—*
  - Horton, Donelson B., and Nunn, Earnest W., 3,478,967.
- Bly, Donald A., to Veeder Industries Inc. Fluid delivery control system. 3,478,856, Cl. 194-013.
- Blythe, Richard, and Work, Edgar A., Jr., to Bendix Corporation, The. Apparatus for scanning an area with an oscillatory scanning element. 3,479,107, Cl. 350-006.
- Bobeck, Andrew H., and Smith, James L., to Bell Telephone Laboratories, Incorporated. Domain propagation media organized for repertory dialer operation. 3,479,654, Cl. 340-174.
- Bobrow, Lucien, to Mr. Hanger, Inc. Garment hanger. 3,478,943, Cl. 223-088.
- Boeing Company, The: *See—*
  - Aichinger, Harry H., 3,478,569.
  - Courter, Jack P., 3,478,904.
  - Van Wyk, Jan W., 3,479,289.
- Bogle, Tommy G., to American Machine & Foundry Company. Acoustic leak detecting apparatus and method. 3,478,576, Cl. 073-040.5
- Bohannon, Philip. Wig stand. 3,479,106, Cl. 312-351.
- Bohlmann, Edward H. Orthodontic multi-purpose repositioner and oral habit conditioner. 3,478,742, Cl. 128-172.1
- Bohme Chemie Gesellschaft mit beschrankter Haftung: *See—*
  - Markert, Hans, and Heyden, Rudi, 3,479,288.
- Bohme Fettchemie G.m.b.H.: *See—*
  - Rutzen, Horst, and Lowenstein, Albert, 3,479,297.
- Boissevain, Mathew G., to FMC Corporation. Method of and apparatus for liquid handling and dialysis. 3,479,280, Cl. 210-022.
- Bok, Hendrik F. Sealed sprayer and baffle combination for a spray-coating environment. 3,478,720, Cl. 118-323.
- Bokma, Mindert P.: *See—*
  - Wyeroski, Ronald M., and Bokma, Mindert P. 3,478,993.
- Boldstein, Irving S., to Continental Can Company, Inc. Method of flameproofing cellulosic materials. 3,479,211, Cl. 117-136.
- Bolkow Gesellschaft mit beschrankter Haftung: *See—*
  - Arbeitlang, Erich, 3,478,607.
  - Thomanek, Franz Rudolf, and Schlesiger, Heinz, 3,478,685.
- Bonenberg, Zdzislaw: *See—*
  - Budzynski, Kazimierz, Juszczyk, Leopold, Bonenberg, Zdzislaw, Dybal, Daniel, and Zakrawacz, Stanislaw 3,479,019.
- Bonessa, Vick G., to Bada Company, The. Wheel balance method. 3,478,603, Cl. 073-483.
- Bonin, Walter T.: *See—*
  - Clark, David J., and Bonin, Walter T. 3,478,732.
- Bonnaud, Michel, to Automobiles Peugeot. Device for pivotably mounting an inclinable backrest of a seat and a seat including said device. 3,479,088, Cl. 297-373.
- Bonsch, Gustav, and Nolz, Klaus, to Voith Getriebe KG. Emptying device for fluid flow circuits. 3,478,516, Cl. 060-054.
- Bonyhard, Peter I., to Bell Telephone Laboratories, Incorporated. Thin film memory circuit. 3,479,657, Cl. 340-174.
- Bonzagni, Francis A., to Monsanto Company. Resins prepared from amino compounds, aldehydes, polyhydroxyl compounds and monohydric alcohols. 3,479,247, Cl. 161-026.3
- Boots Pure Drug Company Limited: *See—*
  - Bryce, Douglas Maxwell, and Rooke, Michael Brian, 3,479,428.
- Borchert, Peter Jochen, to Miles Laboratories, Inc. Process for improving the strength of wool or silk fibers and products thereof. 3,479,128, Cl. 008-127.6
- Borden Company, The: *See—*
  - Gattenby, Miles N., Jr., and D'Amato, Anthony S., 3,479,308.
  - Murphy, Allen Milton, Jr., Retzke, Franklin Albert, and Johnson, John Raymond, 3,479,175.
- Borg-Warner Corporation: *See—*
  - Ball, Rowland E., 3,478,689.
  - Harlin, Lester E., and Moore, Walter C., 3,478,957.
  - Keats, John B., 3,478,714.
  - Klinger, Kenneth A., Randall, John J., and Sakach, Joseph M., Jr., 3,479,160.
  - Kraeplin, Robert C., 3,478,853.
  - Pinkas, Peter F., 3,479,039.
  - Tracy, Herbert E., 3,479,040.
- Borgersen, Roland D. Hardness tester. 3,478,568, Cl. 073-081.
- Boring, Kenneth L., and Downing, Robert D., to General Electric Company. Electron beam welder. 3,479,483, Cl. 219-121.
- Bosch, Robert, Hausgeraete G.m.b.H.: *See—*
  - Wirth, Hermann, 3,478,962.
- Boss Manufacturing Company: *See—*
  - English, Alfred C., 3,478,942.
- Bost, Howard W., and Cook, Charles F., to Phillips Petroleum Company. Nitrogen oxide compounds as sulfoxidation promoters. 3,479,398, Cl. 260-513.
- Bostick, Edgar E., to General Electric Company. Polymerization of cyclic organosiloxanes with group 11-A metal complexes. 3,479,320, Cl. 260-046.5
- Bott, Lawrence L., to Nalco Chemical Company. Electrochemical cell having ceramic- lined tubular cathodes. 3,479,274, Cl. 204-260.
- Bouchard, Arthur J.: *See—*
  - Baumgartner, John R., and Bouchard, Arthur J. 3,478,556.
- Boucher, Elsie J. Method of manufacturing jewelry parts. 3,479,199, Cl. 117-019.
- Bourquin, Paul A., to Wolff & Munier, Inc. Top discharge air duct system and air ducts therefor. 3,478,667, Cl. 098-040.
- Bowden, James J. Method of preheating and charging scrap to a BOF. 3,479,178, Cl. 075-060.
- Bowen, James R.: *See—*
  - Heller, Ralph M., and Bowen, James R. 3,479,643.
- Bowen, John T.: *See—*
  - Hinck, Ernest C., III, and Bowen, John T. 3,478,958.
- Bowers, Klaus D., to Bell Telephone Laboratories, Incorporated. Laminate optical memory with selective erase. 3,479,651, Cl. 340-173.
- Bowman, George H.: *See—*
  - Absolon, Eric W., and Bowman, George H. 3,478,927.
- Boykin, Philip J., to Phillips Petroleum Company. Purification of refrigerant. 3,478,529, Cl. 062-085.
- Bozek, John S., to Continental Can Company, Inc. Apparatus for redrawing and wall ironing containers. 3,478,563, Cl. 072-349.
- Bozek, John W., to Bendix Corporation, The. Shut-off valve for fuse filter. 3,478,881, Cl. 210-096.
- Bozeman, Hoyt William: *See—*
  - Reilly, Frank Ward, and Bozeman, Hoyt William 3,479,014.
- Braaten, Amund, and Wilhelmsen, Willy, to International Standard Electric Corporation. Cable winding machine. 3,478,505, Cl. 057-059.
- Bracken, Robert S., to Maul Bros., Inc. Glassware forming machine. 3,479,173, Cl. 065-229.
- Bradford, Rex C., and Braun, Richard E., to International Business Machines Corporation. Feedthrough elimination in magnetic transducers. 3,479,662, Cl. 340-174.1
- Bradley, Bruce R., and Sims, James G., to Monsanto Company. Spinneret. 3,478,389, Cl. 018-008.
- Bradly, Malcolm Frederick. Steam trap. 3,478,961, Cl. 236-054.
- Bradt, Lynn J., to S I Handling Systems, Inc. Tow truck system and truck therefor. 3,478,697, Cl. 104-172.
- Brahm, Charles B., Corcoran, John M., Glista, Edward M., and Van Olinda, David L., to United Aircraft Corporation. Fuel control for a small gas turbine engine. 3,478,512, Cl. 060-039.28
- Brames, Byron L. Warning device. 3,478,713, Cl. 116-056.
- Braun, Richard E.: *See—*
  - Bradford, Rex C., and Braun, Richard E. 3,479,662.
- Bray, James A.: *See—*
  - Smith, John R., and Bray, James A. 3,479,256.
- Bray, Thomas E., and Clusick, Robert E., to General Electric Company. Solid state light emitting display with memory. 3,479,517, Cl. 250-213.
- Bray, Thomas L.: *See—*
  - Cofer, Daniel B., Ward, George C., and Bray, Thomas L. 3,478,813.
- Brearley Company, The: *See—*
  - Provi, Mike A., and Guinter, S. Robert, 3,478,618.
- Breen, Henry D.: *See—*
  - Lundvall, John S., Loomis, Russell M., and Breen, Henry D. 3,478,700.
- Brefka, Paul E.: *See—*
  - Shapiro, Laban D., Latham, Peter A., Brefka, Paul E., and LaBrie, Paul J. 3,479,568.
- Breidt, Peter, Jr.: *See—*
  - Lefevre, Lloyd Edward, and Breidt, Peter, Jr. 3,479,425.
- Brendel, Gottfried J., to Ethyl Corporation. Preparation of tertiary alkylamine alanes. 3,479,382, Cl. 260-448.
- Brent, Robert G., to Bell Aerospace Corporation. Valve. 3,478,777, Cl. 137-492.5
- Breon, Pearl L., Imes, Vernon W., Johnson, Harold R., Nutter, James M., and Nutter, James M., to Caterpillar Tractor Company. Power module for a sectionalized vehicle. 3,478,833, Cl. 180-012.
- Brewer, George R.: *See—*
  - Wilson, Robert G., Brewer, George R., and Jamba, Douglas M. 3,479,545.
- Brewington, Philip J. Flush valve assembly. 3,478,368, Cl. 004-057.
- Brion, Stanley A., to Plessey Company Limited, The. Rotary stepping motor with permanent magnet rotor having asymmetrical poles. 3,479,539, Cl. 310-049.
- Briskin, Theodore S., and Ward, Geoffrey R., to Sutton Research Corporation. Method for preparation of smoking product with selective reduction following selective oxidation. 3,478,751, Cl. 131-002.
- Briskin, Theodore S., and Ward, Geoffrey R., to Sutton Research Corporation. Cellulosic smoking product and method in the preparation of same. 3,478,752, Cl. 131-002.
- Bristol-Banyu Research Institute, Ltd.: *See—*
  - Naito, Takayuki, and Nakagawa, Susumu, 3,479,365.
- Bristol-Myers Company: *See—*
  - Holdrege, Charles Truman, 3,479,339.
- Brittain, Frank Eustace, to Girling Limited. Permanently coupled assemblies. 3,479,068, Cl. 285-321.
- Broadhurst, Charles J. Method of reinforcing perforations in paper. 3,479,203, Cl. 117-044.
- Brodsky, Ralph Howard. X-ray film illuminator. 3,478,453, Cl. 040-106.1
- Brooks, Alden W.: *See—*
  - Waugh, Dale L., Brooks, Alden W., Jensen, Howard J., and Richmond, Kenneth D. 3,478,613.
- Brooks, Marvin V., to PPG Industries, Inc. Door pivots. 3,478,383, Cl. 016-151.

- Brooks, Ray G., to Texize Chemicals, Inc. Dispensing device. 3,478,935, Cl. 222-321.
- Brooks, Thomas W.: *See*—
  - Petzold, Max L., Brooks, Thomas W., and Bane, John M., Jr. 3,479,353.
- Brose, Harlan F., to United Aircraft Corporation. Catalytic burner. 3,479,144, Cl. 023-288.
- Broszat, Gottfried, to Licentia Patent-Verwaltungs G.m.b.H. Winding arrangement for distributing surge voltage. 3,479,629, Cl. 336-070.
- Broussard, Leo, to Esso Research and Engineering Company. Passivation of metals. 3,479,232, Cl. 148-031.5
- Brown, Cicero C.: *See*—
  - Potts, Ernest L., 3,479,067.
- Brown, Edgar D., Jr., to General Electric Company. Phosphorous-containing organopolysiloxane lubricant. 3,479,290, Cl. 252-049.9
- Brown, Kenard Daniel. Method and apparatus for forming helical springs and the like. 3,478,408, Cl. 029-458.
- Brown, Norman F., to Halliburton Company. Balanced rotary valve. 3,479,006, Cl. 251-174.
- Brown, Norman R., Martin, Michael J., Jr., and Stanner, Donald, to General Motors Corporation. Clip installing tool. 3,478,405, Cl. 029-212.
- Brownhill, Frank D., and Walker, Michael K., to Rolls-Royce Limited. Temperature sensing device. 3,478,590, Cl. 073-363.
- Brownhill, Frank D., Walker, Michael K., and Ward, Peter A., to Rolls-Royce Limited. Temperature sensing device. 3,478,591, Cl. 073-363.
- Bruhl, Donald A., Jr.: *See*—
  - Counts, William E., and Bruhl, Donald A., Jr. 3,479,216.
- Brumm, Richard S., to Grove Valve and Regulator Company. Valve construction. 3,479,004, Cl. 251-118.
- Brunie, Jean Claude, and Crenne, Noel, to Rhone-Poulenc S.A. Process for the oxidation of cycloalkanes. 3,479,394, Cl. 260-462.
- Brunner, Alfred, to Sulzer Brothers, Ltd. Panel shaped heating surface for combustion chambers. 3,478,724, Cl. 122-235.
- Bryce, Douglas Maxwell, and Rooke, Michael Brian, to Boots Pure Drug Company Limited. Sunscreen composition and method of using the same. 3,479,428, Cl. 424-060.
- Buc, George L.: *See*—
  - Hu, Yow-Jiun, and Buc, George L. 3,478,658.
- Bucher, Jeffery C. System for starting an engine from a remote location. 3,478,730, Cl. 123-179.
- Buck, Charles D. Safety switch. 3,479,475, Cl. 200-061.45
- Buckbee-Mears Company: *See*—
  - Mears, Norman B., 3,479,546.
- Buckner Industries, Inc.: *See*—
  - Royer, John A., 3,478,776.
- Budd Company, The: *See*—
  - Weglarz, Walter P., 3,478,553.
- Buddy L Corporation: *See*—
  - Appel, Mel, 3,478,464.
- Budzynski, Kazimierz, Juszczyk, Leopold, Bonenberg, Zdzislaw, Dybal, Daniel, and Zakrawacz, Stanislaw. Open-hearth furnace. 3,479,019, Cl. 263-046.
- Buehl, Karl-Heinz, to Krantz, H. Closed dyeing apparatus and method of preventing condensate therein. 3,478,375, Cl. 008-158.
- Buell, Robert O., to Dresser Industries, Inc. Non-lubricated injection valve assembly. 3,479,007, Cl. 251-214.
- Buesch, Siegfried, and Germann, Reimar, to Hans L I S T. Switching arrangement for the integration of individual high-speed operations. 3,479,496, Cl. 235-183.
- Buhl, Frank C., Lees, Ronald D., and Monagle, Daniel J., to Hercules Incorporated. Sugar purification. 3,479,221, Cl. 127-046.
- Bulbenko, George F., Gobran, Riad H., and Blommers, Elizabeth A., to Thiokol Chemical Corporation. Aziridinyl derivatives of polyfunctional epoxides. 3,479,337, Cl. 260-239.
- Bullard, E. D., Company: *See*—
  - Raschke, Herbert A., 3,478,992.
- Bulow, Arthur J.: *See*—
  - Merritt, Edward E., Titterud, Curtiss W., Peterson, Stanley E., and Bulow, Arthur J. 3,478,390.
- Bunker Hill Company: *See*—
  - Orlandini, Bruno, and Kirkpatrick, Kenneth K., 3,479,378.
- Bunker-Ramo Corporation, The: *See*—
  - Adams, Robert V., 3,478,808.
  - Kosem, Marion, 3,479,574.
- Burford, Charles E. Baking pan. 3,478,998, Cl. 249-120.
- Burgaud, Jean Loup: *See*—
  - Kikindai, Tivadar, and Burgaud, Jean Loup 3,479,281.
- Burgess, Dennis A., to Colight, Inc. Exposure device. 3,479,121, Cl. 355-085.
- Burke, John T.: *See*—
  - Chamot, Walter M., and Burke, John T. 3,479,282.
- Burke, Wilbur A. Pneumatic powered seat erector for an invalid. 3,479,087, Cl. 297-339.
- Burndy Corporation: *See*—
  - Hus, Johannes, 3,479,444.
- Burnett, Peter P. A. Linked fabric and method for making same. 3,479,244, Cl. 161-058.
- Burney, Ivan T., to Westinghouse Electric Corporation. Apparatus for pressurizing an air operated single cup coffee brewer. 3,478,673, Cl. 099-302.
- Burroughs Corporation: *See*—
  - Chedaker, Joseph, Hoberg, George Gilbert, and Sands, Eugene Arthur, 3,479,659.
  - Paige, Walter Griffin, 3,479,118.
  - Quinn, Hubert F., 3,479,655.
  - Weber, Frank W., 3,469,606.
  - Yanishevsky, Gilbert, Miller, Bruce J., and Savinese, Stanley J., 3,479,553.
- Burt, F. N., Company, Inc.: *See*—
  - Byrne, Arthur J., 3,478,653.
- Burton Silverplating Co.: *See*—
  - Ginder, Paul, 3,479,156.
- Buu-Hoi, Nguyen P., Lambelin, Georges, Lepoivre, Constan, Gillet, Claude, and Thiriaux, Jacques, to Madan AD. Substituted arylacetohydroxamic acids. 3,479,396, Cl. 260-500.5
- Buzby, George C., Jr., Smith, Robert C., and Smith, Herchel, to American Home Products Corporation. Process for the preparation of 17-substituted-13- alkylgona-1,3,5(10),6,8-pentaenes. 3,479,376, Cl. 260-397.45
- Buzzards Corporation, The: *See*—
  - Hottel, Hoyt Clarke, Jr., 3,479,580.
- Byrne, Arthur J., to Burt, F. N., Company, Inc. Carton forming apparatus and method. 3,478,653, Cl. 093-051.
- C.I.T.-Compagnie Industrielle des Telecommunications: *See*—
  - Oswald, Jacques, 3,479,457.
- Cabot Corporation: *See*—
  - Rivin, Donald, and Aron, Jerome, 3,479,299.
  - Rivin, Donald, and Aron, Jerome, 3,479,300.
- Cahn, Arno, and Gilbert, Allan H., to Lever Brothers Company. Perfume compositions including ether-ketones. 3,479,301, Cl. 252-522.
- Caldwell, Edgar W. Dispensing device for collapsible tubes. 3,478,928, Cl. 222-103.
- Caldwell, Robert E., and Cass, Louis G., to Chrysler Corporation. Horn actuating switch. 3,479,477, Cl. 200-061.55
- Calgon Corporation: *See*—
  - Petzold, Max L., Brooks, Thomas W., and Bane, John M., Jr., 3,479,353.
- California Institute Research Foundation: *See*—
  - Parker, Gary L., 3,478,514.
- Callahan, Michael L.: *See*—
  - Siebold, Donald J., and Callahan, Michael L. 3,478,718.
- Cambridge Instrument Company, Inc.: *See*—
  - Whitmore, Chatland, and Redway, George F., 3,478,579.
- Campbell, George W., Jr., Nies, Nelson P., and Atteberry, Johnny C., to United States Borax & Chemical Corporation. Method for improving physical properties of boric oxide. 3,479,137, Cl. 023-149.
- Campbell, Victor H., to Sylvania Electric Products, Inc. Color temperature stabilization in color receivers. 3,479,449, Cl. 178-005.4
- Camson Manufacturing Company, The: *See*—
  - Tims, Fred W., Jr., 3,478,427.
- Canadian International Paper Company: *See*—
  - Kalisch, John H., 3,479,249.
- Canadian Patents and Development, Limited: *See*—
  - Makow, David M., 3,479,588.
- Canadian Westinghouse Company Limited: *See*—
  - Simpson, Robert G., Luker, Ronald J., and Jewell, George S., 3,479,513.
- Canalizo, Carlos R., to Otis Engineering Corporation. Fluid powered timing device. 3,478,645, Cl. 091-335.
- Cardinal, Earl Victor, to Abbott Laboratories. Method for cholesterol determination. 3,479,154, Cl. 023-230.
- Carini, George F.: *See*—
  - Davies, Ben, and Carini, George F. 3,479,194.
- Carl, Walther, Sportwaffenfabrik: *See*—
  - Hubner, Siegfried, 3,478,841.
- Carlisle Chemical Works, Inc.: *See*—
  - Weisfeld, Lewis B., 3,479,315.
- Carlson, Emery J.: *See*—
  - Michener, Aubrey W., Jr., Carlson, Emery J., and Koo, Raymond H. 3,479,136.
- Carlson, Emil M. Cart. 3,479,048, Cl. 280-047.23
- Carlson, Thomas W., and Ivers, John R., to Honeywell, Inc. Linear meter movements. 3,479,596, Cl. 324-151.
- Carlson Tool & Machine Co.: *See*—
  - Hazelton, Harold J., 3,479,091.
- Carroll, William C., and Johnston, Howard T., Jr., to International Business Machines Corporation. Nonelectronic magnetic recording system. 3,479,036, Cl. 274-004.
- Carson, Alan B., to Garrett Corporation, The. Transpiration-cooled incinerator. 3,478,706, Cl. 110-008.
- Carstensen, Kenneth J.: *See*—
  - Hauk, Ernest D., 3,478,577.
- Carter, Mary E., and Price, John A., to FMC Corporation. Direct esterification method of preparing polyethylene terephthalate with an ammonium or metal salt of ethylenediaminetetraacetic acid. 3,479,324, Cl. 260-075.
- Carton, Jean, to Compagnie Francaise Thomson-Houston. Continuous copper wire-making process. 3,478,810, Cl. 164-087.
- Carvallo, Pierre. Method of processing cereals, more particularly for whitening and polishing rice, and apparatus for performing the same. 3,478,798, Cl. 146-264.
- Case, J. I., Company: *See*—
  - Auchard, Gerald V., 3,478,831.
  - Avis, John M., and Dorman, Hugh H., 3,478,910.
  - Dahlquist, Robert L., 3,478,750.
  - Davidow, Martin A., and Klee, Maurice, 3,478,749.

- Casey, John B., to Western Electric Company, Incorporated. System for adjusting operating and release sensitivities of magnetically biased relay armatures. 3,479,584, Cl. 324-028.
- Casolo, Angelo J.: *See*—
  - Rajan, Krishnaswamy S., and Casolo, Angelo J. 3,479,266.
  - Rajan, Krishnaswamy S., and Casolo, Angelo J. 3,479,267.
- Cason, Charles M., III: *See*—
  - Barr, Thomas A., Jr., and Cason, Charles M., III 3,478,583.
- Cass, Louis G.: *See*—
  - Caldwell, Robert E., and Cass, Louis G. 3,479,477.
- Castellano, Joseph A.: *See*—
  - Smith, Harry F., and Castellano, Joseph A. 3,479,404.
- Castelli, Joseph N., to United States of America, Army. Attenuation circuit using a tuned amplifier whose Q is varied by shunting resistors. 3,479,609, Cl. 330-021.
- Catalano, Frank R. Stairs layout tools. 3,478,434, Cl. 033-093.
- Caterpillar Tractor Company: *See*—
  - Anderson, Norman L., Darnall, Millard K., Morgan, William C., Peterson, Laurel L., and Stedman, Robert N., 3,478,902.
  - Breon, Pearl L., Imes, Vernon W., Johnson, Harold R., Nutter, James M., and Nutter, James M., 3,478,833.
  - Cryder, John R., and Kroth, Neil W., 3,478,646.
  - Goloff, Alexander, Hautala, Richard E., and White, Claude F., 3,478,411.
  - Johnson, Lowell E., Hansen, Robert C., Pearce, Shairyl I., and Lanchantin, Charles E., Jr., 3,478,621.
  - Maurya, Ramamurat R., Harrington, Joseph, Jr., and Squibb, Edward R., III, 3,478,410.
- Cavagna, Giancarlo, and Walker, William C., to Westvaco Corporation. Coated paper having electroconductive properties and process of making the same. 3,479,215, Cl. 117-201.
- Celanese Coatings Company: *See*—
  - Mork, Alfred N., 3,479,197.
- Celanese Corporation: *See*—
  - Belohlav, Leo R., and Costanza, John R., 3,479,321.
  - Huguet, Juan Luis, 3,479,395.
  - Mac Lean, Alexander F., 3,479,403.
  - Williams, Albert G., 3,479,314.
  - MacLean, Alexander F., and Stautzenberger, Adin L., 3,479,262.
- Centro Informazioni Studi Esperienze s.r.l. (C.I.S.E.): *See*—
  - Perona, Giovanni, and Volta, Giuseppe, 3,478,412.
- Cermak, Jiri, and Jakubec, Jindrich, to Vyzkumny a vyvojovy ustav Zavodu vseobecneho strojirenstvi. Trigger mechanism for automatic firearms for selective firing of a burst or a single shot. 3,478,644, Cl. 089-140.
- Chambers, Vaughan Crandall, Jr., to Du Pont de Nemours, E. I., and Company. Photopolymerizable compositions and layers containing 2,4, 5-triphenylimidazoyl dimers. 3,479,185, Cl. 096-084.
- Chamot, Walter M., and Burke, John T., to Nalco Chemical Company. Method of flocculating suspended solids using copolymers as flocculating agents. 3,479,282, Cl. 210-054.
- Chandler, Kenneth H. Hose coupling assembly. 3,479,058, Cl. 285-016.
- Chang, Yun G., and Bailey, Philip S., to Reichhold Chemicals, Inc.Dimeric peroxide of η-butyly levulinate and process of making the same. 3,479,372, Cl. 260-340.6
- Chapman, James R.: *See*—
  - Forrer, Homer W., and Chapman, James R. 3,478,953.
- Charles, Ray E. Refuse compaction handling equipment. 3,478,909, Cl. 214-501.
- Charman, Walter M., Jr., and Middaugh, George J., Jr., to Oglebay Norton Company. Refractory panel unit with hinge means and frangible portions. 3,478,999, Cl. 249-201.
- Chase-Shawmut Company, The: *See*—
  - Kozacka, Frederick J., 3,479,630.
- Chauvin, Yves, and Lefebvre, Gilles, to Institut Francaise du Petrole, des Carburants et Lubrifiants. Polymerization of bi-secondary monoolefins. 3,479,329, Cl. 260-088.2
- Chedaker, Joseph, Hoberg, George Gilbert, and Sands, Eugene Arthur, to Burroughs Corporation. Magnetic device. 3,479,659, Cl. 340-174.
- Chegwidden, Raymond A., Cohen, Howard M., and Gilbert, William F., Jr., to Bell Telephone Laboratories, Incorporated. Manufacture of garnet ceramic. 3,479,292, Cl. 252-062.57
- Chemische Werke Huls Aktiengesellschaft: *See*—
  - Wiescholleк, Helmut, and Gumlich, Walter, 3,479,303.
- Cheney, C. W., & Son Limited: *See*—
  - Constable, Eric Frederick, 3,478,547.
- Chesebrough-Pond's Inc.:*See*—
  - Fisher, Robert, 3,478,923.
- Chevron Research Company: *See*—
  - Hess, Patrick H., and Millhone, Ralph S., 3,478,824.
  - Hinds, Robert J., and Premo, Paul M., 3,479,253.
  - Kohn, Gustave K., and Fenyes, Joseph G. E., 3,479,413.
  - Runge, Richard J., 3,479,581.
- Chodosh, Stewart M., and Katsoulis, Emanuel G., to Leesona Corporation. Oxygen depolarized electrochemical modular units. 3,479,225, Cl. 136-086.
- Chouings, Leslie C., to Automotive Products Company Limited. Fluid pressure braking systems for tractor-trailer vehicles. 3,479,094, Cl. 303-007.
- Christadore, Morris R.: *See*—
  - Roberts, William A., and Christadore, Morris R. 3,478,736.
- Chrysler Corporation: *See*—
  - Caldwell, Robert E., and Cass, Louis G., 3,479,477.
- Chu, Simon L. Lithographic plates. 3,479,182, Cl. 096-033.
- Chur, Sung Pal: *See*—
  - Stuart-Williams, Raymond, and Chur, Sung Pal 3,479,664.
- Church, Thomas A., and Davis, George D., to International Molding Machine Co. Molding machine. 3,478,812, Cl. 164-183.
- Cincinnati Milling Machine Co., The: *See*—
  - Ma, Carlton Y. W., and Pfister, Stanley A., 3,478,513.
- Clapper, Genung L., to International Business Machines Corporation. Speech analysis system. 3,479,460, Cl. 179-001.
- Clark, David J., and Bonin, Walter T. Wire saw drum. 3,478,732, Cl. 125-012.
- Clark Equipment Company: *See*—
  - Perez, Arthur, and Myers, James E., 3,478,535.
- Clark, Howard R. Pickup camper and trailer top boat loader. 3,478,908, Cl. 214-450.
- Clarke, Ray Allen, and Griffin, Dale Miller, Jr., to Du Pont de Nemours, E. I., and Company. Dye composition. 3,479,192, Cl. 106-022.
- Clayton, Erith T., to Penn Plate, Inc. Mechanical plating. 3,479,209, Cl. 117-109.
- Clerc, Milton C., to Industrial Nucleonics Corporation. Nuclear radiation gauge system. 3,479,511, Cl. 250-083.6
- Cleveland, Donald S., to General Electric Company. Anti-hunting circuit for meter relay. 3,479,562, Cl. 315-159.
- Closmann, Philip J., to Shell Oil Company. Method of increasing the volume of a permeable zone within an oil shale formation. 3,478,825, Cl. 166-036.
- Cloud, Charles E., King, Richard G., and George, James R., to Cloud Machine Corporation. Packaging machine. 3,478,492, Cl. 053-266.
- Cloud Machine Corporation: *See*—
  - Cloud, Charles E., King, Richard G., and George, James R., 3,478,492.
- Clough, Thomas J., to Sinclair Research, Inc. Lubricating oil composition containing condensation product of polyamine and polymeric ketone, 3,479,291, Cl. 252-051.5
- Cluett, Peabody, & Co., Inc.: *See*—
  - Denault, Albert P., Gruber, Lawrence H., and Morton, Kenneth O., 3,478,939.
- Clusick, Robert E.: *See*—
  - Bray, Thomas E., and Clusick, Robert E. 3,479,517.
- Coach and Car Equipment Corporation: *See*—
  - Bilancia, Raymond A., 3,479,082.
- Cochran, Kenneth C.: *See*—
  - Robison, Fred E., and Cochran, Kenneth C. 3,478,386.
- Cofer, Daniel B., Ward, George C., and Bray, Thomas L., to Southwire Company. Vessel positioning means for continuous casting machines. 3,478,813, Cl. 164-278.
- Cogswell, Richard V.: *See*—
  - Pfeiffer, Albert, Cogswell, Richard V., Lynch, Charles W., and Kunert, Herbert B. 3,478,926.
- Cohen, Howard M.: *See*—
  - Chegwidden, Raymond A., Cohen, Howard M., and Gilbert, William F., Jr. 3,479,292.
- Cohen, Robert, Couleur, John F., and Ruth, Richard L., to General Electric Company. Data process system including means responsive to predetermined codes for providing subsystem communication. 3,479,647, Cl. 340-172.5
- Cole, Morton S., to Archer Daniels Midland Company. Method for coating dehydrated food. 3,479,191, Cl. 099-166.
- Colight, Inc.: *See*—
  - Burgess, Dennis A., 3,479,121.
- Collins, Howard W. Building panel system. 3,479,073, Cl. 287-189.36
- Colombini, Ariano: *See*—
  - Veronica, Giacinto, Sironi, Giuseppe, and Colombini, Ariano 3,479,177.
- Colorado Manufacturing Corporation: *See*—
  - McLaughlin, William I., 3,478,781.
- Columbia Broadcasting System, Inc.: *See*—
  - Davis, Ronald N., 3,479,120.
  - Gabor, Dennis, 3,479,111.
  - Goldmark, Peter C., and Goldberg, Abraham A., 3,479,447.
  - McMann, Renville H., Jr., 3,479,450.
- Columbia Cellulose Company Limited: *See*—
  - Taylor, Richard Perry, and Abson, Derek, 3,479,336.
- Comar, Dominique, and Le Poec, Claude, to Commissariat a l'Energie Atomique. Process and apparatus for analysis of neutron activation of an element in liquid samples. 3,479,508, Cl. 250-083.
- Combs, Herbert M. Submersible sea train. 3,478,711, Cl. 114-016.
- Commercial Solvents Corporation: *See*—
  - Wyler, Joseph A., 3,479,236.
- Commissariat a l'Energie Atomique:*See*—
  - Comar, Dominique, and Le Poec, Claude, 3,479,508.
  - Prost, Gerard, and Sole, Jean, 3,479,569.
  - Vieira, David Da Costa, 3,478,586.
  - Yerouchalmi, David, 3,479,538.
- Compagnie de Construction Mecanique Procedes Sulzer: *See*—
  - Roth, Etienne, and Lefrancois, Bernard, 3,479,140.
- Compagnie Francaise Thomson-Houston: *See*—
  - Carton, Jean, 3,478,810.
- Compagnie Generale d'Electricite:*See*—
  - Foucry, Jean, 3,479,228.
- Compass Container Company, Inc.: *See*—
  - Turpen, Russell L., 3,478,919.
- Comstock, Alfred E. Egg carton and tray dispensing machine. 3,478,924, Cl. 221-213.

- Condon, Stanley: *See—*
  - Zuercher, John, and Condon, Stanley 3,479,029.
- Conklin, Harold A., Jr., to Baldwin, D. H., Company. Hitch pin for stringed instruments. 3,478,635, Cl. 084-197.
- Conlon, Thomas E.: *See—*
  - Cunha, Joseph J., and Conlon, Thomas E. 3,479,055.
- Conner, David C., to Rathcon, Inc. Magnetically actuated toy device. 3,478,466, Cl. 046-236.
- Consolidation Coal Company: *See—*
  - Laufer, Robert J., 3,479,407.
- Constable, Eric Frederick, to Cheney, C. W., & Son Limited. Luggage locks. 3,478,547, Cl. 070-071.
- Conti, Francesco: *See—*
  - Pregaglia, Gianfranco, Gregorio, Guglielmo, and Conti, Francesco 3,479,412.
- Continental Can Company, Inc.: *See—*
  - Bartels, Herbert D., 3,478,921.
  - Boldstein, Irving S., 3,479,211.
  - Bozek, John S., 3,478,563.
  - Ruckberg, Herbert S., 3,478,387.
- Contra Costa County Water District: *See—*
  - Harris, William Leslie, 3,478,880.
- Controls Company of America: *See—*
  - Matthies, Alan A., 3,478,534.
- Conversion Chemical Corporation: *See—*
  - Bellinger, Kenneth P., and Verzier, Le Verne, 3,479,293.
- Cook, Alfred W., to S-F-D Laboratories, Inc. Reverse magnetron having an output circuit employing mode absorbers in the internal cavity. 3,479,556, Cl. 315-039.51
- Cook, Charles F.: *See—*
  - Bost, Howard W., and Cook, Charles F. 3,479,398.
- Cook, Edmond A. Depth gauge for measuring the thickness of animal tissues. 3,478,435, Cl. 033-169.
- Cook, Newell C., to General Electric Company. Process for zirconiding and hafniding base metal compositions. 3,479,158, Cl. 029-194.
- Cook, Newell C., to General Electric Company. Process for titaniding base metals. 3,479,159, Cl. 029-194.
- Cooke, Albert Edward, to Newmark Instruments Limited. Yarn supplying means for knitting machines. 3,478,945, Cl. 226-109.
- Cooke, Reginald Benjamin William, to International Standard Electric Corporation. Method of making an electrical assembly. 3,478,425, Cl. 029-624.
- Cooksey, William Harold, to Lucas, Joseph,(Industries) Limited. Ignition distributors utilizing a spring clip means. 3,479,472, Cl. 200-019.
- Cooley, William C., to Exotech Incorporated. Hypervelocity jet producing system employing an impact cumulation process. 3,478,966, Cl. 239-302.
- Cootey, Thomas A., and Fischer, Larry M., to Friedrich Refrigerators, Incorporated. Electronic head pressure control for condensing units. 3,478,532, Cl. 062-184.
- Corcoran, John M.: *See—*
  - Brahm, Charles B., Corcoran, John M., Glista, Edward M., and Van Olinda, David L. 3,478,512.
- Corley-Miller, Inc.: *See—*
  - Treiber, Fritz F., 3,478,486.
- Cornelius Company, The: *See—*
  - Cornelius, Richard T., 3,478,929.
- Cornelius, Richard T., to Cornelius Company, The. Means for decarbonating and dispensing a beverage. 3,478,929, Cl. 222-129.1
- Cornell-Dubilier Electric Corporation: *See—*
  - Underwood, George C., 3,479,627.
- Costanza, John R.: *See—*
  - Belohlav, Leo R., and Costanza, John R. 3,479,321.
- Cothran, Wade R., to Susquehanna Corporation, The. Inclinometer. 3,478,437, Cl. 033-206.
- Couleur, John F.: *See—*
  - Cohen, Robert, Couleur, John F., and Ruth, Richard L. 3,479,647.
  - Bahrs, David L., and Couleur, John F. 3,479,649.
- Counts, William E., and Bruhl, Donald A., Jr., to Beckman Instruments, Inc. Cermet resistance element. 3,479,216, Cl. 117-227.
- Coupette, Werner, to Standard-Messo Duisburg Gesellschaft fur Chemie- Technik mbH & Co. Apparatus for vacuum treating liquid steel according to the circulation method. 3,479,022, Cl. 266-034.
- Coursault, Roger, to Regie Nationale des Usines Renault. Devices for converting a passenger automobile into a utility vehicle. 3,479,079, Cl. 296-026.
- Courter, Jack P., to Boeing Company, The. Cargo loading mechanism. 3,478,904, Cl. 214-075.
- Covey, Ivan. Portable cooking and heating device. 3,478,734, Cl. 126-044.
- Cox, James V.: *See—*
  - Altman, Max S., and Cox, James V. 3,478,738.
- Cox, Paul A.: *See—*
  - Kolin, Alexander, and Cox, Paul A. 3,479,277.
- Coyne, Francis P.: *See—*
  - Hughes, Robert W., and Coyne, Francis P. 3,478,832.
- Cragoe, Edward J., Jr., to Merck & Co., Inc.Preparation of [(2-methylenealkanoyl) phenoxy]alkanoic acids. 3,479,402, Cl. 260-520.
- Craig, Jimmie M., to United States of America, Navy. Very low descent rate, high intensity, illuminating flare. 3,478,687, Cl. 102-035.
- Crane Co.: *See—*
  - Morando, Jorge A., 3,478,694.
- Crenne, Noel: *See—*
  - Brunie, Jean Claude, and Crenne, Noel 3,479,394.
- Crisafulli, Angelo J., and Skinner, Warren. Movable surface game. 3,479,033, Cl. 273-113.
- Crosslen, Louis John, to Mayer, Frank, & Associates, Inc. Theftproof merchandise display. 3,478,893, Cl. 211-165.
- Crosthwait, David N., Jr., to Dunham-Bush, Inc. Tool for adjusting valves. 3,478,625, Cl. 081-003.
- Cruse, Oliver B., to Wagner Electric Corporation. Control valve. 3,479,096, Cl. 303-054.
- Cryder, John R., and Kroth, Neil W., to Caterpillar Tractor Company. Relief valve for hydraulic circuits. 3,478,646, Cl. 091-411.
- Cryodry Corporation: *See—*
  - Jeppson, Morris R., 3,478,900.
- Cseri, Zoltan. Coupling device. 3,478,895, Cl. 213-015.
- CSF-Compagnie Generale de Telegraphie Sans Fil: *See—*
  - Baumberger, Clement F., and Micheron, Francois, 3,479,510.
- Cucchiara, Philip M. Harpsichord with vertical engagement action for jacks. 3,478,630, Cl. 084-258.
- Cudd, Wilson E.: *See—*
  - Osborn, Carroll H., and Cudd, Wilson E. 3,478,770.
- Cunha, Joseph J., and Conlon, Thomas E., to Cunha Products Incorporated. Load distributing assembly for wheel supported vehicles. 3,479,055, Cl. 280-407.
- Cunha Products Incorporated: *See—*
  - Cunha, Joseph J., and Conlon, Thomas E., 3,479,055.
- Cunningham, Ernest R. Earth moving apparatus with vibrating cutting edge. 3,478,450, Cl. 037-141.
- Cunningham, Patrick J., to Bell & Howell Company, mesne. Motion picture projector with viscous switch for controlling projection lamp. 3,479,113, Cl. 352-167.
- Cupler, John A., II. Apparatus for conducting machining operations. 3,478,419, Cl. 029-568.
- Curtiss, Alan Clarkson, and Hood, Roger Williams, to Hersey-Sparling Meter Company. Clapper valve with changing bias. 3,478,778, Cl. 137-527.4
- Cutters Machine Company, Inc.: *See—*
  - Martin, Thomas W., Sr., Rogers, Asa Scobey, Jr., and Ashton, Shirley B., 3,479,023.
- Daeuble, Manfred, Dieck, Klaus, Heinrich, Hans, and Witsch, Guenter, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Dyeing and printing synthetic polyamide fibres. 3,478,376, Cl. 008-055.
- Dahl, Frank L. Positionally adjustable trouble lamp means. 3,479,499, Cl. 240-010.6
- Dahlquist, Robert L., to Case, J. I., Company. Crop separator. 3,478,750, Cl. 130-026.
- Daimler-Benz Aktiengesellschaft: *See—*
  - Andres, Rudolf, 3,478,470.
  - Barenyi, Bela, 3,479,054.
  - Daur, Hans-Karl, 3,478,539.
  - Dinger, Hans, and Deutschmann, Herbert, 3,478,542.
- Dal Mon Research Co.: *See—*
  - D'Alelio, Gaetano F., 3,479,235.
- D'Alba, Anthony R., to Trico Products Corporation. Fluid system. 3,478,648, Cl. 091-411.
- D'Alelio, Gaetano F., to Dal Mon Research Co. Beryllium-containing polymeric propellant compositions. 3,479,235, Cl. 149-019.
- D'Amato, Anthony S.:*See—*
  - Gattenby, Miles N., Jr., and D'Amato, Anthony S. 3,479,308.
- Damiano, Henry, and Rainone, Louis C., to Bell Telephone Laboratories, Incorporated. Communication system with control signal delay means. 3,479,466, Cl. 179-018.
- Dane, Paul E., to Hobart Brothers Company. Method of making welding electrode. 3,478,552, Cl. 072-042.
- Danfoss A/S: *See—*
  - Ohrberg, Carl V., 3,478,887.
- Daniels, David A., to Grace, W. R., & Co. Process for preparing N-methylglycinonitrile. 3,479,388, Cl. 260-465.5
- Daniels, David A., Harper, James L., and Steadman, Thomas R., to Grace, W. R., & Co. Process for preparing N-methylglycinonitrile. 3,479,387, Cl. 260-465.5
- Darnall, Millard K.: *See—*
  - Anderson, Norman L., Darnall, Millard K., Morgan, William C., Peterson, Laurel L., and Stedman, Robert N. 3,478,902.
- Dart Industries Inc.: *See—*
  - Lieberman, George, Palmer, Milton, and Prussin, Samuel B., 3,479,427.
- Darula, Andrew J., to Astrup Company, The. Awning head rod molding. 3,478,806, Cl. 160-045.
- Data Products Corporation: *See—*
  - Stuart-Williams, Raymond, and Chur, Sung Pal, 3,479,664.
- Daur, Hans-Karl, to Daimler-Benz Aktiengesellschaft. Joint coupling. 3,478,539, Cl. 064-013.
- David, Charles W., and Munson, Eugene A., to Disc Pack Corporation, mesne. Apparatus for and method of cleaning memory discs. 3,479,222, Cl. 134-033.
- Davidow, Martin A., and Klee, Maurice, to Case, J. I., Company. Grain separating mechanism for threshing machines. 3,478,749, Cl. 130-026.
- Davies, Ben, and Carini, George F., to Dresser Industries, Inc. Chemically bonded magnesite brick. 3,479,194, Cl. 106-058.
- Davies, George W. Washing and sterilizing device. 3,478,758, Cl. 134-085.

- Davis, Frank L. Cargo tiedown net combination of web adjusters, end connectors and reeving hardware. 3,478,394, Cl. 024-075.
- Davis, George D.: *See—*
  - Church, Thomas A., and Davis, George D. 3,478,812.
- Davis, Ronald N., to Columbia Broadcasting System, Inc. Apparatus for duplicating reelable film. 3,479,120, Cl. 355-085.
- Davy and United Engineering Company Limited: *See—*
  - Samuel, Herbert John, 3,478,561.
- Davy and United Instruments Limited: *See—*
  - Alsop, Charles Francis, 3,478,551.
- Dayco Corporation: *See—*
  - Beindorf, Lucian J., 3,478,609.
  - Osborn, Carroll H., and Cudd, Wilson E., 3,478,770.
  - Waugh, Dale L., Brooks, Alden W., Jensen, Howard J., and Richmond, Kenneth D., 3,478,613.
- Daystar Corporation: *See—*
  - Eckardt, Fred H., 3,478,843.
- Dayton, Gertrude E., and Dayton, Wayne B. Inflatable garment form. 3,478,941, Cl. 223-067.
- Dayton, Wayne B.: *See—*
  - Dayton, Gertrude E., and Dayton, Wayne B. 3,478,941.
- Deary, Reynaldo M. Air pollution filter apparatus. 3,478,495, Cl. 055-227.
- Dechantsreiter, Max J., to Harnischfeger Corporation. Overhead, rigid mast crane for pouring crucibles. 3,478,907, Cl. 214-313.
- Deere & Company: *See—*
  - Hansen, Harold Valentine, Youngberg, Charles Harold, and Ford, Perry, Jr., 3,478,828.
- Deering Milliken Research Corporation: *See—*
  - Whitworth, James W., and Schroder, William J., 3,478,401.
- deGraaf, Paul A., to Parker-Hannifin Corporation. Fueling nozzle structure. 3,479,005, Cl. 251-149.9
- De Hate, Paul F. Sand bath bathtub. 3,478,745, Cl. 128-369.
- De Laval Turbine Inc.: *See—*
  - McLean, John O., 3,478,873.
  - McLean, John O., and Schneider, John R., 3,478,874.
- Delbouille, Andre, and Toussaint, Henri, to Solvay & Cie. Process and catalysts for polymerization and copolymerization of olefins and the resultant polymers and copolymers. 3,479,326, Cl. 260-080.78
- Deluca, Frank P., Jr., to Amsalco, Inc. Acoustic filtration apparatus. 3,478,883, Cl. 210-108.
- Demsey, John N., and Heffran, Vernon C., to Aluminum Company of America. Coated sheet metal and method of forming the same. 3,478,554, Cl. 072-046.
- Denault, Albert P., Gruber, Lawrence H., and Morton, Kenneth O., to Cluett, Peabody, & Co., Inc. Apparatus for folding and pressing garment parts. 3,478,939, Cl. 223-038.
- Denss, Rolf: *See—*
  - Meisels, Alex, Denss, Rolf, and Ryf, Hugo 3,479,361.
  - Meisels, Alex, Denss, Rolf, and Ryf, Hugo 3,479,363.
- De Pietro, Anthony J. Hinge joint for dental articulator. 3,478,431, Cl. 032-032.
- De Smedt, Felix Frederik, to Gevaert-Agfa N.V. Process for making isotropic polymeric film. 3,479,426, Cl. 264-289.
- Detro, Richard Gray, to General Electric Company. Lead connection means for voltage tunable magnetrons. 3,479,442, Cl. 174-050.58
- Detroit Edison Company, The: *See—*
  - Mashikian, Matthew S., Kelley, James K., and McMurray, William C., 3,479,443.
- Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See—*
  - Hahn, Fritz, and Ney, Peter, 3,479,127.
- Deutschmann, Herbert: *See—*
  - Dinger, Hans, and Deutschmann, Herbert 3,478,542.
- De Vaul, Wayne E. Loran receiving system. 3,479,628, Cl. 325-473.
- DeVault, Albert N., to Phillips Petroleum Company. Solvent dewaxing with hydrogenated polymeric dewaxing aids. 3,479,278, Cl. 208-033.
- de Visser, Jacob, and Modderman, Pieter, to Organon Inc. Novel 19-nor-testosterone esters. 3,479,375, Cl. 260-397.4
- Diamond, Albert: *See—*
  - Silverman, Alvin J., and Diamond, Albert 3,479,626.
- Diamond International Corporation: *See—*
  - Peppler, William S., Bliss, George N., and Planck, Norman A., Jr., 3,478,703.
- Diamond Laboratories, Inc.: *See—*
  - Welter, Clarence J., 3,479,430.
- Dias, Fleming, to Zenith Radio Corporation. Wave signal receiver. 3,479,463, Cl. 179-015.
- Dichter, Jakob. Apparatus for the automatic production of glass bottles. 3,479,174, Cl. 065-323.
- Dieck, Klaus: *See—*
  - Daeuble, Manfred, Dieck, Klaus, Heinrich, Hans, and Witsch, Guenter 3,478,376.
- Diehl: *See—*
  - Bausch, Gunther, 3,479,564.
- Diener & Roth: *See—*
  - Armbruster, Fritz, and Rudolph, Martin, 3,479,421.
- Dieterich, Dieter, and Bayer, Otto, to Farbenfabriken Bayer Aktiengesellschaft. Polyurethane plastics. 3,479,310, Cl. 260-029.2
- Dilger, Lawrence, and Ashford, Ernest Stanley, to Veeder Industries Inc. Fuel dispensing apparatus control system. 3,478,854, Cl. 194-003.
- Dinger, Hans, and Deutschmann, Herbert, to Daimler-Benz Aktiengesellschaft. Injection moment adjustable connection for injection pumps of internal combustion engines. 3,478,542, Cl. 064-024.
- Disc Pack Corporation: *See—*
  - David, Charles W., and Munson, Eugene A., 3,479,222.
- Dissing, Erik, and Lyden, Anders Gustaf, to Aktiebolaget Atomenergi. Current meter employing a logarithmic amplifier having compensation for two components of temperature induced error. 3,479,593, Cl. 324-123.
- Doebel, Karl J., and Francis, John E., to Geigy Chemical Corporation. 1,2,8,9-Tetraazaphenalenes. 3,479,355, Cl. 260-250.
- Dohmeier, Hans O. Anchor or roof bolts and the like. 3,478,641, Cl. 085-079.
- Dohr, Albert D.: *See—*
  - Woelfer, Charles G., and Dohr, Albert D. 3,478,784.
- Doi, Kazuyuki: *See—*
  - Yanabu, Osamu, Hada, Takashi, and Doi, Kazuyuki 3,479,162.
- Doig, George, and Mc Geachy, Donald E., to Numatics, Incorporated. Directional mounting plate for air line filter. 3,478,497, Cl. 055-411.
- Doig, Stuart H. Means for forming and applying ribbon bows. 3,479,243, Cl. 161-009.
- Dorand, Pierre Rene Leon Bernard, to Giravions Dorand. Jet flaps. 3,478,987, Cl. 244-042.
- Dorfler, Gerhard, to Gebr. Bohler & Co. Aktiengesellschaft. Apparatus for a linear analyis of surfaces of a structurally heterogeneous substance comprising phases giving different responses to the incidence. 3,479,506, Cl. 250-049.5
- Dorman, Hugh H.: *See—*
  - Avis, John M., and Dorman, Hugh H. 3,478,910.
- Dornbush, Ross J., to Mead Corporation, The. Dispensing container. 3,478,948, Cl. 229-017.
- Dorr-Oliver Incorporated: *See—*
  - Jackson, Clifford E., 3,478,885.
- Doty, John T. Automatic latch and locking tongs. 3,479,078, Cl. 294-104.
- Dow Chemical Company, The: *See—*
  - Lefevre, Lloyd Edward, and Breidt, Peter, Jr., 3,479,425.
  - Safranski, John C., Jr., 3,479,306.
- Dower, Ethell J., to Warren Automatic Tool Company. Closure member and apparatus for controlling fluid flow through a conduit. 3,479,001, Cl. 251-004.
- Downing, Robert D.: *See—*
  - Boring, Kenneth L., and Downing, Robert D. 3,479,483.
- Downing, Wilbur H. Connector unit. 3,479,071, Cl. 287-020.94
- Doyle, Robert Refford Sant. Thermally insulated piping system. 3,478,783, Cl. 138-103.
- Dresser Industries, Inc.: *See—*
  - Buell, Robert O., 3,479,007.
  - Davies, Ben, and Carini, George F., 3,479,194.
  - Kunderman, Fred K., 3,478,955.
- Drexler, Karl F., to General Electric Company. Compound excitation system. 3,479,543, Cl. 310-162.
- Drouillard, William, to Emerson Electric Co. Strand chuck. 3,478,396, Cl. 024-126.
- Dubble, Roger D., and Orton, Erby, to Anchor Hocking Corporation. Method and means for surface coating glassware. 3,479,208, Cl. 117-094.
- Duddy, James J. Mechanics electric lamp assembly. 3,479,500, Cl. 240-052.
- Duddy, Joseph C., Arms, John T., and Kelley, John J., to ESB Incorporated, mesne. Alkaline cell with barrier-type organic polysulfide resin separator. 3,479,223, Cl. 136-006.
- Duecy, George P. Axle load distributing and balancing device. 3,479,049, Cl. 280-081.
- Dukek, William G., and Wakeford, Brian R., to Esso Research and Engineering Company. Device for measuring the effect of surface active materials on emulsified water retention by jet fuels. 3,478,578, Cl. 073-061.1
- Duncan, Lloyd P., to Zero Manufacturing Company. Self-cleaning valve for vacuum milking system. 3,479,008, Cl. 251-297.
- Dunham-Bush, Inc.: *See—*
  - Crosthwait, David N., Jr., 3,478,625.
- Dunlop Company Limited, The: *See—*
  - Moore, Edwin Barclay, 3,479,441.
  - Seip, Hermann, 3,478,848.
- Du Pont de Nemours, E. I., and Company: *See—*
  - Chambers, Vaughan Crandall, Jr., 3,479,185.
  - Clarke, Ray Allen, and Griffin, Dale Miller, Jr., 3,479,192.
  - Gorman, John Joseph, 3,479,311.
  - Gorrafa, Adly Abdel-Moniem, 3,478,392.
  - Holmquist, Howard Emil, 3,479,304.
  - Masino, John Albert, Sturdevant, Eugene J., and Williams, Stanley Victor, 3,479,520.
- Durkopp Aktiengesellschaft: *See—*
  - Biermann, Kurt, 3,478,708.
- Dybal, Daniel: *See—*
  - Budzynski, Kazimierz, Juszczyk, Leopold, Bonenberg, Zdzislaw, Dybal, Daniel, and Zakrawacz, Stanislaw 3,479,019.
- Dybvig, H. Talman: *See—*
  - Janning, John L., 3,479,561.
- Dybvig, Roger S.: *See—*
  - Janning, John L., 3,479,561.
- Dykeman, Edgar G. M., to FMC Corporation. Pallet stacking apparatus. 3,478,897, Cl. 214-006.

- Dzung, Lang Shuen: *See—*
    - Jenny, Ernst, and Dzung, Lang Shuen 3,479,537.
- Eardley, Stephen, Gregory, Gordon Ian, Lazenby, John Kevin, and Long, Alan Gibson, to Glaxo Laboratories Limited. Process for the manufacture of derivatives of cephalosporin C. 3,479,350, Cl. 260-243.
- Eastman Kodak Company: *See—*
    - Hargis, Charles W., and Young, Howard S., 3,479,374.
    - Snavely, Benjamin B., 3,479,515.
- Eckardt, Fred H., to Daystar Corporation. Mist type coolant spray unit. 3,478,843, Cl. 184-006.
- Eckered, Thomas Harald, Sviden, Ove, and Ljungstrom, Olle, to Saab Aktiebolag. Cushion vehicle having inflatable skirt. 3,478,836, Cl. 180-128.
- Edgington, Howard C.: *See—*
    - Liebel, Bruce W., Edgington, Howard C., and Meredith, Philip J. 3,479,585.
- Edler, Karl Heinz, to Ipsen Industries International Gesellschaft mit beschrankter Haftung. Method of and arrangement for controlling a gas-air mixture. 3,479,164, Cl. 048-190.
- Edoco Technical Products, Inc.: *See—*
    - Rasmussen, Donald W., 3,478,655.
- Eggstein, Giorgio, to Ernst Heinkel Aktiengesellschaft. Multiple power booster arrangement. 3,478,519, Cl. 060-054.6
- Ehrlich, Melvin P., to NRA, Inc. Method and means for storing and releasing energy by stimulated emission of electromagnetic radiation. 3,479,608, Cl. 330-004.
- Ehrman, Ernest W. Shell or umbrella structures. 3,478,759, Cl. 135-020.
- Eisenhauer, Roy J., and Evans, Phillip W., to Monsanto Company. Production of olefinic nitriles by catalytic dehydration of monohydroxlated paraffinic nitriles and subsequent flash distillation. 3,479,389, Cl. 260-465.9
- Eisenwerk Rothe Erde G.m.b.H.: *See—*
    - Schmude, Wolfgang, and Pohler, Heinz, 3,478,402.
- Eisner, Ira Leonard. Radial phonograph pickup arm and turntable combination using air bearings. 3,479,038, Cl. 274-023.
- Ek, Birger Henrik, and Stenudd, Even Gunnar Walter, to Facit AB. Hole punching devices for recording media. 3,478,629, Cl. 083-169.
- Elders, Gerald W. Roof bolt connection. 3,478,640, Cl. 085-064.
- Electro Optics Associates: *See—*
    - Met, Viktor, 3,478,608.
- Elevitch, Franklin R. Thin film apparatus for electrophoresis chemical and biochemical analyses and the like. 3,479,265, Cl. 204-180.
- Elliot Laboratories Inc.: *See—*
    - Ericson, Richard E., 3,478,743.
- Elmendorf, Armin. Method of filling open defects in veneer. 3,478,791, Cl. 144-310.
- Elmendorf, Armin. Orienting wood strands. 3,478,861, Cl. 198-033.
- Emerson Electric Co.: *See—*
    - Drouillard, William, 3,478,396.
- Emhart Corporation: *See—*
    - Lattke, Horst G., 3,478,491.
- Engel, Thomas Paul, to Phillips Petroleum Company. Producing a hollow molding by folding and sealing a thermoplastic sheet. 3,479,424, Cl. 264-151.
- Engelhard, Otto, to Indian Head Inc. Warp knit fabric. 3,478,545, Cl. 066-195.
- English, Alfred C., to Boss Manufacturing Company. Glove display device. 3,478,942, Cl. 223-085.
- Ennis, Brian Colwell: *See—*
    - Samuel, Eva Lea, and Ennis, Brian Colwell 3,479,368.
- Ensley, Earl Edward. Back washing apparatus. 3,478,369, Cl. 004-158.
- Enthone Incorporated: *See—*
    - Nambride., Raymond F., 3,479,259.
- Eppendahl, Pierre Charles, and Maurin, Pierre, to Thermiguides S.A. Thread tensioning apparatus. 3,478,983, Cl. 242-154.
- Ericson, Richard E., to Elliot Laboratories Inc. Closed urinary drainage system. 3,478,743, Cl. 128-275.
- Ernst Heinkel Aktiengesellschaft: *See—*
    - Eggstein, Giorgio, 3,478,519.
- Erwin, Kenneth L., and Lodwick, Ross W., to American Welding and Manufacturing Company, The. Flash welder. 3,479,480, Cl. 219-097.
- Erwin, Kenneth L., and Lodwick, Ross W., to American Welding & Manufacturing Company, The. Flash welder. 3,479,482, Cl. 219-100.
- ESB Incorporated: *See—*
    - Duddy, Joseph C., Arms, John T., and Kelley, John J., 3,479,223.
- Escher, Hans. Gas extraction system for open top shaft furnaces. 3,479,021, Cl. 266-031.
- Eshenauer, Earl Wilbert, J., to AMP Incorporated. Binary bit counter. 3,479,653, Cl. 340-174.
- Esso Research and Engineering Company: *See—*
    - Broussard, Leo, 3,479,232.
    - Dukek, William G., and Wakeford, Brian R., 3,478,578.
    - Hochman, Jack M., and Loboda, Wesley J., 3,479,146.
    - King, William H., Jr., 3,478,573.
    - Lyon, Richard K., 3,479,165.
    - Vogelfanger, Elliot A., and Wallace, Thomas J., 3,479,163.
- Estabrooks, David A., to Western Electric Company. Method of and apparatus for coating articles. 3,479,200, Cl. 117-021.
- Estes, Cyrus L. Door moving mechanism. 3,478,469, Cl. 049-199.
- Ethyl Corporation: *See—*
    - Brendel, Gottfried J., 3,479,382.
- European Atomic Energy Community (Euratom): *See—*
    - Perona, Giovanni, and Volta, Giuseppe, 3,478,412.
    - Stanchi, Luciano A., 3,479,526.
- Eutectic Welding Alloys Corporation: *See—*
    - Joseph, A David, 3,479,231.
- Evans, Dain Stedman. Oxidation resistant tungsten and molybdenum alloy bodies. 3,479,161, Cl. 029-195.
- Evans, Edgar J., to United States of America, Army. Electronic solid-state accelerometer. 3,478,604, Cl. 073-517.
- Evans, Phillip W.: *See—*
    - Eisenhauer, Roy J., and Evans, Phillip W. 3,479,389.
- Exotech Incorporated: *See—*
    - Cooley, William C., 3,478,966.
- F. Oberdorfer K.G.: *See—*
    - Schiel, Christian, and Bischoff, Gunther, 3,478,991.
- Fachini, Robert M.: *See—*
    - Graham, Robert L., Fachini, Robert M., and Kenna, Fenton L., Jr. 3,478,898.
- Facit AB: *See—*
    - Ek, Birger Henrik, and Stenudd, Even Gunnar Walter, 3,478,629.
- Fairchild Camera and Instrument Corporation: *See—*
    - Hancock, John R., and Sigler, Harold, 3,479,452.
- Fairchild Hiller Corporation: *See—*
    - Berg, Robert E., 3,478,686.
- Fairfield, Louis R., Jr.: *See—*
    - Mc Lauchlan, Thomas A., and Fairfield, Louis R., Jr. 3,479,097.
- Falcone, Anthony, Jr.: *See—*
    - Falcone, Joseph R., and Falcone, Anthony, Jr. 3,478,722.
- Falcone, Joseph R., and Falcone, Anthony, Jr. Purple martin bird house. 3,478,722, Cl. 119-023.
- Faninger, Bruno. Variable stroke mechanism. 3,478,543, Cl. 066-086.
- Fansteel Metallurgical Corporation: *See—*
    - Lambert, John B., and Marsh, Harold G., 3,479,180.
- Farbenfabriken Bayer Aktiengesellschaft: *See—*
    - Blomeyer, Friedrich, and Oertel, Gunter, 3,479,325.
    - Dieterich, Dieter, and Bayer, Otto, 3,479,310.
    - Kramer, Bernhard, and Weber, Paul, 3,479,126.
- Faris, Sam R.: *See—*
    - Blatz, Paul E., and Faris, Sam R. 3,479,390.
- Farmery, Horstine, to Horstine Farmery Limited. Applicator for granular insecticides, fertilizers and seeds. 3,478,936, Cl. 222-340.
- Farrand Optical Co., Inc.: *See—*
    - Tronnier, Albrecht W., Jeremias, Helmuth M., and Gottesman, Arthur H., 3,479,117.
- Farrell, Robert P., Jr., to General Electric Company. Wastewater sampling apparatus. 3,478,596, Cl. 073-421.
- Farren, Paul L. Reel storage device. 3,479,105, Cl. 312-261.
- Farrington Business Machines Corporation: *See—*
    - Hu, Yow-Jiun, and Buc, George L., 3,478,658.
- Federal Cartridge Corporation: *See—*
    - Merritt, Edward E., Titterud, Curtiss W., Peterson, Stanley E., and Bulow, Arthur J., 3,478,390.
- Federal Pacific Electric Company: *See—*
    - Roy, Wayne C., 3,479,563.
- Fenstermaker, Lloyd H., and Yu, Quin Shen, to United States Steel Corporation. Apparatus for manipulating disc-like members. 3,478,407, Cl. 029-240.
- Fenyes, Joseph G. E.: *See—*
    - Kohn, Gustave K., and Fenyes, Joseph G. E. 3,479,413.
- Ferdinand Lentjes Damplekessel-und Maschinenbau: *See—*
    - Munster, Josef, Wellensiek, Gerd, and Linke, Gunter, 3,478,725.
- Ferguson, Ellis H., to Wyman-Gordon Company. Knockout for forge machine. 3,478,566, Cl. 072-427.
- Ferington, Thomas E., to Grace, W. R., & Co. Adhesive additives for curable liquid resins. 3,479,317, Cl. 260-037.
- Ferrara, Peter J., to Keep Chemical Company. Acid-modified starches and flours and method of making the same. 3,479,220, Cl. 127-038.
- Ferri, Giampiero. Toy gun having a cylindrical magazine for accomodating a strip of cup-like caps. 3,478,458, Cl. 042-057.
- Fessler, Julius H., of 1/2 to Krueger, Albert P. Filter apparatus. 3,478,889, Cl. 210-406.
- Fichtner, Friedrich: *See—*
    - Gerber, Jurgen, and Fichtner, Friedrich 3,478,647.
- Fieni, Walter, to Societe Anonyme Francaise du Ferodo. Finned heat exchanger. 3,478,821, Cl. 165-182.
- Finck, Frederick P., Jr., to Ruleta Company, Inc., The. Draw key for unlocking fasteners having solid or hollow control plungers. 3,478,548, Cl. 070-397.
- Firestone Tire & Rubber Company, The: *See—*
    - Hergenrother, William L., 3,479,319.
- Firma Hiithenwerk Oberhausen AG: *See—*
    - Becker, Gerhard, 3,479,229.
- Fischbein, Harold: *See—*
    - Fischbein, Irving George, and Fischbein, Harold 3,478,709.
- Fischbein, Irving George, and Fischbein, Harold. Sewing machine. 3,478,709, Cl. 112-256.
- Fischer, Franz: *See—*
    - Allison, Robert Corwin, Fischer, Franz, and Hausermann, Heinrich 3,479,349.
- Fischer, James L., and Strommen, Lawrence A., to Bell Telephone Laboratories, Incorporated. Telephone repertory dialer. 3,479,469, Cl. 179-090.
- Fischer, Larry M.: *See—*
    - Cootey, Thomas A., and Fischer, Larry M. 3,478,532.

- Fischer & Porter Co.: *See—*
    - Levesque, Peter, and Haeflein, William K., 3,478,830.
- Fisher, Alan Robert. Curved finger boards for stringed musical instruments. 3,478,631, Cl. 084-293.
- Fisher, Reed E., to Bell Telephone Laboratories, Incorporated. High speed sample and hold circuit. 3,479,528, Cl. 307-231.
- Fisher, Robert, to Chesebrough-Pond's Inc. Dispenser for cotton swabs. 3,478,923, Cl. 221-070.
- Flex-Float Engineering Company: *See—*
    - Raver, Clarence Leo, 3,479,063.
- Flora, Laurence H., to Tinnerman Products, Inc. Fasteners. 3,478,395, Cl. 024-073.
- Floyd, James C., and Shell, Francis J., to Phillips Petroleum Company. Drilling fluids and additives therefor. 3,479,287, Cl. 252-008.5
- FMC Corporation: *See—*
    - Bacon, Roger J., 3,478,448.
    - Bahlke, Allan R., and Bloomquist, George W., 3,479,065.
    - Boissevain, Mathew G., 3,479,280.
    - Carter, Mary E., and Price, John A., 3,479,324.
    - Dykeman, Edgar G. M., 3,478,897.
    - Merigold, Charles Reynolds, and Bauer, William Charles, 3,478,597.
    - Roscoe, Howard E., and Nelson, Edgar L., 3,478,974.
    - Suman, Robert W., Stoddart, William D., and Swartz, Horace M., 3,478,699.
- Fodor, Lawrence M.: *See—*
    - Kahle, Gerald R., and Fodor, Lawrence M. 3,479,330.
- Foell, Theodore J.: *See—*
    - Rees, Richard W., Foell, Theodore J., and Smith, Herchel 3,479,340.
- Fogarty, Charles P. Space delivery system. 3,478,986, Cl. 244-001.
- Ford, John C. Tortilla oven. 3,478,704, Cl. 107-055.
- Ford, Perry, Jr.: *See—*
    - Hansen, Harold Valentine, Youngberg, Charles Harold, and Ford, Perry, Jr. 3,478,828.
- Forest, Robert: *See—*
    - Venne, Claude, Forest, Robert, and Perreault, Serge 3,478,611.
- Forrer, Homer W., and Chapman, James R., to Mead Corporation, The. Reclosable carton. 3,478,953, Cl. 229-051.
- Forsyth, John P.: *See—*
    - Forsyth, Robert W., and Forsyth, John P. 3,478,643.
- Forsyth, Robert W., and Forsyth, John P. Ballistic shielding apparatus. 3,478,643, Cl. 089-036.
- Foster, Caxton C. Parallel input mechanism for memory unit. 3,479,652, Cl. 340-173.
- Foster, Christopher J. Ship launching apparatus and method. 3,478,526, Cl. 061-067.
- Fouche, Jean Clement Louis, to Rhone-Poulec S.A.5H-Dibenzo [a,d]-cycloheptatriene 10 or 11-(1,2,3, 6-tetrahydro-4-pyridyl) and derivatives thereof. 3,479,356, Cl. 260-253.
- Fouery, Jean, to Compagnie Generale d'Electricite. Process for the preparation of electrode material from nickel salt and boron containing compound. 3,479,228, Cl. 136-120.
- Fox, Anthony R., to Sports-Jet Industries, Inc., mesne. Inboard jet propulsion unit. 3,478,712, Cl. 115-012.
- Fox, James H., to Whal Clipper Corporation. Motor and longitudinally split housing structure for hair clipper. 3,479,540, Cl. 310-050.
- Fox, Zola, to Thiokol Chemical Corporation. Fluid control device. 3,478,761, Cl. 137-068.
- Foxboro Company, The: *See—*
    - Kister, Dale F., 3,478,767.
- France, Bernard H., to Radiation Incorporated. System for gating differential or single-ended signals. 3,479,530, Cl. 307-254.
- Francis, John E.: *See—*
    - Doebel, Karl J., and Francis, John E. 3,479,355.
- Franklin Mint, Inc., The: *See—*
    - Segel, Joseph M., 3,478,870.
- Franzen, Gustav: *See—*
    - Nimtz, Klaus, and Franzen, Gustav 3,478,504.
- Frederick, Purdue, Company, The: *See—*
    - Sasmor, Ernest J., 3,479,432.
- Free, David: *See—*
    - Smith, William C., and Free, David 3,478,707.
- Freer, Walter, to General Instrument Corporation. Multi-compartment tuner construction facilitating electromagnetic high-frequency coupling and minimizing electrostatic low-frequency coupling. 3,479,622, Cl. 334-085.
- Freiberg, Ashley H.: *See—*
    - Szabo, Karoly, and Freiberg, Ashley H. 3,479,437.
- Fremont, Robert S., to McGraw-Edison Company, mesne. Signs. 3,478,455, Cl. 040-132.
- Frey, Hubertus G., to General Time Corporation. Pull-out timepiece casing. 3,478,507, Cl. 058-053.
- Friedell, Morley V., to Martin-Marietta Corporation. Pressure relief valve. 3,478,775, Cl. 137-489.5
- Friedlander, Herbert N., and Menikheim, Virginia C., to Monsanto Company. Novel process for modification of fibers. 3,479,129, Cl. 008-115.5
- Friedrich Refrigerators, Incorporated: *See—*
    - Cootey, Thomas A., and Fischer, Larry M., 3,478,532.
- Frilette, Vincent J. Mobil Oil Corporation Process for reducing carbon dioxide with hydrogen hydrogen to carbon monoxide. 3,479,149, Cl. 023-204.
- Frohner, Klaus, Horster, Horst, Lydtin, Hans Jurgen, and Reifenschweiler, Otto, to U.S. Philips Corporation, mesne. Device and method for reducing blackening in a lamp. 3,479,550, Cl. 313-205.
- Fromm , Stanley M. Spectacles having temples with adjustably biased ends. 3,479,110, Cl. 351-123.
- Fruehauf Corporation: *See—*
    - Tantlinger, Keith W., 3,478,903.
- Fryer, Robert Howard. Game playing apparatus. 3,479,027, Cl. 273-001.
- Fuchs, Bernard P. Corn ear orienting device. 3,478,863, Cl. 198-033.
- Fuehrer, Reece R., and Polak, James C., to United States of America, Army, mesne. Radial support structure for clutch hubs. 3,478,852, Cl. 192-110.
- Fuji Iron & Steel Co., Ltd.: *See—*
    - Yanabu, Osamu, Hada, Takashi, and Doi, Kazuyuki, 3,479,162.
- Fujii, Saburo, and Yoshida, Masatoshi, to Toho Beslon Kabushiki Kaisha. Continuous solution-polymerization of acrylonitrile. 3,479,312, Cl. 260-029.6
- Fuller, Robin Walter Ellecker: *See—*
    - McCann, John David, and Fuller, Robin Walter Ellecker 3,479,551.
- Funahashi, Takaji. Multicolor rubber stamp. 3,478,682, Cl. 101-327.
- Funahashi, Takaji. Writing instrument. 3,479,122, Cl. 401-199.
- Fuqua, Norman L., to Westinghouse Electric Corporation. Air operated single cup coffee brewer. 3,478,670, Cl. 099-283.
- Fuqua, Norman L., to Westinghouse Electric Corporation. Pressurizer apparatus for an air operated coffee brewer. 3,478,672, Cl. 099-302.
- Fuqua, Norman L., and Ambrose, John J., to Westinghouse Electric Corporation. Timing arrangement for an air operated coffee brewer. 3,478,671, Cl. 099-283.
- Gabor, Dennis, to Columbia Broadcasting System, Inc. Three-dimensional picture projection. 3,479,111, Cl. 352-044.
- Gadd, John D., to TRW Inc. Aluminide coating braze stop-off. 3,478,413, Cl. 029-490.
- GAF Corporation: *See—*
    - Leibowitz, Marvin R., and Grosser, Frederick, 3,479,417.
    - Merijan, Ashot, and Grosser, Frederick, 3,479,327.
- Galles, Gilbert V. Movable support means. 3,479,632, Cl. 339-005.
- Galt, Ronald Hilson Begg, to Imperial Chemical Industries Limited. Derivatives of 5-hydroxyquinoxaline-1,4 dioxide. 3,479,354, Cl. 260-250.
- Galutia, Glen T. Riveting gun bucker attachment. 3,478,567, Cl. 072-457.
- Gambaretto, Gian Paolo, Rinaldo, Paolo, and Palato, Mario, to Montecatini Edison S.p.A. Flame-extinguishing compositions. 3,479,286, Cl. 252-008.
- Ganz, Alexander J., to Hercules Incorporated. Edible compositions and process. 3,479,190, Cl. 099-139.
- Garrett Corporation, The: *See—*
    - Carson, Alan B., 3,478,706.
- Gartley, William H.: *See—*
    - McBride, Harold Oren, and Gartley, William H. 3,478,374.
- Garver, Robert V., to United States of America, Army. Varactor continuous phase modulator having a resistance in parallel with the varactor. 3,479,615, Cl. 332-030.
- Garwacki, Walter, to General Electric Company. Wide band gap semiconductor devices having improved temperature independent non-rectifying contacts. 3,479,573, Cl. 317-237.
- Garwin, Edward L., to United States of America, Atomic Energy Commission. Coaxial light source with series impedance within the envelope. 3,479,555, Cl. 315-039.
- Gattenby, Miles N., Jr., and D'Amato, Anthony S., to Borden Company, The. Antifogging film comprising vinyl chloride polymer and fatty acid esters. 3,479,308, Cl. 260-023.
- Gauger, Roy C., to Bendix Corporation, The, mesne. Vacuum pump. 3,478,954, Cl. 230-101.
- Gauld, Godfrey R., to Avco Corporation. Relay comprising complementary symmetry-connected transistors with isolated inductance-rectifier input networks. 3,479,531, Cl. 307-255.
- Gay, Duncan: *See—*
    - Kerr, John, and Gay, Duncan 3,479,098.
- Gazalski, John J. Decoy. 3,478,459, Cl. 043-003.
- Gebel, Radames K. H., to United States of America, Air Force. Image transducers using extrinsic semiconductors. 3,479,455, Cl. 178-007.2
- Gebr. Bohler & Co. Aktiengesellschaft: *See—*
    - Dorfler, Gerhard, 3,479,506.
- Geier, Frank W. Wall furniture cabinet unit. 3,479,103, Cl. 312-198.
- Geigy Chemical Corporation: *See—*
    - Allison, Robert Corwin, Fischer, Franz, and Hausermann, Heinrich, 3,479,349.
    - Doebel, Karl J., and Francis, John E., 3,479,355.
    - Meisels, Alex, Denss, Rolf, and Ryf, Hugo, 3,479,361.
    - Meisels, Alex, Denss, Rolf, and Ryf, Hugo, 3,479,363.
    - Rousselot, Felix, 3,478,933.
- Geimuplast Peter Mundt KG: *See—*
    - Mundt, Peter, and Urban, Otfried, 3,478,456.
- General Atronics Corporation: *See—*
    - Keidel, John F., 3,479,519.
- General Bearing Company: *See—*
    - Nosenzo, Mario, 3,478,382.
- General Electric Company: *See—*
    - Airola, Ellis John, 3,479,268.

  Bahrs, David L., and Couleur, John F., 3,479,649.
  Bean, Fredrick D., 3,479,009.
  Boring, Kenneth L., and Downing, Robert D., 3,479,483.
  Bostick, Edgar E., 3,479,320.
  Bray, Thomas E., and Clusick, Robert E., 3,479,517.
  Brown, Edgar D., Jr., 3,479,290.
  Cleveland, Donald S., 3,479,562.
  Cohen, Robert, Couleur, John F., and Ruth, Richard L., 3,479,647.
  Cook, Newell C., 3,479,158.
  Cook, Newell C., 3,479,159.
  Detro, Richard Gray, 3,479,442.
  Drexler, Karl F., 3,479,543.
  Farrell, Robert P., Jr., 3,478,596.
  Garwacki, Walter, 3,479,573.
  Gray, Peter V., 3,479,234.
  Hall, Walter L., 3,479,409.
  Hamilton, Stephen B., Jr., 3,479,410.
  Kauders, Herbert J., 3,479,296.
  Klebe, Johann F., 3,479,383.
  Louden, William C., 3,479,170.
  Lustenader, Edward L., and Van Luik, Frank W., Jr., 3,478,494.
  Mathes, Kenneth N., 3,479,218.
  Michon, Gerald J., 3,479,527.
  Morelock, Charles R., 3,479,205.
  Shaver, Paul J., 3,479,257.
  Siebold, Donald J., and Callahan, Michael L., 3,478,718.
  Whitten, James R., 3,479,502.
  Worthington, Peter L., 3,478,815.
  Bester, Dennis R., and Pratt, Geoffrey, 3,479,461.
  Wicker, Reginald Gordon, 3,479,610.
General Instrument Corporation: *See—*
  Freer, Walter, 3,479,622.
General Motors Corporation: *See—*
  Brown, Norman R., Martin, Michael J., Jr., and Stanner, Donald, 3,478,405.
  Hanchett, Kenneth R., 3,478,615.
  Helms, Harold E., 3,478,816.
  Kemp, Clarence G., 3,478,476.
  Peeples, Denny L., 3,478,782.
  Robbins, Samuel B., 3,479,478.
  Schaaf, Henry W., 3,479,081.
  Shellhause, Ronald L., 3,478,517.
  Weiss, Irwin K., 3,479,051.
General Radio Company: *See—*
  MacKenzie, Thomas E., and Sinclair, Donald B., 3,479,587.
General Time Corporation: *See—*
  Frey, Hubertus G., 3,478,507.
General Tire & Rubber Company, The: *See—*
  Kreider, Robert W., 3,479,313.
George, James R.: *See—*
  Cloud, Charles E., King, Richard G., and George, James R. 3,478,492.
Georgian, Vlasios, and Kerwin, James F., to Smith Kline & French Laboratories. 6,6-Ethylene pregnenes. 3,479,342, Cl. 260-239.55
Gerber, Jurgen, and Fichtner, Friedrich, to Orenstein-Koppel und Lubecker Maschinenbau Aktiengesellschaft. Circuit for hydraulically operable devices, especially hydraulic dredges. 3,478,647, Cl. 091-411.
Germann, Reimar: *See—*
  Buesch, Siegfried, and Germann, Reimar 3,479,496.
Germond, Henry S., IV, to Rex Chainbelt Inc. Adjustable shock absorber. 3,478,846, Cl. 188-097.
Geschickter, Charles F., and Meadow, Jacob R., to Geschickter Fund for Medical Research, Inc., The. Curcumin derivatives. 3,479,345, Cl. 260-240.
Geschickter Fund for Medical Research, Inc., The: *See—*
  Geschickter, Charles F., and Meadow, Jacob R., 3,479,345.
Gevaert-Agfa N.V.: *See—*
  De Smedt, Felix Frederik, 3,479,426.
Gheen, Lyndle G., to Pierce, R. H., Manufacturing Company. Irrigation valving. 3,478,780, Cl. 137-624.18
Gianola, Umberto F., to Bell Telephone Laboratories, Incorporated. Parallel address magnetic domain wall memory. 3,479,660, Cl. 340-174.
Gilbert, Allan H.: *See—*
  Cahn, Arno, and Gilbert, Allan H. 3,479,301.
Gilbert, George J., to RCA Corporation. Encapsulation and connection structure for high power and high frequency semiconductor devices. 3,479,570, Cl. 317-234.
Gilbert Manufacturing Company, Inc.: *See—*
  Schick, Henry W., 3,478,860.
Gilbert, William F., Jr.: *See—*
  Chegwidden, Raymond A., Cohen, Howard M., and Gilbert, William F., Jr. 3,479,292.
Gilissen, Herman Petrus Johannes, to AMP Incorporated. Printed circuit connector. 3,479,637, Cl. 339-176.
Gillead, J. Foster. Shoe heel with rotatable lift. 3,478,447, Cl. 036-036.
Gillet, Claude: *See—*
  Buu-Hoi, Nguyen P., Lambelin, Georges, Lepoivre, Constan, Gillet, Claude, and Thiriaux, Jacques 3,479,396.
Gilmont, Roger, and Parkinson, Martin C., to Virtis Company, Inc., The. Vacuum gauge assembly. 3,478,779, Cl. 137-615.
Ginder, Paul, to Burton Silverplating Co. Multilayer magnetic coating. 3,479,156, Cl. 029-183.5
Giravions Dorand: *See—*
  Dorand, Pierre Rene Leon Bernard, 3,478,987.
Girdler Corporation: *See—*
  Kelsall, Avery Crowell, 3,479,143.
Girling Limited: *See—*
  Brittain, Frank Eustace, 3,479,068.
Gittleman, Morris. Pipe coupling. 3,479,066, Cl. 285-236.
Glasgow, Paul J., to Robbins and Bendror Associates, Inc. Bookbinding machine for folding book end leaves. 3,478,378, Cl. 011-001.
Glass, Marvin, & Associates: *See—*
  Glass, Marvin I., Stan, Henry, and Kripak, Leonid, 3,479,035.
Glass, Marvin I., Stan, Henry, and Kripak, Leonid, to Glass, Marvin, & Associates. Player actuated chance game device. 3,479,035, Cl. 273-138.
Glassman, Aaron, to Pennsylvania Sewing Research Corporatio. Modular electrical switch and fuse box having means for connecting to like boxes. 3,479,567, Cl. 317-114.
Glaxo Laboratories Limited: *See—*
  Eardley, Stephen, Gregory, Gordon Ian, Lazenby, John Kevin, and Long, Alan Gibson, 3,479,350.
Glista, Edward M.: *See—*
  Brahm, Charles B., Corcoran, John M., Glista, Edward M., and Van Olinda, David L. 3,478,512.
Gobran, Riad H.: *See—*
  Bulbenko, George F., Gobran, Riad H., and Blommers, Elizabeth A. 3,479,337.
Goeders, John J. Portable pitching mound. 3,479,028, Cl. 273-025.
Golberine, Boris, and Berr, Roger, to Berr et Cie. Bracelet or like article of jewelry capable of being immediately brought to size. 3,478,537, Cl. 063-004.
Goldberg, Abraham A.: *See—*
  Goldmark, Peter C., and Goldberg, Abraham A. 3,479,447.
Goldmark, Peter C., and Goldberg, Abraham A., to Columbia Broadcasting System, Inc. Recording and reproducing color picture information. 3,479,447, Cl. 178-005.2
Goloff, Alexander, Hautala, Richard E., and White, Claude F., to Caterpillar Tractor Company. Friction welding Stellite facings to valve seats. 3,478,411, Cl. 029-470.3
Goodridge, Walter R., to Mr. Christmas Incorporated. Method for making artificial coniferous free branch. 3,478,652, Cl. 093-001.5
Goranson, Richard B., and Martini, William R., to McDonnell Douglas Corporation. Pulsatile heart pump. 3,478,695, Cl. 103-152.
Gorman, John Joseph, to Du Pont de Nemours, E. I., and Company. Pressure-sensitive chloroprene polymer adhesives. 3,479,311, Cl. 260-029.3
Gorrafa, Adly Abdel-Moniem, to Du Pont de Nemours, E. I., and Company. Tow slicing apparatus. 3,478,392, Cl. 019-000.62
Gosha, Charles E. Compressor. 3,478,956, Cl. 230-185.
Goss, James W. Mirror hanger and molding combination. 3,478,997, Cl. 248-488.
Gotoh, Keishi: *See—*
  Tanaka, Tatsuo, Gotoh, Keishi, and Kajiura, Hiroshi 3,478,599.
Gottesman, Arthur H.: *See—*
  Tronnier, Albrecht W., Jeremias, Helmuth M., and Gottesman, Arthur H. 3,479,117.
Gotz, Franz: *See—*
  Sauttr, Gerd, Mockesch, Erich, and Gotz, Franz 3,478,756.
Grace, W. R., & Co.: *See—*
  Daniels, David A., Harper, James L., and Steadman, Thomas R., 3,479,387.
  Daniels, David A., 3,479,388.
  Ferington, Thomas E., 3,479,317.
  Ketley, Arthur D., 3,479,379.
  Stern, Eric W., and Spector, Marshall L., 3,479,392.
Graham, Robert L., Fachini, Robert M., and Kenna, Fenton L., Jr., to International Harvester Company. Bale wagon. 3,478,898, Cl. 214-006.
Grant, Whitney I.: *See—*
  Kocher, Erich J., and Grant, Whitney I. 3,478,533.
Graser, Earl J., to Olinkraft, Inc. Automatically selective lock device. 3,478,951, Cl. 229-040.
Gray, Peter V., to General Electric Company. Method of producing field effect transistors. 3,479,234, Cl. 148-187.
Gray Tool Company: *See—*
  Holbert, Marvin L., Jr., and Slack, John, 3,478,822.
Greatbatch, Wilson, to Medtronic, Inc. Cardiac implantable demand pacemaker. 3,478,746, Cl. 128-421.
Green Giant Company: *See—*
  Alpen, Cecil W., 3,478,794.
Greene, Oscar, to Name-Maker Corporation. Electric scissors. 3,478,426, Cl. 030-228.
Gregorio, Guglielmo: *See—*
  Pregaglia, Gianfranco, Gregorio, Guglielmo, and Conti, Francesco 3,479,412.
Gregory, Gordon Ian: *See—*
  Eardley, Stephen, Gregory, Gordon Ian, Lazenby, John Kevin, and Long, Alan Gibson 3,479,350.
Gregory, Peter John, to Imperial Chemical Industries of Australia and New Zealand Limited. Process for the reductive dimerisation of alpha, beta-olefinic nitriles. 3,479,386, Cl. 260-465.8
Greven, Hendrik Maria, to Organon Inc.D-Phe-$^{7}$-$^{10}$ A.C.T.H. and derivatives and complexes thereof. 3,479,333, Cl. 260-112.5
Griffin, Dale Miller, Jr.: *See—*
  Clarke, Ray Allen, and Griffin, Dale Miller, Jr. 3,479,192.

Grimes, Milton J., Henrikson, Donald F., and Meisel, Herbert R., to RCA Corporation. Method of providing contact leads for semiconductors. 3,478,420, Cl. 029-588.
Grissom, John T.: *See—*
  Koehler, Dale R., and Grissom, John T. 3,479,507.
Groff, Ralph W., Sr.: *See—*
  Smith, Barton K., Groff, Ralph W., Sr., and Rodman, James B., Sr. 3,478,487.
Groos, Horst Hans, to Schloemann Aktiengesellschaft. Inductively heated billet-containers for extrusion presses. 3,478,562, Cl. 072-272.
Gross, Carl-Axel. Dental articles. 3,478,432, Cl. 032-035.
Grosser, Frederick: *See—*
  Merijan, Ashot, and Grosser, Frederick 3,479,327.
  Leibowitz, Marvin R., and Grosser, Frederick 3,479,417.
Groteke, Daniel E., to American Standard Inc. Skid-resistant surfaces. 3,479,202, Cl. 117-038.
Grove Valve and Regulator Company: *See—*
  Brumm, Richard S., 3,479,004.
Gruber, Bernard A., to Monsanto Research Corporation. Rechargeable tape fuel cell. 3,479,227, Cl. 136-086.
Gruber, Floyd E.: *See—*
  Smookler, Arthur L., and Gruber, Floyd E. 3,479,061.
Gruber, Lawrence H.: *See—*
  Denault, Albert P., Gruber, Lawrence H., and Morton, Kenneth O. 3,478,939.
Gruca, Ned Joseph, to Illinois Tool Works Inc. Screw type fastener. 3,478,639, Cl. 085-041.
Grundy, Gary L., and Herickhoff, Robert J., to Sperry Rand Corporation. Method of determining the intensity of a nuclear-radiation burst. 3,479,509, Cl. 250-083.3
Guinter, S. Robert: *See—*
  Provi, Mike A., and Guinter, S. Robert 3,478,618.
Gulf Research & Development Company: *See—*
  Lese, Henri K., Schulz, Johann G. D., and Whitaker, Arthur C., 3,479,400.
Gumlich, Walter: *See—*
  Wiescholleck, Helmut, and Gumlich, Walter 3,479,303.
Gunn, John C. Shaving mirror accessory. 3,478,996, Cl. 248-473.
Gutzeit, Carlos L., to Hitco. Carbonization method for cellulosic fibers. 3,479,150, Cl. 023-209.1
Gutzeit, Carlos L., to Hitco. Method of carbonizing fibrous cellulosic materials. 3,479,151, Cl. 023-209.5
Gwynn, Ross M., and Themy, Tim. Electrolytic cell. 3,479,275, Cl. 204-275.
H. Struers Chemiske Laboratorium: *See—*
  Nielsen, Erik, 3,478,598.
Haarer, Erich: *See—*
  Adam, Karl, and Haarer, Erich 3,479,411.
Haas, John I., Inc.: *See—*
  Rigby, Francis L., 3,478,930.
Haase, Kurt H., to United States of America, Air Force. Resistively terminated single tee and pi one port network having a prescribed positive real bi-order-n immittance and utilizing a negative immittance. 3,479,618, Cl. 333-024.
Habib, David P., Allard, Robert S., and Zabik, Eugene J., to Tecnifax Corporation. Negative-working diazosulfonate reproduction process. 3,479,183, Cl. 096-049.
Hada, Takashi: *See—*
  Yanabu, Osamu, Hada, Takashi, and Doi, Kazuyuki 3,479,162.
Haeflein, William K.: *See—*
  Levesque, Peter, and Haeflein, William K. 3,478,830.
Haerich, Milton A. Piano sounding board. 3,478,634, Cl. 084-193.
Haggard, Richard A., to U.S. Industries, Inc., mesne. Animal house curtain and method of preparing same. 3,478,805, Cl. 160-005.
Hahm, Heinz Gunther, to Teves, Alfred, GmbH. Low-noise disk-brake assembly. 3,478,849, Cl. 188-218.
Hahn & Clay: *See—*
  Pechacek, Raymond E., 3,478,920.
Hahn, Fritz, and Ney, Peter, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Process for the unhairing of skins and hides with peracids or their salts. 3,479,127, Cl. 008-094.16
Haide, Karl, to Maybach Mercedes-Benz Motorenbau GmbH. Overdrive torque converter with adjustable axial turbine blades. 3,478,515, Cl. 060-054.
Haines, Robert S., and Vranka, Joseph S., to International Business Machines Corporation. Method of fabricating magnetic recording media. 3,479,219, Cl. 117-235.
Hale, Everett W., to Blackstone Corporation. Inoculation feeders. 3,479,093, Cl. 302-040.
Hales, Keith John: *See—*
  Richards, Edward Gordon, Ward, David Marshall, Hales, Keith John, and Stephenson, Norman 3,479,157.
Hall, Richard F.: *See—*
  Walker, Donald V., and Hall, Richard F. 3,479,625.
Hall, Walter L., to General Electric Company. Process for the chlorination of aromatic compounds. 3,479,409, Cl. 260-612.
Halliburton Company: *See—*
  Brown, Norman F., 3,479,006.
  Love, Robert G., 3,478,594.
  Perra, Frank M., 3,479,586.
Halpern, Alfred. Dihydroquinidine galacturonates. 3,479,359, Cl. 260-284.
Ham, James H., Jr., to Bell Telephone Laboratories, Incorporated. Code transmitter. 3,479,470, Cl. 179-090.
Hamann, Omer F., to Stromberg Datagraphix, Inc. Cathode ray tube with a removable face for space vehicles. 3,479,544, Cl. 313-007.
Hamburger Flugzeugbau GmbH: *See—*
  Bielefeldt, Ernst-August, 3,478,989.
Hamilton, Charles H., to North American Rockwell Corporation. Bonding of beryllium members. 3,478,416, Cl. 029-498.
Hamilton, Stephen B., Jr., to General Electric Company. Selective vapor phase methylation of phenols. 3,479,410, Cl. 260-621.
Hanchett, Kenneth R., to General Motors Corporation. Damper to prevent gear clash in a countershaft transmission. 3,478,615, Cl. 074-339.
Hancock, John R., and Sigler, Harold, to Fairchild Camera and Instrument Corporation. Machine for producing engraving plates for stereoscopic reproductions. 3,479,452, Cl. 178-006.6
Handy Manufacturing Company: *See—*
  Joseph, Alan H., 3,479,522.
Haneta, Yuichi, to Nippon Electric Company Limited. Field effect semiconductor device. 3,479,571, Cl. 317-234.
Hanna, William L., and Petersen, Christian C., to Polaroid Corporation. Heat sealer. 3,479,485, Cl. 219-243.
Hans L I S T: *See—*
  Buesch, Siegfried, and Germann, Reimar, 3,479,496.
Hansen, Hans I., to Iowa Manufacturing Company of Cedar Rapids, Iowa. Drive for roll crushers. 3,478,972, Cl. 241-230.
Hansen, Harold Valentine, Youngberg, Charles Harold, and Ford, Perry, Jr., to Deere & Company. Minimum tillage hitch device. 3,478,828, Cl. 172-669.
Hansen, Holger V., Klutchko, Sylvester, and Meltzer, Robert I., to Warner-Lambert Pharmaceutical Company. Hexahydro-9,4$\alpha$-iminoethano-4$\alpha$ H-xanthenes and process for their production. 3,479,358, Cl. 260-286.
Hansen, Robert C.: *See—*
  Johnson, Lowell E., Hansen, Robert C., Pearce, Shairyl I., and Lanchantin, Charles E., Jr. 3,478,621.
Hansson, Rune Einar: *See—*
  Holm, Kurt Anders, and Hansson, Rune Einar 3,479,252.
Hara, Yoichiro: *See—*
  Ito, Yoshikazu, Wakamatsu, Shigeru, Hara, Yoichiro, and Morino, Jiro 3,479,264.
Harford, Jack R., to Aircraft Radio Corporation. Logarithmic signal compressor. 3,479,525, Cl. 307-235.
Harget, Paul J., and Sturgill, Dennis T., to Owens-Illinois, Inc. Thermistors. 3,479,631, Cl. 338-022.
Hargis, Charles W., and Young, Howard S., to Eastman Kodak Company. Preparation of quinones. 3,479,374, Cl. 260-396.
Harlin, Lester E., and Moore, Walter C., to Borg-Warner Corporation. Oil separator for rotary compressor. 3,478,957, Cl. 230-207.
Harmon, Howard I. System and apparatus for erecting moving and dismantling shoring and the like. 3,479,010, Cl. 254-004.
Harnischfeger Corporation: *See—*
  Dechantsreiter, Max J., 3,478,907.
Harper, James L.: *See—*
  Daniels, David A., Harper, James L., and Steadman, Thomas R. 3,479,387.
Harriman, Allen C., and Vornberger, Karl F., to Kamborian, Jacob S. Lasting machine. 3,478,379, Cl. 012-010.5
Harrington, Joseph, Jr.: *See—*
  Maurya, Ramamurat R., Harrington, Joseph, Jr., and Squibb, Edward R., III 3,478,410.
Harris-Intertype Corporation: *See—*
  Moser, Henry W., 3,479,240.
Harris, William B., and Massey, Richard P., to Bell Telephone Laboratories, Incorporated. Thyristor switch circuit for producing pulses of variable widths and having diode means for shortening the fall times of the pulses. 3,479,533, Cl. 307-265.
Harris, William Leslie, to Contra Costa County Water District. Process for water treatment filter conditioning. 3,478,880, Cl. 210-080.
Harrison, John R., and Monagle, Daniel J., to Hercules Incorporated. Sewage treatment. 3,479,283, Cl. 210-054.
Harter, Lynn J.: *See—*
  Woodman, Howard C., and Harter, Lynn J. 3,478,701.
Hartmann, Emil: *See—*
  Seiler, Bernhard, 3,478,912.
Hauk, Ernest D., 10% to Carstensen, Kenneth J. Apparatus and method for testing well pipe. 3,478,577, Cl. 073-049.1
Hausermann, Heinrich: *See—*
  Allison, Robert Corwin, Fischer, Franz, and Hausermann, Heinrich 3,479,349.
Hautala, Richard E.: *See—*
  Goloff, Alexander, Hautala, Richard E., and White, Claude F. 3,478,411.
Hawley Manufacturing Corporation: *See—*
  Scheel, John R., and Nordman, Adolph J., Jr., 3,478,668.
Hazelton, Harold J., to Carlson Tool & Machine Co. Brush blank feeding apparatus. 3,479,091, Cl. 300-003.
Hazzard, Frank C., to United States of America, Army. Differential modulator. 3,479,616, Cl. 332-043.
Hebrank, William H.: *See—*
  Wyatt, William Kirk, Mueller, Edward G., and Hebrank, William H. 3,478,399.
Hechenleitner & Cie: *See—*
  Hechenleitner, Hans, 3,478,485.

Hechenleitner, Hans, to Hechenleitner & Cie. Process and welding device for making containers filled with fluid. 3,478,485, Cl. 053-028.

Hecker, Arthur C., and Thee, Alfred, to Argus Chemical Corporation. Fatty acid-polyvalent metal salt stabilizers for polyvinyl chloride resins with reduced tendency to form bloom. 3,479,309, Cl. 260-023.

Heckscher, Helmut, to Technical Operations, Incorporated. Modulated image photography. 3,478,661, Cl. 095-012.20

Hedgewick, Peter, and Howell, George E., to Reflex Corporation of Canada Limited. Safety cap and container. 3,478,911, Cl. 215-009.

Heffran, Vernon C.: *See—*
  Demsey, John N., and Heffran, Vernon C. 3,478,554.

Heierli, Werner, and Schuppisser, Armin. Reinforced concrete module joint. 3,478,481, Cl. 052-432.

Heimann, Richard H., to Technicon Corporation. Method and means for processing tissue. 3,479,196, Cl. 117-003.

Heimler, Andre, to Societe Anonyme D.B.A. Universal joint. 3,478,538, Cl. 064-007.

Heinonen, Russell M., Jr., to Technical Operations, Incorporated. Intermittent film contact pressure apparatus for cinematographic cameras. 3,479,114, Cl. 352-225.

Heinrich, Hans: *See—*
  Daeuble, Manfred, Dieck, Klaus, Heinrich, Hans, and Witsch, Guenter 3,478,376.

Heiss, Herbert L., to Mobay Chemical Company. Crude polyisocyanate compositions and preparation thereof. 3,479,384, Cl. 260-453.

Heitman, Joseph B., to Pennsalt Chemicals Corporation. Electrolytic process for preparing an aqueous ammoniacal solution of cupric ion. 3,479,263, Cl. 204-086.

Helke, Robert C., and Sturgeon, Wayne E., to Koehler-Dayton, Inc. Recirculating system for a self-contained sewage unit. 3,478,690, Cl. 103-093.

Heller, Ralph M., and Bowen, James R., to United States of America, Air Force. Error correcting and error detecting recording apparatus. 3,479,643, Cl. 340-146.1

Helms, Harold E., to General Motors Corporation. Regenerator matrix. 3,478,816, Cl. 165-009.

Helsley, Grover C.: *See—*
  Lunsford, Carl D., Helsley, Grover C., and Richman, John A., Jr. 3,479,370.

Hemprich, Horst J., Schneider, Walter F., Spiro, Hans W., and Zehr, Joachim O., to International Business Machines Corporation. Line voltage fluctuation insensitive detector for phase failures on three phase transformers. 3,479,583, Cl. 324-051.

Henderson, Leonard L. Bridge for measuring moisture content having field effect transistor in one arm with gate electrode resistively connected through test liquid. 3,479,590, Cl. 324-065.

Hendrickson, Otto. Adjustably controlled saber saw. 3,478,786, Cl. 143-068.

Hendriks, Rudolf, to N.V. Koninklijke Machinefabriek Stork. Turbine. 3,479,124, Cl. 415-159.

Henkel & Cie GmbH: *See—*
  Saran, Herbert, 3,479,302.

Henrikson, Bror W.: *See—*
  Barecki, Chester J., Henrikson, Bror W., and Nordmark, Walter E. 3,478,981.

Henrikson, Donald F.: *See—*
  Grimes, Milton J., Henrikson, Donald F., and Meisel, Herbert R. 3,478,420.

Henrikson, Sture: *See—*
  Backstrom, Arne Ivar, Henrikson, Sture, and Levin, Per Erik 3,479,181.

Henry, John W., IV, to United States of America, Navy. Quiet multivane multirow impeller for centrifugal pumps. 3,478,691, Cl. 103-115.

Henze, Herbert O., to Penn Fishing Tackle Mfg., Co. Fishing reel. 3,478,979, Cl. 242-084.54

Herbst, Hagen, Kleedehn, Eckhart, and Pietrucha, Herbert, to VEB Funkwerk Kopenick, mesne. Apparatus for ascertaining load conditions in a dragnet. 3,478,462, Cl. 043-009.

Hercules Incorporated: *See—*
  Buhl, Frank C., Lees, Ronald D., and Monagle, Daniel J., 3,479,221.
  Ganz, Alexander J., 3,479,190.
  Harrison, John R., and Monagle, Daniel J., 3,479,283.
  Lees, Ronald D., 3,479,284.

Heredy, Laszlo A., to North American Rockwell Corporation. Electrochemical method for recovery of sulfur oxides. 3,479,261, Cl. 204-061.

Hergenrother, William L., to Firestone Tire & Rubber Company, The. Polyethylene terephthalate stabilized with sodium pyrophosphate. 3,479,319, Cl. 260-045.7

Herickhoff, Robert J.: *See—*
  Grundy, Gary L., and Herickhoff, Robert J. 3,479,509.

Herman, Raymond, to Richmond Research Corporation. Self-threading motion picture projector. 3,478,944, Cl. 226-067.

Hersey-Sparling Meter Company: *See—*
  Curtiss, Alan Clarkson, and Hood, Roger Williams, 3,478,778.

Hertzberg, Samuel. Stanchion support apparatus for a pair of curtain traverse rods with draw cords. 3,478,807, Cl. 160-344.

Hess, Patrick H., and Millhone, Ralph S., to Chevron Research Company. Sand consolidation process. 3,478,824, Cl. 166-295.

Hetmann, Richard, to Porsche, Dr. Ing. H.c.F., KG. Vehicle driving unit. 3,478,834, Cl. 180-070.

Heyden, Rudi: *See—*
  Markert, Hans, and Heyden, Rudi 3,479,288.

Hickey, James J.: *See—*
  Overbeck, Charles J., and Hickey, James J. 3,479,152.

Hickey, Weldon W. Retrievable vented packer for oil wells. 3,479,064, Cl. 285-111.

Hilfiker, Harlan D. Safety construction for vehicles. 3,479,080, Cl. 296-035.

Hill, Morse: *See—*
  Reusser, Hans E., and Hill, Morse 3,478,523.

Hilti A.G.: *See—*
  Thurner, Elmar, 3,478,638.

Hinck, Ernest C., III, and Bowen, John T., to Ingersoll-Rand Company. Housing for portable machines. 3,478,958, Cl. 230-232.

Hinds, Robert J., and Premo, Paul M., to Chevron Research Company. Continuous distillation of sulfur dichloride- sulfur monochloride to recover pure sulfur dichloride. 3,479,253, Cl. 203-006.

Hirs, Gene. Method and apparatus for filtering with overlapped filter medium. 3,478,879, Cl. 210-077.

Hirs, Gene. Resilient tubular valve. 3,479,002, Cl. 251-005.

Hirt, John H. Apparatus for producing gases of predetermined characteristics. 3,479,166, Cl. 048-196.

Hitco: *See—*
  Gutzeit, Carlos L., 3,479,150.
  Gutzeit, Carlos L., 3,479,151.

Hitzemann, Gerhard: *See—*
  Tillmann, Peter, Kulling, Achim, and Hitzemann, Gerhard 3,479,148.

Hobart Brothers Company: *See—*
  Dane, Paul E., 3,478,552.

Hobel, Daniel: *See—*
  Sleven, Marvin, Kleiman, Joseph, and Hobel, Daniel 3,479,648.

Hoberg, George Gilbert: *See—*
  Chedaker, Joseph, Hoberg, George Gilbert, and Sands, Eugene Arthur 3,479,659.

Hochhauser, Irving. Process and apparatus for curing material by induction heating. 3,479,419, Cl. 264-025.

Hochman, Jack M., and Loboda, Wesley J., to Esso Research and Engineering Company. Fluid flow distributor. 3,479,146, Cl. 023-288.

Hodge, Keith L. Auxiliary lock for sliding members. 3,478,471, Cl. 049-449.

Hoffman, Floyd C., and Miller, Theodore W., to Armco Steel Corporation. Deburring tool. 3,478,558, Cl. 072-199.

Hofmann, Albert: *See—*
  Troxler, Franz, and Hofmann, Albert 3,479,371.

Hohwart, George, to Woodworth, N. A., Company. Gear pin with pullback action. 3,479,042, Cl. 279-123.

Holbert, Marvin L., Jr., and Slack, John, to Gray Tool Company. Wellhead and seal arrangement. 3,478,822, Cl. 166-088.

Holdrege, Charles Truman, to Bristol-Myers Company. 6-(α-3-Acylureidophenylacetamido)-and 6-(α-3-acylureidothienylacetamido)-penicillanic acids. 3,479,339, Cl. 260-239.1

Holm, Kurt Anders, and Hansson, Rune Einar, to Uddeholms Aktiebolag. Apparatus for the degreasing of articles by means of a solvent. 3,479,252, Cl. 202-170.

Holmquist, Howard Emil, to Du Pont de Nemours, E. I., and Company. Preparation of flame-resistant flexible foams from halogenated tolylene diisocyanate. 3,479,304, Cl. 260-002.5

Homan, Elwood P., to Kayser-Roth Corporation, mesne. Method of knitting sheer seamless support stockings. 3,478,544, Cl. 066-108.

Honeywell Inc.: *See—*
  Allen, Harry R., and Mercier, Alfred C., 3,479,594.
  Carlson, Thomas W., and Ivers, John R., 3,479,596.
  Lord, John B., and Lytle, Dean W., 3,479,458.
  Morton, Richard C., and Sher, Neil C., 3,478,731.
  Reinke, Robert F., 3,478,819.

Hood, Roger Williams: *See—*
  Curtiss, Alan Clarkson, and Hood, Roger Williams 3,478,778.

Hoover Ball and Bearing Company: *See—*
  McKinney, Ralph E., 3,478,968.

Hopkins, Arnold R., and Pindjak, Leo J. Safety credit card construction. 3,478,683, Cl. 101-368.

Hopkins, Leslie Arthur, to Hovercraft Development Limited. Apparatus for supporting strip material on a gas cushion. 3,478,864, Cl. 198-204.

Hoppe, Clemens B. Apparatus for installing nondisplacement sand drains. 3,478,524, Cl. 061-063.

Hornbeck, Robert F., to United States of America, Atomic Energy Commission. Graft-copolymer column support material for liquid-liquid partition chromatography. 3,478,886, Cl. 210-198.

Hornemann, Arno. Anti-backflow drainage system. 3,478,882, Cl. 210-104.

Hornfeck, Anthony J., Koppel, Harold H., and Louis, John R., to Bailey Meter Company. Control system. 3,479,492, Cl. 235-151.1

Horsfall, Geoffrey Alan: *See—*
  Robertson, Michael Mundie, and Horsfall, Geoffrey Alan 3,479,212.

Horster, Horst: *See—*
  Frohner, Klaus, Horster, Horst, Lydtin, Hans Jurgen, and Reifenschweiler, Otto 3,479,550.

Horstine Farmery Limited: *See—*
  Farmery, Horstine, 3,478,936.

Horton, Donelson B., and Nunn, Earnest W., to Blue, John, Company, a division of Subscription Television, Inc. Row crop drop. 3,478,967, Cl. 239-588.

Hosek, William S., to Thiokol Chemical Corporation. Hermetically sealed valve means. 3,478,760, Cl. 137-068.

Hottel, Hoyt Clarke, Jr., to Buzzards Corporation, The. Apparatus including a conductivity probe for determining the salinity of water. 3,479,580, Cl. 324-001.

Hough, Dean R., 45% to Kendall, George W., and 10% to Ruano, William J. Apparatus and method for measuring road contact of vehicle tires. 3,478,582, Cl. 073-146.2

Houilleres du Bassin du Nord & du Pas-de-Calais, Douai Nord Commissariat a l' Energie Atomique , L' Air Liquide, Societe pour l' Etude et l' Exploitation des Procedes Georges Claude: *See—*
  Roth, Etienne, and Lefrancois, Bernard, 3,479,140.

Houtman, Ronald L., Morozowich, Walter, and Sinkula, Anthony A., to Upjohn Company, The. Process for selectively preparing lincomycin 7-acylates and 7-carbonates. 3,479,334, Cl. 260-210.

Hoven, Alfred C., to American Seating Company. Foldable bleacher seating for sports areas. 3,478,473, Cl. 052-009.

Hovercraft Development Limited: *See—*
  Hopkins, Leslie Arthur, 3,478,864.

Howell, George E.: *See—*
  Hedgewick, Peter, and Howell, George E. 3,478,911.

Hoyt, Dolph G., Jr. Golf club iron cover. 3,478,799, Cl. 150-052.

Hu, Yow-Jiun, and Buc, George L., to Farrington Business Machines Corporation. Optical fingerprint recording device. 3,478,658, Cl. 095-001.1

Huber, Franz J. A., to United States of America, Air Force. Cooling apparatus for high heat fluxes. 3,478,820, Cl. 165-047.

Hubner, Siegfried, to Carl, Walther, Sportwaffenfabrik. Silencer for firearms discharging gasses at supersonic velocity. 3,478,841, Cl. 181-047.

Huck Manufacturing Company: *See—*
  Hurd, Ramon L., 3,478,564.

Huffman, Donald D., and Jackel, Arthur P., to Westinghouse Air Brake Company. Train identification system. 3,479,503, Cl. 246-124.

Hughes Aircraft Company: *See—*
  Lautzenhiser, Robert L., and Michel, James D., 3,478,995.
  Wilson, Robert G., Brewer, George R., and Jamba, Douglas M., 3,479,545.

Hughes, Alvin W. Preparing sausage batter for cooking and cooling. 3,478,797, Cl. 146-192.

Hughes, Gordon A., and Smith, Herchel, to American Home Products Corporation. Dithioketals of Δ-4,9-3-ketosteroids. 3,479,435, Cl. 424-241.

Hughes, Gordon Alan, and Smith, Herchel. 13β-Alkyl-6-oxagonanes. 3,479,344, Cl. 260-240.

Hughes, Robert W., and Coyne, Francis P., to Ingersoll-Rand Company. Crawler mounted rock drill. 3,478,832, Cl. 180-009.6

Huguet, Juan Luis, to Celanese Corporation. Oxidation of olefins with tellurium compounds. 3,479,395, Cl. 260-497.

Huibers, Derk Th. A., to Lummus Company, The. Process for the production of aromatic nitriles. 3,479,385, Cl. 260-465.

Hull, Charles W., to Bell & Howell Company, mesne. Mass spectrometer control system utilizing auxiliary mass spectrometer as a reference standard. 3,479,504, Cl. 250-041.9

Huller, Karl, GmbH: *See—*
  Krempel, Fritz, and Stoferle, Theodor, 3,478,859.

Hullhorst, William B., to Owens-Corning Fiberglas Corporation. Method and apparatus for producing tubular fibrous bodies. 3,479,239, Cl. 156-184.

Humphrey, William E., to Optical Research and Development Corporation. Displaced image reflecting optical stabilized system. 3,479,108, Cl. 350-016.

Hurd, Ramon L., to Huck Manufacturing Company. Crimping tool. 3,478,564, Cl. 072-391.

Hursh, Neal W., and Mooreland, Ronald R., to RCA Corporation. Shield. 3,479,566, Cl. 317-103.

Hus, Johannes, to Burndy Corporation. Electrical connection between movable parts. 3,479,444, Cl. 174-086.

Husky, Glover A., to Industrial Metalcraft Company, Inc. Irrigation apparatus. 3,478,773, Cl. 137-344.

Hwang, Ying-Chen, to United States of America, Army, mesne. Symmetrical pulse generator controlled by self-resetting snap diodes. 3,479,535, Cl. 307-319.

Hydro-Aire Division: *See—*
  Morando, Jorge A., 3,478,694.

Hyldon, Roy G., to Quaker Oats Company, The. Drum drier improvement. 3,478,439, Cl. 034-114.

Hyster Company: *See—*
  Mc Donald, John K., 3,478,656.

I. C. I./Organics/Inc.: *See—*
  Perrino, Albert C., and Israel, Michael G., 3,479,408.

Illinois Tool Works Inc.: *See—*
  Gruca, Ned Joseph, 3,478,639.

Imes, Vernon W.: *See—*
  Breon, Pearl L., Imes, Vernon W., Johnson, Harold R., Nutter, James M., and Nutter, James M. 3,478,833.

Imperial Chemical Industries Limited: *See—*
  Galt, Ronald Hilson Begg, 3,479,354.
  Jackson, John Brian, Sherliker, Francis Raymond, and Long, Hamish Arthur, 3,479,318.
  Robertson, Michael Mundie, and Horsfall, Geoffrey Alan, 3,479,212.

Imperial Chemical Industries of Australia and New Zealand Limited: *See—*
  Gregory, Peter John, 3,479,386.

Imris, Paul. Teaching device. 3,478,443, Cl. 035-019.

Indian Head Inc.: *See—*
  Engelhard, Otto, 3,478,545.

Industrial Metalcraft Company, Inc.: *See—*
  Husky, Glover A., 3,478,773.

Industrial Nucleonics Corporation: *See—*
  Clerc, Milton C., 3,479,511.

Industrie-Werke Karlsruhe Aktiengesellschaft: *See—*
  Vollmer, Rudolf, 3,479,003.

Ingersoll-Rand Company: *See—*
  Hinck, Ernest C., III, and Bowen, John T., 3,478,958.
  Hughes, Robert W., and Coyne, Francis P., 3,478,832.

Inland Steel Company: *See—*
  Pray, Ralph E., and Mills, Norman T., 3,479,135.

Institut Francaise du Petrole, des Carburants et: *See—*
  Chauvin, Yves, and Lefebvre, Gilles, 3,479,329.

Inter-Taylor AG: *See—*
  Sauttr, Gerd, Mockesch, Erich, and Gotz, Franz, 3,478,756.

International Business Machines Corporation: *See—*
  Bartz, Maurice R., 3,479,642.
  Bradford, Rex C., and Braun, Richard E., 3,479,662.
  Carroll, William C., and Johnston, Howard T., Jr., 3,479,036.
  Clapper, Genung L., 3,479,460.
  Haines, Robert S., and Vranka, Joseph S., 3,479,219.
  Hemprich, Horst J., Schneider, Walter F., Spiro, Hans W., and Zehr, Joachim O., 3,479,583.
  Jacques, James O., Montgomery, David, and Kuckein, Paul A., 3,479,493.
  Lloyd, Robert H.F., 3,479,233.
  May, Gordon H., 3,478,467.
  Morrison, John R., and Speliotis, Dennis E., 3,479,663.
  Pleshko, Peter, 3,479,523.
  Plummer, William B., Van den Honert, Taco H., and Wilson, Melvin G., 3,479,026.
  Potter, Macy, and Strogis, William J., 3,478,414.
  Tech, Donald D., 3,479,605.

International Harvester Company: *See—*
  Graham, Robert L., Fachini, Robert M., and Kenna, Fenton L., Jr., 3,478,898.

International Machinery Corporation: *See—*
  Mencacci, Samuel A., 3,478,677.

International Molding Machine Co.: *See—*
  Church, Thomas A., and Davis, George D., 3,478,812.

International Nickel Company, Inc., The: *See—*
  Ashcroft, Thomas Brian, 3,479,258.
  Richards, Edward Gordon, Ward, David Marshall, Hales, Keith John, and Stephenson, Norman, 3,479,157.

International Playtex Corporation: *See—*
  Sachs, Charles M., 3,478,747.

International Standard Electric Corporation: *See—*
  Braaten, Amund, and Wilhelmsen, Willy, 3,478,505.
  Cooke, Reginald Benjamin William, 3,478,425.
  Lovelock, Leonard Robert, Way, Kenneth Richard, and Wren, Robert Henry, 3,479,204.
  Sandbank, Carl Peter, King, George, and Marsh, Stanley Bruce, 3,479,611.

Interstate Folding Box Company, The: *See—*
  Nerenberg, Robert W., and Reynolds, Richard P. W., 3,478,868.

Inui, Toshiaki. Method of making an electric blanket. 3,478,422, Cl. 029-611.

Ion Company, The: *See—*
  Simor, George G., 3,478,741.

Iowa Manufacturing Company of Cedar Rapids, Iowa: *See—*
  Hansen, Hans I., 3,478,972.

Ipsen Industries International Gesellschaft mit beschrankter Haftung: *See—*
  Edler, Karl Heinz, 3,479,164.

Iron City Iron Works: *See—*
  Roberts, Dan T., 3,479,230.

Ishikawa, Tunezo: *See—*
  Mori, Kan, Suminoe, Taro, Yamazaki, Tamotu, Ishikawa, Tunezo, and Kogure, Akira 3,479,331.

Israel, Michael G.: *See—*
  Perrino, Albert C., and Israel, Michael G. 3,479,408.

Isreeli, Jack, and Skeggs, Leonard T., to Technicon Corporation. Volume-adjustable conduit for liquid analysis apparatus. 3,479,142, Cl. 023-253.

Ito, Yoshikazu, Wakamatsu, Shigeru, Hara, Yoichiro, and Morino, Jiro, to Toyo Rayon Kabushiki Kaisha. Method of photonitrosation of cycloalkane. 3,479,264, Cl. 204-162.

Ivers, John R.: *See—*
  Carlson, Thomas W., and Ivers, John R. 3,479,596.

Jackel, Arthur P.: *See—*
  Huffman, Donald D., and Jackel, Arthur P. 3,479,503.

Jackson, Byron, Inc.: *See—*
  McFadden, Edward J., 3,479,062.

Jackson, Clifford E., to Dorr-Oliver Incorporated. Horizontal rotary filter assembly. 3,478,885, Cl. 210-194.

Jackson, John Brian, Sherliker, Francis Raymond, and Long, Hamish Arthur, to Imperial Chemical Industries Limited. Mouldable polyester compositions containing finely divided pyrophyllite. 3,479,318, Cl. 260-040.

- Jacques, James O., Montgomery, David, and Kuckein, Paul A., to International Business Machines Corporation. Digital controller with automatic balance and manually adjusted operating point. 3,479,493, Cl. 235-151.1
- Jager, Philipp, to Siemens Aktiengesellschaft. Valve for continuous removal of reaction water from a fuel cell. 3,479,224, Cl. 136-086.
- Jagersberger, Adolf, to Bleckmann & Co. Pressing and compressing tubular heaters. 3,478,423, Cl. 029-615.
- Jakubec, Jindrich: *See—*
  - Cermak, Jiri, and Jakubec, Jindrich 3,478,644.
- Jamba, Douglas M.: *See—*
  - Wilson, Robert G., Brewer, George R., and Jamba, Douglas M. 3,479,545.
- Janning, John L., 1/3 to Dybvig, H. Talman, and Dybvig, Roger S. Breath operated device. 3,479,561, Cl. 315-119.
- Japan Synthetic Rubber Co., Ltd.: *See—*
  - Mori, Kan, Suminoe, Taro, Yamazaki, Tamotu, Ishikawa, Tunezo, and Kogure, Akira, 3,479,331.
- Jaye, Richard C., to Western Industries, Inc. Evaporator pad. 3,479,018, Cl. 261-103.
- Jazbutis, Anatolijus, and Swanson, Richard T., to Aetna Casualty and Surety Company, mesne. Simulator. 3,478,442, Cl. 035-011.
- Jefferson Tank & Seat Mfg., Co., Inc.: *See—*
  - Pisciotta, Humbert A., and Pisciotta, Anthony T., Jr., 3,479,501.
- Jeffrey Galion Manufacturing Company: *See—*
  - McCracken, William E., 3,479,090.
  - Stauffer, Robert E., 3,478,894.
- Jenny, Ernst, and Dzung, Lang Shuen, to Aktiengesellschaft Brown Boveri & Cie. Magnetohydrodynamic machine. 3,479,537, Cl. 310-011.
- Jensen, Hans A., and Merdler, Myron J., to Oscar Mayer & Co., Inc. Packaging machine. 3,478,488, Cl. 053-112.
- Jensen, Howard J.: *See—*
  - Waugh, Dale L., Brooks, Alden W., Jensen, Howard J., and Richmond, Kenneth D. 3,478,613.
- Jensen, Leland P. Fluid blending apparatus. 3,479,015, Cl. 259-110.
- Jeppson, Morris R., to Cryodry Corporation. Apparatus for treating food products and the like with microwave energy. 3,478,900, Cl. 219-010.55
- Jeremias, Helmuth M.: *See—*
  - Tronnier, Albrecht W., Jeremias, Helmuth M., and Gottesman, Arthur H. 3,479,117.
- Jerome, Jack. Electrical cable connection and connector sleeve. 3,479,445, Cl. 174-094.
- Jerrold Electronics Corporation: *See—*
  - Nardontonia, John A., 3,479,592.
  - Winston, Eric, and Qurashi, Maqbool, 3,479,633.
- Jewell, George S.: *See—*
  - Simpson, Robert G., Luker, Ronald J., and Jewell, George S. 3,479,513.
- Jirou, Marcel, and Leroy, Jean Marie Louis, to Kuhlmann, Ugine. Disazo dyestuffs containing an N,N-dicyanoethyl group. 3,479,332, Cl. 260-186.
- Johansson, Karl N. Ingvar. Roof construction. 3,478,474, Cl. 052-011.
- Johnson, Clarence, to AMCA Pharmaceutical Laboratories Ltd. Sectional body gate valve with seat scraping means. 3,478,771, Cl. 137-242.
- Johnson, Harold R.: *See—*
  - Breon, Pearl L., Imes, Vernon W., Johnson, Harold R., Nutter, James M., and Nutter, James M. 3,478,833.
- Johnson, John Raymond: *See—*
  - Murphy, Allen Milton, Jr., Retzke, Franklin Albert, and Johnson, John Raymond 3,479,175.
- Johnson, Lowell E., Hansen, Robert C., Pearce, Shairyl L., and Lanchantin, Charles E., Jr., to Caterpillar Tractor Company. Torque converter and control system therefor. 3,478,621, Cl. 074-688.
- Johnson Matthey & Company Limited: *See—*
  - Selman, Gordon L., 3,478,415.
- Johnston, Howard T., Jr.: *See—*
  - Carroll, William C., and Johnston, Howard T., Jr. 3,479,036.
- Johnston, James D., to Pfizer, Chas., & Co., Inc. Novel carbazates. 3,479,343, Cl. 260-240.
- Jones, Derrick A., to Minnesota Mining and Manufacturing Company. Shutter leaf control system. 3,478,664, Cl. 095-059.
- Jones, Faber B., to Phillips Petroleum Company. Adhesives from olefinically unsaturated polyesters and polythiols. 3,479,323, Cl. 260-075.
- Jones, Vercoe C., to Nutting Truck and Caster Company. Acceleration control mechanism. 3,478,698, Cl. 104-172.
- Jones, Vercoe C., to Nutting Truck and Caster Company. Self-contained acceleration control mechanism. 3,479,665, Cl. 104-172.
- Jorgensen, Niels Christian. Hair curler. 3,478,755, Cl. 132-033.
- Joseph, A David, to Eutectic Welding Alloys Corporation. Welding product and process. 3,479,231, Cl. 148-024.
- Joseph, Alan H., to Handy Manufacturing Company. Position control system. 3,479,522, Cl. 307-119.
- Jung, Margarete, Becker, Harald, and von Doehren, Hans, to Varta Aktiengesellschaft. Silver-containing catalytically active particulate material and electrode therefrom. 3,479,276, Cl. 204-290.
- Jurta, George E. Spherical incline braiding apparatus. 3,478,642, Cl. 087-050.
- Juszczyk, Leopold: *See—*
  - Budzynski, Kazimierz, Juszczyk, Leopold, Bonenberg, Zdzislaw, Dybal, Daniel, and Zakrawacz, Stanislaw 3,479,019.
- Juten, Milford A.: *See—*
  - Williams, Frank H., 3,479,013.
- Juzek, Robert C. Non-slip tuning peg for string instruments played by bows. 3,478,636, Cl. 084-305.
- Kabel-und Metallwerke Gutehoffnug-shutte Aktiengesellschaft: *See—*
  - Martin, Helmut, 3,479,621.
- Kabushiki Kaisha Ricoh: *See—*
  - Umahashi,'Minoru, and Yamakawa, Hitoshi, 3,478,665.
- Kaeslin, Oscar E. Vertical shelf and clothes pole support. 3,478,891, Cl. 211-090.
- Kahle, Gerald R., and Fodor, Lawrence M., to Phillips Petroleum Company. 1-Olefin polymerization process and catalyst. 3,479,330, Cl. 260-093.7
- Kaiser Gypsum Company, Inc.: *See—*
  - Papalia, Rocco, 3,478,479.
- Kajiura, Hiroshi: *See—*
  - Tanaka, Tatsuo, Gotoh, Keishi, and Kajiura, Hiroshi 3,478,599.
- Kajiwara, Masaichi: *See—*
  - Yamato, Junji, Tsukada, Keiichi, Kajiwara, Masaichi, and Ono, Masamichi 3,479,462.
- Kalisch, John H., to Canadian International Paper Company. Pretreatment of wood pulps with an alkaline solution of formaldehyde. 3,479,249, Cl. 162-018.
- Kalish, Samuel: *See—*
  - Morshauser, Fred S., Kalish, Samuel, and Biamonte, Alfred R. 3,479,429.
- Kamborian, Jacob S.: *See—*
  - Harriman, Allen C., and Vornberger, Karl F., 3,478,379.
- Kamei, Mikio: *See—*
  - Akamatsu, Hiroo, Morita, Takanobu, Kamei, Mikio, and Nozoe, Yasuhiro 3,479,518.
- Kaniuka, Walter W., to United States of America, Navy. Apparatus for resisting control stick deflection. 3,478,990, Cl. 244-085.
- Kaplan, John Joseph. Method and apparatus for removing meat from animal carcasses. 3,478,385, Cl. 017-046.
- Kaplan Paper Box Co.: *See—*
  - Richgels, Eugene, 3,478,949.
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  - Chodosh, Stewart M., and Katsoulis, Emanuel G. 3,479,225.
- Katz, Silas: *See—*
  - Trask, Roland Pierce, II, Katz, Silas, and Walker, M. Lucius, Jr. 3,478,764.
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- Kaufmann, Harold: *See—*
  - Achler, Howard S., and Kaufmann, Harold 3,478,555.
- Kaufmann Tool and Engineering Corporation: *See—*
  - Achler, Howard S., and Kaufmann, Harold, 3,478,555.
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- Kayser-Roth Corporation: *See—*
  - Homan, Elwood P., 3,478,544.
- Keats, John B., to Borg-Warner Corporation. Signal device. 3,478,714, Cl. 116-063.
- Keenan, John D., Jr.: *See—*
  - Sylvester, John D., and Keenan, John D., Jr. 3,478,490.
- Keep Chemical Company: *See—*
  - Ferrara, Peter J., 3,479,220.
- Kehoe, Norman T., and Stiegler, Elwood A., to Uniroyal, Inc. Apparatus and method for supplying sheet materials and beads to and assembling the same on a tire building drum. 3,479,238, Cl. 156-111.
- Keidel, John F., to General Atronics Corporation. Photoelectric code reading apparatus enabling in- use focusing and positioning. 3,479,519, Cl. 250-219.
- Kelley, Jack B.: *See—*
  - Piehl, Bill, 3,479,043.
- Kelley, James K.: *See—*
  - Mashikian, Matthew S., Kelley, James K., and McMurray, William C. 3,479,443.
- Kelley, John J.: *See—*
  - Duddy, Joseph C., Arms, John T., and Kelley, John J. 3,479,223.
- Kelly, Donald A. Compound vane rotary internal combustion engine. 3,478,728, Cl. 123-016.
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- Kemp Products Incorporated: *See—*
  - Kemp, Paul G., 3,478,913.

- Kendall, George W.: *See—*
  - Hough, Dean R., 3,478,582.
- Kenna, Fenton L., Jr.: *See—*
  - Graham, Robert L., Fachini, Robert M., and Kenna, Fenton L., Jr. 3,478,898.
- Kennecott Copper Corporation: *See—*
  - Lefler, Clarence Arthur, and Mittelstadt, Gerald D., 3,479,020.
- Kennedy, Howard L., to Motorola, Inc. Multiple power pulse generation. 3,479,532, Cl. 307-260.
- Kent-Owens Machine Company: *See—*
  - Tremblay, Albert F., 3,478,557.
- Kentucky Electronics, Inc.: *See—*
  - Yorns, Edward E., 3,478,628.
- Keough, William R. Apparatus for treating exhaust gases from a stack. 3,478,496, Cl. 055-230.
- Kerr, John, and Gay, Duncan, to National Research Development Corporation. Hydrodynamic gas bearing assembly. 3,479,098, Cl. 308-009.
- Kerwin, James F.: *See—*
  - Georgian, Vlasios, and Kerwin, James F. 3,479,342.
- Ketley, Arthur D., to Grace, W. R., & Co.Process for preparing palladium-π-allyl complexes. 3,479,379, Cl. 260-429.
- Kidd, Joseph V. Pressure balanced mechanical detector with permanent magnetic means activating indicator means. 3,478,717, Cl. 116-124.
- Kidwell, Jay F., to Anchor Hocking Corporation. Method and means for inspecting glass articles. 3,479,514, Cl. 250-223.
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- Kimberly-Clark Corporation: *See—*
  - Weber, Robert E., 3,478,716.
- Kimble, Harry E., and Reinhardt, Paul W. Method of attracting and netting fish. 3,478,460, Cl. 043-004.5
- King, George: *See—*
  - Sandbank, Carl Peter, King, George, and Marsh, Stanley Bruce 3,479,611.
- King, Richard G.: *See—*
  - Cloud, Charles E., King, Richard G., and George, James R. 3,478,492.
- King, William H., Jr., to Esso Research and Engineering Company. Integral heater piezoelectric devices. 3,478,573, Cl. 073-026.
- Kirby, Ralph W., and Richards, Philip C., to Bell Telephone Laboratories, Incorporated. PBX in-dialing. 3,479,467, Cl. 179-018.
- Kirk, David B., to Moore Products Co. Pilot valve. 3,478,765, Cl. 137-081.5
- Kirkpatrick, Kenneth K.: *See—*
  - Orlandini, Bruno, and Kirkpatrick, Kenneth K. 3,479,378.
- Kister, Dale F., to Foxboro Company, The. Gated oscillator digital controller. 3,478,767, Cl. 137-088.
- Kita, Yasuo, to Sumitomo Electric Industries, Ltd. Caliper type disc brake. 3,478,845, Cl. 188-073.
- Klebe, Johann F., to General Electric Company. Cyclic silyl amides. 3,479,383, Cl. 260-448.2
- Klee, Maurice: *See—*
  - Davidow, Martin A., and Klee, Maurice 3,478,749.
- Kleedehn, Eckhart: *See—*
  - Herbst, Hagen, Kleedehn, Eckhart, and Pietrucha, Herbert 3,478,462.
- Kleer-Vu Industries, Inc.: *See—*
  - Sager, Thomas, 3,478,871.
- Kleiman, Joseph: *See—*
  - Sleven, Marvin, Kleiman, Joseph, and Hobel, Daniel 3,479,648.
- Kleinhagauer, Otmar: *See—*
  - Tarmann, Bruno, and Kleinhagauer, Otmar 3,478,809.
- Klemm, Robert E. Cooking apparatus. 3,479,488, Cl. 219-536.
- Kline, John E.: *See—*
  - Votaw, Richard L., and Kline, John E. 3,478,409.
- Klinger, Kenneth A., Randall, John J., and Sakach, Joseph M., Jr., to Borg-Warner Corporation. Metal plating of plastic materials. 3,479,160, Cl. 029-195.
- Klutchko, Sylvester: *See—*
  - Hansen, Holger V., Klutchko, Sylvester, and Meltzer, Robert I. 3,479,358.
- Knapp, Emil P., to Lear Siegler, Inc. Compensating means for synchro output for barometrically actuated systems. 3,478,593, Cl. 073-387.
- Knapp, Frank T., to United States Envelope Company. Blank shingling mechanism for envelope forming machine. 3,479,025, Cl. 271-002.
- Knapp, Wilhelm: *See—*
  - Bender, Alfred, and Knapp, Wilhelm 3,478,847.
- Kobryner, Herman H., to Murray Manufacturing Corporation. Door hinging arrangement in raintight enclosures. 3,479,104, Cl. 312-229.
- Kocher, Erich J., and Grant, Whitney I., to Vilter Manufacturing Corporation. Control for air cooled condensers. 3,478,533, Cl. 062-196.
- Koehler, Dale R., and Grissom, John T., to United States of America, Army. X-ray spectral measuring system utilizing a solid state ionization chamber. 3,479,507, Cl. 250-083.3
- Koehler-Dayton, Inc.: *See—*
  - Helke, Robert C., and Sturgeon, Wayne E., 3,478,690.
- Koenig, Fred W.: *See—*
  - Kus, Stanley T., and Koenig, Fred W. 3,479,305.
- Koerner, Ernest L., Jr., to Monsanto Company. Purifying phosphoric acid. 3,479,139, Cl. 023-165.
- Kogure, Akira: *See—*
  - Mori, Kan, Suminoe, Taro, Yamazaki, Tamotu, Ishikawa, Tunezo, and Kogure, Akira 3,479,331.
- Kohn, Gustave K., and Fenyes, Joseph G. E., to Chevron Research Company. 1-Halo-1-nitro-alkylsulfoneyl halides and their 1-nitro-alkyladisulfide precursors. 3,479,413, Cl. 260-543.
- Kohya, Tetsuya, and Komagata, Eiiti, to Mitsubishi Denki Kabushiki Kaisha. Refrigerator. 3,478,536, Cl. 062-441.
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- Kolb, Hermann: *See—*
  - Mallrich, Rudolf, and Kolb, Hermann 3,478,785.
- Kolin, Alexander, and Cox, Paul A. University of California, The Regents of the Electrophoretic fractionating apparatus. 3,479,277, Cl. 204-299.
- Kollsman, Paul. Automatic color balance for color television. 3,479,448, Cl. 178-005.2
- Komagata, Eiiti: *See—*
  - Kohya, Tetsuya, and Komagata, Eiiti 3,478,536.
- Koo, Raymond H.: *See—*
  - Michener, Aubrey W., Jr., Carlson, Emery J., and Koo, Raymond H. 3,479,136.
- Koppel, Harold H.: *See—*
  - Hornfeck, Anthony J., Koppel, Harold H., and Louis, John R. 3,479,492.
- Korczynski, Joseph E. Apparatus for pulling fence posts and the like. 3,479,012, Cl. 254-132.
- Kosar, John. Positive locking, nonmarring set screw. 3,479,072, Cl. 287-052.08
- Kosem, Marion, to Bunker-Ramo Corporation, The. Feed rate computer and squaring circuit for a pulse responsive multiaxes servo system. 3,479,574, Cl. 318-018.
- Kozacka, Frederick J., to Chase-Shawmut Company, The. High voltage fuse particularly for circuits including solid state devices. 3,479,630, Cl. 337-159.
- Kraeplin, Robert C., to Borg-Warner Corporation. Automatic wear adjuster for friction device. 3,478,853, Cl. 192-111.
- Kramer, Bernhard, and Weber, Paul, to Farbenfabriken Bayer Aktiengesellschaft. Phthalocyanine type dyestuffs. 3,479,126, Cl. 008-026.
- Kramer, Don A., to Motorola, Inc. Raster distortion correction circuit. 3,479,554, Cl. 315-024.
- Krantz, H.: *See—*
  - Buehl, Karl-Heinz, 3,478,375.
- Krause, Herbert, to Atwood Vacuum Company. Seat slide structures. 3,479,099, Cl. 308-003.
- Krause, Walter H., to PPG Industries, Inc., mesne. Actuating device for pressurized containers. 3,478,938, Cl. 222-402.14
- Krautwald, Herbert: *See—*
  - Lindner, Werner, Krautwald, Herbert, and Schedele, Helmut 3,479,623.
- Kreider, Robert W., to General Tire & Rubber Company, The. Oil extension of latices. 3,479,313, Cl. 260-029.7
- Krempel, Fritz, and Stoferle, Theodor, to Huller, Karl, GmbH. Conveying apparatus. 3,478,859, Cl. 198-019.
- Kretzmer, Ernest R., to Bell Telephone Laboratories, Incorporated. Circuit for enabling simultaneous transmission in both directions on a two-wire line. 3,479,468, Cl. 179-081.
- Krimmel, Carl Peter, to Searle, G. D., & Co. Pyridinecarboxylic acid esters of benzenehexol. 3,479,364, Cl. 260-295.
- Kripak, Leonid: *See—*
  - Glass, Marvin I., Stan, Henry, and Kripak, Leonid 3,479,035.
- Krog, Niels: *See—*
  - Vrang, Carl, Krog, Niels, and Lauridsen, Jens Birk 3,479,189.
- Kroth, Neil W.: *See—*
  - Cryder, John R., and Kroth, Neil W. 3,478,646.
- Krueger, Albert P.: *See—*
  - Fessler, Julius H., 3,478,889.
- Krutein, Manfred G. Undersea stockpile and blending apparatus. 3,479,089, Cl. 299-009.
- Kuckein, Paul A.: *See—*
  - Jacques, James O., Montgomery, David, and Kuckein, Paul A. 3,479,493.
- Kuhlmann, Ugine: *See—*
  - Jirou, Marcel, and Leroy, Jean Marie Louis, 3,479,332.
- Kulling, Achim: *See—*
  - Tillmann, Peter, Kulling, Achim, and Hitzemann, Gerhard 3,479,148.
- Kunderman, Fred K., to Dresser Industries, Inc. Variable area diffuser for compressor. 3,478,955, Cl. 230-114.
- Kunert, Herbert B.: *See—*
  - Pfeiffer, Albert, Cogswell, Richard V., Lynch, Charles W., and Kunert, Herbert B. 3,478,926.
- Kus, Stanley T., and Koenig, Fred W., to Standard Oil Company. Process for producing foams from carboxylic acid derivatives and isocyanates by water catalysis. 3,479,305, Cl. 260-002.5
- Kustom Electronics, Inc.: *See—*
  - Ross, Charles A., 3,478,837.
- Kwake, John P. Means for constant pressurization of inflatable and other enclosures. 3,478,472, Cl. 052-001.

- LaBrie, Paul J.: *See—*
  - Shapiro, Laban D., Latham, Peter A., Brefka, Paul E., and LaBrie, Paul J. 3,479,568.
- Lafer, Moveis, Ltda.: *See—*
  - Lafer, Percival, 3,479,083.
- Lafer, Percival, to Lafer, Moveis, Ltda. Convertible wooden furniture. 3,479,083, Cl. 297-118.
- Laffin, Michel, to Societe Anonyme: Ugine Kuhlmann. Continuous pouring of metals. 3,478,814, Cl. 164-281.
- Laganis, Deno, to Schenectady Chemicals, Inc. Phenol formaldehyde containing oil free polyester insulating varnish. 3,479,307, Cl. 260-020.
- Lagerguist, William, to Minnesota Automotive, Inc. Compound master brake cylinder. 3,478,518, Cl. 060-054.6
- 2/10 Lahive, John A., Jr.: *See—*
  - Smyth, Robert R., Smyth, William B., and Smyth, Ralston B., 3,478,851.
- Lamb, Anthony H. Divers thermometer. 3,478,592, Cl. 073-363.9
- Lambelin, Georges: *See—*
  - Buu-Hoi, Nguyen P., Lambelin, Georges, Lepoivre, Constan, Gillet, Claude, and Thiriaux, Jacques 3,479,396.
- Lambert, John B., and Marsh, Harold G., to Fansteel Metallurgical Corporation, mesne. Process for making chromium alloys of dispersion-modified iron-group metals, and product. 3,479,180, Cl. 075-206.
- Lamphere, David A.: *See—*
  - Philipps, David J., and Lamphere, David A. 3,478,587.
- Lanchantin, Charles E., Jr.: *See—*
  - Johnson, Lowell E., Hansen, Robert C., Pearce, Shairyl I., and Lanchantin, Charles E., Jr. 3,478,621.
- Land, Edwin H., to Polaroid Corporation. Photographic apparatus with flash exposure control system. 3,478,660, Cl. 095-011.5
- Land, Edwin H., and Wolff, Otto E., to Polaroid Corporation. Multilayer film pack. 3,479,184, Cl. 096-076.
- Landsem, Perry E. Line reeling control means. 3,478,984, Cl. 242-154.
- Lanes, Jacques P. H. Apparatus for making wine. 3,478,669, Cl. 099-276.
- Lange, Winthrop E. Pharmaceutical composition and method containing 5-methyl-5-(4-pyridyl)-2-oxide-1,3,2-dioxathiane. 3,479,434, Cl. 424-230.
- Lanham, William E., Jr.: *See—*
  - Lanham, William E., Miller, Gene C., and Lanham, William E., Jr. 3,478,705.
- Lanham, William E., Miller, Gene C., and Lanham, William E., Jr. Proofers and ovens for bread products. 3,478,705, Cl. 107-057.
- Larimer, Victor L., to Ashland Oil and Refining Company, mesne. Hydroxy phenyl fatty amides and polymers thereof, their preparation and use. 3,479,377, Cl. 260-404.
- Lasscigne, Albon J., to Sears, Roebuck and Co. Automatic closet light. 3,479,498, Cl. 240-002.
- Latham, Peter A.: *See—*
  - Shapiro, Laban D., Latham, Peter A., Brefka, Paul E., and LaBrie, Paul J. 3,479,568.
- Lattke, Horst G., to Emhart Corporation. Apparatus for loading articles in upwardly open non-partitioned packing cases. 3,478,491, Cl. 053-248.
- Laufer, Robert J., to Consolidation Coal Company. Sulfurization of 2,6-di-tert-butylphenol. 3,479,407, Cl. 260-608.
- Lauridsen, Jens Birk: *See—*
  - Vrang, Carl, Krog, Niels, and Lauridsen, Jens Birk 3,479,189.
- Lautzenhiser, Robert L., and Michel, James D., to Hughes Aircraft Company. Tie-down apparatus. 3,478,995, Cl. 248-361.
- Lawless, William J., to Bell Telephone Laboratories, Incorporated. Multiple counter stage using coincidence gates to coordinate input signals and feedback signals within the stage. 3,479,524, Cl. 307-222.
- Lawrenson, Jack: *See—*
  - Robinson, Albert Sidney, and Lawrenson, Jack 3,479,171.
- Lazar, Edward. Pocket type retractable plumb-bob and casing. 3,478,438, Cl. 033-217.
- Lazenby, John Kevin: *See—*
  - Eardley, Stephen, Gregory, Gordon Ian, Lazenby, John Kevin, and Long, Alan Gibson 3,479,350.
- Leanza, William J.: *See—*
  - Patchett, Arthur A., Rogers, Edward F., and Leanza, William J. 3,479,401.
- Lear Jet Industries, Inc.: *See—*
  - Lear, William P., and Auld, Samuel H., 3,478,973.
- Lear Siegler, Inc.: *See—*
  - Knapp, Emil P., 3,478,593.
  - Linker, John T., 3,478,857.
- Lear, William P., and Auld, Samuel H., to Lear Jet Industries, Inc. Compact player for magnetic tape cartridges. 3,478,973, Cl. 242-055.19
- Lease, Charles W.: *See—*
  - Arbuckle, Wendell S., 3,479,187.
- Ledig, Kurt W.: *See—*
  - Wendt, Gerhard R., and Ledig, Kurt W. 3,479,347.
- Ledig, Kurt W:, and Wendt, Gerhard R., to American Home Products Corporation. Amidinohydrazones of 4-halo-3-keto-steroids and intermediates. 3,479,341, Cl. 260-239.55
- Ledoga S.p.A.: *See—*
  - Nobile, Luciano, 3,479,248.
- Lee, DeWayne A., to United States of America, Atomic Energy Commission. Extraction of lithium values. 3,479,147, Cl. 023-312.
- Lees, Ronald D.: *See—*
  - Buhl, Frank C., Lees, Ronald D., and Monagle, Daniel J. 3,479,221.
- Lees, Ronald D., to Hercules Incorporated. Separation of finely divided solids from liquid suspensions thereof. 3,479,284, Cl. 210-054.
- Leesona Corporation: *See—*
  - Chodosh, Stewart M., and Katsoulis, Emanuel G., 3,479,225.
  - Oswin, Harry G., 3,479,226.
- Lefebvre, Gilles: *See—*
  - Chauvin, Yves, and Lefebvre, Gilles 3,479,329.
- Lefevre, Lloyd Edward, and Breidt, Peter, Jr., to Dow Chemical Company, The. Method of forming a composite multilayer film. 3,479,425, Cl. 264-171.
- Lefler, Clarence Arthur, and Mittelstadt, Gerald D., to Kennecott Copper Corporation. Apparatus for precipitating metal values from a solution pregnant with such values. 3,479,020, Cl. 266-022.
- Lefrancois, Bernard: *See—*
  - Roth, Etienne, and Lefrancois, Bernard 3,479,140.
- Leibowitz, Marvin R., and Grosser, Frederick, to GAF Corporation. Graft copolymers of α-olefins and preformed, water-insoluble, homopolymer of N-vinyl- 2-pyrrolidone. 3,479,417, Cl. 260-878.
- Leiter, Harry. Surgical apparatus. 3,478,744, Cl. 128-303.14
- Leitz, Ernst: *See—*
  - Weissenberg, Gustav, 3,479,512.
- Lentz, Ervin C., to Walker Manufacturing Company. Exhaust system. 3,479,145, Cl. 023-288.
- Le Poec, Claude: *See—*
  - Comar, Dominique, and Le Poec, Claude 3,479,508.
- Lepoivre, Constan: *See—*
  - Buu-Hoi, Nguyen P., Lambelin, Georges, Lepoivre, Constan, Gillet, Claude, and Thiriaux, Jacques 3,479,396.
- Lepselter, Martin P.: *See—*
  - Rymes, Peter A., Jr., and Lepselter, Martin P. 3,479,269.
- Leroy, Jean Marie Louis: *See—*
  - Jirou, Marcel, and Leroy, Jean Marie Louis 3,479,332.
- Lese, Henri K., Schulz, Johann G. D., and Whitaker, Arthur C., to Gulf Research & Development Company. Oxidation of 1,1-diarylalkanes. 3,479,400, Cl. 260-517.
- Lester, Dan A. Film cartridge for continuous showing of motion picture film. 3,479,112, Cl. 352-078.
- Levene, Leon, to Owens-Illinois, Inc. Methods for preparing organopolysiloxanes at neutral conditions. 3,479,316, Cl. 260-033.4
- Lever Brothers Company: *See—*
  - Cahn, Arno, and Gilbert, Allan H., 3,479,301.
- Levesque, Peter, and Haeflein, William K., to Fischer & Porter Co. Conveyor belt weighing system. 3,478,830, Cl. 177-016.
- Levin, Per Erik: *See—*
  - Backstrom, Arne Ivar, Henrikson, Sture, and Levin, Per Erik 3,479,181.
- Levine, Alfred L., and Yee, Peter P. M., to Bendix Corporation, The. Electrostatic reader head. 3,479,491, Cl. 235-061.11
- Levine, Seymour D.: *See—*
  - Principe, Pacifico, and Levine, Seymour D. 3,479,391.
- Lewis, Richard L., to Bendix Corporation, The. Sealed wheel cylinder. 3,478,649, Cl. 092-050.
- Lewis, Richard L., and Smith, Donald W., to Bendix Corporation, The. Proportioning valve. 3,479,095, Cl. 303-022.
- Libbey-Owens-Ford Glass Company: *See—*
  - McCown, William E., Maltby, Robert E., Jr., and Allen, Carey M., 3,479,172.
- Librande, Samuel M., to Simpson, Mary Phyllis, mesne. Protective brassiere. 3,478,739, Cl. 128-132.
- Licentia Patent-Verwaltungs G.m.b.H.: *See—*
  - Broszat, Gottfried, 3,479,629.
- Lickeliter, Robert P., Abbott, Earl, and Reeves, John F. Pneumatic press. 3,478,678, Cl. 100-049.
- Liebel, Bruce W., Edgington, Howard C., and Meredith, Philip J., to United States of America, Air Force. System for measuring the impedance and phase of a solid propellant including a constant current source. 3,479,585, Cl. 324-057.
- Lieberman, George, Palmer, Milton, and Prussin, Samuel B., to Dart Industries Inc. Composition for application to hair. 3,479,427, Cl. 424-047.
- Liebl, Helmut J., to Applied Research Laboratories, Inc. Method of operating an ion microprobe using secondary elections. 3,479,505, Cl. 250-049.5
- Liepmann, Wolfgang H.: *See—*
  - Regunberg, Jerome, and Liepmann, Wolfgang H. 3,479,451.
- Lind, Carl Eric Gottfrid, to Aktiebolaget Svenska Precisionsverktyg. Pump driven by an electric motor. 3,478,688, Cl. 103-025.
- Lindberg, Verne L.: *See—*
  - Palmer, Albert, and Lindberg, Verne L. 3,478,789.
- Linder, Fritz. Sliding closure for pressure vessels and autoclaves. 3,478,916, Cl. 220-041.
- Lindner, Melvin: *See—*
  - Kaufman, Myron N., and Lindner, Melvin 3,479,439.
- Lindner, Werner, Krautwald, Herbert, and Schedele, Helmut, to Siemens Aktiengesellschaft. Electromagnetic relay with multiple contact spring sets. 3,479,623, Cl. 335-129.
- Lindquist, Arne M., to Aktiebolaget Helios Kemisk-Tekniska Fabriker. Metering apparatus. 3,478,934, Cl. 222-309.
- Lindsay, James B. Apparatus for detailing topographic maps in accordance with aerial photographs of topography. 3,479,115, Cl. 353-006.

- Linke, Gunter: *See—*
  - Munster, Josef, Wellensick, Gerd, and Linke, Gunter 3,478,725.
- Linker, John T., to Lear Siegler Inc. Keyboard pushbutton return spring. 3,478,857, Cl. 197-098.
- Little, Arthur D., Inc.: *See—*
  - Ashman, Leland E., 3,479,167.
- Litton Precision Products, Inc.: *See—*
  - Pokorny, Gerold E., 3,479,572.
- Littwin, Arthur K.: *See—*
  - Littwin, Arthur K., and Littwin, Donald F., 3,478,876.
- Littwin, Arthur K., and Littwin, Donald F., to Littwin, Arthur K. Littwin, Robert L. Littwin, Donald F., and Young, Horace A., trustees of Littwin Family trust no. 1. Magnetic parts sorter. 3,478,876, Cl. 209-073.
- Littwin, Donald F.: *See—*
  - Littwin, Arthur K., and Littwin, Donald F. 3,478,876.
- Littwin, Donald F.: *See—*
  - Littwin, Arthur K., and Littwin, Donald F., 3,478,876.
- Littwin Family trust no. 1: *See—*
  - Littwin, Arthur K., and Littwin, Donald F., 3,478,876.
- Littwin, Robert L.: *See—*
  - Littwin, Arthur K., and Littwin, Donald F., 3,478,876.
- Ljungstrom, Olle: *See—*
  - Eckered, Thomas Harald, Sviden, Ove, and Ljungstrom, Olle 3,478,836.
- Llewellyn, Thomas E. Variable thrust rocket engine. 3,478,965, Cl. 239-265.25
- Lloyd, Robert H.F., to International Business Machines Corporation. Method for simultaneously forming a buried layer and surface connection in semiconductor devices. 3,479,233, Cl. 148-174.
- Loboda, Wesley J.: *See—*
  - Hochman, Jack M., and Loboda, Wesley J. 3,479,146.
- Lockwood, Warren H. Nesting and stacking utility bin. 3,478,892, Cl. 211-126.
- Lodwick, Ross W.: *See—*
  - Erwin, Kenneth L., and Lodwick, Ross W. 3,479,480.
  - Erwin, Kenneth L., and Lodwick, Ross W. 3,479,482.
- Logan, Charles H.: *See—*
  - Poor, John H., and Logan, Charles H. 3,479,101.
- Loiseau, Gerard Paul Marie Henri, to Ugine Kuhlman. Methods for stimulating growth of animals with phosphocreatinine. 3,479,433, Cl. 424-200.
- Lombardo, Allan: *See—*
  - Birlain Schafler, Armando, and Lombardo, Allan 3,478,684.
- Long, Alan Gibson: *See—*
  - Eardley, Stephen, Gregory, Gordon Ian, Lazenby, John Kevin, and Long, Alan Gibson 3,479,350.
- Long, Hamish Arthur: *See—*
  - Jackson, John Brian, Sherliker, Francis Raymond, and Long. Hamish Arthur 3,479,318.
- Longenecker, Levi S. Apparatus and method for preheating of metal scrap for furnace charging. 3,479,438, Cl. 013-009.
- Longview Fibre Company: *See—*
  - Willard, Edwin J., 3,478,654.
- Loomis, Russell M.: *See—*
  - Lundvall, John S., Loomis, Russell M., and Breen, Henry D. 3,478,700.
- Lord, John B., and Lytle, Dean W., to Honeywell Inc. Automatic channel equalization apparatus. 3,479,458, Cl. 178-069.
- Louden, William C., to General Electric Company. Method of sealing zirconium hydride coated niobium end caps to alumina ceramic envelopes. 3,479,170, Cl. 065-059.
- Louis, John R.: *See—*
  - Hornfeck, Anthony J., Koppel, Harold H., and Louis, John R. 3,479,492.
- Love, David Christopher: *See—*
  - Scoffield, Eric George, and Love, David Christopher 3,479,131.
- Love, Robert G., to Halliburton Company. Variable frequency pressure transducer. 3,478,594, Cl. 073-398.
- Lovelock, Leonard Robert, Way, Kenneth Richard, and Wren, Robert Henry, to International Standard Electric Corporation. Epoxide resin seals. 3,479,204, Cl. 117-046.
- Lowenstein, Albert: *See—*
  - Rutzen, Horst, and Lowenstein, Albert 3,479,297.
- Lubrifiants: *See—*
  - Chauvin, Yves, and Lefebvre, Gilles, 3,479,329.
- Lucas, Joseph,(Industries) Limited: *See—*
  - Cooksey, William Harold, 3,479,472.
  - Palmer, Kenneth Percival, and Taylor, Michael Charles, 3,478,766.
  - Preece, Kenneth, 3,478,421.
  - Wright, Maurice James, and Nolan, Roger William, 3,479,575.
- Luebs, Donald F., to U.S. Plywood-Champion Papers, Inc. Snap-on plastic cover. 3,478,478, Cl. 052-309.
- Luker, Ronald J.: *See—*
  - Simpson, Robert G., Luker, Ronald J., and Jewell, George S. 3,479,513.
- Luketa, Frank J., to Robbins, Felix & Robbins. Handling of a net and its catch aboard a trawler. 3,478,461, Cl. 043-008.
- Lummus Company, The: *See—*
  - Huibers, Derk Th. A., 3,479,385.
  - Sze, Morgan C., and Stewart, Donald B., 3,479,298.
- Lund, Frederick J. Pneumatic precipitating power applying apparatus. 3,478,969, Cl. 239-654.
- Lundvall, John S., Loomis, Russell M., and Breen, Henry D., to Unarco Industries, Inc. Floor latch strip for railway cars. 3,478,700, Cl. 105-369.
- Lunsford, Carl D., Helsley, Grover C., and Richman, John A., Jr., to Robins, A.H., Company, Incorporated. Esters of 1-substituted-3-disubstituted- pyrrolidinemethanols. 3,479,370, Cl. 260-326.3
- Lustenader, Edward L., and Van Luik, Frank W., Jr., to General Electric Company. Vortex-electrostatic separator. 3,478,494, Cl. 055-127.
- Lyden, Anders Gustaf: *See—*
  - Dissing, Erik, and Lyden, Anders Gustaf 3,479,593.
- Lydtin, Hans Jurgen: *See—*
  - Frohner, Klaus, Horster, Horst, Lydtin, Hans Jurgen, and Reifenschweiler, Otto 3,479,550.
- Lynch, Charles W.: *See—*
  - Pfeiffer, Albert, Cogswell, Richard V., Lynch, Charles W., and Kunert, Herbert B. 3,478,926.
- Lynn, David. Dispensing container for pipe tobacco. 3,478,931, Cl. 222-166.
- Lynn, Lewis G., to Xerox Corporation. Particle size and distribution analyzing apparatus. 3,478,600, Cl. 073-432.
- Lyon, Richard K., to Esso Research and Engineering Company. Hydrogen storage system. 3,479,165, Cl. 048-190.
- Lytle, Dean W.: *See—*
  - Lord, John B., and Lytle, Dean W. 3,479,458.
- M & M Distributing Company, Incorporated: *See—*
  - Meyer, Maurice J., 3,478,768.
- M-O Value Company Limited, The: *See—*
  - Baker, Basil Offor, 3,479,549.
- Ma, Carlton Y. W., and Pfister, Stanley A., to Cincinnati Milling Machine Co., The. Hydraulic control system. 3,478,513, Cl. 060-052.
- Mack, Donald E., to Xerox Corporation. Dicode decoder. 3,479,597, Cl. 325-321.
- MacKenzie, Thomas E., and Sinclair, Donald B., to General Radio Company. Reflection-coefficient measuring apparatus. 3,479,587, Cl. 324-058.
- Mac Lean, Alexander F., to Celanese Corporation. Catalytic oxidations with ruthenium. 3,479,403, Cl. 260-530.
- MacLean, Alexander F., and Stautzenberger, Adin L., to Celanese Corporation of America. Olefin oxidation process. 3,479,262, Cl. 204-080.
- Madan AD: *See—*
  - Buu-Hoi, Nguyen P., Lambelin, Georges, Lepoivre, Constan, Gillet, Claude, and Thiriaux, Jacques, 3,479,396.
- Madson, Walter Louis. Ski slope grooming device. 3,478,827, Cl. 172-379.
- Maeda, Tetsuo. Gearbox change lever for bicycles. 3,478,617, Cl. 074-489.
- Makino, Shinobu, to Shinko Electric Co., Ltd. Vibrator. 3,479,542, Cl. 310-081.
- Makow, David M., to Canadian Patents and Development, Limited. Displacement measuring device including a spaced four-corner electrode array. 3,479,588, Cl. 324-061.
- Mallett, Alfred L., to Seeburg Corporation, The. Counter resetting arrangement for rhythm accompaniment starting. 3,478,633, Cl. 084-001.03
- Mallrich, Rudolf, and Kolb, Hermann, said Kolb assor. to Seitz-Werke G.m.b.H. Counter pressure filling machine with a plurality of chambers. 3,478,785, Cl. 141-039.
- Malm, Robert E., to Page Communications Engineers, Inc. Signal correlation system using delta modulation. 3,479,495, Cl. 235-181.
- Maltby, Robert E., Jr.: *See—*
  - McCown, William E., Maltby, Robert E., Jr., and Allen, Carey M. 3,479,172.
- Man-Sew Corporation: *See—*
  - Sigoda, Victor J., 3,478,451.
- Manlove, Alliott & Company Limited: *See—*
  - Scoffield, Eric George, and Love, David Christopher, 3,479,131.
- Manock, Geoffrey Windle. Woven stretch fabric having yarn crimp superimposed on filament crimp and method of making same. 3,479,245, Cl. 161-077.
- Marateck, Harold: *See—*
  - Marateck, Jack M., and Marateck, Harold 3,479,070.
- Marateck, Jack M., and Marateck, Harold. Structure formed of joined panels. 3,479,070, Cl. 287-020.92
- Marathon Oil Company: *See—*
  - Norton, Charles J., and Seppi, Ned F., 3,479,397.
  - Peterson, Alan H., 3,479,322.
- Marcoux, Vernon F. J. Rotary combustion engine. 3,478,727, Cl. 123-015.
- Margon Corporation: *See—*
  - Wilhelm, John H., 3,478,465.
- Marion, Thomas E., to Universal Machine Co., Inc. Tube cutter. 3,478,627, Cl. 082-070.2
- Markert, Hans, and Heyden, Rudi, to Bohme Chemie Gesellschaft mit beschrankter Haftung. Composition and method for water-proofing leather and fur. 3,479,288, Cl. 252-008.57
- Marsh, Harold G.: *See—*
  - Lambert, John B., and Marsh, Harold G. 3,479,180.
- Marsh, Stanley Bruce: *See—*
  - Sandbank, Carl Peter, King, George, and Marsh, Stanley Bruce 3,479,611.
- Marshall, John L., Jr.: *See—*
  - Barlow, Paul D., and Marshall, John L., Jr. 3,478,398.

- Marsilio, Joseph V., and Reihman, Richard F., to Bethlehem Steel Corporation. Preheating and sealing device for a conduit connected to the vacuum chamber of a metal degassing apparatus. 3,479,486, Cl. 219-385.
- Marti, Fritz, to Portescap, Le. Porte-Enchappement Universal S.A. Bearing for watch pivot. 3,478,509, Cl. 058-140.
- Marti, Fritz, to Portescap, Le. Porte-Enchappement Universal S.A. Bearing for watch piece pivot. 3,478,510, Cl. 058-140.
- Martin, Daniel W., and Bereskin, Alexander B., to Baldwin, D. H., Company. Randomly-perturbed, locked-wave generator. 3,479,440, Cl. 084-001.25
- Martin, Helmut, to Kabel-und Metallwerke Gutehoffnug-shutte Aktiengesellschaft. Form stabilized wave guides. 3,479,621, Cl. 333-095.
- Martin, James B., Jr. Applicator for false eyelashes. 3,478,754, Cl. 132-001.
- Martin-Marietta Corporation: *See—*
  - Friedell, Morley V., 3,478,775.
- Martin, Michael J., Jr.: *See—*
  - Brown, Norman R., Martin, Michael J., Jr., and Stanner, Donald 3,478,405.
- Martin, Paul W., to Republic Industries, Inc. Automatic door operator. 3,478,468, Cl. 049-137.
- Martin, Robert W., and Spears, John R. Hydraulically actuated hucket closing means. 3,479,077, Cl. 294-070.
- Martin, Thomas W., Sr., Rogers, Asa Scobey, Jr., and Ashton, Shirley B., to Cutters Machine Company, Inc. Drive control means for cloth spreading machine. 3,479,023, Cl. 270-031.
- Martini, William R.: *See—*
  - Goranson, Richard B., and Martini, William R. 3,478,695.
- Maruyama, Isamu: *See—*
  - Yamamoto, Hisao, Nakao, Masaru, and Maruyama, Isamu 3,479,348.
- Marzocchi, Alfred, to Owens-Corning Fiberglas Corporation. Neoprene-glass fiber structures and method for preparation. 3,479,207, Cl. 117-076.
- Maschinenfabrik Bennenger AG: *See—*
  - Wenger, Max, 3,478,400.
- Maschinenfabrik Sack G.m.b.H.: *See—*
  - Schenk, Horst, and Wurtz, Friedhelm, 3,478,565.
- Mashikian, Matthew S., Kelley, James K., and McMurray, William C., to Detroit Edison Company, The. Capacitively graded modular pothead for H-V cable. 3,479,443, Cl. 174-073.
- Masino, John Albert, Sturdevant, Eugene J., and Williams, Stanley Victor, to Du Pont de Nemours, E. I., and Company. Yarn package support inspector. 3,479,520, Cl. 250-222.
- Massey, Richard P.: *See—*
  - Harris, William B., and Massey, Richard P. 3,479,533.
- Masucci, Eugene D., to Bell Telephone Laboratories, Incorporated. Telephone line hunting system. 3,479,465, Cl. 179-018.
- Mathes, Kenneth N., to General Electric Company. Method of treating insulated wire. 3,479,218, Cl. 117-231.
- Mathews, Edward C., to Simmonds Precision Products, Inc. Indicator housing with a pointer driving means having a front face concave scale member. 3,479,591, Cl. 324-099.
- Mattern, John, to United States of America, Army. Balanced square-law microwave mixer. 3,479,601, Cl. 325-449.
- Matthies, Alan A., to Controls Company of America. Thermistor controlled refrigeration expansion valve. 3,478,534, Cl. 062-225.
- Mattie, Eugene A. Muffler having two parallel bores with slotted baffles. 3,478,842, Cl. 181-056.
- Maul Bros., Inc.: *See—*
  - Bracken, Robert S., 3,479,173.
- Maurin, Pierre: *See—*
  - Eppendahl, Pierre Charles, and Maurin, Pierre 3,478,983.
- Maurya, Ramamurat R., Harrington, Joseph, Jr., and Squibb, Edward R., III, to Caterpillar Tractor Company, mesne. Friction welding. 3,478,410, Cl. 029-470.3
- Maxfield, Robert E., to National Ideal Company, The. Brooding and growing cage. 3,478,721, Cl. 119-018.
- May, Gordon H., to International Business Machines Corporation. Fare operated gate assembly. 3,478,467, Cl. 049-035.
- Maybach Mercedes-Benz Motorenbau GmbH: *See—*
  - Haide, Karl, 3,478,515.
- Mayer, Frank, & Associates, Inc.: *See—*
  - Crosslen, Louis John, 3,478,893.
- McAfee, Loyd, to Monroe Auto Equipment Company. Shock absorber performance demonstration stand. 3,478,445, Cl. 035-049.
- McBride, Anthony V. Lamp unit mounting receptacle. 3,479,636, Cl. 339-125.
- McBride, Harold O., Tichy, Oscar A. W., and McNish, Howard G., to Whirlpool Corporation. Flow responsive automatic water level control. 3,478,373, Cl. 008-158.
- McBride, Harold Oren, and Gartley, William H., to Whirlpool Corporation. Automatic water level control. 3,478,374, Cl. 008-158.
- McCann, John David, and Fuller, Robin Walter Ellecker, to United Kingdom Atomic Energy Authority. Electron emitting cathodes having a flexible graphite filament with an emissive coating thereon. 3,479,551, Cl. 313-334.
- McCown, William E., Maltby, Robert E., Jr., and Allen, Carey M., to Libbey-Owens-Ford Glass Company. Apparatus for controlling glass temperatures. 3,479,172, Cl. 065-158.
- McCracken, William E., to Jeffrey Galion Manufacturing Company. Continuous mining machine with pivot structure for mining head, gathering head and conveyor boom. 3,479,090, Cl. 299-064.
- Mc Cullough, Edward E., to Thiokol Chemical Corporation. Coupling and valve assembly. 3,478,762, Cl. 137-071.
- McCully, Charles Roland. Electrochemical cooling: 3,478,528, Cl. 062-003.
- McCutcheon, Lulu A. Educational and recreational lesson aids pixx games with peg boards. 3,478,446, Cl. 035-073.
- Mc Donald, John K., to Hyster Company. Method and apparatus for compacting soil. 3,478,656, Cl. 094-048.
- McDonnell Douglas Corporation: *See—*
  - Goranson, Richard B., and Martini, William R., 3,478,695.
- McFadden, Edward J., to Jackson, Byron, Inc. Fluid conductor means for hook mounted elevator. 3,479,062, Cl. 285-098.
- Mc Geachy, Donald E.: *See—*
  - Doig, George, and Mc Geachy, Donald E. 3,478,497.
- McGee, James Dwyer, Beesley, John, and Berg, Anthony David, to National Research Development Corporation. Electron stream transmission device. 3,479,516, Cl. 250-213.
- McGill, Alfred T.: *See—*
  - McGill, Daniel F., and McGill, Alfred T. 3,478,541.
- McGill, Daniel F., and McGill, Alfred T. Roller bearing splines. 3,478,541, Cl. 064-023.7
- McGraw-Edison Company: *See—*
  - Fremont, Robert S., 3,478,455.
- McHale, William L.: *See—*
  - Sorensen, Svend E., and McHale, William L. 3,478,651.
- McKinney, Ralph E., to Hoover Ball and Bearing Company. Bulk material handling system. 3,478,968, Cl. 239-650.
- Mc Lauchlan, Thomas A., and Fairfield, Louis R., Jr., to Weyerhaeuser Company. Fluid guide means. 3,479,097, Cl. 308-005.
- McLaughlin, William I., to Colorado Manufacturing Corporation. Sliding block valve and actuating mechanism therefor. 3,478,781, Cl. 137-625.63
- McLean, John O., to De Laval Turbine Inc. Method and apparatus for separation of tramp oil from oil-in-water emulsions. 3,478,873, Cl. 210-023.
- McLean, John O., and Schneider, John R., to De Laval Turbine Inc. Method for separation of tramp oil from oil-in-water emulsions. 3,478,874, Cl. 210-023.
- McMann, Renville H., Jr., to Columbia Broadcasting System, Inc. Sampling apparatus for television systems employing one and two pickup tubes. 3,479,450, Cl. 178-005.4
- McMurray, William C.: *See—*
  - Mashikian, Matthew S., Kelley, James K., and McMurray, William C. 3,479,443.
- McNish, Howard G.: *See—*
  - McBride, Harold O., Tichy, Oscar A. W., and McNish, Howard G. 3,478,373.
- Mc Pherson, George Bruce, and Patterson, Granville P. Combined water distribution and regeneration system. 3,478,884, Cl. 210-152.
- McRae, John L., and Wislocki, Joseph P. Wall friction device. 3,478,572, Cl. 073-009.
- Mead Corporation, The: *See—*
  - Dornbush, Ross J., 3,478,948.
  - Forrer, Homer W., and Chapman, James R., 3,478,953.
- Meadow, Jacob R.: *See—*
  - Geschickter, Charles F., and Meadow, Jacob R. 3,479,345.
- Mears, Norman B., to Buckbee-Mears Company. Self supporting shadow mask for colored TV picture tubes. 3,479,546, Cl. 313-085.
- Medeiros, Joe Lewis. Oven for cooking food using coals and stored heat. 3,478,674, Cl. 099-347.
- Medtronic, Inc.: *See—*
  - Greatbatch, Wilson, 3,478,746.
- Meisel, Herbert R.: *See—*
  - Grimes, Milton J., Henrikson, Donald F., and Meisel, Herbert R. 3,478,420.
- Meisels, Alex, Denss, Rolf, and Ryf, Hugo, to Geigy Chemical Corporation, mesne. 1-Tetrahydronaphthyl- and 1-indanyl-4-substituted phenyl-4-carboxyalkyl piperidines. 3,479,361, Cl. 260-293.4
- Meisels, Alex, Denss, Rolf, and Ryf, Hugo, to Geigy Chemical Corporation, mesne. 1-Naphthenyl- and 1-indenyl-4-substituted phenyl-4- carboxyalkyl piperidines. 3,479,363, Cl. 260-294.3
- Meisner, Paul, to Top Seal Incorporated. Cup filling machine and elements. 3,478,489, Cl. 053-167.
- Meixner, Otto. Machine with rotating tools for preparing worn-off pneumatic tires to be renewed circumferentially. 3,478,804, Cl. 157-013.
- Melton, Thomas M., to Mobil Oil Corporation. Manufacture of phosphonothioates. 3,479,418, Cl. 260-973.
- Meltzer, Robert I.: *See—*
  - Hansen, Holger V., Klutchko, Sylvester, and Meltzer, Robert I. 3,479,358.
- Mencacci, Samuel A., to International Machinery Corporation. Pressure cooker. 3,478,677, Cl. 099-360.
- Menikheim, Virginia C.: *See—*
  - Friedlander, Herbert N., and Menikheim, Virginia C. 3,479,129.
- Meoni, Angelo, to Societe Gerafin S.A. Method of manufacturing fixed value resistors. 3,478,424, Cl. 029-619.
- Merchant, Leo F.: *See—*
  - Noakes, Thomas E., and Merchant, Leo F. 3,478,774.
- Mercier, Alfred C.: *See—*
  - Allen, Harry R., and Mercier, Alfred C. 3,479,594.
- Merck & Co., Inc.: *See—*
  - Cragoe, Edward J., Jr., 3,479,402.
  - Patchett, Arthur A., Rogers, Edward F., and Leanza, William J., 3,479,401.

- Merdler, Myron J.: *See—*
  - Jensen, Hans A., and Merdler, Myron J. 3,478,488.
- Meredith, Philip J.: *See—*
  - Liebel, Bruce W., Edgington, Howard C., and Meredith, Philip J. 3,479,585.
- Merigold, Charles Reynolds, and Bauer, William Charles, to FMC Corporation. Particle size monitor. 3,478,597, Cl. 073-422.
- Merijan, Ashot, and Grosser, Frederick, to GAF Corporation. Polymers of vinyl esters and N-vinyl-3-alkyl-lactams. 3,479,327, Cl. 260-085.7
- Merola, Anthony. Hollow, metal ball bat. 3,479,030, Cl. 273-072.
- Merritt, Edward E., Titterud, Curtiss W., Peterson, Stanley E., and Bulow, Arthur J., to Federal Cartridge Corporation. Supporting die. 3,478,390, Cl. 018-014.
- Merry, Roydon William: *See—*
  - Stark, Frank Benjamin, and Merry, Roydon William 3,479,635.
- Messerly, Robert H.: *See—*
  - Pitchford, Irvin M., and Messerly, Robert H. 3,478,899.
- Met, Viktor, to Electro Optics Associates. Aligning and mounting mechanism device. 3,478,608, Cl. 074-089.15
- Metallgesellschaft Aktiegesellschaft: *See—*
  - Thikotter, Klaus Hermann, 3,479,017.
- Metzger, Sidney H., Jr., to Mobay Chemical Company. Tetrahydro-2-imino-1,3-oxazines. 3,479,351, Cl. 260-246.
- Meyer, Dietrich, to U.S. Philips Corporation, mesne. Arrangement for touch-free measurement of displacements. 3,479,582, Cl. 324-034.
- Meyer, Edwin F., and Wagner, Robert E., Jr., to United States of America, Army. Liquid dilatometer. 3,478,575, Cl. 073-032.
- Meyer, Maurice J., to M & M Distributing Company, Incorporated. Device for measuring and mixing measured amounts of material. 3,478,768, Cl. 137-101.21
- Meyerhoefer, Carl H. Portable, disposable barbecue unit. 3,478,733, Cl. 126-009.
- Michel, James D.: *See—*
  - Lautzenhiser, Robert L., and Michel, James D. 3,478,995.
- Michels, Nick P. Camera with dating apparatus. 3,478,657, Cl. 095-001.1
- Michener, Aubrey W., Jr., Carlson, Emery J., and Koo, Raymond H., to Allied Chemical Corporation. Iron free aluminum sulfate. 3,479,136, Cl. 023-123.
- Micheron, Francois: *See—*
  - Baumberger, Clement F., and Micheron, Francois 3,479,510.
- Michon, Gerald J., to General Electric Company. Minimum quantity selector with fail-safe override. 3,479,527, Cl. 307-235.
- Mickley, Lewis D., Jr.: *See—*
  - Westbrook, Sidney O., and Mickley, Lewis D., Jr. 3,479,060.
- Middaugh, George J., Jr.: *See—*
  - Charman, Walter M., Jr., and Middaugh, George J., Jr. 3,478,999.
- Mikami, Ichiro: *See—*
  - Murase, Tamotsu, Mikami, Ichiro, and Tamura, Moriyosi 3,479,399.
- Miles Laboratories, Inc.: *See—*
  - Borchert, Peter Jochen, 3,479,128.
- Miller, Bruce J.: *See—*
  - Yanishevsky, Gilbert, Miller, Bruce J., and Savinese, Stanley J. 3,479,553.
- Miller, Daniel C. Jack for raising motor vehicle wheels. 3,479,011, Cl. 254-094.
- Miller, Earl A. Instant grip or handle for a ski pole. 3,479,045, Cl. 280-011.37
- Miller, Gabriel L., to Bell Telephone Laboratories, Incorporated. Pulse stretcher-discriminator whose component electronics exhibit constant power dissipation. 3,479,534, Cl. 307-267.
- Miller, Gene C.: *See—*
  - Lanham, William E., Miller, Gene C., and Lanham, William E., Jr. 3,478,705.
- Miller Holzwarth, Inc.: *See—*
  - Miller, William E., and Webb, Douglas E., 3,479,119.
- Miller, Lester D., to Bangor Punta Operations, Inc. Trailer hitch safety device. 3,479,057, Cl. 280-511.
- Miller, Max W., to Pfizer, Chas., & Co., Inc. 1-Substituted-2-alkyl-5-nitroimidazoles. 3,479,367, Cl. 260-309.
- Miller, Roland E., Wayne, Clyde D., Olson, Edgar C., and Piatek, Robert J., to National Dairy Products Corporation. Method and apparatus for arranging articles in a row. 3,479,024, Cl. 270-058.
- Miller, Stewart E., to Bell Telephone Laboratories, Incorporated. Automatic frequency control system for controlling the frequency of the local oscillator used in a differential phase modulated PCM receiver. 3,479,600, Cl. 325-423.
- Miller, Theodore W.: *See—*
  - Hoffman, Floyd C., and Miller, Theodore W. 3,478,558.
- Miller, William E., and Webb, Douglas E., to Xerox Corporation, and Miller Holzwarth, Inc. Exposure control apparatus. 3,479,119, Cl. 355-080.
- Millhone, Ralph S.: *See—*
  - Hess, Patrick H., and Millhone, Ralph S. 3,478,824.
- Millmaster Onyx Corporation: *See—*
  - Wakeman, Reginald L., 3,479,406.
- Mills, Norman T.: *See—*
  - Pray, Ralph E., and Mills, Norman T. 3,479,135.
- Minett, Ernest Everet, and Weigl , John W., said Minett assor. to Xerox Corporation. Apparatus for justifying a reproduced line of characters. 3,478,659, Cl. 095-004.5
- Minieri, Pasquale P., to Tenneco Chemicals, Inc. Dialkyltin 1,4-endoalkylene-2,3-dihydrophthalates and -1,2,3,6-tetrahydrophthalates. 3,479,380, Cl. 260-429.7
- Minnesota Automotive, Inc.: *See—*
  - Lagerguist, William, 3,478,518.
- Minnesota Mining and Manufacturing Company: *See—*
  - Jones, Derrick A., 3,478,664.
  - Sloan, Robert J., 3,479,201.
- Miserlis, Constantine D., to Badger Company, Inc., mesne. Nitric acid concentration. 3,479,254, Cl. 203-013.
- Mishkin, Sidney: *See—*
  - Bidwell, Robert E., and Mishkin, Sidney 3,478,452.
- Mitchell, Maurice M., Jr., to Atlantic Richfield Company. Preparation of metal alkoxides. 3,479,381, Cl. 260-448.
- Mitsubishi Denki Kabushiki Kaisha: *See—*
  - Kohya, Tetsuya, and Komagata, Eiiti, 3,478,536.
  - Kohya, Tetsuya, and Tsuji, Mikio, 3,478,818.
  - Tada, Yasuo, 3,478,729.
- Mittelstadt, Gerald D.: *See—*
  - Lefler, Clarence Arthur, and Mittelstadt, Gerald D. 3,479,020.
- Mobay Chemical Company: *See—*
  - Heiss, Herbert L., 3,479,384.
  - Metzger, Sidney H., Jr., 3,479,351.
  - Sandridge, Robert L., 3,479,393.
- Moberg, Raymond H., to Sperry Rand Corporation. Coincident current memory apparatus and method. 3,479,656, Cl. 340-174.
- Mobil Oil Corporation: *See—*
  - Blatz, Paul E., and Faris, Sam R., 3,479,390.
  - Melton, Thomas M., 3,479,418.
  - Murphy, Charles L., 3,478,823.
  - Strubhar, Malcolm K., and Slover, Vasel R., Jr., 3,478,584.
  - Zemanek, Joseph, Jr., 3,478,839.
- Mockesch, Erich: *See—*
  - Sauttr, Gerd, Mockesch, Erich, and Gotz, Franz 3,478,756.
- Modderman, Pieter: *See—*
  - de Visser, Jacob, and Modderman, Pieter 3,479,375.
- Modell, Michael, to Abcor Inc., mesne. Thermal conductivity detector. 3,478,574, Cl. 073-027.
- Mole, Philip J. Self closing vapor controlling cap. 3,478,922, Cl. 220-086.
- Molik, Ronald E., to United States of America, Navy. Signal sensitive depressed threshold detector. 3,479,599, Cl. 325-323.
- Momotari, Yasumori, to Tohoku Kyodo Kagakukogyo Kabushiki Kaisha. Fungicidal composition containing the Ba-salts of phenol and chlorinated phenols. 3,479,431, Cl. 424-159.
- Momotoshi Watanabe: *See—*
  - Takeda, Keiichi, 3,479,213.
- Monagle, Daniel J.: *See—*
  - Buhl, Frank C., Lees, Ronald D., and Monagle, Daniel J. 3,479,221.
  - Harrison, John R., and Monagle, Daniel J. 3,479,283.
- Monroe Auto Equipment Company: *See—*
  - McAfee, Loyd, 3,478,445.
- Monsanto Chemical Company: *See—*
  - Speziale, Angelo John, and Ratts, Kenneth Wayne, 3,479,373.
- Monsanto Chemicals(Australia)Limited: *See—*
  - Samuel, Eva Lea, and Ennis, Brian Colwell, 3,479,368.
- Monsanto Company: *See—*
  - Alt, Gerhard H., 3,479,352.
  - Barlow, Paul D., and Marshall, John L., Jr., 3,478,398.
  - Bonzagni, Francis A., 3,479,247.
  - Bradley, Bruce R., and Sims, James G., 3,478,389.
  - Eisenhauer, Roy J., and Evans, Phillip W., 3,479,389.
  - Friedlander, Herbert N., and Menikheim, Virginia C., 3,479,129.
  - Koerner, Ernest L., Jr., 3,479,139.
- Monsanto Research Corporation: *See—*
  - Gruber, Bernard A., 3,479,227.
- Montecatini Edison S.p.A.: *See—*
  - Gambaretto, Gian Paolo, Rinaldo, Paolo, and Palato, Mario, 3,479,286.
  - Pregaglia, Gianfranco, Gregorio, Guglielmo, and Conti, Francesco, 3,479,412.
  - Veronica, Giacinto, Sironi, Giuseppe, and Colombini, Ariano, 3,479,177.
- Montgomery, David: *See—*
  - Jacques, James O., Montgomery, David, and Kuckein, Paul A. 3,479,493.
- Montgomery, Donald H., to RCA Corporation. Memory driver monitoring circuit. 3,479,650, Cl. 340-173.
- Moore, Edwin Barclay, to Dunlop Company Limited, The. Conductor spacers for multi-conductor electrical overhead transmission lines. 3,479,441, Cl. 174-042.
- Moore, Joe D. Suction filtering machine. 3,478,888, Cl. 210-255.
- Moore Products Co.: *See—*
  - Kirk, David B., 3,478,765.
- Moore, Samuel, and Company: *See—*
  - Paulson, Raymond, 3,478,982.
- Moore, Walter C.: *See—*
  - Harlin, Lester E., and Moore, Walter C. 3,478,957.
- Mooreland, Ronald R.: *See—*
  - Hursh, Neal W., and Mooreland, Ronald R. 3,479,566.
- Morando, Jorge A., to Crane Co., d/b/a Hydro-Aire Division. High-speed, self-boosting gear pump. 3,478,694, Cl. 103-126.

- Morelock, Charles R., to General Electric Company. Process for producing boron filament. 3,479,205, Cl. 117-046.
- Morgan, William C.: *See—*
  - Anderson, Norman L., Darnall, Millard K., Morgan, William C., Peterson, Laurel L., and Stedman, Robert N. 3,478,902.
- Mori, Kan, Suminoe, Taro, Yamazaki, Tamotu, Ishikawa, Tunezo, and Kogure, Akira, to Japan Synthetic Rubber Co., Ltd. Catalytic process for preparing a high molecular weight cis-1,4-polyisoprene. 3,479,331, Cl. 260-094.3
- Morino, Jiro: *See—*
  - Ito, Yoshikazu, Wakamatsu, Shigeru, Hara, Yoichiro, and Morino, Jiro 3,479,264.
- Morita, Takanobu: *See—*
  - Akamatsu, Hiroo, Morita, Takanobu, Kamei, Mikio, and Nozoe, Yasuhiro 3,479,518.
- Mork, Alfred N., to Celanese Coatings Company. Process for applying decorative coating to hardboard. 3,479,197, Cl. 117-012.
- Morozowich, Walter: *See—*
  - Houtman, Ronald L., Morozowich, Walter, and Sinkula, Anthony A. 3,479,334.
- Morrison, John R., and Speliotis, Dennis E., to International Business Machines Corporation. Magnetic transducer. 3,479,663, Cl. 340-174.1
- Morshauser, Fred S., Kalish, Samuel, and Biamonte, Alfred R., to Warner-Lambert Pharmaceutical Company. Multi-colored cosmetic preparation. 3,479,429, Cl. 424-063.
- Morton, Kenneth O.: *See—*
  - Denault, Albert P., Gruber, Lawrence H., and Morton, Kenneth O. 3,478,939.
- Morton, Richard C., and Sher, Neil C., to Honeywell Inc. Engine start-up sequence control apparatus. 3,478,731, Cl. 123-198.
- Moser, Henry W., to Harris-Intertype Corporation. Prefeeder mechanism for single facer machines. 3,479,240, Cl. 156-205.
- Motorola, Inc.: *See—*
  - Kennedy, Howard L., 3,479,532.
  - Kramer, Don A., 3,479,554.
- Moulinage et Relorderire de Chavanoz, S.A.: *See—*
  - Seguin, Pierre, 3,478,503.
- Moulton, Alexander Eric, to Moulton Developments Limited. Vehicle suspensions. 3,479,053, Cl. 280-104.
- Moulton Developments Limited: *See—*
  - Moulton, Alexander Eric, 3,479,053.
- Mounteer, Carlyle A. Apparatus and technique for calibrating pressure gauges. 3,478,571, Cl. 073-004.
- Mr. Christmas Incorporated: *See—*
  - Goodridge, Walter R., 3,478,652.
- Mr. Hanger, Inc.: *See—*
  - Bobrow, Lucien, 3,478,943.
- Mueller, Edward G.: *See—*
  - Wyatt, William Kirk, Mueller, Edward G., and Hebrank, William H. 3,478,399.
- Mulders, Julien: *See—*
  - Ryckaert, Andre, and Mulders, Julien 3,479,414.
- Muncheryan, Hrand M.: *See—*
  - Reed, Edward A., and Muncheryan, Hrand M. 3,478,637.
- Mundt, Peter, and Urban, Otfried, to Geimuplast Peter Mundt KG. Unitary slide frame. 3,478,456, Cl. 040-152.
- Munson, Eugene A.: *See—*
  - David, Charles W., and Munson, Eugene A. 3,479,222.
- Munster, Josef, Wellensiek, Gerd, and Linke, Gunter, to Ferdinand Lentjes Damplekessel-und Maschinenbau. Water tube boiler. 3,478,725, Cl. 122-333.
- Murase, Tamotsu, Mikami, Ichiro, and Tamura, Moriyosi, to Ube Industries Ltd. Process for the production of alkali metal terephthalates. 3,479,399, Cl. 260-515.
- Murphy, Allen Milton, Jr., Retzke, Franklin Albert, and Johnson, John Raymond, to Borden Company, The. Method of making a lightweight fertilizer containing urea and formaldehyde. 3,479,175, Cl. 071-029.
- Murphy, Charles L., to Mobil Oil Corporation. Method of recovering oil using sacrificial agent and viscosifier. 3,478,823, Cl. 166-274.
- Murphy, F. F.: *See—*
  - Bailey, Charles R., 3,479,047.
- Murray Manufacturing Corporation: *See—*
  - Kobryner, Herman H., 3,479,104.
- Musumec, Alfred: *See—*
  - Birken, Karl, 3,478,589.
- Myers, James E.: *See—*
  - Perez, Arthur, and Myers, James E. 3,478,535.
- N.V. Koninklijke Maatschappij 'De Schelde':*See—*
  - Van der Hoeven, Hendrik Adriaan, 3,478,525.
- N.V. Koninklijke Machinefabriek Stork: *See—*
  - Hendriks, Rudolf, 3,479,124.
- Nadella S.A.: *See—*
  - Pitner, Alfred, 3,478,540.
  - Pitner, Alfred, 3,479,100.
- Nagel-Schase Manufacturing Company: *See—*
  - Schultz, Edward H., Jr., 3,478,381.
- Naito, Takayuki, and Nakagawa, Susumu, to Bristol-Banyu Research Institute, Ltd. Isothiazole synthesis. 3,479,365. Cl. 260-302.
- Nakagawa, Susumu: *See—*
  - Naito, Takayuki, and Nakagawa, Susumu 3,479,365.
- Nakao, Masaru: *See—*
  - Yamamoto, Hisao, Nakao, Masaru, and Maruyama, Isamu 3,479,348.
- Nalco Chemical Company: *See—*
  - Bott, Lawrence L., 3,479,274.
  - Chamot, Walter M., and Burke, John T., 3,479,282.
  - Overbeck, Charles J., and Hickey, James J., 3,479,152.
- Nambride., Raymond F., to Enthone Incorporated. Bright, level tin plating. 3,479,259, Cl. 204-054.
- Name-Maker Corporation: *See—*
  - Greene, Oscar, 3,478,426.
- Nardontonia, John A., to Jerrold Electronics Corporation. Field strength meters having a plurality of scales and including means for indicating the scale to be observed and the multiplying factor to be applied. 3,479,592, Cl. 324-115.
- National Cash Register Company, The: *See—*
  - Votaw, Richard L., and Kline, John E., 3,478,409.
- National Dairy Products Corporation: *See—*
  - Miller, Roland E., Wayne, Clyde D., Olson, Edgar C., and Piatek, Robert J., 3,479,024.
- National Ideal Company, The: *See—*
  - Maxfield, Robert E., 3,478,721.
- National Research Development Corporation: *See—*
  - Kerr, John, and Gay, Duncan, 3,479,098.
  - McGee, James Dwyer, Beesley, John, and Berg, Anthony David, 3,479,516.
  - Shaw, Allan, 3,478,817.
- National Steel Corporation: *See—*
  - Ross, George P., 3,479,210.
  - Smith, John R., and Bray, James A., 3,479,256.
- Nave, Thomas J.: *See—*
  - Wilson, Newton R., and Nave, Thomas J. 3,479,420.
- Nelson, Edgar L.: *See—*
  - Roscoe, Howard E., and Nelson, Edgar L. 3,478,974.
- Nerenberg, Robert W., and Reynolds, Richard P. W., to Interstate Folding Box Company, The. Sterilizable containers. 3,478,868, Cl. 206-046.
- Newhall, Edmunde E., to Bell Telephone Laboratories, Incorporated. Magnetic core selection arrangement. 3,479,658, Cl. 340-174.
- Newman, Stanley H. Cigarette lighter. 3,479,125, Cl. 431-254.
- Newmark Instruments Limited: *See—*
  - Cooke, Albert Edward, 3,478,945.
- Newport News Shipbuilding and Dry Dock Company: *See—*
  - Tatum, Samuel A., 3,478,602.
- Ney, Peter: *See—*
  - Hahn, Fritz, and Ney, Peter 3,479,127.
- Ngo, Dinh Tuan, to Bell Telephone Laboratories, Incorporated. Wave switching arrangement. 3,479,619, Cl. 333-031.
- Niebergall, Louis F., to Walker Manufacturing Company. Filter test apparatus. 3,478,601, Cl. 073-432.
- Niederer, Otto C. Egg orienting equipment. 3,478,862, Cl. 198-033.
- Nielsen, Erik, to H. Struers Chemiske Laboratorium. Method of introducing successive liquid samples into a cell of an analyzing device and apparatus for carrying out the method. 3,478,598, Cl. 073-423.
- Nies, Nelson P.: *See—*
  - Campbell, George W., Jr., Nies, Nelson P., and Atteberry, Johnny C. 3,479,137.
- Nimtz, Klaus, and Franzen, Gustav, to Palitex Project-Company GmbH. Method of and apparatus for remedying a thread break. 3,478,504, Cl. 057-034.
- Nippon Electric Company Limited: *See—*
  - Haneta, Yuichi, 3,479,571.
- Nippon Kogaku K. K.: *See—*
  - Tsuruoka, Tomio, and Shimomura, Jun, 3,478,663.
- Nippon Telegraph and Telephone Public Corporation: *See—*
  - Yamato, Junji, Tsukada, Keiichi, Kajiwara, Masaichi, and Ono, Masamichi, 3,479,462.
- Noakes, Thomas E., and Merchant, Leo F., to American Standard, Inc. Refrigerant expansion valve. 3,478,774, Cl. 137-454.5
- Nobile, Luciano, to Ledoga S.p.A. Process for solubilizing the hemicellulose of vegetable materials and for recovering the sugars from the solubilized hemicellulose. 3,479,248, Cl. 162-016.
- Noguchi, Yoshiyuki. Speed reduction device. 3,478,623, Cl. 074-798.
- Nolan, Roger William: *See—*
  - Wright, Maurice James, and Nolan, Roger William 3,479,575.
- Nolz, Klaus: *See—*
  - Bonsch, Gustav, and Nolz, Klaus 3,478,516.
- Nooter Corporation: *See—*
  - Woelfer, Charles G., and Dohr, Albert D., 3,478,784.
- Nord-Aviation Societe Nationale de Constructions Aeronautiques: *See—*
  - Poccard, Jacques, 3,478,802.
- Nordman, Adolph J., Jr.: *See—*
  - Scheel, John R., and Nordman, Adolph J., Jr. 3,478,668.
- Nordmark, Walter E.: *See—*
  - Barecki, Chester J., Henrikson, Bror W., and Nordmark, Walter E. 3,478,981.
- Nordstrom, John David, to Ashland Oil & Refining Company. Novel monomers and polymers. 3,479,328, Cl. 260-086.1
- Norell, John R., to Phillips Petroleum Company. Sulfoalkylation of enamines. 3,479,362, Cl. 260-293.4
- Norris, Frank A., to Singer-General Precision, Inc. Piezoelectric force transducer. 3,479,536, Cl. 310-008.5

- North American Rockwell Corporation: *See—*
  - Hamilton, Charles H., 3,478,416.
  - Heredy, Laszlo A., 3,479,261.
- Northrop Corporation: *See—*
  - Requa, Stanley C., 3,479,646.
- Norton, Charles J., and Seppi, Ned F., to Marathon Oil Company. Preparation of sulfonates by the reaction of olefins and bisulfite. 3,479,397, Cl. 260-503.
- Nosenzo, Mario, to General Bearing Company. Sealed ball transfer. 3,478,382, Cl. 016-044.
- Notbohm, Willard C., to Black Clawson Company, The. Method and apparatus for casting an internally flanged tubular member. 3,478,811, Cl. 164-094.
- Nozoe, Yasuhiro: *See—*
  - Akamatsu, Hiroo, Morita, Takanobu, Kamei, Mikio, and Nozoe, Yasuhiro 3,479,518.
- NRA, Inc.: *See—*
  - Ehrlich, Melvin P., 3,479,608.
- Numatics, Incorporated: *See—*
  - Doig, George, and Mc Geachy, Donald E., 3,478,497.
- Nunn, Earnest W.: *See—*
  - Horton, Donelson B., and Nunn, Earnest W. 3,478,967.
- Nurmse, Karl, to ABU Aktiebolag. Braking device for fishing reels, especially for fly fishing. 3,478,978, Cl. 242-084.51
- Nutter, James M.: *See—*
  - Breon, Pearl L., Imes, Vernon W., Johnson, Harold R., Nutter, James M., and Nutter, James M. 3,478,833.
  - Breon, Pearl L., Imes, Vernon W., Johnson, Harold R., Nutter, James M., and Nutter, James M. 3,478,833.
- Nutting Truck and Caster Company: *See—*
  - Jones, Vercoe C., 3,478,698.
  - Jones, Vercoe C., 3,479,665.
- Oakland Corporation, The: *See—*
  - Wallace, Richard B., 3,478,800.
- O'Brien, Paul R., to Reynolds Metals Company. Metal forming system. 3,478,560, Cl. 072-253.
- O'Connor, Thomas J. Quick-change tool for spark cutting apparatus. 3,479,479, Cl. 219-069.
- Oertel, Gunter: *See—*
  - Biomeyer, Friedrich, and Oertel, Gunter 3,479,325.
- Oglebay Norton Company: *See—*
  - Charman, Walter M., Jr., and Middaugh, George J., Jr., 3,478,999.
- Ohlund, John Alex Ingvar, and Andersson, Torsten Wilhelm, to Saab Aktiebolag. Gunnery practice scoring apparatus. 3,479,032, Cl. 273-102.2
- Ohrberg, Carl V., to Danfoss A/S. Combination centrifugal and magnetic separator device. 3,478,887, Cl. 210-223.
- O. K. Partnership: *See—*
  - Parry, Robert D., 3,478,877.
- Olin Mathieson Chemical Corporation: *See—*
  - Saeman, Walter C., 3,479,138.
- Olinkraft, Inc.: *See—*
  - Graser, Earl J., 3,478,951.
- Olson, Edgar C.: *See—*
  - Miller, Roland E., Wayne, Clyde D., Olson, Edgar C., and Piatek, Robert J. 3,479,024.
- Omark Industries, Inc.: *See—*
  - Van Gulik, Johan L., 3,479,481.
- Ono, Masamichi: *See—*
  - Yamato, Junji, Tsukada, Keiichi, Kajiwara, Masaichi, and Ono, Masamichi 3,479,462.
- Optical Research and Development Corporation: *See—*
  - Humphrey, William E., 3,479,108.
- Oram, Daphne. Digitally controlled waveform generators. 3,478,792, Cl. 250-202.
- Orenstein-Koppel und Lubecker Maschinenbau Aktiengesellschaft: *See—*
  - Gerber, Jurgen, and Fichtner, Friedrich, 3,478,647.
- Organon Inc.: *See—*
  - de Visser, Jacob, and Modderman, Pieter, 3,479,375.
  - Greven, Hendrik Maria, 3,479,333.
- Orlandini, Bruno, and Kirkpatrick, Kenneth K., to Bunker Hill Company. Liquid ion exchange process for metal recovery. 3,479,378, Cl. 260-429.
- Orthman, Henry K. Windrow turning device. 3,478,502, Cl. 056-366.
- Orton, Erby: *See—*
  - Dubble, Roger D., and Orton, Erby 3,479,208.
- Osborn, Carroll H., and Cudd, Wilson E., to Dayco Corporation. Flexible tubing and method of manufacture. 3,478,770, Cl. 138-135.
- Oscar Mayer & Co., Inc.: *See—*
  - Jensen, Hans A., and Merdler, Myron J., 3,478,488.
- Oslund, Roger I., to Teletype Corporation. Synchronizing mechanism for encrypting telegraph transmitter. 3,479,456, Cl. 178-022.
- Oswald, Jacques, to C.I.T.-Compagnie Industrielle des Telecommunications. Method and apparatus for the demodulation of electric waves phase-or frequency-modulated by high-speed coded signals. 3,479,457, Cl. 178-067.
- Oswin, Harry G., to Leesona Corporation. Method of chemically regenerating air depolarized cell with hydrogen. 3,479,226, Cl. 136-086.
- Otis Engineering Corporation: *See—*
  - Canalizo, Carlos R., 3,478,645.
- Outboard Marine Corporation: *See—*
  - Shimanekas, William J., 3,478,620.
- Overbeck, Charles J., and Hickey, James J., to Nalco Chemical Company. Chelometric zinc titration. 3,479,152, Cl. 023-230.
- Overstreet, Rogert L., Jr., to Bell Telephone Laboratories, Incorporated. Plurality of sources connected in parallel to produce a timing pulse output while any source is operative. 3,479,603, Cl. 328-061.
- Owens-Corning Fiberglas Corporation: *See—*
  - Hullhorst, William B., 3,479,239.
  - Marzocchi, Alfred, 3,479,207.
- Owens-Illinois, Inc.: *See—*
  - Anderson, Winfield S., Jr., 3,478,680.
  - Harget, Paul J., and Sturgill, Dennis T., 3,479,631.
  - Levene, Leon, 3,479,316.
  - Patterson, John L., 3,479,206.
  - Spanoudis, Louis, 3,479,217.
- Owens, James Loyd, to Western Electric Company, Incorporated. Resistance measuring bridge circuit having output means providing a single polarity voltage. 3,479,589, Cl. 324-062.
- Padovani, Henry R., and Wright, John G., to Auto-Soler Company. Means for supporting footwear and pressing the solepiece thereof. 3,478,946, Cl. 227-097.
- Page Communications Engineers, Inc.: *See—*
  - Malm, Robert E., 3,479,495.
- Paget, Fredrick W., to Sylvania Electric Products, Inc. Fluorescent lamp current regulating circuit. 3,479,559, Cl. 315-105.
- Paget, Fredrick W., and Van Buren, Ned Scott, to Sylvania Electric Products, Inc. Arc discharge regulating device having means to compensate for supply voltage variations. 3,479,560, Cl. 315-105.
- Paige, Walter Griffin, to Burroughs Corporation. Image projection apparatus. 3,479,118, Cl. 355-026.
- Pajak, Witold, to Remco Industries, Inc. Toy force-balanced push-rod toggle switch mechanism. 3,479,474, Cl. 200-061.44
- Palato, Mario: *See—*
  - Gambaretto, Gian Paolo, Rinaldo, Paolo, and Palato, Mario 3,479,286.
- Palitex Project-Company GmbH: *See—*
  - Nimtz, Klaus, and Franzen, Gustav, 3,478,504.
- Palmer, Albert, and Lindberg, Verne L., to Black Clawson Company, The. Apparatus for producting veneer. 3,478,789, Cl. 144-209.
- Palmer, Kenneth Percival, and Taylor, Michael Charles, to Lucas, Joseph, (Industries) Limited. Means for producing pulsating fluid flow. 3,478,766, Cl. 137-081.5
- Palmer, Milton: *See—*
  - Lieberman, George, Palmer, Milton, and Prussin, Samuel B. 3,479,427.
- Panagoulias, Panagiotis L., to United States of America, Army. Method for the qualitative identification of polybutadiene elastomer. 3,479,153, Cl. 023-230.
- Pantasote Company of New York, Inc., The: *See—*
  - Weiss, Hugh R., 3,478,867.
- Papalia, Rocco, to Kaiser Gypsum Company, Inc. Composite wall construction. 3,478,479, Cl. 052-361.
- Paquette, Elmer Gordon, to Bjorksten Research Laboratories, Inc. Pen clips. 3,478,393, Cl. 024-011.
- Park, Jon K.: *See—*
  - Park, Robert C., and Park, Jon K. 3,478,430.
- Park, Robert C., and Park, Jon K. Combined air, water, and spray apparatus for dentistry. 3,478,430, Cl. 032-028.
- Parker, Gary L., to California Institute Research Foundation, mesne. Hydraulic drain means for servo-systems. 3,478,514, Cl. 060-053.
- Parker-Hannifin Corporation: *See—*
  - deGraaf, Paul A., 3,479,005.
- Parker Sweeper Company: *See—*
  - Rhoads, Loy D., 3,478,500.
- Parkinson, Lee K. Oil painting medium. 3,479,195, Cl. 106-159.
- Parkinson, Martin C.: *See—*
  - Gilmont, Roger, and Parkinson, Martin C. 3,478,779.
- Parrish, Maxfield, Jr.: *See—*
  - Bird, George R., and Parrish, Maxfield, Jr. 3,479,168.
- Parry, Robert D., 90% to O. K. Partnership, and 10% to Access Corporation. Article selection system. 3,478,877, Cl. 209-080.5
- Partensky, Pierre Jean Marc, to B.T.B. Benoit-Le Takis Brosse. Apparatus for making nonwoven pile carpets. 3,479,241, Cl. 156-435.
- Paschen, Peter, and Winterhager, Helmut. Process for the selective continuous refining of tin, antimony, zinc, and arsenic impurities from lead. 3,479,179, Cl. 075-078.
- Pasco Packing Company: *See—*
  - Smith, Willard C., 3,478,906.
- Patchett, Arthur A., Rogers, Edward F., and Leanza, William J., to Merck & Co., Inc. Guanidinoaryl and guanidinomethylaryl compounds. 3,479,401, Cl. 260-518.
- Patterson, Granville P.: *See—*
  - Mc Pherson, George Bruce, and Patterson, Granville P. 3,478,884.
- Patterson, John L., to Owens-Illinois, Inc. Metal chute coated with fluorocarbon polymer containing boron nitride platelets. 3,479,206, Cl. 117-075.
- Patzlaff, Albert W. Berry harvesting machine. 3,478,501, Cl. 056-330.
- Paulson, Raymond, to Moore, Samuel, and Company. Strand tensioning device. 3,478,982, Cl. 242-129.8

- Payne, Linwood K., Jr., and Weiden, Mathias H. J., to Union Carbide Corporation. 2-Methyl-2-nitrobicyclo[2.2.1]heptan-3-one N-methylcarbamoyloxime. 3,479,405, Cl. 260-566.
- Pearce, Shairyl I.: *See—*
  - Johnson, Lowell E., Hansen, Robert C., Pearce, Shairyl I., and Lanchantin, Charles E., Jr. 3,478,621.
- Pearne and Lacy Machine Company, Inc.: *See—*
  - Pearne, Florentin J., Pearne, Frank S., and Robson, Frederick G., 3,478,397.
- Pearne, Florentin J., Pearne, Frank S., and Robson, Frederick G., to Pearne and Lacy Machine Company, Inc. Brick cutter and hacker. 3,478,397, Cl. 025-002.
- Pearne, Frank S.: *See—*
  - Pearne, Florentin J., Pearne, Frank S., and Robson, Frederick G. 3,478,397.
- Pearne; Frank S., to Pearne & Lacy Machine Company, Inc. Apparatus for tying brick stacks. 3,478,896, Cl. 214-006.
- Pearne & Lacy Machine Company, Inc.: *See—*
  - Pearne, Frank S., 3,478,896.
- Pechacek, Raymond E., to Hahn & Clay. Pressure vessel closure. 3,478,920, Cl. 220-055.
- Pederson, Walter H. Apparatus for indicating the relative movement of a snowmobile. 3,478,606, Cl. 074-012.
- Peck, Sandford C., to Sylvania Electric Products, Inc. High voltage arc discharge lamp with low voltage control circuit. 3,479,558, Cl. 315-098.
- Peeples, Denny L., to General Motors Corporation. Powered control valve assembly. 3,478,782, Cl. 137-627.5
- Peis, Gunter. Device for holding skis. 3,479,044, Cl. 280-011.13
- Penn Fishing Tackle Mfg., Co.: *See—*
  - Henze, Herbert O., 3,478,979.
- Penn Plate, Inc.: *See—*
  - Clayton, Erith T., 3,479,209.
- Pennsalt Chemicals Corporation: *See—*
  - Heitman, Joseph B., 3,479,263.
- Pennsylvania Sewing Research Corporatio: *See—*
  - Glassman, Aaron, 3,479,567.
- Penrod, William R., to Black-Clawson Company, The. Web winding apparatus. 3,478,975, Cl. 242-064.
- Peppler, William S., Bliss, George N., and Planck, Norman A., Jr., to Diamond International Corporation. Stick inserter for confection machine. 3,478,703, Cl. 107-008.
- Perez, Arthur, and Myers, James E., to Clark Equipment Company. Refrigerated case. 3,478,535, Cl. 062-237.
- Perkin-Elmer Corporation, The: *See—*
  - Preston, Kendall, Jr., 3,479,109.
- Perlman, Sol J., to Vac Pac Manufacturing Company, Inc. Bag bottom. 3,478,952, Cl. 229-057.
- Permadlux Company, The: *See—*
  - Barth, Julius O., 3,479,198.
- Perona, Giovanni, and Volta, Giuseppe, to Centro Informazioni Studi Esperienze s.r.l. (C.I.S.E.), and European Atomic Energy Community (Euratom). Method of welding sintered aluminum powder, 3,478,412, Cl. 029-472.9
- Perra, Frank M., to Halliburton Company. Dynamic impedance analyzer including magnitude and phase displaying means. 3,479,586, Cl. 324-057.
- Perreault, Serge: *See—*
  - Venne, Claude, Forest, Robert, and Perreault, Serge 3,478,611.
- Perrino, Albert C., and Israel, Michael G., to I. C. I./Organics/Inc. $\beta,\beta'$-Thio diethyl sulfones. 3,479,408, Cl. 260-609.
- Peters, William J. Trailer safety hitch. 3,479,056, Cl. 280-461.
- Petersen, Arne J., and Taylor, John T., to Beckman Instruments, Inc. Flow cell assembly. 3,479,270, Cl. 204-195.
- Petersen, Christian C.: *See—*
  - Hanna, William L., and Petersen, Christian C. 3,479,485.
- Peterson, Alan H., to Marathon Oil Company. Cationic ion exchange resin catalysts and process for their production and use. 3,479,322, Cl. 260-067.
- Peterson, Laurel L.: *See—*
  - Anderson, Norman L., Darnall, Millard K., Morgan, William C., Peterson, Laurel L., and Stedman, Robert N. 3,478,902.
- Peterson, Stanley E.: *See—*
  - Merritt, Edward E., Titterud, Curtiss W., Peterson, Stanley E., and Bulow, Arthur J. 3,478,390.
- Petrik, Dragan Rudolf. Underwater floating and to required level submerged tunnel composed from prefabricated tunnel units. 3,478,521, Cl. 061-043.
- Petro-Tex Chemical Corporation: *See—*
  - Tschopp, Lloyd D., and Woerner, Rudolph C., 3,479,416.
- Pettit, Frank, to Richard Metals Corporation. Loose leaf binder and locking means therefor. 3,479,123, Cl. 402-021.
- Petzold, Max L., Brooks, Thomas W., and Bane, John M., Jr., to Calgon Corporation, mesne. Preparation of 6-amino-2,4-bis(dimethylamino)-s- triazine. 3,479,353, Cl. 260-249.6
- Pfeiffer, Albert, Cogswell, Richard V., Lynch, Charles W., and Kunert, Herbert B., to United States of America, Army. Apparatus and method for blowing powder. 3,478,926, Cl. 222-001.
- Pfister, Stanley A.: *See—*
  - Ma, Carlton Y. W., and Pfister, Stanley A. 3,478,513.
- Pfizer, Chas., & Co., Inc.: *See—*
  - Johnston, James D., 3,479,343.
  - Miller, Max W., 3,479,367.
- Philipps, David J., and Lamphere, David A., to Simmond Precision Products, Inc. Capacitance-type fluid measuring apparatus. 3,478,587, Cl. 073-304.
- Phillips Drill Company, Inc.: *See—*
  - Bixby, Thomas G., 3,478,829.
- Phillips Petroleum Company: *See—*
  - Bost, Howard W., and Cook, Charles F., 3,479,398.
  - Boykin, Philip J., 3,478,529.
  - DeVault, Albert N., 3,479,278.
  - Engel, Thomas Paul, 3,479,424.
  - Floyd, James C., and Shell, Francis J., 3,479,287.
  - Jones, Faber B., 3,479,323.
  - Kahle, Gerald R., and Fodor, Lawrence M., 3,479,330.
  - Norell, John R., 3,479,362.
  - Turner, Edward W., 3,478,388.
  - Warzel, Fred M., 3,479,133.
  - Warzel, Fred M., 3,479,134.
  - Wilson, Newton R., and Nave, Thomas J., 3,479,420.
  - Zabasnik, Frederick J., 3,479,422.
- Phillips, William G., to SCM Corporation, mesne. Dispenser for granular condiment having a noisemaker. 3,478,932, Cl. 222-192.
- Piatek, Robert J.: *See—*
  - Miller, Roland E., Wayne, Clyde D., Olson, Edgar C., and Piatek, Robert J. 3,479,024.
- Piehl, Bill, 50% to Kelley, Jack B. Gas transport apparatus. 3,479,043, Cl. 280-005.
- Picquet, Miriam G.: *See—*
  - Ritchie, Ralph W., Ritchie, Fern Joan, and Picquet, Miriam G. 3,478,440.
- Pierce, R. H., Manufacturing Company: *See—*
  - Gheen, Lyndle G., 3,478,780.
- Pierce Specialized Equipment Company: *See—*
  - Bishop, Lewis H., 3,478,666.
- Pietrucha, Herbert: *See—*
  - Herbst, Hagen, Kleedehn, Eckhart, and Pietrucha, Herbert 3,478,462.
- Pilkington Brothers Limited: *See—*
  - Robinson, Albert Sidney, and Lawrenson, Jack, 3,479,171.
- Pilkuhn, Manfred: *See—*
  - Rupprecht, Hans Stephan, and Pilkuhn, Manfred 3,479,613.
- Piller, Jacob P. Self-oiling means for saw chain links. 3,478,787, Cl. 143-135.
- Pillsbury Company, The: *See—*
  - Thelen, Roman J., 3,479,188.
- Pindjak, Leo J.: *See—*
  - Hopkins, Arnold R., and Pindjak, Leo J. 3,478,683.
- Pinkas, Peter F., to Borg-Warner Corporation. Rotary seals. 3,479,039, Cl. 277-030.
- Pisciotta, Anthony T., Jr.: *See—*
  - Pisciotta, Humbert A., and Pisciotta, Anthony T., Jr. 3,479,501.
- Pisciotta, Humbert A., and Pisciotta, Anthony T., Jr., to Jefferson Tank & Seat Mfg., Co., Inc. Porous hollow lamp shade. 3,479,501, Cl. 240-108.
- Pitchford, Irvin M., and Messerly, Robert H., to Wean Industries, Inc. Metal charging apparatus. 3,478,899, Cl. 214-008.5
- Pitner, Alfred, to Nadella S.A. Universal joint. 3,478,540, Cl. 064-017.
- Pitner, Alfred, to Nadella S.A. Journal rolling bearing having a built-in sealing element. 3,479,100, Cl. 308-187.2
- Pittman, Allen G., and Wasley, William L., to United States of America, Agriculture. Enhancing repelling of fibrous materials with fluoroalkyl acrylates. 3,479,214, Cl. 117-161.
- Planck, Norman A., Jr.: *See—*
  - Peppler, William S., Bliss, George N., and Planck, Norman A., Jr. 3,478,703.
- Plenty & Son Limited: *See—*
  - Vanderstegen-Drake, Stamford R. F., 3,478,692.
- Pleshko, Peter, to International Business Machines Corporation. Integrated nor logic circuit. 3,479,523, Cl. 307-205.
- Plessey Company Limited, The: *See—*
  - Brion, Stanley A., 3,479,539.
- Plummer, Walter A. Power-driven seam closing device. 3,478,404, Cl. 029-200.
- Plummer, William B., Van den Honert, Taco H., and Wilson, Melvin G., to International Business Machines Corporation. Acoustic document sensor. 3,479,026, Cl. 271-058.
- Poccard, Jacques, to Nord-Aviation Societe Nationale de Constructions Aeronautiques. Safety device for an unlosable shaft. 3,478,802, Cl. 151-041.75
- Pohlenz, Jack B., to Universal Oil Products Company. Gasoline producing process. 3,479,279, Cl. 208-056.
- Pohler, Heinz: *See—*
  - Schmude, Wolfgang, and Pohler, Heinz 3,478,402.
- Pokorny, Gerold E., to Litton Precision Products, Inc. Acoustic surface wave device. 3,479,572, Cl. 317-235.
- Polak, James C.: *See—*
  - Fuehrer, Reece R., and Polak, James C. 3,478,852.
- Polakowski, Natalis H. Flexible strip rolling mill. 3,478,559, Cl. 072-242.
- Polaroid Corporation: *See—*
  - Baker, James G., 3,478,662.
  - Bird, George R., and Parrish, Maxfield, Jr., 3,479,168.
  - Hanna, William L., and Petersen, Christian C., 3,479,485.
  - Land, Edwin H., 3,478,660.
  - Land, Edwin H., and Wolff, Otto E., 3,479,184.

  - Taylor, Lloyd D., and Roth, Peter H., 3,479,186.
  - Wolff, Otto E., 3,479,497.
- Pomante, Louis N., to United Aircraft Corporation. Fabrication of thin silicon device chips. 3,478,418, Cl. 029-574.
- Poor, John H., and Logan, Charles H. Automatic dispenser. 3,479,101, Cl. 312-073.
- Porsche, Dr. Ing. H.c.F., KG: *See—*
  - Hetmann, Richard, 3,478,834.
- Portescap, Le. Porte-Enchappement Universal S.A.: *See—*
  - Marti, Fritz, 3,478,509.
  - Marti, Fritz, 3,478,510.
- Potter, Macy, and Strogis, William J., to International Business Machines Corporation. Water white rosin flux in benzyl alcohol solution. 3,478,414, Cl. 029-495.
- Potts, Ernest L., to Brown, Cicero C. Flexible coupling. 3,479,067, Cl. 285-261.
- Powell, Robert P. Clamps. 3,479,000, Cl. 249-219.
- Power Regulator Company: *See—*
  - Taylor, Wesley L., 3,478,960.
- Poyton, Joseph Roy. Sheet metal building. 3,478,477, Cl. 052-220.
- PPG Industries, Inc.: *See—*
  - Brooks, Marvin V., 3,478,383.
  - Krause, Walter H., 3,478,938.
- Pratt, Geoffrey: *See—*
  - Bester, Dennis R., and Pratt, Geoffrey 3,479,461.
- Pray, Ralph E., and Mills, Norman T., to Inland Steel Company. Production of high purity Mg $Cl_2$ from spent HCl pickle liquor. 3,479,135, Cl. 023-091.
- Preece, Kenneth, to Lucas, Joseph, (Industries) Limited. Method of manufacturing commutators. 3,478,421, Cl. 029-597.
- Pregaglia, Gianfranco, Gregorio, Guglielmo, and Conti, Francesco, to Montecatini Edison S.p.A. Process for the condensation of primary alcohols. 3,479,412, Cl. 260-642.
- Premo, Paul M.: *See—*
  - Hinds, Robert J., and Premo, Paul M. 3,479,253.
- Presnell, Carlton E., and Zemgals, Guido Z. Ocean current and wave generator. 3,478,444, Cl. 035-019.
- Preston, Kendall, Jr., to Perkin-Elmer Corporation, The. Optical phase modulator. 3,479,109, Cl. 350-161.
- Price, John A.: *See—*
  - Carter, Mary E., and Price, John A. 3,479,324.
- Principe, Pacifico, and Levine, Seymour D., to Squibb, E. R., & Sons, Inc. $\Delta^{1,4}$-17$\alpha$-hydroxy-A-norprogesterone and esters. 3,479,391, Cl. 260-488.
- Pritulsky, James, to AMP Incorporated. Printed circuit board connectors. 3,479,634, Cl. 339-017.
- Prost, Gerard, and Sole, Jean, to Commissariat a l'Energie Atomique. Method and apparatus for releasing electric energy. 3,479,569, Cl. 317-123.
- Protective Treatments, Inc.: *See—*
  - Strack, Donald R., 3,478,475.
- Provi, Mike A., and Guinter, S. Robert, to Brearley Company, The. Two-piece sheet metal bell-crank lever construction. 3,478,618, Cl. 074-519.
- Prussin, Samuel B.: *See—*
  - Lieberman, George, Palmer, Milton, and Prussin, Samuel B. 3,479,427.
- Puma, John. Brake lining wear detector. 3,479,640, Cl. 340-069.
- Purcell, Ronald: *See—*
  - Taylor, John, and Purcell, Ronald 3,479,273.
- Purpuri, Rosario A.: *See—*
  - Stern, Robert, and Purpuri, Rosario A. 3,478,370.
- Quaker Oats Company, The: *See—*
  - Hyldon, Roy G., 3,478,439.
- Quinn, Hubert F., to Burroughs Corporation. Magnetic storage devices with shielding between input and output. 3,479,655, Cl. 340-174.
- Qurashi, Maqbool: *See—*
  - Winston, Eric, and Qurashi, Maqbool 3,479,633.
- Raasch, Robert A. Roller for truck cover. 3,478,980, Cl. 242-086.52
- Rader Pneumatics & Engineering Co., Ltd.: *See—*
  - Smith, William C., and Free, David, 3,478,707.
- Radiation Incorporated: *See—*
  - France, Bernard H., 3,479,530.
- Rafanelli, Arthur C. Juice extracting machine. 3,478,796, Cl. 146-174.
- Rainone, Louis C.: *See—*
  - Damiano, Henry, and Rainone, Louis C. 3,479,466.
- Rajan, Krishnaswamy S., and Casolo, Angelo J., to United States of America, Interior. Inorganic ion exchange membranes for use in electrical separatory processes. 3,479,266, Cl. 204-180.
- Rajan, Krishnaswamy S., and Casolo, Angelo J., to United States of America, Interior. Inorganic ion exchange membranes for use in electrical separatory processes. 3,479,267, Cl. 204-180.
- Ramstetter, Otto. Mechanical scanning device having disengageable scanning and driving means for program control cards. 3,479,473, Cl. 200-046.
- Randall, John J.: *See—*
  - Klinger, Kenneth A., Randall, John J., and Sakach, Joseph M., Jr. 3,479,160.
- Randol, Glenn T. Fluid-level indicator for master brake cylinders. 3,479,639, Cl. 340-059.
- Rapaport, Stanley L. Microbe growth retardation in shingle roofs. 3,479,130, Cl. 021-061.
- Raschke, Herbert A., to Bullard, E. D., Company. Quick release mount for wheel mounted appliance. 3,478,992, Cl. 248-205.
- Rask, Stanley: *See—*
  - Ross, Edgar A., and Rask, Stanley 3,479,565.
- Rasmussen, Donald W., to Edoco Technical Products, Inc. Apparatus for operation upon plastic concrete of canal bottom and side slope. 3,478,655, Cl. 094-039.
- Rassas, Waldo E.: *See—*
  - Shipley, Darrell R., and Rassas, Waldo E. 3,478,753.
- Rassman, William R. Heart massager. 3,478,737, Cl. 128-064.
- Rathcon, Inc.: *See—*
  - Conner, David C., 3,478,466.
- Ratnoff, Raymond. Electrical clinical thermometer. 3,478,570, Cl. 073-001.
- Ratts, Kenneth Wayne: *See—*
  - Speziale, Angelo John, and Ratts, Kenneth Wayne 3,479,373.
- Rauch, Stewart E., Jr., and Roberts, Carlton E., to Bethlehem Steel Corporation. Treatment for ferrous surfaces. 3,479,260, Cl. 204-056.
- Rautenbach, Jacobus Johannes. Pressure burner. 3,478,735, Cl. 126-044.
- Raver, Clarence Leo, to Flex-Float Engineering Company. Fluid pressure tightened joint. 3,479,063, Cl. 285-108.
- Raytheon Company: *See—*
  - Ruden, Thomas E., 3,479,577.
- RC-Ninty Five Incorporated: *See—*
  - Birken, Karl, 3,478,589.
- RCA Corporation: *See—*
  - Gilbert, George J., 3,479,570.
  - Grimes, Milton J., Henrikson, Donald F., and Meisel, Herbert R., 3,478,420.
  - Hursh, Neal W., and Mooreland, Ronald R., 3,479,566.
  - Montgomery, Donald H., 3,479,650.
  - Rhyne, Orville T., 3,479,617.
- Redway, George F.: *See—*
  - Whitmore, Chatland, and Redway, George F. 3,478,579.
- Reed, Edward A., and Muncheryan, Hrand M. Audio-to-visual pattern converting apparatus. 3,478,637, Cl. 084-464.
- Rees, Richard W., Foell, Theodore J., and Smith, Herchel, to American Home Products Corporation. Process for the preparation of steroidal 1,4-dienes unsubstituted in the 3-position. 3,479,340, Cl. 260-239.55
- Reeves, John F.: *See—*
  - Lickeliter, Robert P., Abbott, Earl, and Reeves, John F. 3,478,678.
- Reflex Corporation of Canada Limited: *See—*
  - Hedgewick, Peter, and Howell, George E., 3,478,911.
- Regie Nationale des Usines Renault: *See—*
  - Coursault, Roger, 3,479,079.
- Regunberg, Jerome, and Liepmann, Wolfgang H. Facsimile newspaper transmission system. 3,479,451, Cl. 178-006.6
- Reichhold Chemicals, Inc.: *See—*
  - Chang, Yun G., and Bailey, Philip S., 3,479,372.
- Reid, Larry R., deceased (by Reid, Richard D., administrator). Marine transmission. 3,478,622, Cl. 074-792.
- Reid, Richard D.: *See—*
  - Reid, Larry R. 3,478,622.
- Reifenschweiler, Otto: *See—*
  - Frohner, Klaus, Horster, Horst, Lydtin, Hans Jurgen, and Reifenschweiler, Otto 3,479,550.
- Reihman, Richard F.: *See—*
  - Marsilio, Joseph V., and Reihman, Richard F. 3,479,486.
- Reilly, Frank Ward, and Bozeman, Hoyt William, to Sherman & Reilly, Inc. Versatile sheave block. 3,479,014, Cl. 254-193.
- Reinecker, Walter J., and Westergard, David J. Feeding mechanism. 3,478,793, Cl. 146-070.1
- Reinhardt, Paul W.: *See—*
  - Kimble, Harry E., and Reinhardt, Paul W. 3,478,460.
- Reinke, Robert F., to Honeywell Inc. Variable heat conductor. 3,478,819, Cl. 165-032.
- Remco Industries, Inc.: *See—*
  - Pajak, Witold, 3,479,474.
- Renzi, Peter N., to American Radiator & Standard Sanitary Corporation. Heat exchanger construction. 3,479,489, Cl. 219-540.
- Republic Industries, Inc.: *See—*
  - Martin, Paul W., 3,478,468.
- Republic Steel Corporation: *See—*
  - Reusser, Hans E., and Hill, Morse, 3,478,523.
- Requa, Stanley C., to Northrop Corporation. Digitally addressed solid state electroluminescent display device. 3,479,646, Cl. 340-166.
- Rethmeier, Gerhard, to Anker-Werke Aktiengesellschaft. Controls for business machines such as bookkeeping machines and the like. 3,478,959, Cl. 235-003.
- Retzke, Franklin Albert: *See—*
  - Murphy, Allen Milton, Jr., Retzke, Franklin Albert, and Johnson, John Raymond 3,479,175.
- Reusser, Hans E., and Hill, Morse, to Republic Steel Corporation. Mine roof bolt bearing plate. 3,478,523, Cl. 061-045.
- Rex Chainbelt Inc.: *See—*
  - Germond, Henry S., IV, 3,478,846.
- Reynolds Metals Company: *See—*
  - O'Brien, Paul R., 3,478,560.
- Reynolds, Richard P. W.: *See—*
  - Nerenberg, Robert W., and Reynolds, Richard P. W. 3,478,868.
- Rheinstahl Henschel Aktiengesellschaft: *See—*
  - Schallehn, Hans-Georg, 3,479,076.

Rhoads, Loy D., to Parker Sweeper Company. Reel type rake or sweeper. 3,478,500, Cl. 056-027.

Rhone-Poulec S.A.: *See—*
Fouche, Jean Clement Louis, 3,479,356.

Rhone-Poulenc S.A.: *See—*
Brunie, Jean Claude, and Crenne, Noel, 3,479,394.

Rhyne, Orville T., to RCA Corporation. Hybrid circuit arrangement. 3,479,617, Cl. 333-011.

Richard Metals Corporation: *See—*
Pettit, Frank, 3,479,123.

Richards, Edward Gordon, Ward, David Marshall, Hales, Keith John, and Stephenson, Norman, to International Nickel Company, Inc., The. Welded articles and alloys containing hafnium and nickel. 3,479,157, Cl. 029-194.

Richards, Philip C.: *See—*
Kirby, Ralph W., and Richards, Philip C. 3,479,467.

Richardson, Alfred W., to United States of America, Navy. Cardiac output meter. 3,478,588, Cl. 073-362.

Richgels, Eugene, to Kaplan Paper Box Co. One-piece collapsible book-type box. 3,478,949, Cl. 229-031.

Richman, John A., Jr.: *See—*
Lunsford, Carl D., Helsley, Grover C., and Richman, John A., Jr. 3,479,370.

Richmond, George E. Tooth cleaning tool. 3,478,433, Cl. 032-059.

Richmond, Kenneth D.: *See—*
Waugh, Dale L., Brooks, Alden W., Jensen, Howard J., and Richmond, Kenneth D. 3,478,613.

Richmond Research Corporation: *See—*
Herman, Raymond, 3,478,944.

Ries, Roger P.: *See—*
Satterthwaite, Cameron B., and Ries, Roger P. 3,479,576.

Rieschel, Hans, to Bergwerksverband GmbH. Control arrangements for hydraulic pit prop support units. 3,478,522, Cl. 061-045.

Rigby, Francis L., to Haas, John I., Inc. Apparatus for dispensing viscous materials such as hop extract. 3,478,930, Cl. 222-146.

Rigrod, William W., to Bell Telephone Laboratories, Incorporated. Laser with serially coupled mode selecting resonator sections. 3,479,620, Cl. 331-094.5

Rinaldo, Paolo: *See—*
Gambaretto, Gian Paolo, Rinaldo, Paolo, and Palato, Mario 3,479,286.

Ripley, Charles C., to United States of America, Atomic Energy Commission. In-reactor control drive system. 3,479,250, Cl. 176-036.

Ritchie, Fern Joan: *See—*
Ritchie, Ralph W., Ritchie, Fern Joan, and Picquet, Miriam G. 3,478,440.

Ritchie, Ralph W., Ritchie, Fern Joan, and Picquet, Miriam G. Teaching device. 3,478,440, Cl. 035-009.

Rivin, Donald, and Aron, Jerome, to Cabot Corporation. Carbon based catalysts and compositions producible therefrom. 3,479,299, Cl. 252-426.

Rivin, Donald, and Aron, Jerome, to Cabot Corporation. Carbonaceous products. 3,479,300, Cl. 252-430.

Robbins and Bendror Associates, Inc.: *See—*
Glasgow, Paul J., 3,478,378.

Robbins, Felix & Robbins: *See—*
Luketa, Frank J., 3,478,461.

Robbins, Samuel B., to General Motors Corporation. Cantilevered contact blade and return spring with reversely bent portion. 3,479,478, Cl. 200-153.

Roberts, Carlton E.: *See—*
Rauch, Stewart E., Jr., and Roberts, Carlton E. 3,479,260.

Roberts, Dan T., to Iron City Iron Works. Welding flux for nodular cast iron. 3,479,230, Cl. 148-024.

Roberts, James H. Method and apparatus for separating nut meats from shells. 3,478,875, Cl. 209-002.

Roberts, William A., and Christadore, Morris R. Massage device. 3,478,736, Cl. 128-036.

Robertson, Michael Mundie, and Horsfall, Geoffrey Alan, to Imperial Chemical Industries Limited. Process for treating polyester shaped articles with polymeric compound containing polyester group and active group in the presence of swelling agent for polyester. 3,479,212, Cl. 117-138.8

Robins, A.H., Company, Incorporated: *See—*
Lunsford, Carl D., Helsley, Grover C., and Richman, John A., Jr., 3,479,370.

Robinson, Albert Sidney, and Lawrenson, Jack, to Pilkington Brothers Limited. Method and apparatus to produce transverse surface flow of the float glass bath metal. 3,479,171, Cl. 065-099.

Robinson, Russell I., to Allis, Louis Company, mesne. High speed liquid cooled motors. 3,479,541, Cl. 310-054.

Robison, Fred E., and Cochran, Kenneth C., to Acme Markets, Inc. Hide puller apparatus. 3,478,386, Cl. 017-021.

Robson, Frederick G.: *See—*
Pearne, Florentin J., Pearne, Frank S., and Robson, Frederick G. 3,478,397.

Rockwell Manufacturing Company: *See—*
Wolfensperger, Adolph, 3,478,403.

Rodman, James B., Sr.: *See—*
Smith, Barton K., Groff, Ralph W., Sr., and Rodman, James B., Sr. 3,478,487.

Roed, Age Eilef, to SAAB Aktiebolag. STOL aircraft having by-pass turbojet engines. 3,478,988, Cl. 244-042.

Rogers, Asa Scobey, Jr.: *See—*
Martin, Thomas W., Sr., Rogers, Asa Scobey, Jr., and Ashton, Shirley B. 3,479,023.

Rogers, Edward F.: *See—*
Patchett, Arthur A., Rogers, Edward F., and Leanza, William J. 3,479,401.

Rolamite Technology, Incorporated: *See—*
Wilkes, Donald F., 3,479,624.

Rolls-Royce Limited: *See—*
Brownhill, Frank D., and Walker, Michael K., 3,478,590.
Brownhill, Frank D., Walker, Michael K., and Ward, Peter A., 3,478,591.
Taylor, John, and Purcell, Ronald, 3,479,273.

Rooke, Michael Brian: *See—*
Bryce, Douglas Maxwell, and Rooke, Michael Brian 3,479,428.

Roome, Douglas P., to Standard Packaging Corporation. Film-forming apparatus. 3,478,391, Cl. 018-019.

Roscoe, Howard E., and Nelson, Edgar L., to FMC Corporation. Roll stand for converting equipment. 3,478,974, Cl. 242-058.

Ross, Charles A., to Kustom Electronics, Inc. Rotary sound source with optically enhanced vibrato. 3,478,837, Cl. 181-031.

Ross, Edgar A., and Rask, Stanley, to Southern Weaving Company. Woven circuit device. 3,479,565, Cl. 317-101.

Ross, George P., to National Steel Corporation. Method and apparatus for controlling coating metal temperature in a hot-dip coating bath. 3,479,210, Cl. 117-114.

Rota Forg Corporation: *See—*
Baumgartner, John R., and Bouchard, Arthur J., 3,478,556.

Roth, Etienne, and Lefrancois, Bernard, to Houilleres du Bassin du Nord & du Pas-de-Calais, Douai Nord Commissariat a l' Energie Atomique , L' Air Liquide, Societe pour l' Etude et l' Exploitation des Procedes Georges Claude, and Compagnie de Construction Mecanique Procedes Sulzer. Isotope exchange between a deuterated gas and ammonia. 3,479,140, Cl. 023-193.

Roth, Peter H.: *See—*
Taylor, Lloyd D., and Roth, Peter H. 3,479,186.

Rouse, John Wilson, and Simmons, Harley Earl, to American Can Company. Reinforced bead for a tab opening can. 3,478,917, Cl. 220-054.

Roussel UCLAF: *See—*
Allais, Andre, 3,479,360.

Rousselot, Felix, to Geigy Chemical Corporation. Valve and propellant cartridge assembly for pushbutton aerosol dispenser. 3,478,933, Cl. 222-193.

Roy, Wayne C., to Federal Pacific Electric Company. Transformer with fuse. 3,479,563, Cl. 317-015.

Royalmetal Corporation: *See—*
Benoit, Roland A., and Tripodi, Joseph, 3,478,372.

Royer, John A., to Buckner Industries, Inc. Pressure regulating device for fluid dispening systems. 3,478,776, Cl. 137-491.

Ruano, William J.: *See—*
Hough, Dean R., 3,478,582.

Ruden, Thomas E., to Raytheon Company. Crossed field microwave rectifier. 3,479,577, Cl. 321-008.

Rudolph, Martin: *See—*
Armbruster, Fritz, and Rudolph, Martin 3,479,421.

Rudy, Erwin, to Schwarzkopf Development Corporation. Heat-shock resistant shaped high temperature metal ceramic bodies. 3,479,155, Cl. 029-182.7

Ruckberg, Herbert S., to Continental Can Company, Inc. Apparatus for electrostatic molding. 3,478,387, Cl. 018-005.

Ruempelein, Fritz, to Agfa Aktiengesellschaft. Electrical core-magnet measuring instrument. 3,479,595, Cl. 324-151.

Ruleta Company, Inc., The: *See—*
Finck, Frederick P., Jr., 3,478,548.

Runge, Richard J., to Chevron Research Company. Vertical resistivity logging by measuring the electric field created by a time-varying magnetic field. 3,479,581, Cl. 324-006.

Rupprecht, Hans Stephan, and Pilkuhn, Manfred, to United States of America, Navy. Laser diode and method. 3,479,613, Cl. 331-094.5

Rusnak, Gene A., to United States of America, Interior. Beamforming in seismic surveying. 3,479,638, Cl. 340-007.

Russell, Herman F. Automatic meat cleaning apparatus. 3,478,380, Cl. 015-003.17

Ruter, Lewis L. Floatable fish basket. 3,478,463, Cl. 043-055.

Ruth, Richard L.: *See—*
Cohen, Robert, Couleur, John F., and Ruth, Richard L. 3,479,647.

Ruthroff, Clyde L., to Bell Telephone Laboratories, Incorporated. Frequency discriminator with injection-locked oscillator. 3,479,607, Cl. 329-124.

Rutzen, Horst, and Lowenstein, Albert, to Bohme Fettchemie G.m.b.H. Room deodorants. 3,479,297, Cl. 252-305.

Ryall, Neil E. Traffic signal plumbing apparatus. 3,478,994, Cl. 248-276.

Ryckaert, Andre, and Mulders, Julien, to Solvay & Cie. Stabilized chlorinated hydrocarbon compositions and process therefor. 3,479,414, Cl. 260-652.5

Ryf, Hugo: *See—*
Meisels, Alex, Denss, Rolf, and Ryf, Hugo 3,479,361.
Meisels, Alex, Denss, Rolf, and Ryf, Hugo 3,479,363.

Rynes, Peter A., Jr., and Lepselter, Martin P., to Bell Telephone Laboratories, Incorporated. Method for sputter etching using a high frequency negative pulse train. 3,479,269, Cl. 204-192.

S-F-D Laboratories, Inc.: *See—*
Cook, Alfred W., 3,479,556.

S I Handling Systems, Inc.: *See—*
Bradt, Lynn J., 3,478,697.

Saab Aktiebolag: *See—*
Eckered, Thomas Harald, Sviden, Ove, and Ljungstrom, Olle, 3,478,836.
Ohlund, John Alex Ingvar, and Andersson, Torsten Wilhelm, 3,479,032.
Roed, Age Eilef, 3,478,988.

Sachs, Charles M., to International Playtex Corporation. Brassiere. 3,478,747, Cl. 128-483.

Sadoff, Bernard J., Jr. Visual scheduling means. 3,478,719, Cl. 116-136.

Saeman, Walter C., to Olin Mathieson Chemical Corporation. Process for the recovery of $P_2O_5$ from phosphatic ores. 3,479,138, Cl. 023-165.

Safety Development Corporation: *See—*
Barthauer, Gerald L., 3,479,285.

Safranski, John C., Jr., to Dow Chemical Company, The. Water soluble epoxy esters. 3,479,306, Cl. 260-018.

Sager, Thomas, to Kleer-Vu Industries, Inc. Burst package with fold seal. 3,478,871, Cl. 206-047.

said Smyth, Ralston B.: *See—*
Smyth, Robert R., Smyth, William B., and Smyth, Ralston B., 3,478,851.

4/10 said Smyth, William B.: *See—*
Smyth, Robert R., Smyth, William B., and Smyth, Ralston B., 3,478,851.

Saint-Gobain Techniques Nouvelles: *See—*
Kikindai, Tivadar, and Burgaud, Jean Loup, 3,479,281.

Sakach, Joseph M., Jr.: *See—*
Klinger, Kenneth A., Randall, John J., and Sakach, Joseph M., Jr. 3,479,160.

Sakai Manufacturing Co., Ltd.: *See—*
Sakai, Yoshitaka, 3,478,610.

Sakai, Yoshitaka, to Sakai Manufacturing Co., Ltd. Stepless transmission using elastic rolling mechanism. 3,478,610, Cl. 074-230.17

Salvesen, William R. Key retaining device. 3,478,550, Cl. 070-459.

Samuel, Eva Lea, and Ennis, Brian Colwell, to Monsanto Chemicals(Australia)Limited. Trissubstituted methylbenzimidazoles. 3,479,368, Cl. 260-309.2

Samuel, Herbert John, to Davy and United Engineering Company Limited. Extrusion. 3,478,561, Cl. 072-270.

Sand, Robert T. Vehicle traction device. 3,478,803, Cl. 152-225.

Sandbank, Carl Peter, King, George, and Marsh, Stanley Bruce, to International Standard Electric Corporation. Series operated gunn effect devices. 3,479,611, Cl. 331-052.

Sandoz A.G.: *See—*
Troxler, Franz, and Hofmann, Albert, 3,479,371.

Sandoz Ltd: *See—*
Troxler, Franz, and Hofmann, Albert, 3,479,371.

Sandridge, Robert L., to Mobay Chemical Company. Stabilized organic isocyanate compositions. 3,479,393, Cl. 260-453.

Sandrock, Paul W. Drum for plating, blackening, pickling, and the like. 3,479,271, Cl. 204-213.

Sandrock, Paul W. Apparatus for plating, blackening, pickling, stripping and the like. 3,479,272, Cl. 204-213.

Sands, Eugene Arthur: *See—*
Chedaker, Joseph, Hoberg, George Gilbert, and Sands, Eugene Arthur 3,479,659.

Sarah, Thomas F., to Shakespeare Company, mesne. Fly reel having selective and alternate drag and brake means. 3,478,976, Cl. 242-084.45

Sarah, Thomas F., to Shakespeare Company, mesne. Fly reel having primary and secondary drag means. 3,478,977, Cl. 242-084.45

Saran, Herbert, to Henkel & Cie GmbH. Production of hardenable compositions based on triglycidyl isocyanurate. 3,479,302, Cl. 260-002.

Sasmor, Ernest J., to Frederick, Purdue, Company, The. Methylglucammonium polygalacturonate demulcent compositions and methods of treatment therewith. 3,479,432, Cl. 424-180.

Satterthwaite, Cameron B., and Ries, Roger P., to University of Illinois Foundation. Superconducting amplifier. 3,479,576; Cl. 321-008.

Sauermann, Werner, to Standard Filterbau-Ges. m.b.H. Filter structure. 3,478,498, Cl. 055-492.

Sauttr, Gerd, Mockesch, Erich, and Gotz, Franz, to Inter-Taylor AG. Forming artificial nails. 3,478,756, Cl. 132-073.

Savinese, Stanley J.: *See—*
Yanishevsky, Gilbert, Miller, Bruce J., and Savinese, Stanley J. 3,479,553.

Scannell, Val E. Sailing accessory. 3,478,585, Cl. 073-188.

Scarlett, Robert L.: *See—*
Tomaszewski, Carlos A., and Scarlett, Robert L. 3,479,552.

Schaaf, Henry W., to General Motors Corporation. Body mount. 3,479,081, Cl. 296-035.

Schallehn, Hans-Georg, to Rheinstahl Henschel Aktiengesellschaft. Lock for gas and watertight closing of flaps, gates, doors and the like. 3,479,076, Cl. 292-067.

Schedele, Helmut: *See—*
Lindner, Werner, Krautwald, Herbert, and Schedele, Helmut 3,479,623.

Scheel, John R., and Nordman, Adolph J., Jr., to Hawley Manufacturing Corporation. Traveling aspirator system with valving means. 3,478,668, Cl. 098-115.

Schenectady Chemicals, Inc.: *See—*
Laganis, Deno, 3,479,307.

Schenk, Horst, and Wurtz, Friedhelm, to Maschinenfabrik Sack G.m.b.H. Forging machine. 3,478,565, Cl. 072-399.

Schick, Henry W., to Gilbert Manufacturing Company, Inc. Apparatus for orienting articles. 3,478,860, Cl. 198-033.

Schiel, Christian, and Bischoff, Gunther, to Voith, J. M., G.m.b.H., and F. Oberdorfer K.G. Fabric sleeve and method of making. 3,478,991, Cl. 245-010.

Schillinger, Joseph F. Partitioning member..3,478,947, Cl. 229-015.

Schlage, Ernest L., to Schlage Lock Company. Pick resistant lock unit. 3,478,549, Cl. 070-421.

Schlage, Ernest L., to Schlage Lock Company. Lock mounting. 3,479,074, Cl. 292-001.

Schlage Lock Company: *See—*
Schlage, Ernest L., 3,478,549.
Schlage, Ernest L., 3,479,074.

Schlesiger, Heinz: *See—*
Thomanek, Franz Rudolf, and Schlesiger, Heinz 3,478,685.

Schlessel, Joseph H., to Airequipt Inc. Enveloped quartz iodine lamp. 3,479,548, Cl. 313-113.

Schloemann Aktiengesellschaft: *See—*
Groos, Horst Hans, 3,478,562.

Schlumberger Technology Corporation: *See—*
Baker, John H., Jr., 3,479,579.

Schmermund, Alfred. Filter-section distributing devices, especially for use in the manufacture of filter tipped cigarettes. 3,478,632, Cl. 083-105.

Schmude, Wolfgang, and Pohler, Heinz, to Eisenwerk Rothe Erde G.m.b.H. Method of making a wire race for antifriction bearings. 3,478,402, Cl. 029-148.4

Schneider, John R.: *See—*
McLean, John O., and Schneider, John R. 3,478,874.

Schneider, Walter F.: *See—*
Hemprich, Horst J., Schneider, Walter F., Spiro, Hans W., and Zehr, Joachim O. 3,479,583.

Schrader, Gert, to Teves, Alfred, G.m.b.H. Piston-cylinder assembly with dustcap. 3,478,650, Cl. 092-168.

Schroder, William J.: *See—*
Whitworth, James W., and Schroder, William J. 3,478,401.

Schultz, Edward H., Jr., to Nagel-Schase Manufacturing Company. Caster bracket device. 3,478,381, Cl. 016-029.

Schultz, Rudd. Automotive headlamp safety system with the alternate substitution of filament. 3,479,557, Cl. 315-083.

Schulz, Johann G. D.: *See—*
Lese, Henri K., Schulz, Johann G. D., and Whitaker, Arthur C. 3,479,400.

Schulze, William M. Portable grill. 3,478,676, Cl. 099-357.

Schuppisser, Armin: *See—*
Heierli, Werner, and Schuppisser, Armin 3,478,481.

Schwarzkopf Development Corporation: *See—*
Rudy, Erwin, 3,479,155.

Schwemin, Arnold J. Closed-cycle gas engine. 3,478,511, Cl. 060-024.

Scipione, Alfred S., to Singer-General Precision, Inc. Method of generating a composite blanking signal from a composite sync signal. 3,479,459, Cl. 178-069.5

SCM Corporation: *See—*
Phillips, William G., 3,478,932.

Scoffield, Eric George, and Love, David Christopher, to Manlove, Alliott & Company Limited. Air-detecting device for steam sterilizers. 3,479,131, Cl. 021-103.

Scott Equipment Company, Inc.: *See—*
Scott, Joe, 3,479,242.

Scott, Joe, to Scott Equipment Company, Inc. Reinforcing machine. 3,479,242, Cl. 156-522.

Scott, Richard D., to United States of America, Army, mesne. Hydrodynamically supported magnetic head. 3,479,661, Cl. 340-174.1

Searle, G. D., & Co.: *See—*
Krimmel, Carl Peter, 3,479,364.
Wagner, Hans A., 3,479,357.

Sears, Roebuck and Co.: *See—*
Lasseigne, Albon J., 3,479,498.

Sedam, Jason K., to Amseco Corporation. Connector assembly. 3,479,069, Cl. 285-364.

Seeburg Corporation, The: *See—*
Mallett, Alfred L., 3,478,633.

Seeley, Clarence Edward, and Smith, Charles Myron, to Anchor Hocking Corporation. Method and soda-lime batch for making molybdenum disulfide colored glass. 3,479,193, Cl. 106-052.

Segel, Joseph M., to Franklin Mint, Inc., The. Method and article for packaging objects. 3,478,870, Cl. 206-046.

Seguin, Pierre, to Moulinage et Relorderire de Chavanoz, S.A. Manufacture of a fancy yarn. 3,478,503, Cl. 057-034.

Seidel, Harold, to Bell Telephone Laboratories, Incorporated. Mode control in high power laser by means of a low power laser. 3,479,602, Cl. 331-094.5

Seidel, Harold, to Bell Telephone Laboratories, Incorporated. Mode control in high power laser by means of a low power laser. 3,479,612, Cl. 331-094.5

- Seiler, Bernhard, of 1/2 to Hartmann, Emil. Container. 3,478,912, Cl. 215-031.
- Seip, Hermann, to Dunlop Company, Limited, The. Dual circuit disc brake with hydraulic adjusting means therefor. 3,478,848, Cl. 188-152.
- Seitz-Werke G.m.b.H.: *See—*
  - Mallrich, Rudolf, and Kolb, Hermann, 3,478,785.
- Selman, Gordon L., to Johnson Matthey & Company Limited. Bonding of metals or alloys. 3,478,415, Cl. 029-497.5
- Senco Products, Incorporated: *See—*
  - Becht, Carl T., 3,478,872.
- Seppi, Ned F.: *See—*
  - Norton, Charles J., and Seppi, Ned F. 3,479,397.
- Serbin, Jacob. Seal for fabric treating machine. 3,478,546, Cl. 068-005.
- Seversen, Gordon F., to Televiso Electronics, division of Doughloy Industries, Inc. Multi-price vending machine coin operated control. 3,478,855, Cl. 194-009.
- Shakespeare Company: *See—*
  - Sarah, Thomas F., 3,478,976.
  - Sarah, Thomas F., 3,478,977.
- Shamos, Morris H.: *See—*
  - Smythe, William J., and Shamos, Morris H. 3,479,141.
- Shapiro, Laban D., Latham, Peter A., Brefka, Paul E., and LaBrie, Paul J., to Aerospace Research, Inc., mesne. Instrument housing. 3,479,568, Cl. 317-120.
- Shavel, John, Jr.: *See—*
  - Zinnes, Harold, Shavel, John, Jr., and Sternberg, Martin S. 3,479,436.
- Shaver, Paul J., to General Electric Company. Methods and apparatus for measuring the content of hydrogen or reducing gases in an atmosphere. 3,479,257, Cl. 204-001.
- Shaw, Allan, to National Research Development Corporation. Environmental space conditioning chamber. 3,478,817, Cl. 165-021.
- Shaw, John J. Method of making a muzzle brake. 3,478,417, Cl. 029-558.
- Shell, Francis J.: *See—*
  - Floyd, James C., and Shell, Francis J. 3,479,287.
- Shell Oil Company: *See—*
  - Closmann, Philip J., 3,478,825.
- Shellhause, Ronald L., to General Motors Corporation. Brake master cylinder. 3,478,517, Cl. 060-054.6
- Sher, Neil C.: *See—*
  - Morton, Richard C., and Sher, Neil C. 3,478,731.
- Sheridan, Vernon Arthur. Chair for physically handicapped persons. 3,479,086, Cl. 297-330.
- Sherliker, Francis Raymond: *See—*
  - Jackson, John Brian, Sherliker, Francis Raymond, and Long, Hamish Arthur 3,479,318.
- Sherman & Reilly, Inc.: *See—*
  - Reilly, Frank Ward, and Bozeman, Hoyt William, 3,479,014.
- Sherrod, Buddy L. Steering device. 3,478,527, Cl. 061-072.4
- Shibata, Fukuo. Arrangements combining a plurality of prime mover powers. 3,478,619, Cl. 074-661.
- Shilliday, Douglas J. Standardized orthodontic tooth-positioning and retaining device. 3,478,429, Cl. 032-014.
- Shimanckas, William J., to Outboard Marine Corporation. Marine propulsion unit with dual drive shafts and dual propeller shafts. 3,478,620, Cl. 074-665.
- Shimano, Keizo, to Shimano Kogyo Kabushiki Kaisha. Multistage sprocket wheel assembly for a bicycle of speed change type. 3,478,614, Cl. 074-243.
- Shimano Kogyo Kabushiki Kaisha: *See—*
  - Shimano, Keizo, 3,478,614.
- Shimomura, Jun: *See—*
  - Tsuruoka, Tomio, and Shimomura, Jun 3,478,663.
- Shinko Electric Co., Ltd.: *See—*
  - Makino, Shinobu, 3,479,542.
- Shipley, Darrell R., and Rassas, Waldo E. Cigar and cigarette snubber. 3,478,753, Cl. 131-235.
- Shull, Samuel E., to Air Products and Chemicals, Inc. Isomerization of olefinic hydrocarbons. 3,479,415, Cl. 260-680.
- Siebold, Donald J., and Callahan, Michael L., to General Electric Company. UHF-VHF channel indicating device. 3,478,718, Cl. 116-124.1
- Siegel, Vernon H. Accelerometer and pickoff system. 3,478,605, Cl. 073-517.
- Siemens Aktiengesellschaft: *See—*
  - Jager, Philipp, 3,479,224.
  - Lindner, Werner, Krautwald, Herbert, and Schedele, Helmut, 3,479,623.
- Siemietkowski, John S., and Antkiewicz, Walter D., to United States of America, Navy. Method and apparatus for testing a gas turbine fuel manifold and nozzle assembly. 3,478,580, Cl. 073-119.
- Sigler, Harold: *See—*
  - Hancock, John R., and Sigler, Harold 3,479,452.
- Signal-Lite Road Marker Co.: *See—*
  - Asbury, Edward G., 3,478,715.
- Sigoda, Victor J., to Man-Sew Corporation. Combined sewing and ironing mechanism. 3,478,451, Cl. 038-010.
- Silverman, Alvin J., and Diamond, Albert, to Vernitron Corporation. Electro-mechanical read-out device. 3,479,626, Cl. 335-266.
- Simmond Precision Products, Inc.: *See—*
  - Philipps, David J., and Lamphere, David A., 3,478,587.
- Simmonds Precision Products, Inc.: *See—*
  - Austin, Larry E., and Titcomb, Francis R., 3,478,925.
  - Mathews, Edward C., 3,479,591.
- Simmons, Harley Earl: *See—*
  - Rouse, John Wilson, and Simmons, Harley Earl 3,478,917.
- Simonich, Mario. Machine for drawing, filling with a bulk material and automatically distributing a container. 3,478,702, Cl. 107-001.
- Simor, George G., to Ion Company, The. Toothbrush for producing electrical potentials. 3,478,741, Cl. 128-172.1
- Simplec Manufacturing Company, Inc.: *See—*
  - Summers, Gerald C., 3,479,641.
- Simpson, Mary Phyllis: *See—*
  - Lihrande, Samuel M., 3,478,739.
- Simpson, Robert G., Luker, Ronald J., and Jewell, George S., to Canadian Westinghouse Company Limited. Pattern follower confining fields of view of two scanning photocells within conical surfaces overlapping at pattern. 3,479,513, Cl. 250-202.
- Sims, James G.: *See—*
  - Bradley, Bruce R., and Sims, James G. 3,478,389.
- Sinclair, Donald B.: *See—*
  - MacKenzie, Thomas E., and Sinclair, Donald B. 3,479,587.
- Sinclair Oil Corporation: *See—*
  - Kilmer, Lauren G., 3,478,838.
- Sinclair Research, Inc.: *See—*
  - Clough, Thomas J., 3,479,291.
- Singer-General Precision, Inc.: *See—*
  - Norris, Frank A., 3,479,536.
  - Scipione, Alfred S., 3,479,459.
- Singleton, Robert J., to United States of America, Navy. Electronic measurement system for use with cable towed bodies. 3,479,645, Cl. 340-150.
- Sinkula, Anthony A.: *See—*
  - Houtman, Ronald L., Morozowich, Walter, and Sinkula, Anthony A. 3,479,334.
- Sironi, Giuseppe: *See—*
  - Veronica, Giacinto, Sironi, Giuseppe, and Colombini, Ariano 3,479,177.
- Sitarik, Joseph P., to Bell Telephone Laboratories, Incorporated. Call reroute disabling equipment. 3,479,464, Cl. 179-018.
- Siwersson, Olle Lennart, and Tell, Karl Gunnar. Manure spreaders. 3,478,970, Cl. 239-687.
- Skeggs, Leonard T.: *See—*
  - Isreeli, Jack, and Skeggs, Leonard T. 3,479,142.
- Skinner, Warren: *See—*
  - Crisafulli, Angelo J., and Skinner, Warren 3,479,033.
- Skolnik, Phil. Sash balance. 3,478,384, Cl. 016-197.
- Slack, John: *See—*
  - Holbert, Marvin L., Jr., and Slack, John 3,478,822.
- Sleven, Marvin, Kleiman, Joseph, and Hobel, Daniel, to Whittaker Corporation. Recording method and apparatus. 3,479,648, Cl. 340-172.5
- Sloan, Robert J., to Minnesota Mining and Manufacturing Company. Color-coated roofing granules. 3,479,201, Cl. 117-027.
- Slover, Vasel R., Jr.: *See—*
  - Strubhar, Malcolm K., and Slover, Vasel R., Jr. 3,478,584.
- Smeets, Hubertus H.: *See—*
  - Kardaun, Georg, and Smeets, Hubertus H. 3,479,251.
- Smith, Barton K., Groff, Ralph W., Sr., and Rodman, James B., Sr. Method of and apparatus for wrapping products. 3,478,487, Cl. 053-066.
- Smith, Charles Myron: *See—*
  - Seeley, Clarence Edward, and Smith, Charles Myron 3,479,193.
- Smith, Donald W.: *See—*
  - Lewis, Richard L., and Smith, Donald W. 3,479,095.
- Smith, Ellsworth M., to Steel Improvement and Forge Company, The. Seal weld hand hole cover. 3,478,915, Cl. 220-025.
- Smith, Floyd E. Internal Geneva lock. 3,478,616, Cl. 074-436.
- Smith, Harry F., and Castellano, Joseph A., to Thiokol Chemical Corporation. Fluorimino-cyclo-alkanes and alkenes. 3,479,404, Cl. 260-566.
- Smith, Herchel: *See—*
  - Rees, Richard W., Foell, Theodore J., and Smith, Herchel 3,479,340.
  - Hughes, Gordon Alan, and Smith, Herchel 3,479,344.
  - Buzby, George C., Jr., Smith, Robert C., and Smith, Herchel 3,479,376.
  - Hughes, Gordon A., and Smith, Herchel 3,479,435.
- Smith, James L.: *See—*
  - Bobeck, Andrew H., and Smith, James L. 3,479,654.
- Smith, John R., and Bray, James A., to National Steel Corporation. Process for testing the corrosion resistance of a metallic surface. 3,479,256, Cl. 204-001.
- Smith Kline & French Laboratories: *See—*
  - Georgian, Vlasios, and Kerwin, James F., 3,479,342.
- Smith, Reynold B., and Trimmer, Robert W., to York Label Corporation. Carbon master transfer device. 3,478,681, Cl. 101-227.
- Smith, Robert C.: *See—*
  - Buzby, George C., Jr., Smith, Robert C., and Smith, Herchel 3,479,376.
- Smith, Russell R., and Sonnemann, George, to United Aircraft Corporation. Electric plasma moving current collector. 3,479,471, Cl. 191-045.
- Smith, Willard C., to Pasco Packing Company. Grapple. 3,478,906, Cl. 214-304.

- Smith, William C., and Free, David, to Rader Pneumatics & Engineering Co., Ltd. Waste incineration process. 3,478,707, Cl. 110-008.
- Smookler, Arthur L., and Gruber, Floyd E. Partially balanced flexible pipe joint. 3,479,061, Cl. 285-094.
- Smyth, Ralston B.: *See—*
  - Smyth, Robert R., Smyth, William B., and Smyth, Ralston B. 3,478,851.
- Smyth, Robert R., Smyth, William B., and Smyth, Ralston B., said Smyth, Ralston B., assor to 4/10 to said Smyth, Robert R. 4/10 said Smyth, William B., and 2/10 Lahive, John A., Jr., mesne. Automotive transmission. 3,478,851, Cl. 192-003.5
- Smyth, William B.: *See—*
  - Smyth, Robert R., Smyth, William B., and Smyth, Ralston B. 3,478,851.
- Smythe, William J., and Shamos, Morris H., to Technicon Corporation. Method and apparatus for analysis. 3,479,141, Cl. 023-230.
- Snare, Ronald C., to Bell Telephone Laboratories, Incorporated. Current driver organization. 3,479,521, Cl. 307-088.
- Snavely, Benjamin B., to Eastman Kodak Company. Thermally coupled image amplifier using internal feedback. 3,479,515, Cl. 250-213.
- Societe Anonyme D.B.A.: *See—*
  - Heimler, Andre, 3,478,538.
- Societe Anonyme Francaise du Ferodo: *See—*
  - Fieni, Walter, 3,478,821.
- Societe Anonyme: Ugine Kuhlmann: *See—*
  - Laffin, Michel, 3,478,814.
- Societe Bertin & Cie: *See—*
  - Bertin, Jean H., 3,478,835.
- Societe Gerafin S.A.: *See—*
  - Meoni, Angelo, 3,478,424.
- Sole, Jean: *See—*
  - Prost, Gerard, and Sole, Jean 3,479,569.
- Solowey, Ida. Disposable single unit-dose syringe with locking plunger. 3,478,937, Cl. 222-386.
- Solvay & Cie: *See—*
  - Delbouille, Andre, and Toussaint, Henri, 3,479,326.
  - Ryckaert, Andre, and Mulders, Julien, 3,479,414.
- Sonnemann, George: *See—*
  - Smith, Russell R., and Sonnemann, George 3,479,471.
- Sorensen, Svend E., and McHale, William L., to Battelle Development Corporation, mesne. Piston connection for free-piston engine. 3,478,651, Cl. 092-152.
- Southern Textile Machinery Company, Incorporated: *See—*
  - Sredl, Predrag V., 3,478,940.
- Southern Weaving Company: *See—*
  - Ross, Edgar A., and Rask, Stanley, 3,479,565.
- Southwire Company: *See—*
  - Cofer, Daniel B., Ward, George C., and Bray, Thomas L. 3,478,813.
- Spaid, William L., to United States of America, Air Force. Binary number comparator circuit. 3,479,644, Cl. 340-146.2
- Spanoudis, Louis, to Owens-Illinois, Inc. Copper coated glass article. 3,479,217, Cl. 117-227.
- Spears, John R.: *See—*
  - Martin, Robert W., and Spears, John R. 3,479,077.
- Spector, Marshall L.: *See—*
  - Stern, Eric W., and Spector, Marshall L. 3,479,392.
- Speliotis, Dennis E.: *See—*
  - Morrison, John R., and Speliotis, Dennis E. 3,479,663.
- Sperberg, Lawrence R. Apparatus for measuring tire uniformity. 3,478,581, Cl. 073-146.
- Sperry Rand Corporation: *See—*
  - Arvai, Tibor, 3,478,858.
  - Grundy, Gary L., and Herickhoff, Robert J., 3,479,509.
  - Moberg, Raymond H., 3,479,656.
- Speziale, Angelo John, and Ratts, Kenneth Wayne, to Monsanto Chemical Company. Quinone bis(dihalomethylenes). 3,479,373, Cl. 260-384.
- Spielman, James F. Hand-pulled golf cart. 3,479,052, Cl. 280-041.
- Spiro, Hans W.: *See—*
  - Hemprich, Horst J., Schneider, Walter F., Spiro, Hans W., and Zehr, Joachim O. 3,479,583.
- Sports-Jet Industries, Inc.: *See—*
  - Fox, Anthony R., 3,478,712.
- Squibb, E. R., & Sons, Inc.: *See—*
  - Principe, Pacifico, and Levine, Seymour D., 3,479,391.
- Squibb, Edward R., III: *See—*
  - Maurya, Ramamurat R., Harrington, Joseph, Jr., and Squibb, Edward R., III 3,478,410.
- Sredl, Predrag V., to Southern Textile Machinery Company, Incorporated. Hosiery inspecting and bagging apparatus. 3,478,940, Cl. 223-043.
- St. Clair, John C. High temperature gas valve. 3,478,772, Cl. 137-340.
- Stafford, Henry R., to Bendix Corporation, The. Indexable control mechanism. 3,478,624, Cl. 077-032.1
- Stamicarbon N.V.: *See—*
  - Kardaun, Georg, and Smeets, Hubertus H., 3,479,251.
- Stan, Henry: *See—*
  - Glass, Marvin I., Stan, Henry, and Kripak, Leonid 3,479,035.
- Stanchi, Luciano A., to European Atomic Energy Community(Euratom). Electrical discriminator unit. 3,479,526, Cl. 307-235.
- Standard Filterbau-Ges. m.b.H.: *See—*
  - Sauermann, Werner, 3,478,498.
- Standard-Messo Duisburg Gesellschaft fur Chemie- Technik mbH & Co.: *See—*
  - Coupette, Werner, 3,479,022.
- Standard Oil Company: *See—*
  - Kus, Stanley T., and Koenig, Fred W., 3,479,305.
- Standard Packaging Corporation: *See—*
  - Roome, Douglas P., 3,478,391.
- Stanner, Donald: *See—*
  - Brown, Norman R., Martin, Michael J., Jr., and Stanner, Donald 3,478,405.
- Stapleton, John R. Catalyzed room temperature curing shelf stable sealant compositions. 3,479,246, Cl. 161-218.
- Stark, Frank Benjamin, and Merry, Roydon William, to AMP Incorporated. Electrical connectors. 3,479,635, Cl. 339-064.
- Stark, Norman H. High temperature infrared radiant heating device. 3,479,490, Cl. 219-544.
- Stauffer Chemical Company: *See—*
  - Szabo, Karoly, and Freiberg, Ashley H., 3,479,437.
- Stauffer, Robert E., to Jeffrey Galion Manufacturing Company. Extensible and retractable boom construction for cranes. 3,478,894, Cl. 212-055.
- Stautzenberger, Adin L.: *See—*
  - MacLean, Alexander F., and Stautzenberger, Adin L. 3,479,262.
- Steadman, Thomas R.: *See—*
  - Daniels, David A., Harper, James L., and Steadman, Thomas R. 3,479,387.
- Stearns-Roger Corporation: *See—*
  - Bauserman, Howard M., 3,478,679.
- Stedman, Robert N.: *See—*
  - Anderson, Norman L., Darnall, Millard K., Morgan, William C., Peterson, Laurel L., and Stedman, Robert N. 3,478,902.
- Steel Improvement and Forge Company, The: *See—*
  - Smith, Ellsworth M., 3,478,915.
- Stelmach, George A., to Blaw-Knox Company. Controlled feed system. 3,478,626, Cl. 082-014.
- Stengel, Heinz William. Apparatus for dental models. 3,478,428, Cl. 032-011.
- Stenudd, Even Gunnar Walter: *See—*
  - Ek, Birger Henrik, and Stenudd, Even Gunnar Walter 3,478,629.
- Stephenson, Norman: *See—*
  - Richards, Edward Gordon, Ward, David Marshall, Hales, Keith John, and Stephenson, Norman 3,479,157.
- Sterling Drug Inc.: *See—*
  - Zenitz, Bernard L., and Surrey, Alexander R., 3,479,346.
- Stern, Eric W., and Spector, Marshall L., to Grace, W. R., & Co., mesne. Production of unsaturated ethers and esters. 3,479,392, Cl. 260-497.
- Stern, Robert, and Purpuri, Rosario A. Swimming pool step construction with integral vinyl liner. 3,478,370, Cl. 004-172.
- Sternberg, Martin S.: *See—*
  - Zinnes, Harold, Shavel, John, Jr., and Sternberg, Martin S. 3,479,436.
- Stevens, Roy A. Trays for packaging jars, cans and similar articles. 3,478,950, Cl. 229-032.
- Stewart, Donald B.: *See—*
  - Sze, Morgan C., and Stewart, Donald B. 3,479,298.
- Stiegler, Elwood A.: *See—*
  - Kehoe, Norman T., and Stiegler, Elwood A. 3,479,238.
- Stoddart, William D.: *See—*
  - Suman, Robert W., Stoddart, William D., and Swartz, Horace M. 3,478,699.
- Stoferle, Theodor: *See—*
  - Krempel, Fritz, and Stoferle, Theodor 3,478,859.
- Stoker, Eugene, to Anvil Products, Inc. Threading machine. 3,478,377, Cl. 010-102.
- Stoll, Milton. Temperature controller employing closed loop feedback and incremental programming. 3,479,487, Cl. 219-494.
- Storm Products Company: *See—*
  - Swaisgood, Ralph H., 3,478,878.
- Stow & Davis Furniture Company: *See—*
  - Wallach, Mark K., and Yermakov, Alexis M., 3,479,102.
- Strack, Donald R., to Protective Treatments, Inc. Mounting unit employing dual gasket construction. 3,478,475, Cl. 052-208.
- Strid, Thomas A. Conveyor for bulk grain hauling vehicles. 3,478,905, Cl. 214-083.18
- Strogis, William J.: *See—*
  - Potter, Macy, and Strogis, William J. 3,478,414.
- Stromberg Datagraphix, Inc.: *See—*
  - Hamann, Omer F., 3,479,544.
- Strommen, Lawrence A.: *See—*
  - Fischer, James L., and Strommen, Lawrence A. 3,479,469.
- Strong, Herbert M., and Tuft, Roy E. General Electric Company Thermocouple pressure-sensing means. 3,478,595, Cl. 073-399.
- Strubhar, Malcolm K., and Slover, Vasel R., Jr., to Mobil Oil Corporation. Method and apparatus for obtaining pressure build-up data in pumping wells. 3,478,584, Cl. 073-155.
- Stuart-Williams, Raymond, and Chur, Sung Pal, to Data Products Corporation. Servo positioning system. 3,479,664, Cl. 340-174.1
- Stull Chemical Company: *See—*
  - Wilson, Forrest Arthur, 3,479,176.
- Sturdevant, Eugene J.: *See—*
  - Masino, John Albert, Sturdevant, Eugene J., and Williams, Stanley Victor 3,479,520.
- Sturgeon, Wayne E.: *See—*
  - Helke, Robert C., and Sturgeon, Wayne E. 3,478,690.

- Sturgill, Dennis T.: *See—*
  - Harget, Paul J., and Sturgill, Dennis T. 3,479,631.
- Sulzer Brothers, Ltd.: *See—*
  - Brunner, Alfred, 3,478,724.
  - Kikinis, Alexander, 3,478,726.
- Suman, Robert W., Stoddart, William D., and Swartz, Horace M., to FMC Corporation. Accumulating and safety bumper for tow truck system. 3,478,699, Cl. 104-178.
- Suminoe, Taro: *See—*
  - Mori, Kan, Suminoe, Taro, Yamazaki, Tamotu, Ishikawa, Tunezo, and Kogure, Akira 3,479,331.
- Sumitomo Chemical Co., Ltd.: *See—*
  - Yamamoto, Hisao, Nakao. Masaru, and Maruyama, Isamu, 3,479,348.
- Sumitomo Electric Industries, Ltd.: *See—*
  - Kita, Yasuo, 3,478,845.
- Summers, Gerald C., to Simplec Manufacturing Company, Inc. Sequential direction indicator. 3,479,641, Cl. 340-109.
- Surrey, Alexander R.: *See—*
  - Zenitz, Bernard L., and Surrey, Alexander R. 3,479,346.
- Susquehanna Corporation, The: *See—*
  - Cothran, Wade R., 3,478,437.
- Sutton Research Corporation: *See—*
  - Briskin, Theodore S., and Ward, Geoffrey R., 3,478,751.
  - Briskin, Theodore S., and Ward, Geoffrey R., 3,478,752.
- Sviden, Ove: *See—*
  - Eckered, Thomas Harald, Sviden, Ove, and Ljungstrom, Olle 3,478,836.
- Swaim, Frank H., to United States of America, Navy. Acceleration responsive electrical switch. 3,479,476, Cl. 200-061.45
- Swaisgood, Ralph H., to Storm Products Company. Soldering apparatus. 3,478,878, Cl. 210-070.
- Swanno, Joel E., to Tektronix Inc. Latching device. 3,479,075, Cl. 292-019.
- Swanson, Richard T.: *See—*
  - Jazbutis, Anatolijus, and Swanson, Richard T. 3,478,442.
- Swartz, Horace M.: *See—*
  - Suman, Robert W., Stoddart, William D., and Swartz, Horace M. 3,478,699.
- Swartz, William M. Display device. 3,478,454, Cl. 040-126.
- SWECO Inc.: *See—*
  - Auckland, Wayne James, 3,478,406.
- Swenson, William E. Thin stone supporting and anchoring system. 3,478,480, Cl. 052-396.
- Sylvania Electric Products, Inc.: *See—*
  - Campbell, Victor H., 3,479,449.
  - Paget, Fredrick W., 3,479,559.
  - Paget, Fredrick W., and Van Buren, Ned Scott, 3,479,560.
  - Peek, Sandford C., 3,479,558.
- Sylvester, John D., and Keenan, John D., Jr., to Amsco Packaging Machinery, Inc. Bag loading device having two-part bag support means. 3,478,490, Cl. 053-189.
- Systron-Donner Corporation: *See—*
  - Walker, Donald V., and Hall, Richard F., 3,479,625.
- Szabo, Karoly, and Freiberg, Ashley H., to Stauffer Chemical Company. Guanidine complexes as fungicides. 3,479,437, Cl. 424-304.
- Sze, Morgan C., and Stewart, Donald B., to Lummus Company, The. Production of hydrogen. 3,479,298, Cl. 252-373.
- Tada, Yasuo, to Mitsubishi Denki Kabushiki Kaisha. Apparatus for controlling ignition time of automobile engine. 3,478,729, Cl. 123-117.
- Takeda, Keiichi, to Momotoshi Watanabe, mesne. Mixed solvent solution of polymer for paper treatment. 3,479,213, Cl. 117-155.
- Tally Corporation: *See—*
  - Tobey, Richard, 3,478,985.
- Tamura, Moriyosi: *See—*
  - Murase, Tamotsu, Mikami, Ichiro, and Tamura, Moriyosi 3,479,399.
- Tanaka, Tatsuo, Gotoh, Keishi, and Kajiura, Hiroshi. Measuring method of the particle size for powder and grain. 3,478,599, Cl. 073-432.
- Tantlinger, Keith W., to Fruehauf Corporation. Container stanchion. 3,478,903, Cl. 214-038.
- Tarmann, Bruno, and Kleinhagauer, Otmar. Process of producing continuous castings of square or circular cross-section. 3,478,809, Cl. 164-082.
- Tateisi Electronics Co.: *See—*
  - Akamatsu, Hiroo, Morita, Takanobu, Kamei, Mikio, and Nozoe, Yasuhiro, 3,479,518.
- Tatum, Samuel A., to Newport News Shipbuilding and Dry Dock Company. Filter for a balancing machine. 3,478,602, Cl. 073-462.
- Taylor, John T.: *See—*
  - Petersen, Arne J., and Taylor, John T. 3,479,270.
- Taylor, John, and Purcell, Ronald, to Rolls-Royce Limited. Apparatus for electro-chemical machining with a rotating grooved electrode tool. 3,479,273, Cl. 204-224.
- Taylor, Joseph M.: *See—*
  - Taylor, William B., and Taylor, Joseph M. 3,479,059.
- Taylor, Lloyd D., and Roth, Peter H., to Polaroid Corporation. Emulsion binders. 3,479,186, Cl. 096-114.
- Taylor, Michael Charles: *See—*
  - Palmer, Kenneth Percival, and Taylor, Michael Charles 3,478,766.
- Taylor, Richard Perry, and Abson, Derek, to Columbia Cellulose Company Limited. Production of cellulose esters from particulate lignocellulosic material. 3,479,336, Cl. 260-225.
- Taylor, Wesley L., to Power Regulator Company. Heating-cooling vortex control valve. 3,478,960, Cl. 236-001.
- Taylor, William B., and Taylor, Joseph M. Lined pipe sections and joints. 3,479,059, Cl. 285-055.
- Tech, Donald D., to International Business Machines Corporation. Display formating control. 3,479,605, Cl. 328-186.
- Technical Operations, Incorporated: *See—*
  - Heckscher, Helmut, 3,478,661.
  - Heinonen, Russell M., Jr., 3,479,114.
- Technicon Corporation: *See—*
  - Heimann, Richard H., 3,479,196.
  - Isreeli, Jack, and Skeggs, Leonard T., 3,479,142.
  - Smythe, William J., and Shamos, Morris H., 3,479,141.
- Technigaz: *See—*
  - Alleaume, Jean, 3,479,484.
- Tecnifax Corporation: *See—*
  - Habib, David P., Allard, Robert S., and Zabik, Eugene J., 3,479,183.
- Tektronix Inc.: *See—*
  - Swanno, Joel E., 3,479,075.
- Teletype Corporation: *See—*
  - Oslund, Roger I., 3,479,456.
- Televiso Electronics: *See—*
  - Seversen, Gordon F., 3,478,855.
- Tell, Karl Gunnar: *See—*
  - Siwersson, Olle Lennart, and Tell, Karl Gunnar 3,478,970.
- Tenneco Chemicals, Inc.: *See—*
  - Minieri, Pasquale P., 3,479,380.
- Teves, Alfred, G.m.b.H.: *See—*
  - Schrader, Gert, 3,478,650.
- Teves, Alfred, GmbH: *See—*
  - Bender, Alfred, and Knapp, Wilhelm, 3,478,847.
  - Beuchle, Friedrich, 3,478,844.
  - Hahm, Heinz Gunther, 3,478,849.
- Texas Industries, Inc.: *See—*
  - van der Lely, Cornelis, 3,478,499.
- Texize Chemicals, Inc.: *See—*
  - Brooks, Ray G., 3,478,935.
- Thee, Alfred: *See—*
  - Hecker, Arthur C., and Thee, Alfred 3,479,309.
- Thelen, Roman J., to Pillsbury Company, The. Cooking process and product. 3,479,188, Cl. 099-086.
- Themy, Tim: *See—*
  - Gwynn, Ross M., and Themy, Tim 3,479,275.
- Thermiguides S.A.: *See—*
  - Eppendahl, Pierre Charles, and Maurin, Pierre, 3,478,983.
- Thikotter, Klaus Hermann, to Metallgesellschaft Aktiegesellschaft. Apparatus for charging liquids with gases. 3,479,017, Cl. 261-091.
- Thiokol Chemical Corporation: *See—*
  - Bulbenko, George F., Gobran, Riad H., and Blommers, Elizabeth A., 3,479,337.
  - Fox, Zola, 3,478,761.
  - Hosek, William S., 3,478,760.
  - Mc Cullough, Edward E., 3,478,762.
  - Smith, Harry F., and Castellano, Joseph A., 3,479,404.
- Thiriaux, Jacques: *See—*
  - Buu-Hoi, Nguyen P., Lambelin, Georges, Lepoivre, Constan, Gillet, Claude, and Thiriaux, Jacques 3,479,396.
- Thomanek, Franz Rudolf, and Schlesiger, Heinz, to Bolkow Gesellschaft mit beschrankter Haftung. Projectile with high initial velocity. 3,478,685, Cl. 102-024.
- Thompson, Ray N. All seasons sled. 3,479,046, Cl. 280-018.
- Thompson, Thomas K., to United States of America, Atomic Energy Commission. Method of reducing a radioactive waste solution to dryness. 3,479,295, Cl. 252-301.1
- Thornsbery, Herman F. Mechanical broccoli cutter. 3,478,795, Cl. 146-078.
- Thrall Car Manufacturing Company: *See—*
  - Woodman, Howard C., and Harter, Lynn J., 3,478,701.
- Thurner, Elmar, to Hilti A.G. Anchorage nail. 3,478,638, Cl. 085-028.
- Tichy, Oscar A. W.: *See—*
  - McBride, Harold O., Tichy, Oscar A. W., and McNish, Howard G. 3,478,373.
- Tillmann, Margarete: *See—*
  - Tillmann, Peter, Kulling, Achim, and Hitzemann, Gerhard 3,479,148.
- Tillmann, Peter, deceased (by Tillmann, Margarete, sole heir), Kulling, Achim, and Hitzemann, Gerhard, to Titangesellschaft mbH. Manufacture of fine particle size titanium dioxide. 3,479,148, Cl. 023-202.
- Tims, Fred W., Jr., to Camson Manufacturing Company, The. Hand tool for cutting sheet material. 3,478,427, Cl. 030-293.
- Tinnerman Products, Inc.: *See—*
  - Flora, Laurence H., 3,478,395.
  - Van Niel, Clarence R., 3,478,801.
- Titangesellschaft mbH: *See—*
  - Tillmann, Peter, Kulling, Achim, and Hitzemann, Gerhard, 3,479,148.
- Titcomb, Francis R.: *See—*
  - Austin, Larry E., and Titcomb, Francis R. 3,478,925.

- Titterud, Curtiss W.: *See—*
  - Merritt, Edward E., Titterud, Curtiss W., Peterson, Stanley E., and Bulow, Arthur J. 3,478,390.
- Tobey, Richard, to Tally Corporation. Tape transport. 3,478,985, Cl. 242-055.
- Toho Beslon Kabushiki Kaisha: *See—*
  - Fujii, Saburo, and Yoshida, Masatoshi, 3,479,312.
- Tohoku Kyodo Kagakukogyo Kabushiki Kaisha: *See—*
  - Momotari, Yasumori, 3,479,431.
- Tomaszewski, Carlos A., and Scarlett, Robert L., to Wyle Laboratories. Deflection circuits. 3,479,552, Cl. 315-018.
- Tomiyama, Eijiro. Manually operated sound reproducing device. 3,479,037, Cl. 274-009.
- Top Seal Incorporated: *See—*
  - Meisner, Paul, 3,478,489.
- Toussaint, Henri: *See—*
  - Delbouille, Andre, and Toussaint, Henri 3,479,326.
- Townsend, Stephen E., to Xerox Corporation. Facsimile resolution improvement by utilization of a variable velocity sweep signal. 3,479,453, Cl. 178-006.7
- Toyo Rayon Kabushiki Kaisha: *See—*
  - Ito, Yoshikazu, Wakamatsu, Shigeru, Hara, Yoichiro, and Morino, Jiro, 3,479,264.
- Tracy, Herbert E., to Borg-Warner Corporation. Mechanical seal construction. 3,479,040, Cl. 277-081.
- Trask, Roland Pierce, II, Katz, Silas, and Walker, M. Lucius, Jr., to United States of America, Army. Laminar fluid NOR element. 3,478,764, Cl. 137-081.5
- Treiber, Fritz F., to Corley-Miller, Inc. Film feed mechanism for package wrapping machines and the like. 3,478,486, Cl. 053-064.
- Tremblay, Albert F., to Kent-Owens Machine Company. Tube reducing machine. 3,478,557, Cl. 072-189.
- Trico Products Corporation: *See—*
  - D'Alba, Anthony R., 3,478,648.
- Trimmer, Robert W.: *See—*
  - Smith, Reynold B., and Trimmer, Robert W. 3,478,681.
- Tripodi, Joseph: *See—*
  - Benoit, Roland A., and Tripodi, Joseph 3,478,372.
- Tronnier, Albrecht W., Jeremias, Helmuth M., and Gottesman, Arthur H., to Farrand Optical Co., Inc. Optical condenser system. 3,479,117, Cl. 353-102.
- Troxler, Franz, and Hofmann, Albert, to Sandoz Ltd, a/k/a Sandoz A.G.3-[(1-cyano-2-lower alkyl)amino]-2-hydroxypropoxy- indoles. 3,479,371, Cl. 260-326.15
- TRW Inc.: *See—*
  - Gadd, John D., 3,478,413.
- Tschopp, Lloyd D., and Woerner, Rudolph C., to Petro-Tex Chemical Corporation. Production of isobutylene from isobutane. 3,479,416, Cl. 260-683.3
- Tsuji, Mikio: *See—*
  - Kohya, Tetsuya, and Tsuji, Mikio 3,478,818.
- Tsukada, Keiichi: *See—*
  - Yamato, Junji, Tsukada, Keiichi, Kajiwara, Masaichi, and Ono, Masamichi 3,479,462.
- Tsuruoka, Tomio, and Shimomura, Jun, to Nippon Kogaku K. K. Exposure meter for single lens reflex camera. 3,478,663, Cl. 095-042.
- Tuft, Roy E.: *See—*
  - Strong, Herbert M., and Tuft, Roy E. 3,478,595.
- Turbo Machine Company: *See—*
  - Wyatt, William Kirk, Mueller, Edward G., and Hebrank, William H., 3,478,399.
- Turner, Edward W., to Phillips Petroleum Company. Apparatus for blow molding, cutting and sealing. 3,478,388, Cl. 018-005.
- Turpen, Russell L., to Compass Container Company, Inc. Cover fastening means for a cargo container. 3,478,919, Cl. 220-055.
- Tuthill, John B., to American Dish Service of Kansas City Missouri, Inc. Automatic detergent, rinse additive and sterilizer dispenser for dishwashers. 3,478,757, Cl. 134-057.
- Tuthill Pump Company: *See—*
  - Bangs, Walter J., 3,478,693.
- U.S. Industries, Inc.: *See—*
  - Haggard, Richard A., 3,478,805.
- U.S. Philips Corporation: *See—*
  - Frohner, Klaus, Horster, Horst, Lydtin, Hans Jurgen, and Reifenschweiler, Otto, 3,479,550.
  - Meyer, Dietrich, 3,479,582.
  - Van Daelen, Henri Jean Gerard Marie, 3,479,547.
- U.S. Plywood-Champion Papers, Inc.: *See—*
  - Luehs, Donald F., 3,478,478.
- Ube Industries Ltd.: *See—*
  - Murase, Tamotsu, Mikami, Ichiro, and Tamura, Moriyosi, 3,479,399.
- Uddeholms Aktiebolag: *See—*
  - Holm, Kurt Anders, and Hansson, Rune Einar, 3,479,252.
- Ugine Kuhlman: *See—*
  - Loiseau, Gerard Paul Marie Henri, 3,479,433.
- Ulrich, John L.: *See—*
  - Zavod, Pierce H., and Ulrich, John L. 3,478,769.
- Umahashi, Minoru, and Yamakawa, Hitoshi, to Kabushiki Kaisha Ricoh. Developing apparatus for sensitive paper. 3,478,665, Cl. 095-089.
- Unarco Industries, Inc.: *See—*
  - Lundvall, John S., Loomis, Russell M., and Breen, Henry D., 3,478,700.

- Underwood, George C., to Cornell-Dubilier Electric Corporation. Electromagnetic relay and method of manufacture thereof. 3,479,627, Cl. 335-271.
- Union Carbide Corporation: *See—*
  - Payne, Linwood K., Jr., and Weiden, Mathias H. J., 3,479,405.
- Uniroyal, Inc.: *See—*
  - Ariyan, Zaven S., 3,479,369.
  - Kehoe, Norman T., and Stiegler, Elwood A., 3,479,238.
  - Wetzel, Robert E., 3,478,612.
- United Aircraft Corporation: *See—*
  - Brahm, Charles B., Corcoran, John M., Glista, Edward M., and Van Olinda, David L., 3,478,512.
  - Brose, Harlan F., 3,479,144.
  - Pomante, Louis N., 3,478,418.
  - Smith, Russell R., and Sonnemann, George, 3,479,471.
- United Kingdom Atomic Energy Authority: *See—*
  - McCann, John David, and Fuller, Robin Walter Ellecker, 3,479,551.
- United States Borax & Chemical Corporation: *See—*
  - Campbell, George W., Jr., Nies, Nelson P., and Atteberry, Johnny C., 3,479,137.
- United States Envelope Company: *See—*
  - Knapp, Frank T., 3,479,025.
- United States of America
  - Agriculture: *See—*
    - Pittman, Allen G., and Wasley, William L., 3,479,214.
  - Air Force: *See—*
    - Gebel, Radames K. H., 3,479,455.
    - Haase, Kurt H., 3,479,618.
    - Heller, Ralph M., and Bowen, James R., 3,479,643.
    - Huber, Franz J. A., 3,478,820.
    - Liebel, Bruce W., Edgington, Howard C., and Meredith, Philip J., 3,479,585.
    - Spaid, William L., 3,479,644.
  - Army: *See—*
    - Barr, Thomas A., Jr., and Cason, Charles M., III, 3,478,583.
    - Castelli, Joseph N., 3,479,609.
    - Evans, Edgar J., 3,478,604.
    - Fuehrer, Reece R., and Polak, James C., 3,478,852.
    - Garver, Robert V., 3,479,615.
    - Hazzard, Frank C., 3,479,616.
    - Hwang, Ying-Chen, 3,479,535.
    - Koehler, Dale R., and Grissom, John T., 3,479,507.
    - Mattern, John, 3,479,601.
    - Meyer, Edwin F., and Wagner, Robert E., Jr., 3,478,575.
    - Panagoulias, Panagiotis L., 3,479,153.
    - Pfeiffer, Albert, Cogswell, Richard V., Lynch, Charles W., and Kunert, Herbert B., 3,478,926.
    - Scott, Richard D., 3,479,661.
    - Trask, Roland Pierce, II, Katz, Silas, and Walker, M. Lucius, Jr., 3,478,764.
  - Atomic Energy Commission: *See—*
    - Garwin, Edward L., 3,479,555.
    - Hornbeck, Robert F., 3,478,886.
    - Lee, DeWayne A., 3,479,147.
    - Ripley, Charles C., 3,479,250.
    - Thompson, Thomas K., 3,479,295.
    - Wohlberg, Cornel, 3,479,423.
  - Interior: *See—*
    - Rajan, Krishnaswamy S., and Casolo, Angelo J., 3,479,266.
    - Rajan, Krishnaswamy S., and Casolo, Angelo J., 3,479,267.
    - Rusnak, Gene A., 3,479,638.
  - Navy: *See—*
    - Craig, Jimmie M., 3,478,687.
    - Henry, John W., IV, 3,478,691.
    - Kaniuka, Walter W., 3,478,990.
    - Molik, Ronald E., 3,479,599.
    - Richardson, Alfred W., 3,478,588.
    - Rupprecht, Hans Stephan, and Pilkuhn, Manfred, 3,479,613.
    - Siemietkowski, John S., and Antkiewicz, Walter D., 3,478,580.
    - Singleton, Robert J., 3,479,645.
    - Swaim, Frank H., 3,479,476.
    - Wolff, Hanns H., 3,479,454.
    - Zavod, Pierce H., and Ulrich, John L., 3,478,769.
  - The: *See—*
    - Kaufman, Myron N., and Lindner, Melvin, 3,479,439.
- United States Steel Corporation: *See—*
  - Fenstermaker, Lloyd H., and Yu, Quin Shen, 3,478,407.
- Universal Machine Co., Inc.: *See—*
  - Marion, Thomas E., 3,478,627.
- Universal Oil Products Company: *See—*
  - Pohlenz, Jack B., 3,479,279.
- University of Illinois Foundation: *See—*
  - Satterthwaite, Cameron B., and Ries, Roger P., 3,479,576.
- Upjohn Company, The: *See—*
  - Houtman, Ronald L., Morozowich, Walter, and Sinkula, Anthony A., 3,479,334.
- Urban, Otfried: *See—*
  - Mundt, Peter, and Urban, Otfried 3,478,456.
- Vac Pac Manufacturing Company, Inc.: *See—*
  - Perlman, Sol J., 3,478,952.
- Van Buren, Ned Scott: *See—*
  - Paget, Fredrick W., and Van Buren, Ned Scott 3,479,560.

Van Daelen, Henri Jean Gerard Marie, to U.S. Philips Corporation. Device having a glow-discharge indicator tube for reproducing signs and glowgdischarge tube for use in such a device. 3,479,547, Cl. 313-109.5
Van den Honert, Taco H.: *See—*
  Plummer, William B., Van den Honert, Taco H., and Wilson, Melvin G. 3,479,026.
Van der Hoeven, Hendrik Adriaan, to N.V. Koninklijke Maatschappij 'De Schelde'. Shipbuilding yard and method for building and launching ships or similar floatable bodies. 3,478,525, Cl. 061-064.
van der Lely, Cornelis, to Texas Industries, Inc. Combine harvester. 3,478,499, Cl. 056-023.
Vanderstegen-Drake, Stamford R. F., to Plenty & Son Limited. Pumps. 3,478,692, Cl. 103-120.
Van Dine, Gilbert A., to Bell Telephone Laboratories, Incorporated. Semiconductor multivibrator. 3,479,529, Cl. 307-273.
van Gelder, Willem: *See—*
  Bergh, Arpad A., and van Gelder, Willem 3,479,237.
Van Gulik, Johan L., to Omark Industries, Inc. Welding circuit. 3,479,481, Cl. 219-098.
Van Luik, Frank W., Jr.: *See—*
  Lustenader, Edward L., and Van Luik, Frank W., Jr. 3,478,494.
Van Niel, Clarence R., to Tinnerman Products, Inc. Fastening device. 3,478,801, Cl. 151-041.75
Van Olinda, David L.: *See—*
  Brahm, Charles B., Corcoran, John M., Glista, Edward M., and Van Olinda, David L. 3,478,512.
Van Ryn, Arthur L., to American Seating Company. Chair and folding tablet arm structure. 3,479,084, Cl. 297-162.
Van Wyk, Jan W., to Boeing Company, The. High strength, self-lubricating materials. 3,479,289, Cl. 252-012.
Varga, Tibor Joseph. Protective helmet for babies. 3,478,365, Cl. 002-003.
Varta Aktiengesellschaft: *See—*
  Jung, Margarete, Becker, Harald, and von Doehren, Hans, 3,479,276.
Vatti, Thammayya. Instant sari. 3,478,367, Cl. 002-076.
VEB Funkwerk Kopenick: *See—*
  Herbst, Hagen, Kleedehn, Eckhart, and Pietrucha, Herbert, 3,478,462.
Veeder Industries Inc.: *See—*
  Bly, Donald A., 3,478,856.
  Dilger, Lawrence, and Ashford, Ernest Stanley, 3,478,854.
Venne, Claude, Forest, Robert, and Perreault, Serge. Variable speed drive assembly. 3,478,611, Cl. 074-230.17
Vernitron Corporation: *See—*
  Silverman, Alvin J., and Diamond, Albert, 3,479,626.
Veronica, Giacinto, Sironi, Giuseppe, and Colombini, Ariano, to Montecatini Edison S.p.A. Process for removing arsenic from arsenic-containing iron minerals. 3,479,177, Cl. 075-007.
Verzier, Le Verne: *See—*
  Bellinger, Kenneth P., and Verzier, Le Verne 3,479,293.
Victoreen, John A. Sound reproducer. 3,478,840, Cl. 181-031.
Victory Shelving Co.: *See—*
  Wyeroski, Ronald M., and Bokma, Mindert P., 3,478,993.
Viehaus, Ludwig. Seat furniture unit which is convertible into a bed. 3,478,371, Cl. 005-037.
Vieira, David Da Costa, to Commissariat a l'Energie Atomique. Sensing device having a variable impedance and the application thereof to an apparatus for supervising from a distance the level of oil in a tank. 3,478,586, Cl. 073-304.
Vilter Manufacturing Corporation: *See—*
  Kocher, Erich J., and Grant, Whitney I., 3,478,533.
Virtis Company, Inc., The: *See—*
  Gilmont, Roger, and Parkinson, Martin C., 3,478,779.
Vogel, Clifford. Apparatus for the harvesting of tobacco. 3,478,865, Cl. 198-204.
Vogelfanger, Elliot A., and Wallace, Thomas J., to Esso Research and Engineering Company. Stabilization of petroleum distillate fuels by oxidative treatment. 3,479,163, Cl. 044-064.
Voith Getriebe KG: *See—*
  Bonsch, Gustav, and Nolz, Klaus, 3,478,516.
Voith, J. M., G.m.b.H.: *See—*
  Schiel, Christian, and Bischoff, Gunther, 3,478,991.
Vollmer, Rudolf, to Industrie-Werke Karlsruhe Aktiengesellschaft. Arrangement for an automatic adjustment of physical values. 3,479,003, Cl. 251-058.
Volta, Giuseppe: *See—*
  Perona, Giovanni, and Volta, Giuseppe 3,478,412.
von Doehren, Hans: *See—*
  Jung, Margarete, Becker, Harald, and von Doehren, Hans 3,479,276.
Vornberger, Karl F.: *See—*
  Harriman, Allen C., and Vornberger, Karl F. 3,478,379.
Votaw, Richard L., and Kline, John E., to National Cash Register Company, The. Method and apparatus for coating fastener holes. 3,478,409, Cl. 029-458.
Vrang, Carl, Krog, Niels, and Lauridsen, Jens Birk, to Aktieselskabet Grendstedvaerket. Baking auxiliary. 3,479,189, Cl. 099-118.
Vranka, Joseph S.: *See—*
  Haines, Robert S., and Vranka, Joseph S. 3,479,219.
Vyzkumny a vyvojovy ustav Zavodu vseobecneho strojirenstvi: *See—*
  Cermak, Jiri, and Jakubec, Jindrich, 3,478,644.
Wade, Robert M.: *See—*
  Arnaudin, Edwin H., Jr., and Wade, Robert M. 3,479,446.
Wagner Electric Corporation: *See—*
  Cruse, Oliver B., 3,479,096.
Wagner, Hans A., to Searle, G. D., & Co.(6-Phenylpyrimidine)mono bis[1H-1,2,3,-triazole-4, 5-dicarboxylic acid] lower alkyl esters. 3,479,357, Cl. 260-256.4
Wagner, Heinz. Device for amusement or educational purposes comprising magnetically attractable marker means. 3,479,034, Cl. 273-131.
Wagner, Robert E., Jr.: *See—*
  Meyer, Edwin F., and Wagner, Robert E., Jr. 3,478,575.
Wakamatsu, Shigeru: *See—*
  Ito, Yoshikazu, Wakamatsu, Shigeru, Hara, Yoichiro, and Morino, Jiro 3,479,264.
Wakeford, Brian R.: *See—*
  Dukek, William G., and Wakeford, Brian R. 3,478,578.
Wakeman, Reginald L., to Millmaster Onyx Corporation. Crystalline alkyl dimethyl pseudocuminyl ammonium chlorides. 3,479,406, Cl. 260-567.6
Walker, Donald V., and Hall, Richard F., to Systron-Donner Corporation. Slide switch assembly. 3,479,625, Cl. 335-206.
Walker, M. Lucius, Jr.: *See—*
  Trask, Roland Pierce, II, Katz, Silas, and Walker, M. Lucius, Jr. 3,478,764.
Walker Manufacturing Company: *See—*
  Lentz, Ervin C., 3,479,145.
  Niebergall, Louis F., 3,478,601.
Walker, Michael K.: *See—*
  Brownhill, Frank D., and Walker, Michael K. 3,478,590.
  Brownhill, Frank D., Walker, Michael K., and Ward, Peter A. 3,478,591.
Walker, William C.: *See—*
  Cavagna, Giancarlo, and Walker, William C. 3,479,215.
Wallace, Richard B., to Oakland Corporation, The. Threaded fastener with friction lock insert. 3,478,800, Cl. 151-007.
Wallace, Thomas J.: *See—*
  Vogelfanger, Elliot A., and Wallace, Thomas J. 3,479,163.
Wallach, Mark K., and Yermakov, Alexis M., to Stow & Davis Furniture Company. Furniture construction. 3,479,102, Cl. 312-195.
Walters, Richard E., to Avco Corporation. Shipping apparatus. 3,478,869, Cl. 206-046.
Ward, Abraham W., and Whipple, Raymond T. Quickly engageable and disengageable coupling or chuck. 3,479,041, Cl. 279-042.
Ward, Alan. Conveying apparatus. 3,479,092, Cl. 302-029.
Ward, David Marshall: *See—*
  Richards, Edward Gordon, Ward, David Marshall, Hales, Keith John, and Stephenson, Norman 3,479,157.
Ward, Geoffrey R.: *See—*
  Briskin, Theodore S., and Ward, Geoffrey R. 3,478,751.
  Briskin, Theodore S., and Ward, Geoffrey R. 3,478,752.
Ward, George C.: *See—*
  Cofer, Daniel B., Ward, George C., and Bray, Thomas L. 3,478,813.
Ward, Peter A.: *See—*
  Brownhill, Frank D., Walker, Michael K., and Ward, Peter A. 3,478,591.
Warner-Lambert Pharmaceutical Company: *See—*
  Hansen, Holger V., Klutchko, Sylvester, and Meltzer, Robert I., 3,479,358.
  Morshauser, Fred S., Kalish, Samuel, and Biamonte, Alfred R., 3,479,429.
  Zinnes, Harold, Shavel, John, Jr., and Sternberg, Martin S., 3,479,436.
Warren Automatic Tool Company: *See—*
  Dower, Ethell J., 3,479,001.
Warzel, Fred M., to Phillips Petroleum Company. Production of soda ash from trona. 3,479,133, Cl. 023-063.
Warzel, Fred M., to Phillips Petroleum Company. Production of dense soda ash from trona. 3,479,134, Cl. 023-063.
Washington Scientific Industries , Inc.: *See—*
  Anderson, Kermit V., 3,479,116.
Wasley, William L.: *See—*
  Pittman, Allen G., and Wasley, William L. 3,479,214.
Watkins, Laverne L. Family drinking glass identifying support. 3,478,457, Cl. 040-324.
Waugh, Dale L., Brooks, Alden W., Jensen, Howard J., and Richmond, Kenneth D., to Dayco Corporation. V-belts. 3,478,613, Cl. 074-233.
Way, Kenneth Richard: *See—*
  Lovelock, Leonard Robert, Way, Kenneth Richard, and Wren, Robert Henry 3,479,204.
Wayne, Clyde D.: *See—*
  Miller, Roland E., Wayne, Clyde D., Olson, Edgar C., and Piatek, Robert J. 3,479,024.
Wean Industries, Inc.: *See—*
  Pitchford, Irvin M., and Messerly, Robert H., 3,478,899.
Webb, Douglas E.: *See—*
  Miller, William E., and Webb, Douglas E. 3,479,119.
Weber, Frank W., to Burroughs Corporation. Phase synchronization circuit. 3,469,606, Cl. 328-201.
Weber, Paul: *See—*
  Kramer, Bernhard, and Weber, Paul 3,479,126.

Weber, Robert E., to Kimberly-Clark Corporation. Printable paper product having a cellular coating containing pigment and a reaction product of pro- tein and an epoxy resin defining the cell walls. 3,478,716, Cl. 117-068.
Weck, Friedrich J., to American Potash & Chemical Corporation, mesne. Boron extractant compositions. 3,479,294, Cl. 252-182.
Weglarz, Walter P., to Budd Company, The. Method of forming sandwich panels. 3,478,553, Cl. 072-046.
Weichel, Ernst. Process and apparatus for breaking up a heap of cereal or leaf crop. 3,478,971, Cl. 241-024.
Weiden, Mathias H. J.: *See—*
  Payne, Linwood K., Jr., and Weiden, Mathias H. J. 3,479,405.
Weigl , John W.: *See—*
  Minett, Ernest Everet, and Weigl , John W. 3,478,659.
Weinstein, Elaine. Slip cover type of article carrier. 3,479,085, Cl. 297-219.
Weinstein, Miriam. Illuminated manicuring device. 3,478,763, Cl. 132-075.
Weir, Richard L. Building block construction. 3,478,482, Cl. 052-594.
Weisfeld, Lewis B., to Carlisle Chemical Works, Inc. ABS resin and lubricant. 3,479,315, Cl. 260-030.8
Weiss, Hugh R., to Pantasote Company of New York, Inc., The. Stackable trays and package formed therefrom. 3,478,867, Cl. 206-044.
Weiss, Irwin K., to General Motors Corporation. Spherical bearing king pin steering knuckle assembly. 3,479,051, Cl. 280-096.1
Weissenberg, Gustav, to Leitz, Ernst. Viewing and observation device. 3,479,512, Cl. 250-201.
Wellensiek, Gerd: *See—*
  Munster, Josef, Wellensiek, Gerd, and Linke, Gunter 3,478,725.
Weller, David C., to Bell Telephone Laboratories, Incorporated. System for phase locking two pulse trains. 3,479,598, Cl. 325-321.
Welter, Clarence J., to Diamond Laboratories, Inc. Indirect passive immunization against transmissible gastroenteritis virus in nursing piglets at birth by active immunization of sows prior to farrowing with transmissible gastroenteritis vaccine and method of producing the same. 3,479,430, Cl. 424-089.
Welton, Charles L. Adjustable curb bit. 3,478,493, Cl. 054-007.
Wendt, Gerhard R.: *See—*
  Ledig, Kurt W., and Wendt, Gerhard R. 3,479,341.
Wendt, Gerhard R., and Ledig, Kurt W., to American Home Products Corporation. 3,4-Dihydro-2-quinoxalinol-6-carboxylic acid derivatives. 3,479,347, Cl. 260-240.
Wenger, Max, to Maschinenfabrik Bennenger AG. Yarn field distribution apparatus. 3,478,400, Cl. 028-028.
Wennberg, Karl Fredrik, to AGA Aktiebolag. Breathing apparatus with pressure reduction warning device. 3,478,740, Cl. 128-146.4
Westbrook, Sidney O., and Mickley, Lewis D., Jr. Plumbing connection. 3,479,060, Cl. 285-058.
Westergard, David J.: *See—*
  Reinecker, Walter J., and Westergard, David J. 3,478,793.
Western Electric Company: *See—*
  Estabrooks, David A., 3,479,200.
  Casey, John B., 3,479,584.
  Owens, James Loyd, 3,479,589.
Western Industries, Inc.: *See—*
  Jaye, Richard C., 3,479,018.
Westinghouse Air Brake Company: *See—*
  Huffman, Donald D., and Jackel, Arthur P., 3,479,503.
Westinghouse Electric Corporation: *See—*
  Burney, Ivan T., 3,478,673.
  Fuqua, Norman L., 3,478,670.
  Fuqua, Norman L., and Ambrose, John J., 3,478,671.
  Fuqua, Norman L., 3,478,672.
  Wright, Charles D., 3,478,675.
Westvaco Corporation: *See—*
  Cavagna, Giancarlo, and Walker, William C., 3,479,215.
Wetzel, Robert E., to Uniroyal, Inc. Positive belt structure. 3,478,612, Cl. 074-232.
Weyerhaeuser Company: *See—*
  Mc Lauchlan, Thomas A., and Fairfield, Louis R., Jr., 3,479,097.
Whal Clipper Corporation: *See—*
  Fox, James H., 3,479,540.
Whipple, Raymond T.: *See—*
  Ward, Abraham W., and Whipple, Raymond T. 3,479,041.
Whirlpool Corporation: *See—*
  McBride, Harold O., Tichy, Oscar A. W., and McNish, Howard G., 3,478,373.
  McBride, Harold Oren, and Gartley, William H., 3,478,374.
Whitaker, Arthur C.: *See—*
  Lese, Henri K., Schulz, Johann G. D., and Whitaker, Arthur C. 3,479,400.
White, Claude F.: *See—*
  Goloff, Alexander, Hautala, Richard E., and White, Claude F. 3,478,411.
Whitmore, Chatland, and Redway, George F., to Cambridge Instrument Company, Inc. Air/fuel ratio indicator. 3,478,579, Cl. 073-116.
Whittaker Corporation: *See—*
  Sleven, Marvin, Kleiman, Joseph, and Hobel, Daniel, 3,479,648.
Whitten, James R., to General Electric Company. Rail vehicle detection system. 3,479,502, Cl. 246-034.
Whitworth, James W., and Schroder, William J., to Deering Milliken Research Corporation. Method and apparatus for treating textile yarn. 3,478,401, Cl. 028-062.
Wicker, Reginald Gordon, to General Electric Company Limited, The. Frequency synthesisers. 3,479,610, Cl. 331-002.
Wickham, Donald G., to Ampex Corporation. Transparent magnetic spinel crystal of mixed oxide of lithium iron and vanadium. 3,479,132, Cl. 023-051.
Wieschollek, Helmut, and Gumlich, Walter, to Chemische Werke Huls Aktiengesellschaft. Process for the production of molded foam bodies of polyesters. 3,479,303, Cl. 260-002.5
Wilburn, Warren Ernst. Method for sealing an anode button to a glass cathode ray tube funnel. 3,479,169, Cl. 065-059.
Wilhelm, John H., to Margon Corporation. Doll eye and means pivoting the eye upon moving of its pivot axis within a plane. 3,478,465, Cl. 046-169.
Wilhelmsen, Willy: *See—*
  Braaten, Amund, and Wilhelmsen, Willy 3,478,505.
Wilkes, Donald F., to Rolamite Technology, Incorporated. Magnetically operated switching apparatus. 3,479,624, Cl. 335-188.
Willard, Edwin J., to Longview Fibre Company. Lead-in table for paperboard slitting and transverse cut-off machinery. 3,478,654, Cl. 093-058.2
Williams, Albert G., to Celanese Corporation. Oxymethylene polymer composition and fiber produced therefrom. 3,479,314, Cl. 260-030.4
Williams, Archie T. Bin structure. 3,478,914, Cl. 220-004.
Williams, Frank H., 1/3 to Juten, Milford A. Connector means for fish tapes or the like. 3,479,013, Cl. 254-134.3
Williams, Stanley Victor: *See—*
  Masino, John Albert, Sturdevant, Eugene J., and Williams, Stanley Victor 3,479,520.
Williams, Theodore M. Watch regulator. 3,478,508, Cl. 058-109.
Wilmotte, Raymond M. Information processing and display with optical correlation. 3,479,494, Cl. 235-181.
Wilson, Forrest Arthur, to Stull Chemical Company. Method and multi-phase composition for controlling pests. 3,479,176, Cl. 071-094.
Wilson, Melvin G.: *See—*
  Plummer, William B., Van den Honert, Taco H., and Wilson, Melvin G. 3,479,026.
Wilson, Newton R., and Nave, Thomas J., to Phillips Petroleum Company. Blow molding parisons using fluid sealing. 3,479,420, Cl. 264-089.
Wilson, Robert G., Brewer, George R., and Jamba, Douglas M., to Hughes Aircraft Company. Surface ionization apparatus and electrode means for accelerating the ions in a curved path. 3,479,545, Cl. 313-063.
Winn, James B., Jr., to Archilithic Co., The. Dispensing gun for fiber rovings and cementitious materials. 3,478,963, Cl. 239-102.
Winston, Eric, and Qurashi, Maqbool, to Jerrold Electronics Corporation. Electrical circuit board retainer. 3,479,633, Cl. 339-014.
Winterhager, Helmut: *See—*
  Paschen, Peter, and Winterhager, Helmut 3,479,179.
Wirth, Hermann, to Bosch, Robert, Hausgeraete G.m.b.H. Electrostatic painting apparatus. 3,478,962, Cl. 239-015.
Wislocki, Joseph P.: *See—*
  McRae, John L., and Wislocki, Joseph P. 3,478,572.
Witsch, Guenter: *See—*
  Daeuble, Manfred, Dieck, Klaus, Heinrich, Hans, and Witsch, Guenter 3,478,376.
Woelfer, Charles G., and Dohr, Albert D., to Nooter Corporation. Multi-layer vessel. 3,478,784, Cl. 138-157.
Woerner, Rudolph C.: *See—*
  Tschopp, Lloyd D., and Woerner, Rudolph C. 3,479,416.
Wohlberg, Cornel, to United States of America, Atomic Energy Commission. Method of forming compacted graphite bodies. 3,479,423, Cl. 264-122.
Wolfensperger, Adolph, to Rockwell Manufacturing Company. Method of making seat ring for plug valve. 3,478,403, Cl. 029-157.
Wolff, Hanns H., to United States of America, Navy. Electronic synthesizer. 3,479,454, Cl. 178-006.8
Wolff & Munier, Inc.: *See—*
  Bourquin, Paul A., 3,478,667.
Wolff, Otto E.: *See—*
  Land, Edwin H., and Wolff, Otto E. 3,479,184.
Wolff, Otto E., to Polaroid Corporation. Photographic flashgun with divided reflector and flashbulb ejecting means. 3,479,497, Cl. 240-001.3
Woock, Herbert J. Method of preparing, maintaining and controlling the supply and consistency of hardfacing slurry. 3,479,016, Cl. 259-149.
Wood, Garfield A., Jr. Boat racing game. 3,479,031, Cl. 273-086.
Wood Treating Chemical Company: *See—*
  Augustin, Verlynn O., 3,478,790.
Woodman, Howard C., and Harter, Lynn J., to Thrall Car Manufacturing Company. Boxcar construction. 3,478,701, Cl. 105-404.
Woodward, Robert Burns. Hydrazino-thiazolidines. 3,479,366, Cl. 260-306.7
Woodworth, N. A., Company: *See—*
  Hohwart, George, 3,479,042.
Work, Edgar A., Jr.: *See—*
  Blythe, Richard, and Work, Edgar A., Jr. 3,479,107.
Worthington Corporation: *See—*
  Aronson, David, 3,478,530.
Worthington, Peter L., to General Electric Company. Investment casting apparatus with a cushion around the shell mold. 3,478,815, Cl. 164-361.

Wren, Robert Henry: *See*—
  Lovelock, Leonard Robert, Way, Kenneth Richard, and Wren, Robert Henry 3,479,204.

Wright, Charles D., to Westinghouse Electric Corporation. Apparatus for pressurizing air operated coffee brewer. 3,478,675, Cl. 099-302.

Wright, John G.: *See*—
  Padovani, Henry R., and Wright, John G. 3,478,946.

Wright, Maurice James, and Nolan, Roger William, to Lucas, Joseph, (Industries) Limited. Indicating device for a battery charging system. 3,479,575, Cl. 320-048.

Wurtz, Friedhelm: *See*—
  Schenk, Horst, and Wurtz, Friedhelm 3,478,565.

Wuthrich, Rolf: *See*—
  Blatter, Hans, and Wuthrich, Rolf 3,479,578.

Wyatt, William Kirk, Mueller, Edward G., and Hebrank, William H., to Turbo Machine Company. Apparatus for coiling a textile product. 3,478,399, Cl. 028-021.

Wyeroski, Ronald M., and Bokma, Mindert P., to Victory Shelving Co. Vertically adjustable shelf. 3,478,993, Cl. 248-245.

Wyle Laboratories: *See*—
  Tomaszewski, Carlos A., and Scarlett, Robert L., 3,479,552.

Wyler, Joseph A., to Commercial Solvents Corporation. Process for the preparation of pentarrythritol tetranitrate free from acid and explosive composition having an improved sensitivity and comprising such pentacrythrilol tetranitrate. 3,479,236, Cl. 149-093.

Wyman-Gordon Company: *See*—
  Ferguson, Ellis H., 3,478,566.

Xerox Corporation: *See*—
  Lynn, Lewis G., 3,478,600.
  Mack, Donald E., 3,479,597.
  Minett, Ernest Everet, and Weigl, John W., 3,478,659.
  Townsend, Stephen E., 3,479,453.
  Miller, William E., and Webb, Douglas E., 3,479,119.

Yamakawa, Hitoshi: *See*—
  Umahashi, Minoru, and Yamakawa, Hitoshi 3,478,665.

Yamamoto, Hisao, Nakao, Masaru, and Maruyama, Isamu, to Sumitomo Chemical Co., Ltd. Quinoxaline derivatives. 3,479,348, Cl. 260-240.

Yamato, Junji, Tsukada, Keiichi, Kajiwara, Masaichi, and Ono, Masamichi, to Nippon Telegraph and Telephone Public Corporation. Equational timing system in time division multiplex communication. 3,479,462, Cl. 179-015.

Yamazaki, Tamotu: *See*—
  Mori, Kan, Suminoe, Taro, Yamazaki, Tamotu, Ishikawa, Tunezo, and Kogure, Akira 3,479,331.

Yanabu, Osamu, Hada, Takashi, and Doi, Kazuyuki, to Fuji Iron & Steel Co., Ltd. Chromium plated steel sheet having an almost colorless and transparent chromate film. 3,479,162, Cl. 029-195.

Yanishevsky, Gilbert, Miller, Bruce J., and Savinese, Stanley J., to Burroughs Corporation. Deflection amplifier. 3,479,553, Cl. 315-018.

Yee, Peter P. M.: *See*—
  Levine, Alfred L., and Yee, Peter P. M. 3,479,491.

Yermakov, Alexis M.: *See*—
  Wallach, Mark K., and Yermakov, Alexis M. 3,479,102.

Yerouchalmi, David, to Commissariat a l'Energie Atomique. Composite-electrode for magnetohydrodynamic generator. 3,479,538, Cl. 310-011.

York Label Corporation: *See*—
  Smith, Reynold B., and Trimmer, Robert W., 3,478,681.

Yorns, Edward E., to Kentucky Electronics, Inc. Method of punching a cylindrical CRT convergence electrode. 3,478,628, Cl. 083-054.

Yoshida, Masatoshi: *See*—
  Fujii, Saburo, and Yoshida, Masatoshi 3,479,312.

Young, Horace A.: *See*—
  Littwin, Arthur K., and Littwin, Donald F., 3,478,876.

Young, Howard S.: *See*—
  Hargis, Charles W., and Young, Howard S. 3,479,374.

Youngberg, Charles Harold: *See*—
  Hansen, Harold Valentine, Youngberg, Charles Harold, and Ford, Perry, Jr. 3,478,828.

Yu, Quin Shen: *See*—
  Fenstermaker, Lloyd H., and Yu, Quin Shen 3,478,407.

Zabasnik, Frederick J., to Phillips Petroleum Company. Tubular extrusion having integral web. 3,479,422, Cl. 264-098.

Zabik, Eugene J.: *See*—
  Habib, David P., Allard, Robert S., and Zabik, Eugene J. 3,479,183.

Zadig, Ernest A. Teaching aid for self instruction and testing. 3,478,441, Cl. 035-009.

Zakrawacz, Stanislaw: *See*—
  Budzynski, Kazimierz, Juszczyk, Leopold, Bonenberg, Zdzislaw, Dybal, Daniel, and Zakrawacz, Stanislaw 3,479,019.

Zavod, Pierce H., and Ulrich, John L., to United States of America, Navy. Automatic control system for decompression chamber. 3,478,769, Cl. 137-118.

Zehr, Joachim O.: *See*—
  Hemprich, Horst J., Schneider, Walter F., Spiro, Hans W., and Zehr, Joachim O. 3,479,583.

Zelik, Hynek J., to Black and Decker Manufacturing Company, The. Attaching construction for a portable tool edge guide. 3,478,788, Cl. 144-136.

Zemanek, Joseph, Jr., to Mobil Oil Corporation. Orientation sensing system for well logging tool for use in deviated boreholes. 3,478,839, Cl. 181-000.5

Zemgals, Guido Z.: *See*—
  Presnell, Carlton E., and Zemgals, Guido Z. 3,478,444.

Zenith Radio Corporation: *See*—
  Dias, Fleming, 3,479,463.

Zenitz, Bernard L., and Surrey, Alexander R., to Sterling Drug Inc. N-acyl-N- (and N,N-bis-) [(1-piperidyl-lower- alkyl]amines. 3,479,346, Cl. 260-240.

Zero Manufacturing Company: *See*—
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| | 74 | 3,478,366 |
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| 4– | 57 | 3,478,368 |
| | 158 | 3,478,369 |
| | 172 | 3,478,370 |
| 5– | 37 | 3,478,371 |
| | 63 | 3,478,372 |
| 8– | 26 | 3,479,126 |
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| | 158 | 3,478,373 |
| | | 3,478,374 |
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| 10– | 102 | 3,478,377 |
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| | 46 | 3,478,385 |
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| | 14 | 3,478,390 |
| | 19 | 3,478,391 |
| 19– | .62 | 3,478,392 |
| 21– | 61 | 3,479,130 |
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| | 73 | 3,478,395 |
| | 75 | 3,478,394 |
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| | 173 | RE.26,714 |
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| | | 3,479,159 |
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| 29– | 558 | 3,478,417 |
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| 30– | 90.3 | RE.26,717 |
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| 33– | 93 | 3,478,434 |
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| | 217 | 3,478,438 |
| 34– | 114 | 3,478,439 |
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| | 73 | 3,478,446 |
| 36– | 36 | 3,478,447 |
| 37– | 43 | 3,478,448 |
| | 141 | 3,478,449 |
| | | 3,478,450 |
| 38– | 10 | 3,478,451 |
| 40– | 68 | 3,478,452 |
| | 106.1 | 3,478,453 |
| | 126 | 3,478,454 |
| | 132 | 3,478,455 |
| | 152 | 3,478,456 |
| | 324 | 3,478,457 |
| 42– | 57 | 3,478,458 |
| 43– | 3 | 3,478,459 |
| | 4.5 | 3,478,460 |
| | 8 | 3,478,461 |
| | 9 | 3,478,462 |
| | 55 | 3,478,463 |
| 44– | 64 | 3,479,163 |
| 46– | 12 | 3,478,464 |
| | 169 | 3,478,465 |
| | 236 | 3,478,466 |
| 48– | 190 | 3,479,164 |
| | | 3,479,165 |
| | 196 | 3,479,166 |
| 49– | 35 | 3,478,467 |
| | 137 | 3,478,468 |
| | 199 | 3,478,469 |
| | 337 | 3,478,470 |
| | 449 | 3,478,471 |
| 52– | 1 | 3,478,472 |
| | 9 | 3,478,473 |
| | 11 | 3,478,474 |
| | 208 | 3,478,475 |
| | | 3,478,476 |
| | 220 | 3,478,477 |
| | 309 | 3,478,478 |
| | 361 | 3,478,479 |
| | 396 | 3,478,480 |
| | 432 | 3,478,481 |
| | 594 | 3,478,482 |
| | 658 | 3,478,483 |
| 53– | 26 | 3,478,484 |
| | 28 | 3,478,485 |
| | 64 | 3,478,486 |
| | 66 | 3,478,487 |
| | 112 | 3,478,488 |
| | 167 | 3,478,489 |
| | 189 | 3,478,490 |
| | 248 | 3,478,491 |
| | 266 | 3,478,492 |
| 54– | 7 | 3,478,493 |
| 55– | 127 | 3,478,494 |
| | 227 | 3,478,495 |
| | 230 | 3,478,496 |
| | 411 | 3,478,497 |
| | 492 | 3,478,498 |
| 56– | 23 | 3,478,499 |
| | 27 | 3,478,500 |
| 56– | 330 | 3,478,501 |
| | 366 | 3,478,502 |
| 57– | 34 | 3,478,503 |
| | | 3,478,504 |
| | 59 | 3,478,505 |
| | 160 | 3,478,506 |
| 58– | 53 | 3,478,507 |
| | 109 | 3,478,508 |
| | 140 | 3,478,509 |
| | | 3,478,510 |
| 60– | 24 | 3,478,511 |
| | 39.28 | 3,478,512 |
| | 52 | 3,478,513 |
| | 53 | 3,478,514 |
| | 54 | 3,478,515 |
| | | 3,478,516 |
| | .6 | 3,478,517 |
| | | 3,478,518 |
| | | 3,478,519 |
| 61– | 35 | 3,478,520 |
| | 43 | 3,478,521 |
| | 45 | 3,478,522 |
| | | 3,478,523 |
| | 63 | 3,478,524 |
| | 64 | 3,478,525 |
| | 67 | 3,478,526 |
| | 72.4 | 3,478,527 |
| | .6 | RE.26,718 |
| 62– | 3 | 3,478,528 |
| | 85 | 3,478,529 |
| | 112 | 3,478,530 |
| | 123 | 3,478,531 |
| | 184 | 3,478,532 |
| | 196 | 3,478,533 |
| | 225 | 3,478,534 |
| | 237 | 3,478,535 |
| | 441 | 3,478,536 |
| 63– | 4 | 3,478,537 |
| 64– | 7 | 3,478,538 |
| | 13 | 3,478,539 |
| | 17 | 3,478,540 |
| | 23.7 | 3,478,541 |
| | 24 | 3,478,542 |
| 65– | 1 | 3,479,167 |
| | 3 | 3,479,168 |
| | 59 | 3,479,169 |
| | | 3,479,170 |
| | 99 | 3,479,171 |
| | 158 | 3,479,172 |
| | 229 | 3,479,173 |
| | 323 | 3,479,174 |
| 66– | 86 | 3,478,543 |
| | 108 | 3,478,544 |
| | 195 | 3,478,545 |
| 68– | 5 | 3,478,546 |
| 70– | 71 | 3,478,547 |
| | 397 | 3,478,548 |
| | 421 | 3,478,549 |
| | 459 | 3,478,550 |
| 71– | 29 | 3,479,175 |
| | 94 | 3,479,176 |
| 72– | 8 | 3,478,551 |
| | 42 | 3,478,552 |
| | 46 | 3,478,553 |
| | | 3,478,554 |
| | 166 | 3,478,555 |
| | 185 | 3,478,556 |
| | 189 | 3,478,557 |
| | 199 | 3,478,558 |
| | 242 | 3,478,559 |
| | 257 | 3,478,560 |
| | 270 | 3,478,561 |
| | 272 | 3,478,562 |
| | 349 | 3,478,563 |
| | 391 | 3,478,564 |
| | 399 | 3,478,565 |
| | 427 | 3,478,566 |
| | 457 | 3,478,567 |
| 73– | 1 | 3,478,569 |
| | | 3,478,570 |
| | 4 | 3,478,571 |
| | 9 | 3,478,572 |
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| | 32 | 3,478,575 |
| | 40.5 | 3,478,576 |
| | 49.1 | 3,478,577 |
| | 61.1 | 3,478,578 |
| | 81 | 3,478,568 |
| | 116 | 3,478,579 |
| 73– | 119 | 3,478,580 |
| | 146 | 3,478,581 |
| | .2 | 3,478,582 |
| | 147 | 3,478,583 |
| | 155 | 3,478,584 |
| | 88 | 3,478,585 |
| | 304 | 3,478,586 |
| | | 3,478,587 |
| | 362 | 3,478,588 |
| | | 3,478,589 |
| | 363 | 3,478,590 |
| | | 3,478,591 |
| | .9 | 3,478,592 |
| | 387 | 3,478,593 |
| | 398 | 3,478,594 |
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| | 421 | 3,478,596 |
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| | 423 | 3,478,598 |
| | 432 | 3,478,599 |
| | | 3,478,600 |
| | | 3,478,601 |
| | 462 | 3,478,602 |
| | 483 | 3,478,603 |
| | 517 | 3,478,604 |
| | | 3,478,605 |
| 74– | 12 | 3,478,606 |
| | 18.1 | 3,478,607 |
| | 89.15 | 3,478,608 |
| | 229 | 3,478,609 |
| | 230.17 | 3,478,610 |
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| | 233 | 3,478,613 |
| | 243 | 3,478,614 |
| | 339 | 3,478,615 |
| | 436 | 3,478,616 |
| | 489 | 3,478,617 |
| | 519 | 3,478,618 |
| | 661 | 3,478,619 |
| | 665 | 3,478,620 |
| | 688 | 3,478,621 |
| | 792 | 3,478,622 |
| | 798 | 3,478,623 |
| 75– | 7 | 3,479,177 |
| | 60 | 3,479,178 |
| | 78 | 3,479,179 |
| | 206 | 3,479,180 |
| | 212 | 3,479,181 |
| 77– | 32.1 | 3,478,624 |
| 81– | 3 | 3,478,625 |
| 82– | 14 | 3,478,626 |
| | 70.2 | 3,478,627 |
| 83– | 54 | 3,478,628 |
| | 105 | 3,478,632 |
| | 169 | 3,478,629 |
| 84– | 1.03 | 3,478,633 |
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| | 193 | 3,478,634 |
| | 197 | 3,478,635 |
| | 258 | 3,478,630 |
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| | 305 | 3,478,636 |
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| 85– | 28 | 3,478,638 |
| | 41 | 3,478,639 |
| | 64 | 3,478,640 |
| | 79 | 3,478,641 |
| 87– | 50 | 3,478,642 |
| 89– | 36 | 3,478,643 |
| | 140 | 3,478,644 |
| 91– | 335 | 3,478,645 |
| | 411 | 3,478,646 |
| | | 3,478,647 |
| | | 3,478,648 |
| 92– | 50 | 3,478,649 |
| | 152 | 3,478,651 |
| | 168 | 3,478,650 |
| 93– | 1.5 | 3,478,652 |
| | 51 | 3,478,653 |
| | 58.2 | 3,478,654 |
| 94– | 39 | 3,478,655 |
| | 48 | 3,478,656 |
| 95– | 1.1 | 3,478,657 |
| | | 3,478,658 |
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| 95– | 59 | 3,478,664 |
| | 89 | 3,478,665 |
| | 99 | 3,478,666 |
| 96– | 33 | 3,479,182 |
| | 49 | 3,479,183 |
| | 63 | RE.26,719 |
| | 76 | 3,479,184 |
| | 84 | 3,479,185 |
| | 114 | 3,479,186 |
| 98– | 40 | 3,478,667 |
| | 115 | 3,478,668 |
| 99– | 60 | 3,479,187 |
| | 86 | 3,479,188 |
| | 118 | 3,479,189 |
| | 139 | 3,479,190 |
| | 166 | 3,479,191 |
| | 276 | 3,478,669 |
| | 283 | 3,478,670 |
| | | 3,478,671 |
| | 302 | 3,478,672 |
| | | 3,478,673 |
| | | 3,478,675 |
| | 312 | RE.26,716 |
| | 347 | 3,478,674 |
| | 357 | 3,478,676 |
| | 360 | 3,478,677 |
| 100– | 49 | 3,478,678 |
| | 117 | 3,478,679 |
| 101– | 32 | 3,478,680 |
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| | 327 | 3,478,682 |
| | 368 | 3,478,683 |
| | 453 | 3,478,684 |
| 102– | 24 | 3,478,685 |
| | 35 | 3,478,686 |
| | | 3,478,687 |
| 103– | 25 | 3,478,688 |
| | 87 | 3,478,689 |
| | 93 | 3,478,690 |
| | 115 | 3,478,691 |
| | 120 | 3,478,692 |
| | 126 | 3,478,693 |
| | | 3,478,694 |
| | 152 | 3,478,695 |
| | 236 | 3,478,696 |
| 104– | 172 | 3,478,697 |
| | | 3,478,698 |
| | | 3,479,665 |
| | 178 | 3,478,699 |
| 105– | 369 | 3,478,700 |
| | 404 | 3,478,701 |
| 106– | 22 | 3,479,192 |
| | 52 | 3,479,193 |
| | 58 | 3,479,194 |
| | 159 | 3,479,195 |
| 107– | 1 | 3,478,702 |
| | 8 | 3,478,703 |
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| 110– | 8 | 3,478,706 |
| | | 3,478,707 |
| 112– | 160 | 3,478,708 |
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| 114– | .5 | 3,478,710 |
| | 16 | 3,478,711 |
| 115– | 12 | 3,478,712 |
| 116– | 56 | 3,478,713 |
| | 63 | 3,478,714 |
| | | 3,478,715 |
| | 124 | 3,478,717 |
| | .1 | 3,478,718 |
| | 136 | 3,478,719 |
| 117– | 3 | 3,479,196 |
| | 12 | 3,479,197 |
| | 15 | 3,479,198 |
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| | 21 | 3,479,200 |
| | 27 | 3,479,201 |
| | 38 | 3,479,202 |
| | 44 | 3,479,203 |
| | 46 | 3,479,204 |
| | | 3,479,205 |
| | 68 | 3,478,716 |
| | 75 | 3,479,206 |
| | 76 | 3,479,207 |
| | 94 | 3,479,208 |
| | 109 | 3,479,209 |
| | 114 | 3,479,210 |
| | 136 | 3,479,211 |
| | 138.8 | 3,479,212 |
| 117– | 155 | 3,479,213 |
| | 161 | 3,479,214 |
| | 201 | 3,479,215 |
| | 227 | 3,479,216 |
| | | 3,479,217 |
| | 231 | 3,479,218 |
| | 235 | 3,479,219 |
| 118– | 323 | 3,478,720 |
| 119– | 18 | 3,478,721 |
| | 23 | 3,478,722 |
| | 52 | 3,478,723 |
| 122– | 235 | 3,478,724 |
| | 333 | 3,478,725 |
| | 406 | 3,478,726 |
| 123– | 15 | 3,478,727 |
| | 16 | 3,478,728 |
| | 117 | 3,478,729 |
| | 179 | 3,478,730 |
| | 198 | 3,478,731 |
| 125– | 12 | 3,478,732 |
| 126– | 9 | 3,478,733 |
| | 44 | 3,478,734 |
| | | 3,478,735 |
| 127– | 38 | 3,479,220 |
| | 46 | 3,479,221 |
| 128– | 36 | 3,478,736 |
| | 64 | 3,478,737 |
| | 66 | 3,478,738 |
| | 132 | 3,478,739 |
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| 131– | 2 | 3,478,751 |
| | | 3,478,752 |
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| 132– | 1 | 3,478,754 |
| | 33 | 3,478,755 |
| | 73 | 3,478,756 |
| | 75 | 3,478,763 |
| 134– | 33 | 3,479,222 |
| | 57 | 3,478,757 |
| | 85 | 3,478,758 |
| 135– | 20 | 3,478,759 |
| 136– | 6 | 3,479,223 |
| | 86 | 3,479,224 |
| | | 3,479,225 |
| | | 3,479,226 |
| | | 3,479,227 |
| | 120 | 3,479,228 |
| 137– | 68 | 3,478,760 |
| | | 3,478,761 |
| | 71 | 3,478,762 |
| | 81.5 | 3,478,764 |
| | | 3,478,765 |
| | | 3,478,766 |
| | 88 | 3,478,767 |
| | 101.21 | 3,478,768 |
| | 118 | 3,478,769 |
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| | 340 | 3,478,772 |
| | 344 | 3,478,773 |
| | 454.5 | 3,478,774 |
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| | 527.4 | 3,478,778 |
| | 615 | 3,478,779 |
| | 624.18 | 3,478,780 |
| | 625.63 | 3,478,781 |
| | 627.5 | 3,478,782 |
| 138– | 103 | 3,478,783 |
| | 135 | 3,478,770 |
| | 157 | 3,478,784 |
| 141– | 39 | 3,478,785 |
| 143– | 68 | 3,478,786 |
| | 135 | 3,478,787 |
| 144– | 136 | 3,478,788 |
| | 209 | 3,478,789 |
| | 233 | 3,478,790 |
| | 310 | 3,478,791 |
| 146– | 70.1 | 3,478,793 |
| | 78 | 3,478,794 |

146– 78 : 3,478,795
174 : 3,478,796
192 : 3,478,797
264 : 3,478,798
148– 6.24: 3,479,229
24 : 3,479,230
3,479,231
31.5 : 3,479,232
174 : 3,479,233
187 : 3,479,234
149– 19 : 3,479,235
93 : 3,479,236
150– 52 : 3,478,799
151– 7 : 3,478,800
41.75: 3,478,801
3,478,802
152–225 : 3,478,803
353 : Re.26,713
156– 11 : 3,479,237
111 : 3,479,238
184 : 3,479,239
205 : 3,479,240
435 : 3,479,241
522 : 3,479,242
157– 13 : 3,478,804
160– 5 : 3,478,805
45 : 3,478,806
344 : 3,478,807
161– 9 : 3,479,243
58 : 3,479,244
77 : 3,479,245
218 : 3,479,246
263 : 3,479,247
162– 16 : 3,479,248
18 : 3,479,249
164– 4 : 3,478,808
82 : 3,478,809
87 : 3,478,810
94 : 3,478,811
183 : 3,478,812
278 : 3,478,813
281 : 3,478,814
361 : 3,478,815
165– 9 : 3,478,816
21 : 3,478,817
30 : 3,478,818
32 : 3,478,819
47 : 3,478,820
182 : 3,478,821
166– 88 : 3,478,822
274 : 3,478,823
295 : 3,478,824
299 : 3,478,825
301 : 3,478,826
172–379 : 3,478,827
669 : 3,478,828
173–104 : 3,478,829
174– 42 : 3,479,441
50.58: 3,479,442
73 : 3,479,443
86 : 3,479,444
94 : 3,479,445
120 : 3,479,446
176– 36 : 3,479,250
177– 16 : 3,478,830
178– 5.2 : 3,479,447
3,479,448
.4 : 3,479,449
3,479,450
6.6 : 3,479,451
3,479,452
.7 : 3,479,453
.8 : 3,479,454
7.2 : 3,479,455
22 : 3,479,456
67 : 3,479,457
69 : 3,479,458
.5 : 3,479,459
179– 1 : 3,479,460
15 : 3,479,461
3,479,462
3,479,463
18 : 3,479,464
3,479,465
3,479,466
3,479,467
81 : 3,479,468
90 : 3,479,469
3,479,470
180– 6.48: 3,478,831
9.6 : 3,478,832
12 : 3,478,833
70 : 3,478,834
121 : 3,478,835
128 : 3,478,836
181– .5 : 3,478,838
3,478,839
31 : 3,478,837
3,478,840
47 : 3,478,841
56 : 3,478,842
184– 6 : 3,478,843
188– 18 : 3,478,844
73 : 3,478,845
97 : 3,478,846
152 : 3,478,847

188–152 : 3,478,848
218 : 3,478,849
3,478,850
191– 45 : 3,479,471
192– 3.5 : 3,478,851
110 : 3,478,852
111 : 3,478,853
194– 3 : 3,478,854
9 : 3,478,855
13 : 3,478,856
197– 98 : 3,478,857
151 : 3,478,858
198– 19 : 3,478,859
33 : 3,478,860
3,478,861
3,478,862
3,478,863
204 : 3,478,864
3,478,865
200– 19 : 3,479,472
46 : 3,479,473
61.44: 3,479,474
.45: 3,479,475
3,479,476
.55: 3,479,477
153 : 3,479,478
201– 5 : 3,479,251
202–170 : 3,479,252
203– 6 : 3,479,253
13 : 3,479,254
204– 1 : 3,479,255
3,479,256
3,479,257
38 : 3,479,258
54 : 3,479,259
56 : 3,479,260
61 : 3,479,261
80 : 3,479,262
86 : 3,479,263
162 : 3,479,264
180 : 3,479,265
3,479,266
3,479,267
181 : 3,479,268
192 : 3,479,269
195 : 3,479,270
213 : 3,479,271
3,479,272
224 : 3,479,273
260 : 3,479,274
275 : 3,479,275
290 : 3,479,276
299 : 3,479,277
206– 4 : 3,478,866
44 : 3,478,867
46 : 3,478,868
3,478,869
3,478,870
47 : 3,478,871
56 : 3,478,872
208– 33 : 3,479,278
56 : 3,479,279
209– 2 : 3,478,875
73 : 3,478,876
80.5 : 3,478,877
334 : 3,478,406
210– 22 : 3,479,280
23 : 3,478,873
3,478,874
44 : 3,479,281
54 : 3,479,282
3,479,283
3,479,284
70 : 3,478,878
77 : 3,478,879
80 : 3,478,880
96 : 3,478,881
104 : 3,478,882
108 : 3,478,883
152 : 3,478,884
194 : 3,478,885
198 : 3,478,886
223 : 3,478,887
255 : 3,478,888
406 : 3,478,889
211– 37 : 3,478,890
90 : 3,478,891
126 : 3,478,892
165 : 3,478,893
212– 55 : 3,478,894
213– 15 : 3,478,895
214– 6 : 3,478,896
3,478,897
3,478,898
8.5 : 3,478,899
16 : 3,478,901
38 : 3,478,902
3,478,903
75 : 3,478,904
83.18: 3,478,905
304 : 3,478,906
313 : 3,478,907
450 : 3,478,908
501 : 3,478,909
672 : 3,478,910
215– 9 : 3,478,911

215– 31 : 3,478,912
100 : 3,478,913
219– 10.55: 3,478,900
69 : 3,479,479
97 : 3,479,480
98 : 3,479,481
100 : 3,479,482
121 : 3,479,483
125 : 3,479,484
243 : 3,479,485
385 : 3,479,486
494 : 3,479,487
536 : 3,479,488
540 : 3,479,489
544 : 3,479,490
220– 4 : 3,478,914
25 : 3,478,915
41 : 3,478,916
54 : 3,478,917
3,478,918
55 : 3,478,919
3,478,920
62 : 3,478,921
86 : 3,478,922
221– 70 : 3,478,923
213 : 3,478,924
222– 1 : 3,478,925
3,478,926
31 : 3,478,927
103 : 3,478,928
129.1 : 3,478,929
146 : 3,478,930
166 : 3,478,931
192 : 3,478,932
193 : 3,478,933
309 : 3,478,934
321 : 3,478,935
340 : 3,478,936
386 : 3,478,937
402.14: 3,478,938
223– 38 : 3,478,939
43 : 3,478,940
67 : 3,478,941
85 : 3,478,942
88 : 3,478,943
226– 67 : 3,478,944
109 : 3,478,945
227– 97 : 3,478,946
229– 15 : 3,478,947
17 : 3,478,948
31 : 3,478,949
32 : 3,478,950
40 : 3,478,951
51 : Re.26,712
3,478,953
57 : 3,478,952
230–101 : 3,478,954
114 : 3,478,955
185 : 3,478,956
207 : 3,478,957
232 : 3,478,958
235– 3 : 3,478,959
61.11: 3,479,491
151.1 : 3,479,492
3,479,493
181 : 3,479,494
3,479,495
183 : 3,479,496
236– 1 : 3,478,960
54 : 3,478,961
239– 15 : 3,478,962
102 : 3,478,963
191 : 3,478,964
265.25: 3,478,965
302 : 3,478,966
588 : 3,478,967
650 : 3,478,968
654 : 3,478,969
687 : 3,478,970
240– 1.3 : 3,479,497
2 : 3,479,498
10.6 : 3,479,499
52 : 3,479,500
108 : 3,479,501
241– 24 : 3,478,971
230 : 3,478,972
242– 55.19: 3,478,973
58 : 3,478,974
64 : 3,478,975
84.45: 3,478,976
3,478,977
.51: 3,478,978
.54: 3,478,979
86.52: 3,478,980
107.4 : 3,478,981
129.8 : 3,478,982
154 : 3,478,983
3,478,984
184 : 3,478,985
244– 1 : 3,478,986
42 : 3,478,987
3,478,988
43 : 3,478,989
85 : 3,478,990
245– 10 : 3,478,991
246– 34 : 3,479,502

246–124 : 3,479,503
248–205 : 3,478,992
245 : 3,478,993
276 : 3,478,994
361 : 3,478,995
473 : 3,478,996
488 : 3,478,997
249–120 : 3,478,998
201 : 3,478,999
219 : 3,479,000
250– 41.9 : 3,479,504
49.5 : 3,479,505
3,479,506
83 : 3,479,508
.3 : 3,479,507
3,479,509
3,479,510
.6 : 3,479,511
201 : 3,479,512
202 : 3,478,792
3,479,513
213 : 3,479,515
3,479,516
3,479,517
219 : 3,479,518
3,479,519
222 : 3,479,520
223 : 3,479,514
251– 4 : 3,479,001
5 : 3,479,002
58 : 3,479,003
118 : 3,479,004
149.9 : 3,479,005
174 : 3,479,006
214 : 3,479,007
297 : 3,479,008
252– 3 : 3,479,285
8 : 3,479,286
.5 : 3,479,287
.57: 3,479,288
12 : 3,479,289
49.9 : 3,479,290
51.5 : 3,479,291
62.57: 3,479,292
79.4 : 3,479,293
182 : 3,479,294
301.1 : 3,479,295
.4 : 3,479,296
305 : 3,479,297
373 : 3,479,298
426 : 3,479,299
430 : 3,479,300
522 : 3,479,301
254– 4 : 3,479,010
94 : 3,479,011
132 : 3,479,012
134.3 : 3,479,013
193 : 3,479,014
259–110 : 3,479,015
149 : 3,479,016
260– 2 : 3,479,302
.5 : 3,479,303
3,479,304
3,479,305
18 : 3,479,306
20 : 3,479,307
23 : 3,479,308
3,479,309
29.2 : 3,479,310
.3 : 3,479,311
.6 : 3,479,312
.7 : 3,479,313
30.4 : 3,479,314
.8 : 3,479,315
33.4 : 3,479,316
37 : 3,479,317
40 : 3,479,318
45.7 : 3,479,319
46.5 : 3,479,320
47 : 3,479,321
67 : 3,479,322
75 : 3,479,323
3,479,324
77.5 : 3,479,325
80.78: 3,479,326
85.7 : 3,479,327
86.1 : 3,479,328
88.2 : 3,479,329
93.7 : 3,479,330
94.3 : 3,479,331
112.5 : 3,479,333
186 : 3,479,332
210 : 3,479,334
211.3 : 3,479,335
225 : 3,479,336
239 : 3,479,337
.1 : 3,479,338
3,479,339
.55: 3,479,340
3,479,341
3,479,342
240 : 3,479,343
3,479,344
3,479,345
3,479,346
3,479,347

260–240 : 3,479,348
3,479,349
243 : 3,479,350
246 : 3,479,351
247 : 3,479,352
249.6 : 3,479,353
250 : 3,479,354
3,479,355
253 : 3,479,356
256.4 : 3,479,357
284 : 3,479,359
286 : 3,479,358
3,479,360
293.4 : 3,479,361
3,479,362
294.3 : 3,479,363
295 : 3,479,364
302 : 3,479,365
306.7 : 3,479,366
309 : 3,479,367
.2 : 3,479,368
310 : 3,479,369
326.15: 3,479,371
.3 : 3,479,370
340.6 : 3,479,372
384 : 3,479,373
396 : 3,479,374
397.4 : 3,479,375
.45: 3,479,376
404 : 3,479,377
429 : 3,479,378
3,479,379
.7 : 3,479,380
448 : 3,479,381
3,479,382
.2 : 3,479,383
453 : 3,479,384
3,479,393
462 : 3,479,394
465 : 3,479,385
.5 : 3,479,387
3,479,388
.8 : 3,479,386
.9 : 3,479,389
468 : 3,479,390
488 : 3,479,391
497 : 3,479,392
3,479,395
500.5 : 3,479,396
503 : 3,479,397
513 : 3,479,398
515 : 3,479,399
517 : 3,479,400
518 : 3,479,401
520 : 3,479,402
530 : 3,479,403
543 : 3,479,413
566 : 3,479,404
3,479,405
567.6 : 3,479,406
607 : 3,479,408
608 : 3,479,407
612 : 3,479,409
621 : 3,479,410
635 : 3,479,411
642 : 3,479,412
652.5 : 3,479,414
680 : 3,479,415
683.3 : 3,479,416
878 : 3,479,417
973 : 3,479,418
261– 91 : 3,479,017
103 : 3,479,018
263– 46 : 3,479,019
264– 25 : 3,479,419
89 : 3,479,420
96 : 3,479,421
98 : 3,479,422
122 : 3,479,423
151 : 3,479,424
171 : 3,479,425
289 : 3,479,426
266– 22 : 3,479,020
31 : 3,479,021
34 : 3,479,022
270– 31 : 3,479,023
58 : 3,479,024
271– 2 : 3,479,025
58 : 3,479,026
273– 1 : 3,479,027
25 : 3,479,028
49 : 3,479,029
72 : 3,479,030
86 : 3,479,031
102.2 : 3,479,032
113 : 3,479,033
131 : 3,479,034
138 : 3,479,035
274– 4 : 3,479,036
9 : 3,479,037
23 : 3,479,038
277– 30 : 3,479,039
81 : 3,479,040
279– 42 : 3,479,041
123 : 3,479,042
280– 5 : 3,479,043

280– 11.13: 3,479,044
.37: 3,479,045
18 : 3,479,046
41 : 3,479,052
47.19: 3,479,047
.23: 3,479,048
81 : 3,479,049
95 : 3,479,050
96.1 : 3,479,051
104 : 3,479,053
150 : 3,479,054
407 : 3,479,055
461 : 3,479,056
511 : 3,479,057
285– 16 : 3,479,058
55 : 3,479,059
58 : 3,479,060
94 : 3,479,061
98 : 3,479,062
108 : 3,479,063
111 : 3,479,064
151 : 3,479,065
236 : 3,479,066
261 : 3,479,067
321 : 3,479,068
364 : 3,479,069
287– 20.92: 3,479,070
.94: 3,479,071
52.08: 3,479,072
189.36: 3,479,073
292– 1 : 3,479,074
19 : 3,479,075
21 : Re.26,711
67 : 3,479,076
294– 70 : 3,479,077
104 : 3,479,078
296– 26 : 3,479,079
35 : 3,479,080
3,479,081
297–103 : 3,479,082
118 : 3,479,083
162 : 3,479,084
219 : 3,479,085
330 : 3,479,086
339 : 3,479,087
373 : 3,479,088
299– 9 : 3,479,089
64 : 3,479,090
300– 3 : 3,479,091
302– 29 : 3,479,092
40 : 3,479,093
303– 7 : 3,479,094
22 : 3,479,095
54 : 3,479,096
307– 88 : 3,479,521
119 : 3,479,522
205 : 3,479,523
222 : 3,479,524
231 : 3,479,528
235 : 3,479,525
3,479,526
3,479,527
254 : 3,479,530
255 : 3,479,531
260 : 3,479,532
265 : 3,479,533
267 : 3,479,534
273 : 3,479,529
319 : 3,479,535
308– 3 : 3,479,099
5 : 3,479,097
9 : 3,479,098
187.2 : 3,479,100
310– 8.5 : 3,479,536
11 : 3,479,537
3,479,538
49 : 3,479,539
50 : 3,479,540
54 : 3,479,541
81 : 3,479,542
162 : 3,479,543
312– 73 : 3,479,101
195 : 3,479,102
198 : 3,479,103
229 : 3,479,104
261 : 3,479,105
351 : 3,479,106
313– 7 : 3,479,544
63 : 3,479,545
85 : 3,479,546
109.5 : 3,479,547
113 : 3,479,548
195 : 3,479,549
205 : 3,479,550
334 : 3,479,551
315– 18 : 3,479,552
3,479,553
24 : 3,479,554
39 : 3,479,555
.51: 3,479,556
83 : 3,479,557
98 : 3,479,558
105 : 3,479,559
3,479,560
119 : 3,479,561
159 : 3,479,562

---

317– 15 : 3,479,563
22 : 3,479,564
101 : 3,479,565
103 : 3,479,566
114 : 3,479,567
120 : 3,479,568
123 : 3,479,569
234 : 3,479,570
3,479,571
235 : 3,479,572
237 : 3,479,573
318– 18 : 3,479,574
320– 48 : 3,479,575
321– 8 : 3,479,576
3,479,577
11 : 3,479,578
324– .5 : 3,479,579
1 : 3,479,580
6 : 3,479,581
28 : 3,479,584
34 : 3,479,582
51 : 3,479,583
57 : 3,479,585

324– 57 : 3,479,586
58 : 3,479,587
61 : 3,479,588
62 : 3,479,589
65 : 3,479,590
99 : 3,479,591
115 : 3,479,592
123 : 3,479,593
125 : 3,479,594
151 : 3,479,595
3,479,596
325–321 : 3,479,597
3,479,598
323 : 3,479,599
423 : 3,479,600
449 : 3,479,601
473 : 3,479,628
328– 14 : 3,479,602
61 : 3,479,603
151 : 3,479,604
186 : 3,479,605
201 : 3,479,606
329–124 : 3,479,607

330– 4 : 3,479,608
21 : 3,479,609
331– 2 : 3,479,610
52 : 3,479,611
94.5 : 3,479,612
3,479,613
3,479,614
3,479,620
332– 19 : Re.26,715
30 : 3,479,615
43 : 3,479,616
333– 11 : 3,479,617
24 : 3,479,618
31 : 3,479,619
95 : 3,479,621
334– 85 : 3,479,622
335–129 : 3,479,623
188 : 3,479,624
206 : 3,479,625
266 : 3,479,626
271 : 3,479,627
336– 70 : 3,479,629

337–159 : 3,479,630
338– 22 : 3,479,631
339– 5 : 3,479,632
14 : 3,479,633
17 : 3,479,634
64 : 3,479,635
125 : 3,479,636
176 : 3,479,637
340– 7 : 3,479,638
59 : 3,479,639
69 : 3,479,640
109 : 3,479,641
146.1 : 3,479,643
.2 : 3,479,644
.3 : 3,479,642
150 : 3,479,645
166 : 3,479,646
172.5 : 3,479,647
3,479,648
3,479,649
173 : 3,479,650
3,479,651

340–173 : 3,479,652
174 : 3,479,653
3,479,654
3,479,655
3,479,656
3,479,657
3,479,658
3,479,659
3,479,660
.1 : 3,479,661
3,479,662
3,479,663
3,479,664
350– 6 : 3,479,107
16 : 3,479,108
161 : 3,479,109
351–123 : 3,479,110
352– 44 : 3,479,111
78 : 3,479,112
167 : 3,479,113
225 : 3,479,114
353– 6 : 3,479,115

353– 77 : 3,479,116
102 : 3,479,117
355– 26 : 3,479,118
80 : 3,479,119
85 : 3,479,120
3,479,121
401–199 : 3,479,122
402– 21 : 3,479,123
415–159 : 3,479,124
416–216 : 3,479,009
424– 47 : 3,479,427
60 : 3,479,428
63 : 3,479,429
89 : 3,479,430
159 : 3,479,431
180 : 3,479,432
200 : 3,479,433
230 : 3,479,434
241 : 3,479,435
246 : 3,479,436
304 : 3,479,437
431–254 : 3,479,125

## CLASSIFICATION OF DESIGNS

D 8– 31 : 215,997
61 : 215,998
154 : 215,999
D 9–169 : 216,000
186 : 216,001
193 : 216,002
220 : 216,003
216,004
216,005
232 : 216,006
281 : 216,007
D11– 1 : 216,008
D13– 1 : 216,009

D14– 3 : 216,010
216,011
D15– 8 : 216,012
216,013
D22– 7 : 216,014
D23– 64 : 216,015
142 : 216,023
D26– 5 : 216,016
13 : 216,017
14 : 216,018
216,019
216,020
D29– 23 : 216,021

D30– 20 : 216,022
D33– 8 : 216,024
11 : 216,025
216,026
14 : 216,027
D34– 5 : 216,028
216,029
216,030
216,031
14 : 216,032
15 : 216,033
D41– 1 : 216,034

D42– 7 : 216,035
216,036
D44– 1 : 216,037
5 : 216,038
22 : 216,039
D48– 16 : 216,040
20 : 216,041
31 : 216,042
D52– 3 : 216,044
D54– 12 : 216,045
216,046
216,047

D54– 12 : 216,048
D55– 1 : 216,043
D56– 1 : 216,049
4 : 216,050
216,051
D61– 1 : 216,052
216,053
D70– 1 : 216,054
D71– 1 : 216,055
D80– 8 : 216,056
216,057
D83– 1 : 216,058

D83– 1 : 216,059
D85– 2 : 216,060
D87– 1 : 216,061
3 : 216,062
D90– 20 : 216,063
216,064
216,065
216,066
216,067
D92– 1 : 216,068
15 : 216,069
D95– 3 : 216,070

## CLASSIFICATION OF PLANTS

P. – 43 : 2,940
P. – 43 : 2,941

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Reference is by Serial No. (Notice of Apr. 11, 1968, 849 O.G. 1221)

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37–624.13: 814,213
42– 18.1 : 749,501

55–337 : 789,577
57–152 : 778,096

60– 31.6 : 729,834
49 : 835,295

60– 87.3 : 841,605
64–103 : 840,133

64–151 : 832,247
96– 33 : 825,262

# GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

| | |
|---|---|
| Alabama | 1 |
| Alaska | 2 |
| American Samoa | 3 |
| Arizona | 4 |
| Arkansas | 5 |
| California | 6 |
| Canal Zone | 7 |
| Colorado | 8 |
| Connecticut | 9 |
| Delaware | 10 |
| District of Columbia | 11 |
| Florida | 12 |
| Georgia | 13 |
| Guam | 14 |
| Hawaii | 15 |
| Idaho | 16 |
| Illinois | 17 |
| Indiana | 18 |
| Iowa | 19 |
| Kansas | 20 |
| Kentucky | 21 |
| Louisiana | 22 |
| Maine | 23 |
| Maryland | 24 |
| Massachusetts | 25 |
| Michigan | 26 |
| Minnesota | 27 |
| Mississippi | 28 |
| Missouri | 29 |
| Montana | 30 |
| Nebraska | 31 |
| Nevada | 32 |
| New Hampshire | 33 |
| New Jersey | 34 |
| New Mexico | 35 |
| New York | 36 |
| North Carolina | 37 |
| North Dakota | 38 |
| Ohio | 39 |
| Oklahoma | 40 |
| Oregon | 41 |
| Pennsylvania | 42 |
| Puerto Rico | 43 |
| Rhode Island | 44 |
| South Carolina | 45 |
| South Dakota | 46 |
| Tennessee | 47 |
| Texas | 48 |
| Utah | 49 |
| Vermont | 50 |
| Virginia | 51 |
| Virgin Islands | 52 |
| Washington | 53 |
| West Virginia | 54 |
| Wisconsin | 55 |
| Wyoming | 56 |
| U.S. Air Force | 57 |
| U.S. Army | 58 |
| U.S. Navy | 59 |

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

## PATENTS

1 : 3,478,583
3,478,967
3,479,507
2 : 3,478,696
4 : 3,478,706
3,479,020
3,479,532
3,479,632
3,479,647
5 : 3,479,013
6 : Re.26,711
Re.26,714
Re.26,717
3,478,397
3,478,404
3,478,436
3,478,440
3,478,444
3,478,446
3,478,467
3,478,469
3,478,472
3,478,479
3,478,483
3,478,495
3,478,511
3,478,514
3,478,549
3,478,571
3,478,577
3,478,603
3,478,608
3,478,622
3,478,637
3,478,643
3,478,655
3,478,666
3,478,674
3,478,686
3,478,687
3,478,689
3,478,694
3,478,704
3,478,711
3,478,741
3,478,742
3,478,745
3,478,748
3,478,751
3,478,752

6 : 3,478,758
3,478,767
3,478,776
3,478,783
3,478,786
3,478,791
3,478,794
3,478,795
3,478,796
3,478,799
3,478,808
3,478,824
3,478,857
3,478,861
3,478,880
3,478,883
3,478,886
3,478,889
3,478,892
3,478,896
3,478,897
3,478,900
3,478,914
3,478,919
3,478,931
3,478,941
3,478,985
3,478,992
3,478,995
3,479,004
3,479,005
3,479,010
3,479,011
3,479,016
3,479,040
3,479,041
3,479,050
3,479,055
3,479,056
3,479,065
3,479,066
3,479,074
3,479,078
3,479,089
3,479,101
3,479,109
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## Design Patents

1 : 216,030
6 : 216,000
216,009
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42 : 216,004
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45 : 216,013
55 : 216,011
216,014
216,037
216,038
216,059

## Plant Patents

34 : 2,940
36 : 2,941

## DEFENSIVE PUBLICATIONS APPLICATIONS

Reference is by Serial No. (Notice of Apr. 11, 1968, 849 O.G. 1221)

10 : 687,450
778,096
25 : 832,247
34 : 667,231
36 : 825,262
841,605
42 : 789,577
44 : 749,501
44 : 814,213
47 : 835,295
47 : 840,133
48 : 729,834

U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 18, 1969 Volume 868 Number 3

# TRADEMARKS

## NOTICES

### Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

**Reg. No. 231,389** (ALCOA), Aluminum Company of America, Ingots of aluminum and aluminum base alloys; **Reg. No. 284,996**, same, Aluminum sand mold and permanent mold castings, aluminum billets and ingots, aluminum forgings and extruded shapes, aluminum foil and sheet, aluminum solder, and granulated aluminum; **Reg. No. 284,997** ("ALCOA" AND DESIGN), same; **Reg. No. 285,250** (ALCOA), same, Aluminum cable, steel-reinforced aluminum cable, and condenser blades, all for electrical use; **Reg. No. 285,251** ("ALCOA" AND DESIGN), same; **Reg. No. 286,617** (ALCOA), same, Metal cable clamps, devices for preventing vibration of electric cables, non-ferrous tubing, rivets, and nails; **Reg. No. 286,618** ("ALCOA" AND REPRESENTATION OF SHIELD), same; **Reg. No. 288,976** (ALCOA), same, Aluminum shingles, corrugated roofing, down spouts, and gutters and flashings; **Reg. No. 288,977** ("ALCOA" AND REPRESENTATION OF SHIELD), same, **filed** Aug. 29, 1969, D.C.N.J. (Camden), Doc. 1043–69, *Aluminum Company of America* v. *Alcoa Aluminum Siding Company, Inc. et al.*

**Reg. No. 284,996.** (See Reg. No. 231,389.)

**Reg. No. 284,997.** (See Reg. No. 231,389.)

**Reg. No. 285,250.** (See Reg. No. 231,389.)

**Reg. No. 285,251.** (See Reg. No. 231,389.)

**Reg. No. 286,617.** (See Reg. No. 231,389.)

**Reg. No. 286,618.** (See Reg. No. 231,389.)

**Reg. No. 288,976.** (See Reg. No. 231,389.)

**Reg. No. 288,977.** (See Reg. No. 231,389.)

**Reg. No. 738,144.** (See Reg. No. 810,886.)

**Reg. No. 802,384** (JUST WONDERFUL), Caryl Richards, Inc., Permanent hair waving lotion and neutralizer, hair cream, hair spray, hair shampoo and hair color, **filed** Aug. 12, 1969, D.C., N.D. Tex. (Dallas), Doc. CA–3–3299, *Faberge, Inc.* v. *Welba Lee Keetch, Jr.*

**Reg. No. 810,886** (SHOP-RITE), Wakefern Food Corp., Wholesale distributorship services for grocery and department stores; Reg. No. 812,305, same, Retail store service (commonly known as supermarkets); **Reg. No. 812,306** (SHOP-RITE SUPERMARKETS AND DESIGN), same; **Reg. No. 738,144**, same, Shop-Rite Supermarkets, Cigarettes, **filed** May 19, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C–472, *Wakefern Food Corp.* v. *Sayville Wine & Spirit Shop Inc.* Order of discontinuance, Sept. 8, 1969.

**Reg. No. 812,305.** (See Reg. No. 810,886.)

**Reg. No. 812,306.** (See Reg. No. 810,886.)

**Reg. No. 813,851** (MISCELLANEOUS DESIGN), Laverne International Ltd., Decorative wall paper-type wall coverings for adhesive application to a wall or other surface, comprising thin flexible sheet material such as canvas, plastic, or paper to which designs and/or tonal and textural effects have been applied (Class 20); furniture and furniture accessories of wood, chrome plated steel, painted steel, stainless steel, aluminum, bronze, marble, leather, glass, synthetic glass type products, plastic, foam rubber, rubber, fabrics and combinations of these and other materials including chairs, side chairs, lounge chairs, settees, sofas, ottomans, benches, bar

## CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] 14,986
Date of oldest new application November 18, 1968
Date of oldest amended application (filing date) August 5, 1965

| C. M. WENDT, Director, Trademark Examining Operation<br>TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION | Oldest Application New | Oldest Application Amended |
|---|---|---|
| (I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B | 3-17-69 | 10-6 -66 |
| (II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200 | 12-23-68 | 8-5 -65 |
| (III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36 | 12-17-68 | 2-17-67 |
| (IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107 | 11-18-68 | 8-22-66 |
| Renewals (All Classes) | 8-13-69 | --------- |
| Sec. 12(c) Publications (All Classes) | 8- 8-69 | --------- |

Applications filed during the month of September 1969—2,715

Registrations Issued 404—No.—880,689 to No. 881,092
Renewals Issued 130

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

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stools, coffee tables, dining tables, end tables, desks, chaises, arm chairs, and planters (Class 32); fabric tapestries, fabric drapes, and fabrics for covering furniture, and fabrics for making the same (Class 42); **Reg. No. 845,612**, same, Designing of furniture, textiles, wall coverings and accessories and layouts for others incorporating said designs; design and decorating services, **filed** Aug. 13, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c3566, *Laverne International Ltd.* v. *American Institute of Interior Designers, Inc.*

**Reg. No. 845,612.** (See Reg. No. 813,851.)

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# MARKS PUBLISHED FOR OPPOSITION

## SECTION 1

**The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.**

**A separate fee of twenty-five dollars for each class opposed must accompany the opposition.**

**[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]**

SN 259,290. A/S Radionette, Oslo, Norway. Filed Nov. 23, 1966.

**MULTICORDER**

Owner of Norwegian Reg. No. 70,042, dated Sept. 15, 1966.

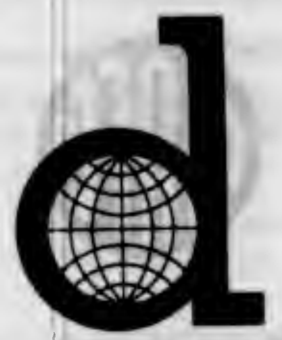
**Class 21—Electrical Apparatus, Machines, and Supplies**

For Television Receivers; Hi-Fidelity and Stereophonic Equipment—Namely, Loudspeakers, Electronic Amplifiers, Radio Receivers, Broadcasting Receivers, and Combinations Thereof (Int. Cl. 9).

**Class 36—Musical Instruments and Supplies**

For Hi-Fidelity and Stereophonic Reproducers—Namely, Tape Recorders, Record Players, Phonographs, Juke Boxes, and Combinations Thereof (Int. Cl. 9).

SN 270,183. Dynaelectron Corporation, Washington, D.C. Filed Apr. 28, 1967.



**Class 21—Electrical Apparatus, Machines, and Supplies**

For Stepper Motors, Incremental Motors, Blanking Amplifiers, Commutators, Relays, Rotary Code Selectors, Synchro-Positioners, Bit Synchronizer Analyzer, Variable Monostable Multivibrator, Amplifiers, Transmitters and Receiving Electric Harness Assemblies, Missile Umbilical Cables, Housing for Electronics Equipment, Antennas, Microwave Transmission Lines, Including Cable Connectors and Adapters Associated Therewith, Stepping Switches, Rotary Switches, Power Dividers, Directional Couplers (Int. Cls. 7 and 9).

First use June 25, 1963.

**Class 31—Filters and Refrigerators**

For Kits Comprising Doors, Shelves, Airducts, and Associated Small Hardware Items for Converting Refrigerated Dispensers to Transparent Door-Type Units (Int. Cl. 11).

First use Aug. 26, 1965.

SN 273,343. Educational Developmental Laboratories, Inc., Huntington, N.Y. Filed June 8, 1967.

**LEARNING 100**

**Class 36—Musical Instruments and Supplies**

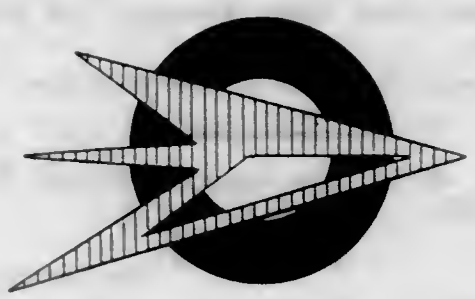
For Tape and Disc Recordings for Use in Teaching Instruments and Other Audio-Visual Techniques (Int. Cl. 9).

**Class 38—Prints and Publications**

For Educational Printed Material Designed To Teach Basic Education—Namely, Film Strips, Work Books, Text Books, Work Sheets, and Teachers' Manuals (Int. Cl. 16).

First use Apr. 20, 1966.

SN 295,700. Orenda Limited, Toronto, Ontario, Canada. Filed Apr. 16, 1968.



Priority claimed under Sec. 44(d) on Canadian application filed Mar. 16, 1968; Reg. No. 161,288, dated Feb. 21, 1969. The drawing is lined for the color red. Owner of U.S. Reg. No. 644,171 and 835,410.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Gas Turbine Driven Electricity Generating Sets, and Parts Therefor (Int. Cl. 7).

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Gas Turbine Engines, Gas Turbine Driven Gas Compressors, and Parts Therefor (Int. Cl. 7).

**Class 26—Measuring and Scientific Appliances**

For Electro-Mechanical Instrumentation for Use With Atomic Reactors—Namely, Equipment for Installation in the Fast Neutron Rod of Materials Testing Atomic Reactors for Measuring Creep Strain in Materials Under Irradiation and at Controlled Heat Levels; Support and Readout Systems and Parts for the Said Equipment; Equipment for Determining Tube Diameter, Straightness, Wall Thickness and Surface Condition of Atomic Reactor Pressure Tubes, Including a Tube Measuring Head, a Head Driving Control and a Readout System, and Parts for the Said Equipment; and High Performance Mineral Insulated Precision Heater Elements for Use With Inreactor Creep Test Equipment, and Parts Therefor (Int. Cl. 9).

**Class 31—Filters and Refrigerators**

For Gas Turbine Driven Refrigeration Compressors, Controls Therefor, and Parts Therefor (Int. Cl. 11).

**Class 100—Miscellaneous**

For Design, Testing, Research and Field Engineering of the Aforesaid Goods (Int. Cl. 42).

**Class 103—Construction and Repair**

For Servicing, Maintenance, Overhaul and Repair of the Aforesaid Goods (Int. Cl. 37).

SN 301,118. Gary Industries, Inc., d.b.a. Acco Products, Chicago, Ill. Filed June 24, 1968.

**ACCO**

The drawing is lined for the color red. Owner of Reg. No. 735,684 and others.

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Staples for Desk Type Staplers (Int. Cl. 16).

**Class 37—Paper and Stationery**

For Suspension Folders, File Folders, Looseleaf Binders, Paper Fasteners, File Covers, Bases for Paper Fasteners, Post Binders, Paper Clips, Clamp Fasteners, and Ring Binders (Int. Cl. 16).

First use on or about Mar. 1, 1968; 1909 as to "ACCO."

SN 301,533. K-Line Tool Company, Holland, Mich. Filed June 27, 1968.

**K-LINE**

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Fixtures and Tools, for Use in the Automotive Field—Namely, Tail Pipe Resizing Tools, Valve Guide Resizing Kits, Ridge Reamers, Power Gear Heads, Cylinder Head Holders, and Spring Compressors (Int. Cls. 7 and 8).
First use on or about Sept. 29, 1958.

**Class 26—Measuring and Scientific Appliances**

For Testing and Measuring Equipment for Use in the Automotive Field—Namely, Engine Vacuum Gauges, Compression Testers, and Taper Gauges (Int. Cl. 9).
First use on or about Nov. 15, 1963.

SN 303,931. Seton Leather Company, Newark, N.J. Filed July 30, 1968.

**HELIOL**

Owner of Reg. No. 684,246.

**Class 1—Raw or Partly Prepared Materials**

For Thermosetting Urethane Resin (Int. Cl. 1).

**Class 6—Chemicals and Chemical Compositions**

For Polymeric Urethane Plasticizer (Int. Cl. 1).

First use on or about Nov. 23, 1965.

SN 305,509. Avon Products, Inc., New York, N.Y. Filed Aug. 20, 1968.

**NATURESQUE**

**Class 51—Cosmetics and Toilet Preparations**

For Facial Mask, Cosmetic Eye Cream, Hand Lotion, Moisturized Face Cream, and Facial Cleansing Cream (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Facial Soap (Int. Cl. 3).

First use Aug. 1, 1968.

SN 306,982. Tohen Kabushiki Kaisha, d.b.a. Tohnen Co., Ltd., Chuo-ku, Tokyo-to, Japan. Filed Sept. 10, 1968.

**Tohnen**

**Class 39—Clothing**

For Suits, Dresses, Blouses, Skirts, Coats, Sweaters, Sports Shirts, Slacks, Underwear, Lingerie, Swim Wear, and Tights (Int. Cl. 25).
First use December 1965; in commerce December 1965.

**Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor**

For Curtains, and Knitted, Netted and Woven Textile Fabrics for Making Dresses, Suits, Coats, Underwear, Curtains, and the Like (Int. Cl. 24).
First use December 1965; in commerce December 1965.

**Class 43—Thread and Yarn**

For Yarns and Thread (Int. Cl. 23).
First use February 1966; in commerce February 1967.

SN 307,034. Manual Arts Furniture Company, Cincinnati, Ohio. Filed Sept. 10, 1968.

**MAFCO**

**Class 19—Vehicles**

For Piano and Organ Moving Wheeled Trucks and Dollies (Int. Cl. 12).
First use in 1962.

**Class 21—Electrical Apparatus, Machines, and Supplies**

For Piano and Organ Electric Lamps (Int. Cl. 11).
First use in 1961.

**Class 32—Furniture and Upholstery**

For Piano and Organ Benches; Stools and Chairs; Piano and Organ Bench Back Rests; Piano and Organ Seat Cushions; Sheet Music Cabinets; Phonograph Record Storage Cabinets; Organ Mirrors; and Cabinets for Player Piano Rolls (Int. Cl. 20).
First use in 1948.

**Class 36—Musical Instruments and Supplies**

For Piano and Organ Bench Pedal Covers and Heel Rests; Player Piano and Reed Organ Electric Drive Pumps; Grille Backs for Pianos and Organs; Piano and Organ Rebuilding Kits and Supplies—Namely, Legs, Lyres, Music Racks, Piano and Organ Case Finishing Materials; Finish Repair and Touch-Up Kits; Piano Mandolin Attachments; Music Stands and Music Rests (Int. Cl. 15).
First use in 1961.

**Class 50—Merchandise Not Otherwise Classified**

For Piano and Organ Bench Seat Covers; Piano and Organ Covers; Quilted Piano and Organ Moving Covers and Pads; and Piano and Organ Moving Skid Platforms (Int. Cl. 22).
First use in 1962.

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SN 308,558. Vanell, Redding, Calif. Filed Oct. 1, 1968. Owner of Reg. Nos. 772,374, 805,997, and others.

**VanEli**

**Class 28—Jewelry and Precious-Metal Ware**

For Jewelry—Namely, Bracelets, Medallions, and Necklaces (Int. Cl. 14).

**Class 39—Clothing**

For Leather Belts (Int. Cl. 25).

First use Aug. 10, 1968.

SN 314,159. Modish Imports, Inc., Brooklyn, N.Y. Filed Dec. 11, 1968.

**MOD**

**Class 29—Brooms, Brushes, and Dusters**

For Eye Make-Up Brushes, Lipstick and Complexion Brushes (Int. Cl. 21).

**Class 40—Fancy Goods, Furnishings, and Notions**

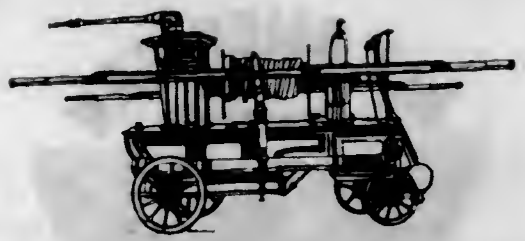
For False Eyelashes and Artificial Fingernails (Int. Cl. 3).

**Class 51—Cosmetics and Toilet Preparations**

For Eye Make-Up Remover Pads (Impregnated), Eye-Liner Cake or Powder, and Eye Shadow Powder (Int. Cl. 3).

First use July 28, 1966.

SN 315,711. Rixson Inc., Franklin Park, Ill. Filed Jan. 3, 1969.



**Class 21—Electrical Apparatus, Machines, and Supplies**

For Fire Protection Equipment—Namely, Fire Sensing and Detecting Devices Responsive to Products of Combustion; Fire Control Systems Comprising Annunciator Panels, Detector Switches and Relays for Actuating an Alarm; Electromechanical Door Holder Releases and/or Door Closers and Latches; and Audible and Silent Alarms and Indicators Including Bells, Buzzers, Horns, Lights and Sirens (Int. Cl. 9).

**Class 26—Measuring and Scientific Appliances**

For Fire Control Systems Comprising Annunciator Panels, Detector Switches and Relays for Actuating Mechanical, Electrical or Pneumatic Fire Protection Equipment or Sprinkler Systems (Int. Cl. 9).

First use Nov. 21, 1968.

SN 321,264. Patio Paper Products Company, Chicago, Ill. Filed Mar. 10, 1969.

**ELEGANT**

**Class 2—Receptacles**

For Party Goods—Namely, Paper Plates and Cups (Int. Cl. 16).

**Class 37—Paper and Stationery**

For Party Goods—Namely, Paper Napkins (Int. Cl. 16).

First use on or about Nov. 21, 1968.

## SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

### Class 1 — Raw or Partly Prepared Materials

SN 309,087. Pioneer Plastics Corporation, Auburn, Maine. Filed Oct. 7, 1968.

**PIOMEL**

Owner of Reg. Nos. 648,807 and 781,761.
For Synthetic Resins (Int. Cl. 1).
First use June 13, 1968.

SN 309,088. Pioneer Plastics Corporation, Auburn, Maine. Filed Oct. 7, 1968.

**PIOPHEN**

Owner of Reg. Nos. 648,807 and 781,761.
For Synthetic Resins (Int. Cl. 1).
First use Oct. 25, 1967.

SN 319,717. The Mead Corporation, Dayton, Ohio. Filed Feb. 20, 1969.

**NUGGETS**

For Decorative Ground Cover—Namely, Processed Bark (Int. Cl. 1).
First use Jan. 29, 1969.

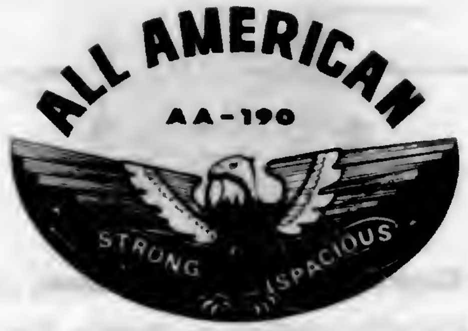
### Class 2 — Receptacles

SN 294,031. Firma Otto Dürr, Stuttgart-Zuffenhausen, Germany. Filed Mar. 25, 1968.

**Epla**

Priority claimed under Sec. 44(d) on German application filed Sept. 26, 1967; Reg. No. 841,910, dated Jan. 30, 1968.
For Tanks for the Electrochemical Coating of Metals (Int. Cl. 6).

SN 307,889. Waterloo Industries, Inc., Waterloo, Iowa. Filed Sept. 20, 1968.



Without relinquishing any common law rights, no claim is made of exclusive use of the words "Strong" and "Spacious" apart from the mark as shown. The lining as shown in the drawing does not indicate color but represents the lining as it appears on the specimens of record.
For Tool Boxes (Int. Cl. 6).
First use July 9, 1968.

## Class 4 — Abrasives and Polishing Materials

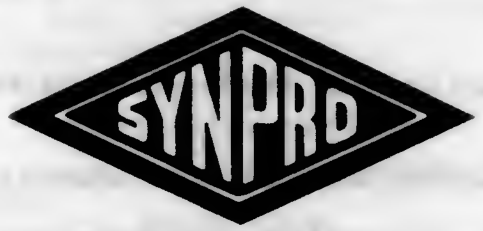
SN 296,771. Standard Oil Company, Flemington, N.J. Filed Apr. 29, 1968.

**EXXON**

For Polishing Materials in Semi-Solid and Liquid Form for General Use (Int. Cl. 3).
First use Nov. 14, 1967.

## Class 6 — Chemicals and Chemical Compositions

SN 296,886. Synthetic Products Company, Cleveland, Ohio. Filed Apr. 29, 1968.



Owner of Reg. No. 563,908.
For Metallic Stearates and Other Metallic Soaps and Metal Salts (Int. Cl. 1).
First use in 1925.

SN 307,253. Union Camp Corporation, New York, N.Y. Filed Sept. 12, 1968.

**UNIPINE**

For Pine Oil Used in the Manufacture of Industrial and Household Cleaners and Disinfectants, Polishes, Paint and Varnish Products, Paint Brush Conditioners, Epoxy Resin Products, Adhesives, Coatings and Preservatives for Paper, Textile Chemicals, Wood Preservatives, Inks and Ore Flotation Frother (Int. Cl. 4).
First use Aug. 13, 1966.

SN 310,584. Omya S.A., Paris, France. Filed Oct. 25, 1968.

**DURCAL**

Owner of French Reg. No. 722,871, dated May 22, 1967.
For Calcium Carbonates (Int. Cl. 1).

SN 310,585. Omya S.A., Paris, France. Filed Oct. 25, 1968.

**DURCALITE**

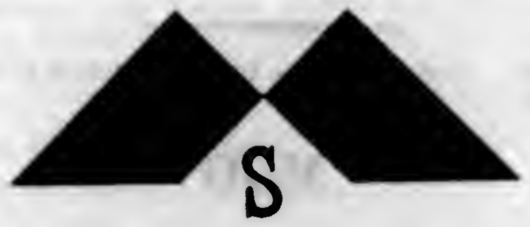
Owner of French Reg. No. 722,872, dated May 22, 1967.
For Calcium Carbonates (Int. Cl. 1).

SN 319,392. Sun Cleanser Company, Detroit, Mich. Filed Feb. 17, 1969.

**SOLAR-CLOR**

For Disinfectant-Algaecide-Bactericide Preparation for Use in Swimming Pools (Int. Cl. 5).
First use Jan. 15, 1969.

SN 319,619. Morton International, Inc., Chicago, Ill. Filed Feb. 19, 1969.



Owner of Reg. No. 826,639.
For Air Freshener for Cars (Int. Cl. 5).
First use at least as early as Nov. 27, 1968.

SN 319,640. Sandoz, Inc., Hanover, N.J. Filed Feb. 19, 1969.

**ALBANIL**

For Hydrolyzed Protein Used for Shampoos, Hair Setting Agents, and Creme Rinses (Int. Cl. 1).
First use in or about November 1962.

SN 320,349. S. C. Johnson & Son, Inc., Racine, Wis. Filed Feb. 28, 1969.

**VITAL**

For Air Freshener and Deodorant (Int. Cl. 5).
First use on or about Jan. 29, 1969.

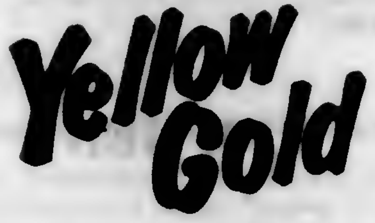
## Class 10 — Fertilizers

SN 324,694. Continental Oil Company, Ponca City, Okla. Filed Apr. 16, 1969.

**FARMSTEAD**

For Fertilizer (Int. Cl. 1).
First use on about Nov. 26, 1968.

SN 324,865. Olin Mathieson Chemical Corporation, New Haven, Conn. Filed Apr. 18, 1969.



For Fertilizer (Int. Cl. 1).
First use Mar. 6, 1969.

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## Class 12 — Construction Materials

SN 297,172. Coulter Petroleum Corporation, d.b.a. Copetco Sales Corporation, Tulsa, Okla. Filed May 2, 1968.

**MINI-MART**

Owner of Reg. No. 858,089.
For Prefabricated Buildings (Int. Cl. 19).
First use Feb. 28, 1967.

SN 299,561. Interstruct Corporation, Carolina, Puerto Rico. Filed June 3, 1968.

**GRIDBLOC**

For Pre-Cast Concrete Blocks (Int. Cl. 19).
First use Feb. 27, 1968.

SN 300,630. The Soundcoat Company, Inc., New York, N.Y. Filed June 17, 1968.

**SOUNDMAT**

For Multiple Layer Noise Control Material Having a Weighted Septum of Either Lead Foil or a Loaded Plastic Between Two Layers of Absorption Foam (Int. Cl. 17).
First use May 2, 1968.

SN 311,311. Structural Plastics Corporation, Osseo, Minn. Filed Nov. 4, 1968.

For Wall Panels and Wall-Forming Panels for Buildings (Int. Cl. 19).
First use September 1961.

SN 312,550. Acieries Reunies de Burbach-Eich-Dudelange, ARBED, S.A., Luxembourg, Luxembourg. Filed Nov. 19, 1968.

**COROX**

Owner of Luxembourg Reg. No. 24,161, dated Oct. 5, 1967.
For Metallurgical Products—Namely, Structural Steel Sections (Int. Cl. 6).

SN 316,305. Georgia-Pacific Corporation, Portland, Oreg. Filed Jan. 10, 1969.

**VINYL SHIELD**

Owner of Reg. No. 854,981.
For Doors (Int. Cl. 19).
First use July 31, 1967.

SN 316,584. American Plywood Association, Tacoma, Wash. Filed Jan. 15, 1969. COLLECTIVE MARK.

**DFPA SPECIAL USE PANEL**

Applicant disclaims "Special Use Panel" separate and apart from the mark as shown, reserving unto itself its common law rights in the same. Owner of Reg. No. 579,860 and others.
For Plywood (Int. Cl. 19).
First use Jan. 3, 1969.

SN 320,943. Dare Products, Incorporated, d.b.a. Dare Products, Inc., Battle Creek, Mich. Filed Mar. 6, 1969.

**RAM**

For Plastic Fence Posts of Substantially Non-Conducting Type, With and Without Wire Anchoring Means, Useable for Constructing Electric Fences (Int. Cl. 19).
First use Feb. 10, 1969.

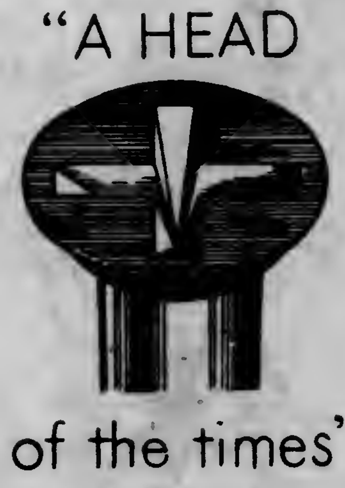
SN 321,705. United States Tile & Marble Co., Washington, D.C. Filed Mar. 13, 1969.

**ALTIMAR**

For Marble Pieces Adhered Together by Synthetic Resin To Form Panels for Use in Floors, Walls, Wainscoting, Church Sanctuaries, and Other Areas (Int. Cl. 19).
First use Nov. 21, 1968.

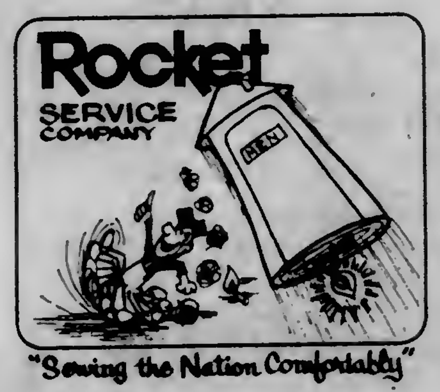
## Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 313,445. Reed & Prince Manufacturing Co., Worcester, Mass. Filed Dec. 2, 1968.



Without waiving any common-law or other rights with respect to the configuration of the screw head recess known as the "Frearson" recess, applicant disclaims the design of a screw head and shank per se apart from the mark as shown.
For Screws (Int. Cl. 6).
First use in 1943.

SN 314,649. Lawrence L. Sintek, d.b.a. Rocket Service Co., Lincoln, Nebr. Filed Dec. 11, 1968.



For Portable Toilet Units (Int. Cl. 11).
First use Aug. 31, 1968.

SN 316,526. Delta Mercantile Corporation, Woodside, N.Y. Filed Jan. 14, 1969.

### SUPERFLEX

For Thin Metal Bands Which Are Strapped Around Various Goods and Packages (Int. Cl. 6).
First use September 1962.

SN 325,912. Yarway Corporation, Blue Bell, Pa. Filed Apr. 29, 1969.

### TURBO-CASCADE

For Valve Used for Fluid Control Purposes (Int. Cl. 6).
First use Apr. 15, 1969.

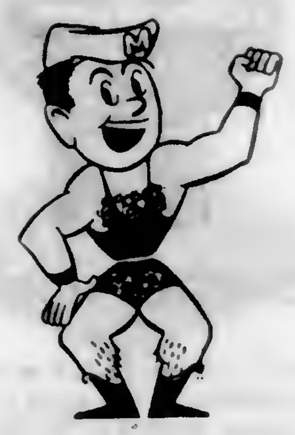
SN 330,680. Woolsey Marine Industries, Inc., New York, N.Y. Filed June 23, 1969.

### SEAQUIPMENT

For Anchors (Int. Cl. 6).
First use Oct. 25, 1968.

## Class 15 — Oils and Greases

SN 302,465. O. C. White, d.b.a. White Radiator Company, South Bend, Ind. Filed July 10, 1968.



Owner of Reg. Nos. 748,330 and 765,353.
For Penetrating Oil (Int. Cl. 4).
First use May 11, 1962.

SN 315,605. Skat Oil Company, Titusville, Pa. Filed Jan. 2, 1969.

### SKAT

For Gasoline (Int. Cl. 4).
First use May 1958.

SN 319,469. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

### ZEP TAC

Owner of Reg. Nos. 681,037, 696,197, and others.
For Belt Lubricant Preparation (Int. Cl. 4).
First use June 1, 1966.

## Class 16 — Protective and Decorative Coatings

SN 289,504. Harris Paint Company, Tampa, Fla. Filed Jan. 23, 1968.

### TUNGalized

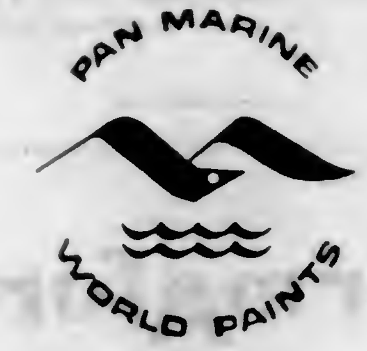
The drawing is lined for red, but color is not claimed as a feature of the mark.
For Paint Primers and House Paint Finish Coatings in White and Colors for Old and New Exterior Wood Surfaces, and Undercoater Primers for Wood and Metal (Int. Cl. 2).
First use in or about January 1955.

SN 294,259. Cal Corporation, Ferndale, Mich. Filed Mar. 27, 1968.

### CAL-CLAD

For Sealer and Solvent Barrier in the Nature of a Paint (Int. Cl. 2).
First use on or about Mar. 1, 1968.

SN 308,412. Woolsey Marine Industries, Inc., New York, N.Y. Filed Sept. 27, 1968.



Applicant disclaims the exclusive right to the use of the words "Marine" and "Paints" apart from the mark as shown.
For Commercial Marine Paints (Int. Cl. 2).
First use Jan. 15, 1968.

SN 312,030. Deft, Incorporated, Torrance, Calif. Filed Nov. 13, 1968.

### DANDY DAUBER

The word "Dauber" is disclaimed apart from the mark.
For Wood Stain Packaged in an Applicator Container (Int. Cl. 2).
First use Oct. 29, 1968.

SN 320,287. Ray Stone Advertising Agency, Inc., Chicago, Ill. Filed Feb. 27, 1969.

### CONTRAX

For Interior Latex Flat Paint, and Exterior Latex Flat Paint and Alkyd Enamel (Int. Cl. 2).
First use Nov. 18, 1968.

SN 320,740. Product Research & Development Corp., Blue Bell, Pa. Filed Mar. 4, 1969.

### SS-99

For Coating Composition Which Restores and Protects Original Finishes on Metal Surfaces (Int. Cl. 2).
First use Feb. 14, 1969.

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SN 320,855. Poly-Oleum Corporation, Detroit, Mich. Filed Mar. 5, 1969.

### POLY-OLEUM

For Rustproof Protective Paint-Like Coating Applied to Interior Surfaces of Automobile Sheet Metal Bodies (Int. Cl. 2).
First use on or about May 29, 1963.

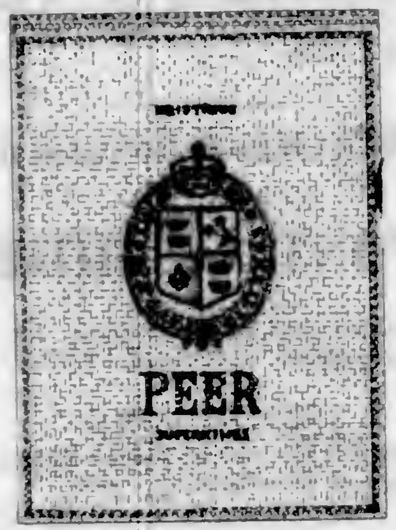
SN 323,417. Duron Paint Manufacturing Company, Inc., Beltsville, Md. Filed Apr. 2, 1969.

### DURA-FRESH

For Paints (Int. Cl. 2).
First use on or about Feb. 25, 1969.

## Class 17 — Tobacco Products

SN 292,159. Kristinus Kommanditgesellschaft, Munich, Germany. Filed Feb. 29, 1968.



Applicant disclaims any exclusive right to the word "Superkings" apart from the mark as shown. The mark is lined for the colors gold, red, and blue. Owner of German Reg. No. 839,367, dated Nov. 21, 1967; and U.S. Reg. No. 529,445.
For Filter Cigarettes (Int. Cl. 34).

SN 305,110. Bayuk Cigars Incorporated, Philadelphia, Pa. Filed Aug. 14, 1968.

### AROMA TIP

The word "Tip" is disclaimed apart from the mark as a whole.
For Cigars (Int. Cl. 34).
First use June 25, 1968.

SN 309,950. Bayuk Cigars Incorporated, Philadelphia, Pa. Filed Oct. 18, 1968.

### PIPE DREAMS

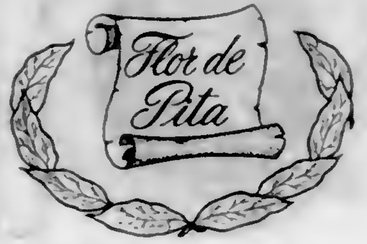
Without waiver of common law rights, the word "Pipe" is disclaimed apart from the mark as shown.
For Pipe Tobacco and Cigars (Int. Cl. 34).
First use June 26, 1968.

SN 314,713. Jamanco, Incorporated, Tampa, Fla. Filed Dec. 17, 1968.

### Tapansa

For Cigars (Int. Cl. 34).
First use July 31, 1968.

SN 317,855. Luis Madruga, Miami, Fla. Filed Jan. 29, 1969.



"Flor de Pita" may be translated from the Spanish as "flower of the agave."
For Cigars (Int. Cl. 34).
First use Aug. 22, 1968.

SN 320,025. Burlington Tobacco Company Limited, Toronto, Ontario, Canada. Filed Feb. 25, 1969.

### ELBA

For Cigarettes (Int. Cl. 34).
First use Jan. 28, 1969; in commerce Jan. 28, 1969.

SN 326,598. Scott Tobacco Company, Bowling Green, Ky. Filed May 7, 1969.

### B.G.

For Chewing Tobacco (Int. Cl. 34).
First use at least as early as 1930.

SN 326,832. R. J. Reynolds Tobacco Company, Winston-Salem, N.C. Filed May 9, 1969.

### DAWN

For Cigarettes (Int. Cl. 34).
First use July 9, 1964.

## Class 18 — Medicines and Pharmaceutical Preparations

SN 299,041. The Reese Chemical Company, Cleveland, Ohio. Filed May 24, 1968.

### DENTAPAINE

For Anesthetic Ointment for Symptomatic Relief of Pain in the Gum Tissues (Int. Cl. 5).
First use February 1960.

SN 299,210. Bristol-Myers Company, New York, N.Y. Filed May 28, 1968.

### JET SWASH

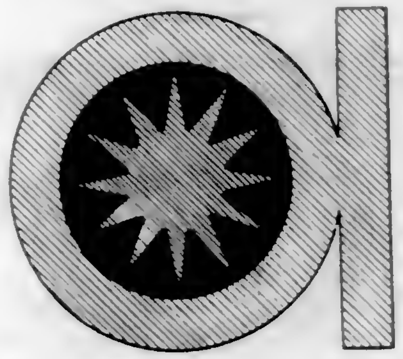
For Oral Antiseptic Mouthwash (Int. Cl. 5).
First use Apr. 9, 1968.

SN 306,704. W. W. Winters, Jr., d.b.a. Chaparral Sales Company, Albuquerque, N. Mex. Filed Sept. 5, 1968.

**CHAPARRAL**

For Vitamins for Four Legged Animals (Int. Cl. 5).
First use January 1964.

SN 309,822. Abbott Laboratories, d.b.a. Amdal Company, North Chicago, Ill. Filed Oct. 17, 1968.



The drawing is lined for the color green, but no claim is made for any particular color.

For Animal Health Products—Namely, Medicated Premixes, Vaccines, Growth Promotants, Nutritionals, and Biological Products (Int. Cl. 5).
First use on or about Apr. 1, 1965.

SN 311,827. Calbiochem, Los Angeles, Calif. Filed Nov. 12, 1968.

**FERRITOSE**

For Ferric Fructose in Tablet and Liquid Form (Int. Cl. 5).
First use Dec. 20, 1965.

SN 315,550. Hall-Johnson Laboratories, Elizabeth, N.J. Filed Jan. 2, 1969.

**MY BRAND**

No claim is made to the word "Brand" apart from the mark as shown.

For Aspirin, Saccharin, and Vitamin Tablets (Int. Cls. 1 and 5).
First use Dec. 12, 1968.

SN 317,317. Ciba Limited, Basel, Switzerland. Filed Jan. 23, 1969.

**ELFANEX**

Owner of Swiss Reg. No. 176,169, dated June 30, 1959.
For Pharmaceutical Preparation With Diuretic and Antihypertensive Effects (Int. Cl. 5).

SN 317,403. The Upjohn Company, Kalamazoo, Mich. Filed Jan. 23, 1969.

**ROLAZOTE**

Owner of Reg. No. 503,257.
For Analgesic Preparation (Int. Cl. 5).
First use Sept. 9, 1968.

SN 318,046. Hoffmann-La Roche Inc., Nutley, N.J. Filed Jan. 31, 1969.

**EFUDEX**

For Dermatotherapeutic Preparation (Int. Cl. 5).
First use Jan. 27, 1969.

SN 318,407. Dawe's Laboratories, Inc., Chicago, Ill. Filed Feb. 5, 1969.

**SCOUREEZ**

For Preparation for the Treatment of Diarrhea in Calves (Int. Cl. 5).
First use Jan. 2, 1969.

SN 327,569. Warner-Lambert Research Institute, Morris Plains, N.J. Filed May 19, 1969.

**RINOBID**

For Antihistaminic Decongestant (Int. Cl. 5).
First use May 6, 1969.

## Class 19—Vehicles

SN 303,925. Progressive Manufacturing Company, Kansas City, Kans. Filed July 30, 1968.

**SPINNY**

For Novelty Vehicle Accessory in the Nature of a Rotating Device To Be Mounted Upon the Aerial of the Vehicle (Int. Cl. 12).
First use July 2, 1968.

SN 312,437. DMH Corporation, St. Louis, Mich. Filed Nov. 18, 1968.

**PONTIAC CHIEF**

For Mobile Homes and House Trailers (Int. Cl. 12).
First use Dec. 8, 1948.

SN 315,843. British Hovercraft Corporation Limited, Yeovil, Somerset, England. Filed Sept. 25, 1968.

**BHC**

Owner of British Reg. No. 910,592, dated June 12, 1967.
For Passenger and/or Cargo Carrying Ground Effect Vehicles, Including Air Cushion Supported Pallets (Int. Cl. 12).

SN 315,844. British Hovercraft Corporation Limited, Yeovil, Somerset, England. Filed Sept. 25, 1968.

**FLOTALOAD**
**BHC**

Owner of British Reg. No. 910,591, dated June 12, 1967.
For Passenger and/or Cargo Carrying Ground Effect Vehicles, Including Air Cushion Supported Pallets (Int. Cl. 12).

SN 320,639. Lanness K. McKee and Company, Inc., Fairmont, N.C. Filed Mar. 3, 1969.

**McKEE**
**Craft**

No claim is made to the word "Craft," except as the same forms part of the mark and in the style shown.

For Runabout Fishing and Pleasure Boats (Int. Cl. 12).
First use in or about January 1967.

SN 326,113. Metalloy Steel Foundry, Inc., Sacramento, Calif. Filed May 1, 1969.

**METALLOY**

For Automatic Couplings for Rail Cars (Int. Cl. 12).
First use about June 1, 1963.

SN 326,126. Plant Bros. Corp., San Francisco, Calif. Filed May 1, 1969.

**HUNKY-DORY**

For Boats, Specifically Sail and Row Boats (Int. Cl. 12).
First use March 1964.

SN 326,268. Wayne Corporation, Richmond, Ind. Filed May 2, 1969.

**SENTINEL**

For Ambulances (Int. Cl. 12).
First use April 1968.

SN 326,644. The Firestone Tire & Rubber Company, Akron, Ohio. Filed May 7, 1969.

**GTO**

For Bicycles and Parts Thereof (Int. Cl. 12).
First use Sept. 29, 1964.

SN 326,705. Wayne Corporation, Richmond, Ind. Filed May 7, 1969.

**PAPOOSE**

For Buses (Int. Cl. 12).
First use Mar. 2, 1969.

SN 327,570. Southeastern Fabricators, Inc., Hialeah, Fla. Filed May 19, 1969.

**FLOAT-ON**

For Boat Trailers (Int. Cl. 12).
First use Sept. 1, 1968.

## Class 20—Linoleum and Oiled Cloth

SN 313,594. The Marley Tile Company Limited, Sevenoaks, Kent, England. Filed Dec. 4, 1968.

**MARLEY**

Owner of British Reg. Nos. 882,340 and 882,341, dated July 26, 1965.
For Plastic Coverings of the Smooth Surface Type for Floors in the Form of Rolls, Rugs, and Tiles (Int. Cl. 19).

SN 322,045. Congoleum Industries, Inc., Kearny, N.J. Filed Mar. 18, 1969.

**CONCEPT 90**

Owner of Reg. No. 701,263.
For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs and Tiles (Int. Cls. 19 and 27).
First use Feb. 7, 1969.

SN 322,047. Congoleum Industries, Inc., Kearny, N.J. Filed Mar. 18, 1969.

**CATALINA**

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs and Tiles (Int. Cls. 19 and 27).
First use Sept. 10, 1968.

SN 322,050. Congoleum Industries, Inc., Kearny, N.J. Filed Mar. 18, 1969.

**SHINYL**

For Plastic Coverings of the Solid Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs and Tiles (Int. Cls. 19 and 27).
First use Mar. 4, 1969.

## Class 21—Electrical Apparatus, Machines, and Supplies

SN 286,960. Redcor Corporation, Canoga Park, Calif. Filed Dec. 14, 1967.

**DYNAMIC BRIDGE**

Applicant disclaims the word "Bridge" apart from the mark as shown.

For Differential Input Data Amplifiers (Int. Cl. 9).
First use Oct. 6, 1967.

SN 287,867. Age Manufacturing & Sales Inc., Garden City, N.Y. Filed Jan. 2, 1968.

**COLOR RESONATOR**

The word "Color" is disclaimed apart from the mark as a whole.

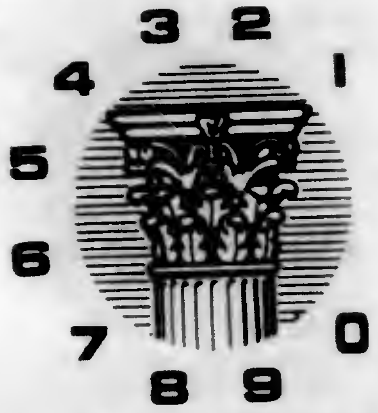
For Television Antennas (Int. Cl. 9).
First use Oct. 16, 1967.

SN 291,605. General Electric Company, Plainville, Conn. Filed Feb. 21, 1968.

**PowerMark**

For Electrical Control Panel Assemblies (Int. Cl. 9).
First use on or before Apr. 30, 1967.

SN 295,739. International Telephone and Telegraph Corporation, New York, N.Y. Filed Apr. 16, 1968.



The mark is a top of a Corinthian column surrounded by the Arabic numerals one through zero. The numerals are disclaimed apart from the showing thereof.
For Telephone Sets and Parts Thereof (Int. Cl. 9).
First use at least as early as November 1967.

SN 298,053. Southwire Company, Carrollton, Ga. Filed May 13, 1968.

### SEMI-C

For Insulated and Uninsulated Electrical Cable and Wire (Int. Cl. 9).
First use on or about Apr. 25, 1968.

SN 298,453. Kurz & Root Company, Appleton, Wis. Filed May 17, 1968.

### KR

For Automatic Voltage Regulators, Engine Generator Controllers, Generator Control Panels, Automatic Transfer Switches and Battery Chargers Used With Engine Generator Sets, Motor Generator Sets, A.C. and D.C. Generators (Int. Cls. 7 and 9).
First use August 1966.

SN 298,531. American West Products Co., Inc., d.b.a. American West Products Co., Inglewood, Calif. Filed May 20, 1968.

### STEREOGUARD

For Electric Alarm System for Automobile Accessories (Int. Cl. 12).
First use May 8, 1968.

SN 299,646. CEB Corporation, Philadelphia, Pa. Filed June 4, 1968.

**CEB**

For Service Entrance Fusible Panel Boards, Service Entrance Circuit Breaker Panel Boards, Electrical Meter Sockets, Electrical Meter Centres, Electrical Safety Switches, Electrical Switch Gear Assembly Panels, Electrical Cabinets, Bus Duct, Lay-In Duct, and Circuit Splitter Boxes and Troughs (Int. Cl. 9).
First use May 1965.

SN 299,849. Icore Industries, Sunnyvale, Calif. Filed June 6, 1968.

### SPIRAL WRAP

Applicant disclaims the word "Wrap" apart from the mark as a whole.
For Plastic Electrical Insulating Material for Wrapping Electrical Wiring and Holding a Plurality of Wires Together (Int. Cl. 17).
First use June 1958.

SN 301,923. Elcon Systems, Inc., Troy, Mich. Filed July 3, 1968.

### IN-TROL

For Electrical Control Consoles for Industrial Equipment (Int. Cl. 9).
First use Jan. 31, 1968.

SN 305,087. Richard C. Wells, Minneapolis, Minn. Filed Aug. 13, 1968.

### LAUNDRA-LITE

For Electrical Indicator Providing Visual Light Indications of the Cycle of Operation and the On-Off Conditions of Washer and Dryer Machines for Laundry Equipment (Int. Cl. 9).
First use Feb. 15, 1968.

SN 309,530. Allied Radio Corporation, Chicago, Ill. Filed Oct. 14, 1968.

### ALLIED

Owner of Reg. Nos. 775,688 and 845,820.
For Speaker Systems and Chassis; Headphones; Microphones; and TV and FM Antennas (Int. Cl. 9).
First use Oct. 21, 1963.

SN 312,309. S. S. Kresge Company, Detroit, Mich. Filed Nov. 15, 1968.

**Kmart**

Owner of Reg. Nos. 743,912 and 845,181.
For Table Which Can Furnish Electrical Outlets for Electrical Appliances (Int. Cl. 9).
First use on or before Apr. 18, 1967.

SN 317,326. Thomas H. Doss, d.b.a. Viking Detectors, Houston, Tex. Filed Jan. 23, 1969.

### VIKING

For Battery Operated Metal Goods Detectors (Int. Cl. 9).
First use Jan. 9, 1969.

SN 317,801. AMP Incorporated, Harrisburg, Pa. Filed Jan. 29, 1969.

### HVI

For Electrical High Voltage Instruments—Namely, Dividers and Ripple Detectors (Int. Cl. 9).
First use Dec. 17, 1968.

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SN 318,652. Interelectronics Corporation, Congers, N.Y. Filed Feb. 7, 1969.

### THERM-CAPACITOR

Owner of Reg. No. 750,709.
For Electrical Condensers (Int. Cl. 9).
First use June 15, 1960.

SN 319,093. Varian Associates, Palo Alto, Calif. Filed Feb. 13, 1969.

### DURATEMP

For Microwave Switches (Int. Cl. 9).
First use Jan. 9, 1969.

SN 319,840. Thomas H. Doss, d.b.a. Relco Industries, Houston, Tex. Filed Feb. 24, 1969.

**THE Frontiersman**

For Buried Metal and Mineral Electronic Detector (Int. Cl. 9).
First use June 20, 1965.

SN 319,975. The Tappan Company, Mansfield, Ohio. Filed Feb. 24, 1969.

### REVERSA-JET

Owner of Reg. No. 833,603.
For Domestic Food Waste Disposers (Int. Cl. 7).
First use on or about Dec. 26, 1968.

SN 321,256. Motorola, Inc., Franklin Park, Ill. Filed Mar. 10, 1969.

### PULSAR

For Television Receivers (Int. Cl. 9).
First use Jan. 30, 1969.

SN 321,914. Engelhard Minerals & Chemicals Corporation, Newark, N.J. Filed Mar. 17, 1969.

### RAISEDLAY

For Metal Strip Material for Electrical Contacts (Int. Cl. 9).
First use Feb. 6, 1969.

SN 322,367. USM Corporation, Boston, Mass. Filed Mar. 20, 1969.

**USM**

Owner of Reg. Nos. 750,359, 803,747, and others.
For Electric Motors (Int. Cl. 7).
First use Feb. 14, 1969.

SN 322,374. Westinghouse Electric Corporation, St. Louis, Mo. Filed Mar. 20, 1969.

### FASTRIM

For Front Covers for Electric Panelboards (Int. Cl. 9).
First use on or about Oct. 9, 1968.

SN 322,401. E. W. Bliss Company, Davenport, Iowa. Filed Mar. 21, 1969.

### CONTROLPAC

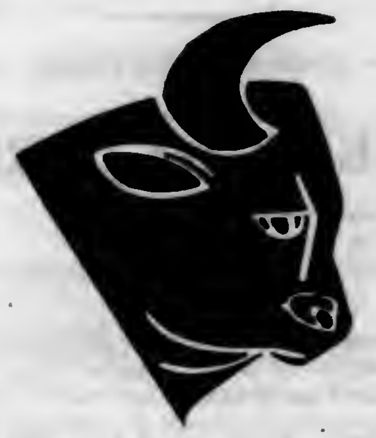
For Modules Containing Solid State Electronic Circuits (Int. Cl. 9).
First use at least as early as September 1968.

SN 323,107. Jones Motrola Corporation, Stamford, Conn. Filed Mar. 28, 1969.

### PUNCH-LINE

For Electric Motors (Int. Cl. 7).
First use Mar. 6, 1969.

SN 323,662. Admiral Corporation, Chicago, Ill. Filed Apr. 4, 1969.



For Loudspeaker Systems (Int. Cl. 9).
First use May 31, 1968.

SN 326,037. International Telephone and Telegraph Corporation, New York, N.Y. Filed May 1, 1969.

### JUNO

For Power Cord (Int. Cl. 9).
First use July 27, 1967.

SN 328,013. W. T. Grant Company, New York, N.Y. Filed May 22, 1969.

**Bradford**

Owner of Reg. No. 775,673.
For Portable Dishwashers, Vacuum Cleaners, Floor Cleaners and Polishers, Radio-Phonograph Combinations, Radio Receivers, Television Sets, Cooking Ranges, and Fans (Int. Cls. 7, 9, and 11).
First use October 1960 on television sets.

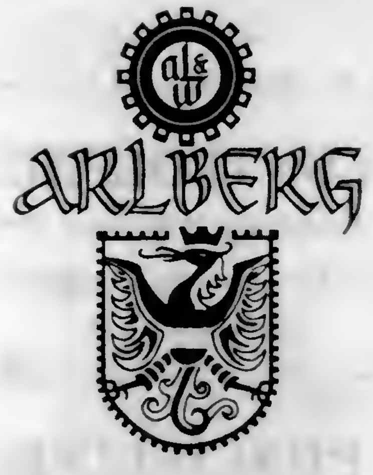
SN 328,113. Fedtro, Inc., Rockville Centre, N.Y. Filed May 26, 1969.

### DOUBLE-O-LET

Owner of Reg. Nos. 774,010, 774,011, and 845,808.
For Multiple Electric Outlets (Int. Cl. 9).
First use Jan. 31, 1969.

## Class 22 — Games, Toys, and Sporting Goods

SN 239,197. Allcock, Laight & Westwood, Limited, Bramalea, Ontario, Canada. Filed Feb. 21, 1966.



Owner of Reg. No. 736,329.

For Ski Equipment—Namely, Skis, Ski Waxes, Ski Boots, Ski Poles, Ski Bands, Ski Boot Presses, Ski Base Repair Candles, and Ski Racing Helmets (Int. Cls. 25 and 28).

First use at least as early as Mar. 1, 1959; in commerce at least as early as Oct. 28, 1959.

SN 298,829. La Burne Company, Pontiac, Mich. Filed May 22, 1968.

**SELECT-A-LURE**

For Fishing Lure Holders (Int. Cl. 28).

First use May 9, 1968.

SN 299,823. Regensteiner Publishing Enterprises, Inc., Chicago, Ill., assignee of Arrco Playing Card Company, New York, N.Y. Filed June 6, 1968.

**STACK-A-MATIC**

For Poker Chip Racks (Int. Cl. 28).

First use Nov. 1, 1967.

SN 305,013. Windsor Golf Corporation, Pittsburgh, Pa. Filed Aug. 12, 1968.

**Blue ● Chip**

The drawing is lined for the color blue.

For Golf Playing Equipment (Int. Cl. 28).

First use June 25, 1968.

SN 308,617. Kusan, Inc., Nashville, Tenn. Filed Oct. 1, 1968. Owner of Reg. No. 511,851.

**HALCO**

For Holster Sets and Wooden Toys (Int. Cl. 28).

First use Mar. 25, 1962.

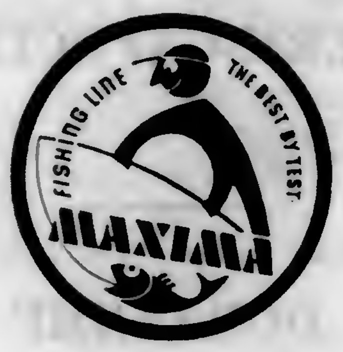
SN 308,618. Kusan, Inc., Nashville, Tenn. Filed Oct. 1, 1968. Owner of Reg. No. 511,334.

**HALCO**

For Play Dress-Up Masquerade Costumes (Int. Cl. 25).

First use Mar. 25, 1962.

SN 308,627. Bruce B. Mises, Inc., Los Angeles, Calif. Filed Oct. 1, 1968.



Applicant disclaims the terms "Fishing Line" and "Best by Test."

First use August 1960.

SN 309,770. Lisbeth Whiting Company, Inc., Jamaica, N.Y. Filed Oct. 16, 1968.

**SPAN-CRAFT**

For Children's Toys, and More Particularly a Toy Kit Comprising Wire, Plastic Shapes and Solution, and Enamel Paint for Making Enamel Flowers Without Heat (Int. Cl. 28).

First use Aug. 16, 1968.

SN 309,772. Lisbeth Whiting Company, Inc., Jamaica, N.Y. Filed Oct. 16, 1968.

**FLOWER POPS**

The word "Flower" is disclaimed apart from the mark as shown.

For Children's Toys, More Particularly a Kit for Assembling Snap-On Objects To Form a Design (Int. Cl. 28).

First use Feb. 2, 1966.

SN 311,983. Lisbeth Whiting Company, Inc., Jamaica, N.Y. Filed Oct. 16, 1968.

**INSTANT KNITTING**

The word "Knitting" is disclaimed apart from the mark as shown.

For Child's Toy Knitting Kit (Int. Cl. 28).

First use Apr. 1, 1968.

SN 312,425. Brunswick Corporation, Chicago, Ill. Filed Nov. 18, 1968.

**SPLIT LEVEL**

For Golf Clubs (Int. Cl. 28).

First use Aug. 13, 1968.

SN 312,582. Galena Novelties Enterprises, Galena, Ill. Filed Nov. 19, 1968.

**WHIRL n' SKIP**

For Toy of the Type Which Is Spun Centrifugally by the Player's Leg (Int. Cl. 28).

First use September 1967.

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SN 312,755. Dial-O-Matic, Inc., Los Angeles, Calif. Filed Nov. 21, 1968.

**SOLO**

For Golf Club With Adjustable Head (Int. Cl. 28).

First use June 17, 1968.

SN 313,563. Exri International, Inc., Chicago, Ill. Filed Dec. 4, 1968.

**PLACEMAKER**

For Toy Creative Building Systems—Namely, Systems for Building Playhouses and Similar Structures (Int. Cl. 28).

First use May 28, 1963.

SN 314,233. Kenner Products Company, Cincinnati, Ohio. Filed Dec. 11, 1968.

**ZIPPITY SPEEDWAY**

The word "Speedway" is disclaimed except as used in combination with "Zippity."

For Toy Road Race Sets (Int. Cl. 28).

First use July 24, 1968.

SN 314,571. K-2 Ski Company, Vashon, Wash. Filed Dec. 16, 1968.

**ELITE**

For Snow Skis (Int. Cl. 28).

First use Oct. 6, 1967.

SN 319,657. Wilson Sporting Goods Co., River Grove, Ill. Filed Feb. 19, 1969.

**PRESTIGE**

For Golf Clubs (Int. Cl. 28).

First use Dec. 16, 1968.

SN 321,180. Milton Bradley Company, Springfield, Mass. Filed Mar. 10, 1969.

**BUILD A STORY**

For Set of Flannel Cut Outs of People and Objects, for Use in Placement Upon a Sheet for the Telling of Stories by an Instructor or Pupil (Int. Cl. 28).

First use Nov. 25, 1968.

SN 321,629. Cameo Doll Products Co., Inc., Port Allegany, Pa. Filed Mar. 13, 1969.

**CAMEO**

For Dolls (Int. Cl. 28).

First use 1926.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 268,168. E.T.S. (Lonertia) Limited, Croydon, Surrey, England. Filed Apr. 3, 1967.

**LONERTIA**

Owner of British Reg. No. B844,756, dated Feb. 6, 1963.

For Shaft Couplings (Int. Cl. 7).

SN 289,797. Gare Ceramic Supply Co., Inc., Haverhill, Mass. Filed Jan. 29, 1968.

**Jodi**

For Molds for Ceramic Materials, for Use in Statuary, Pottery and the Like (Int. Cl. 21).

First use October 1967.

SN 294,249. Automotive Emission Control Corporation, Louisville, Ky. Filed Mar. 27, 1968.

**POLLUTION MASTER**

The word "Pollution" is disclaimed apart from the mark as shown.

For Automotive Crankcase and Exhaust Emission Control System (Int. Cl. 12).

First use Feb. 26, 1968.

SN 295,146. The Johnson Rubber Company, Middlefield, Ohio. Filed Apr. 8, 1968.

**JOHNSON**

For Water Lubricated Rubber Propellor Shaft Bearings Used for Ships (Int. Cl. 7).

First use at least as early as 1961.

SN 296,211. Sundstrand Corporation, Rockford, Ill. Filed Apr. 22, 1968.

**OMNILINE**

For Integrated Numerically Controlled Machine Tools for Performing a Multiplicity of Machining Operations Including, in Certain Instances, Inspection Stations Electronically Controlled for Inspecting Machined Parts (Int. Cl. 7).

First use Mar. 19, 1968.

SN 297,585. National Foam System, Inc., West Chester, Pa. Filed May 7, 1968.

**NATIONAL**

Owner of Reg. Nos. 554,029 and 596,683.

For Automotive Fire Fighting Trucks and Fire Fighting Equipment Comprising High Expansion Foam Generators, Monitors, Hose Reels and Hose Cabinets (Int. Cl. 9).

First use May 27, 1952.

SN 297,789. Marine Construction & Design Co., Seattle, Wash. Filed May 9, 1968.

**CAPSULPUMP**

For Submersible Pumps for Pumping Liquids and Mixtures of Liquids and Solids, Such as Fish and Water Mixture (Int. Cl. 7).

First use Oct. 20, 1967.

SN 302,306. Cutters Exchange, Inc., Nashville, Tenn. Filed July 9, 1968.

**PRIMA I**

For Sewing Machine Parts—Namely, Hooks, Bobbins, Bobbin Cases, Presser Feet, Needles and Needle Bars (Int. Cls. 7 and 26).

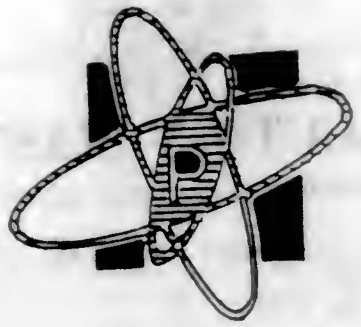
First use Jan. 2, 1968.

SN 303,536. Lockwood Technical, Inc., Sand City (Seaside), Calif. Filed July 24, 1968.

### LTI

Owner of Reg. Nos. 819,827 and 860,035.
For Machines for Applying Hot Melt Adhesive and the Like to Work Surfaces, and Parts Therefor (Int. Cl. 7).
First use on or about June 28, 1967.

SN 303,703. Puretronics Sales, Inc., Detroit, Mich. Filed July 26, 1968.



The drawing is lined for the color blue.
For Pumping Stations, Pneumatic Sewerage Ejector Stations, Man-Lifts, and Sewerage Treatment Plants (Int. Cls. 7 and 11).
First use Feb. 28, 1968.

SN 304,820. Singer Products Company Incorporated, New York, N.Y. Filed Aug. 9, 1968.

### Sun Par

For Automotive Parts—Namely, Engine Bearings, Connecting Rods, Engine Valves, Universal Joints, Power Take-Offs, Ring and Pinion Gears, Transmission Gears, Flywheel Gears, Timing Gears, Cam Shafts, Ball Bearings, Roller Bearings, Water Pumps, Fuel Pumps, Oil Pumps, Pistons, Engine Bearings, Engine Connecting Rods, Engine Valves, Axle and Propeller Shafts, Automotive Clutches, Carburetors and Parts, Clutch Plates and Discs, and Starter Drives (Int. Cl. 12).
First use August 1956.

SN 309,462. Label-Matic, Inc., Burlingame, Calif. Filed Oct. 11, 1968.

### LABEL-MATIC 45

For Label Gun Which Prints and Applies Pressure-Sensitive Labels (Int. Cl. 16).
First use July 9, 1968.

SN 310,225. General Electric Company, Schenectady, N.Y. Filed Oct. 22, 1968.

### ELECTRO-PRESS

For Machines for Altering the Configuration of the Electrical Coils of Inductive Devices by the Application Thereto of Electrical Energy (Int. Cl. 7).
First use at least as early as Jan. 4, 1966.

SN 311,024. Electrographic Corporation, d.b.a. Reilly-Lake Shore Graphics, Chicago, Ill. Filed Oct. 31, 1968.

### Kushion

For Printing Plates for Use in Flexigraphic Printing (Int. Cl. 7).
First use Oct. 22, 1968.

SN 312,007. Anderson Equipment Company, Bridgeville, Pa. Filed Nov. 13, 1968.

### Anderson Equipment Company

Applicant disclaims the words "Equipment Company" apart from the mark as shown. The name "Anderson" is lined for the color green.
For Bulldozers, Construction Crawler Tractors, Power Shovels, and Cranes (Int. Cl. 7).
First use Feb. 2, 1968.

SN 312,823. Taylor & Gaskin, Inc., Detroit, Mich. Filed Nov. 21, 1968.

Owner of Reg. Nos. 842,363, 848,978, and 852,678.
For Mechanical Conveyors and Parts Thereof—Namely, Conveyor Mechanism Comprising a Main Trackway and Communicating Spur Trackways and Conveyors Mounted Thereon (Int. Cl. 7).
First use on or about Aug. 15, 1968.

SN 313,615. Sundstrand Corporation, Rockford, Ill. Filed Dec. 4, 1968.

### OMNIDRIL

Owner of Reg. Nos. 679,566, 845,874, and others.
For Multi-Purpose Machine Tools Operating With or Without Numerical Control and With Work Spindles in Horizontal or Vertical or Angular Attitude for Performing a Number of Machining Operations Such as Drilling, Reaming, Tapping, and Boring (Int. Cl. 7).
First use Oct. 9, 1968.

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SN 316,674. Pamarco, Incorporated, Roselle, N.J. Filed Jan. 15, 1969.

### PAMARCO TPB EVENFLO

Owner of Reg. Nos. 764,266 and 809,538.
For Inking Rollers for Use in Flexographic Printing (Int. Cl. 7).
First use July 1967.

SN 316,851. Harold R. Wakeman, Los Angeles, Calif. Filed Jan. 10, 1969.

### PRESTO-MELT

For Hot Melt Pencil Type Glue Applicators (Int. Cl. 8).
First use Dec. 24, 1968.

SN 318,010. Sola Basic Industries, Inc., Milwaukee, Wis. Filed Jan. 31, 1969.

### HYNI

For Nitrogen Generators (Int. Cl. 7).
First use July 28, 1958.

SN 318,175. Eisenberg-Lozano, Inc., New York, N.Y. Filed Feb. 3, 1969.

### SPOONIK

For Combination Fork, Knife and Spoon (Int. Cl. 8).
First use Dec. 16, 1968.

SN 318,266. Murray Company of Texas, Inc., d.b.a. Boston Gear Works, Pittsburgh, Pa. Filed Jan. 31, 1969.

### BOST-FLEX

Owner of Reg. Nos. 522,911, 837,074, and others.
For Motor Couplings (Int. Cl. 7).
First use Oct. 9, 1968.

SN 318,582. S & S Machinery Company, Inc., Richlands, Va. Filed Feb. 6, 1969.

### UNATRAC

For Battery Powered Vehicle With End Mounted Hauling Bucket or With Interchageable Fork Lift Attachment Primarily for the Mining Industry (Int. Cl. 7).
First use Nov. 20, 1968.

SN 319,231. Eversharp, Inc., Milford, Conn. Filed Feb. 17, 1969.

### BLUE KRONA

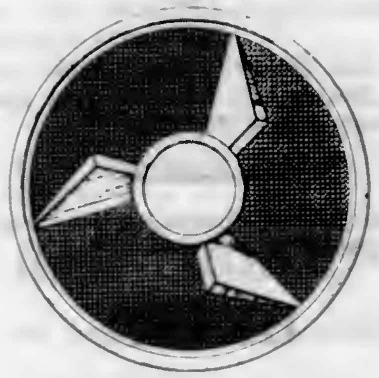
Applicant disclaims the term "Blue" apart from the mark as shown. Owner of Reg. No. 702,520.
For Safety Razors, Safety Razor Blades, and Dispensers Therefor (Int. Cl. 8).
First use Feb. 5, 1969.

SN 319,232. Eversharp, Inc., Milford, Conn. Filed Feb. 17, 1969.

### BLUE SUPER KRONA

Applicant disclaims the terms "Blue" and "Super" apart from the mark as shown. Owner of Reg. No. 702,520.
For Safety Razors, Safety Razor Blades, and Dispensers Therefor (Int. Cl. 8).
First use Feb. 5, 1969.

SN 320,318. Brunswick Corporation, Chicago, Ill. Filed Feb. 28, 1969.



The mark comprises a circular design including radially extending propeller-like members on a stippled background. Owner of Reg. Nos. 621,207 and 621,208.
For Outboard Motors and Parts Thereof (Int. Cl. 7).
First use July 29, 1968.

SN 320,928. American Optical Corporation, Southbridge, Mass. Filed Mar. 6, 1969.

### EDGE-A-LOY

For Equipment Used in Blocking Lenses, Specifically a Dispenser for a Low Melting Point Alloy (Int. Cl. 7).
First use August 1968.

SN 323,350. The Muffler Corporation, Huntsville, Ala. Filed Apr. 1, 1969.

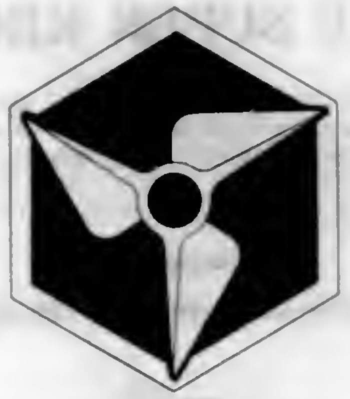
The word "Muffler" is disclaimed apart from the mark as shown.
For Automobile Mufflers (Int. Cl. 12).
First use Feb. 3, 1969.

SN 325,296. Franklin Electric Co., Inc., Bluffton, Ind. Filed Apr. 23, 1969.

### dove

For Electrical Machines for Wrapping, Printing, Labeling and Label Transfers, and Sealing of Packages in Shrinkfilm and Other Plastic and Synthetic Materials (Int. Cl. 7).
First use Feb. 7, 1969.

SN 325,577. Brunswick Corporation, Chicago, Ill. Filed Apr. 25, 1969.



Owner of Reg. Nos. 621,207 and 621,208.
For Outboard Motors and Parts Thereof (Int. Cl. 7).
First use on or about Jan. 24, 1969.

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SN 325,754. Heath Farm Equipment, Inc., Fort Collins, Colo. Filed Apr. 28, 1969.

### HEATH

For Implement Blades, Beet Toppers, Beet Diggers, Beet Thinners, Bean Cutters and Ditchers (Int. Cl. 7).
First use June 1944.

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SN 325,755. Lew Hudson & Associates, Inc., d.b.a. Ancient Warrior Fine Cutlery, San Leandro, Calif. Filed Apr. 28, 1969.

### ANCIENT WARRIOR

For Food Cutting and Serving Implements—Namely, Knives and Forks (Int. Cl. 8).
First use on or before Mar. 24, 1969.

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SN 325,838. Chandler Machine Company, Ayer, Mass. Filed Apr. 29, 1969.

### CHANDLER

For Sewing Machines, Pinking Machines and Pinking Cutters, Pleating Machines, and Convoluting Machines for Filter Media (Int. Cl. 7).
First use in 1917.

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SN 325,976. Kennametal Inc., Latrobe, Pa. Filed Apr. 30, 1969.

### TOP NOTCH

For Detachable Cutting Inserts for Mounting on Tool Holders, Including Indexable Detachable Inserts, and Tool Holders for Supporting the Inserts and Parts of the Said Tool Holders (Int. Cl. 7).
First use Mar. 27, 1969.

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SN 326,208. Delta Manufacturing and Engineering Corp., Dallas, Tex. Filed May 2, 1969.

### DUAL-CHEM

For Vehicle Washing Apparatus (Int. Cl. 7).
First use on or about Mar. 29, 1969.

SN 326,635. Deere & Company, Moline, Ill. Filed May 7, 1969.

### WEEKEND FREEDOM MACHINE

For Lawn and Garden Tractors and Attachments Therefor (Int. Cl. 12).
First use Jan. 1, 1966.

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SN 326,788. The Palmer Engine Company, Cos Cob, Conn. Filed May 8, 1969.

Owner of Reg. No. 89,694.
For Marine Engines and Parts Therefor (Int. Cl. 7).
First use at least as early as Jan. 1, 1907.

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SN 327,301. Screw Conveyor Corporation, Hammond, Ind. Filed May 14, 1969.

### CHEVRON

For Thrust Bearings (Int. Cl. 7).
First use 1959; at least as early as 1952 in another form.

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SN 327,462. The AFA Corporation of Florida, Miami, Fla. Filed May 16, 1969.

### AEREFIL

For Pressurized Hand Sprayers (Int. Cl. 7).
First use Mar. 25, 1969.

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## Class 24 — Laundry Appliances and Machines

SN 311,164. McGraw-Edison Company, Elgin, Ill. Filed Nov. 1, 1968.

### SUPERTWIN

For Portable Washing Machines (Int. Cl. 7).
First use Aug. 27, 1968.
Subj. to Intf. with SN 309,858.

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SN 314,529. Chicago Dryer Company, Chicago, Ill. Filed Dec. 16, 1968.

### POLY-FINISHER

For Apparatus for Ironing and Drying, Folding and Stacking Washed Laundry (Int. Cl. 7).
First use on or about Sept. 14, 1968.

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SN 328,148. American Permac, Inc., Garden City, N.Y. Filed May 23, 1969.

### VALMAC

For Drycleaning Machines (Int. Cl. 7).
First use on or about Mar. 11, 1965.

## Class 25 — Locks and Safes

SN 318,421. Grover E. Hendricks, Niles, Mich. Filed Feb. 5, 1969.

### ROLAMECH

For Lock or Catch Mechanism (Int. Cl. 6).
First use Nov. 26, 1968.

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SN 326,000. Slaymaker Lock Company, Lancaster, Pa. Filed Apr. 30, 1969.

### alphadial

For Combination Locks in General (Int. Cl. 6).
First use Feb. 9, 1968.

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## Class 26 — Measuring and Scientific Appliances

SN 294,940. K & M Electronics Company, Baltimore, Md. Filed Apr. 4, 1968.

### COMP-U-BAR

For Machine With a Memory Bank for Automatically Preparing Mixed Drinks (Int. Cl. 9).
First use prior to Apr. 2, 1968.

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SN 300,906. Computer Communications, Inc., Inglewood, Calif. Filed June 20, 1968.

### VIDEOPRINTER

For Computer Readout Device for Photographically Recording Images From Video Displays (Int. Cl. 9).
First use Feb. 23, 1968.

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SN 301,347. Lab-Line Instruments, Inc., Melrose Park, Ill. Filed June 25, 1968.

### TIMS

For Tissue Carrier Mounts, Dispensers for Components of Tissue Carrier Mounts, Trays for Holding Tissue Carrier Mounts, and Storage Cabinets for Trays Holding Tissue Carrier Mounts, All for Laboratory Purposes (Int. Cl. 9).
First use Nov. 7, 1967.

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SN 306,813. Sigma Chemical Company, St. Louis, Mo. Filed Sept. 6, 1968.

### SIGMA

For Planchets for Radioactive Assay and the Like (Int. Cl. 20).
First use Jan. 2, 1962.

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SN 312,069. Sala A.G., Murten, Freiburg, Switzerland. Filed Nov. 13, 1968.

### PEL

Priority claimed under Sec. 44(d) on Swiss Reg. No. 232,617, dated May 29, 1968.
For Pneumo-Electric Measurement and Control System, and Parts Thereof, Utilizing Differential Gauging Switches (Int. Cl. 9).

SN 313,475. Nitro Nobel AB, Gttorp, Sweden. Filed Dec. 3, 1968.

### AMPLIGRAPH

For Seismographs (Int. Cl. 9).
First use 1967; in commerce 1967.

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SN 315,737. Dana Electronic Computer Company, Inc., Spokane, Wash. Filed Jan. 3, 1969.

### MEASURE-MATIC

For Automatic Mechanically Operated Apparatus for Measuring Foot Size and Indicating Corresponding Individual Shoe Size Requirements (Int. Cl. 9).
First use July 9, 1968.

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SN 316,899. K & M Electronics Company, Baltimore, Md. Filed Jan. 17, 1969.

### BAR-TRONIC

For Machine for Automatically Preparing Mixed Drinks (Int. Cl. 7).
First use prior to Sept. 5, 1968.

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SN 317,455. Kalvar Corporation, New Orleans, La. Filed Jan. 24, 1969.

### KALVAMATIC

For Camera and Processor Combination Unit for Photographic Film (Int. Cl. 9).
First use Oct. 7, 1968.

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SN 319,127. Applied Research Austin, Inc., Austin, Tex. Filed Feb. 14, 1969.

### HYDROLAB

For Electrical Instruments for Laboratory and Field Measurements—Namely, Water Quality Analyzers (Int. Cl. 9).
First use July 30, 1967.

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SN 320,122. Blue M Electric Company, Blue Island, Ill. Filed Feb. 26, 1969.

### TISSUE-BRITE

For Illuminated Controlled-Temperature Baths for Laboratory Use in Flotation of Biological Tissue, and Slide-Dryers for Use Therewith (Int. Cl. 9).
First use on or about Mar. 1, 1967.

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SN 321,520. Michigan Oven Company, d.b.a. Drying Systems Co., Morton Grove, Ill. Filed Mar. 12, 1969.

### DRY-SYS

Owner of Reg. No. 815,478.
For Temperature and Humidity Controls for Ovens, Furnaces, and Air Conditioning Systems; Controlled Temperature Refrigerator Test Cabinets; Controlled Temperature Heated Test Cabinets; Laboratory Ovens; Laboratory Glass Annealing Furnaces; Electrical Flame and Heat Measuring Controls for Governing Ovens, Furnaces, and Boilers, and Master Control Panels and Indicator Panels Therefor; Electronic Timers; and Air Flow, Velocity, and Pressure Actuated Switches, and Component Parts for All of the Aforesaid Goods (Int. Cl. 9).
First use 1917.

SN 323,055. Communication Mfg. Co., Long Beach, Calif. Filed Mar. 28, 1969.

### TRUNK SKAN-I

The Roman numeral "I" is disclaimed apart from the mark as shown.

For Apparatus for Automatic Scanning of Trunks on Selector Levels and Rotary Out Trunk Switches of Telephone Equipment (Int. Cl. 9).

First use Dec. 23, 1968.

SN 323,998. Electro-Learner Corporation, Bethesda, Md. Filed Apr. 9, 1969.

### ELECTRO LEARNER

For Programmed Electrical Displays for Instruction in the Operation of Typing Keyboards (Int. Cl. 9).

First use Apr. 7, 1968.

SN 325,129. Atlas-Rand Corporation, Paramus, N.J. Filed Apr. 22, 1969.

### CARAVELLE

For Motion Picture Film Projectors (Int. Cl. 9).

First use Mar. 27, 1969.

SN 331,701. Quick-Set, Incorporated, Skokie, Ill. Filed July 3, 1969.

### PRO-AM

For Photographic Tripods (Int. Cl. 9).

First use June 7, 1969.

## Class 27 — Horological Instruments

SN 306,669. Jaquet-Girard S.A., Petit-Lancy, Geneva, Switzerland. Filed Sept. 5, 1968.

### JG

### JAQUET-RICHARD

The design portion of applicant's mark consists of a fanciful representation of the letters "JG."

For Timepieces and Separate Parts Thereof (Int. Cl. 14).

First use July 1968; in commerce July 1968.

SN 310,839. Belmont Industries Inc. of Delaware, New York, N.Y. Filed Oct. 30, 1968.

### BELCUTRON

For Watches and Watch Movements (Int. Cl. 14).

First use Aug. 15, 1968.

SN 310,840. Belmont Industries Inc. of Delaware, New York, N.Y. Filed Oct. 30, 1968.

### BELSONIC

For Watches and Watch Movements (Int. Cl. 14).

First use Aug. 15, 1968.

SN 312,876. Bulova Watch Company, Inc., Flushing, N.Y. Filed Nov. 22, 1968.

### WORLDIAL

Owner of Reg. No. 289,419.

For Watches (Int. Cl. 14).

First use Oct. 30, 1968.

SN 318,692. Winthrop Incorporated, Falls Church, Va. Filed Feb. 7, 1969.

### Winthrop

For Wrist Watches, Pocket Watches, Ladies' Watches, Men's Watches, and Clocks (Int. Cl. 14).

First use Dec. 18, 1956.

SN 322,692. Beltane S.A., Geneva, Switzerland. Filed Mar. 25, 1969.

### BELTANE

Owner of Swiss Reg. No. 196,389, dated Jan. 17, 1963.

For Watches, Clocks and Parts Thereof (Int. Cl. 14).

SN 327,117. Bulova Watch Company, Inc., Flushing, N.Y. Filed May 13, 1969.

### MARINE STAR

For Watches and Parts Thereof (Int. Cl. 14).

First use May 1, 1969.

SN 327,119. Bulova Watch Company, Inc., Flushing, N.Y. Filed May 13, 1969.

### TYPHOON

For Watches and Parts Thereof (Int. Cl. 14).

First use May 1, 1969.

SN 327,120. Bulova Watch Company, Inc., Flushing, N.Y. Filed May 13, 1969.

### OCEANTIMER

For Watches and Parts Thereof (Int. Cl. 14).

First use May 1, 1969.

SN 327,121. Bulova Watch Company, Inc., Flushing, N.Y. Filed May 13, 1969.

### TIGERSHARK

For Watches and Parts Thereof (Int. Cl. 14).

First use May 1, 1969.

SN 327,122. Bulova Watch Company, Inc., Flushing, N.Y. Filed May 13, 1969.

### SEA DEVIL

Owner of Reg. Nos. 380,471, 860,531, and others.

For Watches and Parts Thereof (Int. Cl. 14).

First use May 1, 1969.

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## Class 28 — Jewelry and Precious-Metal Ware

SN 304,831. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Aug. 9, 1968.

### SONY

Owner of U.S. Reg. Nos. 705,902, 801,885, and others.

For Jewelry Pins (Int. Cl. 14).

First use July 20, 1967; in commerce July 20, 1967.

SN 314,975. Kousin Jewelry Company, Incorporated, New York, N.Y. Filed Dec. 20, 1968.

### AMERICAN BRIDE

Applicant disclaims the word "American" apart from the mark as shown.

For Finger Rings—Namely, Wedding Bands and Engagement Rings (Int. Cl. 14).

First use Nov. 15, 1952.

SN 323,182. Berg Selector Merchandising Company, Inc., Washington, D.C. Filed Apr. 1, 1969.

### A Michael ORIGINAL

Applicant disclaims the term "Original" apart from the mark as shown.

For Men's Costume Jewelry, Including Cuff Links, Tie Bars, Tie Tacks; Key Rings, Money Clips, Belt Buckles, Shirt Studs and Pendants Made in Whole or in Part of Precious or Semi-Precious Metal, or Precious or Semi-Precious Jewels (Int. Cl. 14).

First use Apr. 15, 1964.

SN 324,038. Capra Gem Co. Inc., Philadelphia, Pa. Filed Apr. 9, 1969.

### Capra Gem

Applicant disclaims the word "Gem" apart from the mark as shown.

For Gems and Jewelry With Gem Settings (Int. Cl. 14).

First use May 27, 1953.

SN 324,484. Pakula and Company, Chicago, Ill. Filed Apr. 14, 1969.

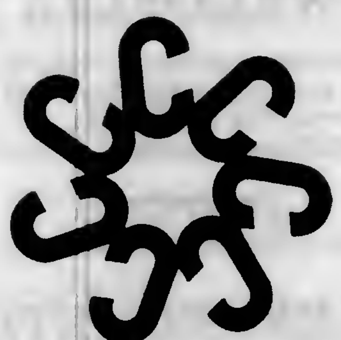
### COMFY CLIP

Applicant disclaims the word "Clip" apart from the mark as shown.

For Jewelry—Namely, Earrings (Int. Cl. 14).

First use on or about Jan. 24, 1969.

SN 327,166. Oneida Ltd., Oneida, N.Y. Filed May 13, 1969.



Owner of Reg. No. 846,242.

For Flatware Made of, or Coated With, Precious Metal (Int. Cl. 8).

First use Apr. 23, 1969.

SN 325,459. Carla Jewelry Corp., Providence, R.I. Filed Apr. 24, 1969.

### MODERN BAROQUE

The mark consists of a fanciful representation of seven letter "C's."

For Jewelry Made of Precious Metals, Including Earrings, Bracelets and Pins (Int. Cl. 14).

First use on or about Mar. 3, 1969.

SN 327,167. Oneida Ltd., Oneida, N.Y. Filed May 13, 1969.

### RUBAIYAT

For Flatware Made of, or Coated With, Precious Metal (Int. Cl. 8).

First use Apr. 23, 1969.

## Class 30 — Crockery, Earthenware, and Porcelain

SN 293,691. Interpace Corporation, Parsippany, N.J., assignee of Castleton China, Inc., New Castle, Pa. Filed Mar. 20, 1968.

### INDIGO

For China Dinnerware (Int. Cl. 21).

First use Jan. 15, 1967.

SN 313,066. Seymart Importing Co. Inc., Rockville Centre, N.Y. Filed Nov. 26, 1968.

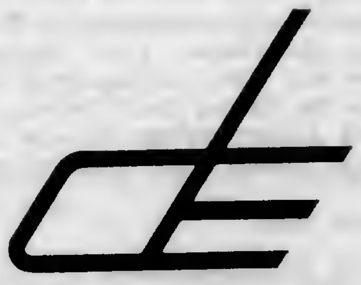
### ROYAL VICTORIA

For China Mugs and Plates (Int. Cl. 21).

First use Oct. 1, 1968.

## Class 31 — Filters and Refrigerators

SN 302,814. Deltech Engineering, Inc., New Castle, Del. Filed July 16, 1968.



For Filter Units for Removing Oil From Compressed Air and Filter Units for Removing Impurities Such as Carbon Monoxide, Nitrogen Dioxide, From Compressed Air To Make It Suitable for Inhalation and Air Dryers Employing Desiccants or Refrigeration To Remove Water Vapor From Compressed Air (Int. Cl. 11).

First use July 1, 1962.

SN 306,233. Fedders Corporation, Edison, N.J. Filed Aug. 29, 1968.

### TOUCH 'N FILL

For Ice Making Machines (Int. Cl. 11).

First use on or about May 10, 1968.

SN 330,877. Biozonics Corporation, Natick, Mass. Filed June 25, 1969.

### D-TOX

For Air and Water Filters Made of Synthetic Bone-Char (Int. Cl. 11).
First use Feb. 5, 1969.

## Class 32 — Furniture and Upholstery

SN 302,851. Lyon Metal Products, Incorporated, Aurora, Ill. Filed July 16, 1968.

### LYON METAL PRODUCTS

The words "Metal" and "Products" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 99,326, 749,664, and others.

For Bookcases; Parts of and Accessories for Bookcases; Office Desks and Tables; Office Machine Cabinets; Office Chairs; Storage, Wardrobe, Combination, Counter High and Desk High Cabinets; Parts of and Accessories for Such Cabinets; Filing Cabinets; Shelf Files; Parts of and Accessories for Shelf Files; Sorting Files; Utility and Display Tables; Coat Racks and Economy Locker Racks; Storage Locker and Open Clothing Storage Rack Combinations; Folding Chairs; Parts of and Accessories for Folding Chairs; Work Stools; Parts of and Accessories for Work Stools; Shop Desks; Parts Cases; Drawer Case Units and Drawer Dividers; Work Benches; Parts of and Accessories for Work Benches; Portable Benches; Bench Drawers; Woodworking Benches; Cabinet Type Benches; Parts of and Accessories for Cabinet Type Benches; Modular Type Benches; Parts of and Accessories for Modular Type Benches; Tool Stand Cabinets; Hanging Cabinets; Tool Stands; Drawer Tool Stands; Shop Box Stacking Frames; Bar, Pipe and Rod Units; Parts of and Accessories for Bar, Pipe and Rod Units; Bin Units; Parts of and Accessories for Bin Units; Revolving Bins; Shelving Units; Parts of and Accessories for Shelving Units; Work and Service Counters; Parts of and Accessories for Work and Service Counters; Storage and Display Units Having Multiple Bin Openings in Rows and Tiers; Sliding Shelf Shelving; Parts of and Accessories for Sliding Shelf Shelving; Storage Lockers; Parts of and Accessories for Storage Lockers; Basket Racks and Storage Locker and Basket Rack Combinations (Int. Cl. 20).
First use January 1966.

SN 319,623. NMS Industries, Inc., Chicago, Ill. Filed Feb. 19, 1969.

### perm-o-flect

The drawing is lined for the colors red and purple.
For Mirrors (Int. Cl. 20).
First use Dec. 13, 1968.

SN 320,191. Southern Cross Industries, Inc., Atlanta, Ga. Filed Feb. 26, 1969.

### Southern Cross

For Beds, Bed Springs, Mattresses, Sofa Beds, and Studio Couches (Int. Cl. 20).
First use at least Jan. 3, 1969.

SN 322,253. Art Metal-Knoll Corp., Jamestown, N.Y. Filed Mar. 20, 1969.

### TAG COLLECTION

The term "Collection" is disclaimed apart from the mark as shown.
For Office Furniture—Namely, Desks, Files, Tables, Bookcases, Chairs, Stationery Trays, Perforated Panels for Display and Storage of Merchandise, Wardrobe Cabinets and Planters (Int. Cl. 20).
First use June 1968.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 280,178. Claude B. Schneible Co., Holly, Mich. Filed Sept. 12, 1967.

### FRACTIONATING

For Suction Ventilation Hoods Used for Foundry Equipment and Other Dust and Fume Producing Equipment (Int. Cl. 11).
First use on or before Aug. 25, 1950.

SN 281,759. American Standard Inc., New York, N.Y. Filed Oct. 4, 1967.

### AIR OF GOOD LIVING

For Residential Furnaces and Air Conditioners (Int. Cl. 11).
First use February 1967.

SN 301,056. Foster Refrigerator Corporation, Hudson, N.Y. Filed June 21, 1968.

### RECON+PLUS

For Units for Thawing or Reconstituting Frozen Fresh or Cooked Foods and for Thereafter Heating Them to a Temperature for Consumption (Int. Cl. 11).
First use about December 1966.

SN 304,080. Fedders Corporation, Edison, N.J. Filed Aug. 1, 1968.

### WALL-FLEX

For Air Conditioning Equipment—Namely, Heating, Cooling, Humidifying, and De-Humidifying Units for Home, Commercial, and Industrial Use (Int. Cl. 11).
First use at least as early as 1966.

SN 304,081. Fedders Corporation, Edison, N.J. Filed Aug. 1, 1968.

### FLEXHERMETIC

For Air Conditioning Equipment—Namely, Cooling and Dehumidifying Units (Int. Cl. 11).
First use at least as early as 1960.

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SN 309,858. Franklin Products Corp., Chicago, Ill. Filed Oct. 17, 1968.

### SUPERTWIN

For Infra-Red Food Warmers for Commercial and/or Domestic Use (Int. Cl. 11).
First use Aug. 23, 1968.
Subj. to Intf. with SN 311,164.

SN 323,399. Western Gold and Platinum Company, Belmont, Calif. Filed Apr. 1, 1969.

### TICUSIL

For Brazing Alloys (Int. Cl. 6).
First use Feb. 9, 1968.

## Class 36 — Musical Instruments and Supplies

SN 314,192. Columbia Broadcasting System, Inc., New York, N.Y. Filed Dec. 11, 1968.

### ARTIST

For Banjos (Int. Cl. 15).
First use in or about February 1967.

SN 314,200. Columbia Broadcasting System, Inc., New York, N.Y. Filed Dec. 11, 1968.

### ESQUIRE

For Guitars (Int. Cl. 15).
First use in or about 1949.

SN 314,201. Columbia Broadcasting System, Inc., New York, N.Y. Filed Dec. 11, 1968.

### Wildwood

For Guitars (Int. Cl. 15).
First use in or about July 1965.

SN 314,318. Columbia Broadcasting System, Inc., New York, N.Y. Filed Dec. 12, 1968.

### CONCERT

For Guitars (Int. Cl. 15).
First use in 1963.

SN 319,808. Bell Industries, Inc., Cincinnati, Ohio. Filed Feb. 24, 1969.

### BELLMASTER

For Electronic Keyboard Carillons (Int. Cl. 15).
First use Dec. 27, 1968.

SN 322,689. Atlas Films, Inc., New York, N.Y. Filed Mar. 25, 1969.

### STEREX

Owner of Reg. No. 866,373.
For Magnetic Tapes in Reel Form and in Cassettes, Magnetic Tape Splices, Magnetic Tape Reel-Holders, Magnetic Tape Demagnetizers, and Microphones for Use With Tape Recorders (Int. Cl. 9).
First use on or about Feb. 14, 1969.

SN 329,198. Capitol Records, Inc., Los Angeles, Calif. Filed June 5, 1969.

### Capitol

Owner of Reg. No. 621,325.
For Phonograph Records (Int. Cl. 9).
First use May 22, 1969.

SN 330,506. Hot Wax Records, Inc., Detroit, Mich. Filed June 19, 1969.

### HOT WAX

For Phonograph Records (Int. Cl. 9).
First use May 9, 1969.

## Class 37 — Paper and Stationery

SN 309,399. The Reynolds & Reynolds Company, d.b.a. Post-Rite Systems Co., Dayton, Ohio. Filed Oct. 10, 1968.

### FANALYZE

For Business Forms (Int. Cl. 16).
First use September 1960.

SN 318,165. Columbian Industries, Inc., Milwaukee, Wis. Filed Feb. 3, 1969.

### Perpetucal

For Desk Calendars (Int. Cl. 16).
First use Jan. 15, 1969.

SN 319,131. Chemolene Industries, Inc., Bordentown, N.J. Filed Feb. 14, 1969.

### MAGNIFIQUE

For Writing Instruments—Namely, Automatic Pens and Pencils (Int. Cl. 16).
First use Jan. 23, 1969.

SN 319,873. The Gilman Brothers Company, Gilman, Conn. Filed Feb. 24, 1969.

### GILCO TRIPLE S

For Wrapping Film (Int. Cl. 16).
First use Dec. 20, 1968.

SN 320,279. The Northwest Paper Company, Cloquet, Minn. Filed Feb. 27, 1969.

### FOLIO VELVET

Applicant disclaims the word "Folio" apart from the mark, without disclaiming any common law rights that applicant may have acquired in the word "Folio."
For Paper—Namely, Printing, Publishing and Converting Paper (Int. Cl. 16).
First use Jan. 30, 1969.

SN 321,823. National Waterproof Papers, Inc.; Beverly, N.J. Filed Mar. 14, 1969.

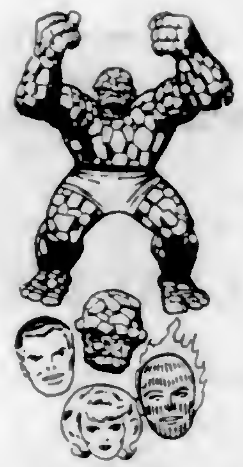
### FLEXIRIB

For Waterproof or Waxed or Plain Paper Which Has Already Been Creped and Is Longitiudinally Ribbed for Flexibility and Lateral Stretch (Int. Cl. 16).

First use Mar. 7, 1967.

## Class 38 – Prints and Publications

SN 276,843. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, d.b.a. Marvel Comics Group, New York, N.Y. Filed July 26, 1967.



The facial features which form a part of the mark do not represent any human being and are merely fanciful.

For Publications, Particularly Comic Magazines (Int. Cl. 16).

First use on or about Feb. 16, 1967.

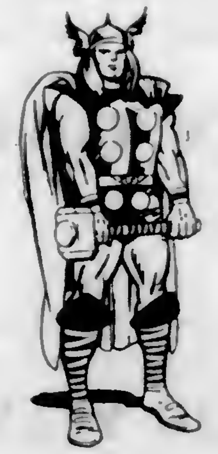
SN 278,015. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, d.b.a. Marvel Comics Group, New York, N.Y. Filed Aug. 10, 1967.

### THE AVENGERS

For Magazine Published Periodically (Int. Cl. 16).

First use on or about May 28, 1963.

SN 278,715. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, d.b.a. Marvel Comics Group, New York, N.Y. Filed Aug. 21, 1967.

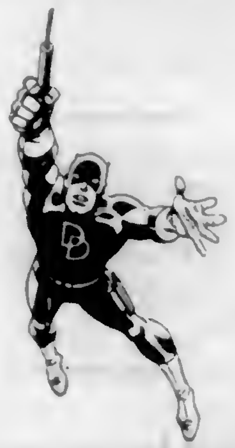


The facial feature which forms a part of the mark does not represent any human being and is merely fanciful.

For Publications, Particularly Comic Magazines (Int. Cl. 16).

First use on or about Dec. 1, 1966; on or about Dec. 27, 1963, in a different form.

SN 278,117. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, d.b.a. Marvel Comics Group, New York, N.Y. Filed Aug. 11, 1967.



The facial feature which forms a part of the mark does not represent any human being and is merely fanciful.

For Publications, Particularly Comic Magazines (Int. Cl. 16).

First use on or about Feb. 2, 1967; Jan. 28, 1963, in a different form.

SN 292,697. Kordet Color Corporation, Oceanside, N.Y. Filed Mar. 7, 1968.

K

KORD COLOR PRINTS

Applicant disclaims any right to the exclusive use of "Color Prints" in the composite mark. Owner of Reg. No. 840,041.

For Color Prints Developed and Processed by Applicant (Int. Cl. 16).

First use May 1, 1967.

SN 299,459. Walter Herdeg Graphis Verlag, d.b.a. Walter Herdeg The Graphis Press, Zurich, Switzerland. Filed May 31, 1968.

### GRAPHIS

For Magazines, Journals, Books, and Yearbooks in the Field of Fine Art and Applied Art, as Well as Prints of Artwork and Lithographs (Int. Cl. 16).

First use in 1944; in commerce in 1944.

SN 300,514. American Chemical Society, Washington, D.C. Filed June 17, 1968.

POLYMER SCIENCE & TECHNOLOGY

POST·J

For Journal (Int. Cl. 16).

First use Feb. 6, 1967.

SN 301,947. Metaframe Corporation, Maywood, N.J. Filed July 3, 1968.

### THE INNES BOOK

Applicant disclaims the term "Book" when used separate and apart from the mark as shown.

For Books Dealing With Tropical Fish Hobby (Int. Cl. 16).

First use on or about May 27, 1966.

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SN 305,673. Centric Communications, Inc., Cochecton, N.Y., assignee of Thomas E. Powers, Hankins, N.Y. Filed Aug. 21, 1968.

### HELP

For Periodical Magazine (Int. Cl. 16).

First use Aug. 10, 1968.

SN 307,316. Daniel Starch & Staff, Inc., Mamaroneck, N.Y. Filed Sept. 13, 1968.

### STARCH

For Reports, Newsletters, and Brochures in the Field of Business Research (Int. Cl. 16).

First use in or about 1932.

SN 308,523. Magazine Management Co., Inc., New York, N.Y., assignee of Perfect Film & Chemical Corporation, d.b.a. Marvel Comics Group, New York, N.Y. Filed Sept. 30, 1968.

### TIP-TOP CROSSWORD PUZZLES

For the purposes of registration, the applicant disclaims the terminology "Crossword Puzzles" apart from the mark as shown, but the applicant does not waive any common law or other right in the mark as shown or in any part thereof.

For Magazines (Int. Cl. 16).

First use on or about June 5, 1958.

SN 308,525. Magazine Management Co., Inc., New York, N.Y., assignee of Perfect Film & Chemical Corporation, d.b.a. Marvel Comics Group, New York, N.Y. Filed Sept. 30, 1968.

### MY CONFESSION

For Magazines (Int. Cl. 16).

First use on or about July 25, 1951.

SN 311,351. Bon Voyage, Inc., Kansas City, Mo., assignee of Bon Appetit, Inc., Kansas City, Mo. Filed Nov. 5, 1968.

### BON VOYAGE

For Periodical Magazine (Int. Cl. 16).

First use Oct. 17, 1968.

SN 312,536. American Society for Metals, Metals Park, Ohio. Filed Nov. 18, 1968.

### METAL PROGRESS

Owner of Reg. No. 747,381.

For Monthly Magazine (Int. Cl. 16).

First use September 1930.

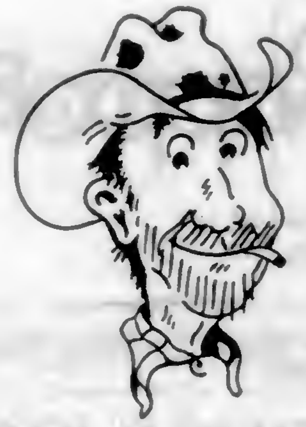
SN 314,283. Westinghouse Electric Corporation, East Pittsburgh, Pa. Filed Dec. 11, 1968.

### BITS AND BYTES

For Company Weekly Newsletter Relating to Computers (Int. Cl. 16).

First use on or about July 19, 1966.

SN 315,592. A. E. Reid, Jr., d.b.a. Ace Reid, Kerrville, Tex. Filed Jan. 2, 1969.



For Syndicated Cartoons, Book Collection of Cartoons, Printed Place Mats, and Picture Postcards (Int. Cl. 16).

First use on or about Feb. 6, 1955.

SN 320,364. Multifact Film Productions, Inc., Orlando, Fla., assignee of Multifact Film Productions, Winter Park, Fla. Filed Feb. 28, 1969.

### MEDFACT

For Developed Photographic Films (Int. Cl. 9).

First use Jan. 15, 1969.

SN 321,701. The Toilet Goods Association, Inc., Washington, D.C. Filed Mar. 13, 1969.

TGA

Cosmetic

JOURNAL

Applicant disclaims the terminology "Cosmetic Journal" apart from the mark as shown.

For Trade Association Journal (Int. Cl. 16).

First use Jan. 20, 1969.

SN 322,433. Gellert Publishing Corporation, New York, N.Y. Filed Mar. 21, 1969.

P&I PREMIUM & INCENTIVE PRODUCT NEWS

Applicant does not claim the phrase "Product News" apart from the mark as shown.

For Magazine (Int. Cl. 16).

First use Apr. 1, 1968.

SN 323,262. Clopay Corporation, Cincinnati, Ohio. Filed Apr. 1, 1969.

### CLOPAY

Owner of Reg. No. 289,234, and others.

For Decorative Self-Adhesive Fringe and Trim Strips and Appliques, for Attachment to Window Shades or the Like (Int. Cl. 16).

First use January 1969.

SN 323,615. Young World Corporation, Washington, D.C. Filed Apr. 3, 1969.

**Rapport**

For Magazine (Int. Cl. 16).
First use Mar. 26, 1969.

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SN 324,444. The Gazette Publishing Company, Tifton, Ga. Filed Apr. 14, 1969.

**THE TIFTON GAZETTE**

For Weekly Newspaper (Int. Cl. 16).
First use in 1897.

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SN 324,445. The Gazette Publishing Company, Tifton, Ga. Filed Apr. 14, 1969.

**THE DAILY TIFTON GAZETTE**

For Daily Newspaper (Int. Cl. 16).
First use in 1897.

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SN 324,867. S. P. Skinner Co., Inc., New York, N.Y. Filed Apr. 18, 1969.

**SKINNER SELECTIONS**

For Catalogs Published at Regular Intervals (Int. Cl. 16).
First use in or about September 1952.

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SN 324,931. Queen's Quarterly Publishing Co., Inc., New York, N.Y. Filed Apr. 18, 1969.

**QUEEN'S QUARTERLY**

The word "Quarterly" is disclaimed when used apart from the mark as shown.
For Magazine (Int. Cl. 16).
First use Mar. 26, 1969.

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SN 325,582. Cleworth Publishing Company, Inc., Cos Cob, Conn. Filed Apr. 25, 1969.

**T & D**

Owner of Reg. No. 741,337.
For Magazine Dealing With the Design, Construction, Operation and Maintenance of and Purchasing for Power Transmission and Distribution Systems and Street and Highway Lighting Systems, Including News About Methods, Equipment, Tools and Materials (Int. Cl. 16).
First use October 1956.

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SN 325,829. American Institute of Industrial Engineers, Inc., New York, N.Y. Filed Apr. 29, 1969.

**AIIE** *transactions*

For Magazine (Int. Cl. 16).
First use Mar. 1, 1969.

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SN 330,664. Chefs Association of the Pacific Coast, Inc., San Francisco, Calif. Filed June 23, 1969.

**THE CULINARIAN**

For Trade Magazine Issued From Time to Time (Int. Cl. 16).
First use as early as Jan. 1, 1954.

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SN 330,800. Western Publishing Company, Inc., Racine, Wis. Filed June 23, 1969.

**GOLDEN GRIFFON**

For Series of Softcover or Paperback Books (Int. Cl. 16).
First use May 29, 1969.

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SN 330,883. Regensteiner Publishing Enterprises, Inc., Chicago, Ill. Filed June 25, 1969.

**AUM**

For Magazine (Int. Cl. 16).
First use on or about Mar. 25, 1969.

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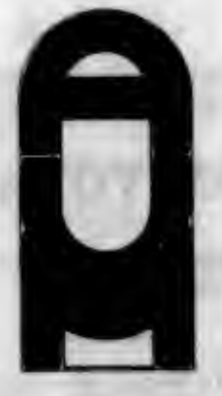
SN 330,884. Regensteiner Publishing Enterprises, Inc., Chicago, Ill. Filed June 25, 1969.



The mark consists of a fanciful design of the letters "AUM."
For Magazine (Int. Cl. 16).
First use on or about Mar. 25, 1969.

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SN 330,888. The Bureau of National Affairs, Inc., Washington, D.C. Filed June 25, 1969.

**WASHINGTON FINANCIAL REPORTS**

For Weekly Report to Financial Institutions (Int. Cl. 16).
First use July 5, 1962.

## Class 39 — Clothing

SN 273,268. Drum Mfg. Co., Inc., Charlotte, N.C. Filed June 7, 1967.

The lines shown on the drawing are merely for the purpose of reproducing the lines shown on the specimens, and are not an indication of color.
For Boys' Pants, Slacks, Jeans and Shorts (Int. Cl. 25).
First use May 1, 1967.

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SN 295,983. B. B. Walker Shoe Company, Asheboro, N.C. Filed Apr. 18, 1968.

**Walkerettes**

For Children's Leather Shoes (Int. Cl. 25).
First use on or about Jan. 15, 1955.

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SN 299,146. Top Form-Yolande, Inc., New York, N.Y., assignee of Tanya Mandoza, New York, N.Y. Filed May 27, 1968.

"La Ligne"
by Tanya

The word "La Ligne" is a French expression and the English translation is "the line." The stippling shown on the drawing is part of the mark and no claim is made as to color.
For Panties Made From Silk, Cotton, Nylon, Acrylic, Dacron, Knitted or Woven; Girdles and Brassieres Made From Silk, Cotton, Nylon, Acrylic, Dacron, Knitted or Woven (Int. Cl. 25).
First use May 17, 1968.

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SN 303,828. Seaton Hall, Inc., East Boston, Mass. Filed July 29, 1968.

**JUNIOR HALL**

The word "Junior" is disclaimed apart from the mark as shown.
For Dresses, Jackets, Slacks, Outer Shorts, Skirts, Blouses, and Suits (Int. Cl. 25).
First use prior to 1962.

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SN 306,294. Brown Shoe Company, Inc., St. Louis, Mo. Filed Aug. 30, 1968.

**SERVOTAN**

For Anti-Perspirant Leather, Sold as a Component of Finished Shoes (Int. Cl. 25).
First use Mar. 15, 1968.

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SN 308,752. Sullivan's of Liberty, Inc., Liberty, N.Y. Filed Oct. 3, 1968.

**Sullivan's**

For Men's Ties, Suits, and Sportcoats; Men's and Boys' Hose; Women's Dresses and Sportswear—Namely, Slacks and Jackets; Slacks; Underwear; Boys' Suits, Jackets, Shirts, and Ties; Shirts; Girls' Dresses, Suits, Pants Suits, Slacks, Sweaters, Blouses, and Jackets (Int. Cl. 25).
First use May 20, 1965.
Subj. to Intf. with SN 257,318.

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SN 310,119. The Mister Short Company, Chicago, Ill. Filed Oct. 21, 1968.

**ANTSY PANTS**

Without waiver of applicant's common law rights, applicant disclaims the word "Pants" apart from the mark in its entirety.
For Undershorts (Int. Cl. 25).
First use on or about Aug. 1, 1947.

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SN 310,133. Rapid-American Corporation, New York, N.Y. Filed Oct. 21, 1968.

**DESIGNER'S COLLECTION BY PAUL BELLINO OF CATANIA, ITALY**

The expression "of Catania, Italy" is disclaimed apart from the mark as a whole. "Paul Bellino" is the name of a living individual whose consent is of record.
For Men's and Boys' Outer Garments—Namely, Coats, Suits, Sport Coats, Jackets, Top Coats, Overcoats, Slacks, Trousers, and Vests (Int. Cl. 25).
First use August 1968.

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SN 310,193. Allied Stores Corporation, New York, N.Y. Filed Oct. 22, 1968.

**STYLOUNGERS**

For Ladies' Shifts and Robes (Int. Cl. 25).
First use Jan. 19, 1963.

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SN 312,861. The Lovable Company, Atlanta, Ga. Filed Nov. 22, 1968.

**THI-ALLOWANCE**

For Women's Foundation Garments (Int. Cl. 25).
First use Nov. 12, 1968.

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SN 313,006. Kurashiki Boseki Kabushiki Kaisha, Kurashiki, Japan. Filed Nov. 25, 1968.

**KURABO**

For Dresses, Coats, Headwear, Underwear, Footwear, Shirts, Hosiery, and Sleepwear (Int. Cl. 25).
First use November 1955; in commerce in or about February 1958.

SN 314,148. Finesse Products, Inc., Mount Kisco, N.Y. Filed Dec. 11, 1968.

**colormate**

For White Fabric Shoes for Women Which Are Sold To Be Dyed Various Colors Pursuant to a Special Procedure Developed by Applicant (Int. Cl. 25).
First use on or about Mar. 30, 1967.

SN 314,665. Alice Cadolle, Paris (Seine), France. Filed Oct. 31, 1968.

**Cadolle**

For Girdles, Corsets, Brassieres, Garter-Belts, Bathing Suits, Lingerie, Negligees, Underwear, Hosiery, Blouses, Bedroom Slippers, Scarves, and Handkerchiefs (Int. Cl. 25).
First use May 22, 1912; in commerce Oct. 21, 1922.

SN 317,262. Standard Knitting Mills, Inc., Knoxville, Tenn. Filed Jan. 22, 1969.

**Stallion**

For Men's and Boys' Knit T-Shirts, Athletic Shirts and Briefs, Broadcloth Shorts, Knit Sportshirts, 3-Way Dress Shirts, and Knit Ski-Type Pajamas (Int. Cl. 25).
First use Jan. 13, 1969.

SN 317,265. Washington Manufacturing Company, Nashville, Tenn. Filed Jan. 22, 1969.

**OLD KENTUCKY**

For Ladies' Shorts, Skirts, Shirts, Dresses, Pants, Dungarees, Jeans; Men's and Boys' Slacks, Overalls, Shorts, Shirts, Jackets, Coats, Pajamas, Underwear, Dungarees, and Jeans (Int. Cl. 25).
First use Jan. 1, 1904.

SN 324,265. The Lovable Company, Atlanta, Ga. Filed Apr. 11, 1969.

**LOVABLE YOUNG FASHIONS**

The term "Young Fashions" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 378,181, 832,979, and others.
For Women's Foundation Garments (Int. Cl. 25).
First use Apr. 2, 1969.

SN 325,096. Uniroyal, Inc., New York, N.Y. Filed Apr. 21, 1969.

**GRASSHOPPERS**

Owner of Reg. Nos. 679,654 and 824,458.
For Shoes (Int. Cl. 25).
First use 1956.

SN 325,415. Technique Originals, Inc., New York, N.Y. Filed Apr. 23, 1969.

**Technique**

For Dresses for Women and Girls (Int. Cl. 25).
First use Mar. 20, 1969.

SN 325,567. Atlas Underwear Corporation, Piqua, Ohio. Filed Apr. 25, 1969.

**SKI SKINS SCHUSSOX**

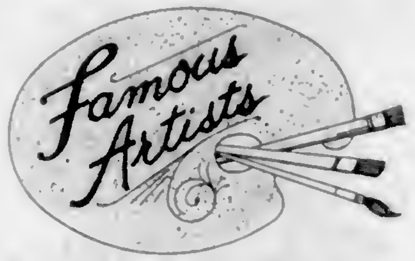
For Men's, Women's, and Children's Sox (Int. Cl. 25).
First use Mar. 28, 1969.

SN 325,568. Atlas Underwear Corporation, Piqua, Ohio. Filed Apr. 25, 1969.

**SKI SKINS SUPORTS**

Owner of Reg. No. 328,698.
For Men's, Women's, and Children's Sox (Int. Cl. 25).
First use Mar. 28, 1969.

SN 325,620. H. Mendel & Co., Inc., Atlanta, Ga. Filed Apr. 25, 1969.



For Ladies' Hosiery and Panty Hose (Int. Cl. 25).
First use Mar. 25, 1969.

SN 327,102. Interco Incorporated, d.b.a. The Florsheim Shoe Company, Chicago, Ill. Filed May 13, 1969.

**FLORSHEIM**

Owner of Reg. Nos. 73,586, 203,292, and others.
For Shoes (Int. Cl. 25).
First use January 1890.

SN 328,977. Glamorise Foundations, Inc., New York, N.Y. Filed June 3, 1969.

**FEEL FREE**

For Foundation Garments (Int. Cl. 25).
First use Nov. 8, 1968.
Subj. to Intf. with SN 315,496.

SN 330,056. Indianapolis Glove Company, Inc., Indianapolis, Ind. Filed June 16, 1969.

**IGC**

For Work Gloves (Int. Cl. 25).
First use May 27, 1969.

SN 330,256. Cherylaine Associates, Ltd., New York, N.Y. Filed June 17, 1969.

**MR. KICKS**

For Men's Rubber Footwear (Int. Cl. 25).
First use May 27, 1969.

SN 330,442. Botany Industries, Inc., New York, N.Y. Filed June 19, 1969.

**BOTANY**

Owner of Reg. Nos. 75,638, 817,059, and others.
For Raincoats (Int. Cl. 25).
First use in or about 1963.

SN 330,443. Botany Industries, Inc., New York, N.Y. Filed June 19, 1969.

**500**

Owner of Reg. Nos. 552,849 and 630,477.
For Raincoats (Int. Cl. 25).
First use in or prior to 1968.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 313,007. Kurashiki Boseki Kabushiki Kaisha, Kurashiki, Japan. Filed Nov. 25, 1968.

**KURABO**

For Textile Fabrics of Cotton, Wool, Synthetic Fibers, and Blends of Two or More Such Fibers for Making Into Articles of Clothing (Int. Cl. 24).
First use November 1955; in commerce in or about February 1958.

SN 320,267. Jackson and Jackson, Incorporated, Tyron, N.C. Filed Feb. 27, 1969.

**AMERICA'S FIRST FAMILY OF COTTON**

Applicant disclaims the words "of Cotton" apart from the mark as shown.
For Sheets, Pillowcases, Towels, and Wash Cloths (Int. Cl. 24).
First use Jan. 2, 1969.

## Class 44 — Dental, Medical, and Surgical Appliances

SN 311,882. I-T-E Imperial Corporation, Chicago, Ill. Filed Nov. 13, 1968.

**MEDIFLUIDICS**

For Medical Diagnostic and Therapeutic Instruments and Components Therefor, and More Particularly Fluid Measuring Devices, Fluid Proportioners, Respirators, and Fluid Valves Therefor (Int. Cl. 10).
First use Aug. 27, 1968.

SN 317,209. Credo Company, Fenton, Mo. Filed Jan. 22, 1969.

**POLYVAR**

For Fluoride Varnish Cavity Liner and Dentinal Tubuli Seal for Use by Dentists (Int. Cl. 5).
First use Dec. 10, 1968.

## Class 45 — Soft Drinks and Carbonated Waters

SN 295,660. Monarch Citrus Products Company, Doraville, Ga. Filed Apr. 15, 1968.

**SWANEE**

For Concentrates for Making Soft Drinks (Int. Cl. 32).
First use Apr. 15, 1968.

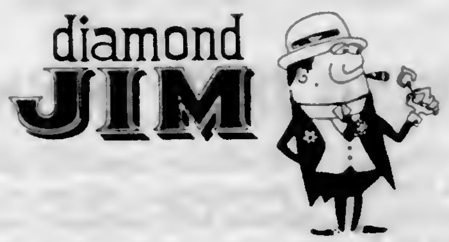
SN 329,542. Tasty-Mates Company, Camden, N.J., assignee of S. Twitchell Company, Camden, N.J. Filed June 9, 1969.

**DART**

For Soft Drinks (Int. Cl. 32).
First use at least as early as May 21, 1962.

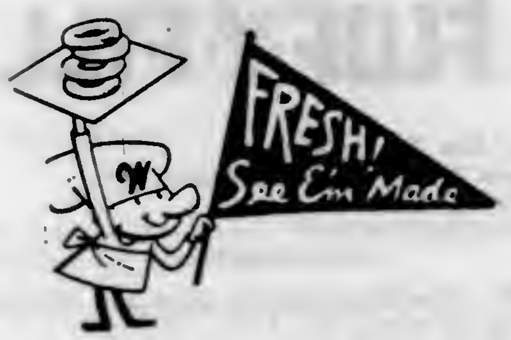
## Class 46 — Foods and Ingredients of Foods

SN 267,652. North Pacific Canners & Packers, Inc., Portland, Oreg. Filed Mar. 27, 1967.



For Frozen French Fried Potatoes (Int. Cl. 29).
First use Mar. 3, 1967.

SN 272,982. Winchell Donut House, Inc., South El Monte, Calif. Filed June 2, 1967.



Applicant disclaims the phrase "Fresh! See E'm Made" apart from the mark as shown.
For Doughnuts, Pastries, French Pastries, Cream-Filled Bars, Turnovers, Cinnamon Rolls; Raised Dough Bakery Products Such as Pastries and Sweet Rolls (Int. Cl. 30).
First use Mar. 18, 1958.

SN 279,632. The Dan Dee Pretzel and Potato Chip Company, Cleveland, Ohio. Filed Sept. 5, 1967.

### DAN·DEE

Owner of Reg. Nos. 506,446, 815,058, and others.

For Pretzels, Potato Chips, Corn Chips, Julienne Potatoes, and Bacon Rinds (Int. Cls. 29 and 30).

First use 1965; in or about August 1927 in a different form.

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SN 283,398. Stark, Wetzel & Co., Inc., Indianapolis, Ind. Filed Oct. 26, 1967.

### BEST BUY

For Bacon (Int. Cl. 29).

First use Oct. 16, 1954.

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SN 286,015. La Coquille de Sucre, Inc., New Orleans, La. Filed Dec. 1, 1967.

### FRENCH QUARTERS

Applicant disclaims the word "French" apart from the mark as presented.

For Confection in the Nature of a Frosted Spiced Cake, Sold Only to Candy Shops (Int. Cl. 30).

First use Nov. 9, 1967.

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SN 299,430. Carnation Company, Los Angeles, Calif. Filed May 31, 1968.

### CHAFING DISH DINNERS

The word "Dinners" is disclaimed separate and apart from the mark as a whole, but the applicant waives none of its common law rights in the mark or any feature thereof.

For Dinners in Cartons, the Principal Ingredients Thereof Being Sauce, Pasta, and Grated Parmesan Cheese (Int. Cl. 30).

First use Apr. 30, 1968.

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SN 301,328. Basic Foods, Inc., Englewood, N.J. Filed June 25, 1968.

### FLUF·Y·FILL

Owner of Reg. No. 556,438.

For Cream Filling for Cakes (Int. Cl. 29).

First use May 12, 1947.

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SN 302,750. Near East Food Products, Inc., Worcester, Mass. Filed July 15, 1968.

### NEAR EAST

Owner of Reg. No. 807,349.

For Rice and Wheat Pilaf Mixes (Int. Cl. 30).

First use on or about June 1, 1962.

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SN 305,244. Vicente Puig & Co., Inc., Bronx, N.Y. Filed Aug. 15, 1968.

### La Cena

The English translation of the Spanish and Italian words "La Cena" is "the supper." Owner of Reg. No. 828,288.

For Pimentos, Condensed Milk, Canned Fruit Nectars, Canned Pigeon Peas, Annato Extract (Flavoring Product Containing Lard), Olives, Honey, Salt, Cheese, and Rice (Int. Cls. 29, 30, 31, and 32).

First use 1966.

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SN 306,768. General Foods Corporation, White Plains, N.Y. Filed Sept. 6, 1968.

### PICK-UP-STIX

The word "Stix" is disclaimed apart from the mark as a whole.

For Frozen Pizza (Int. Cl. 30).

First use Aug. 2, 1968.

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SN 307,825. Brown & Haley, Tacoma, Wash. Filed Sept. 20, 1968.

### FUN

For Candy (Int. Cl. 30).

First use 1926.

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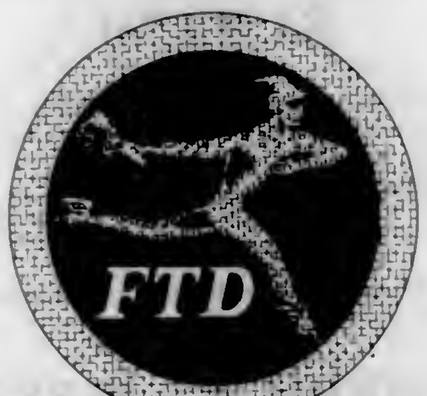
SN 309,032. Florists' Transworld Delivery Association, Detroit, Mich. Filed Oct. 7, 1968. COLLECTIVE MARK.



The drawing is lined for the color yellow. Owner of Reg. Nos. 570,445, 846,286, and others.

For Candy (Int. Cl. 30).

First use Aug. 18, 1968.

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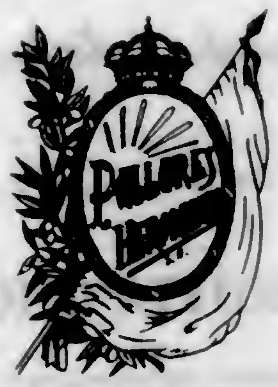
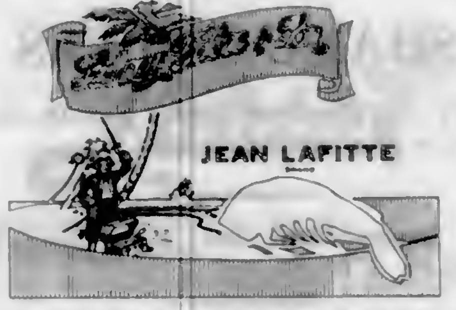
SN 310,247. Pallares Hermanos, S.A., Cabra, Cordoba, Spain. Filed Oct. 22, 1968.



Owner of Spanish Reg. No. 113,105, dated Apr. 30, 1941; and U.S. Reg. No. 221,639.

For Edible Olive Oil (Int. Cl. 29).

SN 311,026. Sidney Fabre & Son, Barataria, La. Filed Oct. 31, 1968.



The drawing is lined for the colors red and green. Applicant disclaims the word "Brand," apart from its use in the mark as shown, and disclaims the representation of the shrimp shown in the drawing.

For Fresh Frozen Crabmeat, Gumbo Crabs, Shrimp, Gumbo Mix; Shell on Headless Shrimp and Peeled and Cleaned Shrimp (Int. Cl. 29).

First use Oct. 1, 1956.

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SN 311,857. Gabriele Gambardella & Figli, Nocera Inferiore, Salerno, Italy. Filed Nov. 12, 1968.

### LA ROMANELLA

Owner of Italian Reg. No. 201,245, dated Mar. 15, 1967.

For Canned, Fresh and Frozen Meat, Fish, Poultry and Game, Meat Extracts, Preserved, Dried and Cooked Fruits and Vegetables, Jellies, Jams, Fresh Eggs; Fresh Whole Milk and Milk Products—Namely, Skimmed Milk, Butter, Cheeses and Cream; Edible Animal and Vegetable Oils and Fats; Preserves and Pickles (Int. Cl. 29).

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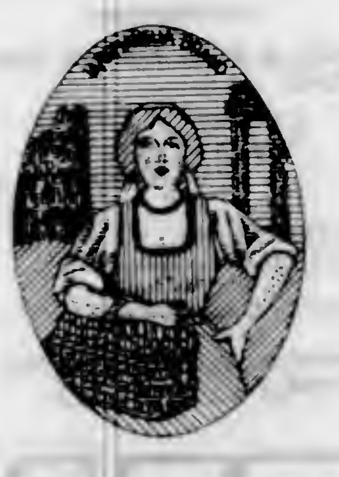
SN 311,858. Gabriele Gambardella & Figli, Nocera, Inferiore, Salerno, Italy. Filed Nov. 12, 1968.



Applicant disclaims the word "Brand" apart from the mark as a whole. The portrait shown in the drawing does not represent a particular living person. The drawing is lined for the colors brown, red, gold, blue, and green. Owner of Italian Reg. No. 203,865, dated Apr. 5, 1967.

For Canned, Fresh and Frozen Meat, Fish, Poultry and Game, Meat Extracts, Preserved, Dried and Cooked Fruits and Vegetables, Jellies, Jams, Fresh Eggs; Fresh Whole Milk and Milk Products—Namely, Skimmed Milk, Butter, Cheeses and Cream; Edible Animal and Vegetable Oils and Fats; Preserves and Pickles (Int. Cl. 29).

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SN 313,955. The Merchants Company, d.b.a. Valley Mills, Vicksburg, Miss. Filed Dec. 9, 1968.

### MAMA COW

For Calf Feed (Int. Cl. 31).

First use Jan. 1, 1967.

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SN 314,605. Pasquale's Food Products, Inc., Benton Harbor, Mich. Filed Dec. 16, 1968.

### SALUTO

For Frozen Pizza (Int. Cl. 30).

First use on or about Nov. 11, 1968.

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SN 314,880. Glove Products Company, Inc., Clifton, N.J. Filed Dec. 19, 1968.

### SIMON FISCHER

The mark "Simon Fischer" does not represent a particular living person. Owner of Reg. No. 352,862.

For Apricot Butter (Int. Cl. 29).

First use 1962.

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SN 314,987. The Schratter Import Co., Inc., New York, N.Y. Filed Dec. 20, 1968.

### MON BOUQUET

For Cheese (Int. Cl. 29).

First use Aug. 14, 1968.

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SN 315,009. Mead Johnson & Company, Evansville, Ind. Filed Dec. 23, 1968.

### EGGSCELLENT

For Powdered Dietary Food Containing Egg Whites (Int. Cl. 5).

First use on or prior to Dec. 10, 1968.

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SN 315,010. Mead Johnson & Company, Evansville, Ind. Filed Dec. 23, 1968.

### EGGSCHANGE

For Powdered Dietary Food Containing Egg Whites (Int. Cl. 5).

First use on or prior to Dec. 10, 1968.

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SN 315,011. Mead Johnson & Company, Evansville, Ind. Filed Dec. 23, 1968.

### EGGSTRACT

For Powdered Dietary Food Containing Egg Whites (Int. Cl. 5).

First use on or prior to Dec. 10, 1968.

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SN 315,012. Mead Johnson & Company, Evansville, Ind. Filed Dec. 23, 1968.

### EXCEPT

For Powdered Dietary Food Containing Egg Whites (Int. Cl. 5).

First use on or prior to Dec. 10, 1968.

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SN 316,775. Delicia, Inc., d.b.a. Progress Confection Company, Elizabeth, N.J. Filed Jan. 16, 1969.

### POP SUEY

The word "Pop" is disclaimed apart from the mark as shown, without relinquishment of any of applicant's common law rights in the word.

For Popcorn and Nut Confectionery (Int. Cl. 30).

First use Dec. 10, 1968.

SN 317,027. French Fried Ice Cream Co., Inc., Bethel, Conn. Filed Jan. 21, 1969.

### FRENCH FRIED ICE CREAM

Without waiving its common law rights, applicant disclaims the words "Ice Cream" except in the the compound mark "French Fried Ice Cream."

For Frozen Confections—Namely, Ice Cream Filled Pastry Shells (Int. Cl. 30).

First use on or before Aug. 15, 1963.

SN 317,308. Beatrice Foods, Company, Chicago, Ill. Filed Jan. 23, 1969.

### BARBARA DEE

"Barbara Dee" is a fictitious name and not the name of any living person.

For Cookies (Int. Cl. 30).

First use on or about June 19, 1966.

SN 320,632. Malone & Hyde, Inc., Memphis, Tenn. Filed Mar. 3, 1969.

### Hyde Park

Owner of Reg. Nos. 792,669, 858,036, and 868,738.

For Mayonnaise, Salad Dressing, and Meatless Sandwich Spread (Int. Cl. 29).

First use Dec. 11, 1968.

SN 320,698. Aunt Nellie's Foods, Inc., Clyman, Wis. Filed Mar. 4, 1969.

### "CAPTAIN KIDD"

Owner of Reg. No. 710,678.

For Canned Vegetables (Int. Cl. 29).

First use Dec. 4, 1923.

SN 320,734. Pat Le Roy Pace, d.b.a. Pace Fish Co., and Pace Fish & Frog Co., Brownsville, Tex. Filed Mar. 4, 1969.

### PACER

Owner of Reg. No. 760,102.

For Frozen Frog Legs and Fresh Water Catfish (Int. Cl. 29).

First use July 1962.

SN 324,013. General Mills, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

### HOTCHAS

For Taco Flavored, Cereal-Derived, Ready To Eat Snack (Int. Cl. 30).

First use on or prior to Dec. 27, 1968.

SN 324,015. General Mills, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

### MR. KABOOM

For Ready-To-Eat Breakfast Cereal (Int. Cl. 30).

First use on or prior to Nov. 4, 1968.

SN 324,017. General Mills, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

### SHAKE-O-PUFFS

For Ready-To-Eat Breakfast Cereal (Int. Cl. 30).

First use on or prior to Sept. 30, 1968.

SN 324,018. General Mills, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

### SUNNY BUNCH

For Cereal Derived Ready-To-Eat Snack (Int. Cl. 30).

First use on or prior to Jan. 23, 1969.

SN 324,019. General Mills, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

### TOBITS

For Ready-To-Eat Breakfast Cereal (Int. Cl. 30).

First use on or prior to Nov. 4, 1968.

SN 324,662. Tasty Baking Company, Philadelphia, Pa. Filed Apr. 16, 1969.

### TASTYKAKE

Owner of Reg. Nos. 101,657, 833,036, and others.

For Cakes, Pies, and Cookies (Int. Cl. 30).

First use Apr. 8, 1969.

SN 329,942. Penick & Ford, Limited, Cedar Rapids, Iowa. Filed June 13, 1969.

### PENFEX

For Corn Syrup (Int. Cl. 30).

First use May 2, 1969.

SN 330,441. Anderson Packing Company, Lindsay, Calif. Filed June 19, 1969.

### T·E·A

For Fresh Citrus Fruits (Int. Cl. 31).

First use Mar. 22, 1928.

SN 330,447. Del Pero-Mondon Meat Company, Marysville, Calif. Filed June 19, 1969.

### Maverick

For Veal and Beef Steaks (Int. Cl. 29).

First use July 1963.

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SN 330,448. Del Pero-Mondon Meat Company, Marysville, Calif. Filed June 19, 1969.

### Lariat

For Chopped Beef Steaks (Int. Cl. 29).

First use November 1962.

SN 331,577. Super Food Services, Inc., Dayton, Ohio. Filed July 2, 1969.

### FAME

Owner of Reg. No. 300,045.

For Canned Vegetables, Frozen Turkeys, Bacon, Weiners, Jellies, Preserves, Tea, and Pepper (Int. Cls. 29 and 30).

First use Feb. 6, 1902.

## Class 47 — Wines

SN 285,246. Mission Hill Wines Ltd., Kelowna, British Columbia, Canada. Filed May 15, 1969.

### MISSION HILL

Owner of Canadian Reg. No. 160,951, dated Jan. 31, 1969.

For Wines (Int. Cl. 33).

SN 331,114. E. & J. Gallo Winery, Modesto, Calif. Filed June 27, 1969.

### SPANEDO

For Wines (Int. Cl. 33).

First use June 19, 1969.

SN 331,115. E. & J. Gallo Winery, Modesto, Calif. Filed June 27, 1969.

### SPANERO

For Wines (Int. Cl. 33).

First use June 19, 1969.

SN 331,116. E. & J. Gallo Winery, Modesto, Calif. Filed June 27, 1969.

### SPANITO

For Wines (Int. Cl. 33).

First use June 19, 1969.

SN 331,117. E. & J. Gallo Winery, Modesto, Calif. Filed June 27, 1969.

### SPANINO

For Wines (Int. Cl. 33).

First use June 19, 1969.

## Class 49 — Distilled Alcoholic Liquors

SN 277,896. E. Delatour & Cie., Sosiete Anonime, Christiansted, St. Croix, Virgin Islands. Filed Aug. 9, 1967.

### PLATANANAS

For Liqueur (Int. Cl. 33).

First use Dec. 15, 1965.

## Class 50 — Merchandise Not Otherwise Classified

SN 308,761. Basketville, Inc., Putney, Vt. Filed Oct. 3, 1968.

### BASKETVILLE

For Miniature Ox-Yokes With Plaque for Displaying Name and Address; Table Mats Made of Bamboo and Fibrous Strips; Decorative Novelties—Namely, Animal and Bird Figures, Miniature Umbrellas as Novelty Items, Bird Feeders Made Principally of Fibrous Strip Material; Wall Plaques; and Imitation Weighing Scales (Int. Cls. 20 and 27).

First use during 1958.

SN 311,119. Die Mesh Corporation, Pelham, N.Y. Filed Nov. 1, 1968.

### ALUMA X'MAS TREE

Applicant disclaims any rights in the words "X'mas Tree" separate and apart from the mark as shown. Owner of Reg. No. 862,271.

For Expanded Aluminum Decoration (Int. Cl. 28).

First use Sept. 2, 1968.

SN 321,618. American Flange & Manufacturing Co., Inc., New York, N.Y. Filed Mar. 13, 1969.

### POLLY-RING

For Closures for Containers and Parts Thereof, for Metal and Fibre Drums (Int. Cl. 6).

First use Sept. 15, 1967.

SN 327,021. Hydrometals, Inc., Dallas, Tex. Filed May 12, 1969.

### DYNA-KOTE

For Lithographic Printing Plates (Int. Cl. 7).

First use Jan. 16, 1969.

## Class 51 — Cosmetics and Toilet Preparations

SN 278,931. Laboratoires du Dr. N. G. Payot Etablissement, Vaduz, Liechtenstein. Filed June 23, 1967.

### ARMATEUR

Priority claimed under Sec. 44(d) on Liechtenstein Reg. No. 2,262, dated Dec. 28, 1966. The mark "Armateur" in English means "ship owner."

For Toilet Water for Men, Pre-Shave and After-Shave Lotions, and Shaving Cream (Int. Cl. 3).

SN 284,404. Steiner Products Limited, London, England. Filed Nov. 8, 1967.

### TYME

For After Shave Lotion, Shaving Foam, Hair Dressing, Hair Tonic Lotion, Hair Groom Spray, Dandruff Control Lotion, Personal Deodorant, Body Talc, and Eau de Cologne (Int. Cl. 3).

First use September 1963; in commerce December 1963.

SN 301,762. Norsk Aktieselskap Barnengens Tekniske Fabrik, Lysaker, near Oslo, Norway. Filed July 1, 1968.

### MIRABELLE

Owner of Norwegian Reg. No. 24,661, dated Feb. 26, 1937.

For Ladies' Cosmetic Products for Skin Care and Make-Up—Namely, Foundation Make-Up, Lipstick, Liquid and Powdered Eyeliner, Mascara, Manicure Creams, Skin Creams, Skin Lotions, Face and Body Powder, Face Pack, Cuticle Oil, Nail Polish, Nail Polish Remover, Nail Polish Drying Lotion, Suntan Lotion, Skin Freshener, Lip Pomade, Rouge, Facial Moisturizing Lotion, and Facial Cleansing Cream (Int. Cl. 3).

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SN 302,803. Cocoa Dermer International, Inc., Atlanta, Ga. Filed July 9, 1968.

### COCOA DERMER CREAM

Applicant disclaims the words "Cocoa Cream" apart from the mark.

For Cosmetic Cream for Use as a Skin Moisturizer (Int. Cl. 3).

First use Mar. 2, 1968.

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SN 306,840. Becton, Dickinson and Company, East Rutherford, N.J. Filed Sept. 9, 1968.

### MINI-WASH

For Cosmetic Paper Towels Impregnated With Skin Freshener and Skin Cleanser (Int. Cl. 3).

First use July 15, 1968.

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SN 315,997. Clairol Incorporated, New York, N.Y. Filed Jan. 7, 1969.

### MAXI BLONDE

Applicant disclaims "Blonde" apart from the mark as shown.

For Hair Lightening Preparations and Hair Conditioner (Int. Cl. 3).

First use Dec. 4, 1968.

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SN 321,858. Elizabeth Arden Sales Corporation, d.b.a. Elizabeth Arden, New York, N.Y. Filed Mar. 17, 1969.

### EYEWRITER

For Eye Shadow, Liquid Eye Liner, and Eye Creams (Int. Cl. 3).

First use Feb. 11, 1969.

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SN 322,833. Clairol Incorporated, New York, N.Y. Filed Mar. 26, 1969.

### BASIC WHITE

Applicant disclaims the word "White" apart from the mark as shown. Owner of Reg. Nos. 762,510, 873,950, and others.

For Powder Hair Lightener (Int. Cl. 3).

First use May 24, 1965.

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SN 323,929. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. Filed Apr. 8, 1969.

### TANNING TWINS

Applicant disclaims the word "Tanning," apart from the mark as shown, without waiver of any common law rights if any thereon.

For Sun Tan Lotions (Int. Cl. 3).

First use Mar. 7, 1968.

SN 325,547. Colgate-Palmolive Company, New York, N.Y. Filed Apr. 25, 1969.

### MOMENT IN SPAIN

Applicant disclaims exclusive rights to the word "Spain" apart from the mark as shown. Owner of Reg. Nos. 816,276 and 864,649.

For After Shave Lotion (Int. Cl. 3).

First use Apr. 15, 1969.

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SN 327,285. Luzier Incorporated, Kansas City, Mo. Filed May 14, 1969.

### MOOD MEDLEY

For Toilet Water (Int. Cl. 3).

First use on or about Dec. 17, 1968.

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SN 328,213. Zsa Zsa Limited, New York, N.Y. Filed May 28, 1969.

### FIGURE CREME

Applicant disclaims the word "Creme" apart from the mark as a whole while reserving all common law rights therein.

For Bust Cream (Int. Cl. 3).

First use Mar. 29, 1969.

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## Class 52 — Detergents and Soaps

SN 311,304. The Purdue Frederick Company, Yonkers, N.Y. Filed Nov. 4, 1968.

### BETADINE SURGI SPONGE

The word "Sponge" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 657,663 and 711,741.

For Scrubbing and Washing Cleanser (Int. Cl. 3).

First use Feb. 18, 1968.

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SN 319,482. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

### LATHEREEN

Owner of Reg. Nos. 681,037, 696,197, and others.

For Hand Soap (Int. Cl. 3).

First use 1945.

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SN 319,677. The Procter & Gamble Company, Cincinnati, Ohio. Filed Feb. 20, 1969.

### EFFECTIN

For Hair Conditioning Ingredient Incorporated in a Hair Shampoo (Int. Cl. 3).

First use Dec. 13, 1968.

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SN 323,688. Economics Laboratory, Inc., St. Paul, Minn. Filed Apr. 4, 1969.

### KDS-33

For Detergent Sanitizer for Use on Farm, Dairy, and Food Processing Equipment (Int. Cl. 3).

First use Mar. 30, 1965.

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SN 328,391. Lever Brothers Company, New York, N.Y. Filed May 27, 1969.

### NATURE GIRL

For Hair Shampoo (Int. Cl. 3).

First use May 12, 1969.

SN 328,625. Lever Brothers Company, New York, N.Y. Filed May 29, 1969.

### BIOZEN

For Enzyme Additive Incorporated as an Ingredient in a Detergent for General Washing and Cleansing (Int. Cl. 3).

First use May 12, 1969.

SN 328,626. Lever Brothers Company, New York, N.Y. Filed May 29, 1969.

### REEF

For Detergent for General Washing and Cleansing (Int. Cl. 3).

First use May 21, 1969.

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# SERVICE MARKS

## Class 100 — Miscellaneous

SN 276,371. The Valeron Corporation, Oak Park, Mich. Filed July 19, 1967.

### NCD

For Computer Assisted Design and Engineering Service To Be Used in the Manufacture of Machine Tooling (Int. Cl. 42).

First use May 18, 1967.

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SN 293,757. Thunderbird Motel Corporation, Minneapolis, Minn. Filed Mar. 20, 1968.

### HALL OF TRIBES

For Banquet Room Service (Int. Cl. 42).

First use Jan. 2, 1959.

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SN 297,953. Beef Corral Restaurants, Inc. Cleveland Heights, Ohio. Filed May 13, 1968

### BEEF CORRAL

Applicant disclaims the word "Beef" apart from the mark as shown.

For Restaurant Services (Int. Cl. 42).

First use Dec. 28, 1966.

Subj. to Intf. with SN 287,878.

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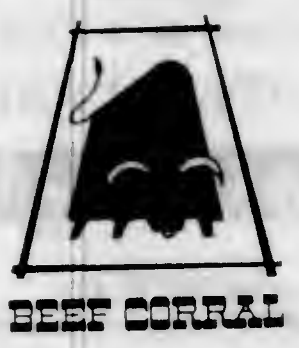
SN 297,954. Beef Corral Restaurants, Inc., Cleveland Heights, Ohio. Filed May 13, 1968



Applicant disclaims the word "Beef" apart from the mark as shown.

For Restaurant Services (Int. Cl. 42).

First use Dec. 28, 1966.

Subj. to Intf. with SN 287,878.

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SN 299,539. Alpha Kappa Psi Fraternity, Indianapolis, Ind. Filed June 3, 1968.

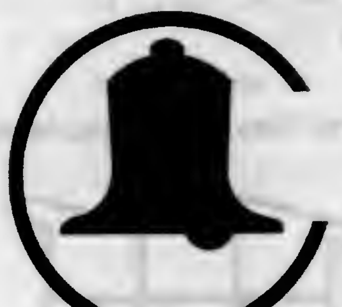
### ALPHA KAPPA PSI

Owner of Reg. No. 520,989.

For Organizing College and Alumni Chapters of the Fraternity, and Supplying Members With Jewelry and Printed Matter Bearing the Name and Official Insignia of the Fraternity (Int. Cl. 42).

First use May 20, 1905.

SN 302,223. Captain International Industries Ltd., Vancouver, British Columbia, Canada. Filed July 8, 1968.



For Leasing of Coin-Operated Merchandise Vending Machines (Int. Cl. 42).

First use May 4, 1968; in commerce May 4, 1968.

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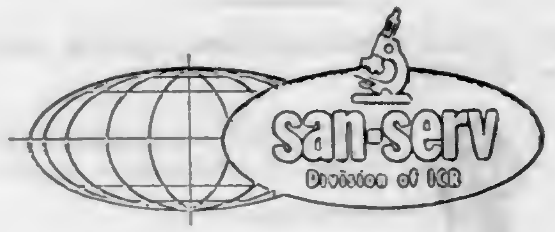
SN 302,841. Insect Control & Research, Inc., Baltimore, Md. Filed July 16, 1968



For Consultant and Laboratory Services in the Field of Food Sanitation Rendered to the Food, Drug, and Affiliated Industries (Int. Cl. 42).

First use February 1967.

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SN 308,502. Nedick's Stores, Inc., New York, N.Y. Filed Sept. 30, 1968.

### DICKENS

For Serving and Dispensing Foods and Beverages in Restaurants (Int. Cl. 42).

First use in or about December 1953.

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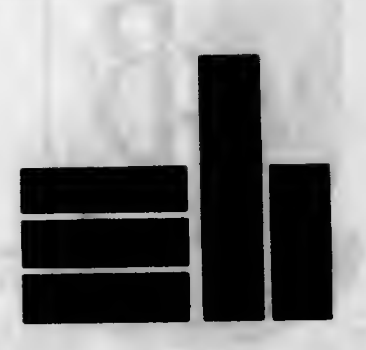
SN 309,405. Syska & Hennessy, Inc., New York, N.Y. Filed Oct. 10, 1968.



For Consulting Engineering Services in the Mechanical and Electrical Fields (Int. Cl. 42).

First use July 1968.

SN 318,130. Componoform, Inc., Cambridge, Mass. Filed Feb. 3, 1969.

**COMPONOFORM**

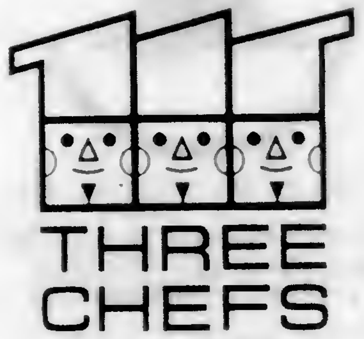
For Construction Design Consulting, Building Systems Engineering, Research and Development and Consulting on Real Estate Development Proposals (Int. Cl. 42).
First use at least as early as Aug. 7, 1967.

SN 318,844. Fred Wolferman, Inc., Kansas City, Mo. Filed Feb. 10, 1969.

**YU ALL**

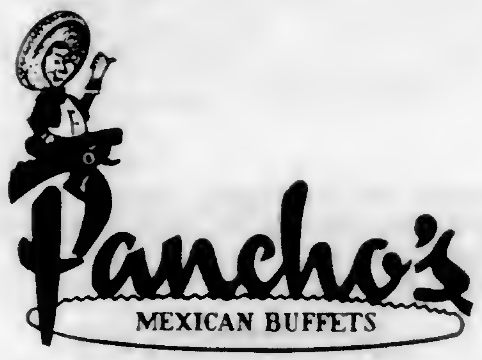
For Restaurant Services (Int. Cl. 42).
First use during 1948.

SN 319,013. Three Chefs Corporation, Annandale, Va. Filed Jan. 24, 1969.



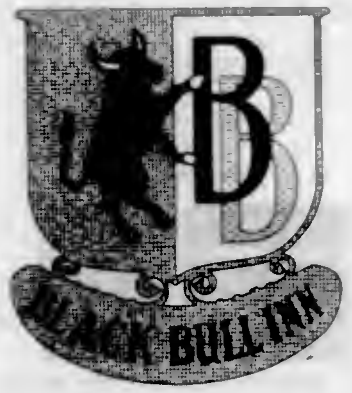
For Restaurant Service (Int. Cl. 42).
First use Sept. 11, 1961.

SN 322,734. Pancho's Mexican Buffet, Inc., El Paso, Tex. Filed Mar. 25, 1969.



No claim is made to the words "Mexican Buffet" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use Dec. 19, 1944.

SN 327,728. Raffles International, Inc., Washington, D.C. Filed May 20, 1969.



The drawing is lined for the colors gold and gray.
For Restaurant Services (Int. Cl. 42).
First use Nov. 23, 1967.

SN 328,106. Avis Rent-A-Car System, Inc., Garden City, N.Y. Filed May 26, 1969.

**AVIS**

The drawing is lined for the color red, but applicant reserves the right to depict the mark in all colors. Owner of Reg. Nos. 703,700, 849,305, and others.
For Vehicle Rental and Leasing Services (Int. Cl. 42).
First use Nov. 7, 1968.

SN 328,931. Longchamps, Inc., New York, N.Y. Filed June 3, 1969.

**THE STOCK YARDS**

For Restaurant Services (Int. Cl. 42).
First use Oct. 7, 1968.

SN 328,933. Longchamps, Inc., New York, N.Y. Filed June 3, 1969.

**Boufferie**

For Restaurant Services (Int. Cl. 42).
First use Mar. 13, 1968

SN 328,934. Longchamps, Inc., New York, N.Y. Filed June 3, 1969.

**RIVERBOAT**

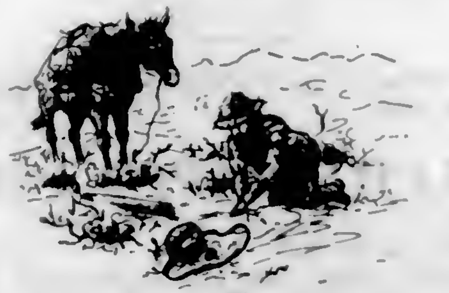
For Restaurant Services (Int. Cl. 42).
First use Apr. 15, 1964.

SN 329,043. Longchamps, Inc., New York, N.Y. Filed June 4, 1969.

**THE STEER PALACE**

For Restaurant Services (Int. Cl. 42).
First use Nov. 20, 1968.

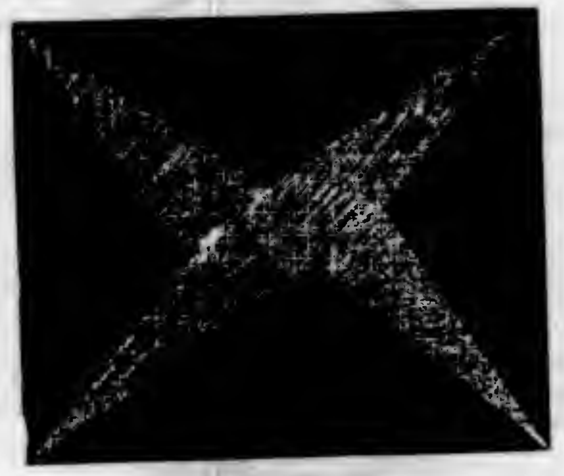
SN 329,048. Stove Pipe Wells Village, Death Valley, Calif. Filed June 4, 1969.



For Motel, Restaurant and Bar Services (Int. Cl. 42).
First use Sept. 9, 1967.

## Class 101 — Advertising and Business

SN 288,286. Denver Chamber of Commerce, Denver, Colo. Filed Jan. 8, 1968.



The mark is lined for the color gold and applicant claims this color as part of the mark.
For Association Services—Namely, Promoting the Goods and Services of Businesses and Governmental Activities Located in the Denver Area (Int. Cl. 35).
First use Nov. 1, 1966.

SN 302,768. Sy Siliman, Miami, Fla. Filed July 15, 1968.

**AUTOAUCTION SYSTEM**

For Brokerage Services for Philatelists and Sellers of Stamp Collections (Int. Cl. 36).
First use Apr. 2, 1968.

SN 302,828. Data Usage Corporation, Fort Lee, N.J. Filed July 16, 1968.

**DOCUMATIC**

For Automatic Documentation of Computer Programs and Services Relating Thereto (Int. Cl. 35).
First use July 9, 1968

SN 306,621. Albertson's Inc., Boise, Idaho. Filed Sept. 5, 1968.

**ALBERTSONS**

For Retail Grocery Store Services (Int. Cl. 35).
First use at least as early as 1939.

SN 309,214. Adray Corporation, Winston-Salem, N.C. Filed Oct. 9, 1968.

**POSTABENCH**

For Advertising Services—Namely, Providing and Leasing Outdoor Advertising Display Media in the Form of Benches Particularly Adapted for the Display of Advertising Material (Int. Cl. 35).
First use on or about Sept. 1, 1968.

SN 311,097. Information Network Corp., Phoenix, Ariz. Filed Nov. 1, 1968.

**SHARP**

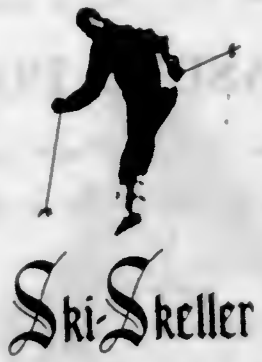
For Computer Time-Sharing Services (Int. Cl. 35).
First use July 31, 1968.

SN 313,098. W. T. Grimm & Co., Chicago, Ill. Filed Nov. 26, 1968.

**MERGERSTAT**

For Compilation and Evaluation of Financial Data for Others (Int. Cl. 35).
First use Aug. 17, 1968.

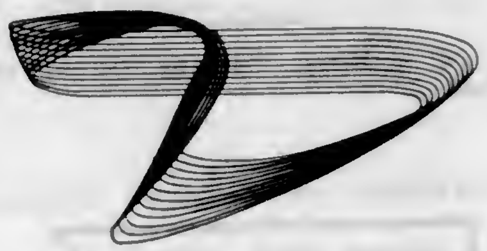
SN 315,163. Ski-Skeller, Incorporated, El Paso, Tex. Filed Dec. 24, 1968.



For Ski Shop Services (Int. Cl. 35).
First use on or about May 1, 1966.

## Class 102 — Insurance and Financial

SN 308,783. IDS New Dimensions Fund, Inc., Minneapolis, Minn. Filed Oct. 3, 1968.



For Operation of a Mutual Investment Fund (Int. Cl. 36.)
First use July 31, 1968.

SN 315,767. Industrial Valley Bank and Trust Company, Jenkintown, Pa. Filed Jan. 3, 1969.

**YOU'RE A VIP AT IVB**

For General Banking and Trust Services (Int. Cl. 36).
First use on or about Jan. 20, 1964.

SN 316,011. Industrial Valley Bank and Trust Company, Jenkintown, Pa. Filed Jan. 7, 1969.

**VIP**

For General Banking and Trust Services (Int. Cl. 36).
First use at least as early as January 1964.

SN 330,445. Continental Casualty Company, Chicago, Ill. Filed June 19, 1969.

**OUT-WRITER**

For Insurance Underwriting (Int. Cl. 36).
First use Mar. 4, 1969.

## Class 103 — Construction and Repair

SN 301,603. Helen L. Bishop, d.b.a. Poolside Distributors, Benton Harbor, Mich. Filed June 28, 1968.

**PLEASURE POOLS**

Applicant disclaims the word "Pools" apart from the mark as shown.
For Building Swimming Pools (Int. Cl. 37).
First use Mar. 23, 1966.

SN 302,921. Monday's Maid, Inc., Union City, Ind. Filed July 17, 1968.

**MONDAY'S MAID**

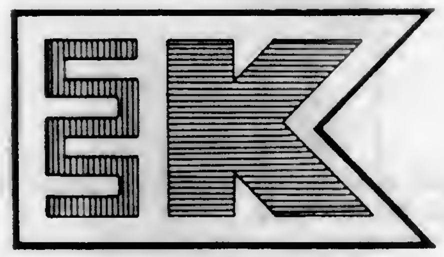
For Coin Operated Laundry Services (Int. Cl. 37).
First use at least as early as Oct. 18, 1963.

SN 320,854. Poly-Oleum Corporation, Detroit, Mich. Filed Mar. 5, 1969.

**POLY-OLEUM**

For Spraying Interior Surfaces of the Sheet Metal Body of an Automobile Body With a Rust-Proof Protective Coating (Int. Cl. 37).
First use on or about May 29, 1963.

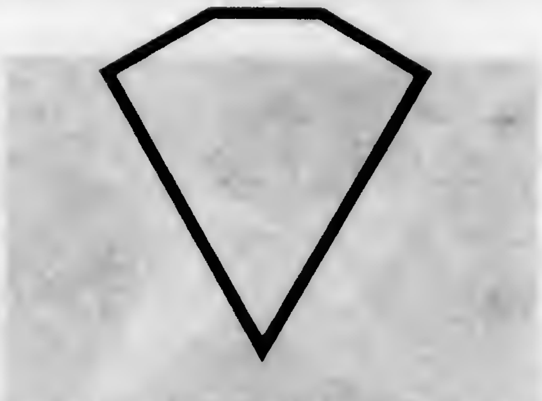
SN 327,918. S. S. Kresge Company, Detroit, Mich. Filed May 21, 1969.



The drawing is lined for the colors red and blue. Owner of Reg. Nos. 831,218, 845,181, and others.
For Automotive Service, Incluwding Repairs, Tire Maintenance, Lubrication, Brake Adjustment, and Muffler Replacement (Int. Cl. 37).
First use on or prior to Jan. 12, 1967.

## Class 105 — Transportation and Storage

SN 286,206. The Superior Oil Company, Houston, Tex. Filed Dec. 4, 1967.



For Transportation and Storage of Oil, Gas and Oilfield Equipment, and Marine Towing for Others (Int. Cl. 39).
First use at least as early as 1932.

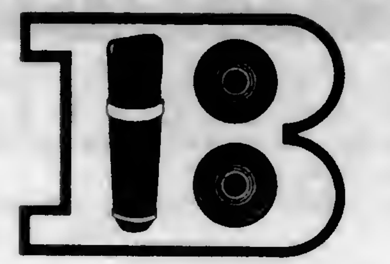
SN 311,952. Transcon Lines, Los Angeles, Calif. Filed Nov. 12, 1968.

**TRANSCON**

For Motor Freight Carrrier Services (Int. Cl. 39).
First use in or about January 1947.

## Class 107 — Education and Entertainment

SN 258,485. F. Joseph Bradley, d.b.a. Bradley Recording Co., Baltimore, Md. Filed Nov. 14, 1966.



For Recording Services on Both Tape and Phonograph Records, Including the Making of Duplication of Both of the Latter (Int. Cl. 41).
First use November 1964.

SN 280,386. Mel Blanc Associates, Inc., Hollywood, Calif. Filed Sept. 15, 1967.

**SUPERFUN**

For Radio and Television Humor Programs (Int. Cl. 41).
First use Nov. 1, 1966.

SN 281,151. Howard D. Wolfe, d.b.a. Holiday Dinner Theatre, Roanoke, Va. Filed Sept. 25, 1967.

**HOLIDAY DINNER THEATRE**

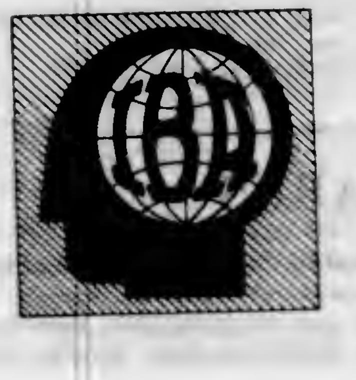
No claim is made to the words "Dinner" and "Theatre" apart from the mark as shown.
For Combination Restaurant and Theatre Services (Int. Cl. 41).
First use Sept. 11, 1967.
Subj. to Intf. with SN 292,199.

SN 281,866. Cinderella Career and Finishing Schools, Inc., Washington, D.C. Filed Oct. 5, 1967.

**STAGE I**

For Providing Classroom Training in Careers for Acting on Television, Radio, Stage, and Screen (Int. Cl. 41).
First use July 7, 1967.

SN 287,724. Computer Services Corporation, Des Moines, Iowa. Filed Dec. 28, 1967.



The drawing is lined for the color green. Owner of Reg. No. 849,980.
For Educational Services—Namely, the Offering of Courses, and the Provision of Teachers and Facilities for Same, in Administrative Systems Engineering, Computer Sciences, Business Research, and Other Special Courses Related to These Fields (Int. Cl. 41).
First use Sept. 14, 1967.

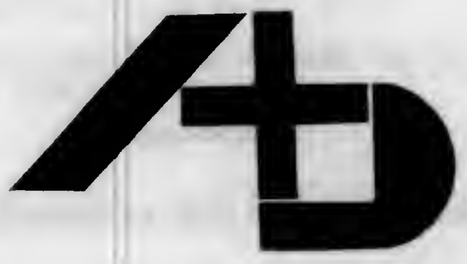
SN 300,398. Himalayan Academy, Virginia City, Nev. Filed June 14, 1968.

**Himalayan**

**Academy**

For Teaching Students in the Pursuit of Self-Realization and Leadership and in Providing Educational Research Pertinent Thereto (Int. Cl. 41).
First use 1964.

SN 301,184. Bell & Howell Company, Chicago, Ill. Filed June 24, 1968.



For Rental of Films of an Educational and Entertaining Nature (Int. Cl. 41).
First use September 1967.

SN 302,073. Gray Rocks Inn, Limited, St. Jovite, Quebec, Canada. Filed July 5, 1968.

**SNOW EAGLE**

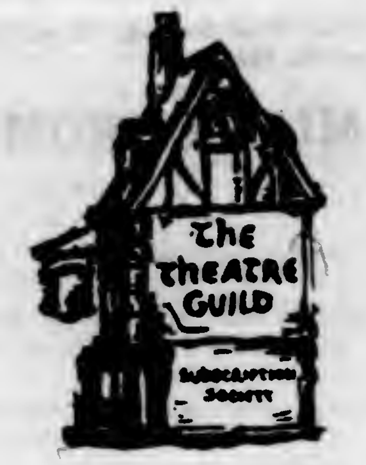
Priority claimed under Sec. 44(d) on Canadian application filed Mar. 19, 1968; Reg. No. 161,034, dated Feb. 7, 1969.
For Providing Private and Class Instructions in Skiing (Int. Cl. 41).
First use 1942; in commerce 1942.

SN 305,569. Sea-Arama, Inc., Galveston, Tex. Filed Aug. 20, 1968.

**SEA-ARAMA**

For Operating Porpoise Shows and Other Live Fish Exhibits (Int. Cl. 41).
First use July 1, 1962.

SN 305,766. The Theatre Guild, New York, N.Y. Filed Aug. 22, 1968.



Applicant makes no claim of exclusive right to use the words "Subscription Society" apart from the mark as shown. Owner of Reg. Nos. 192,663, 681,985, and others.
For Providing Theatre Ticket Subscription Services (Int. Cl. 41.
First use September 1967; in 1929, as to "The Theatre Guild" and the "Tudor House."

SN 310,473. LIN Broadcasting Corporation, Nashville, Tenn. Filed Oct. 24, 1968.

**DELTA EDUCATION CORPORATION**

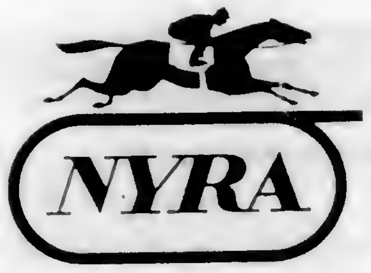
Applicant disclaims the words "Education Corporation."
For Operation of Programs for Special Education, Training, and Research (Int. Cl. 35).
First use Mar. 28, 1967.

SN 316,209. The Journal Company, Milwaukee, Wis. Filed Jan. 9, 1969.

**CASH ON THE LINE**

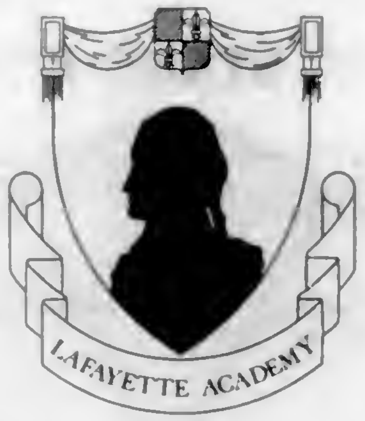
For Entertainment Services—Namely, an Audience Participation Game Rendered Through the Medium of Television (Int. Cl. 41).
First use Sept. 9, 1968.

SN 322,388. The New York Racing Association Inc., Jamaica, N.Y. Filed Mar. 21, 1969.



For Providing Facilities for Horseracing (Int. Cl. 41).
First use 1960.

SN 328,014. Lafayette Academy, Inc., Providence, R.I. Filed May 22, 1969.



For Educational Services—Namely, Occupational Correspondence Courses (Int. Cl. 41).
First use on or about Apr. 25, 1969.

## CERTIFICATION MARKS

### Class A — Goods

SN 313,245. The Wool Bureau, Incorporated, New York, N.Y. Filed Nov. 29, 1968.

**MULTI-KROME**

The mark certifies the nature and quality of material, and other characteristics of the goods, namely, fiber content, pile weight per unit area, mothproofness, secondary backing weight per unit area, dichloromethane soluble matter, and dyeing process.

For Products Made Wholly or Predominantly of Wool, Intended for Ultimate Consumers.

First use at least as early as Nov. 5, 1968.

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# TRADEMARK REGISTRATIONS ISSUED

## PRINCIPAL REGISTER

### Class 1 — Raw or Partly Prepared Materials

880,689. JR AND DESIGN. The Johnson Rubber Company. MULTIPLE CLASS (Classes 1, 12, 13, 20, 21, 23, 35, and 50). SN 268,050. Pub. 9–2–69. Filed 3–31–67.

880,690. ROSITE. Rostone Corporation. SN 283,362. Pub. 9–2–69. Filed 10–25–67.

880,691. MISCELLANEOUS DESIGN. Sumitomo Chemical Co., Ltd. SN 292,019. Pub. 9–2–69. Filed 2–27–68.

880,692. UNITEM. USM Corporation, by change of name from United Shoe Machinery Corporation. SN 293,651. Pub. 9–2–69. Filed 3–19–68.

880,693. DOMTAR. Domtar Limited. SN 298,283. Pub. 9–2–69. Filed 5–16–68.

880,694. GOLDEN EMPRESS. Empress Chinchilla Breeders Cooperative, Incorporated. SN 300,768. Pub. 9–2–69. Filed 5–7–68.

880,695. INKOVAR. Pennsylvania Industrial Chemical Corporation. SN 303,338. Pub. 9–2–69. Filed 7–22–68.

880,696. MONSON. Portland-Monson Slate Co. SN 303,540. Pub. 9–2–69. Filed 7–24–68.

880,697. ROLAWN AND DESIGN. Multi-Systems and Products Corporation. SN 311,051. Pub. 9–2–69. Filed 10–31–68.

880,698. EAGLE VALLEY. Peabody Coal Company. SN 313,195. Pub. 9–2–69. Filed 11–27–68.

### Class 2 — Receptacles

880,699. ANSCOCHROME. GAF Corporation, by change of name from General Aniline & Film Corporation. MULTIPLE CLASS (Classes 2, 26, and 38). SN 279,184. Pub. 9–2–69. Filed 8–28–67.

880,700. MAGIC GARDEN. George M. Sawyer, d.b.a. New Tomorrow Scientific Co. SN 290,892. Pub. 9–2–69. Filed 2–12–68.

880,701. SWAGELOK FERRULE-PAK. Crawford Fitting Company. SN 296,405. Pub. 9–2–69. Filed 4–24–68.

880,702. THERM-SHEEN AND DESIGN. Sweetheart Plastics, Inc. SN 308,160. Pub. 9–2–69. Filed 9–24–68.

880,703. W AND DESIGN. Wisconsin Container Corporation. SN 312,086. Pub. 9–2–69. Filed 11–13–68.

### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

880,704. FISHER. Items, Incorporated, d.b.a. Safe-T-Bone Co. SN 305,451. Pub. 9–2–69. Filed 8–19–68.

880,705. TAG-ALONG. Reliable Luggage, Inc. SN 317,614. Pub. 9–2–69. Filed 1–27–69.

### Class 4 — Abrasives and Polishing Materials

880,706. S ETC. AND DESIGN. Kugelfabrik Schulte & Co. MULTIPLE CLASS (Classes 4, 13, 19, 23, and 26). SN 298,492. Pub. 9–2–69. Filed 5–20–68.

880,707. VESTAL 1776. W. R. Grace & Co. SN 311,486. Pub. 9–2–69. Filed 11–6–68.

### Class 5 — Adhesives

880,708. OVAL DESIGN. Core-Lube, Inc. SN 296,647. Pub. 9–2–69. Filed 4–26–68.

880,709. COHEDUR. Farbenfabriken Bayer Aktiengesellschaft. SN 313,500. Pub. 9–2–69. Filed 12–3–68.

880,710. ANCHOR (DESIGN). Continental Chemical Company, Inc., d.b.a. Anchor Continental. MULTIPLE CLASS (Classes 5 and 37). SN 319,220. Pub. 9–2–69. Filed 2–17–69.

### Class 6 — Chemicals and Chemical Compositions

880,711. BERNZRITE. Bernzomatic Corporation. SN 280,688. Pub. 9–2–69. Filed 9–19–67.

880,712. ONE-A-DAY. Propper Manufacturing Company, Inc. SN 289,336. Pub. 9–2–69. Filed 1–22–68.

880,713. MISCELLANEOUS DESIGN. Sumitomo Chemical Co., Ltd. SN 292,020. Pub. 9–2–69. Filed 2–27–68.

880,714. CANTRIX. Starr Company, Incorporated. MULTIPLE CLASS (Classes 6 and 23). SN 29[illegible]1. Pub. 9–2–69. Filed 3–6–68.

880,715. HARBCO. Harbor Chemical & Engineering Corporation. SN 296,019. Pub. 9–2–69. Filed 4–19–68.

880,716. SUN POOL CHLORINE CONCENTRATE AND DESIGN. Sun Cleanser Company. SN 296,884. Pub. 9–2–69. Filed 4–29–68.

880,717. PDX. Allergan Pharmaceuticals. SN 304,566. Pub. 9–2–69. Filed 8–7–68.

880,718. SPARTA/CLEAR AND DESIGN. Major Pool Equipment Corp. SN 306,157. Pub. 9–2–69. Filed [illegible]8–68.

880,719. BATCO. BA & T Industrial Supply Co. SN 306,627. Pub. 9–2–69. Filed 9–5–68.

880,720. TREE (DESIGN). Henry Field Seed and Nursery Company. SN 308,205. Pub. 9–2–69. Filed 9–25–68.

880,721. WHITE CRYSTAL. Morton International, Inc. SN 308,390. Pub. 9–2–69. Filed 9–27–68.

880,722. INDACO. Diamond Shamrock Corporation. MULTIPLE CLASS (Classes 6, 15, and 52). SN 311,323. Pub. 9–2–69. Filed 11–5–68.

880,723. TERRATOX. Wood Treating Chemicals Co. SN 312,535. Pub. 9–2–69. Filed 11–1–68.

880,724. NO-SKIN. William Recht Co., Inc. SN 312,607. Pub. 9–2–69. Filed 11–19–68.

880,725. NO SHOW. William A. O. Gross. SN 314,072. Pub. 9–2–69. Filed 12–10–68.

### Class 7 — Cordage

880,726. BULLDOG QUALITY AND DESIGN. American Cotton Yarns, Inc. SN 300,321. Pub. 9–2–69. Filed 6–13–68.

880,727. ELITE. American Cotton Yarns, Inc. SN 318,730. Pub. 9–2–69. Filed 2–10–69.

880,728. HALO. Puritan Mills, Inc. SN 319,192. Pub. 9–2–69. Filed 2–14–69.

880,729. NRG BRAID. Puritan Mills, Inc. SN 319,193. Pub. 9–2–69. Filed 2–14–69.

880,730. LAWNDALE. Ansley, Incorporated. MULTIPLE CLASS (Classes 7, 29, and 43). SN 324,110. Pub. 9–2–69. Filed 4–10–69.

## Class 9 — Explosives, Firearms, Equipments, and Projectiles

880,731. "TECHFAB." Alsco, Inc., assignee of Chromcraft Corporation. MULTIPLE CLASS (Classes 9 and 32). SN 240,138. Pub. 9-2-69. Filed 3-4-66.

880,732. THE CATTLEMAN. The Cattleman, Inc. MULTIPLE CLASS (Classes 9 and 38). SN 290,999. Pub. 9-2-69. Filed 2-14-68.

880,733. PENNANT. Imperial Chemical Industries of Australia and New Zealand Limited. SN 316,098. Pub. 9-2-69. Filed 1-8-69.

## Class 11 — Inks and Inking Materials

880,734. STYROPAKE. Sun Chemical Corporation. SN 318,466. Pub. 9-2-69. Filed 2-5-69.

## Class 12 — Construction Materials

880,689. (See Class 1 for this trademark.)

880,735. DECOR FLOOR. Central American Development Corporation. SN 279,367. Pub. 9-2-69. Filed 8-30-67.

880,736. ILC (DESIGN). ILC Industries, Inc. MULTIPLE CLASS (Classes 12 and 39). SN 285,695. Pub. 9-2-69. Filed 1-28-67.

880,737. TUFF·LITE. H. B. Fuller Company. SN 291,729. Pub. 9-2-69. Filed 2-23-68.

880,738. SPANJOIST. A. Carol Sanford, d.b.a. Sanford Associates, assignee of Sanford Industries, Inc. SN 297,442. Pub. 9-2-69. Filed 5-6-68.

880,739. CAPITOLINE. Capitol Products of Grand Rapids, Inc. SN 297,653. Pub. 9-2-69. Filed 5-8-68.

880,740. SINOPAL. Karl Kristian Kobs Kroyer. SN 304,001. Pub, 9-2-69. Filed 7-31-68.

880,741. SONICBAR. Rysdon Products Company. SN 305,499. Pub. 9-2-69. Filed 8-19-68.

880,742. 20K. Harsco Corporation. SN 313,100. Pub. 9-2-69. Filed 11-26-68.

880,743. POMONASTONE. American Olean Tile Company, Inc. SN 314,509. Pub. 9-2-69. Filed 12-16-68.

880,744. RIMAR. Rimar Manufacturing, Inc. SN 314,619. Pub. 9-2-69. Filed 12-16-68.

880,745. DBCA AND DESIGN. Dolomite Brick Corporation of America. SN 315,151. Pub. 9-2-69. Filed 12-24-68.

880,746. PERMSTOP. Owens-Corning Fiberglas Corporation. SN 319,186. Pub. 9-2-69. Filed 2-14-69.

## Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

880,689. (See Class 1 for this trademark.)

880,706. (See Class 4 for this trademark.)

880,747. HEMCO AND DESIGN. Kenton Industries, d.b.a. Home Equipment Mfg. Company. SN 279,951. Pub. 9-2-69. Filed 9-8-67.

880,748. ROTOLOK. G.K.N. Screws & Fasteners Limited. SN 300,183. Pub. 9-2-69. Filed 6-11-68.

880,749. CABINET MASTER. Bainbridge Manufacturing, Inc. SN 301,028. Pub. 9-2-69. Filed 6-21-68.

880,750. SUPERBALL. Superior Ball Joint Corporation. SN 301,779. Pub. 9-2-69. Filed 7-1-68.

880,751. CUSH'N SOFT. Ginsey Industries, Inc. SN 302,411. Pub. 9-2-69. Filed 7-10-68.

## Class 14 — Metals and Metal Castings and Forgings

880,752. ANCROLYT. Rasselstein Aktiengesellschaft. SN 299,159. Pub. 9-2-69. Filed 5-27-68.

880,753. BARLET. American Smelting and Refining Company. SN 302,702. Pub. 9-2-69. Filed 7-15-68.

880,754. PRECISION BRAND AND DESIGN. Precision Steel·Warehouse, Inc. SN 304,709. Pub. 9-2-69. Filed 8-8-68.

880,755. MISCELLANEOUS DESIGN. Superior Castings Co. SN 307,360. Pub. 9-2-69. Filed 9-13-68.

880,756. ARCADE. Arcade Tool and Die Company. SN 308,592. Pub. 9-2-69. Filed 10-1-68.

880,757. JALTEX. Jones & Laughlin Steel Corporation. SN 309,261. Pub. 9-2-69. Filed 10-9-68.

## Class 15 — Oils and Greases

880,722. (See Class 6 for this trademark.)

880,758. LIQUILON. Oil Center Research, Inc. SN 293,883. Pub. 9-2-69. Filed 3-22-68.

880,759. TV CANDLE. Carolina Company, Inc., d.b.a. The Carolina Soap & Candle Makers. SN 301,404. Pub. 9-2-69. Filed 6-26-68.

880,760. SEAL-SKIN. Kent Industries, Inc. SN 301,451. Pub. 9-2-69. Filed 6-26-68.

880,761. AB/SO/LUBE. Marton Chemical Co., Inc. SN 302,949. Pub. 9-2-69. Filed 7-17-68.

## Class 16 — Protective and Decorative Coatings

880,762. GABBROGETTO AND DESIGN. Montecatini Edison S.p.A. MULTIPLE CLASS (Classes 16, 21, and 106). SN 271,670. Pub. 9-2-69. Filed 5-17-67.

880,763. GLASPRAY. H. B. Anderson, d.b.a. Anderson Gun Shop. SN 294,155. Pub. 9-2-69. Filed 3-26-68.

880,764. CORRECTONE. Byk-Gulden Lomberg Chemische Fabrik GmbH. SN 297,759. Pub. 9-2-69. Filed 5-9-68.

880,765. AMCRAFT. Aimcee Wholesale Corporation. MULTIPLE CLASS (Classes 16 and 29). SN 297,935. Pub. 9-2-69. Filed 5-13-68.

880,766. KRAZ-E-KOTE. Cunningham Art Products, Inc. SN 307,983. Pub. 9-2-69. Filed 9-23-68.

## Class 18 — Medicines and Pharmaceutical Preparations

880,767. VITA PLUS N-RICHER AND DESIGN. Vita Plus Corporation. SN 290,037. Pub. 9-2-69. Filed 1-31-68.

880,768. MEDI-MATIC. Naremco, Inc. SN 291,279. Pub. 9-2-69. Filed 2-16-68.

880,769. VITAMINO. Hart-Delta, Inc. SN 293,824. Pub. 9-2-69. Filed 3-21-68.

880,770. OYSTAMINS. Oyster Products Company. SN 295,159. Pub. 9-2-69. Filed 4-8-68.

880,771. TETRA-SAL. Salsbury Laboratories. SN 296,873. Pub. 9-2-69. Filed 4-29-68.

880,772. RACHELAMINE. Rachelle Laboratories, Inc. SN 298,861. Pub. 9-2-69. Filed 5-22-68.

880,773. NIRAMINE. Rachelle Laboratories, Inc. SN 298,862. Pub. 9-2-69. Filed 5-22-68.

880,774. FLUOROPLEX. Allergan Pharmaceuticals. SN 301,227. Pub. 9-2-69. Filed 6-24-68.

880,775. VITA PLUS SILO-N-RICH. Vita Plus Corporation. SN 301,562. Pub. 9-2-69. Filed 6-27-68.

880,776. R AND DESIGN. Block Drug Company, Inc. SN 301,817. Pub. 9-2-69. Filed 7-2-68.

880,777. TINE TEST. American Cyanamid Company. SN 302,032. Pub. 9-2-69. Filed 7-5-68.

880,778. AMPHICOL, Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 308,074. Pub. 9-2-69. Filed 9-24-68.

880,779. THYROLAR. Armour Pharmaceutical Company. SN 314,172. Pub. 9-2-69. Filed 12-11-68.

## Class 19 — Vehicles

880,706. (See Class 4 for this trademark.)

880,780. KEN-CRAFT AND DESIGN. Ken-Craft Products, Inc. SN 295,742. Pub. 9-2-69. Filed 4-16-68.

880,781. AZTEC. A To Z Rental, Inc. MULTIPLE CLASS (Classes 19, 22, and 50). SN 298,995. Pub. 9-2-69. Filed 5-24-68.

880,782. SKI-CONDOR. Ettore Lombardi. SN 303,058. Pub. 9-2-69. Filed 7-18-68.

880,783. HESSE. The Hesse Corporation. SN 303,307. Pub. 9-2-69. Filed 7-22-68.

880,784. BECKY THATCHER. United Marine Co., Inc. SN 303,549. Pub. 9-2-69. Filed 7-24-68.

880,785. UNIWATE. Uniwate Corporation, d.b.a. Uni-Wate Corp. SN 304,167. Pub. 9-2-69. Filed 8-1-68.

880,786. TRAVELEZE. Traveleze Trailer Co., Inc. SN 304,520. Pub. 9-2-69. Filed 8-6-68.

880,787. AZTEC AND DESIGN. A TO Z Rental, Inc. MULTIPLE CLASS (Classes 19, 22, and 50). SN 304,659. Pub. 9-2-69. Filed 8-8-68.

880,788. AZTEC AND DESIGN. A to Z Rental, Inc. MULTIPLE CLASS (Classes 19, 22, and 50). SN 304,660. Pub. 9-2-69. Filed 8-8-68.

880,789. LAMITRON. Meteor Research Ltd. SN 305,749. Pub. 9-2-69. Filed 8-22-68.

880,790. SKIROULE. Skiroule Ltee. SN 306,956. Pub. 9-2-69. Filed 9-9-68.

880,791. MALLARD. Mallard Coach Corporation. SN 307,216. Pub. 9-2-69. Filed 9-12-68.

880,792. NORDIC. Bombardier Limited. SN 307,415. Pub. 9-2-69. Filed 9-16-68.

880,793. HEIL UNI-HAUL. The Heil Co. SN 308,106. Pub. 9-2-69. Filed 9-24-68.

880,794. BESTOP. Bestop Manufacturing Co., Inc. SN 309,020. Pub. 9-2-69. Filed 10-7-68.

880,795. GTR GRABBER AND DESIGN. The General Tire & Rubber Company. SN 310,886. Pub. 9-2-69. Filed 10-30-68.

880,796. GTR STRIDER 5 AND DESIGN. The General Tire & Rubber Company. SN 310,887. Pub. 9-2-69. Filed 10-30-68.

880,797. GTR STRIDER 3 AND DESIGN. The General Tire & Rubber Company. SN 310,888. Pub. 9-2-69. Filed 10-30-68.

880,798. ROLOC SYSTEM. Sun Shipbuilding and Dry Dock Company. SN 310,933. Pub. 9-2-69. Filed 10-30-68.

880,799. GTR GROOVER. The General Tire & Rubber Company. SN 311,478. Pub. 9-2-69. Filed 11-6-68.

## Class 20 — Linoleum and Oiled Cloth

880,689. (See Class 1 for this trademark.)

880,800. WONDA TILE. Gard-Tex Inc. SN 286,260. Pub. 9-2-69. Filed 12-5-67.

## Class 21 — Electrical Apparatus, Machines, and Supplies

880,689. (See Class 1 for this trademark.)

880,762. (See Class 16 for this trademark.)

880,801. IR AND DESIGN. International Rectifier Corporation. SN 290,496. Pub. 9-2-69. Filed 2-7-68.

880,802. TRINITRON. Sony Corporation. SN 290,905. Pub. 9-2-69. Filed 2-12-68.

880,803. BAND-O-CODE. Storm Products Co. SN 295,383. Pub. 9-2-69. Filed 4-10-68.

880,804. ALPHAMATIC. Television Presentations, Inc. SN 294,696. Pub. 9-2-69. Filed 4-1-68.

880,805. PRO REVERB-AMP. Columbia Broadcasting System, Inc. SN 297,500. Pub. 9-2-69. Filed 5-7-68.

880,806. TWIN REVERB-AMP. Columbia Broadcasting System, Inc. SN 297,499. Pub. 9-2-69. Filed 5-7-68.

880,807. KNIGHT. Knight Armature Manufacturing Incorporated. SN 298,944. Pub. 9-2-69. Filed 5-23-68.

880,808. MEGPOT. Electrospace Corporation. SN 299,960. Pub. 9-2-69. Filed 6-7-68.

880,809. M AND DESIGN. Motorola, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 301,003. Pub. 9-2-69. Filed 6-21-68.

880,810. MOTOROLA. Motorola, Inc. MULTIPLE CLASS (Classes 21 and 26). SN 301,004. Pub. 9-2-69. Filed 6-21-68.

880,811. DATAPAX. Datapax Computer Systems Corporation. SN 302,494. Pub. 9-2-69. Filed 7-11-68.

880,812. BRANSONIC. Branson Instruments, Incorporated. SN 302,913. Pub. 9-2-69. Filed 7-17-68.

880,813. CHEM-FAB AND DESIGN. Chem-Fab, Corp. SN 303,140. Pub. 9-2-69. Filed 7-19-68.

880,814. SACE. San Angelo Communications & Electronics, Inc. SN 307,673. Pub. 9-2-69. Filed 9-18-68.

880,815. CHARLES. Charles Equipment Company. MULTIPLE CLASS (Classes 21 and 23). SN 313,858. Pub. 9-2-69. Filed 12-9-68.

## Class 22 — Games, Toys, and Sporting Goods

880,781. (See Class 19 for this trademark.)

880,787. (See Class 19 for this trademark.)

880,788. (See Class 19 for this trademark.)

880,816. PAIPO. Con W. Colburn, d.b.a. Newport Paipo, assignee of Newport Paipo. SN 291,519. Pub. 9-2-69. Filed 2-20-68.

880,817. ON-DECK. On-Deck, Inc. SN 292,004. Pub. 9-2-69. Filed 2-27-68.

880,818. ROUGH-RIDER. Gorman Golf Products, Inc. SN 294,835. Pub. 9-2-69. Filed 4-3-68.

880,819. CARABELLA. Dart Industries Inc., by change of name from Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 295,255. Pub. 9-2-69. Filed 4-9-68.

880,820. COSTA BRAVA. Dart Industries Inc., by change of name from Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 298,248. Pub. 9-2-69. Filed 5-15-68.

880,821. FORMFIT. The Donner Mountain Corporation. SN 299,953. Pub. 9-2-69. Filed 6-7-68.

880,822. ANGLERS ANISE AND DESIGN. Jack A. Cronan, d.b.a. Nordon Associates. SN 300,565. Pub. 9-2-69. Filed 6-17-68.

880,823. ASTRO-GYM. Peter Ottaviani. SN 309,818. Pub. 9-2-69. Filed 10-17-68.

880,824. LITTLE FUN BUGS. Mattel, Inc. SN 310,397. Pub. 9-2-69. Filed 10-24-68.

880,825. BEELINE. Samuel Lombardo. SN 310,574. Pub. 9-2-69. Filed 10-25-68.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

880,689. (See Class 1 for this trademark.)

880,706. (See Class 4 for this trademark.)

880,714. (See Class 6 for this trademark.)

880,815. (See Class 21 for this trademark.)

880,826. LIF-JIB AND DESIGN. Kelley Company, Inc. SN 255,445. Pub. 9–2–69. Filed 9–29–66.

880,827. CONIKRON. Fabrique de Machines Mikron S.A. SN 282,897. Pub. 9–2–69. Filed 10–19–67.

880,828. STAR DESIGN. Sperry Rand Corporation. SN 286,378. Pub. 9–2–69. Filed 12–6–67.

880,829. ACTION. Day/Ton Progress Corp. SN 286,513. Pub. 9–2–69. Filed 12–8–67.

880,830. DYNAVOLVE. Dynavolve Controls, Incorporated. SN 286,650. Pub. 9–2–69. Filed 12–11–67.

880,831. DI–22. Smith International, Inc., by merger and change of name from Drilco Tools, Inc. SN 287,529. Pub. 9–2–69. Filed 12–26–67.

880,832. F 20/20 AND DESIGN. Lily-Tulip Cup Corporation. SN 289,704. Pub. 9–2–69. Filed 1–26–68.

880,833. GET A HORSE WHEEL HORSE, OF COURSE. Wheel Horse Products, Inc. SN 290,924. Pub. 9–2–69. Filed 2–12–68.

880,834. SKY-LEVATOR. Breeze Corporations, Inc. SN 298,790. Pub. 9–2–69. Filed 5–22–68.

880,835. MISCELLANEOUS DESIGN. Air Dynamics Corporation. SN 299,288. Pub. 9–2–69. Filed 5–29–68.

880,836. KAHLE. Kahle Engineering Co. SN 301,346. Pub. 9–2–69. Filed 6–25–68.

880,837. DUALFORM. B. Elliott Incorporated. SN 301,507. Pub. 9–2–69. Filed 6–27–68.

880,838. HEX-ROD. Bimba Manufacturing Company. SN 302,485. Pub. 9–2–69. Filed 7–11–68.

880,839. ELEPON. C.D.M. Company, Ltd. SN 302,590. Pub. 9–2–69. Filed 7–12–68.

880,840. PEDDINGHAUS. Paul Ferd. Peddinghaus. SN 303,067. Pub. 9–2–69. Filed 7–18–68.

880,841. THERMARKER. Thermark Corporation. SN 303,364. Pub. 9–2–69. Filed 7–22–68.

880,842. NEO-LOK. Corona Forge Company. SN 303,775. Pub. 9–2–69. Filed 7–29–68.

880,843. HSI AND DESIGN. Handling Services, Inc. SN 304,091. Pub. 9–2–69. Filed 8–1–68.

880,844. THE LEAHY. The Deister Concentrator Company, Inc. SN 304,593. Pub. 9–2–69. Filed 8–7–68.

880,845. 1+1. Arthur G. McKee & Company. SN 304,803. Pub. 9–2–69. Filed 8–9–68.

880,846. CENTURBO. Mechanical Equipment Company, Inc. SN 305,055. Pub. 9–2–69. Filed 8–13–68.

880,847. CHLOROZONE. Chloro-Guard Electronics, Inc. SN 305,920. Pub. 9–2–69. Filed 8–26–68.

880,848. RAKE-AWAY. Mechanize, Inc. SN 305,950. Pub. 9–2–69. Filed 8–26–68.

880,849. VAC 'N BAG IT. Air Rake Manufacturing Corporation. SN 306,320. Pub. 9–2–69. Filed 8–30–68.

880,850. STABILAIRE. FMC Corporation. SN 306,658. Pub. 9–2–69. Filed 9–5–68.

880,851. EVERSMAN. The Eversman Mfg. Company. SN 306,901. Pub. 9–2–69. Filed 9–9–68.

880,852. BIBUN. Bibun Machine Construction Co., Ltd. SN 307,305. Pub. 9–2–69. Filed 9–13–68.

880,853. SNO-TRIK. Sno-Trik Company. SN 309,107. Pub. 9–2–69. Filed 10–7–68.

880,854. AUCTOR. Ing. C. Olivetti & C., S.p.A. SN 318,860. Pub. 9–2–69. Filed 2–3–69.

880,855. PERM-A-GAUGE. Trident Industries, Inc., assignee, by mesne assignment, of Trident Industries, Inc. SN 319,977. Pub. 9–2–69. Filed 2–24–69.

## Class 26 — Measuring and Scientific Appliances

880,699. (See Class 2 for this trademark.)

880,706. (See Class 4 for this trademark.)

880,809. (See Class 21 for this trademark.)

880,810. (See Class 21 for this trademark.)

880,856. BANTAM 75 AND DESIGN. Capital Controls Company, Inc., d.b.a. Capital Controls Co., Inc. SN 290,378. Pub. 9–2–69. Filed 2–6–68.

880,857. KALIMAT. W. H. Joens & Co. GmbH. SN 290,614. Pub. 9–2–69. Filed 2–8–68.

880,858. JOEDISTAT. W. H. Joens & Co. GmbH. SN 290,615. Pub. 9–2–69. Filed 2–8–68.

880,859. LITE-A-LERT. Weingarden Enterprises, Inc. SN 290,676. Pub. 9–2–69. Filed 2–8–68.

880,860. SK AND DESIGN. Wilhelm Anger OHG. SN 294,338. Pub. 9–2–69. Filed 3–27–68.

880,861. S (DESIGN). Sellstrom Manufacturing Co. SN 294,784. Pub. 9–2–69. Filed 4–3–68.

880,862. ARL AND DESIGN. Applied Research Laboratories, Inc. SN 295,800. Pub. 9–2–69. Filed 4–17–68.

880,863. FASTEX. Illinois Tool Works Inc. SN 306,568. Pub. 9–2–69. Filed 9–4–68.

880,864. CAROLINA BIOLOGICAL SUPPLY CO. ETC. AND DESIGN. Carolina Biological Supply Company. SN 306,643. Pub. 9–2–69. Filed 9–5–68.

880,865. DYNAMATIC. Eaton Yale & Towne Inc. SN 309,443. Pub. 9–2–69. Filed 10–11–68.

880,866. TOSBAC. Tokyo Shibaura Electric Co. Ltd. SN 310,368. Pub. 9–2–69. Filed 10–23–68.

880,867. TYPE-A-SCOPE. Electro-Learner Corporation. SN 312,881. Pub. 9–2–69. Filed 11–22–68.

880,868. ELMARON. Ernst Leitz, G.m.b.H. SN 318,038. Pub. 9–2–69. Filed 1–31–69.

880,869. EYE/LITE. Eye Kraft Optical, Inc. SN 318,897. Pub. 9–2–69. Filed 2–11–69.

## Class 27 — Horological Instruments

880,870. OBREY. Obrey. MULTIPLE CLASS (Classes 27 and 28). SN 307,856. Pub. 9–2–69. Filed 9–20–68.

880,871. SPACEVIEW. Bulova Watch Company, Inc. SN 312,022. Pub. 9–2–69. Filed 11–13–68.

880,872. HATTIE CARNEGIE. Edward Isaacs and Martin J. Ryan (joint owners). SN 316,649. Pub. 9–2–69. Filed 1–15–69.

## Class 28 — Jewelry and Precious-Metal Ware

880,870. (See Class 27 for this trademark.)

880,873. SUFFOLK. Textron Inc. SN 319,211. Pub. 9–2–69. Filed 2–14–69.

880,874. SUFFOLK AND CASTLE DESIGN. Textron Inc. SN 319,212. Pub. 9–2–69. Filed 2–14–69.

## Class 29 — Brooms, Brushes, and Dusters

880,730. (See Class 7 for this trademark.)

880,765. (See Class 16 for this trademark.)

880,875. PERFECT HOUSEKEEPING IS AN ART. Leon J. O'Brien, d.b.a. Manchester Leather Co. SN 306,501. Pub. 9–2–69. Filed 9–3–68.

## Class 31 — Filters and Refrigerators

880,876. MIC AND DESIGN. Machine Ice Co. SN 289,998. Pub. 9–2–69. Filed 1–31–68.

880,877. KRACK. Krack Corporation. MULTIPLE CLASS (Classes 31 and 34). SN 293,281. Pub. 9–2–69. Filed 3–14–68.

880,878. AIR RITE AND DESIGN. Air-Rite, Inc. SN 304,194. Pub. 9–2–69. Filed 8–2–68.

## Class 32 — Furniture and Upholstery

880,731. (See Class 9 for this trademark.)

880,879. COMFO SLEEP AND DESIGN. Comfo Corporation. SN 296,646. Pub. 9–2–69. Filed 4–26–68.

880,880. CITATION AND DESIGN. Alsco, Inc. SN 307,621. Pub. 9–2–69. Filed 9–18–68.

880,881. HOLZAPFEL AND DESIGN. Christian Holzaepfel KG. SN 311,113. Pub. 9–2–69. Filed 11–1–68.

880,882. PORT-A-BAR. Port-A-Crib, Inc. SN 317,099. Pub. 9–2–69. Filed 1–21–69.

880,883. KCSI. KCS Industries Inc. MULTIPLE CLASS (Classes 32 and 50). SN 317,174. Pub. 9–2–69. Filed 1–22–69.

880,884. HARTER H AND DESIGN. Harter Corporation. SN 321,218. Pub. 9–2–69. Filed 3–10–69.

880,885. KARPETWALL. Modern Partitions, Inc. SN 321,248. Pub. 9–2–69. Filed 3–10–69.

880,886. DI AND DESIGN. D'Altrui Industries. SN 321,781. Pub. 9–2–69. Filed 3–14–69.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

880,877. (See Class 31 for this trademark.)

880,887. POLYWELD. Weld Mold Company. SN 289,850. Pub. 9–24–68. Filed 1–29–68.

880,888. SUPERFLAME AND FLAME DESIGN. Atlantic Richfield Company, by merger from Sinclair Refining Company. SN 294,416. Pub. 9–2–69. Filed 3–28–68.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

880,689. (See Class 1 for this trademark.)

## Class 36 — Musical Instruments and Supplies

880,889. MISCELLANEOUS DESIGN. Lanier Electronics Laboratory, Inc. SN 284,209. Pub. 9–2–69. Filed 11–6–67.

880,890. JBL AND DESIGN. James B. Lansing Sound, Inc. SN 310,568. Pub. 9–2–69. Filed 10–25–68.

880,891. REMINDER. Stenocord Corporation. SN 322,918. Pub. 9–2–69. Filed 3–26–69.

880,892. QATRON. Qatron Corporation. SN 324,095. Pub. 9–2–69. Filed 4–9–69.

## Class 37 — Paper and Stationery

880,710. (See Class 5 for this trademark.)

880,893. MED-I-WILL. Torrence Page. SN 294,846. Pub. 9–2–69. Filed 4–3–68.

880,894. CLOPANE SHRINK-TITE. Clopay Corporation. SN 295,114. Pub. 9–2–69. Filed 4–8–68.

880,895. WRITE-A-ROUND. Chrono Graphics, Ltd. SN 297,385. Pub. 9–2–69. Filed 5–6–68.

880,896. COMBINATION PAPERBOARD AND DESIGN. American Paper Institute, Inc. SN 301,717. COLLECTIVE MARK. Pub. 9–2–69. Filed 7–1–68.

880,897. AVAR. Avar, Inc. SN 303,975. Pub. 9–2–69. Filed 7–31–68.

880,898. SNAP-WRAP. Handi-Bag Corporation. SN 308,893. Pub. 9–2–69. Filed 10–4–68.

880,899. CLEARVIEW. Studnite Corporation. SN 313,243. Pub. 9–2–69. Filed 11–29–68.

880,900. PUPKIN. Mary Cooney Howard. SN 313,533. Pub. 9–2–69. Filed 11–4–68.

880,901. SYNO-PLY. International Paper Company. SN 320,157. Pub. 9–2–69. Filed 2–26–69.

880,902. FACELLE AND DESIGN. International Paper Company, assignee of Facelle Company Limited. MULTIPLE CLASS (Classes 37 and 39). SN 320,301. Pub. 9–2–69. Filed 2–27–69.

880,903. MISCELLANEOUS DESIGN. Xerox Corporation. SN 322,238. Pub. 9–2–69. Filed 3–20–69.

880,904. CIRCULAR DESIGN. Xerox Corporation. SN 322,393. Pub. 9–2–69. Filed 3–21–69.

880,905. TARGET (DESIGN). Xerox Corporation. SN 322,394. Pub. 9–2–69. Filed 3–21–69.

## Class 38 — Prints and Publications

880,699. (See Class 2 for this trademark.)

880,732. (See Class 9 for this trademark.)

880,736. (See Class 12 for this trademark.)

880,906. IT'S YOUR FUTURE WHAT ARE YOU DOING WITH IT? AND DESIGN. George W. Canfield. MULTIPLE CLASS (Classes 38 and 100). SN 237,082. Pub. 9–2–69. Filed 1–24–66.

880,907. KAISER. Kaiser Aluminum & Chemical Corporation. SN 246,319. Pub. 9–2–69. Filed 5–23–66.

880,908. STANDARD. Standard & Poor's Corporation. SN 255,128. Pub. 9–2–69. Filed 9–26–66.

880,909. EASY EYE AND DESIGN. Lancer Books, Inc. SN 286,069. Pub. 9–2–69. Filed 12–4–67.

880,910. MISCELLANEOUS DESIGN. Eastman Kodak Company. SN 291,253. Pub. 9–2–69. Filed 2–16–68.

880,911. NEW YORK SCENES AND DESIGN. Enslow Publishing Corp. SN 295,022. Pub. 9–2–69. Filed 4–5–68.

880,912. SANDOZ PANORAMA. Sandoz, Inc. SN 295,179. Pub. 9–2–69. Filed 4–8–68.

880,913. VIEWPOINT FROM MID-AMERICA. William H. Rentschler. SN 296,042. Pub. 9–2–69. Filed 4–19–68.

880,914. 25. Young World Corporation, assignee of Marketing Dynamics Incorporated. SN 298,137. Pub. 9–2–69. Filed 5–14–68.

880,915. SKYSLIDE. Trippensee Planetarium Co., Inc. SN 299,504. Pub. 9–2–69. Filed 5–31–68.

880,916. SELECTRIC. The Henderson Business Service, Limited. SN 298,662. Pub. 9–2–69. Filed 3–14–68.

880,917. RETORT AND DESIGN. Thiokol Chemical Corporation. SN 299,886. Pub. 9–2–69. Filed 6–6–68.

880,918. UNIFLAME. Commercial Decal, Inc. SN 302,392. Pub. 9–2–69. Filed 7–10–68.

880,919. AUDIT CONTROLS. Audit Controls, Inc. SN 303,563. Pub. 9–2–69. Filed 7–25–68.

880,920. CONSULTANTS COMMUNIQUE. The National Cash Register Company. SN 304,702. Pub. 9–2–69. Filed 8–8–68.

880,921. UN-BIRTHDAY NON-ANNIVERSARY UN-ORTHODOX JILM AND DESIGN. Jilm Co. SN 305,048. Pub. 9–2–69. Filed 8–13–68.

880,922. PENTHOUSE. Penthouse Publications Limited. SN 305,841. Pub. 9-2-69. Filed 7-25-68.

880,923. PRAIRIE FARMER. The Prairie Farmer Publishing Company. SN 306,074. Pub. 9-2-69. Filed 8-27-68.

880,924. C.M.R. The Certified Medical Representatives Institute, Inc. MULTIPLE CLASS (Classes 38 and 107). SN 306,295. Pub. 9-2-69. Filed 8-30-68.

880,925. DESIGN REPRESENTATION OF CROWN AND CHINCHILLA. Empress Chinchilla Breeders Cooperative, Inc. SN 306,763. Pub. 9-2-69. Filed 9-6-68.

880,926. RURAL AND URBAN ROADS. The Reuben H. Donnelley Corporation. SN 308,097. Pub. 9-2-69. Filed 9-24-68.

880,927. TELEPHONE (DESIGN). Hello Corporation of Pennsylvania. SN 309,041. Pub. 9-2-69. Filed 10-7-68.

880,928. HELLO SHOP. Hello Corporation of Pennsylvania. SN 309,043. Pub. 9-2-69. Filed 10-7-68.

880,929. READ-STUDY-THINK. Xerox Corporation. SN 309,922. Pub. 9-2-69. Filed 10-17-68.

880,930. BOECKH AND DESIGN. The American Appraisal Company. SN 310,999. Pub. 9-2-69. Filed 10-31-68.

880,931. DENTAL HIGHLIGHTS AND DESIGN. Scientific Communications, Inc. SN 313,764. Pub. 9-2-69. Filed 12-2-68.

880,932. SONI-FAX. Kleer-Vu Industries, Inc. SN 314,937. Pub. 9-2-69. Filed 12-20-68.

880,933. METRO BEAT. Hamilton Publishing Company, Inc. SN 314,969. Pub. 9-2-69. Filed 12-20-68.

880,934. NATIONAL GEOGRAPHIC SOCIETY AND DESIGN. National Geographic Society. SN 315,092. Pub. 9-2-69. Filed 12-23-68.

880,935. SPORTS MERCHANDISER. W. R. C. Smith Publishing Company. SN 315,688. Pub. 9-2-69. Filed 12-16-68.

880,936. HOGARTH PRESS H AND DESIGN. John Patrick O'Connell. SN 316,121. Pub. 9-2-69. Filed 1-8-69.

880,937. IE INDUSTRIAL ENGINEERING. American Institute of Industrial Engineers, Inc. SN 317,520. Pub. 9-2-69. Filed 1-27-69.

880,938. KIRTLANDIA. The Cleveland Museum of Natural History. SN 318,291. Pub. 9-2-69. Filed 2-4-69.

880,939. EDUCATE. Gellert Publishing Corporation. SN 319,157. Pub. 9-2-69. Filed 2-14-69.

880,940. GAINEY'S CONSTRUCTION NEWSLETTER. McGraw-Hill, Inc. SN 319,933. Pub. 9-2-69. Filed 2-24-69.

880,941. LIFE ON THE LAST FRONTIER. Alaska Northwest Publishing Company. SN 322,538. Pub. 9-2-69. Filed 3-24-69.

880,942. PACKERHEAD PRESS. Concrete Pipe Machinery Company. SN 322,835. Pub. 9-2-69. Filed 3-26-69.

880,943. INTERNATIONAL PHARMACEUTICAL ABSTRACTS. American Society of Hospital Pharmacists, Inc. SN 323,219. Pub. 9-2-69. Filed 4-2-69.

880,944. FREEDOM. Jerome Wolk, d.b.a. Freedom Greeting Card Company. SN 323,504. Pub. 9-2-69. Filed 4-2-69.

880,945. BLACK CAT. Zorina Walker, d.b.a. The Black Cat Publishing Co. SN 323,869. Pub. 9-2-69. Filed 4-7-69.

880,946. BETTY AND VERONICA. Close-Up, Inc. SN 323,940. Pub. 9-2-69. Filed 4-8-69.

880,947. THE GUILDEALER. Oliver Tire & Rubber Company. SN 324,140. Pub. 9-2-69. Filed 4-10-69.

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## Class 39 — Clothing

880,902. (See Class 37 for this trademark.)

880,948. (See Class 40 for this trademark.)

880,949. (See Class 40 for this trademark.)

880,950. (See Class 40 for this trademark.)

880,951. GERTRUDE DAVENPORT. Gertrude Davenport Inc. SN 299,952. Pub. 9-2-69. Filed 6-7-68.

880,952. MASADA AND DESIGN. Drummond Knitwear Co. Ltd. SN 306,048. Pub. 9-2-69. Filed 8-27-68.

880,953. VIA IMPORTO. Howard B. Samberg, d.b.a. Huston Shoes. SN 312,612. Pub. 9-2-69. Filed 11-19-68.

880,954. PANTASIAS. Sue J Inc. SN 313,034. Pub. 9-2-69. Filed 11-25-68.

880,955. DURAFAB AND DESIGN. Durafab Disposables, Inc. SN 322,277. Pub. 9-2-69. Filed 3-20-69.

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## Class 40 — Fancy Goods, Furnishings, and Notions

880,948. COURIER. Courier Products, Inc. SN 305,813. Pub. 9-2-69. Filed 8-23-68.

880,949. TAN-FAN. Atherton Associates, Inc. SN 317,300. Pub. 9-2-69. Filed 1-23-69.

880,950. FREEBOOTER. Russell F. Killoran. SN 322,028. Pub. 9-2-69. Filed 3-18-69.

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## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

880,956. WONDER WEAR. American Associated Companies, Inc. SN 309,537. Pub. 9-2-69. Filed 10-14-68.

880,957. PRO-TEC. John Boyle and Company, Incorporated. SN 312,178. Pub. 9-2-69. Filed 11-14-68.

880,958. MISCELLANEOUS DESIGN. P. Kaufmann, Inc. SN 322,993. Pub. 9-2-69. Filed 3-27-69.

880,959. EMPRESS 100. The B. F. Goodrich Company. SN 323,100. Pub. 9-2-69. Filed 3-28-69.

880,960. CENTERFILL. Centerfill Aktieselskab (Nordisk Fjerfabrik, Aktieselskab). SN 324,041. Pub. 9-2-69. Filed 4-9-69.

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## Class 43 — Thread and Yarn

880,730. (See Class 7 for this trademark.)

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## Class 44 — Dental, Medical, and Surgical Appliances

880,961. STYLIZED E (DESIGN). Becton, Dickinson and Company, by merger from Electrodyne Company, Inc. SN 255,301. Pub. 9-2-69. Filed 9-28-66.

880,962. BACTRAP. Walter E. Jordan, d.b.a. Delta Laboratories. SN 300,085. Pub. 9-2-69. Filed 6-10-68.

880,963. SUNBEAM. Sunbeam Corporation. SN 300,984. Pub. 9-2-69. Filed 6-20-68.

880,964. DESIGN OF E IN BLOCK. Encore, Inc. SN 301,728. Pub. 9-2-69. Filed 7-1-68.

880,965. KOTIQUE. Kimberly-Clark Corporation. SN 318,365. Pub. 9-2-69. Filed 2-5-69.

880,966. BASODUR. Espe Fabrik Pharmazeutischer Praparate, G.m.b.H. SN 318,640. Pub. 9-2-69. Filed 2-7-69.

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## Class 45 — Soft Drinks and Carbonated Waters

880,967. CH. DEMEL'S SOHNE. Ch. Demel's Söhne. MULTIPLE CLASS (Classes 45, 46, 47, and 49). SN 292,150. Pub. 9-2-69. Filed 2-29-68.

880,968. SUPER A ASSOCIATED AND DESIGN. Associated Food Stores, Inc. SN 303,389. Pub. 9-2-69. Filed 7-23-68.

880,969. HAWAIIAN PUNCH. R. J. Reynolds Foods, Inc. SN 319,249. Pub. 9-2-69. Filed 2-17-69.

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## Class 46 — Foods and Ingredients of Foods

880,967. (See Class 45 for this trademark.)

880,970. PRODUCED BY ANGELS OF AGRICULTURE THE HONEY BEES ORANGE BLOSSOM APIARIES AND DESIGN. I. B. Fischer, d.b.a. Orange Blossom Apiaries. SN 277,356. Pub. 9-2-69. Filed 8-2-67.

880,971. HOME PRIDE AND DESIGN. The Kroger Co. SN 292,110. Pub. 9-2-69. Filed 2-28-68.

880,972. PRICE'S HOME STYLE. Gerber Cheese Co., Inc., assignee of Price Food Co., Inc. SN 292,292. Pub. 9-2-69. Filed 3-1-68.

880,973. FARM CHARM. Colonial Stores Incorporated, d.b.a. Big Star Products Co. SN 292,469. Pub. 9-2-69. Filed 3-5-68.

880,974. T-M. Morton International, Inc. SN 293,201. Pub. 9-2-69. Filed 3-14-68.

880,975. CALYPSO. The Nestle Company, Inc. SN 294,301. Pub. 9-2-69. Filed 3-27-68.

880,976. TISA. Etablissement Omnipatent. SN 295,130. Pub. 9-2-69. Filed 4-8-68.

880,977. SPOON-REDI. John Sexton & Co. SN 297,712. Pub. 9-2-69. Filed 5-8-68.

880,978. NIPPICAN. Perth Cheese Company. SN 297,798. Pub. 9-2-69. Filed 5-9-68.

880,979. PRIMAVERA. Edy's Character Candies of Northern California, d.b.a. Edy's. SN 297,990. Pub. 9-2-69. Filed 5-13-68.

880,980. ESKIMO DO-NUT. Eskimo Pie Corporation. SN 298,079. Pub. 9-2-69. Filed 5-14-68.

880,981. U.16T. Fabricas de Manteca Sancor Cooperativas Unidas Limitada. SN 299,837. Pub. 9-2-69. Filed 6-6-68.

880,982. DUTCH COUNTRY BRAND. Barnegat Light Products, Inc. SN 300,055. Pub. 9-2-69. Filed 6-10-68.

880,983. HCA FOODS AND DESIGN. Hotel Corporation of America, assignee of HCA Food Corporation. SN 300,445. Pub. 9-2-69. Filed 6-14-68.

880,984. AVANTE. Jeno's, Inc. SN 300,453. Pub. 9-2-69. Filed 6-14-68.

880,985. OLD HOME. Old Home Foods, Inc. SN 300,840. Pub. 9-2-69. Filed 6-19-68.

880,986. SUBWICH. Pizza Papá, Inc., d.b.a. Pizza Papá. SN 301,137. Pub. 9-2-69. Filed 6-24-68.

880,987. NORTHWEST. Frecker's Ice Cream Co. SN 303,609. Pub. 9-2-69. Filed 7-25-68.

880,988. ELF (DESIGN). Fred Usinger, Inc., d.b.a. Usinger's. SN 304,719. Pub. 9-2-69. Filed 8-8-68.

880,989. CHAR-DON. Donald P. Waters, d.b.a. Waters Distributing Company. SN 308,061. Pub. 9-2-69. Filed 9-23-68.

880,990. GOETZE. Albert F. Goetze, Incorporated. SN 309,566. Pub. 9-2-69. Filed 10-14-68.

880,991. CARGILL. Cargill, Incorporated. SN 311,769. Pub. 9-2-69. Filed 11-12-68.

880,992. DOUBLE TEN. DCA Food Industries Inc. SN 312,282. Pub. 9-2-69. Filed 11-15-68.

880,993. DROP O GOLD. Drew Chemical Corporation. SN 313,088. Pub. 9-2-69. Filed 11-26-68.

880,994. DUTCHLAND DAIRY'S MORE THAN A DAIRY. B/G Foods, Inc. SN 316,730. Pub. 9-2-69. Filed 1-16-69.

880,995. DUTCH GIRL (DESIGN). B/G Foods, Inc. SN 316,731. Pub. 9-2-69. Filed 1-16-69.

880,996. STARFLAKE. Borden, Inc. SN 317,930. Pub. 9-2-69. Filed 1-30-69.

880,997. HAWAIIAN PUNCH. R. J. Reynolds Foods, Inc. SN 319,250. Pub. 9-2-69. Filed 2-17-69.

880,998. BUY 'EM BY THE BARREL. The Quaker Oats Company. SN 320,112. Pub. 9-2-69. Filed 2-26-69.

880,999. HANAYOME. Crown Imports Co., Inc. SN 323,763. Pub. 9-2-69. Filed 4-7-69.

881,000. BREAKFAST GOLD. Osceola Fruit Distributors. SN 324,652. Pub. 9-2-69. Filed 4-16-69.

881,001. TBC AND DESIGN. Tasty Baking Company. SN 324,663. Pub. 9-2-69. Filed 4-16-69.

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## Class 47 — Wines

880,967. (See Class 45 for this trademark.)

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## Class 49 — Distilled Alcoholic Liquors

880,967. (See Class 45 for this trademark.)

881,002. TENNESSEE WALKING HORSE AND DESIGN. Tennessee Walking Horse Company, d.b.a. Tennessee Walker Distillery Company. SN 288,650. Pub. 9-2-69. Filed 1-11-68.

881,003. KENTUCKY MIST. Esbeco Distilling Corp. SN 301,925. Pub. 9-2-69. Filed 7-3-68.

881,004. AUDUBON BOTTLE AND DESIGN. Stitzel-Weller Distillery. SN 311,714. Pub. 9-2-69. Filed 11-4-68.

881,005. MUIRHEAD'S SCOTCH AND DESIGN. Charles Muirhead & Son, Limited. SN 312,181. Pub. 9-2-69. Filed 11-14-68.

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## Class 50 — Merchandise Not Otherwise Classified

880,689. (See Class 1 for this trademark.)

880,781. (See Class 19 for this trademark.)

880,787. (See Class 19 for this trademark.)

880,788. (See Class 19 for this trademark.)

880,883. (See Class 32 for this trademark.)

881,006. JANOX. Janox Corporation. SN 309,971. Pub. 9-2-69. Filed 10-18-68.

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## Class 51 — Cosmetics and Toilet Preparations

881,007. CITRONEIGE. Societe Neige des Cevennes. SN 286,187. Pub. 9-2-69. Filed 12-4-67.

881,008. SUMMER COOLER. Helene Curtis Industries, Inc. SN 292,273. Pub. 9-2-69. Filed 3-1-68.

881,009. ROYAL TREATMENT. Paula Payne Products Company, Inc. SN 293,643. Pub. 9-2-69. Filed 3-19-68.

881,010. BRIGHT & SHINING MORNING FACE. Bonne Bell, Inc. SN 296,102. Pub. 9-2-69. Filed 4-22-68.

881,011. DENTU GRIP. Block Drug Company, Inc. SN 304,663. Pub. 9-2-69. Filed 8-8-68.

881,012. WOTO. Deviline Inc. SN 304,676. Pub. 9-2-69. Filed 8-8-68.

881,013. CULTURED PEARLS. Cosmetically Yours, Inc. SN 305,812. Pub. 9-2-69. Filed 8-23-68.

881,014. TIGHT SPOT. Union Carbide Corporation. SN 306,966. Pub. 9-2-69. Filed 9-9-68.

881,015. MERINGUE SPRAY. Caron Corporation. SN 313,803. Pub. 9-2-69. Filed 12-6-68.

881,016. EVENING LIGHTS. Avon Products, Inc. SN 313,886. Pub. 9-2-69. Filed 12-9-68.

881,017. ROMA ROYALE. Roma Royale, Incorporated. SN 314,363. Pub. 9-2-69. Filed 12-12-68.

881,018. AMINO PON. Redken Laboratories, Inc. SN 315,183. Pub. 9-2-69. Filed 12-26-68.

881,019. DEPEND. Clairol Incorporated. SN 320,997. Pub. 9-2-69. Filed 3-7-69.

881,020. FLUFF CLEAN. Carter-Wallace, Inc. SN 321,605. Pub. 9-2-69. Filed 3-13-69.

881,021. MAKEDOWN. Carter-Wallace, Inc. SN 321,606. Pub. 9-2-69. Filed 3-13-69.

## Class 52 — Detergents and Soaps

880,722. (See Class 6 for this trademark.)

881,022. LIQUI GRILL STONE. Klix Chemical Co., Inc. SN 283,905. Pub. 9-2-69. Filed 11-1-67.

881,023. BOUTIQUE. The Drackett Company. SN 304,064. Pub. 9-2-69. Filed 8-1-68.

881,024. STEPHANIE BROOKE. Block Drug Company, Inc. SN 309,157. Pub. 9-2-69. Filed 10-8-68.

881,025. KLEEN KUT. Montrose Oil and Belting Company, Inc., d.b.a. Montrose Supply & Equipment Co. SN 311,791. Pub. 9-2-69. Filed 11-12-68.

881,026. CAL-STRIP. Caled Products Company, Inc. SN 316,612. Pub. 9-2-69. Filed 1-15-69.

# Service Marks

## Class 100 — Miscellaneous

880,906. (See Class 38 for this trademark.)

881,027. GENERAL RESEARCH CORPORATION. General Research Corporation. SN 292,195. Pub. 9-2-69. Filed 2-29-68.

881,028. BOBBY'S BABY AND DESIGN. Bobby's Baby, Inc. SN 292,313. Pub. 9-2-69. Filed 3-4-68.

881,029. THE GALLEY AND DESIGN. William T. Mason. SN 296,335. Pub. 9-2-69. Filed 4-23-68.

881,030. RIDE AND DESIGN. Research Institute for Diagnostic Engineering. SN 297,730. Pub. 9-2-69. Filed 4-15-68.

881,031. H & C AND DESIGN. Howard & Collingwood, Incorporated. SN 298,125. Pub. 9-2-69. Filed 5-14-68.

881,032. NATIONAL NUCLEAR CORPORATION AND DESIGN. National Nuclear Corporation. SN 299,151. Pub. 9-2-69. Filed 5-27-68.

881,033. PRAIRIE FARMER. The Prairie Farmer Publishing Company. SN 299,379. Pub. 9-2-69. Filed 5-29-68.

881,034. BOOM SOUND VIDEO SYSTEMS AND DESIGN. Servicemaster Communications Systems, Inc. MULTIPLE CLASS (Classes 100 and 103). SN 301,091. Pub. 9-2-69. Filed 6-21-68.

881,035. POUGET'S. Restaurant Incorporated, d.b.a. Pouget's. SN 303,825. Pub. 9-2-69. Filed 7-29-68.

881,036. MISCELLANEOUS DESIGN. Southern Christian Leadership Conference Foundation. SN 304,021. Pub. 9-2-69. Filed 7-31-68.

881,037. HOUSTONAIRE. Houstonaire, Inc. MULTIPLE CLASS (Classes 100 and 107). SN 304,222. Pub. 9-2-69. Filed 8-2-68.

881,038. RESTEL. Robert H. Libman. SN 304,937. Pub. 9-2-69. Filed 8-12-68.

881,039. AUSTRAL. Austral Oil Company Incorporated. SN 305,393. Pub. 9-2-69. Filed 8-19-68.

881,040. BENIHANA AND DESIGN. Benihana of Tokyo, Inc. SN 305,524. Pub. 9-2-69. Filed 8-20-68.

881,041. C AND DESIGN. Chicago Athletic Association. SN 306,729. Pub. 9-2-69. Filed 9-6-68.

881,042. MISCELLANEOUS DESIGN. Nationwide Leasing Company. SN 306,796. Pub. 9-2-69. Filed 9-6-68.

881,043. LEONARD'S. Leonard's Pit Barbecue, Inc. SN 309,141. Pub. 9-2-69. Filed 10-8-68.

881,044. ICE. Integrated Circuit Engineering Corp. MULTIPLE CLASS (Classes 100 and 101). SN 310,104. Pub. 9-2-69. Filed 10-21-68.

881,045. BIG ALICE'S KITCHEN AND DESIGN. Restaurant Associates Industries, Inc. SN 312,697. Pub. 9-2-69. Filed 11-20-68.

881,046. CAPTAIN JIM'S. Buffalo Bill's Wild West, Inc., and Kulan Enterprises, Inc. (joint owners). SN 314,031. Pub. 9-2-69. Filed 12-20-68.

881,047. GRAY. Gray Tool Company. SN 315,226. Pub. 9-2-69. Filed 12-26-68.

881,048. DUTCH GIRL (DESIGN). B/G Foods, Inc., d.b.a. Dutchland Dairy Restaurants. SN 316,729. Pub. 9-2-69. Filed 1-16-69.

## Class 101 — Advertising and Business

881,044. (See Class 100 for this trademark.)

881,049. AUTOMATED MANAGEMENT SYSTEMS AND DESIGN. Automated Management Systems. SN 260,232. Pub. 9-2-69. Filed 12-7-66.

881,050. Q-PLAN. International Minerals & Chemical Corporation. SN 278,266. Pub. 9-2-69. Filed 8-15-67.

881,051. BOXED 4D DESIGN. H. L. Davis, d.b.a. Doc Davis+Associates. SN 288,430. Pub. 9-2-69. Filed 1-9-68.

881,052. MARKTEL. Telmark, Inc., d.b.a. Marktel Investigators. SN 291,205. Pub. 9-2-69. Filed 2-15-68.

881,053. SOUL SHACK. Soul Shack. SN 296,824. Pub. 9-2-69. Filed 4-29-68.

881,054. A BOB SANDERS SERVICE AND DESIGN. Insurance Manpower International. SN 300,501. Pnb. 9-2-69. Filed 6-13-68.

881,055. SHOE BOAT. Juvenile Shoes, Inc. SN 304,041. Pub. 9-2-69. Filed 8-1-68.

881,056. PROMPT. Aries Corporation. SN 304,570. Pub. 9-2-69. Filed 8-7-68.

881,057. TURN-KEY AND DESIGN. Turn-Key Computer Applications. SN 305,289. Pub. 9-2-69. Filed 8-16-68.

881,058. ALLRED'S. Marvin H. Allred, d.b.a. Allred's Pool Supplies, assignee of Allred's Pool Supplies, Inc. MULTIPLE CLASS (Classes 101 and 103). SN 305,602. Pub. 9-2-69. Filed 8-21-68.

881,059. KING KAROL. King Karol, Inc. SN 305,656. Pub. 9-2-69. Filed 8-21-68.

881,060. DOLLAR GENERAL. Dollar General Corporation. SN 314,664. Pub. 9-2-69. Filed 11-1-68.

881,061. BRITTS. J. J. Newberry Co. SN 314,728. Pub. 9-2-69. Filed 12-17-68.

881,062. CAMP. Westinghouse Electric Corporation. SN 314,742. Pub. 9-2-69. Filed 12-17-68.

881,063. DIGITAX. Coap Systems Inc. SN 315,643. Pub. 9-2-69. Filed 12-23-68.

881,064. HOMARKET INC. H AND DESIGN. Homarket, Inc. SN 316,937. Pub. 9-2-69. Filed 1-21-69.

881,065. BRYANT TEACHERS BUREAU. Bryant Teachers' Bureau, Inc. SN 320,677. Pub. 9-2-69. Filed 3-4-69.

## Class 102 — Insurance and Financial

881,066. INSECO ETC. AND DESIGN. International Services Co. SN 276,453. Pub. 9-2-69. Filed S.R. 7-20-67; Am. P.R. 2-27-69.

881,067. MULTIMATIC. The Chase Manhattan Bank, National Association. SN 317,276. Pub. 9-2-69. Filed 1-23-69.

881,068. STYLIZED $. The Peoples Trust and Savings Company. SN 318,008. Pub. 9-2-69. Filed 1-31-69.

881,069. MISCELLANEOUS DESIGN. The College Life Insurance Company of America. SN 323,053. Pub. 9-2-69. Filed 3-28-69.

## Class 103 — Construction and Repair

881,034. (See Class 100 for this trademark.)

881,058. (See Class 101 for this trademark.)

## Class 105 — Transportation and Storage

881,070. "A RUN AWAY TO SEA ADVENTURE." P & O Lines (North America), Inc. SN 304,014. Pub. 9-2-69. Filed 7-31-68.

881,071. MISCELLANEOUS DESIGN. Northwest Airlines, Inc., d.b.a. Northwest Orient. SN 321,722. Pub. 9-2-69. Filed 3-14-69.

## Class 106 — Material Treatment

880,762. (See Class 16 for this trademark.)

881,072. THE FRANKLIN MINT AND DESIGN. The Franklin Mint, Inc. SN 303,572. Pub. 9-2-69. Filed 7-25-68.

881,073. THE FRANKLIN MINT AND DESIGN OF COAT OF ARMS. The Franklin Mint, Inc. SN 303,862. Pub. 9-2-69. Filed 7-30-68.

881,074. H AND CROWN DESIGN. The Heckman Bindery, Incorporated. SN 323,195. Pub. 9-2-69. Filed 4-1-69.

## Class 107 — Education and Entertainment

880,924. (See Class 38 for this trademark.)

881,037. (See Class 100 for this trademark.)

881,075. CSA AND DESIGN. Cryogenic Society of America, Inc. SN 241,987. COLLECTIVE MARK. Pub. 9-2-69. Filed 3-28-66.

881,076. WE'RE NO. 1. Tel Ra Productions, Inc. SN 281,931. Pub. 9-2-69. Filed 10-5-67.

881,077. ALPHA MONTESSORI SCHOOL. Alvina M. Rinaldo, d.b.a. Alpha Montessori School. SN 298,759. Pub. 9-2-69. Filed 5-21-68.

881,078. PIVOT POINT. Pivot Point International, Inc. SN 302,759. Pub. 9-2-69. Filed 7-15-68.

881,079. FS AND DESIGN. Famous Artists Schools, Inc. SN 302,830. Pub. 9-2-69. Filed 7-16-68.

881,080. DAZE OF TIME. Timothy James Hughes. SN 303,528. Pub. 9-2-69. Filed 7-24-68.

881,081. THE DRIFTING COWBOYS. Randall Hank Williams, d.b.a. Hank Williams, Jr. SN 303,556. Pub. 9-2-69. Filed 7-24-68.

881,082. THE AMERICAN SOUL TRAIN. The Boogie Kings. SN 304,444. Pub. 9-2-69. Filed 8-6-68.

881,083. FLIGHT CENTER. Flight Centers, Inc. SN 313,924. Pub. 9-2-69. Filed 12-9-68.

# SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

## SECTION 1

(Combined Certificates)

881,086. Cornell & Lont Associates, Inc., Hawthorne, N.J. SN 297,173. Filed P.R. 5-2-68; Am. S.R. 7-16-69.

**CORNELL**

**Class 36—Musical Instruments and Supplies**

For Phonograph Records and Phonograph Record Albums (Int. Cl. 9).

**Class 38—Prints and Publications**

For Booklets of Sheet Music (Int. Cl. 16).

First use Mar. 1, 1968.

## SECTION 2

### Class 26 — Measuring and Scientific Appliances

881,084. May B. Rogers, executrix of the estate of Murray K. Rogers, deceased, Ferguson, Ky., assignee of Murray K. Rogers, d.b.a. Multi-Line Pen Company, Ferguson, Ky. SN 304,969. Filed P.R. 8-12-68; Am. S.R. 7-17-69.

**MULTI-LINE**

For Drafting Systems, Kits and Equipment—Namely, Ball Point Drafting Pens, Liquid Lead Drafting Pencils, Drafting Scribers, Drawing Boards, T-Squares, I-Squares, Rules, Scales, Drafting Tapes, Straight Edges, and Drafting Templates, All of the Foregoing Being Sold Individually and in Kits (Int. Cl. 16).

First use November 1960.

### Class 28 — Jewelry and Precious-Metal Ware

881,092. H. Stern Jewelers, Inc., New York, N.Y. SN 328,100. Filed 5-22-69.

**IPANEMA**

For Jewelry (Int. Cl. 14).

First use June 14, 1967.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

881,085. Stoody Company, Whittier, Calif. SN 277,082. Filed P.R. 7-28-67; Am. S.R. 6-13-69.

**JET SPRAY**

For Torch-Assembly Equipment, for Combustion of Gas in Association With Metallic Particles Whereby To Deposit Metal (Int. Cl. 11).
First use on or about Sept. 15, 1966.

## Class 36 — Musical Instruments and Supplies

881,086. See Section 1 (Combined Certificate).

881,087. N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. SN 314,589. Filed P.R. 12-16-68; Am. S.R. 9-15-69.

**PHILIPS**

Owner of U.S. Reg. Nos. 706,721, 838,406, and others.
For Electronic Organs (Int. Cl. 15).
First use Nov. 1, 1963; in commerce February 1966.

## Class 37 — Paper and Stationery

881,088. The Mead Corporation, Dayton, Ohio. SN 298,141. Filed P.R. 5-14-68; Am. S.R. 8-21-69.

**LITERATURE**

For Coated Book Papers (Int. Cl. 16).
First use Aug. 14, 1967.

## Class 38 — Prints and Publications

881,086. See Section 1 (Combined Certificate).

## Class 39 — Clothing

881,089. Flexnit Company, Inc., New York, N.Y. SN 290,385. Filed P.R. 2-6-68; Am. S.R. 7-25-69.

**THIGH FIT**

For Girdles (Int. Cl. 25).
First use Jan. 20, 1968.

881,090. Atlas Underwear Corporation, Piqua, Ohio. SN 299,196. Filed P.R. 5-28-68; Am. S.R. 9-3-69.

**ALL YOU FEEL IS THE WARMTH**

For Men's Winter Underwear (Int. Cl. 25).
First use May 21, 1968.

## Class 50 — Merchandise Not Otherwise Classified

881,091. Laugherty Incorporated, Knoxville, Tenn. SN 316,659. Filed P.R. 1-15-69; Am. S.R. 8-18-69.

**PRINT-A-FOOT**

For Footprinters (Int. Cl. 16).
First use June 1968.

881,092. (See Class 28 for this trademark).

# TRADEMARK REGISTRATIONS RENEWED

75,638. BOTANY. Cl. 42 (Int. Cl. 24). 10-26-09.
75,771. JP AND DESIGN. Cl. 51 (Int. Cl. 3). 11-16-09.
76,599. REPRESENTATION OF ROYAL KITCHEN. Cl. 46 (Int. Cl. 29). 2-1-10.
258,555. PAZO. Cl. 18 (Int. Cl. 5). 7-9-29.
260,125. "WHITE STAR" AND STAR DESIGN. Cl. 46 (Int. Cl. 30). 8-20-29.
261,233. DAINTY DOT. Cl. 39 (Int. Cl. 25). 9-10-29.
261,450. DAN DEE PRETZELS AND REPRESENTATION OF PRETZEL. Cl. 46 (Int. Cl. 30). 9-17-29.
261,467. ATLAS FARMEX. Cl. 9 (Int. Cl. 13). 9-17-29.
261,624. BAGPAK. Cl. 23 (Int. Cl. 7) 9-17-29.
262,097. "BUSCH HEALTHRISE YEAST" ETC. AND DESIGN. Cl. 46 (Int. Cl. 30). 10-1-29.
262,538. MISS UNITED STATES. Cl. 27 (Int. Cl. 14). 10-15-29.
262,663. BEST BROS. KEENE'S CEMENT CO. Cl. 12 (Int. Cl. 19). 10-22-29.
263,261. OUR GANG. Cl. 39 (Int. Cl. 25). 11-5-29.
263,729. RED DEVIL. Cl. 23 (Int. Cl. 8). 11-12-29.
263,738. "FULCHER'S" ETC. Cl. 49 (Int. Cl. 33). 11-12-29.
264,181. LA MIRADA. Cl. 46 (Int. Cls. 29 and 31). 11-19-29.
264,242. FROBENO. Cl. 6 (Int. Cl. 2). 11-19-29.
264,673. QUICK-KURD. Cl. 6 (Int. Cl. 1) 12-3-29.
265,106. "MELLOW CREAM" AND DESIGN. Cl. 46 (Int. Cl. 30). 12-17-29.
266,683. ORBIT. Cl. 46 (Int. Cl. 31). 1-28-30.
267,072. STEAMATIC. Cl. 23 (Int Cl. 7). 2-11-30.
267,073. NUVEYOR. Cl. 23 (Int. Cl. 7). 2-11-30.
267,320. KROMAN. Cl. 23 (Int. Cl. 8). 2-18-30.
267,444. INDIAN TRAIL FOOTWEAR AND DESIGN. Cl. 39 (Int. Cl. 25). 2-18-30.
267,956. LANUM. Cl. 18 (Int. Cl. 4). 3-4-30.
268,283. KRAZY-IKES. Cl. 22 (Int. Cl. 28). 3-11-30.
442,964. CAVALCADE. Cl. 39 (Int. Cl. 25). 6-21-49.
443,085. SOMACO AND DESIGN. Cl. 39 (Int. Cl. 25). 7-12-49.
443,271. DEVOTEDLY YOURS. Cl. 51 (Int. Cl. 3). 8-23-49.
443,297. MOULIN ROUGE. Cl. 51 (Int. Cl 3). 8-23-49.
443,329. CONTINENTAL. Cl. 31 (Int. Cl. 11). 8-30-49.
443,480. CRACKERJACK. Cl. 51 (Int. Cl. 3). 10-25-49.
443,605. CENTURY AND DESIGN. Cl. 19 (Int. Cl. 12). 12-6-49.
443,648. VELVERY. Cl. 42 (Int. Cl. 17). 12-27-49.
443,722. FOTOEYE. Cl. 26 (Int. Cl. 9). 1-31-50.
443,793. MEDOMIN. Cl. 18 (Int. Cl 5) 2-28-50.
508,071. FELIX. Cl. 46 (Int. Cl. 31). 3-29-49.
510,763. MACCOTAN. Cl. 6 (Int. Cl. 1). 6-7-49.
511,477. VALIANT. Cl. 7 (Int. Cl. 22). 6-21-49.
511,557. CHILTON. Cl. 27 (Int. Cl. 14). 6-28-49.
511,967. SAXOLIN. Cl. 42 (Int. Cl. 24). 7-5-49.
512,010. PHOSPHODUST. Cl. 6 (Int. Cl. 1). 7-5-49.
512,030. REVO. Cl. 23 (Int. Cls. 7 and 8). 7-12-49.
513,187. KUSHIN. Cl. 18 (Int. Cl. 5). 8-2-49.
513,337. O'CEDAR. Cl. 16 (Int. Cl. 3). 8-9-49.
513,992. MICRO GROUND AND DESIGN. Cl. 23 (Int. Cl. 7). 8-23-49.
514,041. BILGERI. Cl. 42 (Int. Cl. 24). 8-23-49.
514,588. NICHILLITE. Cl. 14 (Int. Cl. 6). 8-30-49.
514,589. STIRONITE. Cl. 14 (Int. Cl. 6). 8-30-49.
515,037. HOFFMAN'S LOS ANGELES. Cl. 46 (Int. Cl. 30). 9-13-49.
515,057. "BIG 8." Cl. 22 (Int. Cl. 28). 9-13-49.
515,135. DENSCO. Cl. 44 (Int. Cl. 10). 9-13-49.
515,175. ASHLAND. Cl. 37 (Int. Cl. 16). 9-13-49.

515,188. FLUORIUM. Cl. 6 (Int. Cl. 3). 9-13-49.
515,234. DENTAL INDUSTRY NEWS. Cl. 38 (Int. Cl. 16). 9-13-49.
515,266. BETTY CROCKER. Cl. 38 (Int. Cl. 16). 9-20-49.
515,309. DENTAL SURVEY AND DESIGN. Cl. 38 (Int. Cl. 16). 9-20-49.
515,406. UNIVAC. Cl. 26 (Int. Cl. 9). 9-20-49.
515,410. PORTRAIT OF NANCY. Cl. 38 (Int. Cl. 16). 9-20-49.
515,516. STRETCHWAY. Cl. 40 (Int. Cls. 14 and 26). 9-27-49.
515,558. LEECE NEVILLE ETC. AND DESIGN. Cl. 21 (Int. Cls. 7 and 9). 9-27-49.
515,620. DAMON RECORDING STUDIOS INC. AND DESIGN. Cl. 21 (Int. Cl. 9). 9-27-49.
515,716. RED DEVIL. Cl. 13 (Int. Cl. 6). 9-27-49.
515,723. CORHART. Cl. 12 (Int. Cl. 19). 9-27-49.
515,771. POL. Cl. 18 (Int. Cl. 5). 9-27-49.
515,846. H AND DESIGN. Cl. 14 (Int. Cl. 6). 10-4-49.
515,855. LUBRIGUN. Cl. 23 (Int. Cl. 7). 10-4-49.
515,893. RAPIDUCTION. Cl. 23 (Int. Cl. 7). 10-4-49.
516,052. BAKER. Cl. 19 (Int. Cl. 12). 10-4-49.
516,188. BALFOUR. Cl. 28 (Int. Cl. 14). 10-11-49.
516,195. SHOPPER STOPPER. Cl. 28 (Int. Cl. 14). 10-11-49.
516,214. LITTLE DARLING. Cl. 46 (Int. Cls. 29 and 30). 10-11-49.
516,222. HICKOK. Cl. 28 (Int. Cl. 14). 10-11-49.
516,396. KURFEES. Cl. 16 (Int. Cl. 2). 10-18-49.
516,411. MARBLE HEAD. Cl. 12 (Int. Cl. 19). 10-18-49.
516,698. DENSOR. Cl. 37 (Int. Cl. 16). 10-25-49.
516,702. VALLEY FORGE. Cl. 37 (Int. Cl. 16). 10-25-49.
517,049. GRIFFITH'S. Cl. 46 (Int. Cls. 1, 29, and 30). 11-1-49.
517,146. HICKOK. Cl. 39 (Int. Cl. 25). 11-1-49.
517,397. HIGHHEAT. Cl. 14 (Int. Cl. 6). 11-8-49.
517,398. HIGHFLEX. Cl. 14 (Int. Cl. 6). 11-8-49.
517,400. MUFLEX. Cl. 14 (Int. Cl. 6). 11-8-49.
517,594. JHS AND DESIGN. Cl. 45 (Int. Cl. 32). 11-15-49.
517,639. ANCO AND DESIGN. Cl. 49 (Int. Cl. 33). 11-15-49.
517,642. AUSTIN NICHOLS. Cl. 49 (Int. Cl. 33). 11-15-49.
517,696. SAFELUBE. Cl. 15 (Int. Cl. 4). 11-22-49.
517,883. JJ & S. Cl. 49 (Int. Cl. 33). 11-22-49.
518,007. THERM-O-DISC AND DESIGN. Cl. 26 (Int. Cl. 9). 11-22-49.
518,082. "LENGTH WISE." Cl. 39 (Int. Cl. 25). 11-29-49.
518,148. NAMAC ENCHANTREST. Cl. 32 (Int. Cl. 20). 11-29-49.
518,211. NEW YORK MOTORIST. Cl. 38 (Int. Cl. 16). 11-29-49.
518,395. BGR AND DESIGN. Cl. 13 (Int. Cl. 6). 12-6-49.
518,407. SOLARITE. Cl. 21 (Int. Cl. 17). 12-6-49.
518,450. ALL WEATHER. Cl. 21 (Int. Cl. 9). 12-6-49.
518,534. JAQUATON. Cl. 42 (Int. Cl. 24). 12-6-49.
518,657. GOLDEN TEMPLAR. Cl. 28 (Int. Cl. 14). 12-13-49.
518,814. STRIPKOLEX. Cl. 9 (Int. Cl. 13). 12-13-49.
518,984. HICKOK. Cl. 40 (Int. Cl. 26). 12-20-49.
519,094. EMPIRE STATE. Cl. 17 (Int. Cl. 34). 12-20-49.
519,124. STRETCHWAY. Cl. 3 (Int. Cl. 18). 12-20-49.
519,147. DELAWARE. Cl. 27 (Int. Cl. 14). 12-20-49.
519,152. MAGNAGRIP. Cl. 23 (Int. Cl. 21). 12-27-49.
519,187. TEKNIKAN. Cl. 46 (Int. Cl. 29). 12-27-49.
519,194. EIMCO. Cl. 23 (Int. Cl. 7). 12-27-49.
519,216. DR. SCHOLL'S 2 DROP CORN REMEDY AND DESIGN. Cl. 18 (Int. Cl. 5). 12-27-49.
519,220. ENGLANDER. Cl. 32 (Int. Cl. 20). 12-27-49.
519,659. PHOSCIDE. Cl. 6 (Int. Cl. 5). 1-10-50.
519,695. TREE DESIGN. Cl. 6 (Int. Cl. 1). 1-10-50.
520,081. HENDERSON. Cl. 19 (Int. Cl. 12). 1-17-50.
520,120. RINGCRAFT. Cl. 28 (Int. Cl. 14). 1-24-50.
520,133. TRI-BIKE. Cl. 22 (Int. Cl. 12). 1-24-50.
520,148. COMMANDER. Cl. 44 (Int. Cl. 10). 1-24-50.
520,156. HOXTON. Cl. 39 (Int. Cl. 25). 1-24-50.
520,165. THE FLORSHEIM SHOE. Cl. 39 (Int. Cl. 25). 1-24-50.
520,166. CUB CYCLE. Cl. 22 (Int. Cl. 12). 1-24-50.
520,224. TRIDENT-HEEL AND DESIGN. Cl. 39 (Int. Cl. 25). 1-24-50.
520,262. RED DIAMOND AND DESIGN. Cl. 13 (Int. Cl. 6). 1-24-50.
520,350. HONEYWELL. Cl. 26 (Int. Cl. 9). 1-31-50.
520,757. BULL DOG GOLD EDGE AND DESIGN. Cl. 35 (Int. Cl. 7). 2-7-50.
520,768. KELLOGG-AMERICAN. Cl. 23 (Int. Cl. 7). 2-7-50.
521,067. JIM DANDY. Cl. 16 (Int. Cl. 2). 2-14-50.
521,138. BUTCHER BOY. Cl. 23 (Int. Cl. 7). 2-21-50.
521,234. FULTON. Cl. 19 (Int. Cl. 12). 2-21-50.
521,325. SNAG-LESS. Cl. 22 (Int. Cl. 28). 2-21-50.
521,384. GROVE. Cl. 13 (Int. Cls. 7 and 9). 2-28-50.
521,469. MULTI-WASH. Cl. 34 (Int. Cl. 11). 2-28-50.
521,596. NUMEX. Cl. 15 (Int. Cl. 4). 2-28-50.
521,669. ENTOZYME. Cl. 18 (Int. Cl. 5). 2-28-50.
521,763. PILOT. Cl. 46 (Int. Cls. 1, 29, and 30). 3-7-50.
522,023. ELECTROIL. Cl. 21 (Int. Cl. 7). 3-7-50.

# TRADEMARK REGISTRATIONS CANCELED

### Section 7(d)

377,974. GT'S PHILADELPHIA SCRAPPLE AND DESIGN. Cl. 46. 5-21-40.

### Section 8

171,747. SPECIALIME. Cl. 4. 8-14-23.
401,418. DERMAMENT. Cl. 18. 5-18-43.
402,842. TERRA TOX. Cl. 6. 8-17-43.
403,307. RIO RICCO. Cl. 46. 9-14-43.
728,865. DESIGN OF BOY'S HEAD AND GIRL'S HEAD ETC. Cl. 38. 3-20-62.
728,900. BETTER QUALITY YODER FEEDS AND DESIGN. Cl. 46. 3-20-62.
732,031. FROST CHASER. Cl. 6. 5-29-62.
733,166. OTIS—"FIRST IN GAS LIFE CONTROL." Cl. 101. 6-19-62.
734,036. FIBERSHEEN. Cl. 13. 7-10-62.
734,862. ROTOMATIC. Cl. 22. 7-24-62.
735,367. DIAL. Cl. 36. 7-31-62.
736,004. READY RINGED. Cl. 28. 8-14-62.
736,394. KOOLBAR. Cl. 31. 8-21-62.
744,133. SUPREME. Cl. 45. 1-22-63.
745,827. CREST. Cl. 31. 2-26-63.
746,273. SPRING FRESH. Cl. 45. 3-5-63.

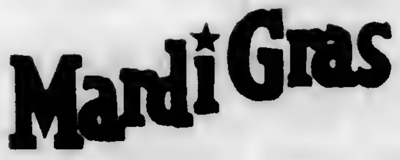
*The following Rregistrations issued Oct. 1, 1963*

757,543. STONE CANTEENER. Cl. 2.
757,551. TELESTAR. Cl 3
757,552. LUSTRO. Cl. 4.
757,554. RPW. Cl. 4.
757,557. SCOTCH MAGIC MENDING TAPE. Cl. 5.
757,563. JLS AND DESIGN. Cl. 6.
757,575. SENTRY. Cl. 10.
757,577. HYDRA-THERM. Cl. 12.
757,579. JONNY. Cl. 12.
757,595. DUREX. Cl. 16.
757,596. BON AMI. Cl. 16.
757,600. TRI VITES. Cl. 18.
757,602. UTOCYLAN. Cl. 18.
757,606. VADEPHEN. Cl. 18.
757,609. INNOVAN. Cl. 18.
757,614. EPLID. Cl. 18.
757,620. MARFAMID. Cl. 18.
757,622. NACIDETE. Cl. 18.
757,623. PINKACIN. Cl. 18.
757,627. COFAREST. Cl. 18.
757,631. MIDAS AUTO SAFETY CENTER. Cl. 19.
757,632. MIDAS SAFETY SHOP. Cl. 19.
757,634. 20 STEP LIFT AND DESIGN. Cl. 19.
757,635. KRISTI SNOW VEHICLES WITH SKI-ACTION AND DESIGN. Cl. 19.
757,639. X-TRAINER. Cl. 19.
757,640. TOMAHAWK AND DESIGN. Cl. 19.
757,654. TELESENSOR. Cl. 21.
757,660. MR. AND DESIGN. Cl. 21.
757,663. GOLDEN TUBE SENTRY. Cl. 21.

757,668. LELLINE. Cl. 21.
757,669. LIFECAD. Cl. 21.
757,671. ALBERT STAEHLE. Cl. 22.
757,672. PARKA PAK. Cl. 22.
757,673. HOME RUN. Cl. 22.
757,674. AUBURN SAFE PLAY TOYS AND DESIGN. Cl. 22.
757,677. BEAUTI-BOOTS. Cl. 22.
757,678. SIR DUNCAN. Cl. 22.
757,680. IMPERIAL. Cl. 22.
757,681. AQUA-BIRD. Cl. 22.
757,683. THE KLUNKS. Cl. 22.
757,685. POLY ZOO. Cl. 22.
757,687. CIRCA-WALK. Cl. 22.
757,688. OAK IN DIAMOND DESIGN WITH CARICATURES. Cl. 22.
757,689. CERAMETAL. Cl. 23.
757,691. ROTOWEEDER. Cl. 23.
757,698. BRADATA. Cl. 23.
757,701. COFFEE-CHEF. Cl. 23.
757,708. THE VIP CIBA AND DESIGN. Cl. 26.
757,713. DICOTRON. Cl. 26.
757,715. EX. Cl. 26.
757,717. REPIPET. Cl. 26.
757,718. TELEOPLEX. Cl. 26.
757,723. CLASSMATE. Cl. 26.
757,724. M AND DESIGN. Cl. 26.
757,730. AIRNAV. Cl. 26.
757,733. TEQUIPCO. Cl. 26.
757,734. BIOPACK. Cl. 26.
757,740. INTERPHOTO. Cl. 26.
757,741. HANKASE. Cl. 26.
757,745. COLOR-GLANCE. Cl. 26.
757,748. BEL-AIR. Cl. 26.
757,749. DART. Cl. 26.
757,751. FURY. Cl. 26.
757,752. SIGMA. Cl. 26.
757,755. CENTREPOINT. Cl. 26.
757,756. PSE. Cl. 26.
757,763. WH. Cl. 28.
757,764. WH. Cl. 28.
757,765. LOVE BEAU. Cl. 28.
757,766. KLEEN D AND DESIGN. Cl. 29.
757,768. CHEERIO. Cl. 29.
757,770. FIREWEL. Cls. 31 and 44.
757,772. YALACTA. Cl. 33.
757,777. ORBITREAD. Cl. 35.
757,778. SATELLITE. Cl. 36.
757,779. AD LIB RECORDS AND DESIGN. Cl. 36.
757,781. VERBALETA. Cl. 36.
757,790. MONACOR. Cl. 36.
757,791. MEMORY LANE. Cl. 36.
757,793. PENLAWN. Cl. 37.
757,796. GUESTGUIDE. Cl. 38.
757,797. COZY CUFFS. Cl. 39.
757,799. HEALTHGARD. Cl. 39.
757,800. STYLETTES. Cl. 39.
757,804. DORSE. Cl. 39.
757,805. SKANDIA PRINTS. Cl. 39.
757,813. PONS. Cl. 39.
757,814. RESTEP JUNIORS. Cl. 39.
757,815. PEN-NORTH WESTER. Cl. 39.
757,816. PEN-ACTION MASTER. Cl. 39.
757,822. CONTOURA. Cl. 39.
757,829. CENTRX AND SYMBOL. Cl. 44.
757,837. BRAND 7. Cl. 46.
757,838. GARDEN BEAUTY. Cl. 46.
757,839. GUIL-PAK. Cl. 46.
757,842. JAN'S. Cl. 46.
757,843. BETTY NORRIS. Cl. 46.
757,845. SURECALF. Cl. 46.
757,847. TREE TOP. Cl. 46.
757,857. GOODDEED. Cl. 46.
757,858. DOUBLE STAMP. Cl. 46.
757,859. DOUBLE STAMP. Cl. 46.
757,860. SUNNYCLIME. Cl. 46.
757,866. FORMITE. Cl. 50.
757,867. JOSEPH WEIDER'S ARCHITECT OF BEAUTY. Cl. 50.
757,868. GRANDMA'S GANG. Cl. 50.
757,869. TAX EXEMPTIONS. Cl. 50.
757,870. GRANDPA'S GANG. Cl. 50.
757,871. FAMILY JEWELS. Cl. 50.
757,872. "THRUWAY TO BEAUTY." Cl. 50.
757,874. BRELLA. Cl. 50.
757,878. BLEND-A-MED. Cl. 51.
757,886. BLUE DENT. Cl. 51.
757,888. SAHARA. Cl. 51.
757,890. CHESSCO AND DESIGN. Cl. 52.
757,891. KLEEN D AND DESIGN. Cl. 52.
757,904. INTEC AND DESIGN. Cl. 100.
757,905. DESIGN OF LAMPLIGHTER LIGHTING GAS LIGHT. Cl. 100.
757,907. SANGER HARRIS AND FLOWER DESIGN. Cl. 101.
757,908. SANDS ASSOCIATED MOTELS—SAM AND DESIGN. Cl. 101.
757,910. PROTECTION IN DEPTH. Cl. 102.
757,912. MULTI-PAY. Cl. 102.
757,923. THE DOVELLS. Cl. 107.
757,932. RUFF. Cl. 7.
757,934. FENDA-RAFT AND DESIGN. Cl. 19.
757,935. FENDA-RAFT. Cl. 19.
757,936. WYND'N SWYNG. Cl. 22.
757,939. DESK PAC. Cl. 37.
757,940. ENGINEERING & SCIENTIFIC MANPOWER NEWSLETTER. Cl. 38.
757,942. BARGAIN PAK AND DESIGN. Cl. 39.
757,943. FOREVERSIZED. Cl. 43.
757,950. HAZLETT'S. Cl. 46.
757,951. CREAMY-HEAD. Cl. 46.
757,952. FRANCE FOOD AND DESIGN. Cl. 46.
757,960. SKUFF MAT. Cl. 50.
757,961. FLOID ETC. AND DESIGN. Cl. 51.
757,963. COCOA ROSE. Cl. 51.
757,964. MILLION DOLLAR RED. Cl. 51.
757,966. PICK-A-PRESENT. Cl. 101.

## TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

443,762. MARDI GRAS. Cl. 49. 2-21-50. Licoreria Roses, Inc. Puerto Rico Distillers, Inc., Arecibo, Puerto Rico. Amended: In the statement, column 1, line 19 through column 2, line 3 and in column 2, lines 9 and 10 are deleted, and the drawing is amended to appear:



507,196. GREEN LABEL. Cl. 46. 3-1-49. Vitamin Food Company, Inc., Newark, N.J. Amended to appear:

**GREEN LABEL**

507,197. RED LABEL. Cl. 46. 3-1-49. Vitamin Food Company, Inc., Newark, N.J. Amended to appear:

**RED LABEL**

666,959. THE CHAMPAGNE OF BEERS. Cl. 48. 9-9-58. Miller Brewing Company, Milwaukee, Wis. Amended to appear:

**THE CHAMPAGNE OF BEERS**

747,504. BLEPH. Cl. 18. 4-2-63. Allergan Pharmaceuticals, Inc., Santa Ana, Calif. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted.

747,506. HERPLEX. Cl. 18. 4-2-63. Allergan Pharmaceuticals, Inc., Santa Ana, Calif. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted.

761,966. TOURALARM. Cl. 27. 12-24-63. General Time Corporation, New York, N.Y. Corrected: In the statement, column 1, line 1, "Tire" should be deleted and *Time* should be inserted.

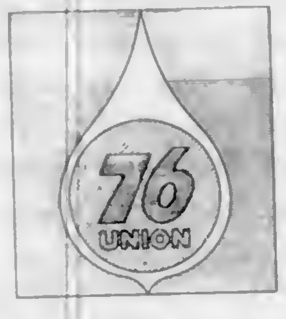
766,237. CONJUNCTIN. Cl. 18. 3-10-64. Allergan Pharmaceuticals, Inc., Santa Ana, Calif. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted.

766,238. CONJUNCTILONE. Cl. 18. 3-10-64. Allergan Pharmaceuticals, Inc., Santa Ana, Calif. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted.

766,872. SUE CORY. Cls. 51 and 52. 3-17-64. Helene Curtis Industries, Inc., Chicago, Ill. Amended: In the statement column 2, lines 1 through 4 are deleted.

771,064. LIQUIWRAP. Cl. 18. 6-9-64. Allergan Pharmaceuticals, Inc., Santa Ana, Calif. Corrected: In the statement, column 1, line 1, ", Inc." should be deleted.

776,476. 76 UNION AND DESIGN. Cl. 15. 9-8-64. Union Oil Company of California, Los Angeles, Calif. Amended to appear:



808,612. POLYNESIAN. Cl. 46. 5-17-66. Allied Old English, Inc., Newark, N.J. Corrected: In the statement, column 1, line 1, "New Jersey" should be deleted and *New York* should be inserted.

864,362. MISCELLANEOUS DESIGN. Cl. 100. 1-28-69. Chock Full O' Nuts Corporation, New York, N.Y. Corrected: In the statement, column 1, line 1, "Delaware" should be deleted and *New York* should be inserted.

866,807. GP. Cl. 23. 3-18-69. Nordberg Manufacturing Company, Milwaukee, Wis. Amended: In the statement, column 2, lines 1 and 2, the description of goods is deleted and *vibrating screens for aggregate and and mineral processing industries* is inserted.

873,210. FOM AND DESIGN. Cl. 101. 7-15-69. Foto-Mem, Inc., Natick, Mass. Corrected: In the statement, column 1, line 1, "Men" should be deleted and *Mem* should be inserted.

874,493. CARBONELL ETC. AND DESIGN. Cl. 49. 8-5-69. Carronell y Compania de Cordoba S.A., Cordoba, Spain. Corrected: In the statement, column 1, line 1, "Carronell" should be deleted and *Carbonell* should be inserted.

874,633. MELROE AND DESIGN. Cl. 23. 8-12-69. Melrose Company, Gwinner, N. Dak. Corrected: In the statement, column 1, line 1, "Melrose" should be deleted and *Melroe* should be inserted.

875,546. VIGOR-WHIRL. Cl. 22. 8-26-69. Jad Tool Company, Cleveland, Ohio. Corrected: In the heading, "288,928" should be deleted and *288,828* should be inserted.

876,300. FREESEAL. Cl. 4. 9-9-69. Texize Chemicals, Inc., Greenville, S.C. Corrected: In the statement, column 1, line 1, "Textize" should be deleted and *Texize* should be inserted.

876,323. MONERAMIC. Cl. 12. 9-9-69. Monier Research & Development Pty. Limited. Villawood, near Sydney, Australia. Corrected: In the statement, column 1, line 4, "Sidney" should be deleted and *Sydney* should be inserted.

876,424. MAILLINOX. Cl. 22. 9-9-69. Etablissements A. Foulneteau, Gray, Haute-Saone, France. Corrected: In the statement, column 1, line 1, "Establissements" should be deleted and *Etablissements* should be inserted.

876,751. W AND DESIGN. Cl. 102. 9-9-69. Waldner & Company, Kansas City, Mo. Corrected: In the statement, column 1, line 1, "Walder" should be deleted and *Waldner* should be inserted.

876,927. THE LUCKIEST LURES IN THE WORLD. Cl. 22. 9-16-69. Glen L. Evans, Inc., Caldwell, Idaho. Corrected: In the statement, column 2, line 1, "snow skis" should be deleted and *artificial fishing lures* should be inserted.

877,061. SPEEDJAC. Cl. 39. 9-16-69. De Wan Manufacturing Corporation, Milwaukee, Wis. Corrected: In the statement, column 1, line 3, "850" should be deleted and *805* should be inserted.

# INDEX OF REGISTRANTS

## NOVEMBER 18, 1969

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A To Z Rental, Inc., Chicago, Ill. 880,781, pub. 9–2–69. Multiple Class (Classes 19, 22, and 50).
A To Z Rental, Inc., Chicago, Ill. 880,787–8, pub. 9–2–69. Multiple Class (Classes 19, 22, and 50).
Aaur Products, Inc., Bradley Beach, N.J. 757,951, canc. Cl. 46.
Abbott Laboratories, North Chicago, Ill. 757,623, canc. Cl. 18.
Ad Lib Records Inc., Staten Island, N.Y. 757,779, canc. Cl. 36.
Adrema Ltd., London, England. 757,698, canc. Cl. 23.
Aimcee Wholesale Corp., New York, N.Y. 880,765, pub. 9–2–69. Multiple Class (Classes 16 and 29).
Air Dynamics Corp., Seattle, Wash. 880,835, pub. 9–2–69. Cl. 23.
Air Rake Mfg. Corp., Chicopee, Mass. 880,849, pub. 9–2–69. Cl. 23.
Airnav, Inc., Seattle, Wash. 757,730, canc. Cl. 26.
Air-Rite, Inc., Columbus, Ga. 880,878, pub. 9–2–69. Cl. 31.
Alaska Northwest Publishing Co., Edmonds, Wash. 880,941, pub. 9–2–69. Cl. 38.
Alim Association, Inc., from South Atlantic Shipbuilders, Inc., Miami, Fla. 757,634, canc. Cl. 19.
Allergan Pharmaceuticals, Inc., Santa Ana, Calif. 747,504–6, cor. Cl. 18.
Allergan Pharmaceuticals, Inc., Santa Ana, Calif. 766,237–8, cor. Cl. 18.
Allergan Pharmaceuticals, Santa Ana, Calif. 880,717, pub. 9–2–69. Cl. 6.
Allergan Pharmaceuticals, Santa Ana, Calif. 880,774, pub. 9–2–69. Cl. 18.
Allergan Pharmaceuticals, Inc., Santa Ana, Calif. 771,064, cor. Cl. 18.
Allied Chemical & Dye Corp., to Allied Chemical Corp., New York, N.Y. 510,763, ren. 11–18–69. Cl. 6.
Allied Chemical Corp. : *See—*
  Allied Chemical & Dye Corp.
Allied Old English, Inc., Newark, N.J. 808,612, cor. Cl. 46.
Allred, Marvin H., d.b.a. Allred's Pool Supplies, Santa Ana, from Allred's Pool Supplies, Inc., Garden Grove, Calif. 881,058, pub. 9–2–69. Multiple Class (Classes 101 and 103).
Allred's Pool Supplies : *See—*
  Allred, Marvin H.
Alpha Montessori School : *See—*
  Rinaldo, Alvina M.
Alsco, Inc., from Chromcraft Corp., St. Louis, Mo. 880,731, pub. 9–2–69. Multiple Class (Classes 9 and 32).
Alsco, Inc., St. Louis, Mo. 880,880, pub. 9–2–69. Cl. 32.
Albin Enterprises, Inc., Burbank, Calif. 757,681, canc. Cl. 22.
American Agricultural Chemical Co., The, New York, N.Y., to Continental Oil Co., Ponca City, Okla. 512,010, ren. 11–18–69. Cl. 6.
American Appraisal Co., The, Milwaukee, Wis. 880,930, pub. 9–2–69. Cl. 38.
American Associated Co., Inc., Atlanta, Ga. 880,956, pub. 9–2–69. Cl. 42.
American Brake Shoe Co., New York, N.Y., to Kellogg-American, Inc., Oakmont, Pa. 520,768, ren. 11–18–69. Cl. 23.
American Biltrite Rubber Co., Inc. : *See—*
  Boston Woven Hose & Rubber Co.
American Cotton Yarns, Inc., Chicago, Ill. 880,726–7, pub. 9–2–69. Cl. 7.
American Cyanamid Co., Wayne, N.J. 880,777, pub. 9–2–69. Cl. 18.
American Institute of Industrial Engineers, Inc., New York, N.Y. 880,937, pub. 9–2–69. Cl. 38.
American Olean Tile Co., Inc., Lansdale, Pa. 880,743, pub. 9–2–69. Cl. 12.
American Optical Co., South Bridge, Mass., from Litton Systems, Inc., Beverly Hills, Calif. 757,734, canc. Cl. 26.
American Paper Institute, Inc., Chicago, Ill. 880,896, pub. 9–2–69. Cl. 37.
American Smelting & Refining Co., New York, N.Y. 880,753, pub. 9–2–69. Cl. 14.
American Society of Hospital Pharmacists, Inc., Washington, D.C. 880,943, pub. 9–2–69. Cl. 38.
Ametek, Inc., New York, N.Y. 757,745, canc. Cl. 26.
Anchor Continental : *See—*
  Continental Chemical Co., Inc.
Anderson Gun Shop : *See—*
  Anderson, H. B.
Anderson, H. B., d.b.a. Anderson Gun Shop, Yakima, Wash. 880,763, pub. 9–2–69. Cl. 16.
Anger, Wilhelm, Ohg, Traun, Austria. 880,860, pub. 9–2–69. Cl. 26.
Anheuser-Busch, Inc., St. Louis, Mo. 262,097, ren. 11–18–69. Cl. 46.
Ansley, Inc., Shelby N.C. 880,730, pub. 9–2–69. Multiple Class (Classes 7, 29, and 43).
Applied Research Laboratories, Inc., Glendale, Calif. 880,862, pub. 9–2–69. Cl. 26.
Arcade Tool & Die Co., Bridgeport, Conn. 880,756, pub. 9–2–69. Cl. 14.
Aries Corp., McLean, Va. 881,036, pub. 9–2–69. Cl. 101.
Armour Pharmaceutical Co., Chicago, Ill. 880,779, pub. 9–2–69. Cl. 18.
Arnold, Schwinn & Co., to Schwinn Bicycle Co., Chicago, Ill. 520,081, ren. 11–18–69. Cl. 19.
Art Craft Optical Co., Inc., Rochester, N.Y. 757,723, canc. Cl. 26.
Ashland Paper Mills, Inc., Ashland, N.H., to Concel Inc., New York, N.Y. 515,175, ren. 11–18–69. Cl. 37.
Associated Food Stores, Inc., Jamaica, N.Y. 880,968, pub. 9–2–69. Cl. 45.
Associated Spring Corp., Bristol, Conn. 518,395, ren. 11–18–69. Cl. 13.
Atherton Associates, Inc., Boston, Mass. 880,949, pub. 9–2–69. Cl. 40.
Atlantic Richfield Co., from Sinclair Refining Co., New York, N.Y. 880,888, pub. 9–2–69. Cl. 34.
Atlas Chemical Industries, Inc. : *See—*
  Atlas Powder Co.
Atlas Powder Co., to Atlas Chemical Industries, Inc., Wilmington, Del. 261,467, ren. 11–18–69. Cl. 9.
Atlas Underwear Corp., Piqua, Ohio. 881,090. Cl. 39.
Auburn Rubber Co., Inc., Deming, N. Mex. 757,674, canc. Cl. 22.
Audit Controls, Inc., Fair Lawn, N.J. 880,919, pub. 9–2–69. Cl. 38.
Austin, Nichols & Co., Inc., Maspeth, N.Y. 517,639, ren. 11–18–69. Cl. 49.
Austin, Nichols & Co., Inc., Brooklyn, to Austin, Nichols & Co., Inc., Maspeth, N.Y. 517,642, ren. 11–18–69. Cl. 49.
Austral Oil Co., Inc., Houston, Tex. 881,039, pub. 9–2–69. Cl. 100.
Automated Management Systems, Jackson, Miss. 881,049, pub. 9–2–69. Cl. 101.
Automation, Inc., Chatsworth, Ga. 757,654, canc. Cl. 21.
Automobile Club of New York, Inc., New York, N.Y. 518,211, ren. 11–18–69. Cl. 38.
Avar, Inc., St. Louis, Mo. 880,897, pub. 9–2–69. Cl. 37.
Avon Products, Inc., New York, N.Y. 443,271, ren. 11–18–69. Cl. 51.
Avon Products, Inc., New York, N.Y. 881,016, pub. 9–2–69. Cl. 51.
BA & T Industrial Supply Co., Los Angeles, Calif. 880,719, pub. 8–2–69. Cl. 6.
B/G Foods, Inc., Chicago, Ill. 880,994–5, pub. 9–2–69. Cl. 46.
B/G Foods, Inc., d.b.a. Dutchland Dairy Restaurants, Chicago, Ill. 881,048, pub. 9–2–69. Cl. 100.
Bainbridge Mfg., Inc., Bainbridge Island, Wash. 880,749, pub. 9–2–69. Cl. 13.
Baker-Raulang Co., The, Cleveland, Ohio, to Otis Elevator Co., New York, N.Y. 516,052, ren. 11–18–69. Cl. 19.
Balfour, L. G., Co., Attleboro, Mass. 516,188, ren. 11–18–69. Cl. 28.
Barnegat Light Products, Inc., Middletown, Pa. 880,982, pub. 9–2–69. Cl. 46.
Bart Industries Inc., from Rexall Drug & Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 880,819, pub. 9–2–69. Cl. 22.
Bassett, Geo., & Co. Ltd., Sheffield, England. 757,847, canc. Cl. 46.
Beach Soap Co., Lawrence, Mass., to Philadelphia Quartz Co., Philadelphia, Pa. 515,188, ren. 11–18–69. Cl. 6.
Beckerman Shoe Corp., New York, N.Y. 757,814, canc. Cl. 39.
Becton, Dickinson & Co., East Rutherford, N.J., from Electrodyne Co., Inc., Westwood, Mass. 880,961, pub. 9–2–69. Cl. 44.
Benihana of Tokyo, Inc., New York, N.Y. 881,040, pub. 9–2–69. Cl. 100.
Benjor Products, Culver City, Calif. 757,868–71, canc. Cl. 50.
Bernzomatic Corp., Rochester, N.Y. 880,711, pub. 9–2–69. Cl. 6.
Best Bros. Keen's Cement Co., The, Medicine Lodge, Kans., to National Gypsum Co., Buffalo, N.Y. 262,663, ren. 11–18–69. Cl. 12.
Bestop Mfg. Co., Inc., Boulder, Colo. 880,794, pub. 9–2–69. Cl. 19.
Bettinger Corp., The, Milford, Mass. 757,689, canc. Cl. 23.
Bibun Machine Construction Co., Ltd., Hiroshima Prefecture, Japan. 880,852, pub. 9–2–69. Cl. 23.
Big Star Products Co. : *See—*
  Colonial Stores Inc.
Bimba Mfg. Co., Monee, Ill. 880,838, pub. 9–2–69. Cl. 23.
Black Publishing Co., The : *See—*
  Walker, Zorina.
Blatchford Calf Meal Co., Waukegan, Ill. 757,845, canc. Cl. 46.
Blendax-Werke R. Schneider & Co., Mainz (Rhine), Germany. 757,878, canc. Cl. 51.
Bliss, E. W., Co. : *See—*
  Mackintosh-Hemphill Co.
Block Drug Co. Inc., Jersey City, N.J. 880,776, pub. 9–2–69. Cl. 18.
Block Drug Co., Inc., Jersey City, N.J. 881,011, pub. 9–2–69. Cl. 51.
Block Drug Co., Inc., Jersey City, N.J. 881,024, pub. 9–2–69. Cl. 52.
Bobby's Baby, Inc., Denver, Colo. 881,028, pub. 9–2–69. Cl. 100.

Bombardier Ltd., Valcourt, Quebec, Canada. 880,792, pub. 9–2–69. Cl. 19.
Bon Ami Co., The, New York, N.Y. 757,596, canc. Cl. 16.
Bonne Bell, Inc., Lakewood, Ohio. 881,010, pub. 9–2–69. Cl. 51.
Boogie Kings, The, Lake Charles, La. 881,082, pub. 9–2–69. Cl. 107.
Borden, Inc., New York, N.Y. 880,996, pub. 9–2–69. Cl. 46.
Boston Woven Hose & Rubber Co., Cambridge, to American Biltrite Rubber Co., Inc., Chelsea, Mass. 520,757, ren. 11–18–69. Cl. 35.
Botany Industries, Inc.: *See*—
Botany Worsted Mills.
Botany Worsted Mills, to Botany Industries, Inc., New York, N.Y. 75,638, ren. 11–18–69. Cl. 42.
Bourjois, Inc.: *See*—
Societe d'Etudes, de Recherches, de Representation et d'Exploitation (S.E.R.R.E.) Societe a Responsabilite Limitee.
Boyle, John, & Co., Inc., New York, N.Y. 880,957, pub. 9–2–69. Cl. 42.
Brakeley Canning Co., The: *See*—
Brakeley, Harry H., Jr.
Brakeley Food Products Co., The: *See*—
Brakeley, Harry H., Jr.
Brakeley, Harry H., Jr., d.b.a. The Brakeley Canning Co., and The Brakeley Food Products Co., Bordentown, to The Brakeley Food Products Co., Camden, N.J. 516,214, ren. 11–18–69. Cl. 46.
Brand, Walter W., d.b.a. Sands Associated Motels, Lubbock, Tex. 757,908, canc. Cl. 101.
Brandwen, Paul E., d.b.a. Paul E. Brandwen, Miami, Fla. 736,394, canc. Cl. 31.
Branson Instruments, Inc., Stamford, Conn. 880,812, pub. 9–2–69. Cl. 21.
Breeze Corp. Inc., Union, N.J. 880,834, pub. 9–2–69. Cl. 23.
Brella Corp., Altadena, Calif. 757,874, canc. Cl. 50.
Bristol-Myers Co.: *See*—
Paris Medicine Co.
Bryant Teacher's Bureau, Inc., Philadelphia, Pa. 881,065, pub. 9–2–69. Cl. 101.
Buffalo Bill's Wild West, Inc., Los Angeles, Calif. 881,046, pub. 9–2–69. Cl. 100.
Bulova Watch Co., Inc.: *See*—
Westfield Watch Co., Inc.
Bulova Watch Co., Inc., Flushing, N.Y. 880,871, pub. 9–2–69. Cl. 27.
Burlington Industries, Inc.: *See*—
May McEwen Kaiser Co.
Byk-Gulden Lomberg Chemische Fabrik G.m.b.H., Konstanz, Germany. 880,764, pub. 9–2–69. Cl. 16.
C.D.M. Co., Ltd., Osaka Prefecture, Japan. 880,839, pub. 9–2–69. Cl. 23.
Caled Products Co., Inc., Brentwood, Md. 881,026, pub. 9–2–69. Cl. 52.
California Olive Packers, Inc., Corning, Calif. 403,307, canc. Cl. 46.
California Spray-Chemical Corp., Richmond, to Chevron Chemical Co., San Francisco, Calif. 519,659, ren. 11–18–69. Cl. 6.
Cameo-Parkway Records, Inc., Philadelphia, Pa. 757,923, canc. Cl. 107.
Camp & McInnes, Inc.: *See*—
Scott, Rufus W., Co.
Canfield, George W., Largo, Fla. 880,906, pub. 9–2–69. Multiple Class (Classes 38 and 100).
Capem Machinery Corp., Buffalo, to International Paper Co., New York, N.Y. 261,624, ren. 11–18–69. Cl. 23.
Capital Controls Co., Inc., Colmar, Pa. 880,856, pub. 9–2–69. Cl. 26.
Capitol Products of Grand Rapids, Inc., Grand Rapids, Mich. 880,739, pub. 9–2–69. Cl. 12.
Carbon Corp., New York, N.Y. 881,015, pub. 9–2–69. Cl. 51.
Card-Tex Inc., Brooklyn, N.Y. 880,800, pub. 9–2–69. Cl. 20.
Cargill, Inc., Minneapolis, Minn. 880,991, pub. 9–2–69. Cl. 46.
Carolina Biological Supply Co., Burlington, N.C. 880,864, pub. 9–2–69. Cl. 26.
Carolina Co. Inc., Southern Pines, N.C. 880,759, pub. 9–2–69. Cl. 15.
Carronell y Compania de Cordoba S.A., Cordoba, Spain. 874,493, cor. Cl. 49.
Carter-Wallace, Inc., New York, N.Y. 881,020–21, pub. 9–2–69. Cl. 51.
Cattleman, Inc., The, New York, N.Y. 880,732, pub. 9–2–69. Multiple Class (Classes 9 and 38).
Centerfill Aktieselskab (Nordisk Fjerfabrik, Aktieselskab), Middelfart, Denmark. 880,960, pub. 9–2–69. Cl. 42.
Central American Development Corp., Lakewood, Ohio. 880,735, pub. 9–2–69. Cl. 12.
Centre Circuits, Inc., State College, Pa. 757,755, canc. Cl. 26.
Centrx Custom Centre, Inc., St. Louis, Mo. 757,829, canc. Cl. 44.
Certified Medical Representatives Institute, Inc., Roanoke, Va. 880,924, pub. 9–2–69. Multiple Class (Classes 38 and 107).
Charles Equipment Co., Villa Park, Ill. 880,815, pub. 9–2–69. Multiple Class (Classes 21 and 23).
Chase Bag Co., New York, N.Y. 511,477, ren. 11–18–69. Cl. 7.
Chase Bag Co., New York, N.Y. 511,967, ren. 11–18–69. Cl. 42.
Chase Manhattan Bank, National Association, New York, N.Y. 881,067, pub. 9–2–69. Cl. 102.
Chem-Fab Corp., Doylestown, Pa. 880,813, pub. 9–2–69. Cl. 21.
Chemical Specialties Sales Corp., The, Bridgeport, Conn. 757,890, canc. Cl. 52.
Chevron Chemical Co.: *See*—
California Spray-Chemical Corp.
Chicago Athletic Association, Chicago, Ill. 881,041, pub. 9–2–69. Cl. 100.
Chloro-Guard Electronics, Inc., Sacramento, Calif. 880,847, pub. 9–2–69. Cl. 23.
Chock Full O'Nuts Corp., New York, N.Y. 864,362, cor. Cl. 100.
Chrono Graphics, Ltd., New York, N.Y. 880,895, pub. 9–2–69. Cl. 37.
Churchwell, J. H., Co., Jacksonville, Fla. 443,085, ren. 11–18–69. Cl. 39.
Ciba Ltd., Basel, Switzerland. 757,602, canc. Cl. 18.
Clairol Inc., New York, N.Y. 881,019, pub. 9–2–69. Cl. 51.
Cleveland Museum of Natural History, The, Cleveland, Ohio. 880,938, pub. 9–2–69. Cl. 38.
Cleveland Pretzel & Potato Chip Co., The, to The Dan Dee Pretzel & Potato Chip Co., Cleveland, Ohio. 261,450, ren. 11–18–69. Cl. 46.
Clopay Corp., Cincinnati, Ohio. 880,894, pub. 9–2–69. Cl. 37.
Close-Up, Inc., New York, N.Y. 880,946, pub. 9–2–69. Cl. 38.
Coap Systems Inc., Greenvale, N.Y. 881,063, pub. 9–2–69. Cl. 101.
Coes Knife Co.: *See*—
Loring Coes Co.
Coes, Loring, Co., to Coes Knife Co., Worcester, Mass. 513,992, ren. 11–18–69. Cl. 23.
Coffee Chef, Inc., Philadelphia, Pa. 757,701, canc. Cl. 23.
Colburn, Con W., d.b.a. Newport Paipo, from Newport Paipo, Newport Beach, Calif. 880,816, pub. 9–2–69. Cl. 22.
College Life Insurance Co. of America, Indianapolis, Ind. 881,069, pub. 9–2–69. Cl. 102.
Colonial Stores Inc., d.b.a. Big Star Products Co., Atlanta, Ga. 880,973, pub. 9–2–69. Cl. 46.
Columbia Broadcasting System, Inc., New York, N.Y. 880,805–6, pub. 9–2–69. Cl. 21.
Comfo Corp., Wakarusa, Ind. 880,879, pub. 9–2–69. Cl. 32.
Commercial Decal, Inc., Mount Vernon, N.Y. 880,918, pub. 9–2–69. Cl. 38.
Computer Control Co., Inc., from Computer Control Co., Inc., Farmingham, Mass. 757,713, canc. Cl. 26.
Concel Inc.: *See*—
Ashland Paper Mills, Inc.
Concrete Pipe Machinery Co., Sioux City, Iowa. 880,942, pub. 9–2–69. Cl. 38.
Consolidated Olive Growers: *See*—
Well, Ira O.
Consolidated Thermoplastics Co., Los Angeles, Calif. 757,685, canc. Cl. 22.
Continental Air Filters, Inc., Louisville, Ky. 443,329, ren. 11–18–69. Cl. 31.
Continental Chemical Co., The, Cleveland, Ohio. 757,552, canc. Cl. 4.
Continental Chemical Co., Inc., d.b.a. Anchor Continental, Columbia, S.C. 880,710, pub. 9–2–69. Multiple Class (Classes 5 and 37).
Continental Oil Co.: *See*—
American Agricultural Chemical Co.
Core-Lube, Inc., Danville, Ill. 880,708, pub. 9–2–69. Cl. 5.
Corhart Refractories Co., Louisville, Ky. 515,723, ren. 11–18–69. Cl. 12.
Cornell & Lont Associates, Inc., Hawthrone, N.J. 881,086. Multiple Class (Classes 36 and 38).
Corona Forge Co., Corona, Calif. 880,842, pub. 9–2–69. Cl. 23.
Cosmetically Yours, Inc., Yonkers, N.Y. 881,013, pub. 9–2–69. Cl. 51.
Courier Products, Inc., New York, N.Y. 880,948, pub. 9–2–69. Cl. 40.
Crawford Fitting Co., Solon, Ohio. 880,701, pub. 9–2–69. Cl. 2.
Cronan, Jack A., d.b.a. Nordon Associates, Lexington, Mo. 880,822, pub. 9–2–69. Cl. 22.
Crookes-Barnes Laboratories, Inc., Wayne, N.J. 757,620, canc. Cl. 18.
Crown Imports Co., Inc., South San Francisco, Calif. 880,999, pub. 9–2–69. Cl. 46.
Cryogenic Society of America, Inc., Orange, Calif. 881,075, pub. 9–2–69. Cl. 107.
Cunningham Art Products, Inc., Stone Mountain, Ga. 880,766, pub. 9–2–69. Cl. 16.
Curtis, Helene, Industries, Inc., Chicago, Ill. 766,872, new cert. Multiple Class (Classes 51 and 52).
Curtis, Helene, Industries, Inc., Chicago, Ill. 881,008, pub. 9–2–69. Cl. 51.
DCA Food Industries, Inc., New York, N.Y. 880,992, pub. 9–2–69. Cl. 46.
D'Altrui Industries, Elizabeth, N.J. 880,886, pub. 9–2–69. Cl. 32.
Dainty Dot Hosiery: *See*—
Levin Bros.
Dairy Laboratories, The, to Dalare Associates, Inc., Philadelphia, Pa. 264,673, ren. 11–18–69. Cl. 6.
Dalare Associates, Inc.: *See*—
Dairy Laboratories, The.
Damon Recording Studios, Inc., Kansas City, Mo. 515,620, ren. 11–18–69. Cl. 21.
Dan Dee Pretzel & Potato Chip Co., The: *See*—
Cleveland Pretzel & Potato Chip Co., The.
Datapax Computer Systems Corp., New York, N.Y. 880,811, pub. 9–2–69. Cl. 21.
Davenport, Gertrude, Inc., New York, N.Y. 880,951, pub. 9–2–69. Cl. 39.
Davis, Doc, & Associates: *See*—
Davis, H. L.

Davis, H. L., d.b.a. Doc Davis & Associates, Cleveland, Ohio. 881,051, pub. 9–2–69. Cl. 101.
Davis Paint Co.: *See*—
New Method Paint Co.
Dayton Co., The, to Dayton-Hudson Corp., Minneapolis, Minn. 520,156, ren. 11–18–69. Cl. 39.
Dayton-Hudson Corp.: *See*—
Dayton Co., The.
Deister Concentrator Co., Inc., The, Fort Wayne, Ind. 880,844, pub. 9–2–69. Cl. 23.
Delta Laboratories: *See*—
Jordan, Walter E.
Demel's, Ch., Sohne, Vienna, Austria. 880,967, pub. 9–2–69. Multiple Class (Classes 45, 46, 47, and 49).
Densco, Inc., Denver, Colo. 515,135, ren. 11–18–69. Cl. 44.
Dental Survey Publications, to Dental Survey Publications, Inc., Minneapolis, Minn. 515,234, ren. 11–18–69. Cl. 38.
Dental Survey Publications, to Dental Survey Publications, Inc., Minneapolis, Minn. 515,309, ren. 11–18–69. Cl. 38.
Dental Survey Publication, Inc.: *See*—
Dental Survey Publications.
Deviline Inc., Mount Vernon, N.Y. 881,012, pub. 9–2–69. Cl. 51.
De Wan Mfg. Corp., Milwaukee, Wis. 877,061, cor. Cl. 39.
Diamond Shamrock Corp., Cleveland, Ohio. 880,722, pub. 9–2–69. Multiple Class (Classes 6, 15, and 52).
Die Cast Finishing Co., The, Cleveland, Ohio. 757,687, canc. Cl. 22.
Dollar General Corp., Scottsville, Ky. 881,060, pub. 9–2–69. Cl. 101.
Dolomite Brick Corp. of America, York, Pa. 880,745, pub. 9–2–69. Cl. 12.
Domtar Ltd., Montreal, Quebec, Canada. 880,693, pub. 9–2–69. Cl. 1.
Donnelley, Reuben H., Corp., The, New York, N.Y. 880,926, pub. 9–2–69. Cl. 38.
Donner Mountain Corp., The, Berkeley, Calif. 880,821, pub. 9–2–69. Cl. 22.
Doric Corp.: *See*—
Doyle Packing Co.
Double Stamp Brands Inc., Birmingham, Ala. 757,858–9, canc. Cl. 46.
Dow-Lee Co., Wichita, Kans. 757,673, canc. Cl. 22.
Doyle Packing Co., Los Angeles, Calif., to Doric Corp., Oklahoma City, Okla. 508,071, ren. 11–18–69. Cl. 46.
Drackett Co., The: *See*—
O-Cedar Corp'N.
Drackett Co., The, Cincinnati, Ohio. 881,023, pub. 9–2–69. Cl. 52.
Drew Chemical Corp., New York, N.Y. 880,993, pub. 9–2–69. Cl. 46.
Drilco Oil Tools, Inc.: *See*—
Smith International, Inc.
Drummond Knitwear Co., Ltd., Maspeth, N.Y. 880,952, pub. 9–2–69. Cl. 39.
Duffy-Mott Co., Inc.: *See*—
Pratt-Low Preserving Co.
Duncan, Donald F., Inc., Evanston, Ill. 757,678, canc. Cl. 22.
Duncan, Donald F., Inc., Evanston, Ill. 757,680, canc. Cl. 22.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 518,814, ren. 11–18–69. Cl. 9.
Durafab Disposables, Inc., Celburne, Tex. 880,995, pub. 9–2–69. Cl. 39.
Durox Co., The, Cleveland, Ohio. 757,595, canc. Cl. 16.
Dynavolve Controls, Inc., Lathrup Village, Mich. 880,830, pub. 9–2–69. Cl. 23.
Eastman Kodak Co., Rochester, N.Y. 880,910, pub. 9–2–69. Cl. 38.
Eaton Yale & Towne Inc., Cleveland, Ohio. 880,865, pub. 9–2–69. Cl. 26.
Eckert-Mauchly Computer Corp., Philadelphia, to Sperry Rand Corp., Blue Bell, Pa. 515,406, ren. 11–18–69. Cl. 26.
Economy Products Corp., Chicago, Ill. 757,672, canc. Cl. 22.
Edy's: *See*—
Edy's Character Dandies of Northern California.
Edy's Character Dandies of Northern California, d.b.a. Edy's, Oakland, Calif. 880,979, pub. 9–2–69. Cl. 46.
Eimco Corp., The to Envirotech Corp., Salt Lake City, Utah. 519,194, ren. 11–18–69. Cl. 23.
Elba Corp., Boulder, Colo. 757,708, canc. Cl. 26.
Electrodyne Co., Inc.: *See*—
Becton, Dickinson & Co.
Electro-Learner Corp., Bethesda, Md. 880,867, pub. 9–2–69. Cl. 26.
Electrospace Corp., Glencove, N.Y. 880,808, pub. 9–2–69. Cl. 21.
Elliott, B., Inc., Wilmington, Del. 880,837, pub. 9–2–69. Cl. 23.
Elmore, R. A., d.b.a. E. A. Fulcher Distilling Co., Inc., to E. A. Fulcher Distilling Co., Inc., Richmond, Va. 263,738, ren. 11–18–69. Cl. 39.
Empress Chinchilla Breeders Cooperative, Inc., New York, N.Y. 880,694, pub. 9–2–69. Cl. 1.
Empress Chinchilla Breeders Cooperative, Inc., New York, N.Y. 880,925, pub. 9–2–69. Cl. 38.
Encore, Inc., Portland, Oreg. 880,964, pub. 9–2–69. Cl. 44.
Engelhard Minerals & Chemicals Corp.: *See*—
Wilson, H. A., Co., The.
Engineers Joint Council, New York, N.Y. 757,940, canc. Cl. 38.
Englander Co., Inc., The, Chicago, Ill., to The Englander Co., Inc., New York, N.Y. 519,220, ren. 11–18–69. Cl. 32.
Enslow Publishing Corp., New York, N.Y. 880,911, pub. 9–2–69. Cl. 38.
Envirotech Corp.: *See*—
Eimco Corp., The.
Esbeco Distilling Corp., Stamford, Conn. 881,003, pub. 9–2–69. Cl. 49.
Eskimo Pie Corp., Richmond, Va. 880,980, pub. 9–2–69. Cl. 46.
Espe Fabrik Pharamazeutischer Praparate G.m.b.H., Seefeld, Germany. 880,966, pub. 9–2–69. Cl. 44.
Etablissement Omnipatent, Vaduz, Liechtenstein. 880,976, pub. 9–2–69. Cl. 46.
Etablissements A. Foulneteau, Gray, Haute-Saone, France. 876,424, cor. Cl. 22.
Evans, Glen L., Inc., Caldwell, Idaho. 876,927, cor. Cl. 22.
Evans, Jan, Inc., Westport, Conn. 757,842, canc. Cl. 46.
Eversman Mfg. Co., The, Denver, Colo. 880,851, pub. 9–2–69. Cl. 23.
Exeter Citrus Association, Exeter, Calif. 266,683, ren. 11–18–69. Cl. 46.
Eye Kraft Optical, Inc., St. Cloud, Minn. 880,869, pub. 9–2–69. Cl. 26.
FMC Corp., San Jose, Calif. 880,850, pub. 9–2–69. Cl. 23.
Fabricas De Manteca Sancor Cooperatives Unidas Limitada, Buenos Aires, Argentina. 880,981, pub. 9–2–69. Cl. 46.
Fabrique de Machines Mikron S.A., Bienne, Switzerland. 880,827, pub. 9–2–69. Cl. 23.
Famous Artists Schools, Inc., New York, N.Y. 881,079, pub. 9–2–69. Cl. 107.
Farbenfabriken Bayer Aktiengesellschaft, Leverkausen-Bayerwerk, Germany. 880,709, pub. 9–2–69. Cl. 5.
Fashion & Time Products Inc.: *See*—
Schwarcz, Adolf, & Son, Inc.
Federated Department Stores, Inc., Dallas, Tex. 757,907, canc. Cl. 101.
Fibersheen, Inc., d.b.a. Fibersheen Sales Co., Denver, Colo. 734,036, canc. Cl. 13.
Field, Henry, Seed & Nursery Co., Shenandoah, Iowa. 880,720, pub. 9–2–69. Cl. 6.
Firewel Co., Inc., The, Cheektowaga, N.Y. 757,770, canc. Multiple Class (Classes 31 and 44).
First National Bank of Boston, The, Boston, Mass. 757,912, canc. Cl. 192.
Fischer, I. B., d.b.a. Orange Blossom Apiaries, Orlando, Fla. 880,970, pub. 9–2–69. Cl. 46.
Fitzsimmons, Howind, Birmingham, Ala. 757,860, canc. Cl. 46.
Flexees International, Inc.: *See*—
Hallmark Shirt Co., Inc., The.
Flexnit Co., Inc., New York, N.Y. 881,089. Cl. 39.
Flight Centers, Inc., Madison, Wis. 881,083, pub. 9–2–69. Cl. 107.
Florsheim Shoe Co., The, to Interco Inc., d.b.a. The Florsheim Shoe Co., Chicago, Ill. 520,165, ren. 11–18–69. Cl. 39.
Foot Form Shoe Shops, Inc., New York, N.Y. 267,444, ren. 11–18–69. Cl. 39.
Foremost-McKesson, Inc.: *See*—
Golden State Co., Ltd.
Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, N.Y. 880,778, pub. 9–2–69. Cl. 18.
Foto-Mem, Inc., Natick, Mass. 873,210, cor. Cl. 101.
France-Foods, Societe Anonyme, Paris, France. 757,952, canc. Cl. 46.
Franklin Mint, Inc., The, Yeadon, Pa. 881,072–3, pub. 9–2–69. Cl. 106.
Frecker's Ice Cream Co., Columbus, Ohio. 880,987, pub. 9–2–69. Cl. 46.
Freedom Greeting Card Co.: *See*—
Wolk, Jerome.
Fried, Morton J., d.b.a. Precision Sensing Equipment, Berkeley, Calif. 757,756, canc. Cl. 26.
Fulcher Distilling Co., Inc.: *See*—
Elmore, R. A.
Fuller, D. B., & Co., to J. P. Stevens & Co., Inc., New York, N.Y. 518,534, ren. 11–18–69. Cl. 42.
Fuller, H. B., Co., St. Paul, Minn. 880,737, pub. 9–2–69. Cl. 12.
Fulton Co., The, Milwaukee, Wis. 521,234, ren. 11–18–69. Cl. 19.
GAF Corp., from General Aniline & Film Corp., New York, N.Y. 880,699, pub. 9–2–69. Multiple Class (Classes 2, 26, and 38).
G.K.N. Screws & Fasteners Ltd., Warley, England. 880,748, pub. 9–2–69. Cl. 13.
Geb & Souhan Yarn Co., Inc., Seneca Falls, N.Y. 757,943, canc. Cl. 43.
Geigg Chemical Co.: *See*—
Geigy Co., Inc.
Geigy Chemical Corp.: *See*—
Geigy Co., Inc.
Geigy Co., Inc., New York, to Geigy Chemical Corp., Ardsley, N.Y. 264,242, ren. 11–18–69. Cl. 6.
Geigy Co., Inc., New York, N.Y., to Geigg Chemical Co., Ardsley, N.Y. 443,793, ren. 11–18–69. Cl. 18.
Gellert Publishing Corp., New York, N.Y. 880,939, pub. 9–2–69. Cl. 38.
General Grocer Co., St. Louis, Mo. 521,763, ren. 11–18–69. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 515,266, ren. 11–18–69. Cl. 38.
General Research Corp., Goleta, Calif. 881,027, pub. 9–2–69. Cl. 100.
General Time Corp., New York, N.Y. 761,966, cor. Cl. 27.
General Tire & Rubber Co., The, Akron, Ohio. 880,795–9, pub. 9–2–69. Cl. 19.
Georgia Asphalt Co., to Gilmer Oil Co., Inc., Toccoa, Ga. 517,696, ren. 11–18–69. Cl. 15.
Gerber Cheese Co., Inc., New York, N.Y., from Price Food Co., Inc., Fort Worth, Tex. 880,972, pub. 9–2–69. Cl. 46.
Gillette Co., The: *See*—
Gillette Safety Razor Co.

Gillette Safety Razor Co., to The Gillette Co., Boston, Mass. 267,320, ren. 11–18–69. Cl. 23.
Gilmer Oil Co., Inc. : *See*—
Georgia Asphalt Co.
Ginsey Industries, Inc., Philadelphia, Pa. 880,751, pub. 9–2–69. Cl. 13.
Goebel, W., Porzellanfabrik, Bavaria, Germany. 757,671, canc. Cl. 22.
Goetze, Albert F., Inc., Baltimore, Md. 880,990, pub. 9–2–69. Cl. 46.
Golden State Co., Ltd., to Foremost-McKesson, Inc., San Francisco, Calif. 519,187, ren. 11–18–69. Cl. 46.
Goodrich, B. F., Co., The, Akron, Ohio. 880,959, pub. 9–2–69. Cl. 42.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 518,450, ren. 11–18–69. Cl. 21.
Gorman Golf Products, Inc., Southfield, Mich. 880,818, pub. 9–2–69. Cl. 22.
Grace, W. R., & Co., New York, N.Y. 880,707, pub. 9–2–69. Cl. 4.
Granat Bros. Inc., Dallas, Tex. 516,195, ren. 11–18–69. Cl. 28.
Gray Tool Co., Houston, Tex. 881,047, pub. 9–2–69. Cl. 100.
Griffith Laboratories, Inc., The, Chicago, Ill. 517,049, ren. 11–18–69. Cl. 46.
Gristede Bros., Inc., New York, N.Y. 757,838, canc. Cl. 46.
Gross, William A. T., Greenwich, Conn. 880,725, pub. 9–2–69. Cl. 6.
Grove Regulator Co., to Grove Valve & Regulator Co., Oakland, Calif. 521,384, ren. 11–18–69. Cl. 13.
Grove Valve & Regulator Co. : *See*—
Grove Regulator Co.
Guestguide Publishers : *See*—
Lesher, Robert G.
Gulton Industries, Inc., Metuchen, N.J. 757,669, canc. Cl. 21.
Gutman-Lann Glove Co., Inc., New York, N.Y. 757,822, canc. Cl. 39.
H. & M. Neckwear Co., Inc., New York, N.Y. 757,741, canc. Cl. 26.
Halberstadt, William, Philadelphia, Pa. 757,763, canc. Cl. 28.
Hallmark Shirt Co., Inc., The, to Flexees International, Inc., New York, N.Y. 442,964, ren. 11–18–69. Cl. 39.
Hamilton Publishing Co., Inc., Chamblee, Ga. 880,933, pub. 9–2–69. Cl. 38.
Hammermill Paper Co. : *See*—
Robeson Process Co.
Handi-Bag Corp., Chelsea, Mass. 880,898, pub. 9–2–69. Cl. 37.
Handling Services, Inc., Marne, Mich. 880,843, pub. 9–2–69. Cl. 23.
Harbor Chemical & Engineering Corp., Chicago, Ill. 880,715, pub. 9–2–69. Cl. 6.
Harriman Mfg. Co., The, Chattanooga, Tenn. 757,691, canc. Cl. 23.
Harris, D. P., Hardware & Mfg. Co., Inc., New York, N.Y. 443,605, ren. 11–18–69. Cl. 19.
Harris, D. P., Hardware & Mfg. Co., Inc., New York, N.Y. 520,133, ren. 11–18–69. Cl. 22.
Harris, D. P., Hardware & Mfg. Co., Inc., New York, N.Y. 520,166, ren. 11–18–69. Cl. 22.
Harrisburg Steel Corp., Harrisburg, to Harsco Corp.; Camphill, Pa. 515,846, ren. 11–18–69. Cl. 14.
Harsco Corp. : *See*—
Harrisburg Steel Corp.
Harsco Corp., Wormleysburg, Pa. 880,742, pub. 9–2–69. Cl. 12.
Hart-Delta, Inc., Zachary, La. 880,769, pub. 9–2–69. Cl. 18.
Harter Corp., Sturgis, Mich. 880,884, pub. 9–2–69. Cl. 32.
Haugron Cientifical S.A., Barcelona, Spain. 757,961, canc. Cl. 51.
Hazlett's Inc., Brewton, Ala. 757,950, canc. Cl. 46.
Heckman Bindery, Inc., The, North Manchester, Ind. 881,074, pub. 9–2–69. Cl. 106.
Hefti, F., & Co. A.G., Hatzingen, Switzerland. 514,041, ren. 11–18–69. Cl. 42.
Heil Co., The, Milwaukee, Wis. 880,793, pub. 9–2–69. Cl. 19.
Heiland Research Corp., Denver, Colo., to Honeywell Inc., Minneapolis, Minn. 443,722, ren. 11–18–69. Cl. 26.
Heinz, William E., Philadelphia, Pa. 757,764, canc. Cl. 28.
Hello Corp. of Pennsylvania, Pittsburgh, Pa. 880,927–8, pub. 9–2–69. Cl. 38.
Henderson Business Service Ltd., The, Ontario, Canada. 880,916, pub. 9–2–69. Cl. 38.
Herman, I. C., & Co., Inc., New York, N.Y. 757,805, canc. Cl. 39.
Hess, Dr., & Clark, Inc., Ashland, Ohio, to Richardson-Merrell Inc., New York, N.Y. 515,771, ren. 11–18–69. Cl. 18.
Hesse Corp., The, Kansas City, Mo. 880,783, pub. 9–2–69. Cl. 19.
Hickok Mfg. Co., Inc. : *See*—
Pioneer Suspender Co.
Hickok Mfg. Co., Inc., Rochester, N.Y. 516,222, ren. 11–18–69. Cl. 28.
Hickok Mfg. Co., Inc., Rochester, N.Y. 517,146, ren. 11–18–69. Cl. 39.
Hickok Mfg. Co., Inc., Rochester, N.Y. 518,984, ren. 11–18–69. Cl. 40.
Hoffman Candy Co. : *See*—
Hoffman, E. A., Candy Co., Inc.
Hoffman, E. A., Candy Co., Inc., to Hoffman Candy Co., Los Angeles, Calif. 515,037, ren. 11–18–69. Cl. 46.
Holzaepfel, Christian, Kg., Ebhausen, Germany. 880,881, pub. 9–2–69. Cl. 32.
Homarket, Inc., Bridgeport, Conn. 881,064, pub. 9–2–69. Cl. 101.
Honeywell Inc. : *See*—
Minneapolis-Honeywell Regulator Co.
Hotel Corp. of America, Boston, Mass., from RCA Food Corp., Baltimore, Md. 880,983, pub. 9–2–69. Cl. 46.
Houstonaire, Inc., Houston, Tex. 881,037, pub. 9–2–69. Multiple Class (Classes 100 and 107).
Howard & Collingwood, Inc., Pittsburgh, Pa. 881,031, pub. 9–2–69. Cl. 100.
Howard, Mary C., Cresskill, N.J. 880,900, pub. 9–2–69. Cl. 37.
Hughes, Timothy J., Burlington, Vt. 881,080, pub. 9–2–69. Cl. 107.
Huston Shoes ; *See*—
Samberg, Howard B.
ILC Industries, Inc., Dover, Del. 880,736, pub. 9–2–69. Multiple Class (Classes 12 and 39).
Ideal Toy Corp., Hollis, N.Y. 757,683, canc. Cl. 22.
Illinois Tool Works Inc., Chicago, Ill. 880,863, pub. 9–2–69. Cl. 26.
Imfeld, Maureen Y. : *See*—
Young, Leslie E.
Imperial Camera Corp., Chicago, Ill. 757,748–52, canc. Cl. 26.
Imperial Chemical Industries of Australia and New Zealand Ltd., Melbourne, Victoria, Australia. 880,733, pub. 9–2–69. Cl. 9.
Integrated Circuit Engineering Corp., Phoenix, Ariz. 881,044, pub. 9–2–69. Multiple Class (Classes 100 and 101).
Interco Inc. : *See*—
Florsheim Shoe Co., The.
International Latex Corp., Dover, Del. 757,627, canc. Cl. 18.
International Minerals & Chemical Corp., Skokie, Ill. 881,050, pub. 9–2–69. Cl. 101.
International Paper Co. : *See*—
Capem Machinery Corp.
International Paper Co., New York, N.Y. 880,901–2, pub. 9–2–69. Cl. 37.
International Rectifier Corp., Los Angeles, Calif. 880,801, pub. 9–2–69. Cl. 21.
International Services Co., Denver, Colo. 881,066, pub. 9–2–69. Cl. 102.
Interphoto Corp., Long Island City, N.Y. 757,740, canc. Cl. 26.
Insurance Manpower International, Dallas, Tex. 881,054, pub. 9–2–69. Cl. 101.
Isaacs, Edward, and Martin J. Ryan, New York, N.Y. 880,872, pub. 9–2–69. Cl. 27.
Items, Inc., d.b.a. Safe-T-Bone Co., St. Louis, Mo. 880,704, pub. 9–2–69. Cl. 3.
Jad Tool Co., Cleveland, Ohio. 875,546, cor. Cl. 22.
Jameson, John, & Son, Ltd., Dublin, Ireland. 517,883, ren. 11–18–69. Cl. 49.
Janox Corp., Arcanum, Ohio. 881,006, pub. 9–2–69. Cl. 50.
Jeno's Inc., Duluth, Minn. 880,984, pub. 9–2–69. Cl. 46.
Jilm Co., Burbank, Calif. 880,921, pub. 9–2–69. Cl. 38.
Joens, W. H., & C., G.m.b.H., Martinstrabe, Germany. 880,857–8, pub. 9–2–69. Cl. 26.
Johnson Rubber Co., The, Middlefield, Ohio. 880,689, pub. 9–2–69. Multiple Class (Classes 1, 12, 13, 20, 21, 23, 35, and 50).
Johnson's, Howard, Motor Lodges, Inc., Wollaston, Mass. 757,905, canc. Cl. 100.
Jones & Laughlin Steel Corp., Pittsburgh, Pa. 880,757, pub. 9–2–69. Cl. 14.
Jonny Shower Door Co., El Cajon, Calif. 757,579, canc. Cl. 12.
Jordan, Walter E., d.b.a. Delta Laboratories, Des Plaines, Ill. 880,962, pub. 9–2–69. Cl. 44.
Juvenile Shoes, Inc., Denver, Colo. 881,055, pub. 9–2–69. Cl. 101.
KCS Industries, Inc., Milwaukee, Wis. 880,883, pub. 9–2–69. Multiple Class (Classes 32 and 50).
Kahle Engineering Co., Union City, N.J. 880,836, pub. 9–2–69. Cl. 23.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 880,907, pub. 9–2–69. Cl. 38.
Kaiser, May McEwen, Co., Burlington, to Burlington Industries, Inc., Greensboro, N.C. 518,082, ren. 11–18–69. Cl. 39.
Kaufmann, P., Inc., New York, N.Y. 880,958, pub. 9–2–69. Cl. 42.
Kelley Co., Inc., Milwaukee, Wis. 880,826, pub. 9–2–69. Cl. 23.
Kellogg-American, Inc. : *See*—
American Brake Shoe Co.
Ken-Craft Products, Inc., San Fernando, Calif. 880,780, pub. 9–2–69. Cl. 19.
Kent Industries, Inc., Fort Worth, Tex. 880,760, pub. 9–2–69. Cl. 15.
Kenton Industries, d.b.a. Home Equipment Mfg. Co., Westminster, Calif. 880,747, pub. 9–2–69. Cl. 13.
Killoran, Russell F., Grand View on Hudson, N.Y. 880,950, pub. 9–2–69. Cl. 40.
Kimberly-Clark Corp., Neenah, Wis. 880,965, pub. 9–2–69. Cl. 44.
King Karol, Inc., New York, N.Y. 881,059, pub. 9–2–69. Cl. 101.
Kleen Chemical Mfg. Co., Chicago, Ill. 757,766, canc. Cl. 29.
Kleen Chemical Mfg. Co., Chicago, Ill. 757,891, canc. Cl. 52.
Kleer-Vu Industries, Inc., New York, N.Y. 880,932, pub. 9–2–69. Cl. 38.
Klix Chemical Co., Inc., South San Francisco, Calif. 881,022, pub. 9–2–69. Cl. 52.
Knight Armature Mfg. Inc., Granby, Quebec, Canada. 880,807, pub. 9–2–69. Cl. 21.
Kostell Furniture Co. : *See*—
Wolfe, Harry M.
Krack Corp., Chicago, Ill. 880,877, pub. 9–2–69. Multiple Class (Classes 31 and 34).

Kralco Co., The, New York, N.Y. 757,966, canc. Cl. 101.
Kremer, Philip, d.b.a. Murd Co., Philadelphia, Pa. 732,031, canc. Cl. 6.
Kristi Co., The, Arvada, Colo. 757,635, canc. Cl. 19.
Kroger Co., The, Cincinnati, Ohio. 880,971, pub. 9–2–69. Cl. 46.
Kroyer, Karl Kristian Kobs, Viby J., Denmark, 880,740, pub. 9–2–69. Cl. 12.
Kugelfabrik Schulte & Co., Tente, Germany. 880,706, pub. 9–2–69. Multiple Class (Classes 4, 13, 19, 23, and 26).
Kurfees, J. F., Paint Co., to Kurfees Paint Co., Louisville, Ky. 516,396, ren. 11–18–69. Cl. 16.
Kurfees Paint Co. : *See*—
Kurfees, J. F., Paint Co.
La Mirada Co. : *See*—
Weil, Ira O.
Lancer Books, Inc., New York, N.Y. 880,909, pub. 9–2–69. Cl. 38.
Landia Machine Co. : *See*—
Oster Mfg. Co.
Lanier Electronics Laboratory, Inc., Atlanta, Ga. 880,889, pub. 9–2–69. Cl. 36.
Lansing, James B., Sound, Inc., Los Angeles, Calif. 880,890, pub. 9–2–69. Cl. 36.
Laralo Marine Co. : *See*—
Loeb, Lawrence A. and Allan L.
Laser Mfg. Co., Inc. : *See*—
Laser, William.
Lasar, William, d.b.a. Laser Mfg. Co., to Lasar Mfg. Co., Inc., Los Angeles, Calif. 521,138, ren. 11–18–69. Cl. 23.
Laugherty Inc., Knoxville, Tenn. 881,091. Cl. 50.
Leece-Neville Co., The, to Victoreen Leece Neville, Inc., Cleveland, Ohio. 515,558, ren. 11–18–69. Cl. 21.
Leitz, Ernst, G.m.b.H., Wetzlar/Lahn, Germany. 880,868, pub. 9–2–69. Cl. 26.
Lei, Inc., Copiague, N.Y. 757,668, canc. Cl. 21.
Leonard's Pit Barbecue, Inc., Memphis, Tenn. 881,043, pub. 9–2–69. Cl. 100.
Lesher, Robert G., d.b.a. Guestguide Publishers, Denver, Colo. 757,796, canc. Cl. 38.
Levin Bros., to Dainty Dot Hosiery, Boston, Mass. 261,233, ren. 11–18–69. Cl. 39.
Lieberman, Joseph, & Sons, Inc., Philadelphia, Pa. 757,768, canc. Cl. 29.
Liberty Mutual Insurance Co., Boston, Mass. 757,910, canc. Cl. 102.
Libman, Robert H., Montreal, Quebec, Canada. 881,038, pub. 9–2–69. Cl. 100.
Lily-Tulip Cup Corp., New York, N.Y. 880,832, pub. 9–2–69. Cl. 23.
Lincoln Engineering Co., St. Louis, Mo., to McNeil Corp., Akron, Ohio. 515,855, ren. 11–18–69. Cl. 23.
Lodding Engineering Corp, Auburn, Mass. 757,904, canc. Cl. 100.
Loeb, Lawrence A. and Allan L., d.b.a. Laralo Marine Co., New Haven, Conn. 757,934–5, canc. Cl. 19.
Lombardi, Ettore, Milan, Italy. 880,782, pub. 9–2–69. Cl. 19.
Lombardo, Samuel, Palos Verdex Penninsula, Calif. 880,825, pub. 9–2–69. Cl. 22.
Lux Clock Mfg. Co., The, Waterbury, Conn., to Robertshaw Controls Co., Richmond, Va, 511,557, ren. 11–18–69. Cl. 27.
Lykens Associated Mills, Inc., Asheville, N.C. 757,942, canc. Cl. 39.
Macalaster Scientific Corp., Cambridge, Mass. 757,7724, canc. Cl. 26.
Machine Ice Co., Houston, Tex. 880,876, pub. 9–2–68. Cl. 31.
Mackintosh-Hemphill Co., Pittsburgh, Pa., to E. W. Bliss Co., Canton, Ohio. 514,588–9, ren 11–18–69. Cl. 14.
Main Toy Co., Oskaloosa, Iowa, to Western Publishing Co., Inc., Rachine, Wis. 268,283, ren. 11–18–69. Cl. 22.
Major Pool Equipment Corp., South Kearny, N.J. 880,718, pub. 9–2–69. Cl. 6.
Malco Products, Inc. : *See*—
New Mexico Asphalt & Refining Co.
Mallard Coach Corp., West Bend, Wis. 880,791, pub. 9–2–69. Cl. 19.
Mansfield Electric Controls Co. : *See*—
Therm-O-Disc, Inc.
Marbelhead Lime Co., Chicago, Ill. 516,411, ren. 11–18–69. Cl. 12.
Marcus, Louis, Corp., The, Baltimore, Md. 757,804, canc. Cl. 39.
Market Invertigators : *See*—
Telmark, Inc.
Marton Chemical Co., Inc., Brooklyn, N.Y. 880,761, pub. 9–2–69. Cl. 15.
Masback Inc., New York, N.Y. 520,262, ren. 11–18–69. Cl. 13.
Mason, William T., Louisville, Ky. 881,029, pub. 9–2–69. Cl. 100.
Mattel, Inc., Hawthrone, Calif. 880,824, pub. 9–2–69. Cl. 22.
McCrory Corp., New York, N.Y. 757,793, canc. Cl. 37.
McGraw-Hill, Inc., New York, N.Y. 880,940, pub. 9–2–69. Cl. 38.
Mckee, Arthur G., & Co, Cleveland, Ohio. 880,845, pub. 9–2–69. Cl. 23.
McKesson Laboratories : *See*—
Foremost-McKesson, Inc.
McNeil Corp. : *See*—
Lincoln Engineering Co.
McNeil Laboratories, Inc., Fort Washington, Pa. 757,609, canc. Cl. 18.
Mead Corp., The, Dayton, Ohio. 881,088. Cl. 37.
Mechanical Equipment Co., Inc., New Orleans, La. 880,846, pub. 9–2–69. Cl. 23.
Mechanize, Inc., Minneapolis, Minn. 880,848, pub. 9–2–69. Cl. 23.
Medical Books For Children Publishing Co., Minneapolis, Minn. 728,865, canc. Cl. 38.
Melrose Co., Gwinner, N. Dak. 874,633, cor. Cl. 23.
Mennel Milling Co., The : *See*—
Northwestern Elevator & Mill Co., The.
Merck & Co., Inc., Rahway, N.J. 267,956, ren. 11–18–69. Cl. 18.
Meteor Research Ltd., Roseville, Mich. 880,789, pub. 9–2–69. Cl. 19.
Midas, Inc., Chicago, Ill. 757,631–2, canc. Cl. 19.
Miller Brewing Co., Milwaukee, Wis. 666,959. Am. 7(d). Cl. 48.
Milwaukee Relays, Inc., Milwaukee, Wis. 757,660, canc. Cl. 21.
Minneapolis-Honeywell Regulator Co., to Honeywell Inc., Minneapolis, Minn. 520,350, ren. 11–18–69. Cl. 26.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 757,557, canc. Cl. 5.
Modern Partitions, Inc., Holland, Mich. 880,885, pub. 9–2–69. Cl. 32.
Monarch Electronics International, Inc., North Hollwood, Calif. 757,790, canc. Cl. 36.
Monier Research & Development Pty. Ltd., Villawood, near Sydney, Australia. 876,323, cor. Cl. 12.
Montecatini Edison S.p.A., Milan, Italy. 880,762, pub. 9–2–69. Multiple Class (Classes 16, 21, and 106).
Montgomery Ward & Co., Inc., Chicago, Ill. 757,799, canc. Cl. 39.
Morton International, Inc., Chicago, Ill. 880,721, pub. 9–2–69. Cl. 6.
Morton International, Inc., Chicago, Ill. 880,974, pub. 9–2–69. Cl. 46.
Motorola, Inc., Franklin Park, Ill. 757,663, canc. Cl. 21.
Motorola, Inc., Franklin Park, Ill. 880,809–10, pub. 9–2–69. Cl. 26.
Montrose Oil & Belting Co. Inc., d.b.a. Montrose Supply & Equipment Co., Brooklyn, N.Y. 881,025, pub. 9–2–69. Cl. 52.
Montrose Supply & Equipment Co. : *See*—
Montrose Oil & Belting Co., Inc.
Moore & Gorlin, Atlanta, Ga. 757,791, canc. Cl. 36.
Muirhead, Charles, & Son, Ltd., Edinburgh, Scotland. 881,005, pub. 9–2–69. Cl. 49.
Multi-Line Pen Co. : *See*—
Rogers, Murray K.
Multi-Systems & Products Corp., Bay City, Mich. 880,697, pub. 9–2–69. Cl. 1.
Munning, A. P., & Co., from Hanson-Van Winkle-Munning Co., Matawan, N.J. 171,747, canc. Cl. 4.
Murd Co. : *See*—
Kremer, Philip.
Murphy Elevator Co., The, Louisville, Ky. 522,023, ren. 11–18–69. Cl. 21.
N.V. Philips' Gloeilampenfabriken, Eindhoven, Netherlands. 881,087. Cl. 36.
Naremco, Inc., Springfield, Mo. 880,768, pub. 9–2–69. Cl. 18.
National Cash Register Co., The, Dayton, Ohio. 880,920, pub. 9–2–69. Cl. 38.
National Geographic Society, Washington, D.C. 880,934, pub. 9–2–69. Cl. 38.
National Gypsum Co. : *See*—
Best Brothers Keen's Cement Co., The.
National Mattress Co., Huntington, W. Va. 518,148, ren. 11–18–69. Cl. 32.
National Nuclear Corp., Palo Alto, Calif. 881,032, pub. 9–2–69. Cl. 100.
Nationwide Leasing Co., Chicago, Ill. 881,042, pub. 9–2–69. Cl. 100.
Nestle Co., Inc., The, White Plains, N.Y. 880,975, pub. 9–2–69. Cl. 46.
Nethercutt Laboratories, d.b.a. Cosgenic Labs, Hollywood, Calif. 757,963, canc. Cl. 51.
New Method Paint Co., Kansas City, to Davis Paint Co., North Kansas City, Mo. 521,067, ren. 11–18–69. Cl. 16.
New Mexico Asphalt & Refining Co., Artesia, to Malco Products, Inc., Roswell, N. Mex. 521,596, ren. 11–18–69. Cl. 15.
Newberry, J. J., Co., New York, N.Y. 881,061, pub. 9–2–69. Cl. 101.
Newport Paipo : *See*—
Colburn, Con W.
Nordberg Mfg. Co., Milwaukee, Wis. 866,807, new cert. Cl. 23.
Nordon Associates : *See*—
Cronan, Jack A.
Norris Candy Co. : *See*—
Norris Inc.
Norris Inc., d.b.a. Norris Candy Co., Atlanta, Ga. 757,843, canc. Cl. 46.
Northwest Airlines, Inc., d.b.a. Northwest Orient, St Paul, Minn. 881,071, pub. 9–2–69. Cl. 105.
Northwest Orient : *See*—
Northwest Airlines, Inc.
Northwestern Elevator & Mill Co., The, Toledo, to The Mennel Milling Co., Fostoria, Ohio. 265,106, ren. 11–18–69. Cl. 46.
Oak Rubber Co., The, Ravenna, Ohio. 757,688, canc. Cl. 22.
Obrey, Paris, France. 880,870, pub. 9–2–69. Multiple Class (Classes 27 and 28).
O'Brien, Leon J., d.b.a. Manchester Leather Co., Lowell, Mass. 880,875, pub. 9–2–69. Cl. 29.
O-Cedar Corn'N, Chicago, Ill., to The Drackett Co., Cincinnati, Ohio. 513,337, ren. 11–18–69. Cl. 16.
O'Connell, John P., Newhall, Calif. 880,936, pub. 9–2–69. Cl. 38.
Oil Center Research, Inc., Lafayette, La. 880,758, pub. 9–2–69. Cl. 15.
Old Home Foods, Inc., St. Paul, Minn. 880,985, pub. 9–2–69. Cl. 46.

Olin Mathieson Chemical Corp., New York, N.Y. 757,622, canc. Cl. 18.
Oliver Tire & Rubber Co., Oakland, Calif. 880,947, pub. 9–2–69. Cl. 38.
Olivetti, Ing. C., & C., S.p.A., Ivrea, Italy. 880,854, pub. 9–2–69. Cl. 23.
On-Deck, Inc., Tenafly, N.J. 880,817, pub. 9–2–69. Cl. 22.
Optique & Precision de Levallois, Levallois-Perretseine, France. 757,718, canc. Cl. 26.
Orange Blossom Apiaries: *See—*
  Fisher, I. B.
Osceola Fruit Distributors, Kissimmee, Fla. 881,000, pub. 9–2–69. Cl. 46.
Oster Mfg. Co., The, Cleveland, Ohio, to Landis Machine Co., Waynesboro, Pa. 515,893, ren. 11–18–69. Cl. 23.
Otis Elevator Co.: *See—*
  Baker-Raulang Co., The.
Otis Engineering Corp., Dallas, Tex. 733,166, canc. Cl. 101.
Ottaviani, Peter, Los Angeles, Calif. 880,823, pub. 9–2–69. Cl. 22.
Owens-Corning Fiberglas Corp., Toledo, Ohio. 880,746, pub. 9–2–69. Cl. 12.
Oyster Products Co., Eureka, Calif. 880,770, pub. 9–2–69. Cl. 18.
P & O Lines, San Francisco, Calif. 881,070, pub. 9–2–69. Cl. 105.
Prairie Farmer Publishing Co., The, Chicago, Ill. 880,923, pub. 9–2–69. Cl. 38.
Palazzolo, J., Son, Inc.: *See—*
  Palazzolo, Joseph.
Palazzolo, Joseph, New York, to J. Palazzolo Son, Inc., New Hyde Park, N.Y. 75,771, ren. 11–18–69. Cl. 51.
Parfums Lucien Lelong Corp., New York, N.Y. 757,888, canc. Cl. 51.
Paris Medicine Co., St. Louis, Mo., to Bristol-Myers Co., New York, N.Y. 258,555, ren. 11–18–69. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 401,418, canc. Cl. 18.
Payne, Paula, Products Co., Inc., Charlotte, N.C. 881,009, pub. 9–2–69. Cl. 51.
Peabody Coal Co., St. Louis, Mo. 880,698, pub. 9–2–69. Cl. 1.
Peddinghaus, Paul Ferd., Gevelsberg, Germany. 880,840, pub. 9–2–69. Cl. 23.
Pendleton Woolen Mills, Portland, Oreg. 757,815–16, canc. Cl. 39.
Pennsylvania Industrial Chemical Corp., Clairton, Pa. 880,695, pub. 9–2–69. Cl. 1.
Penthouse Publications, Ltd., London, England. 880,922, pub. 9–2–69. Cl. 38.
Peoples Trust & Savings Co., Fort Wayne, Ind. 881,068, pub. 9–2–69. Cl. 102.
Perth Cheese Co., Stratford, Ontario, Canada. 880,978, pub. 9–2–69. Cl. 46.
Phelon Magnagrip Co., Inc.: *See—*
  Phelon, Russell E.
Phelon, R. E., Co.: *See—*
  Phelon, Russell E.
Phelon, Russell E., d.b.a. R. E. Phelon Co., to The Phelon Magnagrip Co., Inc., to Phelon Magnagrip Co., Inc., East Longmeadow, Mass. 519,152, ren. 11–18–69. Cl. 23.
Philadelphia Quartz Co.: *See—*
  Beach Soap Co.
Philips Roxane, Inc., New York, N.Y. 757,614, canc. Cl. 18.
Pioneer Suspender Co., Philadelphia, Pa., to Hickok Mfg. Co., Inc., Rochester, N.Y. 515,516, ren. 11–18–69. Cl. 40.
Pioneer Suspender Co., Philadelphia, Pa., to Hickok Mfg. Co., Inc., Rochester, N.Y. 519,124, ren. 11–18–69. Cl. 3.
Pivot Point International, Inc., Chicago, Ill. 981,078, pub. 9–2–69. Cl. 107.
Pizza Papa, Inc., d.b.a. Pizza Papa, St. Paul, Minn. 880,986, pub. 9–2–69. Cl. 46.
Pons Full Fashion Mills, Inc., Valdese, N.C. 757,813, canc. Cl. 39.
Port-A-Crib, Inc., Ballwin, Mo. 880,882, pub. 9–2–69. Cl. 32.
Portland-Monson Slate Co., Middle Granville, N.Y. 880,696, pub. 9–2–69. Cl. 1.
Pouget's: *See—*
  Restaurant Inc.
Powerlock Floors, Inc., Philadelphia, Pa. 757,577, canc. Cl. 12.
Prairie Farmer Publishing Co., The, Chicago, Ill. 881,033, pub. 9–2–69. Cl. 100.
Pratt-Low Preserving Co., Santa Clara, Calif., to Duffy-Mott Co., Inc., New York, N.Y. 76,599, ren. 11–18–69. Cl. 46.
Precision Steel Warehouse, Inc., Franklin Park, Ill. 880,754, pub. 9–2–69. Cl. 14.
Price Food Co., Inc.: *See—*
  Gerber Cheese Co., Inc.
Propper Mfg. Co., Inc., Long Island City, N.Y. 880,712, pub. 9–2–69. Cl. 6.
Puritan Canners Ltd., Richmond, British Columbia, Canada. 757,837, canc. Cl. 46.
Puritan Mills, Inc., Louisville, Ky. 880,728–9, pub. 9–2–69. Cl. 7.
Qatron Corp., Rockville, Md. 880,892, pub. 9–2–69. Cl. 36.
Quaker Oats Co., The, Chicago, Ill. 880,998, pub. 9–2–69. Cl. 46.
Rachelle Laboratories, Inc., Long Beach, Calif. 880,772–3, pub. 9–2–69. Cl. 18.
Ramo Inc., Omaha, Nebr., from Sunshine Pecan Co., San Antonio, Tex. 757,839, canc. Cl. 46.
Rasselstein Aktiengesellschaft, Neuwied, Germany. 880,752, pub. 9–2–69. Cl. 14.
Recht, William, Co., Inc., New York, N.Y. 880,724, pub. 9–2–69. Cl. 6.
Red Devil Inc.: *See—*
  Smith, Landon P., Inc.
  Red Devil Tools.
Red Devil Tools, Irvington, to Red Devil Inc., Union, N.J. 515,716, ren. 11–18–69. Cl. 13.
Redken Laboratories, Inc., Van Nuys, Calif. 881,018, pub. 9–2–69. Cl. 51.
Reliable Luggage, Inc., West Pittsburg, Pa. 880,705, pub. 9–2–69. Cl. 3.
Rentschler, William H., Chicago, Ill. 880,913, pub. 9–2–69. Cl. 38.
Research Institute for Diagnostic Engineering, Pasadena, Calif. 881,030, pub. 9–2–69. Cl. 100.
Restaurant Associates Industries, Inc., New York, N.Y. 881,045, pub. 9–2–69. Cl. 100.
Restaurant Inc., d.b.a. Pouget's, Washington, D.C. 881,035, pub. 9–2–69. Cl. 100.
Revlon, Inc., New York, N.Y. 757,964, canc. Cl. 51.
Rexall Drug & Chemical Co.: *See—*
  Bart Industries Inc.
Reynolds, R. J., Foods, Inc., New York, N.Y. 880,969, pub. 9–2–69. Cl. 45.
Reynolds, R. J., Foods, Inc., New York, N.Y. 880,997, pub. 9–2–69. Cl. 46.
Richardson-Merrell Inc.: *See—*
  Dr. Hess & Clark, Inc.
Rimar Mfg., Inc., Manheim, Pa. 880,744, pub. 9–2–69. Cl. 12.
Rinaldo, Alvina M., d.b.a. Alpha Montessori School, Kansas City, Mo. 881,077, pub. 9–2–69. Cl. 107.
Ringcraft Inc., Detroit, Mich. 520,120, ren. 11–18–69. Cl. 28.
Robbins, A. H., Co., Inc., Richmond, Va. 521,669, ren. 11–18–69. Cl. 18.
Robert Hosiery Mills, Inc., Collegeville, Pa. 757,797. Cl. 39.
Robertshaw Controls Co.: *See—*
  Lux Clock Mfg. Co., The.
Robeson Process Co., New York, N.Y., to Hammermill Paper Co., Erie, Pa. 519,695, ren. 11–18–69. Cl. 6.
Rogers, May B., from Murray K. Rogers, d.b.a. Multi-Line Pen Co., Ferguson, Ky. 881,084. Cl. 26.
Rogers, Murray K.: *See—*
  Rogers, May B.
Roma Royale, Inc., Dallas, Tex. 881,017, pub. 9–2–69. Cl. 51.
Rostone Corp., Lafayette, Ind. 880,690, pub. 9–2–69. Cl. 1.
Rubinstein, Helena, Inc., New York, N.Y. 443,480, ren. 11–18–69. Cl. 51.
Rysdon Products Co., Chicago, Ill. 880,741, pub. 9–2–69. Cl. 12.
S. & M. Jewelry Co., New York, N.Y. 757,765, canc. Cl. 28.
Sainberg & Co., Inc., New York, N.Y. 757,939, canc. Cl. 37.
Saks & Co., New York, N.Y. 520,224, ren. 11–18–69. Cl. 39.
Salsbury Laboratories, Charles City, Iowa. 880,771, pub. 9–2–69. Cl. 18.
Samberg, Howard B., d.b.a. Huston Shoes, Berkeley, Calif. 880,953, pub. 9–2–69. Cl. 39.
San Angelo Communications & Electronics, Inc., San Angelo, Tex. 880,814, pub. 9–2–69. Cl. 21.
Sandoz, Inc., Hanover, N.J. 880,912, pub. 9–2–69. Cl. 38.
Sanford, A. Carol, d.b.a. Sanford Associates, Pompano Beach, Fla. 880,738, pub. 9–2–69. Cl. 12.
Sanford Associates: *See—*
  Sanford, A. Carol.
Savannah Sugar Refining Corp., Savannah, Ga. 260,125, ren. 11–18–69. Cl. 46.
Savary, Rene P. M., Paris, France. 757,772, canc. Cl. 33.
Sawyer, George M., Inglewood, Calif. 880,700, pub. 9–2–69. Cl. 2.
Schneible, Claude B., Co., Holly, Mich. 521,469, ren. 11–18–69. Cl. 34.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 519,216, ren. 11–18–69. Cl. 18.
Schwarcz, Adolf, & Son, Inc., to Fashion & Time Products Inc., New York, N.Y. 519,147, ren. 11–18–69. Cl. 27.
Schwinn Bicycle Co.: *See—*
  Arnold, Schwinn & Co.
Scientific Communications, Inc., Chicago, Ill. 880,931, pub. 9–2–69. Cl. 38.
Scott, O M, & Sons Co., The, Marysville, Ohio. 757,575, canc. Cl. 10.
Scott, Rufus W., Co. New York, N.Y., to Camp & McInnes, Inc., Reading, Pa. 263,261, ren. 11–18–69. Cl. 39.
Sculpcraft Corp., The, Cleveland, Ohio. 757,866, canc. Cl. 50.
Seamless Rubber Co., The: *See—*
  Bart Industries Inc.
Sellstrom Mfg. Co., Palatine, Ill. 880,861, pub. 9–2–69. Cl. 26.
Servicemaster Communications Systems, Inc., Chicago, Ill. 881,034, pub. 9–2–69. Multiple Class (Classes 100 and 103).
Sexton, John, & Co., Chicago, Ill. 880,977, pub. 9–2–69. Cl. 46.
Shapiro, Justin J., d.b.a. Labindustries, Berkeley, Calif. 757,717, canc. Cl. 26.
Skiroule Ltee., Quebec, Canada. 880,790, pub. 9–2–69. Cl. 19.
Smith International, Inc., Whittier, Calif., from Drilco Oil Tools, Inc., Midland, Tex. 880,831, pub. 9–2–69. Cl. 23.
Smith, J. Hungerford, Co., Rochester, N.Y., to United Fruit Co., Boston, Mass. 517,594, ren. 11–18–69. Cl. 45.
Smith, J. Lee, & Co., Inc., New Brunswick, N.J. 757,563, canc. Cl. 6.
Smith, Landon P., Inc., Irvington, to Red Devil Inc., Union, N.J. 263,729, ren. 11–18–69. Cl. 23.
Smith, W. R. C., Publishing Co., Atlanta, Ga. 880,935, pub. 9–2–69. Cl. 38.
Sno-Trik Co., Solon, Ohio. 880,853, pub. 9–2–69. Cl. 23.
Societe des Usines Chimiques Rhone-Poulenc, Paris, France. 757,606, canc. Cl. 18.

Societe d'Etudes, de Recherches, de Representation et d'Exploitation (S.E.R.R.E.) Societe a Responsabilite Limitee, Paris, France, to Bourjois, Inc., New York, N.Y. 443,297, ren. 11–18–69. Cl. 51.
Societe Neige des Cevennes, Nanterre (Hauts-de-Seine), France. 881,007, pub. 9–2–69. Cl. 51.
Solar Compounds Corp., Linden, N.J. 518,407, ren. 11–18–69. Cl. 21.
Sony Corp., Shinagawa-ku, Tokyo, Japan. 880,802, pub. 9–2–69. Cl. 21.
Soul Shack, Washington, D.C. 881,053, pub. 9–2–69. Cl. 101.
Soundscriber Corp., The, North Haven, Conn. 757,778, canc. Cl. 36.
Southern Christian Leadership Conference Foundation, Chicago, Ill. 881,036, pub. 9–2–69. Cl. 100.
Sparkletts Drinking Water Corp., Los Angeles, Calif. 744,133, canc. Cl. 45.
Sparkletts Drinking Water Corp., Los Angeles, Calif. 745,827, canc. Cl. 31.
Sparkletts Drinking Water Corp., Los Angeles, Calif. 746,273, canc. Cl. 45.
Speidel Corp., to Textron, Inc., Providence, R.I. 518,657, ren. 11–18–69. Cl. 28.
Sperry Rand Corp.: *See—*
  Eckert-Mauchly Computer Corp.
Sperry Rand Corp., New York, N.Y. 880,828, pub. 9–2–69. Cl. 23.
Standard & Poor's Corp., New York, N.Y. 880,908, pub. 9–2–69. Cl. 38.
Starr Co., Inc., Petersburg, Va. 880,714, pub. 9–2–69. Multiple Class (Classes 6 and 23).
Stenocord Corp., Los Angeles, Calif. 880,991, pub. 9–2–69. Cl. 36.
Stern, H., Jewelers, Inc., New York, N.Y. 881,092. Cl. 28.
Stevens, J. P., & Co., Inc.: *See—*
  Fuller, D. B., & Co., Inc.
Stitzel-Weller Distillery, Louisville, Ky. 881,004, pub. 9–2–69. Cl. 49.
Stone Container Corp., Chicago, Ill. 757,543, canc. Cl. 2.
Stoody Co., Whittier, Calif. 881,085. Cl. 34.
Storm Products Co., Los Angeles, Calif. 880,803, pub. 9–2–69. Cl. 21.
Studnite Corp., New York, N.Y. 880,899, pub. 9–2–69. Cl. 37.
Style Footwear Co., Inc., South Norwalk, Conn. 757,800, canc. Cl. 39.
Sue J Inc., San Francisco, Calif. 880,954, pub. 9–2–69. Cl. 39.
Sumitomo Chemical Co., Ltd., Osaka, Japan. 880,691, pub. 9–2–69. Cl. 1.
Sumitomo Chemical Co., Ltd., Osaka, Japan. 880,713, pub. 9–2–69. Cl. 6.
Sun Chemical Corp., New York, N.Y. 880,734, pub. 9–2–69. Cl. 11.
Sun Cleanser Co., Detroit, Mich. 880,716, pub. 9–2–69. Cl. 6.
Sun Shipbuilding & Dry Dock Co., Chester, Pa. 880,798, pub. 9–2–69. Cl. 19.
Sunbeam Corp., Chicago, Ill. 880,963, pub. 9–2–69. Cl. 44.
Sunshine Pecan Co.: *See—*
  Ramo Inc.
Superior Ball Joint Corp., New Haven, Ind. 880,750, pub. 9–2–69. Cl. 13.
Superior Castings Co., South San Francisco, Calif. 880,755, pub. 9–2–69. Cl. 14.
Sweetheart Plastics, Inc., Wilmington, Mass. 880,702, pub. 9–2–69. Cl. 2.
Swift & Co., Chicago, Ill. 757,857, canc. Cl. 46.
Swyngtyme Products, Inc., Lancaster, Pa. 757,936, canc. Cl. 22.
Synthetic Ropes, Inc., Chester, Pa. 757,932, canc. Cl. 7.
Tasty Baking Co., Philadelphia, Pa. 881,001, pub. 9–2–69. Cl. 46.
Tech Serv, Inc., College Park, Md. 757,715, canc. Cl. 26.
Tel Ra Productions, Inc., Philadelphia, Pa. 881,076, pub. 9–2–69. Cl. 107.
Television Presentations, Inc., New York, N.Y. 880,804, pub. 9–2–69. Cl. 21.
Telmark, Inc., d.b.a. Market Investigators, Dewitt, N.Y. 881,052, pub. 9–2–69. Cl. 101.
Tennant, C. H., Co., to Tennant Co., Minneapolis, Minn. 512,030, ren. 11–18–69. Cl. 23.
Tennant Co.: *See—*
  Tennant, C. H., Co.
Tennessee Walker Distillery Co.: *See—*
  Tennessee Walking Horse Co.
Tennessee Walking Horse Co., d.b.a. Tennessee Walker Distillery Co., Tullahoma, Tenn. 881,002, pub. 9–2–69. Cl. 49.
Test Equipment Corp., Houston, Tex. 757,733, canc. Cl. 26.
Texize Chemicals, Inc., Greenville, S.C. 876,300, cor. Cl. 4.
Textron, Inc.: *See—*
  Speidel Corp.
Textron Inc., Providence, R.I. 880,873–4, pub. 9–2–69. Cl. 28.
Thermark Corp., Hammond, Ind. 880,841, pub. 9–2–69. Cl. 23.
Therm-O-Disc, Inc., from J. D. Bolesky, d.b.a. Mansfield Electric Controls Co., to Therm-O-Disc, Inc., Mansfield, Ohio. 518,007, ren. 11–18–69. Cl. 26.
Thiokol Chemical Corp., Bristol, Pa. 880,917, pub. 9–2–69. Cl. 38.
Tokyo Shibaura Electric Co., Ltd., Kawasaki, Japan. 880,866, pub. 9–2–69. Cl. 26.
Tomahawk Boat Mfg. Corp., Tomahawk, Wis. 757,640, canc. Cl. 19.
Torrence Page, Sepulveda, Calif. 880,893, pub. 9–2–69. Cl. 37.
Traveleze Trailer Co., Inc., Sun Valley, Calif. 880,786, pub. 9–2–69. Cl. 19.
Tree Publishing Co., Inc., Nashville, Tenn. 735,367, canc. Cl. 36.
Trident Industries, Inc., from Trident Industries, Inc., Princeton, N.J. 880,855, pub. 9–2–69. Cl. 23.
Trippensee Planetarium Co., Inc., Saginaw, Mich. 880,915, pub. 9–2–69. Cl. 38.
Tucker Mfg. Corp., Leominster, Mass. 757,960, canc. Cl. 50.
Turn-Key Computer Applications, Rolling Hills Estates, Calif. 881,057, pub. 9–2–69. Cl. 101.
USM Corp., from United Shoe Machinery Corp., Boston, Mass. 880,692, pub. 9–2–69. Cl. 1.
Ultravite Laboratories Ltd., Downsview, Ontario, Canada. 757,600, canc. Cl. 18.
Union Carbide Corp., New York, N.Y. 881,014, pub. 9–2–69. Cl. 51.
Union Oil Co. of California, Los Angeles, Calif. 776,476. Am. 7(d). Cl. 15.
United Conveyor Corp., Chicago, Ill. 267,072–3, ren. 11–18–69. Cl. 23.
United Feature Syndicate, Inc., New York, N.Y. 515,410, ren. 11–18–69. Cl. 38.
United Marine Co., Inc., Kansas City, Mo. 880,784, pub. 9–2–69. Cl. 19.
United Products Corp., Kansas City, Mo. 757,551, canc. Cl. 3.
United States Borax & Chemical Corp., Los Angeles, Calif. 757,554, canc. Cl. 4.
Uniwate Corp., d.b.a. Uni-Wate Corp., Bristol, Tenn. 880,785, pub. 9–2–69. Cl. 19.
Usinger's: *See—*
  Usinger, Fred, Inc.
Usinger, Fred, Inc., d.b.a. Usinger's, Milwaukee, Wis. 880,988, pub. 9–2–69. Cl. 46.
Valley Paper Co., Holyoke, Mass. 516,698, ren. 11–18–69. Cl. 37.
Valley Paper Co., Holyoke, Mass. 516,702, ren. 11–18–69. Cl. 37.
Velveray Corp., New York, N.Y. 443,648, ren. 11–18–69. Cl. 42.
Verbaleta Recorder Corp., Garden City, N.Y. 757,781, canc. Cl. 36.
Vermeiren, Yvonne M., Mareuil-Sur-Lay, France. 757,886, canc. Cl. 51.
Victoreen Leece Neville, Inc.: *See—*
  Leece-Neville Co., The.
Vita Plus Corp., Madison, Wis. 880,767, pub. 9–2–69. Cl. 18.
Vita Plus Corp., Madison, Wis. 880,775, pub. 9–2–69. Cl. 18.
Vitamin Food Co., Inc., Newark, N.J. 507,196–7. Am. 7(d). Cl. 46.
Vitaminerals, Inc., Glendale, Calif. 513,187, ren. 11–18–69. Cl. 18.
Vogt, F. G., & Sons, Inc., from Oscar Mayer & Co., Inc., Chicago, Ill. 377,974, canc. Cl. 46.
Voit, W. J., Rubber Corp., Los Angeles, Calif. 757,777, canc. Cl. 35.
Waldner & Co., Kansas City, Mo. 876,751, cor. Cl. 102.
Walker, Zorina, d.b.a. The Black Cat Publishing Co., New York, N.Y. 880,945, pub. 9–2–69. Cl. 38.
Walters, Herbert E., d.b.a. Treasure Crafts, Ramona, Calif. 736,004, canc. Cl. 28.
Ward Green Co., New York, N.Y. 520,148, ren. 11–18–69. Cl. 44.
Waters Distributing Co.: *See—*
  Waters, Donald P.
Waters, Donald P., d.b.a. Waters Distributing Co., Denver, Colo. 880,989, pub. 9–2–69. Cl. 46.
Webster Tobacco Co., Inc., to Bayuk Cigars, Inc., Philadelphia, Pa. 519,094, ren. 11–18–69. Cl. 17.
Welder, Joseph, Union City, N.J. 757,677, canc. Cl. 22.
Welder, Joseph, Union City, N.J. 757,867, canc. Cl. 50.
Welder, Joseph, Union City, N.J. 757,872, canc. Cl. 50.
Weingarden Enterprises, Inc., Toledo, Ohio. 880,859, pub. 9–2–69. Cl. 26.
Weld Mold Co., Brighton, Mich. 880,887, pub. 9–2–69. Cl. 34.
Weil, Ira O., d.b.a. La Mirada Co., Chicago, Ill., to Consolidated Olive Growers, Lindsay, Calif. 264,181, ren. 11–18–69. Cl. 46.
Wen-Mas Corp., Los Angeles, Calif. 734,862, canc. Cl. 22.
Western Publishing Co., Inc.: *See—*
  Main Toy Co.
Westfield Watch Co., Inc., New York, to Bulova-Watch Co., Inc., Flushing, N.Y. 262,538, ren. 11–18–69. Cl. 27.
Westinghouse Electric Corp., Pittsburgh, Pa. 881,062, pub. 9–2–69. Cl. 101.
Wheel Horse Products, Inc., South Bend, Ind. 880,833, pub. 9–2–69. Cl. 23.
Williams, Randall H., Nashville, Tenn. 881,081, pub. 9–2–69. Cl. 107.
Wilson, H. A., Co., The, to Engelhard Minerals & Chemicals Corp., Newark, N.J. 517,397, ren. 11–18–69. Cl. 14.
Wilson, H. A., Co., The, to Engelhard Minerals & Chemicals Corp., Newark, N.J. 517,400, ren. 11–18–69. Cl. 14.
Wisconsin Container Corp., Menasha, Wis. 880,703, pub. 9–2–69. Cl. 2.
Wolfe, Henry M., Chicago, Ill., to Kostell Furniture Co., Inc., New Holstein, Wis. 515,057, ren. 11–18–69. Cl. 22.
Wolk, Jerome, d.b.a. Freedom Greeting Card Co., Philadelphia, Pa. 880,944, pub. 9–2–69. Cl. 38.
Wood-Treating Chemicals Co., from Wood Treating Chemicals Co., St. Louis, Mo. 402,842, canc. Cl. 6.
Wood Treating Chemicals Co., St. Louis, Mo. 880,723, pub. 9–2–69. Cl. 6.
Xerox Corp., Rochester, N.Y. 880,903–5, pub. 9–2–69. Cl. 37.
Xerox Corp., Rochester, N.Y. 880,929, pub. 9–2–69. Cl. 37.
Xtra, Inc., Boston, Mass. 757,639, canc. Cl. 19.
Yoder Feeds, Inc., Kalona, Iowa. 728,900, canc. Cl. 46.
Young, Leslie E., d.b.a. The Snag-Less Sinker Co., to Maureen Young Imfeld, d.b.a. Snag-Less Sinker Co., Cincinnati, Ohio. 521,325, ren. 11–18–69. Cl. 22.
Young World Corp., from Marketing Dynamics Inc., Washington, D.C. 880,914, pub. 9–2–69. Cl. 38.

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November 25, 1969 Volume 868 Number 4

# PATENTS

## NOTICES

### Board of Appeals Decisions Rendered in the Month of October 1969

| | |
|---|---|
| Examiner affirmed | 146 |
| Examiner affirmed in part | 15 |
| Examiner reversed | 32 |
| Total | 193 |

### Disclaimers

3,282,635.—*Louis E. Himelreich,* Louisville, Ky. HOLLOW-WALL DRAWER. Patent dated Nov. 1, 1966. Disclaimer filed July 15, 1969, by the assignee, *H. J. Scheirich Company.*

Hereby enters this disclaimer to claim 3 of said patent.

3,369,090.—*John A. Turchan,* East Detroit, Mich. DUAL BRAKING SYSTEM SAFETY DEVICE. Patent dated Feb. 13, 1968. Disclaimer filed July 31, 1969, by the assignee, *The Weatherhead Company.*

Hereby enters this disclaimer to claims 1, 2 and 3 of said patent.

### Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 3,147,214, T. R. E. Kressman and J. R. Millar, REMOVAL OF ANIONS FROM AQUEOUS SOLUTIONS, decided June 12, 1969, Interference No. 95,117, claims 1, 2, 3, 4, 5 and 6.

Patent No. 3,183,809, H. Nerwin, PHOTOGRAPHIC APPARATUS FOR USE WITH IMAGE TRANSFER FILM PRODUCT, decided May 28, 1969, Interference No. 95,697, claims 1, 2, 3, 4, 5, 6, 9, 10, 11, 12, 13 and 14.

Patent No. 3,215,987, J. Terzian, ELECTRONIC DATA PROCESSING, decided Oct. 7, 1969, Interference No. 96,524, claims 12 and 13.

Patent No. 3,271,940, R. Ashton, M. L. Gullickson, and J. G. Butler, CORN HARVESTER, decided May 14, 1969, Interference No. 95,924, claims 1 to 3, 6 to 12 and 26 to 36.

Patent No. 3,284,547, J. Metivier and M. Saull, PHOSPHORIC ESTERS, decided May 28, 1969, Interference No. 96,246, claims 1 and 2.

Patent No. 3,287,201, R. S. Chisholm, G. E. Sleighter and F. M. Ernsberger, METHOD OF STRENGTHENING GLASS BY ION EXCHANGE AND ARTICLE MADE THEREFROM, decided May 26, 1969, Interference No. 95,963, claims 1, 2, 5 and 7.

Patent No. 3,326,869, R. J. Perrone, SILICONE-RUBBER, POLYETHYLENE COMPOSITION; HEAT SHRINKABLE ARTICLES MADE THEREFROM AND PROCESS THEREFOR, decided Apr. 28, 1969, Interference No. 96,194, claim 1.

### TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

### Chapter I—Patent Office, Department of Commerce

PART 1—RULES OF PRACTICE IN PATENT CASES

*Issuance of Patent to Assignee*

Notice of proposed rule making regarding the revision of § 1.334 of Title 37, Code of Federal Regulations, dealing with the issuance of a patent to an assignee, was published in the Federal Register of February 13, 1969 (34 F.R. 2136), and comments from the general public were invited. In view of the comments received, the Patent Office decided to alter its original proposal, and an amended version was published in the Federal Register of June 11, 1969 (34 F.R. 9213). The public, as was the case with the original proposal, was invited to submit written comments, suggestions or objections pertaining to the amended proposal.

Full attention has been given to all the comments received and minor changes in the text of the amended proposal have been effected where appropriate.

In consideration of the foregoing, and pursuant to the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793; 35 U.S.C. 6), § 1.334 of Title 37, Code of Federal Regulations, is hereby revised as follows:

§ 1.334 *Issue of patent to assignee.*

In case of an assignment of the entire interest in the invention and application, or of the entire interest in the patent to be granted, the patent will normally issue to the assignee. If the assignee should hold an undivided part interest, the patent will normally issue jointly to the inventor and the assignee. If it is desired that the patent so issue the assignment in either case must first have been recorded, and at a day not later than the date payment is made of the issue fee or portion thereof specified in the notice of allowance. At the time of payment of the issue fee, a statement must be furnished indicating whether or not an assignment has been filed with the Patent Office. In the event an assignment has been filed, such statement must include the name of the assignee and indicate whether or not an acknowledgment of a recorded assignment has been received from the Patent Office.

Effective date: This revision shall become effective upon publication in the Federal Register.

WILLIAM E. SCHUYLER, JR.,
*Commissioner of Patents.*

Approved: Oct. 29, 1969.
MYRON TRIBUS,
*Assistant Secretary for Science and Technology.*

[F.R. Doc. 69-13084; Filed, Nov. 3, 1969; 8:45 a.m.]

*Published in 34 F.R. 1772-3, Nov. 4, 1969*

### New Applications Received During September 1969

| | |
|---|---|
| Patents | 8265 |
| Designs | 427 |
| Plant Patents | 7 |
| Reissues | 16 |
| Total | 8715 |

### Issue—November 25, 1969

| | | | | |
|---|---|---|---|---|
| Patents | 1300—No. | 3,479,666 | to No. | 3,480,965, incl. |
| Designs | 113—No. | 216,071 | to No. | 216,183, incl. |
| Plant Patents | 3—No. | 2,942 | to No. | 2,944, incl. |
| Reissues | 6—No. | 26,720 | to No. | 26,725, incl. |
| Total | 1422 | | | |

## Annual Index of Patents

The 1968 edition of the Annual Index of Patents has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, Part I, $11.50; Part II, $4.50.

## Annual Index of Trademarks

The 1968 edition of the Annual Index of Trademarks has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, $4.25.

## Certificates of Correction for the Week of Nov. 25, 1969

3,285,019
3,321,125
3,330,140
3,331,284
3,343,373
3,348,027
3,350,381
3,355,766
3,356,639
3,356,640
3,356,672
3,360,659
3,361,688
3,361,695
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3,363,514
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3,366,624
3,370,358
3,370,641
3,370,903
3,371,712
3,371,766
3,372,129
3,372,792
3,373,146
3,373,908
3,374,142
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3,389,843
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3,391,621
3,391,734
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3,418,770
3,424,434
3,427,046
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3,435,666
3,440,763
3,443,608
3,445,264
3,449,455
3,449,676
3,456,425
3,456,913
3,457,081
3,458,457
3,458,575
3,458,597
3,463,548
3,449,985

## Certain Cases

*Reopening After Decision, Board of Appeals*

Effective with the date of this notice the Commissioner of Patents will, on a trial basis, entertain petitions under § 1.198 of Title 37, Code of Federal Regulations (Patent Office Rule 198), to reopen certain cases in which an applicant has sought review under 35 U.S.C. 141 or 145. This procedure is restricted to cases which have been decided by the Board of Appeals and which are amendable to settlement without the need for going forward with the court proceeding. Such petitions will ordinarily be granted only in the following categories of cases:

1. When the decision of the Board of Appeals asserts that the rejection of the claims is proper because the claims do not include a disclosed limitation or because they suffer from some other curable defect, and the decision reasonably is suggestive that claims including the limitation or devoid of the defect will be allowable;
2. When the decision of the Board of Appeals asserts that the rejection of the claims is proper because the record does not include evidence of a specified character, and is reasonably suggestive that if such evidence were presented, the appealed claims would be allowable, and it is demonstrated that such evidence presently exists and can be offered; or
3. When the decision of the Board of Appeals is based on a practice, rule, law, or judicial precedent which, since the Board's decision, has been rescinded, repealed, or overruled.

Any such petition must be accompanied by the proposed amendment, evidence, or argument said to justify allowance of the claims. The petition further must point out how the case falls within one of the preceding categories. Failure to do so or failure of the case to qualify as coming within one of the categories will usually constitute bases for denying the petition. In any event, no case will be reopened unless it is for the consideration of matters not already adjudicated, and sufficient cause has been shown.

Such petitions will not be ordinarily entertained after the filing of the Commissioner's brief in cases in which review has been sought under 35 U.S.C. 141, or after trial in a 35 U.S.C. 145 case.

In the case of an appeal under 35 U.S.C. 141, if the petition is granted, steps will be taken to request the court to remand the case to the Patent Office and if so remanded the proposed amendments, evidence, and arguments will be entered of record in the application file for consideration, and further action will be taken by the Board of Appeals in the first instance or by the Examiner as may be appropriate. In the case of civil action under 35 U.S.C. 145, steps will be taken for obtaining dismissal of the action without prejudice to consideration of the proposals.

WILLIAM E. SCHUYLER, JR.,
*Commissioner of Patents.*

Approved: Oct. 16, 1969.
MYRON TRIBUS,
*Assistant Secretary for Science and Technology.*

[F.R. Doc. 69-12674; Filed Oct. 22, 1969; 8:48 a.m.]

*Published in 34 F.R. 17210, Oct. 23, 1969*

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# PATENT EXAMINING CORPS

### R. A. WAHL, Assistant Commissioner

## CONDITION OF PATENT APPLICATIONS AS OF NOVEMBER 3, 1969

| PATENT EXAMINING GROUPS<br>*Denotes oldest new application. | Actual Filing Date of Oldest New Case Awaiting Action |
|---|---|
| **CHEMICAL EXAMINING GROUPS** | |
| GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices. | 10-26-67 |
| GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides. | *4-28-67 |
| HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes. | 5-29-67 |
| COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography. | 6-01-67 |
| SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes. | 5-02-67 |
| **ELECTRICAL EXAMINING GROUPS** | |
| INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—W. S. COLE, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous. | 2-21-68 |
| SECURITY, GROUP 220—S. BOYD, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material. | 7-07-67 |
| INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts. | *5-29-67 |
| ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring. | 10-12-67 |
| PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments. | 1-25-68 |
| DESIGNS, GROUP 290—S. BOYD, Director. Industrial Arts; Household, Personal and Fine Arts. | 1-02-69 |
| **MECHANICAL EXAMINING GROUPS** | |
| HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages. | 4-23-68 |
| MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks. | *12-26-67 |
| AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination. | 1-17-68 |
| HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission. | 10-01-68 |
| FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures. | 7-25-68 |
| TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—F. H. BRONAUGH, Director. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling. | 3-04-68 |
| Total number of pending applications (excluding Designs) | 182,774 |
| Total number of Design applications pending | 3,372 |

**Expiration of patents:** The patents within the range of numbers indicated below expire during November 1969, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

| | |
|---|---|
| Patents | Numbers 2,616,081 to 2,619,636, inclusive |
| Plant Patents | Numbers 1,142 to 1,151, inclusive |

# DECISIONS IN PATENT AND TRADEMARK CASES

## U.S. Court of Customs and Patent Appeals

### IN RE ARTHUR N. ARAKELIAN

*No. 8119. Decided May 15, 1969*

[56 CCPA —; 410 F.2d 429; 161 USPQ 604]

1. PATENTABILITY—EVIDENCE—INSUFFICIENT COMPARATIVE TESTS.
"What is in point, it seems to us, is the fact that the affidavit, purporting to show that certain lead salts of phosphorodithioic acid may be less soluble than the corresponding zinc salts, employs examples in which, in each case, the concentration of the lead salts found not to be soluble is at least 49%. The concentration of the salt recited in the rejected claims (other than claim 13), however, ranges from about 20–80% or 40–60%. The affidavit does not establish, therefore, that lead salts of phosphorodithioic acids in general are not soluble at concentrations of from 20 to near 49%, the lower portion of the claimed range lying below 49%. In passing, we also draw attention to Freuler's teaching, previously noted, that his particular phosphorodithioic acid salts, including lead and zinc salts, may be added to oil up to at least the lower limit of about 20% recited by appellant. Thus we do not consider the affidavit to be persuasive evidence of the possible insolubility of the tested lead salts of phosphorodithioic acid at concentrations of 20%–48%, concentrations within the scope of the claims."

2. SAME—COMBINING REFERENCES—BROAD CLAIMS.
"We cannot find sufficient evidence in this record that one skilled in the art, aware of the high solubility of the zinc phosphorodithioate oil additives of Higgins and led by the teachings of Freuler to substitute lead for zinc in the phosphorodithioate salts here involved, would consider it unobvious that similar high solubility should be present in the analogous lead salts, at least to the extent broadly recited in the claims."

3. SAME—PARTICULAR SUBJECT MATTER—"LUBRICANT IMPROVING AGENT."
The refusal of certain claims in an application entitled "Lubricant Improving Agent," as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 256,108.

AFFIRMED.

*Roger Y. K. Hsu*, *William H. Pittman*, *Oberlin*, *Maky*, *Donnelly and Renner* (*Donald D. Jeffery*, of counsel) for appellant.

*Joseph Schimmel* (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

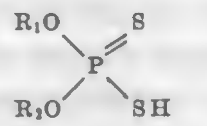
Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This appeal is from the Patent Office Board of Appeals decision affirming the Examiner's rejection of claims 2–9 and 13 of appellant's application[1] under 35 U.S.C. 103 as being obvious over Higgins[2] in view of Freuler.[3] Claim 15 has been allowed.

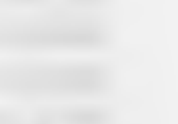
### *The Invention*

This invention relates to a liquid concentrate which may be blended with lubricating oils to improve various qualities thereof. Appellant acknowledges that it has long been known to add lead salts of organic phosphorodithioic acids to lubricating oils to inhibit corrosion and oxidation and further that, to facilitate easy mixing with the lubricating oil, it has been desired to supply the salts to the lubricant compounders in the form of liquid concentrates containing the phosphorodithioate salts dissolved in high concentration in oil. Appellant indicates that problems sometimes arise because of the tendency of the lead phosphorodithioate salts to crystallize or solidify when the concentrate is left standing. Appellant has discovered that these problems in the concentrate may be avoided by the use of particular lead salts of phosphorodithioic acids having the structure



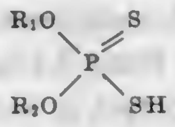
in which $R_1$ and $R_2$ are selected from the group consisting of lower molecular weight primary aliphatic radicals having less than 5 carbon atoms and higher molecular weight primary aliphatic radicals having 5 to 18 carbon atoms, with the lead salt mixture containing both lower molecular weight aliphatic radicals and higher molecular weight aliphatic radicals and being characterized by the presence therein of about 8.5 to 9.8 carbon atoms per atom of phosphorus.

The patentability of claim 2 (reproduced as follows) is determinative of all the claims on appeal, this being the position taken by the Patent Office and not controverted by appellant:

> 2. A clear, free-flowing solution in an oil of from about 20 to about 80 percent by weight of the lead salts of a mixture of phosphorodithioic acids having the structure
>
> 
>
> in which $R_1$ and $R_2$ are selected from the group consisting of lower molecular weight primary aliphatic radicals having less than five carbon atoms and higher molecular weight primary aliphatic radicals having from about 5 to about 18 carbon atoms, said lead salt mixture containing both lower molecular weight aliphatic radicals and higher molecular weight aliphatic radicals and being characterized by the presence therein of from about 8.5 to about 9.8 carbon atoms per atom of phosphorus.

### *The References*

Higgins discloses an additive intended to impart similar beneficial qualities to lubricating oil, comprising zinc salts of a mixture of phosphorodithioic acids having the structure



in which $R_1$ and $R_2$ are the same or different primary aliphatic hydrocarbon radicals selected from the class consisting of lower molecular weight radicals having less than five carbon atoms and higher molecular weight radicals having at least five carbon atoms. While Higgins does not teach specifically that the ratio of carbon atoms to phosphorus atoms must be 8.5–9.8 : 1, the products shown in every one of the examples are within this range. Thus, Examples 1–3 show a ratio of 8.5 : 1, Examples 4–7 show 9 : 1 and Example 8 shows 8.7 : 1.

Freuler is cited by the Examiner for a teaching that zinc and lead salts of particular dialkyl dithiophosphoric acids differing from those of Higgins and appellant are useful as lubricating oil additives. For example, Freuler states:

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[1] Serial No. 256,108, filed February 4, 1963, for "Lubricant Improving Agent."
[2] U.S. Patent 3,000,822, issued September 19, 1961.
[3] U.S. Patent 2,364,283, issued December 5, 1944.

> A specific example of this invention which is particularly valuable as a high film strength and oiliness agent, and which also imparts some oxidation inhibiting value to oils compounded therewith, is zinc di-octyl thiophosphate. The corresponding lead salt is also useful.

### *The Rejection*

The Examiner's rejection under 35 U.S.C. 103 was based on the premise that Higgins discloses the use of zinc salts corresponding to the lead salts employed by appellant and that it would be obvious to one skilled in the art to substitute the corresponding lead salts in view of Freuler's teaching of the "functional equivalence" of zinc and lead salts of other dialkyl dithiophosphoric acids as lubricant additives. The Board, in affirming the Examiner, stated:

> Higgins et al. clearly show a compound similar to that claimed except that the metal is zinc and not lead. However, since zinc and lead thiophosphates are adequately soluble in mineral oil and impart high film strength thereto as shown by Freuler, page 3, lines 7 through 19 and lines 28 and 29, it would be obvious to one skilled in the art to use lead instead of zinc in the phosphorodithioate inhibitors shown by Higgins et al.

### *Opinion*

Here, the Solicitor discusses the Higgins' disclosure and concludes that the Higgins compounds may be characterized as the zinc analogs of the lead phosphorodithioate salts of appellant. The Solicitor also indicates that the Higgins examples show the use of Higgins' analogous zinc salts in solutions in a range from 50% to 75% by weight and, in addition, points out that the product of each of Higgins' eight examples is characterized by a carbon to phosphorus atom ratio within the range recited in claim 2. Having thus set the background of similarity between the claimed compositions of appellant and the solutions of salts in oil disclosed in Higgins, the Solicitor then poses, we believe correctly, the determinative issue here:

> What the case boils down to is this. Appellant has discovered that the lead analogs of Higgins' zinc salts can form a clear and free-flowing solution in oil, even when used in high concentrations. Higgins' zinc salts also have that capability. Can such discovery, as recited in illustrative claim 2, be properly held unobvious under 35 U.S.C. 103, notwithstanding Freuler's teaching that for his purposes, which include inhibition of corrosion, his lead and zinc thiophosphates are equivalents * * *.

On the record here, we agree with the Patent Office that the claimed subject matter cannot be held unobvious. As to claim 13 which recites a concentration of salt in oil from 0.1 to about 20%, we consider the rejection to be quite clearly correct in view of Freuler's explicit teaching of the use of his additive in the same range[4] coupled with Freuler's teaching that lead and zinc salts are equally useful as lubricant additives.

As to the remaining claims, in which the concentration of lead salt is recited as from about 20% to about 80% (in claim 12, about 40% to about 60%), it is appellant's contention that any equivalency between the lead and zinc salts of phosphorodithioic acid which might be inferred from Freuler would be merely for the purpose of imparting certain antioxidant and corrosion-inhibiting properties to lubricants, and that there is no suggestion of equivalency with respect to the *oil solubility* characteristics which is the heart of appellant's invention. Further, appellant asserts, it would be unobvious to employ, in oil concentrates, lead salts corresponding to the zinc salts of Higgins in view of the lower solubility in oil of certain other lead salts of phosphorodithioic acids as compared with the corresponding zinc salts, as shown by an affidavit filed by appellant. The affidavit compares pairs of samples of various lead and zinc phosphorodithioates in oil and shows that for each pair of samples tested the lead salt exhibited much inferior solubility.

The Solicitor, however, is unimpressed by the results shown in the affidavit, observing that none of the phosphorodithioate salts selected for comparison in the affidavit comes within the classes of phosphorodithioate salts involved in the respective inventions of either Higgins or appellant. But implicit in that observation is the suggestion that appellant should have made a "comparison of the results of the invention with the results of the invention." *In re Chapman*, 53 CCPA 978, 357 F.2d 418, 148 USPQ 711 (1966). **[1]** What is in point, it seems to us, is the fact that the affidavit, purporting to show that certain lead salts of phosphorodithioic acid may be less soluble than the corresponding zinc salts, employs examples in which, in each case, the concentration of the lead salts found not to be soluble is at least 49%. The concentration of the salt recited in the rejected claims (other than claim 13), however, ranges from about 20–80% or 40–60%. The affidavit does not establish, therefore, that lead salts of phosphorodithioic acids in general are not soluble at concentrations of from 20 to near 49%, the lower portion of the claimed range lying below 49%. In passing, we also draw attention to Freuler's teaching, previously noted, that his particular phosphorodithioic acid salts, including lead and zinc salts, may be added to oil up to at least the lower limit of about 20% recited by appellant. Thus we do not consider the affidavit to be persuasive evidence of the possible insolubility of the tested lead salts of phosphorodithioic acid at concentrations of 20%–48%, concentrations within the scope of the claims. **[2]** We cannot find sufficient evidence in this record that one skilled in the art, aware of the high solubility of the zinc phosphorodithioate oil additives of Higgins and led by the teachings of Freuler to substitute lead for zinc in the phosphorodithioate salts here involved, would consider it unobvious that similar high solubility should be present in the analogous lead salts, at least to the extent broadly recited in the claims.

**[3]** The decision is affirmed.

AFFIRMED.

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[4] For example, Freuler states: "In referring to the content of 1.0% of the salt in the lubricating oil, it is not intended to convey the idea that this amount is critical. Varying proportions may be employed in mineral lubricating oils between any lower range sufficient to produce the desired increased film strength, or stabilization, or oxidation control, for example, 0.1%, up to a figure such as 20% beyond which added material produces no appreciable increased effect. * * *"

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## U.S. Court of Customs and Patent Appeals

### IN RE DETLEF WINKELMANN

*No. 8160. Decided May 29, 1969*

[56 CCPA —; 392 F.2d 653; 161 USPQ 729]

1. PATENTABILITY—COMBINING REFERENCES—OBVIOUSNESS—BROAD CLAIMS.

"Regarding the Apps and Huebner references, appellant argues that disclosures of 'lithographic inks' are irrelevant inasmuch as his invention involes the use of a 'viscous developer paste.' This may well be true as to the specific process that appellant has disclosed, but the rejection is directed to what appellant has claimed. Since we agree with the Board that appellant's claims are broad enough to embrace the 'development' of one of the types of lithographic plates disclosed by Shoemaker, we need only decide whether it would be obvious to apply a viscous or paste-like ink to such a plate. We are convinced that it would by the * * * disclosure in the Apps reference * * *."

2. SAME—PARTICULAR SUBJECT MATTER—"HEAT-COPYING PROCESS."

The decision of the Board of Appeals, refusing certain claims in an application entitled "Heat-Copying Process" as unpatentable over the prior art, is affirmed.

APPEAL from Patent Office. Serial No. 146,256.

AFFIRMED.

*James E. Bryan* for appellant.

*Joseph Schimmel* (*Joseph F. Nakamura*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, DURFEE and NEESE, *Judges* sitting by designation, ALMOND and BALDWIN, *Associate Judges*.

RICH, *Acting Chief Judge*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals, adhered to on reconsideration, affirming the rejection of claims 2–13 and 27 of application Serial No. 146,256, filed October 19, 1961, entitled "Heat-Copying Process." No claim is allowed.

Appellant's invention relates to a heat-copying process in which a latent heat image is formed on a surface of a heat-softenable resin layer by exposing it to radiant heat through a master which is to be copied. The latent image is rendered visible by applying a semisolid or highly viscous developer paste to the imaged portion of the resin layer. The paste is subsequently "fixed" by heating if it does not air dry.

As explained by appellant, the heating process differentially alters the wettability of the imaged and non-imaged areas of the resin layer; that is, one will be water-receptive (hydrophilic), and the other water-repellent (hydrophobic). A developer paste that will wet only the imaged area is ordinarily used.

The developer paste comprises a liquid carrier and one or more powders. Examples of suitable carrier liquids are water; alcohols such as methanol, ethanol, and propanol; aromatic hydrocarbons such as benzene, toluene, and xylene; and oils such as linseed oil, varnish, and wood oils. The powders may be organic and/or inorganic, colored or uncolored substances such as glass powder, inorganic pigments, and organic dyestuffs. Other materials, such as waxes and synthetic resins, may be added to increase the viscosity and adhesion characteristics of the developer paste.

The following, Example 1 of appellant's application, may help to visualize how the process is practiced:

> A transparent document, to be reproduced, is placed on a layer * * * of a ketone resin with a softening temperature of 67–82° C., which is supported on a paper * * * in such a manner that the text is legible from above. The two together are passed * * * in close proximity to a powerfully focused infra-red rod radiator, with the master [document] next to the radiator. The master [the document] and the synthetic resin layer, which now carries a latent heat image, are then separated from each other. The image-bearing layer is then tested for hydrophilic properties in the image parts thereof by a light wiping over with a sponge wetted with water. As the parts are seen to be hydrophilic [wettable by water], in the development, which is affected by roller application, a paste is used which is prepared by intensive mixing of the following components: 7% by weight of rice starch, 5% by weight of lamp black, 9% by weight of ethanol, and 79% by weight of water.

> The paste dries in the air and gives reproductions which are resistant to rubbing. In order that the paste will be held more smoothly on the roller, a sponge which has been slightly moistened with water may be pressed against the inking roller.

The following claims are representative, 27 being the sole independent claim:

> 27. A process for developing a latent heat image formed in a heat-softenable resin layer by exposing the layer to radiant heat through a master which comprises treating the layer with a viscous developer paste comprising a vehicle and a thickener.
>
> 8. A process according to claim 27 in which the developer paste contains a wax.
>
> 5. A process according to claim 27 in which the vehicle is selected from the group consisting of water, an alcohol, an aromatic hydrocarbon, an oil, and mixtures thereof.

All claims are "rejected under 35 U.S.C. 103 as embracing a process made obvious by the prior art"; two United States patents and a publication are relied on:

Shoemaker, 2,764,085, Sept. 25, 1956.
Huebner, 1,669,416, May 15, 1928.
Apps, Printing Technology, 341–60 (1958).

Shoemaker, the primary reference, discloses a method of producing an image lithographic plate by exposing a coated base sheet to infrared radiation through a master to form a water-repellent, ink-receptive imaged portion on the water-receptive, ink-repellent coating. The sensitivity of the coating derives from the presence of an insolubilized "Werner complex" (a chromium compound, the structure of which is not important here). According to Shoemaker, the Werner complex "provides a hydrophilic water receptive surface upon insolubilization and * * * becomes ink receptive and water repellent upon thermal reaction." The Patent Office places particular emphasis on the following disclosure in Shoemaker (emphasis ours):

> * * * the Werner complex * * * may be used to form a *lithograph* surface having the described characteristics wherein instead of being applied alone onto the base sheet or coated base sheet, it is incorporated as an ingredient with the hydrophilic colloid coating of the type heretofore employed in the manufacture of lithograph plates, as set forth in the patents previously pointed out. In such instances reliance is still had upon the development of a heat pattern or application of heat for thermal conversion of the complex from a water receptive material to a water repellent and ink receptive surface. Such modification may include the addition of the Werner complex compound in amounts ranging from 2–20 percent in the hydrophilic colloid coating based upon casein, *polyvinyl alcohol*, alginates, and carboxymethyl cellulose *formulated in the manner described in the prior art patents.*

It should be noted that the product obtained by the Shoemaker process is a lithographic plate which is employed in a printing process (such as on paper) to produce a plurality of reproductions of the master from which it was made. In appellant's disclosed process, on the other hand, the product itself is the desired reproduction; it is not used to produce additional copies.

The Huebner patent and Apps reference are relied on for their disclosures of various types of inks which may be used in lithographic printing.

In affirming the § 103 rejection, the Board tacitly acknowledged that appellant has *disclosed* a patentable invention. The Board took the position, however, that appellant's claims are so broad as to read on an obvious modification of the Shoemaker process. Specifically, the Board stated:

> Appellant here has presented claims which are so broad as to embrace the use of known lithographic inks [Huebner and Apps] on a known lithograph plate [Shoemaker] to obtain the usual and expected inking or "development" of the image areas of that plate. The claims at bar do not require the resin layer to be actually softened by the radiant heat nor do they preclude the presence of other materials in the resin layer, such as the Werner complex compound of Shoemaker et al. Since polyvinyl alcohol is a thermoplastic resin, it necessarily has the property of being heat-softenable as so broadly specified by the appealed claims. Appellant's reference in his reply brief to the darkening of polyvinyl alcohol at temperatures above 100° C. is not persuasive of any patentable difference since the claims on appeal do not specify any operating temperature and the resin is defined by the claims so broadly as to include polyvinyl alcohol.

In response to this appellant first contends that the *record* does not establish polyvinyl alcohol to be "thermoplastic." Although we tend to agree with appellant on this limited point, it is nonetheless clear from the record that polyvinyl alcohol is "heat-softenable," and that expression, not "thermoplastic," is the limitation recited in claim 27, the only claim which refers to the resin.

Appellant also points out that in the resin layer of Shoemaker the polyvinyl alcohol is in *admixture* with *minor amounts* of the Werner complex and a bivalent metal salt.* From this appellant argues that such a layer cannot be properly termed a "heat-softenable resin layer." We might well agree with appellant if polyvinyl alcohol were only a minor ingredient in such a layer. Here, however, the layer is almost exclusively polyvinyl alcohol, and we therefore consider appellant's argument not well taken.

**[1]** Regarding the Apps and Huebner references, appellant argues that disclosures of "lithographic inks" are irrelevant inasmuch as his invention involves the use of a "viscous developer paste." This may well be true as to the specific process that appellant has disclosed, but the rejection is directed to what appellant has claimed. Since we agree with the Board that appellant's claims are broad enough to embrace the "development" of one of the types of lithographic plates disclosed by Shoemaker, we need only decide whether it would be obvious to apply a viscous or paste-like ink to such a plate. We are convinced that it would by the following disclosure in the Apps reference:

> ESSENTIAL PROPERTIES OF LITHOGRAPHIC INKS
>
> * * * * * * *
>
> (3) Suitable inks have plastic viscosities of 500 p.–2,000 p., which means that stouter inks are used by lithographers than typographers. Litho inks are often described as medium-stiff; the inks should be short and buttery but give readily under pressure.

In addition to the arguments relating to claim 27, appellant has advanced arguments based on limitations of seven of the thirteen dependent claims. However, as none of these claims limits in any way the recitation of "heat-softenable resin layer" in claim 27, we consider the § 103 rejection to be equally applicable to them.

Since the § 103 rejection of all claims was proper, it is unnecessary for us to consider another rejection of claim 5.

**[2]** The decision of the Board is affirmed.

**AFFIRMED.**

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* Inclusion of such a salt is taught by one of the "prior art patents" referred to in the above-quoted paragraph from Shoemaker.

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## Supreme Court of the United States

LEAR, INCORPORATED, PETITIONER *v.* JOHN S. ADKINS

*No. 56. Decided June 16, 1969*

[— U.S. —; 161 USPQ Supplement]

1. PATENT—VALIDITY—LICENSEE ESTOPPEL.

"Almost 20 years ago, in its last consideration of the doctrine, this Court also invoked an estoppel to deny a licensee the right to prove that his licensor was demanding royalties for the use of an idea which was in reality a part of the public domain. *Automatic Radio Manufacturing Company* v. *Hazeltine Research, Incorporated*, 339 U.S. 827, 836 (1950). We granted certiorari in the present case, 391 U.S. 912, to reconsider the validity of the *Hazeltine* rule in the light of our recent decisions emphasizing the strong federal policy favoring free competition in ideas which do not merit patent protection. *Sears, Roebuck* v. *Stiffel Company*, 376 U.S. 225 (1964); *Compco Corporation* v. *Day-Brite Lighting Incorporated*, 376 U.S. 234 (1964)."

2. SAME—SAME—SAME—ILLEGAL LICENSE RESTRICTIONS.

"* * * in the large number of cases in which licensing agreements contained restrictions that were arguably illegal under the antitrust laws, the doctrine of [licensee] estoppel was a dead letter."

3. SAME—SAME—SAME—INVALIDITY PROVED BY THIRD PARTY.

"It is generally the rule that licensees may avoid further royalty payments, regardless of the provisions of their contract, once a third party proves that the patent is invalid."

4. SAME—SAME—SAME—PATENT OBTAINED THROUGH FRAUD ON PATENT OFFICE.

"Under ordinary contract principles the mere fact that some benefit is received is enough to require the enforcement of the contract, regardless of the validity of the underlying patent. Nevertheless, if one tests this result by the standard of good-faith commercial dealing, it seems far from satisfactory. For the simple contract approach entirely ignores the position of the licensor who is seeking to invoke the court's assistance on his behalf. Consider, for example, the equities of the licensor who has obtained his patent through a fraud on the Patent Office. It is difficult to perceive why good faith requires that courts should permit him to recover royalties despite his licensee's attempts to show that the patent is invalid."

5. SAME—SAME—SAME—ESTOPPEL NOT COMPELLED BY SPIRIT OF CONTRACT LAW.

"Even in the more typical cases, not involving conscious wrongdoing, the licensor's equities are far from compelling. A patent, in the last analysis, simply represents a legal conclusion reached by the Patent Office. Moreover, the legal conclusion is predicated on factors as to which reasonable men can differ widely. Yet the Patent Office is often obliged to reach its decision in an *ex parte* proceeding, without the aid of the arguments which could be advanced by parties interested in proving patent invalidity. Consequently, it does not seem to us to be unfair to require a patentee to defend the Patent Office's judgment when his licensee places the question in issue, especially since the licensor's case is buttressed by the presumption of validity which attaches to his patent. Thus, although licensee estoppel may be consistent with the letter of contractual doctrine, we cannot say that it is compelled by the spirit of contract law, which seeks to balance the claims of promisor and promisee in accord with the requirements of good faith."

6. SAME—SAME—SAME—PUBLIC INTEREST OUTWEIGHS EQUITIES OF LICENSOR.

"Surely the equities of the licensor do not weigh very heavily when they are balanced against the important public interest in permitting full and free competition in the use of ideas which are in reality a part of the public domain. Licensees may often be the only individuals with enough economic incentive to challenge the patentability of an inventor's discovery. If they are muzzled, the public may continually be required to pay tribute to would-be monopolists without need or justification. We think it plain that the technical requirements of contract doctrine must give way before the demands of the public interest in the typical situation involving the negotiation of a license after a patent has issued."

7. Same—Same—Same—*Automatic Radio Company* v. *Hazeltine Research, Incorporated* Overruled.

"We are satisfied that *Automatic Radio Company* v. *Hazeltine Research, Incorporated*, supra, itself the product of a clouded history, should no longer be regarded as sound law in respect of its [licensee] 'estoppel' holding, and that holding is now overruled."

8. Same—Same—Same—Licensing During Pending Application.

"Adkins' position would permit inventors to negotiate all important licenses during the lengthy period while their applications were still pending at the Patent Office, thereby disabling [estopping] entirely all those who have the strongest incentive in showing that a patent is worthless. While the equities supporting Adkins' position are somewhat more appealing than those supporting the typical licensor, we cannot say that there is enough of a difference to justify such a substantial impairment of overriding federal policy."

9. Same—Same—Royalties Prior to Determination of Invalidity.

"Nor can we accept a second argument which may be advanced to support Adkins' claim to at least a portion of his post-patent royalties, regardless of the validity of the Patent Office grant. The terms of the 1955 agreement provide that royalties are to be paid until such time as 'the patent . . . is held invalid' * * * and the fact remains that the question of patent validity has not been finally determined in this case. Thus, it may be suggested that although Lear must be allowed to raise the question of patent validity in the present lawsuit, it must also be required to comply with its contract and continue to pay royalties until its claim is finally vindicated in the courts."

10. Same—Same—Same.

In connection with an agreement providing that royalties are to be paid until such time as "the patent . . . is held invalid," *Held* that "* * * Lear must be permitted to avoid the payment of all royalties accruing after Adkins' 1960 patent issued if Lear can prove patent invalidity."

11. Same—Same—Licensee Estoppel—Retroactive Effect of Decision Repudiating Licensee Estoppel.

"Adkins suggests that any decision repudiating licensee estoppel as the general rule should not be retroactively applied to contracts concluded before such a decision is announced. Given the extent to which the estoppel principle had been eroded by our prior decisions, we believe it clear that the patent owner—even before this decision—could not confidently rely upon the continuing vitality of the doctrine. Nor can we perceive that our decision today is likely to undermine any existing legitimate business relationships. Moreover, the public's interest in the elimination of specious patents would be significantly prejudiced if the retroactive effect of today's decision were limited in any way."

REMANDED (Mr. Justice Black, *The Chief Justice*, and Mr. Justice Douglas, concurring in part and dissenting in part, and Mr. Justice White concurring in part).

*C. Russell Hale*, Pasadena, Calif. (*Edwin L. Hartz, Thomas G. Corcoran, Allen E. Throop, Corcoran, Foley, Youngman & Rowe*, and *Christie, Parker & Hale*, with him on the brief), *Lawrence G. Wallace*, Assistant to the Solicitor General (*Erwin N. Griswold*, Solicitor General, *Edwin M. Zimmerman*, Assistant Attorney General, and *Howard E. Shapiro* and *Richard H. Stern*, Justice Dept. attorneys, with him on the brief) as amicus curiae for the United States, for petitioner.

*Peter R. Cohen*, Beverly Hills, Calif. (*Allen E. Susman*, and *Rosenfeld, Meyer & Susman*, with him on the brief) for respondent.

Mr. Justice Harlan delivered the opinion of the Court.

In January of 1953, John Adkins, an inventor and mechanical engineer, was hired by Lear Incorporated for the purpose of solving a vexing problem the company had encountered in its efforts to develop a gyroscope which would meet the increasingly demanding requirements of the aviation industry. The gyroscope is an essential component of the navigational system in all aircraft, enabling the

pilot to learn the direction and altitude of his airplane. With the development of the faster airplanes of the 1950's, more accurate gyroscopes were needed, and the gyro industry consequently was casting about for new techniques which would satisfy this need in an economical fashion. Shortly after Adkins was hired, he developed a method of construction at the company's California facilities which improved gyroscope accuracy at a low cost. Lear almost immediately incorporated Adkins' improvements into its production process to its substantial advantage.

The question that remains unsettled in this case, after eight years of litigation in the California courts, is whether Adkins will receive compensation for Lear's use of those improvements which the inventor has subsequently patented. At every stage of this lawsuit, Lear has sought to prove that, despite the grant of a patent by the Patent Office, none of Adkins' improvements were sufficiently novel to warrant the award of a monopoly under the standards delineated in the governing federal statutes. Moreover, the company has sought to prove that Adkins obtained his patent by means of a fraud on the Patent Office. In response, the inventor has argued that since Lear had entered into a licensing agreement with Adkins, it was obliged to pay the agreed royalties regardless of the validity of the underlying patent.

The Supreme Court of California unanimously vindicated the inventor's position. While the court recognized that generally a manufacturer is free to challenge the validity of an inventor's patent, it held that "one of the oldest doctrines in the field of patent law establishes that so long as a licensee is operating under a license agreement, he is estopped to deny the validity of his licensor's patent in a suit for royalties. The theory underlying this doctrine is that a licensee should not be permitted to enjoy the benefit afforded by the agreement while simultaneously urging that the patent which forms the basis of the agreement is void." 67 Cal. 2d 882, 891, 435 P. 2d 321, 325–326 (1967).

**[1]** Almost 20 years ago, in its last consideration of the doctrine, this Court also invoked an estoppel to deny a licensee the right to prove that his licensor was demanding royalties for the use of an idea which was in reality a part of the public domain. *Automatic Radio Manufacturing Co.* v. *Hazeltine Research, Inc.*, 339 U.S. 827, 836 (1950). We granted certiorari in the present case, 391 U.S. 912, to reconsider the validity of the *Hazeltine* rule in the light of our recent decisions emphasizing the strong federal policy favoring free competition in ideas which do not merit patent protection. *Sears, Roebuck* v. *Stiffel Co.*, 376 U. S. 225 (1964); *Compco Corp.* v. *Day-Brite Lighting Inc.*, 376 U. S. 234 (1964).

## I.

At the very beginning of the parties' relationship, Lear and Adkins entered into a rudimentary one-page agreement which provided that although "[a]ll new ideas, discoveries, inventions etc. related to . . . vertical gyros become the property of Mr. John S. Adkins," the inventor promised to grant Lear a license as to all ideas he might develop "on a mutually satisfactory royalty basis."[1] As soon as Adkins' labors yielded tangible results, it quickly became apparent to the inventor that further steps should be taken to place his rights to his ideas on a firmer basis. On February 4, 1954, Adkins filed an application with the Patent Office in an effort to gain federal protection for his improvements. At about the same time, he entered into a lengthy period of negotiations with Lear in an effort to conclude a licensing agreement which would clearly establish the amount of royalties that would be paid.

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[1] Lear argues that this original agreement was not submitted in evidence at trial and so should not be considered a part of the record on appeal. The California Supreme Court, however, treated the agreement as an important part of the record before it, 67 Cal. 2d, at 906, 435 P. 2d, at 335; and so we are free to refer to it.

These negotiations finally bore fruit on September 15, 1955, when the parties approved a complex 17-page contract which carefully delineated the conditions upon which Lear promised to pay royalties for Adkins' improvements. The parties agreed that "if the United States Patent Office refuses to issue a patent on the substantial claims [contained in Adkins' original patent application] or if such a patent so issued is subsequently held invalid then in any of such events Lear at its option shall have the right forthwith to terminate the specific license so affected or to terminate this entire Agreement . . . ." § 6.

As the contractual language indicates, Adkins had not obtained a final Patent Office decision as to the patentability of his invention at the time the licensing agreement was concluded. Indeed, he was not to receive a patent until January 5, 1960. This long delay has its source in the special character of Patent Office procedures. The regulations do not require the Office to make a final judgment on an invention's patentability on the basis of the inventor's original application.[2] While it sometimes happens that a patent is granted at this early stage, it is far more common for the Office to find that although certain of the applicant's claims may be patentable, certain others have been fully anticipated by the earlier developments in the art. In such a situation, the Patent Office does not attempt to separate the wheat from the chaff on its own initiative. Instead, it rejects the application, giving the inventor the right to make an amendment which narrows his claim to cover only those aspects of the invention which are truly novel.[3] It often happens, however, that even after an application is amended, the Patent Office finds that some of the remaining claims are unpatentable. When this occurs, the agency again issues a rejection which is subject to further amendment.[4] And so the process of rejection and amendment continues until the Patent Office Examiner either grants a patent or concludes that none of the inventor's claims could possibly be patentable, at which time a final rejection is entered on the Office's records.[5] Thus, when Adkins made his original application in 1954, it took the average inventor more than three years before he obtained a final administrative decision on the patentability of his ideas, with the Patent Office acting on the average application from two to four times.[6]

The progress of Adkins' effort to obtain a patent followed the typical pattern. In his initial application, the inventor made the ambitious claim that his entire method of constructing gyroscopes was sufficiently novel to merit protection. The Patent Office, however, rejected this initial claim, as well as two subsequent amendments, which progressively narrowed the scope of the invention sought to be protected. Finally, Adkins narrowed his claim drastically to assert only that the design of the apparatus used to achieve gyroscope accuracy

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[2] 37 CFR § 1.111 (1967).
[3] 37 CFR § 1.106 (1967).
[4] 37 CFR § 1.112 (1967).
[5] CFR § 1.113 (1967).
[6] Seidel, What the General Practitioner Should Know About Patent Law, at 61 (1956).

was novel.[7] In response, the Office issued its 1960 patent, granting a 17-year monopoly on this more modest claim.

During the long period in which Adkins was attempting to convince the Patent Office of the novelty of his ideas, however, Lear had become convinced that Adkins would never receive a patent on his invention and that it should not continue to pay substantial royalties on ideas which had not contributed substantially to the development of the art of gyroscopy. In 1957, after Adkins' patent application had been rejected twice, Lear announced that it had searched the Patent Office's files and had found a patent which it believed had fully anticipated Adkins' discovery. As a result, the company stated that it would no longer pay royalties on the large number of gyroscopes it was producing at its plant in Grand Rapids, Michigan (the Michigan gyros). Payments were continued on the smaller number of gyros produced at the company's California plant for two more years until they too were terminated on April 8, 1959 (the California gyros).

As soon as Adkins obtained his patent in 1960, he brought this lawsuit in the California Superior Court. He argued to a jury that both the Michigan and the California gyros incorporated his patented apparatus and that Lear's failure to pay royalties on these gyros was a breach both of the 1955 contract and of Lear's quasi-contractual obligations. Although Lear sought to raise patent invalidity as a defense, the trial judge directed a verdict of $16,351.93 for Adkins on the California gyros, holding that Lear was estopped by its licensing agreement from questioning the inventor's patent. The trial judge took a different approach when it came to considering the Michigan gyros. Noting that the company claimed that it had developed its Michigan designs independently of Adkins' ideas, the court instructed the jury to award the inventor recovery only if it was satisfied that Adkins' invention was novel, within the meaning of the federal patent laws. When the jury returned a verdict for Adkins of $888,122.56 on the Michigan gyros,[8] the trial judge granted Lear's motion for judgment notwithstanding the verdict, finding that Adkins' invention had been completely anticipated by the prior art.[9]

Neither side was satisfied with this split decision, and both appealed to the California Court of Appeals, which adopted a quite different approach. The court held that Lear was within its contractual rights in terminating its royalty obligations entirely in 1959, and that if Adkins desired to recover damages after that date he was "relegated to an action for infringement" in the federal courts. 52 Cal. Rptr. 795, 806. So far as pre-1959 royalties were concerned, the court held that the contract required the company to pay royalties on both the California and Michigan gyros regardless of the validity of the inventor's patent. 52 Cal. Rptr., at 809.

Once again both sides appealed, this time to the California Supreme Court, which took yet another approach to the problem presented. The court rejected the Court of Appeals' conclusion that the 1955 license gave Lear the right to terminate its royalty obligations in

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[7] Adkins actually amended his application a third time before he made the amendment which gained the approval of the Patent Office. This third amendment was superseded by the successful amendment, however, before the Patent Office considered it.

[8] For purposes of the present lawsuit, the parties stipulated that the jury would award only those damages accruing before May 31, 1963.

[9] Adkins also filed a second cause of action which contended that Lear had wrongfully appropriated a valuable trade secret and so was liable regardless of the validity of the inventor's contractual and quasi-contractual theories. The trial court, however, required Adkins to choose between his contract and tort claims. Since the California Supreme Court completely vindicated the inventor's right to contractual royalties, it was not obliged to consider the propriety of this aspect of the trial judge's decision. Consequently, the tort claim is not before us at this time.

1959. Since the 1955 agreement was still in effect, the court concluded, relying on the language we have already quoted, that the doctrine of estoppel barred Lear from questioning the propriety of the Patent Office's grant. 67 Cal. 2d, at 907, 435 P. 2d, at 336. The court's adherence to estoppel, however, was not without qualification. After noting Lear's claim that it had developed its Michigan gyros independently, the court tested this contention by considering "whether what is being built by Lear [in Michigan] springs *entirely*" (emphasis supplied) from the prior art. 67 Cal. 2d, at 913, 435 P. 2d, at 340. Applying this test, it found that Lear had in fact "utilized the apparatus patented by Adkins throughout the period in question." 67 Cal. 2d, at 915, 435 P. 2d, at 341, reinstating the jury's $888,000 verdict on this branch of the case.

## II.

Since the California Supreme Court's construction of the 1955 licensing agreement is solely a matter of state law, the only issue open to us is raised by the court's reliance upon the doctrine of estoppel to bar Lear from proving that Adkins' ideas were dedicated to the common welfare by federal law.[10] In considering the propriety of the State Court's decision, we are well aware that we are not writing upon a clean slate. The doctrine of estoppel has been considered by this Court in a line of cases reaching back into the middle of the 19th century. Before deciding what the role of estoppel should be in the present case and in the future, it is, then, desirable to consider the role it has played in the past.

### A.

While the roots of the doctrine have often been celebrated in tradition, we have found only one 19th century case in this Court that invoked estoppel in a considered manner. And that case was decided before the Sherman Act made it clear that the grant of monopoly power to a patent owner constituted a limited exception to the general federal policy favoring free competition. *Kinsman* v. *Parkhurst*, 18 How. 289 (1855).[11] Curiously a second decision often cited as supporting the estoppel doctrine points clearly in the opposite direction. *St. Paul Plow Works* v. *Starling*, 140 U.S. 184 (1891), did not even question the right of the lower courts to admit the licensee's evidence showing that the patented device was not novel. A unanimous Court

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[10] Adkins claims that we have no jurisdiction to decide the federal question presented because the company did not adequately preserve it in its argument before the State Supreme Court. We do not agree. While it is true that Lear did not ask the Supreme Court to repudiate estoppel entirely, it did seek to persuade the court to carve out an exception to the estoppel principle which was so sweeping as to undermine the doctrine's vitality completely. The company argued, on the basis of federal as well as state cases, that a licensee may escape the impact of estoppel simply by announcing that it has repudiated the licensing agreement, regardless of the contract's terms. See, *e.g.*, Respondent's and Cross-Appellant's Opening Brief in Cases Nos. 28624 and 30089, at 110–111.

The California Supreme Court rejected this argument on its merits: "Lear relies on authorities holding that a licensee may terminate a license agreement upon notice to his licensor even though, prior to termination, there has been no adjudication of invalidation of the patent which is the subject of the agreement and that thereafter the licensee may challenge the validity of the patent. (See, *e. g., The Armstrong Co.* v. *Shell Co. of Cal.* (1929), 98 Cal. App. 769, 778–779). This rule has no application if the agreement sets forth the particular circumstances under which terminations must occur. As stated above, such provisions must be complied with in order to effect a valid cancellation." 67 Cal. 2d, at 899, n. 15, 435 P. 2d, at 331, n. 15.

We clearly have jurisdiction to consider whether this decision is wrong. In doing so, we have the duty to consider the broader implications of Lear's contention, and vindicate, if appropriate, its claim to relief on somewhat different grounds than it chose to advanced below, especially when the California court recognized, in language we have already quoted, *supra*, at 2, that matters of basic principle are at stake.

[11] There are two other early cases which enforced patent licenses without a thorough consideration of the estoppel issues that were presented. In *Eureka Co.* v. *Bailey Co.*, 11 Wall. 488 (1870), the Court held that a licensee was obliged to overcome a "very strong presumption" of patent validity in order to avoid his royalty obligations, without indicating how much more compelling a showing was required than was considered necessary in an ordinary infringement action. In *Dale Tile Manufacturing Co.* v. *Hyatt*, 125 U.S. 46 (1888), this Court affirmed the decision of the New York state courts invoking the doctrine of licensee estoppel, on the ground that the estoppel question presented was one which only involved state law.

merely held that, where there was conflicting evidence as to an invention's novelty, it would not reverse the decision of the lower court upholding the patent's validity.

In the very next year, this Court found the doctrine of patent estoppel so inequitable that it refused to grant an injunction to enforce a licensee's promise never to contest the validity of the underlying patent. "It is as important to the public that competition should not be repressed by worthless patents, as that the patentee of a really valuable invention should be protected in his monopoly . . . ." *Pope Manufacturing Co.* v. *Gormully*, 144 U. S. 224, 234 (1892).

Although this Court invoked an estoppel in 1905 without citing or considering *Pope's* powerful argument, *United States* v. *Harvey Steel*, 196 U. S. 310, the doctrine was not to be applied again in this Court until it was revived in *Automatic Radio Manufacturing Co.* v. *Hazeltine Research, Inc.*, supra, which declared, without prolonged analysis, that licensee estoppel was "the general rule." 339 U.S., at 836. In so holding, the majority ignored the teachings of a series of decisions this Court had rendered during the 45 years since *Harvey* had been decided. During this period, each time a patentee sought to rely upon his estoppel privilege before this Court, the majority created a new exception to permit judicial scrutiny into the validity of the Patent Office's grant. Long before *Hazeltine* was decided, the estoppel doctrine had been so eroded that it could no longer be considered the "general rule," but was only to be invoked in an ever-narrowing set of circumstances.

### B.

The estoppel rule was first stringently limited in a situation in which the patentee's equities were far more compelling than those presented in the typical licensing arrangement. *Westinghouse Electric & Manufacturing Co.* v. *Formica Insulation Co.*, 266 U.S. 342 (1924), framed a rule to govern the recurring problem which arises when the original patent owner, after assigning his patent to another for a substantial sum, claims that the patent is worthless because it contains no new ideas. The courts of appeals had traditionally refused to permit such a defense to an infringement action on the ground that it was improper both "to sell and keep the same thing," *Faulks* v. *Kemp*, 3 F. 898, 903 (1880). Nevertheless, *Formica* imposed a limitation upon estoppel which was radically inconsistent with the premises upon which the "general rule" is based. The Court held that while an assignor may not directly attack the validity of a patent by reference to the prior state of the art, he could introduce such evidence to *narrow* the claims made in the patent. "The distinction seems a nice one but seems to be workable." 266 U.S., at 351. Workable or not, the result proved to be an anomaly: if a patent had *some* novelty *Formica* permitted the old owner to defend an infringement action by showing that the invention's novel aspects did not extend to include the old owner's products; on the other hand, if a patent had *no* novelty at all, the old owner could not defend successfully since he would be obliged to launch the direct attack on the patent that *Formica* seemed to forbid. The incongruity of this position compelled at least one court of appeals to carry the logic of the *Formica* exception to its logical conclusion. In 1940 the Seventh Circuit held that a licensee could introduce evidence of the prior art to show that the licensor's claims were not novel at all and thus successfully defend an action for royalties. *Casco Products Corp.* v. *Sinko Tool & Manufacturing Co.*, 116 F.2d 119.

In *Scott Paper Co.* v. *Marcalus Manufacturing Co.*, 326 U.S. 249 (1945), this Court adopted a position similar to the Seventh Circuit's, undermining the basis of patent estoppel even more than *Formica* had done. In *Scott*, the original patent owner had attempted to defend an infringement suit brought by his assignee by proving that his product was a copy of an expired patent. The Court refused to permit the assignee to invoke an estoppel, finding that the policy of the patent laws would be frustrated if a manufacturer was required to pay for the use of information which, under the patent statutes, was the property of all. Chief Justice Stone, for the Court, did not go beyond the precise question presented by a manufacturer who asserted that he was simply copying an expired patent. Nevertheless it was impossible to limit the *Scott* doctrine to such a narrow compass. If patent policy forbids estoppel when the old owner attempts to show that he did no more than copy an expired patent, why should not the old owner be also permitted to show that the invention lacked novelty because it could be found in a technical journal or because it was obvious to one knowledgeable in the art? As Justice Frankfurter's dissent indicated, *id.*, at 258–264, there were no satisfactory answers to these questions. The *Scott* exception had undermined the very basis of the "general rule."

### C.

At about the time *Scott* was decided, this Court developed yet another doctrine which was profoundly antithetic to the principles underlying estoppel. In *Sola Electric Co.* v. *Jefferson Electric Co.*, 317 U.S. 173 (1942), the majority refused to permit a licensor to enforce the license's price-fixing provisions without permitting the licensee to contest the validity of the underlying patent. Since the price-fixing clause was *per se* illegal but for the existence of a valid patent, this narrow exception could be countenanced without compromising the general estoppel principle. But the *Sola* Court went further: it held that since the patentee had sought to enforce the price-fixing clause, the licensee could *also* avoid paying royalties if he could show that the patent was invalid. Five years later, the "anti-trust exception" was given an even more extensive scope in the *Katzinger* and *MacGregor* cases.[12] Here, licensors were not permitted to invoke an estoppel despite the fact that they sought only to collect their royalties. The mere existence of a price-fixing clause in the license was held to be enough to bring the validity of the patent into question. **[2]** Thus in the large number of cases in which licensing agreements contained restrictions that were arguably illegal under the antitrust laws, the doctrine of estoppel was a dead letter. Justice Frankfurter, in dissent, went even further, concluding that *Katzinger* and *MacGregor* had done all but repudiate the estoppel rule: "If a doctrine that was vital law for more than ninety years will be found to have now been deprived of life, we ought at least to give it decent public burial." 329 U.S., at 416.

### D.

The lower courts, both state and federal, have also hedged the impact of estoppel by creating exceptions which have indicated a recognition of the broader policies pointing to a contrary approach. **[3]** It is generally the rule that licensees may avoid further royalty payments, regardless of the provisions of their contract, once a third party proves that the patent is invalid. See *e. g.*, *Drackett Chemical Co.* v. *Chamberlain Co.*, 63 F. 2d 853 (1933). Some courts have gone further to hold that a licensee may notify the patent owner that he is repudiating his agreement, regardless of its terms, and may subsequently defend any action for royalties by proving patent invalidity. Note, The Doctrine of Licensee Repudiation in Patent Law, 63 Yale L. J. 125 (1953); Ellis, Patent Licenses § 328 (3d ed. Deller 1958). And even in the 19th century, state courts had held that if the licensee had not actually sold products incorporating the patent's ideas, he could challenge the validity of the patent. See Forkosch, Licensee Estoppel in Patent Law, 20 Temple L. Q. 515, 529, n. 45 (1947).[13]

## III.

The uncertain status of licensee estoppel in the case law is a product of judicial efforts to accommodate the competing demands of the common law of contracts and the federal law of patents. On the one hand, the law of contracts forbids a purchaser to repudiate his promises simply because he later becomes dissatisfied with the bargain he has made.[14] On the other hand, federal law requires that all ideas in general circulation be dedicated to the common good unless they are protected by a valid patent. *Sears, Roebuck* v. *Stiffel Co.*, supra, *Compco Corp.* v. *Day-Brite Lighting Inc.*, supra. When faced with this basic conflict in policy, both this Court and courts throughout the land have naturally sought to develop an intermediate position which somehow would remain responsive to the radically different concerns of the two different worlds of contract and patent. The result has been a failure. Rather than creative compromise, there has been a chaos of conflicting case law, proceeding on inconsistent premises. Before renewing the search for an elusive middle ground, we must reconsider on their own merits the arguments which may properly be advanced on both sides of the estoppel question.

### A.

It will simplify matters greatly if we first consider the most typical situation in which patent licenses are negotiated. In contrast to the present case, most manufacturers obtain a license after a patent has issued. Since the Patent Office makes an inventor's ideas public when it issues its grant of a limited monopoly,[15] a potential licensee has access to the inventor's ideas even if he does not enter into an agreement with the patent owner. Consequently, a manufacturer gains only two benefits if he chooses to enter a licensing agreement after the patent has issued. First, by accepting a license and paying royalties for a time, the licensee may have avoided the necessity of defending an expensive infringement action during the period when he may be least able to afford one. Second, the existence of an unchallenged

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[12] *Edward Katzinger Co.* v. *Chicago Metallic Manufacturing Co.*, 329 U.S. 394 (1947); *MacGregor* v. *Westinghouse Electric & Manufacturing Co.*, 329 U.S. 402 (1947).

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[13] In addition to the works cited in the text, a detailed explication of the development of estoppel doctrine may be found in Cooper, Estoppel to Challenge Patent Validity: The Case of Private Good Faith vs. Public Policy, 18 Western Res. L. Rev. 1122 (1967), and in Kramer, Estoppel To Deny Patent Validity—A Slender Reed, 23 N. Y. U. Intramural L. Rev. 237 (1968).

[14] See 1 A. Corbin, Contracts § 127 (1963); Treece, Licensee Estoppel in Patent and Trademark Cases, 53 Iowa L. Rev. 525, 528–530 (1967).

[15] 37 CFR §§ 1.11, 1.13 (1967).

patent may deter others from attempting to compete with the licensee.[16]

**[4]** Under ordinary contract principles the mere fact that some benefit is received is enough to require the enforcement of the contract, regardless of the validity of the underlying patent. Nevertheless, if one tests this result by the standard of good-faith commercial dealing, it seems far from satisfactory. For the simple contract approach entirely ignores the position of the licensor who is seeking to invoke the court's assistance on his behalf. Consider, for example, the equities of the licensor who has obtained his patent through a fraud on the Patent Office. It is difficult to perceive why good faith requires that courts should permit him to recover royalties despite his licensee's attempts to show that the patent is invalid. Compare *Walker Process Equipment, Inc.* v. *Food Machinery & Chemical Corp.*, 382 U.S. 172 (1965).

**[5]** Even in the more typical cases, not involving conscious wrongdoing, the licensor's equities are far from compelling. A patent, in the last analysis, simply represents a legal conclusion reached by the Patent Office. Moreover, the legal conclusion is predicated on factors as to which reasonable men can differ widely. Yet the Patent Office is often obliged to reach its decision in an *ex parte* proceeding, without the aid of the arguments which could be advanced by parties interested in proving patent invalidity. Consequently, it does not seem to us to be unfair to require a patentee to defend the Patent Office's judgment when his licensee places the question in issue, especially since the licensor's case is buttressed by the presumption of validity which attaches to his patent. Thus, although licensee estoppel may be consistent with the letter of contractual doctrine, we cannot say that it is compelled by the spirit of contract law, which seeks to balance the claims of promisor and promisee in accord with the requirements of good faith.

**[6]** Surely the equities of the licensor do not weigh very heavily when they are balanced against the important public interest in permitting full and free competition in the use of ideas which are in reality a part of the public domain. Licensees may often be the only individuals with enough economic incentive to challenge the patentability of an inventor's discovery. If they are muzzled, the public may continually be required to pay tribute to would-be monopolists without need or justification. We think it plain that the technical requirements of contract doctrine must give way before the demands of the public interest in the typical situation involving the negotiation of a license after a patent has issued.

**[7]** We are satisfied that *Automatic Radio Co.* v. *Hazeltine Research, Inc.*, supra, itself the product of a clouded history, should no longer be regarded as sound law in respect of its "estoppel" holding, and that holding is now overruled.

### B.

The case before us, however, presents a far more complicated estoppel problem than the one which arises in the most common licensing context. The problem arises out of the fact that Lear obtained its license in 1955, more than four years before Adkins received his 1960 patent. Indeed, from the very outset of the relationship, Lear obtained special access to Adkins' ideas in return for its promise to pay satisfactory compensation.

Thus, during the lengthy period in which Adkins was attempting to obtain a patent, Lear gained an important benefit not generally obtained by the typical licensee. For until a patent issues, a potential licensee may not learn his licensor's ideas simply by requesting the information from the Patent Office. During the time the inventor is seeking patent protection, the governing federal statute requires the Patent Office to hold an inventor's patent application in confidence.[17] If a potential licensee hopes to use the ideas contained in a secret patent application, he must deal with the inventor himself, unless the inventor chooses to publicize his ideas to the world at large. By promising to pay Adkins royalties from the very outset of their relationship, Lear gained immediate access to ideas which it may well not have learned until the Patent Office published the details of Adkins' invention in 1960. At the core of this case, then, is the difficult question whether federal patent policy bars a State from enforcing a contract regulating access to an unpatented secret idea.[18]

Adkins takes an extreme position on this question. The inventor does not merely argue that since Lear obtained privileged access to his ideas *before 1960*, the company should be required to pay royalties accruing *before 1960* regardless of the validity of the patent which ultimately issued. He also argues that since Lear obtained special benefits before 1960, it should also pay royalties during the entire patent period (1960–1977), without regard to the validity of the Patent Office's grant. We cannot accept so broad an argument.

**[8]** Adkins' position would permit inventors to negotiate all important licenses during the lengthy period while their applications were still pending at the Patent Office, thereby disabling entirely all those who have the strongest incentive in showing that a patent is worthless. While the equities supporting Adkins' position are somewhat more appealing than those supporting the typical licensor, we cannot say that there is enough of a difference to justify such a substantial impairment of overriding federal policy.

**[9]** Nor can we accept a second argument which may be advanced to support Adkins' claim to at least a portion of his post-patent royalties, regardless of the validity of the Patent Office grant. The terms of the 1955 agreement provide that royalties are to be paid until such time as "the patent . . . is held invalid," § 6, and the fact remains that the question of patent validity has not been finally determined in this case. Thus, it may be suggested that although Lear must be allowed to raise the question of patent validity in the present lawsuit, it must also be required to comply with its contract and continue to pay royalties until its claim is finally vindicated in the courts.

The parties' contract, however, is no more controlling on this issue than is the State's doctrine of estoppel, which is also rooted in contract principles. The decisive question is whether overriding federal policies would be significantly frustrated if licensees could be required to continue to pay royalties during the time they are challenging patent validity in the courts.

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[16] Of course, the value of this second benefit may depend upon whether the licensee has obtained exclusive or nonexclusive rights to the use of the patent. Even in the case of nonexclusive licenses, however, competition is limited to the extent that the royalty charged by the patentee serves as a barrier to entry.

[17] 35 U.S.C. § 122 (1964) provides: "Applications for patents shall be kept in confidence by the Patent Office and no information concerning the same given without authority of the applicant or owner unless necessary to carry out the provisions of any Act of Congress or in such special circumstances as may be determined by the Commissioner."

The present regulations issued by the Patent Office unequivocally guarantee that "Pending patent applications are preserved in secrecy . . . unless it shall be necessary to the proper conduct of business before the Office" to divulge their contents. 37 CFR § 1.14 (a) (1967). The parties do not contend that Adkins' patent application was publicized by the Office during the period it was under consideration.

[18] See Doerfer, The Limits on Trade Secret Law Imposed by Federal Patent and Antitrust Supremacy, 80 Harv. L. Rev. 1432 (1968); Note, The *Stiffel* Doctrine and the Law of Trade Secrets, 62 Nw. L. Rev. 956 (1968); Adelman, Trade Secrets and Federal Preemption—the Aftermath of Sears and Compco, 49 Journal of the Patent Office Society 713 (1967); Treece, Patent Policy and Pre-emption: The Stiffel and Compco Cases, 32 U. Chi. L. Rev. 80 (1964).

It seems to us that such a requirement would be inconsistent with the aims of federal patent policy. Enforcing this contractual provision would give the licensor an additional economic incentive to devise every conceivable dilatory tactic in an effort to postpone the day of final judicial reckoning. We can perceive no reason to encourage dilatory court tactics in this way. Moreover, the cost of prosecuting slow-moving trial proceedings and defending an inevitable appeal might well deter many licensees from attempting to prove patent invalidity in the courts. The deterrence effect would be particularly severe in the many scientific fields in which invention is proceeding at a rapid rate. In these areas, a patent may well become obsolute long before its 17-year term has expired. If a licensee has reason to believe that he will replace a patented idea with a new one in the near future, he will have little incentive to initiate lengthly court proceedings, unless he is freed from liability at least from the time he refuses to pay the contractual royalties. Lastly, enforcing this contractual provision would undermine the strong federal policy favoring the full and free use of ideas in the public domain. **[10]** For all these reasons, we hold that Lear must be permitted to avoid the payment of all royalties accruing after Adkins' 1960 patent issued if Lear can prove patent invalidity.[19]

### C.

Adkins' claim to contractual royalties accruing before the 1960 patent issued is, however, a much more difficult one, since it squarely raises the question whether, and to what extent, the States may protect the owners of *unpatented* inventions who are willing to disclose their ideas to manufacturers only upon payment of royalties. The California Supreme Court did not address itself to this issue with precision, for it believed that the venerable doctrine of estoppel provided a sufficient answer to all of Lear's claims based upon federal patent law. Thus, we do not know whether the Supreme Court would have awarded Adkins recovery even on his pre-patent royalties if it had recognized that previously established estoppel doctrine could no longer be properly invoked with regard to royalties accruing during the 17-year patent period. Our decision today will, of course, require the state courts to reconsider the theoretical basis of their decisions enforcing the contractual rights of inventors and it is impossible to predict the extent to which this re-evaluation may revolutionize the law of any particular State in this regard. Consequently, we have concluded, after much consideration, that even though an important question of federal law underlies this phase of the controversy, we should not now attempt to define in even a limited way the extent, if any, to which the States may properly act to enforce the contractual rights of inventors of unpatented secret ideas. Given the difficulty and importance of this task, it should be undertaken

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**[11]** [19] Adkins suggests that any decision repudiating licensee estoppel as the general rule should not be retroactively applied to contracts concluded before such a decision is announced. Given the extent to which the estoppel principle had been eroded by our prior decisions, we believe it clear that the patent owner—even before this decision—could not confidently rely upon the continuing vitality of the doctrine. Nor can we perceive that our decision today is likely to undermine any existing legitimate business relationships. Moreover, the public's interest in the elimination of specious patents would be significantly prejudiced if the retroactive effect of today's decision were limited in any way.

only after the state courts have, after fully focussed inqury, determined the extent to which they will respect the contractual rights of such inventors in the future. Indeed, on remand, the California courts may well reconcile the competing demands of patent and contract law in a way which would not warrant further review in this Court.

### IV.

We also find it inappropriate to pass at this time upon Lear's contention that Adkins' patent is invalid.

Not only did Lear fail to raise this issue in its petition for certiorari, but the California Supreme Court has yet to pass on the question of patent validity in that clear and unequivocal manner which is so necessary for proper adjudication in this Court. As we have indicated, the California Supreme Court considered the novelty of Adkins' idea relevant to its decision at only one stage of its extensive analysis. Since Lear claimed that it had developed its Michigan gyros completely independently of Adkins' efforts, the Supreme Court believed itself obliged to consider whether Adkins' ideas were not "entirely" anticipated by the prior art. 67 Cal. 2d, at 913, 435 P. 2d, at 340. Applying this test, the Court upheld the jury's verdict of $888,000 on the Michigan gyros, finding that "Lear utilized the apparatus patented by Adkins throughout the period in question." 67 Cal. 2d, at 915, 435 P. 2d. at 341. In reaching this conclusion, however, the Court did express its belief that Adkins' invention made a "significant step forward" in the art of gyroscopy. 67 Cal. 2d, at 915, 435 P. 2d, at 341.

It is far from clear that the Court, in making this last statement, intended to hold that Adkins' ideas satisfied the demanding standard of invention explicated in our decision in *Graham* v. *John Deere Co.*, 383 U. S. 1 (1966). Surely, such a holding was not required by the Court's analysis, which was concerned only with the question whether Lear had benefited from Adkins' ideas in any degree. In this context we believe that Lear must be required to address its arguments attacking the validity of the underlying patent to the California courts in the first instance.

The judgment of the Supreme Court of California is vacated and the case is remanded to that court for further proceedings not inconsistent with this opinion. *It is so ordered.*

**MR. JUSTICE WHITE**, concurring in part.

The applicable provision of 28 U.S.C. § 1257 empowers us to review by writ of certiorari "[f]inal judgments or decrees rendered by the highest court of a State . . . where any title, right, privilege or immunity is specially set up or claimed under the Constitution, treaties or statutes of, or commission held or authority exercised under, the United States." Although Adkins disputes it, we have jurisdiction to consider whether a patent licensee is estopped to challenge the validity of the patent. The California Supreme Court ruled that he is and therefore would not entertain attacks on Adkins' patent as a defense to his suit for royalties. Lear seeks review of that holding here. In my view, not only is the issue properly here but the Court has correctly decided it.

Although we have jurisdiction to review this state court judgment and to determine the licensee estoppel issue, it does not necessarily follow that we may or should deal with two other federal questions which come into focus once the licensee is free to challenge the patent. The first is whether the patent is valid. The second, which arises only if the patent is invalidated, is whether federal law forbids the collection of royalties which might otherwise be collectible under a contract rooted in state law. Although the Court does not deal with the first issue, it does purport to decide the second, at least in part. However, as either a jurisdictional or a policy matter, neither of these issues is properly before us in this case.

In the first place, we have no decision of the California Supreme Court affirming or denying, as a matter of federal law, that Adkins may not enforce his contract if his patent is held invalid. The California court held that the license agreement had not been terminated in accordance with its terms, that the doctrine of licensee estoppel prevented Lear from challenging the patent and that Lear was utilizing the teaching of Adkins' patent. There was thus no necessity or reason to consider whether the patent was invalid, or if it was, whether either state or federal law prevented collection of the royalties reserved by the contract. Even if these issues had been presented to the California Supreme Court, sound principles would have dictated that the court not render a decision on questions unnecessary to its disposition of the case. See, *e.g., Southwestern Bell Telephone Co.* v. *Oklahoma*, 303 U.S. 206, 212–213 (1938).

There is no indication, however, that Lear, directly or by inference, urged in the California courts that if Adkins' patent were invalid, federal law overrode state contract law and precluded collection of the royalties which Lear had promised to pay. One of the defenses presented by Lear in its answer to Adkins' claim for royalties was that there had been a failure of consideration because of the absence of bargained-for patentability in Adkins' ideas. But failure of consideration is a state law question, and I find nothing in the record and nothing in this Court's opinion indicating that Lear at any time contended in the state courts that once Adkins' patent was invalidated, the royalty agreement was unenforceable as a matter of federal law.[20]

Given Lear's failure below to "specially set up or claim" the federal bar to collection of royalties in the event Adkins' patent was invalidated, and without the California Supreme Court's "final judgement" on this issue, I doubt our jurisdiction to decide the issue. But even if jurisdiction exists, the Court should follow its characteristic practice and refuse to issue pronouncements on questions not urged or decided in the state courts.

In *McGoldrick* v. *Compagnie Generale Atlantique*, 309 U.S. 430, (1940), the Court, while recognizing it had jurisdiction to determine whether a New York tax was an unconstitutional burden on interstate

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[20] The Court brushes aside the problem by characterizing the additional issue it decides as representing a "more complicated estoppel problem." But licensee estoppel, the question raised here, refers to estoppel against the licensee to challenge the patent, not to any bar or "estoppel" interposed by federal law against collecting royalties on an invalidated patent. Whether Adkins can enforce his contract for royalties if his patent is found to be invalid cannot be shoehorned into the licensee estoppel question, and by no stretch of the imagination can it be included within the scope of the question raised and litigated by the parties in this case. In the courts below Lear wanted to challenge Adkins' patent only for the purpose of showing that Adkins was entitled to no recovery under the terms of the contract itself, either because of a failure of consideration or because the contract had been legally terminated or could be legally terminated. Indeed, the District Court of Appeals noted: "Lear concedes that it would be estopped to contest the validity of any patent issued to Adkins on the claims of his application described in the license agreement so long as it continued to operate under that agreement." 52 Cal. Rptr., at —. See also Lear's Opening Brief in the District Court of Appeals, at 109.

commerce, refused to consider whether the tax was a prohibited impost or duty on imports and exports, saying: "[I]t is only in exceptional cases, and then only in cases coming from the federal courts, that [the Court] considers questions urged by a petitioner or appellant not pressed or passed upon in the courts below. . . . [D]ue regard for the appropriate relationship of this Court to state courts requires us to decline to consider and decide questions affecting the validity of state statutes not urged or considered there." *Id.*, at 434.

*Wilson* v. *Cook*, 327 U.S. 474 (1946), reached a similar conclusion. There the Court denied a government contractor the benefit of the implied constitutional immunity of the Federal Government from taxation by the State, but at the same time declined to consider whether the state tax at issue placed a forbidden tax directly on the United States. This was because the Court was "not free to consider" a ground of attack "not presented to the Supreme Court of Arkansas or considered or decided by it," even though the issue was in some measure related to one actually decided by the state courts and arose under the same implied constitutional immunity argument. *Id.*, at 483. Compare *Dewey* v. *Des Moines*, 173 U.S. 193, 197–198 (1899). The Court relied on *McGoldrick* and a long line of prior cases, including *New York ex rel. Cohn* v. *Graves*, 300 U. S. 308, 317 (1937), where the Court had said: "In reviewing the judgment of a state court, this Court will not pass upon any federal question not shown by the record to have been raised in the state court or considered there, whether it be one arising under a different or the same clause in the Constitution with respect to which other questions are properly presented."

The result is the same when a party has attempted to raise an issue in the State court but has not done so in proper or timely fashion. "Questions first presented to the highest State court on a petition for rehearing come too late for consideration here . . . ." *Radio Station WOW* v. *Johnson*, 326 U.S. 120, 128 (1945). "Since the State Supreme Court did not pass on the question now urged, and since it does not appear to have been properly presented to that court for decision, we are without jurisdiction to consider it in the first instance here." *CIO* v. *McAdory*, 325 U.S. 472, 477 (1945). And no different conclusion obtains when the federal question, although not yet presented to or decided by the state court, will probably or even certainly arise during further proceedings held in that court. See, e.g., *NAACP* v. *Alabama*, 357 U.S. 499, 466–467 (1958); *Hudson Distributors, Inc.* v. *Eli Lilly & Co.*, 377 U.S. 386, 394–395 (1964).

Wholly aside from jurisdictional considerations or those relating to our relationships with state courts, there is the matter of our own Rule 23(1) (c), which states that "[o]nly the questions set forth in the petition or fairly comprised therein will be considered by the court." See *Flournoy* v. *Wiener*, 321 U.S. 253, 259 (1944). None of the questions presented by Lear's petition for certiorari comes even close to the issue to which the Court now addresses itself—an issue which will arise only if Lear can and does challenge the patent, if the patent is declared invalid, if Adkins nevertheless seeks to enforce the agreement and if Lear interposes a defense based on federal law.

This seems a poor case for waiving our Rules. In the first place, the question of validity has not been reached by the California Supreme Court, and when it is, the patent may withstand attack. In that event there will be no necessity to consider the impact of patent law on the enforceability of a contract grounded in state law. Second, even if the patent is declared invalid, the state court, after the parties have addressed themselves to the issues, may accommodate federal and state law in a matter which would not prompt review here. Third, the parties themselves have neither briefed nor seriously argued the question in this Court, and we do not have the benefit of their views on what is surely a difficult question. The Court itself has flushed the issue, which it now deals with on a piecemeal basis.[21] Like the question of patent validity, I would leave the consequences of invalidity to the state court in the first instance.

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MR. JUSTICE BLACK, with whom THE CHIEF JUSTICE and MR. JUSTICE DOUGLAS join, concurring in part and dissenting in part.

I concur in the judgment and opinion of the Court, except for what is said in Part III, C, of the Court's opinion. What the Court does in this part of its opinion is to reserve for future decision the question whether the States have power to enforce contracts under which someone claiming to have a new discovery can obtain payment for disclosing it while his patent application is pending, even though the discovery is later held to be unpatentable.. This reservation is, as I see it, directly in conflict with what this Court held to be the law in *Sears, Roebuck & Co.* v. *Stiffel Co.*, 376 U.S. 225 (1964), and *Compco Corp.* v. *Day-Brite Lighting*, 376 U.S. 234 (1964). Brother HARLAN concurred specially in those cases, saying—contrary to what the Court held—"I see no reason why the State may not impose reasonable restrictions on the future 'copying' itself." *Compco*, supra, at 239. Consequently the Court is today joining in the kind of qualification that only MR. JUSTICE HARLAN was willing to make at the time of our *Stiffel* and *Compco* decisions.

I still entertain the belief I expressed for the Court in *Stiffel* and *Compco* that no State has a right to authorize any kind of monopoly on what is claimed to be a new invention, except when a patent has been obtained from the Patent Office under the exacting standards of the patent laws. One who makes a discovery may, of course, keep it secret if he wishes, but private arrangements under which self-styled "inventors" do not keep their discoveries secret, but rather disclose them, in return for contractual payments, run counter to the plan of our patent laws, which tightly regulate the kind of inventions that may be protected and the manner in which they may be protected. The national policy expressed in the patent laws, favoring free competition and narrowly limiting monopoly, cannot be frustated by private agreements among individuals, with or without the approval of the State.

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[21] The Court's opinion flatly proscribes recovery by Adkins of "all royalties accruing after Adkins, 1960 patent issued if Lear can prove patent invalidity." *Ante,* at 20. But recovery of pre-1960 royalties is left open by the Court, apparently because pre-issuance and post-issuance royalties do not stand on the same footing under federal law. Such a distinction may be valid, and pre-1960 royalties recoverable; but if so, what of post-1960 royalties which are attributable to the head-start Lear obtained over the rest of the industry as a result of pre-issuance disclosure of Adkins, idea? Today's bar to collection of post-1960 royalties would seem to be inflexible, and yet those royalties arguably are recoverable to the extent they represent payment for the pre-1960 disclosure of Adkins' idea; to that extent, they seem indistinguishable from pre-1960 royalties, at least for purposes of federal patent law. Cf. *Brulotte* v. *Thys Co.,* 379 U.S. 29, 31 (1964). See also *id.,* at 34–39 (dissenting opinion). This possibility and others serve to indicate the wisdom of refraining from any pronouncement now, and particularly from any rigid line-drawing, in advance of consideration by the courts below and by the parties.

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## U.S. Court of Customs and Patent Appeals

### IN RE ANTHONY L. GARNERO

*No. 8172. Decided June 26, 1969*

[56 CCPA —; 412 F.2d 276; 162 USPQ 221]

1. CLAIM—CONSTRUCTION OF CLAIM—STRUCTURAL LIMITATIONS.

"* * * it seem to us that the recitation of the particles as 'interbonded one to another by interfusion between the surfaces of the perlite particles' is as capable of being construed as a structural limitation as 'intermixed,' 'ground in place,' 'press fitted,' 'etched,' and 'welded,' all of which at one time or another have been separately held capable of construction as structural, rather than process, limitations."

2. SAME—SAME—WORDS AND PHRASES—"CONSISTING ESSENTIALLY OF."

"* * * the 'consisting essentially of * * *' terminology would, as the Board pointed out, exclude additional unspecified ingredients which would affect the basic and novel characteristics of the product defined in the balance of the claim. However, to follow the teachings of Thomas combined in any manner with Pierce, would *require* the presence of at least one additional material with the expanded perlite, whether it be the sodium silicate binder of Thomas or the hydrated lime which Pierce uses to provide a chemical joining action. In either event it cannot be said that the additional ingredient would not materially affect the basic and novel characteristic of appellant's product which is that the perlite particles are held together *without* any additional material."

3. PATENTABILITY—PARTICULAR SUBJECT MATTER—"STRUCTURAL MATERIAL OF EXPANDED MINERALS AND METHOD FOR MANUFACTURE."

The refusal of certain claims in an application entitled "Structural Material of Expanded Minerals and Method for Manufacture," as unpatentable over the prior art, is reversed.

APPEAL from Patent Office. Serial No. 381,145.

**REVERSED.**

*Herman Hersh, McDougall, Hersh, Scott & Ladd* (*George A. Degnan*, of counsel) for appellant.

*Joseph Schimmel* (*Fred W. Sherling*, of counsel) for the Commissioner of Patents.

Before RICH, *Acting Chief Judge*, HOLTZOFF and MCLAUGHLIN, *Judges*, sitting by designation, ALMOND and BALDWIN, *Associate Judges*

BALDWIN, *J.*, delivered the opinion of the court.

This appeal is from the Patent Office Board of Appeals decision affirming the Examiner's rejection of two claims [1] of appellant's application [2] as unpatentable under 35 U.S.C. 103, claim 1 being rejected on Thomas [3] in view of Pierce [4] and claim 9 being rejected on the same combination of references further in view of Ford.[5] No claim has been allowed.

### *The Invention*

The invention relates to a thermal insulation panel formed from expanded perlite particles. The particles are held together without any additional material, such as an external bonding agent, by interfusion between the surfaces of the perlite particles. Interfusion is effected by taking the initially unexpanded perlite particles and heating them rapidly for expansion so that combined water associated with the particles is released as a vapor which operates as a flux which enables the particles to become stuck together at temperatures as low as 1400° F.[6] The specification describes the product as "having a density which may vary from 1 pound per cubic foot to as much as 80 pounds per cubic foot while still maintaining a porosity and a mass integrity sufficient to enable use thereof as a structural insulation material."

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[1] The rejections of only claims 1 and 2 are pursued on appeal here.

[2] Serial No. 381,145, filed July 8, 1964, for "Structural Material of Expanded Minerals and Method for Manufacture," allegedly a continuation of application Serial No. 714,831, filed February 12, 1958, for "Structural Material of Expanded Minerals and Method for Manufacturing." The parent application was before this court in *In re Garnero,* 52 CCPA 1370, 345 F.2d 589, 145 USPQ 457 (1965), and we there affirmed the rejection of claims directed to a method of manufacturing an expanded perlite structure as being obvious under 35 U.S.C. 103 in view of certain, different prior art cited in that case.

[3] U.S. Patent 2,600,812, issued June 7, 1952.

[4] U.S. Patent 2,517,235, issued August 1, 1950.

[5] U.S. Patent 2,691,248, issued October 12, 1954.

Claims 1 and 9 read:

> 1. A composite, porous, thermal insulation panel characterized by dimensional stability and structural strength consisting essentially of expanded perlite particles which are interbonded one to another by interfusion between the surfaces of the perlite particles while in a pyroplastic state to form a porous perlite panel.
>
> 9. An insulation panel as claimed in claim 1 in which the panel is formed in cross-section with layers of different densities.

### *The References*

Thomas discloses a pipe insulating composition which utilizes sodium silicate as a binding agent to hold already expanded perlite particles together, with sodium chloride being used as a setting agent. A mixture of the expanded perlite, the sodium silicate binder, and the sodium chloride setting agent are subjected to a compression from 5 to 7 tons per square foot, at ambient temperature, to produce articles formed of the composition. Prior to compression, Thomas' aggregate mixture has a density of 4 to 10 pounds per cubic foot.

Pierce discloses a building material utilizing expanded perlite particles which are mixed with hot hydrated lime (CaO) at a temperature of about 300° F. Pierce states that "the exterior of the granules reacts chemically to bind the entire mass together." The specification discloses that the end product may have a density of 40–50 pounds per cubic foot.

Ford discloses cellular glass pellets having a core of highly cellulated glass, an intermediate layer of less highly cellulated glass, and an outer layer of substantially uncellulated glass, thus demonstrating a panel having a cross-section of varying density.

### *The Rejection*

Sustaining the Examiner's rejection of claim 1 as being unpatentable over Thomas in view of Pierce under 35 U.S.C. 103, the Board stated:

> The language used by Pierce is considered to be readable on "interbonding by interfusion" as expressed in the claims at issue. Albeit that the condition limitations appear to differ somewhat from the details of the process described by the patentees, we are apprised of no facts which would lead us to conclude that the instantly claimed product necessarily would be patentably unique when compared to that resulting from the prior art methods.

The Board rejected arguments by appellant that the inclusion in the claim of the phrase "consisting essentially of" would exclude the

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[6] Thus, appellant's specification states: "Fusion believed to be necessary for adhesion occurs with the average perlite at a temperature within the range of 2000–2200° F. It has been found, however, that the combined water which is released as a vapor when the perlite particles are heated to a pyroplastic state operates as a flux which enables the desired stickiness to develop for agglomeration when the particles are heated to a temperature as low as 1400° F. but preferably at a temperature above 1600° F. Thus agglomeration can be achieved at a temperature starting at 1400° F. Best adhesions and expansions are secured when the particles are heated to a temperature above 1800° F. Thus the preferred conditions for operation from the standpoint of expansion and agglomeration will reside in heating the particles to a temperature of 1800–2200° F."

presence of an external binder and thus distinguish from the compositions of Thomas which uses a sodium silicate binder and that the phrase "expanded perlite particles which are interbonded one to another by interfusion between the surfaces" distinguishes from the chemical bonding of Pierce which employs lime as an additional ingredient. Instead the Board noted the existence of other claims (now cancelled) adding other limitations to claim 1 and stated:

> [T]he recital of "consisting essentially" renders a claim open only for the inclusion of unspecified ingredients which would not materially affect the basic and novel characteristics of the product defined in the balance of the claim. * * * Where, as here, other claims indicate that particular components are not excluded by the words "consisting essentially of," appellant's arguments as to the existence of diverse reaction mechanisms in the prior art processes cannot be accepted as conclusive of a factual patentable distinction in his claimed product.

The Examiner's rejection of claim 9 on the ground that the feature of different densities in different layers would be an obvious modification in view of Ford, was affirmed by the Board in that:

> Appellant has urged no patentable merit in the specific modifications set forth in claims 5 through 9, and we perceive none.

### *Opinion*

On appeal the Solicitor's position appears to be that the only distinction between appellant's *product* and the *products* of the prior art is the *process* by which appellant's product is made; and, as that *process* has been found to be unpatentable in our previous decision of *In re Garnero*, 52 CCPA 1370, 345 F.2d 589, 145 USPQ 457 (1965), then the *product* claims are likewise unpatentable. The Solicitor is in effect reading claim 1, which recites "expanded perlite particles which are interbonded one to another by interfusion between the surfaces of the perlite particles while in a pyroplastic state to form a porous perlite panel," as a product claim containing a process limitation and then applying the rationale expressed by this court in *In re Stephens*, 52 CCPA 1409, 345 F.2d 1020, 145 USPQ 656 (1965); and *In re Dilnot*, 49 CCPA 1015, 300 F.2d 945, 133 USPQ 289 (1962).

The trouble with the Solicitor's approach is that it necessarily assumes that claim 1 should be construed as a product claim containing a process, rather than structural, limitation. **[1]** However, it seems to us that the recitation of the particles as "interbonded one to another by interfusion between the surfaces of the perlite particles" is as capable of being construed as a structural limitation as "intermixed," "ground in place," "press fitted," "etched," and "welded," all of which at one time or another have been separately held capable of construction as structural, rather than process, limitations.[7] The correct inquiry therefore, it appears to us, is whether the product defined by claim 1 is patentably distinguishable over the disclosures of Thomas and Pierce in view of the *structural* limitation defining the panel as "consisting essentially of expanded perlite particles * * * interbonded one to another by interfusion between the surfaces of the perlite particles."[8] Neither Thomas nor Pierce disclose expanded perlite particles *interbonded one to another by interfusion between the surfaces thereof;* it is not therefore reasonable to view such interbonding to be obvious by considering the references collectively.

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[7] Saxe and Levitt, Product by Process Claims and Their Current Status in Chemical Patent Office Practice, 42 JPOS 528, 536, 537 (August 1960), and cases collected thereat.

See also a recent decision of this court in *In re Steppan*, 55 CCPA 791, 394 F.2d 1013, 156 USPQ 143 (1967) in which we found that use of the term "condensation product" in a chemical claim to a product did not thereby render the claim a product-by-process claim.

[8] Taking the view we do that the just recited limitation is structural in nature we do not find it necessary to consider the additional recitation "while in a pyroplastic state * * *" as the mere presence of a method limitation in an article claim which is otherwise allowable would not so poison the claims as to render it unpatentable. *Ex parte Lindberg*, 157 USPQ 606 (P.O. Bd. App. 1967).

[2] Moreover, the "consisting essentially of * * *" terminology would, as the Board pointed out, exclude additional unspecified ingredients which would affect the basic and novel characteristics of the product defined in the balance of the claim. However, to follow the teachings of Thomas combined in any manner with Pierce, would *require* the presence of at least one additional material with the expanded perlite, whether it be the sodium silicate binder of Thomas or the hydrated lime which Pierce uses to provide a chemical joining action. In either event it cannot be said that the additional ingredient would not materially affect the basic and novel characteristic of appellant's product which is that the perlite particles are held together *without* any additional material.

[3] The rejections of claims 1 and 9 are therefore reversed. As to claims 2 and 5–8, the other claims initially appealed but not pursued, the appeal is dismissed.

REVERSED.

McLAUGHLIN, *J.*, concurs in the result.

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## U.S. Court of Customs and Patent Appeals

### IN RE KLAUS HAFNER

*No. 8126. Decided June 5, 1969*

[56 CCPA —; 410 F.2d 1403; 161 USPQ 783]

1. APPLICATION—DISCLOSURE—UTILITY—SUFFICIENCY OF DISCLOSURE TO SUPPORT CLAIMS OR FOR ANTICIPATION—COMPOUND AND PROCESS—35 U.S.C. 101, 102, 112.

"In essence, appellant is contending that a double standard should not be applied in determining the adequacy of a disclosure to anticipate under § 102, on the one hand, and to support the patentability of a claim under § 112 on the other. He feels that a disclosure adequate for the one purpose is necessarily adequate for the other but, unhappily for him, this is not so. As we shall develop, a disclosure lacking a teaching of how to use a fully disclosed compound for a specific, substantial utility or of how to use for such purpose a compound produced by a fully disclosed process is, under the present state of the law, entirely adequate to anticipate a claim to either the product or the process and, at the same time, entirely inadequate to support the allowance of such a claim. This is so because of the requirements of law engrafted on sections 101 and 112 by the decision of the Supreme Court in *Brenner* v. *Manson*, 383 U.S. 519, 86 S.Ct. 1033, 148 USPQ 389 (1966), with respect to the meaning to be given to the words 'useful' and 'use' in those sections. In construing them, we must of course, give them the meaning demanded by the Supreme Court."

2. SAME—SAME—ENABLING DISCLOSURE IN REFERENCE AND APPLICATION—FULLY DISCLOSED COMPOUND.

*Held*, with respect to the disclosure of a compound in a reference or in an application, "By 'fully disclosed compound' is meant a compound for which a process of making is also disclosed or is obvious."

3. SAME—SAME—UTILITY—SUFFICIENCY OF DISCLOSURE TO SUPPORT CLAIMS OR FOR ANTICIPATION—COMPOUND AND PROCESS—35 U.S.C. 102 and 112.

"Standing alone, appellant's argument against a double standard [regarding adequacy of disclosure for anticipation under § 102 and to support a claim under § 112] is a plausible proposition. However, when considered in light of the specific provisions of § 102, and § 112 as it has been interpreted, it is seen to be untenable—§ 112 provides that the specification must enable one skilled in the art to 'use' the invention whereas § 102 makes no such requirement as to an anticipatory disclosure. The disclosure of how to use must relate to a use of the kind considered by the Supreme Court in *Brenner* v. *Manson* to be a sufficient utility. The majority of this court has spoken in *Kirk* and *Joly* * * * as to its construction of the *Manson* requirement. Thus, the double standard which appellant criticizes is now, implicitly if not explicitly, required by law, at least in situations such as we have here, although the 'invention' per se claimed is fully disclosed and though the manner of 'making,' as distinguished from 'using,' the invention is also fully disclosed or is obvious."

4. SAME—SAME—SAME—DISCLOSURE OF SPECIFIC USE REQUIRED—35 U.S.C. 112.

On the issue whether a disclosure complied with the "how to use" requirement of § 112 where the claimed compounds were disclosed as intermediates for preparing acetal resins, and with reference to the holding in the Patent Office that "although persons skilled in the art might well have no difficulty *preparing* acetal resins from the compounds of appellant's invention, the parent application disclosure was still inadequate under § 112 because there is no *express* disclosure of a specific use to which the resulting resins can be put, and appellant has not *shown* that such a use would be obvious," *Held* that "After carefully reviewing the record and appellant's arguments and in view of the law as established by *Brenner* v. *Manson*, *Kirk*, and *Joly*, the decision below appears to be correct."

5. SAME—BENEFIT OF FILING DATE OF EARLIER APPLICATION—UTILITY—35 U.S.C. 112 and 120.

"* * * appellant * * * maintains that § 120 only requires that a 'previously filed' U.S. application disclose the *'invention'* as required by § 112 and does not require that it also disclose 'the manner and process of making and *using* it' (emphasis added). Appellant correctly points out that the utility of an invention is distinct from 'the invention' per se and from this argues that only 'the invention' need be disclosed. *If* § 120 spoke *only* of an 'invention disclosed in an application previously filed in the United States,' which it does not, appellant's interpretation might well be unassailable. This section, however, also makes specific reference to the first paragraph of § 112 (see footnote 9). From this we think it clear that § 120 means that, to be entitled to the benefits provided by that section, the invention disclosed in the 'previously filed' application must be described therein in such a manner as to satisfy *all* the requirements of the first paragraph of § 112 as the courts have construed it, including that which requires the description to be sufficient to enable one skilled in the art *to use* the same for a legally adequate utility."

6. SAME—SAME—SAME—NEW MATTER—RULES 53 AND 55—35 U.S.C. 132.

"Appellant has argued that his failure to disclose adequately the utility of his invention is a mere 'technical' defect which he could have cured by an amendment of his parent U.S. application (35 U.S.C. 132), instead of by the continuation-in-part application which he chose. We have to disagree. * * * Here the parent application is found to be fatally defective. Appellant further argues that his parent application was sufficient, under Rules 53 and 55, to be given a filing date for examination and that its defect was only a 'minor informality' such as contemplated by Rule 53(a). An application can be given a filing date and be examined and still contain a fatal defect requiring its rejection. * * * What was added in the continuation-in-part to render it adequate under the law was clearly 'new matter' under 35 U.S.C. 132."

APPEAL from Patent Office. Serial No. 384,782.

AFFIRMED.

*Robert A. Sturges* for appellant.

*Joseph Schimmel* (*Raymond E. Martin*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, RICH, ALMOND and BALDWIN, *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the rejection of claims 1, 3, and 4 of application Serial No. 384,782, filed July 23, 1964, entitled "New Aldehydes of the Fulvene Series and New Processes of Preparing the Same." No claim has been allowed.

This case comes to us with the following somewhat involved but important background. On August 17, 1959, appellant filed two German applications, one relating to certain fulvene derivatives and the other to certain cyclopentadiene derivatives. By appellant's admission, neither German application contained any disclosure of utility, such disclosure having been unnecessary in Germany. On August 1, 1960, within one year of the German filings, appellant filed a U.S. application [1] (the "parent" of the instant application) combining the two German disclosures. A claim of priority was made and the necessary certified copies of the German applications were filed. Although the parent application alleged that the claimed compounds are useful as intermediates for preparing certain artificial resins and indicated a manner in which such resins can be prepared, all claims were finally rejected under 35 U.S.C. 112 because of an alleged failure of the specification to disclose how those resins might be put to use.

On April 27, 1961, during the pendency of the parent application, one of appellant's two German applications (hereinafter referred to as "Hafner") was published.[2] More than one year thereafter, on July 24, 1964, the instant continuation-in-part application was filed. It contains a reference to the parent application, and a claim for priority going back to the German application was made at the time of filing. The instant application contains an amplified disclosure of utility and "how to use," the adequacy of which, under 35 U.S.C. 101 and 112 respectively, has not been questioned.

All the appealed claims stand rejected as being "fully met (35 U.S.C. 102)" by both Hafner and an article published in May 1960 by one Arnold.[3] Assuming that these two references are valid § 102 references and considering their respective dates and the filing dates of appellant's two German and two U.S. applications, the instant application must be entitled to the parent application's U.S. filing date to overcome Hafner and the convention filing date of the German applications to overcome Arnold.

Until his brief before this court, appellant conceded that

> * * * the claims are met by * * * Hafner and * * * Arnold * * * *if the present application is not entitled to rely upon the filing date of the parent application* * * * and through it to * * * [Hafner].

Now, however, appellant urges that these references do not qualify as "enabling" disclosures [4] because they allegedly do not "teach the public 'how to use' the invention * * *." Appellant also maintains that

> * * * the Patent Office is at once inconsistent and unfair in holding that the Arnold disclosure and the Hafner disclosure * * * "fully meet" the appealed claims, and that the disclosure in the parent application which is even better than that in the Hafner reference fails to support the claims on appeal.

**[1]** In essence, appellant is contending that a double standard should not be applied in determining the adequacy of a disclosure to anticipate under § 102, on the one hand, and to support the patentability of a claim under § 112 on the other. He feels that a disclosure adequate for the one purpose is necessarily adequate for the other but, unhappily for him, this is not so. As we shall develop, a disclosure lacking a teaching of how to use a fully disclosed compound [5] for a

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[1] Serial No. 46,390, filed August 1, 1960.

[2] Auslegeschrift 1,105,411.

[3] Z. Arnold, "Formylation of Cyclopentadiene," Collection of Czechoslovak Chemical Communications, 25, pp. 1313–1317 (May 1960).

[4] Citing *Seymour* v. *Osborne*, 11 Wall. 516, 78 U.S. 516, 20 L.Ed. 33 (1870) and *In re LeGrice*, 49 CCPA 1124, 301 F.2d 929, 133 USPQ 365 (1962).

**[2]** [5] By "fully disclosed compound" is meant a compound for which a process of making is also disclosed or is obvious.

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specific, substantial utility or of how to use for such purpose a compound produced by a fully disclosed process is, under the present state of the law, entirely adequate to anticipate a claim to either the product or the process and, at the same time, entirely inadequate to support the allowance of such a claim.[6] This is so because of the requirements of law engrafted on sections 101 and 112 by the decision of the Supreme Court in *Brenner* v. *Manson*, 383 U.S. 519, 86 S.Ct. 1033, 148 USPQ 689 (1966), with respect to the meaning to be given to the words "useful" and "use" in those sections. In construing them, we must of course, give them the meaning demanded by the Supreme Court.[7]

**[3]** Standing alone, appellant's argument against a double standard is a plausible proposition. However, when considered in light of the specific provisions of § 102, and §112 as it has been interpreted, it is seen to be untenable—§ 112 provides that the specification must enable one skilled in the art to "use" the invention whereas § 102 makes no such requirement as to an anticipatory disclosure. The disclosure of how to use must relate to a use of the kind considered by the Supreme Court in *Brenner* v. *Manson* to be a sufficient utility. The majority of this court has spoken in *Kirk* and *Joly*, supra note 7, as to its construction of the *Manson* requirement. Thus, the double standard which appellant criticizes is now, implicitly if not explicitly, required by law, at least in situations such as we have here, although the "invention" per se claimed is fully disclosed and though the manner of "making," as distinguished from "using," the invention is also fully disclosed or is obvious.

Returning now to the question of appellant's right to his claims of priority, the Examiner held appellant not entitled to the filing date of either his German applications or his parent U.S. application because the latter allegedly did not comply with § 112 (as required by § 120) in that the "how to use" requirement of § 112 was not met.

**[4]** The only "how to use" disclosure in the parent application reads:

> The new products are valuable intermediate products especially for preparing artificial resins and plastic masses such as unsaturated linear or cross-linked long-chained acetal resins or mixed acetal-polyester resins which may be copolymerized with monomeric vinyl compounds such as styrene or diallylphathalate.

The Examiner and Board were of the view that, although persons skilled in the art might well have no difficulty *preparing* acetal resins from the compounds of appellant's invention, the parent application disclosure was still inadequate under § 112 because there is no *express* disclosure of a specific use to which the resulting resins can be put, and appellant has not *shown* that such a use would be obvious.

After carefully reviewing the record and appellant's arguments and in view of the law as established by *Brenner* v. *Manson*, *Kirk*, and *Joly*, the decision below appears to be correct.[8]

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[6] This of course assumes that it would not be obvious how to use the compound for a legally adequate utility.

[7] The writer of the present opinion on behalf of the court writes, of course, on the basis of the law as it *is*, notwithstanding his personal views that it should be otherwise for reasons fully expressed in *In re Nelson*, 47 CCPA 1031, 280 F.2d 172, 126 USPQ 242 (1960), and in his dissenting opinion in *In re Kirk*, 54 CCPA 1119, 376 F.2d 936, 153 USPQ 48, 266 (1967), augmented by the late Judge Smith's dissenting opinion in the companion case of *In re Joly*, 54 CCPA 1159, 376 F.2d 906, 153 USPQ 45, 243 (1967).

[8] See note 7, supra. But for these decisions and their stringent requirements as to the *kind* of "utility" which must be disclosed in compliance with the "how to use" requirement of the first paragraph of § 112, the writer personally would agree with appellant herein that the disclosure of how to use in his parent application, quoted above, complies with the statutory requirements, which would entitle the present continuation-in-part application to the parent's filing date. But the writer's personal views are not the law.

**[5]** While arguing that his parent application did in fact comply with the first paragraph of § 112, appellant also maintains that § 120 [9] only requires that a "previously filed" U.S. application disclose the "*invention*" as required by § 112 and does not require that it also disclose "the manner and process of making and *using* it" (emphasis added). Appellant correctly points out that the utility of an invention is distinct from "the invention" per se [10] and from this argues that only "the invention" need be disclosed. *If* § 120 spoke *only* of an "invention disclosed in an application previously filed in the United States," which it does not, appellant's interpretation might well be unassailable.[11] This section, however, also makes specific reference to the first paragraph of § 112 (see footnote 9). From this we think it clear that § 120 means that, to be entitled to the benefits provided by that section, the invention disclosed in the "previously filed" application must be described therein in such a manner as to satisfy *all* the requirements of the first paragraph of § 112 as the courts have construed it, including that which requires the description to be sufficient to enable one skilled in the art *to use* the same for a legally adequate utility.[12] We therefore find appellant not entitled to the benefit of the parent filing date.

Finally, appellant argues that the instant application is entitled to the filing date of the German applications even though we find it is not entitled to the date of the parent U.S. application. We have carefully considered appellant's extensive arguments but hold that the express language of §§ 119 and 120 requires the contrary conclusion for the reasons stated above. **[6]** Appellant has argued that his failure to disclose adequately the utility of his invention is a mere "technical" defect which he could have cured by an amendment of his parent U.S. application (35 U.S.C. 132), instead of by the continuation-in-part application which he chose. We have to disagree. As we said in the section headed "New Matter" of *In re Nelson*, supra note 7,

> Of course, if the application had been fatally defective * * * such a defect could not have been cured by an amendment the object of which was to put into the specification something required to be there when it was filed.

Here the parent application is found to be fatally defective. Appellant further argues that his parent application was sufficient, under Rules 53 and 55 to be given a filing date for examination and that its defect was only a "minor informality" such as contemplated by Rule 53(a). An application can be given a filing date and be examined and still contain a fatal defect requiring its rejection. We have already expressed our disagreement with the "minor informality" theory in discussing the "technical" defect argument. What was added in the continuation-in-part to render it adequate under the law was clearly "new matter" under 35 U.S.C. 132.

Because of the primary ground of our decision—inability to obtain the benefit of the filing date of the U.S. parent application—it follows that appellant does not get the benefit of the filing date of the German applications on which it was based.

The decision of the Board is affirmed.

AFFIRMED.

WORLEY, *Chief Judge*, and ALMOND, *J.*, concur in the result.

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[9] § 120. *Benefit of earlier filing date in the United States.*

> An application for patent for an *invention disclosed in the manner provided by the first paragraph of section 112 of this title* in an application previously filed in the United States by the same inventor shall have the same effect, as to such invention, as though filed on the date of the prior application * * *. [Emphasis added.]

[10] *In re Kirchner*, 49 CCPA 1234, 305 F.2d 897, 134 USPQ 324 (1962).

[11] Compare the wording of 35 U.S.C. 119.

[12] See *Dyer* v. *Field*, 55 CCPA 771, 386 F.2d 466, 156 USPQ 85 (1967), footnote 3; *In re Risse*, 54 CCPA 1495, 378 F.2d 948, 154 USPQ 1 (1967); *In re Hitchings*, 52 CCPA 1141, 342 F.2d 80, 144 USPQ 637 (1965); *Swain* v. *Crittendon*, 51 CCPA 1459, 332 F.2d 820, 141 USPQ 811 (1964).

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## U.S. Court of Customs and Patent Appeals

### ERICH F. MEITZNER AND JAMES A. OLINE *v.* HERBERT CORTE AND ALFRED MEYER

*No. 8081. Decided May 15, 1969*

[56 CCPA —; 410 F.2d 433; 161 USPQ 599]

1. INTERFERENCE—CONCEPTION.

"We agree with the Board's decision and adopt as our own * * * the Board's reasoning" that "*A conception of an invention involves not only a conception of the idea but also of the means for putting it into practice* * * *." that "*A conception is not complete merely because it can be read on the terms of the count*," and that "*the record does not establish that at the time of the alleged conception Meitzner had a conception of a practical material for his purpose*."

2. SAME—SAME—CONCEPTION INCLUDES MEANS TO EFFECT DESIRED RESULT.

"* * * appellants contend: 'That Sigafoos did not immediately achieve positive results is immaterial.' We cannot agree that this fact is 'immaterial'; but we do feel that it does not necessarily establish that the description in Exhibit M–1 was legally inadequate as a conception; it is just one fact that should be taken into consideration. However, the apparent inability of Meitzner and Oline, *the inventors*, to direct Sigafoos to a successful production of porous beads, after his initial failures, is in our opinion an entirely different matter. It convinces us, as it convinced the Board, that appellants, jointly or individually, had not conceived of all the means necessary to effect the result desired."

3. SAME—SAME—SAME.

"* * * to successfully employ the process of the count, one must use a minimum critical amount of diluent, this amount varying with the particular diluent and with the amount of cross-linking agent in the monomer mixture. It is also evident that water-solubility of the diluent is of extreme importance, it being necessary to add salts to the aqueous phase if the solubility of the diluent in water exceeds certain values. If these parameters are taken into account, *tert*-butyl alcohol apparently can be used to obtain porous beads according to the process of the count. But, what we find lacking in the Meitzner et al. proofs relating to conception is a recognition of the importance of these parameters, and a recognition of how these parameters must be varied to render a given diluent useful. In other words, we find lacking in appellants' proofs a recognition of the means by which the process of the count could be put into practice."

APPEAL from Patent Office. Interference No. 92,816.

AFFIRMED.

*Harold J. Birch*, *Donald C. Simpson*, *Irons*, *Birch*, *Swidler & McKie*, *George W. F. Simmons*, *Rohm and Haas Company*, for appellants.

*Connolly and Hutz* (*Earl Christensen*, of counsel) for appellees.

Before WORLEY, *Chief Judge*, KIRKPATRICK, *Judge*, sitting by designation, RICH, ALMOND and BALDWIN, *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Patent Interferences awarding priority to Corte and Meyer in Interference No. 92,816, involving Corte and Meyer (Corte et al.) application Serial No. 718,989, filed March 4, 1958, entitled "Anion Exchanger

**[5]** While arguing that his parent application did in fact comply with the first paragraph of § 112, appellant also maintains that § 120 [9] only requires that a "previously filed" U.S. application disclose the "*invention*" as required by § 112 and does not require that it also disclose "the manner and process of making and *using* it" (emphasis added). Appellant correctly points out that the utility of an invention is distinct from "the invention" per se [10] and from this argues that only "the invention" need be disclosed. *If* § 120 spoke *only* of an "invention disclosed in an application previously filed in the United States," which it does not, appellant's interpretation might well be unassailable.[11] This section, however, also makes specific reference to the first paragraph of § 112 (see footnote 9). From this we think it clear that § 120 means that, to be entitled to the benefits provided by that section, the invention disclosed in the "previously filed" application must be described therein in such a manner as to satisfy *all* the requirements of the first paragraph of § 112 as the courts have construed it, including that which requires the description to be sufficient to enable one skilled in the art *to use* the same for a legally adequite utility.[12] We therefore find appellant not entitled to the benefit of the parent filing date.

Finally, appellant argues that the instant application is entitled to the filing date of the German applications even though we find it is not entitled to the date of the parent U.S. application. We have carefully considered appellant's extensive arguments but hold that the express language of §§ 119 and 120 requires the contrary conclusion for the reasons stated above. **[6]** Appellant has argued that his failure to disclose adequately the utility of his invention is a mere "technical" defect which he could have cured by an amendment of his parent U.S. application (35 U.S.C. 132), instead of by the continuation-in-part application which he chose. We have to disagree. As we said in the section headed "New Matter" of *In re Nelson*, supra note 7,

> Of course, if the application had been fatally defective * * * such a defect could not have been cured by an amendment the object of which was to put into the specification something required to be there when it was filed.

Here the parent application is found to be fatally defective. Appellant further argues that his parent application was sufficient, under Rules 53 and 55 to be given a filing date for examination and that its defect was only a "minor informality" such as contemplated by Rule 53(a). An application can be given a filing date and be examined and still contain a fatal defect requiring its rejection. We have already expressed our disagreement with the "minor informality" theory in discussing the "technical" defect argument. What was added in the continuation-in-part to render it adequate under the law was clearly "new matter" under 35 U.S.C. 132.

Because of the primary ground of our decision—inability to obtain the benefit of the filing date of the U.S. parent application—it follows

that appellant does not get the benefit of the filing date of the German applications on which it was based.

The decision of the Board is affirmed.

AFFIRMED.

WORLEY, *Chief Judge*, and ALMOND, *J.*, concur in the result.

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[9] § 120. *Benefit of earlier filing date in the United States.*

> An application for patent for an *invention disclosed in the manner provided by the first paragraph of section 112 of this title* in an application previously filed in the United States by the same inventor shall have the same effect, as to such invention, as though filed on the date of the prior application * * *. [Emphasis added.]

[10] *In re Kirchner*, 49 CCPA 1234, 305 F.2d 897, 134 USPQ 324 (1962).

[11] Compare the wording of 35 U.S.C. 119.

[12] See *Dyer* v. *Field*, 53 CCPA 771, 386 F.2d 466, 156 USPQ 85 (1967), footnote 3; *In re Risse*, 54 CCPA 1495, 378 F.2d 948, 154 USPQ 1 (1967); *In re Hitchings*, 52 CCPA 1141, 342 F.2d 80, 144 USPQ 637 (1965); *Swain* v. *Crittendon*, 51 CCPA 1459, 332 F.2d 820, 141 USPQ 811 (1964).

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## U.S. Court of Customs and Patent Appeals

### ERICH F. MEITZNER AND JAMES A. OLINE *v.* HERBERT CORTE AND ALFRED MEYER

*No. 8081. Decided May 15, 1969*

[56 CCPA —; 410 F.2d 433; 161 USPQ 599]

1. INTERFERENCE—CONCEPTION.

"We agree with the Board's decision and adopt as our own * * * the Board's reasoning" that *"A conception of an invention involves not only a conception of the idea but also of the means for putting it into practice * * *."* that *"A conception is not complete merely because it can be read on the terms of the count,"* and that *"the record does not establish that at the time of the alleged conception Meitzner had a conception of a practical material for his purpose."*

2. SAME—SAME—CONCEPTION INCLUDES MEANS TO EFFECT DESIRED RESULT.

"* * * appellants contend: 'That Sigafoos did not immediately achieve positive results is immaterial.' We cannot agree that this fact is 'immaterial'; but we do feel that it does not necessarily establish that the description in Exhibit M–1 was legally inadequate as a conception; it is just one fact that should be taken into consideration. However, the apparent inability of Meitzner and Oline, *the inventors*, to direct Sigafoos to a successful production of porous beads, after his initial failures, is in our opinion an entirely different matter. It convinces us, as it convinced the Board, that appellants, jointly or individually, had not conceived of all the means necessary to effect the result desired."

3. SAME—SAME—SAME.

"* * * to successfully employ the process of the count, one must use a minimum critical amount of diluent, this amount varying with the particular diluent and with the amount of cross-linking agent in the monomer mixture. It is also evident that water-solubility of the diluent is of extreme importance, it being necessary to add salts to the aqueous phase if the solubility of the diluent in water exceeds certain values. If these parameters are taken into account, *tert*-butyl alcohol apparently can be used to obtain porous beads according to the process of the count. But, what we find lacking in the Meitzner et al. proofs relating to conception is a recognition of the importance of these parameters, and a recognition of how these parameters must be varied to render a given diluent useful. In other words, we find lacking in appellants' proofs a recognition of the means by which the process of the count could be put into practice."

APPEAL from Patent Office. Interference No. 92,816.

AFFIRMED.

*Harold J. Birch*, *Donald C. Simpson*, *Irons, Birch, Swidler & McKie*, *George W. F. Simmons*, *Rohm and Haas Company*, for appellants.

*Connolly and Hutz* (*Earl Christensen*, of counsel) for appellees.

Before WORLEY, *Chief Judge*, KIRKPATRICK, *Judge*, sitting by designation, RICH, ALMOND and BALDWIN, *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Patent Interferences awarding priority to Corte and Meyer in Interference No. 92,816, involving Corte and Meyer (Corte et al.) application Serial No. 718,989, filed March 4, 1958, entitled "Anion Exchanger

With Sponge Structure" and Meitzner and Oline (Meitzner et al.) application Serial No. 749,526, filed July 18, 1958, entitled "Polymerization Processes and Products Therefrom."

Corte et al., senior party, rely on the filing date of their German application, March 9, 1957; their right to this date has not been challenged. Having the burden of proving priority by a preponderance of the evidence, Meitzner et al. have presented testimony and exhibits in an effort to establish that they conceived the invention of the count prior to March 9, 1957, and were reasonably diligent from immediately prior to that date until an actual reduction to practice shortly thereafter.

### *The Invention of the Count*

The invention of the count is basically a process for the synthesis of styrene-divinylbenzene copolymers under specialized conditions which result in the copolymer product being recovered in the form of opaque beads having a sponge-like porosity. When styrene and divinylbenzene (DVB) are dissolved in at least a particular minimal amount of a solvent (also referred to as "diluent" and "precipitant") having the properties described in the count, and the resulting solution of monomer-in-solvent is dispersed in excess water, it forms a so-called oil-in-water emulsion, i.e., the monomer-in-solvent phase forms minute droplets in the water. The polymerization of the suspended styrene and DVB then proceeds. It is believed that the styrene monomer forms linear polystyrene chains, and that the DVB acts as a cross-linking agent therebetween. Since the solvent for the monomers is *not* a solvent for linear polystyrene, as the polymerization proceeds, the copolymer forms a separate solid phase within each suspended droplet. When the polymerization in a droplet is complete, there remains a bead having large "macropores" which are filled with the solvent. The solvent can be removed by several techniques not important here.

The single count reads:

> 2. A process which comprises (*a*) dissolving a major amount of styrene and a minor amount of divinyl benzene in an inert organic liquid which is a solvent for styrene but not for linear polystyrene, said inert organic liquid being selected from the group consisting of an inert aliphatic oxygen-containing solvent and an inert aliphatic hydrocarbon solvent, said solvent being present in an amount sufficient to impart a sponge-like porosity to the copolymer formed therein; (*b*) incorporating said solution into an excess of water to form a dispersion of droplets; and (*c*) copolymerizing said styrene and said divinyl benzene while suspended in said aqueous medium and in the presence of said inert organic liquid, the resultant copolymer being recovered in the form of opaque beads.

The beads obtained by the process of the count are unique in their porosity. The pores are very extensive in size and depth; such porosity is referred to variously as "macroporosity," a "macroreticular structure," and "a sponge-like porosity," all of which mean the same thing. Visually, these beads are always opaque; however, not all opaque beads are macroporous.

The beads may be converted into ion-exchange resins by chemically attaching either acidic or basic groups thereto. For example, if sulfonate groups are attached, the product can be used to soften water. The "macropores" preserved in the product are effective in removing large molecules from solutions treated with the resins.

### *The Meitzner et al. Proofs*

Meitzner testified to entering in his laboratory notebook a description of a process for the preparation of beads "for ion exchange resins having internal porosity." This entry (Exhibit M–1) was written on January 31, 1957.[1] The record indicates that shortly thereafter, the "concept" set out in Exhibit M–1 was discussed by Meitzner and Oline, and as a result Oline was asked to "reduce this concept to practice."

Sigafoos, a chemist working under the supervision of Oline, testified with respect to experiments conducted from February 11 to March 25, Exhibits M–7 through M–12 being the notebook records of these experiments. Meitzner et al. contend that the experiment of Exhibit M–12, carried out on March 14–15, in which *tertiary amyl alcohol* was used as a solvent with styrene and DVB in the preparation of resin beads by suspension polymerization constituted a reduction to practice of the invention of the count. It is also the position of Meitzner et al. that Exhibit M–1 establishes conception of the invention and that the activities of Oline and Sigafoos constitute reasonable diligence until the alleged reduction to practice.

The description contained in Exhibit M–1, which is entitled "Preparation of beads for ion exchange resins having internal porosity," reads, in pertinent part, as follows:

> Suspension polymerized beads for ion exchange resin manufacture are to be prepared in the presence of a diluent for the monomer mixture, the diluent having a measured degree of hydrophilicity, [2] compatibility with the monomeric system but only limited compatibility with the polymer. [3] It [the diluent] should also not interfere drastically with the polymerization * * *. The water solubility should be such that desirable concentrations of the diluent may be maintained in the monomer mixture in contact with the aqueous phase. [4] As the suspended droplets of the monomer mixture undergo polymerization, assuming the diluent being less compatible with the polymer, a phase separation may occur and a diluent rich phase will form inside the bead distinctly separate from the polymeric phase. * * * Such beads may become opaque or translucent. * * * For example, in systems involving styrene monomer [5] acetone or other ketones, alcohols such as tert butyl alcohol or petroleum type solvents may [be] used.

As pointed out above, subsequent to the date of Exhibit M–1, Sigafoos carried out certain experiments recorded in Exhibits M–7 to M–12. The experiment of Exhibit M–7 (conducted February 11–13) is stated to have had as its purpose the determination of the solubility of various organic solvents in a styrene-15% DVB monomer mix; no polymerization was attempted in this experiment. The purpose of the experiment recorded in Exhibit M–8 (conducted during the period from February 12 to March 13) is stated therein to have been to "test the effect" of ethyl alcohol on a styrene-15% DVB monomer system "for complete polymerization, porosity of the beads, and for comparison with toluene extended copolymers." This experiment, which constitutes the first attempt to reduce to practice the process described in Exhibit M–1, was unsuccessful inasmuch as only *clear* resin beads were obtained, indicating a lack of macroporosity. The experiment recorded in Exhibit M–9 was similar to that of Exhibit M–8, but normal butanol was employed as the diluent for the styrene-15% DVB monomer mixture; again the beads obtained were clear. Sigafoos also carried out a series of experiments (Exhibits M–10–A, B, and C) using cyclohexane as a solvent in the preparation of beads from styrene-20% DVB mixture. Opaque beads were not obtained.

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[1] All dates hereinafter are in 1957.

[2] On direct examination Meitzner explained "hydrophilicity" and "a measured degree of hydrophilicity" as follows: Hydrophilicity means affinity for water and I am speaking here of a measured degree of hydrophilicity. That means the water solubility should be subject to control.

[3] On direct examination Meitzner testified:

> Q22. Now next you state that the diluent has "compatibility with monomeric system but only limited compatibility with the polymer." What do you mean by the term "compatibility" as used in this phrase? A. This means that a homogeneous solution of the monomers and the diluent is formed.
>
> Q23. "Only limited compatibility with the polymer"? A. This means that the polymer is insoluble or nearly insoluble in the particular diluent.

[4] On direct examination Meitzner testified:

> Q26. The next sentence is "The water solubility should be such that desirable concentrations of the diluent may be maintained in the monomer mixture in contact with the aqueous phase." What property of the diluent is being described in this sentence? A. The diluent should have a restricted water solubility.

[5] On direct examination Meitzner testified:

> Q48. What is meant in this conception by the term "systems involving styrene monomer"? A. A styrene/divinylbenzene mixture, and particularly one which contains a major amount of styrene and a minor amount of divinylbenzene.

The record shows that Meitzner submitted a monthly report (Exhibits M–3 and M–3–A) entitled "Monthly Summary of Research for February 1957" which bears a date of March 11. This report includes a reference to work done by Oline and Sigafoos and was stated by Meitzner to refer to his "concept" recorded in January (Exhibit M–1). This report states, in pertinent part:

> An attempt was made to carry out the suspension polymerization of styrene/divinylbenzene copolymers in the presence of an additive which would cause the polymer formed to separate from the solvent/monomer mixture. This would furnish a heterogeneous bead containing both polymer and solvent rich locations and could constitute a path to macroporosity. Experiments in this direction, using added solvents such as butanol or cyclohexane, have given clear beads, suggesting that the desired result was not achieved.

Oline testified that he was responsible for characterizing the beads referred to in the above report and further testified as follows (emphasis ours):

> After discussing our previous results with Dr. Meitzner, *he suggested that if I had any ideas, to go ahead and try them.* I went to the library and looked up some information, a book on solvents * * * in a sense I tried tertiary amyl alcohol for two reasons: One, that I had worked with a company that had manufactured tertiary amyl alcohol and had had a little background in its properties; and then, in consulting the book, it seemed to further indicate that here was a material, a solvent, which had somewhat unusual properties in its relationship with water, water being soluble in it and it being soluble in water. For these two reasons, one of familiarity and one of property, I thought, well, this might be an interesting one to try. So that was the manner in which we arrived at the selection of tertiary amyl alcohol.

The precise date of Meitzner's suggestion that "if [Oline] * * * had any ideas, to go ahead and try them" and the date of Oline's decision to try tertiary amyl alcohol have not been established; it is not contended, however, that either was before the Corte et al. date of March 9. On March 14–15, Sigafoos, at the direction of Oline, conducted an experiment (recorded in Exhibit M–12) by which he prepared resin beads by the use of 35% tertiary amyl alcohol with styrene-20% divinylbenzene. With respect to this experiment, it is unnecessary for us to determine whether it was successful and constituted an actual reduction to practice of the invention of the count, as alleged by Meitzner et al.

### *The Board Decision*

The Board's award of priority to Corte et al. was based on the holding that Meitzner et al. failed to establish a conception of the invention in issue prior to the Corte et al. effective date. In reaching this holding the Board said, inter alia (emphasis ours):

> *A conception of an invention involves not only a conception of the idea but also of the means for putting it into practice* * * *. Although * * * [Exhibit M–1] describes the process in which a diluent having certain properties may be employed we are of the opinion that the alleged conception does not include the means whereby the desired result may be achieved. * * * the record does not establish that the specific examples of diluents suggested in this exhibit are operative to obtain the intended effect. * * *
>
> In this case it is apparent to us that at the time of the alleged conception Meitzner did not have in mind any diluent which would produce the desired porosity. In our opinion this view is strengthened by the testimony of Oline * * * that after the earlier experiments wherein opaque beads were not produced that he was told by Meitzner that if he (Oline) had any ideas to go ahead and try them, after which he selected tertiary amyl alcohol to be used in the experiment of Exhibit M–12.
>
> *A conception is not complete merely because it can be read on the terms of the count.* Attention is directed to *Raiche* v. *Foley*, 27 CCPA 1380, 1940 C.D. 718, 113 F.2d 497 [46 USPQ 224], wherein the counts related to the prevention of surface adhesion between coatings, the court stated * * *
>
>> The counts do not specify any particular material to be inserted and subsequently dissolved out for producing this effect but, clearly, unless Foley had a conception of a practical material which would work successfully, conception in that regard was not complete.
>
> We believe that the same reasoning applies here, as *the record does not establish that at the time of the alleged conception Meitzner had a conception of a practical material for his purpose.*

Viewing the case as it did, the Board found it unnecessary to consider the question of diligence.

### *Opinion*

**[1]** We agree with the Board's decision and adopt as our own so much of the Board's reasoning as has been quoted above. Appellants, however, raise two points which we feel we should treat.

**[2]** First, appellants contend: "That Sigafoos did not immediately achieve positive results is immaterial." We cannot agree that this fact is "immaterial"; but we do feel that it does not necessarily establish that the description in Exhibit M–1 was legally inadequate as a conception,[6] it is just one fact that should be taken into consideration. However, the apparent inability of Meitzner and Oline, *the inventors*, to direct Sigafoos to a successful production of porous beads, after his initial failures, is in our opinion an entirely different matter. It convinces us, as it convinced the Board, that appellants, jointly or individually, had not conceived of all the means necessary to effect the result desired. And, on this point, we agree with the Board that *Alpert* v. *Slatin*, 49 CCPA 1343, 305 F.2d 891, 134 USPQ 296 (1962), is applicable here at least to the extent that the court there adopted the following statement by the Board:

> Conception of an inventive process involves *proof of mental possession of the steps of an operative process* and, if necessary, of means to carry it out to such a degree that nothing remains but routine skill for effectuation thereof. If after the claimed conception date extensive research was found necessary before achieving minimum satisfactory performance the mental embodiment of that date was a mere hope or expectation, a statement of a problem, but not an inventive conception. [Emphasis ours.]

Appellants also maintain that Exhibit M–1 refers specifically to a diluent which is *in fact* operative, *tert*-butyl alcohol, that the Board unjustifiably challenged the operability of *tert*-butyl alcohol, and that the Board erred in refusing to consider evidence presented, with appellants' Request for Reconsideration before the Board, to establish operability of *tert*-butyl alcohol. However, even were we to consider the evidence just mentioned and were we to be led by it to conclude that *tert*-butyl alcohol *can* be used successfully in a process encompassed by the count, that would not establish that appellants conceived *how tert*-butyl alcohol could be so used prior to appellees' effective date. To explain, appellants' specification teaches the following (emphasis ours):

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[6] Cf. *Trumbull* v. *Kirschbraun*, 21 CCPA 758, 67 F.2d 974, 20 USPQ 46 (1933).

> A minimum concentration of any particular precipitant is required to effect phase separation. * * *
>
> * * * * * * *
>
> In the case of *tert*-amyl alcohol and *sec*-butanol, the need for higher precipitant concentrations as the amount of cross-linking decreases is clearly evident. * * * *there is a definite concentration of precipitant below which no phase separation occurs; and, without phase separation, the unusual and desirable properties of the products of this invention are not obtained.*
>
> * * * * * * *
>
> When suspension copolymerizing monomers, an additional factor must be considered, namely the solubility of the precipitant in the suspending medium. Since suspension polymerization of most ethylenically unsaturated monomers is generally conducted in aqueous media, most frequently it is the water-solubility of the precipitant which must be considered. While precipitants with water-solubilities as high as 15 to 20 grams per 100 grams of water can be employed, a low water solubility is preferred because of handling ease, ease of recovery, and processing economies. As is well-known, however, it is possible to decrease the water-solubilities of compounds by adding salts to the aqueous phase. This method also may be employed to decrease the water-solubilities of the precipitants utilized so significantly in the present invention.
>
> * * * * * * *
>
> The quantities of alkanol required are from about 30% to about 50% of the weight of the monomer mixture and the alkanol *with the least amount of precipitant being required at the highest percentage of cross-linking.*

[3] Thus, to successfully employ the process of the count, one must use a minimum critical amount of diluent, this amount varying with the particular diluent and with the amount of cross-linking agent in the monomer mixture. It is also evident that water-solubility of the diluent is of extreme importance, it being necessary to add salts to the aqueous phase if the solubility of the diluent in water exceeds certain values. If these parameters are taken into account, *tert*-butyl alcohol apparently can be used to obtain porous beads according to the process of the count. But, what we find lacking in the Meitzner et al. proofs relating to conception is a recognition of the importance of these parameters and a recognition of how these parameters must be varied to render a given diluent useful. In other words, we find lacking in appellants' proofs a recognition of the means by which the process of the count could be put into practice.

The decision of the Board is affirmed.

AFFIRMED.

# PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

**2,604,313**, F. W. Grantham, DRIER; **2,643,463**, same, LAUNDRY APPARATUS, **filed** Feb. 12, 1968, D.C., N.D. Ill. (Chicago), Doc. 68c251, *Paulette Grantham et al.* v. *McGraw-Edison Company*. Motion to dismiss granted, July 24, 1968. Order vacating order of July 24, 1968, cause reinstated, Oct. 25, 1968. Cause dismissed with leave to reinstate within 90 days, Feb. 27, 1969. Filed third amended complaint, Mar. 6, 1969.

**2,604,359**, F. L. Zybach, SELF-PROPELLED SPRINKLING IRRIGATING APPARATUS, **filed** Aug. 7, 1969, D.C., Kans. (Wichita), Doc. W–3878, *Valmont Industries, Inc., formerly known as Valley Manufacturing Co., Frank L. Zybach and Albert E. Trowbridge* v. *B/J Manufacturing Co., Inc.* Stipulated that action be discontinued and dismissed with prejudice, defendant's counterclaim dismissed with prejudice, Aug. 5, 1969.

**2,643,463.** (See 2,604,313.)

**2,690,518**, Fyler and Rowe, COLOR PICTURE TUBE; **3,179,836**, J. Giuffrida, COMPENSATION FOR EARTH'S MAGNETIC FIELD BY COLOR DOT DISPLACEMENT; **3,222,172**, same, METHOD FOR MAKING COLOR TELEVISION PICTURE TUBES, **filed** Feb. 28, 1969, U.S.C.A., 1st Cir. (Boston), Appeal No. 7291, *Columbia Broadcasting System* v. *Sylvania Electric Products, Inc.* Judgment which held valid and infringed Patent 2,690,518 is affirmed. That part of the judgment which held valid and infringed Patents 3,179,836 and 3,222,172 is vacated and the case remanded for further proceedings, Aug. 11, 1969.

**2,723,327**, C. E. Gilbert, LINE CORD SWITCH, **filed** Sept. 8, 1969, D.C., E.D.N.Y. (Brooklyn), Doc. 69–C–1128, *Gilbert Mfg. Co.* v. *Leviton Mfg. Co.*

**2,730,269**, Earle and Covington, FLUID APPARATUS, **filed** Aug. 28, 1969, D.C., N.D. Ga. (Atlanta), Doc. 1352, *Carl A. Covington, Dorothy B. Marsh and G. W. Murphy Industries, Inc.* v. *D-K Pneumatics, Inc.*

**2,738,144**, F. Honig, TEXTILE PACKAGE, **filed** Aug. 15, 1969, S.D.N.Y. (Foley Square), Doc. 69–3608, *Stress Strand Corporation* v. *Allied Chemical Corporation.*

**2,795,258**, Berry and Wells, BAG, **filed** Oct. 25, 1968, D.C., S.D.N.Y., Doc. 68–C–4227, *Morris J. Berry and Louis Wells* v. *I. B. Kleinert Rubber Co.* Discontinued, Apr. 16, 1969.

**2,851,372**, Kaplan and Sienko, COATED METAL SHEET AND METHOD OF MAKING THE SAME, **filed** June 22, 1965, D.C., N.D. Ill. (Chicago), Doc. 65c1045, *M. S. Kaplan Company* v. *Prefinish Metal, Incorporated.* Consent judgment, complaint dismissed with prejudice. Counterclaim of defendant dismissed with prejudice, Aug. 25, 1969.

**2,956,114**, Ginsburgh, Henderson, Dolby and Anderson, BROAD BAND MAGNETIC TAPE SYSTEM AND METHOD, **filed** July 10, 1969, D.C., N.D. Calif. (San Francisco), Doc. 51712, *International Video Corp.* v. *Ampex Corporation.*

**2,983,010**, O. R. Huggins, GUY HOOK FOR ATTACHMENT TO TRANSMISSION LINE POLES OR THE LIKE, **filed** Oct. 19, 1966, D.C., N.D. Ala. (Birmingham), Doc. CA–66–647–S, *Malleable Iron Fittings Company* v. *Barron Bethea Company Incorporated.* Judgment, certain claims valid; defendant takes nothing on its counterclaim asserting invalidity of said claims of patent; said claims are not infringed by defendant; plaintiff takes nothing on its claims for alleged breach of the 1962 settlement agreement; dismissing the defendant's claim for unfair competition which remains pending herein, with prejudice, Sept. 9, 1969.

**3,033,206**, A. P. Ramsell, BRASSIERE, **filed** Sept. 2, 1969, D.C., N.D. Calif. (Los Angeles), Doc. 69–1732–R, *Carl G. Simonsen* v. *Mohr Laboratories.*

**3,044,557**, R. C. Posh, VARIABLE PITCH FAN BLADE, **filed** Mar. 7, 1969, U.S.C.A. 1st Cir. (Boston), Appeal No. 7295, *Canadian Filters (Harwich) Limited* v. *Lear Siegler, Inc.* Injunction is vacated, action remanded to the District Court for further proceedings, Aug. 12, 1969.

**3,121,417**, Goldman and Goldman, AQUARIUMS AND THREE-DIMENSIONAL DISPLAY THEREFOR, **filed** Sept. 2, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1735–IH, *Penn-Plax Plastics, Inc.* v. *Miracle Plastics, Inc.*

**3,130,113**, D. Silman, SELF-ADHESIVE DECORATIVE SURFACE COVERING MATERIAL, **filed** Nov. 26, 1968, D.C., S.D.N.Y., Doc. 68–C–4670, *United Merchants & Manufacturers, Inc.* v. *Roy W. Ritchie, also known as Roy Ritchie, Jr.* Case dismissed, June 27, 1969.

**3,179,836.** (See 2,690,518.)

**3,191,801**, R. P. Standish, BALLOON VENDING MACHINE, **filed** May 23, 1969, D.C., S.D.N.Y., Doc. 69–C–2235, *Miner Industries Inc.* v. *Northwestern Sales & Service Corp.* Final judgment, permanently enjoined, Aug. 6, 1969.

**3,222,172.** (See 2,690,518.)

**3,231,049**, Platus, Marovich and Cunningham, ENERGY ABSORBING DEVICE; **3,426,869**, Platus and Gularte, ENERGY ABSORBING ARRANGEMENT; **3,435,919**, Gularte and Platus, ENERGY ABSORBING ARRANGEMENT, **filed** Aug. 13, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1592–F, *ARA, Inc.* v. *David L. Platus and Mechanics Research, Inc.*

**3,243,914**, D. B. Poynter, ELECTRICALLY OPERATED COIN BOX DEVICE, **filed** Oct. 14, 1966, D.C., S.D.N.Y., Doc. 66–C–3384, *Poynter Products, Inc. and Alabe Crafts, Inc.* v. *Allied Stores Corp. and Allied Purchasing Corp.* Default judgment, defendants are enjoined and restrained, May 14, 1969.

**3,255,722**, Ferdinand and Lopatka, STEEL SHELVING, **filed** June 30, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1361, *S. A. Hirsh Manufacturing Co.* v. *Quaker Industries, Inc.*

**3,282,566**, J. E. Clarke, SCISSORS OPERATING LINKAGE, **filed** Sept. 11, 1968, D.C., N.D. Ohio (Cleveland), Doc. C68–677, *Autoquip Corporation* v. *Lo-Lift Manufacturing Corp. and Kennth P. Smith.* Final judgment, patent valid. Defendants enjoined, Sept. 2, 1969.

**3,283,419**, H. A. Tytel, PAINTING PANEL FOR A PAINT-BY-NUMBER KIT, **filed** Feb. 15, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67–C–143, *The Art Award Co., Inc.* v. *Standard Toycraft, Inc.* Order on stipulation dismissing action, Aug. 26, 1969.

**3,298,428**, H. L. Herman, COMBINED ACCESS SCUTTLE AND LIGHT FIXTURE, **filed** Sept. 2, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1736–HP, *Modern Aire Ventilating, Inc. et al.* v. *Jensen Industries, Inc.*

**3,307,731**, H. Seltzer, PLUGGING DEVICE, **filed** Jan. 29, 1969, D.C., S.D.N.Y., Doc. 69–C–361, *D. & S. Plug Corp.* v. *Republic Auto Parts Inc.* Consent judgment, restrained and enjoined, Aug. 20, 1969.

**3,339,258**, E. J. Johnston, PRESSURE ROLL AND METHOD OF MAKING, **filed** Sept. 13, 1968, D.C., Kans (Wichita), Doc. W–4056, *A. Lakin & Sons, Inc.* v. *Hesston Corporation.* Stipulation and order for dismissal, Aug. 22, 1969.

**3,346,300**, L. A. Grant, BLAST FURNACE LINING REMOVING MACHINE; **3,389,755**, same, DEMOLITION TOOL CRADLE; **3,458,396**, same, DEMOLITION MACHINE, **filed** Jan. 15, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c81, *Louis A. Grant, Incorporated* v. *Edward Gray Corporation and Gray-Keibler Inc.*

**3,349,285**, N. L. Belkin, SURGICAL GOWN WITH STATIC ELECTRICITY DISCHARGE MEANS, **filed** Aug. 20, 1969, D.C., E.D. Wis. (Milwaukee), Doc. 69–C–404, *Angelica Corporation* v. *Will Ross, Inc.*

**3,354,778**, A. Koller, DEVICE FOR THE ALIGNMENT AND READING OF DISTANCES AND ANGLES, **filed** Aug. 27, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1701–S, *Dr. Johannes Heidenhain Feinmechanik & Optic* v. *Infrared Industries, Inc.*

**3,366,145**, E. E. Lohn, UNIVERSAL CARBURETOR-MANIFOLD ADAPTOR, **filed** Aug. 29, 1969, D.C., C.D. Calif. (Los Angeles), Doc. 69–1728–F, *Edwin E. Lohn* v. *Segal Incorporated and Al Segal.*

**3,366,731**, E. Wallerstein, TELEVISION DISTRIBUTION SYSTEM PERMITTING PROGRAM SUBSTITUTION FOR SELECTED VIEWERS, **filed** Nov. 25, 1968, D.C., S.D.N.Y., Doc. 68–C–4653, *Edward Wallerstein* v. *Market Facts, New York, Inc.* Dismissed, Apr. 16, 1969.

**3,381,276**, P. James, COMPUTER SYSTEMS, **filed** Sept. 3, 1969, D.C., District of Columbia (Washington), Doc. 2467–69, *Photo Magnetic Systems, Inc.* v. *American Telephone and Telegraph Co.*

**3,389,755.** (See 3,346,300.)

**3,426,869.** (See 3,231,049.)

**3,435,919.** (See 3,231,049.)

**3,458,396.** (See 3,346,300.)

U.S. GOVERNMENT PRINTING OFFICE: O——1969

# REISSUES

## NOVEMBER 25, 1969

Matter enclosed in heavy brackets **[ ]** appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

### 26,720

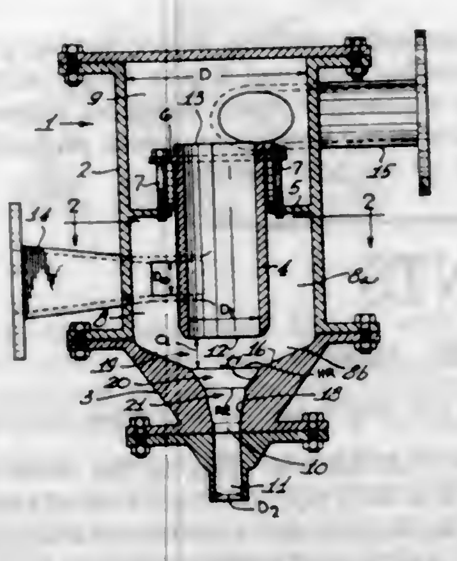
### APPARATUS FOR SPECIFIC GRAVITY SEPARATION OF SOLID PARTICLES

**Jan Visman, Edmonton, Alberta, Canada, assignor, by mesne assignments, to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada**

**Original No. 3,353,673, dated Nov. 21, 1967, Ser. No. 556,756, June 10, 1966, which is a continuation-in-part of application Ser. No. 268,745, Mar. 28, 1963. Application for reissue Apr. 8, 1968, Ser. No. 724,678**

**Int. Cl. B04c** *3/06;* **B03d** *3/00, 1/26*

**U.S. Cl. 209—211** **10 Claims**



*A hydrocyclone having an upper cylindrical section and a lower section of tri-conical shape. The lower end of the vortex finder is located a predetermined distance from the line of juncture of the first and second conical portions of the lower section.*

### 26,721

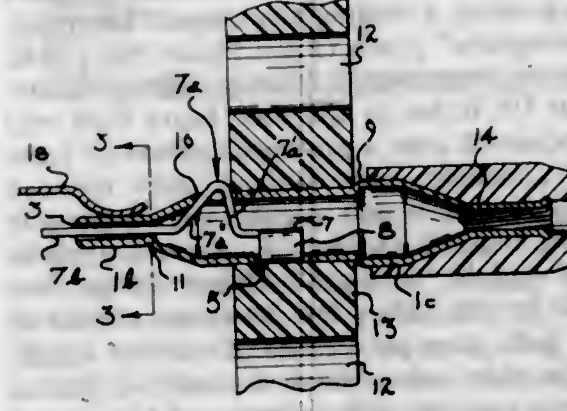
### ONE PIECE PLUGBOARD PLUG CONNECTOR

**Bernard Edward Shlesinger, Jr., Annandale, Va., assignor to AMP Incorporated, Harrisburg, Pa.**

**Original No. 3,275,973, dated Sept. 27, 1966, Ser. No. 474,932, July 26, 1965. Application for reissue July 10, 1968, Ser. No. 747,022**

**Int. Cl. H01r** *9/08*

**U.S. Cl. 339—217** **33 Claims**



*A connector is provided for insertion into a plugboard or the like. The connector is of simple one piece construction and is designed to hold in place in a plugboard when pressure is applied against the front portion of the connector while being readily withdrawn when a pulling force is exerted on the rear portion of the connector. These characteristics are achieved by a spring detent member which takes various forms as set forth in the modifications disclosed.*

### 26,722

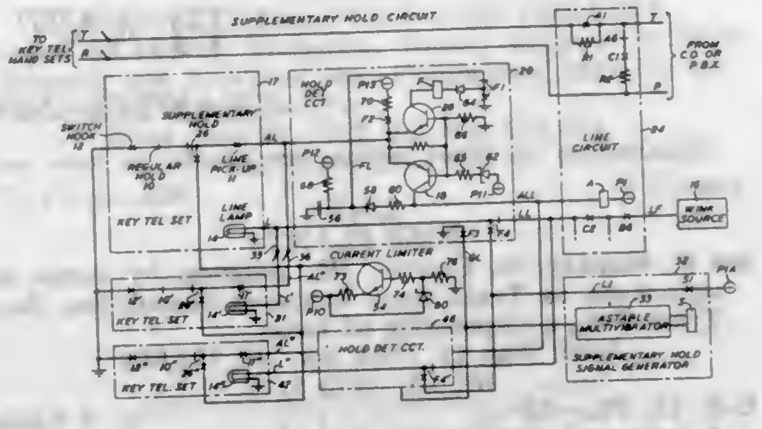
### KEY TELEPHONE CONTROL SYSTEMS

**Albert D. Limiero, Sea Girt, and James R. McEowen, Madison Township, Monmouth County, N.J., and Jonathan A. Spencer, Cambridge, Mass., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**

**Original No. 3,395,256, dated July 30, 1968, Ser. No. 475,676, July 29, 1965. Application for reissue Oct. 29, 1968, Ser. No. 791,814**

**Int. Cl. H04m** *1/00*

**U.S. Cl. 179—99** **10 Claims**



A transistorized telephone pushbutton system providing normal and special holding circuits, more than one flashing rate, and two distinct means of retrieving a call from hold.

### 26,723

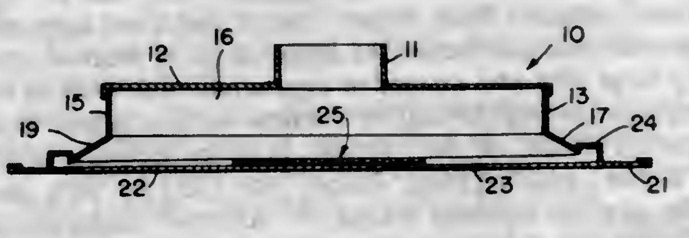
### AIR DISTRIBUTION DEVICES

**Eugene F. Averill, Waterloo, and Marvin L. Kloostra, Cedar Falls, Iowa, assignors to Titus Manufacturing Corporation, Waterloo, Iowa, a corporation of Iowa**

**Original No. 3,264,972, dated Aug. 9, 1966, Ser. No. 374,693, June 12, 1964. Application for reissue Dec. 27, 1967, Ser. No. 706,995**

**Int. Cl. F24f** *13/06*

**U.S. Cl. 98—40** **9 Claims**



*Air diffusers embodying perforated plate air outlet with air deflector extending across upstream side of perforated plate and opposite air inlet; deflector comprises plurality of individually orientable sections, each section having narrow, pitched webs with openings between webs to give one way or multiple way lateral discharge through perforated plate.*

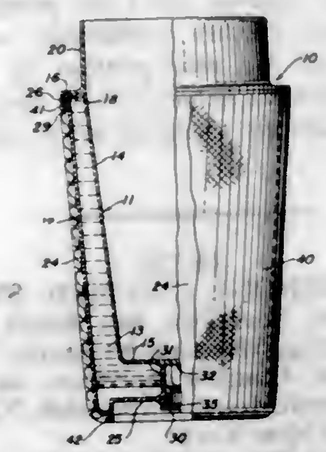
### 26,724
### REFRIGERATED TUMBLER

**Roger L. Paquin, Killingworth, Conn., assignor to Glacier Ware, Inc.**

**Original No. 3,360,957, dated Jan. 2, 1968, Ser. No. 546,971, May 2, 1966. Application for reissue June 21, 1968, Ser. No. 753,802**

**Int. Cl. F25d** *3/08*

**U.S. Cl. 62—457** **2 Claims**



A double walled tumbler which can be used without a persons lip becoming frozen thereto by providing a lip of insulating material such as polyethylene extending above the refrigerant hermetically sealed therein.

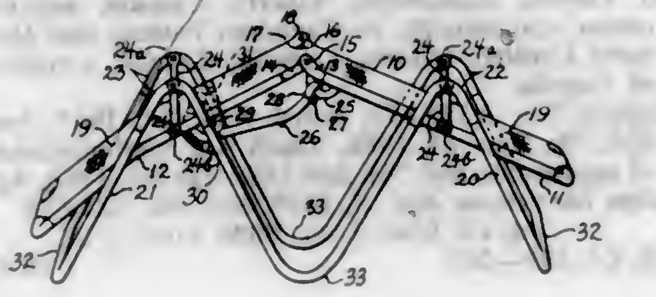
### 26,725
### COMBINED RECLINING EXERCISING AND MASSAGING DEVICE

**John W. Sellner, 10246 Silverton Ave., Tujunga, Calif. 91042**

**Original No. 3,315,666, dated Apr. 25, 1967, Ser. No. 331,025, Dec. 16, 1963. Application for reissue Mar. 13, 1969, Ser. No. 808,027**

**Int. Cl. A61h** *15/00*

**U.S. Cl. 128—57** **5 Claims**



*A reclining and exercising device having a double M-shaped adjustable base and a pair of pivotally interconnected body supporting frame members supported within the base member by flexible members pivotally mounted on each side of the base member.*

# PLANT PATENTS

## GRANTED NOVEMBER 25, 1969

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

### 2,942
### ROSE PLANT

**Ian F. Mackay, St. Charles, Ill., assignor, by mesne assignments, to Texas Rose Research Foundation, Inc., Tyler, Tex., a corporation of Texas**

**Filed Mar. 11, 1968, Ser. No. 712,309**

**Int. Cl. A01h** *5/02*

**U.S. Cl. Plt.—20** **1 Claim**

A new and distinct variety of hybrid tea rose plant produced by crossing President Eisenhower, Plant Patent No. 1,217, on Suspense, Plant Patent No. 1,944.

### 2,943
### NECTARINE TREE

**David L. Armstrong, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California**

**Filed Mar. 14, 1968, Ser. No. 713,264**

**Int. Cl. A01h** *5/08*

**U.S. Cl. Plt.—41** **1 Claim**

1\. A new and distinct variety of nectarine tree of the yellow-fleshed, fruit bearing type, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous tree habit, with a chilling requirement approximately that of "Springtime" peach (Plant Patent No. 1,268), or very slightly greater, the production of large crops of fruit of relatively large size and attractive appearance for fruit of such a ripening season as that of the new variety, a fruit ripening period which, on the average, is in the ripening season of "Robin" peach (Plant Patent No. 529) or very close to the average ripening season of "Armred" nectarine (Plant Patent No. 2,580), uniform fruit size, with a rounded to truncate fruit shape, an attractive fruit color, with a contrast of Canary Yellow to Straw Yellow ground color, heavily overlaid on one side with a red coloration which becomes particularly bright at the tree-ripe stage, smooth fruit skin which is characteristic of the nectarine, without pubescence, yellow fruit flesh, with only a slight trace of red in the apical area when the fruit is tree-ripe, a tendency for the fruit flesh to cling to the stone to a slight degree until it is fully ripe, characteristic of early-ripening peaches and nectarines, and a distinctive and pleasing nectarine flavor, with a good balance between sugar and acid.

### 2,944
### PEACH TREE

**David L. Armstrong, Ontario, Calif., assignor, by mesne assignments, to Stark Bro's Nurseries & Orchards Company, Louisiana, Mo., a corporation of Missouri**

**Filed Mar. 27, 1968, Ser. No. 716,675**

**Int. Cl. A01h** *5/08*

**U.S. Cl. Plt.—43** **1 Claim**

1\. A new and distinct variety of peach tree of the yellow-fleshed, freestone, fruit-bearing, dwarf tree type, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous, compact, bushy and dwarf tree habit, with stem internodes averaging approximately ¼ inch in length and resulting in close spacing of the normal to large size leaves, giving a densely foliaged appearance to the tree which attains a height of 5 to 6 feet in about 10 years with little or no pruning, a chilling requirement intermediate between "Springtime" peach (Plant Patent No. 1,268) and "Tejon" peach (unpatented), showly, light pink, single flowers about 1½ inches in diameter, heavy fruit crop production, as observed over a prolonged period of years at Wasco, Calif., medium sized fruit of quite rounded appearance as grown as Wasco, Calif., and ripening in that area between June 16 and July 5, or about 2 weeks after the dwarf peach "Bonanza" (Plant Patent No. 2,213), said fruit having only a few flecks and streaks of red color in the flesh, scant pubescence of medium length, and an attractive skin color which basically is Indian Yellow, attractively overlaid with splotches and streaks of red, particularly on one side of the fruit where it is substantially deeper in color because of the overlay, but with the skin color varying with the degree of coverage by the foliage.

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# PATENTS

## GRANTED NOVEMBER 25, 1969

# GENERAL AND MECHANICAL

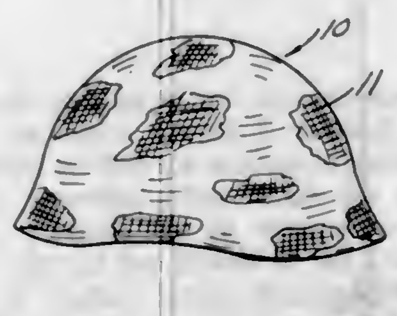
### 3,479,666
### CAMOUFLAGED HELMET SHELL AND METHOD FOR MAKING SAME

**Daniel D. Webb, Birmingham, Mich., assignor to American Safety Equipment, Oak Park, Mich., a corporation of Michigan**

**Filed July 24, 1968, Ser. No. 747,255**

**Int. Cl. A42b** *1/08;* **C04b** *41/16;* **B29h** *9/02*

**U.S. Cl. 2—3** **5 Claims**



A military type camouflaged helmet shell formed of fibrous glass layers, resin and an outer layer of preprinted camouflaged, two-way stretch type cloth all bonded together by the resin and providing a roughened, glare-free, camouflaged outer surface upon the shell. The shell is made upon an upright, hollow male mold form made of a stiff, self-sustaining, slightly inflatable material which is first covered by said layers and over which a downwardly opening, closely fitting female mold form is positioned, with the male form then being inflated and the resin being cured by heat to form the integral shell.

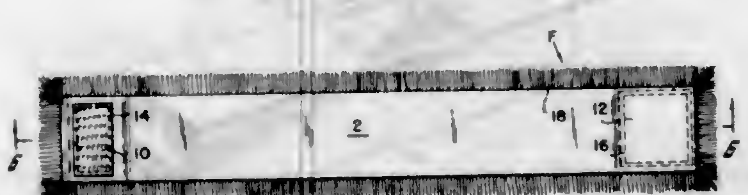
### 3,479,667
### DECORATIVE FURPIECE

**Thomas L. Mehl, Mine Brook Road, Far Hills, N.J. 07931**

**Filed Aug. 6, 1968, Ser. No. 750,559**

**Int. Cl. A41d** *5/00, 23/00, 1/00*

**U.S. Cl. 2—65** **2 Claims**



A decorative furpiece comprising a tubular sleeve including a fur member and a backing member; means for securing the members together at their marginal edges; the securing means forming a seam extending on the inside of the tubular sleeve; the sleeve having a first fastener including means for securing the first fastener to the outside of the fur member adjacent one end of the sleeve, and the sleeve having a second fastener for cooperation with the first fastener including means for securing the second fastener to the outside of the backing member adjacent the other end of the sleeve.

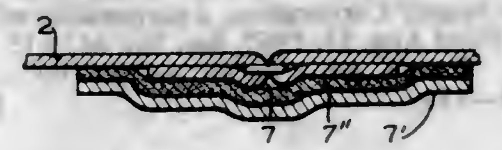
### 3,479,668
### WATERPROOF HAT CONSTRUCTION

**Sam Bigler, Richmond, Va., assignor to M & B Headwear Co., Inc., Richmond, Va., a corporation of Virginia**

**Filed June 3, 1968, Ser. No. 734,141**

**Int. Cl. A42b** *1/02*

**U.S. Cl. 2—175** **4 Claims**



A waterproof hat construction, the crown, sides and brim being made of waterproofed material stitched together, the stitched seams being made waterproof by being covered by a waterproof adherent tape.

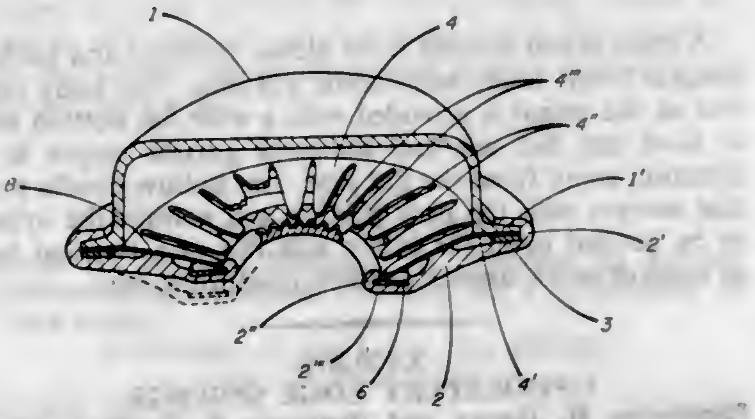
### 3,479,669
### ACOUSTICAL EAR MUFF AND THE LIKE

**Clayton H. Allen, Wellesley, Mass., assignor to Bolt Beranek and Newman Inc., Cambridge, Mass., a corporation of Massachusetts**

**Filed Aug. 29, 1967, Ser. No. 664,154**

**Int. Cl. A42b** *1/06*

**U.S. Cl. 2—209** **5 Claims**



This disclosure deals with a novel acoustical ear muff and the like emplyoing a novel friction-spring cushion that resists deformation except for a relative sliding movement between components thereof and that enables compliant application to the head or the like.

### 3,479,670
### TUBULAR PROSTHETIC IMPLANT HAVING HELICAL THERMOPLASTIC WRAPPING THEREAROUND

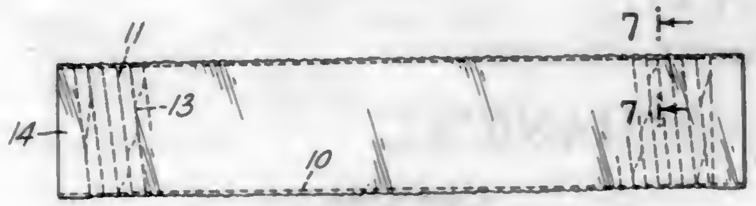
**Irving Bridgman Medell, Monmouth Junction, N.J., assignor to Ethicon, Inc., a corporation of New Jersey**

**Filed Oct. 19, 1966, Ser. No. 588,670**

**Int. Cl. A61f** *1/00;* **A61b** *17/04;* **F16l** *11/00*

**U.S. Cl. 3—1** **4 Claims**

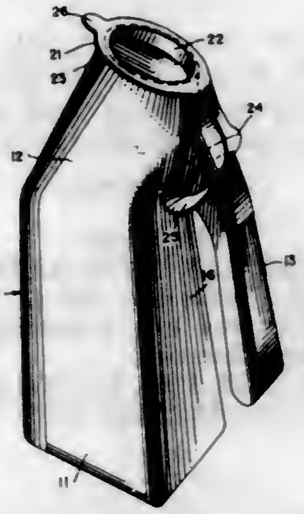
An open-mesh non-absorbent cylindrical tube is wrapped with two sections of polypropylene monofilament to form a right-hand helix and a left-hand helix along the surface of the tube. This composite structure is heated to the fusion temperature of polypropylene causing the polypropylene monofilaments to fuse into and partially penetrate the exterior surface of the tube and causing the monofilaments to fuse together at the points of intersection. The tubes so obtained are resistant to collapse and kinking and may be coated with a dispersion



of collagen fibrils to reduce permeability. The product so obtained has utility as an esophageal graft.

## 3,479,671
## MALE URINAL

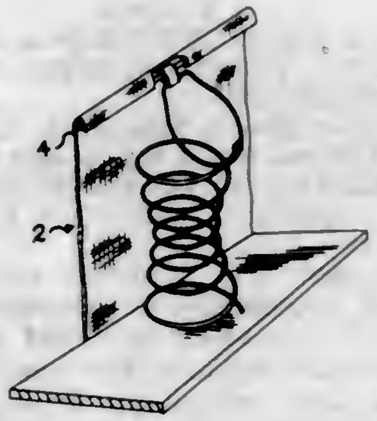
**Frank R. Beich, Wilmette, Ill., assignor to American Hospital Supply Corporation, a corporation of Illinois**
**Filed Aug. 21, 1967, Ser. No. 662,115**
**Int. Cl. A47k** *11/00;* **A61q** *9/00*
**U.S. Cl. 4—110** **10 Claims**



A male urinal formed from plastic material and having integral body, neck, and handle portions. The body portion of the urinal is provided with a wide flat bottom and at least one flat side and the neck portion slopes in a direction away from the flat side. The hollow handle portion merges with the neck portion and permits the urinal to be hooked upon the safety side rail of a hospital bed or upon drawers, drawer handles, towel rods, etc.

## 3,479,672
## UPHOLSTERY EDGE SPRINGS

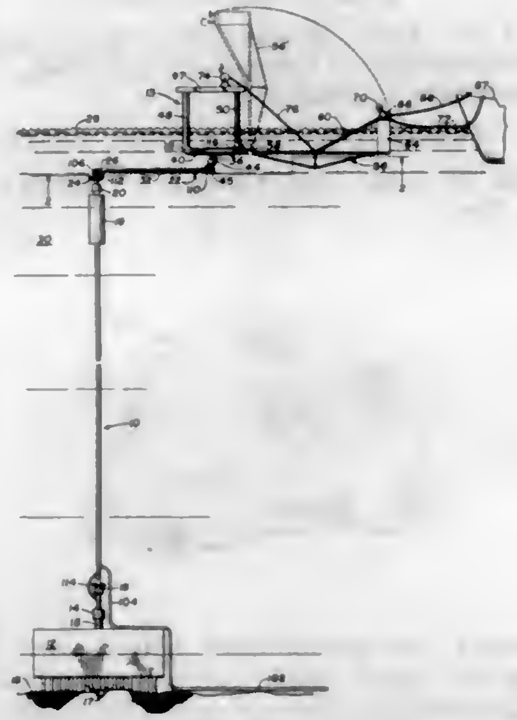
**Benjamin H. Haney and Benjamin F. Dockery, High Point, N.C., assignors to Hickory Springs Manufacturing Company, Inc., Hickory, N.C., a corporation of North Carolina**
**Continuation-in-part of application Ser. No. 427,650, Jan. 25, 1965. This application June 6, 1967, Ser. No. 643,929**
**Int. Cl. A47c** *31/00*
**U.S. Cl. 5—260** **2 Claims**



Upholstery spring with coils terminating at the top in a heat treated, stress relieved turned up portion.

## 3,479,673
## APPARATUS AND METHOD FOR TRANSPORTING FLUIDS BETWEEN A SUBMERGED STORAGE TANK AND A FLOATING VESSEL

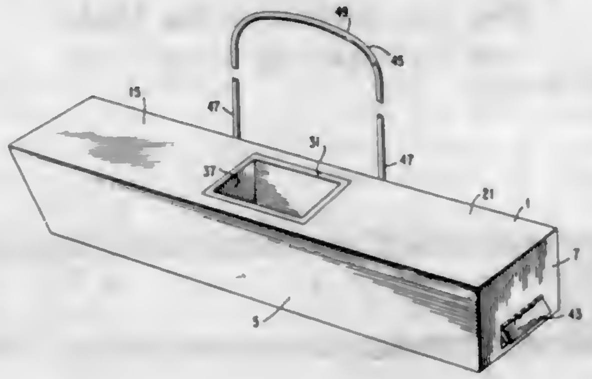
**William F. Manning, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York**
**Original application Oct. 25, 1966, Ser. No. 589,434. Divided and this application June 28, 1968, Ser. No. 777,513**
**Int. Cl. B63b** *27/24, 21/50, 21/52*
**U.S. Cl. 9—8** **8 Claims**



An apparatus for the mooring and loading of vessels. A loading boom is pivotally mounted to a floating terminal. The liquid flows through the loading boom. The hose which connects the loading boom with a vessel is retractable into the loading boom.

## 3,479,674
## WATER SHOE

**Richard L. Beymer, Box 488, Palm Beach, Fla. 33480**
**Filed Sept. 7, 1967, Ser. No. 666,177**
**Int. Cl. B63h** *11/02;* **A63c** *15/04, 5/06*
**U.S. Cl. 9—310** **2 Claims**



A water shoe comprises an elongated float having a chamber along its underside which is closed fore and aft by one-way valves. The foot of the wearer moves a portion of the wall of this chamber with a pumping action such that on the up stroke the fore valve opens and the aft valve closes to let water into the chamber, and on the down stroke the fore valve closes and the aft valve opens to expel water from the chamber with a jet action that propels the shoe forward. An inverted U-shaped handle on the outer side of each of a pair of shoes lets the wearer steady the shoes and control their position and direction.

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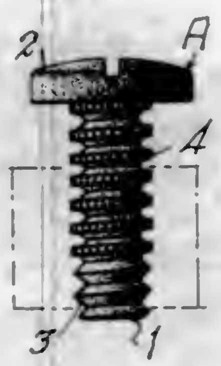
## 3,479,675
## SELF-LOCKING SCREW-THREADED ELEMENT AND METHOD OF MAKING IT

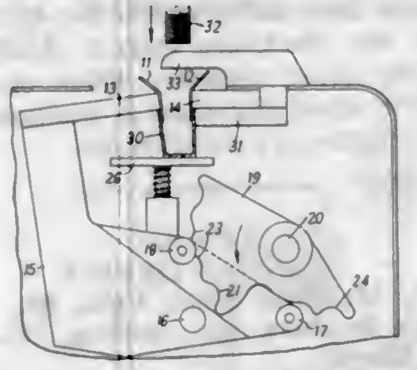
**Anthony S. Ricca, 49 Berkeley Ave., Belleville, N.J. 07109**
**Filed May 31, 1967, Ser. No. 642,482**
**Int. Cl. B23g** *9/00*
**U.S. Cl. 10—10** **2 Claims**



The smooth portion of an element such as a bolt or nut before the screw thread is formed, has a portion thereof knurled so that the surface is both roughened and increased in diameter, after which the screw thread is formed, for example on an automatic screw machine so that the crest of the thread in the knurled portion is rough and of slightly larger diameter than the normal portion of the thread so as to jam in a normally threaded mated element to relatively lock the threads of said elements.

## 3,479,676
## BINDING OF SHEETS OF PAPER, CARD OR OTHER SHEET MATERIAL

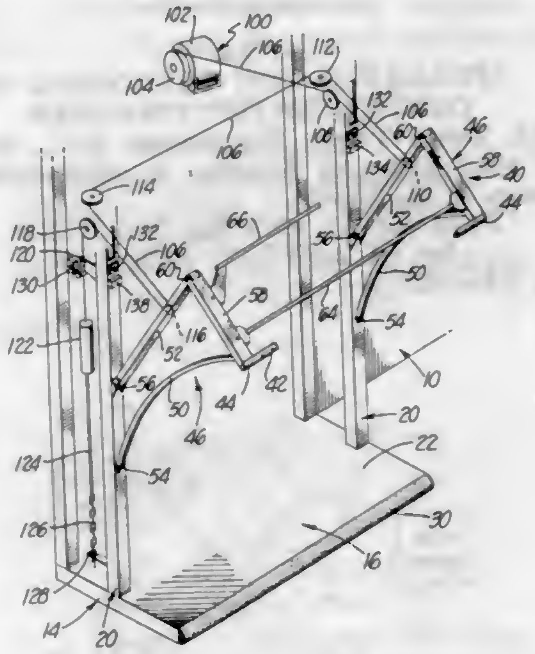
**Leslie Joe Morris, 225 Ash Road, Aldershot, Hampshire, England**
**Filed Jan. 30, 1968, Ser. No. 701,659**
**Claims priority, application Great Britain, Feb. 1, 1967, 4,987/67**
**Int. Cl. B42c** *19/00;* **B42f** *1/02*
**U.S. Cl. 11—1** **10 Claims**



The specification describes an apparatus enabling the side flanges of a resilient channel member to be prised apart to enable a stack of loose leaves to be inserted. The machine has two blades, one of which is fixed and the other of which is mounted on a pivoted support for swinging movement towards and away from the fixed blade. The channel member is disposed with the two blades between the side flanges of the channel and is resiliently supported by a spring platform. The movable blade is operated to open the channel, the marginal portion of the stack of leaves is then inserted between the blades into the channel and is pressed downward to depress the platform and disengage the channel member from the blades so that the member closes round the marginal portion of the leaves.

## 3,479,677
## CANOPY FOR AIRPLANE LOADING RAMP

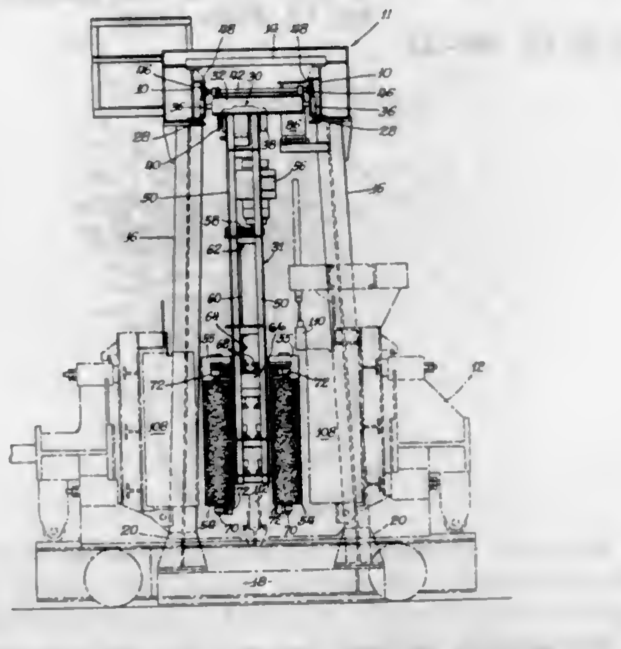
**Walter R. Burns, Joshua Tree, Calif., assignor to Stanray Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Dec. 21, 1967, Ser. No. 692,500**
**Int. Cl. E04f** *10/04;* **B63b** *27/14*
**U.S. Cl. 14—71** **8 Claims**



A passenger loading and unloading ramp for airplanes provided at its outer end with a canopy for covering any space between the outer end of the ramp and a doorway in the fuselage of the airplane with which the ramp is being used. The canopy includes a flexible bumper engageable with the fuselage above the doorway, and includes laterally spaced linkages permitting the ends of the bumper to pivot downwardly and forwardly toward the fuselage independently of each other. With this construction, the bumper can accommodate various airplane fuselage configurations.

## 3,479,678
## MOLD CLEANER

**Lyman W. Jeffreys, Prospect, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey**
**Filed Aug. 17, 1967, Ser. No. 661,402**
**Int. Cl. B22d** *43/00*
**U.S. Cl. 15—21** **9 Claims**



A rotary brush device is provided for scrubbing the casting cavity of a graphite mold. Rotary brushes are attached to an overhead trolley, which guides the brushes through the open mold. Pivotally mounted arms actuated by power cylinders are connected to the brushes for swinging the rotating brushes out against the internal mold surfaces and retracting the brushes after the cleaning operation has been completed. A system is provided to direct a water spray against the area of the mold being cleaned.

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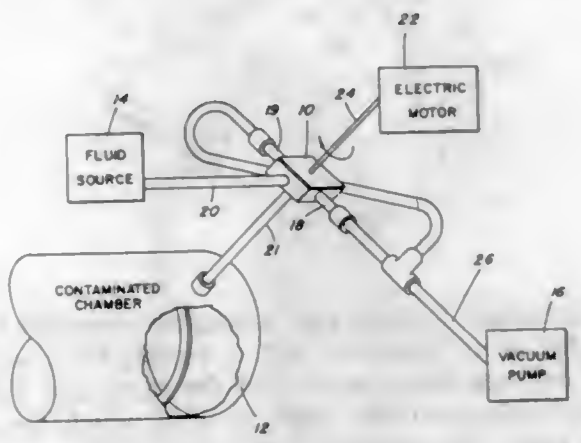
### 3,479,679
## APPARATUS FOR CLEANSING A CONTAMINATED CHAMBER

**Frederick David Vogel, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Oct. 23, 1967, Ser. No. 677,297**
**Int. Cl. A47l** *5/38;* **B08b** *5/04*
**U.S. Cl. 15—302** **2 Claims**



This invention provides an automatic apparatus for the removal of trace amounts of impurities from a contaminated chamber. An electric motor driven multiport valve is connected to the contaminated chamber and to a vacuum pump. The contaminated chamber is then alternately and repetitively evacuated by the vacuum pump and purged with a fluid until the trace amount of impurities are sufficiently removed.

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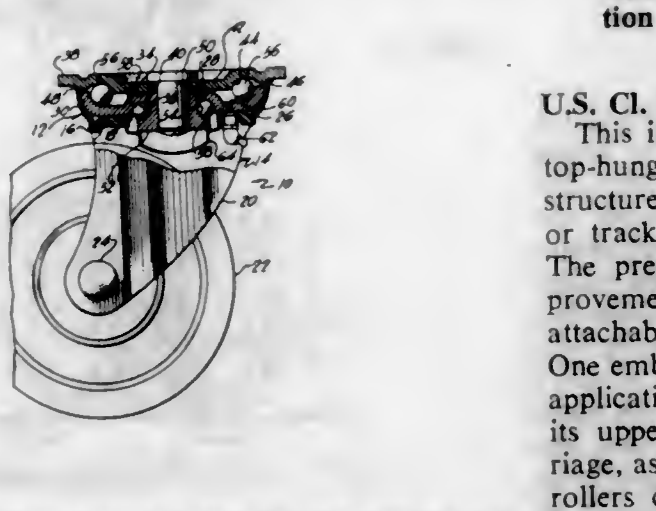
### 3,479,680
## CASTER SEAL

**Edwin T. Clinton, Redding Ridge, and Michael Kramcsak, Jr., Bridgeport, Conn., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia**
**Filed May 8, 1967, Ser. No. 636,938**
**Int. Cl. B60b** *33/00*
**U.S. Cl. 16—21** **1 Claim**



An annular resilient external seal for the bearing portion of a caster and having upper and lower engagement with the stationary and rotatable members of the caster.

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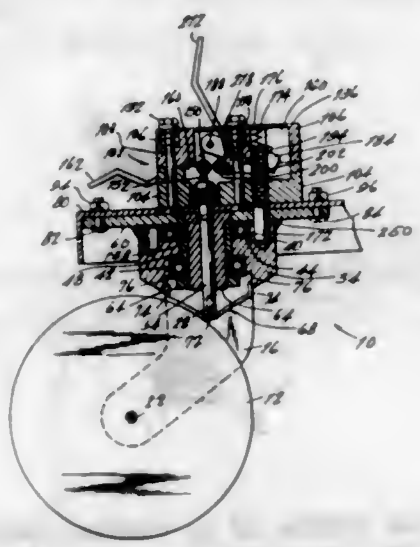
### 3,479,681
## CASTER ASSEMBLY

**Louis Maslow, Huntsville Road, Dallas, Pa. 18612**
**Filed Jan. 25, 1967, Ser. No. 611,650**
**Int. Cl. B60b** *33/00;* **F16d** *63/00*
**U.S. Cl. 16—35** **10 Claims**



This invention and this disclosure are directed to a new and unique caster assembly. More particularly and specifically, this invention and its disclosure are directed to a caster assembly provided with a brake mechanism which is so located with respect to the balance of the caster assembly such that the caster wheel itself can be removed without removing the entire brake mechanism. More specifically with respect to the brake mechanism, the invention provides a caster assembly brake mechanism which is operable by controls remote from the caster wheel itself. Furthermore, the brake mechanism does not entail the protrusion or projection of parts radially outward from the caster wheel which represent a hazard in schools, hospitals and other institutions where casters are often employed as a means for facilitating the movement of carts, furniture and the like. Furthermore, the caster assembly of the invention is characterized by permitting removal of the caster wheel without dislodging or removing the caster brake mechanism and other mechanisms in their entirety. Another feature of the invention and this disclosure thereof resides in a brake means for the caster assembly which does not depend upon a specific wheel alignment or position for its operation. Another feature is a swivel brake.

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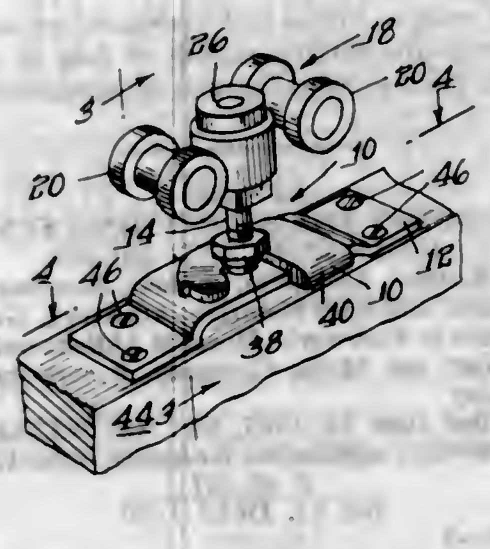
### 3,479,682
## HANGER DEVICE

**Delmar D. McNinch, Rock Falls, Ill., assignor to Lawrence Brothers, Inc., Sterling, Ill., a corporation of Illinois**
**Filed Feb. 7, 1968, Ser. No. 703,758**
**Int. Cl. E05d** *13/02*
**U.S. Cl. 16—97** **10 Claims**

This invention relates generally to hanger devices for top-hung doors, and more particularly to a novel hanger structure for suspending slidable doors from a guide way or track along the overhead section of a door frame. The present invention is concerned primarily with improvements in that portion of a door hanger which is attachable to the upper margin or edge of the door panel. One embodiment of the invention disclosed in the present application includes a shank or bolt member adapted at its upper extremity for connection with a hanger carriage, as for example, a carriage of the type incorporating rollers designed to be shifted along a horizontal overhead track. The opposite, or lower, extremity of the shank is adapted for detachable coupling with a plate or bracket secured to the upper margin of a door panel.

This plate is provided with an open-ended slot having an entry portion terminating in an enlarged portion for accommodating the shank, and the shank is provided with a first shoulder in the vicinity of the lower extremity thereof for engaging the under side of the plate, and a second shoulder spaced upwardly from the first shoulder. A shank section of reduced diameter is disposed between said shoulders to permit relative lateral insertion of the shank within the entry portion of the slot. A shank section of increased diameter approximates the diameter of said enlarged slot portion. When axially aligned, this slot portion and shank section may be relatively shifted into telescopic association. A latch member is shiftably supported on the upper side of the plate member. When occupying a latched position, said latch member projects into the annular area beneath the second shoulder and maintains the telescoped association of the enlarged slot portion and complementary shank section.



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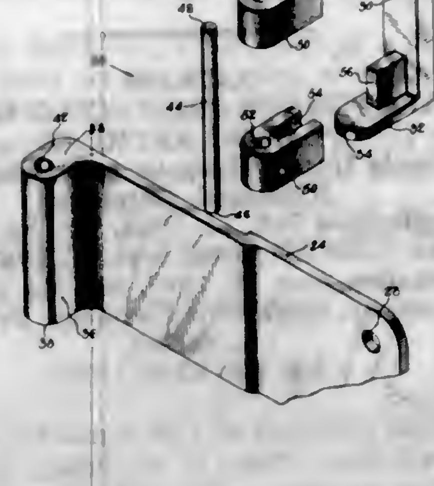
### 3,479,683
## CARGO CONTAINER HINGE CONSTRUCTION

**Milton E. Hull, Hayward, Calif., assignor to Dymo Industries, Inc., Emeryville, Calif., a corporation of California**
**Filed Oct. 18, 1967, Ser. No. 676,225**
**Int. Cl. E05d** *9/00, 5/06, 7/10*
**U.S. Cl. 16—128** **6 Claims**



A cargo container hinge in which the hinge butt has confronting laterally extending members spaced longitudinally from one another, the hinge plate includes a barrel portion lying between the confronting members and being spaced longitudinally from each confronting member, and the pintle projects longitudinally from each end of the barrel portion, each end of the pintle being received within a barrel member which is secured to the hinge butt adjacent a confronting member such that the pintle, the hinge plate and the barrel members are located between the confronting members of the hinge butt. The barrel members may be released from the hinge butt, but are not readily released so that the pintle is thus securely captivated between the confronting members but can be removed by release of the barrel members from the hinge butt.

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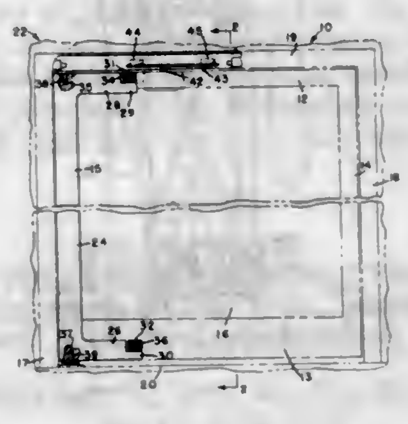
### 3,479,684
## RADIAL HINGE ASSEMBLY

**Alfred J. Abbott, 1701 Central Ave., Albany, N.Y. 12205**
**Filed May 12, 1967, Ser. No. 638,099**
**Int. Cl. E05d** *3/08*
**U.S. Cl. 16—163** **3 Claims**



A radial hinge assembly including a vertical member and a radial arm mounted at each end thereof and means for pivotally mounting the radial hinge to a door opening and means for pivotally mounting and supporting the door at the ends of the radial arms thereon so that in use the door will have a pivotal and translating movement.

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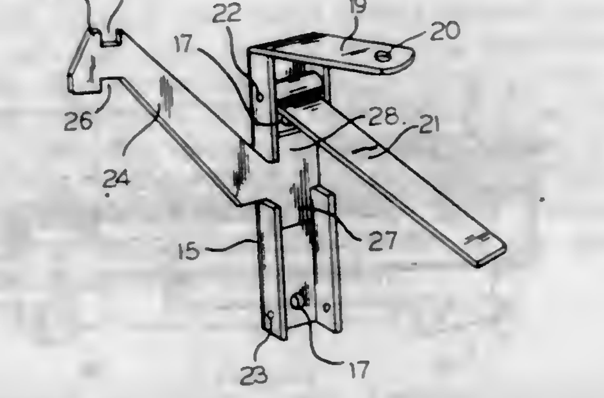
### 3,479,685
## WINDOW SUPPORTS

**Roger L. Boneck, Milwaukee, Wis. (W140 N5550 Lilly Road, Menomonee Falls, Wis. 53051)**
**Filed Feb. 5, 1968, Ser. No. 702,871**
**Int. Cl. E05d** *7/10;* **A47h** *1/10;* **E06b** *9/17*
**U.S. Cl. 16—172** **10 Claims**



A device for attaching storm window or screen to the window frame. The device comprises a channel member attached to the window frame, an angle support having at least one opening therein attached to the sash of the storm window or screen and a hooked hinged plate designed to lock into the channel member and hook into the opening in the angle support to thereby lockedly attach the storm window or screen in place.

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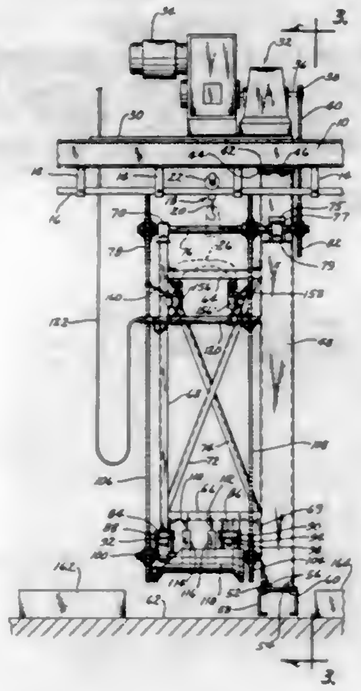
### 3,479,686
### HIDE REMOVAL DEVICE
**John G. Troy, 7529 Grover St., Omaha, Nebr. 68124**
**Filed Feb. 6, 1967, Ser. No. 614,206**
**Int. Cl. A22b** *5/16*
**U.S. Cl. 17—21** **5 Claims**



A hide removal device comprising a pair of hide grippers secured to a chain assembly which is movably mounted on an adjustable frame means, the chain assembly being moved on the frame means in a manner so as to remove the hide from an animal carcass in a downwardly direction with respect thereto to avoid contamination of the carcass.

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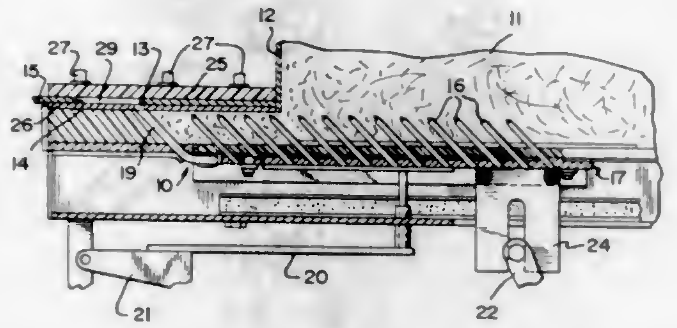
### 3,479,687
### MOLDING APPARATUS WITH EXPANSION RELEASE
**Harry H. Holly, Olympia Fields, Ill., assignor to Hollymatic Corporation, a corporation of Illinois**
**Filed Mar. 24, 1967, Ser. No. 625,642**
**Int. Cl. A22c** *7/00*
**U.S. Cl. 17—32** **8 Claims**



Apparatus for molding articles of a plastic material containing entrapped gaseous fluid including means for forcing the material into a mold cavity under pressure through a feeder opening and means for releasing this pressure on the material in the mold cavity after the cavity is out of communication with the feeder opening and prior to the cavity being moved to ejecting position together with means for forcing the material back into the cavity after it had been displaced therefrom by operation of the releasing means.

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### 3,479,688
### COLD TREATMENT BEFORE SLAUGHTERING
**Theodore M. Hoersch, Park Forest, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed Mar. 14, 1967, Ser. No. 622,896**
**Int. Cl. A22b** *5/00*
**U.S. Cl. 17—45** **8 Claims**

Animals such as avians and mammals are subjected to cold treatment for varying periods of time so as to quiet the animals prior to slaughter and to increase the dressed yield.

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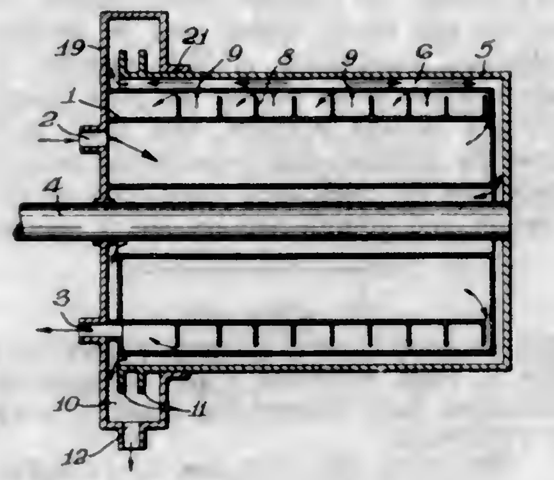
### 3,479,689
### HEATED GODET FOR STRETCHING SYNTHETIC FILAMENTS AND FILMS
**Herbert Kurzke, Kelkheim, Taunus, Gunther Bauer, Bobingen, and Karl Heinrich, Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany**
**Filed June 13, 1967, Ser. No. 645,744**
**Claims priority, application Germany, June 15, 1966, F 49,467**
**Int. Cl. D01d** *1/00*
**U.S. Cl. 18—1** **5 Claims**



Heated godet comprising a cylinder rotating around a stationary core acting as a heating body, the gap formed by the heating body and the rotating cylinder being filled with a defined heating liquid which advantageously circulates through the heating body as well as through the gap formed by the heating body and the rotating cylinder.

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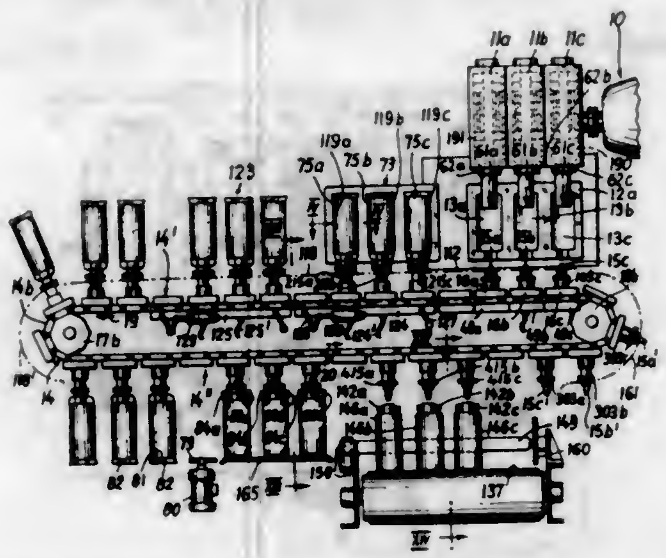
### 3,479,690
### APPARATUS FOR PRODUCING HOLLOW PLASTIC ARTICLES
**Reinold Hagen, Hangelar ueber Siegburg, Rhineland, Germany**
**Original application Feb. 12, 1964, Ser. No. 344,419, now Patent No. 3,340,569, dated Sept. 12, 1967. Divided and this application Aug. 15, 1967, Ser. No. 660,761**
**Claims priority, application Germany, Feb. 16, 1963, K 48,967**
**Int. Cl. B29c** *1/06*
**U.S. Cl. 18—5** **20 Claims**

The blowing mandrels of a blow molding apparatus are mounted on holders affixed to an endless conveyor which transports the mandrels, either singly or in groups, into registry with one or more cavities of an open-and-shut mold. Each mandrel comprises a sleeve which is mounted on the corresponding holder and an axially movable core which is displaced to an extended position and penetrates into a parison in the mold when the corresponding mandrel registers with the cavity. The cores have cutting edges which trim the parisons during axial movement to extended positions and such cores thereupon remain in extended positions to transport finished articles away from the mold. Locking devices are provided to prevent premature displacement of cores from extended positions.



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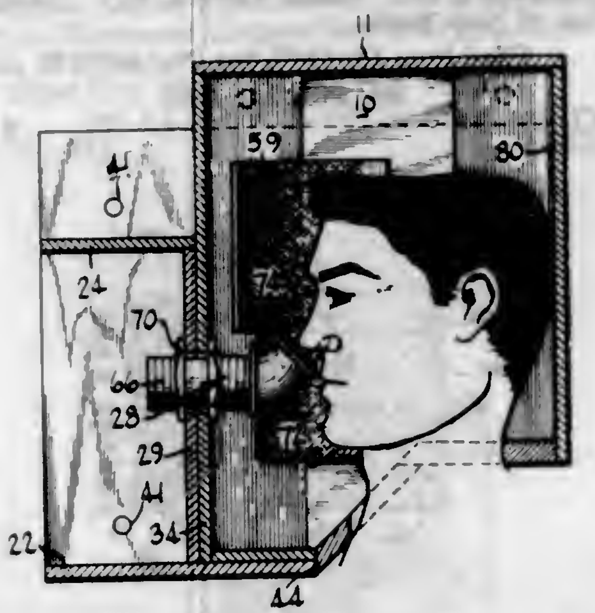
### 3,479,691
### DEVICE FOR MAKING SCULPTURE
**Donovan D. Durland, 1183 W. Main St., Decatur, Ill. 62522**
**Filed July 17, 1967, Ser. No. 653,909**
**Int. Cl. B29c** *13/00*
**U.S. Cl. 18—5.1** **11 Claims**



A device for producing a sculpture of a human head comprising a head enclosure having a removable cover and back section. The head enclosure also contains a means for supplying air to the subject during the making of a mold and a means for retaining the mold within the head enclosure while the subject's head is removed. The mold in the head enclosure is then cast with a solid forming liquid.

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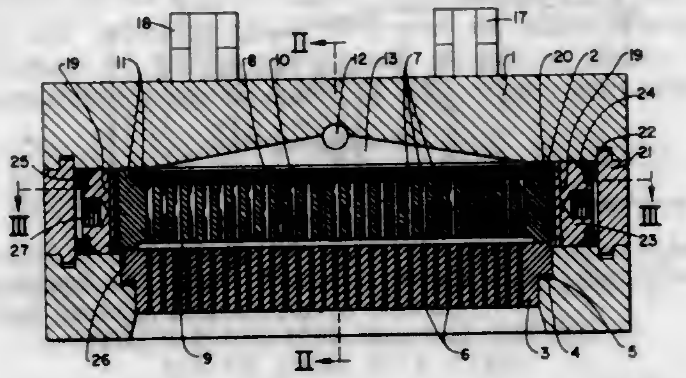
### 3,479,692
### SPINNERET ASSEMBLY
**Paul V. M. van den Biggelaar, Huissen, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware**
**Filed Apr. 18, 1967, Ser. No. 631,815**
**Claims priority, application Netherlands, Apr. 28, 1966, 6605678**
**Int. Cl. D01d** *3/00*
**U.S. Cl. 18—8** **2 Claims**

An improved spinneret apparatus for the manufacture of synthetic filaments, fibers and threads comprising a container, distribution plate and spinneret plate, each rectangular in shape, at least one opening being provided in one side of said container for installing and removing said distribution and spinneret plates, the height of said opening being equal to or slightly larger than the thickness of said plates and the length of said opening being equal to or slightly longer than the length of the smallest side of said plates, said opening being capable of being closed with a sliding locking member positioned therein, said container being self-sealing when said opening is closed and said container subjected to polymer pressure.



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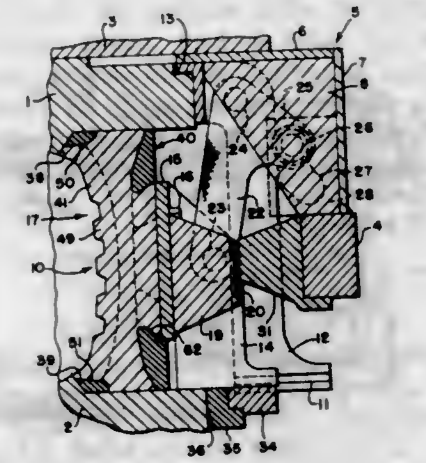
### 3,479,693
### TIRE MOLD CONSTRUCTION
**Armindo Cantarutti, Akron, Ohio, assignor, by mesne assignments, to NRM Corporation, a corporation of Ohio**
**Filed Sept. 22, 1966, Ser. No. 581,245**
**Int. Cl. B29h** *5/02*
**U.S. Cl. 18—17** **5 Claims**



A tire mold construction for sectional mold tire presses using radially movable tread mold sectors between upper and lower side wall mold sections with each tread mold sector being of a composite metallic structure having a softer metal insert in a harder metal frame, the insert being cast within the frame with the latter having passages extending to the exterior thereof with the softer metal of the insert within the passages being coplanar with the frame to facilitate heat transfer to the tread pattern which is machined into the insert.

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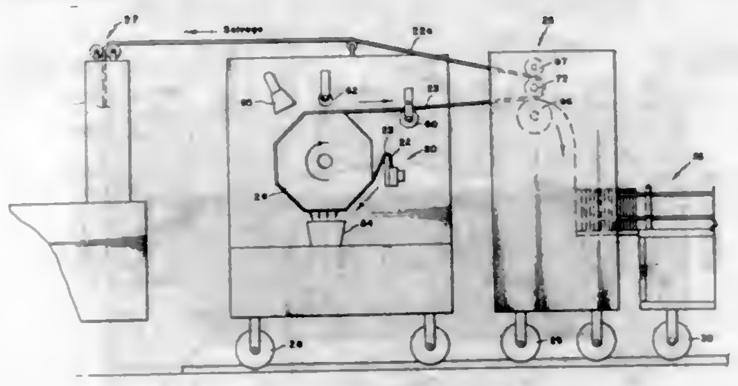
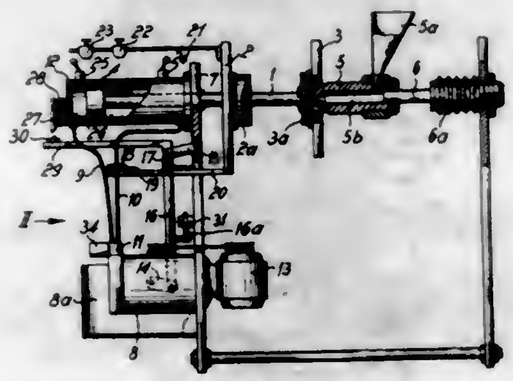
### 3,479,694
### CONTINUOUS METHOD AND APPARATUS FOR MANUFACTURING ARTICLES FROM FOAMED THERMOPLASTIC MATERIAL
**Thomas W. Winstead, Baltimore, Md.**
**(Williamson Lane, Cockeysville, Md. 21030)**
**Filed Aug. 19, 1965, Ser. No. 480,917**
**Int. Cl. B29c** *17/00, 17/14*
**U.S. Cl. 18—19** **5 Claims**

Integrated apparatus for continuously extruding foamed thermoplastic sheets and manufacturing therefrom three-dimensional articles. The apparatus has means for first spreading the extruded and expanding sheets, vacuum-forming articles therefrom on the periphery of a forming wheel, severing the formed articles, conducting the severed articles to a stacking means, packaging the articles, and returning the selvage for re-use. The operation of the extrusion device, forming wheel, severing device, stacking means and packaging means are all coordinated to provide a continuous, integrated system.



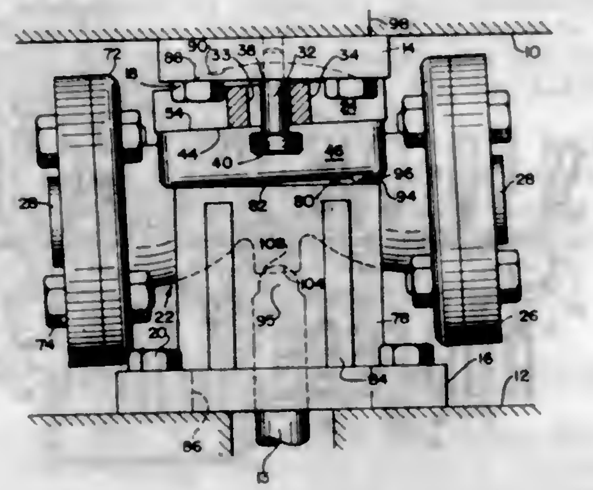
### 3,479,695
### INJECTION MOLDING MACHINE
**Alfred Fischbach, Am Scheffert, Ruenderoth, Cologne, Germany**
**Filed Dec. 29, 1966, Ser. No. 605,898**
**Claims priority, application Germany, Jan. 7, 1966, F 48,097**
**Int. Cl. B29f** *1/00*
**U.S. Cl. 18—30** **16 Claims**



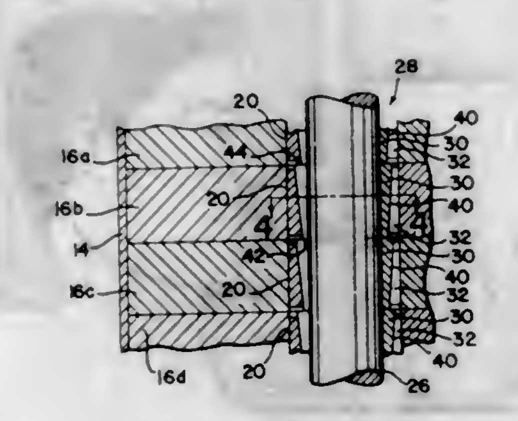
Injection molding machine wherein a mold section is mounted on a platen which is reciprocable along tie bars by a double-acting cylinder receiving hydraulic fluid from a variable delivery pump. The delivery of the pump is varied by a cycle control as a function of the position of the platen to vary the speed of the platen during forward and/or return movement.

### 3,479,696
### APPARATUS FOR MOLDING LINERS IN HOLLOW METAL BODIES
**Harold J. Balhouse, East Greenwich, R.I., assignor to Grinnell Corporation, Providence, R.I., a corporation of Delaware**
**Filed June 30, 1967, Ser. No. 650,477**
**Int. Cl. B29f** *5/00;* **B29c** *1/16*
**U.S. Cl. 18—30** **18 Claims**

Methods and apparatus for automatically aligning in a molding machine, and for clamping togteher with uniformly distributed clamping force in such a machine, an unlined metal body and mandrels assembled therewith preparatory to and during the actual introduction of the lining material whereby tight seals are achieved between certain surfaces of the assembly members which are forced together and between which lining material might leak during its introduction if there has not been, in addition to the conventional machining of these members, some special machining of the valve body, or if any of such machining has not been done properly.



### 3,479,697
### PIN-TYPE CONNECTING JOINT AND METHOD OF ASSEMBLING
**Nathan M. Kramarow, Flushing, N.Y., assignor to Barogenics, Inc., Mount Vernon, N.Y., a corporation of New York**
**Filed June 13, 1967, Ser. No. 645,672**
**Int. Cl. B29c** *1/00*
**U.S. Cl. 18—34** **5 Claims**



A hinge pin-type joint and method of assembling the same which is extremely advantageous for constructing pressure containers of the segmented cylinder type. The joint structure includes a plurality of overlapped structural bodies having generally aligned bores extending therethrough. A pin, having a longitudinal axis and a cylindrical outer surface of a diameter materially less than the minimum transverse width of the bores, is positioned within the bores so as to define, in conjunction therewith, an axially extending clearance passage having openings at its opposite ends. A connecting member is forced into the passage from one of the openings. This connecting member has an inner end and an outer end, and a connecting body portion between the ends. The body portion is of a gradually decreasing cross section from the outer end to the inner end. Consequently, when the member is forced into the openings it is compressed between the outer surface of the pin and the bore to form a force transmitting connection therebetween.

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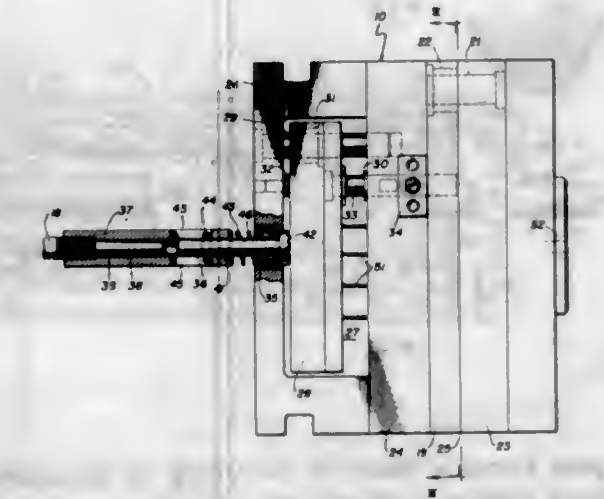
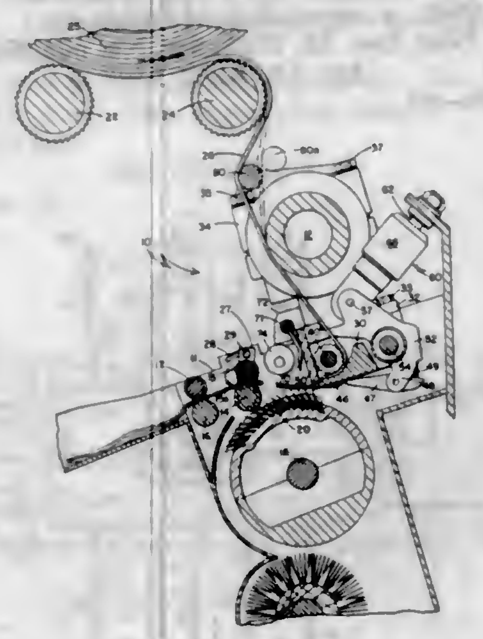
### 3,479,698
### INJECTION MOLD ASSEMBLY
**John J. Shaughnessy, 3 Howard St., Townsend, Mass. 01469**
**Filed June 29, 1967, Ser. No. 649,918**
**Int. Cl. B29f** *1/14*
**U.S. Cl. 18—42** **7 Claims**



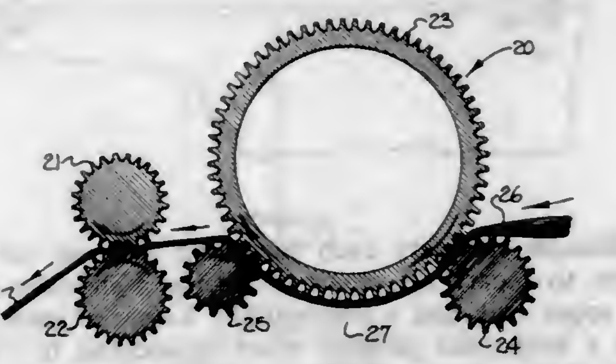
This invention has to do with an injection mold assembly and, more particularly, to apparatus for the injection molding of articles, wherein means is provided to assure that the molded article is ejected from the mold when it is opened after the article has been formed.

### 3,479,699
### COMBERS
**John Clifford Von Kaenel, Gordon Campbell Anderson, and Stephen David Seymore, Jr., Clemson, S.C., assignors to Maremont Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Oct. 10, 1966, Ser. No. 585,605**
**Int. Cl. D01g** *19/04, 19/16*
**U.S. Cl. 19—223** **12 Claims**



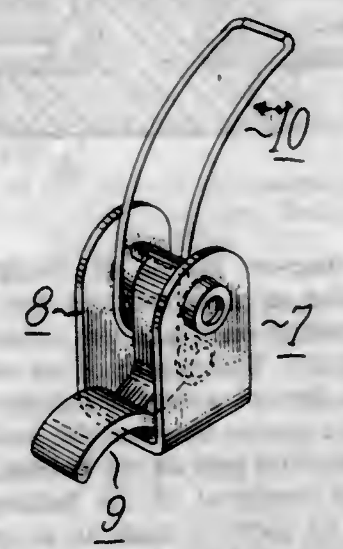
A textile fiber comber of the type having an oscillating nipper shaft for oscillating the nipper mechanism adjacent to a rotary bottom comb, the so-called half-lap, and to a top comb, toward and away from a pair of detaching rolls. The nipper head mechanism disclosed, by the oscillating motion of its rock shaft, produces all of the motions necessary for operating the nipper itself including its feed roll, the top comb, and the conversion of a uniform unrolling of the lap supply roll to the intermittent lap feed at the feed roll. The nipper cushion plate carrier is rigidly and directly mounted on the oscillating nipper shaft and has pivotally mounted on it the nipper knife carrier for movement of the nipper knife toward and away from the nipper edge. The nipper knife carrier is operated by an adjustable and resilient link connected to the comber frame so that the nipper knife remains in its clamping position for an adjustable portion of its path of travel. Movement of the nipper knife carrier also operates the lap feed roll and also the top comb carrier pivoted on the nipper knife carrier for movement as guided by a roller mounted on the comber frame. Also disclosed are nipper shaft and detaching roll drives, each of which provides adjustment of the motion thereof, as well as means for dynamically timing the detaching rolls to the rotary comb.

### 3,479,700
### TEXTILE DRAFTING SYSTEM
**Emmett S. Livingston, Columbus, Ga., assignor, by mesne assignments, to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio**
**Filed Jan. 15, 1968, Ser. No. 697,786**
**Int. Cl. D01h** *5/74, 5/18*
**U.S. Cl. 19—260** **10 Claims**



Apparatus for drafting textile material in which laterally spaced first and second nip control rolls form successive first and second nips with a common fluted master control roll, with all the control rolls rotating at about the same peripheral speed, and at least the second nip control roll being fluted, and wherein the meshing relationship of the rolls at the second nip is such with respect to the relationship of the rolls at the first nip as to impart draft to the textile material in its course from the first to the second nip.

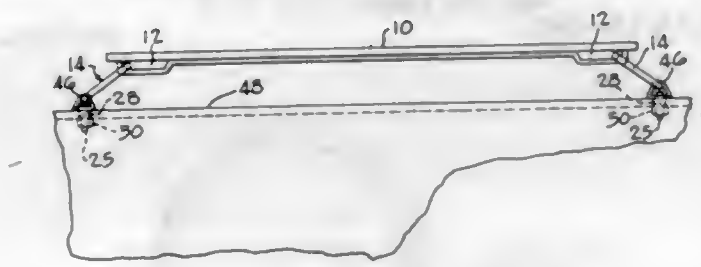
### 3,479,701
### LATCH DEVICE
**Robert W. Zerfoss, Greenville, S.C., assignor to General Electric Company, a corporation of New York**
**Filed Aug. 16, 1967, Ser. No. 661,050**
**Int. Cl. B65d** *45/06;* **E05c** *19/14*
**U.S. Cl. 24—73** **7 Claims**



Latch suitable for detachably connecting parts of a luminaire comprises a U-shaped base adapted to be secured to one of the parts, a pivot lever having a first pair of oppositely projecting integral pivot pins detachably inserted into bearing apertures in the yieldably spreadable arms of the U-shaped base, and a curved U-shaped spring having looped ends engaging another pair of integral pins on the lever and having a bight portion for latching on a hook or the like on the other part of the luminaire when the lever is turned about it pivot pins.

### 3,479,702
## RETAINER FOR COLLAPSIBLE HANDLE FOR A CARRYING CASE

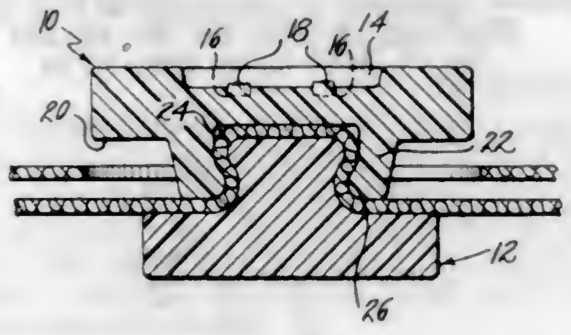
**Marton Szabo, Broomall, Pa., assignor to Philadelphia Handle Company, Inc., Camden, N.J., a corporation of New Jersey**
**Filed Mar. 20, 1968, Ser. No. 714,710**
**Int. Cl. A45c** *13/26*
**U.S. Cl. 24—73** **5 Claims**



Handle retainers each including a screw for attachment to a carrying case and having a shoulder adjacent its upper end, and a substantially L-shaped member having a horizontal portion which is secured to the upper end of the screw and bears against its shoulder, the vertical portion of the member being bent over the horizontal portion to form a curved female hinge member to rotatably receive the link associated with the end of a carrying handle.

### 3,479,703
## SNAP-ON BUTTON

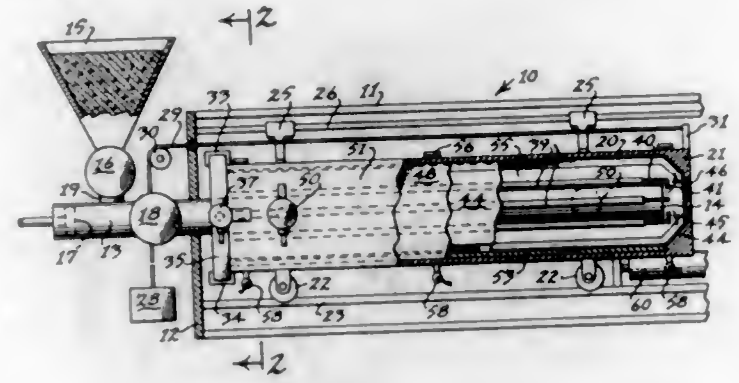
**Raymond S. Embry, deceased, late of Bernalillo County, N. Mex., by Elisama Embry, administratrix, 1821 Truman NE., Albuquerque, N. Mex. 87110**
**Filed Sept. 28, 1967, Ser. No. 671,927**
**Int. Cl. A44b** *1/34*
**U.S. Cl. 24—107** **5 Claims**



A two-part snap-on button is disclosed for either factory application to a garment or for replacement of a conventional button on a garment when it has become separated therefrom. The fabric of an underlying layer of a garment, as that of a shirt is interposed, in a recess of the head of the button between the head of the button and a head on the stud part of the button, with the fabric clamped between the head of the button and the stud. The dimensions of parts is such as to provide a clearance between the underlying layer and the underface of the button head to enable an upper layer of the garment to be buttoned over the head in conventional fashion.

### 3,479,704
## POST FORMING MACHINE

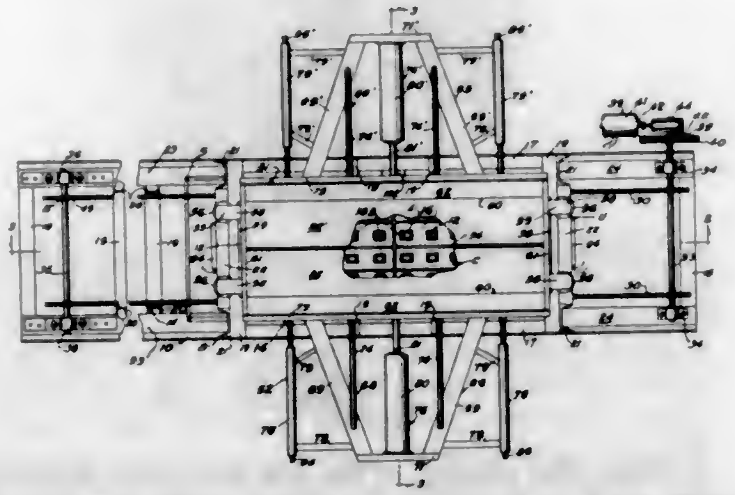
**Oscar Lee Reed, Wynnburg, Tenn. 38077**
**Filed May 5, 1966, Ser. No. 548,360**
**Int. Cl. F28b** *1/14, 7/10*
**U.S. Cl. 25—41** **8 Claims**



A post forming machine including an elongated, hollow mold having a closed end and an open end, a flexible liner having a closed end and an open end adapted to conform to the interior dimensions of the mold, and an elongated fluid concrete discharge conduit extending through the open ends of the mold and liner, and substantially the length of the mold in its initial position, with the discharge end of the conduit being adjacent the closed end of the mold, and means for forcing fluid concrete through the discharge conduit so that the accumulation of concrete against the closed end of the mold forces the mold and liner longitudinally away from the discharge conduit to gradually fill the mold with concrete.

### 3,479,705
## MOLDING APPARATUS

**Kenneth L. Poynter, Conyers, Ga., assignor, by mesne assignments, to Miami Brick and Stone, Inc. of Miami, Miami, Okla., a corporation of Oklahoma**
**Filed Dec. 15, 1966, Ser. No. 601,972**
**Int. Cl. B28b** *1/08*
**U.S. Cl. 25—41** **10 Claims**



The disclosure herein is directed to an apparatus for molding concrete products from a mix of concrete having an appreciable slump. The device accomplishes this by providing a mold defined by separate portions, each portion being effective for selective and independent vibration. The products are molded by first filling the mold while the portions are positioned together and simultaneously vibrated, and by subsequently separating the portions while the portion of the mold not supporting the molded product is vibrated.

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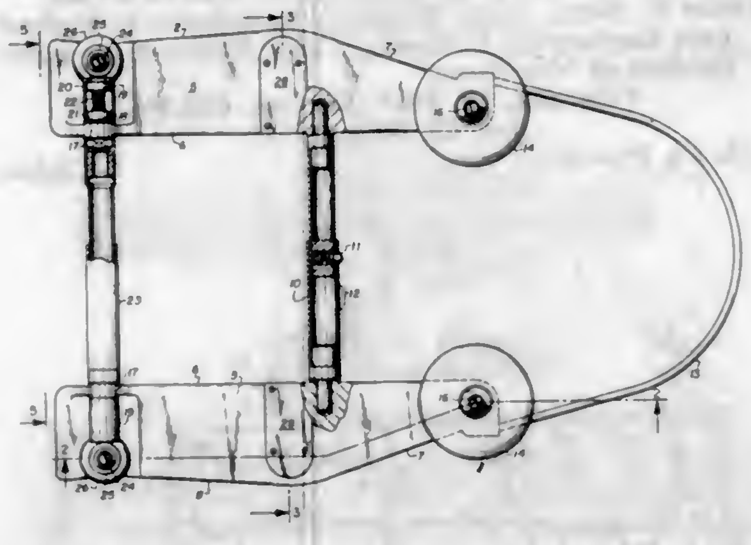
### 3,479,706
## SPREADER FOR TUBULAR KNIT FABRICS

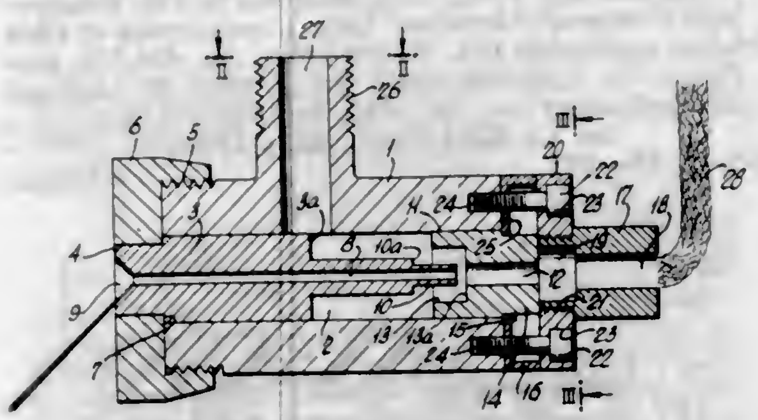
**Frank Catallo, Elmont, N.Y., assignor to Fab-Con Machinery Development Corp., Paterson, N.J., a corporation of New Jersey**
**Filed Feb. 1, 1968, Ser. No. 702,418**
**Int. Cl. D06c** *5/00, 3/00*
**U.S. Cl. 26—55** **15 Claims**



This invention is directed to a spreader for circular knit fabric tubes and includes a pair of spaced frame members each having a pair of idler wheels at the front for initially expanding the tube and a set of nip-driven rolls, rollers and edge wheels at the rear thereof for engaging substantially the entire inner circumference of the tube and advancing it into the associated nip. Opposed pairs of driven tapered rolls are provided intermediate the ends of the frame members for externally advancing edge portions of the expanded tube and for maintaining the spreader in its correct lateral position.

### 3,479,707
## JET FIBER TEXTURIZER

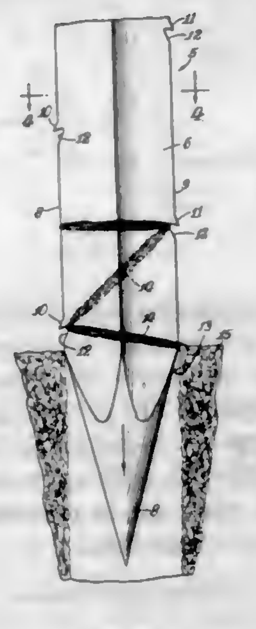
**Chester L. Loveland, Dalton, Pa., assignor to U.S. Textile Machine Company, Scranton, Pa., a corporation of Pennsylvania**
**Continuation-in-part of application Ser. No. 543,700, Apr. 19, 1966. This application Aug. 2, 1967, Ser. No. 660,561**
**Int. Cl. D02g** *1/16*
**U.S. Cl. 28—1** **12 Claims**



A yarn texturing device wherein a jet of fluid is applied to a yarn for bulking the latter. The yarn texturing device has a cylindrical housing provided with a cylindrical passageway extending therethrough, and a yarn needle is concentrically positioned in the passageway and is provided with an axial yarn-conveying bore extending therethrough. This needle is formed at a forward portion with a section of a diameter which is less than the diameter of the housing passageway to define an annular space with the latter. An orifice block is fitted into the housing passageway at its end opposite from the needle, and this block has an axial bore aligned with the axial bore extending through the needle. The axial bore of the block is provided with an abruptly enlarged entrance opening at an end which surrounds the forward end of the needle to form an annular chamber therewith. An air inlet for introducing air into the annular space between the housing and needle communicates with the interior of the housing and has a central axis which is offset from the longitudinal central axis of the annular space between the housing and the needle, so that in this way, the air which is introduced into the housing has considerable turbulence for bulking the yarn as it moves through the axial bores of the needle and orifice block.

### 3,479,708
## FELTING NEEDLE

**Edson P. Foster, 409, S. 29th St., P.O. Box 527, Manitowoc, Wis. 54220**
**Filed May 15, 1968, Ser. No. 729,345**
**Int. Cl. D04h** *18/00*
**U.S. Cl. 28—4** **4 Claims**

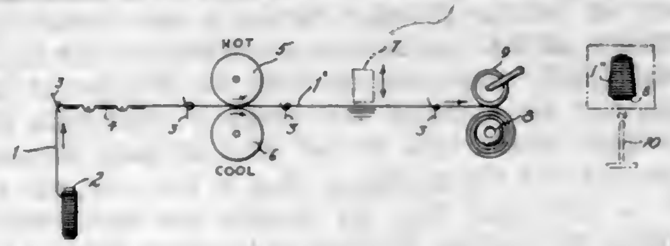


A felting needle having an elongated body portion of a cross sectional configuration having a major axis and a minor axis, such as of diamond cross section, having corner edges extending longitudinally of the body portion at the opposite ends of the major axis, and in which barbs are formed only in such corner edges.

### 3,479,709
## STRAND TREATMENT

**Benjamin S. Daniel, West Point, Ga., assignor, by mesne assignments, to Techniservice Corporation, Philadelphia, Pa., a corporation of Pennsylvania**
**Original applications Jan. 13, 1958, Ser. No. 708,666, now Patent No. 3,358,345, and Oct. 19, 1965, Ser. No. 498,050, now Patent No. 3,358,344, both dated Dec. 19, 1967. Divided and this application Dec. 8, 1967, Ser. No. 689,032**
**The portion of the term of the patent subsequent to Dec. 19, 1984, has been disclaimed**
**Int. Cl. D02g** *1/08*
**U.S. Cl. 28—72** **12 Claims**

This invention relates to processing of textile strands, concerning particularly modification of the configuration of monofilament or multifilament textile strands to impart desirable deviation from rectilinearity or surface regularity to the component filament(s) thereof. This is done by establishing a temperature differential or gradient across such a strand, from one side to the opposite side thereof, preferably by forwarding it by a pair of nip rolls, one hot and one cool. The resulting strand assumes a generally crinkled, coiled, or curled configuration, which may be accentuated by rotation of the respective rolls at unequal surface speeds and by subsequent relaxation under substantially uniform heating. A novelty thick-and-thin effect results from intermittent optional separation



of the treating rolls to provide spaced lengths of untreated or variably treated strand.

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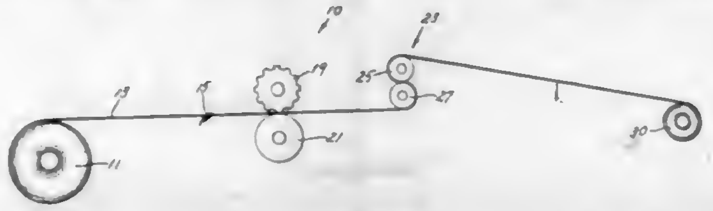
### 3,479,710
### TEXTURED TEXTILE MATERIAL

**Walter Turton, Stamford, Conn., and Charles Mazzone, Dover, N.J., assignors to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware**
**Filed Dec. 13, 1967, Ser. No. 690,288**
**Int. Cl. D02g** *3/22;* **D02j** *1/22*
**U.S. Cl. 28—72** **4 Claims**



A method and apparatus for texturizing a textile material wherein the material is mechanically deformed to introduce flattened segments of reduced cross-sectional areas along the length of the yarn whereby a high degree of residual shrinkage is maintained in said yarn. This textured yarn exhibits an ability to cause a high degree of stitch distortion when kit in combination with an untextured yarn into a tricot fabric.

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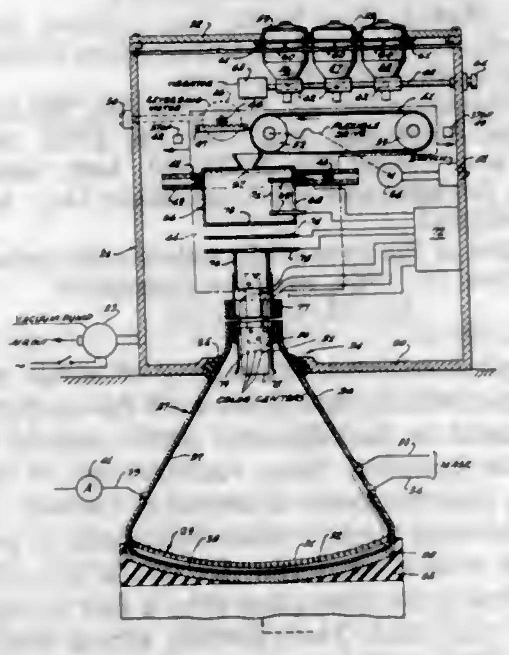
### 3,479,711
### METHOD AND APPARATUS FOR PRODUCING A COLOR KINESCOPE AND BLANK UNIT THEREFOR

**Hans W. Heil, Malibu, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**
**Filed Aug. 25, 1966, Ser. No. 575,129**
**Int. Cl. H01j** *9/18*
**U.S. Cl. 29—25.13** **14 Claims**



Method and apparatus for forming phosphor patterns on the face plate of a cathode ray tube by electrically charging phosphor powder, forming it into a stream, and then scanning the face plate with the phosphor powder stream.

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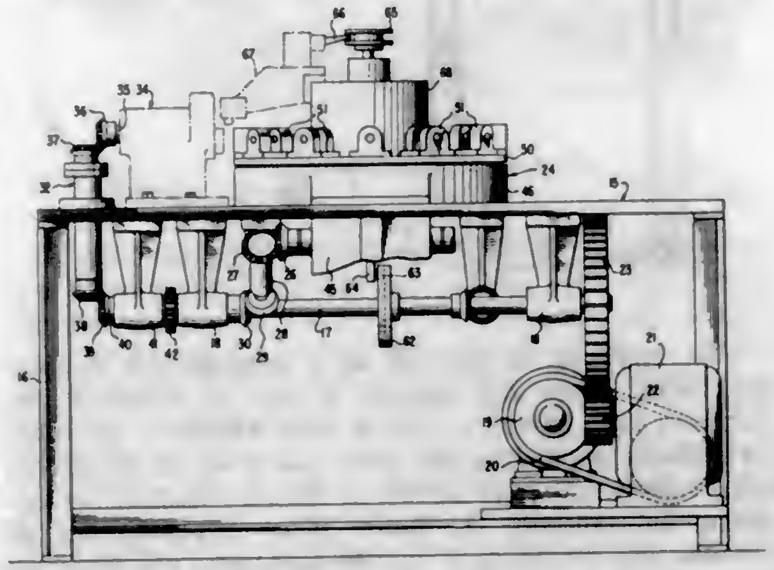
### 3,479,712
### PARTS FABRICATING APPARATUS HAVING READILY REPLACEABLE UNITS AND INDEXABLE WORK HOLDING RING STRUCTURE

**Albert F. Pityo, Cedar Grove, N.J., assignor to Federal Tool Engineering Company, Cedar Grove, N.J., a corporation of New Jersey**
**Filed Jan. 10, 1967, Ser. No. 608,296**
**Int. Cl. B23p** *23/00*
**U.S. Cl. 29—38** **7 Claims**



A parts fabricating apparatus employing a basic or main drive having plural power take-off points for the direct operation of plural work processing apparatus modules or units; the individual apparatus units have built-in individual drives and are readily removable and replaceable on the fabricating apparatus. The apparatus possesses a work unit indexing ring structure having a highly accurate mover also driven from the main drive of the apparatus.

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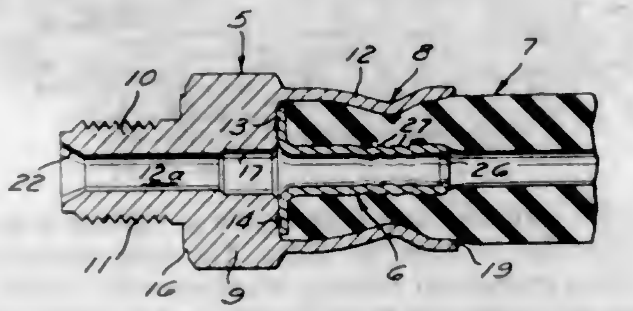
### 3,479,713
### METHOD OF MAKING A HOSE COUPLING

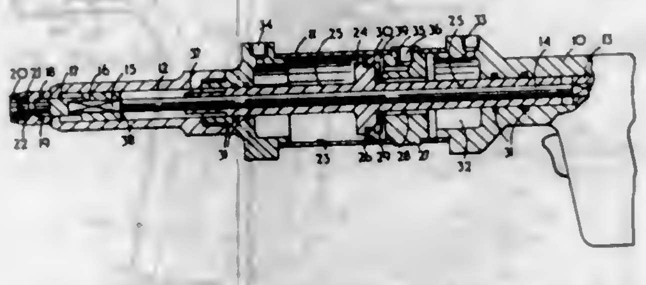
**Albert J. Weatherhead, Jr., Shaker Heights, and John Nicol, Fairview Park, Ohio, assignors to The Weatherhead Company, Cleveland, Ohio, a corporation of Ohio**
**Original application Oct. 27, 1964, Ser. No. 406,726, now Patent No. 3,345,090, dated Oct. 3, 1967. Divided and this application Aug. 24, 1967, Ser. No. 677,814**
**Int. Cl. B21d** *53/00;* **B23p** *11/00*
**U.S. Cl. 29—157** **4 Claims**



This application discloses a crimp type hose coupling and the method of making the same by extruding the body of the coupling comprising a hexagonal central portion, an adjacent threaded end on one end and an adjacent tubular sleeve on the other end, then welding a flanged nipple inside of said sleeve to form a hose receiving pocket, then inserting the hose into said pocket and crimping the sleeve onto said hose.

### 3,479,714
### APPARATUS FOR TIGHTENING AND LOCKING NUTS ON BOLTS

**Robert T. Allsop, Storton, near Stourbridge, England, assignor to G.K.N. Screws & Fasteners Limited, Birmingham, Warwick, England, a British company**
**Filed Dec. 22, 1966, Ser. No. 603,910**
**Claims priority, application Great Britain, Dec. 24, 1965, 54,851/65**
**Int. Cl. B23p** *19/08*
**U.S. Cl. 29—200** **9 Claims**



A tool for tightening and locking a nut on a bolt having a substantially cylindrical body, a spindle extending axially within the body, a motor for rotating the spindle connected to one end thereof, a nut engaging wrench member connected to the other end of the spindle and also slidable axially on this end of the spindle, a pneumatically operated impact piston slidably mounted upon the spindle within the body and having a tubular sleeve projecting from its forward face for delivering an axially directed impact to the rear of the wrench member and a deforming tool mounted within the wrench member and having forwardly extending projections to engage and deform the end face of a nut which is engaged by the wrench member.

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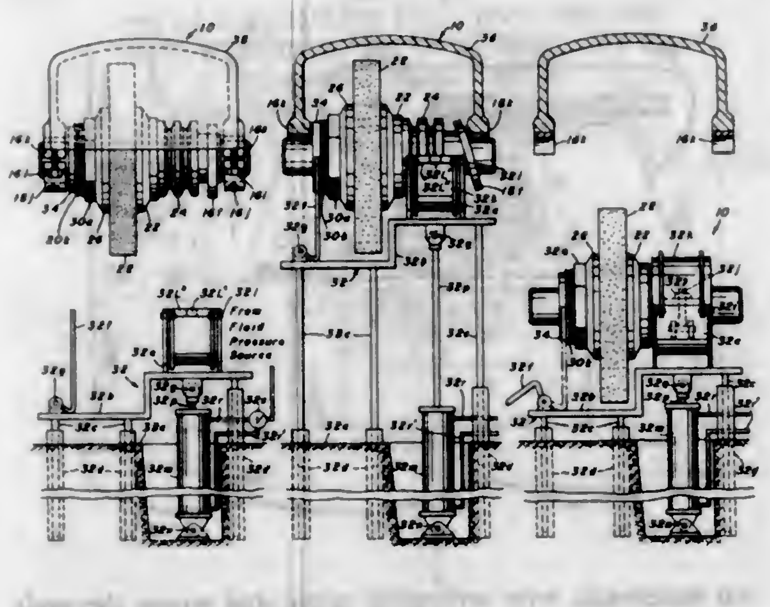
### 3,479,715
### APPARATUS FOR REPLACING ROTATABLE MEMBERS

**George H. Hendrickson, Oaklawn, Ill., assignor to United States Steel Corporation, a corporation of Delaware**
**Filed Oct. 26, 1967, Ser. No. 678,233**
**Int. Cl. B23p** *19/02*
**U.S. Cl. 29—200** **20 Claims**



This disclosure relates to an improved apparatus for replacing rotatable members and, more particularly, to a method of and an apparatus for supporting a shaft member to permit its disengagement from a supporting member, for moving the shaft member away from the supporting member, for clamping the shaft member to permit removal of the securing means for retaining the rotatable member on the shaft member, replacement of the rotatable member and the reassembly of the securing means on the shaft member, for supporting and unclamping the shaft member and for moving the shaft member into engagement with the supporting member to permit its attachment to the supporting member.

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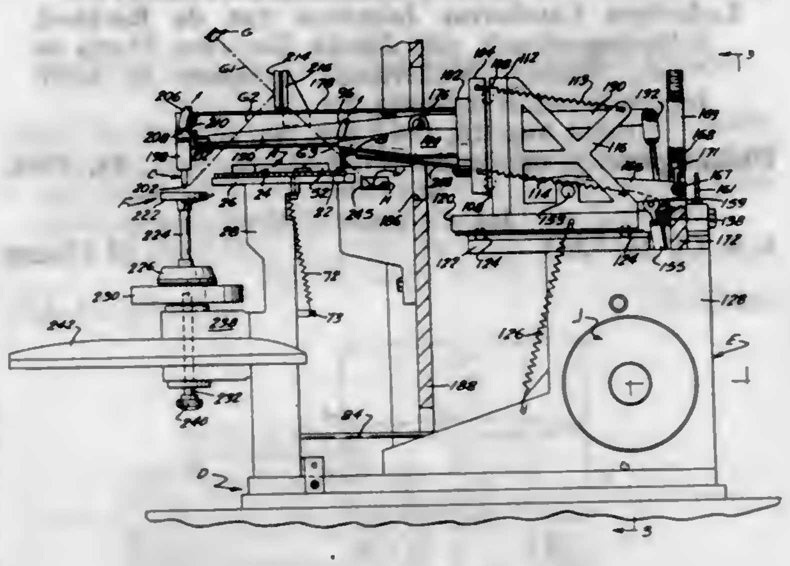
### 3,479,716
### AUTOMATIC DICE DISPENSER FOR SEMICONDUCTOR BONDING

**Earl A. Zanger, Jr., and Frederick W. Kulicke, Jr., Philadelphia, Pa., assignors to Kulicke & Soffa Industries, Inc., Fort Washington, Pa., a corporation of Pennsylvania**
**Filed Dec. 5, 1966, Ser. No. 599,181**
**Int. Cl. B65g** *59/04;* **B65h** *3/08*
**U.S. Cl. 29—203** **7 Claims**



An automatic dice dispenser in which semiconductor wafers are loaded into an indexing tray having individual pockets with downwardly converging walls. The tray then advances and positions one wafer die at a time in successive pockets into registration with a pick-up and bonding tool which grasps the referenced die and delivers it to a successively referenced mounting base.

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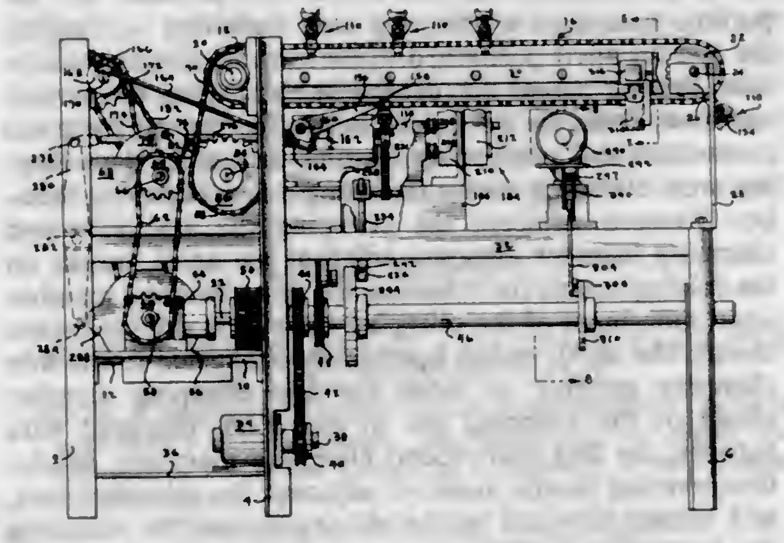
### 3,479,717
### LEAD MAKING MACHINE

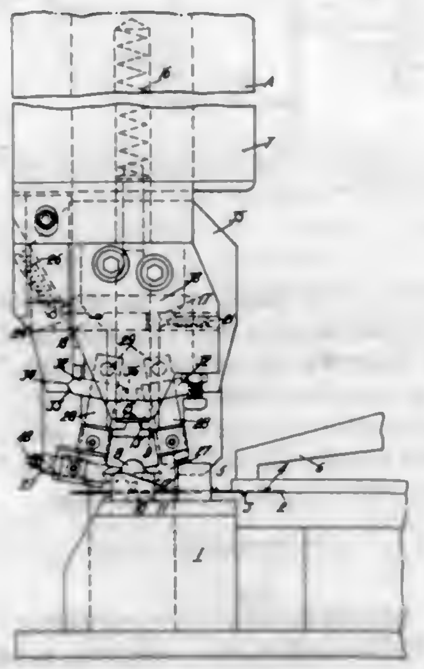
**David Francis Howard, Camp Hill, Pa., assignor to AMP Incorporated, Camp Hill, Pa.**
**Filed Mar. 27, 1967, Ser. No. 626,322**
**Int. Cl. H01r** *43/00*
**U.S. Cl. 29—203** **6 Claims**



Lead making machine comprises conveyor having aligned pairs of associated wire clamps thereon at spaced intervals. Wire or other filamentary material is loaded on a pair of clamps at a loading station by a wire feeding means adapted to feed wire normally of the path of movement of the conveyor. Feeding means has extensible guide tube which is initially extended until its end is disposed adjacent to clamp on opposite side of the conveyor from the feeding means. End of wire is positioned in clamp on opposite side which is then closed and feeding means is retracted. During retraction, wire is fed through the guide tube and the length of wire fed hangs as a loop beneath the conveyer. Second clamp is then closed and wire is cut at a location adjacent to the second clamp. Ends of lead are then presented to various operating mechanisms such as wire strippers or terminal applying mechanisms as conveyor moves along its path.

### 3,479,718
## STRIPPING AND CRIMPING APPARATUS

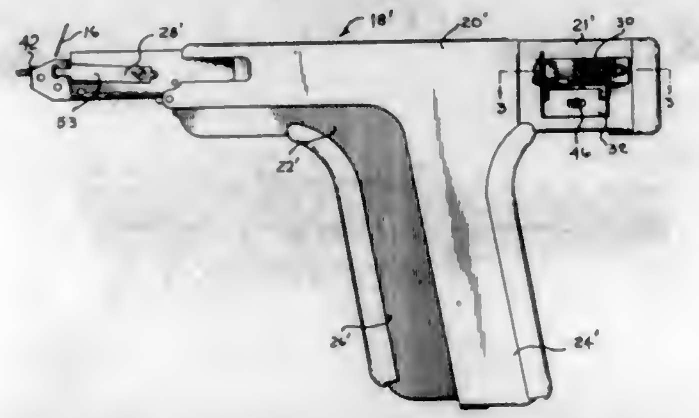
**Lodevicus Lambertus Johannes van de Kerkhof, 's-Hertogenbosch, and Joseph Gerardus Maria de Vries, Tilburg, Netherlands, assignors to AMP Incorporated, Harrisburg, Pa.**
**Filed Aug. 18, 1967, Ser. No. 661,640**
**Claims priority, application Netherlands, Aug. 24, 1966, 6611896**
**Int. Cl. H01r** *3/00*
**U.S. Cl. 29—203** **12 Claims**



Apparatus for stripping the insulation from an end portion of an insulated wire and crimping a ferrule of an electrical connector to the bared end portion, the apparatus comprises a crimping area including a crimping die and an anvil positioned to perform a crimping operation, driving means for driving the crimping die toward and away from the anvil, feed means for feeding electrical connectors and positioning ferrules thereof in the crimping area, clamping means including a first clamping member disposed adjacent the crimping die and a second clamping member disposed adjacent the anvil, means on the driving means for releasing the first clamping member upon movement of the crimping die by the driving means toward the anvil, means operatively connected to the first clamping member to move the first clamping member ahead of the crimping die to clamp an insulated wire between the first and second clamping members, insulation-severing means mounted adjacent the crimping area, and means provided by the driving means for actuating the insulation-severing means to sever the insulation on the wire, to move the insulation-severing means away from the crimping area thereby removing the severed insulation from the wire, and to place the stripped end of the wire into the ferrule prior to the crimping die engaging the ferrule to crimp the ferrule onto the wire.

### 3,479,719
## TOOL FOR MAKING CLIP-TYPE ELECTRICAL CONNECTIONS

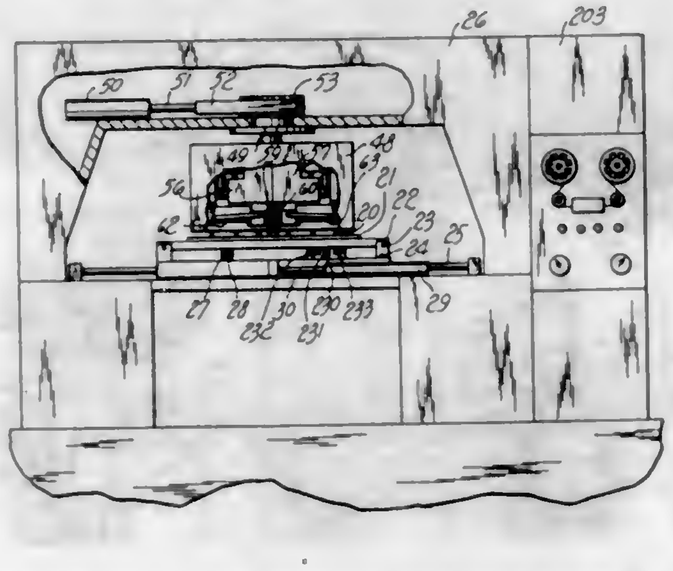
**Edward Leal Hadden, Mechanicsburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.**
**Filed Jan. 12, 1967, Ser. No. 612,067**
**Int. Cl. H01r** *3/00*
**U.S. Cl. 29—203** **2 Claims**



Hand tool for making clip-type electrical connections has two concentrically arranged housings which are telescopically movable with respect to each other when the terminal clip is pushed onto the terminal post. Tool has selective stop which determines final position of clip on post in form of a cylinder rotatably mounted on the outside surface of the outer housing and extending through aligned openings in the outer and inner housings. Stop has a plurality of shoulders which are located such that the inner housing moves relatively against one of the shoulders during the telescoping movement of the housing to prevent further movement of the terminal clip along the terminal post.

### 3,479,720
## AUTOMATIC WIRE WRAPPING APPARATUS

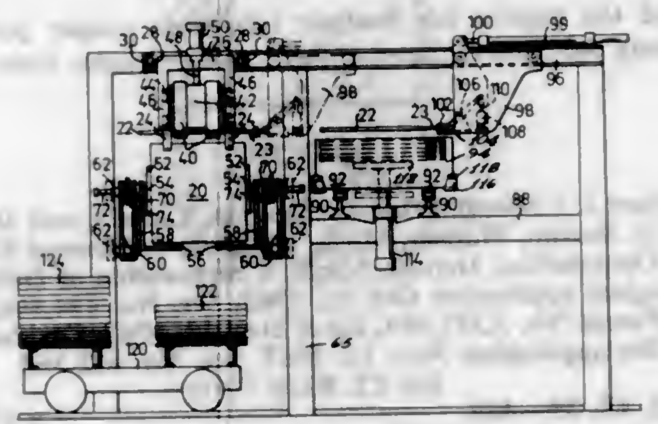
**William D. Bohannon, Jr., Graham, and Harold O. King, Elon College, N.C., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed Sept. 1, 1967, Ser. No. 665,110**
**Int. Cl. B21f** *3/00*
**U.S. Cl. 29—203** **3 Claims**



An automatic wire wrapping apparatus wraps the ends of a section of wire on respective first and second terminals on a terminal board in a selected one of two modes of operation. The first mode of operation is to simultaneously wrap the ends of the wire on the respective first and second terminals. The second mode of operation is to sequentially wrap a first end of the wire on the first terminal, lay the wire in a predetermined path on the terminal board from the first to the second terminal, and wrap the second end of the wire on the second terminal. During the laying of wire, the wire is fed toward the terminal board to lay the wire directly on the terminal board.

### 3,479,721
## APPARATUS FOR WITHDRAWING SUSPENSION RODS FROM CATHODE PLATES

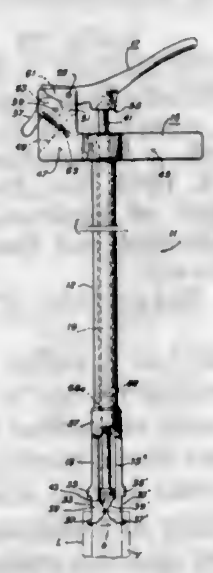
**Olov Carl Gustav Wennberg, Karlstad, Sweden, assignor to AB C. J. Wennbergs Mekaniska Verkstad, Karlstad, Sweden, a corporation of Sweden**
**Filed Jan. 30, 1967, Ser. No. 612,503**
**Claims priority, application Sweden, Feb. 8, 1966, 1,593/66**
**Int. Cl. B23q** *7/10*
**U.S. Cl. 29—211** **6 Claims**



Holding devices are adapted to grip parallel cathode plates from opposite directions on the opposite edges thereof to retain said plates while rods from which the plates are suspended are removed from suspension means secured to the plates. The holding devices comprise gripping plates secured to shafts for rotating the cathode plates about a quarter of a revolution after removal of the rods to set the cathode plates in a horizontal position and to deposit them on a carriage. An extractor with tongs is mounted on a carriage and adapted to remove the rods and deposit them into a magazine open at its top and its bottom, and a vertically movable support receives the rod while being stored in predetermined positions in the magazine.

### 3,479,722
## VALVE LIFTER PULLING MEANS

**John F. Maness, 161 N. Montgomery St., Memphis, Tenn. 38104**
**Filed June 9, 1967, Ser. No. 644,853**
**Int. Cl. B23p** *19/04;* **B25b** *27/14*
**U.S. Cl. 29—213** **10 Claims**

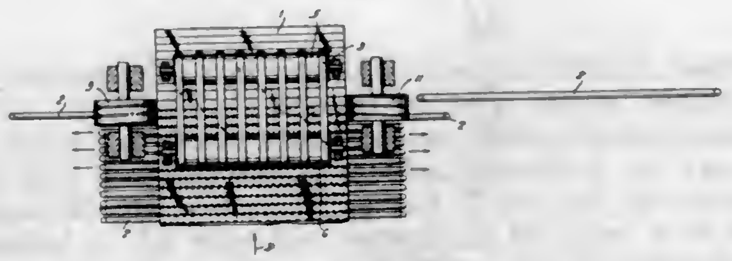


The invention includes a valve lifter tool having a head part including a pair of spreadable jaws adapted to engage the interior wall surface of a hydraulic type valve lifter; the invention also includes an attachment head having spreadable claws adapted to be actuated by the spreadable jaws of the tool. The attachment head being adapted to be right angularly secured on and actuated by the jaws of the tool. A user of the tool and attachment head combination, by actuating the jaws of the tool simultaneously actuates the claws of the attachment head.

The tool per se is adapted for use in extracting a valve lifter where a straight and unobstructed pull can be applied on the lifter; the tool with the attachment head right angularly secured thereto is adapted for use in extracting a valve lifter when a straight pull cannot be applied on the lifter, and the pull must be made from a position offset from the projected axis of the lifter.

### 3,479,723
## MACHINE FOR WITHDRAWING RODS FROM TEXTURE MATS OR THE LIKE

**Josef Sucher, Hagen, Siegfried Werner, Port Elizabeth, Hellmut Schlosser, Wickede, and Manfred Chojnowski and Josef Hain, Hagen, Germany, assignors to Varta Aktiengesellschaft, Frankfurt am Main, Germany**
**Filed Oct. 11, 1967, Ser. No. 674,626**
**Int. Cl. B23p** *19/02*
**U.S. Cl. 29—241** **29 Claims**

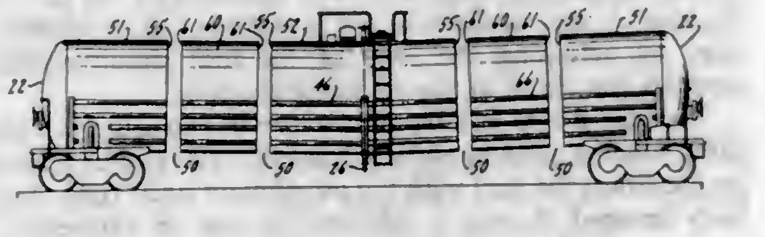


A machine for withdrawing contour rods from the pockets of texture mats which are utilized to accommodate electrodes in electric storage cells. The machine comprises two sets of endless belts which are trained around pulleys and define a channel in which the mats travel lengthwise so that the ends of rods in their pockets extend beyond the lateral edges of the mats. Two pairs of withdrawing wheels are provided adjacent to the edges of the mats and one wheel of each pair has a threaded rim defining alternating shallower and deeper rod-receiving grooves. When the end portion of a rod enters a shallower groove, such rod is withdrawn in response to rotation of the wheels about axes which are normal to the axes of pulleys for the belts. The shallower grooves of one rim register with the deeper grooves of the other rim so that one pair of wheels extricates rods from oddly numbered pockets and the other pair of wheels extricates rods from the evenly numbered pockets of a mat. At least some pulleys and at least some withdrawing wheels are adjustable.

### 3,479,724
## METHOD OF EXPANDING A RAILWAY TANK CAR BY LENGTHENING SAME

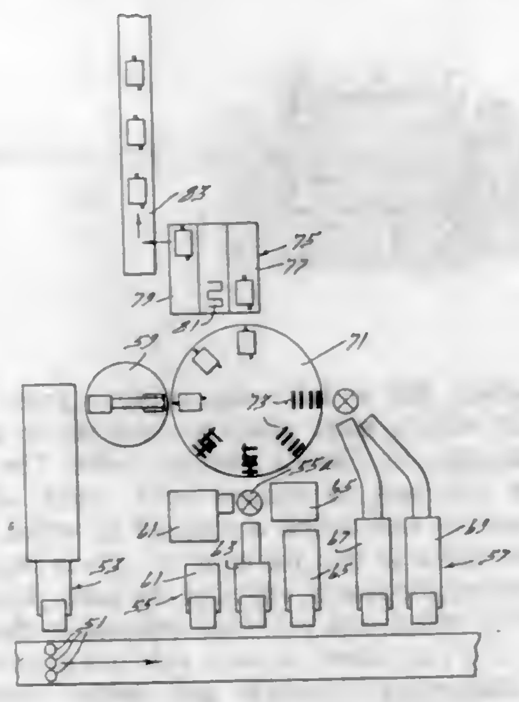
**Jack R. Kruizenga, Olympia Fields, and Donald C. Graves and Harry Role, Chicago, Ill., assignors, by mesne assignments, to Union Tank Car Company, a corporation of Delaware**
**Filed Aug. 1, 1967, Ser. No. 657,556**
**Int. Cl. B23p** *17/00;* **B23k** *31/02*
**U.S. Cl. 29—412** **2 Claims**

A tank car and method of expanding the car. The tank car incorporates a tank constructed of opposed, right circular cylindrical sections inclined downwardly from their outer ends to a mitre joint at the tank center. The car is expanded by segmenting each of the sections in a plane perpendicular to its axis and introducing right circular cylindrical insert segments. Heater or coolant conduits are also segmented and lengthened with insert segments.



### 3,479,725
### MUFFLER MANUFACTURING SYSTEM

**Gerald H. Shaff, Frank R. Smith, and Ralph J. Haren, Racine, Wis., and Orlando J. Chiappe, Buffalo Grove, Ill., assignors to Walker Manufacturing Company, Racine, Wis., a corporation of Delaware**
**Filed Mar. 17, 1967, Ser. No. 624,009**
**Int. Cl. B23p** *19/00*
**U.S. Cl. 29—430** **5 Claims**

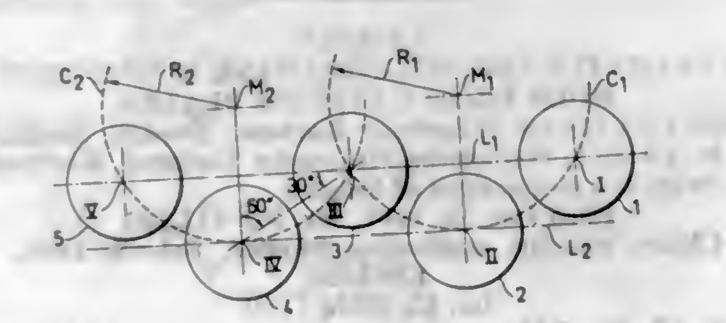


A muffler manufacturing method forms a muffler shell at one station, muffler tubes at another station, and muffler partitions at still another station. The tubes and partitions are then combined into a skeleton and then the skeleton is inserted into the muffler shell and welded in place.

### 3,479,726
### METHOD OF UNITING A PLURALITY OF FIRST OBJECTS WITH A CORRESPONDING NUMBER OF SECOND OBJECTS

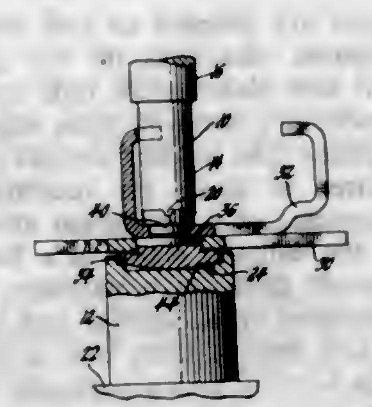
**Lars Ingvar Hellborg, Lund, Sweden, assignor, by mesne assignments, to Sobrefina S.A., Fribourg, Switzerland, a company of Switzerland**
**Filed May 11, 1967, Ser. No. 637,817**
**Claims priority, application Sweden, May 12, 1966, 6,504/66**
**Int. Cl. B23p** *19/04*
**U.S. Cl. 29—429** **4 Claims**

A method of uniting a plurality of first objects with a corresponding number of second objects wherein a spacial configuration of the first objects is brought into confronting relation with the same spacial configuration of the second objects, and the first and second objects are then moved relative to each other to bring them together and effect the union. The spacial configuration of the objects is constituted by an arrangement in two parallel rows, and the objects are brought into their proper positions along the rows by moving them along circular lines.



### 3,479,727
### RIVETING

**Albert J. Colautti, Windsor, Ontario, Canada, and Donald H. Suszko, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Original application Oct. 11, 1965, Ser. No. 494,606, now Patent No. 3,357,084, dated Dec. 12, 1967. Divided and this application Nov. 13, 1967, Ser. No. 682,368**
**Int. Cl. B23p** *11/00*
**U.S. Cl. 29—444** **2 Claims**



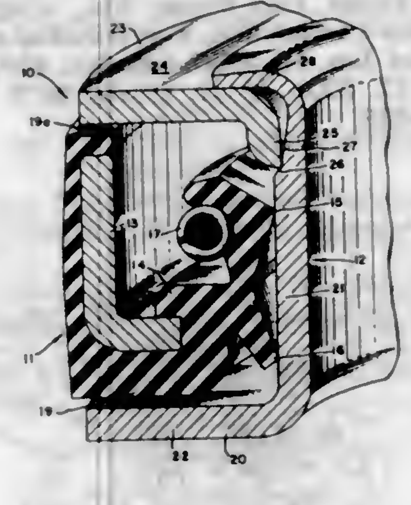
A controlled degree of looseness in a rivet which provides a pivot for two relatively movable members is achieved by exerting an upsetting force on the rivet while resisting the force by an abutment engaging the perimeter of the rivet head so that the head is sprung slightly by the upsetting force and then springs back to provide the desired degree of clearance.

### 3,479,728
### METHOD OF MAKING A UNITIZED SEAL

**Peter C. Burfield, Birmingham, Mich., and Louis Z. Mical, Bellevue, Wash., assignors to Federal-Mogul Corporation, Detroit, Mich., a corporation of Michigan**
**Application Jan. 18, 1968, Ser. No. 707,344, which is a continuation-in-part of application Ser. No. 527,455, Feb. 15, 1966. Divided and this application Nov. 18, 1968, Ser. No. 794,456**
**Int. Cl. B21d** *39/00;* **B23p** *11/02*
**U.S. Cl. 29—450** **10 Claims**

This unitized seal has a radial shaft-sealing member with at least one sealing lip and a novel two-piece wear sleeve assembly. A main element of the wear sleeve assembly has an axial wear sleeve portion engaging the sealing lip or lips and provided on one side of the sealing lip or lips with a step leading to a thinned terminal portion on one end; on the other end is a radial flange. A secondary element provides another radial flange and is abutted against the step, the terminal portion being turned radially and engaging the secondary element, thereby unitizing the seal. The secondary element may be a simple washer, a

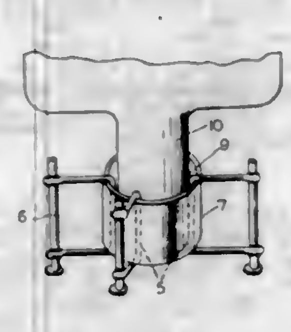
stepped washer, or a washer with a short axial flange abutted against the step. In the last instance, the main element may have two steps, each leading to successively thinner portions and providing a short cylindrical portion between them on which the short axial flange of the secondary element is supported. In any event, the step or steps are provided by thinning the metal on the lip-engaging side only, leaving the shaft-engaging side smooth and cylindrical.



The method for making the unitized seal comprises: (1) forming a main annular wear sleeve element from a flat metal sheet, to provide a flat radial flange and a cylindrical wear sleeve portion, the wear sleeve portion being pinched off to provide a step followed by a tapered thinner terminal portion at the end distant from said radial flange, (2) forming a secondary annular element from sheet metal to provide a radial flange and a pierce intermediate in diameter between the wear sleeve portion and the terminal portion; if there is a short axial flange it has a pinch-off end; the radial flange may be stepped or flat, (3) inserting an annular sealing element on the wear sleeve, (4) inserting the secondary element on the main element so that it abuts the step and the radial flanges lie on opposite sides of the sealing element at the opposite ends of the seal, and (5) closing the terminal portion tightly against the radial portion of the secondary element.

### 3,479,729
### METHOD OF ATTACHING LEADS TO A CYLINDRICAL PIEZOELECTRIC TRANSDUCER

**Ramon P. Britt, Baltimore, Md., assignor to the United States of America as represented by the Secretary of Agriculture**
**Filed Sept. 26, 1967, Ser. No. 670,812**
**Int. Cl. B23k** *31/02*
**U.S. Cl. 29—471.3** **3 Claims**

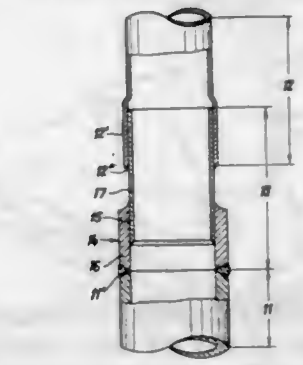


A method of attaching two or more leads to a cylindrical piezoelectric transducer whereby the leads to be attached are used as a means of rigidly suspending a piezoelectric ceramic cylinder in such a manner that the leads are positioned at the desired points of attachment to the internal electrode.

Solder is transferred by a soldering iron or other heating means to the electrode-lead interface by inserting the heating means into the hollow cylinder, thus attaching all the leads simultaneously.

### 3,479,730
### METHOD OF AND ASSEMBLY FOR THE JOINING OF ELEMENTS OF DIFFERENT MATERIALS

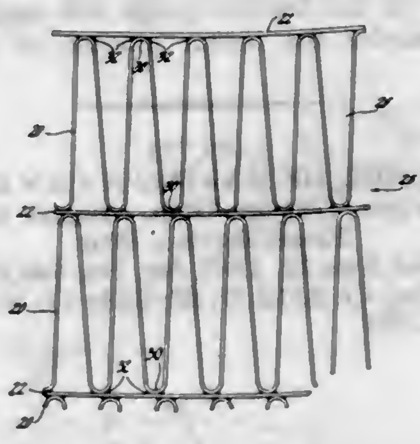
**Leonhard Poth, Pullach, Isartal, Germany, assignor to Linde Aktiengesellschaft, a corporation of Germany**
**Continuation of application Ser. No. 442,317, Mar. 24, 1965. This application July 17, 1968, Ser. No. 747,013**
**Claims priority, application Germany, Mar. 25, 1964, G 40,198**
**Int. Cl. B23k** *31/02*
**U.S. Cl. 29—472.1** **3 Claims**



Method of joining tubular elements of difficulty bondable materials of different melting points together wherein a liminated transition piece having coaxial layers of these materials bonded together has each of the layers removed over respective annular zones and thermally welded to the respective elements to be joined with at least the higher melting-point weld securing the respective element to the corresponding layer over a narrower zone spaced from the lower melting-point layer thereby preventing thermal distortion thereof.

### 3,479,731
### BRAZING METHOD

**Edward R. Mantel, Warren, Charles W. Vigor, Rochester, and Stephen W. Iwankovitsch, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed June 13, 1967, Ser. No. 645,698**
**Int. Cl. B23k** *1/04, 31/02*
**U.S. Cl. 29—472.3** **5 Claims**



A complex assembly of metal components requiring a plurality of substantially linear brazed joints may be fabricated by applying a tacky material to the surfaces of the components which are to be joined; positioning the metal components in a predetermined relationship to form an unbrazed assembly, pressure being exerted at each area which is to be joined so as to obtain tight metal-to-metal contact; dusting the assembly with powdered braze alloy a portion of which adheres to the tacky substance adjacent each joint to be brazed, heating the assembly to first vaporize the tacky substance and then to melt the braze alloy such that it flows between and around the contact areas to form a fillet, and subsequently cooling the assembly to solidify the braze alloy and form a strong effective bond at each of the places to be joined.

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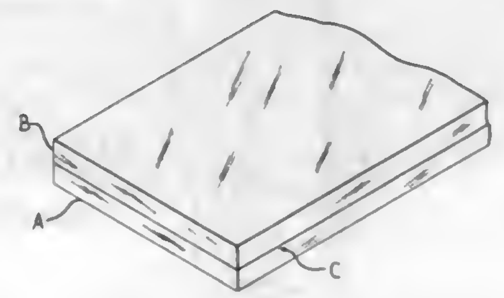
**3,479,732**

### MANUFACTURE OF COMPOSITE THERMOSTATIC METAL

**Jacob L. Ornstein, Attleboro, and Howard C. Mueller, Norwood, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**
**Filed Sept. 1, 1966, Ser. No. 576,631**
**Int. Cl. B23k** *31/02*
**U.S. Cl. 29—497.5** **4 Claims**



A bonded composite is prepared of at least two metals, a first one having a relatively low coefficient of thermal expansion which is substantially a function of cold-working and a second one having a relatively high coefficient of thermal expansion which is substantially independent of cold-working. A first thickness of the prepared composite is selected which is in excess of the desired final gauge thickness, and at this excess thickness the composite is annealed to a substantially dead-soft condition. Then it is reduced by rolling to said final gauge thickness, which involves cold-working. The amount of cold-working determines the coefficient of thermal expansion of said first metal with concomitant determination of the flexivity of the composite at the final gauge. There exists a relationship between the ranges of reductions and resulting flexivity of any two such metals selected to form the composite. The required reduction determines the increment that the first thickness must exceed the final gauge. Thus for any arbitrarily selected final gauge, any of a range of flexivities can be obtained by properly selecting the increment at which annealing is to be performed. Then rolling to the finished gauge will cancel the increment and involve the proper amount of cold-working needed.

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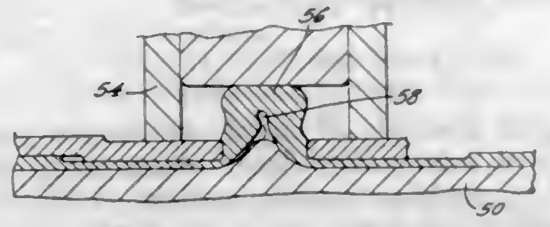
**3,479,733**

### METHOD OF MAKING A CAN END

**Omar L. Brown, Dayton, Ohio, assignor to Ermal C. Fraze, Dayton, Ohio**
**Filed June 22, 1967, Ser. No. 648,075**
**Int. Cl. B21d** *39/00;* **B23p** *11/00*
**U.S. Cl. 29—509** **18 Claims**



The invention relates to a method of forming a rivet in a tear strip of a can end integrally of the tear strip with the rivet extending through an aperture of a pull tab in overlapping engagement with the pull tab for anchorage of the pull tab to the can end. The rivet is initially formed by coining or squeezing the sheet material of the tear strip across its thickness in an annular zone with consequent extrusion of the sheet material radially inwardly of the annular zone.

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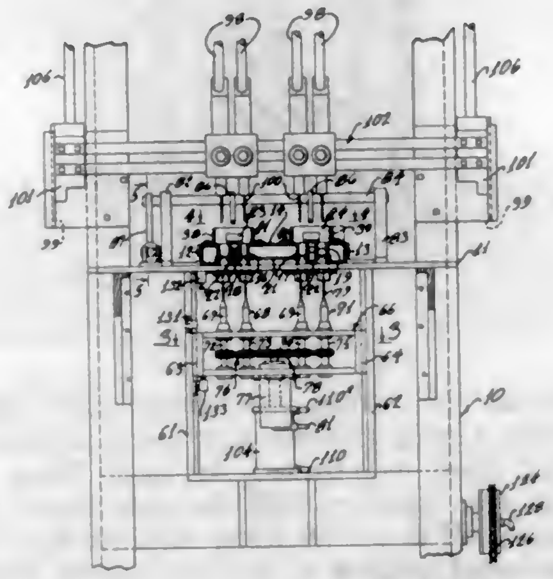
**3,479,734**

### PROCESS AND APPARATUS FOR SETTING NAILS IN ELONGATED MEMBERS

**Marshall O. Groat, Fort Payne, Ala., assignor to Kingsberry Homes Corporation, a corporation of Delaware**
**Filed Jan. 16, 1967, Ser. No. 609,447**
**Int. Cl. B23p** *19/02, 19/00;* **B27f** *7/00*
**U.S. Cl. 29—525** **3 Claims**



Nails are set at predetermined longitudinally spaced locations along an elongated member by moving the elongated member to position the predetermined locations thereon sequentially in alignment with and between a hole boring tool and a nail driving unit. Relative movement is imparted between the elongated member and the hole boring tool and nail driving unit to drill a hole in the elongated member and then drive a nail therein at predetermined locations.

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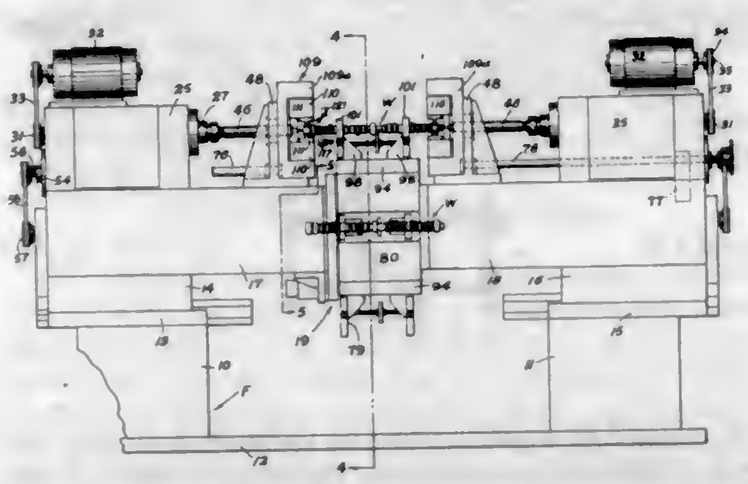
**3,479,735**

### SHAFT END MACHINING METHOD AND MACHINE TOOL

**Harry E. Miles, Jr., and Dale W. Wright, Saginaw, Mich., assignors, by mesne assignments, to Miles Machinery Company, Saginaw, Mich., a corporation of Michigan**
**Filed Dec. 5, 1966, Ser. No. 599,130**
**Int. Cl. B23b** *7/00;* **B23p** *23/00*
**U.S. Cl. 29—558** **12 Claims**



An apparatus and method for making shafts wherein the ends of the shafts are first center drilled and then plunge milled. Individual shafts are supported on quick release supports carried by an indexing head for sequentially indexing the shaft from the drilling station to the plunge milling station and then to a discharge station where the shafts are stripped from their supports. The drilling and plunge milling heads are simultaneously advanced toward the shafts at different speeds to permit simultaneous drilling and plunge milling of different shafts. Preferably both ends of an individual shaft are simultaneously drilled and then simultaneously plunge milled with a generally radially extending cutter member. Additional clamp members may be provided at each of the drilling and milling stations to secure the shafts.

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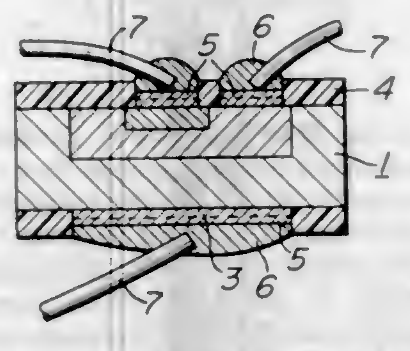
**3,479,736**

### METHOD OF MAKING A SEMICONDUCTOR DEVICE

**Hisashi Toki and Takashi Agatsuma, Kodaira-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan**
**Filed Aug. 17, 1967, Ser. No. 661,297**
**Claims priority, application Japan, Aug. 31, 1966, 41/56,902**
**Int. Cl. B01j** *17/00;* **H01l** *5/00*
**U.S. Cl. 29—577** **12 Claims**



A method of making a semiconductor device including a method of forming a large-area electrode for use in a high power transistor, diode, etc., said method including stages of firmly fixing a first electrode layer as of nickel to a predetermined position on the surface of a semiconductor substrate by sintering, forming a passivation film on said substrate surface including the surface of said first electrode layer at a relatively low temperature, etching away said passivation film placed on said first electrode layer, forming an auxiliary metal layer as of nickel on the exposed first electrode layer by plating and forming a second electrode layer of solder on said auxiliary metal layer by immersing the assembly thus obtained into fused solder.

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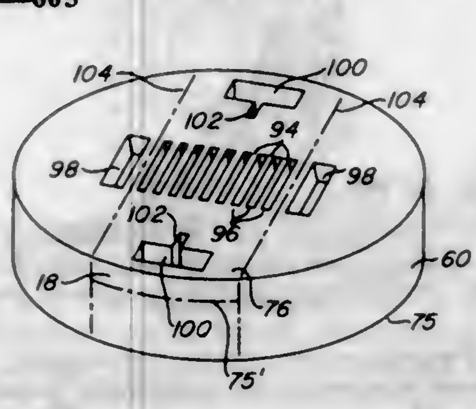
**3,479,737**

### METHOD OF FABRICATING MAGNETIC TRANSDUCERS

**Sigmund Hinlein, Sudbury, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**
**Filed Sept. 15, 1966, Ser. No. 579,596**
**Int. Cl. H01f** *7/06;* **G11b** *5/42*
**U.S. Cl. 29—603** **12 Claims**



This disclosure relates to a method of fabricating a multi-channel head configuration. First and second core-supporting structures are fabricated by machining a metal slug to provide a pair of planar parallel surfaces, firmly supporting one of the slug surfaces, forcing a punch having at least two pairs of studs into the other slug surface to form a ribbed cavity, removing excess metal from the slug, and adhesively bonding core segments in spaces defined by the ribs.

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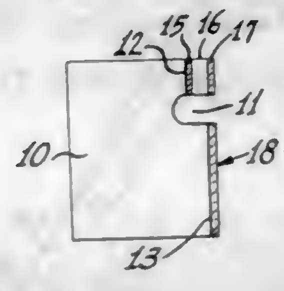
**3,479,738**

### MAGNETIC HEADS

**Joseph John Hanak, Trenton, N.J., assignor to RCA Corporation, a corporation of Delaware**
**Filed May 23, 1967, Ser. No. 641,443**
**Int. Cl. H01f** *7/06;* **G11b** *5/42*
**U.S. Cl. 29—603** **6 Claims**



There is disclosed a magnetic transducer and method of manufacturing the same for use in high frequency recording and reproducing apparatus. The transducer comprises at least two circuit parts of single crystal ferrite positioned to form a front gap, which is filled by a suitable technique with a non-magnetic spacing material. The back surfaces of the ferrite circuit parts are united by molecular transport which provides a relatively low reluctance path in the vicinity of the final assembled transducer which was formerly occupied by the back surfaces of the circuit parts or back gap. The molecular transport bond results in a ferrite molecular distribution which affords a reluctance of the same order of magnitude as the reluctance associated with a continuous body of ferrite, minimizing the drive current required for operation because of the virtual elimination of the back gap in the transducer.

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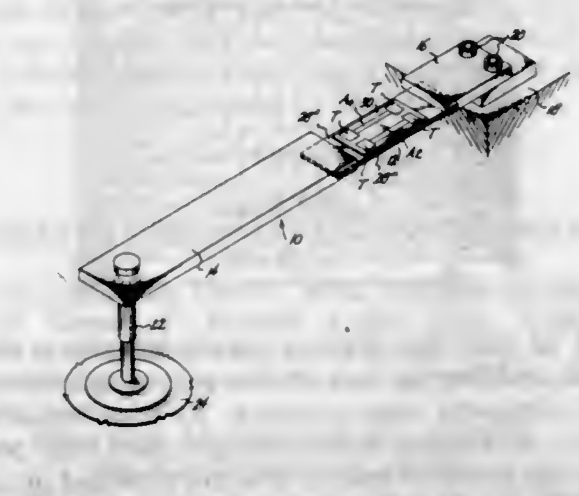
**3,479,739**

### METHOD OF MAKING A TRANSDUCER BEAM

**Cecil K. Stedman, Enumclaw, Wash., assignor to Statham Instrument, Inc., Los Angeles, Calif., a corporation of California**
**Filed Apr. 24, 1967, Ser. No. 633,116**
**Int. Cl. H04r** *31/00*
**U.S. Cl. 29—620** **12 Claims**

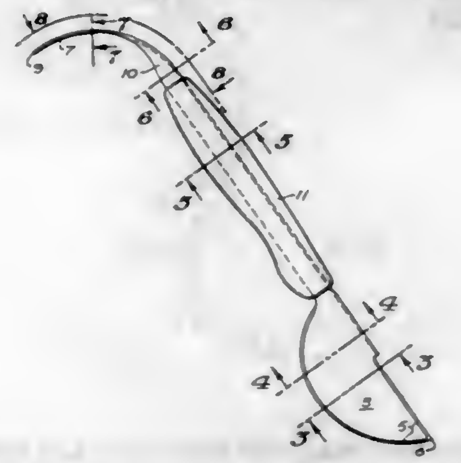


Transducer structure in the nature of a thin, laminated, flexural element having evaporated film strain gages on each of two opposite surfaces. Fabrication method involving simultaneously depositing by a single vapor source plural films of a strain sensitive electroconductive material onto insulative front surface areas of two separate or separable parts of a sheet material, to form two substantially identical bridge arm means, then bonding the two parts together, back-to-back.

3,479,740

### SEGMENT SEVERING IMPLEMENT

**Christopher H. Clarke, 1575 Homewood Drive, Altadena, Calif. 91001**
**Filed Oct. 19, 1967, Ser. No. 676,572**
**Int. Cl. B67b** *7/24*
**U.S. Cl. 30—24** **2 Claims**

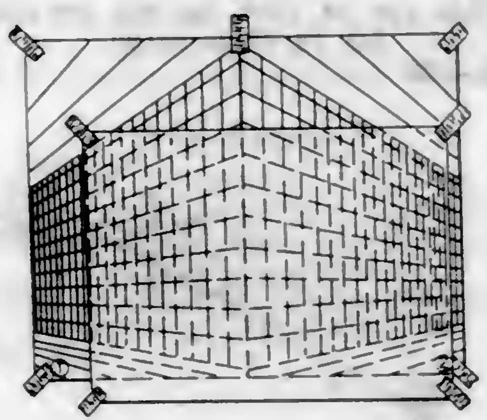


An instrument for cutting to permit intact subsequent removal of segments of fruit such a grapefruit or oranges in which a flat double blade has a configuration corresponding to a grapefruit or orange segment membrane in profile is used to make an initial cut along opposite sides of a pair of membranes to sever the intervening segment, and a complementary curved single blade has in side aspect a curvature corresponding to the curvature of the rind of the fruit and in plan aspect a wedge shape corresponding to the shape of the segment as severed from the membranes is used to make a final cut contiguous to the rind to complete severance of the fruit segment.

3,479,741

### SET OF UNDERLAY DRAFTING PANELS

**Raymond Nicyper, Birch Hill, Weston, Conn. 06880**
**Filed Apr. 18, 1967, Ser. No. 631,659**
**Int. Cl. G01b** *5/24;* **B43l** *5/00*
**U.S. Cl. 33—1** **10 Claims**

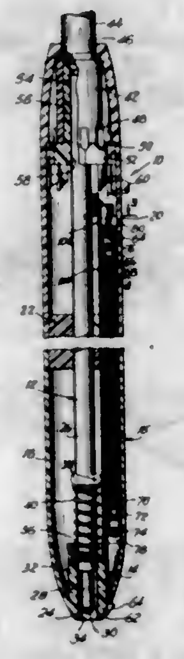


A set of underlay drafting panels includes a plurality of panels each having at least one pair of spaced opposite parallel elongated edge portions. At least some of the panels are of different widths between these edge portions. At least one group of indicia lines are provided on each of the panels extending between points located equidistantly from one another along one of the edge portions within a predetermined elongated first zone and spaced at a first distance, to corresponding points located equidistantly from one another along the other edge portion within a second zone which is longer than the predetermined zone of the first edge portion and is spaced at a second distance greater than the first distance. The first and second zones of the edge portions of all panels are located on some of the panels in identical relationship and on the remaining ones of the panels in a second relationship constituting a mirror-image reversal with the indicia lines on all panels being so arranged that each plane of the respective panels has a constant viewing angle and the viewing points remain the same distance from the center of vision even when transposed with reference to one another.

3,479,742

### MARKING AND MEASURING IMPLEMENT

**Arnold Starkenberg, New York, N.Y.**
**(325 Marine Ave., Brooklyn, N.Y. 11209)**
**Filed Oct. 31, 1968, Ser. No. 772,234**
**Int. Cl. B43l** *9/00*
**U.S. Cl. 33—27** **11 Claims**

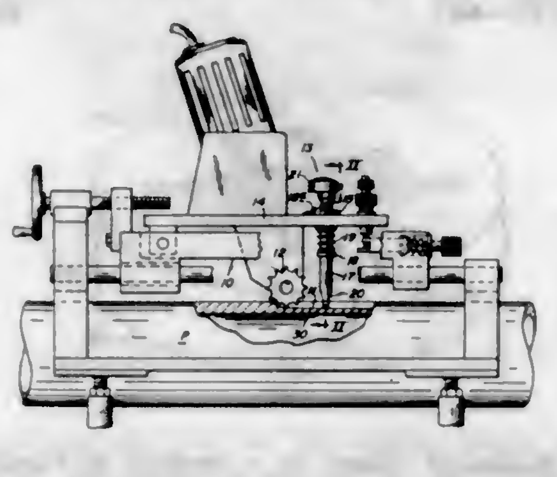


Combined marking and measuring implement configured to substantially the configuration of a conventional writing instrument having an elongated housing or barrel and a marking tip extending outwardly of one end thereof and a flexible measuring tape carried within the housing or barrel and extendable outwardly of the same end portion thereof adjacent the marking tip.

3,479,743

### DEPTH-MEASURING GAUGE

**William L. Zemberry, Swissvale Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware**
**Filed Apr. 18, 1967, Ser. No. 631,807**
**Int. Cl. G01b** *3/22, 5/00;* **G03b** *1/64*
**U.S. Cl. 33—169** **2 Claims**

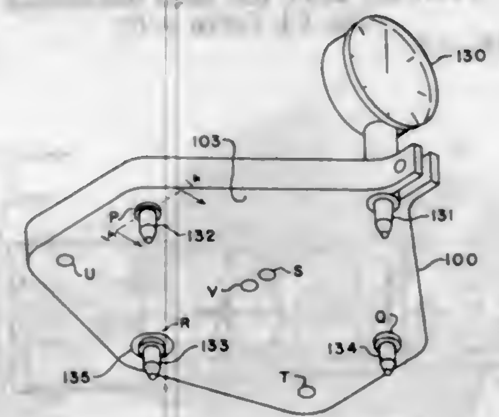


A gauge for measuring the depth of a notch as it is cut in the surface of a workpiece. Gauge includes an anvil which rides on the surface of the workpiece and moves up and down with irregularities in the surface. A spade mounted within the anvil rides within the notch and gives an indication of the depth on a dial indicator.

3,479,744

### CONVERTIBLE TORSION MEASURE

**Bradford Howland, 2161 Massachusetts Ave., Cambridge, Mass. 02140, and Stephen Jay Wiesner, 61 Shattuck Road, Watertown, Mass. 02172**
**Filed Apr. 29, 1968, Ser. No. 724,961**
**Int. Cl. G01b** *3/22, 5/20*
**U.S. Cl. 33—172** **20 Claims**

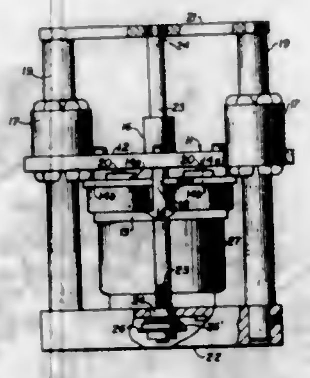


A torsion measure is disclosed with contact points at the corners of a unit square wherein the deflection of one corner from the plane defined by the others is shown to be a measure of geodesic torsion. By employing an unconventional configuration the same instrument is readily converted to perform the functions of spherometer and three-point lens measure. By judicious choice of scale factors the instrument is uniquely adopted to determine Gaussian curvature and to use as its measuring element standard dial indicators calibrated in thousandths of inches and hundredths of millimeters.

3,479,745

### DIMENSIONAL MEASURING MACHINE FOR TEST SPECIMENS

**Ernest H. Lorbeer, Livermore, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Feb. 10, 1969, Ser. No. 797,764**
**Int. Cl. G01b** *5/00*
**U.S. Cl. 33—174** **10 Claims**

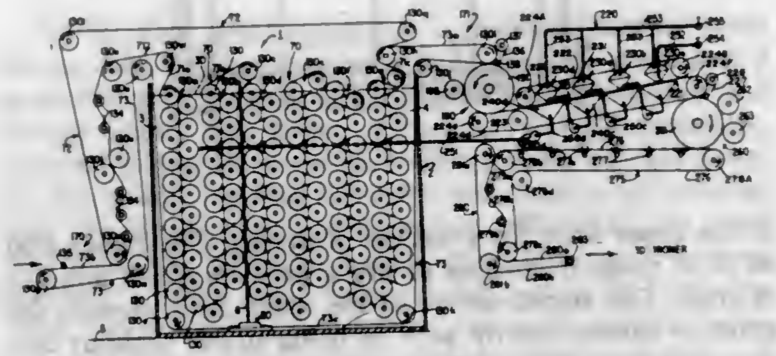


An apparatus for measuring changing cross-sectional areas and length of a specimen undergoing tensile or compressive test. The apparatus comprises a set of movable potentiometers which act as electrical micrometers, the voltage dividers thereof being actuated by feeler arms which contact the specimen. As the feeler arms scan the specimens by traversing its length back and forth, the voltages of the potentiometer are recorded and indicate changes in the cross-sectional area of the specimen. In operation, a stepping motor upon command of a pulse generator drives a movable assembly holding the potentiometers. A combination of electronic circuits provides instructions for changing the direction of the movable assembly when the assembly has scanned the length of the specimen. Thus, the cross-sectional area and length of a specimen under tensile or compressive testing may be continuously monitored and observed as it continuously changes.

3,479,746

### CONTINUOUS DRYING METHOD AND APPARATUS

**Erwin B. Bahmsen, Hinsdale, Ill., assignor to Steiner American Corporation, Salt Lake City, Utah, a corporation of Nevada**
**Original application Oct. 21, 1965, Ser. No. 499,137. Divided and this application July 19, 1968, Ser. No. 754,149**
**Int. Cl. F26b** *13/06, 3/30*
**U.S. Cl. 34—17** **15 Claims**



A method and an apparatus for drying solid fabric articles, wherein the articles are dried by subjecting them successively to radiant heat and blasts of warm air while the articles are transported along a horizontal path.

3,479,747

### CONTROL OF DIMENSIONS OF NEWLY-OPENED BALES OF ACRYLIC STAPLE FIBERS

**Charles H. McGill, Decatur, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**No Drawing. Filed May 3, 1968, Ser. No. 726,539**
**Int. Cl. F26b** *17/00*
**U.S. Cl. 34—22** **6 Claims**

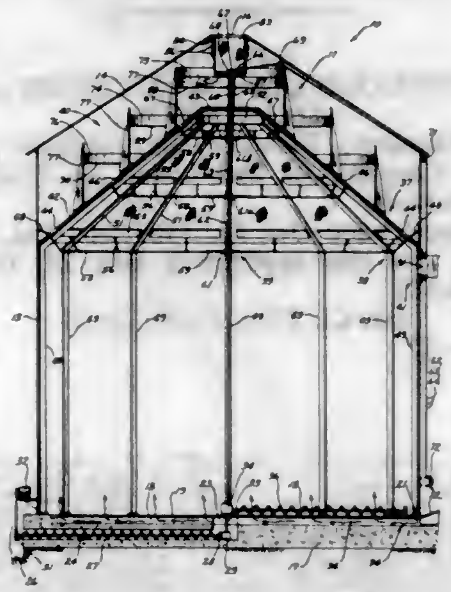
End-to-end dimensions of newly-opened pressure-bound bales of acrylic staple fibers are controlled by maintaining regulated minimum levels of ambient relative humidity and temperatuer prior to the baling operation and thereby preconditioning the fibers. Maximally optimum end-to-end expansion of bales is obtained by subjecting fibers to an ambient relative humidity of at least 55% and an ambient temperature of at least about 65° F. prior to the baling operation.

3,479,748

### APPARATUS FOR AND PROCESS OF DRYING GRAIN

**Vernon H. Sietmann, Laurel, Iowa, assignor of fifty percent to Gerald F. Dendel, Costa Mesa, Calif., ten percent to Wanda and Raymond Smith, both of Laurel, Iowa, and ten percent to Beth and Larry Keese, both of Gilman, Iowa**
**Filed Sept. 22, 1967, Ser. No. 669,928**
**Int. Cl. F26b** *17/12, 25/06*
**U.S. Cl. 34—33** **20 Claims**

This invention comprises an inverted cone-shaped perforated floor which is mounted in a raised position relative to the base floor of a conventional grain drying bin for batch drying grain within the bin, then dumping the grain to the base floor of the bin. The raised floor has a plurality of particularly placed openings formed therein, closed by a remote operator-controlled device whereby the grain, after drying, can be dumped in an even, level manner onto the base floor. A series of bands are concentrically mounted above the upper floor to maintain the level of the grain being dried parallel to the upper surface of the upper floor for evenness of drying. The bands also serve to make it possible to dry a predetermined amount of grain. The sloped nature of the upper floor permits the grain to tumble gently as it is being dried, without mechanical abuse, thus increasing the efficiency of the drying process.



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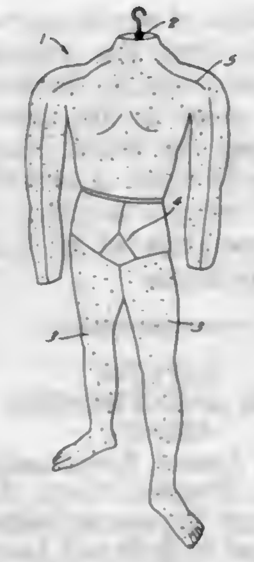
### 3,479,749
### APPLIANCE FOR DRYING MOIST ARTICLES

**Martin Duarte del Moral, 4 Avenida del General Peron, Madrid, Spain**
**Filed May 29, 1967, Ser. No. 641,822**
**Claims priority, application Spain, Aug. 27, 1966, 330,654**
**Int. Cl. F26b** *5/00;* **A41h** *5/02*
**U.S. Cl. 34—103** **5 Claims**



An appliance for promoting the demoisturizing of articles of textile or analogous materials which when in use are applied to a support of predetermined configuration. The appliance includes an inflatable elastic mold which, when filled with the fluid, at least resembles in shape and size the support to which an article to be demoisturized is to be applied in actual use, so that the filled mold supports such article during the demoisturizing thereof in a position resembling the position the article assumes when applied to the support in actual use.

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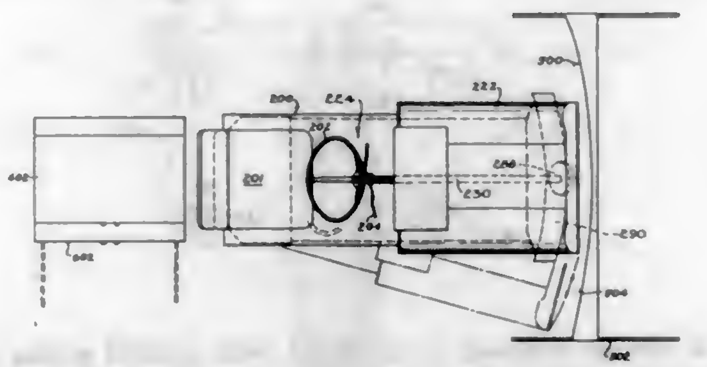
### 3,479,750
### AUTOMOTIVE VEHICLE SIMULATOR FOR DEMONSTRATING AUTOMATIC SELF-CENTERING OF STEERABLE AUTOMOBILE WHEELS

**Richard T. Swanson, Lakewood, N.Y., assignor, by mesne assignments, to Aetna Casualty and Surety Company, a corporation of Connecticut**
**Filed Feb. 6, 1964, Ser. No. 342,977**
**The portion of the term of the patent subsequent to Nov. 25, 1983, has been disclaimed**
**Int. Cl. G09b** *9/02*
**U.S. Cl. 35—11** **3 Claims**



The invention disclosed herein presents a novel type of automotive simulator vehicle which allows pivotal movement of the simulator and automatic self-centering action so that the operator can obtain the equivalent sensation as that of an actual vehicle. Pivotal movement of the simulator is effected by using a friction wheel on an arcuate track, wherein the friction wheel is responsive to the steering wheel of the simulator. The automatic centering action is accomplished by positioning resilient coil springs within the frame of the simulator. The springs operate in opposition one with the other biasing the simulator to a neutral position whenever a deviation from neutral is effected by the operator.

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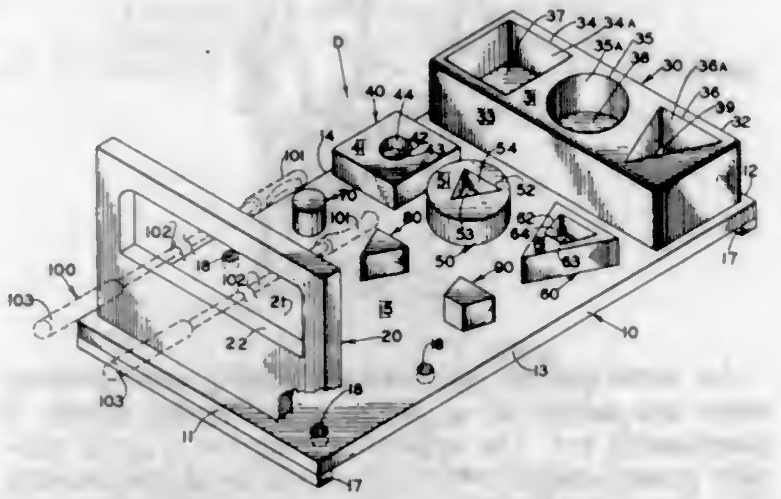
### 3,479,751
### MANUAL DEXTERITY TRAINING DEVICE

**Dale K. Welbourn, Neola, Iowa 51559**
**Filed Apr. 10, 1967, Ser. No. 629,691**
**Int. Cl. G09b** *15/06;* **A63b** *21/00, 23/00*
**U.S. Cl. 35—29** **10 Claims**



This invention relates to a device for training and developing the manual dexterity of human subjects, and in particular, this invention provides a novel combination, positions, and relationships of movable blocks and recesses therefor, together with a forwardly positioned recessed pedestal and a rearwardly positioned slotted shield, the utilization of said device resulting in steady development of manual dexterity in a challenging and pleasant manner.

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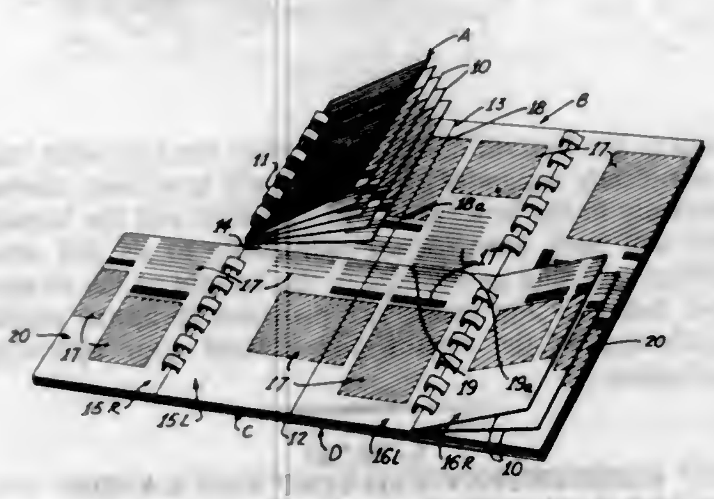
### 3,479,752
### PUBLICATION LAYOUT GUIDE

**Robert O. Criger, 2942 Harvard Drive, Visalia, Calif. 93277**
**Continuation of application Ser. No. 575,873, Aug. 29, 1966. This application Sept. 20, 1968, Ser. No. 767,040**
**Int. Cl. G09b** *25/00, 29/00;* **B42d** *1/00*
**U.S. Cl. 35—53** **5 Claims**



A publication layout guide comprising a plurality of stacks of sheets, whereby each sheet is provided with various shaped portions thereon representing pictorial and copy locations for the proposed layout. The arrangement of the stacks is such that each lie adjacent to other stacks. This system of display yields a continuous, yet changing, layout guide as new sheets are added or old ones removed.

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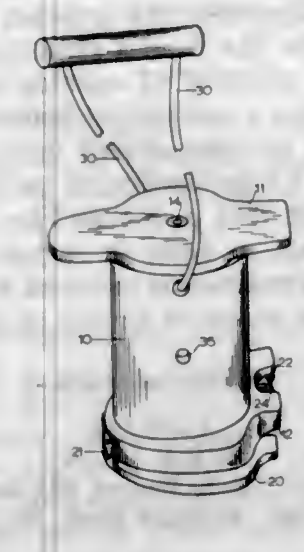
### 3,479,753
### NOISE MAKING SHOE ATTACHMENT

**Ammon L. Wade, 801 Kenly Road, Goldsboro, N.C. 27530**
**Filed Jan. 28, 1969, Ser. No. 794,603**
**Int. Cl. A43b** *3/10*
**U.S. Cl. 36—7.5** **4 Claims**



The child's shoe attachment incorporates a hollow can, a foot-rest on top of the can which the child can secure to the bottom of its shoe, and a pivoted ground engaging member which claps against the bottom of the can as the child walks to produce a noise.

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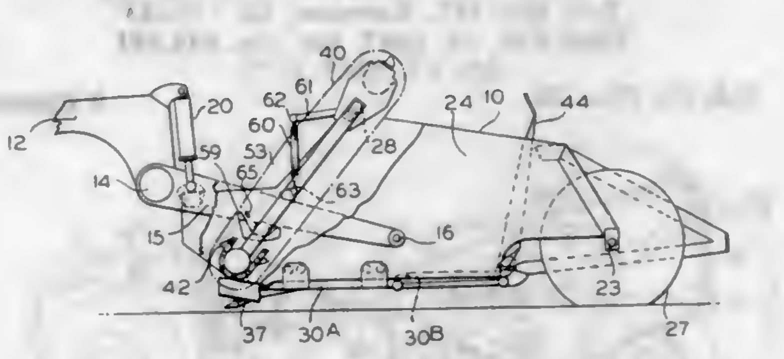
### 3,479,754
### ELEVATOR MOUNTING FOR SELF-LOADING ELEVATOR SCRAPER

**Edward D. Duke, Chicago, and Ramiz Y. Hermiz, Addison, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware**
**Filed June 29, 1966, Ser. No. 561,571**
**Int. Cl. E02f** *1/00;* **B65g** *21/00, 41/00*
**U.S. Cl. 37—8** **1 Claim**



An elevator mechanism for a material scraper bowl having side walls, a bottom joining the side walls and a generally open forward end, comprising an elevator frame having upper and lower horizontal support members, material engaging means movably mounted on said elevator frame for assisting the entry and loading of material into the bowl; upper guide means affixed to the bowl side walls for supporting said upper horizontal support member; a lower guide member attached to the bowl side walls for supporting said lower horizontal support member, said lower guide member defining a cam surface and having adjusting means for altering the disposition of said cam surface and means mounted at the ends of each of the upper and lower horizontal support members for cooperating with said upper guide means and lower guide member respectively to permit a pivotal and linear movement about said upper guide means and an arcuate movement in both a vertical and a horizontal direction about said lower guide member.

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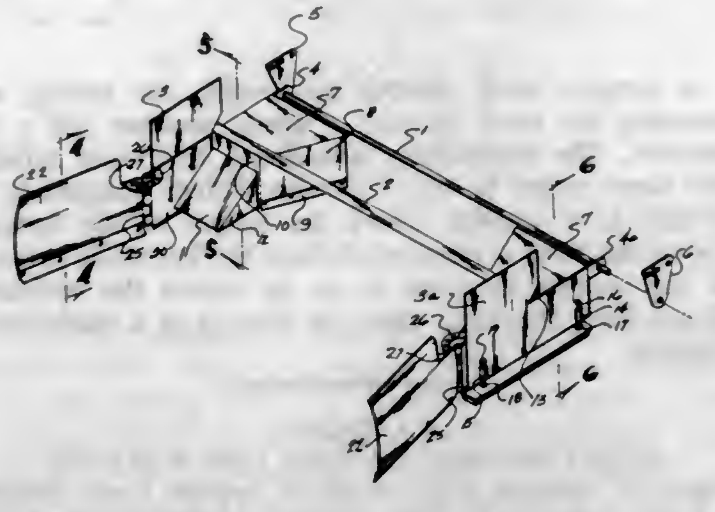
### 3,479,755
### DETACHABLE WINDROW SIZER BOX FOR MATERIAL MOVING SCRAPER

**Harold D. Schropp, 7349 Via Serena, Cucamonga, Calif. 91730**
**Filed June 13, 1967, Ser. No. 645,705**
**Int. Cl. E02f** *3/76;* **B60p** *1/36;* **E01c** *19/22*
**U.S. Cl. 37—8** **2 Claims**

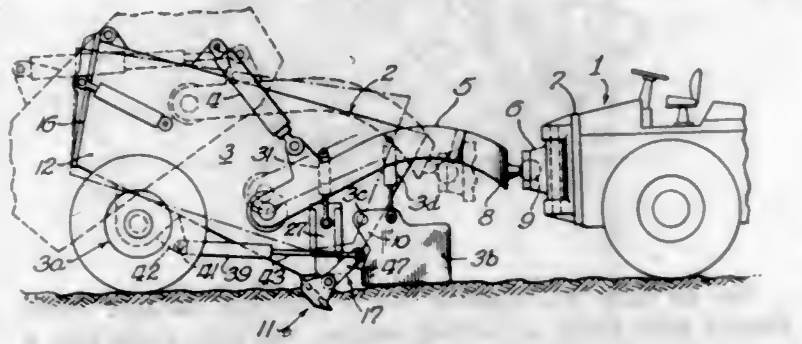


The present device comprises a pair of vertically disposed plates, held rigidly in parallel spaced relation, having at one end of each of said pair of plates, a deflector member hingedly connected thereto; the other end having fasteners suitable for attachment to a material moving scraper; the said device being adapted to uniformly mix and spread windrows of material during the construction of highways.

3,479,756

### REVERSIBLE CUTTING BLADE MEANS

**William E. Martin, % Martin Company,**
**P.O. Box 187, Kewanee, Ill. 61443**
**Filed Feb. 16, 1967, Ser. No. 616,551**
**Int. Cl. E02f** *3/76*
**U.S. Cl. 37—129** **9 Claims**

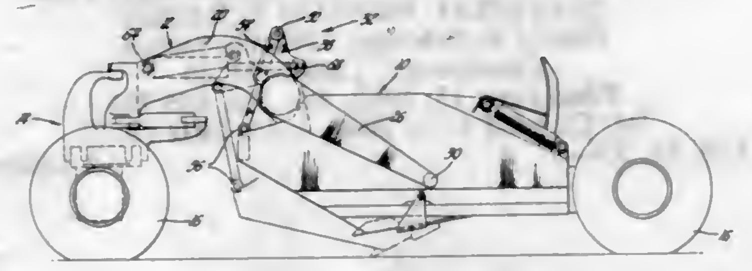


A trailer type mobile earth moving dump truck providing a self-loading and discharging material carrying bowl with an inlet opening for material access and entry during bowl movement and with the provision of an adjustable cooperative and reversible material cutting feed blade structure including closure means for the bowl opening all associated with the material access and bowl entry opening of the material receiving, carrying and discharging dump truck.

3,479,757

### CONTROL FOR SCRAPER BOWL TO REMOVE LOAD FROM HYDRAULIC CIRCUIT WHEN BOWL IS RAISED

**William H. Eiger, Eastlake, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Apr. 26, 1967, Ser. No. 633,841**
**Int. Cl. E02f** *3/85*
**U.S. Cl. 37—129** **2 Claims**



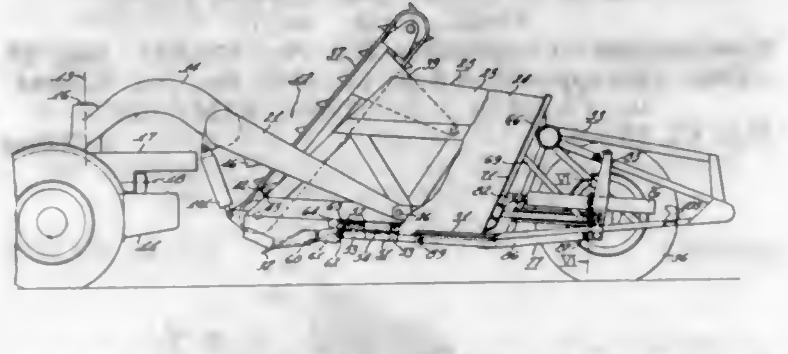
A scraper bowl control mechanism for raising and lowering the bowl between a carry position and a dig position. The mechanism including a hydraulic cylinder and lever means having a portion thereof adapted to be located in a position where the weight of the forward end of the bowl is transferred from the hydraulic cylinder to the scraper structure so as to relieve the hydraulic circuit from any load when the bowl is in a raised-carry position.

3,479,758

### EJECTION MECHANISM FOR SCRAPER

**James N. Johnson and Donald D. Lorenc, Cedar Rapids, Iowa, assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.**
**Filed Aug. 28, 1967, Ser. No. 663,650**
**Int. Cl. E02f** *3/76, 3/81*
**U.S. Cl. 37—129** **5 Claims**

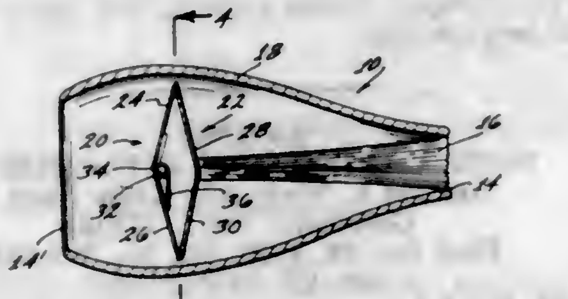
An ejection mechanism for a self-loading scraper in which a single hydraulic ram is operable to move a push-out type ejector and a bottom door to achieve complete ejection of material from the interior of the bowl. One of the two expansible and contractible components of the hydraulic ram is connected directly to the rear of the ejector and the other component of the ram is connected to an upright lever which has its upper end connected to the scraper frame and its lower end connected through a link to the bottom door. Thus, when the hydraulic ram is completely expanded the ejector will have been moved forwardly in the bowl to its eject position and the bottom door will have been moved rearwardly to its full open position exposing an opening in the bottom of the scraper bowl. Suitable stop means are provided to insure proper functioning of the ejector and bottom door operating mechanism.



3,479,759

### COMBUSTION EXHAUST SIMULATOR

**Donald J. Lattis, 6226 S. Newlin 90601, and Wayne L. Congleton, 13935 Ramona Drive 90605, both of Whittier, Calif., and Jose J. Gomez, Los Angeles, Calif.; said Jose J. Gomez assignor to said Donald J. Lattis and Wayne L. Congleton**
**Filed Nov. 27, 1968, Ser. No. 779,385**
**Int. Cl. G09f** *19/02*
**U.S. Cl. 40—106.51** **9 Claims**



A device for simulating the emission of flame, exhaust fumes, heat or the like from a simulated jet, or the like, exhaust port. A plurality of suitably colored streamers are disposed within a pod-shaped housing and are caused to extend out of an exhaust port thereof by air flowing rearwardly from a front opening in the housing, or by the relative movement of a pendulum-like weight suspended within the housing, or both, in response to air velocity or acceleration. Retraction is obtained by spring force, or the like, or by the action of gravity on the pendulum-like member.

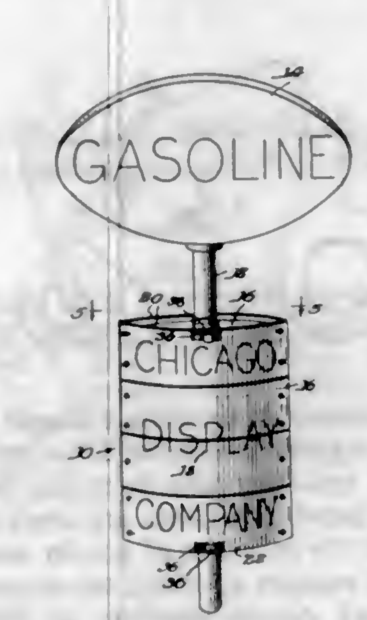
3,479,760

### POLE SIGN

**H. Kent Snyder, Jr., River Forest, Ill., assignor to Chicago Display Company, Melrose Park, Ill., a corporation of Illinois**
**Filed Mar. 26, 1968, Ser. No. 716,017**
**Int. Cl. G09f** *7/18*
**U.S. Cl. 40—145** **6 Claims**

A display sign suitable for mounting on a pole comprises a pair of flexible placards of identical shape and size, and having linear top and bottom edges. The top

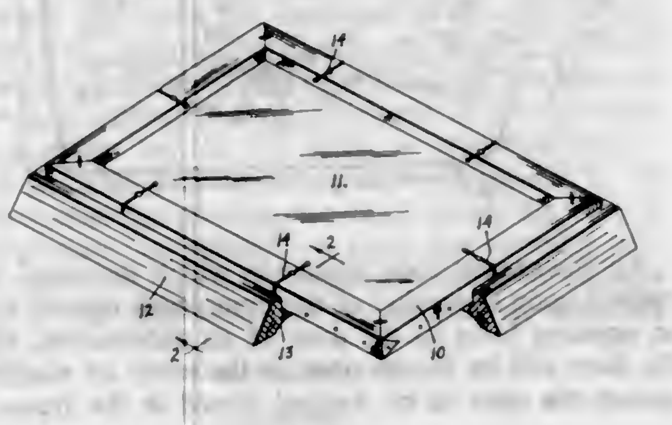
and bottom ends of each placard are folded over onto the backs of the placards to form sleeves, each having a pair of fastening apertures near the ends and a pair of mounting apertures near the center. Flexible bars are located in the sleeves, the bars having apertures aligned with the fastening and mounting apertures. The sign is mounted on a pole by fastening the corresponding corners of the placards to one another at the fastening apertures in back-to-back relationship bowed around the pole. A pair of flexible straps are passed through the mounting apertures, one at the top and one at the bottom of the sign, and around the pole. Tightening means on the straps provide for tightening the straps around the sign and pole.



3,479,761

### PICTURE FRAME FASTENER

**Nicholas J. D'Amato, 2840 Braidwood Road, Richmond, Va. 23225**
**Filed Mar. 28, 1968, Ser. No. 716,971**
**Int. Cl. G09f** *1/12*
**U.S. Cl. 40—156** **8 Claims**

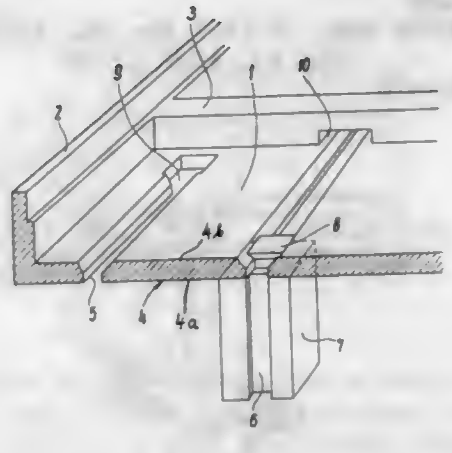


A fastener for retaining a canvas stretcher frame in a rabbeted seat of a picture frame. The fastener consists of an elongated flexible member provided at longitudinally spaced points with a pair of pronged elements which project laterally in opposite directions from the flexible member. One of the pronged elements is secured in the seat of the picture frame, with the flexible member projecting from the seat behind the stretcher frame, and the other pronged element is secured to the stretcher frame to hold the latter in the picture frame seat. An end portion of the flexible member extends beyond the element secured to the stretcher frame and affords a finger-piece.

3,479,762

### TOY CONSTRUCTION KIT

**Artur Fischer, 133 Grunmettstetterstrasse, 7241 Tumlingen, kreis, Freudenstadt, Germany**
**Filed Jan. 25, 1968, Ser. No. 700,632**
**Claims priority, application Germany, Feb. 8, 1967, F 51,460**
**Int. Cl. A63h** *33/00*
**U.S. Cl. 46—11** **5 Claims**

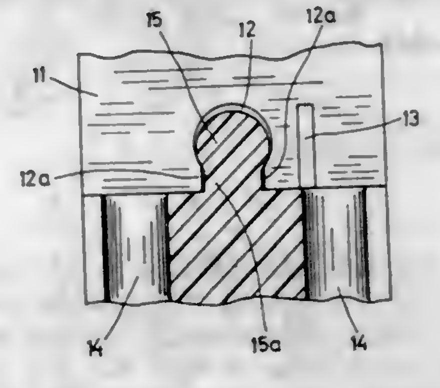


In a toy construction kit of the type comprising elements which are provided with cooperating coupling portions of male and female type, a multi-purpose element constitutes a receptacle or a portion thereof for storing of the remaining elements of the kit, and is provided with at least one female coupling portion which is configurated so as to cooperate with the male coupling portions of the remaining elements of the kit so that the same can be connected to the multi-purpose element, whereby the latter can also be used as a structural part in conjunction with such remaining elements.

3,479,763

### ASSEMBLY KIT HAVING DOVETAIL CONNECTION WITH REDUCED CONTACT AREA

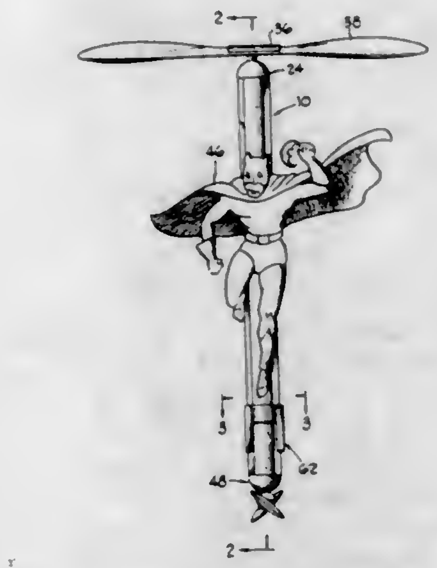
**Artur Fischer, Tumlingen, kreis Freudenstadt, Germany**
**Filed Nov. 8, 1965, Ser. No. 514,165**
**Claims priority, application Germany, Nov. 13, 1964, F 44,435; Mar. 18, 1965, F 45,561**
**Int. Cl. A63h** *33/08*
**U.S. Cl. 46—25** **7 Claims**



In a toy building kit a socket member has a first exposed surface which is provided with a groove of undercut configuration having an outer portion adjacent to the exposed surface and an inner portion bounded by an interior surface and increasing in width in a direction inwardly away from the outer portion. A plug member is provided having a second exposed surface from which a connecting projection extends which is adapted to be received in the groove. The projection includes a neck portion which is to be received in the outer portion of the groove and a head which is to be slidably received in the inner portion of the groove and which has a cross-sectional area smaller than that of the inner portion so that the projection will be in engagement with the interior surface only in the region adjacent the outer portion of the groove.

### 3,479,764
### AERIAL TOY

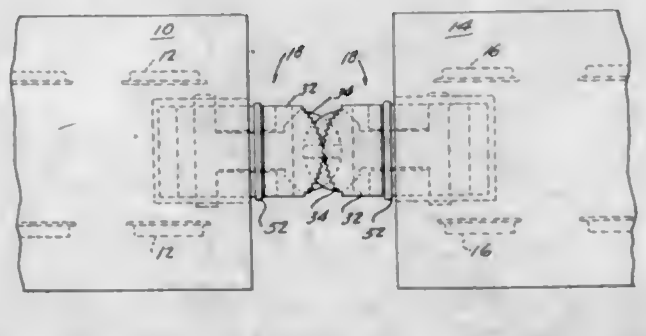
**Burton C. Meyer and Marvin I. Glass, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership**
**Filed Apr. 19, 1967, Ser. No. 631,993**
**Int. Cl. A63h** *27/00*
**U.S. Cl. 46—74** **2 Claims**



A toy helicopter or the like comprising a tubular body with counter-rotating propellers at the end and containing a rubberband motor connected for driving the propellers in opposite directions. The tube is ribbed and has a fork-like latch slidable on the ribs and engageable with one of the propellers to restrain it while the other is turned to wind the rubber band motor.

### 3,479,765
### CAR COUPLING MEANS FOR TOY TRAINS

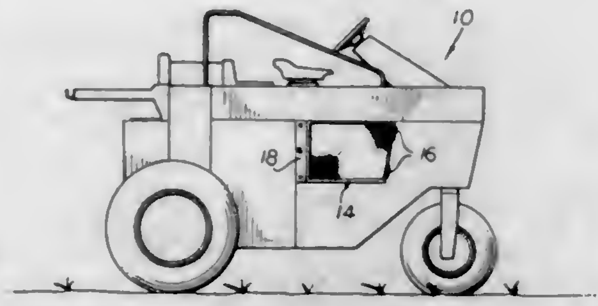
**Melvin W. Pankow, 1517 Central Ave., Sandusky, Ohio 44870**
**Filed Jan. 6, 1967, Ser. No. 607,780**
**Int. Cl. A63h** *33/26*
**U.S. Cl. 46—242** **7 Claims**



A toy train car coupling device remotely disengageable from a coupled position comprising a coupling supporting fixture for attachment to a toy car, a coupling arm having one end horizontally pivoted in said fixture and having coupling means formed at the other end, said coupling means comprising an upwardly directed flange and a downwardly directed latch member. Magnetic means are also provided to assist in both the coupling and uncoupling operations.

### 3,479,766
### DROP PANEL DOOR FASTENER

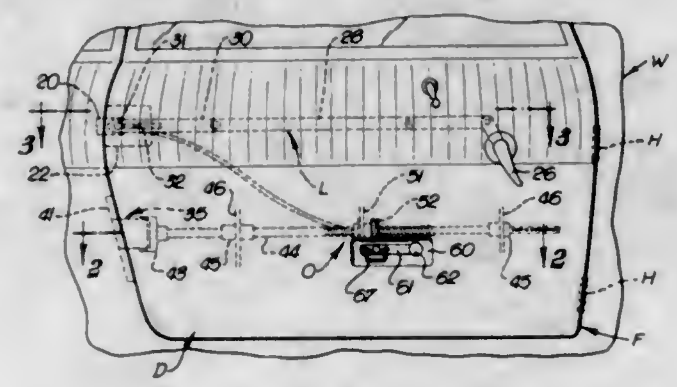
**Charles D. Mecklin and James M. Francis, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware**
**Filed July 3, 1967, Ser. No. 650,805**
**Int. Cl. E05f** *1/04;* **E05c** *17/00*
**U.S. Cl. 49—236** **6 Claims**



A means for releasably securing a hinged door or cover having a fixed support positioned adjacent the free end of the door and including pins extending through angled slots in a drop panel. The slots are angled to urge the drop panel under the influence of gravity toward the door so that the panel engages a locking tab secured to the free edge of the panel. Access openings or finger holes are provided to permit manual lifting of the panel, the angled slots directing the panel away from the door as it is lifted so that the panel is free of the locking tab.

### 3,479,767
### EMERGENCY DOOR OPENER FOR AUTOMOBILES

**Newell J. Gardner, 6505 Wilshire Blvd., Los Angeles, Calif. 90048, and William R. Lastinger, Austin, Tex. (P.O. Box 75366, Los Angeles, Calif. 90005)**
**Filed Mar. 11, 1968, Ser. No. 714,165**
**Int. Cl. E05f** *11/54;* **E05c** *15/02;* **B60j** *5/04*
**U.S. Cl. 49—280** **16 Claims**

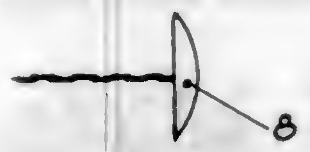


An emergency door opener in which the usual latch is opened upon operation of the emergency opener to apply an opening force to the door of an automobile, whereby the door will be forced open in the event an accident has caused the door to be wedged closed in the frame.

### 3,479,768
### SELF-FASTENING RECESS UNIT FOR WINDOW ASSEMBLY

**Jean Claude Smadja, Neuilly-sur-Seine, France, assignor to Compagnie Financiere et Commerciale, Vaduz, Furstentum, Liechtenstein, a corporation of Furstentum**
**Filed Dec. 5, 1967, Ser. No. 688,160**
**Claims priority, application France, Dec. 9, 1966, 86,928; Aug. 4, 1967, 116,930**
**Int. Cl. E06b** *7/16;* **E04b** *2/28;* **E04c** *2/38*
**U.S. Cl. 49—441** **3 Claims**

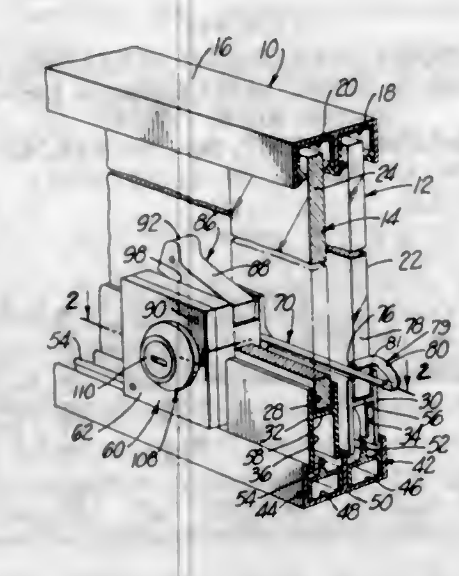
The present window assembly is for use in single or double stationary windows, horizontally sliding windows, and vertically sliding windows and for these purposes a window guide is provided which is of a single reinforced section of a thermoplastic material which forms a rigid



window framework, a tight sealing single or double slide and a self-fixing tight sealing device for a recess of a support therefor.

### 3,479,769
### LATCHING AND LOCKING DEVICE FOR BYPASSING SLIDING DOORS

**Arthur G. Diack, 5314 Loleta Ave., Los Angeles, Calif. 90041**
**Filed Mar. 29, 1968, Ser. No. 717,129**
**Int. Cl. E05b** *65/08;* **E05d** *13/04*
**U.S. Cl. 49—449** **6 Claims**

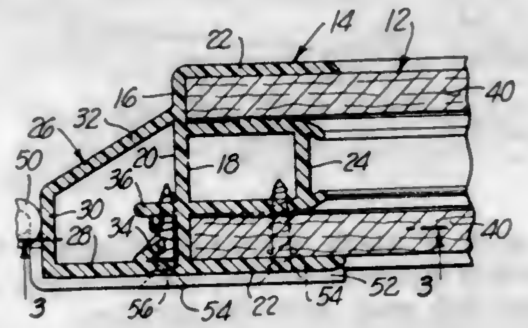


A latching and locking device for bypassing sliding doors which is mounted on one end of a lower rail of one of the doors. The device includes a generally Z-shaped latch having an intermediate leg which is located between and parallels the paths of the doors. The intermediate leg of the latch is provided at one end with a generally perpendicular latching arm engageable with an edge of the other door to latch both of the doors. At its other end, the intermediate leg of the latch is provided with a generally prependicular actuating arm engageable by an actuating means for pivoting the latch about the axis of the intermediate leg thereof to pivot the latching arm from an operative, extended position, wherein it engages the edge of the other door, to an inoperative, retracted position.

### 3,479,770
### STRUCTURAL MEMBERS AND DOORS AND RELATED STRUCTURES FORMED FROM THE SAME

**Donald E. Mock, Covina, Calif., assignor to Anjac Plastics Inc., El Monte, Calif., a corporation of California**
**Continuation-in-part of application Ser. No. 696,879, Jan. 10, 1968. This application Aug. 16, 1968, Ser. No. 753,202**
**Int. Cl. E06b** *1/16, 1/28*
**U.S. Cl. 49—501** **4 Claims**

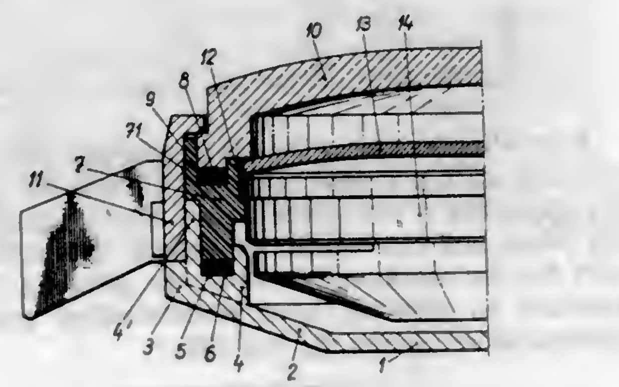
Structural members or surrounds for use in forming doors and related structures are disclosed. Each of these members as a back wall, means for holding at least one panel attached to one side of the back wall and trim means attached to the other side of the back wall. The trim means in such a member includes an exterior wall extending from the back wall, a deflecting lip attached to the exterior wall so as to extend from it towards the back wall and an attaching wall extending from the back wall so as to be spaced from the exterior wall and the deflecting lip. If desired, this attaching wall may include a beveled lip spaced from the back wall and extending from the attaching wall towards the exterior wall.



This structure is designed so that in the formation of a door or related construction, a fastener, such as a screw may be inserted through the exterior wall in such a manner as to be deflected by the deflecting lip so as to extend along the back wall into the attaching wall. When the beveled lip is used, this lip also aids in deflecting the fastener against the back wall. As a result of this type of construction, the trim means can be of relatively light weight material and yet still will adequately hold any fasteners used.

### 3,479,771
### WATCHCASE

**Jean Steimann, 9 Rue du Succes, 2300 La Chaux-de-Fonds, Switzerland**
**Filed Oct. 13, 1967, Ser. No. 675,179**
**Claims priority, application Switzerland, Oct. 14, 1966, 14,896/66**
**Int. Cl. G04b** *37/08*
**U.S. Cl. 58—90** **6 Claims**

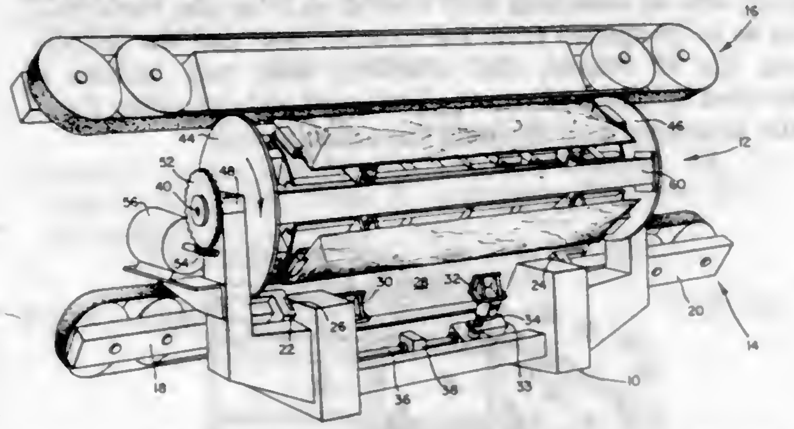


A watchcase for a waterproof watch has an annular portion which supports the movement and has an upstanding inner rim which positions the dial and a shoulder with a sealing ring. The watch crystal has an edge portion which seats on the sealing ring with an inner shoulder engaging the top of the upstanding inner rim and an outer shoulder engaged by a bezel.

### 3,479,772
### SWELL SANDER

**Harold R. Yoder, Bechtelsville, Pa., assignor to Boyertown Burial Casket Company, Boyertown, Pa., a corporation of Pennsylvania**
**Filed Oct. 30, 1968, Ser. No. 771,814**
**Int. Cl. B24b** *21/02*
**U.S. Cl. 51—145** **10 Claims**

A machine for sanding a large wooden surface in the form of a segment of a cylinder includes a rotatable carriage mounted in a frame. The carriage has a plurality of work holding chucks each of which includes adjustable means for holding the work piece at the ends and the sides and each of which is radially adjustable. Mounted on the frame is a plurality of belt sanders which are movable toward and away from the carriage.



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**3,479,773**

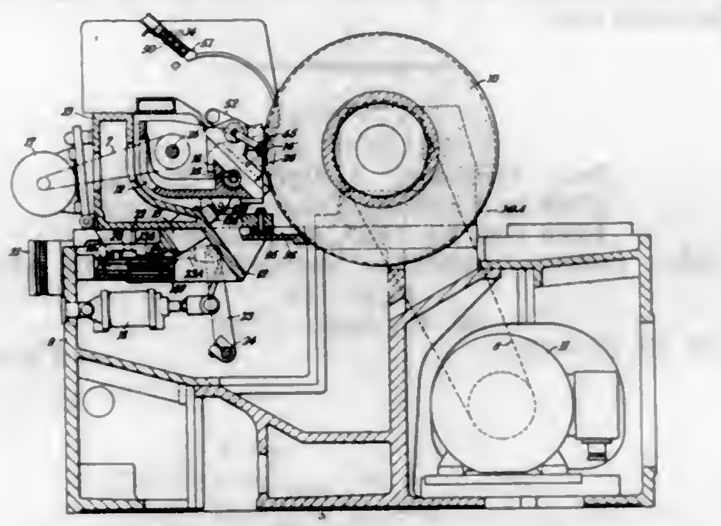
### GRINDING MACHINES

**John Penrose Mills, Wolverhampton, England, assignor to H. M. Hobson Limited, London, England, a company of Great Britain**

**Filed Jan. 19, 1967, Ser. No. 610,259**

**Int. Cl. B24b** *49/00, 51/00, 5/00*

**U.S. Cl. 51—165** **16 Claims**



A grinding machine, for use in particular for the profile grinding of thin walled tubes, which includes mechanism for traversing a workpiece past a rotating profiled grinding wheel and mechanism for rapidly approaching a support for the workpiece towards the grinding wheel, preparatory to grinding, to a predetermined position, and afterwards retracting the support.

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**3,479,774**

### STROPPING DEVICE

**Philipp Eckstein, Darmstadt, Germany, assignor to Gustav Gockel Maschinenfabrik G.m.b.H., Frankfurt am Main, Germany**

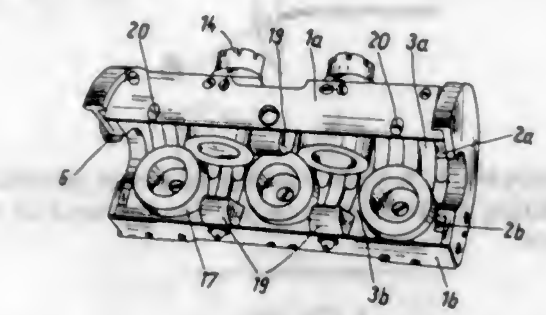
**Filed Aug. 5, 1966, Ser. No. 570,469**

**Claims priority, application Germany, Aug. 5, 1965, G 44,360**

**Int. Cl. B24b** *3/56;* **B24d** *9/00*

**U.S. Cl. 51—173** **7 Claims**

A stropping device including two housings having opposed stropping rings, the housings being adjustable towards and away from each other to accommodate the knife to be sharpened. The stropping rings are rotatably mounted on spindles which in turn are mounted in the housings, and guides are also provided in the housings to guide the stropping rings. In use the housings are adjusted into the proper position and then secured after which the housings are grasped by the hand and reciprocated manually along the knife edge causing the stropping rings to rotate while sharpening the knife edge. Apertures are provided through the housings for visual purposes while a scale is also provided to indicate the adjusted position of the housings. During pauses in the stropping operation or when the housings are not in use, they may be rested on a wetting device comprised of a box containing a wetting liquid and a sponge secured in the box to receive the housings and transmit the wetting liquid to the stropping rings.



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**3,479,775**

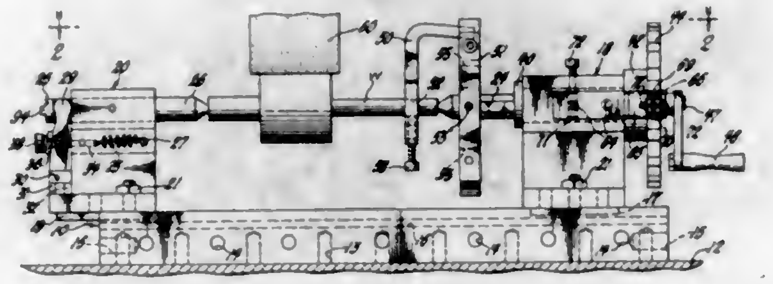
### WORK HANDLING FIXTURE

**Joseph K. Smith, 14705 Colpaert Drive, Warren, Mich. 48093**

**Filed Feb. 27, 1967, Ser. No. 618,702**

**Int. Cl. B24b** *5/00, 41/06, 47/02*

**U.S. Cl. 51—237** **4 Claims**



A work handling fixture for surface grinding machines or the like is shown and described which comprises a base, a headstock and a tailstock carried on said base, and a pair of axially aligned centers one carried in each of said headstock and tailstock. The two centers have conical ends and are yieldably maintained spaced from each other for rotatably holding a work part therebetween. One of the centers is directly driven at manual speeds the same as and by a manually operable crank. The fixture further comprises connecting means fast to the rotatably driven center for clamping to said work part so that the latter is driven the same as and by the former in respect to movement including rotation. Said fixture further comprises locking means for locking the rotatably driven center against rotation. Said fixture further comprises indexing means cooperative with said locking means by which the work part may be rotated between predetermined and precise positions of rotation and held locked in each said position against rotation.

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**3,479,776**

### BLADE SHARPENER

**Raymond J. O. Berg, Rte. 1, Box 93, Gooselake, Iowa 52750**

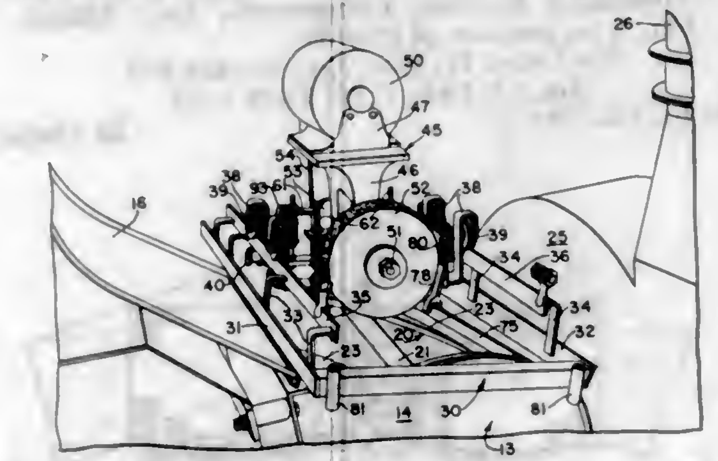
**Filed Sept. 26, 1966, Ser. No. 581,979**

**Int. Cl. B24b** *19/00*

**U.S. Cl. 51—249** **7 Claims**

A blade sharpening device for use on a blade rotor supported internally of a housing that includes a carriage supported on the housing for axial movement in respect to the rotor and having a grinding wheel depending into

the housing for sharpening blades on the rotor, and a connection between the carriage and rotor for angularly shifting the rotor in response to axial shifting of the carriage.



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**3,479,777**

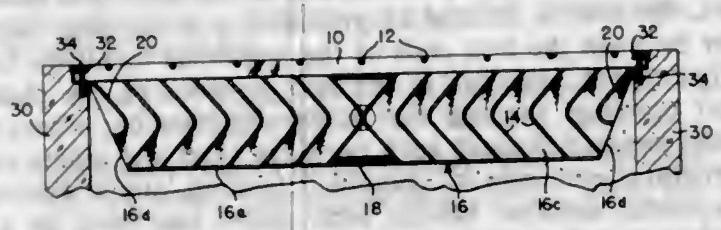
### UNDERGROUND UTILITY VAULT WITH A VENTILATOR-TYPE GRATE

**John B. Schack, Auburn, Wash., assignor to Concrete Conduit Company, Inc., Auburn, Wash., a corporation of Washington**

**Filed Mar. 22, 1968, Ser. No. 715,291**

**Int. Cl. E02d** *29/14;* **E04c** *2/42*

**U.S. Cl. 52—20** **7 Claims**



A grate for an underground utility vault opening comprises a grillwork suspended across the vault opening and a ventilator structure depending from the grillwork into the vault opening. The ventilator structure is reinforced to support the grillwork midsection and is provided with chevron-type baffles to prevent insertion of elongated objects into the vault opening from without.

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**3,479,778**

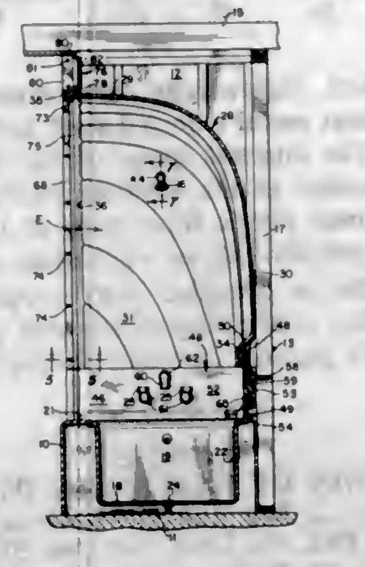
### BATH SHELL ENCLOSURE FOR BATHTUBS

**Howard M. Johnson, Algonquin, Ill., assignor of one-half to Joseph B. Coleman, Algonquin, Ill.**

**Filed Feb. 13, 1967, Ser. No. 615,677**

**Int. Cl. A47k** *3/08*

**U.S. Cl. 52—35** **4 Claims**



The bath shell enclosure, which is preferably of molded plastic material, available in various colors to match the tub and color scheme in the bathroom, encloses the three sides and top of the tub for protection of the walls as well as the ceiling over the tub from splatter to avoid the otherwise inevitable peeling of paint and cracking of plaster or cement around the tub where the wall is tiled, while giving a decorative background for the entire tub area. It may be installed to improve existing bathrooms or installed as a part of the original bathroom equipment.

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**3,479,779**

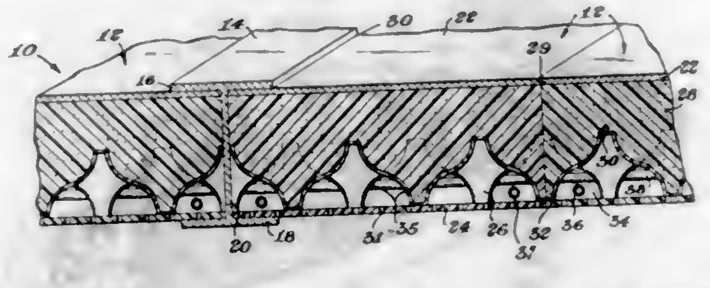
### COMPOSITE CONSTRUCTION PANEL

**Earl E. Ziegler, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**Filed May 2, 1968, Ser. No. 726,144**

**Int. Cl. E04b** *1/82, 5/48;* **E04c** *2/52*

**U.S. Cl. 52—144** **3 Claims**



A composite construction panel for use in walls, roofs or floors of buildings. Such panels can be completely prefabricated and can be installed simply and in a dry system. Between the skins of the panel is located a reinforced core structure, which core structure is substantially saddle shaped and provides continuous passageways for duct work and conduits. Also forming part of the composite panel is a thermal insulating and/or rigid reinforcing filler material which extends between one of the skins and one surface of the core structure to provide desirable insulation and strength characteristics to the panel.

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**3,479,780**

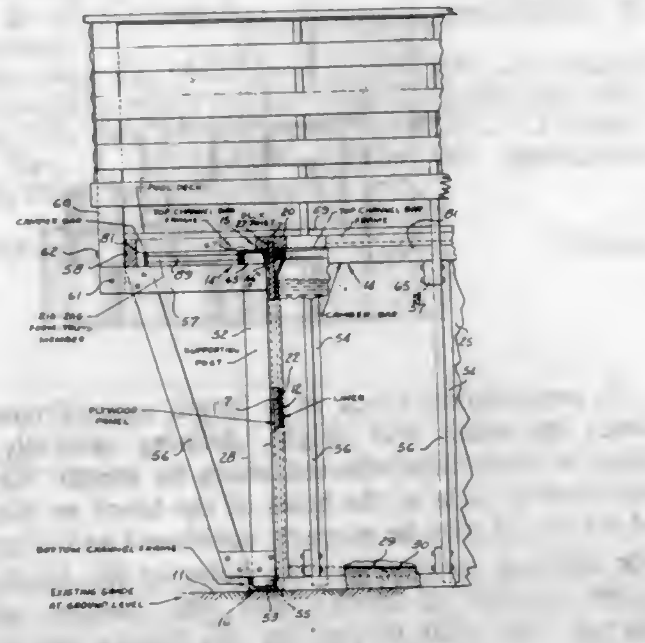
### CAMBER TRUSS UPPER FRAME SUPPORTING MEANS FOR SIDEWALLS OF AN ABOVE GROUND SWIMMING POOL

**Julius Schwarz, Teaneck, George E. Dokes, Hillsdale, Otokar von Bradsky, Westwood, and Sidney J. Goodman, Paramus, N.J., assignors to Hendon Construction Company, Little Ferry, N.J., a corporation of New Jersey**

**Filed July 25, 1967, Ser. No. 655,886**

**Int. Cl. E02d** *27/32;* **E04c** *3/04;* **E04h** *3/16*

**U.S. Cl. 52—169** **4 Claims**



A camber truss upper frame supporting means for sidewalls of an above ground swimming pool including an angle bar frame for supporting an upper portion of upright sidewalls of the swimming pool, channeled camber bars suitably affixed at opposite ends to the angle bars of the upper frame, and prefabricated truss members in a zig-zag form and mounted in cooperative relation between the angle bars and the camber bars.

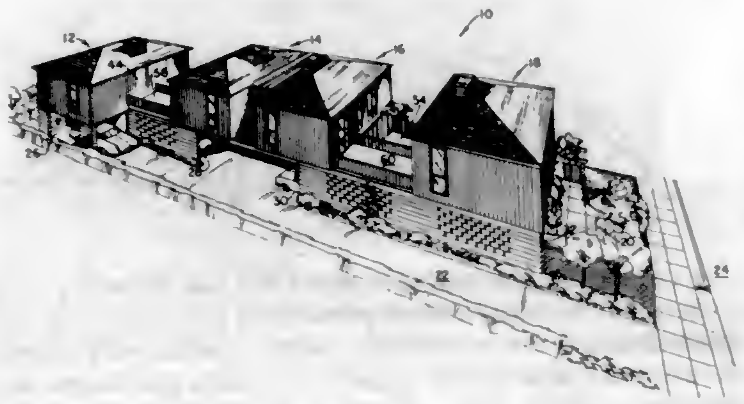
### 3,479,781
### MULTIPLE-DWELLING STRUCTURE

**Wallace J. S. Johnson, Berkeley, Calif., assignor to Up-Right, Inc., Berkeley, Calif., a corporation of California**

**Filed Mar. 21, 1968, Ser. No. 715,042**

**Int. Cl. E02d** *27/00;* **E04h** *5/00;* **E02f** *19/10*

**U.S. Cl. 52—169** **9 Claims**



A multiple-dwelling structure which provides a number of single-family dwellings disposed on a typical urban lot, each dwelling having a blank wall, a deck between the dwellings, a private yard and garage and complete physical psychological, visual and acoustical privacy from one another.

### 3,479,782
### CONSTRUCTION BLOCK

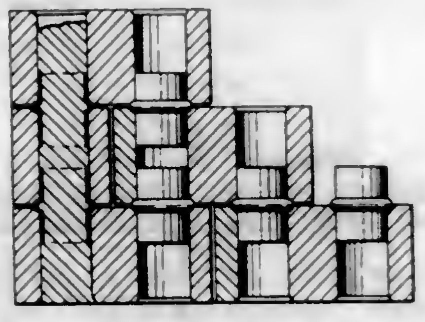
**George B. Muse, Hillcrest Drive, Calhoun, Ga. 30701**

**Filed Aug. 4, 1967, Ser. No. 658,524**

**The portion of the term of the patent subsequent to Mar. 3, 1986, has been disclaimed and dedicated to the Public**

**Int. Cl. E04c** *1/10;* **E04b** *2/10*

**U.S. Cl. 52—438** **3 Claims**



A construction block of a length approximately three times its width and height, defining centrally located holes in each third thereof along its length. Sleeves are provided to slide in the holes of the block so that several of the blocks may be properly positioned and aligned upon one another by inserting the holes of the blocks of adjacent courses of blocks over one another, about the sleeves. The wall formed by the blocks and sleeves is permanently set into position by pouring mortar through the aligned holes of the blocks and sleeves.

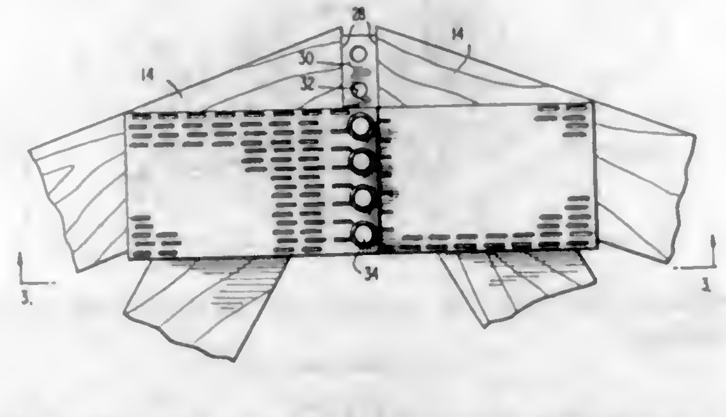
### 3,479,783
### JOINT

**John Calvin Jureit, Coral Gables, Fla., assignor to Automated Building Components, Inc., Miami, Fla., a corporation of Florida**

**Filed Sept. 11, 1967, Ser. No. 666,877**

**Int. Cl. E04c** *1/32;* **E04b** *1/38*

**U.S. Cl. 52—584** **20 Claims**



The splice joint comprises connector plates having a plurality of teeth struck to form normally projecting nails distributed over a major portion of the plate, the latter having a planar end portion having openings therethrough, the plates are applied on opposite sides of wooden structural members forming a splice joint by pressing the teeth into the wooden members with the end portions extending beyond the end of the structural member, the joint is formed by providing a reinforcing member between the butt ends of the structural members and aligning the openings in the end portions of the plates and openings through the reinforcing member whereby bolts inserted through such openings align and secure the structural members in assembled relation, and a wooden structural member having such plates may also be attached thereby to suitable anchoring brackets or fittings.

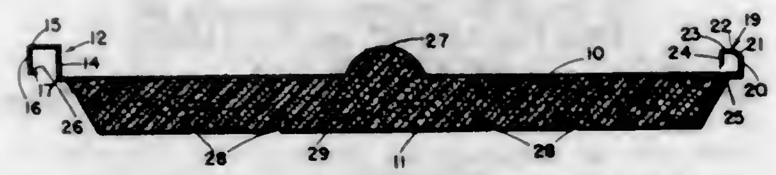
### 3,479,784
### CONSTRUCTION PANEL

**Daniel Massagli, Covina, Calif., assignor to Tru-Lok Metal Fabricating Company, Inc., San Dimas, Calif., a corporation of California**

**Filed Dec. 5, 1967, Ser. No. 688,229**

**Int. Cl. E04c** *1/30;* **E04b** *1/62*

**U.S. Cl. 52—588** **1 Claim**



A sandwiched, lightweight construction panel having a light gage sheet metal external shell and a rigid foamed plastic filling the internal space of the shell, the plastic filler being bonded to the internal surfaces of the shell cavity, the foamed plastic filler being of the class of rigid polyurethane, polystyrene, or equivalent plastic composition, each panel is provided with cooperating, longitudinally extending connecting means that permit assembly and prevent the passage of water through the joint.

### 3,479,785
### INSTALLATION OF FASTENERS IN CONCRETE

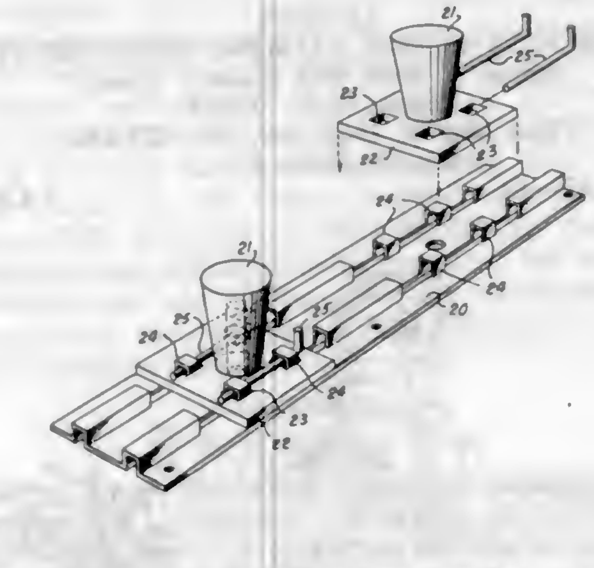
**Gale Asch, Rte. 2, Box 186–1, McKinney, Tex. 75069**

**Filed Oct. 19, 1966, Ser. No. 587,710**

**Int. Cl. E04g** *17/02;* **E04c** *5/18*

**U.S. Cl. 52—701** **4 Claims**

This invention relates to a technique for accurately spacing and aligning fasteners for securing members to concrete or the like, and more particularly to the use of a template to attach to form work for concrete for holding in position fasteners or inserts at accurately spaced and aligned locations.



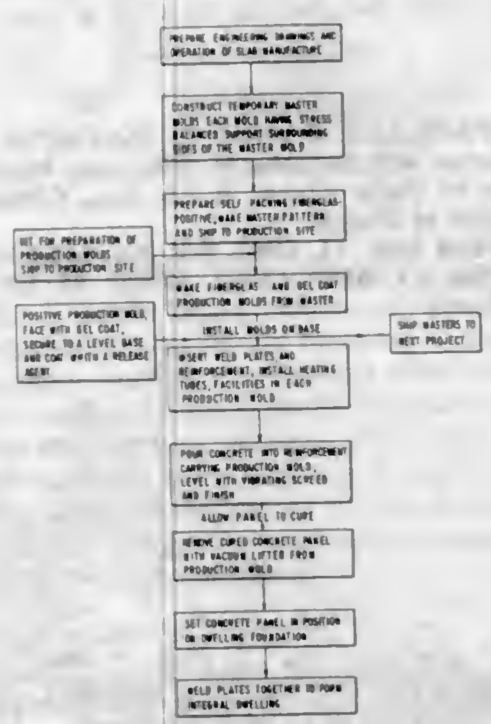
### 3,479,786
### METHOD FOR MAKING LOW COST LARGE THIN CONCRETE PANELS IN SEAMLESS REINFORCED PLASTIC MOLDS

**George J. Kreier, Jr., 1524 Cambridge St., Philadelphia, Pa. 19130**

**Continuation-in-part of application Ser. No. 590,580, Oct. 31, 1966. This application Nov. 8, 1968, Ser. No. 777,991**

**Int. Cl. E04b** *1/04;* **E04c** *2/04;* **E04g** *11/00*

**U.S. Cl. 52—745** **4 Claims**


PREPARE ENGINEERING DRAWINGS AND OPERATION OF SLAB MANUFACTURE
CONSTRUCT TEMPORARY MASTER MOLDS EACH MOLD HAVING STRESS BALANCED SUPPORT SURROUNDING SIDES OF THE MASTER MOLD
PREPARE SELF PACKING FIBERGLAS POSITIVE, MAKE MASTER PATTERN AND SHIP TO PRODUCTION SITE
SET FOR PREPARATION OF PRODUCTION MOLDS SHIP TO PRODUCTION SITE
MAKE FIBERGLAS AND GEL COAT PRODUCTION MOLDS FROM MASTER
POSITIVE PRODUCTION MOLD, FACE WITH GEL COAT, SECURE TO A LEVEL BASE AND COAT WITH A RELEASE AGENT
INSTALL MOLDS ON BASE
SHIP MASTERS TO NEXT PROJECT
INSERT WELD PLATES, AND REINFORCEMENT, INSTALL HEATING TUBES, FACILITIES IN EACH PRODUCTION MOLD
POUR CONCRETE INTO REINFORCEMENT CARRYING PRODUCTION MOLD, LEVEL WITH VIBRATING SCREED AND FINISH
ALLOW PANEL TO CURE
REMOVE CURED CONCRETE PANEL WITH VACUUM LIFTER FROM PRODUCTION MOLD
SET CONCRETE PANEL IN POSITION ON DWELLING FOUNDATION
WELD PLATES TOGETHER TO FORM INTEGRAL DWELLING

Method and apparatus for constructing a house or a building from thin, seamless concrete panels in which a unitary fiberglass mold of deeply undercut or waffle pattern is coated with a release agent, concrete is poured therein, leveled, cured and the mold is removed by flexing upwardly so that the cured concrete panel is pulled away for assembling, at the site, a plurality of panels in the building operation.

### 3,479,787
### METHOD AND APPARATUS FOR PACKING BLOCKS OF CIGARETTES AND THE LIKE

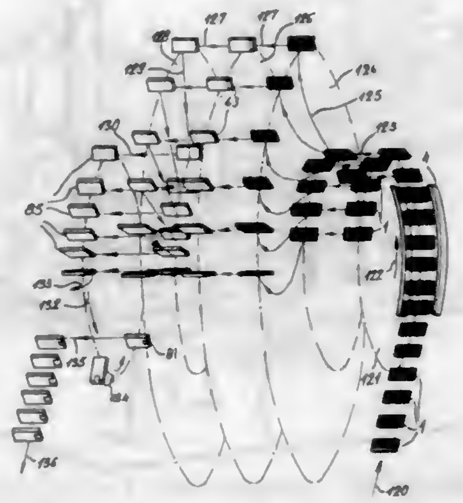
**Dietrich Bardenhagen and Bernhard Schubert, Hamburg-Lohbrugge, Germany, assignors to Hauni Werke Korber & Co. KG., Hamburg-Bergedorf, Germany**

**Filed Sept. 13, 1967, Ser. No. 668,296**

**Claims priority, application Great Britain, Sept. 19, 1966, 41,636/66**

**Int. Cl. B65b** *19/12, 19/32;* **B65c** *3/10*

**U.S. Cl. 53—14** **41 Claims**



Blocks of arrayed cigarettes or like commodities are packed in groups so that *n* commodities advance simultaneously through and simultaneously reach the discharging ends of *n* packing tracks wherein they are provided with envelopes which are closed prior to removal from the respective discharging ends and prior to transfer onto a takeoff conveyor located downstream of the packing tracks. The commodities are fed in a single file in an arcuate or straight path by means of an endless supply conveyor and are removed from the supply conveyor by a transfer conveyor which delivers them to the receiving ends of the respective packing tracks with simultaneous reorientation. During travel from the supply conveyor to the receiving ends of the packing tracks, the commodities may be moved apart to provide more room for the component parts of the devices which effect the application folding and tucking of envelopes during travel of commodities along the respective tracks.

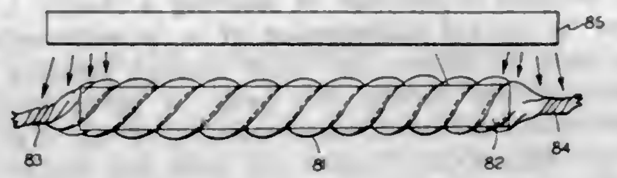
### 3,479,788
### PACKAGING

**Robert L. Dreyfus, Arlington, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut**

**Application Sept. 15, 1965, Ser. No. 527,999, now Patent No. 3,404,508, which is a division of application Ser. No. 126,202, July 24, 1961, now Patent No. 3,215,266, dated Nov. 2, 1965. Divided and this application Apr. 25, 1968, Ser. No. 736,242**

**Int. Cl. B65b** *11/00, 53/06*

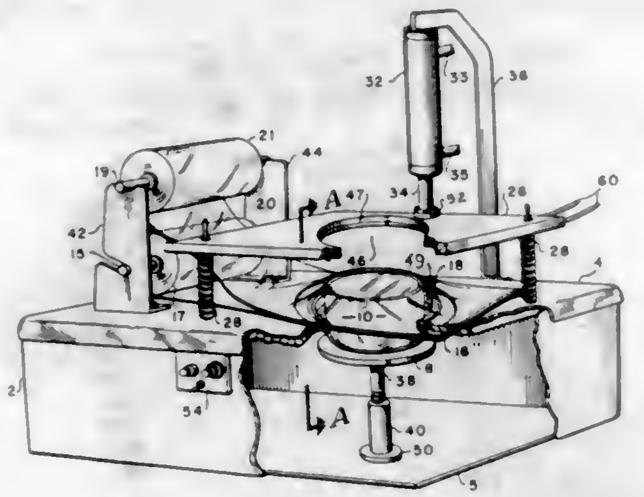
**U.S. Cl. 53—33** **1 Claim**



A method of packaging an article in heat-shrinkable film by spirally wrapping the film about the article, heating and thereby shrinking the opposite ends of the package, and then shrinking the remainder of the film to conform to the article.

### 3,479,789
### PACKAGE AND METHOD OF MAKING SAME

**John W. Harrison, Winchester, Mass., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut**
**Original application Mar. 16, 1966, Ser. No. 541,891, now Patent No. 3,355,010, dated Nov. 28, 1967. Divided and this application May 8, 1967, Ser. No. 652,359**
**Int. Cl. B65b** *11/00, 43/00, 7/06*
**U.S. Cl. 53—34** **3 Claims**



A method of packaging wherein a product is placed on a biaxially, oriented, heat shrinkable film; said film and product are located over an opening in a support member so that they may be forced partially through the opening with a portion of the film remaining on the support member; and, while in said opening the product is covered with a second sheet of heat shrinkable film which is then heat sealed to the first, causing the seal to shrink as a tight band around the product.

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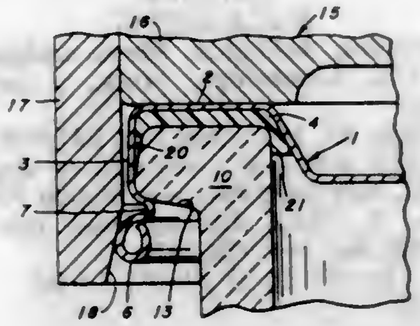
### 3,479,790
### METHOD OF SEALING A CONTAINER ASSEMBLY AND SEALED CONTAINER ASSEMBLY

**Robert L. La Barge, Pittsburgh, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Nov. 14, 1967, Ser. No. 682,898**
**Int. Cl. B67b** *3/12;* **A61j** *9/08*
**U.S. Cl. 53—42** **7 Claims**



A method is provided of securing a closure to a container by inward deformation of a circumferential bead of a metallic closure shell skirt through pressure applied simultaneously around the bead to move inwardly a substantially circumferential portion of the skirt of the closure shell located above the bead into secure closure affixation on the container so that such closure affixation is thereafter maintained by the inwardly deformed and constricted closure bead. A closure fitment or closure is also provided that is adapted to be securely affixed to the container by a partially preformed inwardly directed skirt portion in securement relation to a suitable container bead and to be maintained in secure closure affixation on the container by a deformed and constricted lower skirt bead of the closure.

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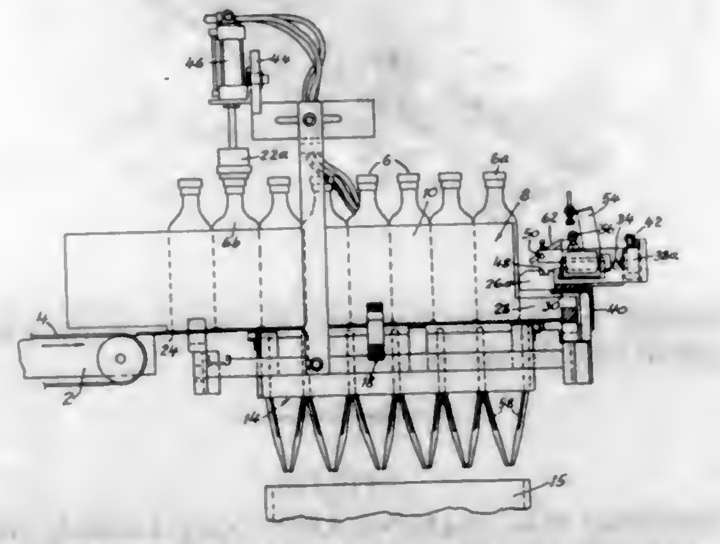
### 3,479,791
### STOP MEANS FOR PACKING EQUIPMENT

**Anton J. Wild, 968 Bonnell Court, Union, N.J. 07083**
**Filed May 7, 1968, Ser. No. 727,203**
**Int. Cl. B65b** *57/10*
**U.S. Cl. 53—61** **6 Claims**



Equipment for packing articles in cases wherein article feeding means advance articles into channels in a packing head and onto article supporting strips carried by a packer grid. Sensing means in each channel are individually actuated when a full complement of articles fills that channel to prevent the article feeding means from pushing additional articles against those already filling the channel. Crowding, displacement and distortion of articles in the channels is thereby eliminated. When all channels are filled with the proper number of articles, the article supporting strips are moved to cause the articles to be transferred from the packing head to a case.

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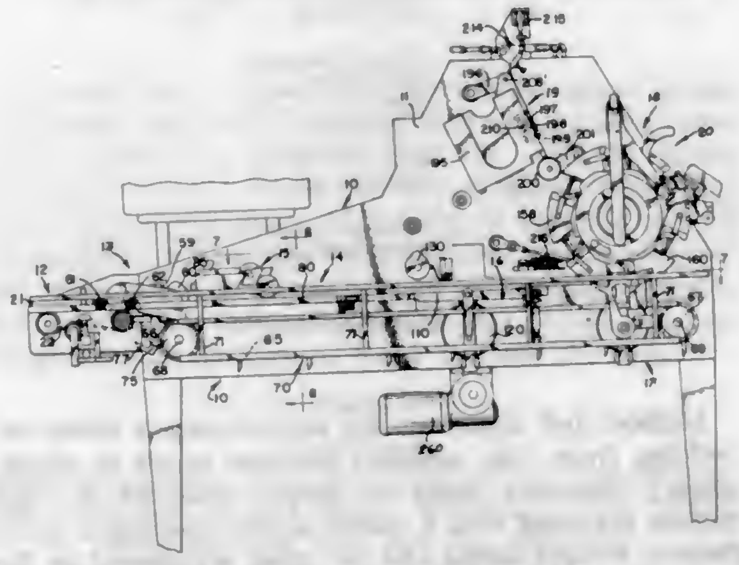
### 3,479,792
### PACKAGE BANDING MACHINE

**Hans A. Jensen and Augustus H. Eberman, Madison, Wis., assignors to Oscar Mayer & Co. Inc., Chicago, Ill., a corporation of Illinois**
**Filed Sept. 11, 1967, Ser. No. 666,634**
**Int. Cl. B65b** *13/02, 17/00, 35/50*
**U.S. Cl. 53—62** **17 Claims**



A stacking and banding machine which is characterized by a horizontally disposed infeed conveyor for receiving generally rectangular packages, for example, one-half pound packages of sausages, and for delivering the packages to a device which segregates the packages in pairs and advances successive pairs thereof to a horizontally disposed main conveyor where they are carried past a glue applicator and lines of glue are applied to the top surface of the trailing package of each pair thereof, the leading one of each pair of the packages is stacked on the trailing package and the assembly is delivered into a pocket of a turret operating in a vertical plane at the end of the main conveyor and receiving label forming bands which are fed from a supply magazine to the pockets of the turret for encircling the package assemblies, and mechanism associated with the turret for activating an adhesive on and rolling down the overlapping ends of each band, after which the banded package is ejected into a discharge chute.

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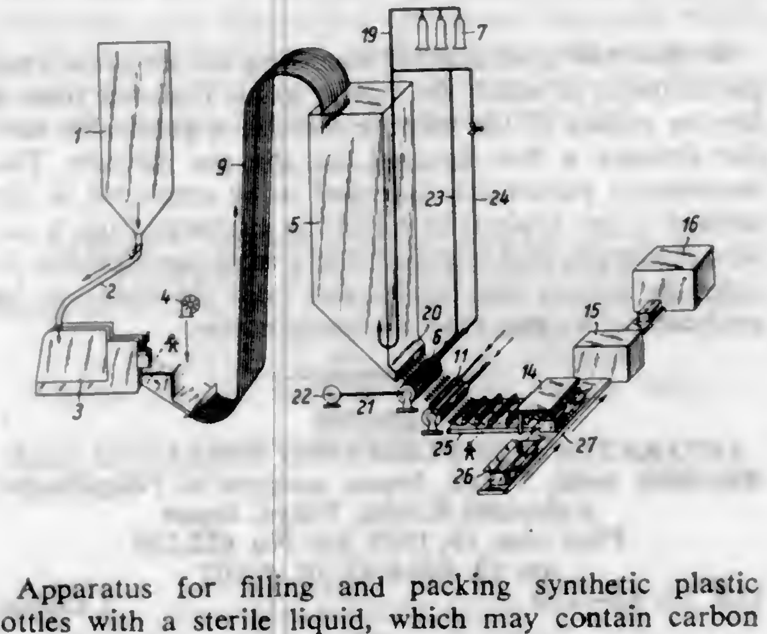
### 3,479,793
### DEVICE FOR FILLING STERILE LIQUIDS, ESPECIALLY CARBON DIOXIDE CONTAINING BEVERAGES, INTO STERILE BOTTLES MADE OF SYNTHETIC MATERIAL

**Heinz Evers, Hamburg-Grossflottbek, Germany, assignor to Interstabella A.G., Chur, Switzerland**
**Filed Dec. 1, 1966, Ser. No. 598,376**
**Claims priority, application Germany, Dec. 13, 1965, E 30,652**
**Int. Cl. B67c** *7/00, 3/10;* **B65b** *3/02*
**U.S. Cl. 53—112** **5 Claims**



Apparatus for filling and packing synthetic plastic bottles with a sterile liquid, which may contain carbon dioxide, wherein the bottles are mounted upon a movable support member, such as a cylindrical wheel element, and sequentially moved between bottle evacuation, $CO_2$, filling, sealing and packing stations. Preferably, the filling of the bottles occurs soon after the formation of bottles whereby the sterile condition of the bottle obtained due to the formation temperatures prevents contamination of the bottle prior to its being filled.

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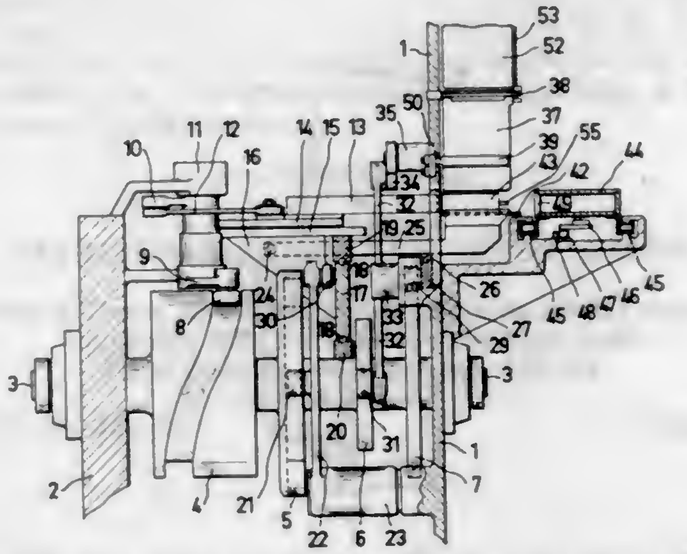
### 3,479,794
### FEEDING OUT DEVICE IN A CIGARETTE PACKETING MACHINE

**Ragnar Osterdahl, Stockholm, Sweden, assignor to Arenco Aktiebolag, Stockholm-Vallingby, Sweden**
**Filed Oct. 31, 1967, Ser. No. 679,424**
**Claims priority, application Sweden, Nov. 18, 1966, 15,866**
**Int. Cl. B65b** *35/30, 39/00, 1/04*
**U.S. Cl. 53—151** **4 Claims**

An arrangement in a continuously operating cigarette packaging machine comprising a cigarette storage means with a bottom comprising parallel shafts each provided with a guide plate, a bottom plate with vertical plates with their edges positioned under corresponding edges of said guide plates, between said vertical plates movable plungers are arranged and displaceable together with said bottom plate by a first disc cam a certain length in parallel with a container arranged on a chain passing said storage means, said plungers being actuated in their longitudinal direction by a second disc cam under said certain length to transfer cigarettes fed to the space between said vertical plates into said container.



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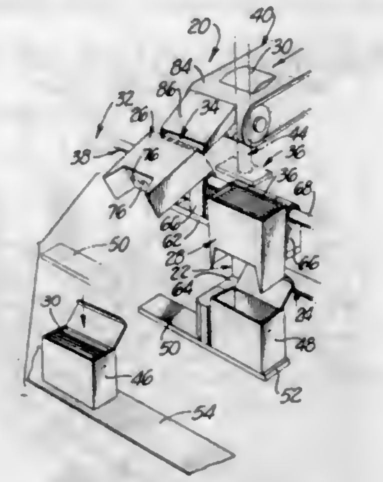
### 3,479,795
### AUTOMATIC PACKAGING APPARATUS

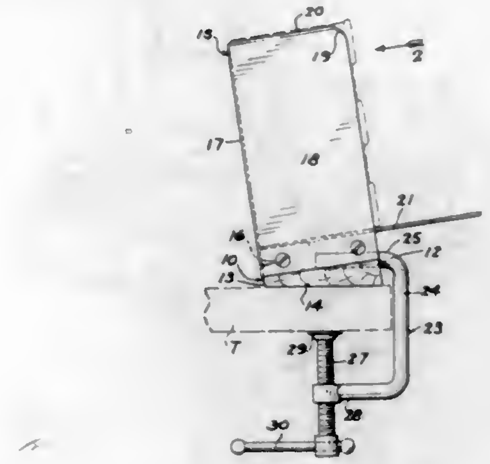
**Russell John Martin, Waverly, Iowa, assignor to Carnation Company, Los Angeles, Calif., a corporation of Delaware**
**Filed Oct. 31, 1966, Ser. No. 590,643**
**Int. Cl. B65b** *35/50, 39/00*
**U.S. Cl. 53—160** **9 Claims**



An apparatus for automatically inserting groups of envelopes or packets into boxes. The apparatus includes two receptacles in side-by-side relation which are shuttled between a common loading station and separate unloading stations respectively located on opposite sides of the loading station, each receptacle being loaded with a group of packets when it is at the common loading station, and being unloaded into a box when it is at the unloading station corresponding thereto. One receptacle is filled with a group of packets while another group is being unloaded from the other receptacle into a box.

### 3,479,796
### DEVICE FOR BOXING SHOTGUN SHELLS

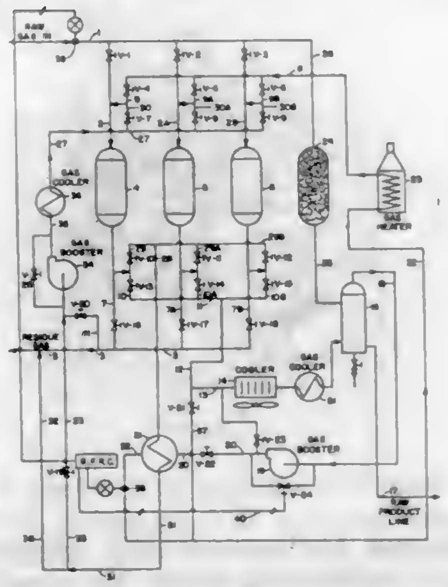
**Owen T. Blunt, 3725 W. Pemberton Road,**
**Bloomfield Hills, Mich. 48013**
**Filed Aug. 3, 1967, Ser. No. 658,173**
**Int. Cl. B65b** *67/02, 35/56, 39/00*
**U.S. Cl. 53—390** **3 Claims**



The device shown herein comprises a base and a clamp for fastening the base to a table. Side and rear walls extend upwardly from the base and a lift member rests on the base. The side and rear walls define a cavity into which shotgun shells can be loaded in side-by-side relation. After the shells are loaded, an inverted open ended shell box or carton is slipped over the side and end walls and the shotgun shells and the box and lift member are lifted simultaneously and inverted so that the shells are thereby loaded into the box in proper relation.

### 3,479,797
### SURGE CHAMBER FOR HYDROCARBON RECOVERY SORPTION SYSTEMS

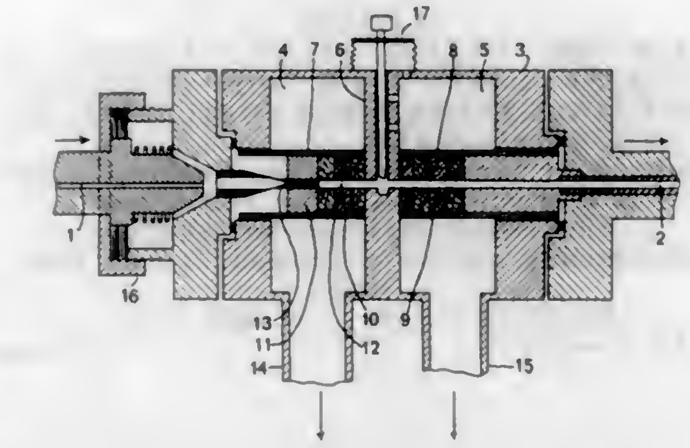
**John R. Spencer, Walton D. Greathouse, and James H. Cheek, Houston, Tex., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware**
**Filed Aug. 10, 1967, Ser. No. 659,781**
**Int. Cl. B01d** *53/02*
**U.S. Cl. 55—62** **9 Claims**



Method and apparatus for removing condensables from gases comprising three adsorber beds sequentially switched to sorption, heating, and cooling circuits. Condensing and liquid collection apparatus are included in the heating circuit to remove vaporized condensables in a heated gas flowing through the bed in the heating circuit. A surge chamber intermediate a conduit connecting the heating circuit and an outside gas source (feed gas or residue gas) accommodates expansion and contraction of gas in the heating circuit. Prior to switching the hot regenerated bed into the cooling circuit, the gas therein is displaced into the spent bed next to be heated.

### 3,479,798
### METHOD IN THE ANALYSIS OF GASES

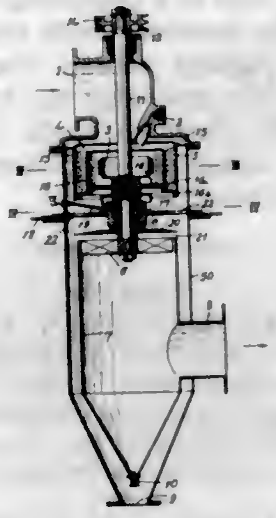
**Erik Ragnar Ryhage, Armfeltsgatan 5,**
**Stockholm, Sweden**
**Filed Apr. 16, 1965, Ser. No. 448,701**
**Claims priority, application Sweden, Apr. 21, 1964, 4,911/64; Apr. 23, 1964, 5,025/64; Sept. 25, 1964, 11,498/64**
**Int. Cl. B01d** *13/02*
**U.S. Cl. 55—158** **4 Claims**



Method and apparatus for separating carrier gases from gas mixtures in which the carrier gas is removed from a flowing stream of the mixture through a permeable barrier defining a flow channel for the gas mixture. The invention is particularly intended to be employed in the method of gas analysis in which the discharge from a gas chromatograph is introduced into a mass spectrometer in order to remove the carrier gas from the gases to be analyzed before they enter the spectrometer.

### 3,479,799
### APPARATUS FOR PURIFYING POLLUTED GAS

**Toyohiko Aoki, Tokyo, Japan, assignor to Naigaikogyo Kabushiki Kaisha, Tokyo, Japan**
**Filed Mar. 10, 1967, Ser. No. 622,135**
**Int. Cl. B01d** *47/16, 47/02*
**U.S. Cl. 55—230** **2 Claims**



A gas liquid contact apparatus having rotating agitating, contacting and separating mechanisms being rotated by a common shaft. The agitating, contacting and separating mechanisms are positioned within a tank.

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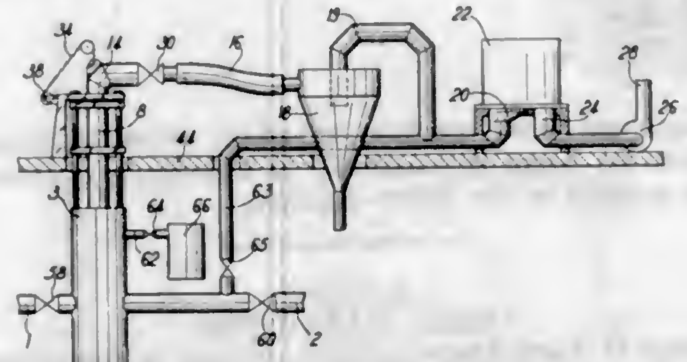
### 3,479,800
### GAS FILTERING INSTALLATION

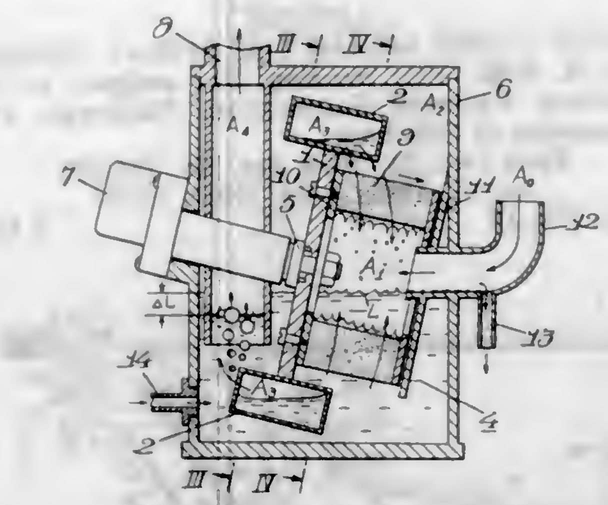
**Jacques Brion, Jouy-en-Josas, Michel Cousin, Montrouge, Wulf Talejkinski, Paris, and Andre Volk, Eaubonne, France, assignors to Commissariat a l'Energie Atomique, Paris, France**
**Filed July 24, 1967, Ser. No. 655,526**
**Claims priority, application France, Aug. 9, 1966, 72,566**
**Int. Cl. B01d** *45/18, 46/04*
**U.S. Cl. 55—294** **10 Claims**



A filtering installation which provides, without dismounting and consecutively, gas filtering through porous tubes which are preferably lined with a fibrous deposit, then the cleaning of the tubes when clogged by deposit of substances carried along by the filtered gas, and regeneration of the tubes, prior to further filtering, by the spraying of fibrous material onto their inner wall. These features are obtained by providing the installation above the actual filter with a number of tubular cleaning probes which can move relatively to the porous tubes and which can penetrate inside each such tube and which are connected to a suction system. A unit for spraying fibrous material into the cleaned tubes is also provided.

### 3,479,801
### ROTARY TRANSMITTING APPARATUS OF PURIFIED AND HUMIDIFIED AIR

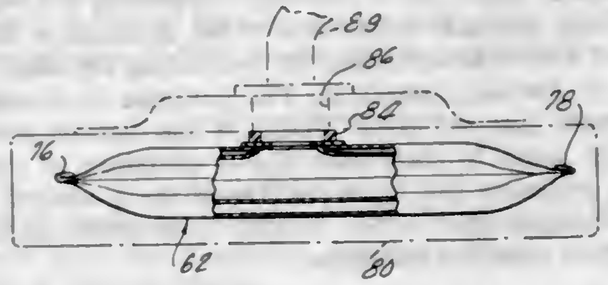
**Shohachiro Yamasaki, 18, Saganisonin Monzen, Ohjyoin-cho, Ukyo-ku, Kyoto, Japan**
**Filed Dec. 27, 1967, Ser. No. 693,839**
**Claims priority, application Japan, Oct. 9, 1967, 42/64,887**
**Int. Cl. B01d** *47/02, 47/00*
**U.S. Cl. 55—232** **3 Claims**



An apparatus transmitting purified and humidified air in which a plurality of hollow members are disposed at a fixed distance on a circle intersecting a liquid surface in a container at an oblique angle and fixed so that open ends thereof are rotated around a rotary axis positioned on the substantially equal level to that of the liquid surface, air introduced onto said liquid surface of the container through a filter means is caught by said hollow members, and in turn continuously discharged downwards beneath of a lower open end extending under water of an air exhaust pipe, meanwhile the liquid contained in said container is continuously dropped onto said filter means to purify and humidify the air introduced into said container and to wash contaminating substances stayed on said filter means. If said filter means is so constituted as to rotate together with said hollow bodies on the co-axial circle, contaminating substances remaining on the filter means can be cleaned by the liquid when said filter means is passing through said liquid and the liquid remaining on the filter means drops therefrom, so that effects of purification and humidification of air according to the apparatus of the invention can be improved.

### 3,479,802
### MULTI-COMPARTMENT VACUUM CLEANER FILTER BAG

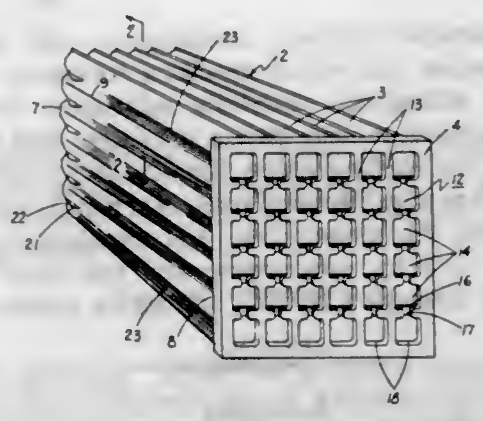
**John J. Fesco, Baldwin, N.Y., assignor to Studley Paper Company, Inc., a corporation of New York**
**Filed Feb. 23, 1965, Ser. No. 434,600**
**Int. Cl. B01d** *46/02, 29/12*
**U.S. Cl. 55—367** **2 Claims**



A multi-compartment vacuum cleaner bag formed of an air permeable material comprising inner and outer tubes formed with gussetted end walls, the ends of the tubes being sealed and an aperture and collar arrangement wherein a seal is formed so that the dust laden air initially enters the inner tube and passes therethrough in to the outer tube and thence into the atmosphere in filtered form.

### 3,479,803
### POCKET-TYPE FILTER

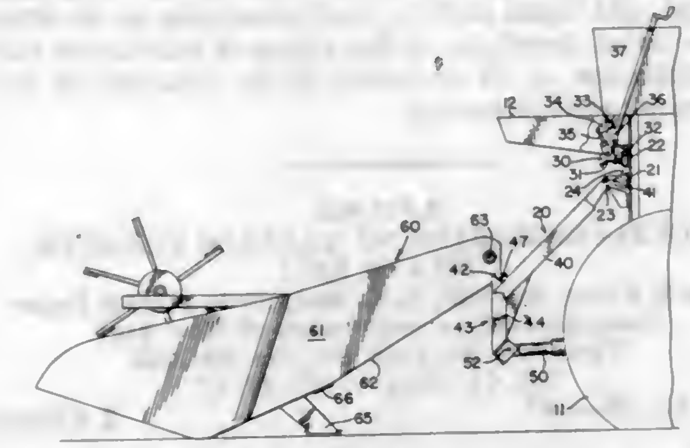
**Tom R. Smith, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware**
**Filed Jan. 23, 1967, Ser. No. 610,889**
**Int. Cl. B01d** *29/06*
**U.S. Cl. 55—500** **5 Claims**



An improved pocket-type fluid filter formed from flexible filtering material, the pockets of the filter having preselected indentation lines adjacent the mouth portions to insure proper opening and contouring of such pockets during fluid treating operations and having fold forming means adjacent the downstream end portions to hold the downstream ends in extended open position during fluid treating operations.

### 3,479,804
### FEEDER HITCH

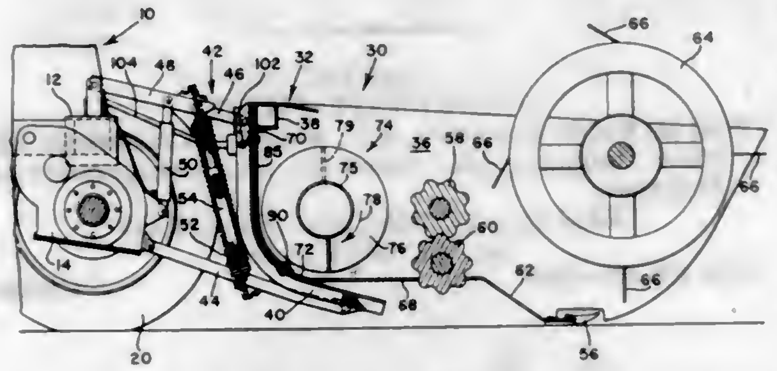
**Richard A. De Pauw, East Moline, Ill., and William H. Knapp, Davenport, Iowa, assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware**
**Filed Jan. 8, 1968, Ser. No. 696,278**
**Int. Cl. A01d** *35/12*
**U.S. Cl. 56—21** **18 Claims**



A header hitch for a combine comprising a U-shaped slide ramp pivotally connected to the combine at its free end and hydraulic cylinders for oscillating the slide ramp about its pivotal connection. The combine is driven forward such that the pivot shafts of the header slide up the slide ramp to their seat. Upon actuation of the hydraulic cylinders the bight portion of the U-shaped slide ramp engages the header causing it to pivot about its connection with the combine.

### 3,479,805
### COMBINATION MOWER, CONDITIONER AND WINDROWER

**Gust Soteropulos, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware**
**Filed Oct. 24, 1967, Ser. No. 677,549**
**Int. Cl. A01d** *41/02, 41/06, 57/02*
**U.S. Cl. 56—23** **3 Claims**

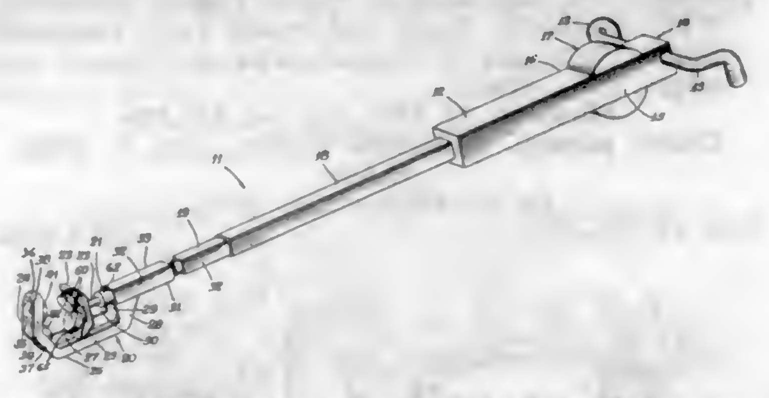


A self-propelled mower, conditioner, and windrower having a traction unit which carries a forwardly disposed, transversely elongated, vertically adjustable header, including a forward mower bar, a harvester reel above the mower bar for feeding crops thereto and rearwardly to a pair of crop conditioning rolls rearwardly of and coextensive with the mower bar, and an auger behind the conditioner rolls for converging and rearwardly propelling the crop through a central, adjustable width discharge opening.

### 3,479,806
### INERTIA SHAKER CONSTRUCTION

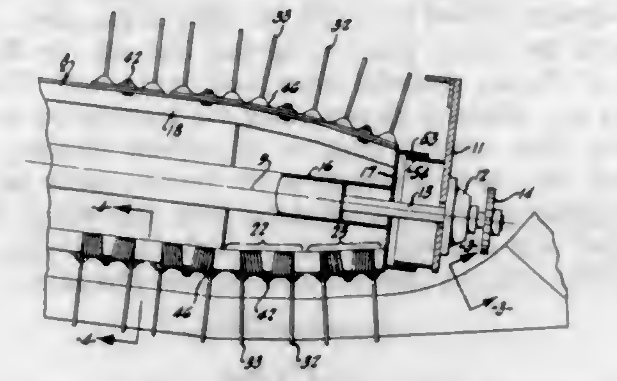
**Stuart D. Pool and Richard R. Steingas, Naperville, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware**
**Filed Aug. 30, 1965, Ser. No. 483,474**
**Int. Cl. A01g** *19/00;* **F16h** *27/04*
**U.S. Cl. 56—328** **1 Claim**

A tree shaker apparatus including an elongated extensible boom adapted for mounting on a mobile harvesting vehicle. A tree engaging clamp is mounted on the forward end of the boom and an inertia shaker mechanism is mounted on the rearward end of the boom for reciprocating the boom longitudinally to dislodge fruit from a tree gripped by the clamp structure.



### 3,479,807
### BEAN HARVESTER

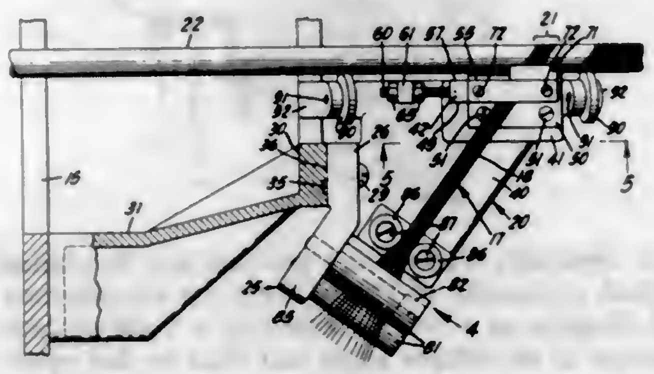
**George O. Tiura, Modesto, Calif., assignor to Tiura Manufacturer & Sales, a corporation of California**
**Filed Mar. 20, 1967, Ser. No. 624,380**
**Int. Cl. A01d** *7/00*
**U.S. Cl. 56—400** **2 Claims**



A harvester having a rotor on an advancing frame, the rotor having a support bar on which a spring tine unit is held by a retaining plate provided with a reentrant notch to guide and center a spring-urged tine into the apex of the notch. The ground end of the inclined rotor is multiple tapered and has a guard against vine entanglement.

### 3,479,808
### STRAND GUIDE MEANS FOR SPIRAL WINDERS

**Robert H. Frill, West Reading, Pa., assignor to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware**
**Filed Dec. 23, 1968, Ser. No. 786,201**
**Int. Cl. D02g** *3/36;* **D01h** *13/04*
**U.S. Cl. 57—10** **6 Claims**



Means for assembling a plurality of wire strands or the like withdrawn from individual strand supplies into a preformed band or ribbon and for guiding the ribbon of strands to a fabricating point.

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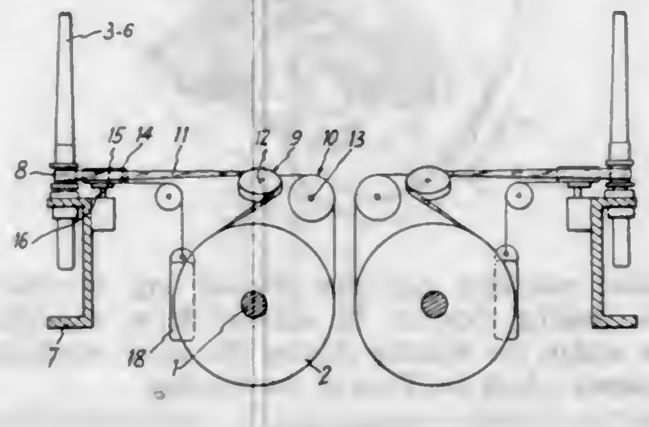
### 3,479,809
### BELT DRIVE FOR SPINDLES ON CONTINUOUS SPINNING OR TWISTING FRAMES

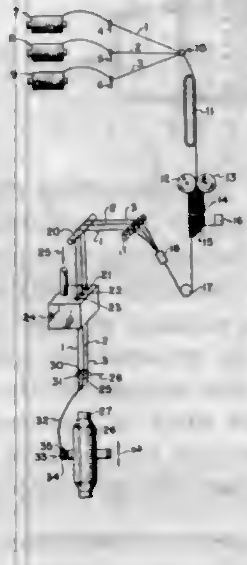
**Jean-Frederic Herubel, Guebwiller, France, assignor to N. Schlumberger & Cie, Guebwiller, Haut-Rhin, France, a French society**
**Filed Sept. 29, 1967, Ser. No. 671,657**
**Claims priority, application France, Oct. 11, 1966, 79,448**
**Int. Cl. D01h** *13/00;* **F16h** *7/00*
**U.S. Cl. 57—105** **8 Claims**



Apparatus for driving spindles on continuous spinning or twisting frames comprising a belt passing round a driving pulley and round spindles arranged in a line in pairs or with a solitary end spindle, guide pulleys associated with the driving pulley guiding the belt to and from the end spindles of the row and the belt passing between the pairs of spindles, or between a pair of spindles and a solitary spindle, over a tension roller, the arrangement maintaining the belt in contact with approximately the same arc of the wharve on each spindle.

### 3,479,810
### PROCESS FOR THE PREPARATION OF YARNS FOR PILE FABRICS

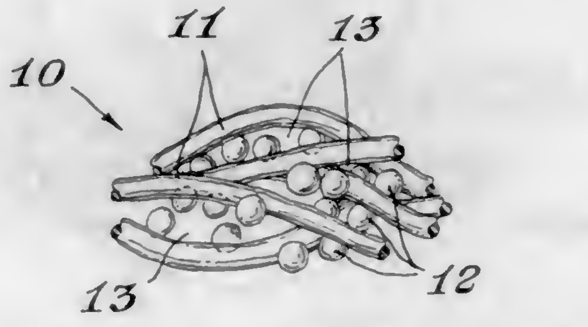
**Jannes Eshuis, Arnhem, Netherlands, assignor to American Enka Corporation, Enka, N.C., a corporation of Delaware**
**Filed Aug. 2, 1968, Ser. No. 749,709**
**Claims priority, application Netherlands, Aug. 12, 1967, 6711130**
**Int. Cl. D03g** *3/02;* **D04h** *17/00*
**U.S. Cl. 57—140** **3 Claims**



The invention relates to new, continuous filament yarns and a process of making such yarns having the combination of improved color and superior soiling resistance in comparison with continuous filament yarns heretofore available. There is provided a yarn made by the process wherein two or more differently colored yarns are subjected to crimping, then are separated and individually treated with a fluid under pressure and thereafter plied together and collected.

### 3,479,811
### YARN AND METHOD OF MAKING THE SAME

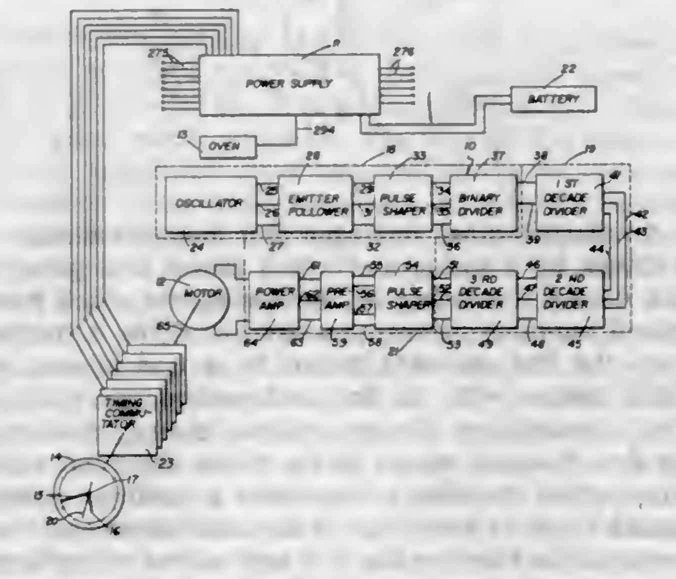
**Harold A. Walters, Beaverton, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed Nov. 29, 1967, Ser. No. 686,656**
**Int. Cl. D02g** *3/22, 3/36;* **B29h** *7/20*
**U.S. Cl. 57—153** **12 Claims**



Expandable microspheres are incorporated in a thread or yarn, subsequently heated to expand the microspheres and bulk the yarn. Bulking of the yarn after weaving or sewing provides tightly woven fabric or locked-in sewing thread.

### 3,479,812
### MASTER CLOCK

**Roger G. Kramer, Frederick, Md., assignor to Simplex Time Recorder Company, Gardner, Mass., a corporation of Massachusetts**
**Continuation of application Ser. No. 348,181, Feb. 28, 1964. This application Dec. 23, 1966, Ser. No. 628,179**
**Int. Cl. G04c** *13/04*
**U.S. Cl. 58—25** **2 Claims**

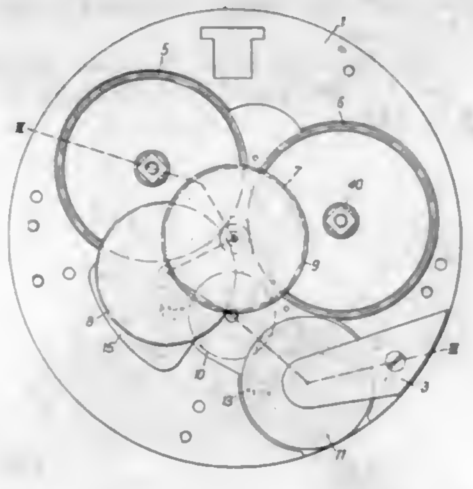


This invention relates to a master clock and, more particularly, to apparatus arranged to serve as a main regulator for a series of secondary clocks or other event-regulating equipment.

### 3,479,813
### DRIVE SPRING ARRANGEMENT FOR WATCH MOVEMENT USING TWO BARRELS

**Hans Kocher, Buren an der Aare, Switzerland, assignor to Buren Watch Company S.A., Buren an der Aare, Switzerland, a corporation of Switzerland**
**Filed Oct. 25, 1967, Ser. No. 678,014**
**Claims priority, application Germany, Apr. 15, 1967, 1,673,618**
**Int. Cl. G04b** *33/00, 1/16*
**U.S. Cl. 58—59** **14 Claims**

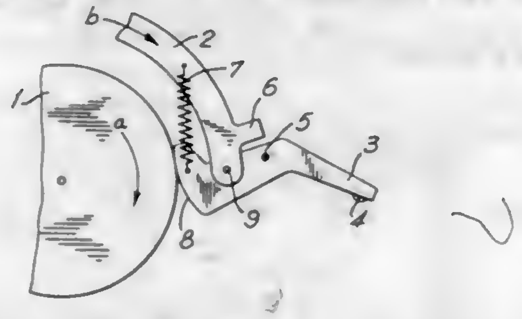
A watch movement having two separate drive springs housed in respective barrels which are mounted about parallel rotative axes, both said barrels being drivingly connected to the center-wheel runner of the time train,



and including a self-winding train wherein the ratchet wheels of both barrels are connected to a third step-down runner in the winding train.

### 3,479,814
### DRIVE FOR ELECTRIC CLOCKS

**Gustav Krüger, 22 Hirschbergerstrasse**
**725 Leonberg-Eltingen, Germany**
**Filed Mar. 10, 1967, Ser. No. 622,285**
**Claims priority, application, Germany, Mar. 23, 1966,**
**1,523,963**
**Int. Cl. G04c** *1/06*
**U.S. Cl. 58—41** **10 Claims**

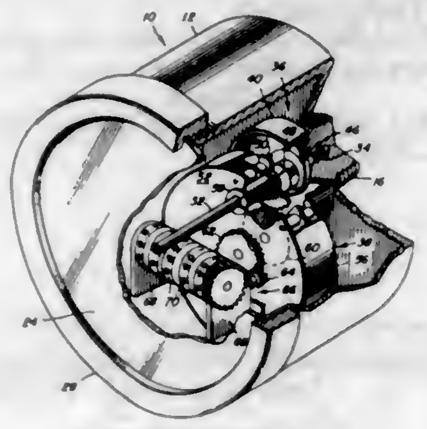


An electric clock having a first movable means which is driven by a spring and which moves in a given direction during tensioning of the spring, the clock having a second movable means to which the drive is transmitted from the first movable means by a transmission means which coacts with the first and second movable means. This transmission means assumes during movement of the first movable means in the above direction while the drive spring therefor is tensioned a position completely spaced from at least one of movable means so that the transmission between the first and second movable means is completely interrupted without any frictional or mechanical engagement of any type between components of the transmission while the spring which drives the first movable means is tensioned.

### 3,479,815
### ELAPSED TIME INDICATOR

**Stuart M. Prindell, Jr., Malcolm R. Perry, Vincent W. Martin, and Daniel F. Fritsch, Lancaster, Pa., assignors to Hamilton Watch Company, Lancaster, Pa., a corporation of Pennsylvania**
**Filed Sept. 27, 1967, Ser. No. 670,871**
**Int. Cl. G04b** *5/20, 37/12, 47/00*
**U.S. Cl. 58—145** **14 Claims**

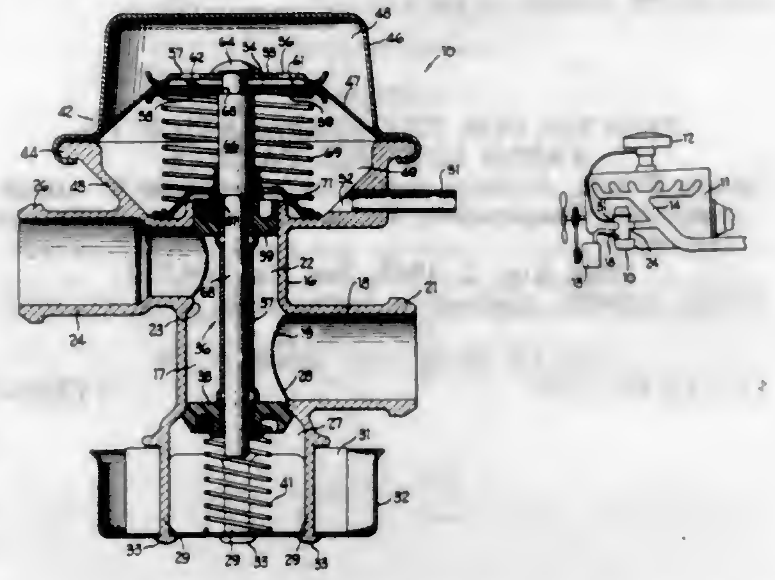
In one form, the elapsed time indicator comprises a housing releasably secured on the end of a rotating element for rotation therewith and a clock mechanism having a conventional escapement and balance wheel depending from a shaft mounted in the housing coaxially with the rotating element. A constant torque friction clutch is carried by the housing to translate the rotation of a monitored shaft into a constant torque input driving the clock mechanism which, in turn, drives a counter having



a readout recording aggregate elapsed time of rotation of the rotating element. In another form, the clutch rotates within the housing driving the clock mechanism and counter which are fixed to the housing.

### 3,479,816
### BY-PASS VALVE FOR AIR INJECTION SYSTEM

**George D. La Masters, Decatur, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Feb. 1, 1968, Ser. No. 702,266**
**Int. Cl. F01n** *3/02*
**U.S. Cl. 60—30** **5 Claims**



A by-pass valve for controlling the flow of ventilating air to the exhaust system of an internal combustion engine includes a dual valve element co-operating with a pair of ports which divert available ventilating air while restricting air flow to the exhaust system. The valve element is directly operable in response to excess pressure in the valve body and is also independently operable in response to a rapid pressure drop in the engine intake manifold by means of a vacuum servo-motor acting on the valve element through a lost motion connection.

### 3,479,817
### LOW ENTROPY ENGINE

**Wallace L. Minto, Sarasota, Fla., assignor to Kinetics Corporation, Sarasota, Fla., a corporation of Delaware**
**Filed July 6, 1967, Ser. No. 651,580**
**Int. Cl. F01k** *25/00, 19/10;* **F01n** *3/04*
**U.S. Cl. 60—36** **6 Claims**

A prime mover system includes a gas fluid driven engine, a condenser, a pump, a boiler and a super-heater connected in a closed loop and containing as a drive medium

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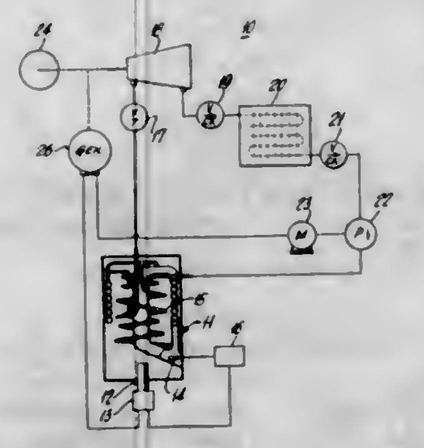
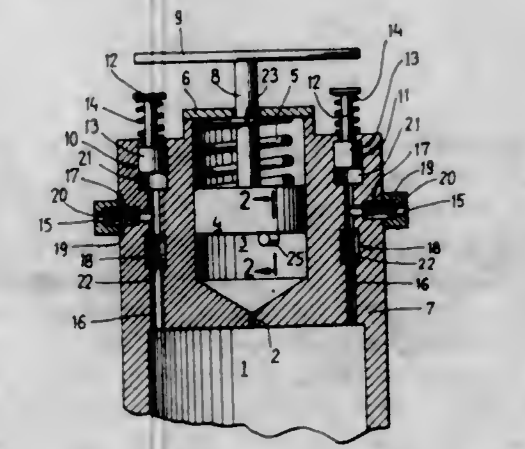
a non-flammable fluid having a latent heat of vaporization of less than 100 gram-calories per gram at the operating temperature of the condenser, and a boiling point of less than 95° C. at atmospheric pressure, and a critical temperature at least 10° C. higher than the temperature of the condenser cooling fluid, such as the halogenated low boiling point hydrocarbons, for example, trichloromonofluoromethane. The condenser is valved to maintain a pressure therein at least equal to the condensation pressure of the drive fluid at a temperature higher than the temperature of the condenser cooling medium, and the boiler heater is automatically regulated to maintain the boiler temperature or pressure at an adjustable predetermined value. An adjustable throttle valve is located between the engine input and the boiler.



### 3,479,818
### APPARATUS AND METHOD FOR FEEDING PULSATING FLUID PROPELLANT ROCKET ENGINES

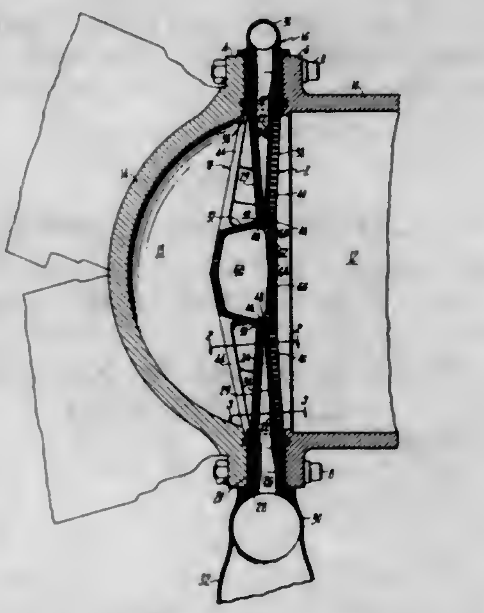
**Heinrich Strobl, Hohenkirchen, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Ottobrunn, near Munich, Germany**
**Filed Mar. 14, 1967, Ser. No. 623,086**
**Claims priority, application Germany, Mar. 25, 1966,**
**B 86,362**
**Int. Cl. F02g** *3/00;* **F02k** *5/02*
**U.S. Cl. 60—39.48** **16 Claims**



A method of feeding propellant to the combustion chamber of a fluid operated pulsating rocket engine using an energy operated pump and an elastic energy storing member such as a spring, comprises storing pump operating energy by using the operating pressure of the rocket engine during each high pressure phase of operation, and utilizing the stored energy during the low pressure phase of operation to drive the energy operated pump and to direct the propellant into the combustion chamber so that the cycle is repeated. The initial energy storage level of the elastic member is adjusted to vary the operating characteristics. The device for carrying out the method includes a pump having a suction connected to the propellant supply and a discharge connected to the combustion chamber. The energy storing means includes a member movable upon increase in pressure of the combustion chamber to store energy and movable in an opposite direction upon decrease in pressure of the combustion chamber to operate the pump.

### 3,479,819
### INJECTOR

**David L. Bogue, Jupiter, Fla., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Sept. 12, 1967, Ser. No. 667,215**
**Int. Cl. F02g** *1/06, 3/00;* **F02k** *9/02*
**U.S. Cl. 60—39.74** **16 Claims**

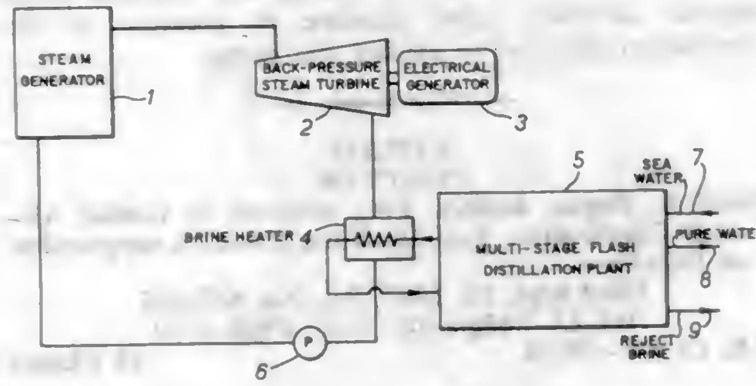


An injector for injecting two fluids having a multiplicity of radially arranged spray bars which project inwardly from a manifold with the bars having a cooperating member with arms which completes the face of the injector. One fluid is fed to the spray bars and enters the combustion chamber from small openings or nozzles therein while the other fluid is injected from between spray bars and member in a radial line. The center of the member and arms having areas covered with porous metal so that a coolant can be fed therethrough to protect the face of the injector during operation. The portion of the spray bars facing the combustion chamber are provided with inserts of a high conductivity material to aid in keeping the face of the injector at a safe temperature. The spray bars are also protected so that a fluid will not boil therein as it is being passed therethrough. The openings or nozzles passing from the spray bars can be variably controlled to provide throttling. This includes the use of an operating ring in one of the fluid manifolds which can be rotated by a mechanism therein to variably position valves which control flow through the openings or nozzles of the spray bars.

### 3,479,820
### ECONOMICAL UTILIZATION OF EXISTING POWER PLANTS

**Abraham Rutenberg, 13 Panorama Road,**
**Haifa, Israel**
**Filed Oct. 30, 1967, Ser. No. 679,024**
**Claims priority, application Great Britain, Nov. 8, 1966,**
**50,078/66**
**Int. Cl. F01b** *31/16;* **F02b** *41/10;* **F01k** *19/10*
**U.S. Cl. 60—64** **4 Claims**

A steam power plant utilizes a condensing steam turbine to generate electricity until a substantial part of the capital cost of the plant is recovered. Then the condensing steam turbine is replaced by a back pressure turbine and the quantity of steam input is increased to permit electrical output substantially equal to the original output and low pressure exhaust steam is then used for other purposes, for example, to operate a water desalination plant.



3,479,821

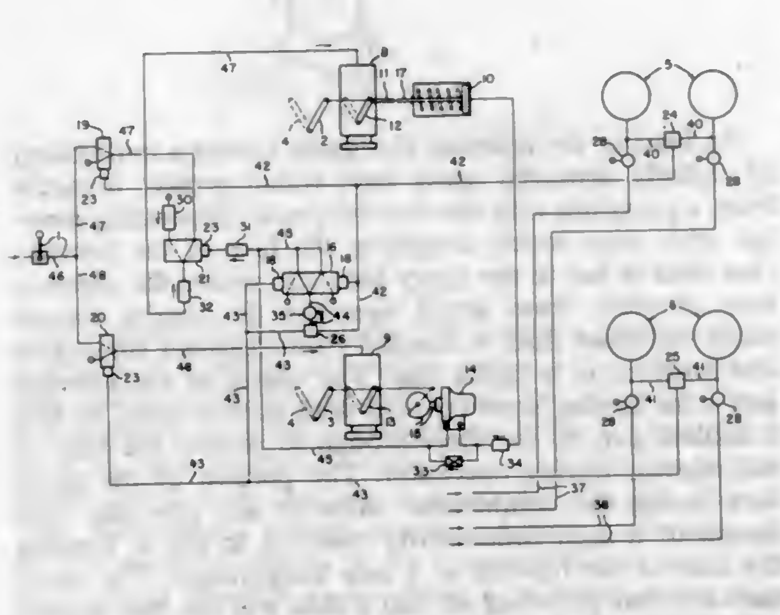
### LOAD SHARE CONTROL MECHANISM

**Harold M. Mathers, 902 NW. Ballard Way 98107, and Paul Scott, 1530 N. 107th 98133, both of Seattle, Wash.**

**Filed May 13, 1968, Ser. No. 728,426**

**Int. Cl. F02b** *73/00*

**U.S. Cl. 60—97** **10 Claims**



A pneumatic control mechanism for automatically connecting a master throttle to multiple engines according to whether the clutches coupling the engines to a common load are engaged.

3,479,822

### ENGINE SYNCHRONIZER

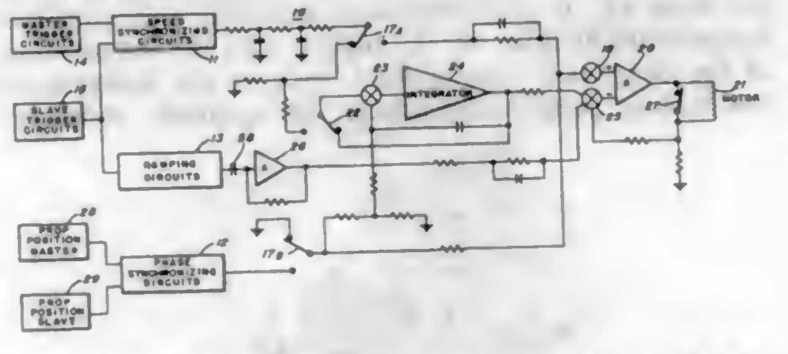
**Robert E. Nelson, Indianapolis, and Charles D. Boltz, Jr., Greenwood, Ind., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**

**Filed Mar. 27, 1968, Ser. No. 716,657**

**Int. Cl. F02b** *73/00;* **F01b** *21/00;* **B64c** *11/46*

**U.S. Cl. 60—97** **7 Claims**

A control system which provides for speed synchronizing and phase synchronizing two or more turboprop engines by applying current to the windings of a torque motor which is attached to the fulcrum point of the engine governor system. By energizing the torque motor in a direction to aid or oppose the centrifugal governor weight, more or less propeller pitch may be essentially artificially introduced to increase or decrease motor speed.



3,479,823

### COMBUSTION APPARATUS

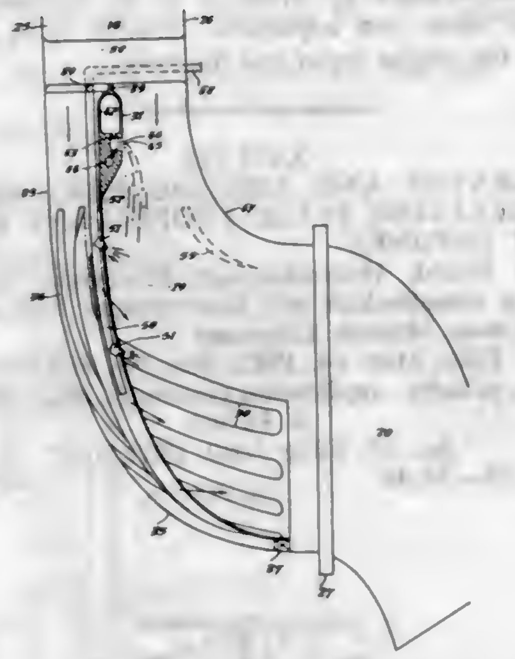
**David Harding Parnell and Arthur Sotheran, London England, assignors, by mesne assignments to Rolls-Royce Limited, Derby, England, a British company**

**Filed June 27, 1967, Ser. No. 649,314**

**Claims priority, application Great Britain, July 1, 1966, 29,673/66**

**Int. Cl. F02k** *3/08;* **F02c** *3/04*

**U.S. Cl. 60—224** **8 Claims**



The disclosure of this invention relates to combustion apparatus for a bypass duct of a bypass gas turbine jet propulsion engine for aircraft in which a grid of longerons is provided at one end with a nose member in alignment with the adjacent ends of the longerons shaped to allow substantially laminar flow past it. The nose member has means for providing selectively a sheltered zone in the laminar flow and ducting is provided with at least one fuel injector for supplying pilot fuel to the sheltered zone. Ducting and at least one fuel injector are provided for supplying main fuel between the longerons which constitute continuous channels for flame propagation.

3,479,824

### SEAWALL AND FENCE CONSTRUCTION

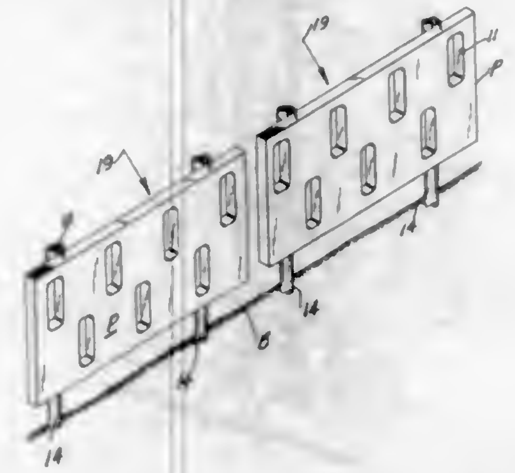
**Cecil F. Schaaf, G-2126 E. Coldwater Road 48505, and Walter Macciomel, 5615 Marlowe Drive 48504, both of Flint, Mich.**

**Filed Sept. 18, 1967, Ser. No. 668,439**

**Int. Cl. E02b** *3/06;* **E01f** *7/00;* **E04h** *17/16*

**U.S. Cl. 61—3** **2 Claims**

This invention relates to precast seawalls and concrete fence constructions in which panels are swingingly mounted on posts anchored in a lake bottom or on dry land and on which the panels are swingingly mounted to swing during storms, heavy winds, and other severe weather conditions to break the winds and waves to control the shifting of sand and make for quieter and more calm water flowing through and past the panels. Whereas the mounted panels are subjected to a swinging action in stormy weather, it is also true that the structure using this same construction can be utilized as a fence which can be erected on land adjacent the shore line and will break up heavy winds in the open or in a passageway without damage to the fence or the immediate area.



3,479,825

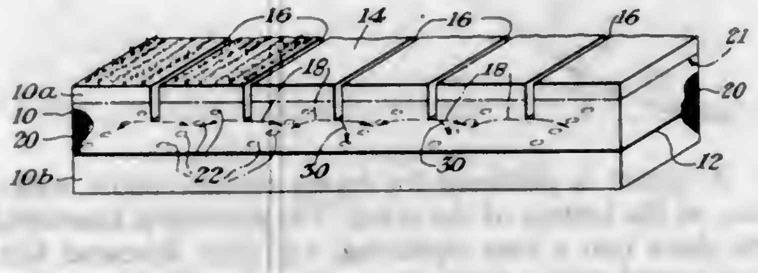
### IRRIGATIONAL SYSTEMS

**Harold Richard Hellstrom, 5245 Center Ave., Pittsburgh, Pa. 15232**

**Filed July 31, 1967, Ser. No. 657,150**

**Int. Cl. E02b** *13/00;* **B63b** *35/04;* **E02f** *5/00*

**U.S. Cl. 61—13** **12 Claims**



A subsurface irrigational system is disclosed wherein a barrier is placed a predetermined distance below the surface of the soil to control the downward percolation of water through the subsoil. Thus, an artificial water table is maintained above the barrier but below the root systems of the particular crop or crops to be planted in the irrigated area. Depending upon the character of the soil and subsoil the artificial barrier can be continuous or discontinuous, impervious or semi-pervious in order to control the height of the artificial water table in accord with the slope of the land, character of the soil, type of crops, soil salinity, and availability of irrigational water. After installation of the barrier, irrigational water is introduced through either a subsurface conduit system or through widely spaced relatively deep subirrigational ditches so that the water flows laterally through the soil and subsoil between the land surface and the artificial barrier. This arrangement provides a minimum of interference with farming equipment and more importantly minimizes surface evaporation of the irrigational water.

3,479,826

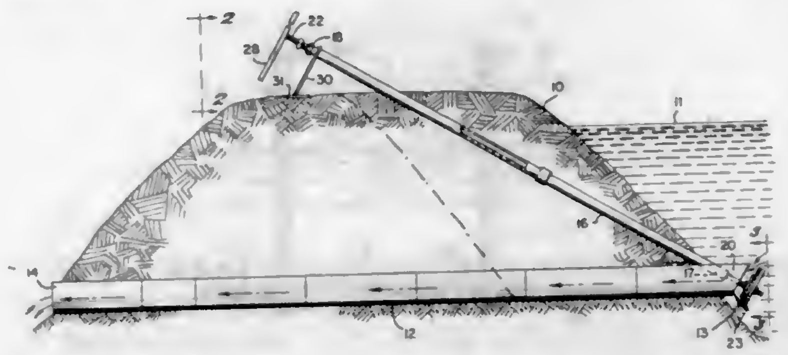
### IRRIGATION VALVE

**Charles Richens, Roosevelt, Utah 84066**

**Filed May 3, 1968, Ser. No. 726,325**

**Int. Cl. E02b** *8/04;* **F16k** *31/46*

**U.S. Cl. 61—22** **1 Claim**



An irrigation valve angularly mounted at the inlet end of a stand pipe and controlled by a stem running to a handle above the dam.

3,479,827

### TRENCH SHORING FRAME

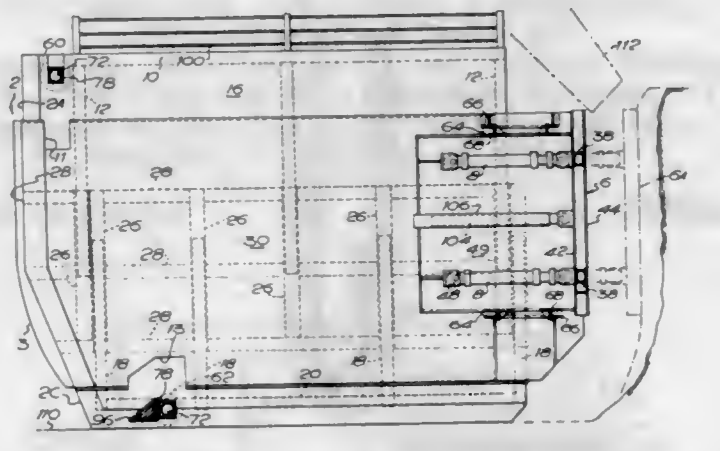
**Anthony Ronald Seaton Morrice, 79 Oakdale, Harrogate, England**

**Filed Feb. 26, 1968, Ser. No. 708,206**

**Claims priority, application Great Britain, Mar. 3, 1967, 10,109/67**

**Int. Cl. E21d** *5/00, 5/11*

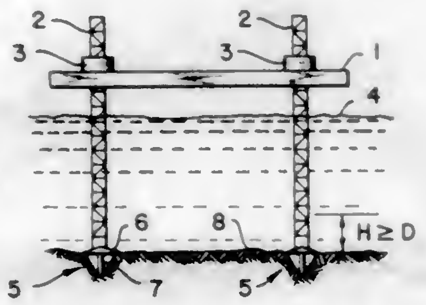
**U.S. Cl. 61—41** **8 Claims**



A trench shoring apparatus for laying pipeline in a trench adapted to change direction during the digging of the trench at the required angle without need for lifting the apparatus out of the formed trench, comprising a frame having a rigid thrust plate, vertical side walls formed with at least two telescoping members, jack assemblies connecting the side walls to the thrust plate, and a plurality of cross-members extending between the side walls, struts located towards the front of the side walls cooperating with hinged plates located at the rear of the side walls which adapt for the telescoping movement of the side walls and at least one of the cross-members being operable to move the side walls towards and away from each other. When the shoring frame is set in a trench, it supports the full side loads and is movable along the trench by operation of the jacks which drive the apparatus when the thrust plate pushes against the soil directly behind it.

### 3,479,828
### PLATFORM LEG

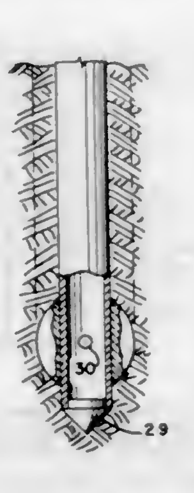
**Rafael Fernández Luque, Rijswijk, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed Mar. 20, 1968, Ser. No. 714,657**
**Claims priority, application Great Britain, Apr. 28, 1967, 19,618/67**
**Int. Cl. E02b** *17/02;* **B63b** *35/44*
**U.S. Cl. 61—46.5** **8 Claims**



A leg for supporting a structure, such as an offshore drilling platform, on a marine bottom, said leg including an upstanding framework terminating at its lower end in a foot member, said foot member being of a design that diminishes the turbulence resulting from water current flow in the vicinity of the leg where the framework is connected to the foot member thereby reducing scour of the marine bottom.

### 3,479,829
### METHOD AND APPARATUS FOR FORMING END BEARING PILES

**Willard B. Goodman, Sherman Oaks, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed June 21, 1967, Ser. No. 647,818**
**Int. Cl. E02d** *5/34, 5/54;* **E21b** *11/02*
**U.S. Cl. 61—53.6** **15 Claims**

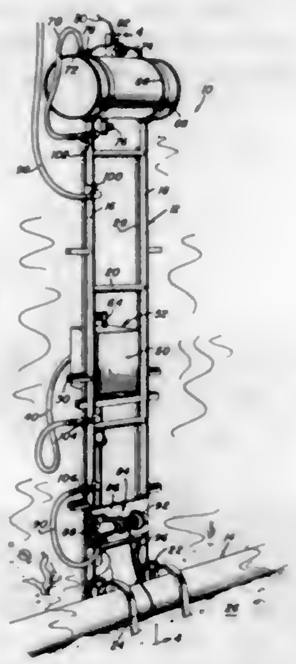


An elongated tubular member, having fins near one end and injection ports adjacent the fins, is sonically driven into an earth formation and rotated at a selected depth while a slurry of solidifiable material such as cement is injected into the formation from the ports forming an enlarged base. The tubular member is then withdrawn from the formation while cement is pumped through the member into the borehole to form the body of the pile.

### 3,479,830
### ANCHORING MACHINE

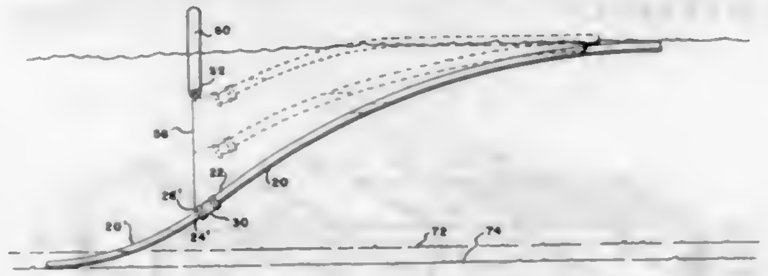
**Adam R. Ostarly, New Orleans, La., assignor to Global Divers and Contractors, Inc., a corporation of Louisiana**
**Filed Apr. 20, 1967, Ser. No. 632,254**
**Int. Cl. E02d** *5/74;* **B63b** *21/26, 35/04*
**U.S. Cl. 61—72.3** **17 Claims**

The anchoring of pipe line lying on the floor of the ocean by driving a screw anchor into the floor bed and tying its upper end to the pipeline before the anchor is further driven below the mud line. Apparatus for driving the anchor is floated to a location above the pipeline and pulled down to the bottom surface so as to drive the anchor into the bed adjacent to the pipeline.



### 3,479,831
### METHOD AND SYSTEM FOR LAYING PIPE UNDER WATER

**Walter Dorwin Teague, Jr., Nyack, N.Y., assignor to Columbia Gas System Service Corporation, New York, N.Y., a corporation of Delaware**
**Filed Sept. 20, 1967, Ser. No. 669,220**
**Int. Cl. B63b** *35/04;* **F16l** *1/00*
**U.S. Cl. 61—72.3** **11 Claims**

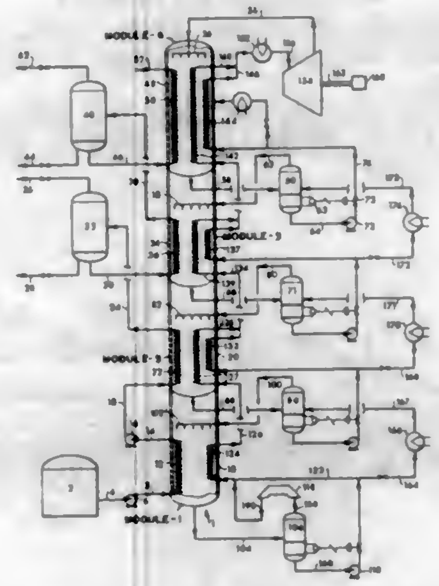


A system is disclosed for laying pipeline under water, i.e., on the bottom of the ocean. The pipeline is assembled on shore into a long pipestring, e.g., four thousand feet, and coated with a corrosion resistant material, and a cement jacket is added to maintain a slight positive buoyancy in the assembled pipestring. The pipestring is then towed out to sea to the desired installation area, and one end is attached to the free end of an already laid and submerged pipeline. The pipestring is then progressively flooded at a predetermined rate to create a negative buoyancy thereby causing the pipestring to sink progressively and to drape along the ocean bottom.

### 3,479,832
### PROCESS FOR VAPORIZING LIQUEFIED NATURAL GAS

**Jan A. Sarsten, Millington, N.J., and Michael C. Myers, Rome, Italy, assignors to Esso Research and Engineering Company, a corporation of Delaware**
**Filed Nov. 17, 1967, Ser. No. 683,991**
**Int. Cl. F17c** *7/02*
**U.S. Cl. 62—52** **7 Claims**

The instant disclosure is directed to a method for vaporizing liquefied natural gas that can produce byproduct power at low cost by economic utilization of the available liquefied natural gas cold sink. A single multicomponent motive fluid is used as the liquefied naural gas exchange media.

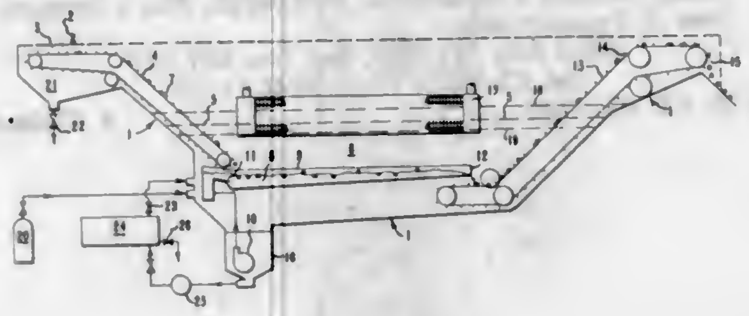


### 3,479,833
### METHOD OF EXTRACTING HEAT FROM ARTICLES WITH AN EBULLIENT LIQUID FREEZANT

**Vincent H. Waldin, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**Continuation-in-part of application Ser. No. 725,257, Apr. 19, 1968, which is a continuation-in-part of application Ser. No. 703,393, Feb. 6, 1968. This application Jan. 30, 1969, Ser. No. 795,328**

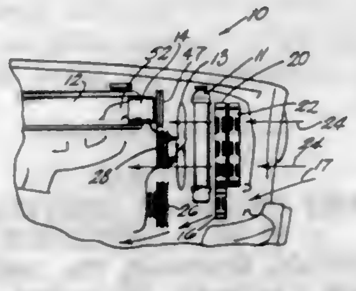
**Int. Cl. F25d** *13/06, 17/02*
**U.S. Cl. 62—63** **27 Claims**



Method of, and apparatus for, extracting heat from articles, as in the freezing of food, by direct contact with an ebullient liquid freezant in an open vessel without significant loss of freezant vapor to the atmosphere which comprises maintaining by means of a vapor condenser a noncondensable gas-100% freezant vapor interface within the vessel below the level of all paths to the outside atmosphere and above the level at which the articles come in direct contact with the liquid freezant, and introducing the articles into and removing the articles from the vessel without substantially disturbing the noncondensable gas such as air above the interface or introducing essentially any noncondensable gas below the interface, said vessel being equipped with a sluice pan adapted to contain liquid freezant which flows with a substantially constant velocity in a horizontal direction away from the region of introduction of articles.

### 3,479,834
### METHOD AND APPARATUS FOR AIR CONDITIONING AUTOMOBILES AND THE LIKE

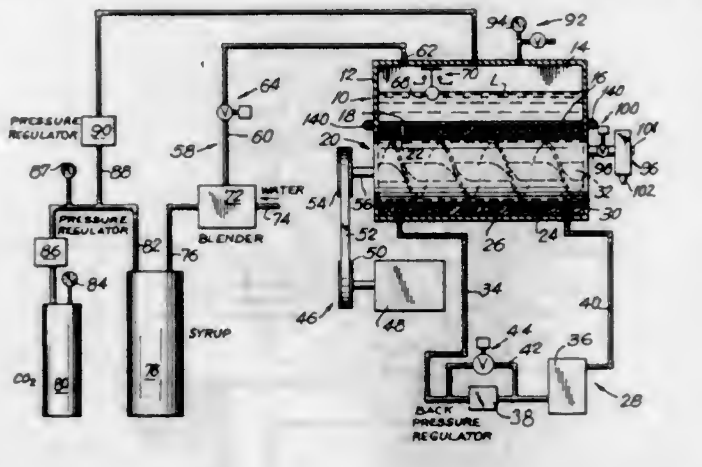
**William E. Anglin and Paul E. Anglin, Dallas, Tex., assignors to Capitol Refrigeration, Inc., Dallas, Tex., a corporation of Texas**
**Filed Apr. 10, 1968, Ser. No. 720,164**
**Int. Cl. F25b** *1/00;* **B60h** *3/04*
**U.S. Cl. 62—115** **11 Claims**



This is an improved automobile air conditioning system where the refrigerant condenser system, for instance, is of tubular type and is of special construction, mounted in front of the automobile radiator, as usual, but has an additional lower section for receiving the superheated refrigerant gas direct from the compressor, with cooling air passing through this lower section and out below the automobile radiator so as to not affect the normal engine cooling operation of the latter. The thus pre-cooled refrigerant gas then passes through a second condenser section directly in front of the automobile radiator and into a third condenser section forward of the second, with refrigerant condensation taking place substantially completely in this third section. Behind the automobile radiator the space is also very limited and in order to belt drive more than the fan, a special adjustable member is added to facilitate tightening the compressor belt as well as the belt, which may be used to drive the fan, and which through various pulleys and belts, may also be utilized to drive a generator and a smog pump.

### 3,479,835
### MACHINE FOR DISPENSING A SEMI-SOLID, CHILLED, EDIBLE PRODUCT

**Curtis Lane, Riverdale, N.Y., and Kenneth Glemby, Woodcliff Lake, and Leon Greenstein, Cranford, N.J., assignors to Lanex Importing Company, Lodi, N.J.**
**Filed Jan. 17, 1968, Ser. No. 698,496**
**Int. Cl. F25c** *7/16*
**U.S. Cl. 62—135** **3 Claims**



A vending or non-vending machine for dispensing a carbonated or non-carbonated edible product in a chilled semisolid condition and a method for operating the machine. A supply of the product in liquid condition is maintained in a closed container from which the liquid is delivered to an agitating means which is refrigerated and which converts the product from its liquid into its chilled, semisolid condition, and a dispensing means coacts with the agitating means for dispensing the product therefrom. The liquid which is in the closed container is maintained at a pressure higher than atmospheric pressure so as to reduce the tendency of the product to freeze, and in addition carbon dioxide is incorporated into the liquid so that the liquid is in a carbonated condition further depressing the freezing point. Also, the agitating means is intermittently actuated to further reduce the tendency of the product to freeze. During actual dispensing of the product the agitating means is refrigerated to an increasing degree so as to increase the rate at which the product is converted from liquid into chilled, semisolid condition.

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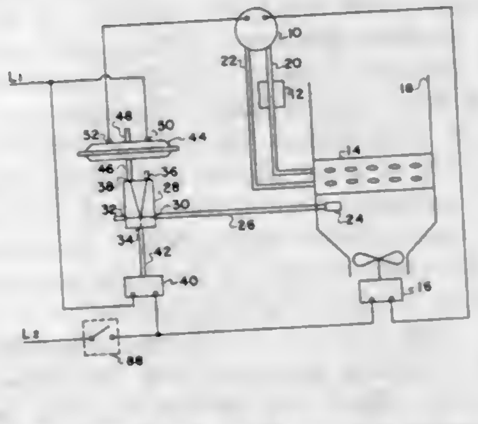
**3,479,836**

### DEFROST CONTROL SYSTEM USING A FLUID AMPLIFIER

**William L. McHale, Broomall, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware**
**Filed Nov. 24, 1967, Ser. No. 685,593**
**Int. Cl. F25d** *21/06, 21/02*
**U.S. Cl. 62—140** **6 Claims**



A defrost control system having a pressure operated device controlling the operation of a compressor and a circulation fan in a cooling system and wherein the defrost control system includes a fluid amplifier for amplifying pressure sensed at an evaporator and communicating the amplified pressure to the pressure operated device.

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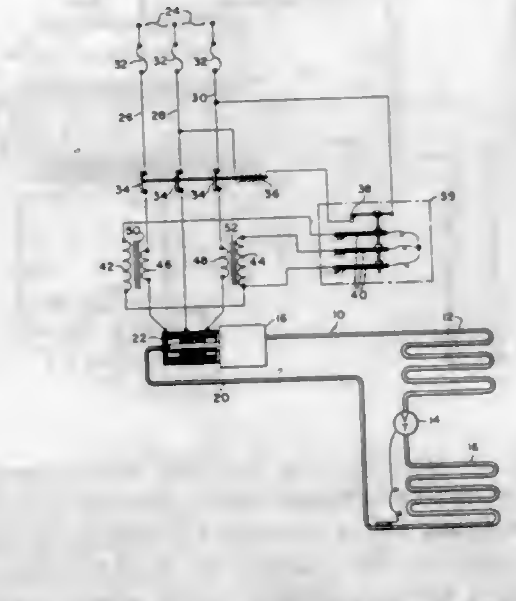
**3,479,837**

### MOTOR CONTROL FOR REFRIGERATION SYSTEM

**Robert G. Miner, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin**
**Filed Dec. 4, 1968, Ser. No. 780,997**
**Int. Cl. F25b** *1/00, 41/00*
**U.S. Cl. 62—230** **4 Claims**



A compression cycle refrigeration system driven by a refrigerant cooled motor having power circuit overload interrupting means that will not be damaged by fault currents of the order accompanying motor burnout or shorting.

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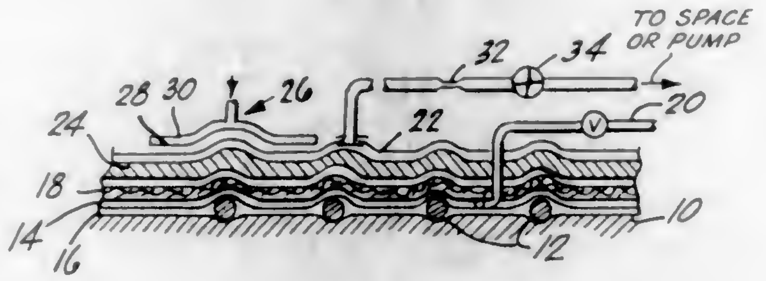
**3,479,838**

### COOLING MATERIAL

**Jack G. Bitterly, Woodland Hills, Calif., assignor to McDonnell Douglas Corporation, a corporation of Maryland**
**Filed May 15, 1967, Ser. No. 638,227**
**Int. Cl. F25d** *23/12;* **F25b** *19/00*
**U.S. Cl. 62—259** **4 Claims**



A material to be used as a blanket, article or garment that provides cooling of a person's body or other objects in contact therewith. It consists of an inner heat conducting and moisture absorbent layer, a water permeable or impermeable inner membrane, a second water absorbent layer, an internal vapor conduit, and an outer impervious layer forming a flexible protective pressure barrier having a vapor outlet. A negative pressure between the object and the inner layer assists in the heat and moisture transfer to the second absorbent layer. Supplemental coolant liquids also may be pumped through the evacuation chamber contained within the outer layers. A negative pressure from without removes the heated moisture through the outer layer at a controlled rate to regulate the cooling rate and thus the surface temperature of the object or person protected by the material.

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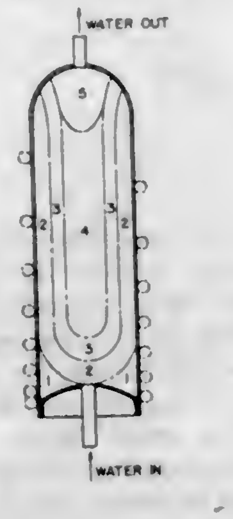
**3,479,839**

### FREEZABLE WATER COOLING CHAMBER

**Eugene W. Scott, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed July 31, 1967, Ser. No. 657,127**
**Int. Cl. B67d** *5/62;* **F28f** *13/00*
**U.S. Cl. 62—394** **5 Claims**



Drinking water cooler cooling chamber apparatus having refrigerant coils wrapped about the chamber in a nonuniform spacing concentrating the heat extracting capacity adjacent the inlet end of the chamber to cause the water within the chamber to freeze, when it does, in a controlled sequence from the inlet to the outlet end of the chamber to avoid ice bridging across the outlet with part of the interior water trapped in the interior of the chamber.

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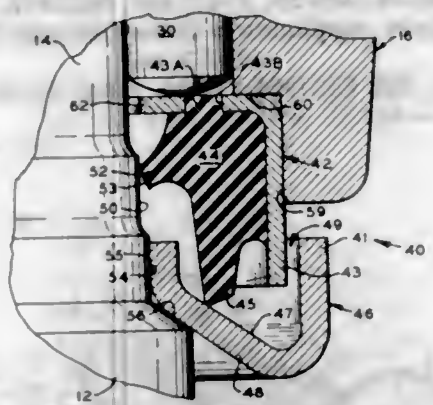
**3,479,840**

### TRUNNION SEAL FOR CARDAN-TYPE UNIVERSAL JOINT

**Richard P. Meyers, Toledo, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia**
**Filed Apr. 16, 1968, Ser. No. 721,703**
**Int. Cl. F16d** *3/68*
**U.S. Cl. 64—17** **7 Claims**



A trunnion sealing device in a Cardan-type universal joint is provided in which a multi-lip, labyrinth type seal is assembled around the radially inner extremity of the trunnion on each journal cross arm in order to effect improved sealing characteristics between the external surface of the trunnion and the bearing race enclosing the trunnion.

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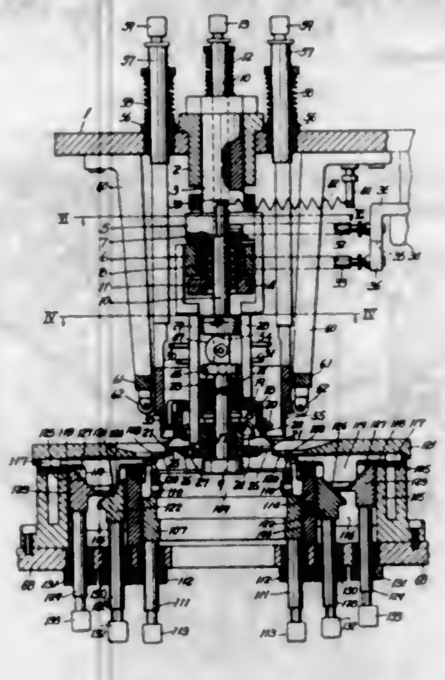
**3,479,841**

### CIRCULAR TRICOT KNITTING MACHINE

**Naotake Kitahara, Tokyo, and Terue Yoshida,, Yokosuka-shi, Japan, assignors to Tokyo Kulsushita Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan**
**Filed Sept. 28, 1967, Ser. No. 671,343**
**Claims priority, application Japan, Dec. 8, 1966, 41/80,024**
**Int. Cl. D04b** *9/06*
**U.S. Cl. 66—31** **2 Claims**



The invention relates to a circular tricot knitting machine in which improved knitting needles, yarn guides, a presser, and sinkers are arranged in a circle. All needles move horizontally toward the center, while the yarn guides, positioned above the same, and reciprocating in circumferential direction, feed the yarns. The presser and the sinkers make up and down strokes, crossing the needles.

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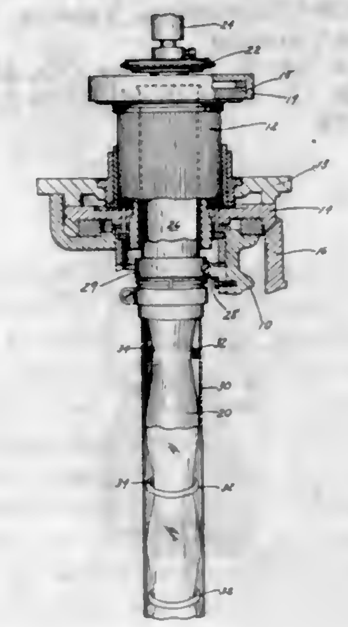
**3,479,842**

### ANTITWIST INSERT FOR CIRCULAR KNITTING MACHINES AND METHOD

**Truette H. Baird, Valdese, N.C., assignor to Stevens Hosiery Division of J. P. Stevens & Co., Inc., Hickory, N.C., a corporation of Delaware**
**Filed Feb. 14, 1968, Ser. No. 705,460**
**Int. Cl. D04b** *27/34*
**U.S. Cl. 66—149** **3 Claims**



A plurality of non-conductive inserts, each of which has a cylindrical bore located substantially in the center thereof, are placed inside a vacuum draw-down tube which is connected to a circular knitting machine. The inside diameter of the inserts enables a knitted fabric to be pulled away from the flat surface of the draw-down tube and thereby prevents the fabric from clinging to the sides thereof. The resulting loss of friction prevents the fabric from twisting. The proper number and spacing of the inserts may vary with different yarns being used and the length of the knitted fabric.

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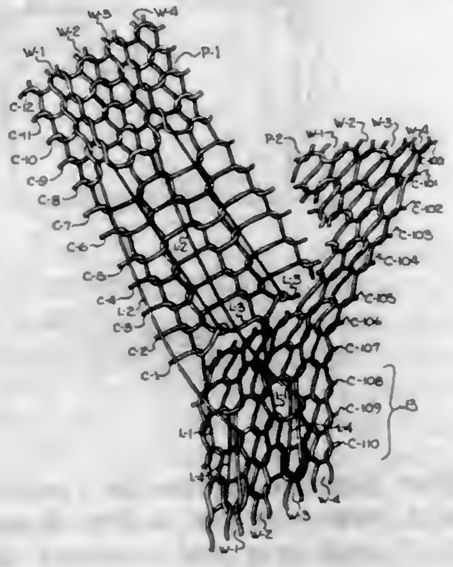
**3,479,843**

### RIB-KNIT TURNED CUFF SOCK

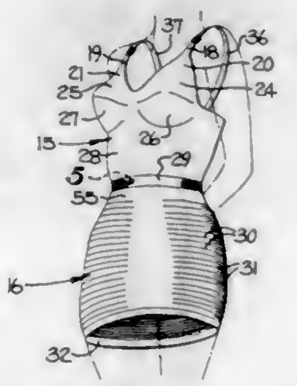
**Harper Shields, Burlington, N.C., assignor to Alamance Industries, Inc., Burlington, N.C., a corporation of North Carolina**
**Filed July 19, 1968, Ser. No. 746,028**
**Int. Cl. D04b** *9/54*
**U.S. Cl. 66—173** **2 Claims**



The sock includes an integrally knit true rib turned cuff which may be worn straight up on the leg or turned down and the cuff fabric has the same appearance in either position. The sock is knit on a machine having sets of cylinder and dial needles and the initially formed loops of the cuff are held on idled cylinder needles during the rib knitting of the turned cuff portion.

### 3,479,844
### FORM-FITTING SEAMLESS GARMENT AND METHOD

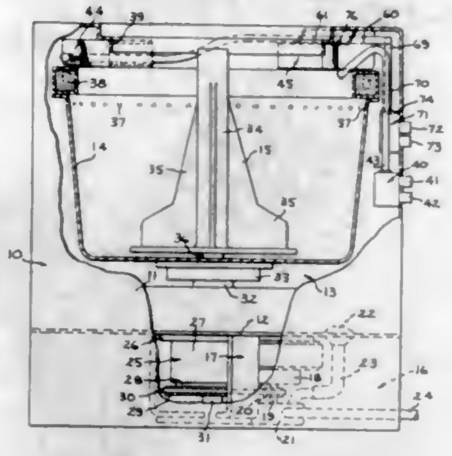
**Andre Henri Silvain, Roubaix, Nord, France, assignor to Pilot Research Corporation, Valdese, N.C., a corporation of North Carolina**
**Filed July 6, 1967, Ser. No. 651,487**
**Int. Cl. A41b** *9/06;* **D04b** *9/42*
**U.S. Cl. 66—176** **8 Claims**



One form of the garment is adapted to cover substantially the complete torso and includes an upper portion having fashioned breast-receiving pockets, and an integrally knit lower portion having a greater amount of fabric in the rear portion. Another form of garment is adapted to cover only the lower trunk of the wearer. The garment is formed on a circular knitting machine with reciprocation and rotation of the needle cylinder.

### 3,479,845
### ADDITIVE DISPENSING MEANS FOR A WASHING MACHINE

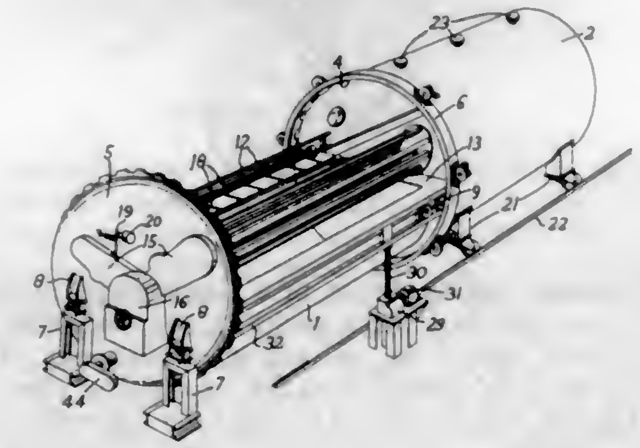
**Einar O. Engebretsen, Valley View, Ill., assignor to General Electric Company, a corporation of New York**
**Filed Feb. 14, 1968, Ser. No. 705,513**
**Int. Cl. D06f** *29/00, 39/02*
**U.S. Cl. 68—17** **4 Claims**



Additive dispensing means for a washing machine. The dispensing means include a first dispenser-container of the flow-through type and a second dispenser-container of the siphon-type. The dispenser-containers are fluid-connected in parallel to conduit means which convey wash fluid to the machine's wash chamber. The first dispenser-container has an outlet for discharging a first mixture, comprising a first additive and wash fluid, into the wash chamber. The second dispenser-container has an outlet for discharging a second mixture, comprising a second additive and wash fluid, to the wash chamber. The fluid-connections of the dispenser-containers to the conduit means are valveless and are arranged such that discharging of the second mixture can commence only after discharging of the first mixture is substantially completed.

### 3,479,846
### WINCH AND LIKE DYEING MACHINES

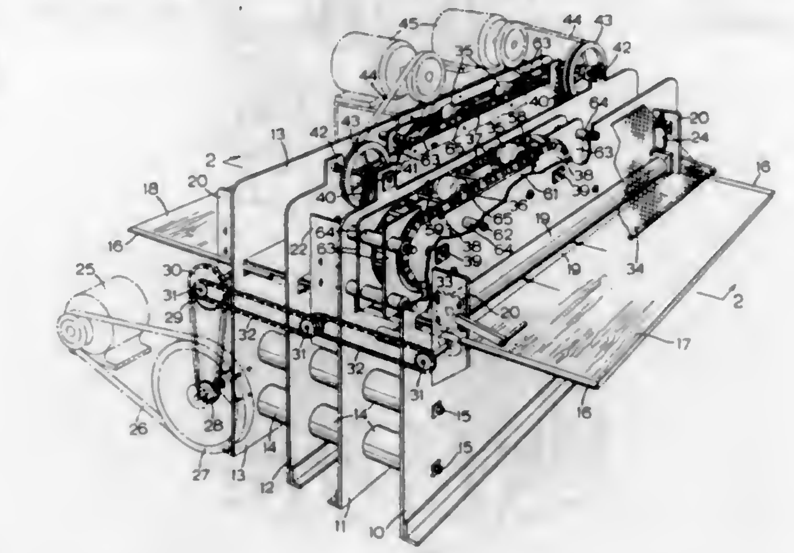
**Derek J. Walsom, Queniborough, England, assignor to Samuel Pegg & Son Limited, Leicester, England**
**Filed Oct. 20, 1967, Ser. No. 676,880**
**Claims priority, application Great Britain, Nov. 8, 1966, 49,873/66**
**Int. Cl. D06p** *5/00;* **D06f** *39/00*
**U.S. Cl. 68—62** **3 Claims**



A high temperature winch dyeing machine in which the dye bath and winch assembly are separable from the outer casing to facilitate loading and unloading of the ropes of fabric.

### 3,479,847
### LEATHER WORKING MACHINE

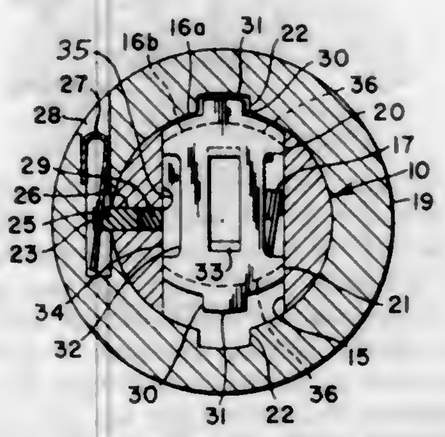
**John E. Becker, Bowmanville, Ontario, Canada, assignor to Robson Leather Company, Limited, Oshawa, Ontario, Canada**
**Filed Jan. 11, 1968, Ser. No. 697,050**
**Int. Cl. C14b** *1/34*
**U.S. Cl. 69—46** **14 Claims**



The machine has two working stations through which the leather bends are passed successively by feed rolls; at each station the bend is engaged from beneath by an upwardly-urged flat bed, and from above by the lower run of an endless loop of rotatable leather-working rollers, the leather being squeezed and smoothed thereby. The two loops run in opposite directions transversely of the direction of movement of the bend through the machine, resulting in a machine that is balanced both statically and dynamically. Each loop squeezes the respective portion of the bend from the centre outward to the edge, the two loops overlapping so that the whole surface is worked. The means urging the bed upward comprise a pneumatic/hydraulic lever combination that adjusts automatically for the bend thickness and irregularities.

### 3,479,848
### SIDE BAR LOCK

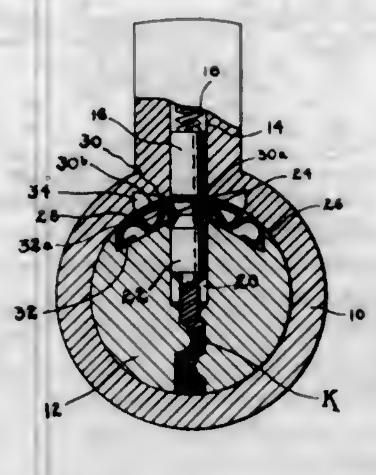
**Abraham H. Golden, Stamford, Conn., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed July 21, 1967, Ser. No. 655,168**
**Int. Cl. E05b** *29/04, 63/00*
**U.S. Cl. 70—364** **8 Claims**



A lock key plug is equipped with a stack of disc tumblers, some of which lock through engagement with a groove in the bore of an outer cylinder, and others of which control a side bar engaging a further groove in the cylinder bore. The tumblers that engage a groove are arranged with clearance that prevents a transfer of pressures between those tumblers and the side bar. A standard type of key will set all of the tumblers in release position, the tumblers moving in opposition to spring pressure while permitting the side bar to move by spring pressure to release position. The arrangement resists picking while at the same time permitting numerous tumbler combinations with no interchange of keys.

### 3,479,849
### PIN TUMBLER SIDE BAR CYLINDER LOCK

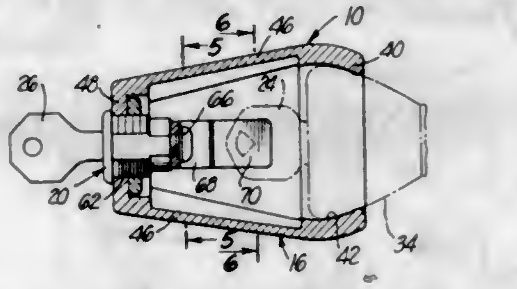
**Mathias M. Check, 34 Bowman Drive, Greenwich, Conn. 06830**
**Filed Oct. 20, 1967, Ser. No. 676,901**
**Int. Cl. E05b** *27/08, 15/14*
**U.S. Cl. 70—364** **10 Claims**



A new pin tumbler, side bar cylinder lock using a pivoting side bar locking device that pivots into the groove of the change pin to affect a locking action in the shell of the cylinder lock.

### 3,479,850
### MASTER KEY ATTACHMENT

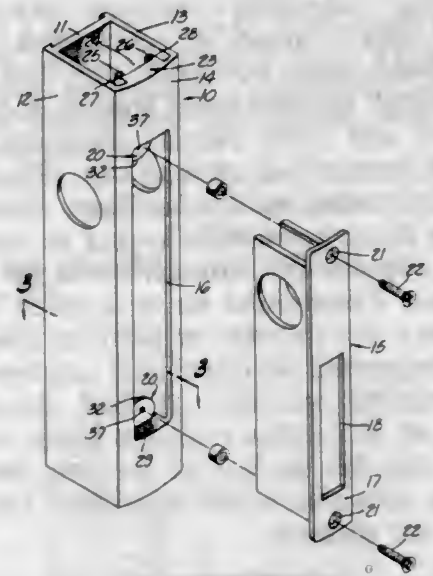
**Jud K. Frye, 111 Mockingbird Lane, West Covina, Calif. 91790**
**Filed June 10, 1968, Ser. No. 735,850**
**Int. Cl. E05b** *11/00, 35/00*
**U.S. Cl. 70—447** **12 Claims**



A master key attachment is provided for turning a door key in a door lock to permit the door to be locked and unlocked with a master key. The attachment is secured to the lock by fastening means which may be released only by a special tool and contains a master lock which operatively engages the door key in such a way that rotation of a master key in the master lock rotates the door key and the door lock. A primary advantage of the attachment resides in the fact that the door key may be removed only by authorized persons having the special tool required to release the attachment from the lock.

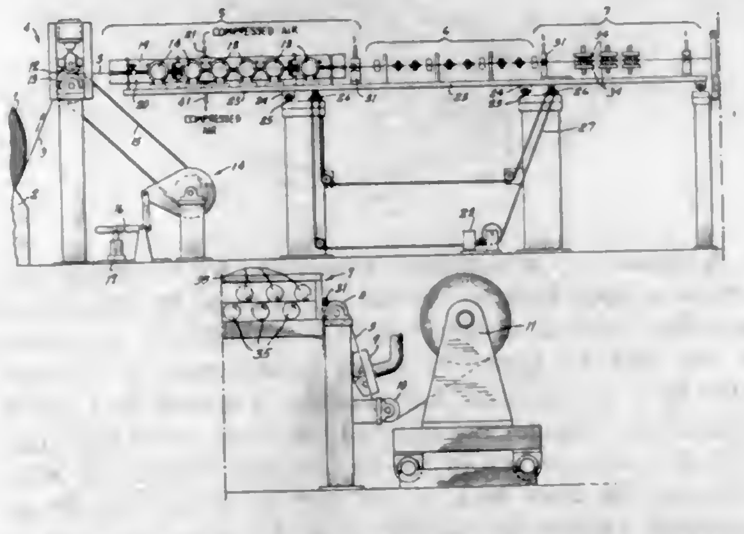
### 3,479,851
### LOCK MOUNTING MEANS FOR NARROW STILE DOOR FRAME

**Robert E. Davidson, Santa Susana, Charles L. Eads, Palm Springs, and Samuel A. Soter, Glendale, Calif., assignors to Adams Rite Manufacturing Company, Glendale, Calif., a corporation of California**
**Filed July 24, 1967, Ser. No. 655,506**
**Int. Cl. E05b** *9/06, 9/08;* **F16b** *1/00*
**U.S. Cl. 70—451** **4 Claims**



Lock mounting means for securing a lock frame structure edgewise in a receiving opening provided in a wall of a hollow narrow stile door frame by means of elongate anchor clips positioned at the opposite ends of the opening, these clips being constructed from a generally flat material and undulated to permit their edge margins to be frictionally slidably supported in spaced apart receiving channels provided within a longitudinally extending rib integrally formed on the inner side of the nose wall of the hollow stile. Struck out stop projections at one end of the clip operate to limit its endwise movement during mounting insertion in the channels so that in a use position of the clip this end projects to a position relative to the lock mounting opening to receive a lock mounting member such as a screw into a threaded receiving opening provided in the clip end.

### 3,479,852
## ROLLING APPARATUS FOR ROUNDING THE EDGES OF STRIP METAL
**Lucas J. Conrad and John R. Everhart, Winston-Salem, N.C., assignors to Archer Products, Incorporated, Winston-Salem, N.C., a corporation of Delaware**
**Filed Apr. 21, 1967, Ser. No. 632,758**
**Int. Cl. B21d** *55/00;* **B21b** *45/02, 13/10*
**U.S. Cl. 72—40 31 Claims**



Apparatus for rounding the edge of an elongated strip of metal, e.g., aluminum. The edge is rounded by rolling and cleaning techniques. Edge forming rolls rotate on vertical axes and have round grooves which receive an edge of the strip. Edge thickness control rolls overlap the edges of the strip and engage the marginal flat surfaces thereof. The edge thickness control rolls are mounted on caster supports so that their axes of rotation tend to assume directions at right angles to the motion of the strip. Both edge forming rolls and the edge thickness control rolls are rotated only by their contact with the moving strip. Rolls are readily demountable. Supports allow rolls to follow lateral movements of strip without stressing it.

The cleaning techniques employed include brushing and cleaning with a stream of compressed air. One set of brushes rotates about horizontal axes and engages the edges of the strip. Between these brushes, the strip passes between upper and lower plenum chambers, which are supplied with compressed air and are effective to hold the middle of the strip against buckling. The fluid cleaning apparatus comprises a tube having an open end and diametrically opposite slits through which the edge of the material passes. Compressed air is supplied to the hose and blows away any splinters or particles clinging to the edges. The compressed air cleaning is employed after the rolling or brushing operation. A final cleaning station includes one set of brushes rotatable about vertical axes and engaging the flat surface of the strip and a second set of brushes rotatable about horizontal axes and also engaging the flat surface.

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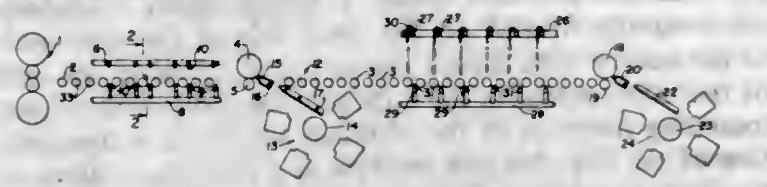
### 3,479,853
## HOT ROLLING OF LIGHT GAUGE STRIP
**George L. Berry, Pittsburgh, Pa., assignor to Jones & Laughlin Steel Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Aug. 29, 1967, Ser. No. 664,896**
**Int. Cl. B21b** *27/10*
**U.S. Cl. 72—128 8 Claims**



Light gauge strip is hot rolled in a conventional tandem mill, coiled in a coiler placed close to the delivery stand of the mill, and cooled by high pressure sprays, the upper sprays being positioned immediately above the run-out table.

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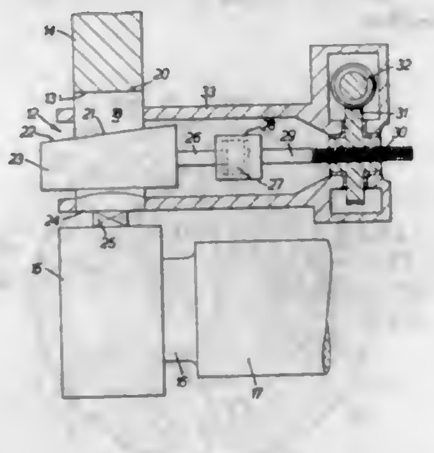
### 3,479,854
## ROLLING MILLS
**Dennis Stubbs, Sheffield, England, assignor to Davy and United Engineering Company, Limited, Sheffield, England**
**Filed May 15, 1967, Ser. No. 643,785**
**Claims priority, application Great Britain, May 16, 1966, 21,713/66**
**Int. Cl. B21b** *31/30, 31/32, 31/24*
**U.S. Cl. 72—244 4 Claims**



This disclosure relates to rolling mills and particularly to the means for adjusting the roll gap of a rolling mill. One of the rolls of the mill is adjusted vertically by a pair of wedges arranged between the bearing chock assemblies of the roll and the housings of the mill. One of the wedges of each pair is adjustable longitudinally by a combined piston cylinder assembly screw arrangement, the piston cylinder assembly being connected to and located between the wedges and the screw, in which the screw is employed for coarse adjustment of the wedge and hence the roll and the piston cylinder assembly for a fine adjustment thereof.

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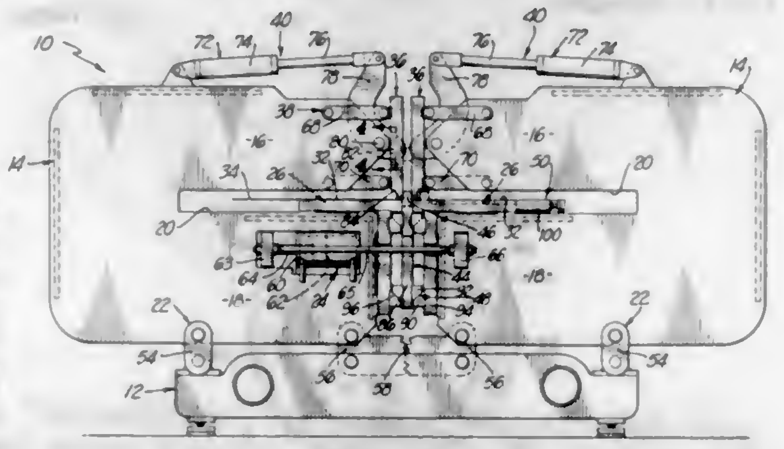
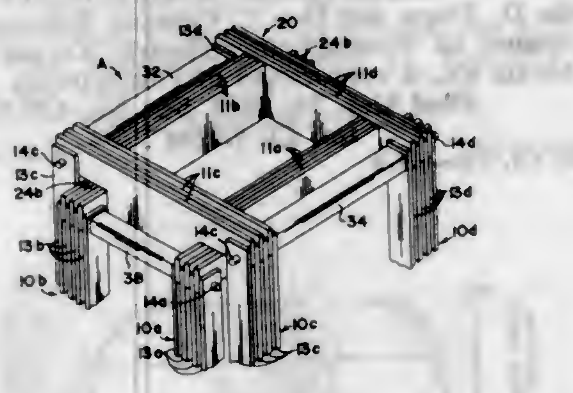
### 3,479,855
## CORRUGATING MACHINE
**Frank R. Ogilvie, 5029 Ivescrest, Covina, Calif. 91722**
**Filed July 19, 1967, Ser. No. 654,448**
**Int. Cl. B21d** *5/02, 13/02*
**U.S. Cl. 72—383 15 Claims**



A machine for corrugating sheet material and having work supporting surfaces, work clamping means and forming punch means.

### 3,479,856
## FRAME STRUCTURE
**F. George Boggio, Glen Rock, N.J., and Alexander Zeitlin, White Plains, N.Y., assignors to Barogenics, Inc., Mount Vernon, N.Y., a corporation of New York**
**Filed Jan. 19, 1968, Ser. No. 699,220**
**Int. Cl. B21j** *13/04*
**U.S. Cl. 72—455 8 Claims**



A frame structure especially suited for use in presses and comprising at least three frame subassemblies each frame subassembly including spaced crossheads connected at their outer end portions by tie couplings to define a closed ring. The subassemblies are positioned with their crossheads lying in generally parallel planes and the end portions of each respective crosshead in overlapping juxtaposed position with the end portions of crossheads of two other subassemblies to define, in planes generally perpendicular to said tie couplings, opposed compound heads having a polygonal ring configuration.

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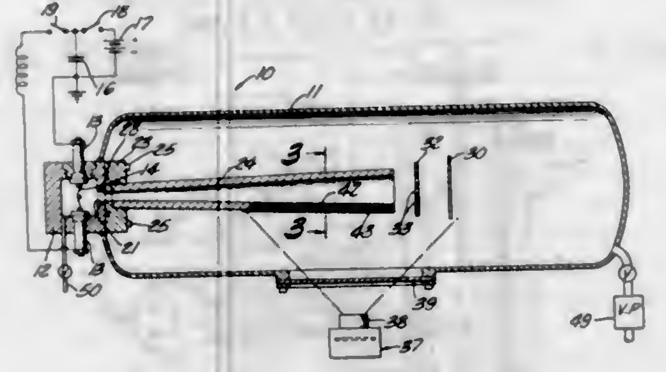
### 3,479,857
## MICROMETEORITE SHOWER CREATING APPARATUS AND METHOD
**Daniel Edgar Bloxsom, Jr., 523 S. Lucerne, Los Angeles, Calif. 90005, and Barry V. Rhodes, 22358 Baltar St., Canoga Park, Calif. 91304**
**Filed July 20, 1965, Ser. No. 473,472**
**Int. Cl. G01n** *3/62;* **G01m** *9/00;* **G01w** *1/00*
**U.S. Cl. 73—12 12 Claims**



A method and apparatus is provided for generating a shower of micrometeorites or the like particles traveling at hypersonic velocity in space environmental conditions and for determining the effect of impact of such particles on another object. Particle velocities in the range of 120,000 feet per second are achievable in the laboratory using relatively simple inexpensive equipment and a low molecular weight gas propellant effective to accelerate the particles by drag effect as the hot pressurized gas expands into a vacuum. The particle velocity is determined by smear camera technique and the impact area for the particles after being accelerated to hypersonic velocity may be controlled by locating a grid in the path of the particles.

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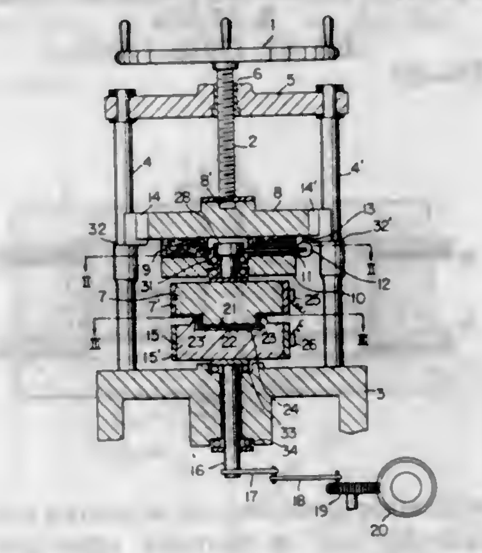
### 3,479,858
## APPARATUS FOR MEASURING VISCOELASTICITY
**Masashi Umeno, Kawasaki-shi, Makoto Miyake, Nishinomiya-shi, and Chikao Tosaki, Tokyo, Japan, assignors to Japan Synthetic Rubber Co., Ltd., Tokyo, Japan**
**Filed Feb. 27, 1967, Ser. No. 618,771**
**Claims priority, application Japan, Mar. 8, 1966, 41/13,885**
**Int. Cl. G01n** *3/22, 33/44*
**U.S. Cl. 73—15.6 3 Claims**



Viscoelastic measuring apparatus including a rotatable lower platen with a cavity and an upper platen with a protrude, the latter being rotatable but fixed in relation to the former. Upon angular oscillation of the lower platen, viscoelasticity of the specimen inserted in a hollow space between the protrude and the cavity will be measured by means of a load cell rigidly protruded from the upper platen.

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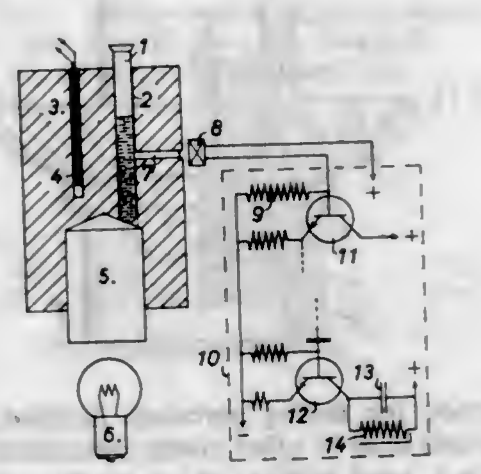
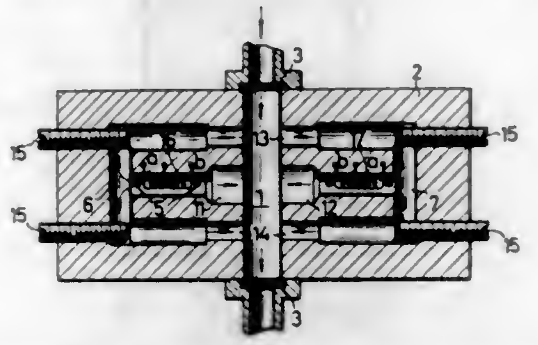
### 3,479,859
## METHOD AND APPARATUS FOR MEASURING THE BOILING POINT OF A LIQUID
**Jürg Hager, Rapperswil, Switzerland, assignor to Mettler Instrumente AG, Zurich, Switzerland, a Swiss corporation**
**Filed Feb. 6, 1967, Ser. No. 614,298**
**Claims priority, application Switzerland, July 29, 1966, 11,034/66**
**Int. Cl. G01n** *25/02;* **H01j** *39/12*
**U.S. Cl. 73—17 4 Claims**



Method and apparatus for determining the boiling point of a liquid, characterized by the measurement of the light reflected by the bubbles in a direction perpendicular to that in which they are rising, whereby the measurement of the boiling temperature of a liquid can be largely automated. The light reflected by the bubbles is measured electrically, account being taken of the amount of time required for the ascending bubbles to cover a given measuring path, as well as the number of bubbles passing said measuring path per unit of time.

### 3,479,860
### OXYGEN DETERMINATION

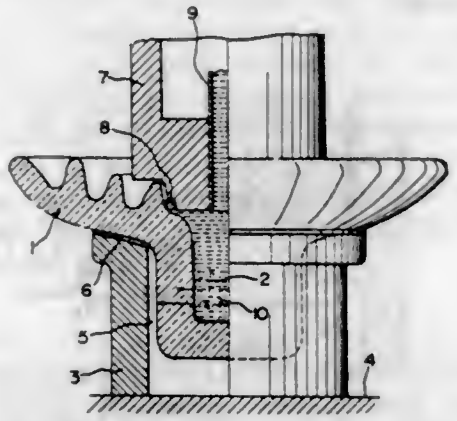
**Karl-Friedrich Luft, Essen, Germany, assignor to Bergwerksverband G.m.b.H., Essen, Germany, a German company**
**Filed May 22, 1967, Ser. No. 640,006**
**Claims priority, application Germany, June 15, 1966, B 87,556**
**Int. Cl. G01n** *31/00*
**U.S. Cl. 73—27** **2 Claims**



The specification describes an improved gas flow measuring system for use in portable apparatus for determining oxygen in gas mixtures using its paramagnetism. In the flow measuring system two electrically heated resistors forming the two halves of a bridge circuit are placed in the limbs of two identical duct systems through which the gas flows cooling the resistances and upsetting the bridge balance. The use of identical duct systems prevents acceleration effects, due for example to lifting the apparatus, from disturbing the bridge balance.

### 3,479,861
### METHOD OF DETECTING DEFECTS IN A HEAD PORTION OF A PORCELAIN SHELL OF A SUSPENSION INSULATOR

**Tsutomu Moriya, Nagoya, Japan, assignor to NGK Insulators, Ltd., Nagoya, Japan**
**Filed Sept. 5, 1967, Ser. No. 665,424**
**Claims priority, application Japan, Feb. 15, 1967, 42/9,258**
**Int. Cl. G01m** *3/02*
**U.S. Cl. 73—37** **3 Claims**



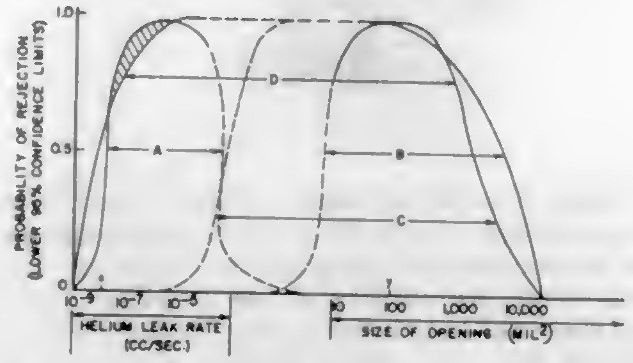
A method for testing porcelain insulators by feeding a pressurized fluid or other elastic substances into a cavity formed in a head portion of a porcelain shell of a suspension insulator. The pressure is defined by the following formula

$$\sigma_t = P\{r_1^2/(r_2^2-r_1^2)+r_1^2 r_2^2/r^2(r_2^2-r_1^2)\}$$

where, P is the pressure of the fluid fed into the cavity; $\sigma_t$ is the stress produced by the pressure P in the peripheral direction of the head portion; $r_1$ and $r_2$ are the inner and outer radii of the head portion, respectively; and $r$ is any radius located between $r_1$ and $r_2$. The pressure P is selected such that the stress $\sigma_t$ corresponds to the practical load conditions acting upon the suspension insulator. This method is effected after firing of the porcelain shell and before its assembly.

### 3,479,862
### HERMETICITY TEST FOR PACKAGED ELECTRICAL COMPONENTS

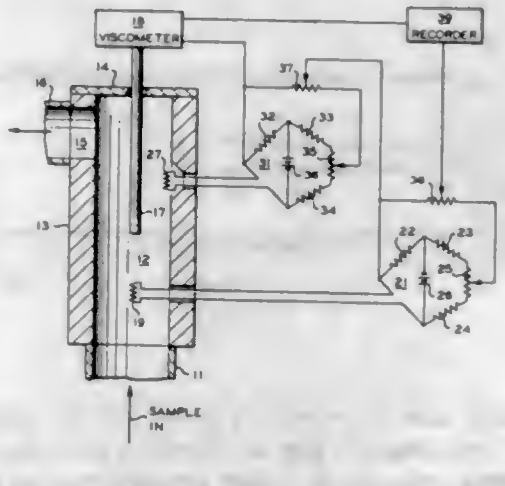
**Orlin D. Trapp and Don L. Cannon, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Mar. 24, 1967, Ser. No. 625,640**
**Int. Cl. G01m** *3/34*
**U.S. Cl. 73—49.3** **6 Claims**



A method including placing packaged components in a pressurized liquid and measuring electrical resistance between conductors as an indication of the extent to which liquid has penetrated the package.

### 3,479,863
### COMPENSATION OF VISCOMETER FOR VARIATIONS IN TEMPERATURE PROFILE OF SAMPLE

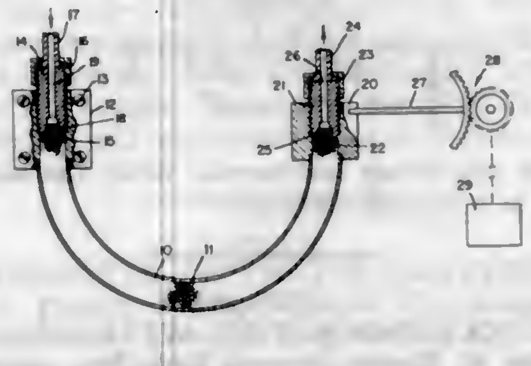
**Louis D. Kleiss, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Feb. 29, 1968, Ser. No. 709,460**
**Int. Cl. G01n** *11/02*
**U.S. Cl. 73—54** **10 Claims**



A viscometer probe is positioned in a chamber through which the fluid sample is passed. A first temperature sensor is positioned in a flow path adjacent the probe to measure the temperature of the fluid adjacent the probe. A second temperature sensor is spaced in a flow path from the probe and is preferably positioned at the wall of the chamber. Each temperature sensor is connected in its own Wheatstone bridge and the output voltages of the two bridges are connected in series opposition to each other and in series with the viscometer voltage output to correct the viscometer voltage output to a standard temperature.

### 3,479,864
### ANALYTICAL METHOD AND FREE ENERGY MEASURING APPARATUS

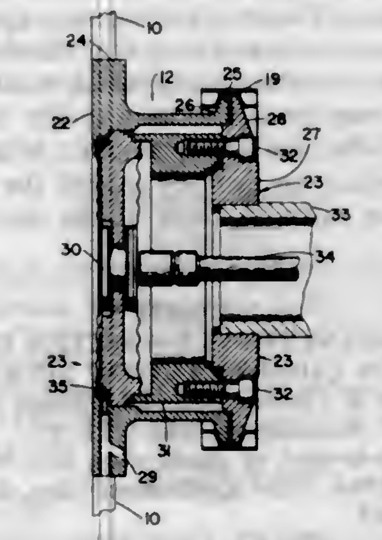
**James A. Patterson, 727 Viola Place, Los Altos, Calif. 94022**
**Continuation-in-part of application Ser. No. 540,317, Apr. 5, 1966. This application Apr. 11, 1968, Ser. No. 721,564**
**Int. Cl. G01n** *11/10*
**U.S. Cl. 73—64.3** **28 Claims**



Free energy of a fluid is determined relative to that of other fluids by swelling or contracting a symmetrical particle having a molecular lattice that is insoluble in the fluids causing the swelling and contracting. Particles formed from a cross-linked organic resin such as a styrene-divinyl benzene copolymer are preferred. Change in particle volume at constant pressure or change in pressure at constant volume of the particle upon contact with fluid is directly proportional to free energy of fluid relative to a standard fluid used with the same particles.

### 3,479,865
### SANITARY LIQUID LEVEL MEASUREMENT DEVICE

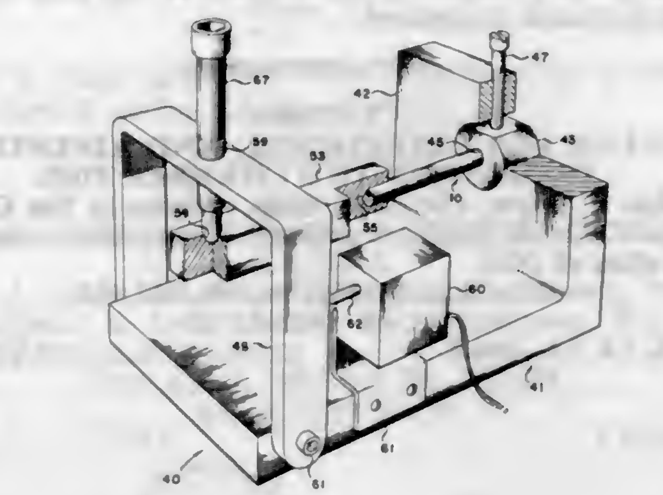
**Frederic A. Sonnenberg, Foxboro, and George DeVries, Westboro, Mass., assignors to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts**
**Filed Apr. 5, 1968, Ser. No. 719,184**
**Int. Cl. G01f** *23/00*
**U.S. Cl. 73—299** **1 Claim**



A liquid level measuring device for milk tanks and the like. A pressure responsive diaphragm unit is mounted near the base of the tank to measure the head of liquid in the tank. A special means is provided for sealing the diaphragm unit in the tank so that crevices are eliminated and sanitary conditions are maintained.

### 3,479,866
### HYDROGEN EMBRITTLEMENT TESTING METHOD AND APPARATUS

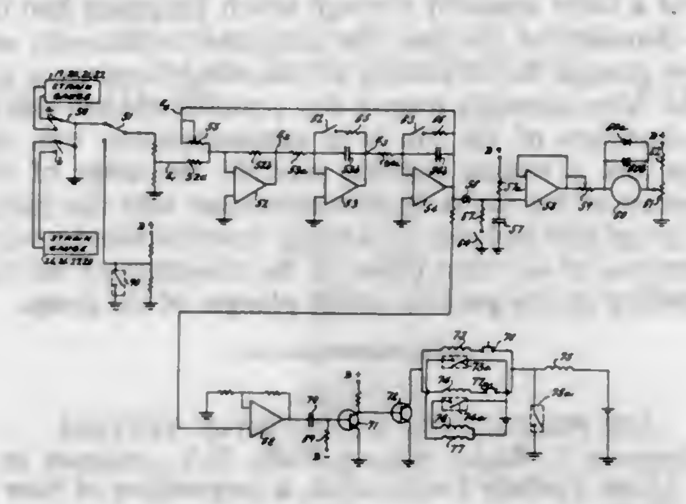
**Richard C. Movich, North Hollywood, and Ronald L. Topp, Glendale, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.**
**Filed June 19, 1967, Ser. No. 647,044**
**Int. Cl. G01n** *3/20, 3/00*
**U.S. Cl. 73—100** **2 Claims**



A testing process and apparatus for determining whether or not high strength steel parts are embrittled by hydrogen. In such a process a notched coupon, which is fabricated from the same material and heat treated under identical conditions as the steel parts, is retained in a frame in cantilevered position and subjected to a constant bending moment by the apparatus for a specific period of time. If the coupon has been embrittled by hydrogen it will fracture under the constant load.

### 3,479,867
### HARMONIC SIGNAL ANALYZER SYSTEM FOR TESTING TIRES

**Haig D. Tarpinian, Grosse Pointe, and Harry Friedmann, Huntington Woods, Mich., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey**
**Filed June 9, 1967, Ser. No. 644,965**
**Int. Cl. B60c** *19/10;* **G01m** *17/02*
**U.S. Cl. 73—146** **11 Claims**



An electronic, undamped oscillator driven by a periodic input signal (forcing function) having a frequency equal to the natural frequency of the oscillator develops an output sinusoidal signal having a rate of growth (amplitude increase) proportional to the amplitude of the first harmonic component of the input signal. When the input signal is a force variation signal and the oscillator is tuned to the rotational frequency of a tire mounted on the force variation machine, the rate of growth of the output signal of the oscillator is proportional to the amplitude of the force variation signal. A peak follower detects the amplitude of the increments between successive peaks of the oscillator output signal. A meter indicates the amplitude of the successive peaks of the oscillator output signal, thereby indicating the amplitude of the first harmonic component of the force variation signal. A circuit which senses the positive-slope zero-crossing of the oscillator output signal is utilized to energize a tire-marking unit, thereby indicating the position of the peak of the first harmonic component.

3,479,868

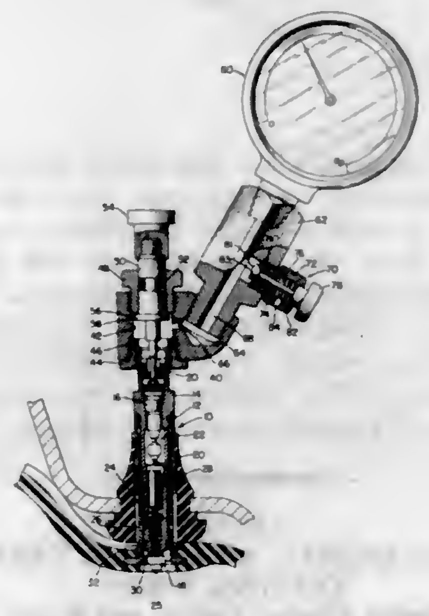
### GAUGE FOR DETERMINING AND ADJUSTING PRESSURE IN TWO CHAMBER TIRE

**Ralph K. Boyer, Cleveland, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio**

**Filed Apr. 1, 1968, Ser. No. 717,805**

**Int. Cl. B60c *23/02***

**U.S. Cl. 73—146.8 5 Claims**



A gauge for selectively measuring the pressures in each of two chambers of a two chamber tire. The gauge includes a chuck portion which is engageable over the outer end of a valve assembly through which air passes into the two chambers of the tire. The gauge has a manually operable plunger for displacing an actuating member or pin in the valve assembly from a first position wherein one of the chambers of the tire is in communication with the gauge and a second position wherein the other of the chambers of tne tire is in communication with the gauge. The gauge also includes a manually operable bleeder valve for release of air from either of the chambers of the tire depending on the position of the plunger of the gauge.

3,479,869

### AIR POLLUTION MEASURING SYSTEM

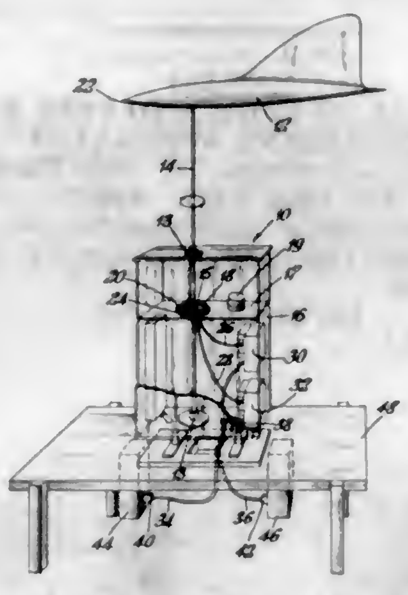
**Lawrence C. Jugle, Niagara Falls, N.Y., assignor to Union Carbide Corporation, a corporation of New York**

**Filed Apr. 3, 1967, Ser. No. 628,027**

**Int. Cl. G01w *1/02***

**U.S. Cl. 73—170 1 Claim**

A means for measuring the air pollution generated by a single pollution source comprising a wind sensitive control device which electrically activates one or more pollution measuring instruments when the atmospheric wind is in a suitable direction.



3,479,870

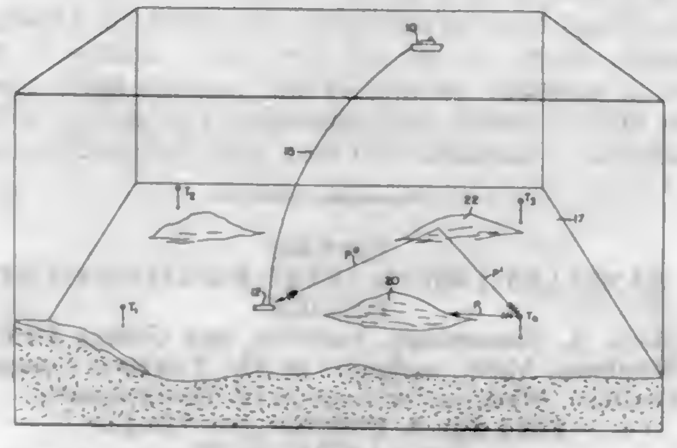
### OCEANOGRAPHIC APPARATUS

**William H. Kumm, Severna Park, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Nov. 29, 1967, Ser. No. 686,553**

**Int. Cl. G01w *1/08***

**U.S. Cl. 73—170 3 Claims**



A towed underwater vessel carries instrumentation for obtaining or measuring oceanographic parameters. The vessel includes a dispenser which contains a coilable tube in the form of a strip of resilient material which when unrolled from its coil curves transversely upon itself to assume a cylindrical shape. Carried at the free end of the extended strip is instrumentation which must be positioned at a distance from the towed vessel. The dispenser is located adjacent the tow cable so that when the strip is extended it contacts and curves around the tow cable for substantially the entire distance of the unrolled strip.

3,479,871

### ELECTROMAGNETIC FLOWMETER INCLUDING HUM COMPENSATION MEANS

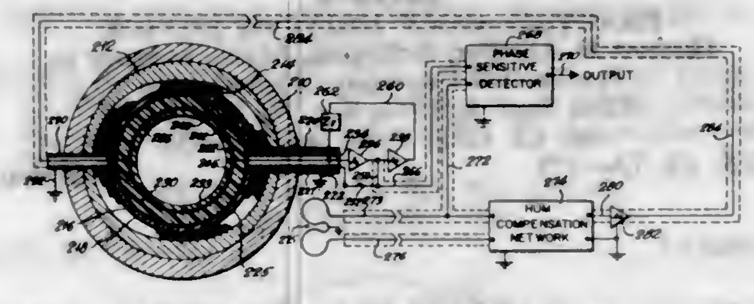
**Vincent J. Cushing, 9804 Hillridge Drive, Kensington, Md. 20795**

**Continuation-in-part of application Ser. No. 558,484, June 17, 1966. This application Mar. 6, 1968, Ser. No. 717,063**

**Int. Cl. G01f *1/00***

**U.S. Cl. 73—194 15 Claims**

Two detecting electrodes are disposed at opposite sides of a flow conduit, and a guard means including a third electrode is disposed adjacent to a high impedance electrode which is connected with a high impedance portion of the associated electrical network. An alternating magnetic field is produced within the flow conduit. In a first form of the invention, a first hum compensation voltage is impressed upon at least one of the electrodes and a second independent hum compensation voltage is impressed on another of said electrodes. In a second form of the invention, first, second and third lead means are connected with the high impedance detecting electrode, the low impedance detecting electrode and the guard means respectively, and means is provided for adjusting the lead means to control the amount of net flux threading the circuit loops including said lead means so as to provide substantially no net flux.



3,479,872

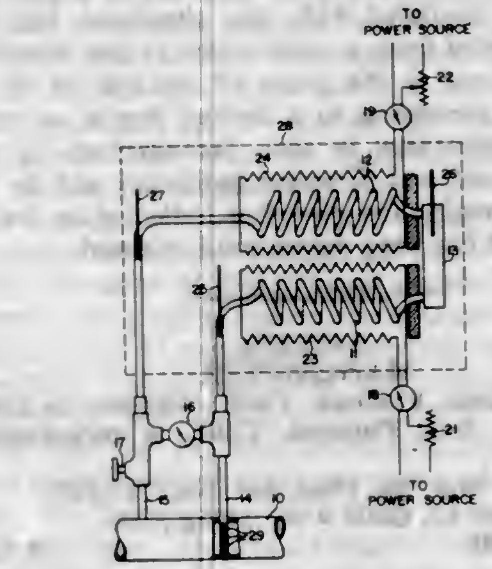
### CALORIMETER APPARATUS AND SYSTEM

**Peter O. Tauson, Bradford Woods, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Apr. 14, 1965, Ser. No. 448,127**

**Int. Cl. G01k *17/02***

**U.S. Cl. 73—192 7 Claims**



Calorimeter apparatus and method for determining the quality of a flowing vapor wherein measured amounts of heat are supplied to conduit means containing the vapor to dry and if desired to superheat the vapor. Inlet, outlet and if desired, intermediate temperatures along the conduit means are measured so that the vapor quality is determined without the necessity of flow measurements.

3,479,873

### SELF-CLEANING ELECTRODES

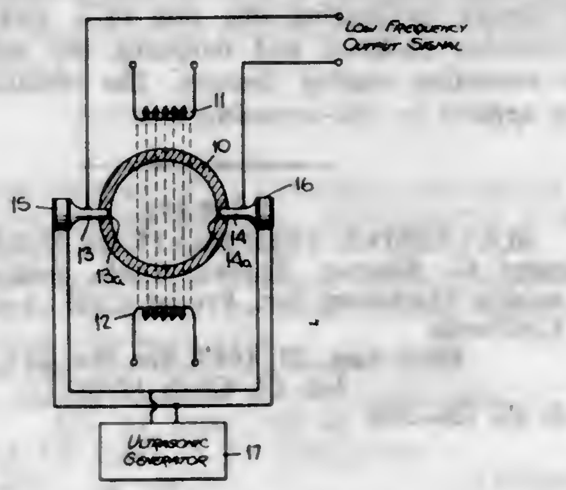
**Henry Hermanns, Huntingdon Valley, Pa., assignor to Fischer & Porter Co., Warminster, Pa., a corporation of Pennsylvania**

**Continuation-in-part of application Ser. No. 556,045, June 8, 1966. This application Nov. 13, 1967, Ser. No. 682,433**

**Int. Cl. G01f *1/02***

**U.S. Cl. 73—194 9 Claims**

A self-cleaning electrode incorporated in magnetic flowmeters, measurement probes and other instruments in which an electrode is exposed to a contaminating fluid which tends to coat the electrode with material which interferes with its proper operation, the electrode having an ultrasonic transducer operatively coupled thereto to produce ultrasonic energy which is transmitted to the fluid to create cavitation effects therein acting to clean the exposed surface of the electrode.



3,479,874

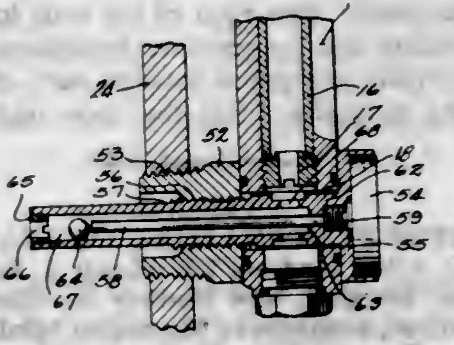
### MOUNTING FASTENERS FOR LIQUID LEVEL GAUGES

**Gus J. Lukas and Floyd J. Bydalek, Manitowoc, Wis., assignors to Lube Devices, Inc., Manitowoc, Wis., a corporation of Wisconsin**

**Filed Apr. 1, 1968, Ser. No. 717,598**

**Int. Cl. G01f *23/02***

**U.S. Cl. 73—292 8 Claims**



A liquid level gauge having a mounting fastener by which the gauge is mounted on a tank wall, said fastener having a liquid passage for fluid flow between the tank and the gauge and a fluid shutoff mechanism in the passage to control the fluid flow.

3,479,875

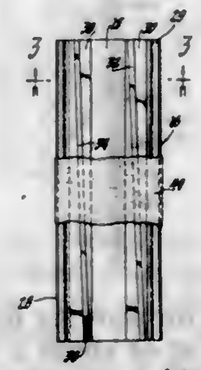
### THERMISTOR LIQUID LEVEL SENSOR AND METHOD FOR MAKING SAME

**John W. Riddel, Fenton, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**

**Filed Feb. 20, 1968, Ser. No. 706,865**

**Int. Cl. G01f *23/00;* H05k *3/00***

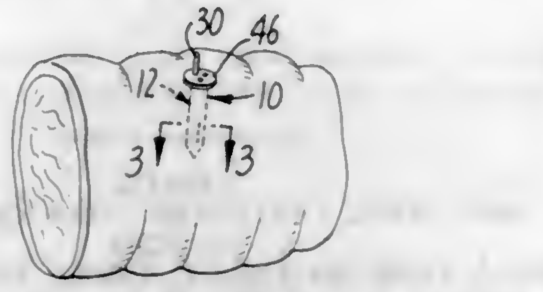
**U.S. Cl. 73—295 8 Claims**



A thermistor formed on one side of an insulated metal strip has formed thereon a pair of spaced parallel printed resistors. A pair of spaced parallel conductors are printed on the resistors. The opposite side of the strip carries a printed heating element and a printed resistor connected in parallel with the thermistor arrangement. The device is formed by coating one side of a nickel strip with thermistor material and oxidizing the nickel to form an insulating coating thereon. The remaining elements are applied by silk-screening.

### 3,479,876
### SUCCESSIVE TEMPERATURE INDICATOR

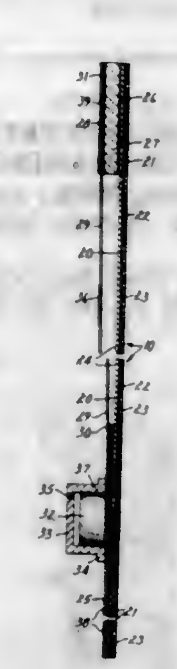
**George G. Kliewer, Fresno, Calif., assignor to Commodity Marketers, Inc., Fresno, Calif., a corporation of California**
**Filed Aug. 25, 1967, Ser. No. 663,390**
**Int. Cl. G01k** *11/00*
**U.S. Cl. 73—358** **3 Claims**



The indicator comprises, a tubular housing having an interior provided with a plurality or longitudinally extending sections, each of which slidably receives an indicator rod for movement between retracted and extended positions relative to the housing. Springs received in the sections resiliently urge each of the rods towards the extended position and temperature responsive retention devices operatively interposed between each of the rods and the housing normally retain the rods against extension.

### 3,479,877
### TIME-TEMPERATURE INDICATOR

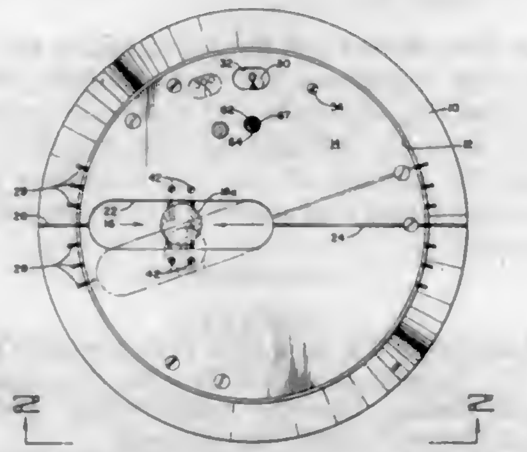
**Michael G. Allen, Hudson, Wis., Louis A. Errede, Roydon Borough, England, and Rodney R. Hannula, Maplewood, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**
**Filed Aug. 28, 1968, Ser. No. 755,844**
**Int. Cl. G01k** *11/06*
**U.S. Cl. 73—358** **8 Claims**



An indicator device for showing the length of time an environment has been at or above a predetermined temperature. A fusible tablet of temperature indicator substance enclosed by a protective rigid cap is positioned at one end of a wick which is attached to but spaced from a heat-conducting base sheet. When the predetermined temperature is reached, the indicator substance melts and flows along the wick, the distance of flow indicating the length of exposure time.

### 3,479,878
### PRACTICE GOLF DRIVING DEVICE

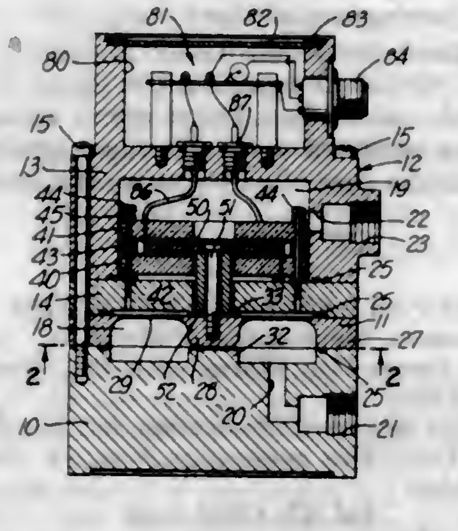
**Herbert H. Loeffler, Arlington, Mass., assignor to Pro-Tee-Off Company, a partnership**
**Filed Sept. 8, 1966, Ser. No. 577,981**
**Int. Cl. G01l** *5/06;* **A63b** *69/36*
**U.S. Cl. 73—379** **11 Claims**



A golf practice device which provides an indication of both the distance and direction which would have been imparted to an actual golf ball impacted by a golf stroke applied to a simulated ball, the simulated ball being rotatably mounted from a plate which is free to rotate in a plane transverse to the plane of rotation of the ball, the plate thus precessing to a limited degree as the ball rotates. The apparatus is also characterized by easily resettable distance and direction indicators and by brake means which retains the direction indicator in the position to which it has been driven until released.

### 3,479,879
### MANOMETER

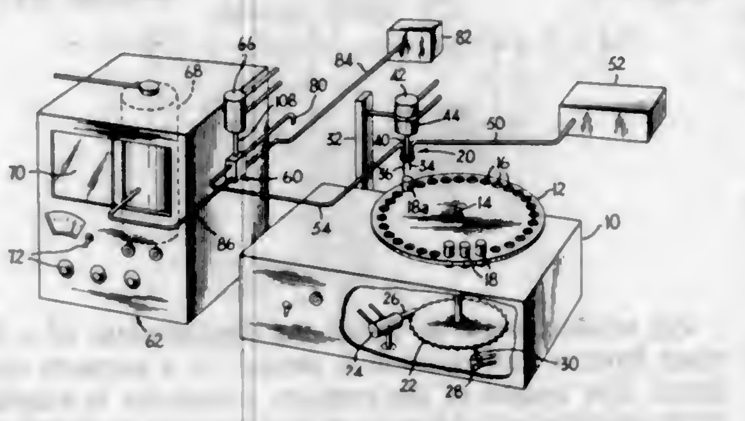
**William A. Music, Pomona, Calif., assignor to Schwien Engineering, Inc., Pomona, Calif., a corporation of California**
**Filed Mar. 29, 1968, Ser. No. 717,165**
**Int. Cl. G01l** *9/00;* **H01g** *7/00*
**U.S. Cl. 73—398** **9 Claims**



A manometer for measurement of differential pressure with high sensitivity and operable over a wide pressure range is disclosed. The manometer includes a unitary metal diaphragm for operation at high and low obsolute pressures and capable of withstanding large overpressures. A dual capacitor with one moving plate connected to the diaphragm and two fixed plates is disposed in one chamber of the manometer for operation unaffected by change in dielectric constant due to pressure change.

### 3,479,880
### APPARATUS FOR DELIVERING SAMPLES TO A GAS CHROMATOGRAPH

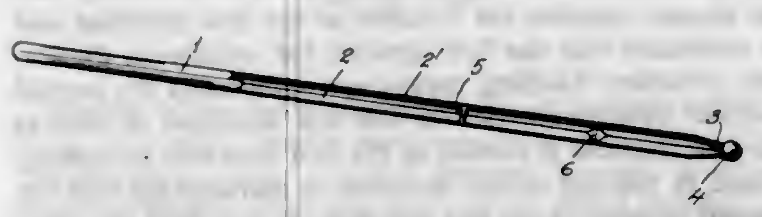
**Walter F. Mutter, White Bear Lake, Minn., and Duane C. Watson, Bon Air, Va., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia**
**Filed Nov. 3, 1967, Ser. No. 680,461**
**Int. Cl. G01n** *1/00*
**U.S. Cl. 73—422** **1 Claim**



Apparatus for delivering liquid samples to a chromatograph in which a probe comprised of a pair of tubular needles is stroked downwardly through the top of a vial containing the liquid to be sampled and held in a sampling position on a turntable with the first of the needles having its tip end located above the sample level and the second needle having its tip end located near the botom of the vial. A pressurized gas is directed into the vial through the first needle and forces the liquid sample through the second needle, the sample displaced from the vial being directed through a metering valve which functions in a first valving condition during an initial part of the sampling operation to direct liquid sample to a discharge line thereby purging the system of old sample traces. After a suitable period of purging, the metering valve is oriented to a second valving condition and delivers a metered quantity of the liquid sample to a conduit connected with the inlet port of the gas chromatograph column, the metered quantity being swept through the latter by a carrier gas. The metering valve is then returned to its first valving condition, the probe retracted from the vial and the turntable on which the respective sample carrying vials are mounted is indexed to station the succeeding vial in sampling position.

### 3,479,881
### MEASURING ROD

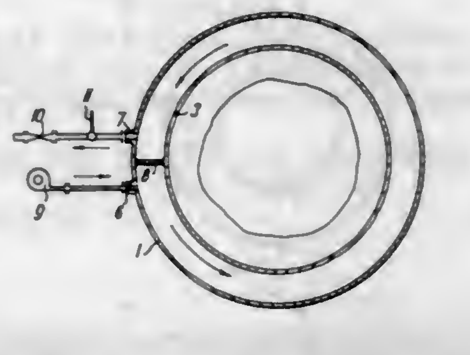
**Hans Peter Olof Unger, Skeppargatan 57, Stockholm, Sweden**
**Filed Sept. 20, 1967, Ser. No. 669,092**
**Claims priority, application Sweden, Sept. 22, 1966, 12,379/66**
**Int. Cl. G01n** *1/10;* **B43m** *11/00;* **G01f** *11/10*
**U.S. Cl. 73—425.4** **4 Claims**



A measuring rod for measuring liquids whose tapered one end is provided with a bulbous portion, the rod being adapted to be immersed in the liquid, and having a number of parallel flutes which are defined by longitudinal ribs between which are located transversely extending threshold members, which threshold members constitute delay means for the passage of the fluid towards the tapered portion.

### 3,479,882
### METHOD FOR INSPECTING LINERS AND SHELLS OF HEATING DEVICES AND APPARATUS FOR PERFORMING THE METHOD

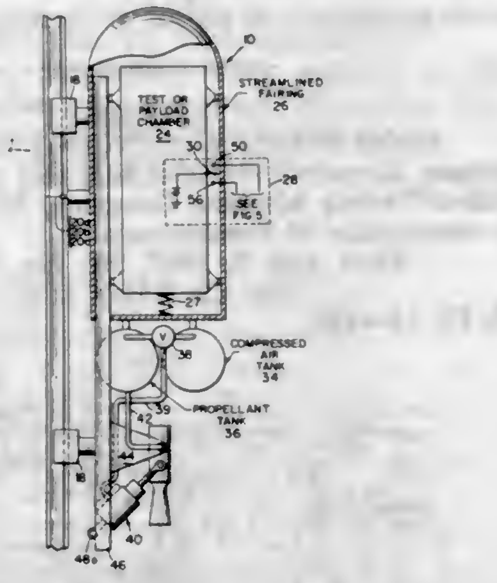
**Jaroslav Pospíšil, Prerov, and Václav Hubáček, Olomouc, Czechoslovakia, assignors to CKD Praha, oborovy podnik, Prague, Czechoslovakia**
**Filed Jan. 10, 1967, Ser. No. 608,288**
**Claims priority, application Czechoslovakia, Jan. 12, 1966, 170/66**
**Int. Cl. G01f** *15/14;* **G01j** *5/04*
**U.S. Cl. 73—432** **2 Claims**



A method and apparatus for sensing damage to the lines or shell of a vertical shaft heat exchanger that is used in heating granular material. An annular passage adjacent the exchanger is designed to have a uniform flow of gas from the inlet of the passage to an outlet. Temperature and flow in the outlet are measured and any deviation from normal reflects damage to the liner or shell.

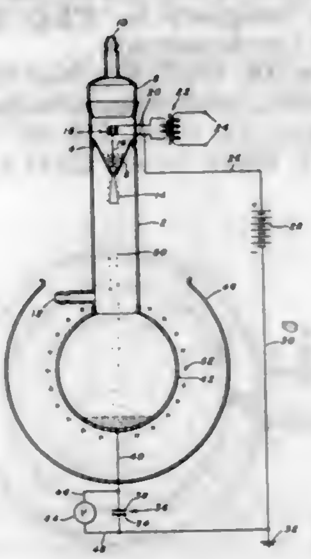
### 3,479,883
### VERTICAL-TRACK FREE-FALL SYSTEM

**Guy F. Cooper, 484 Rancho Drive, Ventura, Calif. 93003**
**Filed Apr. 25, 1967, Ser. No. 634,803**
**Int. Cl. G01f** *15/14;* **G01j** *5/04;* **G01k** *1/08*
**U.S. Cl. 73—432** **9 Claims**



A device for the placement of an object in free-fall, in which windage or friction drag are substantially eliminated. A sled, riding upon a pair of vertical rails, is accelerated and decelerated by a pivoted rocket motor. While in free-fall, the motor is swung into a horizontal position, thrusting the vehicle against its guide rails. A simple accelerometer-controlled servo system causes the motor to pivot slightly above or below the horizontal during free-fall, so that the vertical thrust vector cancels any drag, thus permitting a condition of free-fall to be achieved during ascent and descent.

### 3,479,884
## METHOD AND APPARATUS FOR MEASURING SPECIFIC SURFACE AREA OF POWDERS
**Paul Imris, 507 Pittsburgh St., Springdale, Pa. 15144**
**Filed Aug. 15, 1967, Ser. No. 665,664**
**Int. Cl. G01f** *15/14;* **G01j** *5/04*
**U.S. Cl. 73—432** **4 Claims**

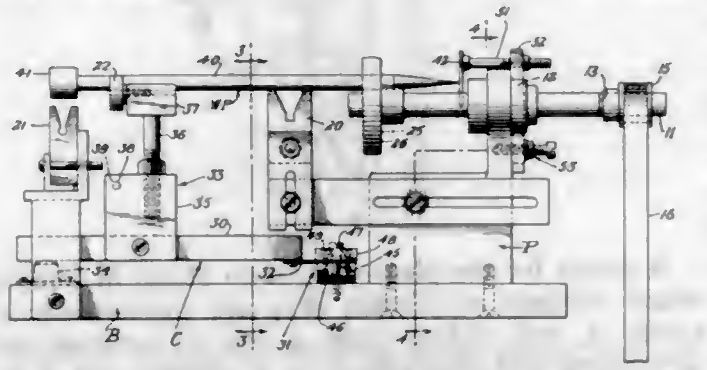


The method of measuring the specific surface area of powders comprising the steps of electrostatically charging the particles of a weighed sample of the powder, collecting the charged particles in a conductive receptacle, and measuring the electric potential acquired by a condenser connected between this receptacle and ground. The specific surface area is then calculated using the following formula

$$S=\frac{4\pi\left(\frac{CV_1}{4\pi E_0V_2}\right)^2}{W}$$

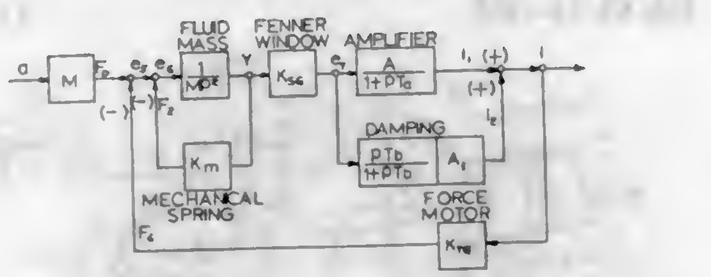
where:
$V_1$=the potential developed across the condenser,
$V_2$=the potential to charge the particles,
C=the capacity of the condenser,
W=the weight of the sample,
E=the permittivity of the gas or vacuum.

### 3,479,885
## HIGH SPEED BALANCING MACHINE
**Sylvester Karpchuk, Philadelphia, Pa., assignor to Tinius Olsen Testing Machine Company, Willow Grove, Pa., a corporation of Pennsylvania**
**Filed Aug. 2, 1967, Ser. No. 657,878**
**Int. Cl. G01m** *1/16*
**U.S. Cl. 73—460** **8 Claims**



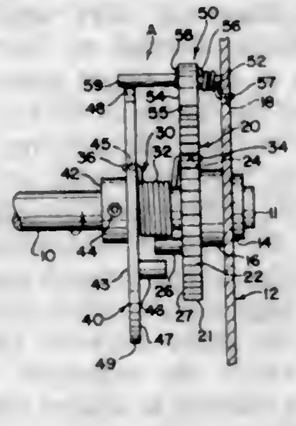
High speed equipment for determining the unbalance in a work piece having a composite cradle and drive system for supporting and rotating a work piece at extremely high speeds and means to hold the work piece in the cradle and drive as it rotates at high speed.

### 3,479,886
## ACCELEROMETER
**Eugene B. Canfield, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York**
**Continuation-in-part of application Ser. No. 303,246, Aug. 20, 1963. This application Sept. 22, 1967, Ser. No. 669,924**
**Int. Cl. G01p** *15/00*
**U.S. Cl. 73—516** **5 Claims**



An accelerometer in which the displacement of a fluid mass from a null position is sensed by a pressure transducer. The output of the pressure transducer is amplified in a plurality of stages and fed back to a motor that moves the mass toward the null position.

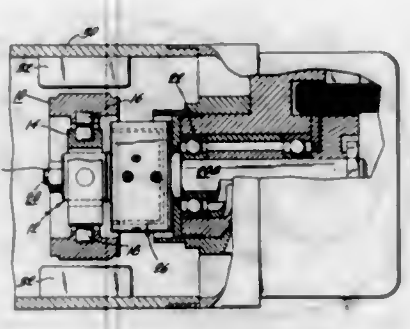
### 3,479,887
## REPEAT CYCLE RELEASE MECHANISM
**Sheldon I. Ross, Moline, Ill., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Ohio**
**Filed Apr. 10, 1968, Ser. No. 720,132**
**Int. Cl. F16h** *5/74*
**U.S. Cl. 74—3.52** **8 Claims**



A release mechanism having a support and a shaft adapted to be rotated in opposing first and second directions. First and second rotatable members are located on the shaft in axially spaced relationship therewith, with the first member being fixed to the shaft for rotation therewith and with the second rotatable member being loosely mounted on the shaft for rotation with respect to the shaft. A coil spring loosely surrounds the shaft between the rotatable members, with the coil spring having each of its opposing ends mechanically coupled to a different one of the rotatable members, and being arranged so as to resiliently bias the second member for rotation in the first direction and to resiliently bias the first member for rotation in the second direction. Locking means normally locks the second member against rotation in the first direction so that as the first member is rotated in the first direction the energy stored in the coil spring increases to increasingly bias the second member in the first direction. A lock release carried by the first member releases the locking means after a predetermined angular rotation of the first member in the first direction, whereupon the energy stored in the coil

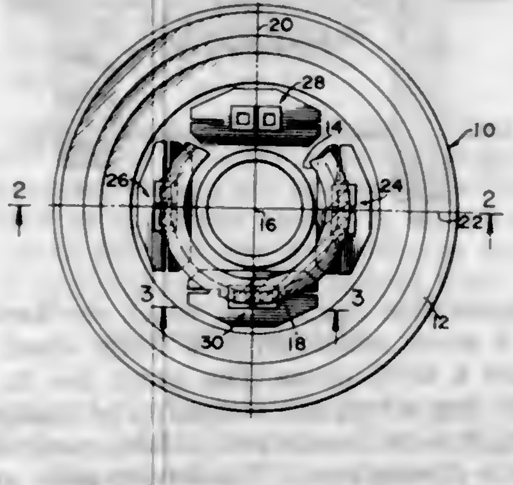
spring is released to drive the second member in the first direction. Stop members prevent more than 360° of respective angular rotation between the rotatable members in either of the two directions.

### 3,479,888
## VIBRATION ATTENUATOR AND GYROSCOPE APPARATUS EMPLOYING SAME
**Bernard Litman, Wantagh, Everett R. Silvia, Huntington Station, and Christopher Stabile, Kings Park, N.Y., assignors to American Bosch Arma Corporation, Garden City, N.Y., a corporation of New York**
**Filed May 5, 1966, Ser. No. 547,934**
**Int. Cl. G01c** *5/04*
**U.S. Cl. 74—5.5** **15 Claims**



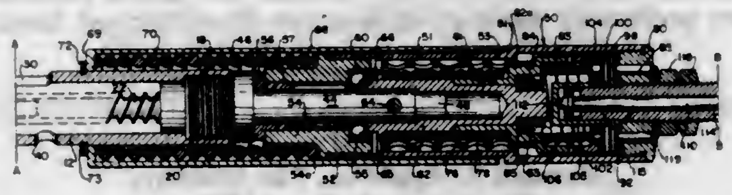
A vibration attenuator is employed between the support bearing and the suspension of a rotating-suspension type gyro to reduce gyro drift due to vibrations transmitted to the support shaft by the bearing. The attenuator consists, in effect, of an inner and outer shaft connected together by sets of radially-extending axially-resilient support members, the sets of support members being displaced from each other along the shaft axis. Preferably each support member is affixed at one end to the interior side of a hollow inner cylindrical shaft, and extends through an aperture in the opposite wall of the inner shaft to be secured to the inner surface of the outer shaft, thereby providing a more compact structure for a given length of support member.

### 3,479,889
## TWO-AXIS INDUCTANCE BRIDGE PICKOFF
**Herbert Binder, New Monmouth, and Walter J. Krupick, Succasuna, N.J., assignors to Singer-General Precision, Inc., a corporation of Delaware**
**Filed Apr. 28, 1967, Ser. No. 634,709**
**Int. Cl. G01c** *19/28*
**U.S. Cl. 74—5.6** **6 Claims**



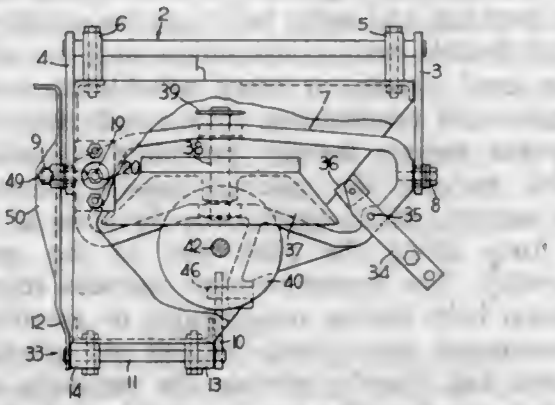
Sensing of the orientation of a gyroscope rotor relative to its supporting means along mutually orthogonal axes is achieved by four magnetic sensors disposed at equal distances axially from the rotor in an initial position of the rotor. The sensors are disposed at equal radial distances from the spin axis of the rotor and along mutually perpendicular axes which are perpendicular to the spin axis in an initial position thereof. The sensors each comprise a magnetic core, forked at its end which is nearest to the gyroscope rotor and a winding about each of two forked arms. A magnetic circuit exists with regard to each sensor and includes, in succession, one sensor arm, the air gap between the end of the sensor arm and the gyroscope rotor, a segment of the rotor itself between projections of the ends of the sensor arms, the air gap between the rotor and the other sensor arm, the other sensor arm and the magnetic core portion interconnecting the bases of the arms. The windings on the sensor arms of a pair of opposed sensors are connected in an electrical bridge circuit which is initially balanced and becomes unbalanced in response to changes in magnetic permeance effected by a non-uniformity of spacing between rotor and sensors to provide an electrical output signal indicative of the rotor tilt.

### 3,479,890
## SEAT RECLINING MECHANISM
**Russell B. Howell, Burbank, Calif., assignor to Fairchild Hiller Corporation, Bay Shore, N.Y., a corporation of Maryland**
**Filed June 29, 1967, Ser. No. 650,052**
**Int. Cl. F16h** *27/62, 1/20*
**U.S. Cl. 74—89.15** **16 Claims**



A seat reclining mechanism of the reciprocating type operative for holding the back of a seat in any of an infinite number of positions between a generally upright reference position and a reclining position. The mechanism has an override capacity for a brake which is used to hold the mechanism, and thus the seat, in a predetermined position so that force applied to the seat can release the brake and permit the seat to return to the reference position. Portions of the mechanism are operated in a fluid medium to damp its reciprocating action.

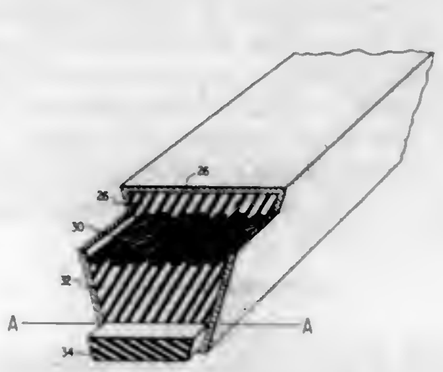
### 3,479,891
## FRICTION DRIVE TRANSMISSION
**Robert A. Moore, Waukesha, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.**
**Filed Mar. 26, 1968, Ser. No. 716,131**
**Int. Cl. F16h** *15/34*
**U.S. Cl. 74—191** **10 Claims**



A variable speed transmission using conical power transmitting surfaces and mechanical means to vary the contact diameter between frictionally engaging cones through incremental movement across the cone surfaces.

### 3,479,892
### V-BELT

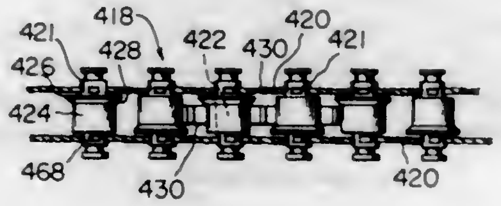
**Mario Cicognani, Milan, Italy, assignor to Pirelli S.p.A., Milan, Italy**
**Filed Mar. 1, 1968, Ser. No. 709,729**
**Claims priority, application Italy, Mar. 23, 1967, 14,042/67**
**Int. Cl. F16g** *1/12, 5/10, 5/16*
**U.S. Cl. 74—233** **7 Claims**



A durable V-belt comprising in sequence, from the larger base to the smaller base, a relatively rigid elastomeric layer, a core layer of reinforcing cord elements, a relatively rigid rubber layer having a hardness greater than 65 Shore degrees, and a softer rubber bottom layer which has good resistance to tearing. The above elements are preferably enclosed in a cover of rubberized fabric.

### 3,479,893
### TRANSMISSION BELT

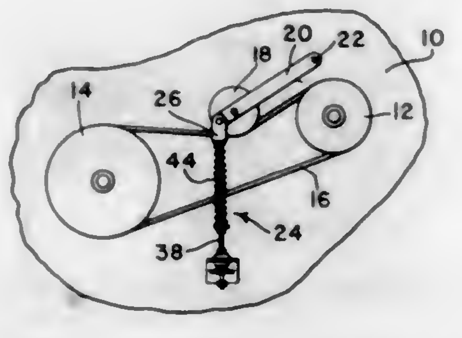
**Bernard S. Appleton, 926 Midway, Woodmere, N.Y. 11598**
**Continuation-in-part of application Ser. No. 566,960, July 21, 1966. This application Jan. 23, 1968, Ser. No. 699,970**
**Int. Cl. F16g** *1/24, 13/08*
**U.S. Cl. 74—235** **47 Claims**



This invention relates to flexible transmission belts adapted for use with standard sprocket wheel means. The transmission belts comprise transmission pin means with, or without rollers, adapted to match the root area between standard sprocket teeth, said means having a diameter substantially equal to twice the radius of the root of the sprocket, and being held together serially by an elongated flexible body construction such as cable made of wire, cord, fabric, or other suitable material, so as to register said transmission means with said roots of said sprocket means; thereby providing a transmission belt which matches the sprocket means positively, without lost motion, which applies the direction of transmission of force along the pitch line of the sprocket teeth smoothly. The invention also provides forms of transmission belts having non-metallic or metallic cylindrical transmission pins which will fit all standard sprocket wheels and thereby obviate the necessity of providing special sprockets for use in combination therewith, and which will fit all existing sprocket mechanism installations without alteration; and the invention provides for various forms of connectors to connect belt ends together and provide transmission means at such connection points with proper relationship to the other transmission means of the belt or belts. The invention also contemplates a new type of connection between transmission pin and the body portion of the belt as well as methods for making such connection.

### 3,479,894
### BELT TENSIONING DEVICE

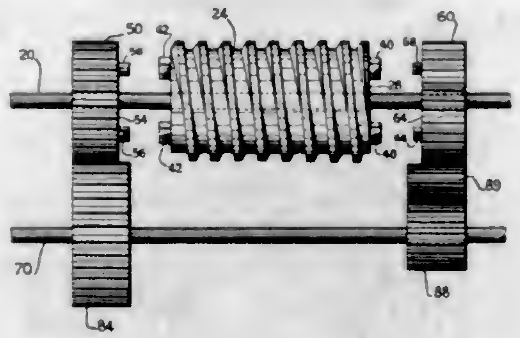
**Harold Eugene deBuhr and Larry Wilson Cofer, Ottumwa, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware**
**Filed Feb. 28, 1968, Ser. No. 708,886**
**Int. Cl. F16h** *7/12*
**U.S. Cl. 74—242.11** **8 Claims**



A belt drive having an idler mounted on a swingable arm, which is acted on by a tensioning device. The device includes a stop which limits movement of the idler away from the belt, the device being preferably adjusted so that in normal operation, the stop is engaged and the idler functions as a fixed idler. The device also includes a spring which biases the idler toward the belt, so that when the belt stretches due to increased loads, the idler follows the belt and functions as a spring-loaded idler.

### 3,479,895
### WINCH MECHANISM

**Thure H. Wegener, Cranbury-S. River Road, Cranbury, N.J. 08512**
**Filed Dec. 4, 1967, Ser. No. 687,554**
**Int. Cl. F16h** *3/10*
**U.S. Cl. 74—333** **8 Claims**

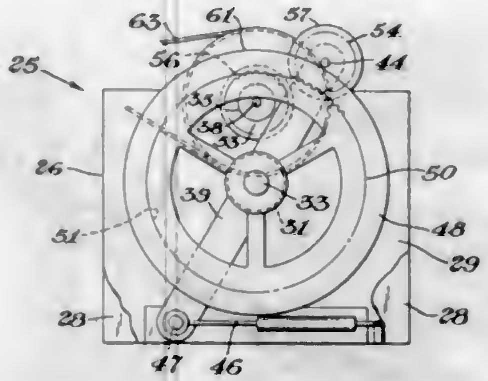


This application discloses a winch mechanism which includes a worm which drives a worm wheel, to which is attached a cable drum. The worm has its ends provided with lugs which are adapted to be engaged by corresponding lugs on loosely and slidably mounted forward and reverse driving gears. The driving gears are adapted to be driven by an external power source, with which they are always meshed. All shafts in the apparatus are of the simplest form and require no critical machining.

In another form of the disclosure, the worm is keyed to its shaft, as are its forward and reverse driving gears, which, in this case, do not engage the worm. An external input power shaft is provided with forward and reverse power gears which carry lugs adapted to be engaged and driven by a cylinder keyed to the shaft and having lugs at its ends for engaging one or the other of the power gears. Again, driving and driven gears are always meshed, and all shafts are of the simplest form.

### 3,479,896
### GEAR TRAIN AND APPARATUS

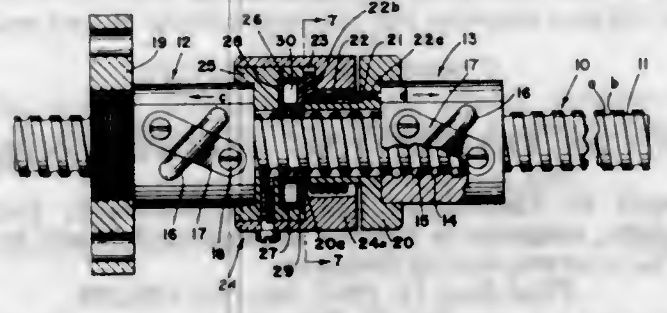
**Robert Woody, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed Jan. 10, 1968, Ser. No. 696,799**
**Int. Cl. F16h** *55/04, 3/38*
**U.S. Cl. 74—399** **9 Claims**



Two shafts adjustably positioned and generally parallel to each other are driven by a gear having an external and internal driving face of like pitch diameter. One shaft is supported on a support rotating about the axis of the driving gear.

### 3,479,897
### VARIABLY PRELOADED BALL NUT AND SCREW ASSEMBLY

**Donald J. Holthofer, Northridge, Calif., assignor to Saginaw Products Corporation, Saginaw, Mich., a corporation of Michigan**
**Filed Aug. 16, 1967, Ser. No. 661,068**
**Int. Cl. F16h** *55/18*
**U.S. Cl. 74—441** **9 Claims**

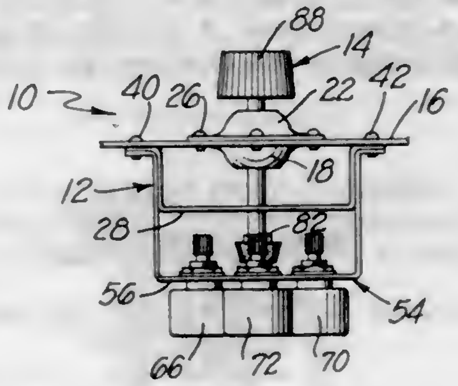


A preloaded ball nut and screw assembly wherein a pair of axially spaced apart nuts are mounted on a ball screw and connected by a torsion spring. A rotatable spring mount on one of the nuts may be secured in various selected rotary positions to vary the preload force.

### 3,479,898
### MULTIPLE SELECTION CONTROL STRUCTURE

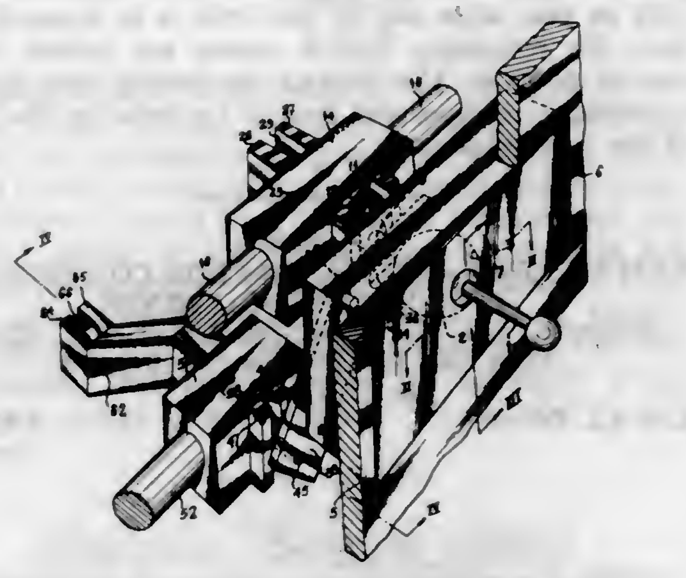
**Jay H. Prager, 25–11, 6-chome, Nishigotanda, Shinagawa-ku, Tokyo, Japan**
**Substituted for abandoned application Ser. No. 571,099, Aug. 8, 1966. This application Jan. 13, 1969, Ser. No. 796,942**
**Int. Cl. F16h** *35/18, 13/10;* **G05g** *9/02*
**U.S. Cl. 74—471** **3 Claims**

The multiple selection control structure of this invention comprises the single manually operable control element which can be moved in a first mode to select and engage a structure to be controlled, and then moved in a second mode so as to adjust or move the controlled structure. With a multiple selection in the first mode, the control element can selectively engage any one of a plurality of structures which can be adjusted, and thus a single manually operable control element can select and adjust a plurality of control devices or structures.



### 3,479,899
### MECHANISM FOR REGULATING THE OPERATION OF TRANSMISSIONS OR THE LIKE

**Giordano Romi, Sao Paulo, Brazil, assignor to Industrias Romi S.A., Sao Paulo, Brazil**
**Filed Feb. 7, 1967, Ser. No. 614,456**
**Int. Cl. G05g** *9/02*
**U.S. Cl. 74—473** **17 Claims**

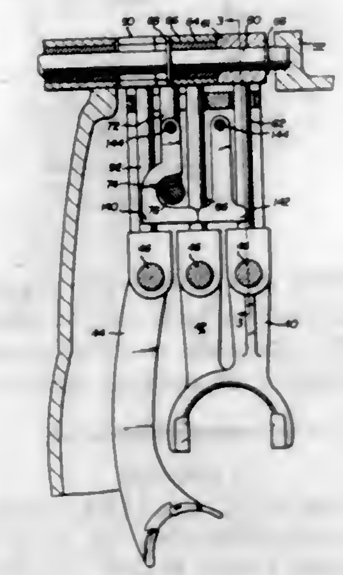


A shifting mechanism for variable speed transmissions comprises a single selector lever which is movable between several positions to have during such movement a component of movement in the one and/or the other of two mutually inclined directions. The selector lever is directly coupled with two shifters one of which is displaced only when the lever has a component of movement in one direction and the other of which is displaced only when the lever has a component of movement in the other direction. Both shifters are displaced when the lever is moved in a sense to have components of movement in both directions.

### 3,479,900
### SLIDING GEAR SHIFTING MECHANISM

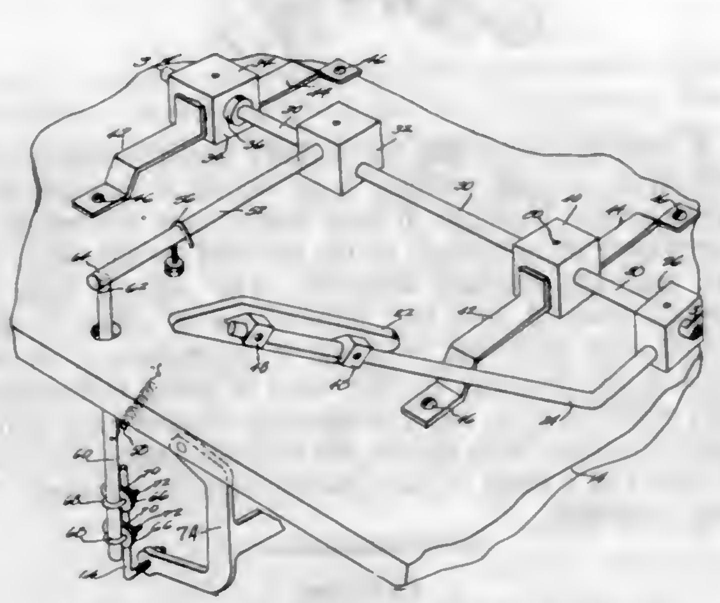
**Vance H. Mays, South Euclid, Ohio, assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin**
**Filed Feb. 1, 1968, Ser. No. 702,401**
**Int. Cl. G05g** *5/10, 9/02*
**U.S. Cl. 74—477** **14 Claims**

A shifting mechanism for a transmission of the type which includes an input shaft, a countershaft and an output shaft with a selective interconnection between the input shaft and the countershaft for driving the countershaft at two different ranges relative to the input shaft. The transmission further includes a plurality of shiftable gears for selectively connecting the countershaft to the output shaft thereby establishing a plurality of forward speeds and a reverse speed. A plurality of shifting forks are designed to engage and disengage the respective gears with an individual control for each of the forks and lock means for maintaining the forks in engaged position. A positive interlock is provided between the respective controls so that when any of the forks is in engaged position, the remaining control means are locked in the neutral position. The shifting mechanism also includes a provision incorporated therein for selecting the range of the transmission.



### 3,479,901
### ARM CONTROL-MECHANISM FOR COMMERCIAL-TYPE SEWING MACHINES

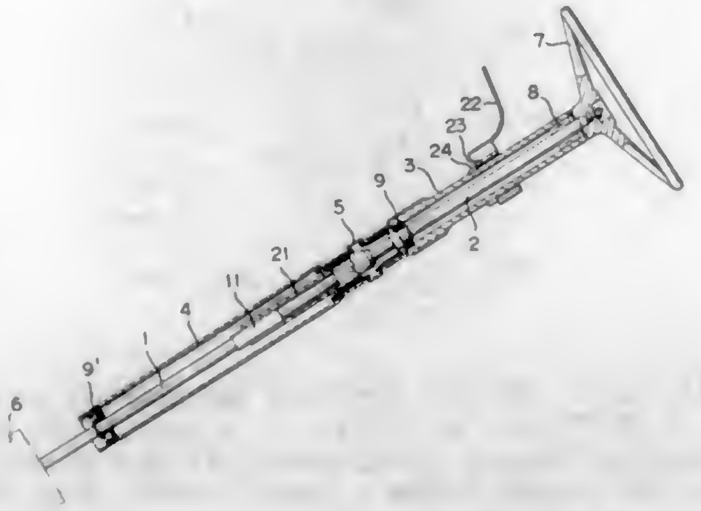
**Robert E. Lee, 513 Plum, Henderson, Ky. 42420**
**Filed Dec. 21, 1967, Ser. No. 692,410**
**Int. Cl. G05g** *1/20*
**U.S. Cl. 74—491** **3 Claims**



An arm control mechanism for sewing machines of the commercial type, which are adapted for handicapped individual use, having an attachment which enables one to operate it with efficiency of an able-bodied person, and which fits any clutch type commercial sewing machine and which does not interfere with the operation of the machine. The component parts are of steel or rigid construction and are adapted to be adjusted for proper installation and use in accordance with the purposes of the invention.

### 3,479,902
### SAFETY STEERING ASSEMBLY

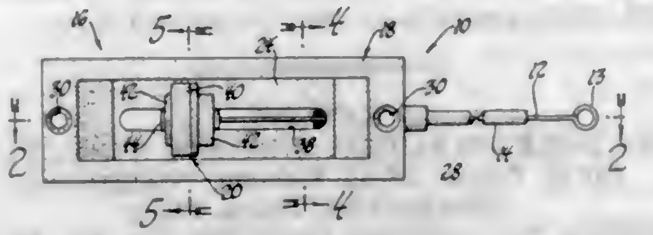
**Kenjiro Okamoto, Fujisawa-shi, Japan, assignor to Nippon Seiko Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan**
**Filed Sept. 25, 1967, Ser. No. 670,148**
Claims priority, application Japan, Nov. 10, 1966, 41/73,475
**Int. Cl. B62d** *1/18*
**U.S. Cl. 74—492** **7 Claims**



A collapsible, impact-absorbing steering assembly is desirable for safety reasons. In this invention, a telescopic steering shaft is mounted within a two-piece steering column, one piece being fitted within the other. An impact-absorbing section is located in one column adjacent the butting end of the other column, and comprises at least one reduced-diameter section having a plurality of slots or holes therein. On impact of the vehicle, the shafts telescope and one column is forced over the other while at the same time plastically deforming. Such deformation and friction between the columns absorb impact energy.

### 3,479,903
### MOTION TRANSMITTING REMOTE CONTROL ASSEMBLY

**Ronald O. Hermanson and Arno Hellthaler, Detroit, Mich., assignors to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware**
**Filed June 12, 1967, Ser. No. 645,359**
**Int. Cl. F16c** *1/10*
**U.S. Cl. 74—502** **25 Claims**



A motion transmitting remote control assembly of the type which is operated to control a device by transmitting tension or compression in a curved path by a flexible core element and including a support body having a wall with an elongated slot therein with a slider member slidably supported by the support body for bearing engagement with one face of the wall and extending through the slot with a washer-like element snapped onto and retained on the slider member for bearing engagement with the opposite face of the wall for providing a predetermined resistance to the sliding movement of the slider member.

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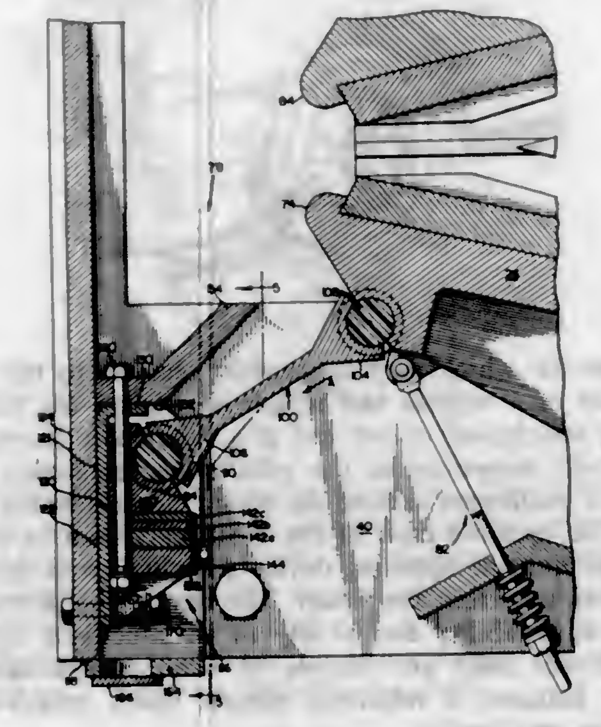
### 3,479,904
### TOGGLE LINK MOUNTING MECHANISM

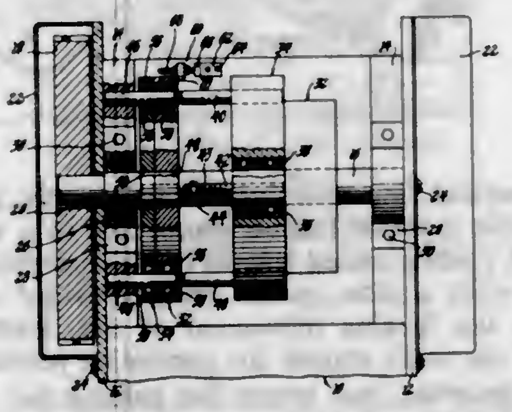
**Heinz W. Winter, Salt Lake City, Utah, assignor, by mesne assignments, to Envirotech Corporation, Salt Lake City, Utah, a corporation of Delaware**
**Filed July 12, 1968, Ser. No. 747,768**
**Int. Cl. G05g** *1/04*
**U.S. Cl. 74—520** **5 Claims**



A slide block is provided to mount one end of a toggle link and the slide block is immobilized by a rupturable element the size of which is kept to a minimum as a substantial portion of the thrust tending to move the slide block is resisted by friction between an extended surface of the slide block and a rigid housing therefor.

### 3,479,905
### FLYWHEEL ASSEMBLY

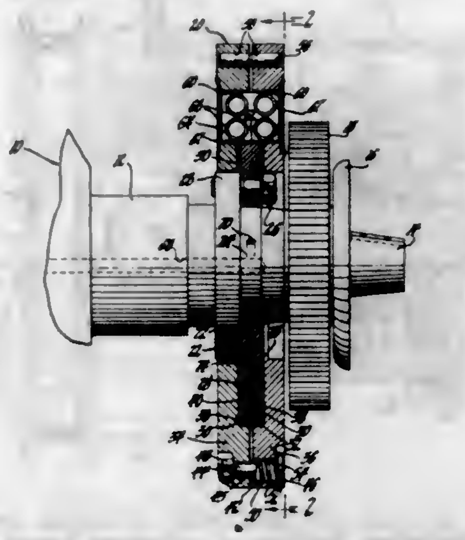
**Robert Arthur Helrigel, Hastings, Mich., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware**
**Filed Oct. 19, 1967, Ser. No. 676,566**
**Int. Cl. G05g** *5/08*
**U.S. Cl. 74—572** **6 Claims**



There is provided an improvement in a flywheel assembly of the type adapted for machines and the like, and having a first inertia mass coupled to a machine shaft through a clutch assembly. Secondary inertia masses are stored in non-rotatable position relative to the shaft, such masses being separately mountable on the first inertia mass for rotation therewith. Latch means mounted on the machine and engageable with the secondary inertia masses maintain such secondary masses in stored position when not in use. Upon release of the latch means, one or more of the secondary inertia masses may be moved into secure engagement with the first inertia mass for rotation therewith to provide additional flywheel energy.

### 3,479,906
### TUNED FRICTION DAMPER

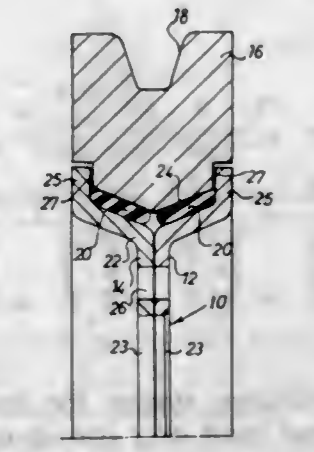
**James K. Valus, La Grange Park, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Apr. 12, 1967, Ser. No. 630,316**
**Int. Cl. F16f** *16/12*
**U.S. Cl. 74—574** **7 Claims**



A tuned friction damper adapted for mounting on the interior of an internal combustion engine adjacent the end of the crankshaft to damp torsional vibrations therein, the damper including a pair of annular inertia members movably carried on a crankshaft mounted hub and resiliently driven by coil spring means between the hub and the inertia members. Pressure oil lubricated friction plates carried on the inertia members engage annular hub surfaces to damp oscillatory motions of the hub, the damping force being created by adjustable spring clamping means acting between the annular inertia members.

### 3,479,907
### TORSIONAL VIBRATION DAMPER

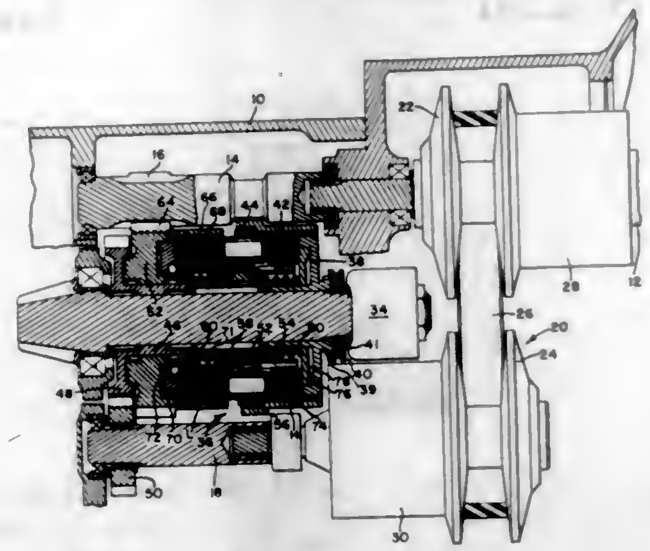
**Jeffrey Hall, Sheepridge, England, assignor to Holset Engineering Company Limited**
**Filed Dec. 5, 1967, Ser. No. 688,033**
**Claims priority, application England, Nov. 3, 1967, 50,065/67**
**Int. Cl. F16f** *15/12*
**U.S. Cl. 74—574** **7 Claims**



The present invention relates to a torsional vibration damper in which the hub member is of at least two part construction such that at least one elastic element may be placed in position prior to assembly of the hub member and an inertia member.

### 3,479,908
### COMBINED VARIABLE-SPEED AND PLANETARY DRIVE

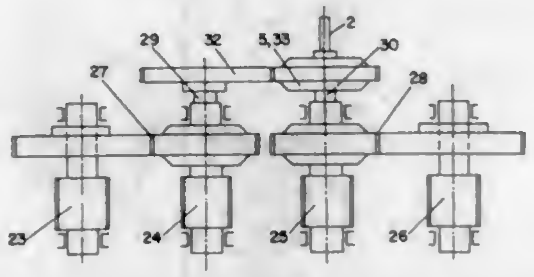
**James Henry Kress and David Forrest Lemons, Cedar Falls, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware**
**Continuation of application Ser. No. 540,602, Apr. 6, 1966. This application Aug. 14, 1968, Ser. No. 754,111**
**Int. Cl. F16h** *37/06*
**U.S. Cl. 74—681** **8 Claims**



A transmission having a constant-speed input shaft driving the variable-diameter drive sheave of an infinitely-variable belt drive, the driven sheave of which drives a variable-speed shaft connected to the sun gear of a planetary gear train parallel to and generally between the constant-speed and variable-speed shafts. The gear train has one clutch engageable to directly connect the output to the variable-speed shaft and an alternately engageable clutch to connect the constant-speed shaft to one of the other planetary elements to provide a differential drive in the gear train.

### 3,479,909
### TOOTH GEARING WITH POWER DISTRIBUTION

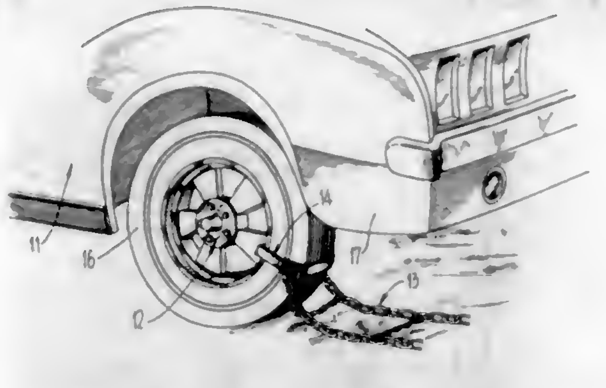
**Felix Fritsch, Vienna, Austria, assignor to Simmering-Graz-Pauker Aktiengesellschaft fur Maschinen-, Kessel- und Waggonbau, Vienna, Austria**
**Filed Dec. 12, 1967, Ser. No. 689,875**
**Claims priority, application Austria, Feb. 15, 1967, A 1,459/67**
**Int. Cl. F16h** *1/42*
**U.S. Cl. 74—714** **7 Claims**



A power distribution system for transmitting power from a single input shaft over two or more transmission paths to two or more pinions which drive a single bull gear and attached output shaft. The transmission paths branch at an epicyclic gear train having a planet carrier and a ring gear, each of which is drivingly connected to one of the pinions.

### 3,479,910
### DEVICE FOR APPLYING SKID CHAINS TO TIRES

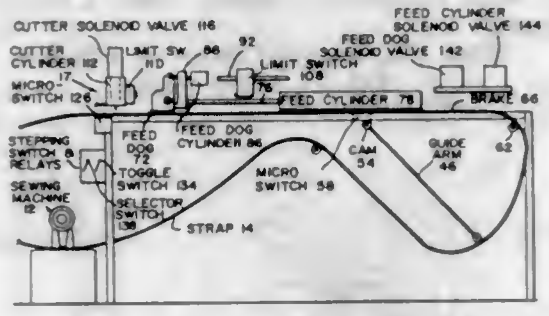
**Barry K. Jewett, 270 Yulupa Ave., Santa Rosa, Calif. 95405**
**Filed Sept. 20, 1967, Ser. No. 669,150**
**Int. Cl. B60c** *27/14*
**U.S. Cl. 81—15.8** **7 Claims**



A device which may be readily secured to the wheel and tire of a vehicle and which is adapted for the temporary attachment of one end of a skid chain thereto such that upon movement of the vehicle the remainder of the chain is positioned around the entire circumference of the tire. The opposite ends of the chain may then be hooked together and the applying device detached from the chain and removed from the wheel. The device is characterized by its adjustability and ability to be effectively attached to different sizes and shapes of tires. In addition, the device features a relatively simple quick attach-detach securing mechanism.

### 3,479,911
### STRAP FEED AND CUTOFF MACHINE

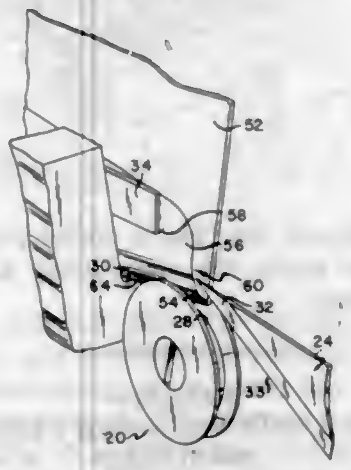
**Warren Galkin, Providence, R.I. (33 Factory St., West Warwick, R.I. 02893)**
**Filed June 27, 1966, Ser. No. 560,633**
**Int. Cl. B26d** *5/20;* **B65h** *25/14*
**U.S. Cl. 83—65** **18 Claims**



A machine for directing a continuously moving web of flexible material from a source and to a work station wherein predetermined lengths of the material are severed at the work station, means being provided and responsive to the feeding movement of the flexible material toward the work station for producing periodic severing of the material, and means for guiding the flexible material as it is received from the source toward the work station, including a movable member that is responsive to the feed of the flexible material for controlling operation of means for moving the flexible material toward the work station, the means for directing the material to the work station providing for a different rate of feed than the feeding movement of the material from the source, and means responsive to the different rate of feed of the material for controlling movement thereof toward the work station.

### 3,479,912
### ENVELOPE OPENER

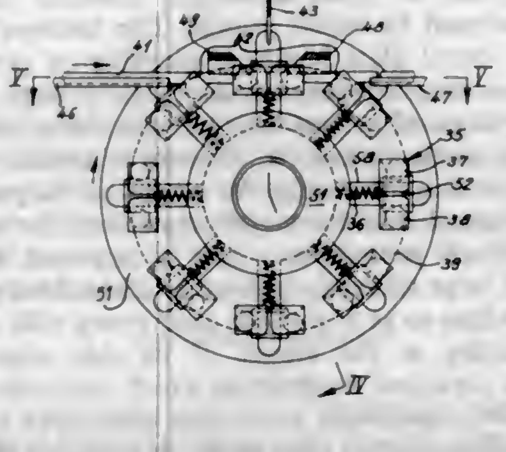
**Melvin H. Kennedy, Cortland, N.Y., assignor to SCM Corporation, a corporation of New York**
**Filed Jan. 8, 1968, Ser. No. 696,178**
**Int. Cl. B26d** *7/06*
**U.S. Cl. 83—176** **5 Claims**



A device for opening sealed envelopes. The device includes a roller positioned intermediate the end of a V-shaped guide and a blade for causing an envelope sealing flap end to buckle thereby permitting access of the blade between the buckled end of the envelope back and effect shearing of the envelope along the sealing flap fold as it is drawn through the guide.

### 3,479,913
### CUTTING MECHANISM FOR CIGARETTE MACHINES OR THE LIKE

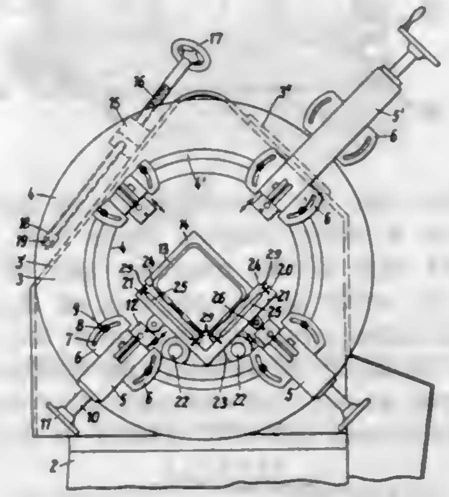
**Juergen Goemann and Wolfgang Grimm, Hamburg, Germany, assignors to Hauni-Werke Koerber & Co. K.G., Hamburg-Bergedorf, Germany**
**Filed Dec. 5, 1967, Ser. No. 688,043**
**Claims priority, application Germany, Dec. 15, 1966, H 61,303**
**Int. Cl. B26d** *1/56*
**U.S. Cl. 83—310** **17 Claims**



A cutting mechanism wherein an orbiting knife blade reciprocates along the path for a wrapped tobacco rod issuing from a continuous rod cigarette or cigar machine to sever the rod while moving in the direction of rod travel. During severing, the rod is supported by successive trough-shaped sockets orbiting about the fixed axis of a driven support which moves the sockets at the speed of and in the same direction as the rod. Sockets which engage the rod during severing are aligned with the rod by a planetary gearing or by a cam whose face is tracked by followers provided on the sockets.

### 3,479,914
### CARD AND ETIQUETTE PUNCHING MACHINE

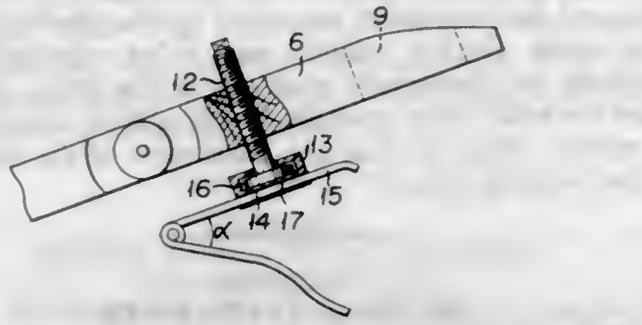
**Gerhard Busch, Heidenkampsweg 48, Hamburg, Germany**
**Filed June 8, 1966, Ser. No. 556,149**
**Claims priority, application Germany, June 16, 1965, B 82,415**
**Int. Cl. B26d** *7/06*
**U.S. Cl. 83—448** **10 Claims**



A card and etiquette punching machine in which at least one punching tool is carried adjustable in substantially radial direction on a ring which in turn is carried turnably about its axis on stationary support means and in which a stack of cards or the like to be punched is carried on a guide channel movable parallel to the ring axis in engagement with the cutting edge of the tool, whereby the angular and lateral position of the tool to the stack of cards may be quickly and easily adjusted.

### 3,479,915
### ACTION MECHANISMS FOR GRAND PIANOS

**Yoshiyuki Matsumoto, Hamamatsu-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Japan, a corporation of Japan**
**Filed Mar. 27, 1967, Ser. No. 626,204**
**Claims priority, application Japan, June 18, 1966, 41/57,921**
**Int. Cl. G10c** *3/18*
**U.S. Cl. 84—239** **1 Claim**



A grand piano action mechanism having an arm operatively related with a key, a repetition lever rotatably mounted on the arm, a jack rotatably mounted on one end of the arm to push up a hammer, a repetition spring disposed beneath the repetition lever to push it upwardly, a spring seat movably mounted between the repetition lever and one end of the repetition spring so as to control the magnitude of the repulsive force of the spring.

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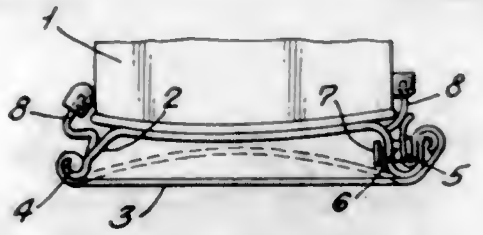
### 3,479,916
### SHOULDER RESTS FOR STRINGED INSTRUMENTS

**Wilhelm Wolf, Reinier de Vosstraat 3,**
**Amsterdam, Netherlands**
**Filed Jan. 23, 1967, Ser. No. 611,001**
**Claims priority, application Netherlands, Jan. 28, 1966, 6601165**
**Int. Cl. G10d** *1/02*
**U.S. Cl. 84—280 12 Claims**



A shoulder rest for attachment to a stringed instrument such as a violin adapted to be held between the shoulder and chin of the musician and which may be clipped to the under or bottom face of the instrument, and which includes a resilient portion at the side directed toward the shoulder. Moreover, the resilient portion is fixedly secured at one end and adjustably secured at the other end to frames operably related to the instrument.

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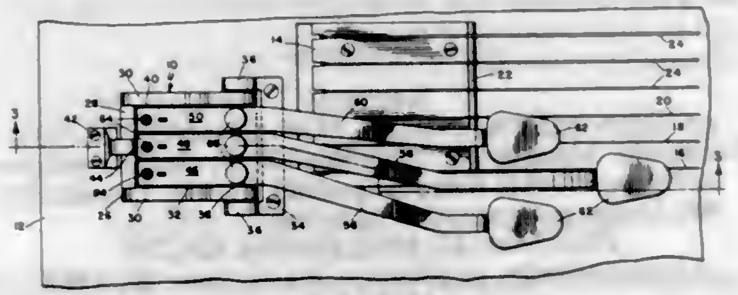
### 3,479,917
### MULTIPLE LEVER MANUAL TONE CHANGER FOR GUITARS

**Anthony Zitnik, Jr., 2431 E. 16th St., National City, Calif. 92050, and James T. Moore, 5933 Potomac St., San Diego, Calif. 92114**
**Filed Dec. 15, 1967, Ser. No. 691,045**
**Int. Cl. G10d** *3/14*
**U.S. Cl. 84—312 6 Claims**



The unit is an attachment adaptable to most guitars, or similar stringed instruments, to provide individual or combined tonal changes of several strings while playing. Each variable string has an individual control lever while is adjustable for a precise tone change, the levers being grouped for convenient operation by the player's hand in the string picking position and being adjustable individually to comfortable positions in the group. In addition the entire lever assembly is operable by one lever for a vibrato effect, without any adjustment of the individual tone changing action.

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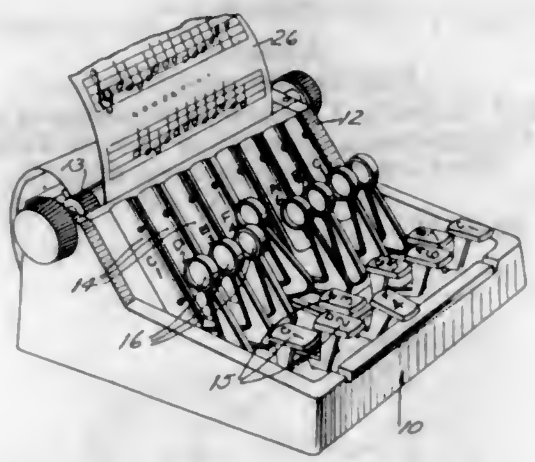
### 3,479,918
### MUSICAL TYPEWRITER

**Robert I. Genin, Scarsdale, N.Y., assignor to Child Guidance Toys Inc., New York, N.Y., a corporation of New York**
**Filed Jan. 5, 1967, Ser. No. 607,457**
**Int. Cl. G10d** *13/08*
**U.S. Cl. 84—404 5 Claims**

A musical typewriter in which a row of xylophone bars of varying length are supported on a frame in front of a roller which receives a music instruction sheet having notes thereon identified by a predetermined code, the bars being struck by clappers operated by a row of keys having code indicia thereon, whereby a player reading the coded notes is able to strike the appropriate keys to play the music on the sheet.



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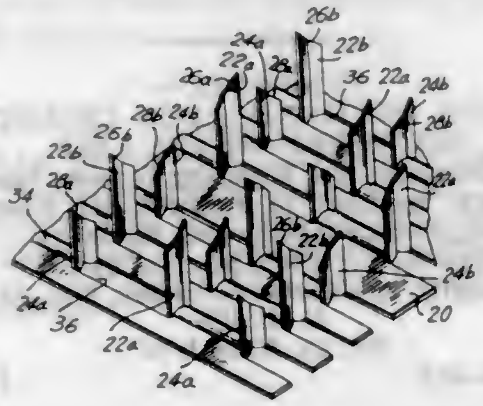
### 3,479,919
### PRONGED FASTENERS FOR STRUCTURAL MEMBERS

**Julius Lidsky, Miami Beach, Fla., assignor to Ronel Corporation, Miami, Fla., a corporation of Florida**
**Filed Apr. 12, 1967, Ser. No. 630,307**
**Int. Cl. F16b** *15/00;* **E04b** *1/38*
**U.S. Cl. 85—13 9 Claims**



A pronged fastener for connecting together structural members made of wood or similar material capable of being penetrated by metal prongs. The fastener is in the form of a metal plate having a plurality of prongs projecting from one face thereof, and these prongs are composed of groups of prongs which respectively have different lengths, so that when the fastener is applied to a pair of structural members only the group of longest prongs will be required initially to penetrate into the structural members. Each prong has a pair of opposed side edges and an end edge which is inclined to and extends between these side edges so as to provide each prong with a pointed tip terminating at the longer of its side edges. These prongs are arranged in rows in which successive prongs of each row respectively have their end edges oppositely inclined with respect to each other. In addition, the prongs are arranged in two groups of different lengths with the prongs of each row being arranged with one relatively long prong followed by a relatively short prong, so that the prongs of different lengths alternate with each other in each row. The plate is formed at its face which is opposed to that from which the prongs project with V-

grooves, and the prongs are struck from those portions of the plate which are formed with the V-grooves, so that each prong is of a V-shaped cross section.

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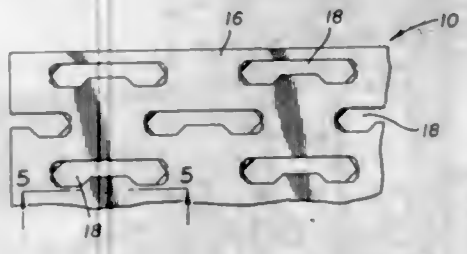
### 3,479,920
### CONNECTOR PLATE

**Arthur Carol Sanford, P.O. Box 1177,**
**Pompano Beach, Fla. 33061**
**Filed Sept. 5, 1967, Ser. No. 665,639**
**The portion of the term of the patent subsequent to Apr. 16, 1985, has been disclaimed**
**Int. Cl. F16b** *15/00*
**U.S. Cl. 85—13 11 Claims**



A metallic connector plate for joining wooden members. The teeth are punched in pairs from a common opening. Fundamentally, each tooth has a base portion and a tip portion with the tip portion being of substantially lesser width than the base portion. The opposed edges of each portion are formed from parallel sides of the opening in the plate from which each tooth is punched so that one edge of the tip portion is a continuation of one edge of the base portion. The teeth are contorted so that at least the tip portion lies in a preselected plane perpendicular to the plates.

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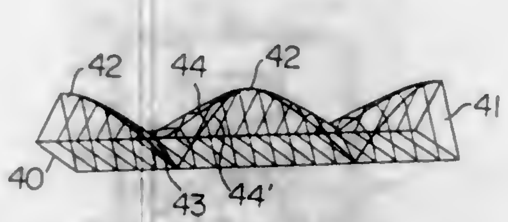
### 3,479,921
### NON-CIRCULAR SCREWS

**Seiji Omoto, Tokyo, Japan, assignor of one-half to Hideo Osawa, Toyokawa-machi, Toyokawa-shi, Aichi-ken, Japan**
**Filed July 17, 1967, Ser. No. 653,713**
**Int. Cl. F16b** *33/02*
**U.S. Cl. 85—46 1 Claim**



Fluteless swaging taps and self-tapping screws in which radial reliefs are disposed between adjacent thread forming areas but the roots of the threads are maintained at a constant distance from the axis of the screw, the tops of the threads defining a surface whose cross-section is noncircular. The forms of the screw threads are especially fit for being produced by a rolling operation.

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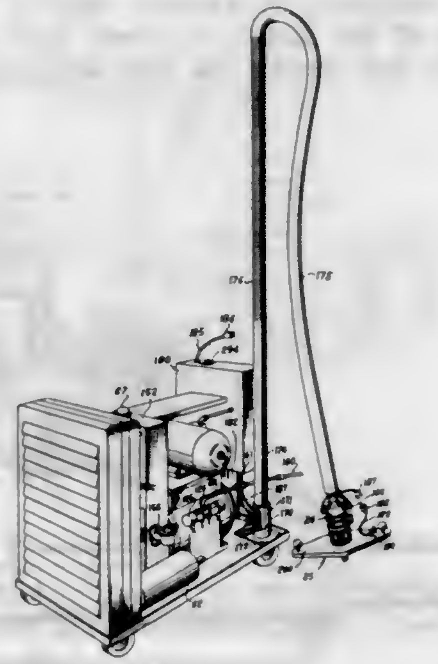
### 3,479,922
### TEMPLATE CONTROLLED ROUTER WITH CONTROLLED HYDRAULIC DRIVE MEANS

**Robert A. Shuey, 4405 Highland,**
**Dallas, Tex. 75205**
**Filed July 10, 1967, Ser. No. 652,243**
**Int. Cl. B23c** *1/16, 1/20;* **B27c** *5/00*
**U.S. Cl. 90—13 22 Claims**

An apparatus for shaping work pieces which includes a hand tool provided with a hydraulic motor and means for moving a cutting tool driven by the motor, the apparatus having means for continuously varying the speed of rotation of the hydraulic motor operable by controls on the hand tool.



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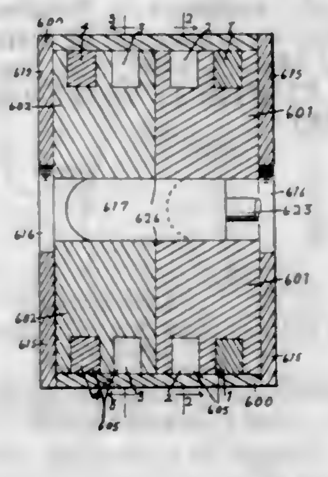
### 3,479,923
### HYDRAULIC TRANSMISSION

**Guy H. Tripp, 209 N. Columbian,**
**Bay City, Mich. 48706**
**Filed June 12, 1967, Ser. No. 656,976**
**Int. Cl. F01c** *1/00, 3/00;* **F04c** *1/00*
**U.S. Cl. 91—97 7 Claims**



A hydraulic transmission comprising a plurality of fluid actuated oppositely rotatable rotors positioned in a stator, said stator fitted with inlet ports, exit ports and valves communicating with said rotors and an output shaft movable through said stator and rotors and rotatable therein with a selected one of said rotors.

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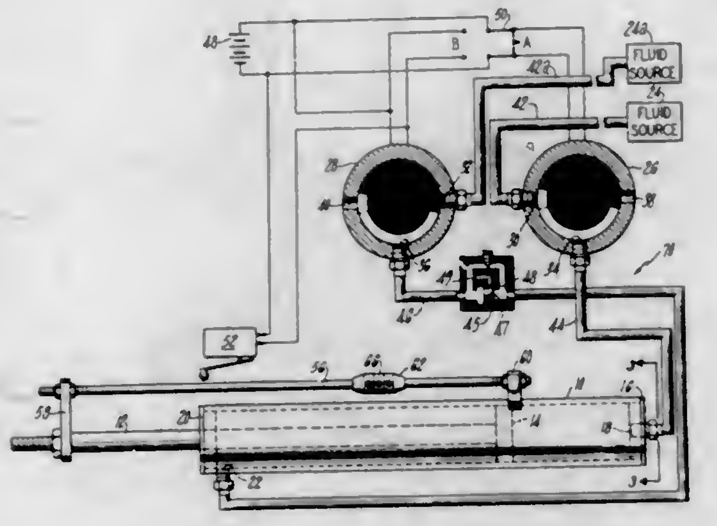
### 3,479,924
### PISTON TYPE OPERATOR WITH POWER CHECKING

**Harold W. Ferguson, New Hartford, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut**
**Filed Apr. 19, 1968, Ser. No. 722,649**
**Int. Cl. F01b** *25/00;* **F15b** *13/044, 15/20*
**U.S. Cl. 91—165 11 Claims**

A fluid powered door operator having a double acting piston and cylinder assembly, sources of fluid at different pressures, one supplying each end of the cylinder, and a fluid flow control valve in each supply line for controlling fluid flow to the cylinder. An operator control switch initiates the flow to the cylinder of fluid under full pressure. Cam operated switch apparatus, also associated with the valve structure, is adapted, after a predetermined movement of the piston, to admit fluid under positive pressure to flow against the then advancing side of the piston while continuing the full pressure to the other side, to power check the piston and a door attached thereto and to stop the door at a predetermined point in a short distance. An adjustable valve can be utilized for providing throttled fluid flow in one direction and unthrottled exhaust flow, increasing the precision and versatility of the design.



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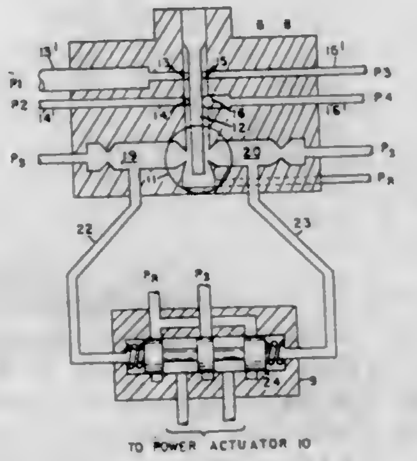
### 3,479,925
### HYDRAULIC SIGNAL SUMMING AND CONTROL SYSTEM

**Paul F. Hayner, Lexington, Mass., and David G. Eldridge, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware**
**Filed Mar. 7, 1967, Ser. No. 621,219**
**Int. Cl. F15b** *13/16, 11/10, 13/042*
**U.S. Cl. 91—367** **9 Claims**



This is a hydraulic or pneumatic control system for controlling fluid pressure and flow to an actuator so that the actuator position is controlled in accordance with a predetermined function of a plurality of fluid pressure signals. The fluid pressure signals are converted to mechanical forces which are applied to resilient mechanical structure which directly controls fluid flow from two or more nozzles producing a pressure differential representative of the predetermined function. This pressure differential is employed to meter the fluid pressure and/or flow to the actuator.

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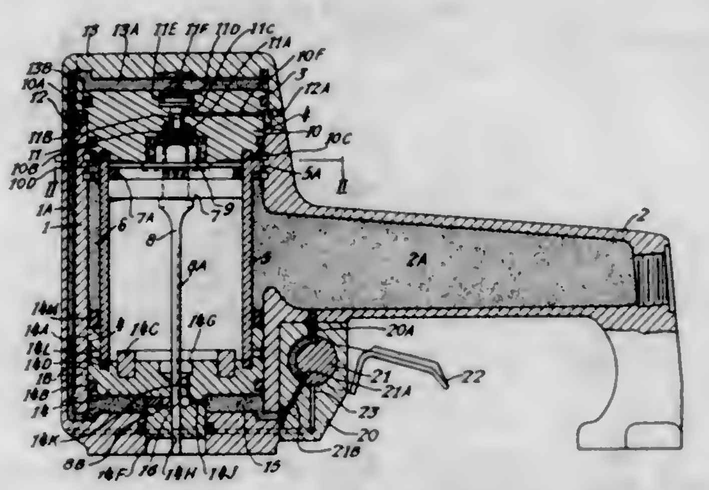
### 3,479,926
### PNEUMATIC DEVICES FOR DRIVING FASTENERS OR LIKE PURPOSES

**Malcolm Edwin Hillier, Upper Walmer, Deal, Kent, England, assignor to Gaston E. Marbaix Limited, a British company**
**Filed Dec. 20, 1966, Ser. No. 603,256**
**Claims priority, application Great Britain, Dec. 29, 1965, 55,142/65**
**Int. Cl. F15b** *13/04;* **F16j** *11/04;* **B25c** *5/06*
**U.S. Cl. 91—404** **31 Claims**



This invention involves a pneumatic gun or the like having a pair of main valve members at opposite ends of a main cylinder in which a double-acting main piston operates such that the movement of the working piston controls the valve members involved in the working phase of the cycle and the first-mentioned valve is provided with means for enabling venting in the return phase.

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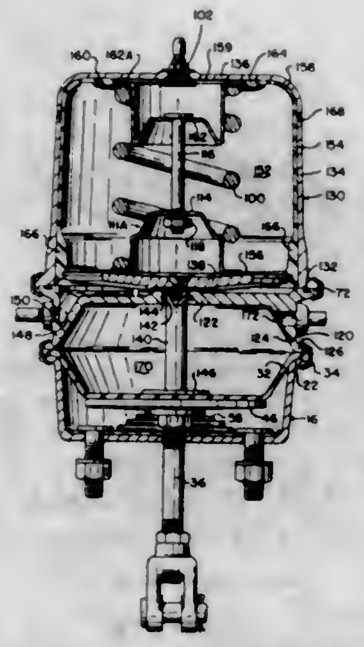
### 3,479,927
### VEHICLE BRAKE OPERATOR

**Elmer Ralph Woodward, Cloverdale, Calif., assignor to Wiz Corporation, San Francisco, Calif., a corporation of California**
**Filed May 19, 1967, Ser. No. 639,670**
**Int. Cl. F01b** *29/00, 19/02, 30/00*
**U.S. Cl. 92—128** **2 Claims**



A brake operator with an expansible chamber including a movable member connected to the vehicle brake means for actuation thereof between brake-applied and brake-released positions. The chamber is closed and contains a spring and capitive gas under pressure to urge the movable member toward the brake-applied position. Means are provided for introducing fluid under pressure to the other side of the movable member to move the same to the brake-released position.

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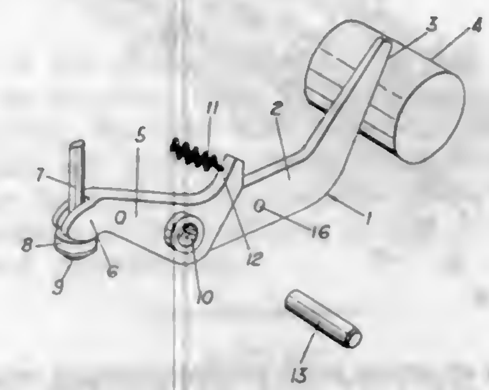
### 3,479,928
### DIAPHRAGM PUMP ROCKER ARMS

**Michel Noirot, Chelles, and Claude Quatredeniers, Les Lilas, France, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Dec. 4, 1967, Ser. No. 687,706**
**Claims priority, application Great Britain, Dec. 6, 1966, 54,527/66**
**Int. Cl. F16j** *1/10;* **F04b** *43/02;* **F16h** *53/06*
**U.S. Cl. 92—129** **2 Claims**



The rocker arm of a diaphragm pump for use as an internal combustion engine fuel pump is made with a metal core one end of which is engageable with a rotary drive cam and the other end of which has moulded integral therewith an arm portion, of nylon or other plastics material, a free end of which is forked for engagement with the pump diaphragm push rod.

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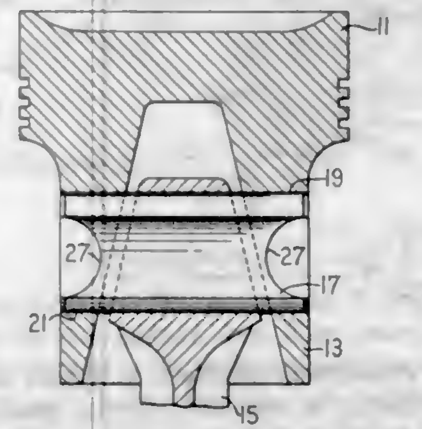
### 3,479,929
### PISTON PIN

**Charles N. Fangman, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Feb. 19, 1968, Ser. No. 706,596**
**Int. Cl. F16j** *1/16;* **F16b** *9/02*
**U.S. Cl. 92—187** **6 Claims**



A piston pin having an arcuate upper and lower surface joined by concave surfaces along the length and across the ends thereof.

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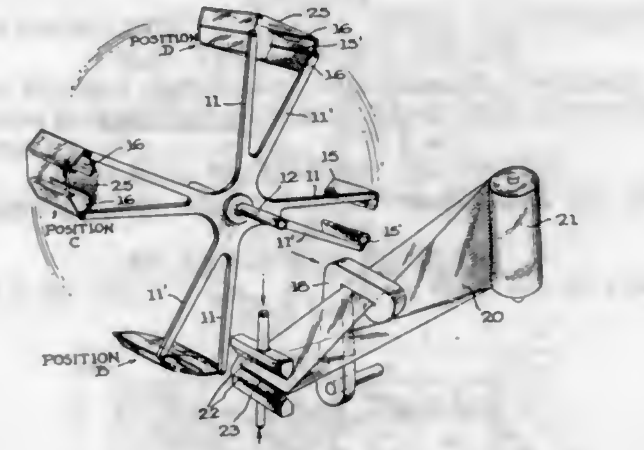
### 3,479,930
### AUTOMATIC STRETCH BAG MACHINE

**William S. Peppler, Chappaqua, N.Y., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware**
**Filed Sept. 5, 1967, Ser. No. 665,364**
**Int. Cl. B31b** *1/32, 1/64*
**U.S. Cl. 93—8** **7 Claims**

An automatic stretch bag machine having turret mounted forming bars or spreaders which meet with a film supply fed from a roll and after sealing and cut-off of the film takes place through the action of a pair of jaws, forming bars, within the bag formed from the film, spread the bag during the rotation of the forming bars and the bag, thereby moving bags successively into positions to be filled.



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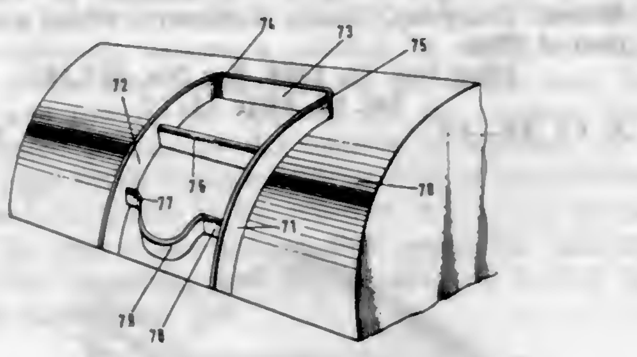
### 3,479,931
### ROTARY DIES

**Thomas D. Bishop, Solihull, England, assignor to The Deritend Engineering Company Limited, Birmingham, England, a British company**
**Filed Jan. 14, 1966, Ser. No. 520,691**
**Claims priority, application Great Britain, Jan. 14, 1965, 1,618/65; May 4, 1965, 18,627/65**
**Int. Cl. B31b** *1/14*
**U.S. Cl. 93—58.2** **4 Claims**



A method of making a die for use in cutting cardboard and like materials, comprising the steps of providing a metal forme, locating a plurality of studs at predetermined positions on said forme, welding each of said studs to said forme, locating a pattern of cutting rule in relation to said studs, and securing the rule to the studs; a die produced by such method; apparatus for preparing the cutting rule used in such method; and apparatus for carrying out such method.

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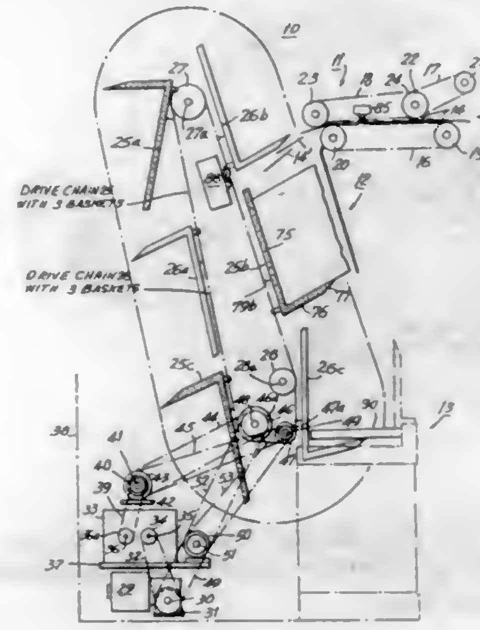
### 3,479,932
### BUCKET DRIVE

**Sture Stal and Ralf Backman, Solna, Sweden, assignors to Industrial Development AB, Sundbyberg, Sweden**
**Filed Mar. 14, 1968, Ser. No. 713,136**
**Int. Cl. B65h** *33/16*
**U.S. Cl. 93—93** **19 Claims**

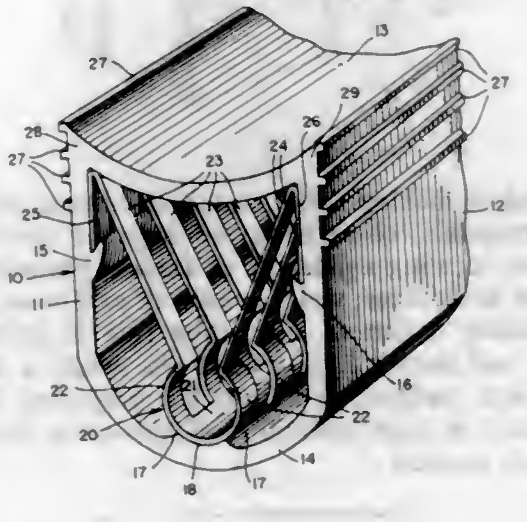
A stacker for newspapers, and the like, in which folded newspapers entering the stacker in an overlapped fashion are collected upon a moving bucket intercepting the stream of newspapers to form newspaper bundles of an accurate, predetermined count in readiness for subsequent wrapping and delivery operations.

Alternate buckets are coupled to different pairs of drive chains which are selectively driven at either normal stacking speed or four times stacking speed to permit the next bucket to be placed in the readiness position for intercepting the stream while the preceding bucket is receiving and stacking newspapers being delivered by the incoming stream.



## 3,479,933
## ELONGATED, HOLLOW, ELASTOMER SEALING STRIP WITH ELONGATED, LATERALLY DEFORMABLE SPRING

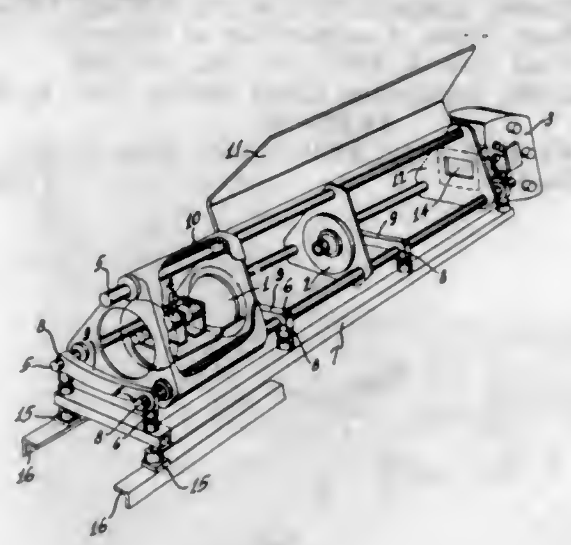
**Frank K. Hall, Findlay, Ohio, assignor to The D. S. Brown Company, North Baltimore, Ohio, a corporation of Ohio**
**Filed Jan. 11, 1968, Ser. No. 697,187**
**Int. Cl. E01c** *11/12*
**U.S. Cl. 94—18** **3 Claims**



Elongated sealing strips for sealing concrete joints and the like composed of hollow, elongated, elastomer member and an internal spring member having longitudinally spaced spring arms. The spring member has a base composed of an elongated strip with curved strips of relatively small radii positioned in a seat in the midportion of the inner side of the bottom wall and diverging spring arms with downwardly extending free ends seated respectively in the upper corners of the hollow elastomer member with an elastomer rib immediately below the free ends of the spring arms.

## 3,479,934
## PHOTOCOMPOSING APPARATUS SUPPORT STRUCTURE

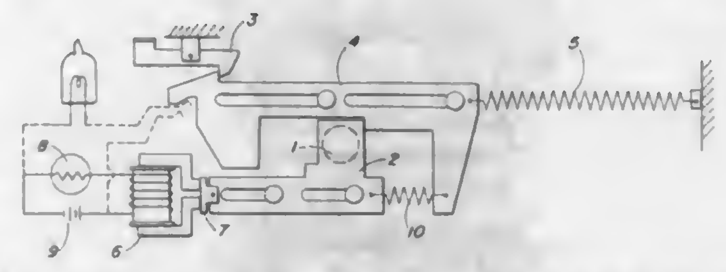
**James F. Delany, Cinnaminson, and Gerard O. Walter, Skillman, N.J., assignors to RCA Corporation, a corporation of Delaware**
**Filed Oct. 11, 1966, Ser. No. 585,910**
**Int. Cl. B41b** *13/00, 15/00, 17/00*
**U.S. Cl. 95—4.5** **2 Claims**



A support structure for a photocomposing machine for supporting a plurality of operative components therein includes a group of three substantially horizontal and substantially parallel support bars spaced from each other in a manner to form a triangular profile so as to define a delimited volume. The operative components of the photocomposing machine are slidably mounted on the support bars within the delimited volume and the slidable mountings include a plurality of support eyelets attached to the operative components for slidably receiving the support bars.

## 3,479,935
## AUTOMATIC SHUTTER CONTROL

**Donald M. Harvey, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**Continuation of application Ser. No. 590,893, Oct. 31, 1966. This application Feb. 10, 1969, Ser. No. 815,510**
**Int. Cl. G01j** *1/52*
**U.S. Cl. 95—10** **3 Claims**

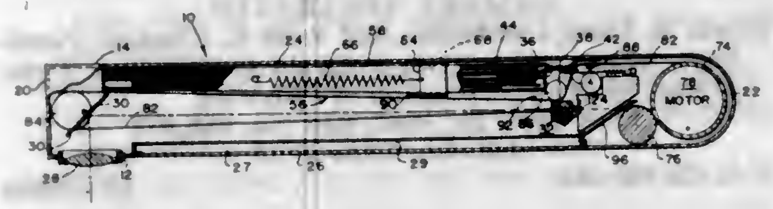


Magnetic breakaway shutters in which either the moment of breakaway is regulated, or the speed of the breakaway is regulated. An electromagnet is controlled by a photocell circuit to regulate the effect of the electromagnet which determines the speed of the shutter.

## 3,479,936
## EXPOSURE CONTROL SYSTEM

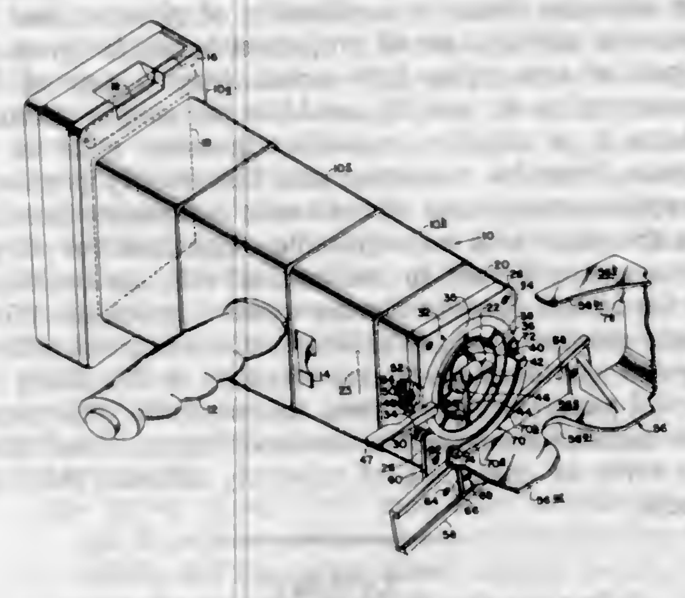
**Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware**
**Filed Dec. 23, 1966, Ser. No. 604,318**
**Int. Cl. G03b** *41/02, 7/02;* **G01j** *1/44*
**U.S. Cl. 95—10** **18 Claims**

A camera in which a photosensitive image recording medium is moved relative to and past an elongated aperture which is substantially fixed with respect to an optical system which forms an image at a surface. A portion of the film is located at this surface during exposure to light transmitted through the aperture. The camera has a device for moving the image relative to the aperture so as to retain the image and the recording medium stationary with respect to one another during exposure of the recording medium by light transmitted through the aperture. There is also provided, a device for measuring the light from the incremental portion of the scene and varying a parameter of the aperture so as to vary the light energy admitted by the aperture in inverse relation to the brightness of that portion of the scene being photographed.



## 3,479,937
## CAMERA APPARATUS FOR FITTING CORNEAL CONTACT LENSES

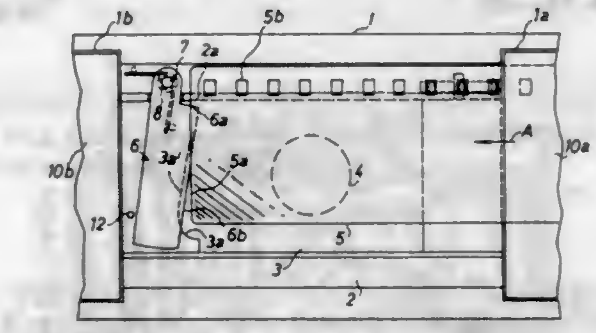
**Robert T. Sullivan, Norwood, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware**
**Filed July 20, 1967, Ser. No. 654,796**
**Int. Cl. G03b** *19/04*
**U.S. Cl. 95—11** **12 Claims**



A photographic camera for use in fitting of corneal contact lenses to the human eye. The camera has a rotatable wheel element with an actuating handle attached thereto, an opaque semi-circular disk optically aligned with the objective aperture of the camera, and a facial supporting frame for spacing the eyes a given distance from the objective. The opaque disk is interconnected with the wheel element and is moved from a first position in which it blocks exposure of the lower half of a photosensitive sheet to a second position in which it blocks exposure of the other half of the sheet in response to rotation of the wheel element from a first to a second position. The facial supporting frame is slideably mounted in front of the objective and has a member for linking the support frame to the wheel element so that the frame is moved transverse to the objective axis in response to rotation of the wheel element to thereby align one of the eyes with the objective. The camera has an electronic flash and an ultraviolet transmitting filter for rendering the fluorescein in the subject's eyes to become visible and thereby enable the pattern formed between the contact lens and the corneal surface of both eyes to be recorded on corresponding halves of a photosensitive sheet.

## 3,479,938
## PHOTOGRAPHIC CAMERA WITH AUTOMATIC FILM THREADING MEANS

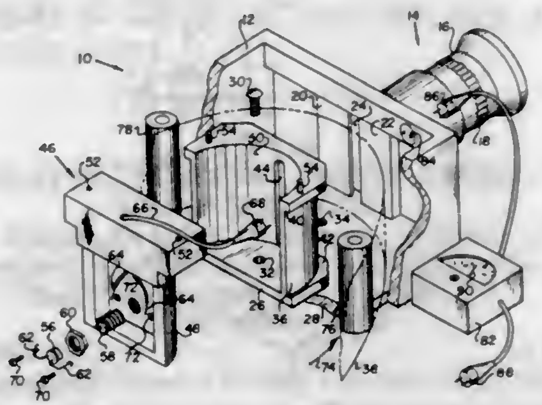
**Alfred Winkler and Heinz Ernst, Munich, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany**
**Filed Sept. 15, 1967, Ser. No. 668,017**
**Claims priority, application Germany, Sept. 24, 1966, A 26,405**
**Int. Cl. G03b** *19/00, 19/04*
**U.S. Cl. 95—11** **12 Claims**



A pivoted deflector is provided in the housing of a still camera between the chambers which accommodate unexposed and exposed film. The deflector prevents the curling of the tongue-like leading portion of the roll film into the film window of the camera and prevents the film from becoming stuck in the film winder. The deflector is biased by a spring so as to overlie a cutout provided in the film channel as an extension of that part of the window which is remotest from the chamber for unexposed film. When the leading edge of the film tongue tends to curl into the window, it engages the deflector and causes the latter to turn against the bias of the spring and to ultimately assume a position in which an edge thereon guides the leading edge of the tongue past the window and toward the chamber for the exposed film. The remoted portion of the window is bounded by a slanting edge which registers with an edge of the deflector when the latter yields to the pressure of a curled tongue so that the edge of the window then assists the deflector in directing the tongue past the window and toward the chamber for exposed film.

## 3,479,939
## STRIP FILM CAMERA AND METHOD OF OPERATING SAME

**Emil T. Jones, Babylon, N.Y., assignor to Jones Precision Photo Finish, Inc., Westbury, N.Y., a corporation of New York**
**Filed Feb. 13, 1967, Ser. No. 615,492**
**Int. Cl. G03b** *37/00, 29/00*
**U.S. Cl. 95—15** **10 Claims**



A photographic camera having a strip of film movable behind a lens and a light sensor that is positioned with respect to the strip of moving film to sense only the light that actually impinges upon and passes through the film. The method of operating the camera includes positioning the light sensor behind the strip of film to assure uniformity of exposure of the film as well as density of color in the print, in spite of variations of lighting conditions that may occur.

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**3,479,940**

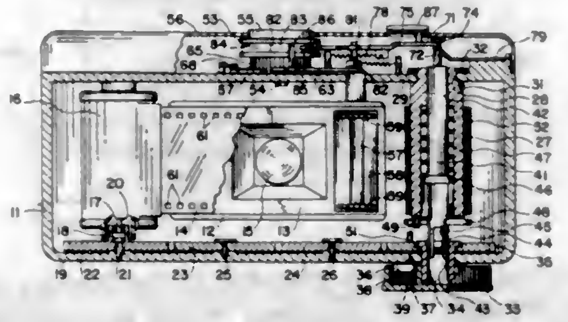
### AUTOMATIC FILM ADVANCING AND REWINDING SYSTEM

**Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**Filed June 26, 1967, Ser. No. 648,584**

**Int. Cl. G03b** *19/04, 1/04*

**U.S. Cl. 95—31** **10 Claims**



A camera is provided with a film advancing and rewinding system operable by a single operating member. There is provided a device for automatically converting the system from its film advancing mode of operation to its rewinding mode when a predetermined length of film has been advanced. This predetermined length of film is variably adjustable by the operator for exposure of a selected number of frames on the film before rewinding.

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**3,479,941**

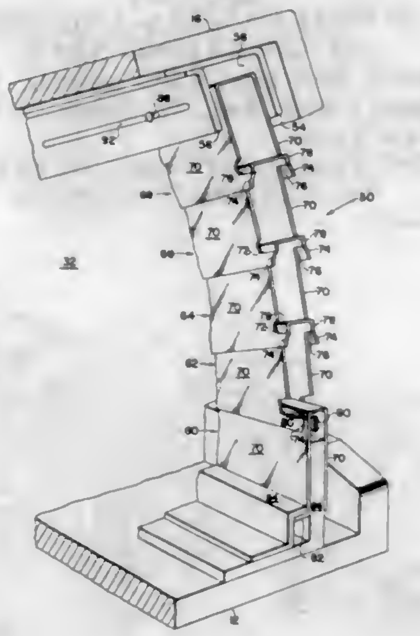
### EXTENSIBLE CAMERA

**Irving Erlichman, Natick, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware**

**Filed July 25, 1967, Ser. No. 655,859**

**Int. Cl. G03b** *17/04*

**U.S. Cl. 95—39** **10 Claims**



A folding camera comprising four relatively movable housing sections and a bellows system for joining the housing sections to form a light-tight exposure chamber, said bellows system comprising blades nesting one within another when the bellows system is in the collapsed condition, and locked together at their edges when in the expanded condition so as to form a light-impervious wall.

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**3,479,942**

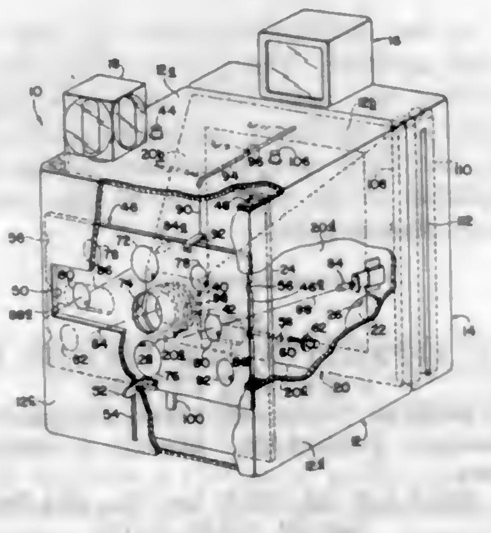
### CAMERA APPARATUS

**Edwin H. Land, Cambridge, and Vaito K. Eloranta, Needham, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware**

**Filed Sept. 19, 1967, Ser. No. 668,871**

**Int. Cl. G03b** *3/02*

**U.S. Cl. 95—44** **18 Claims**



An easily-operated camera embodying flash equipment; a set of lenses supplemental to the camera objective for adjusting focus to a plurality of given subject distances or zones; a set of projection lenses for projecting a pair of converging light beams from a pair of light sources so as to visually establish the subject distances. There is a slidable manually-adjustable plate at the camera front for mounting and functionally positioning complementary lenses of both sets; and means interlocking the plate with an adjustable diaphragm for varying the aperture thereof in conjunction with the positioning of the lenses. A given shutter speed is provided. With a single movement of the slidable plate, all distance, focusing and aperture adjustments necessary to the taking of a perfect picture are performed automatically. The camera also includes means for accommodating to either black-and-white or color film of relatively different ASA film speeds.

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**3,479,943**

### AUTOMATIC FOCUSSING DEVICE FOR PHOTOGRAPHIC CAMERAS

**Takeshi Goshima, Ohta-ku, Tokyo, Japan, assignor to Canon Camera Company, Incorporated, Ohta-ku, Tokyo, Japan, a corporation of Japan**

**Filed Nov. 25, 1963, Ser. No. 325,829**

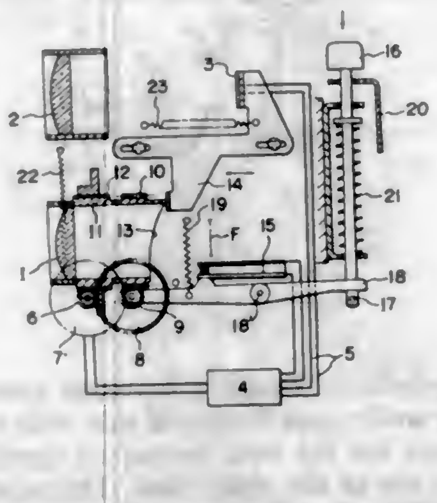
**Claims priority, application Japan, Nov. 27, 1962, 37/53,181**

**Int. Cl. G03b** *3/00*

**U.S. Cl. 95—45** **2 Claims**

1. An automatic focussing machanism for photographic camera comprising,
   a lens for directing the light incident thereon to focus at the focal plane thereof,
      unexposed photographic film being positionable at said focal plane,
   a photoconductive element having the characteristic of $R=k/I^e$, where R designates its electrical resistivity, I the luminous intensity of the light incident thereupon, and *e* and *k* are constants specific to it,
   a lens tube mounting the lens and movable along the optical axis of the lens,

   an auxiliary lens for directing light incident thereupon along an axis parallel to that of the lens to the photoconductive element,
   spring-biased means supporting the photoconductive element for motion in either direction along such parallel axis,
   cam means on the lens tube for moving the photoconductive element supporting means in synchronism with, and in the same direction as, the lens tube movement,
   electrical circuit means for moving the lens tube including the photoconductive element, a normally open switch, a controller, and a motor,
   gearing interconnecting the lens tube and the motor,
   a single spring-biased shutter release means for depressing to expose the film, and



   spring-biased lever means associated with the switch and the shutter release means in such manner that in the initial portion of a depressing movement of the shutter release means the switch closes and electrical signals are transmitted from the controller selectively to rotate the motor and move the lens tube and the photoconductive element supporting means to position the element at the focal plane vicinity of the auxiliary lens and the lens so that its focal plane coincides with the position of the film, the motor stopping its rotation on the focussing of an image on the film, respectively, on the photoconductive element, and to stop rotation of the motor and movement of the lens tube and supporting means for the remaining portion of the depression of the shutter release means,
      the spring biased lever means on termination of the depression of the release means opening the switch and the spring-biased support means restore the element supporting means and the lens tubes to their respective preoperated positions.

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**3,479,944**

### APPARATUS FOR CONTROLLING THE FOCUSING MECHANISM OF A CAMERA

**John Denzil Barr, Oadby, England, assignor to The Rank Organisation Limited, London, England**

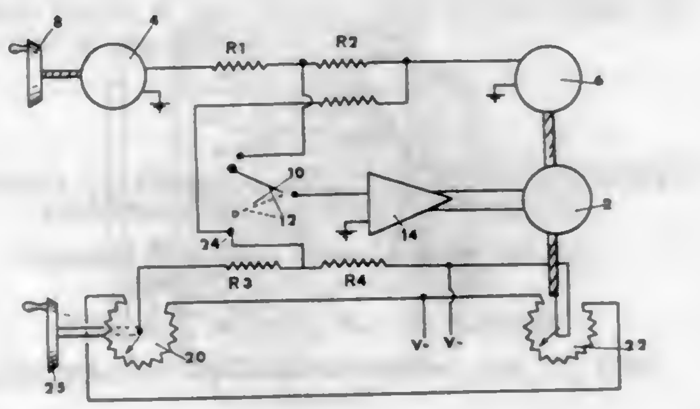
**Filed Oct. 13, 1966, Ser. No. 586,432**

**Claims priority, application Great Britain, Oct. 15, 1965, 43,872/65**

**Int. Cl. G03b** *3/10*

**U.S. Cl. 95—45** **21 Claims**

The focusing mechanism is intended primarily for use with television or cinematograph cameras. The apparatus provides the usual manual focus control by means of a main focus adjustor and additionally it provides an auxiliary focus adjustor which may be preset and then subsequently actuated to automatically change the focus to the preset condition. Two main embodiments of the mechanism are described: one in which the auxiliary focus control takes the form of an electrical circuit of two potentiometers and two summing resistances, the other or mechanical embodiment in which the auxiliary focus control takes the form of a heart shaped cam mounted on the main focus adjustor shaft.



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**3,479,945**

### PHOTOGRAPHIC FOCUSING CAMERA

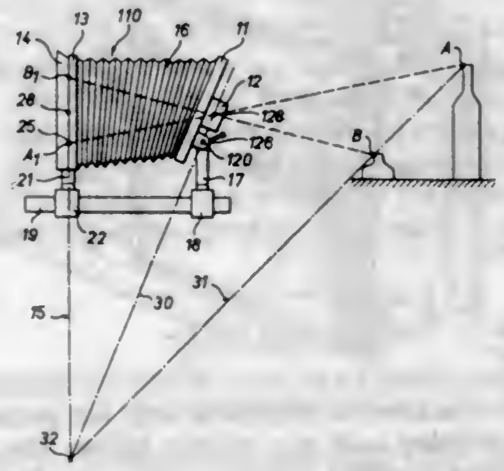
**Carl Koch, Schaffhausen, Switzerland, assignor to Sinar AG Schaffhausen, Feuerthalen, Switzerland**

**Filed July 6, 1967, Ser. No. 651,436**

**Claims priority, application Switzerland, July 8, 1966, 10,137/66**

**Int. Cl. G03b** *17/12, 19/02*

**U.S. Cl. 95—50** **10 Claims**



A photographic focusing screen camera in which the distance between the lens carrier and the picture carrier is adjustable and having a base on which the carriers are mounted. At least one of the carriers being pivotally mounted on the base and a focusing screen is associated with the picture carrier. The adjustable carrier being at a distance from a center of the movable carrier which is smaller than a distance of an edge of the focusing screen running parallel to the swing axis from a center of the focusing screen.

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**3,479,946**

### PHOTOGRAPHIC CAMERA WITH OSCILLATING FLAP SHUTTER

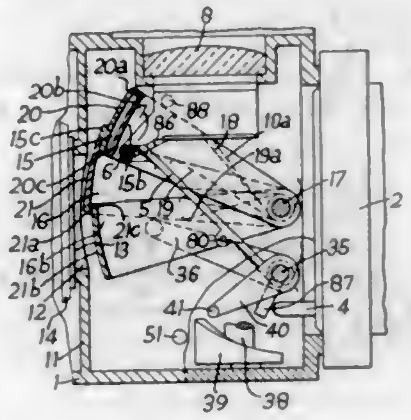
**Siegfried Bohm, Dresden, Germany, assignor to VEB Pentacon Dresden Kamera- und Kinowerke**

**Filed Mar. 7, 1967, Ser. No. 621,179**

**Int. Cl. G03b** *9/26*

**U.S. Cl. 95—60** **11 Claims**

A photographic camera having a shutter comprising two pairs of part cylindrical swinging-flaps movable along two curved closely adjacent paths between the objective and film gate about a common pivot. The outmost flaps of each pair abut each other when the shutter is closed in either its cocked or normal rest position. The arcuate length of each of the part cylindrical flaps is shorter than



the height of the film gate aperture. On release of the shutter from its cocked position, the pairs of flaps run off in sequence to effect exposure.

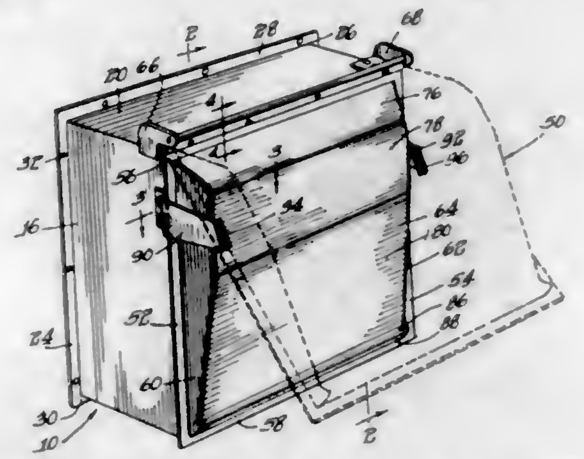
### 3,479,947
### VENTILATOR UNIT

**Lawrence A. Myers, Milford, Ind., assignor to Chore-Time Equipment, Inc., Milford, Ind., a corporation of Indiana**

**Filed Jan. 15, 1968, Ser. No. 697,913**

**Int. Cl. F04d** *25/14;* **F24f** *13/08*

**U.S. Cl. 98—116** **7 Claims**



There is disclosed a ventilator unit for mounting in a wall of a building such as a poultry house. The unit comprises a frame in which a fan is mounted and a combined closure and hood member swingably connected to the frame and adapted to be opened by air pressure when the fan is energized and constructed for minimizing the entry of rain and the like.

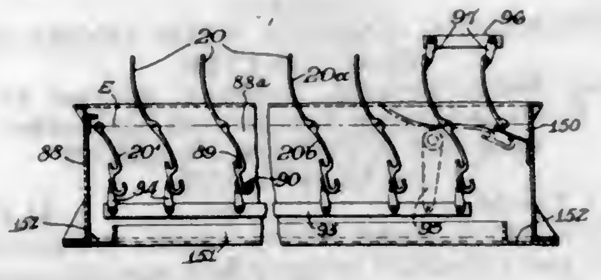
### 3,479,948
### LOUVER

**Ralph T. Mathews, Wallingford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**Filed Feb. 26, 1968, Ser. No. 708,120**

**Int. Cl. F24f** *13/08;* **F25d** *21/14*

**U.S. Cl. 98—121** **3 Claims**



An air flow-regulating louver shaped to an inwardly directed concave moisture-collecting transverse profile and provided with moisture-collecting gutter means on the leading edge.

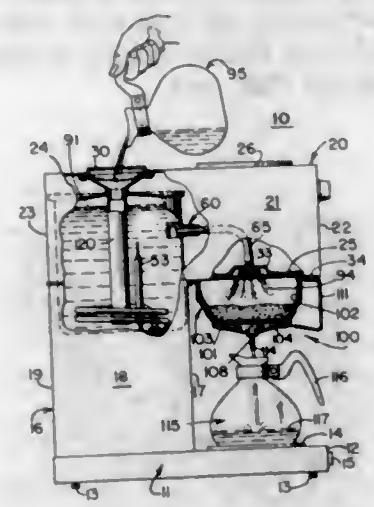
### 3,479,949
### BEVERAGE BREWING MACHINE

**Donald S. Reynolds, Glencoe, and Harvey R. Krueger, Carpentersville, Ill., assignors to Reynolds Products, Inc., Rolling Meadows, Ill., a corporation of Illinois**

**Filed Sept. 18, 1967, Ser. No. 668,384**

**Int. Cl. A47j** *31/10, 31/56*

**U.S. Cl. 99—282** **30 Claims**



There is disclosed herein a beverage brewing machine including a water tank having a side wall and a bottom wall. A cover for the tank having an opening therein is disposed on top of the water tank. Thermostatically controlled heating means is disposed within the water tank for heating water therein. The water tank has an outlet in the side wall thereof disposed substantially below the top thereof. A discharge head is mounted in spaced relation to the water tank, a discharge water line connecting the outlet and the discharge head. A brew basket is disposed below the discharge head for receiving hot water therefrom. An upstanding tube is disposed in the water tank in communication with the opening in the cover. The tube terminates near the bottom of the tank and has an inner diameter substantially greater than the inner diameter of the discharge outlet, so that upon pouring a beaker of cold water through the cover and into the tube the hot water disposed in the tank will be displaced above the discharge outlet for flow therethrough.

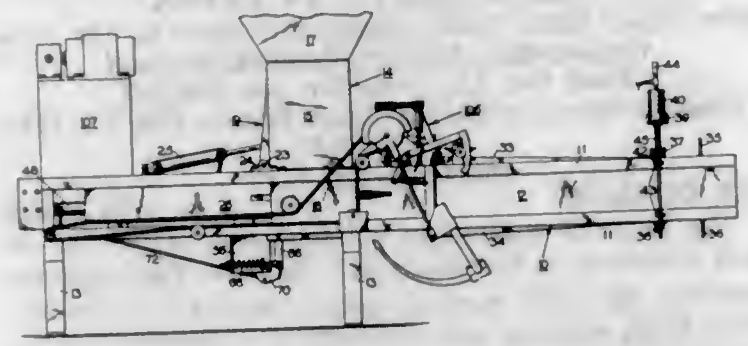
### 3,479,950
### BALER FOR COTTON MOTES AND OTHER MATERIALS

**Percy F. Freeman, 4061 SW. Greenleaf Drive, Portland, Oreg. 97221**

**Filed Dec. 18, 1967, Ser. No. 691,347**

**Int. Cl. B30b** *15/26, 15/16*

**U.S. Cl. 100—49** **4 Claims**



An automatically operating baler in which the accumulation of a desired mass of material in the baling chamber by the delivery packer causes the operation of the latter temporarily to cease and the plunger to operate to compress the material and force it into the baler discharge channel against a previously formed bale, the restraining tension imposed on the previously formed bale in the discharge channel being automatically governed by the load on the plunger so as to prevent overload on the plunger.

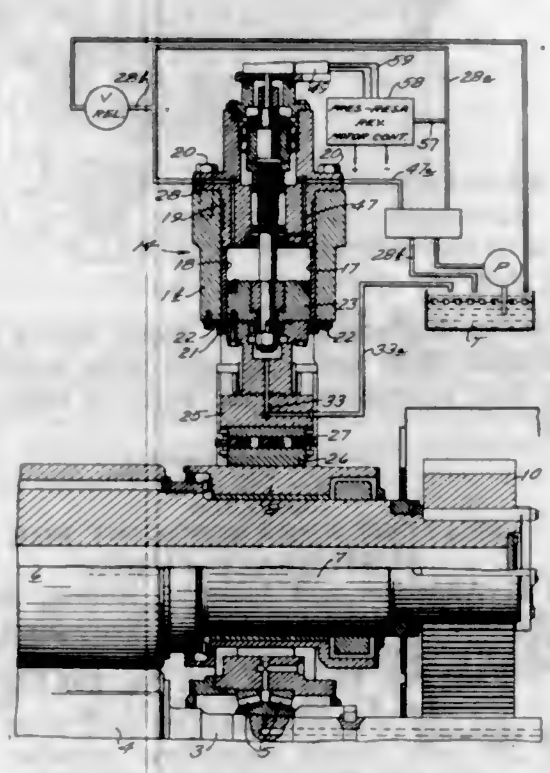
### 3,479,951
### ROLL POSITIONING MECHANISM

**George R. Cournoyer, Huntington, Conn., assignor to USM Corporation, Boston, Mass., a corporation of New Jersey**

**Filed Aug. 28, 1967, Ser. No. 663,638**

**Int. Cl. B21b** *31/32;* **D06f** *45/08;* **B30b** *3/04*

**U.S. Cl. 100—170** **9 Claims**



A calender roll, metal rolling roll or the like, has its opposite ends each positioned by a hydraulic cylinder connected to the roll frame or housing and containing a piston which bears on the roll's bearing. The cylinder has an inlet through which a constant flow of hydraulic pressure liquid is introduced and an outlet through which this liquid is permitted to continuously discharge under the control of a valve or variable flow control gap which is responsive to relative movement of the piston in the cylinder. This valve is adjustably positionable to locate the operating position of the piston and therefore the position of the roll. Other details are also disclosed.

### 3,479,952
### PRODUCTION OF PLASTIC PRINTING PLATES

**Eugene L. Bernardi, Oakland, and Henry A. Krysiak, Lorenzo, Calif., assignors to Reichhold Chemicals, Inc., White Plains, N.Y., a corporation of Delaware**

**Continuation-in-part of application Ser. No. 331,624, Dec. 18, 1963. This application Nov. 14, 1966, Ser. No. 593,761**

**Int. Cl. B41c; C08f** *21/00;* **B41n** *1/00*

**U.S. Cl. 101—401.1** **19 Claims**

A process for producing plastic printing plates wherein a thermosetting polymeric resin composition in liquid form is spread onto a matrix having a relief image and is subsequently cured at elevated temperatures over a period of time not exceeding ten minutes to form a printing plate having a high fidelity relief surface image opposite that of the matrix.

### 3,479,953
### METHOD OF PRODUCING AND REGENERATING REGENERABLE PRINTING FORMS

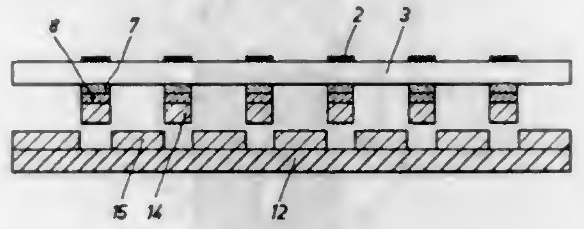
**Gerhard Ritzerfeld, Franzensbader Str. 21, Berlin-Grunewald, Germany**

**Filed Jan. 16, 1967, Ser. No. 609,648**

**Claims priority, application Germany, Jan. 27, 1966, R 42,497**

**Int. Cl. B41m** *5/04;* **B41c** *1/06*

**U.S. Cl. 101—470** **2 Claims**



A regenerable printing form is prepared by forming on a backing sheet a mirror image of indicia which are to be printed consisting of a binder material having incorporated therein a transferable dye, such as a triphenylmethane dye if printing or duplicating is to be carried out in a spirit duplicator, and having also incorporated therein a material adapted to absorb heat or to be heated when exposed to high frequency radiation to an extent such that contacting portions of a transferable dye-containing transfer layer will be softened and adhered to the mirror image, thereby replenishing the printing form with transferable dye.

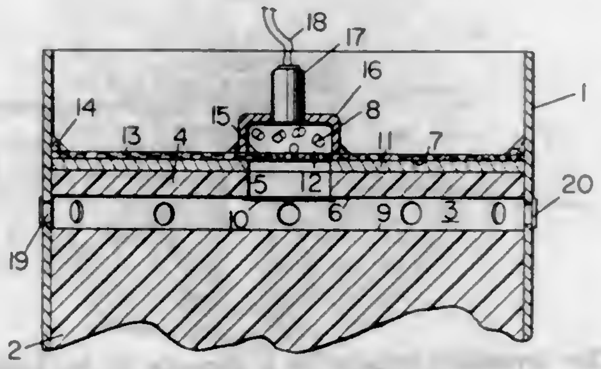
### 3,479,954
### IGNITER SYSTEM FOR ILLUMINATING COMPOSITIONS

**Christopher W. Bolieau, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware**

**Filed May 7, 1968, Ser. No. 727,187**

**Int. Cl. F21l** *17/00*

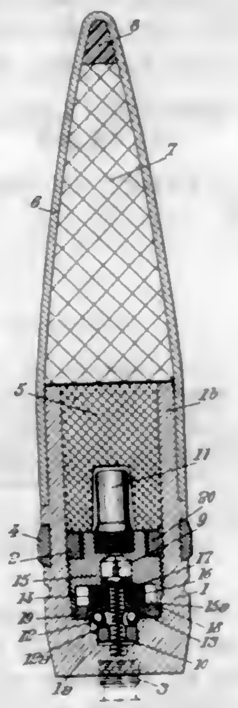
**U.S. Cl. 102—37.8** **5 Claims**



An igniter system for illuminating flares or candles is provided in which a wafer shaped grain of igniter is spaced apart from the illuminant grain in a casing and combustion products of the igniter are caused to impinge against and flow over the surface of the illuminant grain enroute to venting means in the casing.

### 3,479,955
### EXPLOSIVE SHELL WITH BASE DETONATING FUSE

**Louis Birkigt, Pregny-Geneva, Switzerland, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland**
**Filed June 7, 1968, Ser. No. 735,440**
**Claims priority, application Luxemburg, June 9, 1967, 53,847**
**Int. Cl. F42b** *11/22, 13/12;* **F42c** *15/00*
**U.S. Cl. 102—56** **3 Claims**



The constituent elements of the mechanism of the base detonating fuse, instead of being housed in a separate casing which is then inserted in a housing formed in the base of the shell, are mounted directly in such a housing previously arranged to be able to receive the constituent elements in question.

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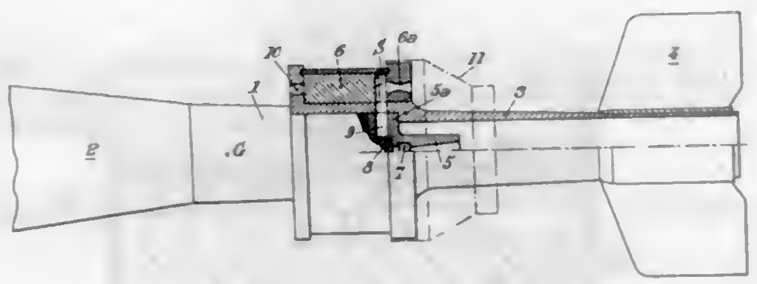
### 3,479,956
### SELF-PROPELLED RIFLE GRENADE CAPABLE OF BEING LAUNCHED BY BULLET IMPACT

**Louis Birkigt, Pregny-Geneva, Switzerland, assignor to Brevets Aero-Mecaniques S.A., Geneva, Switzerland**
**Filed Aug. 31, 1967, Ser. No. 664,667**
**Claims priority, application Luxembourg, Sept. 14, 1966, 51,960; Oct. 13, 1966, 52,164**
**Int. Cl. F42b** *11/42*
**U.S. Cl. 102—65.2** **1 Claim**



The invention relates to a grenade to be launched by means of a bullet from a rifle on the end of the barrel of which a tubular tail of the grenade is fitted, said bullet striking an axial obstacle carried by the grenade. The grenade further comprises an auxiliary propelling charge delivering powder gases through annular nozzle means opening toward the rear, and igniting means extending from the axial obstacle to said auxiliary propelling charge.

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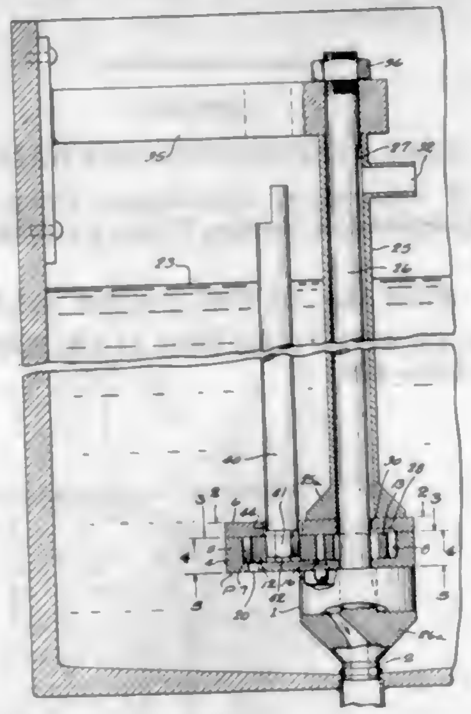
### 3,479,957
### POSITIVE DISPLACEMENT GEAR TYPE PUMP

**Harold O. Cadman, Rockton, Ill., assignor to Louis A. M. Phelan, Roscoe, Ill.**
**Filed May 2, 1968, Ser. No. 726,117**
**Int. Cl. F04b** *13/02;* **F04c** *1/04;* **F16h** *1/02*
**U.S. Cl. 103—2** **5 Claims**



A positive displacement, fluid pump having two gears with constant mesh teeth, the gears being supported only around their peripheries by the bores in which they are located.

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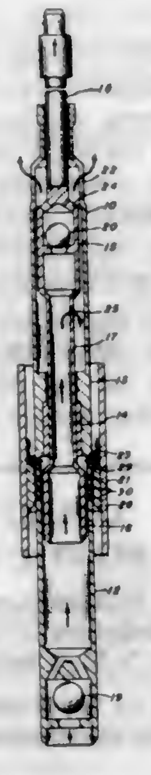
### 3,479,958
### SEATING ARRANGEMENT FOR SUBSURFACE PUMPS

**Robert L. Anderson and John M. Rohrig, Huntington Beach, Calif., assignors to United States Steel Corporation, a corporation of Delaware**
**Filed Jan. 18, 1968, Ser. No. 698,914**
**Int. Cl. F04b** *47/02, 21/06*
**U.S. Cl. 103—46** **3 Claims**



An arrangement for seating a subsurface oil well pump to prevent foreign material from accumulating around the pump barrel and interfering with removal of the pump. Barrel has vent ports through which foreign material discharges as the pump plunger makes an upstroke. Seat is located immediately below these ports where it blocks off the space below. Consequently foreign material returns to the barrel through the ports as the plunger makes a downstroke.

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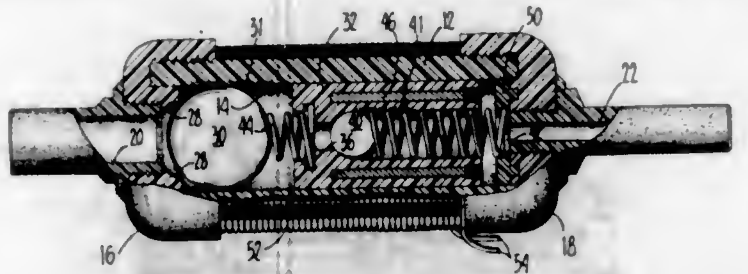
### 3,479,959
### ELECTROMAGNETIC METERING PUMP

**William N. Christensen, deceased, late of Portland, Oreg., by Robert L. Slaughter, administrator, Beaverton, Oreg. 97005**
**Filed Oct. 23, 1967, Ser. No. 678,160**
**Int. Cl. F04b** *7/04;* **H02k** *7/14, 35/02*
**U.S. Cl. 103—53** **5 Claims**



A pump having an elongate fluid chamber and a piston supported in the chamber for reciprocal movement therein. The piston is resiliently biased so as to be supported in the chamber intermediate the ends thereof when in a quiescent state. Disposed in the piston is a tubular body of magnetic material for magnetic cooperation with an electromagnetic coil surrounding the chamber. The coil is asymmetric of the quiescent position of the magnet, so that energization of the coil will effect movement of the piston relative the chamber.

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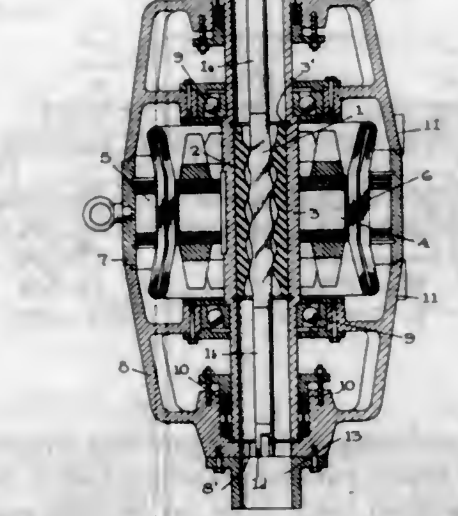
### 3,479,960
### ENCASED ELECTRIC PUMP

**Jose Joaquim Cardoso, Belo Horizonte, Brazil, assignor to Magnesita S.A., Minas Gerais, Brazil, a corporation of Brazil**
**Filed Dec. 26, 1967, Ser. No. 693,232**
**Claims priority, application Brazil, Dec. 26, 1966, 186,674; Sept. 20, 1967, 193,486**
**Int. Cl. F04c** *1/06, 15/00*
**U.S. Cl. 103—117** **3 Claims**



An electric motor driven gear pump wherein a resilient, helically shaped hollow member is rigidly secured in a tubular shaft which is rotatably driven by the rotor of the motor. A helical gear member is disposed within said hollow member and is fixed at opposed ends to the pump housing so that it remains stationary while the resilient hollow member rotates around it to axially move fluid through the hollow member and said tubular shaft.

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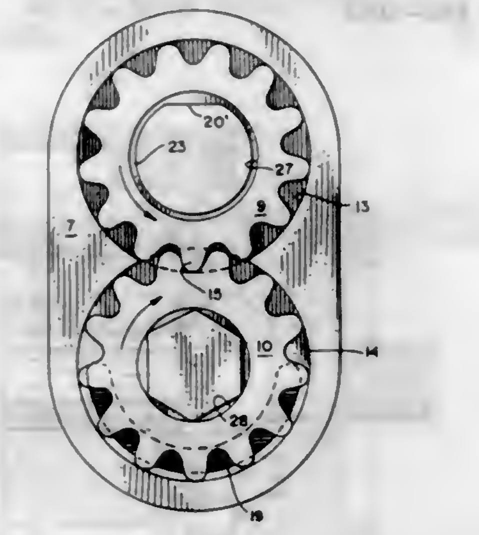
### 3,479,961
### PUMP

**Harold O. Cadman, Rockton, Ill., assignor to Louis A. M. Phelan, Roscoe, Ill.**
**Filed Sept. 22, 1967, Ser. No. 674,048**
**Int. Cl. F01c** *1/26*
**U.S. Cl. 103—126** **4 Claims**



The essential concept of this invention involves the structuring of a pump having a pair of housing parts and a pair of meshing gears formed of special high wear-resistant and low expansion-coefficient material with the gears peripherally journaled in the two-piece housing and all secured in operative assembly by a pair of housing-clamping and gear-driving elements. The pump is adapted for use in various situations requiring either the intimate mixing of two different types of fluid or the processing of a single fluid for constant flow against high-resistive pressures.

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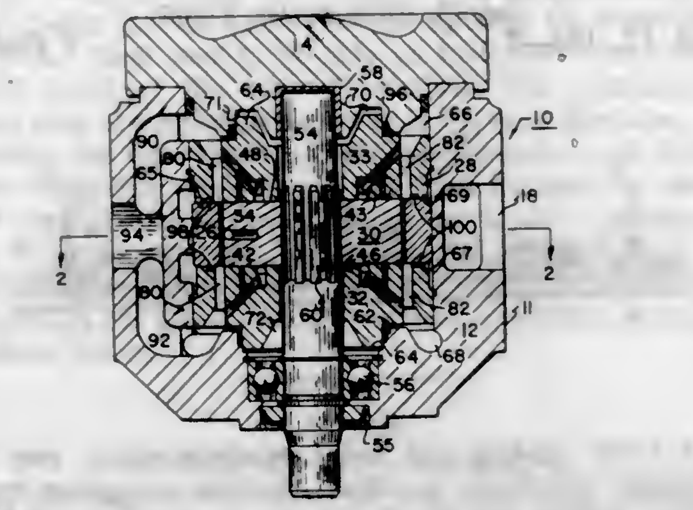
### 3,479,962
### POWER TRANSMISSION

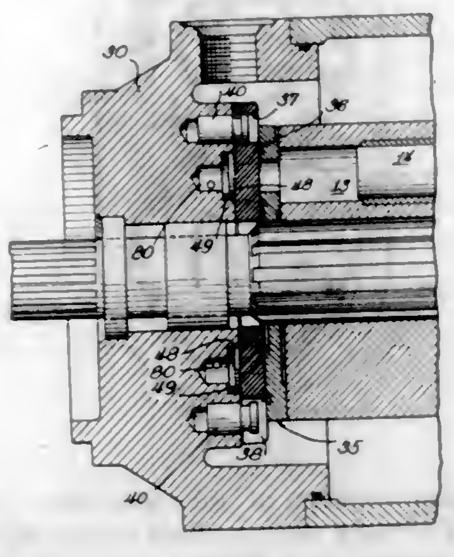
**Raymond B. Pettibone, Detroit, Mich., assignor to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware**
**Filed Nov. 22, 1967, Ser. No. 684,989**
**Int. Cl. F04c** *1/00, 15/00, 27/00*
**U.S. Cl. 103—136** **2 Claims**



A fluid pressure energy translating device having a cam ring with a pumping mechanism therein disposed between two deflectable pressure responsive cheek plates in which the clearance between the cheek plates and the pumping mechanism is dependent upon the pressure balance thereacross; the check plates having balancing recesses thereon and facing the cam ring at a support surface to provide a more precise control of the pressure balance between the pressure plates and the pumping mechanism.

## 3,479,963
## FLUID DEVICE

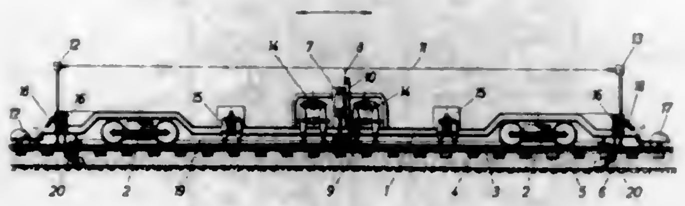
**Gerald Randa, Auburn, Ind., and William T. Stephens, Mentor, Ohio, assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**
**Filed Oct. 18, 1967, Ser. No. 676,124**
**Int. Cl. F04b** *1/02, 1/10*
**U.S. Cl. 103—162** **14 Claims**



A fluid pressure device having a rotating cylinder barrel, a port block and a valve plate between said cylinder barrel and the port block. The device including intake and discharge ports in the valve plate including a seal or piston assembly surrounding said ports and responsive to fluid pressure to provide a seal between the valve plate and the port block and pressure responsive surfaces providing a controlled force to maintain sealing between the valve plate and the rotating cylinder barrel.

## 3,479,964
## MOBILE TRACK CORRECTION APPARATUS

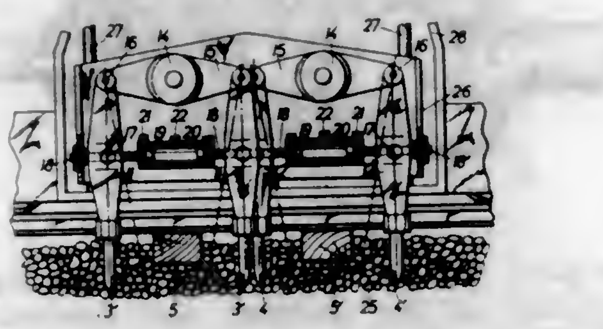
**Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna, Austria**
**Continuation-in-part of application Ser. No. 438,907, Mar. 11, 1965. This application May 6, 1968, Ser. No. 733,206**
**Int. Cl. E01b** *33/00, 27/02*
**U.S. Cl. 104—7** **9 Claims**



A track grading and lining machine which may be operated selectively in either direction comprises track lifting, shifting and tamping means spacedly mounted on an elongated mobile carriage, with at least one of said means being mounted in a pair at a fixed distance from each other, one of the means of the pair being operable when the carriage moves in one direction and the other means being operable when the carriage moves in the other direction. Reference means extends from both ends of the carriage so that track correction may be effected during movement in either direction.

## 3,479,965
## BALLAST TAMPING TOOL FOR MOBILE TAMPER

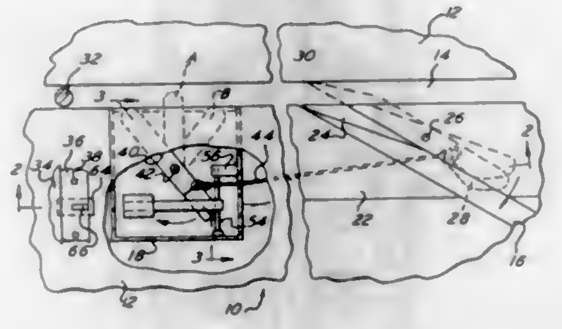
**Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna, Austria**
**Continuation-in-part of application Ser. No. 575,043, Aug. 25, 1966. This application June 19, 1968, Ser. No. 744,602**
**Claims priority, application Austria, Sept. 2, 1965, A 8,068/65**
**Int. Cl. E01b** *27/13;* **E01c** *19/30*
**U.S. Cl. 104—12** **10 Claims**



In a mobile track tamper wherein vibratory tamping tools are vertically immersed into the ballast and the immersed tools are moved in a plane parallel to the track to tamp the ballast, the tool shafts carry a ballast tamping plate at their lower ends, which is relatively thin and extends vertically to the ballast for penetration into the ballast between ballast rocks, the cross section of the plate in a plane perpendicular to the shaft being substantially uniform throughout at least most of the length of the plate and being sinuous so that the plate surface concavities conform to the average surface curving of the ballast rocks.

## 3,479,966
## TOW TRUCK SWITCHING SYSTEM

**Anthony J. Rotondo, Easton, Pa., assignor to SI Handling Systems, Inc., Easton, Pa., a corporation of Pennsylvania**
**Filed Apr. 17, 1967, Ser. No. 631,364**
**Int. Cl. B61k** *1/00;* **B61j** *3/00;* **B61b** *13/00*
**U.S. Cl. 104—88** **9 Claims**

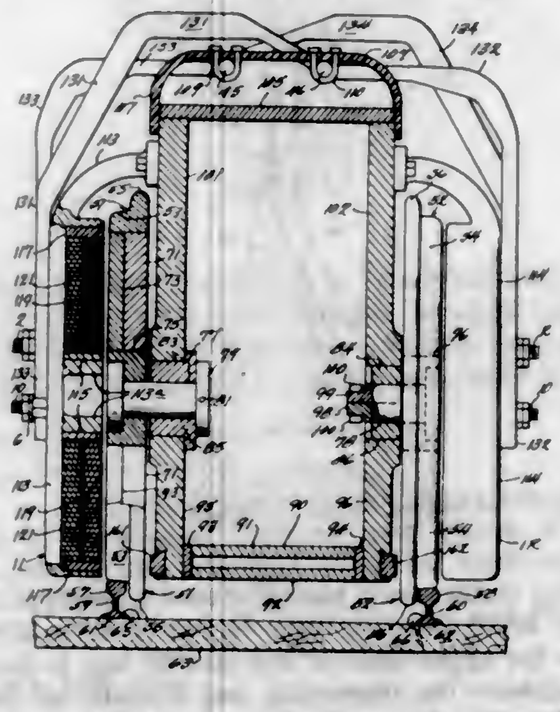


A tow truck switching system is provided wherein structure on a tow truck initiates movement of a switching member with a small force from an inactive position to an intermediate position so that it projects into the path of a tow pin on the tow truck. The tow pin contacts the switching member in the intermediate position thereof and with a larger force physically moves it to an active position. Movement of the switching member from its intermediate position to its active position moves a switch plate

so that the tow pin will be transferred from movement along the main slot to movement along a shunt slot. The structure for initiating movement of the switching member may be a magnet.

## 3,479,967
## ELECTRIC LOCOMOTIVE

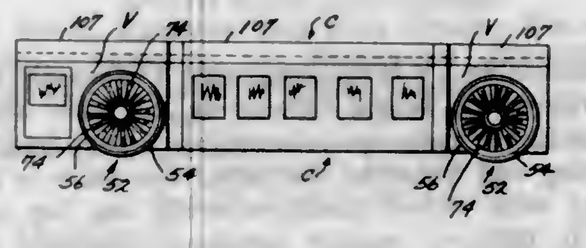
**George Crompton, 710 Armada Road S., Venice, Fla. 33595**
**Continuation-in-part of application Ser. No. 501,949, Oct. 22, 1965. This application Aug. 25, 1967, Ser. No. 663,386**
**Int. Cl. B61c** *3/00, 9/45;* **B61f** *13/00*
**U.S. Cl. 105—53** **14 Claims**



The driving wheels of the locomotive that fit the railroad track are the rotors of electric motors the stators of which are suspended outside of said driving wheels and which stators create rotating magnetic fields due to connection to polyphase electric power from a diesel driven generator or from outside power, the rotating magnetic fields producing electric current in the said driving wheels and the reaction of the rotating magnetic field with the resultant electric field in the said wheels producing a train driving torque in the said wheels and by simply reversing a switch in the locomotive the engineer can apply electromagnetic brakes to the wheels, the synchronous speed of the locomotive being, in the example, 225 m.p.h. with a projected actual speed of up to 200 m.p.h.

## 3,479,968
## LOW SLUNG RAILROAD CAR

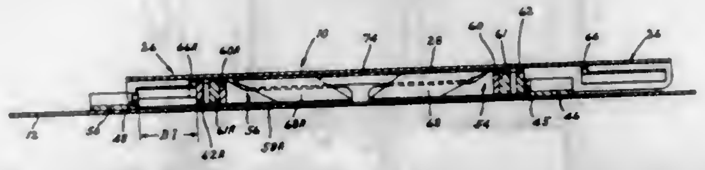
**George Crompton, 710 Armada Road S., Venice, Fla. 33595**
**Continuation-in-part of application Ser. No. 464,599, June 11, 1965. This application Jan. 17, 1968, Ser. No. 698,553**
**Int. Cl. B61c** *3/00, 9/45;* **B61f** *13/00*
**U.S. Cl. 105—238** **6 Claims**

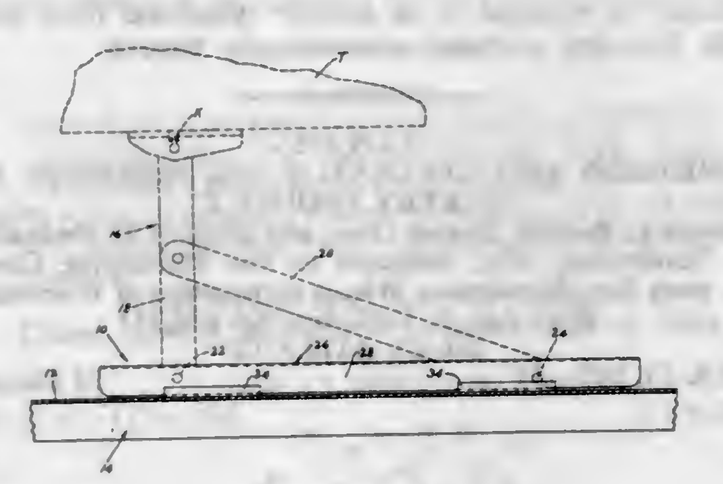


A low slung railroad car the bottom of the body of which extends well below the axles of the wheels which are abnormally large in diameter and which are set just outside narrow portions of the car, the wheels having independent axles.

## 3,479,969
## CUSHIONED SUPPORT STRUCTURE FOR RAILWAY CAR

**James C. Hammonds, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey**
**Filed Nov. 24, 1967, Ser. No. 685,556**
**Int. Cl. B61d** *45/00, 3/08*
**U.S. Cl. 105—368** **8 Claims**



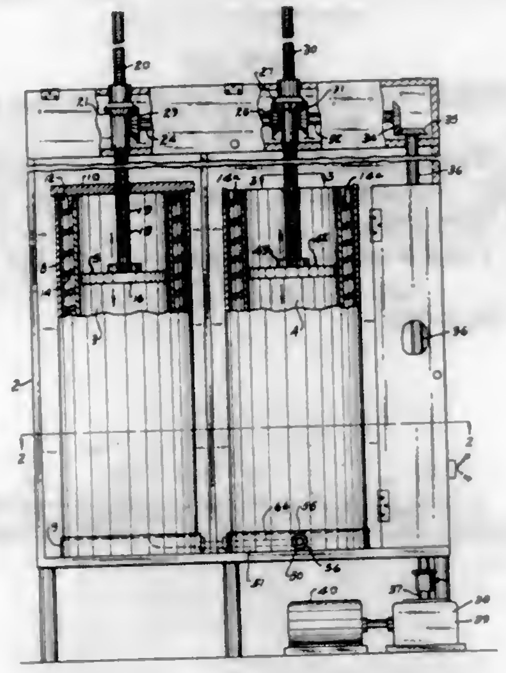


A load support mounted on the deck of a railway flat car for cushioned back and forth movement relative to the deck upon impact forces being exerted against the car. Elastomeric shear pads are positioned in series between the deck and the load support in unsecured relation thereto and are spaced from each other longitudinally of the deck. Means interconnect the pads to the deck and load support in such a manner that the cushioned movement of the support structure along the deck upon impact loads being exerted against the car is twice the deflection of either shear pad to provide an increased total cushioned travel of the support structure. The elastomeric shear pads are preloaded in shear in opposite directions to recenter the load support after its cushioned travel. Friction wedge-like members are provided between the deck and support structure to assist the shear pads in dissipating the impact forces. The wedge-like members exert a frictional force proportional to the shearing forces developed in the shear pads and increasing with an increase in shear forces.

## 3,479,970
## TAMALE MAKING MACHINE

**Joe Carbajal, 117 S. 22nd St., Phoenix, Ariz. 85034**
**Continuation-in-part of application Ser. No. 450,811, Apr. 26, 1965. This application Mar. 16, 1967, Ser. No. 623,718**
**Int. Cl. A23g** *3/00*
**U.S. Cl. 107—1** **5 Claims**

A tamale making machine comprising a pair of "masa" and flavoring extruding cylinders having concentric outlets communicating with a nozzle means whereby the "masa" is extruded in an annular cylindrical form with the flavoring extruded concentrically thereof.



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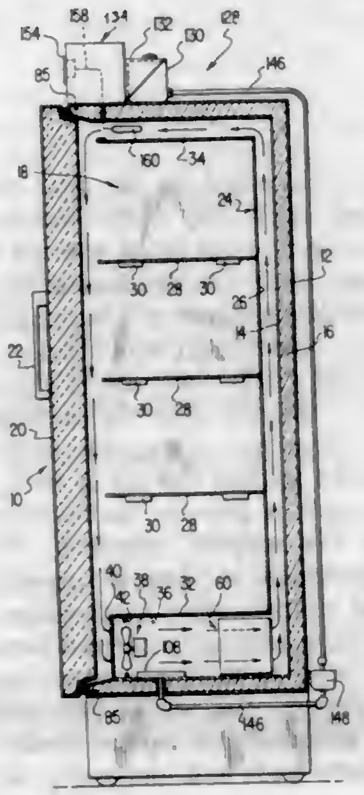
### 3,479,971
## METHOD AND APPARATUS FOR PROOFING A BAKERY PRODUCT

**Erwin L. Bender, Beaver Dam, and Richard H. Swanson, Manitowoc, Wis., assignors to The Manitowoc Company Inc., Manitowoc, Wis., a corporation of Wisconsin**

**Filed Apr. 5, 1967, Ser. No. 628,753**

**Int. Cl. A21d** *8/02*

**U.S. Cl. 107—54** **14 Claims**



This invention relates to a method and apparatus for proofing a bakery product, such as dough for bread, pastries, rolls and the like, in which the prepared dough is placed in a cabinet and frozen in order to preserve the dough until needed. At a predetermined time prior to the actual baking operation, the same cabinet is warmed to allow the dough to defrost prior to proofing. Although the commencement of the thawing or retard step may be manually effected, it is preferred that this step be automatically commenced. After the dough in the cabinet has been thawed, the proofing operation is commenced by the use of either automatically operable means or by manually operated mechanisms. Since the dough remains in the same cabinet through the freezing, thawing, and proofing steps, numerous economies may be made in a bakery operation.

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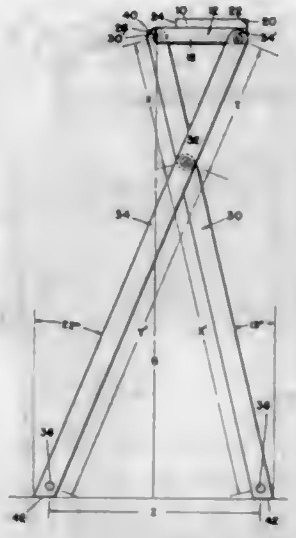
### 3,479,972
## FOLDING CLOTHES RACK AND UTILITY DRESSER

**Delford J. Thompson, 1341 S. 6th, Sunnyside, Wash. 98944**

**Filed May 14, 1968, Ser. No. 728,978**

**Int. Cl. A47b** *96/14, 3/02*

**U.S. Cl. 108—29** **5 Claims**



A folding clothes rack having scissor type support legs of specific lengths so that when set-up a horizontal rod secured to the upper ends of one pair of legs is disposed midway between the supporting feet laterally of the rod axis, and novel hook-type fingers, on a shelf pivotally connected to the other pair of legs, for hooking over the rod to anchor the rack in its set-up configuration.

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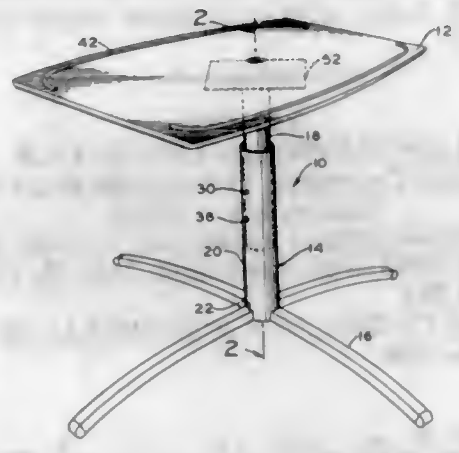
### 3,479,973
## ADJUSTABLE TV TABLE

**Ronald K. Bartlett and Thomas M. O'Sullivan, Lamar, Mo., assignors to O'Sullivan Industries, Inc., Lamar, Mo., a corporation of Missouri**

**Filed Dec. 13, 1967, Ser. No. 690,313**

**Int. Cl. A47b** *11/00, 9/14*

**U.S. Cl. 108—141** **2 Claims**



An adjustable TV table comprising a telescopic vertical shaft with spring biased buttons on the inner shaft engageable in vertically spaced openings on the outer shaft for raising and lowering the table. The table is further provided with swivel means whereby the top can be turned in different angular positions. Mounting of the shaft upon cross bars used as legs is effected by notches cut in the outer support shaft and a self levelling washer connection.

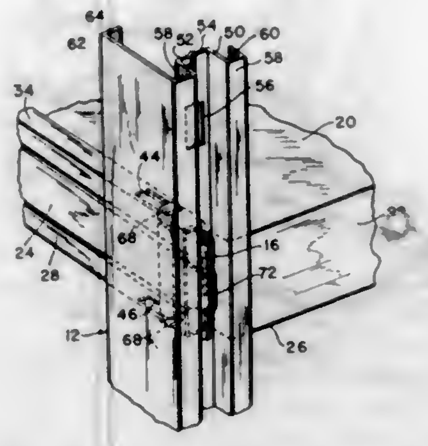
### 3,479,974
## KNOCKDOWN STEEL SHELVING

**Irwin J. Ferdinand, Glencoe, and Milton E. Handler, Evanston, Ill., assignors to Hirsh Company, Skokie, Ill., a corporation of Illinois**

**Filed Aug. 7, 1967, Ser. No. 658,695**

**Int. Cl. A47b** *57/10*

**U.S. Cl. 108—144** **10 Claims**



Knockdown steel shelving in which cut ends of corner notched shelf flanges are clamped securely against sides of an upright support by wedge activated tension elements manually applied from a position externally of the posts.

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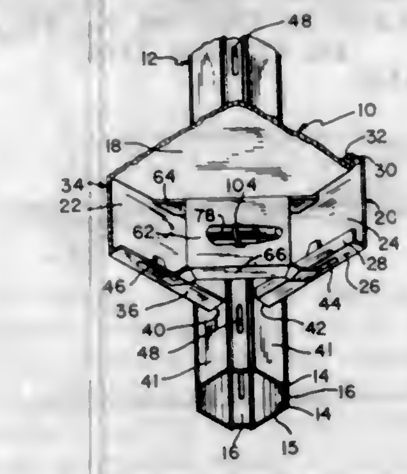
### 3,479,975
## LIGHTWEIGHT STEEL SHELVING

**Irwin J. Ferdinand, Glencoe, and Milton E. Handler, Evanston, Ill., assignors to Hirsh Company, Skokie, Ill., a corporation of Illinois**

**Filed Sept. 18, 1967, Ser. No. 668,433**

**Int. Cl. A47b** *95/08, 3/06*

**U.S. Cl. 108—144** **17 Claims**



Knockdown lightweight steel shelving in which cut ends of corner notched shelf flanges are clamped securely against adjacent sides of a roll-formed upright corner post having improved form lines for continuous shelving with wedge activated tension elements manually applied from a position internally of the shelves.

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### 3,479,976
## CIRCULAR BINDING MACHINE FOR WOVEN AND KNITTED GOODS

**Rolf Flach, Kempten, and Fritz Krause, Durach, Germany, assignors to Kemptener Maschinenfabrik G.m.b.H., Kempten, Allgau, Germany**

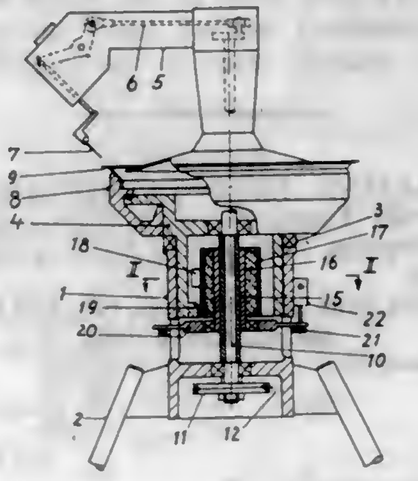
**Filed June 21, 1968, Ser. No. 738,976**

**Claims priority, application Germany, June 21, 1967, 1,660,910, 1,660,911**

**Int. Cl. D05b** *7/00, 69/02*

**U.S. Cl. 112—25** **21 Claims**

Two foot pedals are provided for respectively interrupting the sewing needle drive without actuating the needle positioning means or changing the sewing rate, and to actuate the needle positioning means only after a reduction in the sewing rate. Also, a hand lever is provided for directly interrupting the sewing needle drive.



The needle positioning means includes a shiftable abutment for arresting the sewing needle in a position outside of the needle ring independently of the position of the upper portion of the machine carrying the sewing needle.

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### 3,479,977
## CONTROL APPARATUS FOR ZIGZAG SEWING MACHINES, IN PARTICULAR FOR THE PRODUCTION OF BUTTONHOLES

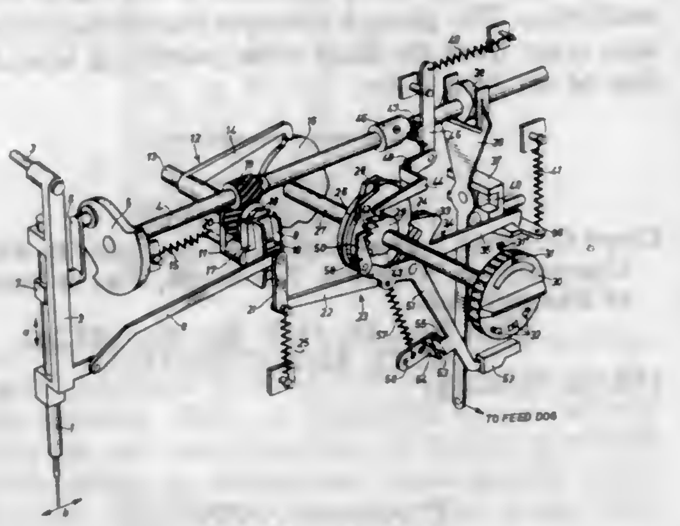
**Willi Meier, Karlsruhe, Germany, assignor to G. M. Pfaff AG, Kaiserslautern, Pfalz, Germany, a corporation of Germany**

**Filed Apr. 4, 1967, Ser. No. 628,321**

**Claims priority, application Germany, Apr. 6, 1966, D 39,143**

**Int. Cl. D05b** *3/06*

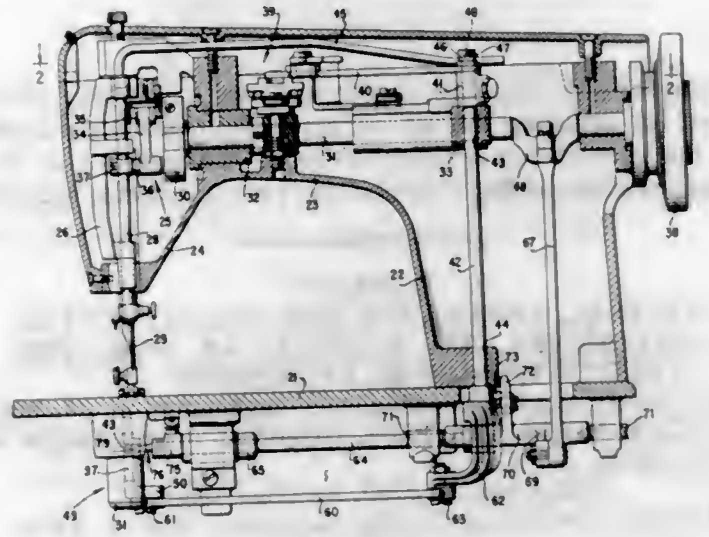
**U.S. Cl. 112—158** **7 Claims**



A conventional zigzag sewing machine is adapted for the sewing of buttonholes by the consecutive operation of a control member, to change from one to the next buttonhole sewing phase. Three cams controlling the various buttonhole sewing phases are mounted upon a common control shaft and are operated from one to the next operating position by a ratchet also mounted upon said shaft. An oscillating control pawl is continuously intermittently operated towards and away from said ratchet by operative connection with the main drive shaft of the sewing machine. The normal working stroke of said pawl being insufficient to operably engage the ratchet teeth, actuation of said ratchet is effected by temporarily manually rotating or presetting the same by a predetermined angle, such by the aid of an auxiliary pawl operated by a control lever. With the pitch angle of the ratchet teeth being equal to the sum of the operating stroke of the first pawl and said presetting angle, actuation of the ratchet is controlled by operating said control member thus providing a relay effect by the ratchet being operated by the intermittently applied local power source and controlled by reduced effort on the control member.

### 3,479,978
### COMPENSATING LOOP TAKER MECHANISMS

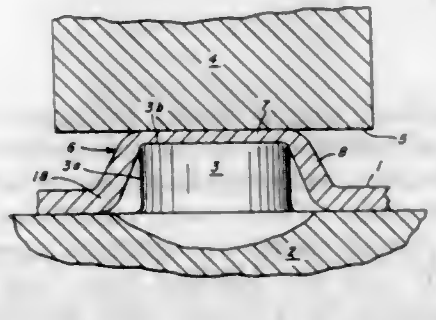
**Giancarlo Della Torre, Bressano, Italy, assignor to The Singer Company, New York, N.Y., a corporation of New Jersey**
**Filed June 26, 1967, Ser. No. 648,831**
**Int. Cl. D05b** *3/02*
**U.S. Cl. 112—159** **8 Claims**



A crankpin is pivotally connected to a crank on a shaft for transmitting motion from the shaft to a loop taker which is pivotally mounted in the frame for lateral oscillation. The pivoted crankpin transmits motion to the loop taker from the shaft while permitting lateral oscillation of the loop taker.

### 3,479,979
### METAL FORMING

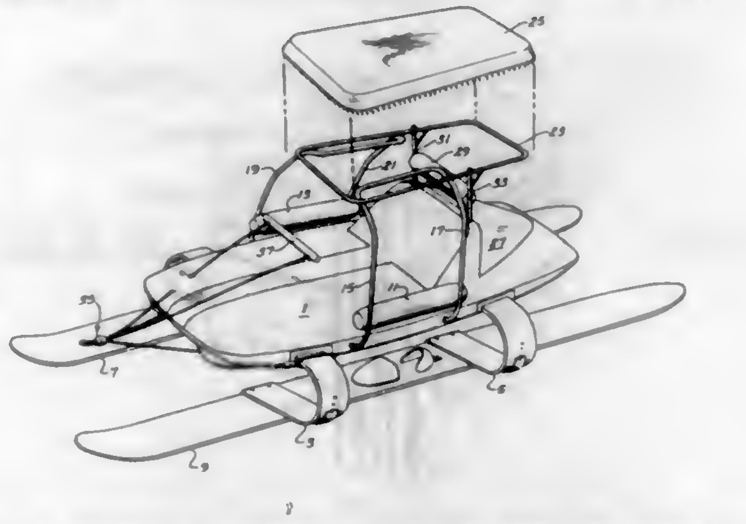
**Lloyd G. Dunn, Lower Burrell, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Nov. 16, 1967, Ser. No. 685,241**
**Int. Cl. B21d** *47/00, 13/10*
**U.S. Cl. 113—121** **7 Claims**



A method of making a boss in sheet metal by positioning a sheet of metal between mating faces of an anvil and a punch, the face of the punch extending outwardly of the anvil face, and pressing the sheet metal between the anvil and punch to induce outward flow of the metal thereby forming a boss in the sheet metal.

### 3,479,980
### MULTIPURPOSE SPORT VEHICLE CHASSIS

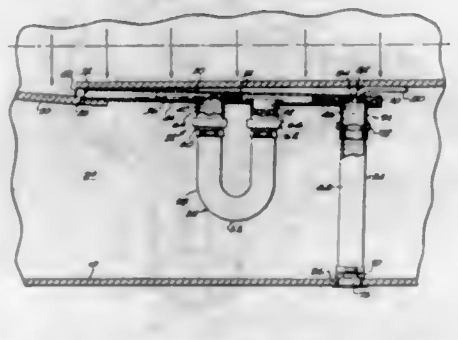
**Donald D. Simmons, 4030 Washington Blvd., Arlington, Va. 22201**
**Filed Oct. 24, 1967, Ser. No. 677,647**
**Int. Cl. B62b** *15/00;* **B60f** *3/00*
**U.S. Cl. 114—66.5** **9 Claims**



A buoyant chassis adaptable for water, snow and ice sports includes a foamed-plastic main body portion with detachable supports for skis, hydroplanes, hydrofoils, toboggins and ice skates. Attachments to the body portion include a towing harnes, arm rests, a head rest and a canopy. Ready conversion is accomplished with the same chassis by changing the detachable supports to correspond to the desired sport.

### 3,479,981
### BOAT DRAIN AND VALVE UNIT

**Martin R. Dosal, 1043 NE. 98th St., Miami Shores, Fla. 33153, and Carlos Salas-Humara, 2742 NE. 37th Drive, Fort Lauderdale, Fla. 33308**
**Filed Feb. 20, 1968, Ser. No. 710,434**
**Int. Cl. B63b** *13/00*
**U.S. Cl. 114—183** **10 Claims**



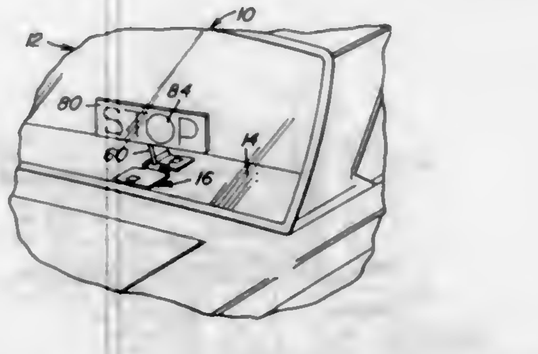
For use on a boat, a device to drain excess water from within the boat and which includes a one-way valve to restrict the entrance of water into the boat when in an overloaded condition; the one-way valve includes a valve body which defines a flow through path including a depending U-shaped portion and a vented chamber so that an air bubble is adapted to be trapped in the valve body to obstruct the passage of water therethrough when submerged or depressed below the float line of a craft on which it is installed as when it is in an overloaded condition.

### 3,479,982
### SUDDEN STOP ACTUATED VEHICLE WARNING SIGNAL

**Peter Honcharenko, 37793 W. Horseshoe Drive, Mount Clemens, Mich. 48043**
**Filed Aug. 29, 1967, Ser. No. 664,177**
**Int. Cl. B60q** *1/26*
**U.S. Cl. 116—35** **10 Claims**

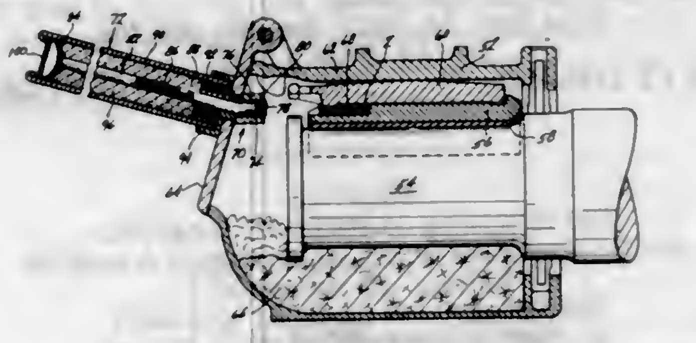
A warning device including a base adapted to be supported from a vehicle subject to sudden deceleration and

having a signal actuating arm pivotally secured thereto for swinging movement between active and inactive positions rotated between 45° and 135° apart about an axis extending transversely of the arm with spring means operatively connected between the base and the arm yieldingly urging the arm toward its inactive position and weight means supported from the base for oscillation generally in unison with the arm and operative, upon deceleration of the base while moving in at least one direction, to shift the arm toward its active position.



### 3,479,983
### TEMPERATURE SENSOR

**Norman J. Wilkaitis, Marion, and Adrian G. La Brot, Alton, Ill., assignors to Olin Mathieson Chemical Corporation**
**Filed Oct. 24, 1967, Ser. No. 677,610**
**Int. Cl. G01k** *1/02*
**U.S. Cl. 116—114.5** **14 Claims**

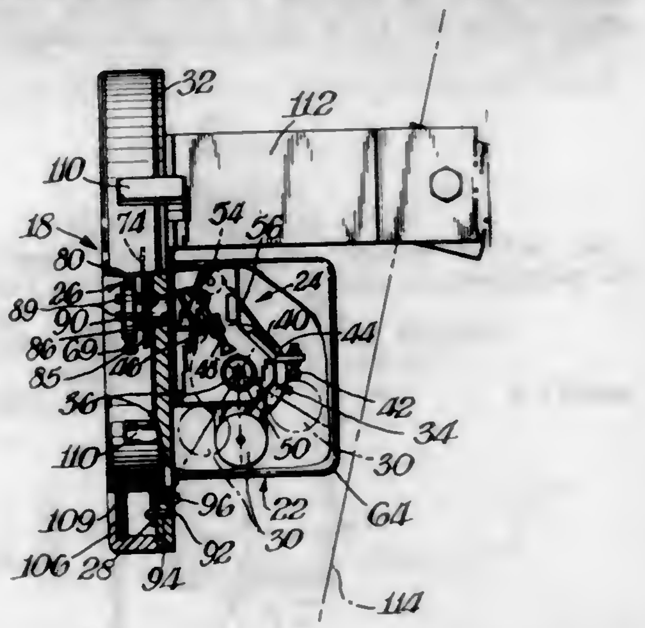


A temperature sensor including a housing in which is sealed a pyrophoric material in a non-air environment. Energy generating means is positioned adjacent the pyrophoric material and is separated therefrom by a fusible metal seal capable of melting at a predetermined temperature. The energy generating means is adapted to be actuated upon the melting of the fusible metal seal and the spontaneous ignition of the pyrophoric material when exposed to air.

### 3,479,984
### SAFE LOAD INDICATOR

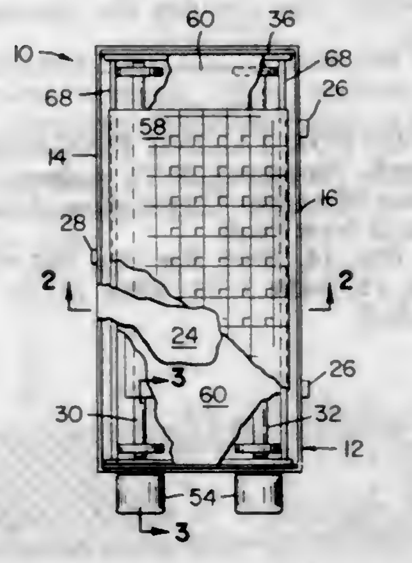
**Joseph A. Deluca, Jr., 21 Maplewood Lane, Faulk Road, Wilmington, Del. 19803**
**Filed Oct. 24, 1966, Ser. No. 588,938**
**Int. Cl. G09f** *9/40*
**U.S. Cl. 116—124** **2 Claims**

Precise instrument for simultaneously indicating maximum safe load that can be lifted by crane at any inclination of crane boom relative to horizontal, radius of boom and boom angle comprises pendulum for producing motion in response to changes of crane boom angle. Instrument also includes pointer assembly and transmission for connecting pointer assembly to pendulum. Dial face is provided for particular crane, for particular length and type, boom and dial has safe load, boom radius, and boom angle readings for each working angle of that boom. Pointer assembly includes pointer arm that moves across dial face as boom angle changes to thereby simultaneously indicate consistently and exactly safe load, boom angle, and boom radius readings by position of pointer arm on dial face without gain or loss at any inclination of boom.



### 3,479,985
### RECORD KEEPING AND VIEWING DEVICE

**Ervin W. Morley, Napa, Calif., assignor of ten percent to Ellane B. Hammond, Imola, Napa, Calif.**
**Filed Apr. 17, 1967, Ser. No. 631,412**
**Int. Cl. G09f** *9/46*
**U.S. Cl. 116—135** **1 Claim**

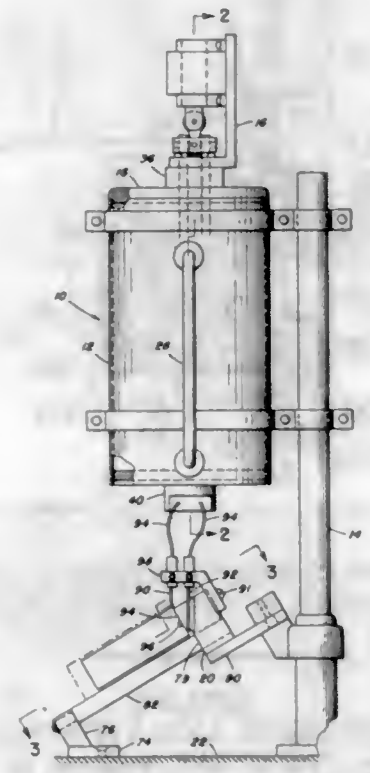


A device for keeping records of various types and for viewing such records. A movable web wrapped on a pair of spaced rotatable shafts is supported by a backing plate so that the web can be marked and thereby provided with record indicia. A transparent cover permits viewing of the web and protects the same. The device may be of pocket size proportion so that it can be conveniently carried.

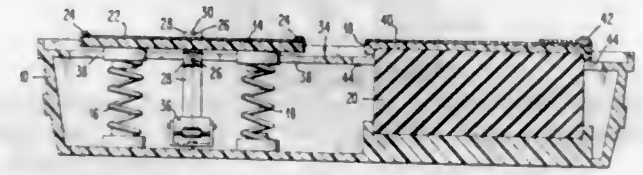
### 3,479,986
### APPARATUS FOR LIQUID SOLVENT SEALING OF PLASTIC FILM CARTRIDGES

**James E. Hoover, Binghamton, N.Y., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware**
**Filed Sept. 22, 1967, Ser. No. 669,828**
**Int. Cl. B05c** *11/14;* **B65b** *7/16*
**U.S. Cl. 118—2** **7 Claims**

This invention relates to an apparatus adapted to dispense a liquid solvent sealer for plastic film cartridges. In essence, a receptacle containing liquid solvent is adapted to dispense a quantity of the solvent through a hypodermic needle arrangement whereby the solvent contacts the cartridge. The solvent which will fuse the cartridge is dispensed when the cartridge is positioned on a support so as to energize a microswitch, which in turn starts an electric timer that controls a solenoid operated valve mechanism. De-energization of the solenoid valve by the timer cuts off the flow of solvent. The cycle cannot be repeated without removing the cartridge from the support thereby repositioning the microswitch to its cocked position.



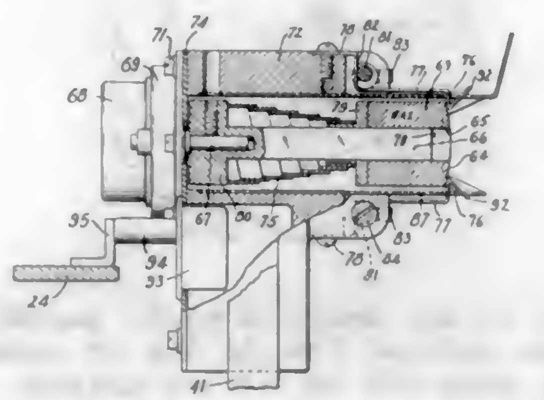
### 3,479,987
### APPARATUS FOR TAKING FINGERPRINTS
**Walter K. French, Montrose, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Oct. 14, 1966, Ser. No. 586,774**
**Int. Cl. B41k** *1/20;* **B05c** *11/10*
**U.S. Cl. 118—31.5** **1 Claim**



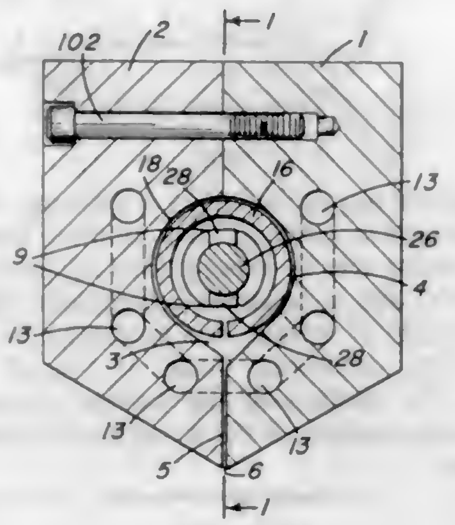
A method and apparatus for preparing for fingerprinting by securing a thinly inked strip to a spring-mounted table whose tension may be adjusted to provide uniform inking and a second resiliently mounted table for securing a fingerprint card are shown. Both tables are supported with three degrees of freedom.

### 3,479,988
### RUNNING THREAD WAXER
**Wayne C. Trost and Robert J. Mahoney, Rockford, Ill., assignors to Barber-Colman Company, Rockford, Ill., a corporation of Illinois**
**Filed June 26, 1967, Ser. No. 648,710**
**Int. Cl. B05c** *3/132*
**U.S. Cl. 118—78** **17 Claims**

A thread, while being unwound from a bobbin and onto a cheese in a Barber-Colman multiple winder or spooler is traversed back and forth across and held against the exposed end of a wax cylinder by the horizontally swingable fingers of the thread break detector. The cylinder is supported on a horizontal shaft and urged outwardly by a volute spring to hold the cylinder end against adjustable stops which are retractible radially to permit replacement of the cylinder. The cylinder is telescoped on the squared end of the shaft driven by a motor controlled by a switch which is closed when the cheese is in winding position but opened automatically as an incident to breaking of the thread. Means are disposed on opposite sides of said exposed end which engage and raise the thread at reversals of travel to relieve pressure thereof with respect to the wax cylinder.



### 3,479,989
### EXTRUSION COATING APPARATUS
**Walker F. Hunter and Edward J. Mizma, Hilton, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**Filed Nov. 28, 1967, Ser. No. 686,106**
**Int. Cl. B05c** *11/02*
**U.S. Cl. 118—608** **8 Claims**



An extrusion hopper for depositing onto a moving support a relatively wide stream of a liquid dispersion which is uniformly thick and free of defects resulting from pressure drops across the length of the hopper discharge slot and in which the particles are maintained uniformly dispersed comprises a substantially cylindrical chamber having an elongated discharge slot extending radially therefrom and a slotted tubular rotor rotatable coaxially within said chamber from the slots of which a dispersion fed into one end of the rotor issues at a plurality of points along the length of the hopper while at the same time being subjected to a shear rate which keeps the particles dispersed. An additional shear rate can be induced on the dispersion by placing a stationary rod concentrically within said rotor.

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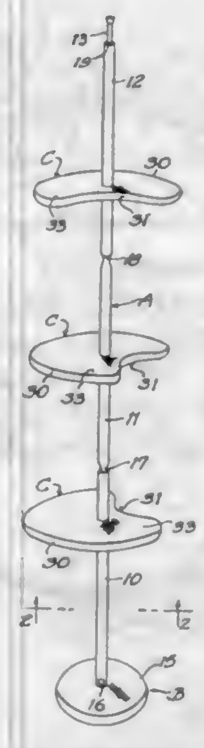
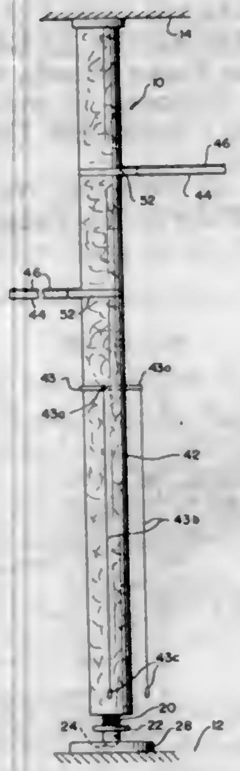
### 3,479,990
### CAT TREE
**Frank L. Crow, 2054 Argyle St., Apt. 104, Los Angeles, Calif. 90028**
**Filed Jan. 11, 1968, Ser. No. 697,068**
**Int. Cl. A01k** *1/00;* **A63b** *9/00*
**U.S. Cl. 119—1** **5 Claims**



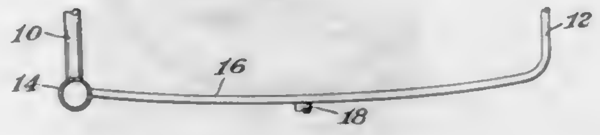
Disclosed herein is a cat tree embodying a plurality of cat landing stations or platforms carried by a sectional pole adapted to be mounted in a vertical position in a selected room of a dwelling, with a base engaged against the floor to hold the tree against rotation, with a spring-loaded plunger engaged against the ceiling, and with the platforms covered with a tough textile material which provides a scratching, claw-sharpening surface.

### 3,479,991
### ANIMAL CLIMBING STRUCTURE
**William J. Lichtenberger, 10195 W. Higgins Road, Rosemont, Ill. 60018**
**Filed July 10, 1968, Ser. No. 743,692**
**Int. Cl. A01k** *1/00, 29/00;* **A63b** *9/00*
**U.S. Cl. 119—1** **12 Claims**



A portable animal climbing structure having a base and an upright member, characterized in that the upright member is provided with a traction giving animal claw receiving and supporting surface and further characterized in that an animal perching surface is provided intermediate the ends thereof. The upper and lower end portions of the support are provided with a structure for engaging the floor and ceiling of a room to mount the support therebetween.

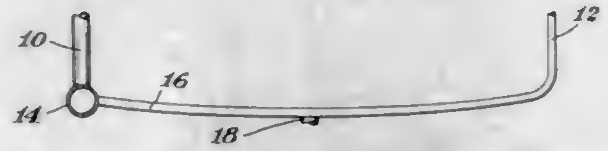
### 3,479,992
### BOILER OR THE LIKE
**Ludo K. Frevel, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed June 3, 1968, Ser. No. 733,977**
**Int. Cl. F22b** *15/00, 37/10*
**U.S. Cl. 122—235** **8 Claims**



In wet bottom boilers or the like the boiler tubes on or adjacent to the boiler flow are surrounded with a spaced apart housing in which the open space between the tubes and housing is filled at least to the extent necessary to cover the tubes, with dense, high melting point particulated material such as monazite sand, for example.

Such a structure prevents localized overheating, weakening, and eventual rupturing of the boiler tubes by preventing molten iron, iron sulfide or other molten, heavy substances present in molten slag from contacting the boiler tubes.

### 3,479,993
### WET BOTTOM BOILER FLOOR OR THE LIKE
**Ludo K. Frevel, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed June 3, 1968, Ser. No. 733,978**
**Int. Cl. F22b** *15/00, 37/10*
**U.S. Cl. 122—235** **8 Claims**



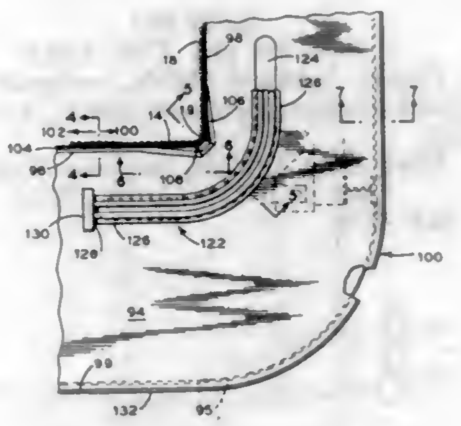
In wet bottom boilers or the like the boiler tubes on or adjacent to the boiler floor are formed into a unitary structure and are surrounded on their top side with dense, high melting point particulated material such as monazite sand, for example.

Lateral movement of the particulated material is restricted by a series of so-called dams extending transverse to the boiler tubes and by an array of protective elements (rods or plates) disposed above the dams.

Such a structure prevents localized overheating, weakening, and eventual rupturing of the boiler tubes by preventing molten iron, iron sulfide or other molten, heavy substances present in molten slag from contacting the boiler tubes.

### 3,479,994
### ENCLOSURE FOR VAPOR GENERATOR
**Edward W. Kreider, Wadsworth, and John A. Lavey, Barberton, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New York**
**Filed Feb. 1, 1968, Ser. No. 702,456**
**Int. Cl. F22b** *37/24*
**U.S. Cl. 122—494** **11 Claims**

An enclosure adapted to be mounted on a vapor generator having a furnace chamber of substantially rectangular cross-section defined by four walls. The enclosure generally includes a wrapper mounted on the furnace walls for relative movement with respect to the walls. In the area where the wrapper extends around a corner of the furnace chamber, an arcuately shaped expansion joint is provided. Trusses are provided for supporting the wrapper such that the wrapper acts to relieve stresses which develop in the trusses, two trusses being provided on opposite or adjacent walls of the furnace chamber and interconnected to one another via the wrapper. The ends of the trusses are thus physically connected together to relieve stresses in the trusses.



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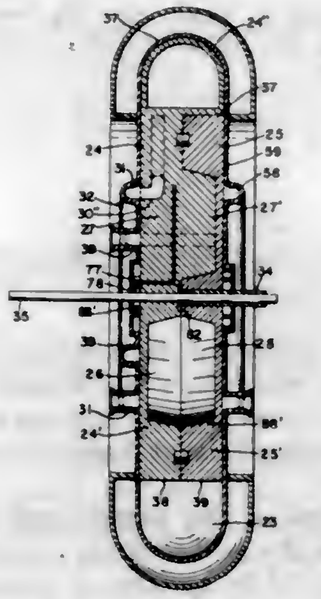
### 3,479,995
## ROTARY ENGINE
**Stanley O. Johnson, Grand Forks, N. Dak. 58201**
**Filed Oct. 2, 1967, Ser. No. 672,174**
**Int. Cl. F02b** *53/04, 53/06, 55/14*
**U.S. Cl. 123—11** **1 Claim**



The invention comprises a rotary engine having an annular fixed housing, a pair of disc members rotatably mounted within the housing with a piston fixed to the outer edge of each disc member for travel arcuately within the housing, the disc members having cooperating portions forming an inner pre-compression chamber for pre-compressing fresh gases prior to their combustion, the housing has an pressure differential means to transmit the pre-compressed gases from the pre-compression chamber to the outward interior portions of the housing in the line of travel of the pistons which forms a combustion chamber, the housing has annular ring conduit means to transfer the burnt gases in the combustion chamber out of the engine after combustion.

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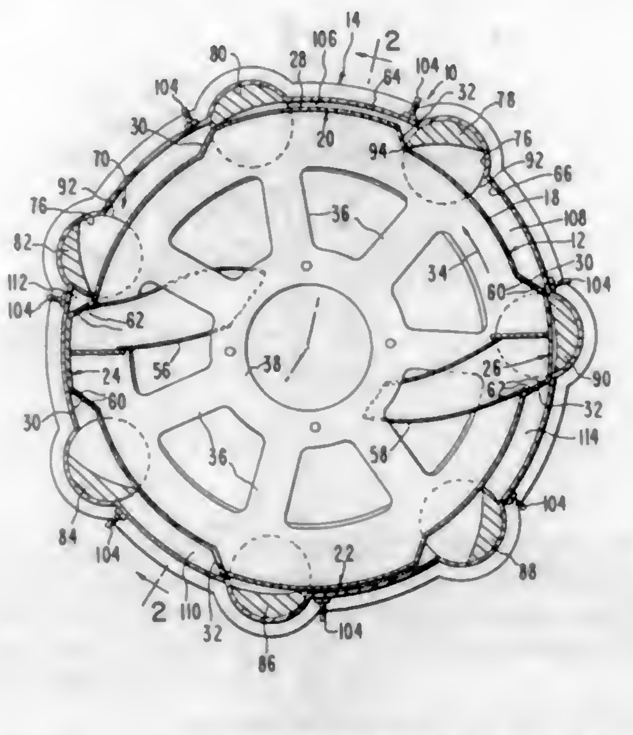
### 3,479,996
## ROTARY ENGINE
**Lowell E. Statler, Box 115, Bellevue, Ohio 44811**
**Filed Jan. 5, 1968, Ser. No. 695,936**
**Int. Cl. F02b** *53/04*
**U.S. Cl. 123—15** **14 Claims**



A rotary internal combustion engine having a rotor provided with at least one pair of circumferentially spaced lobes on its outer surface. The rotor is disposed in a cylindrical housing whose inner surface defines with the rotor a chamber through which the lobes pass. One lobe serves to compress fuel in the chamber and to provide an abutement for the rotor when the compressed fuel expands upon ignition whereby the rotor is caused to rotate relative to the housing. The other lobe serves to exhaust combustion gases of a previous combustion stage to the atmosphere and to provide for the intake of fuel to the chamber for the next compression-ignition stage. The wall has movable barriers which cooperate with the lobes to separate the chamber into a number of different, isolated portions.

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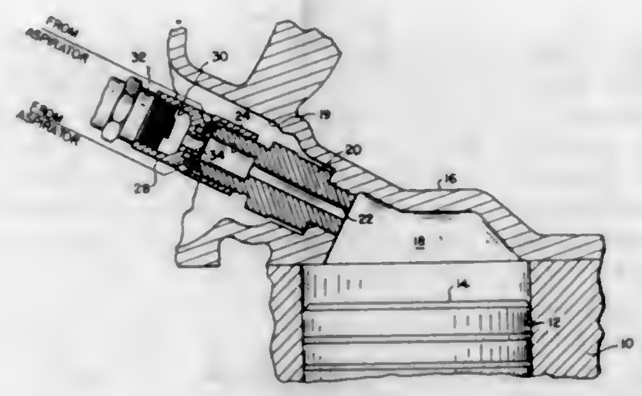
### 3,479,997
## INLET VALVE FOR INTERNAL COMBUSTION ENGINE
**Ross L. Fryer, Grosse Pointe Woods, and Dennis C. Hill, Southfield, Mich., assignors, by mesne assignments, to Continental Motors Corporation, Detroit, Mich., a corporation of Virginia**
**Filed May 13, 1968, Ser. No. 728,621**
**Int. Cl. F02b** *23/00;* **F02p** *23/00*
**U.S. Cl. 123—75** **8 Claims**



An internal combustion engine having an auxiliary or precombustion chamber connected with the primary combustion chamber, and an ignition chamber connected with the auxiliary combustion chamber by a passage having one end opening into the ignition chamber and its other end terminating in a tubular heat shield which extends into the auxiliary combustion chamber. The body member which houses the ignition chamber has a pair of integral, annular, ported valve seats formed around the heat shield for the admission of a fuel mixture into the auxiliary chamber. A pressure-responsive, flapper valve having a central opening through which the heat shield extends, is supported for motion adjacent the valve seats between a closed position in which it closes the ports and an open position in which it is spaced from the valve seats to open the ports for the admission of the fuel mixture.

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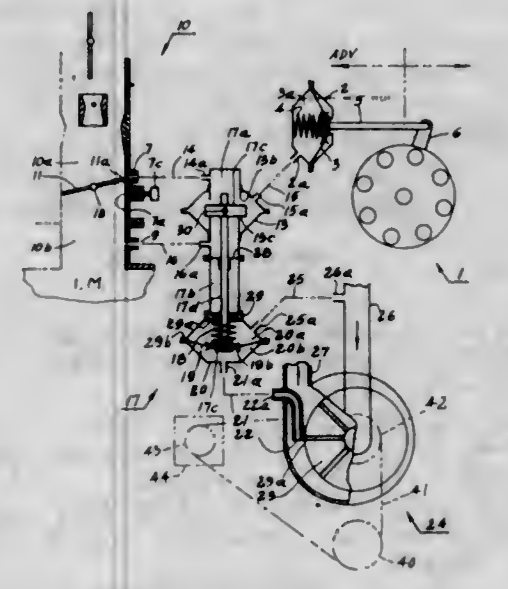
### 3,479,998
## SPARK CONTROL
**Brooks Walker, 1280 Columbus Ave., San Francisco, Calif. 94133**
**Filed Mar. 27, 1967, Ser. No. 626,258**
**Int. Cl. F02d** *31/00;* **F02p** *1/00, 5/06*
**U.S. Cl. 123—97** **8 Claims**



An apparatus for controlling the operation of a suction operated spark timing control motor of an internal combustion engine. A pair of longitudinally spaced ports are provided in the main air passage of the carburetor for selective connection to the motor. A pair of conduits connect the ports to a valve and a single conduit connects the valve to the motor. The valve is operated in response to the speed of the engine to connect one or the other of the ports to the motor. The upper port is above the closed position of the throttle valve in the passageway.

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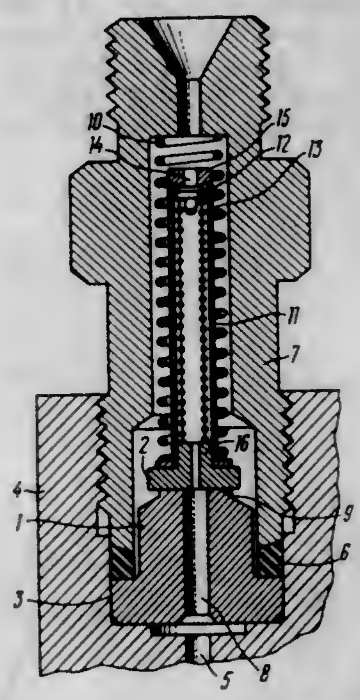
### 3,479,999
## INJECTION PUMP VALVE
**Ulrikh Ulrikhovich Keller, Tambovskaya ulitsa 75, kv. 85; Adolf Nikodimovich Ledokhovich, Tambovskaya ulitsa 75, kv. 59; Jury Alexeevich Bitjugov, Blagodatnaya ulitsa 34, kv. 18; and Gennady Yakovlevich Stratulatov, Vasilievsky ostrov 2, Linia 61, kv. 22, all of Leningrad, U.S.S.R.**
**Filed Nov. 2, 1967, Ser. No. 680,140**
**Int. Cl. F02b** *15/00, 49/00*
**U.S. Cl. 123—139** **6 Claims**

A valve system for the delivery stage of a fuel injection pump for internal combustion engines provided with spring-loaded delivery and check valves, an opening through which fuel passes to the check valve for effecting opening thereof and a throttle opening in the delivery valve in the fuel flow path from a delivery fuel line to a pump with the check valve being open. The cross section of the throttle opening is smaller than that of the opening through which fuel passes to the check valve.



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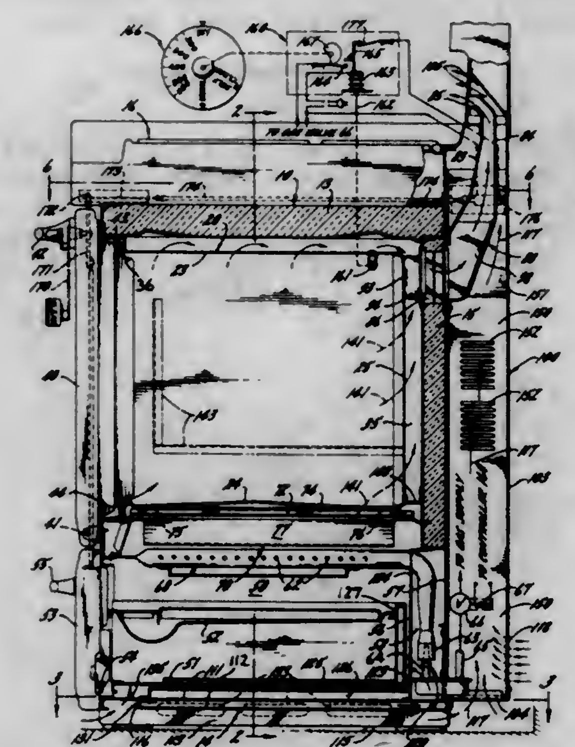
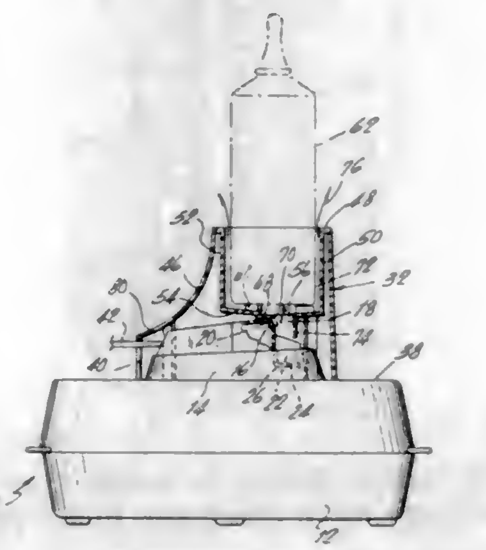
### 3,480,000
## SELF-CLEANING GAS OVEN
**Sumner H. Torrey and Donald J. Dubuque, Kankakee, Johnny C. Weiss, Bourbonnais, and Norman R. Sloan, St. Anne, Ill., assignors to Geo. D. Roper Corporation, Kankakee, Ill., a corporation of Delaware**
**Filed May 31, 1968, Ser. No. 733,423**
**Int. Cl. F24c** *3/02, 15/32;* **A47j** *37/00*
**U.S. Cl. 126—39** **16 Claims**



A self-cleaning gas range having a muffled oven liner with a broiler compartment and broiler burned below it, the hot air and products of combustion from the burner passing around the oven liner both for normal oven cookery and for raising the temperature of the liner to a self-cleaning level with provision for securing equalized distribution of heat. Special means are provided for venting the hot air from the burner and the products of decomposition from the oven liner, as well as for preventing passage of heat downwardly to the floor, particularly when the burner is turned to its high range during the self-cleaning cycle.

### 3,480,001
### BOTTLE WARMER ATTACHMENT FOR VAPORIZER

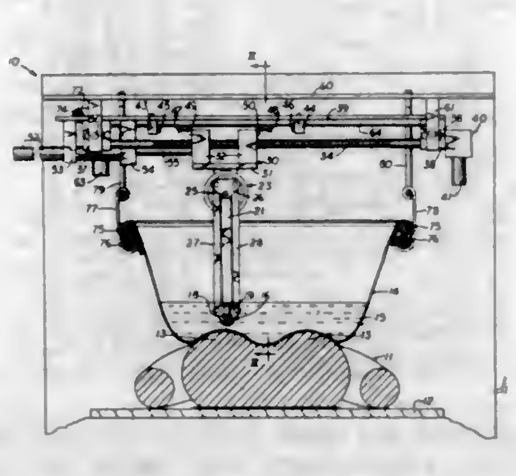
**Lawrence Katzman, New York, and Edward Briggin, Brooklyn, N.Y., assignors to Kaz Manufacturing Co., Inc., New York, N.Y., a corporation of New York**
**Filed Jan. 25, 1968, Ser. No. 700,504**
**Int. Cl. A47g** *23/04;* **F24d** *1/00;* **F22b** *1/28*
**U.S. Cl. 126—261** **7 Claims**



A baby bottle warmer for use in combination with a vaporizer having a container and a steam heating assembly provided with a steam emitting head mounted on said container. The steam emitting head is provided with a steam outlet. An adapter is seated on the head and includes wall means forming a baby bottle receiving chamber extending above the head and having support means for engaging the bottom of a baby bottle. The support means has an opening therein communicating with the steam outlet for heating a baby bottle by steam.

### 3,480,002
### MEDICAL ULTRASONIC SCANNING SYSTEM

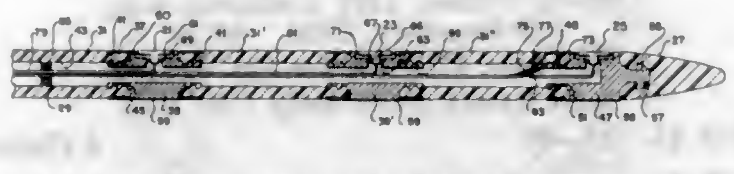
**John J. Flaherty, Elk Grove Village, and Donald T. O'Connor, Barrington, Ill., assignors to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Jan. 24, 1967, Ser. No. 611,399**
**Int. Cl. A61b** *6/12;* **H02n** *9/00*
**U.S. Cl. 128—2** **19 Claims**



Medical ultrasonic system especially designed for breast examination, including pulse-echo transducer means moved in first and second transverse directions in a plane generally parallel to a patient's skin, the movement in the second direction being at a velocity of several times greater than that in the first direction. A C-scan indicating spot is deflected in synchronism with the transducer movements and its intensity is controlled by echo signals. A B-scan spot is deflected in one direction in synchronism with transducer pulsing and in a transverse direction in synchronism with the movement in the second direction. Additional features include the recording of the B-scan and C-scan indications by first and second cameras, a sector scan arrangement, a cathode ray tube having memory means and gate and gate control circuitry.

### 3,480,003
### APPARATUS FOR MEASURING ESOPHAGEAL MOTILITY

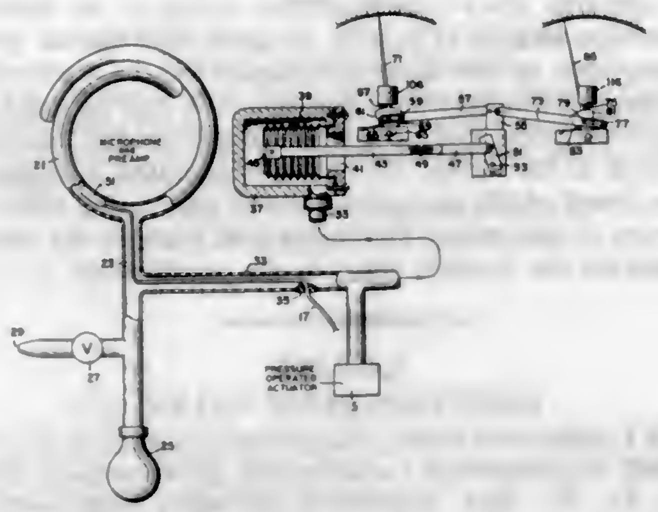
**Nelson A. Crites, Columbus, Ohio, assignor to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware**
**Filed Feb. 3, 1967, Ser. No. 613,787**
**Int. Cl. A61b** *5/10, 1/26*
**U.S. Cl. 128—2** **4 Claims**



Apparatus for measuring squeezing pressure of the esophagus, useful in detecting and diagnosing diseases and malfunctions thereof. A flexible tube having a central lumen is swallowed by the patient. Pressure sensitive transducers resiliently mounted on the tube measure variations in pressure while in or passing through the esophagus. Calibration markings indicate the length of tubing in the patient's esophagus. Other means conductivity of esophageal mucosa and pH in the esophagus or stomach.

### 3,480,004
### APPARATUS FOR MEASURING BLOOD PRESSURE WITH AN IN-CUFF MICROPHONE AND PREAMPLIFIER

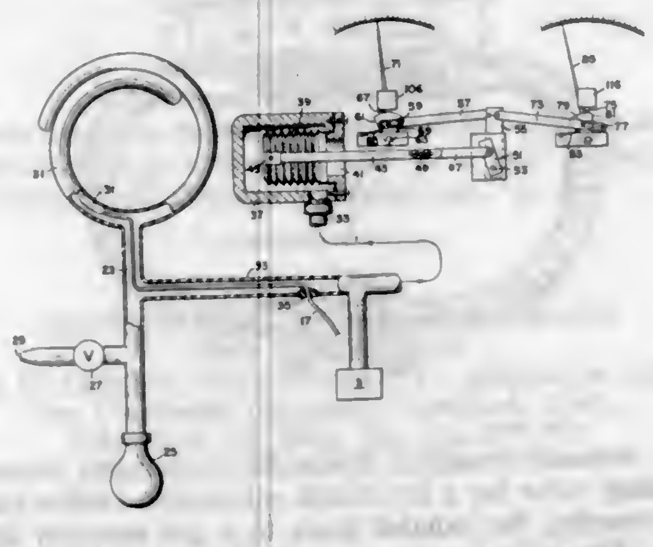
**William C. Edwards, Plandome Manor, N.Y., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**
**Original application June 23, 1965, Ser. No. 466,351. Divided and this application Mar. 5, 1968, Ser. No. 710,471**
**Int. Cl. A61b** *5/02;* **H04m** *1/00*
**U.S. Cl. 128—2.05** **1 Claim**



A microphone located within an inflatable sphygmomanometer cuff for detecting Korotkoff sounds is provided with a preamplifier, also located in the cuff and powered through a two-wire cable, which passes through an opening in the wall of a tube leading from the cuff to a pressure measuring instrument. The two-wire line delivers power to the preamplifier and carries the signal to the input of a control circuit, which causes the pressure measuring instrument to record systolic and diastolic pressures.

### 3,480,005
### APPARATUS FOR MEASURING BLOOD PRESSURE WITH PLURAL BRAKE CONTROLLED INDICATORS

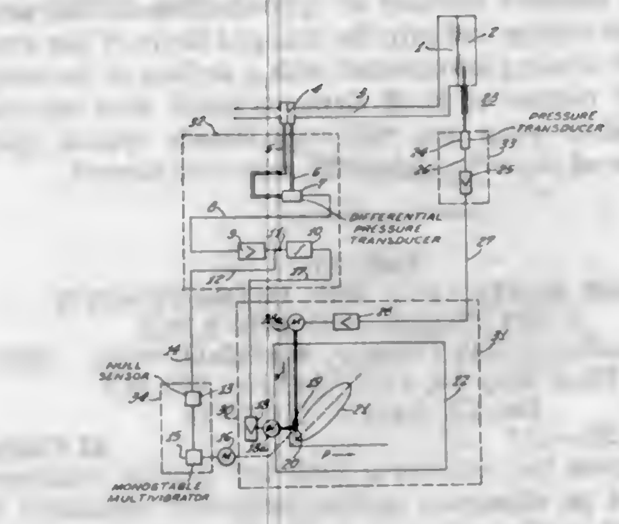
**William C. Edwards, Plandome Manor, N.Y., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**
**Original application June 23, 1965, Ser. No. 466,351. Divided and this application Mar. 5, 1968, Ser. No. 710,501**
**Int. Cl. A61b** *5/02;* **G01l** *7/06*
**U.S. Cl. 128—2.05** **3 Claims**



An automatic blood pressure measuring apparatus comprises an inflatable cuff, and pressure sensing means operating a pair of movable stops. Systolic and diastolic indicators are urged by springs against the respective stops, and an electrical control system, operating in response to Korotkoff sounds detected by a microphone, operates a first solenoid brake to arrest the systolic indicator upon the appearance of a first Korotkoff sound. A second solenoid brake, normally arresting movement of the diastolic indicator, is disengaged momentarily upon the appearance of each Korotkoff sound, to permit the diastolic indicator to engage its stop.

### 3,480,006
### PHYSIOLOGICAL VOLUME-PRESSURE DIAGRAM RECORDING DEVICE

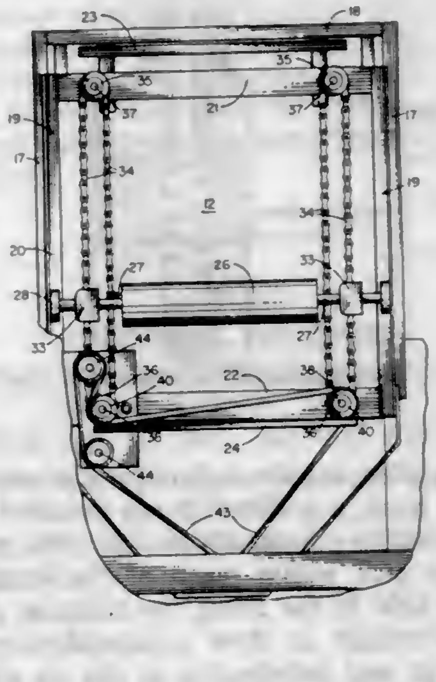
**Veit Schomber, Freiburg im Breisgau, Germany, assignor to Fritz Hellige & Co. G.m.b.H., Freiburg im Breisgau, Germany**
**Filed Sept. 24, 1965, Ser. No. 489,845**
**Claims priority, application Germany, Sept. 28, 1964, H 53,884**
**Int. Cl. A61b** *5/08*
**U.S. Cl. 128—2.08** **5 Claims**



A device for recording the volume-pressure relationship of the lungs. The volume of air inhaled and exhaled is measured by an orifice velocity meter in the breath flow path. The velocity representing output of the orifice meter is integrated to determine volume, and applied to the Y axis motor of an X–Y recorder. A manometer in the thorax provides a pressure representing signal which is applied to the recorder X axis motor. Elasticity of the lung, indicated by the line through the reversal points of the volume-pressure diagram, is measured by sensing the null during reversals of breath flow. The null indicator triggers a monostable multivibrator which provides a distinctive signal to the recording pen.

### 3,480,007
### ROLLER BACK CHAIR

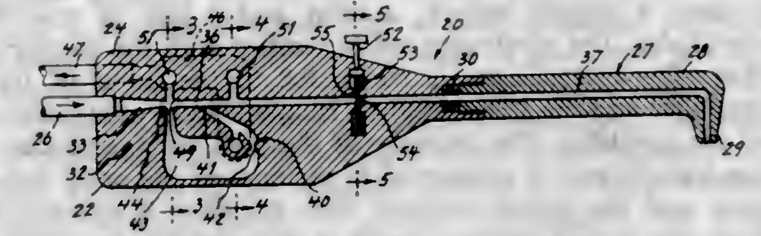
**Dillon K. Kilcup, 2907 Monroe St., Spokane, Wash. 99205**
**Filed Sept. 7, 1967, Ser. No. 666,041**
**Int. Cl. A61h** *15/00, 23/02*
**U.S. Cl. 128—58** **4 Claims**



An upholstered chair embodying a roller mechanism to cyclicly move an elongate roller up and down within the chair back structure to massage the back of a user. The roller mechanism embodies an endless chair drive always moving in one direction. The roller mechanism may be embodied in chairs of ordinary commerce. A specie of compound roller with eccentric massaging elements is disclosed.

### 3,480,008
### ORAL CLEANSING AND GUM MASSAGING MEANS

**Wu Wai Chao, Bloomfield Hills, Mich., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed May 27, 1966, Ser. No. 553,424**
**Int. Cl. A61h** *9/00;* **A61m** *3/00*
**U.S. Cl. 128—66** **15 Claims**



An oral cleansing and gum massaging apparatus wherein a pulsating jet discharge of fluid is effected through a discharge nozzle and wherein fluid amplifier means are provided having feedback means including capacitor means of predetermined dimensions for preselecting a desired rate of discharge pulsation.

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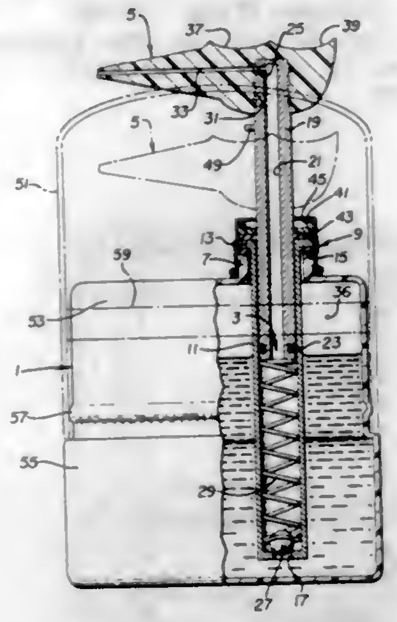
### 3,480,009
### ORAL HYGIENE APPLIANCE

**William W. Sinai, Orinda, Calif.**
**(2844 Summit St., Oakland, Calif. 94609)**
**Filed Oct. 12, 1967, Ser. No. 674,808**
**Int. Cl. A61h** *13/00;* **A61m** *11/00, 1/00*
**U.S. Cl. 128—66** **7 Claims**



An oral hygiene appliance involving a container of a size to fit the hand, a pressure pump installed in the container and including a manually reciprocable piston carrying a massage pick within reach of the forefinger, with the container held in the hand, the massage pick having a bore therethrough in flow communication with the pump discharge and terminating at the tip of said pick.

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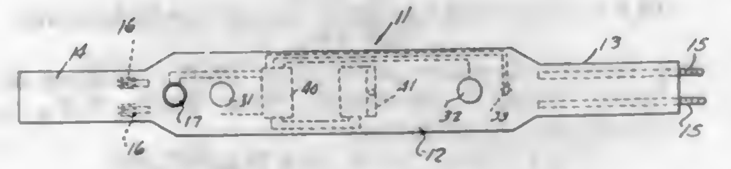
### 3,480,010
### ELECTRONIC SNORE DEPRESSOR

**Robert B. Crossley, 201 Shangri-La,**
**Corpus Christi, Tex. 78412**
**Filed May 12, 1967, Ser. No. 638,050**
**Int. Cl. A61f** *13/12, 5/56;* **A61n** *1/08*
**U.S. Cl. 128—132** **10 Claims**



An anti-snore device consisting of a neckband to be worn by a sleeper. The neckband contains a microphone, a transistor amplifier, a high voltage-producing transformer, a supply battery, a relay and a pair of spaced electrodes. The electrodes are in contact with the sleeper's skin. The microphone is connected to the input of the amplifier and the relay winding is connected to the output of the amplifier. The primary of the high voltage-producing transformer is connected in series with the relay contacts and the supply battery. The amplifier is energized from the supply battery. Snore is detected by the microphone to produce output signal waves of corresponding pitch, causing intermittent closure at this frequency of the relay contacts, thereby inducing a high voltage across the electrodes designed to shock the sleeper and to condition him against snoring.

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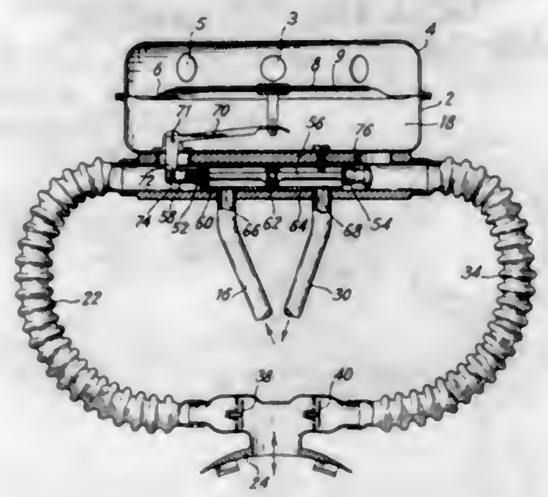
### 3,480,011
### DEVICE FOR DISCHARGING THE GASES EXHALED BY THE WEARER OF A RESPIRATORY APPARATUS

**Jacques Yves Cousteau, Monaco, and Emile Gagnan, Paris, France, assignors to La Spirotechnique**
**Filed Mar. 7, 1966, Ser. No. 532,354**
**Int. Cl. A62b** *7/04, 11/00*
**U.S. Cl. 128—142.2** **4 Claims**



A demand breathing device has a demand pressure-reducing valve for a breathable mixture and valve means for directing the exhaled gases to a gas recovery apparatus. The valve means comprises a pair of spaced pistons that move together inside a cylinder, and the pistons are moved by a diaphragm which separates the interior of a chamber from the ambient medium. This chamber communicates with the cylinder, and the cylinder communicates with a source of breathable mixture, and with a mouthpiece through which mixture may be inhaled and exhaled, and with an exhaust for exhaled gas.

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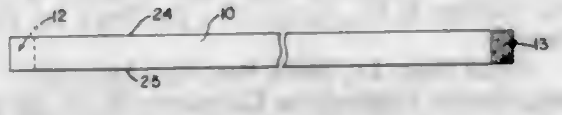
### 3,480,012
### BANDAGE WRAP

**John A. Smithers, 741 23rd Ave. Court, and William A. Murray, 3205 15th St. A, both of Moline, Ill. 61265**
**Filed Feb. 27, 1967, Ser. No. 618,810**
**Int. Cl. A61f** *13/06;* **A61m** *15/00*
**U.S. Cl. 128—165** **6 Claims**



A fabric wrap composed of an elongated fabric having exposed crimped fibers on opposite sides thereof and further having patches of minute hook elements projecting from opposite surfaces at opposite ends of the wrap adapted to engage and grip the crimped fibers of the wrap upon their coming into contact with a surface of the wrap. A pair of patches of hook elements on at least one end of the fabric wrap and relatively closely spaced apart lengthwise of the wrap and on the same side thereof.

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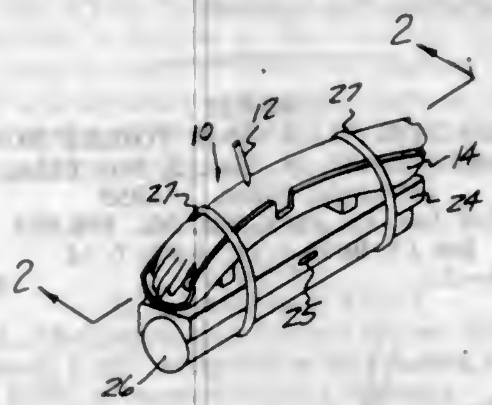
### 3,480,013
### LIMB RESTRAINT FOR INTRAVENOUS INJECTIONS AND THE LIKE

**Max J. Garber, 24718 Templar, Southfield, Mich. 48075**
**Filed May 24, 1967, Ser. No. 640,963**
**Int. Cl. A61f** *5/37, 13/10*
**U.S. Cl. 128—133** **12 Claims**

A restraint for securing a limb for medical treatment consists of an elongated section concavely contoured to the general configuration of the limb and the attitude in which it is to be disposed and having upstanding sidewalls. Grooves are formed in the sidewalls at the proper point of application of a tourniquet to the limb. The restraint is joined to an elongated base having a flat upper surface and an axially concave under-surface by means of male and female projections on the restraint and the base. The base has an aperture for receiving straps for securing it to a fixed member or it may be fixed to an elongated sandbag by means of tape.



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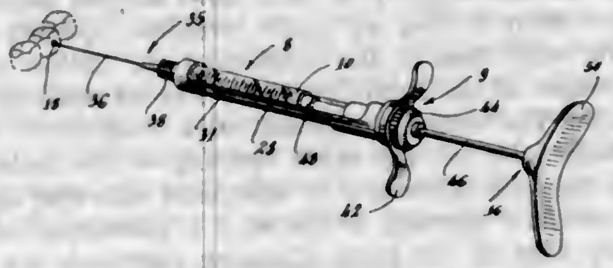
### 3,480,014
### METHOD FOR OINTMENT STORAGE AND DISPENSING

**John C. Callahan, Orangeburg, N.Y., assignor to American Cyanamid Company, Stamford, Conn.**
**Filed Sept. 15, 1966, Ser. No. 579,705**
**Int. Cl. A61m** *35/00;* **A61j** *3/04*
**U.S. Cl. 128—261** **1 Claim**



Air sensitive medicinal ointment is pre-packaged in an air- and moisture-tight cartridge assembly in which it is stored and from which it is then directly dispensed by means of a syringe applicator. The cartridge is reversible in structure so that either end may be used for dispensing, and the cartridge stoppers maintain sealing for multiple dosage applications.

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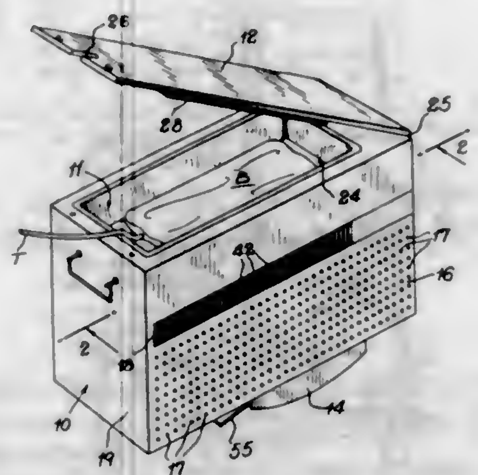
### 3,480,015
### APPARATUS FOR COLLECTING AND COOLING BLOOD

**Frank A. Gonzalez, New York, N.Y., assignor to Medical Electroscience, Inc., New Hyde Park, N.Y., a corporation of New York**
**Filed May 12, 1967, Ser. No. 638,142**
**Int. Cl. A61m** *1/03;* **A61f** *7/00*
**U.S. Cl. 128—276** **8 Claims**



Apparatus for collecting and cooling blood in a flexible bag placed in a pan within a box. The box contains a system for directly refrigerating the pan by extracting heat therefrom. The box has rockers formed with a compound curve surface to enable the box to be rocked by a motor driven mechanism to gently agitate the blood collected in the bag.

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### 3,480,016
### SANITARY PRODUCTS

**John R. Costanza, North Plainfield, and Michael Dunay, Fanwood, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 702,511, Feb. 2, 1968. This application Sept. 3, 1968, Ser. No. 757,164**
**Int. Cl. A61f** *13/16;* **B32b** *5/06, 5/22*
**U.S. Cl. 128—284** **18 Claims**

Toilet-flushable sanitary products capable of absorbing body discharge such as diapers and sanitary napkins are disclosed which have excellent dry and wet strength and which comprise a scrim or paper of biodegradable fibers such as cellulosic fibers bound together by a resin possessing certain critical characteristics including the fact that it is stable to body discharge but capable of being degraded in a toilet system upon the addition of a suitable substance and padding of unbonded water-dispersible absorbent material.

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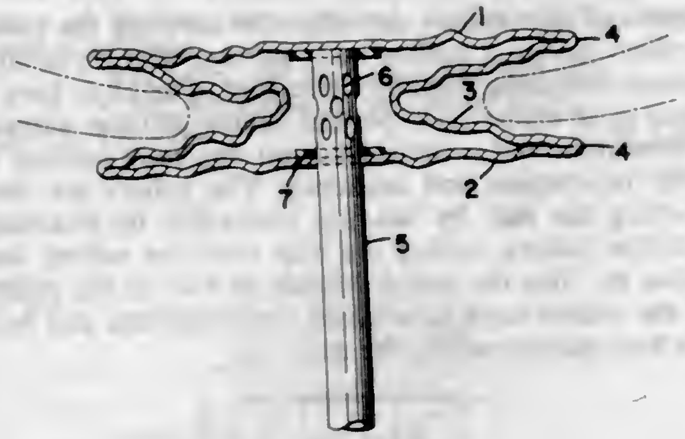
### 3,480,017
### CERVICAL DILATOR

**Wallace B. Shute, 300 Island Park Drive, Ottawa, Ontario, Canada**
**Filed Apr. 5, 1967, Ser. No. 628,727**
**Claims priority, application Canada, Apr. 27, 1966, 958,955**
**Int. Cl. A61m** *29/02, 7/02*
**U.S. Cl. 128—344** **11 Claims**



A cervical dilator comprising a fluid-tight container formed from a flexible material and insertable in a collapsed state into the cervical canal, inlet means in said container for allowing intermittent introduction of fluid under pressure to alternately inflate said container such that a peripheral radial wall of said container expands radially to directly contact the walls of said canal and deflate said container so as to cause dilatation of the cervix and simulate the effects of labour contraction, the ends of said container being adapted to limit axial expansion of said container during inflation and the peripheral wall of said container having a portion intermediate the ends thereof providing a waist portion of reduced dimensions in the freely inflated state of said container for location and retention of the edges of the cervical os during inflation and deflation of the container when inserted into the cervical canal.

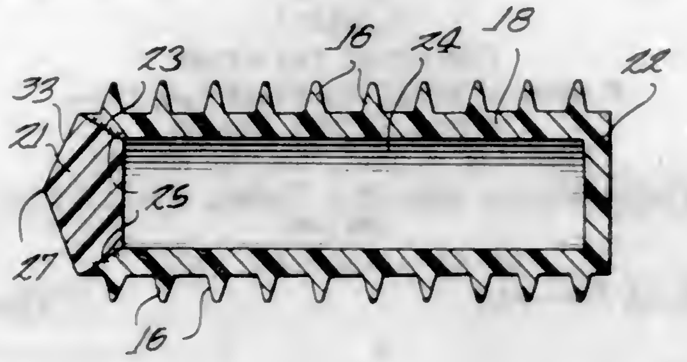
### 3,480,018
### GELLED TOBACCO SHEETS AND METHOD OF MAKING SAME

**William P. Fairchild, San Diego, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware**
**No Drawing. Filed Apr. 6, 1967, Ser. No. 628,846**
**Int. Cl. A24b** *3/14, 15/08*
**U.S. Cl. 131—17** **25 Claims**

Process for preparing a tobacco sheet material having improved moisture resistance properties and improved release from the casting surface on which the sheet is formed. A tobacco slurry containing water, ground tobacco, a humectant, an Xanthomonas hydrophilic colloid and locust bean gum is formed into a continuous sheet on a casting surface such as a stainless steel surface, while either the slurry or the casting surface, or both of them, are at a temperature of about 115° F., or higher, after which the continuous sheet is dried and removed from the casting surface.

### 3,480,019
### ROLLER, CLIP AND COMPOSITION OF MATTER

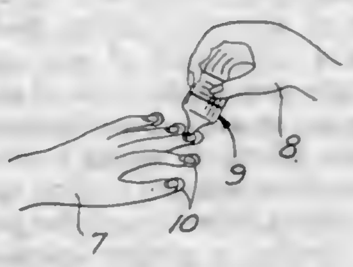
**Samuel J. Popeil, 2920 N. Commonwealth Ave., Chicago, Ill. 60657**
**Continuation-in-part of application Ser. No. 551,320, May 19, 1966. This application Dec. 26, 1967, Ser. No. 693,432**
**Int. Cl. A45d** *2/12*
**U.S. Cl. 132—40** **9 Claims**



Improved hair rollers and clips for securing the same, the rollers having a hollow body portion with a plurality of spines extending radially therefrom. The clips have a circular open ended body portion having two legs extending therefrom, and a looped tab on the body portion to provide orientation and resiliency. The rollers are used for setting the hair by heating, preferably by steaming, the hollow rollers, rolling the hair over the rollers, and securing by clips the rolled strands of hair to the rollers until the rollers have transferred their moisture and heat to the hair thereby setting the curl.

### 3,480,020
### MANICURE MEANS

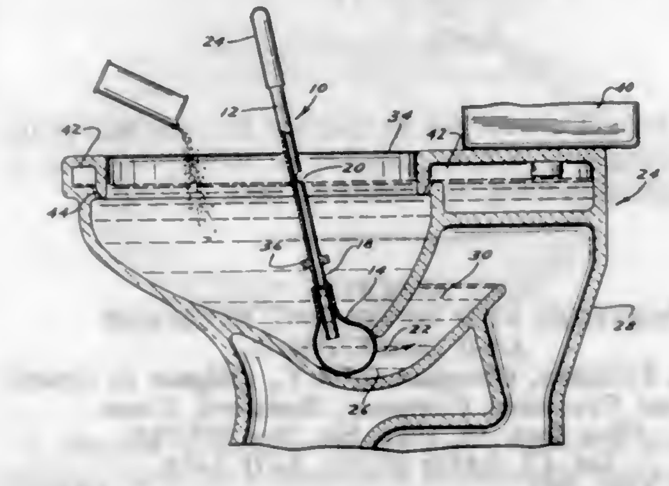
**Frances H. Ernest, 6546 Archdale Ave., Detroit, Mich. 48228**
**Filed Nov. 23, 1966, Ser. No. 596,701**
**Int. Cl. A45d** *40/30*
**U.S. Cl. 132—88.5** **2 Claims**



This application discloses the means and method for measuring, mixing and applying material for building up, strengthening and elongating finger nails. The invention resides in the provision of a two piece, telescoping, calibrated, squeeze type receptacle, having an applicator discharge end and a template for use in applying the build up material to the free ends of the nails, and the method of applying the material.

### 3,480,021
### METHOD FOR CLEANING TOILET BOWLS

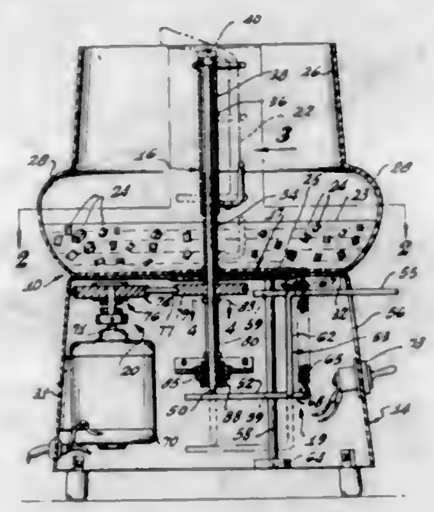
**John N. Ewald, Jr., Rte. 3, Box 242A, Litchfield, Minn. 55355**
**Filed Jan. 18, 1968, Ser. No. 698,852**
**Int. Cl. B08b** *3/08;* **A47k** *1/14*
**U.S. Cl. 134—24** **5 Claims**



The method employs a toilet bowl stopper including a hollow stem having an upper overflow opening and a hollow bulb open to the interior of the hollow stem at the botom of the stem. The bulb has an opening therethrough. The stopper is placed in a toilet bowl so that the bulb seals off the drain opening of the toilet bowl while the bulb opening is in alinement with that opening. The overflow opening in the stem is positioned adjacent the top edge of the bowl. Cleaning chemicals are added to the bowl and the bowl flushed. The water will fill the bowl and the excess will pass out through the stem overflow opening. Thus the chemicals added to such water will act to clean the entire bowl, and not just that portion thereof normally below the trap water level. Pressure of the water holds the stopper in place. When cleaning action is complete, the stopper is removed to allow the water to flow out of the drain until the normal trap water level is established.

### 3,480,022
### CLEANING DEVICE FOR EYEGLASSES

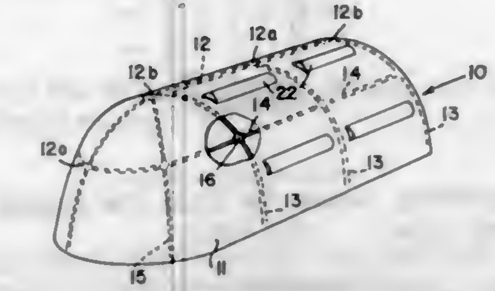
**Joseph W. Richardson, 80—209 Ave. 50, and Dal C. Woodhouse, 50—462 Jefferson St., both of Indio, Calif. 92201**
**Filed Aug. 25, 1967, Ser. No. 663,296**
**Int. Cl. B08b** *3/10, 11/02*
**U.S. Cl. 134—112** **10 Claims**



Apparatus for cleaning eyeglasses having a bowl containing a suitable cleaning fluid and a centrally mounted, rotatable eyeglass supporting rack. An actuating lever mechanism is provided for lowering and raising the rotating rack and eyeglasses into and out of the cleaning fluid. Suitable and drying rotational speeds are provided by a friction clutch. A portion of the bowl has an interrupted annular concave shape to cause the cleaning fluid to flow upwardly and inwardly over the glasses as they are rotated. An alternate form of the driving mechanism provides automatic raising and lowering of the supporting rack.

### 3,480,023
### COLLAPSIBLE TENT

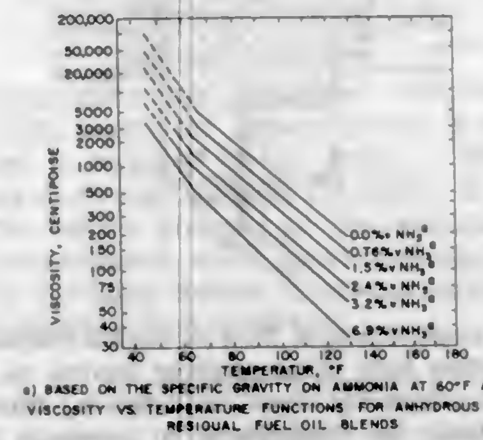
**John A. McConnell and Everett Wayne Williamson, Newark, Calif., assignors to McConnell, Inc., Newark, Calif., a corporation of California**
**Filed May 31, 1968, Ser. No. 733,383**
**Int. Cl. A45f** *1/00*
**U.S. Cl. 135—1** **1 Claim**



Tent structure adapted to cover different areas. The flexible tent cover is supported by lightweight resilient structural members which are bowed to form arches and have the bottom end parts thereof clamped in sockets pivotally attached to stakes which are adapted to be spaced at predetermined distances depending upon the amount of arching of the structural members and height of the tent.

### 3,480,024
### PIPELINE TRANSPORTATION OF LIQUID ANHYDROUS AMMONIA AND LIQUID HYDROCARBON SOLUTIONS

**Paul R. Scott, Houston, Tex., and Ronald F. Scheuerman, El Cerrito, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed Dec. 28, 1967, Ser. No. 694,242**
**Int. Cl. F17c** *1/04, 1/16*
**U.S. Cl. 137—1** **5 Claims**

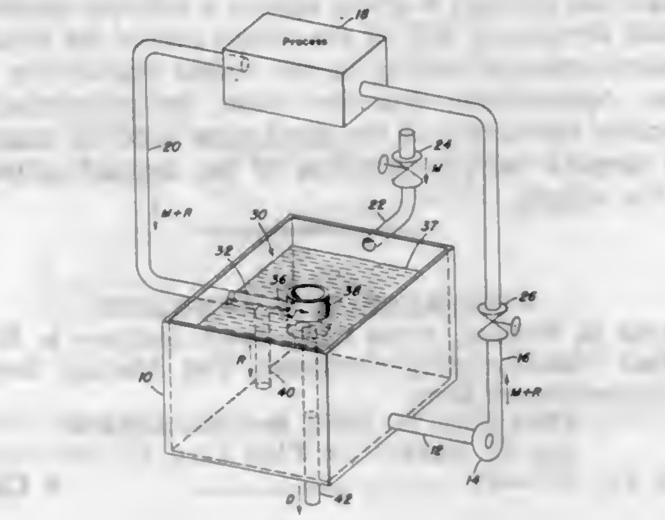


A method of transporting anhydrous liquid ammonia through pipelines as a solution in a liquid hydrocarbon.

### 3,480,025
### FLOW DIVIDER

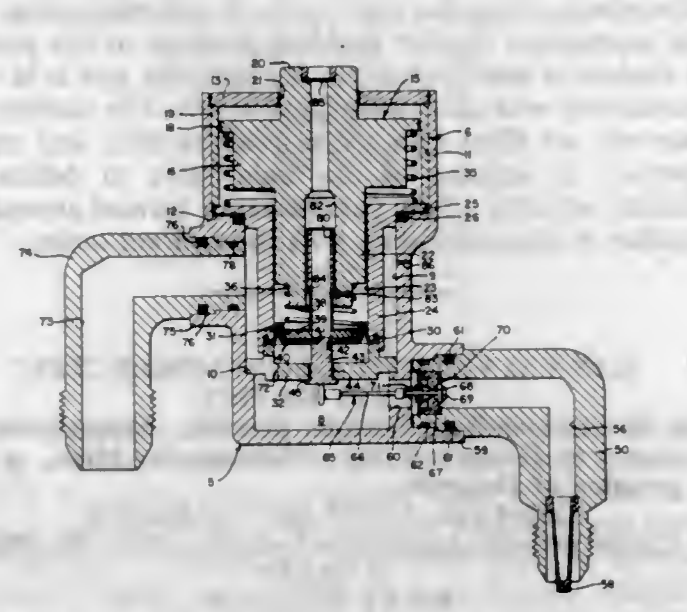
**Charles T. Hsu, Edison, and Geoffrey Hamer, Metuchen, N.J., assignors to American Standard Inc., New York, N.Y., a corporation of Delaware**
**Filed May 26, 1966, Ser. No. 553,239**
**Int. Cl. E03b** *1/00, 7/07;* **F16k** *21/18*
**U.S. Cl. 137—2** **2 Claims**

A flow recirculation system consisting of means for circulating a liquid to a process to be served by the system; a reservoir in the system for the recirculation liquid; means to supply the system with make-up liquid; and a flow divided means formed with an inlet passageway to receive the liquid from the process, and with a discharge passageway and recirculation passageway both in communication with the inlet passageway, the recirculation passageway being in communication with the liquid in the reservoir at a position below the normal liquid level in the reservoir whereby fluid in the reservoir seeks its own level in the recirculation passageway such that higher liquid levels in the reservoir and in the recirculation passageway divert greater amounts of liquid to the discharge passageway.



### 3,480,026
### VALVE RESPONSIVE TO CHANGES IN SPEED

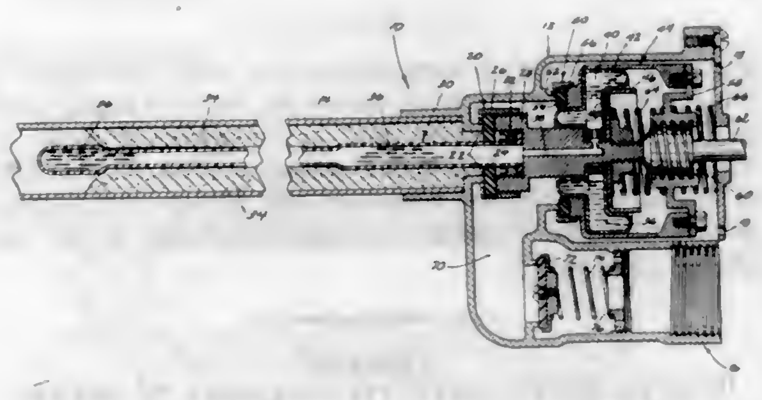
**James R. Phlipot, Hamburg, Lawrence H. Gill, Depew, and Earl W. Clifford, Getzville, N.Y., assignors to Aro of Buffalo, Incorporated, Buffalo, N.Y., a corporation of Ohio**
**Filed Oct. 16, 1967, Ser. No. 675,613**
**Int. Cl. G05d** *16/00;* **B64d** *25/02*
**U.S. Cl. 137—38** **9 Claims**



The present so-called anti-G valve has a sliding weight working in a bore closed at one end and which closed end has a pressurized gas inlet and an outlet. An exhaust passage extends through the weight with one end surrounded by a valve seat facing the closed end of the bore. A valve stem is slidingly mounted on the valve body to engage this seat and thereafter be moved by the weight to open a demand valve in the inlet thereby admitting pressurized gas to the closed end of the bore and thence through the outlet to the aviator's suit. On reverse movement of the weight, the demand valve closes and the weight leaves its seated engagement with the valve stem so as to exhaust the closed end of the bore, and its outlet, to ambient. As another feature, it is desirable to limit the maximum gas pressure to the suit, regardless of what the weight calls for. This is prevented by having the weight act through a spring against a follower-diaphragm which forms one wall of the closed end of the bore and controls effective seating of the weight against the valve stem. Approaching excessive value, the pressurized gas restrains movement of the diaphragm (and its action on the demand valve) regardless of the demand called for by the weight.

### 3,480,027
### NONFREEZABLE HYDRANT

**Wayne B. Noland, Avon Lake, Iowa, assignor to Woodford Manufacturing Company, Des Moines, Iowa, a corporation of Iowa**
**Filed Mar. 21, 1966, Ser. No. 535,820**
**Int. Cl. E03b** *9/14;* **F16k** *7/10, 11/10*
**U.S. Cl. 137—59** **6 Claims**

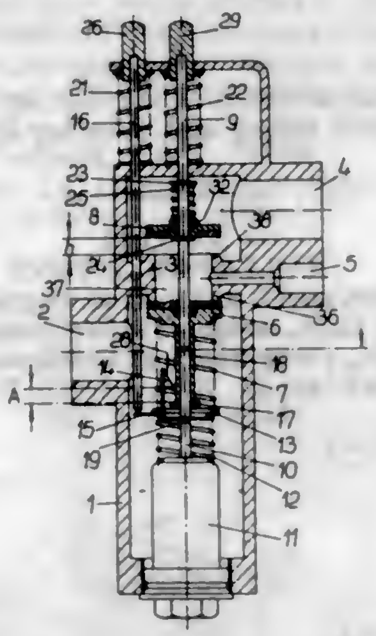


A hydrant having a valve assembly including a pair of valves which may be simultaneously closed or selectively opened such that when the inner or main valve controlling fluid flow through the hydrant is closed, the outer valve may be opened placing the hydrant housing portion downstream from the main valve in communication with the atmosphere thereby enabling drainage of this portion. A bladder is also disposed in the inlet line and is in communication with an expansible reservoir. The bladder and reservoir are filled with a non-freezable fluid and are responsive to opening of the main valve to deflate the bladder whereby a fluid passageway is formed around the bladder in communication with the hydrant outlet.

### 3,480,028
### GAS VALVE WITH A THERMOELECTRIC SAFETY DEVICE

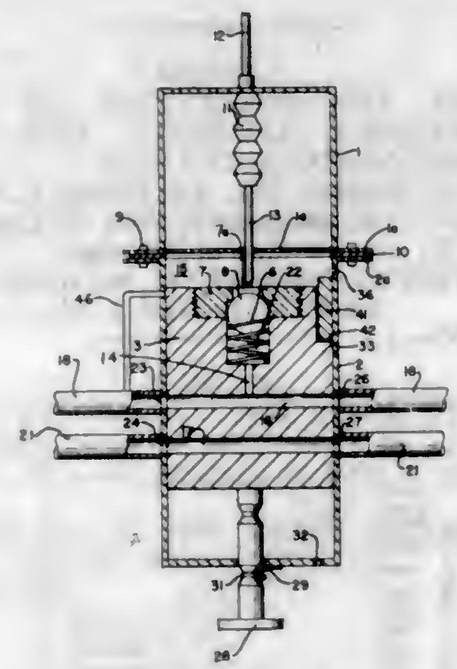
**Jan H. van der Zee, Emmen, Drenthe, Netherlands, assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**
**Filed Feb. 3, 1967, Ser. No. 613,870**
**Claims priority, application Germany, Mar. 19, 1966, H 58,853**
**Int. Cl. F23n** *5/24*
**U.S. Cl. 137—66** **6 Claims**

A 100% safety shut-off and safe-lighting gas valve, having a manually resettable and thermocouple energizable latching mechanism for the safety valve. In operation, a separate manual actuator is provided to deflect the latch and free the safety valve to close, without affecting the position of the remainder of the latching mechanism that otherwise would hold the valve open. The latching mechanism is such that the safety valve cannot be manually opened by the manual resetting means unless the latching mechanism is in its electrically released condition or position, where the latch can engage and pick up the safety valve.



### 3,480,029
### SHUTOFF VALVE

**Saxon Cole, Shrewsbury, Mo., assignor to American Air Filter Company, Inc., Louisville, Ky.**
**Filed Jan. 10, 1968, Ser. No. 696,856**
**Int. Cl. F16k** *31/143, 31/363*
**U.S. Cl. 137—79** **2 Claims**

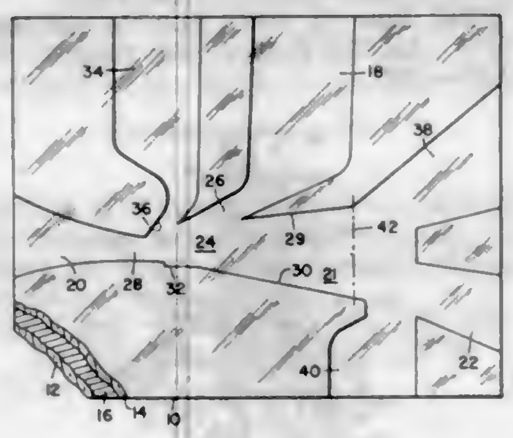


A valve to control flow of fluid through a conduit which includes a piston type valve member having an integral pilot valve to selectively divert fluid flowing through the valve and actuate the valve piston to terminate the flow of fluid through the valve.

### 3,480,030
### FLUIDIC DIODE

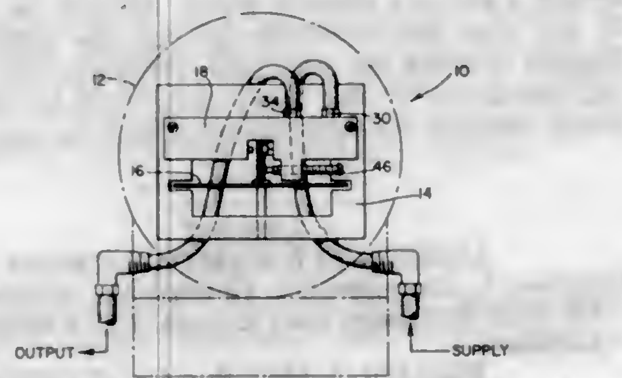
**Thomas W. Bermel, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York**
**Filed Mar. 18, 1968, Ser. No. 713,707**
**Int. Cl. F15c** *1/14*
**U.S. Cl. 137—81.5** **8 Claims**

A flow-type fluidic diode having first and second primary passages and at least one auxiliary passage which may consist of a vent. Fluid introduced into the first primary passage will, due to the wall attachment effect, issue from the the auxiliary passage. However, fluid introduced into the second primary passage will issue from the first primary passage.



### 3,480,031
### ELECTRO-PNEUMATIC TRANSDUCER

**Russell Emery Cushing, Gibraltar, Mich., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Oct. 14, 1965, Ser. No. 496,082**
**Int. Cl. F15b** *5/00;* **G05d** *16/20;* **G05f** *5/00*
**U.S. Cl. 137—82** **9 Claims**

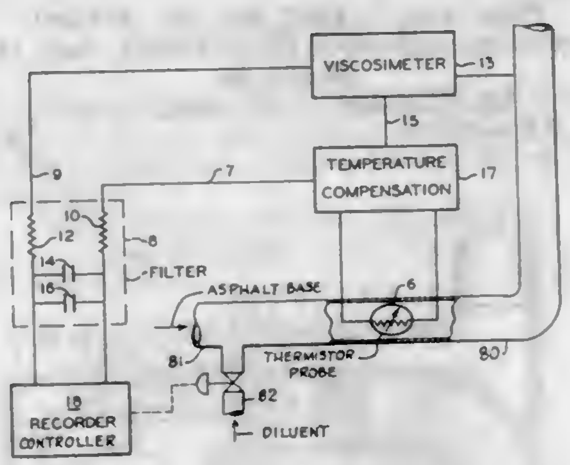


An electro-pneumatic transducer comprising a wattmeter torque motor for sensing power in an electrical circuit and in response thereto urging a flapper against the stream of air emitted from the nozzle of a pneumatic relay. The output pressure of the pneumatic relay is thereby proportionally modulated in response to electrical power for providing control of process variables dependent upon electrical load conditions.

### 3,480,032
### TEMPERATURE COMPENSATION FOR VISCOSITY MEASUREMENTS

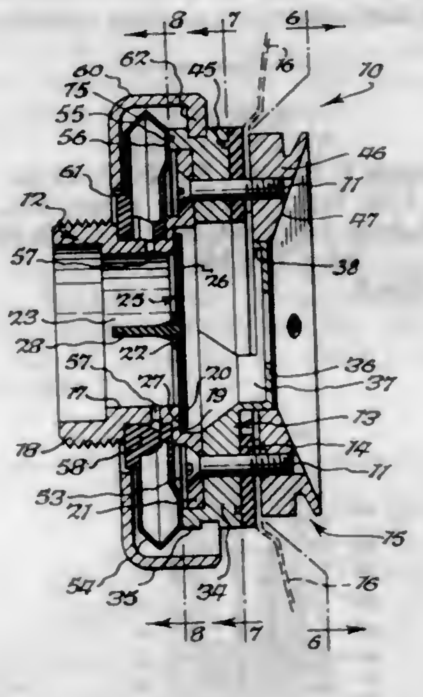
**Henry R. Collins, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**
**Filed Aug. 22, 1966, Ser. No. 574,038**
**Int. Cl. G05d** *11/02;* **G01n** *11/02*
**U.S. Cl. 137—92** **9 Claims**

A viscosity measuring device, which produces a first output signal representative of a measurement of the viscosity of a first fluid, is combined with a temperature compensating circuit which produces a second output signal representative of the difference between the viscosity of a given fluid at the temperature of the said first fluid and the viscosity of said given fluid at a reference temperature, to produce a composite output signal representative of the viscosity of said first fluid at the reference temperature.



### 3,480,033
### INHALATION-EXHALATION VALVE

**Robert L. Holloway, Snyder, N.Y., assignor, by mesne assignments, to "Automatic" Sprinkler Corporation of America, doing business as The Illuminating Building, Cleveland, Ohio, a corporation of Ohio**
**Filed Aug. 10, 1967, Ser. No. 659,766**
**Int. Cl. A61m** *15/00;* **G05d** *7/01*
**U.S. Cl. 137—102** **8 Claims**

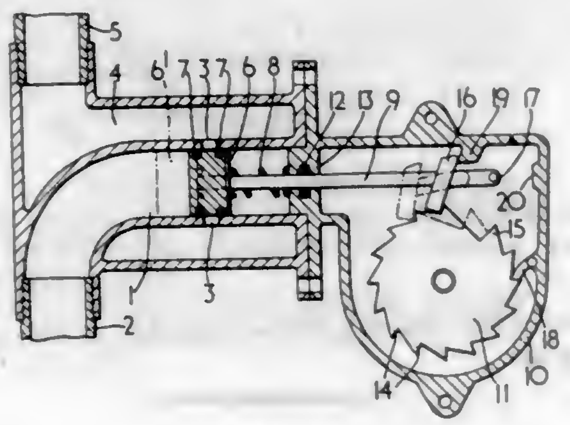


The inhalation-exhalation valve comprises a valve body having a breathing fluid inlet passage including a branch conduit for transmitting breathing fluid along the face mask to prevent fogging. An exhaust conduit opens from the face mask through the valve body into an annular chamber. Exhaled air is vented from the annular chamber under control of an inflatable annulus seated in sealing engagement with an annular valve seat. Breathing fluid at inlet pressure flows from the inlet passage through an orifice in the valve body into the annulus to maintain the same inflated and in sealing engagement against the seat. The exhalation pressure acts on an annulus area smaller than the annulus area subject to inlet pressure whereby exhalation pressure in excess of inlet pressure is required to unseat the annulus.

### 3,480,034
## VALVE RESPONSIVE TO A PULSATING FLUID PRESSURE

**Maurice William Jerome, Ringwood, England, assignor to Wright Rain Limited, Crowe, Ringwood, Hampshire, England**

**Filed Aug. 7, 1967, Ser. No. 658,687**
**Claims priority, application Great Britain, Aug. 26, 1966, 38,384/66**
**Int. Cl. G05d** *11/00;* **A01g** *25/02*
**U.S. Cl. 137—119** **4 Claims**



A valve, particularly for controlling a water sprinkler, including a valve member biased to a closed position and movable therefrom towards an open position in response to pulses of fluid pressure applied through a supply pipe to said valve member. The valve also includes a ratchet device preventing said valve member from entering said open position until a predetermined number of fluid pressure pulses has been applied to said valve member subsequent to the immediately preceding opening thereof.

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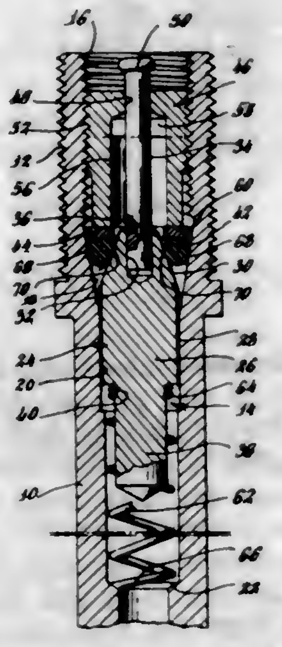
### 3,480,035
## VALVE CORE

**Joseph J. Szanto, Fairfield, Conn.**
**(8560 NW. 15th St., Pembroke Pines, Fla. 33024)**

**Filed June 14, 1967, Ser. No. 646,085**
**Int. Cl. F16k** *15/20*
**U.S. Cl. 137—234.5** **7 Claims**



An improved valve core having a unitary sealing ring loosely encircling a conical valve seat, the sealing ring forming both the static and dynamic seals when the valve core is located in a valve stem.

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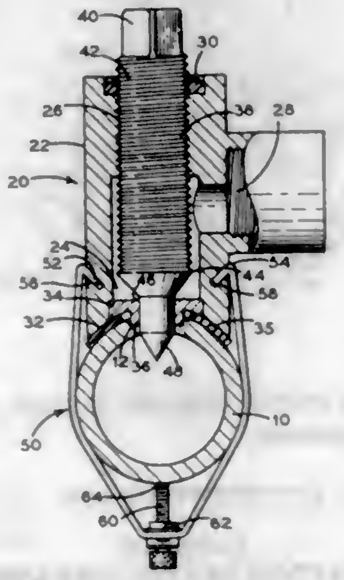
### 3,480,036
## LINE TAP VALVE AND METHOD FOR TAPPING INTO A PIPELINE

**Henry Ehrens, Bayside, N.Y., and Sidney Weiner, Cresskill, N.J., assignors to Sealed Unit Parts Co., Inc., Allenwood, N.J., a corporation of New York**

**Filed June 14, 1967, Ser. No. 645,924**
**Int. Cl. F16l** *41/06, 55/00*
**U.S. Cl. 137—318** **9 Claims**



The wall of a pipeline has drilled therein a pilot hole which does not completely pass through the wall. A line tap valve which includes a valve body carrying a valve stem through a valve chamber is fitted onto the pipeline by means of a strap. The bottom end of the valve chamber is closed off by a washer with a centerbored boss. The boss fits into the pilot hole. An end of the valve stem having a piercing element passes through the centerbore of the boss and is driven through the portion of the pipeline opposite the pilot hole. Thereafter the propelling and retraction of the valve stem provides the valving action between the valve chamber and the pipeline.

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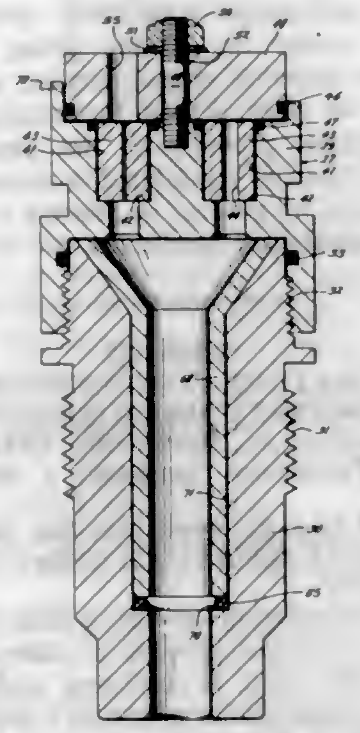
### 3,480,037
## ADJUSTABLE POSITIVE CHOKE

**Granison T. Alexander, Jr., Houma, La., assignor to Gem Oil Tool Company, Inc., Houma, La., a corporation of Louisiana**

**Filed Oct. 6, 1967, Ser. No. 673,498**
**Int. Cl. F16k** *5/10, 43/00;* **E21b** *43/12*
**U.S. Cl. 137—329.06** **11 Claims**



An adjustable positive choke for controlling fluid flow through a conduit. It is particularly useful as a wellhead valve for controlling the flow of fluid from an oil well, for example. The choke includes a plurality of flow bean inserts having axial bores therethrough which may be of the same cross sectional area or different cross sectional areas whereby fluid flow through the choke may be selectively controlled through each of the flow bean inserts, thereby providing an adjustable choke, which choke has a positive size orifice in each flow position.

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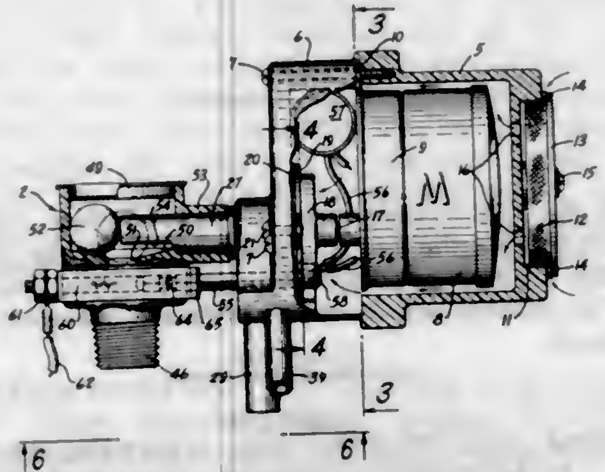
### 3,480,038
## PULSATOR UNIT FOR MILKING MACHINE

**Clifford G. Simons, Delavan, Wis., assignor, by mesne assignments, to Sta-Rite Industries, Inc., Delavan, Wis., a corporation of Wisconsin**

**Filed Feb. 1, 1965, Ser. No. 429,279**
**Int. Cl. A01j** *5/14;* **F16k** *31/04*
**U.S. Cl. 137—550** **6 Claims**



The invention relates to a portable pulsator unit to be associated with a milking machine. The pulsator unit includes a casing which houses a motor that acts to drive a rotary valve assembly to alternately connect the milking machine to vacuum and atmospheric pressure.

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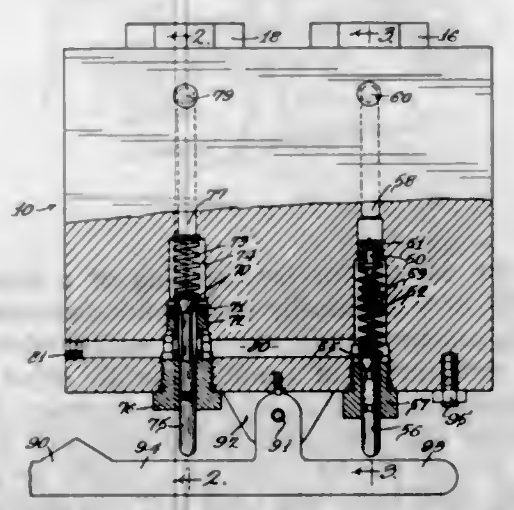
### 3,480,039
## CONTROL VALVE

**Edward O. Brannon and Irving J. Petersen, Racine, Wis., assignors to Racine Hydraulics, Inc., a corporation of Wisconsin**

**Filed Feb. 26, 1968, Ser. No. 708,273**
**Int. Cl. F16k** *11/14, 11/18*
**U.S. Cl. 137—596.2** **8 Claims**



This invention relates to a three-way control valve having a pair of poppet valve members under the control of a pair of pilot valves provided for control of an operated member connected to a control port of the control valve to have flow either to or from the operated member or to provide a neutral, hold, position, with one of the poppet members functioning as a leakproof check valve and with the poppet members each performing as metering or feathering valves in alternate directions of movement of the operated member and with provision made for one of the pilot valves to function as a relief valve for system pressure.

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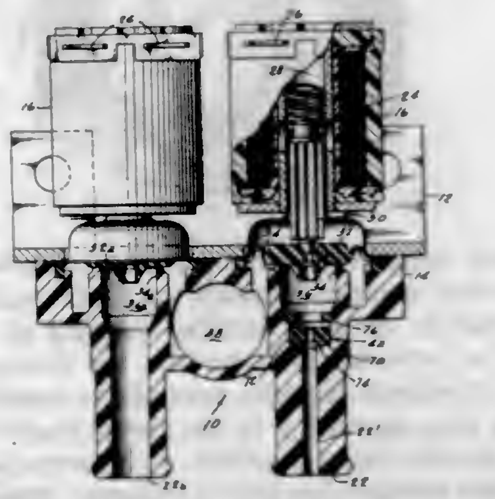
### 3,480,040
## SINGLE-INLET, DOUBLE-OUTLET VALVE

**Howard L. Erickson, Bensenville, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois**

**Filed Oct. 20, 1965, Ser. No. 498,417**
**Int. Cl. F16k** *11/22, 11/24*
**U.S. Cl. 137—608** **7 Claims**



A single-inlet, double-outlet valve to control fluid flow including a valve body having respective zones in communication with the inlet and outlets, a pair of flexible diaphragms for selectively closing and opening communication between the zones, a pair of solenoids operatively associated with the flexible diaphragms, and a first fluid control means in the inlet of the valve and a second fluid flow control means in one of the outlets.

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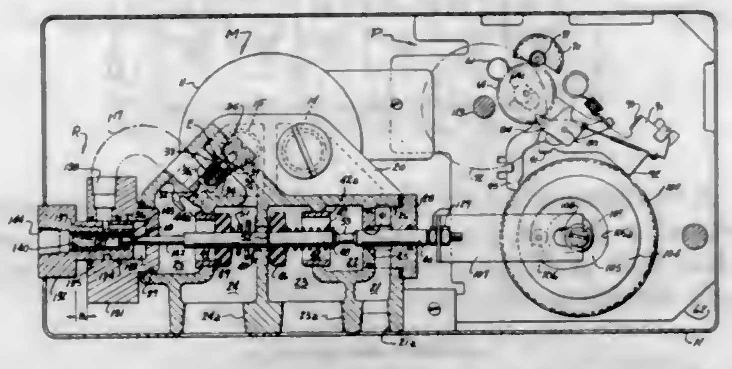
### 3,480,041
## TIMER CONTROLLED WATER SOFTENER VALVE

**Robert A. Whitlock, Rockford, Ill., assignor to Aqua-Matic Inc., Rockford, Ill., a corporation of Illinois**

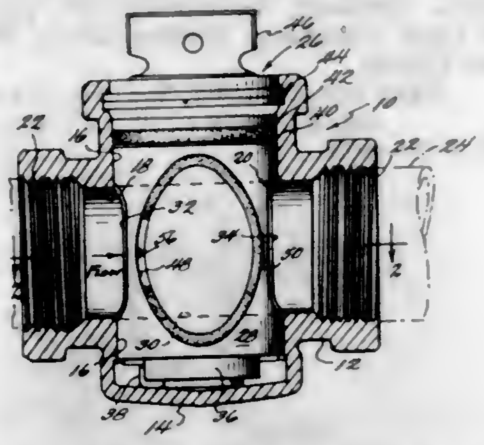
**Filed Aug. 23, 1965, Ser. No. 481,718**
**Int. Cl. G04c** *23/26;* **G05d** *7/06*
**U.S. Cl. 137—624.2** **21 Claims**



A multiport valve and a valve element therein which is movable between two extreme positions. A program clock is provided which includes a synchronous motor and a time indicator driven by the motor. A mechanical drive is interposed between the time indicator and the valve element and connected to the valve element for driving the same between its positions. Presettable means is provided for periodically engaging the time indicator with the mechanical drive to drive the valve element so that the synchronous motor is the prime mover for the valve element. A regenerant valve is mounted on the multiport valve and the valve element controls the flow through the regenerant valve.

### 3,480,042
### O-RING SEAL SEATING ARRANGEMENT FOR ROTARY PLUG VALVE

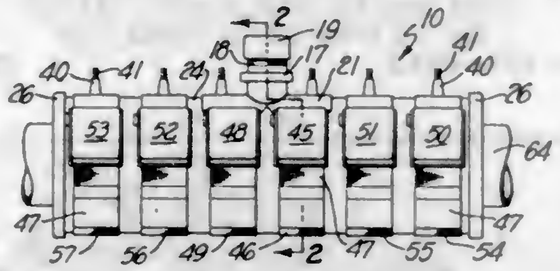
**Frank H. Mueller and William L. Hauffe, Decatur, and William A. Hood, Cerro Gordo, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois**
**Filed Oct. 12, 1967, Ser. No. 674,863**
**Int. Cl. F16k** *11/02, 5/04;* **F16j** *15/40*
**U.S. Cl. 137—625.22 7 Claims**



A rotary plug valve having a plug member rotatable in a housing member between an open position and a closed position, the plug member carrying an O-ring seal in a groove provided in its surface, the O-ring seal being adapted to encircle the inlet port of the housing member when the plug member is in the closed position, the plug member further being provided with means for relieving the pressure beneath the O-ring seal and creating a differential pressure across the O-ring seal to cause the same to be drawn into the groove on the plug as the plug member approaches the full open position.

### 3,480,043
### EMERGENCY LEAK CLAMP

**Ward M. Proudfoot, Palos Verdes Estates, Burnie M. Craig, Pasadena, and Albert D. Viancour, Monterey Park, Calif., assignors, by mesne assignments, to Ward M. Proudfoot, Palos Verdes Estates, Calif.**
**Filed Jan. 12, 1967, Ser. No. 608,883**
**Int. Cl. F16l** *55/16*
**U.S. Cl. 138—99 2 Claims**

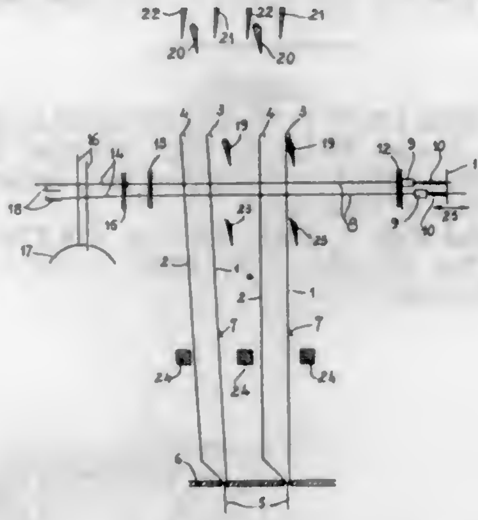


A resilient, inflatable pipe clamp which can be wrapped around a pipe in place, over a rupture in the pipe and while fluid is discharging therefrom, and inflated to stop such discharge of fluid.

### 3,480,044
### DOUBLE-LIFT JACQUARDS OPERATING WITH REVERSE SELECTION

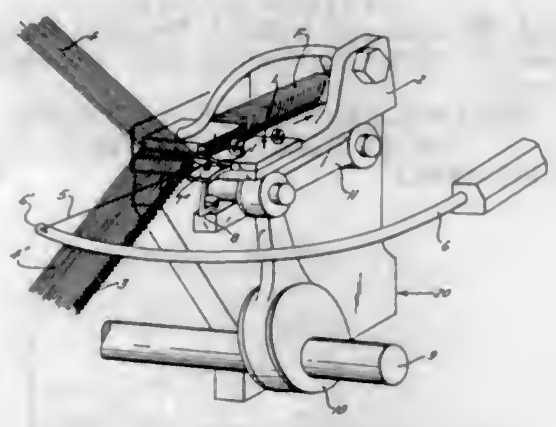
**Gabriel Servillat, Saint-Cyr-au-Mont-d'Or, France, assignor to Societe des Mecaniques Verdol, Lyon, Rhone, France, a French limited liability company**
**Filed Feb. 16, 1968, Ser. No. 706,140**
**Claims priority, application France, Feb. 28, 1967, 48,339**
**Int. Cl. D03c** *3/06;* **D03d** *49/02*
**U.S. Cl. 139—59 4 Claims**

In a double-lift Jacquard operating with reverse selection, i.e. wherein, when unactuated by the selecting means of the Jacquard, the spring-loaded needles which control the double hooks maintain the latter at a position for which they escape the action of the knife frames which strokes and on the contrary decreased when one of the reciprocate vertically with a phase difference of 180°, the reaction of the needle-loading springs is increased when the said frames are midway of their respective frames reaches the end of its descending stroke. For this purpose the perforated plate against which the springs rest may be reciprocated in unison with the operation of the Jacquard.



### 3,480,045
### LOOM ATTACHMENT FOR WEAVING SLIDE-FASTENER ELEMENTS ONTO TAPES

**Ruggero Dal Negro, Milan, Italy, assignor to Italo Americana Prentice S.p.A., Milan, Italy, a corporation of Italy**
**Filed July 27, 1967, Ser. No. 656,405**
**Claims priority, application Italy, Aug. 9, 1966, 774,992/66**
**Int. Cl. D03d** *49/50, 49/68, 47/00*
**U.S. Cl. 139—116 6 Claims**



In a loom set up for the weaving of a stringer tape designed to carry a helically coiled slide-fastener element, a retaining attachment is provided which releasably engages the weft thread at a point laterally offset from the warp, adjacent an edge to which the fastener element is to be secured and approximately in line with the fell of the cloth, a weft carrier (such as a needle or a shuttle) entering the shed from that edge and entraining the weft thread while holding it clear of the fastener element; as the weft carrier approaches or reaches the end of its traverse, the attachment releases the weft thread which thereupon enters between turns of the coiled element near the fell. Upon the return of the weft carrier, an extension of the lay re-engages the projecting part of the weft thread with the retaining attachment as the previously inserted filling is beaten against the cloth.

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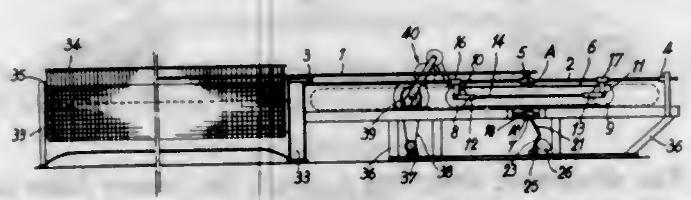
### 3,480,046
### DRIVING MECHANISM FOR THE WEFT INSERTERS OF SHUTTLELESS LOOMS

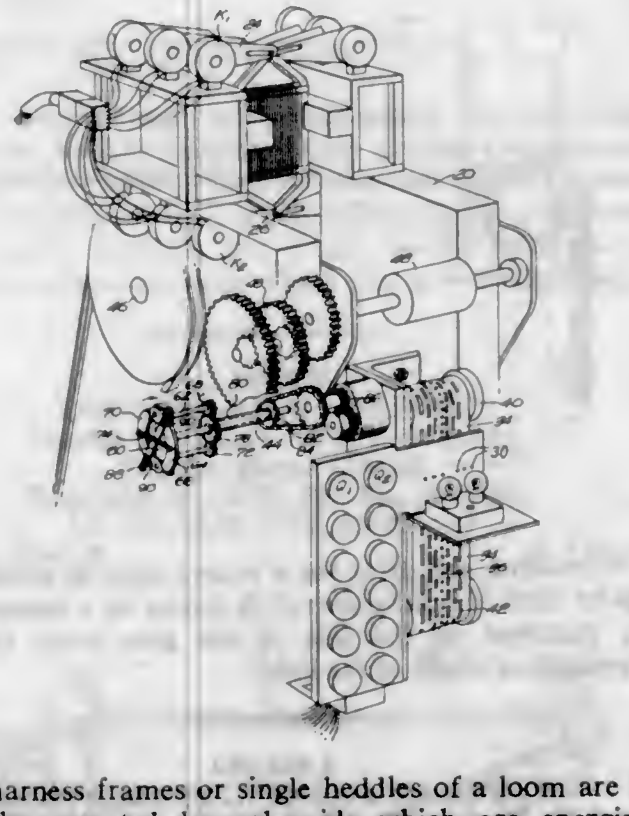
**Antonio Camarasa Monge, 36 Avenida General Mola, Madrid, Spain**
**Filed Jan. 29, 1968, Ser. No. 701,343**
**Claims priority, application Spain, Jan. 31, 1967, 336,782**
**Int. Cl. D03d** *47/00*
**U.S. Cl. 139—122 2 Claims**



The weft inserter is carried for rectilinear reciprocating movement by a carrier member which slides on a bar. From the same bar, rotatable pulleys are suspended by means of forks arranged at either side of the carrier member. The pulleys carry an endless belt to one run of which the carrier member is fixedly attached. The entire pulley-belt system is reciprocated. During the reciprocating movement, the other run of the belt is held at a fixed point so that the belt moves with respect to the moving system and the weft inserter travels in a rectilinear path double the length of the travel of the system.

### 3,480,047
### PATTERN CONTROL MECHANISM FOR LOOMS

**Carl F. Libby, Stoughton, Mass., assignor to John D. Riordan, Hopkinton, and Gertrude C. Libby, Stoughton, Mass., trustees of the Libby Family Trust**
**Continuation of application Ser. No. 657,329, July 31, 1967. This application Jan. 10, 1969, Ser. No. 796,273**
**Int. Cl. D03d** *49/00, 45/10*
**U.S. Cl. 139—319 9 Claims**

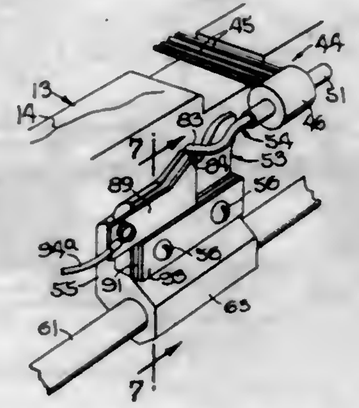


The harness frames or single heddles of a loom are individually operated by solenoids which are energized by circuits by which each frame is pulled to its raised or lowered position according as a photo-electric element associated with the frame is activated or deactivated. A spring for each frame tends to hold it yieldingly in a mid-position, whereby the initial half of an up or down movement of a frame during which the pull of the solenoid is weakest is assisted by the spring.

If the drive of the belt is synchronized with the weft-laying mechanism for low and moderate speeds, as it should be, the shed-changes lag somewhat when the loom is operated at high speeds. A governor is connected into the driving means for the belt and operates to advance the timing of the belt drive in accordance with the speed of operation of the loom.

### 3,480,048
### FILL BREAK DETECTOR FOR A LOOM

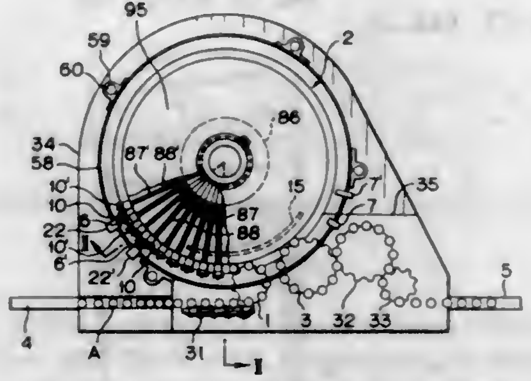
**Paul E. Block, South Beloit, Ill., assignor to Warner Electric Brake & Clutch Company, South Beloit, Ill., a corporation of Delaware**
**Filed Feb. 12, 1968, Ser. No. 704,623**
**Int. Cl. D03d** *51/18, 51/44, 51/28*
**U.S. Cl. 139—374 6 Claims**



For stopping a loom in the absence of a filling thread, a fill break detector includes a feeler normally projecting into the path of a reciprocating shuttle in resting engagement with the thread last drawn from the shuttle and adapted to be retracted clear of the path by a cam before the next pass of the shuttle. After each such pass, the feeler is returned to the path and, if a correctly tensioned filling thread is not present to limit the return of the feeler, the latter falls to an abnormal position causing one electrical terminal on the feeler to contact a second terminal on the cam and thereby produce an electric signal indicating the thread absence. A circuit including the two terminals responds to the signal to stop the loom by energizing an electromagnetic brake and de-energizing an electromagnetic clutch interposed in the loom drive.

### 3,480,049
### BOTTLE FILLING APPARATUS

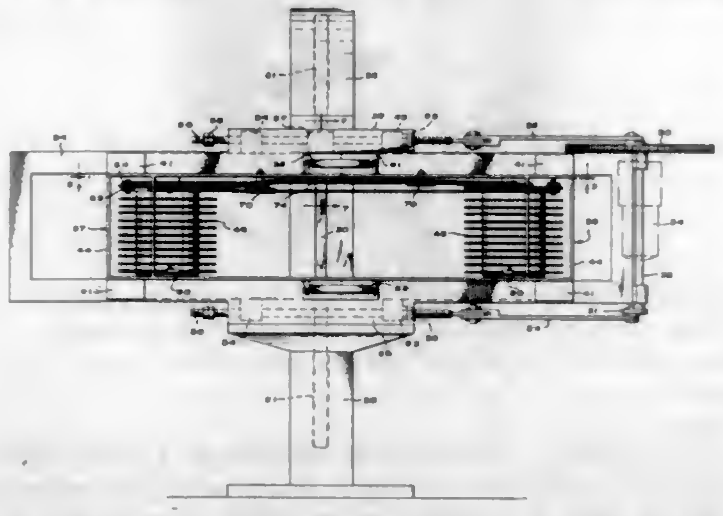
**Sadao Noguchi, Nagoya-shi, Japan, assignor to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan**
**Filed June 14, 1966, Ser. No. 557,521**
**Int. Cl. B65b** *57/02*
**U.S. Cl. 141—141 7 Claims**



A bottle filling apparatus comprises a turntable rotatable about a vertical axis and having a single row of bottle supports extending around its periphery, each bottle support being aligned with a filling valve. The bottle supports are divided into two groups, with the supports of each group alternating with each other. The filling valves associated with one group are at a level different from the filling valves associated with the other group, and each group has a respective pair of valve actuators associated therewith, one for opening the associated valves and the other for closing the associated valves. When there is no bottle on a support, the latter can be raised to a level higher than when there is a bottle on the support, and such raising operates trigger mechanism for retracting the associated valve opening stop when the empty support reaches the angular position of the latter.

### 3,480,050
### SHAKE-SAWING MACHINE

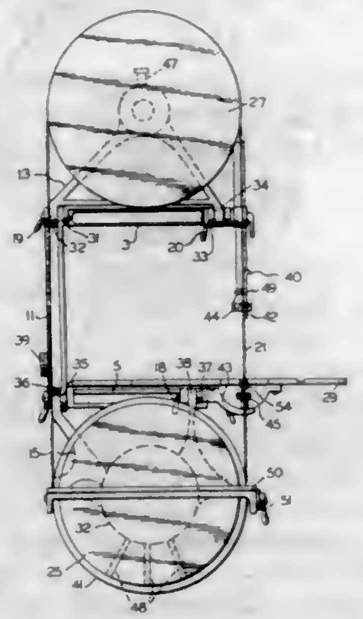
**John H. Hughes, 6321 Central Park Drive, Aberdeen, Wash. 98520**
**Filed Aug. 25, 1965, Ser. No. 482,549**
**Int. Cl. B27b** *3/22*
**U.S. Cl. 143—26** **10 Claims**



A machine for producing a bisecting zig-zag kerf in a shake bolt, employing a double-edged saw blade travelling endwise to its length and giving to the bolt a succession of 4-stage cyclical movements, the second and fourth stages being each a respective one of two oppositely directed strokes of reciprocation shuttling the bolt along a linear travel path which includes the saw blade and is longitudinal to the blade's cutting plane, the first and third stages being each one of two oppositely directed rocking movements in which the bolt turns about a respective center which lies intermediate the ends of the bolt and approximately coincides with the saw blade and positions the bolt so that its longitudinal median line is moderately inclined in opposite directions from said linear travel path.

### 3,480,051
### FOLDING BANDSAW-DISC SANDER

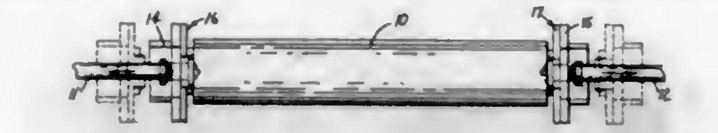
**Charles E. Gray, 107½ S. Main St., Elkhart, Ind. 46514**
**Filed May 3, 1968, Ser. No. 726,349**
**Int. Cl. B27c** *7/00*
**U.S. Cl. 144—1** **8 Claims**



A portable bandsaw-disc sander combination tool mounted on a collapsible, sectional supporting frame.

### 3,480,052
### CHUCKS FOR VENEER LATHE LOADERS

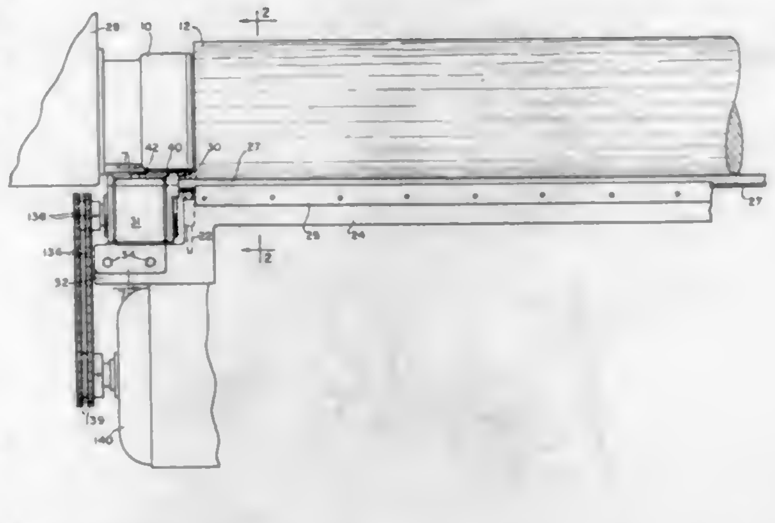
**Leonard L. Hayes, Lewiston, Idaho, assignor to Potlatch Forests, Inc., Lewiston, Idaho, a corporation of Delaware**
**Filed June 30, 1967, Ser. No. 650,358**
**Int. Cl. B27c** *7/00*
**U.S. Cl. 144—209** **1 Claim**



The disclosure describes a chuck for veneer lathe loaders that has a C-shaped annular wedge sector **26** that penetrates a log end for supporting the log. The sector **26** has a cylindrical inner surface **33** that has a radius greater than the radius of a lathe spindle so that the spindle may be moved through the chuck into engagement with the log end. The shape of the chuck permits the rotation of the log while the chuck is in engagement with the log end. The side opening of the chuck is sufficient to permit the radial movement of the chuck with respect to the spindle when the spindle is inserted through the chuck. The wedge sector **26** has a conical surface **36** that intersects with the surface **33** forming a thin annular edge **40** for facilitating the penetration of the log end.

### 3,480,053
### PRESSURE ROLL DRIVES

**Melvin M. Whipple, 700 Delay Drive, Eugene, Oreg. 97402**
**Filed Sept. 7, 1967, Ser. No. 666,016**
**Int. Cl. B27l** *5/02*
**U.S. Cl. 144—213** **15 Claims**

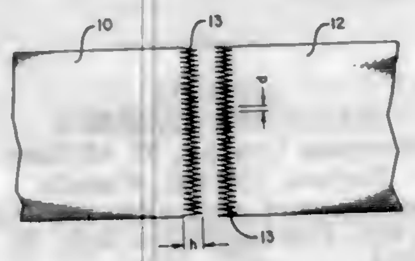


A pressure roll drive for a veneer lathe in which a gear rigidly fixed to a pressure roll is driven by a speedup gearing mounted on the side of the gear away from the log engaging chuck of the lathe.

### 3,480,054
### METHOD OF FORMING FINGER JOINTS

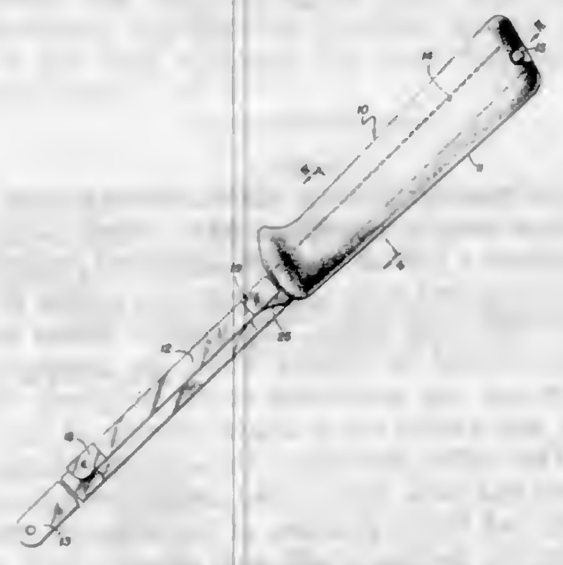
**Josef E. Marian, Berkeley, Calif., assignor to Hombak Maschinenfabrik KG., Bad Kreuznach, Germany, a German company**
**Original application Aug. 22, 1966, Ser. No. 574,055. Divided and this application Dec. 9, 1968, Ser. No. 782,180**
**Claims priority, application Sweden, June 29, 1966, 8,898/66**
**Int. Cl. B27f** *1/00*
**U.S. Cl. 144—317** **6 Claims**

A method of forming a finger joint by precisely machining narrow (preferably three or more per centimeter) and short (preferably less than fifteen millimeters long) fingers on the mating surfaces, applying an adhesive and forcing the joint together under pressure, a satisfactory bond being achieved in a brief period of time.



### 3,480,055
### SAW HOLDER

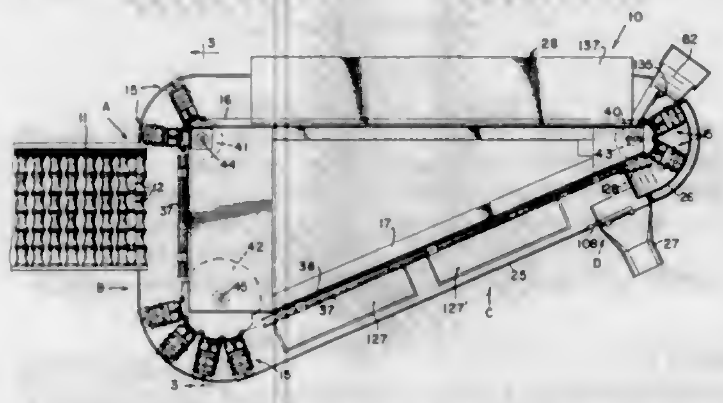
**Gabriel M. LaPointe, Worcester, Mass., assignor to Parker Manufacturing Company, Worcester, Mass., a corporation of Massachusetts**
**Continuation of application Ser. No. 615,543, Feb. 13, 1967. This application Sept. 9, 1968, Ser. No. 759,813**
**Int. Cl. B25q** *1/00;* **B27b** *21/00*
**U.S. Cl. 145—108** **5 Claims**



A saw holder and, more particularly, an apparatus arranged to hold a hacksaw blade so that a substantial portion of the blade is unsupported, the holder consisting of a handle having a wedge-shaped groove in which are swingably movable two plates having inclined cooperative surfaces between which the saw blade is held.

### 3,480,056
### EGG BREAKING MACHINE

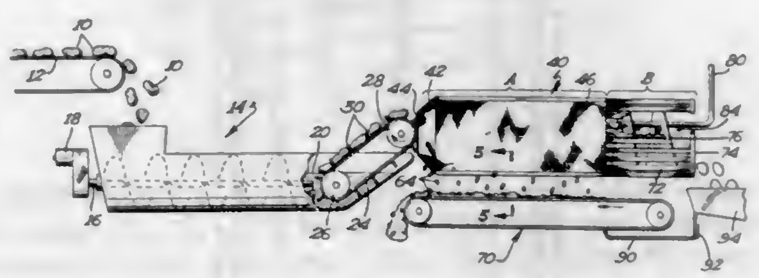
**Charles H. Willsey, 1717 E. 37th St., Topeka, Kans. 66605**
**Filed Mar. 21, 1967, Ser. No. 624,786**
**Int. Cl. A23b** *5/00;* **A23l** *1/32*
**U.S. Cl. 146—2** **20 Claims**



An apparatus for cracking shell eggs and separating the yolks from the albumen which is characterized by a series of cracking and separating assemblies having egg gripping members with associated cracking knives and cooperating contents separating devices which are carried on an endless traveling conveyor in a path along which there are mounted cam mechanisms for operating the cracking and separating devices, collecting receptacles into which the yolk and albumen are dumped, and washing apparatus for cleaning the cracking and separating devices.

### 3,480,057
### METHOD AND APPARATUS FOR PEELING FRUITS AND VEGETABLES UNDER LOW MOISTURE CONDITIONS

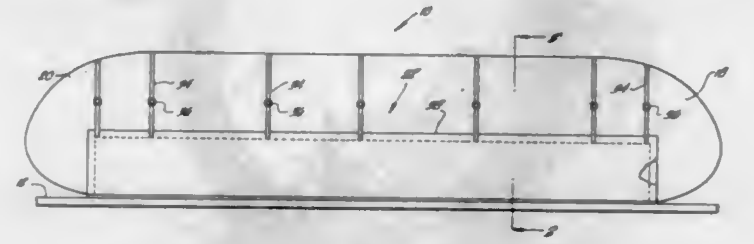
**Max G. Wilhelm, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware**
**Filed Apr. 18, 1967, Ser. No. 631,698**
**Int. Cl. B02b** *1/04;* **A23n** *7/00*
**U.S. Cl. 146—231** **24 Claims**



Method and apparatus for removing peelings from fruits and vegetables under low moisture conditions in order to reduce river pollution. Surfaces of food products are first softened conventionally, then drained and caused to slide across an abradant surface, e.g. woven screen, perforated metal, with frictional contact causing the surface layer to be removed in paste form. Apparatus includes hollow rotating cylinder composed of perforate material such as woven screen and a conveyor positioned to receive the paste as it falls through the openings in the screen.

### 3,480,058
### CONTAINER SAFETY WALL

**George B. Harr, Pasadena, Calif., assignor to Air Logistics Corporation, Pasadena, Calif., a corporation of California**
**Filed Jan. 23, 1968, Ser. No. 699,954**
**Int. Cl. B65d** *25/14, 25/34, 89/00*
**U.S. Cl. 150—.5** **5 Claims**



A container safety wall having a flexible liner, a sealant adjacent the liner and, preferably, a substantially parallel backing board adjacent another side of the sealant. The backing board is constructed of a resilient and flexible material which, when pierced by an object, does not deform beyond the hole caused by the passage of the object. The boards can be contoured about simply curved objects such as conventional collapsible storage tanks. The sealant material disposed between the liner and the backing board is such that the piercing object causes a cut, wound or slit which is smaller than the dimensions of the object.

The safety wall includes a seal strip between the wall of the container and the liner. The strip prevents escape of the contents of the tank from between the tank walls and the liner after the tank wall has been pierced. The safety wall is secured to the walls of the container by auxiliary straps or like means.

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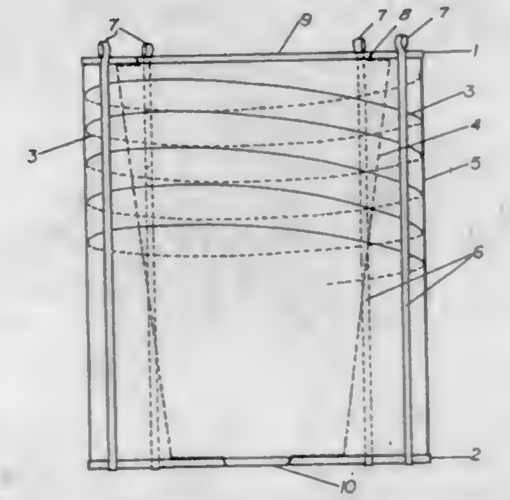
### 3,480,059
### COLLAPSIBLE RECEPTACLE FOR LARGE QUANTITIES

**Werner Peter Schoening, Houston, Tex., assignor to Griffolyn Company, Inc., a corporation of Delaware**
**Filed Oct. 19, 1967, Ser. No. 676,454**
**Int. Cl. B65d** *89/04, 89/14, 89/06*
**U.S. Cl. 150—48** **5 Claims**



A collapsible receptacle for quantities of 60–10,000 gallons, characterized by having the load distributed between stiff upper and lower plates by means of flexible connecting and distributing means; and a flexible liner helically reinforced, which has a vertical dimension longer than the means connecting upper and lower plates.

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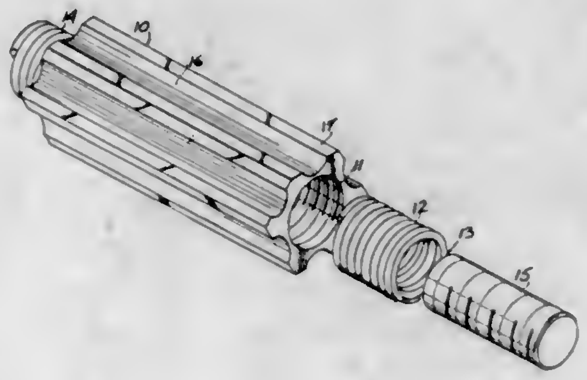
### 3,480,060
### SPACER CONSTRUCTION AND METHOD OF MANUFACTURING SAME

**Robert W. Sheldon, 560 Carriage Drive NE., Atlanta, Ga. 30328**
**Filed Mar. 28, 1968, Ser. No. 716,916**
**Int. Cl. F16b** *39/30, 3/22, 23/00*
**U.S. Cl. 151—14** **10 Claims**



A lightweight spacer construction including a sleeve adapted to be engaged by conventional tool for rotating the same, a helically coiled thread insert screwed in one end of the sleeve and a threaded stud assembly screwed into the opposite end of the sleeve. The method of manufacturing the spacer construction comprising the steps of forming a hollow member having an outside configuration to be engaged and rotated by a conventional tool, internally threading each end of said member, screwing a helically coiled thread insert in one end of the sleeve and subsequently screwing a threaded stud assembly into the other end of the sleeve.

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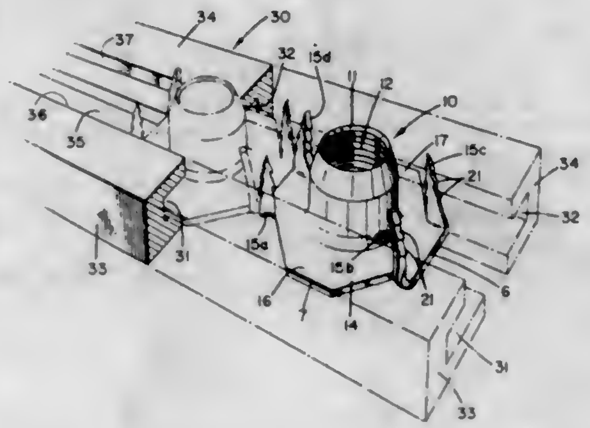
### 3,480,061
### FASTENER MEMBER

**Walter Hermann Leistner, 97 Alamosa Drive, Toronto, Ontario, Canada**
**Continuation-in-part of application Ser. No. 616,661, Feb. 16, 1967. This application Sept. 30, 1968, Ser. No. 763,583**
**Int. Cl. F16b** *39/00*
**U.S. Cl. 151—41.73** **2 Claims**



A fastener member for use with a feeding track having an octagon-shaped base flange from which are formed four prongs and a pair of support means. The flange has flat parallel front and back edges with two prongs at each of the front and back edges. The support means permit the fastener member to advance within the feeding track. The four prongs are positioned at the periphery of the base flange and extend out a centre opening of the feeding track. Flat buffer portions of the adjacent prongs and the flat front and back edges make contact with the associated edges and buffer portions of the adjacent fastener members in the feeding track and prevent them from riding up on one another in the feeding track.

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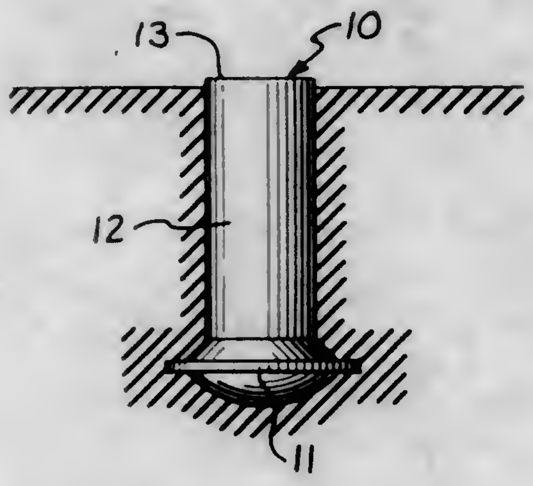
### 3,480,062
### TIRE STUD

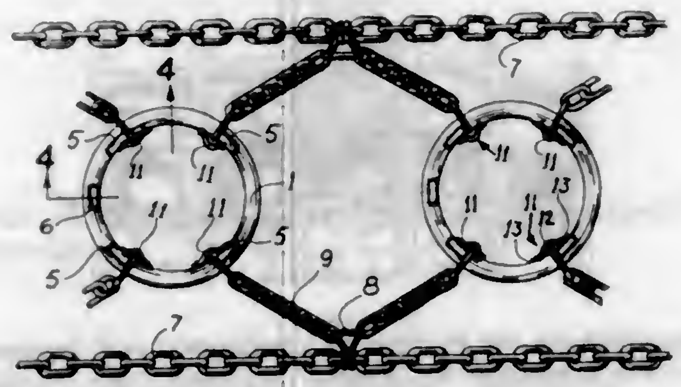
**Mial T. Hillhouse, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company**
**Filed Jan. 16, 1968, Ser. No. 698,212**
**Int. Cl. B60c** *11/16*
**U.S. Cl. 152—210** **24 Claims**



A tire stud for use in the tread of a pneumatic tire which is formed of a unitary body consisting of a two-phase composition of sintered metal and ceramic particles.

### 3,480,063
### TIRE CHAINS

**Ernest Grondin, Drummondville, Quebec, Canada, assignor to Drummond Automotive Inc., Drummondville, Quebec, Canada**
**Filed Oct. 12, 1967, Ser. No. 674,811**
**Int. Cl. B60c** *27/06, 27/00, 27/20*
**U.S. Cl. 152—230** **4 Claims**



This invention concerns a tire chain comprising cleat carrying ring members held against the tread of a tire by chains, the terminal links freely surrounding the ring members, and locating elements secured to the inside of the ring members and freely surrounding the terminal links.

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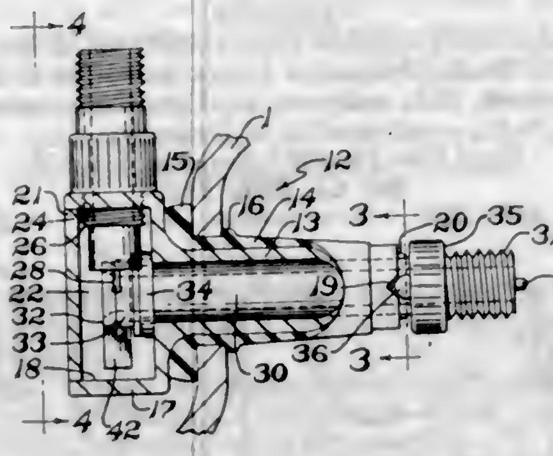
### 3,480,064
### DUAL CHAMBER TIRE AND INFLATING MEANS

**Victor R. Huber, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York**
**Filed May 23, 1967, Ser. No. 640,688**
**Int. Cl. B60c** *5/04*
**U.S. Cl. 152—340** **5 Claims**



A safety tire having in inner tire mounted in an outer tire with a valve operative to provide selective gauging, deflation or pressurization of the respective dual chambers defined by the outer tire, inner tire and the rim.

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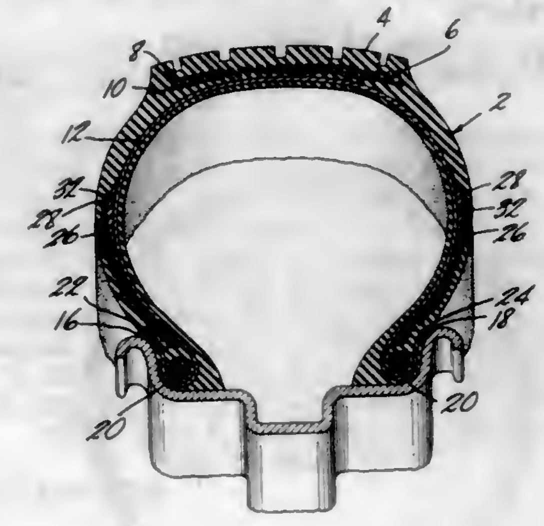
### 3,480,065
### PNEUMATIC TIRES

**Henri Verdier, Beauregard-l'Eveque, Puy-de-Dome, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, Puy-de-Dome, France**
**Filed June 21, 1967, Ser. No. 647,871**
**Claims priority, application France, June 21, 1966, 66,374**
**Int. Cl. B60c** *13/00*
**U.S. Cl. 152—353** **2 Claims**

The disclosure herein relates to radial carcass pneumatic tires containing plies of oblique elastic wires or cords in the sidewalls of the tire in the zone between mid-height of the tire and the bead wires, the oblique plies being separated from the radial wires or cords by an extra thickness of rubber to stabilize the tires during operation without materially decreasing the riding comfort of the tire; and a method for manufacturing such tires in which the oblique plies are separated by a removable sheet to enable the tire to be converted from a cylindrical shape, as assembled on a tire building drum, to a torus, without opposition from the crossed plies, the sheet being removed prior to vulcanizing of the tire.



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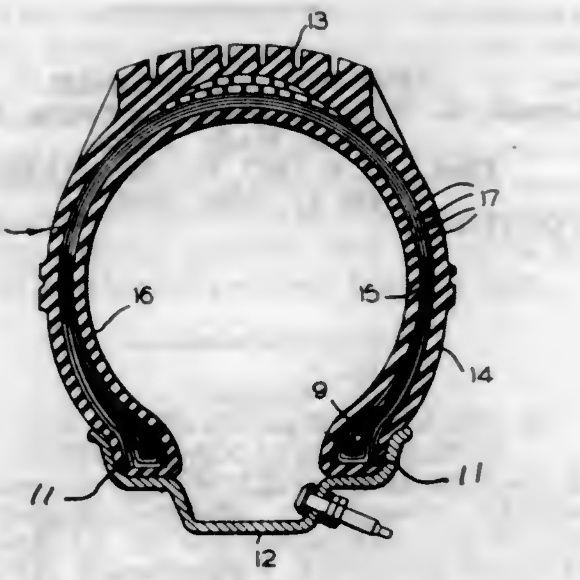
### 3,480,066
### REINFORCED RUBBER ARTICLES WITH LATEX RUBBERIZED ORGANIC REINFORCEMENTS AND METHOD OF PREPARING THE SAME

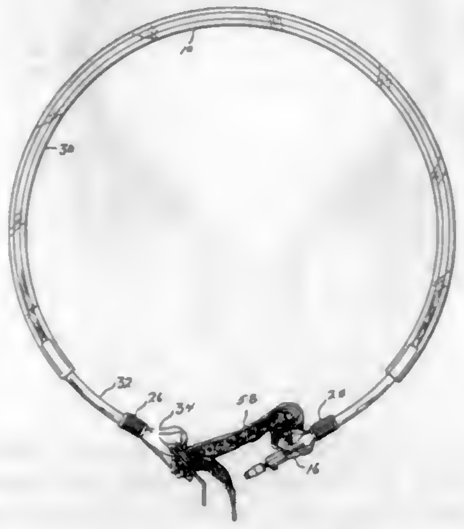
**Curtis L. Meredith, East Baton Rouge, La., assignor to Copolymer Rubber & Chemical Corporation, a corporation of Louisiana**
**Continuation-in-part of application Ser. No. 561,310, June 13, 1966. This application Aug. 3, 1966, Ser. No. 569,882**
**Int. Cl. B60c** *5/00;* **A09j** *5/00*
**U.S. Cl. 152—359** **20 Claims**



The preparation of reinforced elastomeric products in which the reinforcement is treated with a composition containing a phenol aldehyde resin and a latex of a rubbery interpolymer of ethylene, a straight chain monoolefin containing 3–16 carbon atoms and a polyunsaturated bridged ring hydrocarbon in the form of a 5-alkylidene-2-norbornene in which the interpolymer is characterized by reduced specific viscosity of at least 2.2 and an effective unsaturation level of at least 5 carbon-to-carbon double bonds per 1000 atoms.

### 3,480,067
### INFLATABLE TUBELESS TIRE SEATING DEVICE WITH QUICK RELEASE

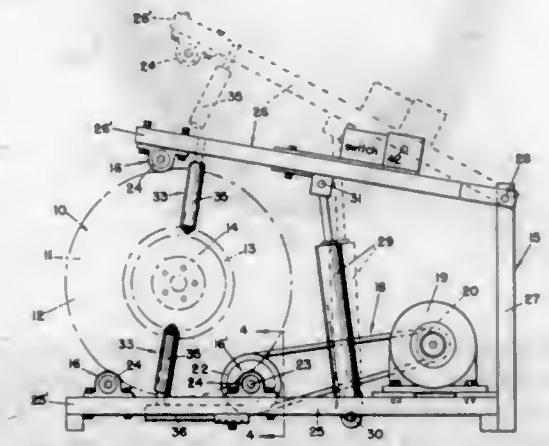
**Meyer Iglewitz, 178 Sherman Ave.,**
**Newark, N.J. 07114**
**Continuation-in-part of application Ser. No. 710,494, Mar. 5, 1968. This application Jan. 21, 1969, Ser. No. 792,479**
**Int. Cl. B60c** *25/12*
**U.S. Cl. 157—1.21** **2 Claims**



A seating belt for seating tubeless tires on a wheel rim which has an elongated flexible tube, sealed at one end, and a gas feed fitting and inlet at the other end of the tube. A cylindrical sheath with a wire mesh is placed around the tube. There are shields and collars at both ends. The fitting inlet projects past one of the collars. The seating belt is held to the tire by means of a strap which passes through buckles at said ends. One of the buckles has a release lever which will permit the strap to slide on the buckle, so that the seating belt can be placed around the tire to be mounted, and hold the tire as it expands. The flexible tube can be filled with compressed air through the inlet fitting and the belt will firmly hold the tire until the release lever is handled to release the seating belt.

### 3,480,068
### TIRE PRECONDITIONER

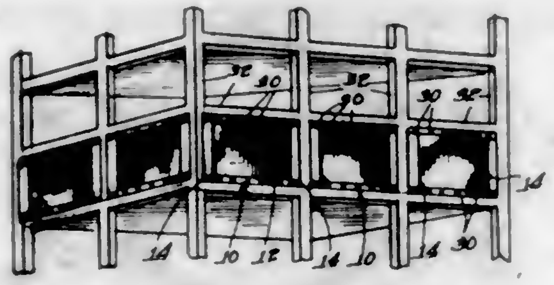
**Donald G. Reid and Merle L. Pfaffle, both of Wilbur, Wash. 99185**
**Filed Feb. 8, 1967, Ser. No. 614,591**
**Int. Cl. B60c** *25/00*
**U.S. Cl. 157—13** **8 Claims**



A tire preconditioner having plural axially parallel rollers to circumpose and press upon the peripheral tread of a tire on a wheel and at least one of which rollers is driven by power means to rotate and flex the tire and thus effect its eventual permanent configuration.

### 3,480,069
### TEMPORARY WALL CONSTRUCTION

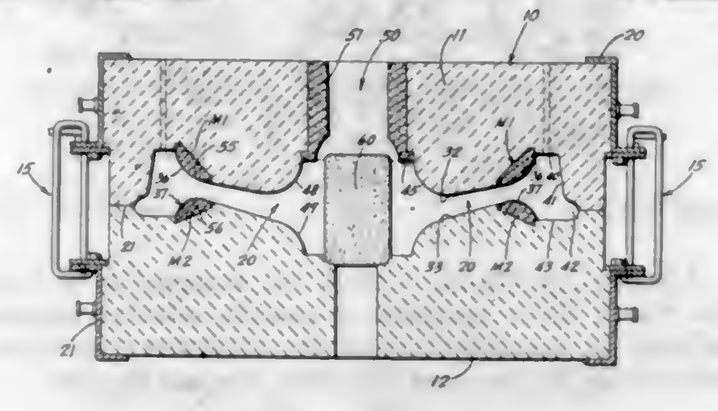
**Gary R. Handwerker, Morton Grove, Ill., assignor to Midwest Canvas Corporation, Chicago, Ill., a corporation of Illinois**
**Filed May 6, 1968, Ser. No. 726,868**
**Int. Cl. A47h** *23/10;* **E06b** *9/00*
**U.S. Cl. 160—354** **5 Claims**



An article for use in forming a temporary wall between structural members to protect workmen, construction materials, equipment, and the like, against the elements. The article comprises a relatively wide, flexible light-transmitting panel fabricated of plastic, and two narrow panels, advantageously fabricated of fire- and moisture-proof canvas, joined to opposite side margins of the light-transmitting panel. Means are provided in the panels to enable the article to be suspended in a substantially vertical plane from structural members to form a temporary, protective wall therebetween. Said means also can be employed to interconnect a plurality of the articles to form a temporary wall of any desired dimensions. Tab means are provided inwardly of the side margins to enable the central portion of the article to be supported in a manner whereby it will not sag, and to prevent flapping caused by the wind.

### 3,480,070
### PERMANENT MOLD FOR CASTING A WHEEL

**Robert H. Beetle, Mountain Lakes, and John B. Dabney, Ridgewood, N.J., assignors to Abex Corporation, New York, N.Y., a corporation of Delaware**
**Filed Feb. 16, 1967, Ser. No. 616,570**
**Int. Cl. B22c** *9/28*
**U.S. Cl. 164—365** **2 Claims**

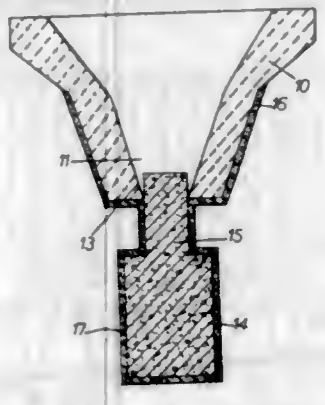


A railroad wheel having an inner hub portion and an outer tread portion joined by a thinner plate is cast in a permanent mold having a yieldable and relatively thick lining at the fillets near the tread portion of the wheel. As the casting cools and contracts, the lining yields which allows wheels with fillets of sharp radii to be produced.

### 3,480,071
### METHOD OF SHELL MOULDING AND CASTING

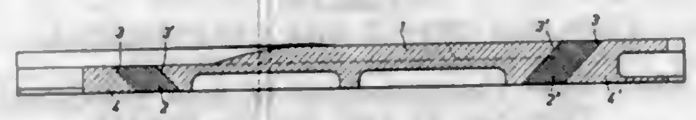
**John Aherne Heron, Farnham Royal Lodge, Buckinghamshire, England**
**Filed Sept. 14, 1967, Ser. No. 667,688**
**Int. Cl. B22d** *47/02, 7/02*
**U.S. Cl. 164—36** **6 Claims**

A method of simultaneously forming a whole group of cast objects includes the formation of an assembly made up of expendable patterns of the group of objects and of an apertured trough member, covering the assembly with shell mould material, and removing the expendable material.



### 3,480,072
### CORE PORTION OF A RAILROAD FROG AND METHOD OF MAKING THE SAME

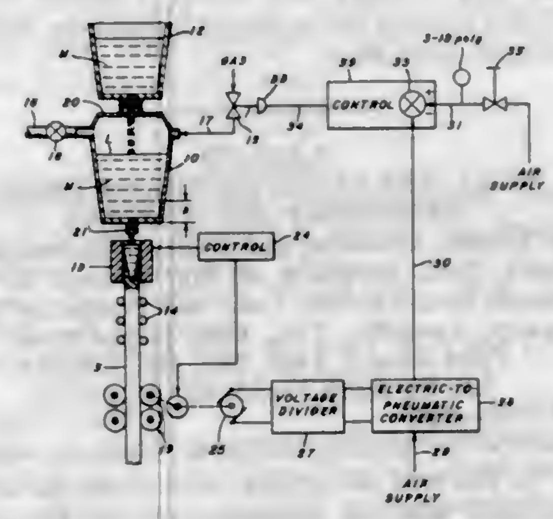
**Armin Heim and Friedhelm Hillebrand, Osnabruck, Germany, assignors to Kloeckner-Werke AG, Duisburg, Germany**
**Filed May 4, 1966, Ser. No. 547,563**
**Int. Cl. E01b** *7/12;* **B22d** *19/02*
**U.S. Cl. 164—93** **5 Claims**



In a railroad frog, in combination, a core portion having spaced end portions and having intermediate said end portions and spaced therefrom a center portion, said center portion consisting essentially of manganese steel and said end portions consisting essentially of a weldable steel; and intermediate portions interposed between said center portion and each of said end portions, said intermediate portions consisting predominantly of a mixture of said manganese steel and said weldable steel and said intermediate portions being fused to said center portion and said end portions. The railroad frog of the invention permits easy welding to adjacent rail portions.

### 3,480,073
### APPARATUS FOR CONTROLLING DISCHARGE OF METAL FROM A VACUUM DEGASSING CHAMBER

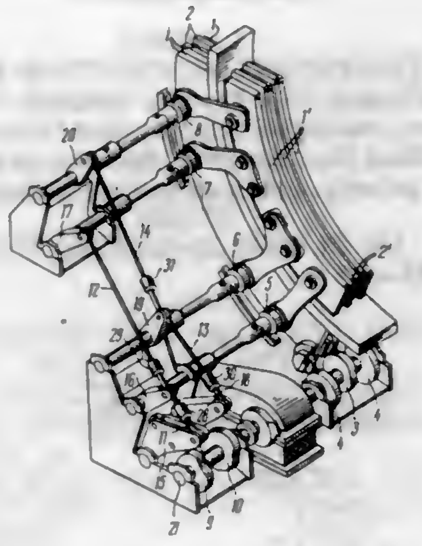
**James H. Wilson, Franklin Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of Delaware**
**Filed Nov. 29, 1967, Ser. No. 686,517**
**Int. Cl. B22d** *11/10, 37/00*
**U.S. Cl. 164—155** **3 Claims**



In normal operation molten metal discharges from a vacuum degassing chamber at the same rate it is teemed into the chamber. The level of metal in chamber is constant. At the end of teeming the level falls and the discharge rate diminishes. Invention automatically injects pressurizing gas to chamber to compensate for loss of head and maintain the discharge rate.

### 3,480,074
### ALTERNATELY OPERATED WALKING BARS FOR EXTRACTING AN INGOT FROM A CURVED MOLD

**Vladimir Alexandrovich Bykov, Ul. Khmeleva 12, kv. 24, Sverdlovsk, U.S.S.R.; and Alexei Ivanovich Varaxin, Ul. Dybenko 22, korp. 5, kv. 374, Moscow, U.S.S.R.; and Evgeny Jukhimovich Gelfenbein, Ul. 40 let Oktyabraya 28, kv. 51; Stanislav Evgenievich Karlinsky, Ul. Kultury 4, kv. 22; Vitaly Maximovich Niskovskikh, Ul. Festivalnaya 21, kv. 60; Boris Yakovlevich Orlov, Ul. Kraskykh partizan 3, kv. 4; Oleg Petrovich Sokolovsky, Ul. Kultury 16, kv. 69; and Georgy Lukich Khimich, Ul. Lenina 53, kv. 92, all of Sverdlovsk, U.S.S.R.**
**Filed Mar. 6, 1967, Ser. No. 621,029**
**Int. Cl. B22d** *29/00*
**U.S. Cl. 164—282** **3 Claims**

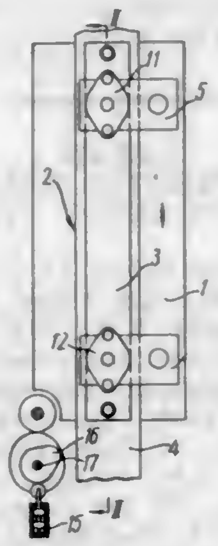


A device for drawing an ingot out of a continuous casting machine having sets of alternately operated walking bars on each side of the ingot, the walking bars moving in the direction of drawing of the ingot when in contact therewith and moving in the contrary direction when withdrawn from contact, the device including cam means to cause movement of the walking bars parallel to the drawing direction and cam operated lever and crank means to move the bars toward and away from the ingot.

### 3,480,075
### SYSTEM OF SECONDARY COOLING IN CONTINUOUS CASTING PLANTS

**Alexei Ivanovich Varaxin, Ul. Dybenko 22, korp. 5, kv. 374, Moscow, U.S.S.R.; and Evgeny Jukhimovich Gelfenbein, Ul. 40 let Oktyabrya 28, kv. 51; Leonid Georgievich Kuznetsov, Ul. Pobedy 59, kv. 5; Vitaly Maximovich Niskovskikh, Ul. Festivalnaya 21, kv. 60; and Savva Abramovich Rolnik, Ul. Mashinostroitelei 45, kv. 87, all of Sverdlovsk, U.S.S.R.**
**Filed Mar. 1, 1967, Ser. No. 619,814**
**Claims priority, application U.S.S.R., Mar. 15, 1966, 1,059,315**
**Int. Cl. B22d** *11/12*
**U.S. Cl. 164—283** **4 Claims**

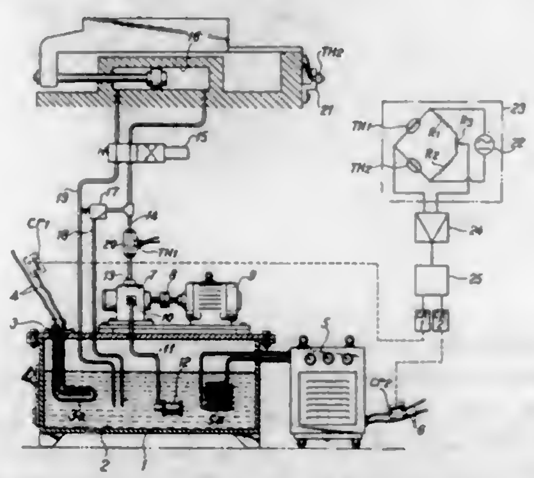
A secondary cooling device to support the sides of an ingot being extracted from a continuous casting machine including a cooled presser plate moved toward and away from contact with the ingot, preferably by use of hydraulic cylinder means, to support the sides of the ingot as it is extracted, with the toward and away movement being timed to permit the movement of the ingot with respect to the cooling device and means being provided to permit limited movement of the device with the ingot.



**3,480,076**

### OIL TEMPERATURE CONTROL SYSTEM

**Tamaki Tomita, % Toyoda Machine Works, Ltd., 1, 1-chome, Asahicho, Kariya, Aichi Prefecture, Japan**
**Filed Dec. 26, 1967, Ser. No. 693,566**
**Claims priority, application Japan, Dec. 29, 1966, 42/660**
**Int. Cl. F25b** *29/00;* **F28d** *15/00*
**U.S. Cl. 165—27** **7 Claims**



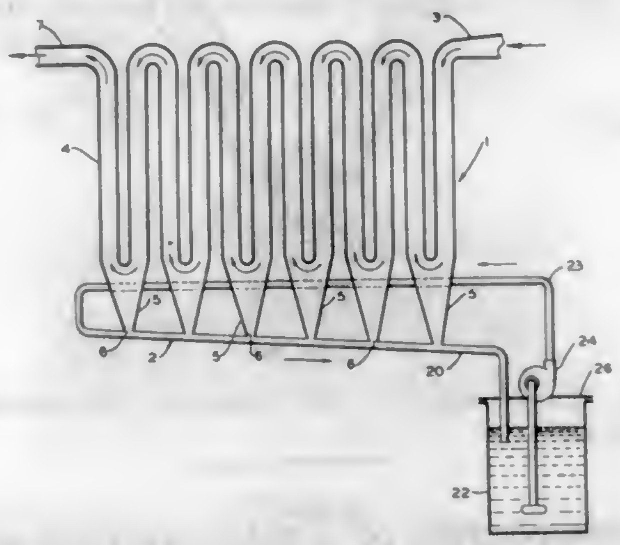
An oil temperature control system in which there are detected the temperature of an operating oil circulating in a fluid circuit composed of a hydraulic motor and an oil reservoir and the ambient temperature of a machine operated by the hydraulic motor, the values of the detected temperatures being fed into an automatic electric balancing circuit which generates an output signal only when the difference between the temperature inputs is not of a predetermined value to actuate an oil heating or cooling means, whereby the temperature of the operating oil is varied in response to the ambient temperature.

**3,480,077**

### PHOSPHORUS CONDENSATION APPARATUS

**Harry M. Stevens, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**Original application Oct. 7, 1965, Ser. No. 493,848, now Patent No. 3,433,601, dated Mar. 18, 1969. Divided and this application May 27, 1968, Ser. No. 738,762**
**Int. Cl. F28b** *3/00, 9/10;* **F28f** *13/06*
**U.S. Cl. 165—111** **7 Claims**

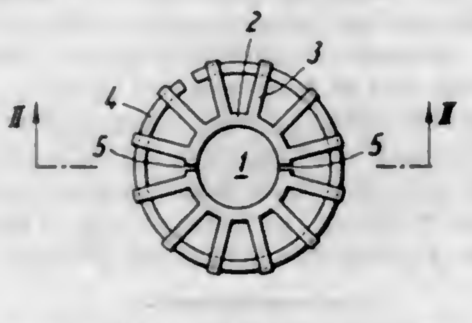
An apparatus is provided which includes a condenser for condensing phosphorus via indirect cooling and a header line for receiving condensed phosphorus from the condenser into a moving stream of liquid phosphorus. The header line discharges into a storage tank from which liquid phosphorus is recycled to the header line to maintain a moving stream of liquid phosphorus therein. This apparatus reduces contamination of phosphorus during condensation thereof.



**3,480,078**

### COOLING DEVICE FOR CYLINDRICAL ELECTRICAL COMPONENTS

**Edwin Jäger, Gantrischstrasse 49, Bern, Switzerland**
**Filed Nov. 21, 1967, Ser. No. 689,744**
**Claims priority, application Switzerland, Nov. 23, 1966, 16,808/66**
**Int. Cl. F28f** *7/00*
**U.S. Cl. 165—185** **6 Claims**



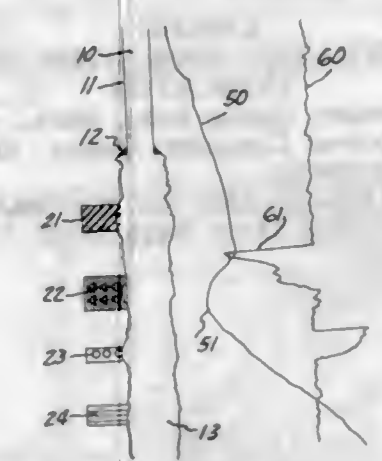
At least a pair of longitudinally extending semi-cylindrical envelope segments, each provided with a plurality of axially extending cooling ribs, with the segments adapted to be fitted together about a cylindrical electrical component to form a substantially complete cylindrical envelope about the component, the inner bore of which is in intimate abutting contact with the cylindrical surface of the electrical component to form a heat dissipating and cooling device, and the outer edges of the cooling ribs provided with recesses into which a spring ring is engageable for holding the segments in intimate contact with the electrical component.

**3,480,079**

### WELL TREATING METHODS USING TEMPERATURE SURVEYS

**Jerry H. Guinn, Amarillo, and William Sherwood Wright, Midland, Tex., assignors of fifty percent to Cardinal Chemical, Inc., Odessa, Tex., and Producers Chemical Company, Amarillo, Tex., both corporations of Texas**
**Filed June 7, 1968, Ser. No. 735,313**
**Int. Cl. E21b** *47/00, 43/24, 43/20*
**U.S. Cl. 166—250** **18 Claims**

A method of treating wells to stimulate production from or to increase acceptance of fluids in the well strata by controlled selective treatment of the formations of the well in conjunction with temperature evaluation. Blocking and propping agents are utilized to block off each zone or strata as it is treated. Temperature gradient curves and temperature differential curves are utilized to determine the strata treated and, where multiple strata are being treated, to trace the entry of treating fluids into such strata sections or adjacent strata, and utilizing the information obtained from the temperature log to design the next stage of treatment. The process permits step by step treatment of all zones in the well, and a determination of the fact that all zones have been treated. Blocking or diverting materials may be combined with propping agents to expedite the process.



**3,480,080**

### WATERFLOODING WITH AN AQUEOUS, SALINE SOLUTION OF A HYDROCARBON SULFONATE HAVING AN OPTIMUM DEGREE OF SULFONATION

**Charles L. Murphy, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York**
**No Drawing. Filed Mar. 22, 1968, Ser. No. 715,135**
**Int. Cl. E21b** *47/00;* **E21c** *43/22*
**U.S. Cl. 166—252** **9 Claims**

This specification discloses waterflooding to recover oil from a subterranean oil-containing formation employing a saline solution of a hydrocarbon sulfonate wherein the degree of sulfonation of the hydrocarbon sulfonate which effects the lowest interfacial tension between the solution of the sulfonate and the oil in the formation is empirically determined. A plurality of solutions having the same given ionic strength but containing a hydrocarbon sulfonate having different degrees of sulfonation are placed in contact with oil from the formation, and the interfacial tensions between the solutions and the oils are measured. The hydrocarbon sulfonate having the degree of sulfonation effecting the lowest interfacial tension is then employed in an aqueous solution thereof having the given ionic strength for flooding the formation to recover oil from the formation.

**3,480,081**

### PRESSURE PULSING OIL PRODUCTION PROCESS

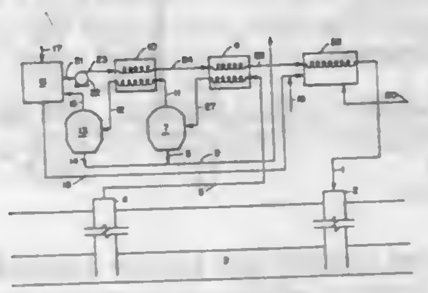
**Martin Felsenthal, Howard H. Ferrell, and Robert R. Matthews, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware**
**No Drawing. Filed Feb. 20, 1967, Ser. No. 617,086**
**Int. Cl. E21b** *43/20, 43/24, 43/22*
**U.S. Cl. 166—263** **10 Claims**

A cyclic oil recovery process wherein there is injected into a subterranean formation containing free gas via an injection well both a gas flooding medium and an aqueous flooding medium to force a substantial part of the free gas into solution in the oil, following which the injection well is made a production well and a substantial part of the free gas comes out of solution. The aqueous flooding medium may be water, brine, or steam.

**3,480,082**

### IN SITU RETORTING OF OIL SHALE USING $CO_2$ AS HEAT CARRIER

**Harold E. Gilliland, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware**
**Filed Sept. 25, 1967, Ser. No. 670,205**
**Int. Cl. E21b** *43/24;* **C10g** *1/00*
**U.S. Cl. 166—266** **4 Claims**



Carbon dioxide is utilized as heat carrier for retorting oil shale which is intimately associated with carbonate minerals. The carbon dioxide has high heat capacity and with the high $CO_2$ atmosphere prevents calcining the carbonate, thus conserving heat.

**3,480,083**

### WATERFLOOD PROCESS USING ORGANIC PHOSPHATE ESTERS

**Donald C. Oleen, Houston, Tex., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware**
**No Drawing. Filed Mar. 27, 1968, Ser. No. 716,312**
**Int. Cl. E21b** *43/20, 43/22;* **C09k** *3/00*
**U.S. Cl. 166—275** **8 Claims**

Certain organic phosphate esters are used in a waterflooding system in order to prevent scaling of equipment and plugging. These esters are introduced into one or more injection wells and will pass through the underground formation to a producing well or wells without being destroyed during such passage.

**3,480,084**

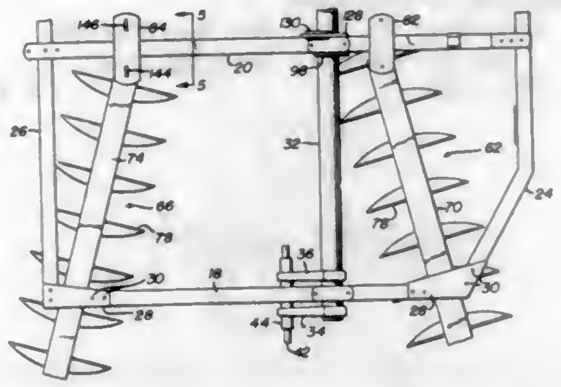
### COMPOSITION AND METHOD USING TEMPORARY SOILD DIVERTING AGENT FOR AQUEOUS FLUIDS

**Louis H. Eilers, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**No Drawing. Filed Mar. 25, 1968, Ser. No. 715,547**
**Int. Cl. E21b** *33/138;* **C08b** *27/02*
**U.S. Cl. 166—282** **8 Claims**

A composition comprising: a material consisting substantially of whole and/or cracked natural grains or seeds, a particulated finely subdivided thickening agent, and an aqueous carrier or vehicle and the method of treating a subterranean formation penetrated by a wellbore which comprises injecting said composition down the wellbore and forcing at least some of it into the formation where such diverting agent serves as a temporary plugging agent to divert fluid to less accessible or tighter portions of the formation. Phthalic anhydride is also advantageously employed as an ingredient in the composition to aid in break down of the diverting agent, due to hydrolysis of the phthalic anhydride, thereby aiding in breaking the gel and subsequent removal of diverting agent from the formation.

### 3,480,085
### DISK HARROW

**Lawrence E. Tilbury and Steven E. Maple, Rockford, Ill., assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin**
**Filed Apr. 12, 1967, Ser. No. 630,451**
**Int. Cl. A01b** *59/042, 15/16, 49/00*
**U.S. Cl. 172—328** **1 Claim**



A wheel type tandem disk harrow adapted to be towed by a vehicle in either working or transport position wherein the harrow frame is maintained substantially level. The harrow has a plurality of angularly adjustable front and rear disk gang assemblies and the rear gangs can be moved laterally in relation to the frame.

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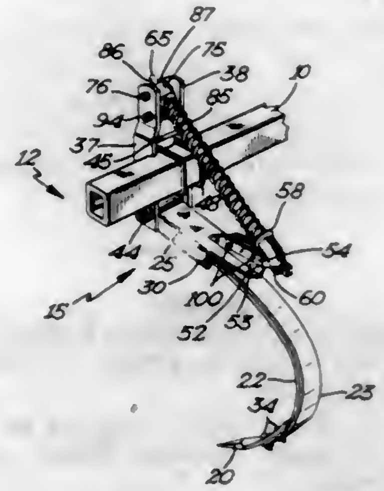
### 3,480,086
### ADJUSTABLE SHANK ASSEMBLY

**Merlin A. Groenke, Glencoe, Minn., assignor to Portable Elevator Manufacturing Company, Bloomington, Ill., a corporation of Illinois**
**Filed Feb. 17, 1967, Ser. No. 616,898**
**The portion of the term of the patent subsequent to June 28, 1983, has been disclaimed**
**Int. Cl. A01b** *15/20, 23/00, 35/20*
**U.S. Cl. 172—710** **2 Claims**



This disclosure is directed to an adjustable shank assembly for mounting cultivating tools on agricultural implements. The improved shank assembly for mounting the cultivating tool is adjustable to position the angle of the cultivating tool and its depth relative to the earth being worked to take care of varying soil conditions. The shank assembly further mounts the tool for spring biased pivotal movement to permit the tool to swing clear of the earth upon encountering immovable obstructions. In the improved shank assembly, the tool support mounting the tool has a raised flange or rib section with a plurality of connecting apertures therein. This tool support is connected through a coupling member having similar apertures therein to a pressure rod having the spring biasing means associated therewith. The pressure rod is journaled on the frame of the shank assembly. Alignment of the various apertures in the raised rib section of the tool support with those in the coupling member adjusts the position of the tool support with the tool thereon relative to the frame of the shank assembly and hence the ground being worked to provide a simplified angle adjustment of the tool with the earth for varying soil working conditions.

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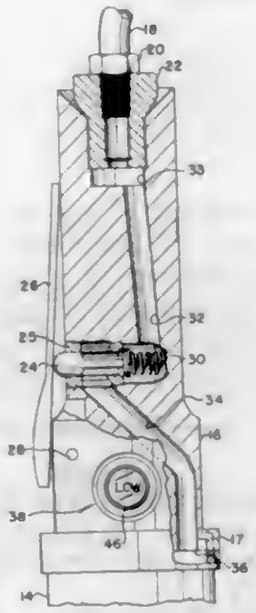
### 3,480,087
### FLUID OPERATED TOOL WITH PRESSURE INDICATOR

**James H. Boeger, Spring Lake, Mich., assignor to Gardner-Denver Company, Quincy, Ill., a corporation of Delaware**
**Filed Feb. 20, 1968, Ser. No. 706,950**
**Int. Cl. B25d** *17/00;* **F01b** *31/12, 25/26*
**U.S. Cl. 173—20** **2 Claims**



The combination of a fluid operated tool including a handle and a housing for the tool operating mechanism, and a visual pressure indicator located on the tool proper and substantially within the normal tool profile. Such a location of the indicator makes possible convenient and expedient signalling when the pressure of the motive fluid to the tool has reached a predetermined minimum value.

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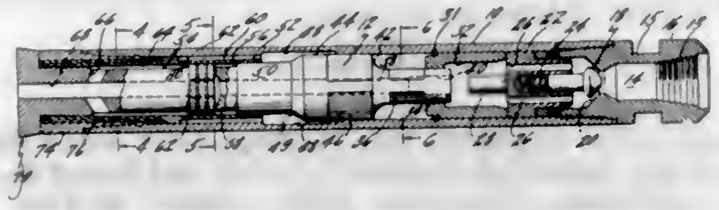
### 3,480,088
### DIFFERENTIAL PRESSURE TOOL

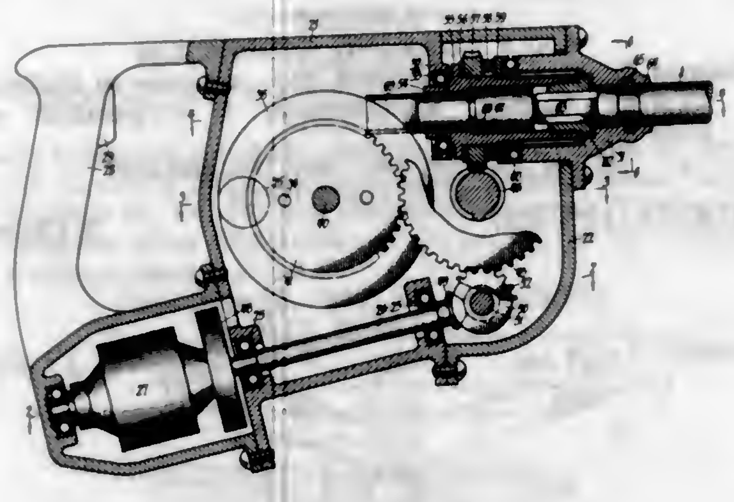
**Leo L. Ghelfi, 462 Bolton Road, Vernon, Conn. 06086**
**Filed Dec. 5, 1967, Ser. No. 688,133**
**Int. Cl. B25d** *17/14;* **E21c** *3/20;* **E21b** *1/00*
**U.S. Cl. 173—78** **15 Claims**



A percussive tool which operates solely on a pressure differential, the tool having a piston with three sections of different cross-sectional area, the piston sections cooperating with the tool housing and elements suspended therein to provide a unique valving action which results in the driving of the piston, the tool further having a chuck characterized by the absence of threaded joints in the path of energy transfer between the piston and work.

### 3,480,089
### ROTARY PERCUSSION APPARATUS

**John Royston Siddons, Lower Plenty, Victoria, and Kenneth Gordon, Heidelberg, Victoria, Australia, assignors to Siddons Industries Limited, Carlton, Victoria, Australia, a Victorian company**
**Filed July 10, 1967, Ser. No. 652,273**
**Claims priority, application Australia, July 15, 1966, 8,361/66; Feb. 27, 1967, 18,202/67; June 8, 1967, 22,912/67**
**Int. Cl. B25d** *9/04;* **E21c** *3/08*
**U.S. Cl. 173—99** **10 Claims**



Rotary percussion apparatus comprising a tool bit nonrotatably mounted in a rotatable sleeve driven by a motor, the tool bit being operatively driven by a rotor driven by the motor, the rotor comprising a pair of spaced disks, the inner confronting surfaces of which are formed with complementary track portions which together form a track adapted to receive striker means movable along the track during rotation of the rotor for driving the tool bit.

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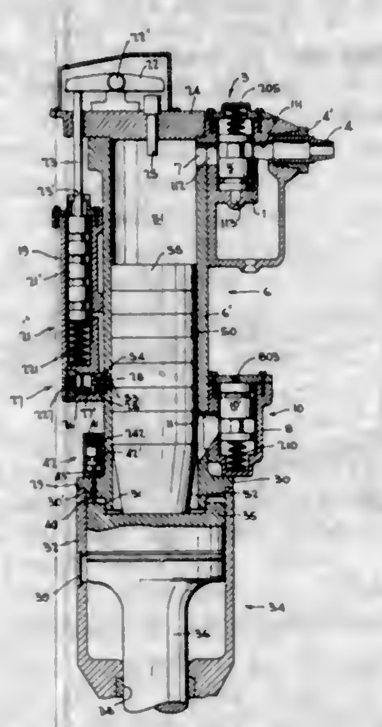
### 3,480,090
### PNEUMATIC IMPACT HAMMER

**Eimatsu Kotone, 4, Aza-Nishiyama 193, Kobayashi, Takarazuka-shi, Hyogo-ken, Japan**
**Filed Mar. 22, 1968, Ser. No. 715,269**
**Int. Cl. E21c** *3/04;* **F01l** *25/04, 25/02*
**U.S. Cl. 173—135** **10 Claims**



An automatic impact hammer driven by compressed air and having a time delay chamber effective to cause the pneumatic control system to refrain from driving the operating piston until the pressure within said chamber is increased to a given or predetermined value. This desired time lag is from the end of impact or power stroke to the beginning of return stroke of the piston during which compressed air is accumulated in the reservoir for the next cycle of the hammer. Also, a safety valve is provided in the pneumatic control system to prevent the piston from no-load stroking, and a closed chamber is formed between the cylinder and the tool to provide an air cushion upon return of the tool to the start position.

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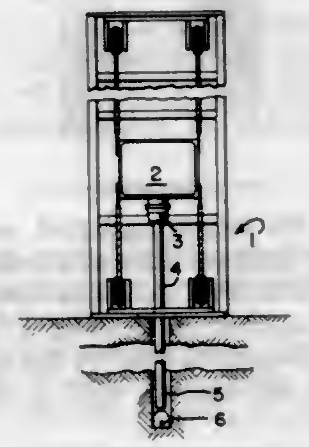
### 3,480,091
### FEED APPARATUS FOR ROCK DRILLS

**Laszlo Gyongyosi, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey**
**Filed Mar. 18, 1968, Ser. No. 713,605**
**Int. Cl. E21c** *5/08;* **E21b** *1/02, 3/02*
**U.S. Cl. 173—160** **11 Claims**



A feed control for rock drilling equipment capable of both high and low speed feed employing a worm gear drive unit powered by a hydraulic motor and a pair of variable delivery pumps. The high speed system is used for adding or removing drill rods to the drill string and for pulling the tool out of the hole. The low speed system is used during the drilling operation. The control is readily adaptable to both rotary and down-the-hole drilling.

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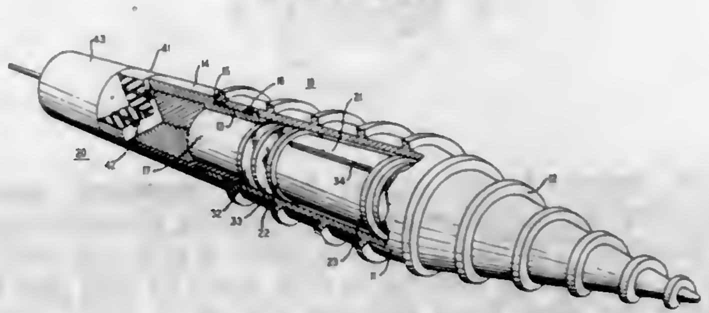
### 3,480,092
### ROTARY IMPACT BURROWING DEVICE

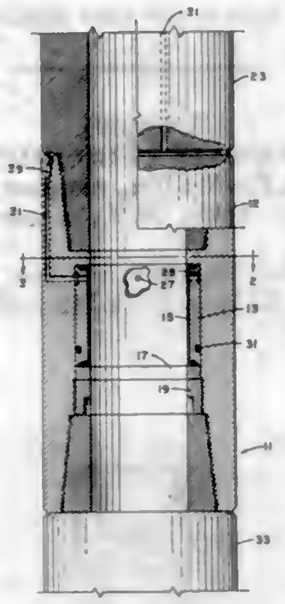
**Gordon A. Reinold, Baltimore, Md., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**
**Filed Nov. 8, 1967, Ser. No. 681,356**
**Int. Cl. E21b** *11/02;* **B25d** *15/02;* **E01g** *3/00*
**U.S. Cl. 175—19** **8 Claims**



A self-propelled guidable underground missile is disclosed in which the propulsion unit is an auger driven by impact from a rotary missile member.

### 3,480,093
### TOTAL RECOVERY CORE CATCHER

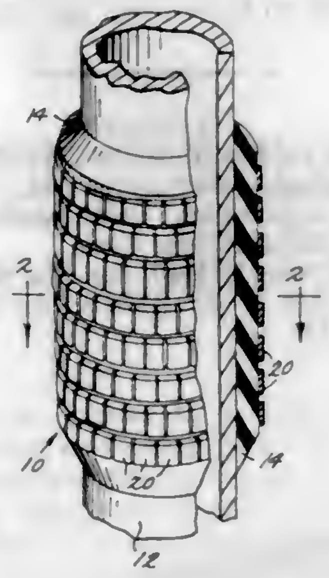
**Frank Clynch, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware**
**Filed Jan. 4, 1968, Ser. No. 695,741**
**Int. Cl. E21b** *9/20, 25/00*
**U.S. Cl. 175—58** **5 Claims**



A core catcher for collecting liquid, semi-solid or solid cores from a bore hole comprising a hollow housing with an elastic expandable liner positioned inside the housing, said liner being capable of forming a total seal against liquid flow upon being expanded by the application of gas pressure between the interior wall of said housing and said liner.

### 3,480,094
### DRILL COLLAR FOR PROTECTING DRILL STRING

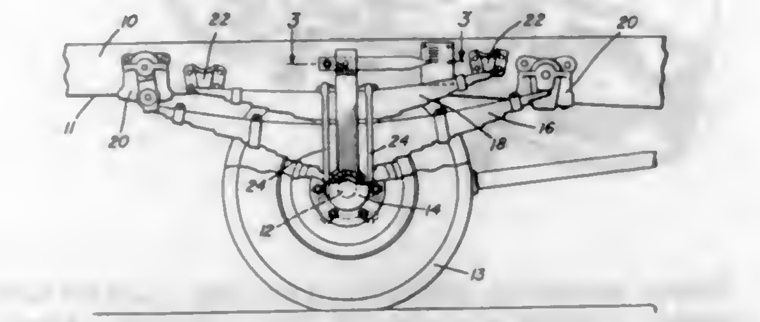
**James B. N. Morris, New Orleans, La.**
**(P.O. Box 663, Harvey, La. 70058)**
**Filed Mar. 21, 1968, Ser. No. 714,833**
**Int. Cl. E21b** *17/00;* **E21c** *9/00;* **F16c** *1/26*
**U.S. Cl. 175—325** **9 Claims**



An improved drill collar having improved shock absorbing and abrasion and heat resisting characteristics is described. The improved drill collar is of a type which can be attached or adhered to drill string or drill pipe to protect the same from abrasion and shock while being used in earth boring operations. The improved drill collar comprises an elastomeric sleeve means which can be adhered or affixed to a drill string, and the exterior surface of the elastomeric sleeve means includes a plurality of closely spaced ceramic elements. The closely spaced ceramic elements are positioned in or on the exterior surface of the elastomeric sleeve means so as to be exposed on the drill collar exterior surface, and the plurality of ceramic elements provides substantially improved abrasion and heat resistant characteristics for the drill collar. The ceramic elements may be made of a porcelain composition, and the elastomeric sleeve means can be of a neoprene rubber composition having a Shore A durometer hardness in the range of approximately 60 to 70.

### 3,480,095
### AXLE LOADING INDICATOR

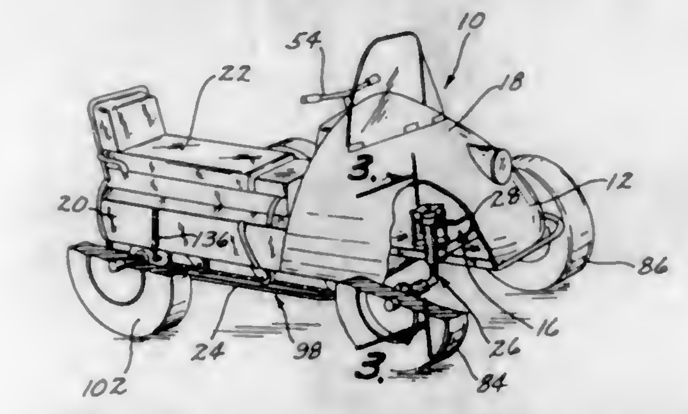
**Martin Tuchman, Maplewood, N.J., assignor to Railway Express Agency, Incorporated, a corporation of Delaware**
**Filed Nov. 29, 1967, Ser. No. 686,496**
**Int. Cl. G01g** *19/08*
**U.S. Cl. 177—137** **3 Claims**



A load indicator for vehicles including an upright link, one end of which is seated upon an axle housing of a vehicle. The opposite end of the link is orientated vertically above the axle housing and is connected to a second link, the latter serving as a weight indicating pointer. One end of this pointer is fixed to the subframe of a vehicle by means of a rotating pin connection. The opposite end of the ponter rotates alongside a graduated plate or card which indicates the displacement of the subframe with respect to the axle housing, a measure of the load carried by the vehicle.

### 3,480,096
### SUSPENSION SYSTEM FOR A SNOW VEHICLE

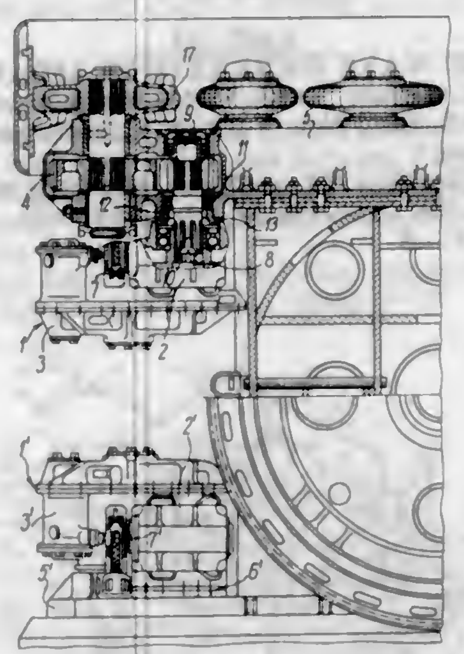
**Max M. Hammitt, 1434 Arthur Drive, Ames, Iowa 50010**
**Filed Jan. 18, 1968, Ser. No. 698,748**
**Int. Cl. B62m** *27/00*
**U.S. Cl. 180—5** **12 Claims**



A suspension system for a convertible snow vehicle having steering skis at its forward end for steering the vehicle and a track means at its rearward end for propelling the vehicle. The steering skis are each secured to a spindle which forms a portion of the front suspension system. The spindle is quickly and easily removed from the front suspension system and may be replaced by a second spindle which has a rotatable wheel means secured thereto. The track means includes a rear axle having a sprocket means secured thereto which is in operative engagement with the movable track. A wheel means having a hollow sleeve secured to its rim may be operatively secured to each of the opposite ends of the rear axle whereby the wheel means will drive the vehicle and will support the track means above the ground. The vehicle is converted from a conventional snow vehicle to a wheeled vehicle by the substitution of the wheel means for the skis and by the attachment of the wheel means to the rear axle of the track means.

### 3,480,097
### DRIVING MECHANISM OF DOUBLE-TRACK VEHICLES

**Boris Ivanovich Solokhin, Kolpino, proezd Lenina 21, kv. 90; Gennady Nikolaevich Krauze, Kolpino ulitsa Very Slutskoi 16, kv. 37; and Alexandr Ivanovich Vargasov, Kolpino ulitsa Oktaybrskaya 37, kv. 41; all of Oblast, Leningradskaya, U.S.S.R.**
**Filed May 18, 1967, Ser. No. 639,390**
**Int. Cl. B62d** *11/00*
**U.S. Cl. 180—6.48** **3 Claims**

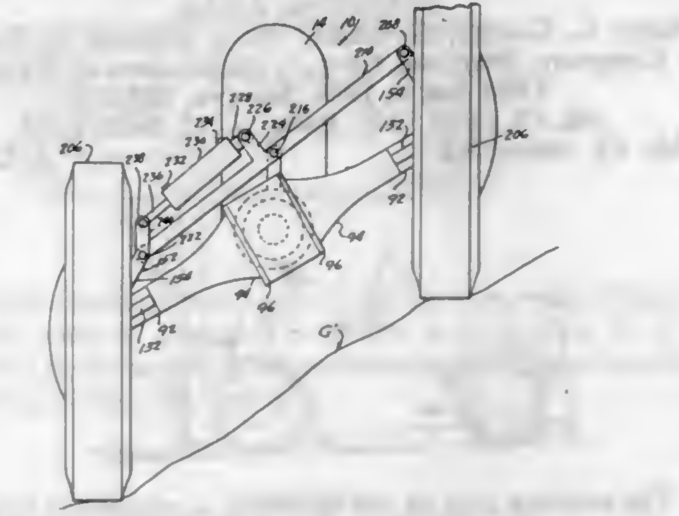


A driving mechanism of double-track vehicles such as excavators, in which a separate drive is provided for each track. Each drive comprises a reduction gear with an output shaft projecting therefrom, said reduction gear being rigidly secured to the inner side of the track frame. A cap connects the reduction gear with the track frame and rests and wedges between the frame and the reduction gear prevent sliding movement therebetween. A motor with a brake is mounted on top of the reduction gear and a final drive means has a driving shaft with an end portion connected directly to the end portion of the output shaft of the reduction gear, such that they are prevented from sliding with respect to each other.

### 3,480,098
### HYDRAULIC LEVELLING AND CONTROL MEANS FOR TRACTORS AND OTHER VEHICLES

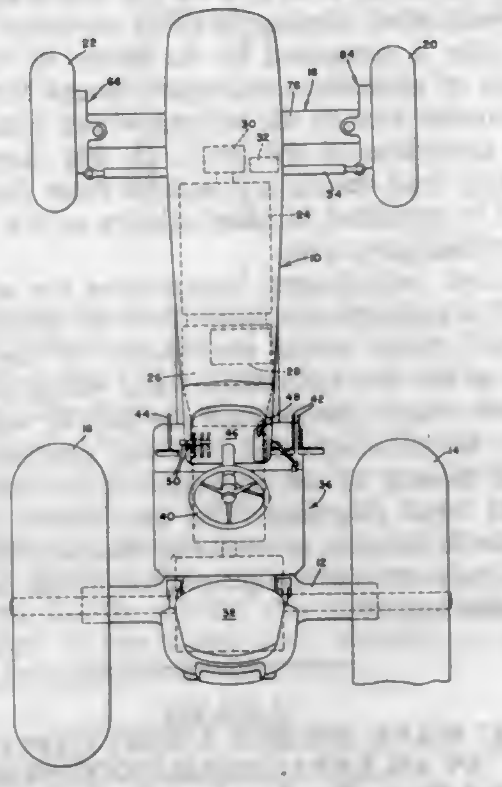
**Jesse E. Ward, Jr., 3210 5th Ave., Phenix City, Ala. 36867**
**Filed Mar. 1, 1968, Ser. No. 709,665**
**Int. Cl. B60g** *19/00, 17/00;* **B60k** *17/00*
**U.S. Cl. 180—41** **6 Claims**

An automatically actuated control system for vehicles which are adapted to operate on terrain including ground surfaces at angles of inclination other than horizontal, the apparatus of the invention comprising a straight line drive shaft between the differential and transmission; the differential including a housing therefor from the opposite sides of which laterally project axle housings carrying driven rear axles; the housings being freely swingable about the axis of the drive shaft; universal connecting means between the rear axles and the rear wheels of the vehicles; and means responsive to a tilting movement of the chassis to return the vehicle chassis, its wheels, and the vehicle operator to their normal upright position relative to a horizontal ground plane while maintaining the center of gravity passing through the center of the vehicle perpendicular to a horizontal plane at all times.



### 3,480,099
### INTERLOCKED CHANGE SPEED AND AUXILIARY HYDROSTATIC FRONT WHEEL DRIVE MOTOR CONTROLS

**Lester Leroy Nighswonger, Billie Gene Hunck, and Donald Irwin Malm, Cedar Falls, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware**
**Filed Nov. 28, 1967, Ser. No. 686,177**
**Int. Cl. B62d** *7/00;* **B60k** *17/34;* **F16d** *31/06*
**U.S. Cl. 180—44** **8 Claims**



An agricultural tractor having an engine, a pair of rearward drive wheels driven through a mechanical variable ratio transmission, a front axle structure having a pair of steerable front wheels, a pair of axial piston-type hydrostatic motors respectively mounted in and connected to the front wheels by planetary reduction gear trains including hydraulically actuated brakes, the wheel motors being selectively powered by the main hydraulic pump on the tractor through a control system which provides for a series or parallel operation of the motors and automatic disconnection of the motors in certain conditions of the transmission.

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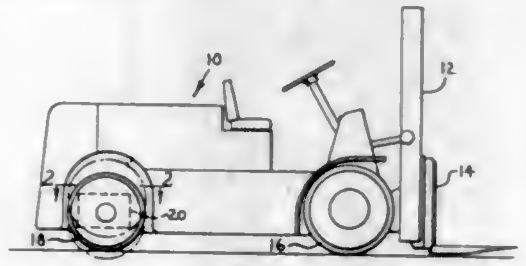
### 3,480,100
### STEERING AXLE

**Gary L. Gaulke, Gresham, Oreg., assignor to Hyster Company, Portland, Oreg., a corporation of Nevada**
**Filed Jan. 4, 1967, Ser. No. 607,250**
**Int. Cl. B62d** *5/00;* **B60g** *11/22;* **B62b** *1/00*
**U.S. Cl. 180—79.2** **3 Claims**



The steering axle of the invention is suspended beneath the frame of an industrial truck and mounts a steering prime mover in the form of a two-way hydraulic fluid-actuated steering cylinder. In one embodiment the axle includes an upper, horizontally disposed axle frame portion spaced above a lower similar axle frame portion, with the two portions rigidly joined together by a vertically extending web portion. The opposite ends of the upper and lower axle frame portions define spindle housings which receive spindle bearings and pivotally mount a pair of wheel spindles. Each spindle is of one-piece construction so as to eliminate the need for a king pin and includes a spindle arm which mounts a wheel, and a steering arm. The steering cylinder is stationarily mounted in a horizontal transverse position on the web portion of the axle. The single piston rod of the cylinder projects from both ends thereof toward the opposed steering arms and is connected to each arm by a short tie link. Thus, such rod functions both as a tie rod and drag link to turn both wheels when actuated in either direction.

The axle is connected to the frame of the lift truck by a pair of elastomer connectors spaced fore and aft of the rotational axes of the steered wheels along the longitudinal centerline of the truck. In this manner steering forces and road shocks are isolated from the frame, and the axle is permitted to pivot relative to the frame about a longitudinal pivot axis.

A second embodiment incorporates the same features as the first embodiment except that the second has a one piece axle frame which corresponds to the upper axle portion of the first embodiment and which eliminates the lower axle frame portion and the joining web portion of the first embodiment. The two-way steering cylinder is mounted directly to the underside of the axle frame for increased road clearance. The axle frame has a single large spindle housing at each end thereof which pivotally receives most of the upright portion of an inclined, one-piece wheel spindle.

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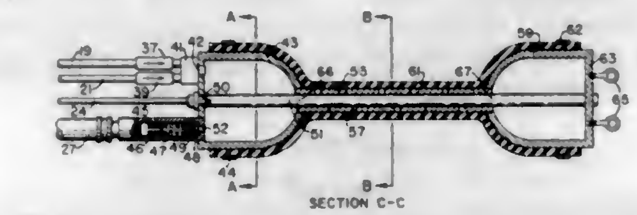
### 3,480,101
### SEISMIC WAVE SOURCE USING EXPLOSIVE GAS IN AN EXPANSIBLE ENCLOSURE

**Adelbert Barry, Franklin L. Chalmers, and John B. Pearson, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware**
**Continuation-in-part of application Ser. No. 614,307, Feb. 6, 1967. This application June 5, 1967, Ser. No. 653,284**
**Int. Cl. G10k** *11/00;* **G01v** *1/00, 1/10*
**U.S. Cl. 181—.5** **40 Claims**

A marine seismic wave source includes an enclosure for combustible gas including a plurality of elongated tubular members a flexible, expansible elastomer around the tubular members, means for introducing a combustible gaseous mixture into the enclosure and for igniting the mixture. When the device is towed through the water after production of a seismic pulse after igniting the gaseous mixture, the gaseous combustion products and the components of the enclosure are rapidly cooled by water passing through the tubular members. The source may further include an exhaust conduit extending from the enclosure to the water surface and a check valve therein for permitting gaseous flow only from the enclosure to the earth's surface. Preferably, the movable member of the check valve has high inertia and comprises a spring-biased movable valve member seating on a valve seat.



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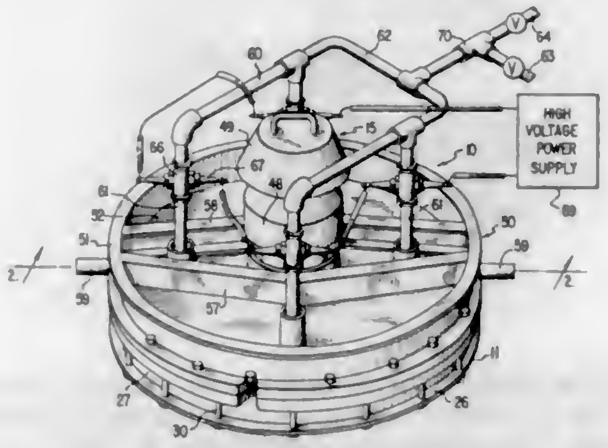
### 3,480,102
### SEISMIC WAVE GENERATING APPARATUS

**Lauren G. Kilmer, Tulsa, Okla., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**
**Filed Nov. 28, 1967, Ser. No. 686,180**
**Int. Cl. G10k** *11/00;* **G01v** *1/02*
**U.S. Cl. 181—.5** **11 Claims**



A gas exploder seismic wave generator which includes an explosion chamber having an extensible sidewall and a magnetically operated pressure release valve for rapidly exhausting the explosion chamber substantially simultaneously with the occurrence of relative movement between the top and bottom of the chamber including means providing a delay in the closure of the valve to permit substantially complete exhaustion of the chamber.

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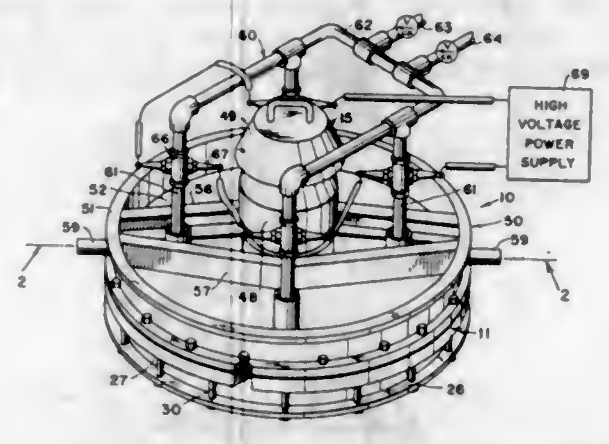
### 3,480,103
### METHOD OF GENERATING REPETITIVE SEISMIC SHOCK WAVES

**Lauren G. Kilmer, Tulsa, Okla., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**
**Continuation of application Ser. No. 595,135, Nov. 17, 1966. This application Aug. 9, 1968, Ser. No. 781,642**
**Int. Cl. G01v** *1/00, 1/16*
**U.S. Cl. 181—.5** **9 Claims**

A method for injecting into the ground a continuous seismic signal made up of repetitive shock waves having a predetermined repetition rate utilizing a gas exploder having an explosion chamber formed of a rigid top, a rigid bottom, and an extensible side wall and including inlet means for a fuel gas and an oxidizing gas, spark

means, and exhaust means for exhausting said chamber comprising the steps of injecting a combustible mixture of a fuel gas and an oxidizing gas into said chamber through said inlet means; actuating said spark means at said repetition rate to ignite said mixture whereby a high pressure wave is created; passing the shock wave to said inlet means to inhibit the injection of said fuel gas and said oxidizing gas; and rapidly venting said chamber.



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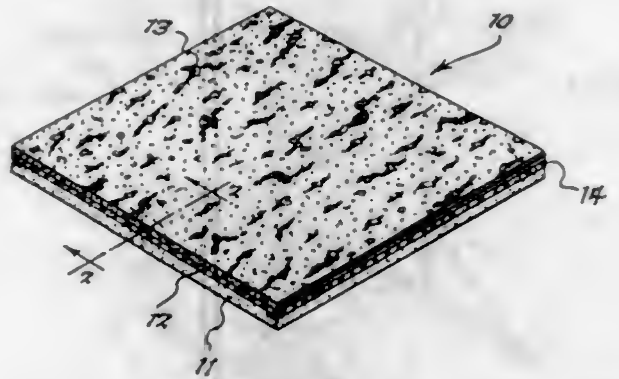
### 3,480,104
### ACOUSTIC TILE LAMINATE

**Arthur C. Austin, Kenmore, and Edward R. Gorka and Norbert W. Kaleta, Tonawanda, N.Y., assignors to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware**
**Filed June 15, 1967, Ser. No. 646,261**
**Int. Cl. G10k** *11/04;* **E04b** *1/99*
**U.S. Cl. 181—33** **6 Claims**



An acoustic tile laminate which provides sound attenuation by virtue of having an air impervious layer of paint between two layers of sound absorbing tile, the layer of paint leaving the rear surface of the tile exposed so that both the front and rear surfaces have good sound absorbing qualities. The improved method of manufacturing the tile consists of depositing the paint on the wet backing layer of the tile and thereafter depositing the wet facing layer on the wet paint and drying all three layers simultaneously.

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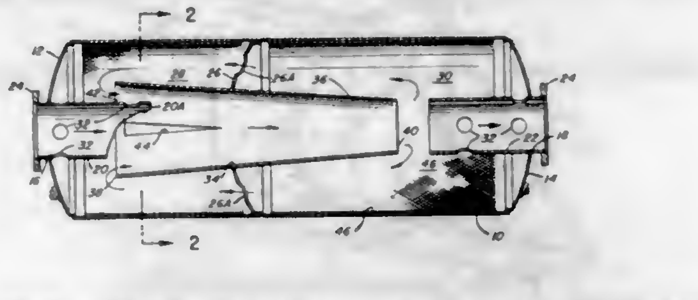
### 3,480,105
### DEVICE FOR SILENCING GAS FLOW STREAMS

**Howard T. Burris, Tulsa, Okla., assignor to Con-Rad, Division of U.S. Industries, Inc., Tulsa, Okla., a corporation of Delaware**
**Filed Dec. 13, 1968, Ser. No. 783,662**
**Int. Cl. F01m** *1/00*
**U.S. Cl. 181—47** **8 Claims**

This invention relates to devices for silencing gas flow. More particularly, the invention relates to devices for silencing gas flow including an elongated closed tubular shell, a partition wall dividing the interior of the shell into dissimilar volume chambers, an inlet conduit connecting to one of the chambers through one end of the shell and an outlet conduit connecting to the other chamber through the other end of the shell, each of the outlets having the plurality of spaced openings therein within the shell, and a baffle tube in the partition baffle communicating the inlet and outlet chamber with each other. In one embodiment the baffle tube is arranged to induce a circulation of return air flow within the silencer to further eliminate sound pulsations in the outlet gas flow.



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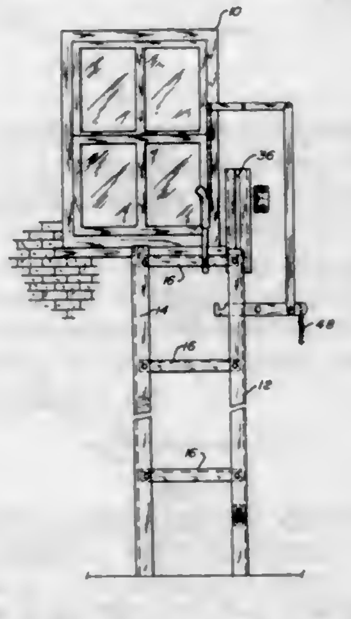
### 3,480,106
### FIRE ESCAPE LADDER

**Jerome J. Weiner, 670 Cedar Lane,**
**Teaneck, N.J. 07666**
**Filed Nov. 13, 1968, Ser. No. 775,423**
**Int. Cl. E06c** *9/06, 1/383*
**U.S. Cl. 182—96** **10 Claims**



A fire escape ladder for mounting to the side of a multistory building includes a pair of rails adapted to lay adjacent each other when the ladder is in its collapsed or stored position. The ladder, when stored, is also disposed to lay adjacent or substantially parallel to the side of the building. When the ladder is released for use, it drops by gravity to an erected condition with its lower portion swung away from the building so that the ladder, in position for use, is disposed at a determined slope to the side of the building. In the erected condition the side rails are spaced apart by the length of a plurality of spaced pivoted rungs extending from rail to rail.

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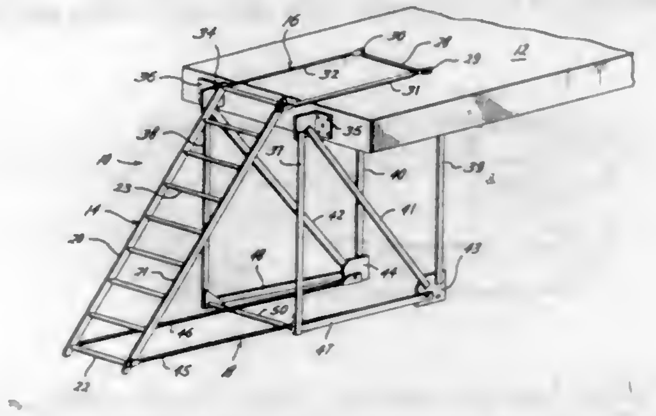
### 3,480,107
### CLIMBING APPARATUS ADAPTED FOR INSTALLATION ON PIERS AND THE LIKE

**John B. Goodhue, P.O. Box 5345,**
**Beaumont, Tex. 77706**
**Filed Oct. 2, 1967, Ser. No. 672,041**
**Int. Cl. E06c** *9/06, 7/16*
**U.S. Cl. 182—97** **10 Claims**

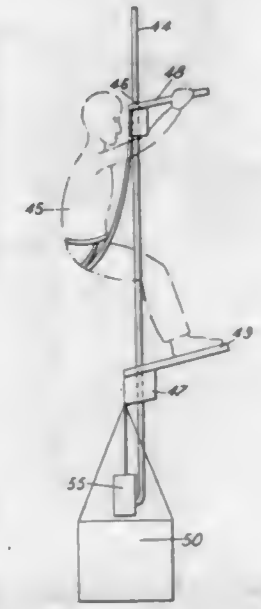
For installation on piers and the like, stair-like apparatus having at least two positions, one being retraction to a position preferably out of the water, and the other being a position extending into the water whereby a swimmer or boater has ease of access by the present invention and is permitted to climb to the pier with ease; said apparatus preferably including a pair of elongate members with a number of foot supporting members in between.



**3,480,108**

### MEANS FOR LOWERING LOADS

**Daniel Waumsley Cooper, Woking, England, assignor to G.Q. Parachute Company Limited, Woking, England, a British company**
**Filed Oct. 16, 1967, Ser. No. 675,528**
**Claims priority, application Great Britain, Nov. 19, 1966, 51,913/66**
**Int. Cl. A63b,** *27/00, 29/02*
**U.S. Cl. 182—133** **4 Claims**



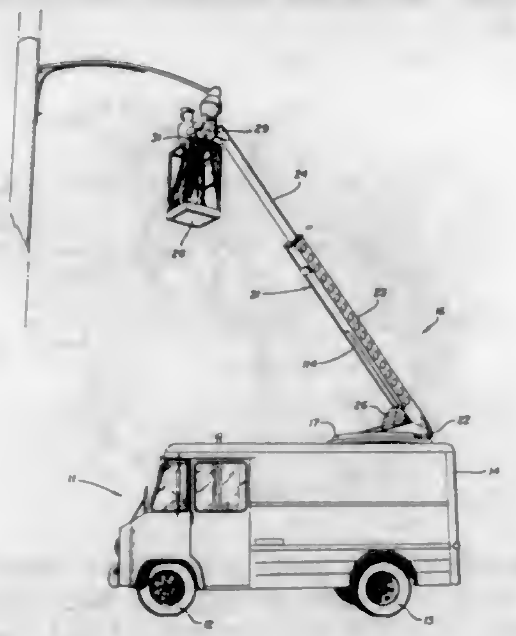
A device with rope clamping means and with a load attached thereto clampingly engages a vertical rope and moves downward therealong. The degree of friction or clamping pressure exerted on the rope is controlled by a lever mechanism operating on the clamping means. Separate adjustable means carried by the clamping means also is employed for fixing the degree of friction or clamping pressure on the rope to regulate the speed of descent of the device and load carried thereby.

**3,480,109**

### LIFTING EQUIPMENT

**Jay M. Eitel, Atherton, and Bertram J. Leigh, Redwood City, Calif., assignors to Telsta Corporation, San Carlos, Calif., a corporation of California**
**Continuation-in-part of application Ser. No. 572,306, Aug. 15, 1966. This application Jan. 15, 1968, Ser. No. 697,900**
**Int. Cl. E04g** *1/18;* **B66c** *23/62*
**U.S. Cl. 182—148** **18 Claims**

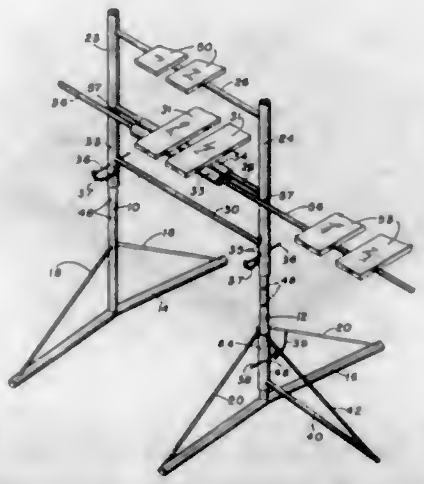
Lifting equipment having an outer boom section and an inner boom section with self-supporting carrier track means having one end secured to the outer boom section and having the other end secured to the inner boom section for carrying cables by which control means which moves with one of the boom sections can be utilized for controlling operation of motive means which is utilized for controlling movement of the sections with respect to each other.



**3,480,110**

### EXTENDABLE SCAFFOLD

**Ronald C. Coleman, 1323 Northlake Drive, Richardson, Tex. 75080**
**Filed Jan. 4, 1968, Ser. No. 695,797**
**Int. Cl. E04g** *1/22, 7/00*
**U.S. Cl. 182—184** **11 Claims**



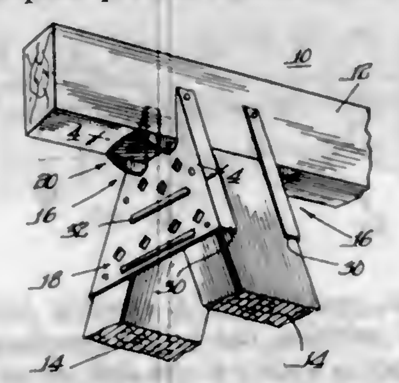
Spaced apart upright members are connected by a horizontal bar which supports end portions of an elevated scaffold platform. Parallel twin sleeves are pivotable around the axis of the horizontal bar to a position wherein one of the sleeves may receive an end portion of an extension rod. When received by the sleeve, the extension rod acts as a cantilever extension of the horizontal bar to receive an additional scaffold platform. A base member is pivotally connected to one of the upright members to provide additional support to the structure when the extension rod is in use.

**3,480,111**

### SAWHORSE BRACKET ASSEMBLY

**Charles O. Larson, Sterling, Ill., assignor to Charles D. Larson Co., Sterling, Ill., a corporation of Illinois**
**Filed Apr. 1, 1968, Ser. No. 717,653**
**Int. Cl. E04g** *1/32*
**U.S. Cl. 182—224** **10 Claims**

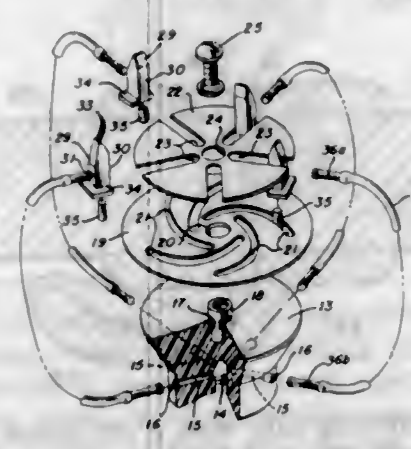
A bracket assembly for use in the formation of a sawhorse or the like structure. The assembly includes a main support bracket having a generally triangular face plate with a slot of a predetermined width extending inwardly from the apex thereof and a shelf portion extending outwardly from a first surface of the face plate at the base of the slot; and an auxiliary bracket mounted on the main bracket. The auxiliary bracket includes a plate portion having a width at least at a predetermined point therealong equal to the width of the slot in the main bracket and being received thereat in the slot. A first section of the plate portion extends from the first surface of the face plate and rests on the shelf portion. The free end of the first section overhangs the end of the shelf portion and is reversely bent thereabout. A second section extends from the opposite surface of the face plate and includes flanges along the sides thereof, the ends of which are butted against the second surface of the face plate. The cross member of the sawhorse structure rests on the auxiliary bracket and an aperture in the latter serves to allow for the insertion of a fastener into the cross member.



**3,480,112**

### ADJUSTABLE APPLICATOR FOR LUBRICATING BALL BEARINGS

**Jack W. Giese, 3680 Ethan Allen Ave., San Diego, Calif. 92117**
**Filed May 29, 1968, Ser. No. 733,070**
**Int. Cl. F16n** *5/00, 7/14, 11/10*
**U.S. Cl. 184—1** **4 Claims**

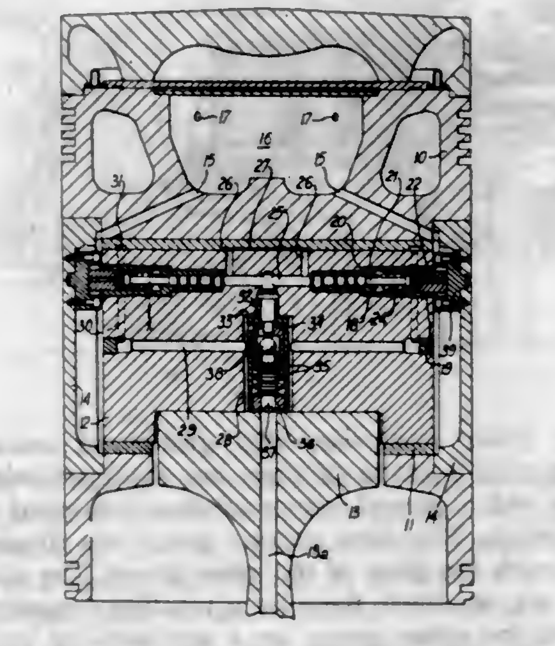


An apparatus for lubricating race mounted roller or ball bearings freely mounted, having cages, or having ball separators and being open or shielded. A plurality of nozzles each having several orifices are selectively radially displaceable by the mechanical cooperation of a guide member and camming member each concentrically carried on a body member. The apparatus is mounted on a lubrication table that discharges a precisely measured amount of lubricant. The lubricant passes through the plurality of tubes to the nozzles and onto the bearing positioned immediately adjacent the nozzles. A single such applicator can be used to lubricate bearings of different diameters since all that is required is to merely twist the camming member to radially displace the nozzles to accommodate the various sized bearings. By being constructed of plastics or Teflon-like substances chemical reaction between the invention and the lubricants used is eliminated.

**3,480,113**

### PRESSURE LUBRICATION SYSTEMS

**Joseph Albert Pope, Bramhall, and John Edwin Herbert Appleby, Cheadle, England, assignors to Mirrlees National Limited, a British company**
**Filed Aug. 31, 1967, Ser. No. 664,707**
**Claims priority, application Great Britain, Oct. 7, 1966, 44,818/66**
**Int. Cl. F01m** *1/00, 11/00*
**U.S. Cl. 184—6** **7 Claims**

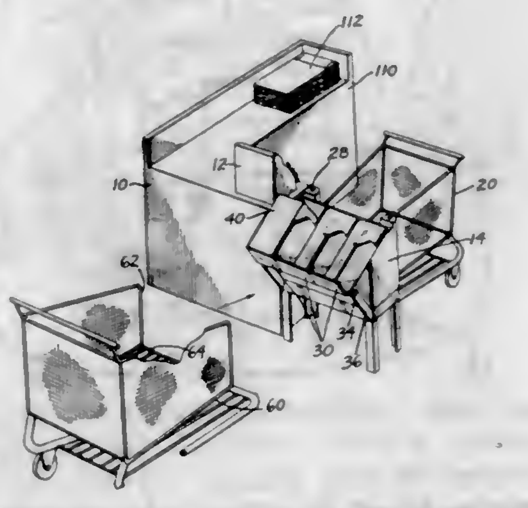


A pressure lubrication system comprising a high pressure system and a low pressure system wherein there is a pressure intensifier located within a gudgeon pin in the piston, means for supplying the intensifier with lubricant from the low pressure system, the complementary parts of the piston and the intensifier adapted to be actuated by relative oscillating movement of the gudgeon pin within its bearing to provide cyclic pressure-intensified lubrication impulses.

**3,480,114**

### MERCHANDISE CHECK OUT SYSTEM

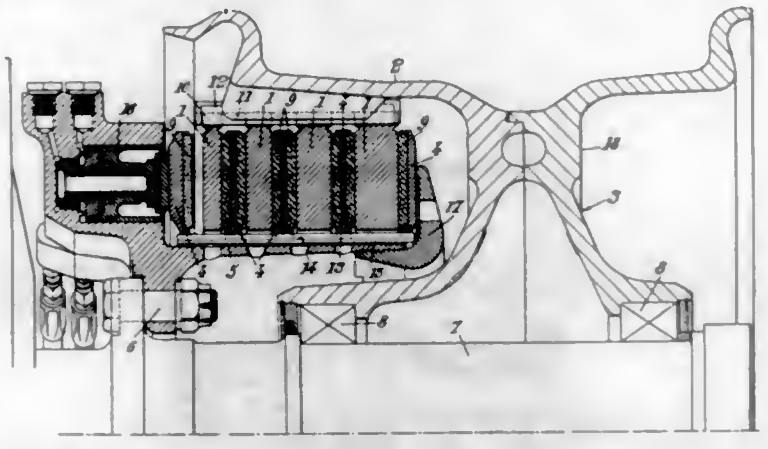
**Willie M. Shoffner, 318 S. Lutheran Church Road, R.R. 2, New Lebanon, Ohio 45345**
**Filed Aug. 11, 1967, Ser. No. 660,088**
**Int. Cl. A47g** *9/02;* **B65g** *67/00*
**U.S. Cl. 186—1** **10 Claims**



System for checking out merchandise in which tiltable holders for bags are mounted on a check out counter and are tiltable to discharge loaded bags together with a self-unloading cart, or a high-level cart.

### 3,480,115
### DISC BRAKES

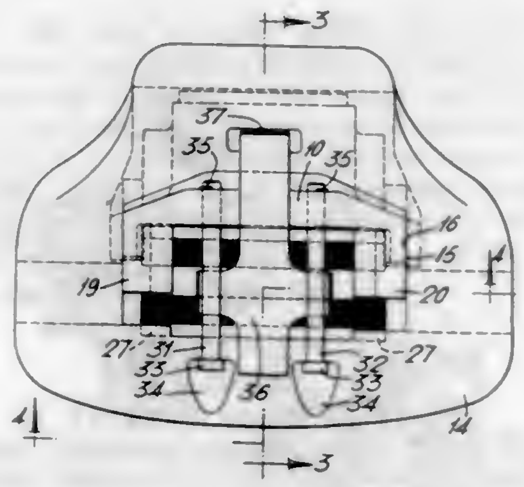
**Pierre Joseph Martin Lallemant, Port-Marly, France, assignor to Societe Hispano-Suiza-Lallemant, Bois-Colombes, France**
**Filed Mar. 19, 1968, Ser. No. 714,300**
**Claims priority, application France, Mar. 22, 1967, 99,819**
**Int. Cl. F16d** *55/224, 65/84*
**U.S. Cl. 188—72** **6 Claims**



The brake comprises two groups of coaxial discs, namely a first group of discs not equipped with friction linings and a second group of discs equipped with friction linings. The discs of one group are disposed alternately with the discs of the other group. The discs of one group are angularly fixed on a rotating structure and the discs of the other group, on a non-rotating structure, of the brake. Control means are provided to apply the discs of these two groups against each other. The discs of at least one of the two groups have thicknesses that vary from one disc to another according to the axial position of the disc.

### 3,480,116
### YOKE MOUNTING AND GUIDE MEANS FOR SPOT-TYPE DISC BRAKE

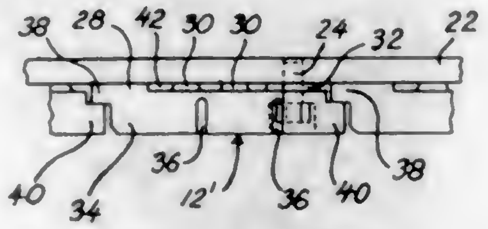
**Heinrich Bernhard Rath, Koblenz-Luetzel, Germany, assignor to Girling Limited, Tyseley, Birmingham, England, a company of Great Britain**
**Continuation of application Ser. No. 547,597, May 4, 1966. This application Aug. 8, 1968, Ser. No. 753,841**
**Claims priority, application Great Britain, May 6, 1965, 19,082/65**
**Int. Cl. F16d** *55/36, 65/12*
**U.S. Cl. 188—73** **12 Claims**



In a disc brake of the sliding yoke reaction type the yoke formed as a casting is slidably guided on spaced parallel surfaces of substantial radial depth on a stationary member and is urged against shoulders on the stationary member adjacent to the inner ends of the parallel guiding surfaces.

### 3,480,117
### DISK BRAKE

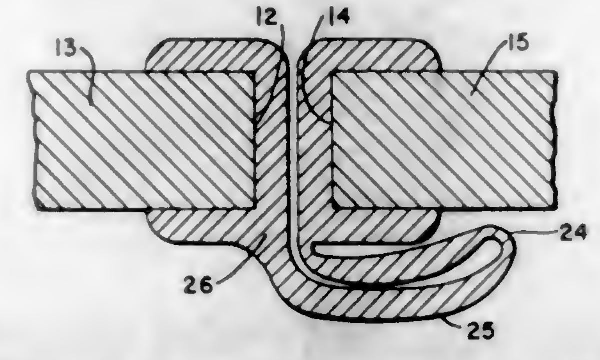
**Sven Birger Ågren, Ornskoldsvik, and Björn A. H. Andersson and Nils Svante Andersson, Gullanget, Sweden, assignors to Aktiebolaget Hagglund & Soner, Ornskoldsvik, Sweden, a corporation of Sweden**
**Filed Apr. 1, 1968, Ser. No. 717,795**
**Int. Cl. F16d** *65/84*
**U.S. Cl. 188—264** **1 Claim**



A disk brake, particularly a steering brake for belt driven armored vehicles, has a brake surface made of a plate located upon a rotary brake disk as well as upon a relatively immovable brake disk. These plates consist of friction metal and have grooves provided upon their friction surfaces which are of such depth and intersect each other in such manner that the plate is divided into sections with cooling channels between the sections. Thus the rear surface of the plate located away from the friction surface is provided with raised portions to assure a comparatively high resistance to heat transmission between the plate and the machine part which carries it and also to provide channels for air cooling. The plate is provided only upon one of its radial edges with openings receiving connecting elements, such as screws.

### 3,480,118
### EXPANSIBLE CARRYING CASE WITH WEB HAVING TWO STABLE STATES

**Herbert Gordon Dyke, Kent County, Del.**
**(206 E. 35th St., New York, N.Y. 10016)**
**Filed Aug. 24, 1967, Ser. No. 663,038**
**Int. Cl. A45c** *7/00*
**U.S. Cl. 190—44** **16 Claims**

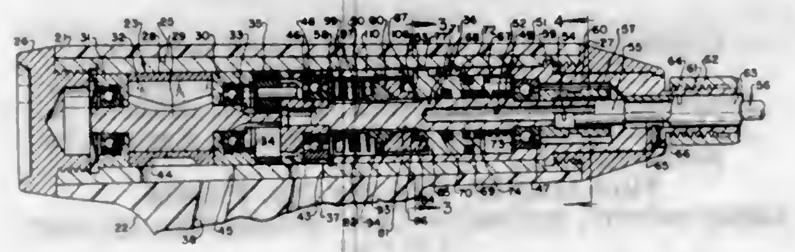


Expansible carrying case with a peripheral web about an expansion joint. The web holds the joint contracted or opened up, and in opened state serves as the wall for that portion of the carrying case. The web has two stable states, flat or folded, and can be flipped over from one to the other. If it folds in, it has at least one somewhat stiff strip that tends to push out flat. If it folds out, it has an elastic pull that tends to hold it in flat.

### 3,480,119
### WIRE-WRAPPING TOOL WITH PREDETERMINED POSITION STOP

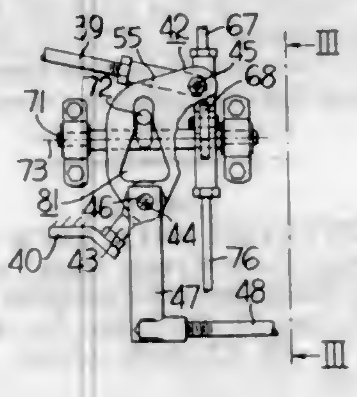
**William J. Baker, Reed City, and Richard J. Hurst, Paris, Mich., assignors to Gardner-Denver Company, a corporation of Delaware**
**Filed Mar. 16, 1967, Ser. No. 623,611**
**Int. Cl. F16d** *71/00, 13/54;* **B65h** *81/06*
**U.S. Cl. 192—3** **5 Claims**

An air actuated tool for making wrapped electrical connections between a terminal and a conductor. The tool includes an air-actuated piston and a rotary index cam having engaging surfaces which are cooperable, upon deenergization of the tool, to stop the rotary tool spindle and an attached wrapping bit in a selectable angular relation with respect to the tool housing. A spring coacts with the index cam to absorb potentially damaging inertia forces resulting from rapid deceleration of the rotating tool parts, including the drive motor, as an incident to indexing the spindle and bit. The tool is convertibly adapted to provide spring loading for the bit to accommodate rearward axial thrust against the bit as the convolutions of the connection are formed by the bit.



### 3,480,120
### MEANS FOR INTERLOCKING TRANSMISSION AND PARKING BRAKE CONTROLS

**Leo W. Lenzen, Round Lake, Norman G. Olsen, Highland Park, and Raymond N. Wenda, Grayslake, Ill., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.**
**Filed Jan. 24, 1968, Ser. No. 700,156**
**Int. Cl. F16h** *57/10;* **F16d** *67/00*
**U.S. Cl. 192—4** **5 Claims**

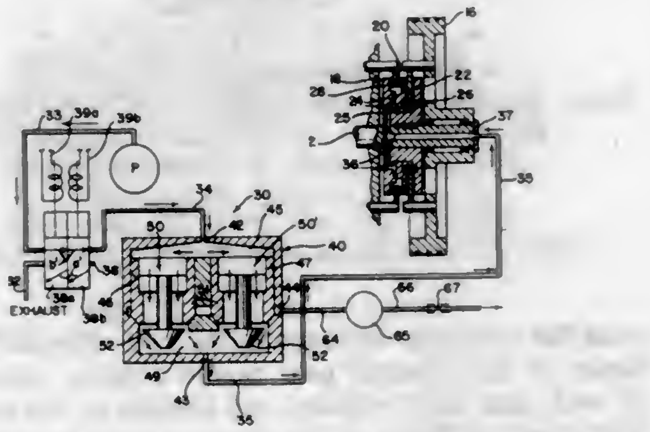


The control linkages for a change speed transmission and a parking brake have interlocking parts which lock the transmission in neutral when the emergency brake is applied. The interlocking parts also coact to shift the transmission control linkage to a neutral position if the parking brake is applied when the transmission is in a drive establishing condition. This interlocking mechanism prevents operation of the vehicle in either forward or reverse when the parking brake is applied thus preventing the parking brake from being "burned up" when inadvertently left engaged during vehicle operation.

### 3,480,121
### PRESS BRAKE AND EXHAUST VALVE THEREFOR

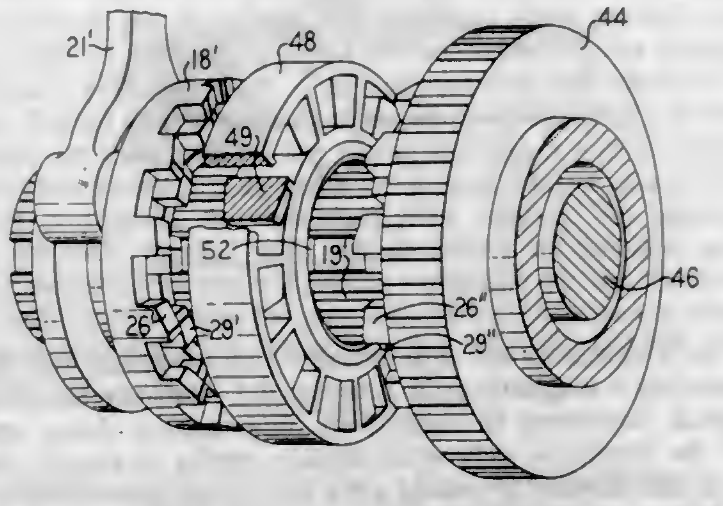
**Robert Malgrot, Paris, France, assignor to E. W. Bliss Company, a corporation of Delaware**
**Filed July 6, 1967, Ser. No. 651,412**
**Int. Cl. F16d** *67/00;* **B30b** *1/32;* **G05d** *7/01*
**U.S. Cl. 192—18** **4 Claims**

The disclosure relates to the art of pneumatic press brake and clutch controls employing a standard control valve to exhaust the fluid operating cylinder of the brake and clutch unit. The arrangement applies particularly to heavy duty crank driven presses in which the ram is started and stopped by a friction disc brake and clutch unit coupled to the crankshaft. The brake is maintained in a disengaged position by the air pressure and the clutch is engaged during a greater part of one revolution of the crank. To assure that the crankshaft is stopped and started from a predetermined point, the disclosure provides a separate fluid responsive exhaust valve which is actuated by the control valve. The brake is engaged by allowing air to escape from the fluid cylinder through the exhaust valve at a controlled rate instead of through the control valve. Any tendency to increase the crank stopping angle due to a malfunction of the air control valve is thus eliminated since it is bypassed during the exhaust cycle. Furthermore, the exhaust valve employs dual flow paths each controlled by separate valving means redundant to the system such that should one become jammed the other has enough flow area to allow for normal braking travel.



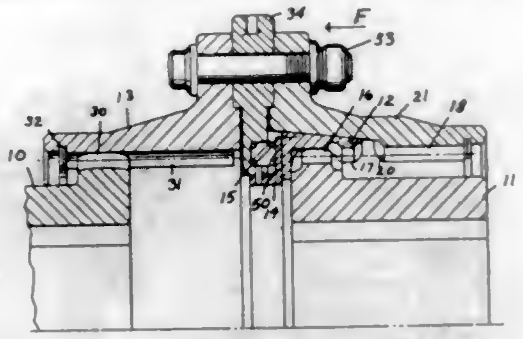
### 3,480,122
### SELF-SYNCHRONIZING GEAR COUPLER

**Glenn A. Ball, Peoria, and Le Roy Lichtenstein and Philip S. Webber, Morton, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Feb. 6, 1968, Ser. No. 703,305**
**Int. Cl. F16d** *11/04;* **F16h** *3/38*
**U.S. Cl. 192—53** **8 Claims**



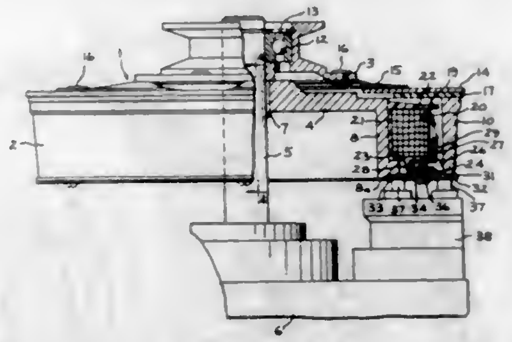
Mechanism for selectively coupling a shaft and a gear carried thereon has a coupler which is splined to the shaft and has teeth for engaging teeth on the gear. When the shaft and gear have unequal speeds, engagement is prevented by a blocker ring with additional teeth that overlap the spaces between the teeth of the coupler. After synchronous speeds have been reached, the blocker ring yields circumferentially to allow meshing of the gear and coupler teeth.

### 3,480,123
### SYNCHRONIZING FLEXIBLE COUPLING
**Norman J. Anderson and John L. Decker, Erie, Pa., assignors to Zurn Industries, Inc., Erie, Pa., a corporation of Pennsylvania**
**Filed July 31, 1967, Ser. No. 657,128**
**Int. Cl. F16d** *11/06, 13/60, 19/00*
**U.S. Cl. 192—53** **8 Claims**



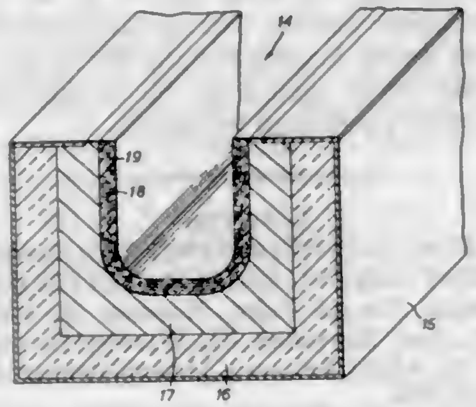
In the coupling disclosed herein, the crowned face and flanks of the external gear permit angular misalignment of each gear mesh without end loading of the gear teeth. The crowned flanks of the external gear, in contact with the flanks of the internal gear, result in well distributed contact. The radially crowned and chamfered tips of the external gear eliminate fillet root interference within the internal gear; the coupling in the engaged state transmits torque with no slip or loss in speed, thereby operating at peak efficiency. In the disengaged state, the coupling is completely disconnected and the only losses experienced are those of the bearing supporting the disconnected coupling half and very small loss in the synchronizing cone ring.

### 3,480,124
### ELECTROMAGNETIC CLUTCH
**David L. Billings and Robert M. Fey, Louisville, Ky., assignors to General Electric Company, a corporation of New York**
**Filed Apr. 22, 1968, Ser. No. 723,086**
**Int. Cl. F16d** *27/02;* **H01r** *39/08*
**U.S. Cl. 192—84** **6 Claims**



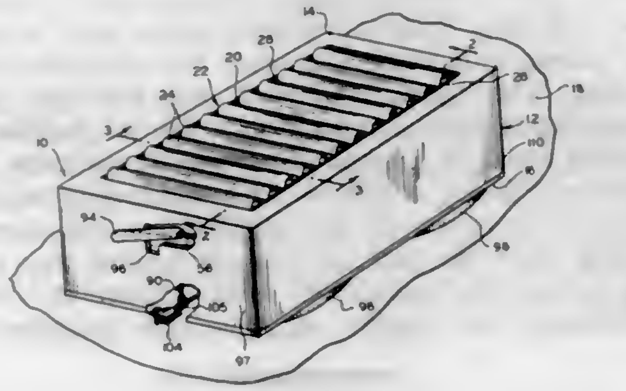
In a clutch of the type including an electrical coil for inducing a magnetic field between the relatively movable clutch structures to operatively interconnect them; one of the structures defines an annular cavity to receive the coil and the coil is wound on a bobbin of electrically insulative material which is then received in the cavity. The bobbin includes a number of spaced bosses which are received in complementary holes provided in the clutch structure and two oppositely positioned ones of the bobbins serve as mountings for the coil terminals. An annular strip of electrically insulative material is provided with a pair of spaced slip rings and includes an equal number of spaced openings with each opening communicating with a different one of the slip rings than the opening disposed opposite it. The strip is mounted on the clutch structure by means of conductive connectors, such as screws, which extend through the openings and holes. Each one of an oppositely disposed pair of the screws engages a slip ring and a terminal. Thus the bobbin and the annular strip are securely mounted on the clutch while the slip rings are electrically connected to the coil.

### 3,480,125
### FIBROUS INSULATING MATERIALS AND CHANNELS LINED WITH SAME
**Malcolm Donald Ash, Wirral, England, assignor to Morgan Refractories Limited, Wirral, England, a British company**
**Filed Mar. 23, 1966, Ser. No. 536,826**
**Claims priority, application Great Britain, Mar. 26, 1965, 12,962/65**
**Int. Cl. B65g** *11/16;* **B32b** *7/14;* **D04h** *1/30*
**U.S. Cl. 193—2** **6 Claims**



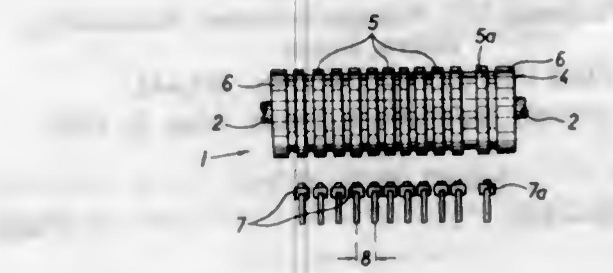
A ceramic blanket, particularly suitable for lining apparatus handling molten metals, comprises a thickness of felted or matted ceramic fibres of alumina and silica stiffened by treatment with a silica sol from one surface part way only through its thickness towards the other surface. In this way part of the thickness is rigid enough to keep its shape but the remainder is resilient and resists shocks.

### 3,480,126
### PALLET CONVEYOR WITH LOCK MECHANISM
**Richard R. Jung, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Delaware**
**Filed Apr. 17, 1967, Ser. No. 631,362**
**Int. Cl. B65g** *13/00*
**U.S. Cl. 193—35** **4 Claims**



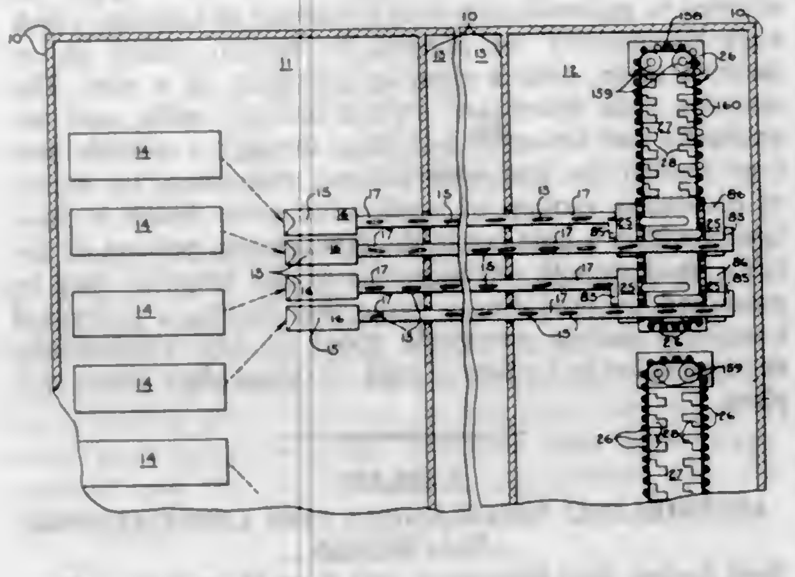
A device for use in transporting loads along a supporting floor surface including a base member having a plurality of rollers rotatably supported on the upper surface thereof to receive a load thereon from a roller conveyor and the like. The device includes friction locking members supported by an overcenter linkage arrangement which is selectively operable to lock the rollers against rotation, and a manually operable lock releasing mechanism to release the locking means. Means, such as inflatable fluid pressure pads, are mounted on the underside of the device which adapt the device to be readily moved along the supporting surface with a minimum of frictional resistance.

### 3,480,127
### PRINTING PLATEN FOR CALCULATING AND BOOKKEEPING MACHINES
**Alfred Hesse and Wolfgang Bindel, Wilhelmshaven, Germany, assignors to Olympia Werke AG, Wilhelmshaven, Germany**
**Filed May 18, 1967, Ser. No. 639,359**
**Claims priority, application Germany, June 16, 1966, O 11,734**
**Int. Cl. B41j** *11/05*
**U.S. Cl. 197—144** **7 Claims**



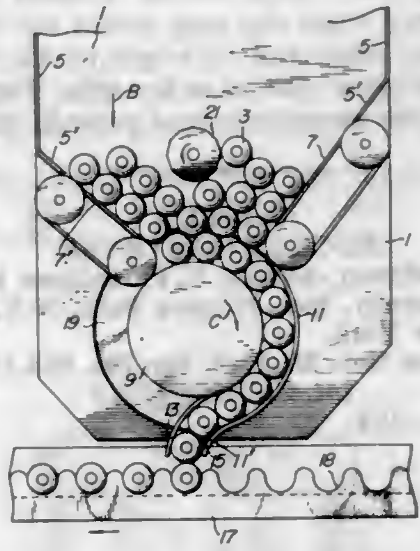
A printing platen for calculating and bookkeeping machines is provided with an outer resilient surface consisting of spaced rings, the spacing being in correspondence to the spacing of the type carriers of the machine.

### 3,480,128
### BOBBIN DISTRIBUTING INSTALLATION
**Charles W. Brouwer, East Greenwich, David G. Cruickshank, North Kingstown, and Raymond V. Tata, Warwick, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts**
**Filed Sept. 11, 1967, Ser. No. 666,624**
**Int. Cl. B65g** *47/24*
**U.S. Cl. 198—1** **14 Claims**



A textile mill installation and apparatus for simultaneously handling various types of filled yarn bobbins. The filled bobbins are stored in a yarn spinning or twisting processing area. Each type of filled bobbins is stored in a jumbled condition in a separate storage bin at the processing area and is automatically conveyed to bobbin orienting equipment at the winding area. The various types of oriented bobbins are selectively distributed to winding stations using a particular one of the types of bobbins to wind the packages. Once the various types of jumbled bobbins have been deposited in their respective storage bins, the entire operation of orienting and distributing the bobbins is automatic. The apparatus includes a storage bin conveyor which cooperates with a delivery conveyor in avoiding scuffing and undesirable interference of the bobbins while conveying the bobbins from the processing area to the orienting equipment which automatically orients both partially and fully filled bobbins. Finally, a distributing system receives the various types of the oriented bobbins and simultaneously and automatically distributes each type of bobbin to winding stations using that type of bobbin.

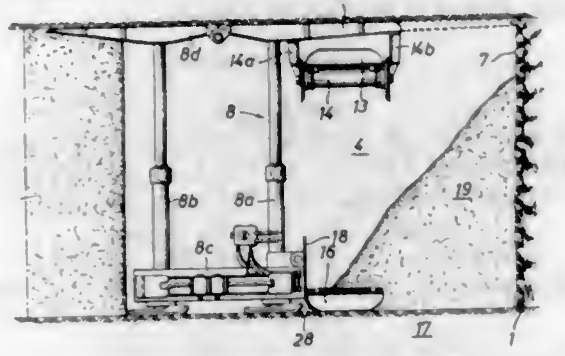
### 3,480,129
### APPARATUS FOR ARRANGING AMPULES AND FEEDING THEM ONTO A CONVEYOR
**Hideo Tatibana, 3–5 Nakano 6-chome, Nakano-ku, Tokyo, Japan**
**Filed Jan. 22, 1968, Ser. No. 699,501**
**Claims priority, application Japan, Feb. 15, 1967, 42/9,324**
**Int. Cl. B65g** *47/26, 3/00*
**U.S. Cl. 198—32** **5 Claims**



The specification and drawings disclose an apparatus for arranging ampules fed to the apparatus into a row thereof and for feeding them onto a conveyor one-by-one. The apparatus comprises an inclined table on which a pair of downwardly converging belt conveyors are provided to form a planar funnel. A rotary disc is provided, which is rotatable around an axis which is perpendicular to the surface of the table, so as to partially intervene in the gap at the bottom ends of the funnel shaped belt conveyors. The ampules fed and stacked in the funnel with their axes directed perpendicularly to the table are taken out of the funnel through a gap provided between the rotary disc and the bottom end of one of the belt conveyors, as the rotary disc rotates. An arcuate guide wall parallel with the periphery of the disc and the periphery at the exit define a passage for the ampules which extends from the gap to terminate at above a third horizontal conveyor on which the ampules are fed one after one.

### 3,480,130
### PROP AND CONVEYOR ARRANGEMENT FOR REMOVING LOOSE MINERAL
**Rudi Kerschek, Lunen, Westphalia, Germany, assignor to Gewerkschaft Eisenhutte Westfalia, Wethmar, near Lunen, Westphalia, Germany**
**Filed May 3, 1967, Ser. No. 635,896**
**Claims priority, application Germany, May 10, 1966, G 46,840**
**Int. Cl. B65g** *21/00, 41/00*
**U.S. Cl. 198—126** **5 Claims**

Prop and roof supporting arrangement including side-by-side advanceable mine roof prop means extending in longitudinal direction and endless scraper chain conveyor means extending in longitudinal direction along the prop means and having a lower working flight for scraping contact with the mine floor and an upper return flight guidedly positioned along the upper portion of the prop means, with a pusher plate extending in longitudinal direction interposed between the adjacent portions of the prop means and the lower flight and carried by the prop means in sliding contact with the lower flight to confine the rearward limit of the conveyor path and achieve advance of the lower flight during advance of the prop means, whereby when the prop means are advanced the lower working flight will be urged by the plate means into a pile of loose mineral at the mine floor to take up such mineral for conveyance to a point of discharge.



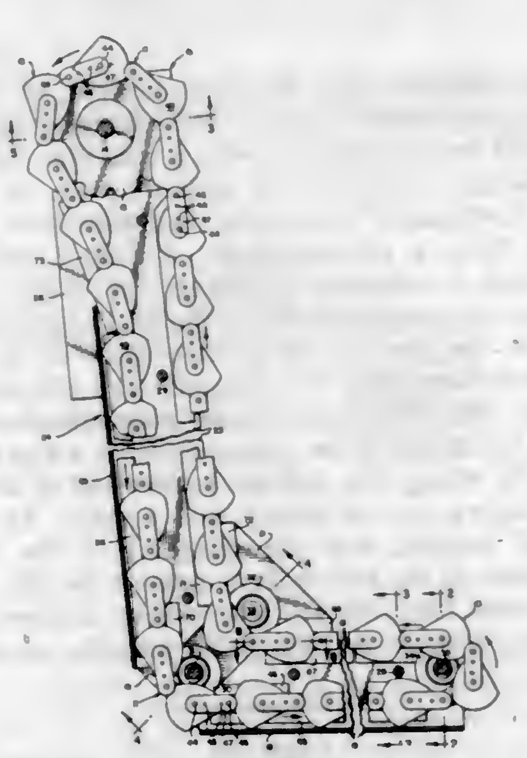
### 3,480,131
### BUCKET CONVEYER

**Robert L. Holloway, Snyder, N.Y., assignor to Chisholm-Ryder Company, Inc., Niagara Falls, N.Y., a corporation of New York**

**Filed Nov. 28, 1967, Ser. No. 686,186**

**Int. Cl. B65g** *17/16*

**U.S. Cl. 198—151** **8 Claims**



Particularly to provide an endless, high speed bucket conveyer having closely spaced parallel flights capable of sharp turns and reversals, a pair of transversely spaced standard hollow pin conveyer chains are employed. Each bucket has each end head fixed to a link having solid pins fitted and secured within pairs of adjacent hollow pins of the chains. One solid pin of each end head is on an axis through the center of the bucket and the other solid pin thereof is on an axis outboard and along one edge of the mouth of the bucket. For maximum internal bucket capacity and close bucket-to-bucket spacing at all times, each bucket has two side walls in the form of outwardly bulging cylindrical segments joined together to form the bucket bottom and, with the end heads, form the bucket mouth. One side wall of each bucket is concentric with its center axis and the other concentric with an axis adjacent the lip formed by its one side wall, the two walls being thereby heart-shaped in cross section with one lip traveling in closely and uniformly spaced relation to one side wall of the next bucket. The pitch of each chain is approximately equal to 60° of travel about the axis of the minimum size of rollers used to guide the chains around turns.

### 3,480,132
### APPARATUS FOR ARRANGING AMPULES IN REGULAR ORDER

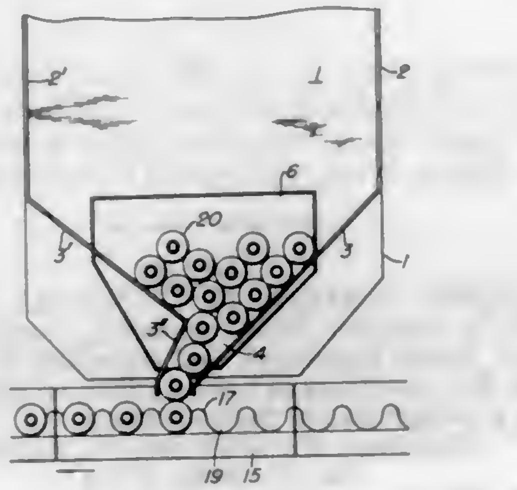
**Hideo Tatibana, 3–5, Nakano-6-chome, Nakano-ku, Tokyo, Japan**

**Filed Feb. 6, 1968, Ser. No. 703,441**

**Claims priority, application Japan, Mar. 6, 1967, 42/13,737**

**Int. Cl. B65g** *27/10*

**U.S. Cl. 198—220** **1 Claim**



The specification and drawings disclose apparatus adapted to automatically load a number of ampules which were successively set upright at random places on an inclined table, onto a running conveyor, in a row. The ampules slide downward on the inclined table, and are gradually and smoothly advanced through a suitable passage toward the conveyor without stagnating, by means of oscillating motion of a vibration plate which is positioned within a hole cut in the downstream portion of the table. Said smooth advancement of the ampules may be promoted by providing a projection having a polygonal transverse section swingable about an axis substantially perpendicular to a plane of said vibration plate above said plate.

### 3,480,133
### ASSEMBLING MECHANISM FOR LINECASTING MACHINES

**Karl Debus, Bad Homburg, and Kurt Heimel, Neu Isenburg, Germany, assignors to Linotype, G.m.b.H., Frankfurt am Main, Germany**

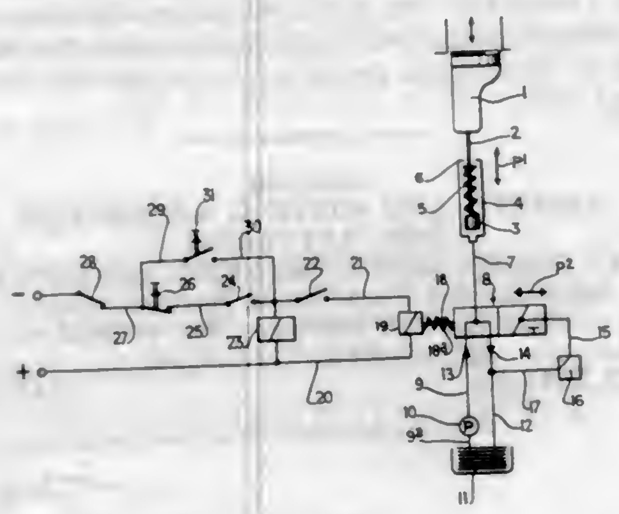
**Filed Nov. 14, 1966, Ser. No. 591,805**

**Int. Cl. B41b** *11/30*

**U.S. Cl. 199—18** **5 Claims**

Hydraulic mechanism for actuating the assembling elevator of a linecasting machine. The mechanism includes a single acting hydraulic cylinder which raises the elevator when a control valve is actuated to direct hydraulic fluid from a continuously running pump to the

cylinder. A relief valve permits the hydraulic fluid to be circulated to a fluid reservoir when the assembling elevator is in its raised terminal position. The assembling elevator is restored to its lower position by a spring.



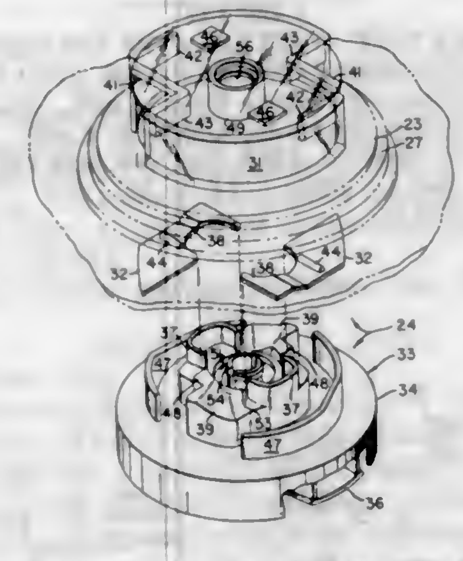
### 3,480,134
### REEL CONTAINER

**Max D. Waddington, Opelika, Ala., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California**

**Filed Jan. 19, 1967, Ser. No. 610,353**

**Int. Cl. B65d** *85/67;* **B65h** *75/02*

**U.S. Cl. 206—52** **4 Claims**



A two-part container that clamps onto a reel of tape or film, so as to prevent rotation or rattling of the reel within the container. Each of the two container parts has an arbor portion fitting within the hub of the reel, and a rotating hand grip on one of the arbors operates an extending detent element to first latch the two container parts loosely together, and then draw them axially together and into tight clamping engagement with the sides of the reel.

### 3,480,135
### CORD TYPE CONTAINER CARRIER

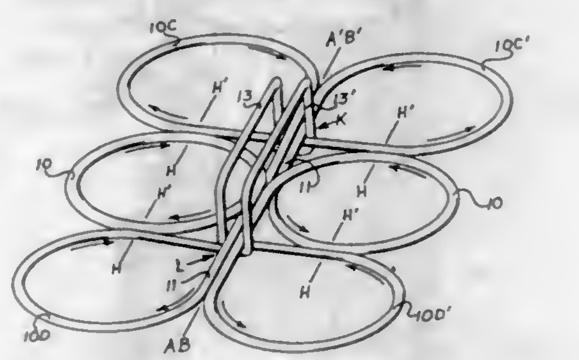
**James D. Rockett, 1904 N. 34th St., Milwaukee, Wis. 53208**

**Filed Dec. 27, 1967, Ser. No. 693,856**

**Int. Cl. B65d** *71/00*

**U.S. Cl. 206—65** **4 Claims**

A carrying unit for a plurality of containers and the like being comprised of two series of loops, each series of said loops being comprised of a cord or ribbon being wound or placed upon a series of containers to co-mate in a gripping manner, said loops being formed and welded from a single strand or a plurality of strands, embodiments being comprised of two strands per series of loops being welded, or twisted and welded to form complete loops, said series of said loops then being joined together to form a package unit having two parallel rows of clustered containers.



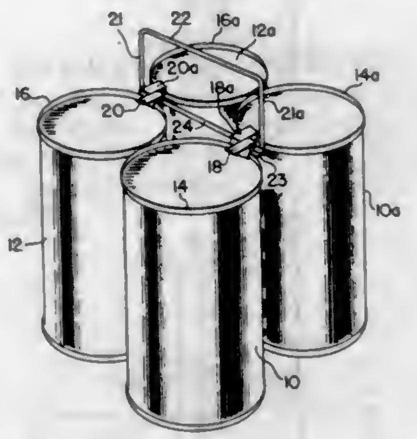
### 3,480,136
### CLIP DEVICE

**Ougljesa Jules Poupitch, Itasca, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware**

**Filed Jan. 29, 1968, Ser. No. 701,195**

**Int. Cl. B65d** *85/62, 71/00*

**U.S. Cl. 206—65** **4 Claims**



A clip for connecting a pair of containers of the type having an end rim bead, and including a body portion with depending flange formations shaped to provide a confining recess for snugly engaging and gripping the surfaces of the container beads of an adjacently positioned pair of containers and each clip device further including transverse aperture means traversing a common diametral portion between adjacent paired containers for receiving a portion of a handle member to support the connected pair of containers, and the handle portion being adapted to extend through the aperture means of an adjacent clip device connecting another pair of containers for securing together adjacent pairs of clip-connected containers as a portable package.

### 3,480,137
### PACKAGE FOR A FRAGILE PRODUCT

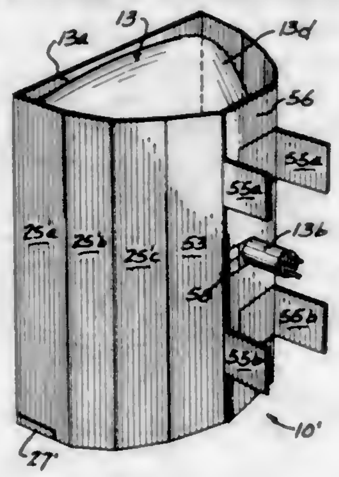
**Wendell J. Wallace, Lockport, Ill., assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware**

**Filed Aug. 2, 1968, Ser. No. 749,799**

**Int. Cl. B65d** *85/42, 5/56, 25/14*

**U.S. Cl. 206—65** **4 Claims**

A package for a fragile product, such as a cathode ray tube, is provided which includes an outer container and an inner packing disposed within the interior of the outer container. The inner packing substantially encompasses the product and retains same in a substantially fixed position within the outer container.



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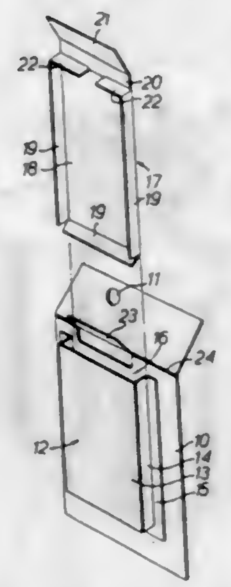
### 3,480,138
### DISPLAY PACKS

Ernest C. Baker, Solihull, England, assignor to Newey Goodman Limited, Birmingham, England, a British company
Filed July 30, 1968, Ser. No. 748,750
Int. Cl. B65d *73/00*
U.S. Cl. 206—78 6 Claims



A display pack comprises a backing sheet and a transparent cover having a recess and a peripheral flange secured to the sheet. An opening in the cover enables an article container to be inserted into the recess. The container has a window through which articles can be viewed. Part of the container constitutes a closure for the opening. There may be a flap formed from the backing sheet and overlying the opening, the sheet being foldable along the line at which the flap joins the sheet so that when the sheet is folded the flap is less of a restriction to the withdrawal of the container.

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### 3,480,139
### RECOVERY OF KIESERITE FROM CRUDE MINERAL SALTS

Guenter Fricke, Roeddensen, Lehrte, and Arno Singewald, Kassel, Wilhelmshohe, Germany, assignors to Wintershall Aktiengesellschaft, Kassel, Germany
No Drawing. Filed July 5, 1967, Ser. No. 651,653
Claims priority, application Germany, Feb. 2, 1967, W 43,285
Int. Cl. B03b *1/04*
U.S. Cl. 209—9 15 Claims

Kieserite is obtained in a preparation process of mineral salts comprising the step of adding a finely dispersed water adsorbent and a chemical conditioning agent to the crude salt, the adsorbent and the chemical agent being in physically separate form, and the chemical conditioning agent comprising at least one fatty acid having between 3 and 18 carbon atoms, subjecting the components to thorough mixing and thereafter effecting the separation in an electrostatic step at a relative humidity between 0.5 and 20%.

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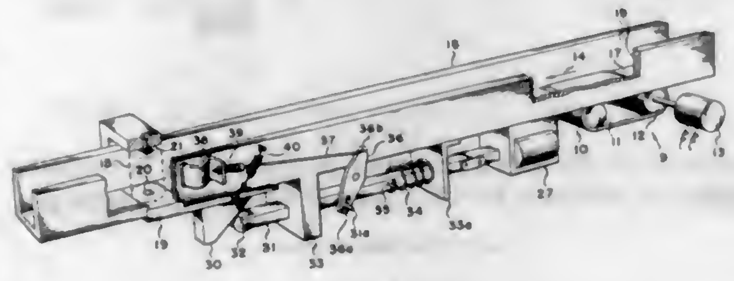
### 3,480,140
### TESTING AND SORTING APPARATUS FOR BATTERIES

Robert J. Unkefer, Sherman Oaks, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Mar. 24, 1967, Ser. No. 625,648
Int. Cl. B07c *3/12, 5/344*
U.S. Cl. 209—73 14 Claims



An apparatus for automatically testing batteries by subjecting them to a potentiometer-controlled circuit to determine their residual life, using the battery as part of the circuit, and to activate a sorter to separate the batteries in accordance with the residual life determination.

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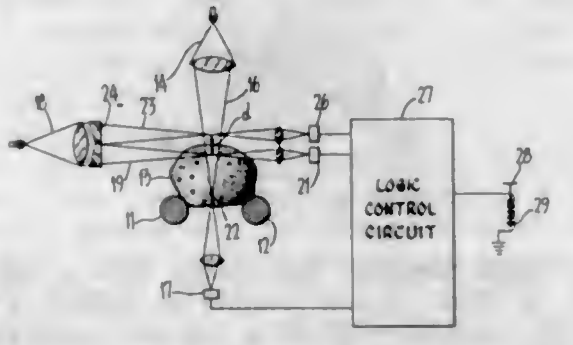
### 3,480,141
### PHOTOELECTRIC SYSTEM FOR GRADING OBJECTS ACCORDING TO LENGTH AND WIDTH

Frank C. Rock, Jr., Santa Rosa, Calif., assignor to George E. Lauer, Oakland, Calif.
Filed Aug. 30, 1967, Ser. No. 664,485
Int. Cl. B07c *1/14, 5/10, 3/14*
U.S. Cl. 209—80 18 Claims



A first light beam from a source is projected vertically downward transverse to a conveyor transporting at a selected velocity, objects to be graded. A photoelectric cell is located subjacent the conveyor to receive the vertically projected light beam. The cell provides signals of durations equal to the periods which objects interrupt the vertically projected light beam. A second source and associated inverse prism provides two vertically spaced apart light beams horizontally projected at selected elevations above the conveyor. Each of the horizontally projected light beams impinge an associated photoelectric cell which provides a signal indicative of the interruption of the respective light beam by objects transported by the conveyor. The signals from the three cells are coupled to a logic control circuit selectively adapted to actuate an ejector to displace objects from the conveyor in accordance with certain predetermined combinations of signals issued by the cells.

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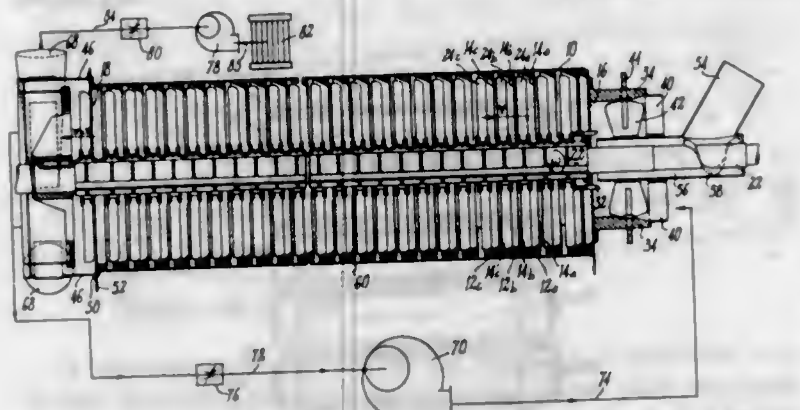
### 3,480,142
### METHOD AND APPARATUS FOR PNEUMATICALLY SEPARATING SOLID PARTICLES

André Bonnet, Vincennes, France, assignor to Société Aria, Paris, France
Filed Nov. 28, 1966, Ser. No. 597,433
Claims priority, application France, Dec. 21, 1965, 43,128
Int. Cl. B07b *7/01, 4/08*
U.S. Cl. 209—133 15 Claims



A method and apparatus of continuous dry fractionation or classification of pulverulent products, which consists in maintaining in a stationary cylindrical casing a continuous flow of air having a predetermined axial velocity at all points, in combination with a constant angular velocity about the axis of said casing, in releasing at substantially zero axial velocity and at said angular velocity, from a particular cross section, and at a particular distance from the axis, of said casing, particles of the pulverulent dry product to be fractionated or classified.

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### 3,480,143
### FLOTATION OF SILICEOUS ORES

Abraham Mitzmager and Chanuch Gorin, Kiriat Haim, Israel, assignors to Chemicals & Phosphates Ltd., Haifa Bay, Haifa, Israel, a corporation of Israel
No Drawing. Continuation-in-part of application Ser. No. 531,789, Mar. 4, 1966. This application Apr. 12, 1968, Ser. No. 721,063
Claims priority, application Israel, Mar. 28, 1965, 23,241
Int. Cl. B03d *1/08, 1/00*
U.S. Cl. 209—166 9 Claims

Flotation-separation of a siliceous ore into a floated heavy mineral fraction and a non-floated siliceous fraction using as collector a composition containing acid esters of phosphorus acids in which the state of oxidation of phosphorus corresponds statistically to approximately four.

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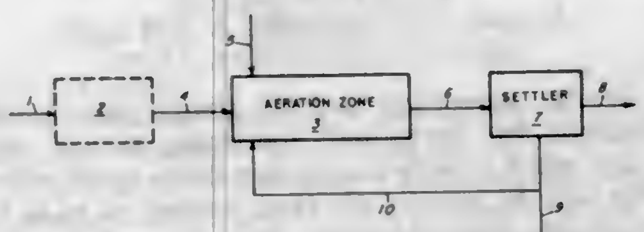
### 3,480,144
### PROCESS FOR REMOVING PHOSPHORUS FROM WASTE WATER

Edwin F. Barth and Morris B. Ettinger, Cincinnati, Ohio, assignors to the United States of America as represented by the Secretary of the Interior
Filed May 3, 1968, Ser. No. 726,285
Int. Cl. C02c *1/06*
U.S. Cl. 210—4 9 Claims



Phosphates are removed from sewage streams treated by the activated sludge process by introducing phosphate precipitating ions directly into the aerating zone of the process.

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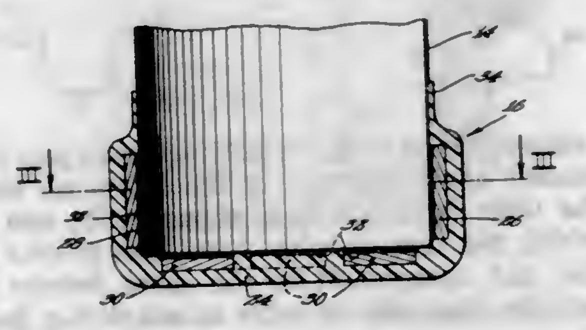
### 3,480,145
### MAGNETIC FILTER

Donald W. Gladden, P.O. Box 1037, Mesilla Park, N. Mex. 88047
Filed Feb. 23, 1968, Ser. No. 707,699
Int. Cl. B01d *35/06, 29/00*
U.S. Cl. 210—223 2 Claims



A filtering device comprising a cup member having a plurality of magnets disposed in the walls and base of the cup. The cup is molded of a material such as plastic or latex and sized to fit over the end of an oil filter can of an internal combustion engine. The magnets attract magnetic particles suspended in the liquid passing through the filter. The invention also includes the method of filtering magnetic particles from the oil system of internal combustion engines.

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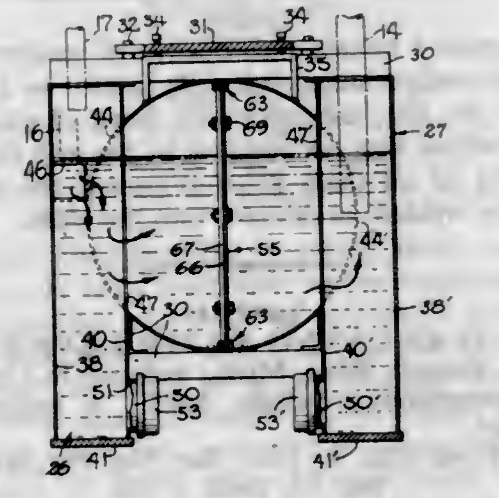
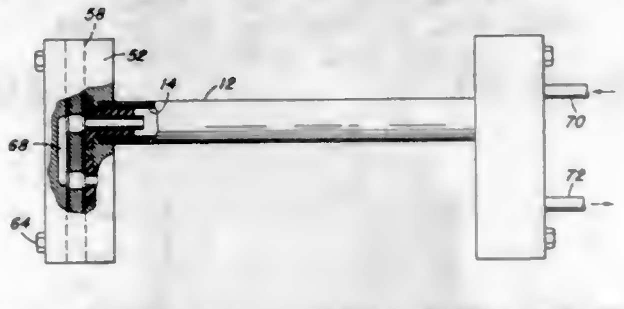
### 3,480,146
### HYDRAULIC RESERVOIR

Pierce Barker, Jr., Rockford, Ill., assignor to Barker Rockford Co., Rockford, Ill., a corporation of Illinois
Filed July 25, 1967, Ser. No. 655,817
Int. Cl. B01d *21/24, 21/02*
U.S. Cl. 210—250 8 Claims



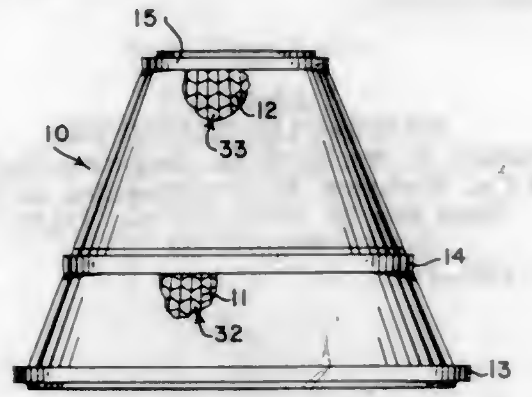
A reservoir for storing hydraulic oil and including an upright hollow leg which supports the reservoir and also serves as a return conduit for oil flowing from hydraulic operating devices back into the reservoir. The leg is formed with an outlet spaced below and angularly offset from an inlet so that oil passing through the leg from the inlet to the outlet must flow in a multi-directional path and, since heavy foreign particles carried by the oil resist such directional changes because of their high inertia, the particles are separated from the oil and settle to the bottom of the leg. A flow-directing baffle extends lengthwise within the reservoir and interconnects two end covers to enable removal of the covers by the release of a single screw.

### 3,480,147
### FILTRATION SYSTEM SEAL
**Anthony J. Kanyok, East Hanover, N.J., assignor to American Standard Inc., a corporation of Delaware**
**Filed May 22, 1967, Ser. No. 640,305**
**Int. Cl. B01d** *13/00*
**U.S. Cl. 210—321** **10 Claims**



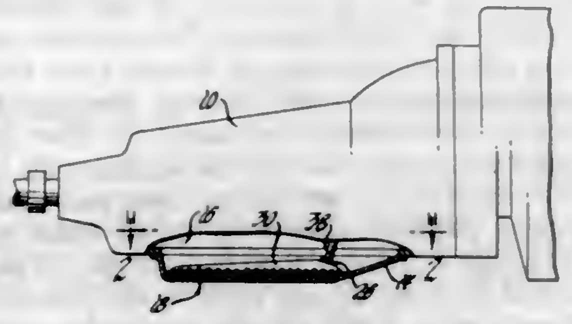
An ultra filtration system which includes a pair of manifold headers and a plurality of tubes between the headers. The tubes include a rigid support tube and a filter tube within the support tube. A resilient tubular plug is distorted and compressed in the space betwen a feed pipe and the filter tube in order to establish a fluid tight seal.

### 3,480,148
### CONICAL HONEYCOMB STRUCTURE
**Edward T. Bryand, South Portland, Maine, assignor to Metal-Tech Inc., Biddeford, Maine, a corporation of Maine**
**Filed Feb. 2, 1967, Ser. No. 613,675**
**Int. Cl. B04b** *3/00, 7/08*
**U.S. Cl. 210—380** **2 Claims**



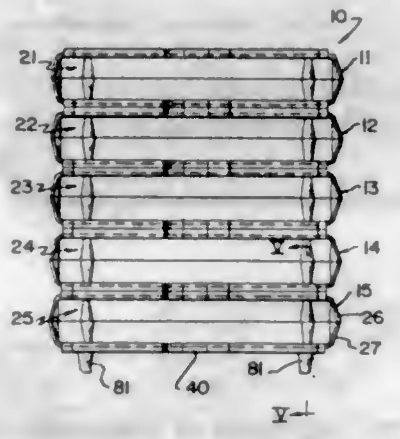
An improved honeycomb openwork structure of frusto-conical configuration, especially useful as a centrifuge basket or the like, the openwork being characterized by an intermediate ring, in addition to the end rings and by the slotting of all three rings to permit the honeycomb strips to be welded, or brazed, into the slots.

### 3,480,149
### FLAT CASING FILTER DEVICE
**Robert L. Houser, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Mar. 8, 1967, Ser. No. 621,589**
**Int. Cl. B01d** *27/08*
**U.S. Cl. 210—445** **1 Claim**



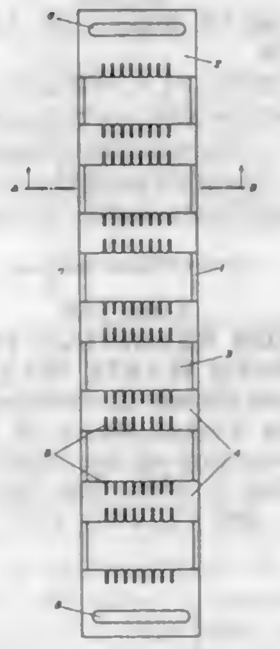
A flat casing closely confining a flat envelope of filter material, the casing and filter material being cooperatively arranged to maintain liquid flow passages leading to and from the filter material.

### 3,480,150
### FILING DEVICE
**Dudley E. Cornell III, and James L. Evans, both of 225 San Pedro NE., Albuquerque, N. Mex. 87108**
**Filed May 10, 1967, Ser. No. 637,598**
**Int. Cl. A47f** *3/14, 5/16*
**U.S. Cl. 211—11** **5 Claims**



A filing device having several box-like filing compartments fitted together to make a multi-compartment file, each compartment being made of two identical molded sections, fitted together by means of self-locking fastener means. Legs are attached for supporting the filing device in a slightly slanting position on a flat horizontal surface.

### 3,480,151
### SUPPORTING RACK OF QUARTZ
**Heinz Schmitt, Hanau am Main, Germany, assignor to Heraeus-Schott Quarzschmelze G.m.b.H., Hanau am Main, Germany**
**Filed Mar. 28, 1968, Ser. No. 716,894**
**Claims priority, application Germany, Apr. 5, 1967, H 58,659**
**Int. Cl. A47g** *19/08*
**U.S. Cl. 211—41** **9 Claims**



A tubular supporting rack of quartz glass having a substantially flat upper wall containing narrow parallel slots into which objects such as thin disks, plates, wires or the like may be inserted for being treated so as to form, for example, semiconductors, One or more groups of these slots may be combined by one or more central apertures so that the slots are provided only in the opposite edge portions surrounding each aperture.

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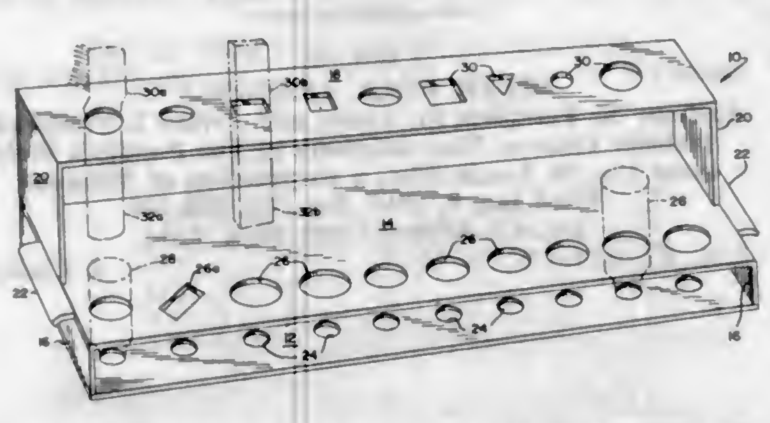
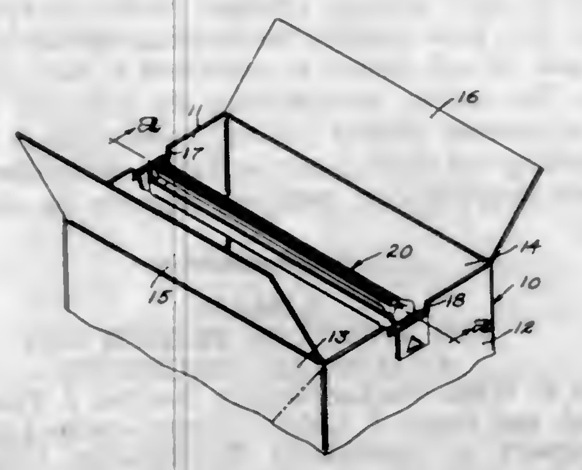
### 3,480,152
### STORAGE RACK FOR VESSEL CONTAINING UNSTABLE MATERIAL
**Helen A. Walsh, 4447 Howard St., Skokie, Ill. 60076**
**Filed July 18, 1967, Ser. No. 654,186**
**Int. Cl. A47b** *73/00*
**U.S. Cl. 211—74** **2 Claims**



A storage rack for bottles or the like, containing unstable material, the rack being constructed and arranged to store the bottles upside down so that the material being stored accumulates adjacent the closure end of the bottle to assist the closure end in sealing against the entry of air to the interior of the bottle.

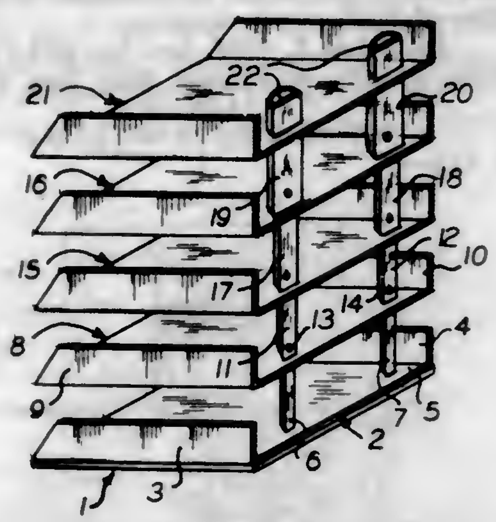
### 3,480,153
### HANGER BAR FOR GARMENT CARTONS
**Herbert S. Collin, Newton, Mass.**
**(56 Bristol St., Boston, Mass. 02118)**
**Filed Dec. 5, 1967, Ser. No. 688,131**
**Int. Cl. A47g** *29/08*
**U.S. Cl. 211—124** **6 Claims**



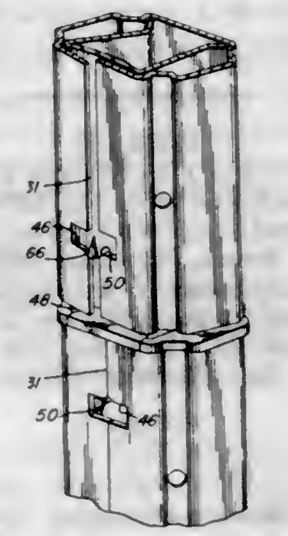
A bar for supporting clothes hangers in an upright garment shipping carton. A channel shaped metal bar for supporting the hangers has U-shaped end portions which engage over the side walls of a carton. A lock bar, of inverted channel shape, overlies the hooks of the hangers and has down turned ends terminating in prongs which snap into slots in the end portions of the supporting bar.

### 3,480,154
### COLLAPSIBLE SORTING TRAYS
**Henri E. Telfer, 7 Fitz Allen St., Trinidad, West Indies**
**Filed Feb. 8, 1968, Ser. No. 704,143**
**Int. Cl. A47f** *3/14;* **A47j** *47/00*
**U.S. Cl. 211—126** **9 Claims**

This specification describes a multiplicity of filing or sorting trays. The trays are adapted to use in a vertical stack with each tray comprising a body and one or more rods extending vertically therefrom preferably at the rear thereof so as to engage the next successively higher tray and support such in cantilever fashion. The supporting rods of each successively higher tray after the base trays are hollow and telescoped in size with respect to the preceding and succeeding rod. Similarly each successively higher body in the tray stack has slightly smaller dimensions than the next lower body so as to facilitate collapsing of the tray stack for easy storage and movement thereof. A multiplicity of lateral interconnected tray stacks are disclosed each having the attributes of a stack of single trays.



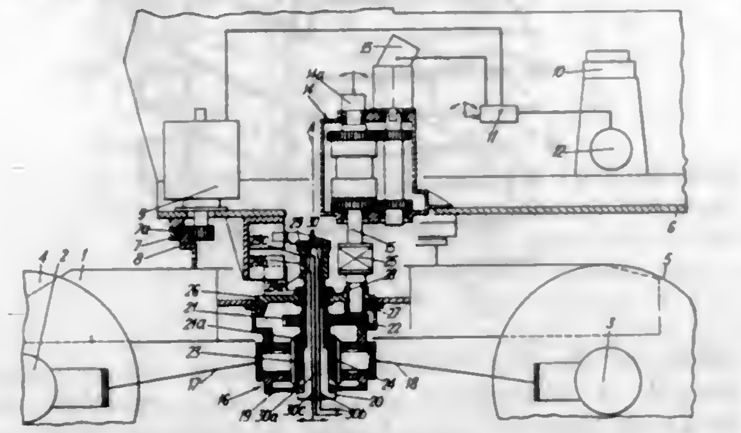
### 3,480,155
### STEEL SHELVING
**Irwin J. Ferdinand, Glencoe, and Irwin R. Kulbersh, Niles, Ill., assignors to Hirsh, Skokie, Ill., a corporation of Illinois**
**Filed Apr. 24, 1968, Ser. No. 723,691**
**Int. Cl. A47f** *5/00*
**U.S. Cl. 211—148** **22 Claims**



Lightweight steel shelving in which short sections of corner posts are snap assembled by the customer in end-to-end relationship and held in alignment and against separation by a connector with a molded pad cammed into place between the ends in weight bearing relationship. The connection accommodates various shaped posts and comprises an elongated generally U-shaped spring element bridging the joined ends and is provided with camming shouldered spring actuated detents which, upon insertion and advancement into the ends of post sections, spring inwardly of the walls of the post sections until the shouldered detents snap into shouldered apertures in the post walls in interlocking relationship therewith against rectilineal separation. A single post assembly can be disassembled individually either by slight relative rotation without damage to the posts but when assembled as a corner post in shelving is held against relative twisting and performs as an integral member or, tiered shelving can be separated as units by spring detents engaging in either of the two abutting post sections present at each corner of the shelving. Provision is also made with the connector for decor panels posts and nested leveling pads on the bottom of the posts for stabilizing the shelving.

### 3,480,156
### SELF-PROPELLED VEHICLE WITH ROTATABLE SUPERSTRUCTURE

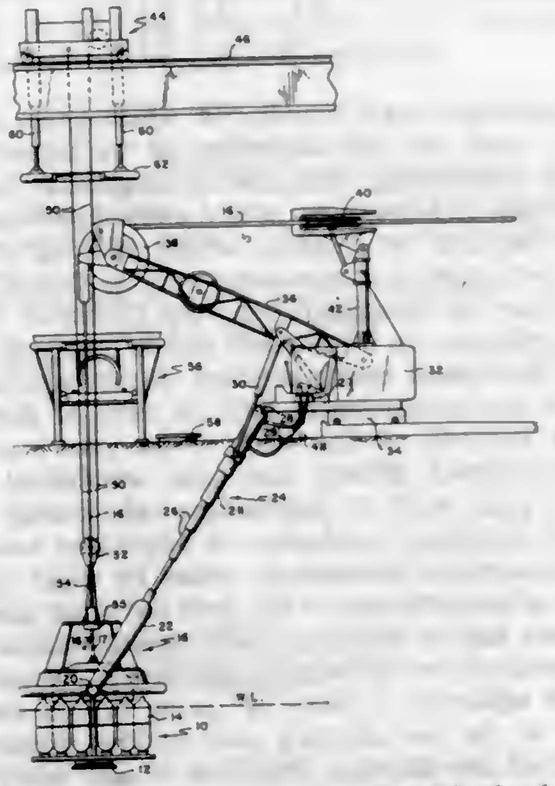
**Pietro Pensa, Milan, Italy, assignor to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles, a corporation of Netherlands Antilles**
**Filed Jan. 5, 1968, Ser. No. 695,935**
**Claims priority, application Italy, Jan. 19, 1967, A 11,691/67**
**Int. Cl. B66c** *23/40, 23/54*
**U.S. Cl. 212—38** **4 Claims**



A self-propelled excavator having a driven wheel mounted chassis, with rotatable superstructure having an engine connected to drive by suitable means such as a hydraulic transmission, a change speed gear in turn having an output shaft having a gear thereon meshing with a gear forming the input to a distribution gearing carried on the chassis and connected to the wheels, the input gear for the distribution gearing being on an axis coincident with the axis of rotation of the superstructure on the chassis. A fluid pressure transfer means is also arranged on this axis of rotation. An interlock means prevents simultaneous rotation of the superstructure and drive of the wheels.

### 3,480,157
### PERSONNEL TRANSFER CAPSULE HANDLING SYSTEM

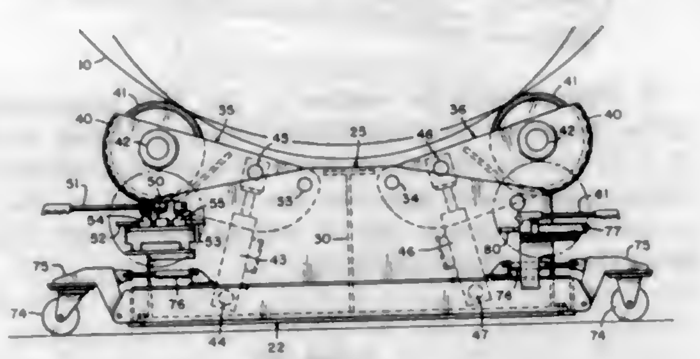
**Arthur Southerland, Jr., Washington, D.C., Frank H. Cirer, Virginia Beach, Va., and Alfred G. Anderson, Bethesda, Md., assignors to the United States of America as represented by the Secretary of the Navy**
**Filed Sept. 28, 1967, Ser. No. 671,496**
**Int. Cl. B66c** *13/06*
**U.S. Cl. 212—41** **5 Claims**



A handling system mounted aboard a ship for launching and recovering a load at sea comprising a hoisting crane and an adjustable stabilizer boom both of which are connected to the load. The stabilizing boom has damping means preventing pendulous swinging of the load while the ship pitches and roles. The handling system also provides a bridge crane with stabilizer booms for transferring the load from the launch and recovering position to remote areas aboard the ship.

### 3,480,158
### IDLER ROLL ASSEMBLY

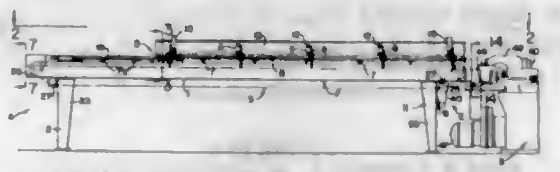
**Anthony K. Pandjiris, St. Louis, and Arthur I. Frederick, Webster Groves, Mo., assignors to The Pandjiris Weldment Co., St. Louis, Mo., a corporation of Missouri**
**Filed Jan. 9, 1967, Ser. No. 608,188**
**Int. Cl. B23k** *37/04;* **B65g** *7/04*
**U.S. Cl. 214—1** **2 Claims**



An idler roll assembly having pivotally mounted pairs of roll frames that are individually adjustable about pivot axes for selectively adjusting either or both the vertical and horizontal positions of different workpieces, supported and rotatable on wheels carried by the roll frames, in order to align adjacent portions of the workpieces precisely in a joint suitable for welding operation. At least one pair of roll frames is positioned at each side of the joint. The system, incorporating the idler roll assembly, has a powered turning roll unit, remote from the joint, supporting and rotating one workpiece, while other means, remote from the joint, rotatively supports the other workpiece.

### 3,480,159
### BAR AND TUBE FEEDER FOR AUTOMATIC MACHINES

**Frank F. White, Shaker Heights, Norman J. Tanno, Kirtland, and Elmer T. Chipps, Mentor-on-the-Lake, Ohio, assignors to Automation Development Corporation, Mentor, Ohio, a corporation of Ohio**
**Filed Nov. 22, 1966, Ser. No. 600,350**
**Int. Cl. B23q** *5/22;* **B23b** *13/00*
**U.S. Cl. 214—1.2** **35 Claims**



A narrow bar feeder having a reciprocating continuous chain conveyor mounted on a long box beam and spaced removable bar-receiving carriers spaced along the chain and having escapement means for repeatedly feeding bars laterally to a central position on the carriers. A retractable capping bar is provided above the bar on the carriers to prevent whipping of the bar during high speed rotation, and a pusher rod is mounted on the chain to move under the capping bar, said pusher having feed fingers for gripping the bar as it is advanced and retracted.

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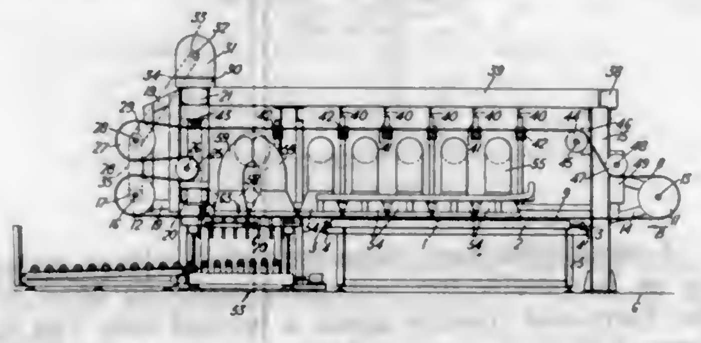
### 3,480,160
### STACKING GLASS SHEETS

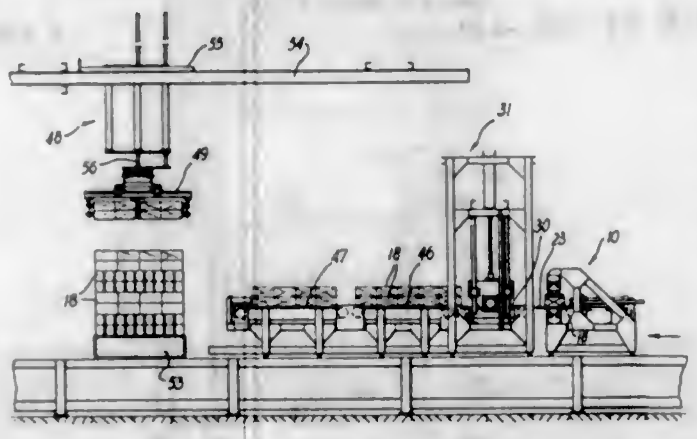
**Richard Barradell-Smith, St. Helens, James Edward Hall, Billinge, near Wigan, and James Roby, Orrell, near Wigan, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain**
**Filed Oct. 26, 1967, Ser. No. 678,333**
**Claims priority, application Great Britain, Oct. 26, 1966, 48,075/66**
**Int. Cl. B65g** *57/11;* **B65h** *29/24, 29/32*
**U.S. Cl. 214—6** **5 Claims**



Glass sheets are transferred from a conveyor to a stacking station by retaining the sheets in contact with a movable suction member from which the sheets are prised when above the stack of sheets being formed.

### 3,480,161
### MECHANICAL HANDLING APPARATUS

**James M. Bason, Mobberley, Knutsford, England, assignor to Bason & Sons Limited, a British company**
**Filed Apr. 11, 1968, Ser. No. 720,529**
**Int. Cl. B65j** *57/16;* **B66c** *1/00*
**U.S. Cl. 214—6** **10 Claims**

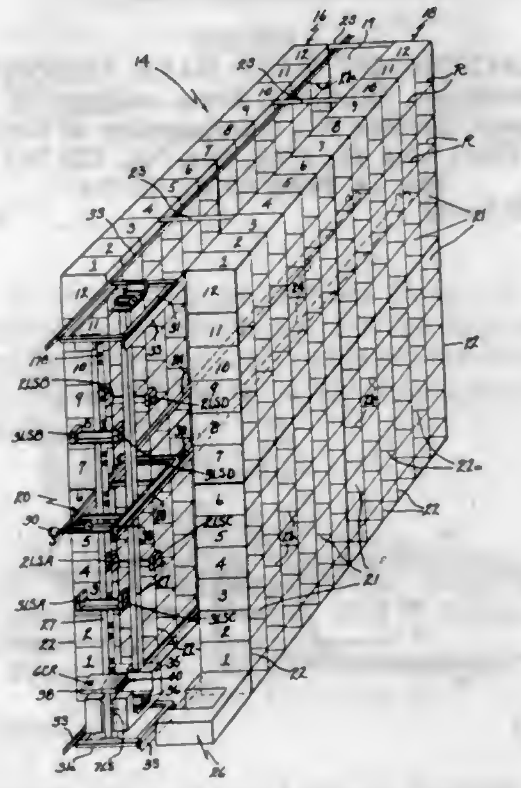


In apparatus for mechanically handling bricks or like articles, the latter are conveyed in side-by-side contact to a first station, where a pusher displaces a predetermined number clear of the conveyor as a single row which is then conveyed to a second station. Here alternate rows of bricks are picked up and each deposited inverted upon the next row to arrive, the resultant double rows of bricks being discharged as formed and marshalled into a pack for removal by a stacker unit. At some stage of the process (e.g. at the first or second station or during engagement by the stacker unit) the bricks in each row are laterally separated whilst being individually gripped.

### 3,480,162
### PRINT-OUT DEVICE FOR WAREHOUSING SYSTEM

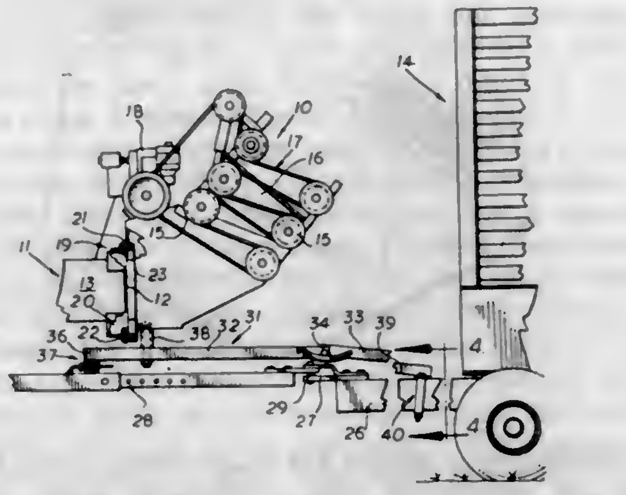
**Sanford Saul, Cleveland, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio**
**Filed Feb. 27, 1967, Ser. No. 618,951**
**Int. Cl. B65g** *47/00*
**U.S. Cl. 214—16.4** **23 Claims**

The print-out device comprises impulse actuated counting and printing modules coupled into the control circuit of an automatic warehousing system, for automatically printing onto a tape, or card or other record, the location at which a load has been deposited in the storage frame of the system. The warehousing system is of the type wherein a mobile load carrier is movable horizontally and vertically with respect to the storage frame, and with the control circuit of the system including horizontal and vertical counting sensors which furnish the impulse signals for actuation of the counting and printing modules. Such print-out device produces a visual record at the time of depositing of the load, of where the load has been deposited in the storage frame, so that such load may be subsequently accurately and conveniently retrieved therefrom. An address-type print-out system is also disclosed which is adapted to be automatically programmed for printing onto a tape, card or other record, upon programming of the warehousing system proper to deposit a load therein, and which printing occurs when the load carrier deposits the load in the storage frame of the system.



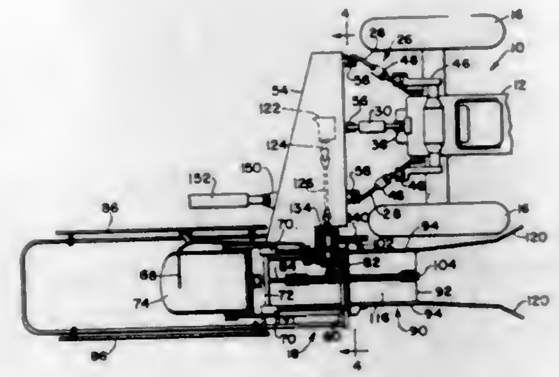
### 3,480,163
### STEERING ARM FOR BALE THROWER

**Allan C. McAdams, Memphis, Tenn., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware**
**Filed Feb. 23, 1968, Ser. No. 707,765**
**Int. Cl. B65g** *67/04*
**U.S. Cl. 214—42** **9 Claims**



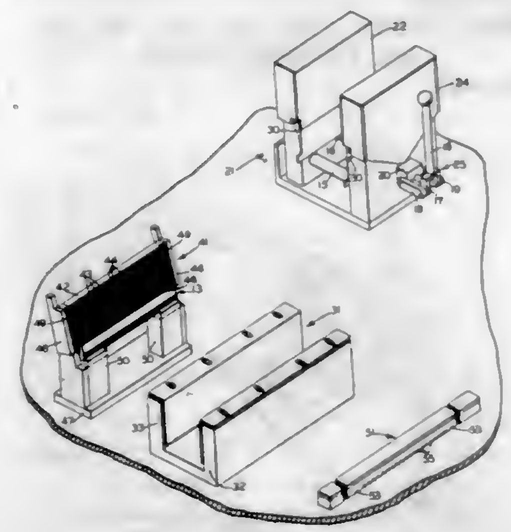
A steering arm for controlling the discharge direction of a bale thrower mounted at the rear of a baler and operably responsive to relative angular misalignment of the baler and an associated wagon. The steering arm interconnects the tongue of the wagon, the baler, and the bale thrower, all of which are relatively movable with respect to one another. The steering arm comprises a longitudinally extending member having a rearward end engageable with the tongue for detecting misalignment and a forward end pivotally attached to the baler and bale thrower at longitudinally spaced points.

### 3,480,164
### TRACTOR-MOUNTED BALE THROWER
**Gust Soteropulos, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware**
**Filed May 16, 1968, Ser. No. 729,741**
**Int. Cl. B65g** *65/02, 67/24*
U.S. Cl. 214—42 10 Claims



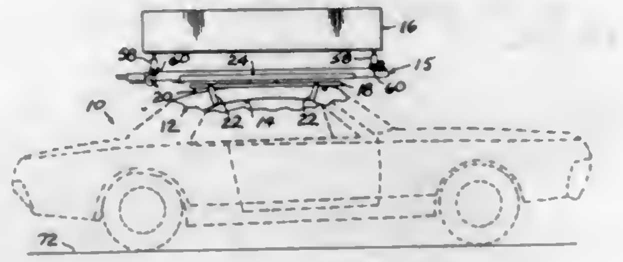
A bale thrower mounted on a tractor, entirely apart from a baler, and used for picking up successive bales directly from the field and throwing or ejecting them into a trailing wagon.

### 3,480,165
### LOADING A PLURALITY OF ARTICLES INTO A WORKHOLDER
**Jerry C. Hurst, Laureldale, and Samuel E. Kurtz, Reading, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed Jan. 20, 1967, Ser. No. 610,675**
**Int. Cl. B65g** *57/00;* **B66c** *1/02*
U.S. Cl. 214—152 8 Claims



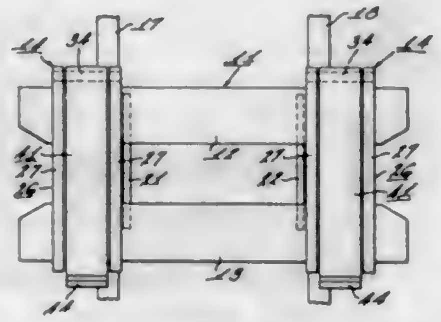
Paramagnetic diodes are magnetically aligned, picked up and transferred with a magnetic wand, and then loaded into an apertured workholder in spaced parallel relationship to one another.

### 3,480,166
### CAR TOP CARRIER
**Bobby R. Abbott, 3808 SW. 40th Place, Oklahoma City, Okla. 73119**
**Filed Jan. 29, 1968, Ser. No. 701,417**
**Int. Cl. B60r** *9/00*
U.S. Cl. 214—450 5 Claims



A rectangular base frame connected with an supported by an automative top centrally journals an upper frame for horizontal rotation about a vertical axis. The upper frame is hingedly connected at one side to a pair of spaced-apart tubular members which telescopingly receive a pair of pipes. The pipes are extended and their free ends are supported by the surface of the earth laterally of the car so that a manually operated winch loads equipment by pulling it up the incline formed by the telescoping members.

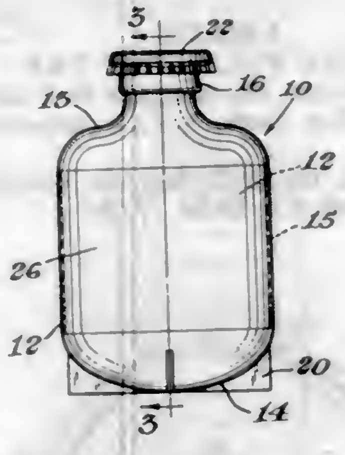
### 3,480,167
### FORK INTERCHANGER
**Ronald D. Varilek, Park Forest, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.**
**Filed Feb. 5, 1968, Ser. No. 703,125**
**Int. Cl. B66f** *9/06, 9/14*
U.S. Cl. 214—620 5 Claims



An attachment with a rod mounted fork is installed on a two-bar lift truck carriage in place of the usual hook type forks. By interchanging the attachment with rod type forks for the usual hook type forks, the lift truck user can quickly convert from hook type fork operation to rod type fork operation without altering the carriage.

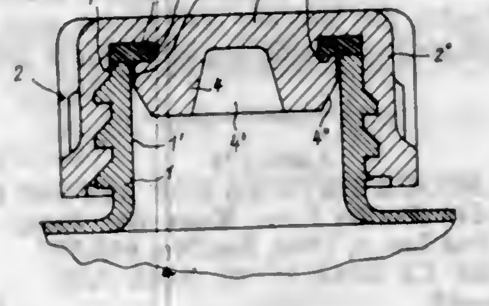
### 3,480,168
### THERMOPLASTIC PRESSURE VESSEL FOR CARBONATED BEVERAGES
**Richard J. Lee, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed Dec. 26, 1967, Ser. No. 693,266**
**Int. Cl. B65d** *11/04, 11/26*
U.S. Cl. 215—1 9 Claims

A thermoplastic pressure vessel or bottle for carbonated beverages which would be subject only to a minimum of distortion due to the relatively high internal pressures occasioned by the carbonated beverage contained in the bottle. The bottom of the bottle can be ovoidal or hemispherical in configuration to evenly distribute pressures in that end of the container. Special feet would be employed with this bottom. The center section of the bottle is prevented from substantial distortion by banding the container with a metal foil or a high strength polymer strip.



A high strength cap which has substantially the same rates of expansion and contraction as the rest of the body is employed.

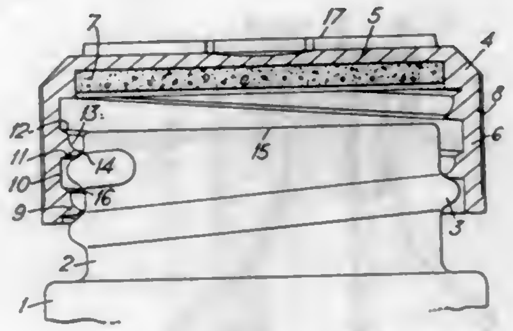
### 3,480,169
### CLOSURE
**Wilhelm Hammes, Seelscheid, near Siegburg, Germany, assignor to Mauser Kommandit-Gesellschaft, Cologne-Bazenthal, Germany**
**Filed Dec. 7, 1967, Ser. No. 688,825**
**Claims priority, application Germany, Dec. 13, 1966, M 71,995**
**Int. Cl. B65d** *41/04*
U.S. Cl. 215—40 10 Claims



A closure for sealing the neck of a container includes a cup-shaped cap member having an open side and being provided with a bottom wall and a circumferential wall. A supporting projection extends from the bottom wall towards the open side within the confines of the circumferential wall with which it defines an annular clearance in which the neck of the container is received. The peripheral face of the projection is provided with a circumferential recess which extends inwardly from the clearance. A sealing ring is received in the circumferential recess.

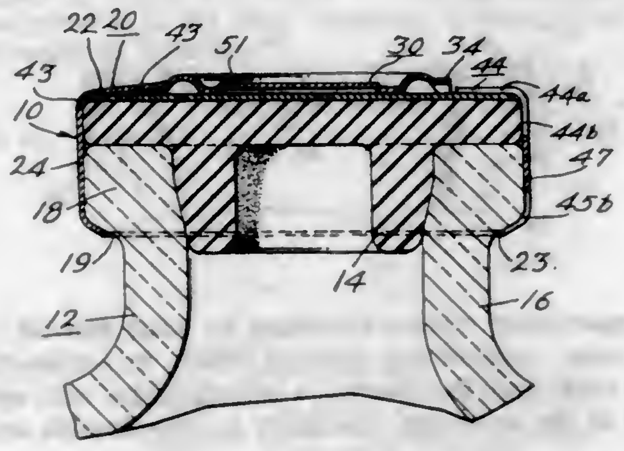
### 3,480,170
### SCREW-THREADED BOTTLE CLOSURES
**Trevor Gwilym Evans and Geoffrey Alan Ryder, Welwyn Garden City, England, assignor of one-third to James Michael, Welwyn Garden City, England**
**Filed Oct. 1, 1968, Ser. No. 764,209**
**Claims priority, application Great Britain, Nov. 1, 1967, 49,673/67**
**Int. Cl. B65d** *41/04, 55/02*
U.S. Cl. 215—43 6 Claims

A screw-threaded closure cap for a container or the part of the container onto which the cap is screwed is provided with a screw-thread having a thread profile with a step in that flank of the thread which trails as the thread is screwed up. When the stepped thread is provided on the cap, the container has a cooperating thread of conventional profile and conversely when the stepped thread is provided on the container, the cap has a cooperating thread of conventional profile. When the cap is screwed on to the container, the crest of the conventional thread has a clearance at the root of the stepped thread and the step is so shaped that as the two threads are tightened



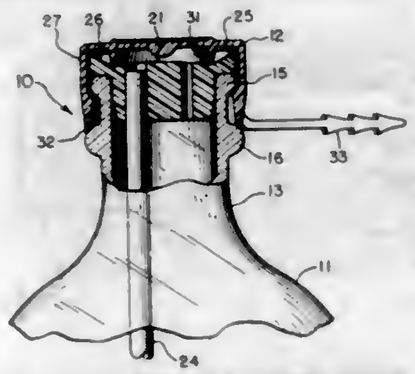
and there is an axial thrust between them, the crest of the conventional thread is forced onto the step which has an interference fit with the crest of the conventional thread so that the cap is frictionally held tightly against release on the container.

### 3,480,171
### CONTAINER CLOSURE
**Le Roy H. Rohde, Phoenixville, Pa., assignor to The West Company, Phoenixville, Pa., a corporation of Pennsylvania**
**Filed Dec. 30, 1966, Ser. No. 606,061**
**Int. Cl. B65d** *17/10, 41/12*
U.S. Cl. 215—46 10 Claims



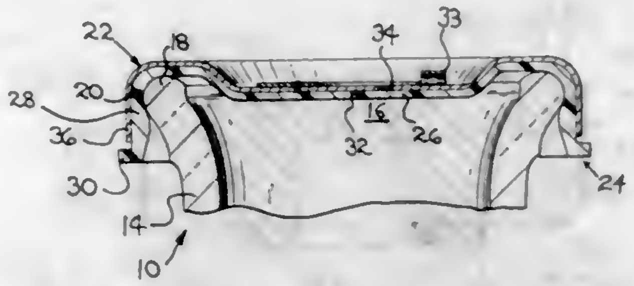
A tear off cap for a container comprising an annular top portion, a skirt depending from the outer peripheral edge of the top portion, a central disc connected to the annular top portion along a hinge line, a pair of closely spaced score lines in the top and skirt defining therebetween a detachable tab section, one of said score lines disposed adjacent one end of the hinge line extending across the annular top and down said skirt to a point spaced from the lower edge thereof, the other of said score lines being disposed adjacent the other end of said hinge line and comprising a first segment extending across the top portion downwardly along the skirt and terminating upwardly from the lower edge thereof and a second segment aligned with the first segment spaced therefrom by a bridge and extending to the lower edge of the skirt and a third score line in the cap approximately diametrically opposed from said tab portion including a first score line section extending across the annular top portion and down said skirt and a second score line section vertically aligned with said first score line section and opposed therefrom to provide a short connecting bridge on said skirt serving as a hinge facillitating removal of the cap from the container, said second score line section extending to the lower edge of the skirt.

### 3,480,172
### RECLOSED PACKAGE
**Dennis F. Shine, Evanston, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware**
**Filed Apr. 9, 1968, Ser. No. 719,871**
**Int. Cl. B65d** *41/60;* **A61j** *1/00*
**U.S. Cl. 215—46** **3 Claims**



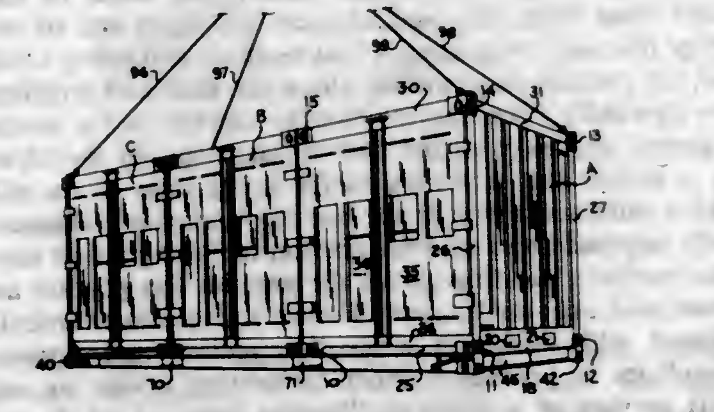
A container with an elastomer vertically passaged stopper in its upper end opening is resealed with a cap having an integral ring depending from the cap top and sealingly tensioned into engagement with the surface of the stopper by coaction of a catch carried from a cap flange and a lug on said container.

### 3,480,173
### COMPOSITE CLOSURE
**Jack M. Wheaton, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio**
**Filed Nov. 20, 1967, Ser. No. 684,318**
**Int. Cl. B65d** *41/60*
**U.S. Cl. 215—56** **6 Claims**



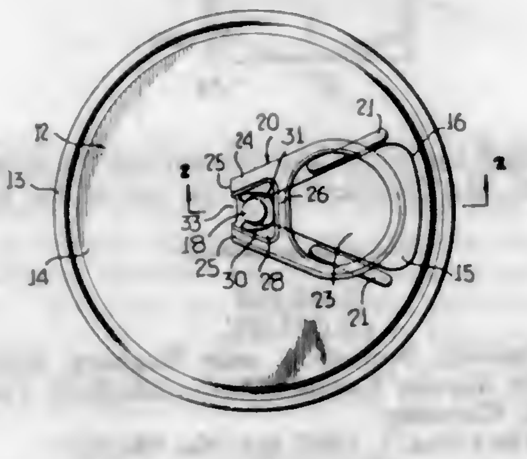
A tamper-proof closure including an outer tear-off cap and an inner resilient cap element which, in conjunction with the outer cap, functions as a sealing gasket and, upon removal of the outer cap, has utility as a re-closable snap-cap.

### 3,480,174
### ASSEMBLY OF FREIGHT CONTAINERS AND FOUNDATION FRAME FOR USE THEREWITH
**James B. Sherwood, London, England**
**(32 Rue Vaneau, Paris 7, France)**
**Filed Aug. 2, 1967, Ser. No. 657,858**
**Int. Cl. B65j** *1/04*
**U.S. Cl. 220—1.5** **7 Claims**



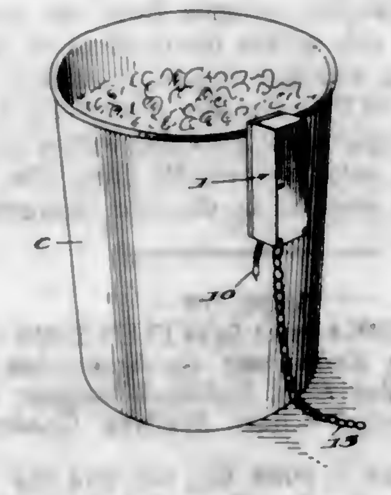
A modular type assembly of a plurality of freight containers mounted upon a foundation frame in indexed relation thereto, is transportable as a single unit. The overall size of the assembly corresponds to the overall size of a single standard-sized, large freight container.

### 3,480,175
### SINGLE PULL RING TAB
**Nick S. Khoury, Worth, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York**
**Filed Mar. 17, 1967, Ser. No. 624,029**
**Int. Cl. B65d** *17/24*
**U.S. Cl. 220—54** **7 Claims**



This subject has to do with easy opening can ends having a tear portion defined by a weakening line and wherein a pull tab is attached to the tear portion to effect the removal thereof. The pull tab overlies the tear portion so as to protect the tear portion against accidental removal. By having the pull tab coextensive with the tear portion, more space is made available for a larger tear portion.

### 3,480,176
### ANIMAL SHOCK DEVICES FOR REFUSE CANS
**A C Boyd, 616 Starlite Lane, Knoxville, Tenn. 37920**
**Filed Jan. 4, 1968, Ser. No. 695,777**
**Int. Cl. B65d** *25/20;* **A01k** *3/00*
**U.S. Cl. 220—85** **5 Claims**



A device for preventing animal interference with refuse cans which is constructed for detachable connection with a can. The can should be of conducting material and insulated from the ground while the device imparts an electric charge thereto which is grounded through the body of the animal in contact with the can. A housing is provided for enclosing the means of imparting a pulsating high voltage current through a hook device that can be connected detachably with the can.

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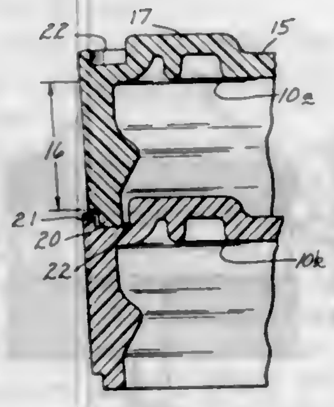
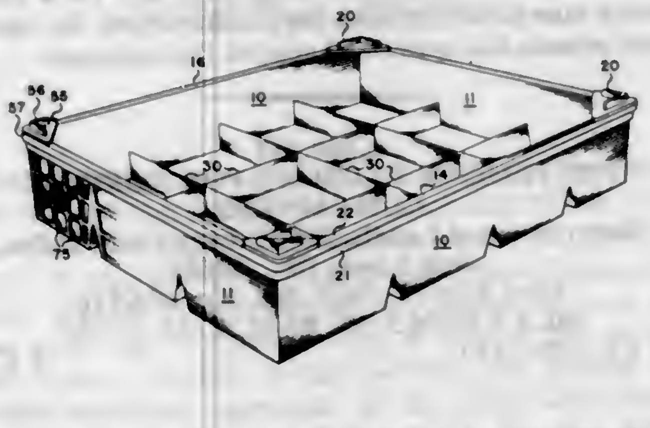
### 3,480,177
### CONTAINER LID
**Neil C. Elliot, East Granby, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**Filed Dec. 22, 1967, Ser. No. 692,809**
**Int. Cl. B65d** *41/18, 21/02, 43/10*
**U.S. Cl. 220—97** **7 Claims**



A nestable, plastic container lid having stacking means which include male and female projections in the endwall and sidewall of the lid which cooperate with similar configurations in adjacently stacked lids to limit movement of the supported lid.

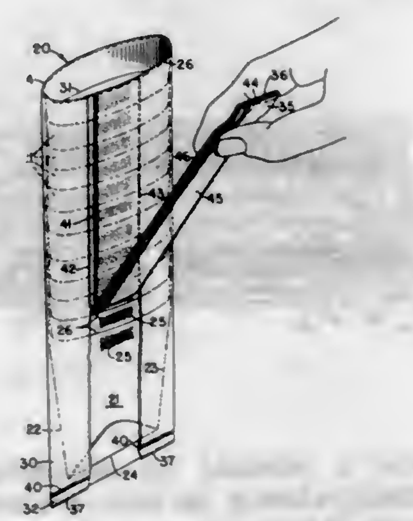
### 3,480,178
### CONTAINERS THAT ARE COMPACTLY NESTABLE WHEN EMPTY AND STACKABLE IN SPACED RELATION WHEN FULL
**Henry Z. Morgan, 153 Arquemedes-Polanco, Mexico City, Mexico**
**Continuation-in-part of application Ser. No. 674,415, Oct. 11, 1967. This application Sept. 16, 1968, Ser. No. 766,666**
**Int. Cl. B65d** *21/06, 1/24, 1/38*
**U.S. Cl. 220—97** **27 Claims**



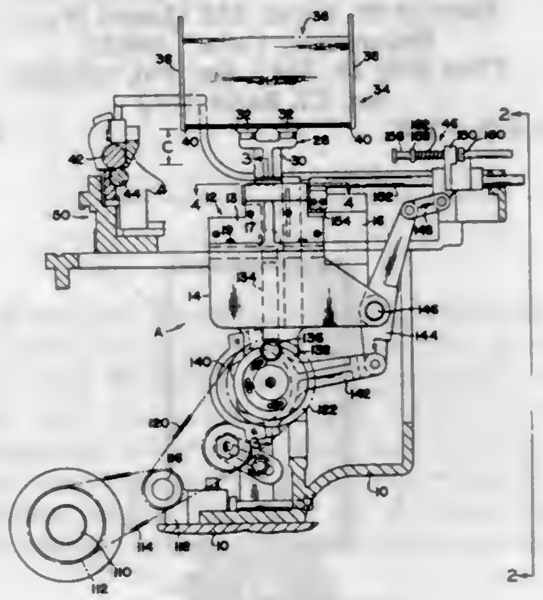
Containers molded from plastic in an open-work wall structure are compactly nestable when empty and are equipped with removable corner supports for stable stacking in spaced relation when filled.

### 3,480,179
### DISPENSING PACKAGE FOR PAPER-CUP ASHTRAYS AND THE LIKE
**David L. Rowland, 49 W. 55th St., New York, N.Y. 10019**
**Filed Apr. 18, 1968, Ser. No. 722,351**
**Int. Cl. B65d** *83/00*
**U.S. Cl. 221—63** **5 Claims**

A package for holding and dispensing paper-cup ashtrays and the like. A stack of flattened ashtrays, each with an area of pressure-sensitive adhesive on its back surface near an upper edge and above the upper edge of the next ashtray below in th stack, enabling adhering each ashtray to a vertical surface, is enclosed in a dispenser-wrapper made from material that is easily released from the pressure-sensitive adhesive. The wrapper covers the pressure-sensitive adhesive and temporarily adheres thereto, and a tear strip portion on the dispenser-wrapper is at least as wide as the area of pressure-sensitive adhesive and runs between the upper and lower ashtrays of the stack, enabling the package to be opened as desired for dispensing therefrom one ashtray at a time.



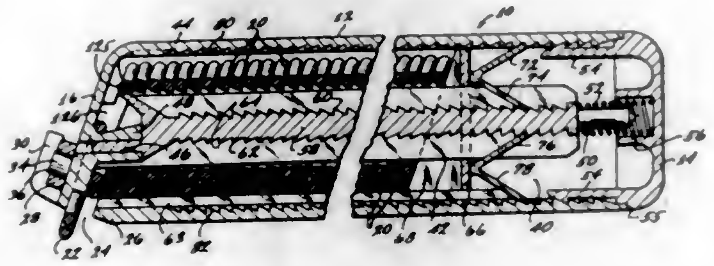
### 3,480,180
### BLANK FEEDING APPARATUS
**Bernard K. Hook and Roger J. Nelsen, Hastings, Mich., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware**
**Filed Feb. 28, 1968, Ser. No. 709,014**
**Int. Cl. B65g** *59/04;* **B65h** *1/06, 3/08*
**U.S. Cl. 221—211** **8 Claims**



An apparatus for individually feeding rectangular metal blanks from a vertical stack of blanks to a machine such as a can body maker. The apparatus includes a vertically reciprocated slide member carrying a vacuum cup unit arranged to engage the lowermost blank in the stack and withdraw it into alignment with a vertically reciprocated push member. A slide valve assembly is built into the slide member and functions to control application of vacuum to the vacuum cup unit in timed relationship with movement of the slide. Additionally, the push member and the slide are driven from a common drive.

### 3,480,181
### DISPENSING DEVICE WITH FOLLOWER AS DISCHARGE ASSISTANT

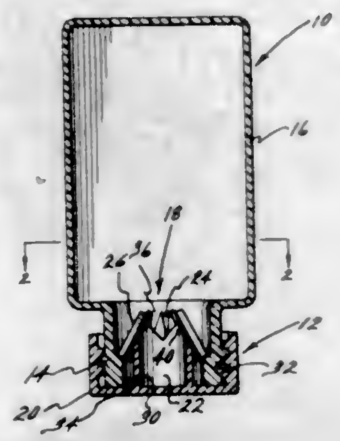
**Hugo Bauer, 3779 Griffith View Drive, Los Angeles, Calif. 90039**
**Filed Oct. 14, 1968, Ser. No. 767,364**
**Int. Cl. B65h** *1/14*
**U.S. Cl. 221—279** **7 Claims**



A device is provided for dispensing items such as drapery hooks wherein the items are stacked side-by-side in a housing therefor. A feed plate within the housing abouts one end of the stack and is operatively associated with an elongated track that is displaceable rearwardly and forwardly within the housing so as to move forwardly with the track. Ratchet means are provided allowing rearward movement of the elongated track, but limiting rearward movement of the feed plate. The ratchet means includes ratchet surfaces on the track and on opposed surfaces of the housing. Pawls carried by the feed plate act against the housing ratchet surfaces to limit rearward movement thereof while over-running the track ratchet surfaces during rearward movement of the track. During forward movement of the track, the pawls overrun the housing ratchet surfaces but react against the track ratchet surfaces to move the feed plate forwardly therewith.

### 3,480,182
### PILL DISPENSING CONTAINER

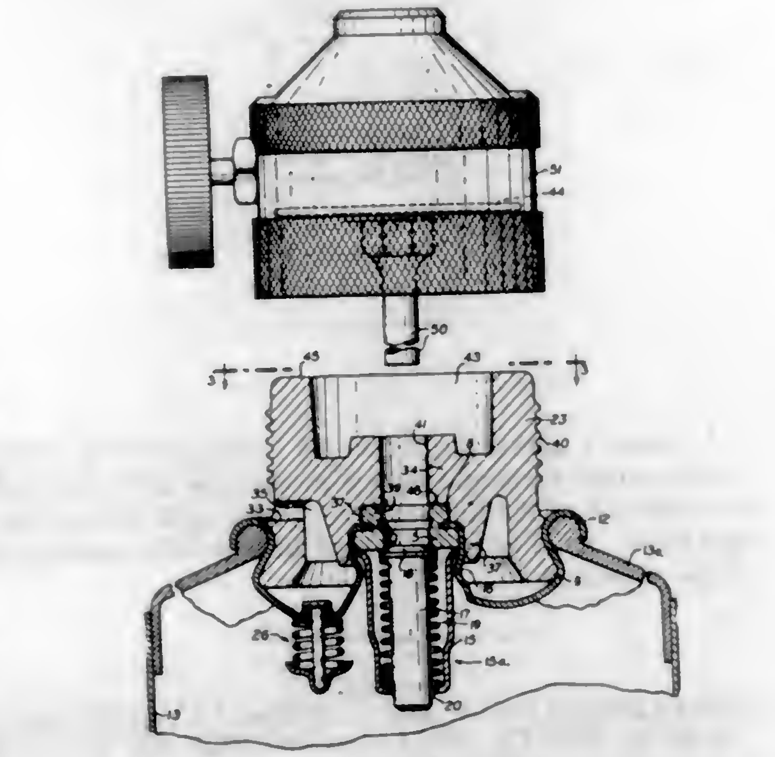
**Herbert W. Rigor, 685 Quartz Way, Broomfield, Colo. 80020**
**Filed July 20, 1967, Ser. No. 654,856**
**Int. Cl. B65d** *5/72*
**U.S. Cl. 221—288** **4 Claims**



This invention relates to a pill bottle equipped with a radially-slitted flexible membrane covering the mouth thereof and a cooperating screw-type closure therefor that carries a cup-shaped insert with a toothed-edge operable upon rotation to wriggle the leaves of the membrane so as to agitate the contents and cause a single pill to work its way past said membrane into the closure for removal therewith.

### 3,480,183
### CONTAINER OUTLET OPENING OUTFITTED WITH ONE PIECE, DOUBLE SEAL GASKET

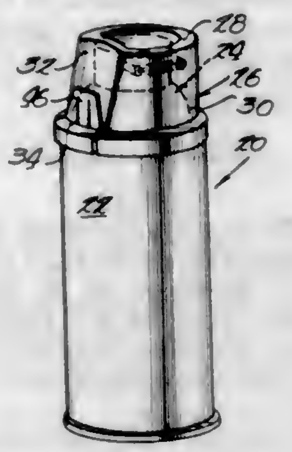
**Dean M. Rockwell, Buffalo, N.Y., assignor to Impact Container Corporation, Alden, N.Y., a corporation of New York**
**Filed Feb. 27, 1967, Ser. No. 618,628**
**Int. Cl. B67b** *7/24;* **B65d** *83/00*
**U.S. Cl. 222—3** **4 Claims**



A one piece double seal gasket is provided at the discharge passage of a container for pressurized fluids. The lower portion of the gasket serves as a valve seat, and both upper and lower portions form seals along the stem of a tap connector when the tap connector is mounted on the container with its stem disposed in the discharge passage and holding the valve stem away from the valve seat. A bushing interposed between the container and the tap connector presses the upper seal against the container.

### 3,480,184
### PROTECTIVE CLOSURE FOR AEROSOL CONTAINERS

**Henry Richard Landis, 5200 Stoney Creek Drive, Oak Lawn, Ill. 60453**
**Filed July 20, 1967, Ser. No. 654,916**
**Int. Cl. B67d** *5/32;* **B65d** *51/18, 17/00*
**U.S. Cl. 222—153** **1 Claim**



A tamper-proof protective closure for aerosol containers.

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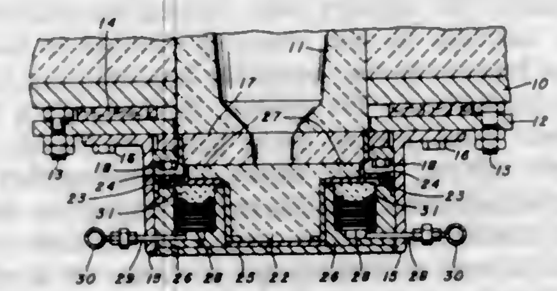
### 3,480,185
### CHARGED EFFERVESCING AGENT AND MEDICAMENT DISPENSING METERING VALVE-ACTUATED AEROSOL CONTAINER PRODUCING A DOSE OF MEDICAMENT AND CARBONATION IN WATER

**Wallace H. Steinberg, Matawan, N.J., and Saul R. Kohn, Dresher, Pa., assignors to Johnson & Johnson, a corporation of New Jersey**
**No Drawing. Filed June 20, 1966, Ser. No. 558,628**
**Int. Cl. A61k** *9/00, 27/00*
**U.S. Cl. 222—192** **11 Claims**

There is disclosed an anhydrous liquid effervescent pharmaceutical composition sealed in an aerosol package under the pressure of a gaseous propellant. The composition is composed of a medicament, of the type intended for oral ingestion, which is combined with an effervescent couple of an alkaline salt and an organic acid in a suspension of an anhydrous liquid carrier such as ethylene alcohol or propylene glycol. When the composition is released from the container into water, its solid ingredients instantaneously dissolve to form a carbonated fluid containing a medicament.

### 3,480,186
### SLIDING GATE FOR METAL-HOLDING VESSEL

**John A. Grosko, Whitaker Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware**
**Filed Dec. 22, 1967, Ser. No. 692,767**
**Int. Cl. B67d** *3/00;* **B65d** *47/26;* **F16k** *3/02*
**U.S. Cl. 222—512** **2 Claims**

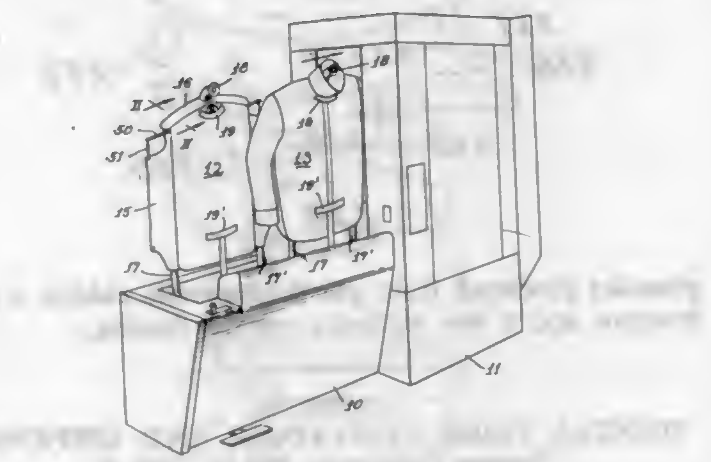


A metal-holding vessel with a bottom outlet has spaced beams secured therebelow, one on each side of the outlet and a closure panel slidably supported on the beams is adapted, in one position, to close said outlet. Expansible-chamber motors are carried by the beams on each side of the panel and constantly urge it toward the bottom of the vessel. Graphite blocks between the motors and the panel facilitate movement of the latter and protect the motors from the heat of the metal. Another motor mounted on the beams actuates the panel to open or close the vessel outlet.

### 3,480,187
### AIR BAGS FOR PRESSING MACHINES

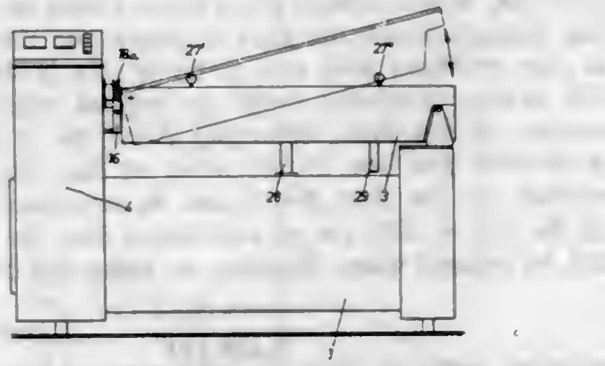
**Francis H. Bonn, 3215 NE. 15th St., Apt. 3, Pompano Beach, Fla. 33062**
**Filed Mar. 28, 1968, Ser. No. 716,946**
**Int. Cl. A41h** *5/02;* **A47j** *51/086*
**U.S. Cl. 223—67** **9 Claims**

An inflatable bag, adapted for use in a garment pressing machine, said bag containing therein a coil spring which prevents complete collapse of the bag when deflated. The inflatable wall of the bag moves independently of the spring within the bag. This improvement prevents excessive wrinkling of the deflated bag which can lead to excessive wear during the inflation step. Also, when a large wrinkle in the bag is trapped during the inflation of the bag, the garment being pressed is not stretched sufficiently to prevent a rough dry in that area of the garment.



### 3,480,188
### AUTOMATIC TROUSER PRESSING MACHINE

**Manfred Frauendorf, Nuremberg, Germany, assignor to Normbau Maschinenfabrik GmbH & Co., Nuremberg, Germany**
**Filed Nov. 14, 1966, Ser. No. 594,051**
**Claims priority, application Germany, Nov. 13, 1965, N 27,617**
**Int. Cl. A41h** *5/01*
**U.S. Cl. 223—73** **10 Claims**

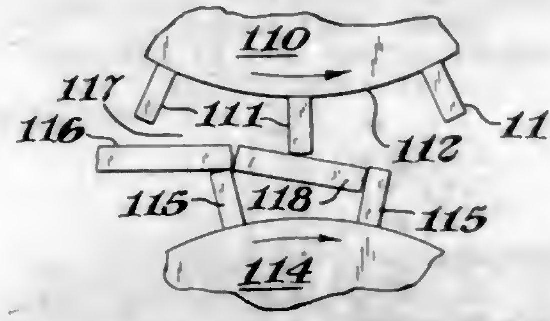


A steam press for trousers comprising supporting members and cover leaves arranged in two sets of tiers one above the other to define clamping means for trousers, where the cover leaves are movable relative to the supporting members below them to clamp the crease edges of trouser legs between them before the steam treatment of the trousers begins. The upper tier of supporting members and of cover leaves is movable relative to the lower tier.

### 3,480,189
### FRACTURING OF SOLID BODIES

**Alvin S. Topolski and Walter A. Trumbull, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 526,492, Feb. 10, 1966. This application Jan. 9, 1967, Ser. No. 613,714**
**Int. Cl. B26f** *3/00, 3/02;* **B65h** *35/00*
**U.S. Cl. 225—4** **12 Claims**

Rigid strands are formed into granules by passing the strands between rotating toothed gear-like drums between which the strand is flexed and fractured to provide uniform or non-uniform sized granules, as desired. The



granules produced from plastic materials exhibit a clean fracture and a low tendency toward dusting.

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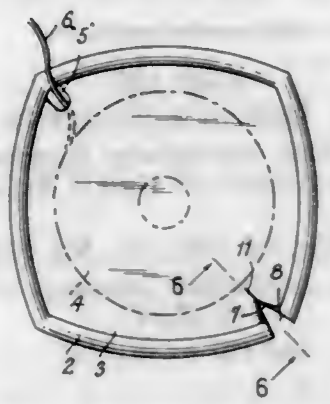
### 3,480,190
### DENTAL FLOSS CONTAINER AND DISPENSER

**Hyman Freedman, 200 W. 58th St.,**
**New York, N.Y. 10019**
**Filed July 7, 1967, Ser. No. 651,772**
**Int. Cl. B26f** *3/02*
**U.S. Cl. 225—33** **10 Claims**



A container and dispenser for dental floss comprising a receptable containing a roll or spool of the floss and provided with a closure plate formed with an outlet opening through which the floss is drawn and the cover plate is also provided with one or more slits in its edge, each slit having relatively rough or ragged edges, so that a section of the floss, emerging from the outlet opening is entered into one or the other of the slits and a pull exerted on the floss will cause its severance. The parts of the slit or slits are so positioned that the fingers cannot be injured when handling or using the device.

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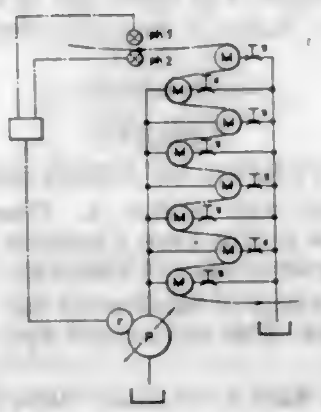
### 3,480,191
### DRIVE MEANS FOR A CYLINDER PROCESSING MACHINE

**Cornelis Johannes Van Os, Zonstraat 100,**
**Enschede, Netherlands**
**Filed Sept. 12, 1967, Ser. No. 667,163**
**Claims priority, application Netherlands, Sept. 13, 1966,**
**6612911**
**Int. Cl. B65h** *25/22, 17/42*
**U.S. Cl. 226—25** **10 Claims**



Means for driving a cylinder drying machine whereby to keep a web of material to be passed through said machine substantially free of tension. The drive means include a plurality of hydro-motors which are connected in parallel relation to a pump, as well as a calibrating device positioned in the path of flow of each hydro-motor and an electric control device likewise connected to said pump, the arrangement being such that the web is kept substantially free of tension from input to output.

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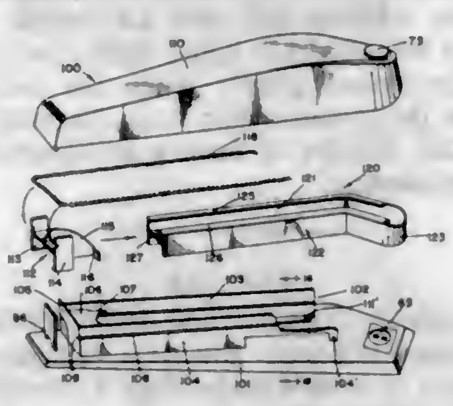
### 3,480,192
### APPARATUS FOR ATTACHING BUTTONS

**Robert L. Scurlock, New York, N.Y., and Albert Torongo, Jr., Washington Crossing, Pa., assignors to Scurlock, Inc., New York, N.Y., a corporation of New York**
**Filed Feb. 4, 1963, Ser. No. 255,845**
**Int. Cl. A41h** *37/10;* **B25c** *5/02*
**U.S. Cl. 227—120** **28 Claims**



1. A device for stapling buttons having bendable legs extending therefrom comprising a linearly extending base, an arm overlying said base, means pivotally connecting said arm to said base along a transverse axis, an elongate chamber in said arm having the axis thereof inclined at substantially 45 degrees with respect to said transverse axis, a cartridge in said chamber adapted to hold a plurality of buttons having bendable legs, said cartridge comprising track means for guiding buttons and a discharge port, said track means being generally parallel to said chamber axis, a spring urged follower carried by said arm in said chamber and adapted to engage an end button in said cartridge, a plunger carried by said arm for forcing buttons through said discharge port, and an anvil carried by said base beneath said discharge port.

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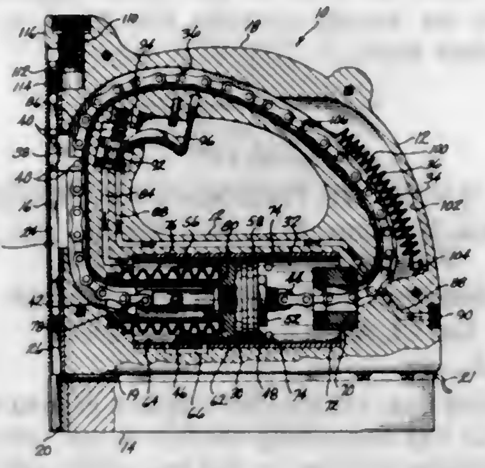
### 3,480,193
### POWER-OPERABLE FASTENER APPLYING DEVICE

**Robert E. Ralston, 11808 44th Place S.,**
**Seattle, Wash. 98178**
**Filed Sept. 15, 1967, Ser. No. 668,231**
**Int. Cl. B27f** *7/22*
**U.S. Cl. 227—130** **11 Claims**



A pneumatically-operable fastener applying device comprising a casing which houses a fastener storage chamber containing a supply of fasteners (e.g. staples or nails), a fastener driving blade reciprocally mounted above the fastener storage chamber for driving fasteners out of the storage chamber and into a piece of work, a pneumatically-operable piston for propelling the fastener driving blade through its fastener applying stroke, and a flexible band member (e.g. a roller link chain) for delivering motive power from the piston to the fastener driving blade. The band member courses a generally arcuate channel in the housing, has its opposite ends connected to the oppositely facing surfaces of the piston and is operatively connected to the fastener driving member. By virtue of this construction, the piston is centrally loaded and not subject to a twisting torque, and the fastener driving blade is nonetheless disposed to permit the mechanism to be used for applying fasteners to a work surface close by a wall or the like.

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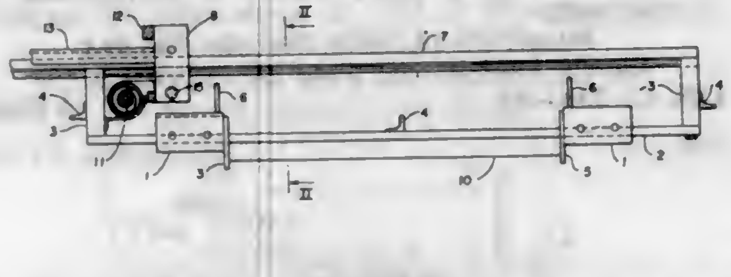
### 3,480,194
### STRIP EDGE DETECTION FOR MACHINE FUNCTION INITIATING DEVICE

**Melvin M. Seeloff, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio**
**Filed Sept. 18, 1967, Ser. No. 668,487**
**Int. Cl. B23q** *15/00;* **B23k** *37/02*
**U.S. Cl. 228—8** **10 Claims**



Strip edge detecting means to accurately detect the edges of very thin strips, without damage thereto, to precisely control machine functions, such as welding functions to secure metal strips in end-to-end relationship. A linear induction motor is used as a detector in a uniquely different than normal manner, that is, having its normal armature fixed and its normal stator slidable on the fixed armature so that a gauge plate on the slidable stator will engage the strip edge. The slidable stator also carries an adjustable switch actuating element for actuating a switch mounted on a carriage which is slidable on a stationary slide. A machine processing device, such as a welder, flash stripper or planisher, controlled by said switch, has a carriage portion also slidable on said stationary slide to push the switch supporting carriage away from a "stand-by" stop, towards which a return spring normally presses it. This makes movements or strokes of the sheet detector independent of strokes of the strip processing device.

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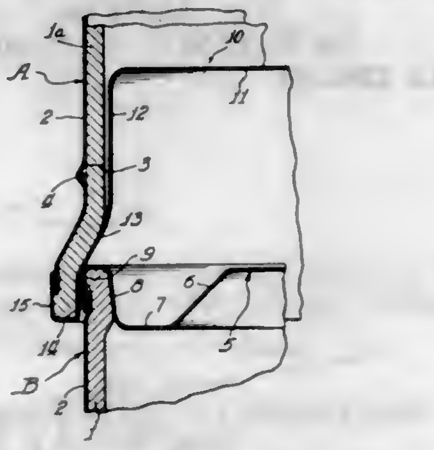
### 3,480,195
### STACKABLE CONTAINER

**Melvin A. Koboldt, St. Louis, Mo., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware**
**Filed Jan. 19, 1968, Ser. No. 699,154**
**Int. Cl. B65d** *3/10*
**U.S. Cl. 229—5.5** **4 Claims**

A tubular can with a fibrous body portion has a metal top affixed onto one end to provide an outside top diameter the same as the body of the tube. The bottom has an inner recessed portion having a diameter enabling it to fit snugly within the tube. The bottom also has a flared section of larger diameter to provide a portion



having an inside diameter slightly greater than the outside diameter of the top of the can to enable the bottom portion to fit outside the top of a similar can for secure stacking.

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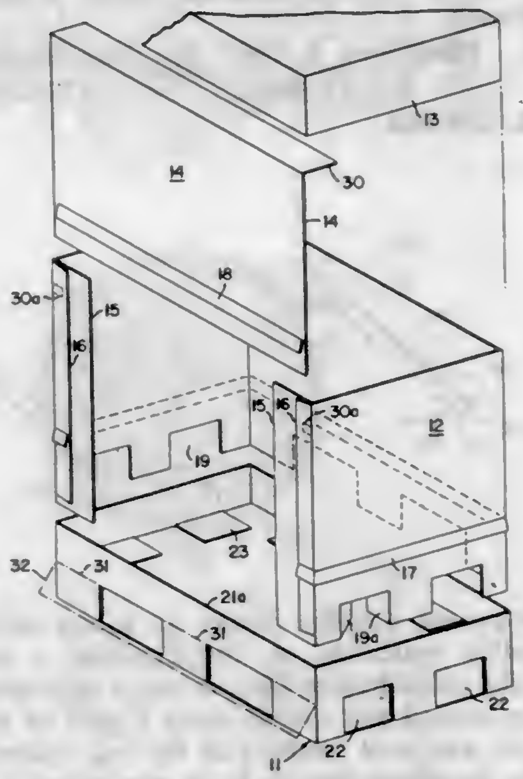
### 3,480,196
### CARGO CONTAINERS

**John de Simas, 960 Hillcrest, Millbrae, Calif. 94030**
**Filed Feb. 2, 1968, Ser. No. 702,649**
**Int. Cl. B65d** *5/32, 5/44, 19/06*
**U.S. Cl. 229—23** **15 Claims**



Collapsible and reuseable palletized cargo containers are disclosed comprised of separate interlocking parts for converting pallets into palletized cargo containers including means for access to the inside of the containers having weather protection features. A method of custom making pallets of specified dimension from separate reproducible parts and a method of converting the pallet to a palletized cargo container are also disclosed.

### 3,480,197
### CONTAINERS

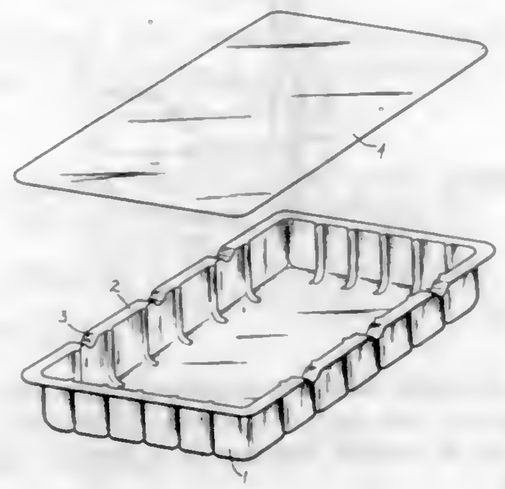
**Ronald W. Massey, Worthing, England, assignor to Monsanto Chemicals Limited, London, England, a British company**

**Filed Mar. 30, 1967, Ser. No. 627,070**

**Claims priority, application Great Britain, Apr. 7, 1966, 15,670/66**

**Int. Cl. B65d** *51/16, 81/00, 85/00*

**U.S. Cl. 229—43** **5 Claims**



A covered packaging container having a series of venting channels permitting ingress or egress of gas which are formed simultaneously with the container and remain open after assembly.

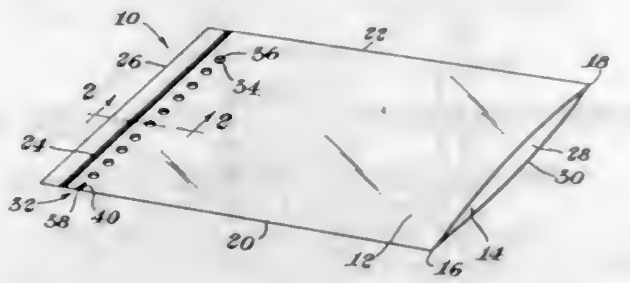
### 3,480,198
### BAG OPENING DEVICE

**John P. Repko, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**Filed Nov. 3, 1967, Ser. No. 680,519**

**Int. Cl. B65d** *27/34, 33/22*

**U.S. Cl. 229—66** **8 Claims**



An improved opening device for a bag constructed of heat fusible materials, as, for example, a heat fusible plastic like polyethylene film. A series of registered apertures are formed and spaced along a path on the opposed front and rear wall sections of the bag assemblage, and the walls fused together in local minute welds surrounding each of the registered apertures. Such apertures define an imperforate tear line along which a rupturing can be effected in a pre-determined manner for the convenient opening of the bag assemblage. In a specific arrangement the registered apertures extend inwardly from an edge of the bag assemblage at which point an imperforate edge notch is provided to locate the initial tearing action. The tear line provides a reclosing feature with a strip of material partially separated from the bag, on opening thereof, forming a tie string arrangement.

### 3,480,199
### CAPACITY CONTROL SYSTEM FOR COMPRESSOR UNITS

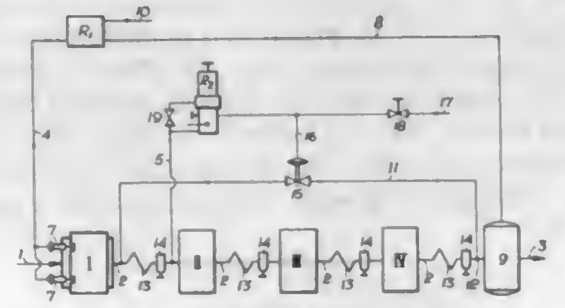
**Friedrich Bauer, Vienna V, Austria, assignor to Hoerbiger Ventilwerke Aktiengesellschaft, Vienna, Austria**

**Filed Nov. 24, 1967, Ser. No. 685,553**

**Claims priority, application Austria, Nov. 24, 1966, A 10,866/66**

**Int. Cl. F04b** *49/00*

**U.S. Cl. 230—4** **5 Claims**



A capacity control system for multi-stage compressor units comprising control means for altering the delivery of the first-stage compressor of the unit and additional control means for altering the delivery of one of the subsequent compression stages.

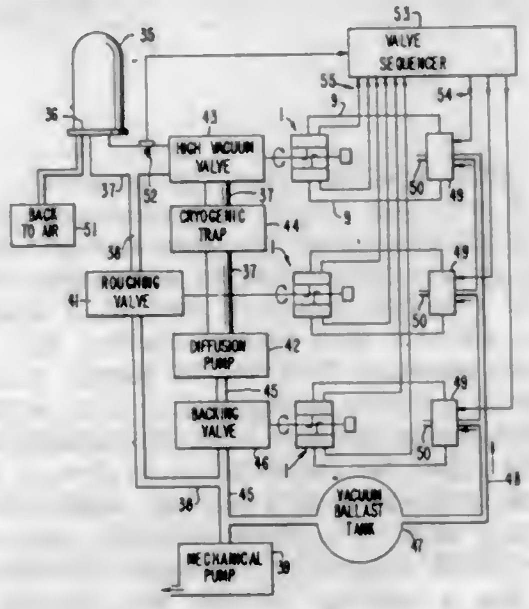
### 3,480,200
### VACUUM ACTUATOR AND VACUUM SYSTEM USING SAME

**Daniel F. Rohrer, Hillsboro, Oreg., assignor to Varian Associates, Palo Alto, Calif., a corporation of California**

**Filed Feb. 19, 1968, Ser. No. 706,553**

**Int. Cl. F04b** *41/06;* **F04d** *25/16;* **F01l** *25/08*

**U.S. Cl. 230—45** **2 Claims**



A vacuum powered rotary actuator and vacuum system using same are disclosed. The vacuum actuator includes a housing having a chamber with a rotary output shaft transversely disposed thereof between a pair of pistons coupled to the shaft for rotating same. Means are provided for selectively applying vacuum to one side and then the other of the pistons to produce rotary motion of the output shaft and of a valve coupled to the output shaft.

### 3,480,201
### PACKAGE SYSTEM FOR COMPRESSING GASES

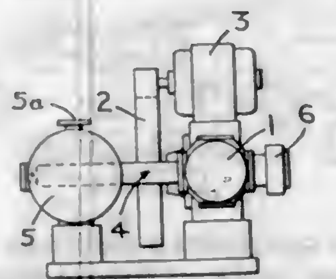
**Harold W. Whiting, Buffalo, N.Y., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware**

**Filed Dec. 29, 1967, Ser. No. 694,480**

**Int. Cl. F04b** *25/00, 39/06;* **F04c** *29/04*

**U.S. Cl. 230—182** **15 Claims**

The invention relates to a package system for compressing gases wherein a compressing means, a heat exchanger, and a storage receiver for the compressed gases provide a compact assembly by having the heat exchanger connected at one end directly to the discharge outlet of the compressor and having the other end so connected to the receiver that the greater length of the heat exchanger is telescoped or extended into the receiver; the heat exchanger including, a plurality of conduits forming a tube nest therein, and a cooling means being disposed about the tube nest; and means being further provided operatively associated with the receiver to permit the tube nest to be removably held in the heat exchanger in its assembled position in the receiver.



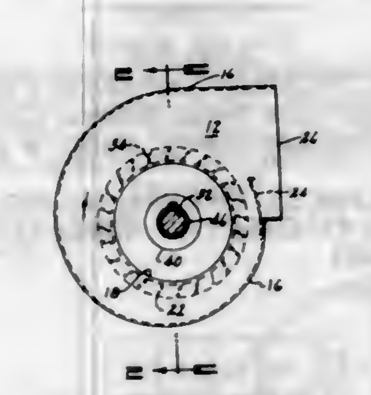
### 3,480,202
### CENTRIFUGAL FAN HAVING INLET GUIDE BAFFLE

**William W. Stephenson, Jr., 184 S. Glengarry Road, Birmingham, Mich. 48010**

**Filed Sept. 29, 1967, Ser. No. 671,820**

**Int. Cl. F04d** *17/16, 29/44*

**U.S. Cl. 230—127** **1 Claim**



A circular baffle located at the inlet of a conventional centrifugal fan, said baffle acting as a guiding surface in directing the gas so as to fill the blades more uniformly across the wheel width, especially directing a portion of the air onto the side closest to the housing inlet side sheet. When the baffle is used it is observed that stability is improved by dampening a tendency toward pulsating operation, especially in the low static pressure range.

### 3,480,203
### SEALING APPARATUS FOR ROTARY MECHANISM

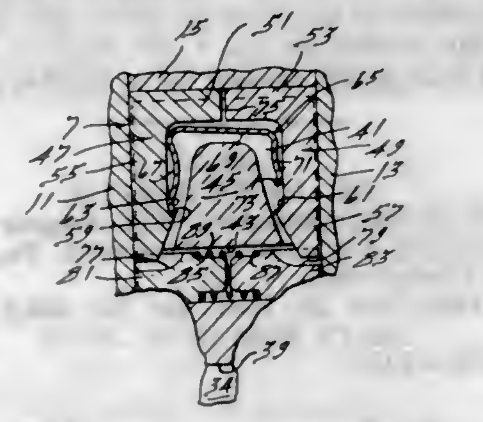
**David A. Koch, Southfield, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware**

**Filed Jan. 29, 1968, Ser. No. 701,358**

**Int. Cl. F04c** *27/00;* **F01c** *19/04*

**U.S. Cl. 230—145** **5 Claims**

Rotary compressor having a two apex rotor with two apex sealing plates located at each apex and biased away from one another against the side walls of the compressor housing. The radially inner ends of the apex sealing plates are received in slotted sealing pins biased outwardly. A passage is provided between the apex sealing plates and the rotor to permit compressed refrigerant to aid in the biasing of the apex sealing plates and the sealing pins.



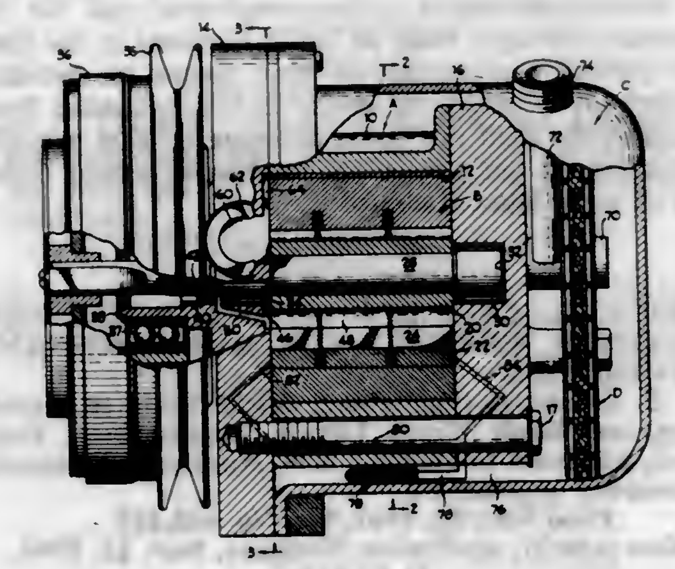
### 3,480,204
### LUBRICATION SYSTEM FOR ROTARY COMPRESSOR

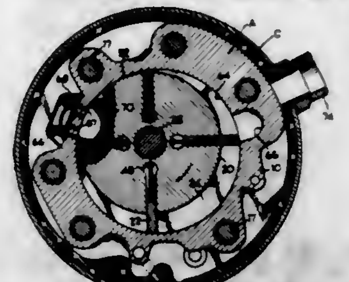
**Lester E. Harlin, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware**

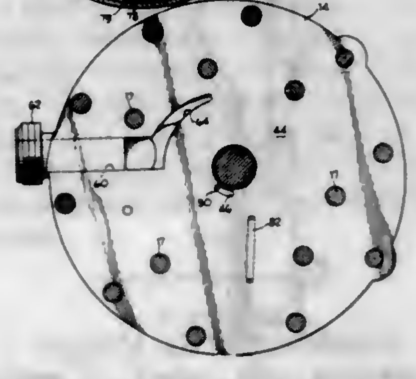
**Filed Mar. 26, 1968, Ser. No. 716,066**

**Int. Cl. F04c** *17/00, 29/02;* **F04b** *39/02*

**U.S. Cl. 230—152** **1 Claim**



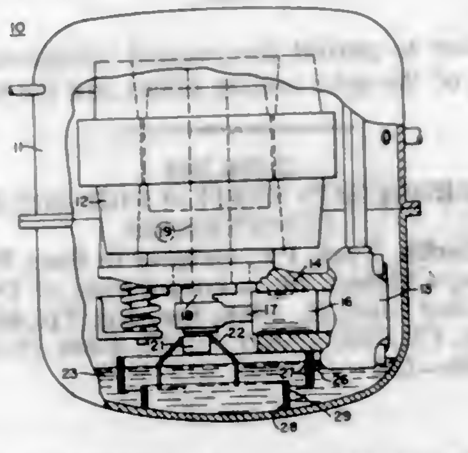




A lubrication system for rotary sliding vane compressors which is adapted to insure that the main shaft seal is readily supplied with sufficient lubrication under relatively low pressure. The bearing plate is provided with a recess which intermittently communicates with the under side of the vanes in the suction zone. A passage connects the recess to the space in which the main bearing and seal are located so that a low pressure condition is created in such space, causing oil to migrate into it.

### 3,480,205
### OIL NOISE BAFFLE

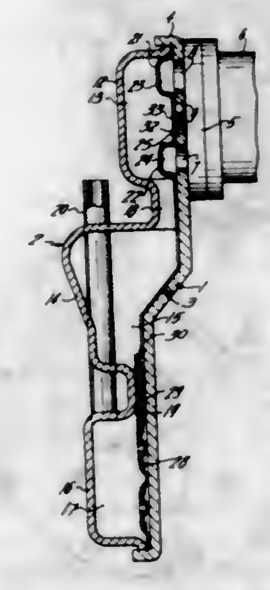
**Bernard W. Hatten, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Nov. 29, 1967, Ser. No. 686,513**
**Int. Cl. F04b** *35/04, 39/02*
**U.S. Cl. 230—232** **5 Claims**



A hermetically-sealed motor-compressor unit for refrigeration, having a body of liquid lubricant in the shell which partially submerges the unit, means for aerating the lubricant to reduce its ability to transmit noise from the unit to the shell and baffle structure at least partially surrounding the aerating means to reduce sloshing noises in the oil as the latter is aerated.

### 3,480,206
### FABRICATED CYLINDER HEAD AND SILENCER CHAMBER ASSEMBLY FOR A REFRIGERANT COMPRESSOR

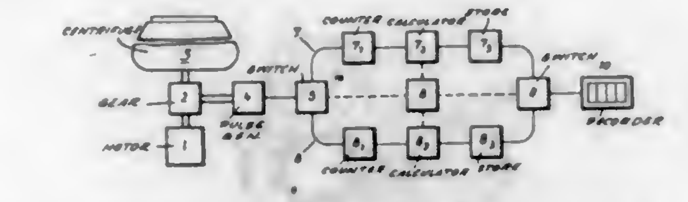
**Arne F. Enemark, Sonderborg, Kjeld Kjeldsen, Nordborg, and Bendt Wegge Larsen, Augustenborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a company of Denmark**
**Filed Nov. 22, 1967, Ser. No. 685,195**
**Claims priority, application Germany, Nov. 23, 1966, D 51,618**
**Int. Cl. F04b** *39/12, 39/00*
**U.S. Cl. 230—232** **6 Claims**



An assembly of prefabricated components or elements made of metallic sheet material assembled in fixed assembly in which solely three elements jointly define a cylinder head, a suction valve chamber and pressure or discharge silencer chambers provided internally thereof with a throttle passage communicating between two discharge silencer chambers.

### 3,480,207
### CENTRIFUGE WITH EFFICIENCY MEASURING DEVICE

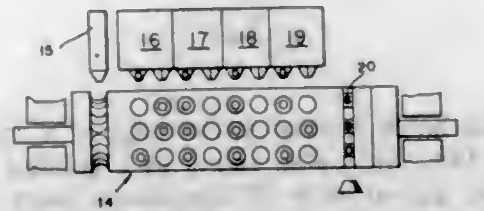
**Karl Strohmaier, 74 Tubingen, 74 Im Schonblick, Germany**
**Filed June 15, 1966, Ser. No. 557,704**
**Int. Cl. B01f** *13/00;* **B04b** *9/00;* **G01r** *11/00*
**U.S. Cl. 233—1** **10 Claims**



1. A centrifuge comprising a centrifuge rotor, a driving motor, driving gear means operatively interposed between the motor and the rotor for driving the rotor at a required rotary speed, means for producing an electrical signal proportional to the instantaneous rotary speed of said rotor, converter means for producing during a given time interval a signal proportional to the square of said electrical signal, and means for indicating said squared quantity summed over the time of operation of the centrifuge, wherein said means for producing an electrical signal comprises pulse transmitter means coupled to the rotor for producing electrical pulses at a frequency proportional to said rotor speed, said converter means comprising counting means for counting pulses, timing means for applying said pulses to said counting means during said given time intervals, calculating means connected to said counting means for producing a signal proportional to the square of the value of said counted pulses, said indicating means including further counting means, and means for applying said squared quantity to said further counting means.

### 3,480,208
### FLUIDIC NUMERIC READOUT DEVICE

**James R. Goodykoontz, Santa Monica, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio**
**Filed Jan. 15, 1968, Ser. No. 697,877**
**Int. Cl. G06d** *1/00;* **G06m** *1/12*
**U.S. Cl. 235—201** **6 Claims**



There is disclosed a device providing a direct readout capability for a fluidic system thus avoiding the need to go through a conversion to electrical signals in order to provide numeric information. The device consists of a light weight cylinder which is free to rotate about its axis. The output of a plurality of fluidic flip-flops equal in number to the number of binary digits represented, impinge directly onto the surface of the cylinder. Additionally, a constant flow jet impinges on a turbine track on the cylinder causing it to rotate. The flip-flop outputs act to overpower the turbine drive, the force of which is adjusted so that the cylinder will stop only at a predetermined position in which all of the flip-flops are exerting maximum force for the number represented. A numeric visual readout track then indicates what this equivalent number is and a magnetic numeric representation may also be read by conventional reading heads if it is desired to use the device as a binary to digital converter providing both optical and electrical readout.

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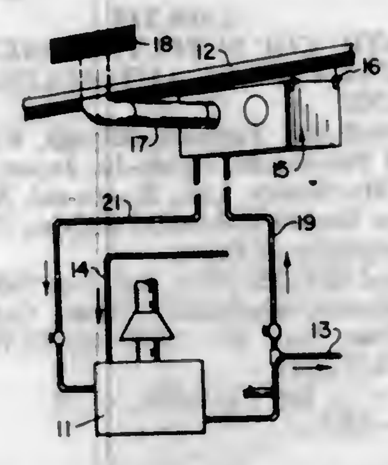
### 3,480,209
### HUMIDIFIER AND SYSTEM

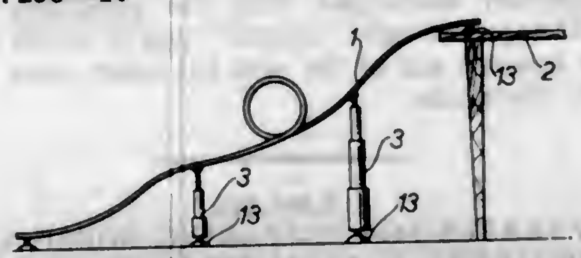
**Walter R. Stiles, Milford, Mich., assignor to Skuttle Manufacturing Company, Milford, Mich., a corporation of Michigan**
**Filed June 14, 1967, Ser. No. 645,972**
**Int. Cl. F24d** *1/00;* **F24f** *3/14*
**U.S. Cl. 237—1** **5 Claims**



A humidifier system comprises a humidifier assembly which draws air successively through a dry filter, a heating unit and a humidifying unit before discharge into the space to be humidified. The humidifier assembly is adapted primarily for houses and the like that are heated by hot water or steam and the heating unit of the humidifier is connected to the source of hot water or steam which may be the space heating system boiler or the usual hot water tank. The heating unit may be electrical. The humidifier assembly is compact and contained in a casing readily installed to derive its air heating from the existing space heating system, but the humidifier system is otherwise independent. It supplies clean filtered dry heated moist air, usually above body temperature.

### 3,480,210
### RACE TRACK

**Roger Paul Perrinjaquet, 18 Chemins Ph. de Sauvage 1214, Geneva, Switzerland**
**Filed Dec. 13, 1968, Ser. No. 783,664**
**Claims priority, application Switzerland, Dec. 21, 1967, 18,145/67**
**Int. Cl. A63h** *18/02, 18/12, 33/00*
**U.S. Cl. 238—10** **7 Claims**

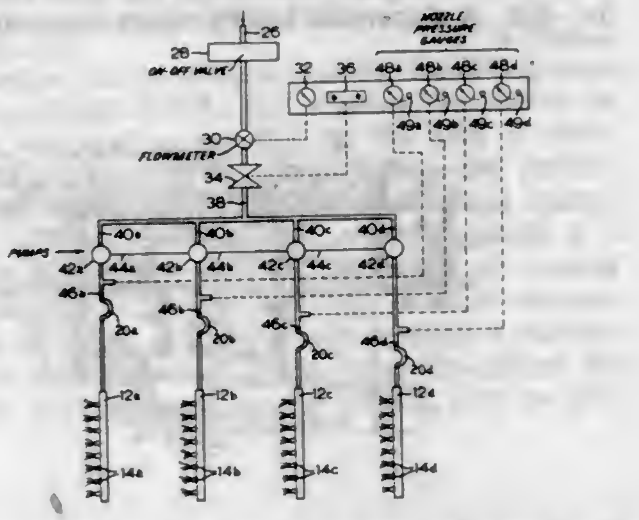


A track for rolling toys, particularly toy vehicles, is described which consists of individual track segments joinable on to another by means of connector elements inserted in recesses in the ends of each segment, said recesses bearing an inverse geometrical correlation with said connector elements. The track segments and connector elements are constructed of flexible material such that convoluted shapes can be imparted to an assembled track.

### 3,480,211
### SPRAY CONTROL MECHANISM FOR CONTINUOUS CASTING MACHINES

**Tibor Miklos Vertesi, Whitby, Ontario, and Bruce Allan Phillips, Ajax, Ontario, Canada, assignors to Gamma Engineering Limited, Whitby, Ontario, Canada, a corporation of British Columbia, Canada**
**Filed Nov. 18, 1968, Ser. No. 776,462**
**Int. Cl. B05b** *13/00, 1/30*
**U.S. Cl. 239—450** **8 Claims**

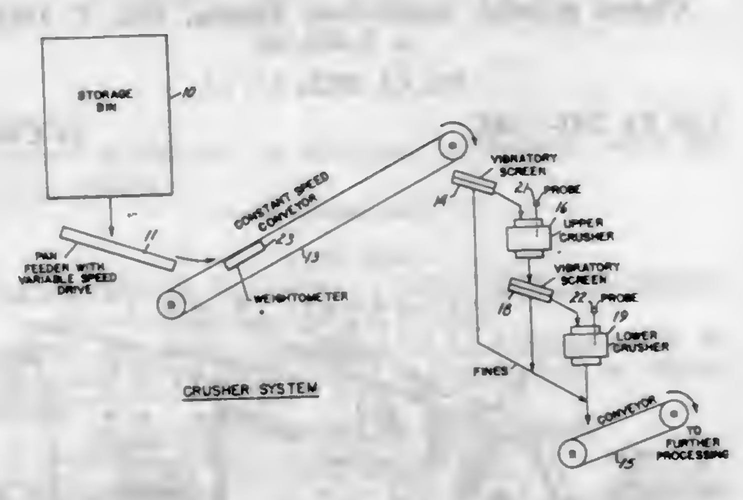
A flow control mechanism for spraying water on a newly formed strand from a continuous casting machine. The water from a common supply pipe is divided between (for a vertically descending square strand) four equal displacement pumps and then delivered to four spray conduits. The pumps are mechanically connected to operate at the same speed and are driven by the water



so that each delivers the same volume of water to its spray conduit, regardless of whether more nozzles in one spray conduit than another are plugged. A pressure gauge connected to each spray conduit indicates when nozzles are clogging and whether more nozzles are plugged in one conduit than in another.

### 3,480,212
### CONTROL APPARATUS

**Jack G. Liljegren, Wayne G. Schaal, and Lawrence F. Schubert, Silver Bay, Minn., assignors to Reserve Mining Company, Silver Bay, Minn., a corporation of Minnesota**
**Filed Feb. 23, 1967, Ser. No. 617,923**
**Int. Cl. B02c** *25/00*
**U.S. Cl. 241—34** **10 Claims**

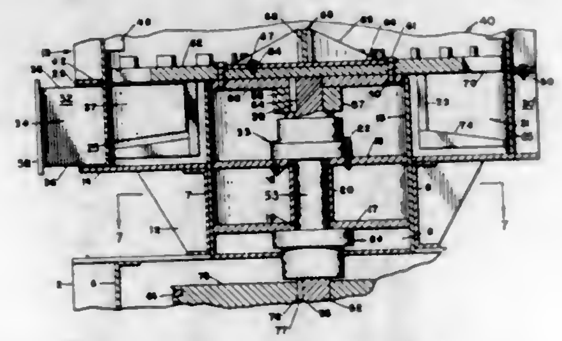


A control system for varying the feed rate of material being fed to a pair of series connected grinding machines, driven by electric motors, in response to certain process variables including variations in the power consumption of the motors. The selected power consumption control level or set point and consequently the feed rate are automatically and continually raised under normal operating conditions and lowered when the level exceeds a predetermined maximum.

### 3,480,213
### VERTICAL SHREDDERS

**Harry J. Shelton, Jr., Ladue, Mo., assignor to Gruendler Crusher & Pulverizer Co., St. Louis, Mo., a corporation of Missouri**
**Filed July 12, 1965, Ser. No. 471,480**
**Int. Cl. B02c** *17/02, 1/08;* **B07b** *13/00*
**U.S. Cl. 241—92** **15 Claims**

A shredder having a vertical cylindrical housing in which a disk-like rotor is journaled. Upwardly projecting cutters are on the disk for shredding refuse as it falls onto the upper surface of the disk. Sweeper blades depend from the rotor disk for sweeping shredded refuse out an outlet formed in the housing. Vertically extending baffles are affixed to the interior surface of the housing above the rotor disk to impede rotation of the mass of refuse with the disk. A dispersion cone projects upwardly from the center of the rotor disk for directing refuse outwardly on the disk, and notches are formed along the outer periphery of the disk so that the shredded refuse will fall into the path of the sweeper blades. Alternative embodiments include fingers projecting inwardly below the disk for further shredding the refuse and a laminated rotor disk which permits altering the size of the notches along the periphery of the disk.



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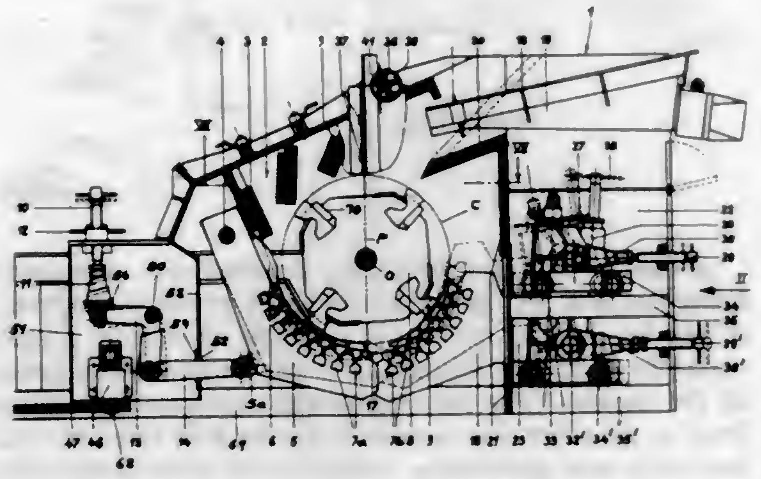
### 3,480,214
### ROTARY DISINTEGRATOR

**Franz Wageneder, Josef-Grimps-Strasse 6, Laakirchen, Austria**
**Filed Sept. 5, 1967, Ser. No. 665,448**
**Claims priority, application Austria, Oct. 7, 1966, A 9,401/66**
**Int. Cl. B02c** *13/13*
**U.S. Cl. 241—185** **10 Claims**



A rotary disintegrator, such as a rock crusher in which a rotor with peripherally mounted breaker blades turns about a horizontal axis, is provided with a pair of swingable grates disposed below the rotor with a curvature approximating that of the blade orbit, the two grates being separated from each other by a small gap at the nadir of the rotor and forming two independently adjustable clearances for the goods to be comminuted. The second grate may have its entrance edge disposed slightly below the level of the discharge edge of the first grate to intercept larger fragments accelerated across the gap; above the exit of the ascending clearance formed between the rotor and the second grate a deflector plate intercepts all particles not previously discharged.

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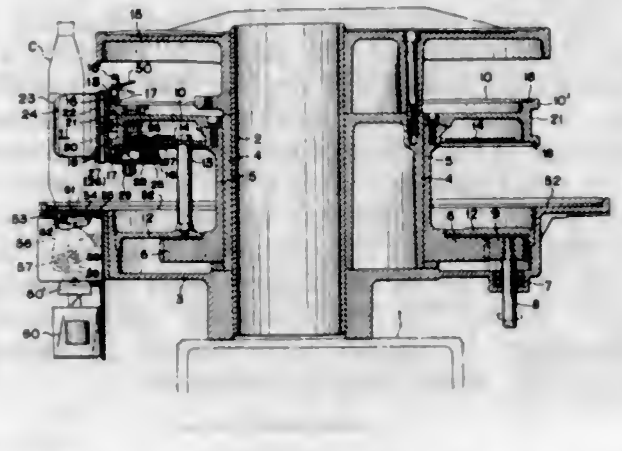
### 3,480,215
### AUTOMATIC COP SUPPLYING METHOD AND ITS APPARATUS OF AUTOMATIC WINDING MACHINE

**Isamu Matsui and Tamotsu Miyagi, Kyoto-shi, and Muneaki Funahashi, Kyoto-fu, Japan, assignors to Murata Machinery, Ltd., Kyoto-shi, Kyoto, Japan, and Toyo Boseki Kabushiki Kaisha, Osaka, Japan, both companies of Japan**
**Filed Oct. 25, 1966, Ser. No. 589,263**
**Claims priority, application Japan, Oct. 26, 1965, 40/65,796; Nov. 27, 1965, 40/72,791; Apr. 8, 1966, 41/22,328**
**Int. Cl. B65h** *54/24*
**U.S. Cl. 242—35.5** **19 Claims**



A method of automatically supplying fresh cops to travelling winding units of an automatic winder. The fresh cops to be supplied have a tail free end retrieved of the yarn thereof as the cops are transported to a supply position. The retrieving of the free end of the yarn is detected and if a failure to retrieve the free tail end of the yarn has taken place on individual cops, these cops are automiatcally discharged from the cop-supply line as "failed" cops and only "normal" cops in which retrieval of the free tail end of the yarn has taken place are supplied to the winder.

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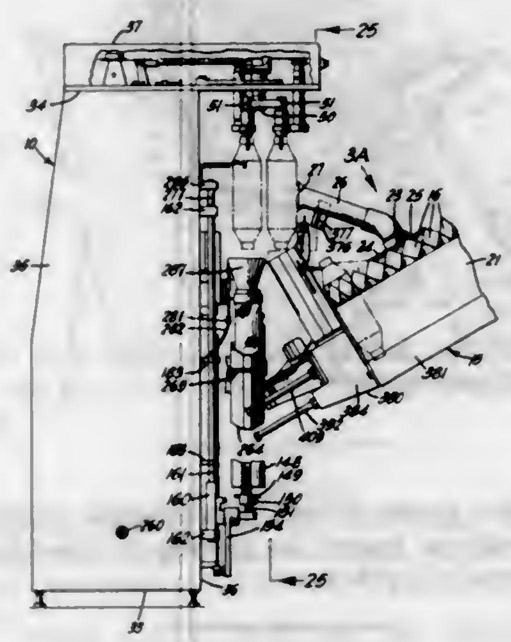
### 3,480,216
### APPARATUS FOR PREPARING BOBBINS FOR DELIVERY TO AN AUTOMATIC WINDER

**Vincent A. Iannucci, Lincoln Park, and Ronald S. Schartel, Whitfield, Pa., assignors, by mesne assignments, to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware**
**Filed Aug. 31, 1967, Ser. No. 664,866**
**Int. Cl. B65h** *54/24*
**U.S. Cl. 242—35.6** **21 Claims**

Apparatus for preparing yarn bobbins, as they are received from a spinning machine, for delivery to the bobbin magazine of an automatic winder comprising a bobbin supply hopper, means for delivering bobbins in succession from the hopper to a turret which is indexible to carry each bobbin from a first bobbin receiving station to a second or servicing station which has means to dislodge terminal ends of yarn wound thereon, means to cut off the dislodged ends, means to rotate the bobbin in a winding direction, and means operable during such movement to engage an outer spiral winding and locate a freed end thereof in position to be grasped and held by a suction nozzle at a third station. A further indexing movement of the turret carries the bobbin to the third station which, in addition to the suction nozzle, has means for rotating the bobbin in an unwinding direction whereby a length of yarn is drawn from the bobbin and into the suction nozzle, means to release the bobbin, and means to deliver the released bobbin to a receptacle adjacent the magazine of the associated winder. The receptacle contains a pusher which, upon rotation of the magazine to position an empty compartment thereof opposite the receptacle, is energized to shove the bobbin through a gate into the magazine compartment.



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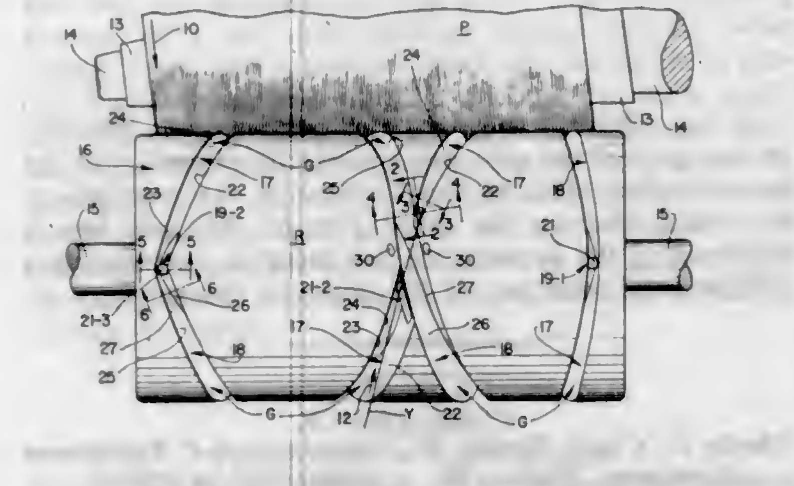
### 3,480,217
### TRAVERSE ROLL

**William H. O'Brien, Warwick, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts**
**Filed Aug. 7, 1967, Ser. No. 658,869**
**Int. Cl. B65h** *57/04*
**U.S. Cl. 242—43.2** **3 Claims**



A traverse roll for a yarn winding machine. A pair of connected helical grooves in a body of the traverse roll form a continuous groove which guides a strand of yarn back and forth as the strand is wound into a package. Wear resistant pins, securely embedded at their opposite ends in the roll body and positioned along edge portions of the roll at intersections of the grooves, guide the strand axially and radially of the roll and effectively prevent the strand from abrading and cutting into the traverse roll body.

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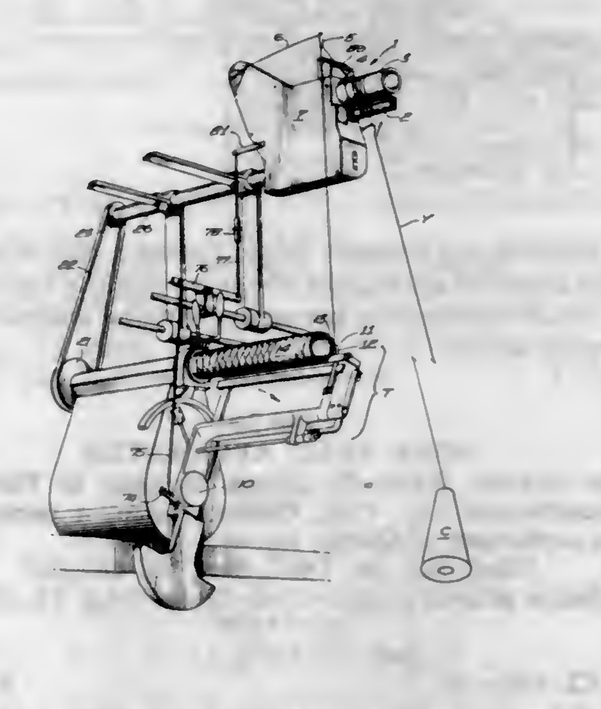
### 3,480,218
### YARN FURNISHER FOR WINDING MACHINES

**John B. Lawson, Barrington, R.I., assignor to Robison Rayon Company, Inc., Providence, R.I., a corporation of Rhode Island**
**Filed Dec. 22, 1966, Ser. No. 603,925**
**Int. Cl. B65h** *59/06*
**U.S. Cl. 242—45** **9 Claims**

This invention relates to apparatus for furnishing yarn to winding machines and the like, wherein the tension on the yarn is selectively controlled as the yarn is taken up by a yarn package. The invention provides positive yarn feeding means and a differential control system whereby it is possible to deliver yarn continuously ti a winder at a pre-selected tension, regardless of tension changes which enter the system from external sources. Further, the invention provides means whereby a uniform tension may be maintained on the yarn throughout the build of the yarn package, or the tension may be programmed to increase or decrease, as desired, while the package builds.



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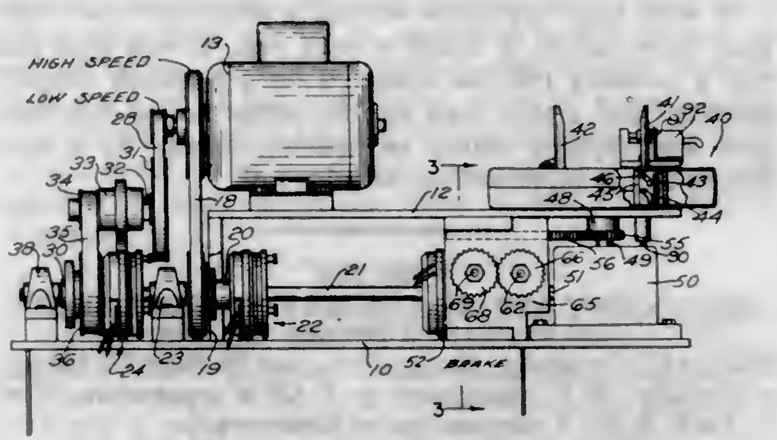
### 3,480,219
### MACHINE FOR WINDING CORD-LIKE MEMBERS INTO HANK FORM

**Harris F. Hanscom, Barrington, R.I., assignor to H. F. Hanscom & Company, Inc., a corporation of Rhode Island**
**Filed Sept. 5, 1967, Ser. No. 665,389**
**Int. Cl. B65h** *54/56*
**U.S. Cl. 242—53** **7 Claims**



A machine having a turntable with at least a pair of winding fingers which will wind, into a hank or other shape, cord-like material of predetermined length.

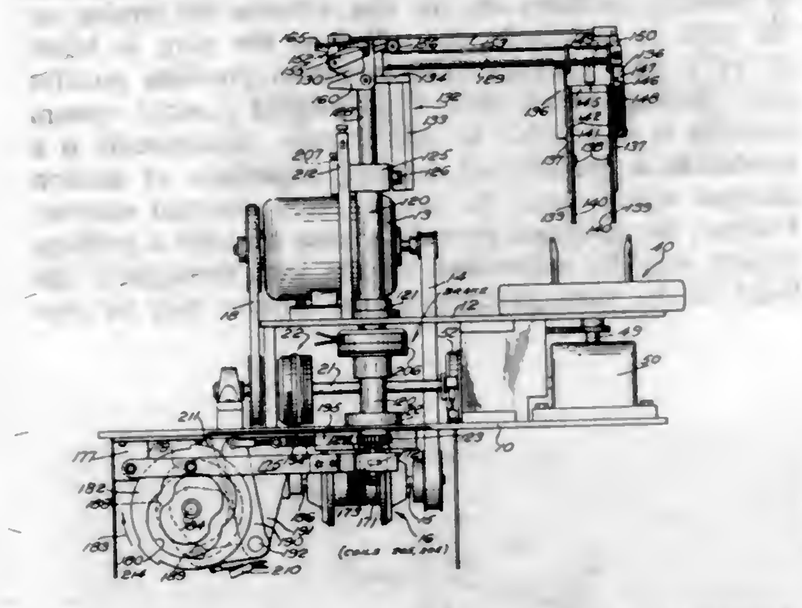
### 3,480,220
## MACHINE FOR WINDING AND TRANSFERRING HANKED MATERIAL

**Harris F. Hanscom, Barrington, R.I., assignor to H. F. Hanscom & Company, Inc., a corporation of Rhode Island**

**Filed Sept. 5, 1967, Ser. No. 665,421**

**Int. Cl. B65h** *67/04*

**U.S. Cl. 242—53** **6 Claims**



A winding and transfer means having a pair of grasping fingers mounted on an arm which is vertically reciprocable and angularly rotatable between a winding turntable and a wrapping station.

### 3,480,221
## WIRE FEED APPARATUS

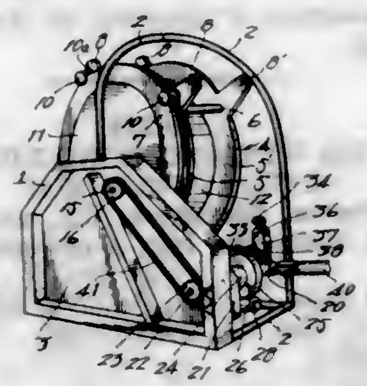
**Shigeo Sekino, Kyoto-fu, Japan, assignor to The Osaka Transformer Co., Ltd., Osaka, Japan, a company of the prefecture of Osaka, Japan**

**Filed Aug. 16, 1967, Ser. No. 661,024**

**Claims priority, application Japan, Aug. 19, 1966, 41/77,880**

**Int. Cl. B65h** *51/08*

**U.S. Cl. 242—54** **5 Claims**



A wire feed apparatus having a simplified and compact construction in which a wire reel, a wire feed roll and a pressure roll are mounted on a common support structure and a wire feed electric motor and a reduction gear are disposed within an opening defined by a wire electrode coil supported on the wire reel.

### 3,480,222
## PHOTOCOPY APPARATUS HAVING ROLL SHEET MATERIAL SUPPORT MEANS

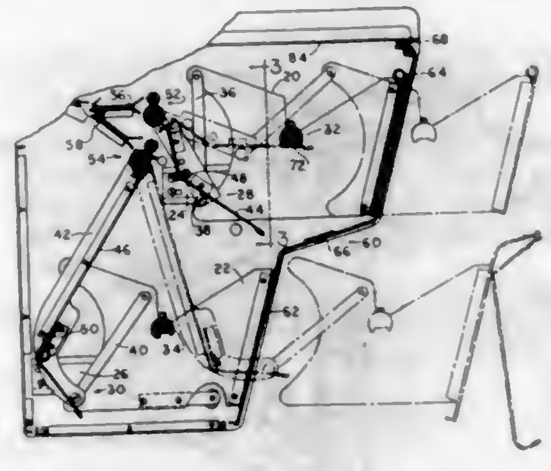
**Robert C. Goodman, Binghamton, and Delbert W. Sames, Conklin, N.Y., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware**

**Filed Nov. 14, 1966, Ser. No. 593,769**

**Int. Cl. B65h** *19/04*

**U.S. Cl. 242—55.3** **3 Claims**

Apparatus for feeding and dispensing sheet materials from a plurality of rolls thereof for use in photocopy or duplicating apparatus is disclosed. The feeding and dispensing apparatus comprises a plurality of slidably mounted frames for rotatably supporting a plurality of rolls of sheet material on mandrels having drag inducing means carried by the frames and movable guide means associated with the frames for guiding the sheet materials during the unwinding thereof.



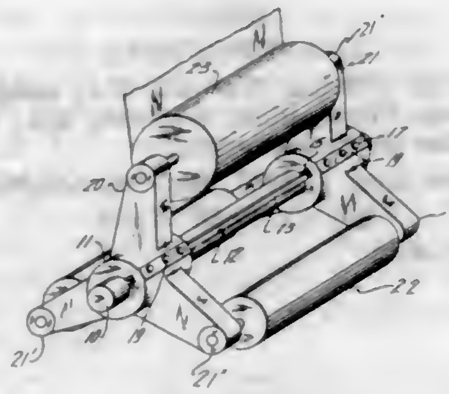
### 3,480,223
## SPLIT KEY FOR SPIDER ARM

**Clive H. Porter, Park Ridge, N.J., assignor, by mesne assignments, to James Talcott, Inc., Americas, N.Y., a corporation of New York**

**Filed Sept. 12, 1967, Ser. No. 667,210**

**Int. Cl. B65h** *79/00*

**U.S. Cl. 242—64** **1 Claim**



A key which is split into two parts so that one side of one part of the split key is correctly aligned with the corresponding sides of the keyways in the members to be joined whereas the other part of the split key is tightened in the keyways of one member, overcoming a difference of tolerance of the width of the keyways.

### 3,480,224
## CORE CHUCK

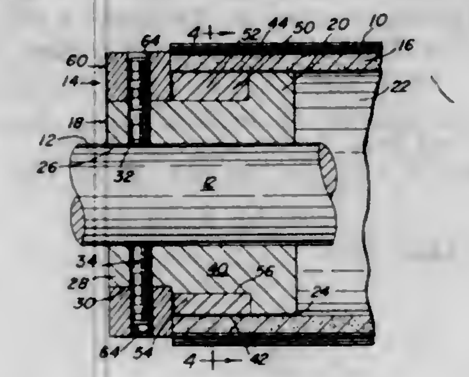
**Merlin G. Clark, Skokie, Ill., assignor to A-C Equipment Company, Skokie, Ill., a corporation of Illinois**

**Filed Feb. 21, 1968, Ser. No. 707,052**

**Int. Cl. B65h** *17/02*

**U.S. Cl. 242—68.2** **9 Claims**

The core chuck includes an eccentric ring carried on an eccentric hub member and adapted to be rotated into a position whereby the outer circumferential surface of the eccentric ring is brought into binding frictional contact with the inside of the core. By these means a driving engagement is had without distortion of the supported end of the core. The core chuck is further characterized by the eccentric ring having an outside diameter scaled for concentric sliding engagement within the core, when in retracted position, whereby frictional engagement with the inner core surface rotates the ring eccentrically relative to the core axis and into binding engagement with the core.



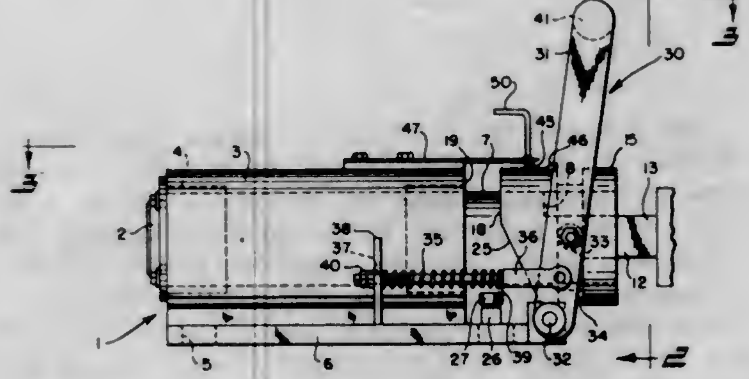
### 3,480,225
## SELF-LOCKING CHUCK FOR ROLL SHAFTS

**Alexander V. Alexeff, Cleveland, Ohio, assignor to Alexeff-Snyder Enterprises, Cleveland, Ohio, a corporation of Ohio**

**Filed Apr. 2, 1968, Ser. No. 718,119**

**Int. Cl. B65h** *17/02*

**U.S. Cl. 242—68.4** **9 Claims**



A self-locking chuck having a rotatable support member with an open-sided socket in one end for receiving the end of a roll shaft, and an axially movable collar spring biased into a position overlying the socket to prevent accidental drop-out of the roll shaft. A latch mechanism positively holds the collar in the retracted position when the open side of the socket is facing upwardly until manually released or the collar is rotated beyond the limits of the latch. A stop having a rotatable cam follower thereon prevents retraction of the collar while the open side of the socket is facing downward without scoring the collar.

### 3,480,226
## PROJECTION CARTRIDGE

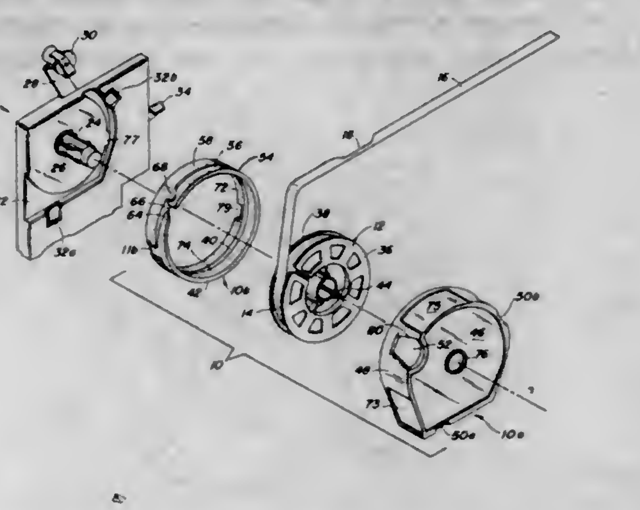
**Robert J. Roman, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**Filed Nov. 1, 1966, Ser. No. 591,249**

**Int. Cl. G03b** *1/04*

**U.S. Cl. 242—71.1** **9 Claims**

A cartridge adapted to receive a flanged reel of strip material and to be latched to a projector, comprises an outer casing and an inner member. The outer casing includes a side wall and an edge wall which cooperate with a wall of the projector to define a closed chamber for the strip material when the cartridge is on the projector. The inner member fits within the outer casing and defines an inwardly facing annular surface having an internal diameter which is less than the flange diameter of the reel and beyond which the flange can be snapped when inserting the reel into the cartridge or removing it therefrom.



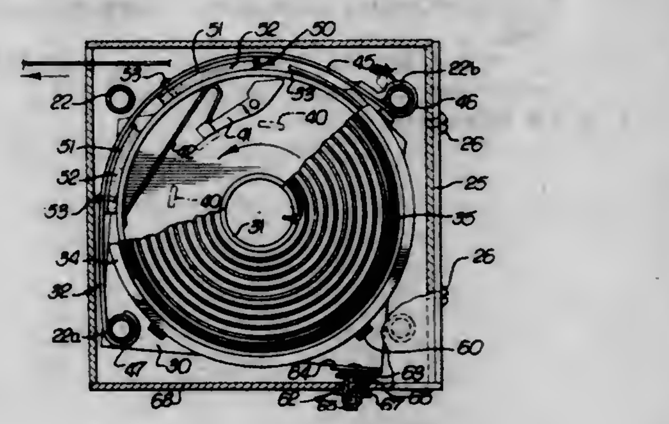
### 3,480,227
## RETRACTOR DEVICE WITH COMPENSATING BRAKE

**Walter T. Matthews, Van Nuys, Calif., assignor to Duplex, Inc., Los Angeles, Calif., a corporation of California**

**Filed May 21, 1968, Ser. No. 730,877**

**Int. Cl. B65h** *75/48;* **F16d** *63/00;* **E05f** *1/08*

**U.S. Cl. 242—107.3** **8 Claims**



The device is a cable retractor wherein a cable drum and a brake drum are interrelated in a manner whereby a cable may be unwound from the cable drum against opposition of a spiral spring but free of any braking action, a band type of brake being provided which is applied to the brake drum during windup of the cable. The amount of braking force applied is controlled by the amount of tension on the cable. The principal improvement involved is in the form of the brake which provides compensation in the braking action ranging from a full area application of the brake when the tension is heavy to a lesser area application and decreasing force as the cable tension decreases.

### 3,480,228
## SAFETY BELT AND SEAT BELT APPARATUS

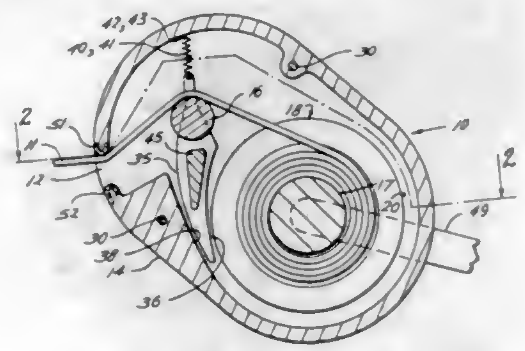
**Izaak A. Ulert, Houston, Tex., assignor of forty-five percent to Julius Epstein, Houston, Tex., ten percent to Louis Goldfaden, Houston, Tex., and five percent to Carl B. Fox, Jr., Hedwig Village, Tex.**

**Filed June 30, 1967, Ser. No. 650,454**

**Int. Cl. B65h** *75/48*

**U.S. Cl. 242—107.4** **7 Claims**

This application discloses safety belt and seat belt apparatus wherein the belt is wound on a spool or reel, wherein the spool is spring-biased to rewind the belt when the belt is not under tension, wherein the belt is drawn from the spool against the bias for use, and wherein the belt is withdrawable from the spool at the slower rates of belt travel to be put into use and to enable normal relatively slow movements of the person about whom the belt is placed without restraint and wherein the belt withdrawal is restrained by a brake when the belt is attempted to be withdrawn at faster rates of belt travel such as occur when a vehicle is involved in a collision or upon other sudden voluntary or involuntary movements of the person away from the point of fixture of the belt and spool apparatus.



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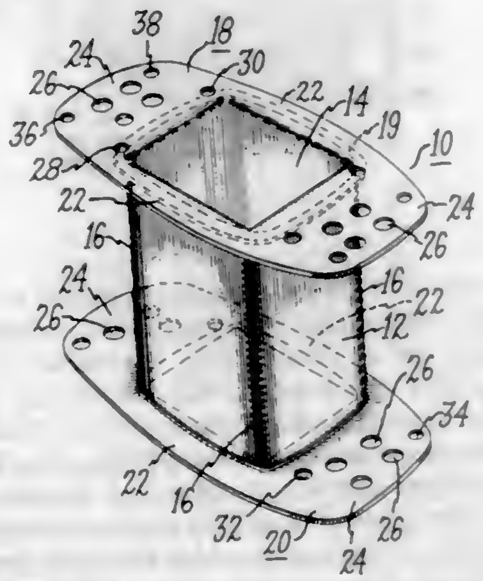
3,480,229

### COIL WINDING FORM

**Franklin R. D'Entremont, Dover, N.H., assignor to General Electric Company, a corporation of New York**
**Filed June 8, 1967, Ser. No. 644,521**
**Int. Cl. B65h** *75/14;* **H01f** *27/30*
**U.S. Cl. 242—118.4** **1 Claim**



A coil winding form for winding a plurality of coils for use in an instrument transformer. The winding form is of insulating material to provide desired insulation between the coil and its core. The base or arbor of the form is square shaped in cross section, and is provided with an equal plurality of serrations on each edge of the arbor for obtaining precision winding with parallel turns perpendicular to the center line of the winding form on three sides of the coil, the four sides of the coil providing progression between adjacent turns. Flanges are provided with openings in the flanges at the desired start and stop position of each of the windings.

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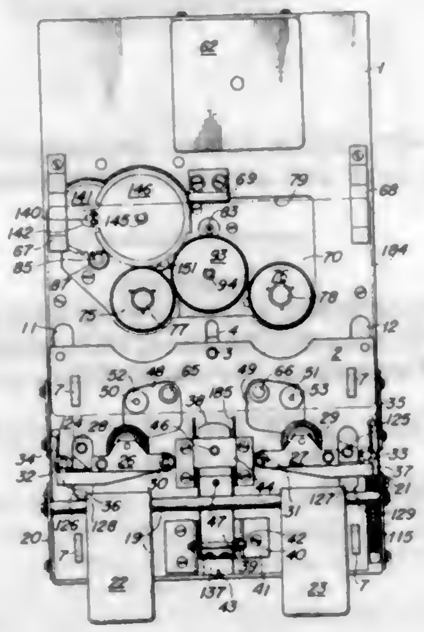
3,480,230

### MAGNETIC RECORDING AND REPRODUCING APPARATUS

**Hiroo Hosono, Osaka, and Michinori Nagahiro, Hirakata-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan**
**Filed Nov. 20, 1967, Ser. No. 684,344**
**Claims priority, application Japan, Nov. 26, 1966, 41/77,924, 41/77,925, 41/77,926, 41/77,927; Dec. 7, 1966, 41/80,706, 41/80,707**
**Int. Cl. B65h** *75/40*
**U.S. Cl. 242—191** **6 Claims**



This specification discloses a magnetic recording and reproducing apparatus in which the opposite ends of a tape are fixed to a supply reel and a take-up reel as in a cartridge type apparatus. In the present apparatus, there is provided a tape termination detecting mechanism which is adapted to detect the fact that rotary members such as reel shafts, pinch roller, etc. rotated in association with the tape transportation are stopped when such tape transportation is finished, thereby stopping the tape transport mechanism or reversing the direction of the tape transportation.

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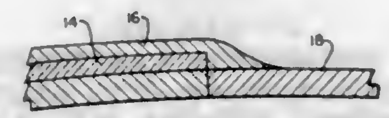
3,480,231

### LIGHTNING PROTECTION FOR AIRCRAFT COMPONENTS

**John H. Lumn, El Cajon, Calif., assignor, by mesne assignments, to Ametek, Inc., New York, N.Y., a corporation of Delaware**
**Filed May 31, 1967, Ser. No. 642,492**
**Int. Cl. B65g** *45/02*
**U.S. Cl. 244—1** **7 Claims**

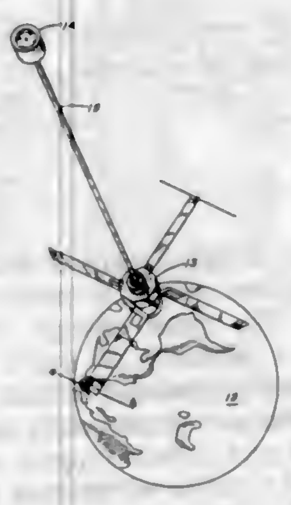


A lightning protection system for aircraft components apt to be struck by lightning such as wings, external fuel tanks, etc. including a thin ceramic coating covering the leading portion of the component to be protected and a conductive coating superimposed on the ceramic coating and electrically connected to a ground or dispersal area together with a method for applying the coatings.

3,480,232

### DAMPING COUPLER FOR SATELLITE ATTITUDE CONTROL

**Theodore Wyatt, Union Bridge, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Original application Nov. 22, 1965, Ser. No. 509,689, now Patent No. 3,362,656, dated Jan. 9, 1968. Divided and this application Oct. 23, 1967, Ser. No. 677,293**
**Int. Cl. B64g** *1/10*
**U.S. Cl. 244—1** **4 Claims**



A means for controlling and damping the motion of a satellite when in orbit comprising a boom extending from the satellite and attached to the satellite through a coil spring in order to absorb the rotational, along orbit and cross-orbital plane libration motion of the satellite.

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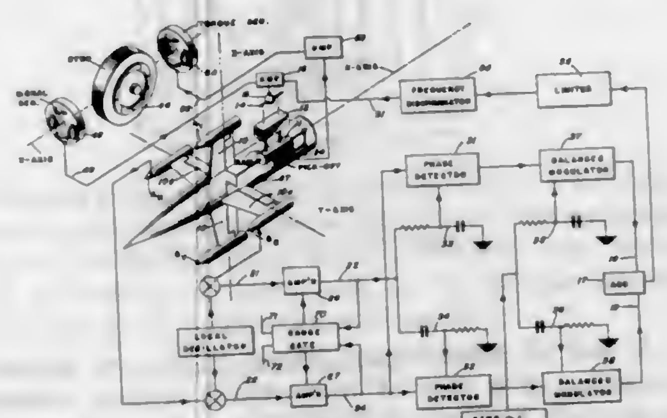
3,480,233

### MISSILE GUIDANCE METHOD AND APPARATUS

**Lan J. Chu, Lexington, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed July 21, 1954, Ser. No. 444,931**
**Int. Cl. F41g** *7/00;* **F42b** *15/02;* **G06f** *15/50*
**U.S. Cl. 244—3.18** **6 Claims**



The disclosure is directed to a missile guidance system incorporating radiant energy detection devices, which feed signal processing circuitry for phase differentiating of the signals in a manner to provide steering signals for application to the control surfaces of the missile for course changing to effect continuous pursuit of a target by the missile.

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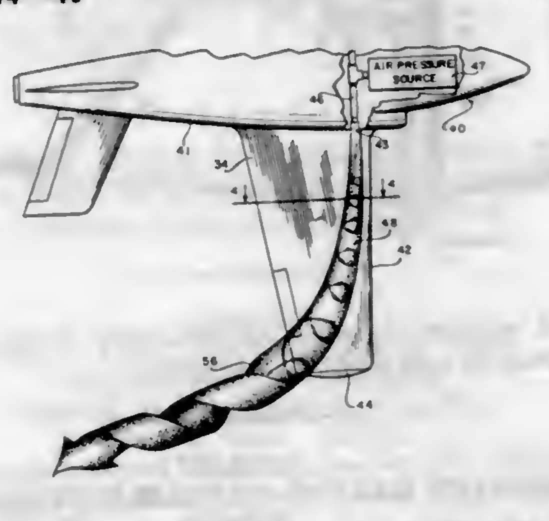
3,480,234

### METHOD AND APPARATUS FOR MODIFYING AIRFOIL FLUID FLOW

**Joseph J. Cornish III, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Los Angeles, Calif.**
**Filed Aug. 18, 1967, Ser. No. 661,646**
**Int. Cl. B64c** *3/00*
**U.S. Cl. 244—40** **12 Claims**



A technique for preventing or controlling the occurrence of flow separation from the surface of an airfoil such as an aircraft wing. A jet of fluid is blown across the airfoil surface in a spanwise direction to entrain air adjacent the path of the jet. The movement of the blown fluid and entrained air in combination with the oncoming airflow establishes a vortex which is locked in position along the spanwise dimension of the airfoil. The oncoming airflow flows over the locked vortex and then becomes reattached to the airfoil surface, thereby preventing or delaying the occurrence of flow separation.

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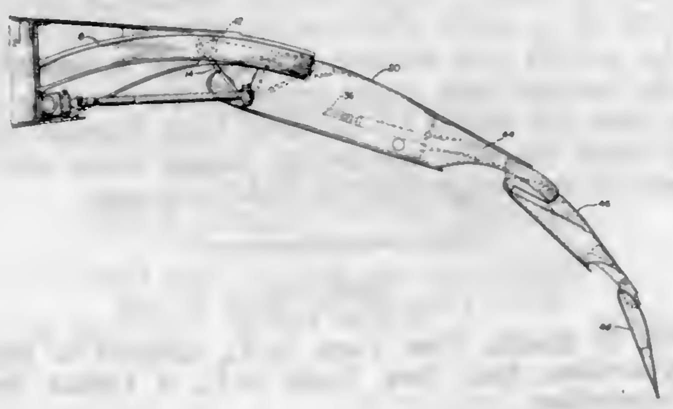
3,480,235

### MULTIPLE SLOTTED AIR-FOIL SYSTEM FOR AIRCRAFT

**Hans Multhopp, Baltimore, Md., assignor to Syscon, Inc., Baltimore, Md., a corporation of Maryland**
**Filed Feb. 29, 1968, Ser. No. 709,380**
**Int. Cl. B64c** *3/38*
**U.S. Cl. 244—42** **2 Claims**



A multiple slotted flap system for aircraft employing a plurality of flap sections extending from the edge of a wing in sequential progression by means of tracks and rollers which are wholly contained within the contour of the respective flap sections. Each flap section is individually extended or retracted, allowing for several combinations of flap arrangements.

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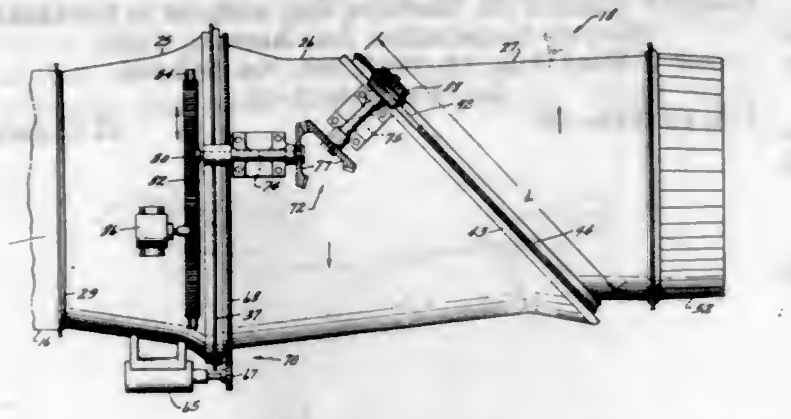
3,480,236

### THRUST VECTORING EXHAUST SYSTEM

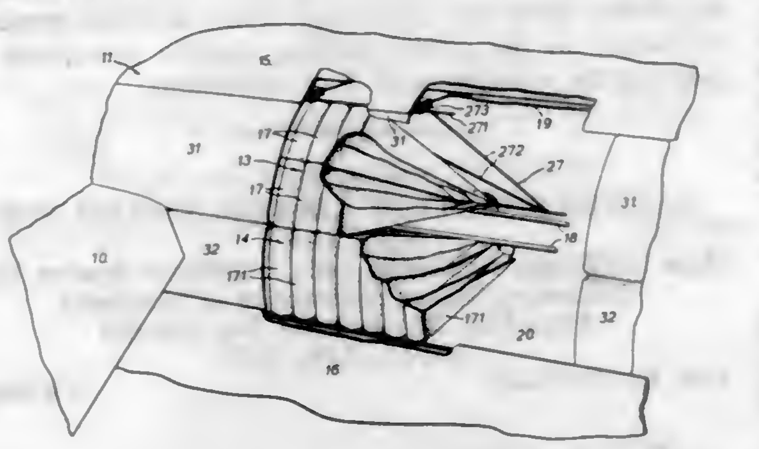
**Dudley O. Nash, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York**
**Filed Sept. 5, 1967, Ser. No. 665,432**
**Int. Cl. B64b** *1/24;* **F02k** *1/24;* **B64c** *15/04*
**U.S. Cl. 244—53** **11 Claims**

An exhaust system including at least two relatively rotatable ducts and actuation means for simultaneously rotating the ducts in opposite directions in a predetermined manner in order to selectively direct the thrust produced by a jet propulsion engine.



### 3,480,237
### AIRCRAFT HAVING VARIABLE SWEEP-BACK WINGS

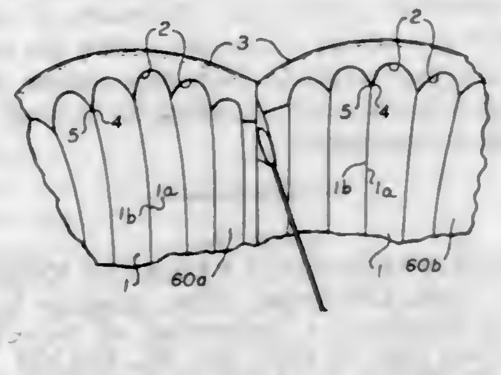
**James Kenneth Appleby, Penwortham, Preston, England, assignor to British Aircraft Corporation (Operating) Limited, London, England, a British company**
**Filed July 6, 1967, Ser. No. 651,522**
**Claims priority, application Great Britain, July 7, 1966, 30,625/66**
**Int. Cl. B64c** *3/40*
**U.S. Cl. 244—46** **14 Claims**



An aircraft with variable sweep wings, in which slots in the fuselage sides, which accommodate the wing trailing edges are sealed by inflatable bags, disposed above and below the wing and having wedged shape with the apexes of the wedges pointing into the fuselage.

### 3,480,238
### GLIDE WING

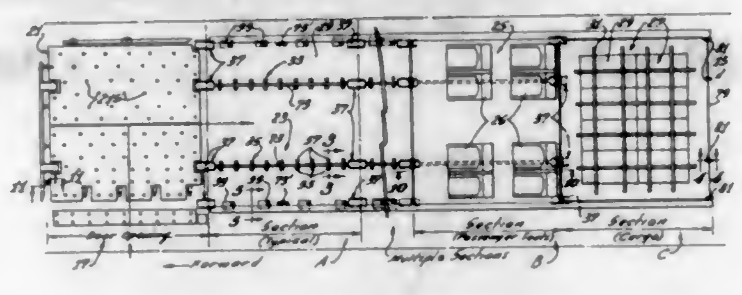
**David T. Barish, New York, N.Y., assignor to Barish Associates, Inc., New York, N.Y., a United States corporation**
**Filed Feb. 27, 1967, Ser. No. 618,888**
**Int. Cl. B64d** *17/02*
**U.S. Cl. 244—142** **11 Claims**



A flexible wing air foil having a leading edge which is arcuate shape in cross section.

### 3,480,239
### QUICK CHANGE SYSTEM

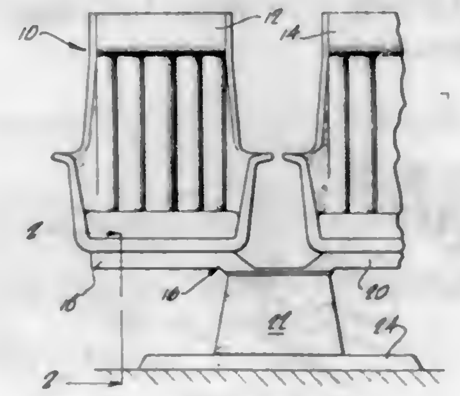
**Richard H. Jensen, Los Angeles, and Arnold B. Nordstrom, Torrance, Calif., assignors, by mesne assignments, to Tridair Industries, Redondo Beach, Calif.**
**Filed Feb. 23, 1967, Ser. No. 617,947**
**Int. Cl. B64d** *9/00, 11/06*
**U.S. Cl. 244—118** **33 Claims**



The disclosure of this invention describes an improved quick change system which is particularly adapted for use in aircraft. The quick change system as described herein includes a plurality of tracks and other rollers which are detachably mounted to seat rails or other suitable devices which are permanently installed in the aircraft. The tracks and rollers support either passenger or cargo pallets and a series of latching assemblies are utilized to secure the pallets in position within the aircraft. The seat pallet described herein includes a tie-down mechanism and an antirattle device for tightly securing the seat pallet in position within the aircraft and for preventing annoying rattling thereof.

### 3,480,240
### AIRCRAFT SEAT ASSEMBLY WITH LATERAL POSITIONING FACILITY

**Frank J. Del Giudice, Seattle, Wash., assignor, by mesne assignments, to Hardman Aerospace, Los Angeles, Calif., a corporation of California**
**Filed Mar. 15, 1968, Ser. No. 713,337**
**Int. Cl. B64d** *11/06;* **B61d** *1/04*
**U.S. Cl. 244—118** **12 Claims**



A pair of spaced-apart lateral tracks are adapted for mounting to a pair of fore-and-aft seating channels in an aircraft. The base of a laterally positionable pedestal is carried by these lateral tracks. A continuous beam is mounted on the pedestal for the cantilever support of a pair of aircraft seats. The lateral tracks may be positioned as desired in the aircraft's fore-and-aft seating channels and the pedestal moved laterally relative to these channels for desired positioning of the carried aircraft seats relative to the aircraft's interior wall and aisle. After the desired seating position has been obtained, the lateral tracks are locked in place in the fore-and-aft aircraft channels and the pedestal is locked to the lateral tracks.

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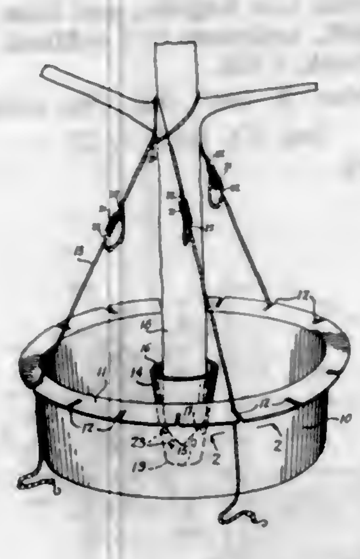
### 3,480,241
### CHRISTMAS TREE HOLDER

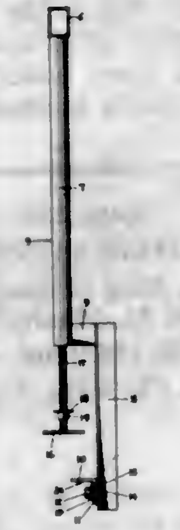
**Paul H. Moyer, Orlando, Fla., assignor to E-Z Mount Corporation, Orlando, Fla., a corporation of Florida**
**Filed Nov. 2, 1967, Ser. No. 680,158**
**Int. Cl. A47g** *33/12;* **B65j** *1/22*
**U.S. Cl. 248—44** **2 Claims**



A Christmas tree holder including an open top pan and spaced tension members for securing a tree in said pan.

### 3,480,242
### REMOVABLE STANCHION

**Floyd M. Cleveland, Fort Lauderdale, Fla., assignor to General Safety, Inc., Fort Lauderdale, Fla., a corporation of Florida**
**Filed Jan. 17, 1968, Ser. No. 698,519**
**Int. Cl. E06b** *7/28*
**U.S. Cl. 248—226** **4 Claims**

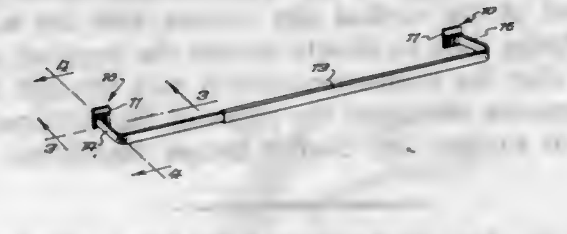


A stanchion for removable attachment to a floor structure for supporting a temporary guard rail. The stanchion has an adjustable clamping means so that it may be attached to slanting surfaces, such as the bottom surface of stairways or to a flat-bottomed surface.

### 3,480,243
### MOUNTING BRACKET

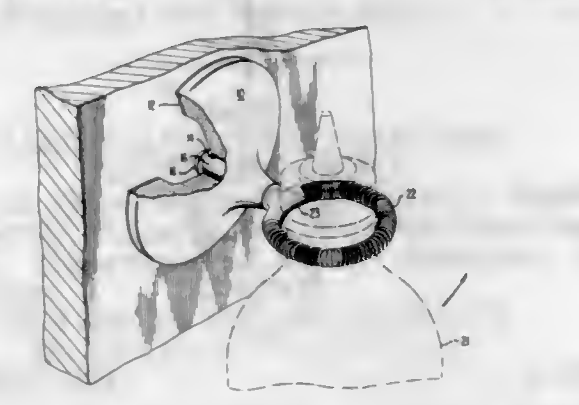
**Donald V. Summerville, Jr., Buffalo, N.Y., assignor to Gardco Industries, Inc., Buffalo, N.Y., a corporation of New York**
**Filed Dec. 20, 1966, Ser. No. 603,240**
**Int. Cl. A47h** *1/102*
**U.S. Cl. 248—264** **13 Claims**

A molded plastic curtain rod bracket including a base member having pressure-sensitive adhesive for mounting it on a surface and an arm for carrying the curtain rod selectively mountable on the base member by a key-type connection. The arm either has a friction-fit with a hollow curtain rod or an encircling gripping fit with a solid rod. The base member can also selectively carry an arm for supporting a window shade roller or a hook and includes a plurality of keyways so as to be capable of mounting a plurality of supporting arms.



### 3,480,244
### WALL MOUNTED BRACKET FOR HOLDING CONTAINERS

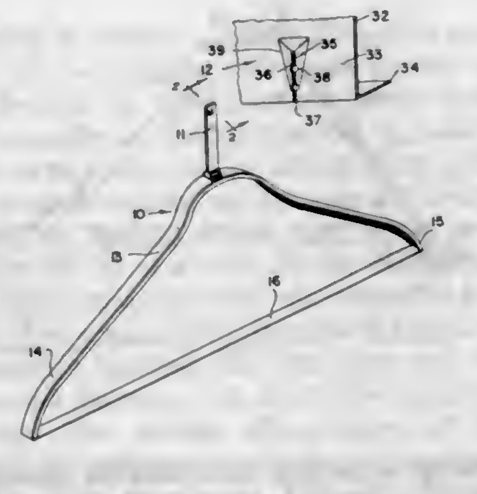
**Hans H. Iversen, 7009 N. 42nd St., Omaha, Nebr. 68112**
**Continuation-in-part of application Ser. No. 707,175, Feb. 12, 1968. This application Feb. 13, 1969, Ser. No. 800,828**
**Int. Cl. A47g** *29/00*
**U.S. Cl. 248—312** **6 Claims**



A bracket for holding dispensing containers including a mounting plate for attachment to a vertical surface, a shaft extending from and rotatable in the plate, and an expansible, self-adjusting spring-type clamp attached to the shaft for holding the necks of containers of varying diameters so that the container may be tilted to dispense its contents and will automatically return to its upright position when released.

### 3,480,245
### HANGER STEM

**Carl E. Gingher, 304–328 Depot St., Scranton, Pa. 18509**
**Filed Oct. 12, 1967, Ser. No. 674,951**
**Int. Cl. E04g** *17/18;* **A47j** *51/08*
**U.S. Cl. 248—317** **21 Claims**



A clothes hanger having a hanger stem comprising an elongated member upstanding from the clothes hanger and opposed parallel faces on at least a portion of the stem. There are opposed hemispherical protrusions on the parallel faces. The hanger stem may be supported from an angular member having a slot therein with vertical and horizontal portions and an enlarged opening at the upper end of the vertical slot portion with the width of the slot being such to closely receive the opposed parallel faces so that the protrusions which pass through the enlarged opening rest upon the edges of the horizontal slot portion to support the clothes hanger therefrom.

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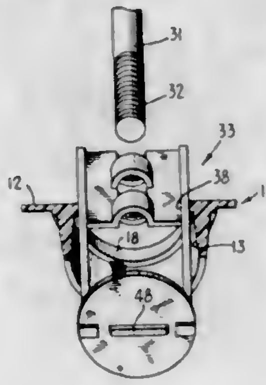
### 3,480,246
### HANGER ASSEMBLY FOR MODULAR PANELS

**Robert A. D. Schwartz, Oakland, and Philip W. Pfeiffer, San Mateo, Calif., assignors to United Lighting and Ceiling Co., Oakland, Calif., a corporation of California**
**Original application June 15, 1965, Ser. No. 464,122, now Patent No. 3,368,070, dated Feb. 6, 1968. Divided and this application Sept. 22, 1967, Ser. No. 688,284**
**Int. Cl. E04g** *17/18;* **E04b** *1/38*
**U.S. Cl. 248—327** **4 Claims**



A hanger assembly for supporting a light transmitting panel in vertically spaced positons relative to a hanger rod in which legs depend from said rods through an aperture in the panel and a retaining disk is inserted between the legs to spread them into an operative panel supporting position.

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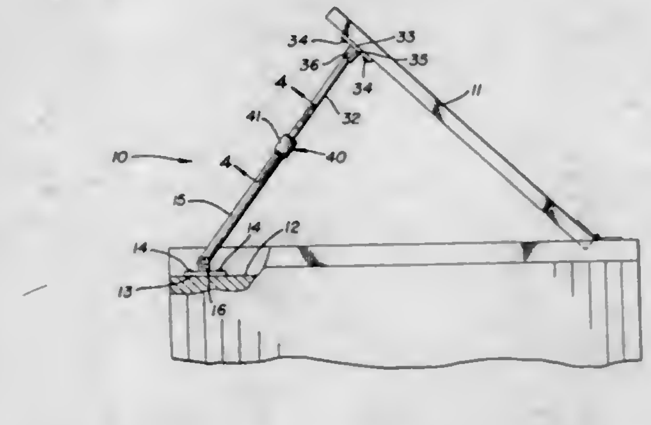
### 3,480,247
### SELF-LOCKING ADJUSTABLE STANCHION

**Donald W. Waner, Stow, Ohio, assignor, by mesne assignments, to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware**
**Filed Oct. 30, 1967, Ser. No. 678,957**
**Int. Cl. F16m** *11/00, 13/00;* **A47b** *39/10*
**U.S. Cl. 248—355** **4 Claims**



A self-locking, adjustable stanchion for closure devices. The stanchion is constructed with a sheath section within which an extension rod is slidably received. The rod is freely extensible from the sheath but retractable only upon the release of a locking mechanism which is self actuated as the rod tends to retract within the sheath section.

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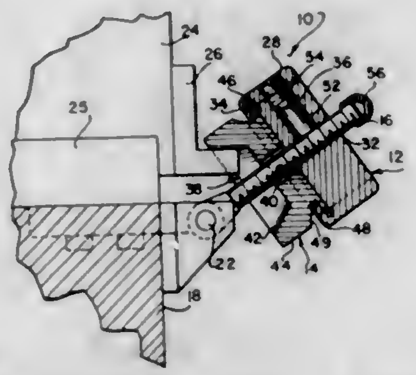
### 3,480,248
### CLAMP ASSEMBLY

**Joseph A. Lucchino, Los Angeles, and John B. Bierbower, Sepulveda, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.**
**Filed Nov. 2, 1967, Ser. No. 680,131**
**Int. Cl. B65j** *1/22*
**U.S. Cl. 248—361** **10 Claims**



An adjustable clamp assembly for securing electronic equipment to equipment storage racks, which includes rotatably connected nut and retainer elements. The retainer is captured by means of a plurality of foldable tabs disposed about the circumference of the nut which are inserted into a circumferential groove within the retainer. The nut has a threaded aperture intercommunicating its threaded central axial portion with its outer surface. A nylon pellet and set screw are positioned within the threaded aperture such that as the set screw is advanced, it bears against the nylon pellet causing it to forcibly engage a threaded rod upon which the assembly is retained, thereby controllably inhibiting rotative movement of the nut.

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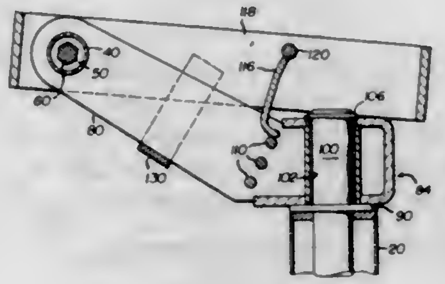
### 3,480,249
### TILTING CHAIR CONSTRUCTION

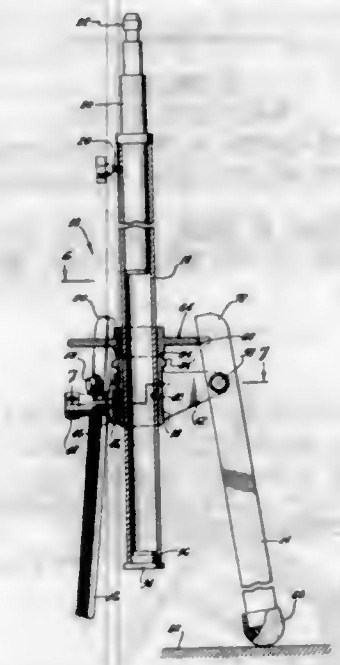
**Finn Lie, Ring Station, Norway (P.O. Box 21, Moelv, Norway)**
**Filed Dec. 11, 1967, Ser. No. 689,482**
**Int. Cl. A47c** *3/023*
**U.S. Cl. 248—373** **5 Claims**



A tilting chair construction includes a tiltable seat which is mounted for tilting movement on a horizontal axis adjacent to and parallel with the forward portions of the seat and its mounting. The mounting for the seat is secured to a chair base at a point remote from said horizontal axis to prevent overbalancing of the chair. A locking arrangement is provided between parts of the seat mounting assembly.

### 3,480,250
### UPRIGHT STAND WITH ADJUSTABLE LEG SPAN

**Maxey A. Hankins, Encino, Calif., assignor to Mole-Richardson Co., a corporation of California**
**Filed Aug. 31, 1967, Ser. No. 664,767**
**Int. Cl. F16m** *11/38, 11/00*
**U.S. Cl. 248—168** **6 Claims**



An upright stand, such as a tripod, provided with means to permit the manual adjustment of the span of the legs of the stand. The stand may be utilized for supporting lights, cameras, reflectors, projection screens, or the like.

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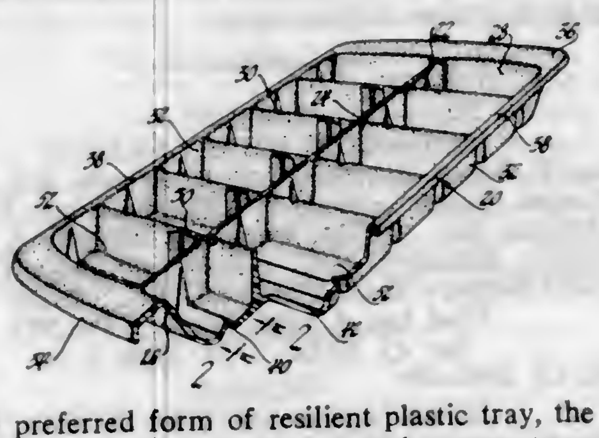
### 3,480,251
### TRAY AND GRID WITH GROOVES

**Joe P. Pietrzak, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Mar. 6, 1967, Ser. No. 620,812**
**Int. Cl. F25c** *1/24*
**U.S. Cl. 249—127** **2 Claims**



In the preferred form of resilient plastic tray, the side and bottom walls at the midde of each compartment are provided with transversely extending inverted V-shaped grooves of greater height than the thickness of the walls. Each of these grooves has an additional groove extending along the apex and also additional grooves on both sides of the base thereof thinning the material to provide a resilient hinge. The tray is also provided with a grid having upright grooves in the transverse walls adjacent their intersections with the longitudinal walls.

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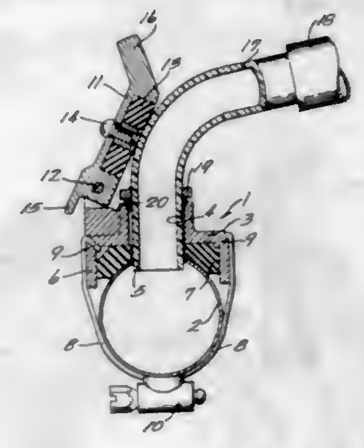
### 3,480,252
### PIPELINE MILKING SYSTEM

**Clifford G. Simons, Delavan, Wis., assignor to Sta-Rite Industries, Inc., Delavan, Wis., a corporation of Wisconsin**
**Filed Jan. 30, 1967, Ser. No. 612,697**
**Int. Cl. F16k** *51/00, 1/20*
**U.S. Cl. 251—146** **8 Claims**

The invention relates to a device for connecting a milking apparatus to a vacuum pipeline. The device includes a valve body mounted on the pipeline and having an opening in alignment with an opening in the pipeline. The opening in the valve body is enclosed by a hinged lid and the milking apparatus includes a rigid tubular nipple adapted to be inserted within the opening in the valve body and containing an annular sealing member disposed to engage the valve seat to provide an airtight seal when the nipple is engaged with the valve body.



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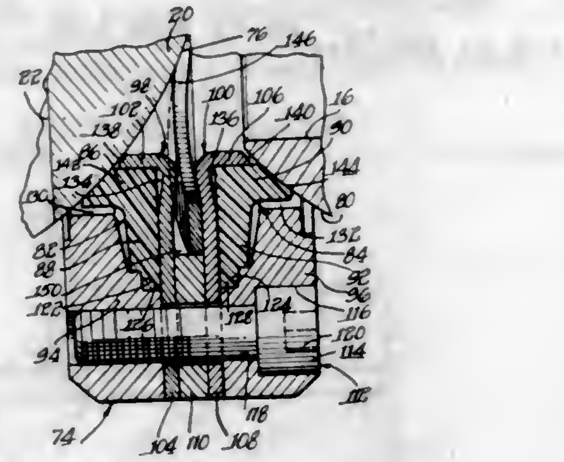
### 3,480,253
### BALL VALVE WITH SEATS FOR JOURNALLED BALL

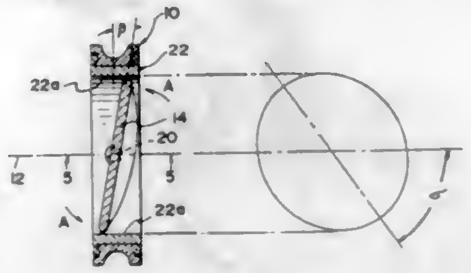
**Werner K. Priese, Barrington, and David J. Davies, Naperville, Ill., assignors to Hills-MacCanna Company, Carpentersville, Ill., a corporation of Delaware**
**Filed Dec. 28, 1967, Ser. No. 694,273**
**Int. Cl. F16k** *25/02, 15/04, 5/06*
**U.S. Cl. 251—174** **6 Claims**



A ball valve in which a journalled ball is sealed to the valve body by a composite valve seat having replaceable seat seals formed of yieldable polymeric material that cantilever inwardly in spaced relation to each other and are initially urged into sealing engagement with the ball and a seat support surface on the body by inwardly cantilevering annular springs which also serve, in the event of destruction of the seat seals by the excessive heat of a fire, to establish an emergency seal between the ball and valve body. The seat sealing pressure is further increased by fluid pressure between the seat seals and by a wavy spring disposed between the inwardly cantilevering annular springs. The sealing effectiveness of the seat is undiminished by displacement of the ball incident to tightening of the valve stem seal. The seat support surface is defined by a body insert adapted to be readily removed for cleaning and replacement if necessary.

### 3,480,254
### ANGLE SEATING BUTTERFLY VALVE WITH SKEWED DISC

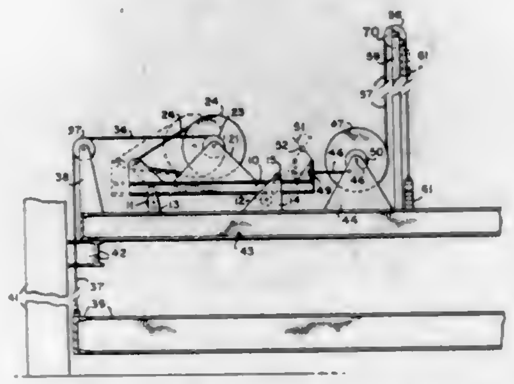
**Donald G. Fawkes, Aurora, Ill., assignor to Henry Pratt Company, a corporation of Delaware**
**Filed Feb. 12, 1968, Ser. No. 704,691**
**Int. Cl. F16k** *1/22, 5/04*
**U.S. Cl. 251—305** **7 Claims**



A butterfly valve in which a valve housing has a longitudinal center line and means defining an elliptical cylindrical valve seat surface which has a center line coincident with the housing center line. A closure disc is pivotally mounted in the housing about a shaft axis perpendicular to the housing center line. The disc has a circular periphery in a plane angularly offset relative to the shaft axis so that the shaft axis passes through the plane of the disc. The plane formed by the disc periphery in valve closed position is skewed to a plane perpendicular to the housing center line.

### 3,480,255
### PLURAL WINCH LIFTING UNIT

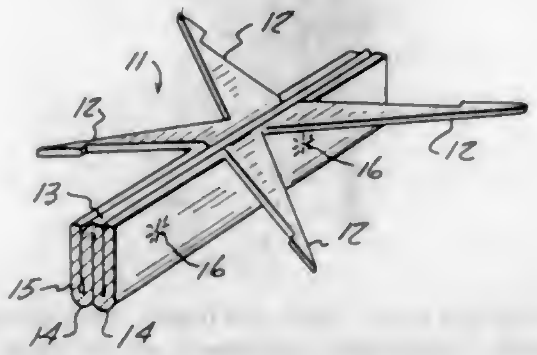
**John H. Wiggins, Woodside, Calif.**
**(P.O. Box 418, Menlo Park, Calif. 94025)**
**Continuation-in-part of application Ser. No. 710,168, Mar. 4, 1968. This application May 13, 1968, Ser. No. 728,858**
**Int. Cl. B66d** *1/50*
**U.S. Cl. 254—173** **9 Claims**



A power driven winch and cable system and counterweight control system adapted to apply continuous tension to a cable for pulling a body wherein a power driven winch is mounted on a movable frame and a first tension cable extends therefrom parallel to the frame for a portion of its stretch to lift the body, Attached to the movable frame for the power driven winch is a motion transmitting connection extending to a power storing tension-responsive mechanism comprising a second winch unit wherein the winch is adapted to be driven by a counterweight through a sheave of considerably greater diameter and a third cable from this sheave extends to a counterweight which is lifted from its rest position in response to overload of the first cable for lifting the body at the same time that the frame for the winch moves in response to this overload or excessive tension. After a given movement of the movable winch frame a switch for the motor of the power driven winch is turned from "on" to "off" so that the gravity pull of the weight through the speed reducing mechanism to the second winch assumes the burden of lifting the load until the movable frame is restored to its original position and the motor switch is turned from "off" to "on."

### 3,480,256
### BARBED WIRE

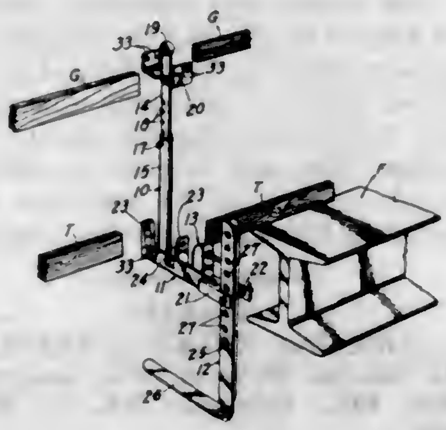
**George Simon and Joseph A. Simon, Grosse Pointe Farms, Mich., assignors of one-third to Joseph P. Kleinsmith, Detroit, Mich.**
**Filed Dec. 5, 1966, Ser. No. 599,246**
**Int. Cl. E04h** *17/04;* **B21f** *25/00;* **B21c** *37/04*
**U.S. Cl. 256—8** **2 Claims**



This disclosure relates to a barbed wire formed of an elongated sheet metal ribbon having cut barbs formed integrally along its edges and a central hard bead. The bead may be formed by longitudinally bending the center portion of the ribbon to form a compacted, centrally located, narrow strip, offset from the plane of the ribbon. Alternatively, it may be formed by welding a wire strip to the center of the ribbon. In either case, the strip or bead is hardened to reinforce the assembled barbed wire and make it more difficult to cut.

### 3,480,257
### GUARD RAIL STANCHION

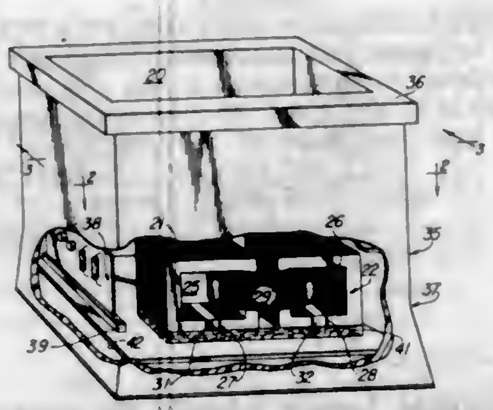
**Jesse T. Bourn, deceased, late of Atlanta, Ga., by Helen Louise Bourn, executrix, 1333 Sheridan Road NE., Atlanta, Ga. 30324; Banks L. Ridenhour, 7 Manor Drive, Salisbury, N.C. 28144; and Robert C. Lum, 3214 Sudbury Road, Charlotte, N.C. 28205**
**Filed Jan. 5, 1968, Ser. No. 696,973**
**Int. Cl. E04h** *17/14;* **E04g** *1/16*
**U.S. Cl. 256—59** **5 Claims**



A guard rail stanchion to be utilized during the construction of a building to prevent both persons and materials from falling over the open edges of a floor section of the building, and which includes an upright member, the height of which is adjustable; a support member attached to the bottom of the upright member which rests on the floor section of the building; a clamping member adjustably pivoted at one end of the support member and having a portion thereof which extends under the floor section to which the stanchion is to be attached; a locking means which engages the clamping member and pivots the clamping member into engagement with the floor section to hold the stanchion in position; and rail support means that are provided at the top and bottom of the upright member for receiving guard rails of conventional design therein to prevent persons from falling over the edge of the floor section as well as to prevent material from being accidentially knocked over the edge of the floor section.

### 3,480,258
### ULTRASONIC CLEANER

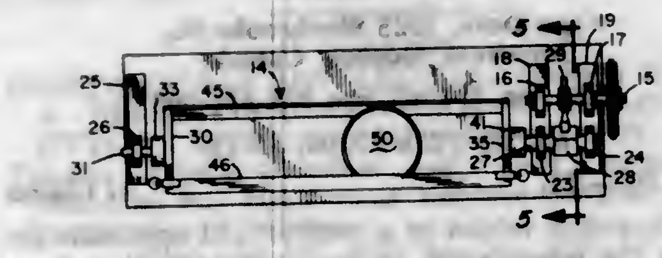
**Frank Massa, Cohasset, Mass., assignor to Massa Division, Dynamics Corporation of America, Hingham, Mass.**
**Filed Aug. 30, 1967, Ser. No. 664,561**
**Int. Cl. B01f** *11/02*
**U.S. Cl. 259—72** **9 Claims**



The invention relates to ultrasonic cleaners of the home appliance type, and especially to denture cleaning devices. More particularly, a molded, one-piece, open top tank is set on its narrow side. An ultrasonic vibrator is attached to hang down below this narrow side and to drive sonic energy through that side and into a fluid in the tank. Since the driving transducer operates through the narrow side, it may be made much less powerful and at a lower cost without sacrificing any cleaning power.

### 3,480,259
### PAINT MIXING APPARATUS

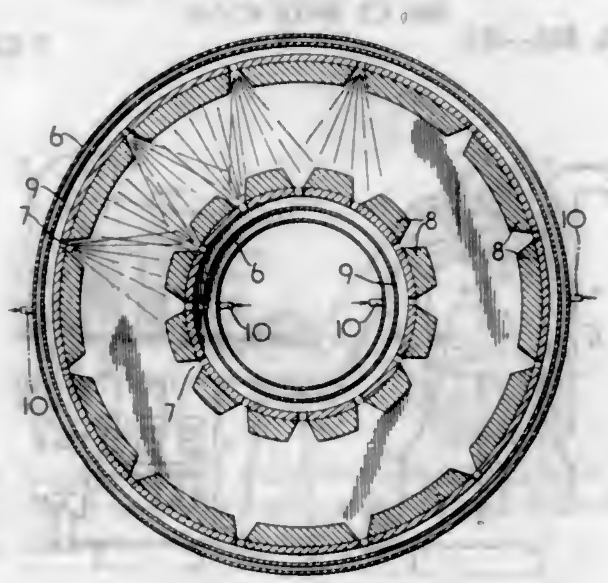
**Howard D. Schletz, 165 W. Logan, West St. Paul, Minn. 55118**
**Filed July 1, 1968, Ser. No. 741,555**
**Int. Cl. B01f** *11/00*
**U.S. Cl. 259—75** **8 Claims**



A paint mixing apparatus having members for holding a container of paint in the peripheral region during application of oscillatory motion to the container.

### 3,480,260
### METHOD AND MEANS FOR MIXING A MASS OF CONCRETE OR OTHER MATERIAL

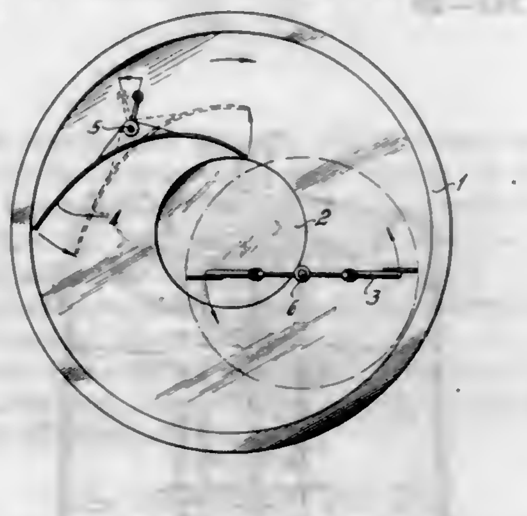
**Erik Valdemar Fejmert, Casa Lucciola, 6922 Morcote, Switzerland**
**Filed Nov. 6, 1967, Ser. No. 680,886**
**Claims priority, application Sweden, Nov. 16, 1966, 15,656**
**Int. Cl. B28c** *5/06, 7/14*
**U.S. Cl. 259—147** **6 Claims**



The mixing of concrete in a flat-bottomed mixing tank by the action of power-driven paddles in which fluid is injected at a selected temperature and pressure into the mass of material being worked by the paddles.

### 3,480,261
### PROCESS OF MIXING

**Wilhelm Eirich, Bahnhofstr. 19, and Gustav Eirich, Walcorener Str. 41, both of Hardheim, Germany**
**Filed Apr. 10, 1968, Ser. No. 720,043**
**Claims priority, application Germany, Apr. 11, 1967, E 33,771**
**Int. Cl. B28c** *5/20, 7/02*
**U.S. Cl. 259—148** **8 Claims**



The disclosure relates to a process for the intensive mixing of the ingredients in the preparation of construction materials such as concrete, calcium silicate brick or the like and includes the steps of varying the speed of a mixing element and/or adding of water so as to maintain the energy input substantially constant at the rated capacity of the power operated drive. In one example the mixer is initially operated at a speed to produce the rated capacity and water is gradually added simultaneously with a gradual increase in speed to maintain operation at rated load. In another example all the remaining water required is added at one time and the speed of operation of the mixing element is correspondingly increased.

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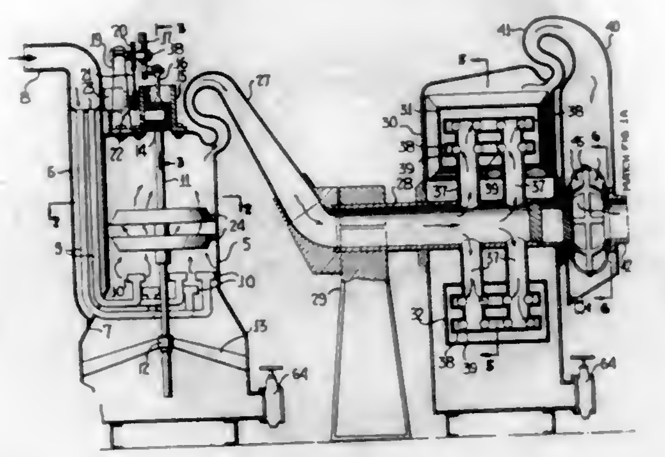
### 3,480,262
### AIR CLEANING APPARATUS

**Curtis Joseph Himel, 510 Belle Chasse Highway N., Belle Chasse, La. 70037**
**Filed Feb. 16, 1968, Ser. No. 706,137**
**Int. Cl. B01d** *47/06*
**U.S. Cl. 261—22 7 Claims**



An air cleaning and sterilizing apparatus comprising a series of tanks each containing a cleaning or sterilizing liquid, the first tank having a vertical reciprocating agitator and the second and third tanks having rotating arcuate tubular members having baffles therein and a rotating tubular shaft extending through the second and third tanks supporting said arcuate members having air ducts communicating with said arcuate members, the tubular shaft having connection with the air discharge conduit of the first tank.

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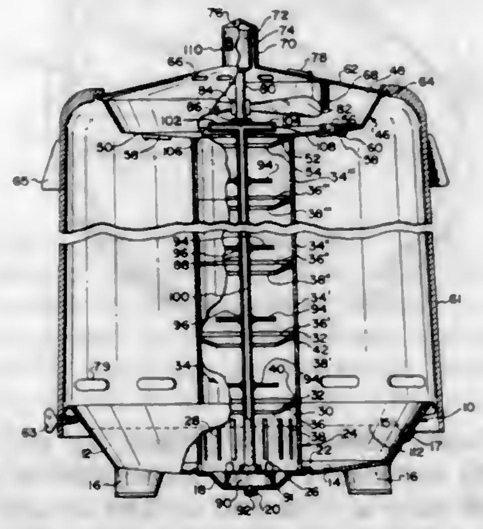
### 3,480,263
### AIR HUMIDIFIER AND FILTER

**Watson P. Davidson, 516 Summit Ave., St. Paul, Minn. 55102**
**Filed Oct. 2, 1967, Ser. No. 672,157**
**Int. Cl. B01d** *47/02;* **F24f** *3/14*
**U.S. Cl. 261—29 12 Claims**



An easily cleaned air humidifier and filter which turbulates forced air in co-current or counter-current contact through a column of repeated alternate stations of misting and cascading water for intimate moisture-air contact accomplished by means of a blower and vertically spaced alternating coaxial conical baffles and rotating discs. The preferred embodiment is a portable unit for home or office use having readily assembled and disassembled parts that are easy to clean and includes a hollow shaft outlet riser conduit for a self-cleaning, self-contained intake impeller pump at the lower end and a centrifugal misting impeller pump booster at the upper end to cycle water and air through the system. Modifications are disclosed.

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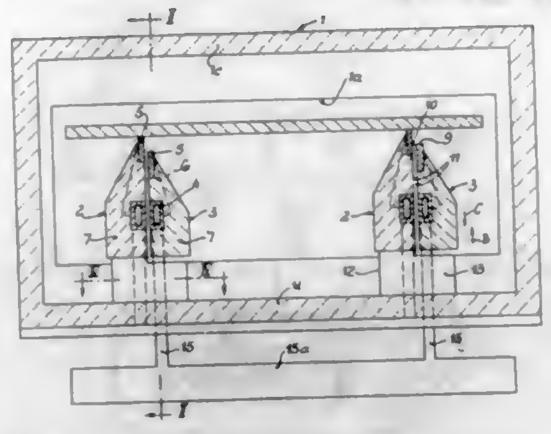
### 3,480,264
### METALLURGICAL WALKING BEAM FURNACE

**Wilhelm Krause, Essen, Germany, assignor to Koppers-Wistra-Ofenbau G.m.b.H., Dusseldorf-Heerdt, Germany**
**Filed Jan. 25, 1968, Ser. No. 700,630**
**Claims priority, application Germany, Jan. 31, 1967, K 61,311; May 23, 1967, K 62,346**
**Int. Cl. C21d** *9/00*
**U.S. Cl. 263—6 14 Claims**



A metallurgical furnace wherein the workpieces are transported intermittently through a heating chamber and rest on stationary holders during intervals between stepwise advances. Each holder is adjacent to a walking beam which is movable up and down as well as forwardly and backwards to transport workpieces forwardly when in raised position and while moving forwardly and to thereupon deposit the workpieces on the holders during downward movement and prior to backward movement to retracted position. The holders and the associated walking beams are surrounded by jackets of heat-insulating material and are separated from each other by narrow vertical gaps through which scale and like solids can descend but which admit little heat to the respective holders and walking beams. The holders and walking beams are internally cooled by a circulating fluid and have rows of plate-like work-engaging portions which extend upwardly and consist of highly heat-resistant metallic material.

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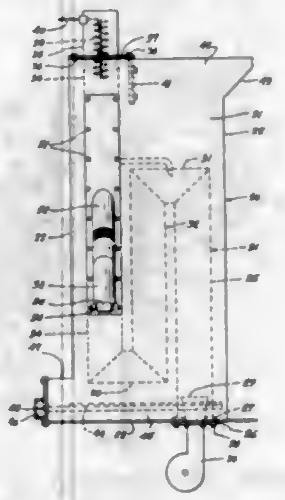
### 3,480,265
### SHELL SAND TREATING APPARATUS AND METHOD

**Vagn Devé, 3025 Sherbrooke St., Montreal, Quebec, Canada**
**Filed Jan. 4, 1968, Ser. No. 696,008**
**Int. Cl. F27b** *15/00, 15/16*
**U.S. Cl. 263—21 11 Claims**

This invention relates to a method and apparatus for changing the temperature of granular material such as sand used in shell molding and other applications, and in which the material is fluidized in a vessel, which is bottom-fed with gas under pressure and the fluidized material

is contacted with a stationary heat exchange surface located in the vessel.

The method and apparatus are used for reclaiming shell sand by heating the sand above the burning off temperature of the resin and other residues or impurities. The method and apparatus are also used for cooling sand down to a resin coating temperature.



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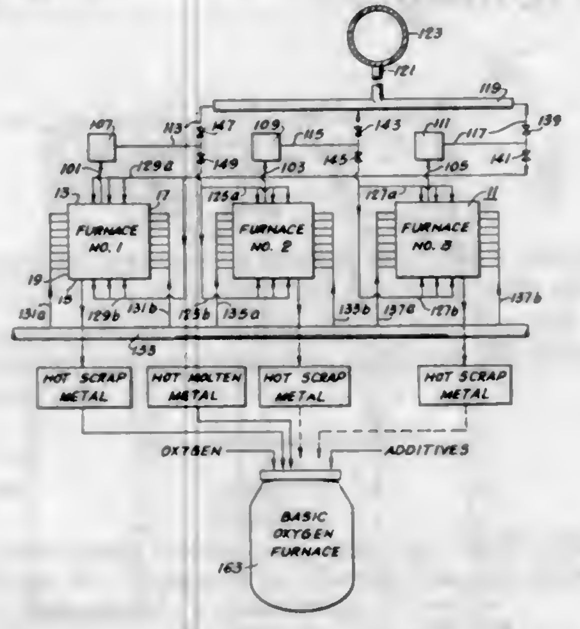
### 3,480,266
### APPARATUS FOR MAKING STEEL

**Joseph J. Ciochetto, Glenshaw, Pa., assignor to Koppers Company, Inc., a corporation of Delaware**
**Original application Apr. 16, 1965, Ser. No. 448,715, now Patent No. 3,399,992. Divided and this application Oct. 27, 1967, Ser. No. 705,240**
**Int. Cl. F27b** *5/12, 5/16*
**U.S. Cl. 266—27 3 Claims**



A plurality of scrap metal preheating furnaces are operated in sequence to provide an uninterrupted supply of preheated scrap metal to a basic oxygen furnace. The exhaust gases produced in one preheater are conducted to and partially heat cold scrap metal in another preheater; the remaining heat required being supplied by burning suitable fuel in the preheater under operation during a given period of time.

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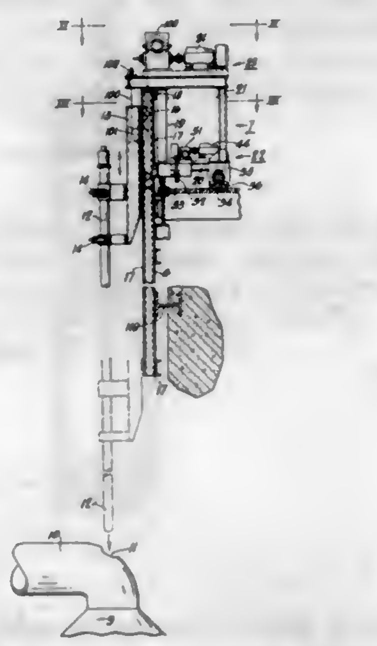
### 3,480,267
### HORIZONTALLY MOVABLE PLATFORM HAVING A VERTICALLY MOVABLE CARRIAGE FOR OXYGEN STEELMAKING OPERATIONS

**Thomas Gregord, Glenshaw, and Robert Charles Kania, Gibsonia, Pa., assignors to Koppers Company, Inc., a corporation of Delaware**
**Filed May 16, 1967, Ser. No. 638,839**
**Int. Cl. C21c** *5/32, 5/46;* **B66c** *19/00*
**U.S. Cl. 266—34 6 Claims**

A lance handling apparatus for an oxygen steel converter includes one or more lance handling carriages located on a platform that is horizontally movable on parallel spaced apart rails to any selected position. The rails both guide and support the platform. Drives raise and lower



each carriage along a guide into and out from the oxygen converter. Lance and carriage are isolated from the platform during the blowing operation.

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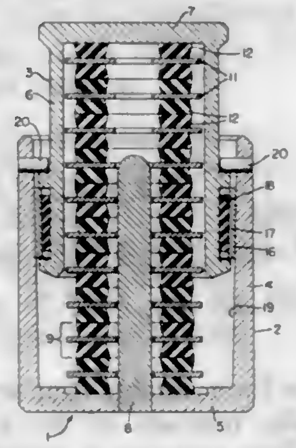
### 3,480,268
### SHOCK ABSORBER

**Byron L. Fishbaugh, St. Marys, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio**
**Filed Dec. 26, 1967, Ser. No. 693,349**
**Int. Cl. F16f** *1/38, 1/40*
**U.S. Cl. 267—1 13 Claims**



A shock absorber for damping vibration such as may be encountered in railway draft gear rigging. It comprises a tubular housing and a tubular plunger which telescopes into the housing. Stacked elastomeric compression pads are positioned inside the plunger and housing to cushion relative axial movement of the housing and plunger due to axial loading. Elastomeric friction pads are mounted between the sidewalls of the housing and the plunger to provide additional vibration damping by exerting a drag on one of the sidewalls.

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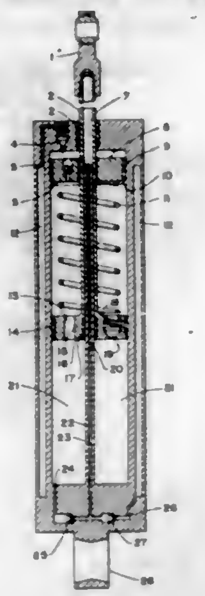
### 3,480,269
### HYDRAULIC SUSPENSION UNIT

**David E. Jewell, Littleton, Colo., and William R. Givens, Columbus, Ohio, assignors to The Gates Rubber Company, Denver, Colo., a corporation of Colorado**
**Filed Feb. 23, 1968, Ser. No. 707,781**
**Int. Cl. F16f** *9/19, 9/50;* **B60g** *17/04*
**U.S. Cl. 267—64 16 Claims**

A hydraulic type suspension unit having a hydraulic control circuit comprising: a fluid reservoir, a pumping system, a high pressure chamber, interconnecting fluid passageways and flow regulating valves and seals. A suspension unit which provides the damping forces of a conventional shock absorber in addition to a hydraulic springing force and a load-leveling force which tends to maintain the suspension unit at a constant length.



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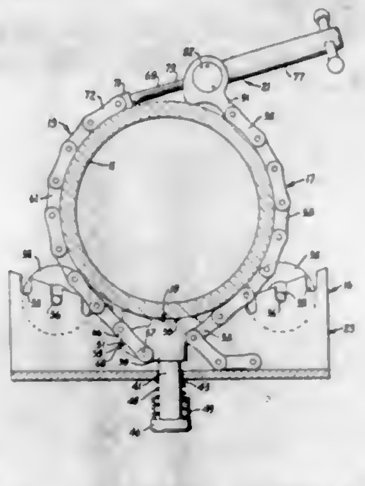
3,480,270

### APPARATUS FOR GRIPPING A PIPE

**John B. Gill, 20433 Earl St.,**
**Torrance, Calif. 90503**
**Filed Nov. 19, 1965, Ser. No. 508,754**
**Int. Cl. B25b** *13/52, 11/00*
**U.S. Cl. 269—131** **10 Claims**



An apparatus for rotatably supporting a pipe and having provision for restraint of the pipe against rotation when desired. This restraint is accomplished by a chain collar adapted to be mounted in encircling relation on the pipe and having tightener means to shorten the length of the collar and make it grip the pipe firmly. The pipe is supported on rollers for rotational movement, and the chain collar is provided with an extension which is slidably engaged in an opening in the cradle support. This structure permits the tightening means to pull the chain into tight engagement with the pipe without translating any of the force into pressing of the pipe against the rollers, which would tend to crush asbestos cement pipes and the like.

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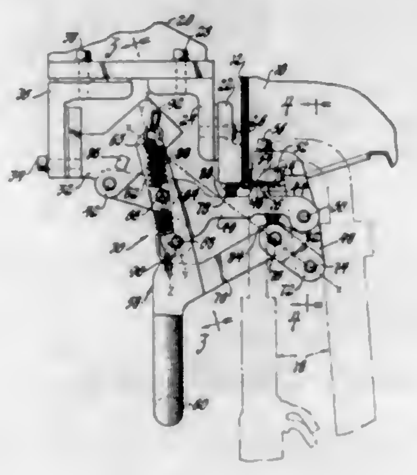
3,480,271

### TOGGLE CLAMP

**George P. Coutilish, Detroit, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Oct. 18, 1967, Ser. No. 676,233**
**Int. Cl. B25b** *1/14*
**U.S. Cl. 269—228** **7 Claims**

A welding fixture is adapted to position sheet metal parts for spot welding together by a plurality of welding guns. A plurality of toggle clamps are mounted on the fixture for clamping the parts together prior to welding. Each clamp includes a pair of movable jaws which are pivotally interconnected and one of which is pivoted to a support. An operating member is pivoted to the support and is operatively connected to the jaws by toggle links which move overcenter to lock the clamp in closed position. Adjustable stops are provided to position the clamp in closed position and a spring is provided to bias the clamp into open and closed positions.



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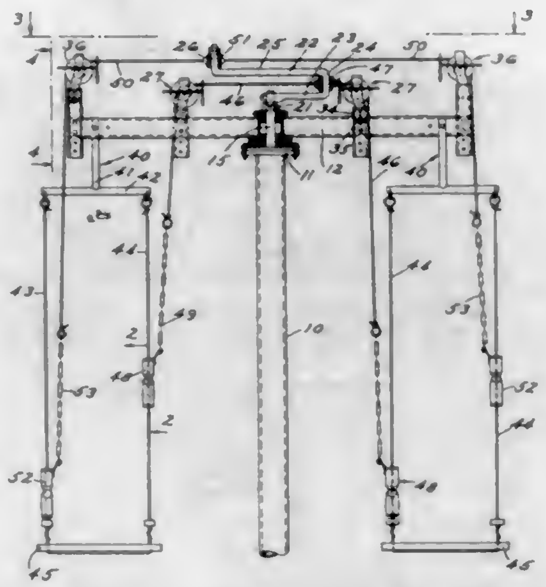
3,480,272

### SWING DEVICE

**Kurt R. Ziebart, Rte. 2, Box 192 E,**
**Williamsburg, Mich. 49690**
**Filed Feb. 23, 1967, Ser. No. 617,950**
**Int. Cl. A63g** *1/12, 9/16*
**U.S. Cl. 272—33** **20 Claims**



A swing device disclosed herein comprises a pair of swing members which are supported by ropes from the ends of a cross beam which, in turn, is rotatably mounted about a vertical axis. Cables extend from a crank fixed to the cross beam and over pulleys alongside the ropes and handles telescoped over the ropes and connected to the cables. By manipulating the handles, the cross beam and, in turn, the entire swing device is rotated about a vertical axis.

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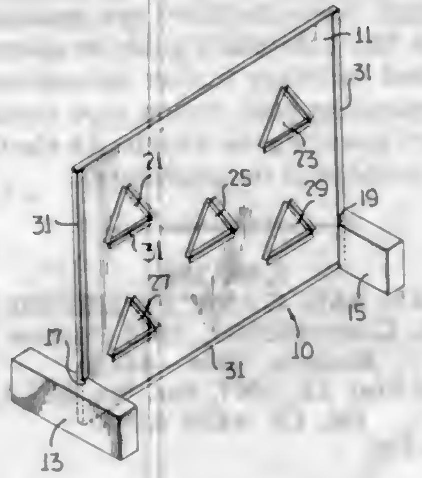
3,480,273

### HURDLE AND TARGET

**Stephen R. Wise, Melbourne, Fla.**
**(2752 Choctaw, Eau Gallie, Fla. 32935)**
**Filed May 24, 1967, Ser. No. 640,937**
**Int. Cl. A63b** *63/00, 69/00*
**U.S. Cl. 272—59** **5 Claims**

A hurdle comprising a rectangular cardboard panel supported in vertical plane by a pair of support blocks, the panel being alternatively supported with either its length or width extending vertically. Apertures are defined in the panel to minimize its wind resistance and serve as targets for thrown balls.



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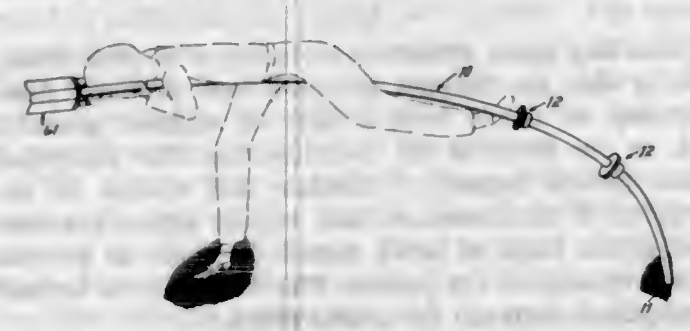
3,480,274

### GYMNASTIC AMUSEMENT DEVICE

**Robert Boggild and William L. Dale, both % Crossbow Inc., 8120 Blue Ash Road, Cincinnati, Ohio 45236**
**Continuation-in-part of application Ser. No. 251,225, Jan. 14, 1963. This application Feb. 8, 1966, Ser. No. 525,892**
**Int. Cl. A63b** *9/00, 21/00*
**U.S. Cl. 272—60** **6 Claims**



A gymnastic amusement device wherein a fiberglass pole is mounted in a socket, the fiberglass pole having spaced steps to permit a child to climb upon the pole, and the pole having damping means to minimize the whipping action of the pole.

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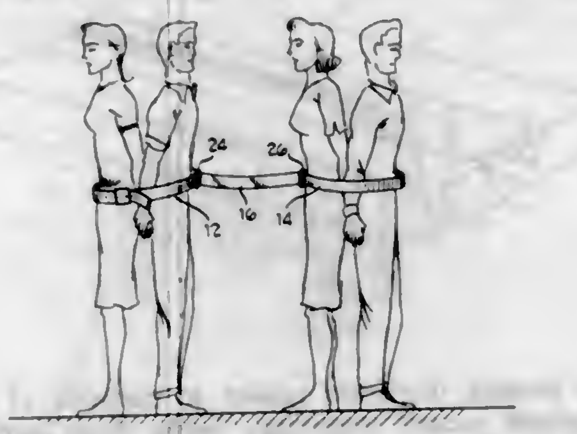
3,480,275

### GAME

**Hans Jernstrom, Northbrook, and Marvin I. Glass, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership**
**Filed Aug. 10, 1967, Ser. No. 659,761**
**Int. Cl. A63f** *9/00;* **A63b** *71/00*
**U.S. Cl. 273—1** **5 Claims**



A game comprising a pair of flexible, adjustable loop-forming elements joined together in side-by-side relation by a third flexible element, each of said loop-forming elements having an inside diameter sufficient to enable a pair of players to removably position themselves within said loop-forming element with the latter encircling their waists, and a chance means for indicating a plurality of positions and/or activities for the players. Each pair of players attempts to be the first to remove themselves from the loop-circling element while acting in accordance with the random instructions from the chance means.

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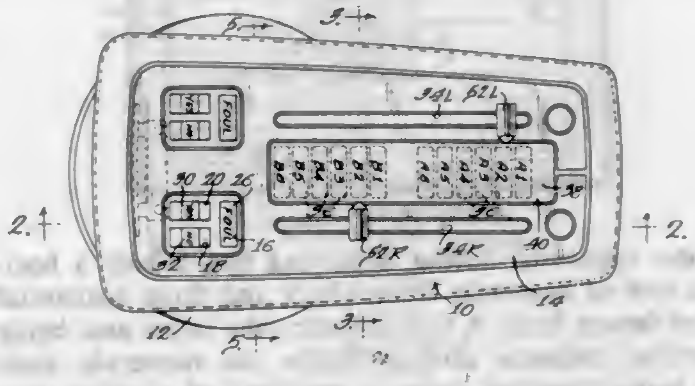
3,480,276

### BOWLER IDENTIFICATION DEVICE

**Robert Torresen, Muskegon, Mich., assignor to Brunswick Corporation, a corporation of Delaware**
**Filed Jan. 30, 1967, Ser. No. 612,682**
**Int. Cl. A63d** *5/04*
**U.S. Cl. 273—54** **22 Claims**



A bowler identification panel for use with an automatic bowling scoring system having a plurality of positions in which a pair of indicators for a pair of lanes may be disposed to identify any of a plurality of bowlers to the computing system and including means for precluding the changing of position before a frame is completed, means for precluding simultaneous disposition of the indicators at the same bowler position and means for precluding movement of an indicator to certain of the positions during open bowling.

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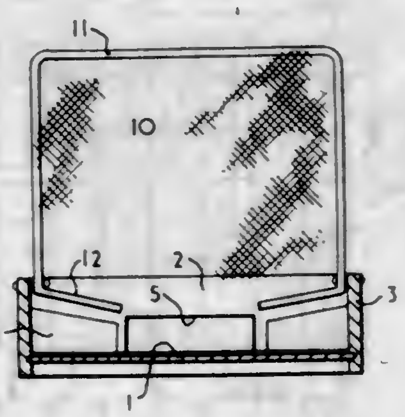
3,480,277

### TABLE FOOTBALL GAME

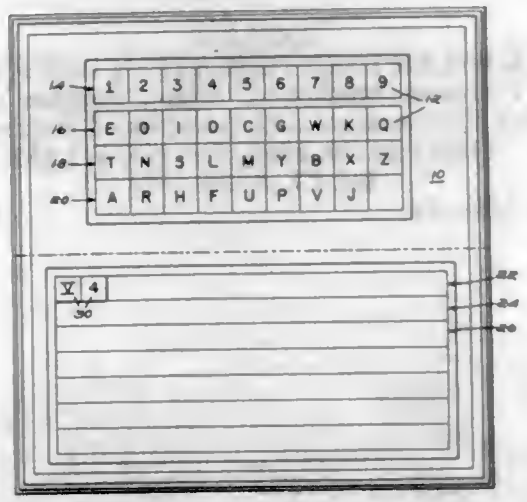
**Ralph Fraser, 508 Bathurst Ave., Ottawa, Ontario, Canada**
**Filed Aug. 17, 1966, Ser. No. 573,034**
**Int. Cl. A63f** *7/06*
**U.S. Cl. 273—94** **1 Claim**



A table football game having a playing board with ball impelling members mounted on rotatable and slidable transverse rods, some of the members being provided with a special rearwardly extending foot designed to pick up and support the ball and to project the same in an overhead aerial forward pass in a direction away from that toward which the foot extends, on rotation of the member through approximately 180 degrees. The playing board having a sloped playing surface and a back stop for keeping the ball in play.

### 3,480,278
### ACCESSORY FOR USE IN PLAYING WORD FORMING GAME

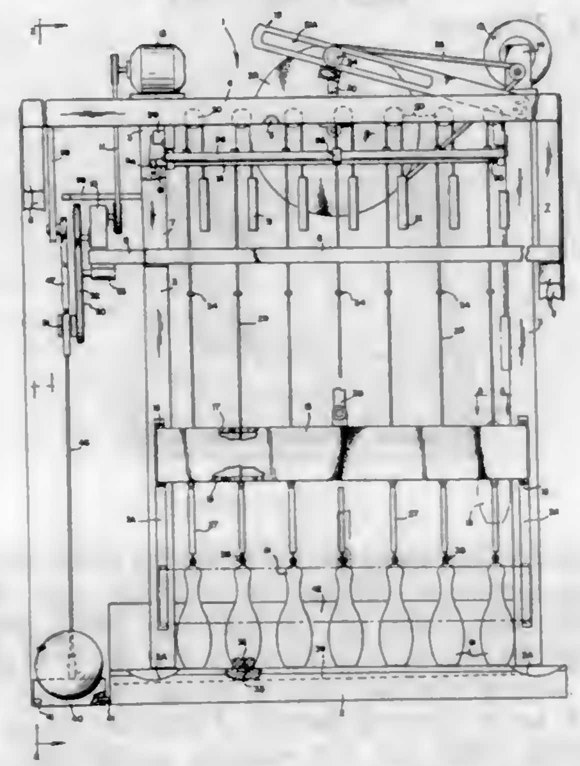
**William J. Conley, 36 Hervey St., Brockton, Mass. 02401**
**Filed Mar. 27, 1967, Ser. No. 626,081**
**Int. Cl. A63f** *3/00, 9/06*
**U.S. Cl. 273—148** **7 Claims**



Game apparatus having a playing board with a horizontal row of numerals from 1 to 9 and three horizontal rows of letters from A to Z thereon, the latter also being in vertical columns directly below the numerals, each letter being disposed below a numeral of a value proportional to the relative frequency of the appearance of the letter. Also included are cubical playing pieces with numerals thereon that match those on the board, and supplementary, wedge-shaped members bearing alphabetical letters to cover and replace selected letters on the board. Below the rows of numerals and letters on the board are a plurality of blank horizontal lanes to receive the playing pieces.

### 3,480,279
### BOWLING PIN SETTER APPARATUS

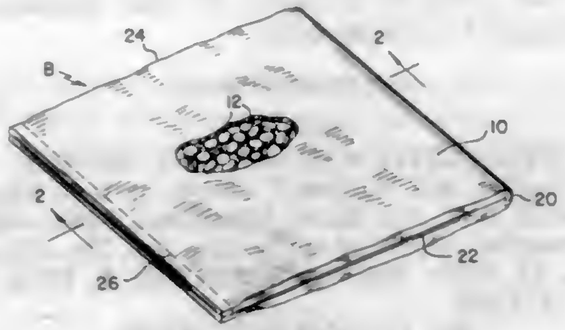
**Alvin C. Ingebo, 15500 SW. Royalty Parkway, Tigard, Oreg. 97223**
**Filed Feb. 26, 1968, Ser. No. 708,018**
**Int. Cl. A63d** *5/08*
**U.S. Cl. 273—44** **3 Claims**



The apparatus disclosed is for the setting of bowling pins and includes a pin carriage for the setting of pins after the "downed" pin or pins have been upwardly moved into the carriage by separate counterweights. A tiltable ball return guide is also provided and activated upon ball contact. Powered wheel members are separately coupled to the carriage and ball return guide to operate the same and which wheel members further include switch actuating pins for operating push button type switches to start and stop motors powering the wheels. An electrical scoring circuit is also included in the disclosure.

### 3,480,280
### BEAN BAG GAME PROJECTILE

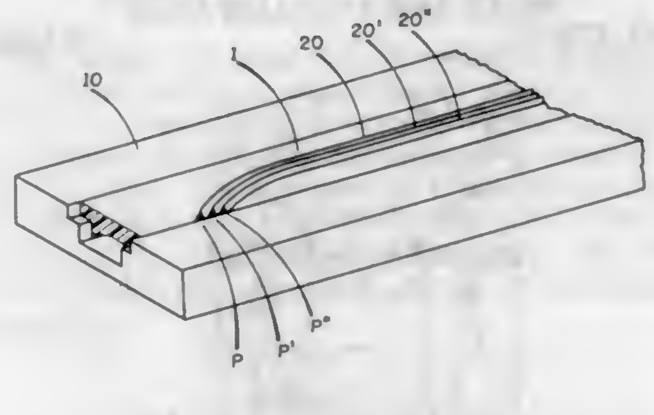
**Allen M. Gamertsfelder, 7575 Darrow Road, Hudson, Ohio 44236**
**Filed May 15, 1967, Ser. No. 638,410**
**Int. Cl. A63b** *65/00*
**U.S. Cl. 273—106** **2 Claims**



A bean bag game projectile including a flexible closed bag of a size for manual grasping and partially filled (preferably ⅓ filled) with a filler of resilient granular pellets. In one form of the invention the filler comprises granular pellets formed of medium soft rubber. In another form of the invention, such rubber pellets are configured in the form of small round flat disks to provide easy intermixing of the pellets. The bag may be formed of transparent material for added effect.

### 3,480,281
### METHOD OF PHONOGRAPH RECORD FABRICATION

**Clayton H. Allen, Wellesley, and John C. Heine, Cambridge, Mass., assignors to Bolt Beranek and Newman Inc., Cambridge, Mass., a corporation of Massachusetts**
**Filed Feb. 3, 1967, Ser. No. 613,873**
**Int. Cl. G11b** *5/86, 7/28*
**U.S. Cl. 274—3** **4 Claims**



The present invention relates to methods of making phonograph record stampings, being more particularly directed to converting annular records with spiral grooves into linear tape records having substantially parallel recording grooves or tracks with the aid of impressionable, settable resilient plastic materials.

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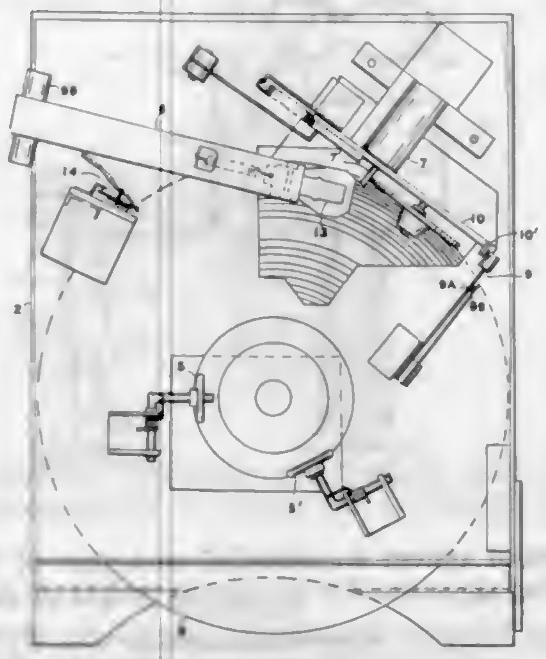
### 3,480,282
### AUTOMATIC RECORD PLAYER

**Marvin Mindell, Great Neck, Karl Rudzitis, West Babylon, N.Y., assignors to Viewlex, Inc., Holbrook, N.Y.**
**Filed Mar. 28, 1967, Ser. No. 626,533**
**Int. Cl. G11b** *25/04, 25/06*
**U.S. Cl. 274—9** **6 Claims**

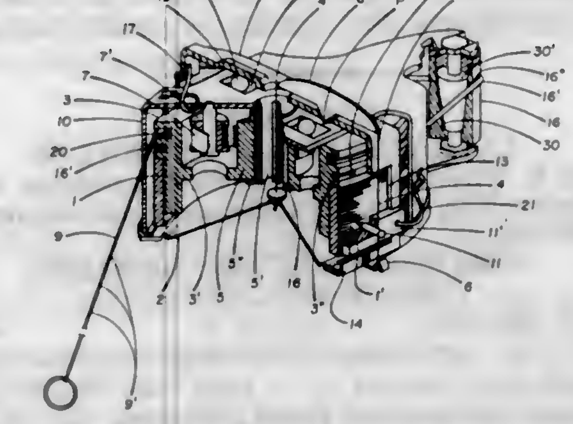


An automatic record player wherein it is only necessary to lift a flap or control lever, slide a record into a slot, and close the flap. An internal carriage is connected to the flap so that when the flap is closed, the record is automatically placed on a spindle. The carriage is rotatably mounted and connected to the flap so that when the flap is closed, the carriage is rotated down and the record is gripped between a spindle and a pair of pressure wheels mounted on the carriage.

When the carriage is rotated down a rim drive wheel engages the rim of the record. The rim drive wheel is mounted on the control arm which controls a motor start switch for rotating the record. The rotation of the carriage also engages a tone arm with the record. The needle or other pickup of the tone arm then follows the grooves in the records towards the center part of the record. When the record is finished playing, the tone arm activates a stop switch which stops the rotation of the record. The flap is then raised, the record removed, and a new record put in.

### 3,480,283
### PHONOGRAPH SYSTEM

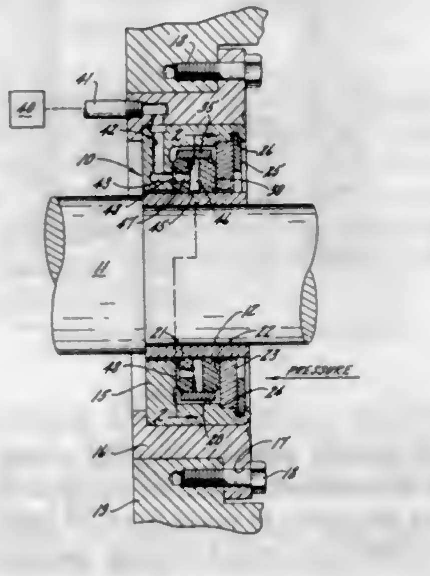
**Royal V. Jones, Jr., Waltham, Clayton H. Allen, Wellesley and Colin G. Gordon, Bedford, Mass., assignors to Bolt, Beranek and Newman Inc., Cambridge, Mass., a corporation of Massachusetts**
**Filed Feb. 13, 1967, Ser. No. 615,537**
**Int. Cl. G11b** *3/26;* **G10k** *9/10*
**U.S. Cl. 274—17** **8 Claims**



This invention embodies a phonograph system provided with a novel tensioned wire coupling system between the needle engaging a drum-type record and the loudspeaker reproducing apparatus, and preferably including viscous conical-surface speed control means.

### 3,480,284
### VENTED LABYRINTH SEAL

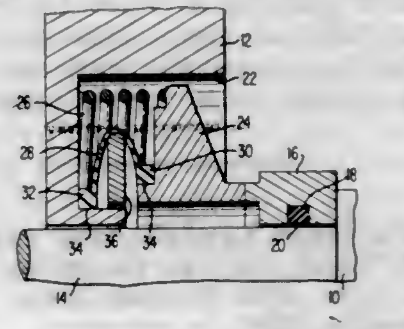
**Robert M. Voitik, Glenview, Ill., assignor to Continental Illinois National Bank and Trust Company of Chicago, trustee**
**Filed July 24, 1967, Ser. No. 655,425**
**Int. Cl. F16j** *15/34, 15/54*
**U.S. Cl. 277—26** **1 Claim**



A labyrinth type seal formed of stator elements with a rotor mounted on a shaft between them in which the rotor has an annular groove extending about its inner surface and in which an auxiliary passageway is provided in the rotor and adjacent stator element for venting the groove to inhibit leakage along the shaft particularly under cool, static conditions. In a second mode of operation the passageway is pressurized.

### 3,480,285
### MECHANICAL SHAFT SEAL

**James H. Anderson, 1615 Hillock Lane, York, Pa. 17403**
**Filed Dec. 12, 1967, Ser. No. 689,839**
**Int. Cl. F16j** *15/36, 15/38*
**U.S. Cl. 277—88** **5 Claims**

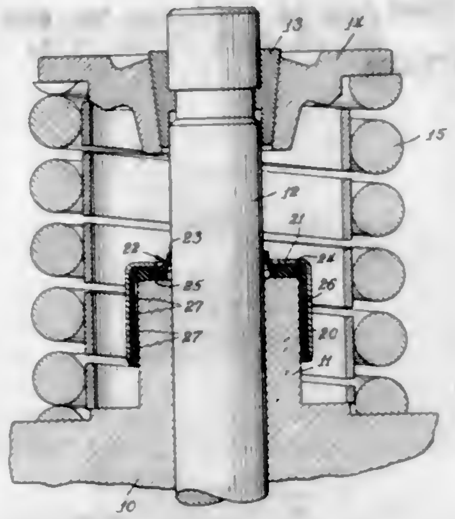


A rotary mechanical seal apparatus having a pair of coacting members with adjacent rubbing faces to form a fluid tight seal. One of said members is usually mounted on or carried by a rotating element, such as a shaft, while the other member is retained against rotation within a suitable support, such as a housing. The housing supported member is biased into engagement with the rotating member so as to maintain the rubbing faces of the members in engagement and thereby effectively seal a fluid within the housing.

**3,480,286**

### VALVE STEM SEAL

**Thomas O. Kosatka, Chicago, Ill., assignor to Victor Manufacturing and Gasket Company, Chicago, Ill., a corporation of Illinois**
**Filed Aug. 9, 1967, Ser. No. 659,461**
**Int. Cl. F16j** *15/32, 15/56*
**U.S. Cl. 277—182** **6 Claims**

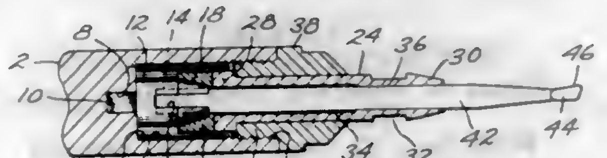


A plastic sealing washer fixed in a cup shaped metal shell by an elastomeric material bonded to the shell and dimensioned for press fit upon a valve stem guide to position said washer in seal forming engagement with the valve stem.

**3,480,287**

### BORING TOOL HEAD

**James E. O'Donnell, 15 Sparhawk Road, Lynn, Mass. 01905**
**Filed Mar. 14, 1967, Ser. No. 623,044**
**Int. Cl. B23b** *29/04*
**U.S. Cl. 279—6** **6 Claims**



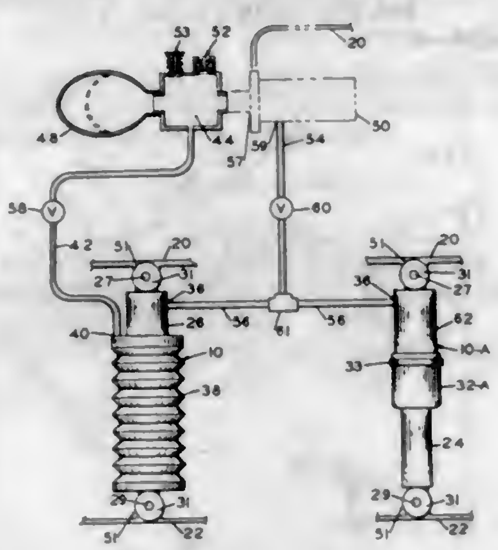
The following specification describes an adjustable boring tool holder comprising means for gripping the end of a boring tool and means operative by flexing the shank of the tool to radially shift the position of its cutting edge relative to the axis of rotation of the tool holder.

**3,480,288**

### SUSPENSION SYSTEM FOR VEHICLES

**Arthur E. Vogel, 1860 E. Cherry St. 43205, and Palmer Fultz, 3832 Riverside Drive 43220, both of Columbus, Ohio**
**Continuation-in-part of application Ser. No. 479,225, Aug. 12, 1965. This application Feb. 23, 1966, Ser. No. 529,328**
**Int. Cl. B62d** *37/00;* **B60s** *9/00*
**U.S. Cl. 280—6.1** **24 Claims**

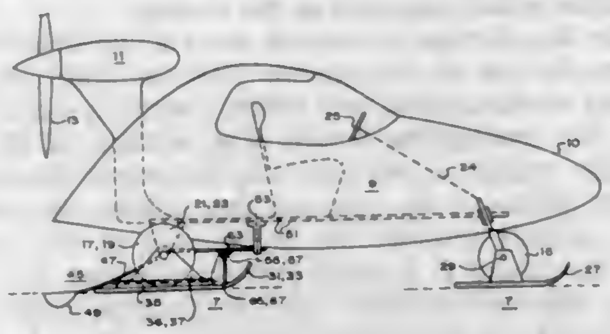
A controlled suspension system for a vehicle having unsprung and sprung weight portions including a vertically expansible and contractible chamber disposed between those portions, together with a compressor connected with the chamber, the chamber having an outlet orifice which is at least partially opened and closed as the static load on the unsprung portion decreases and increases, respectively. Preferably, the compressor inlet and the outlet orifice are connected directly with atmosphere. Also, preferably, the control system is embodied as a part of the shock absorbing apparatus for the sprung weight of the vehicle.



**3,480,289**

### SURFACE VEHICLE

**Wallace K. Larkin, 74 Hollins Drive, Santa Cruz, Calif. 95060**
**Filed Mar. 6, 1968, Ser. No. 715,468**
**Int. Cl. B62b** *19/00*
**U.S. Cl. 280—21** **10 Claims**



A surface vehicle includes a rearwardly-disposed pair of supporting skis which are canted about longitudinal axes in response to transverse or yawing motion of the vehicle relative to the intended direction of travel. The skis are canted by the movement relative to the vehicle of a free-trailing, rudder-like direction sensor which thus automatically provides stabilization against yawing or sideways skidding. Highly efficient braking of the forward motion of the vehicle may be accomplished by maneuvering the vehicle into a sideways skid to cant the skis against the direction of motion in the same manner as an experienced skier executes a parallel turn.

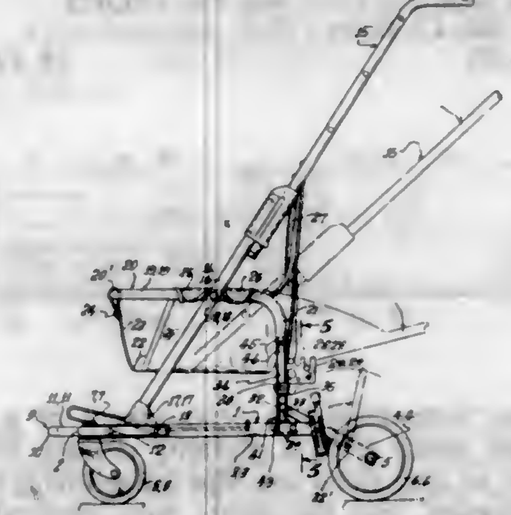
**3,480,290**

### COLLAPSIBLE BABY STROLLER

**Arnold E. Peterson, Glendale, Calif., assignor to A. E. Peterson Mfg. Co., Glendale, Calif., a corporation of California**
**Filed May 29, 1967, Ser. No. 641,952**
**Int. Cl. B62b** *3/02, 7/10*
**U.S. Cl. 280—36** **4 Claims**

A stroller type vehicle including a collapsible frame structure characterized by a rigid base frame to which the wheels are attached and a collapsible seat supporting frame movably mounted on the base frame by pivotal connection to the side members of the handle means and

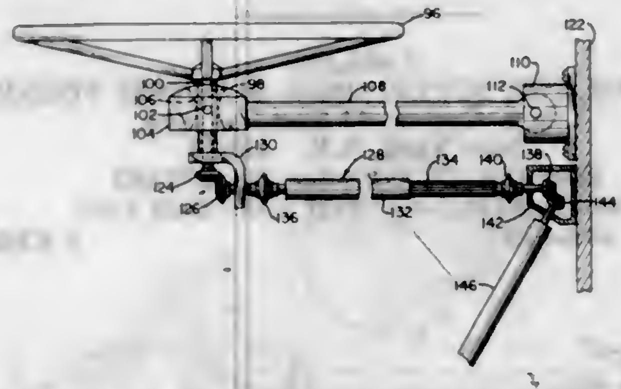
to a pair of lazy bar links pivotally connected both to the base frame and to the seat supporting frame and on which a pair of manually releasable, self-engaging latch means operates automatically to secure the stroller in erected position.



**3,480,291**

### SAFETY CONSTRUCTION FOR VEHICLES

**Harlan D. Hilfiker, 12195 W. Ohio Place, Denver, Colo. 80228**
**Original application Mar. 8, 1967, Ser. No. 621,694. Divided and this application Aug. 26, 1968, Ser. No. 772,885**
**Int. Cl. B62d** *27/06*
**U.S. Cl. 280—87** **4 Claims**



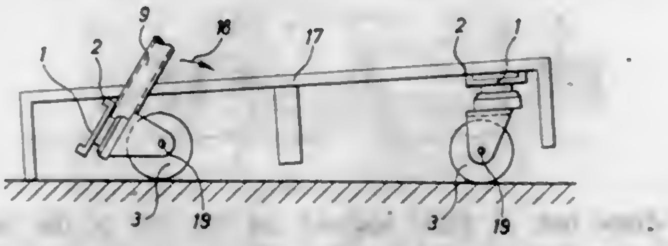
The invention is a safety construction for automobiles in which the body is detachably mounted to the chassis, the body resting on a cradle-shaped upper surface of the chassis so that upon a high speed impact of the vehicle with another object the body separates completely from the forward end of the chassis traveling in an upward direction to gradually decelerate the body and passengers. The forward end of the body is of bullet-shaped design to provide deflection of the body from its line of travel if another object is contacted by the curving surfaces of the bullet-shaped forward end, thus preventing instantaneous deceleration to zero as occurs in head-on collisions. The vehicle may be operated with the body at different elevations and is provided with a safety oriented collapsible steering mechanism.

**3,480,292**

### LIFTING DOLLY

**Karl August Börkey, Hagen, Germany, assignor to Walter Borkey KG., Hagen-Delstern, Germany**
**Filed Oct. 3, 1967, Ser. No. 672,600**
**Claims priority, application Germany, Oct. 28, 1966, B 89,601**
**Int. Cl. B62d** *21/14;* **B66f** *3/00*
**U.S. Cl. 280—43.17** **23 Claims**

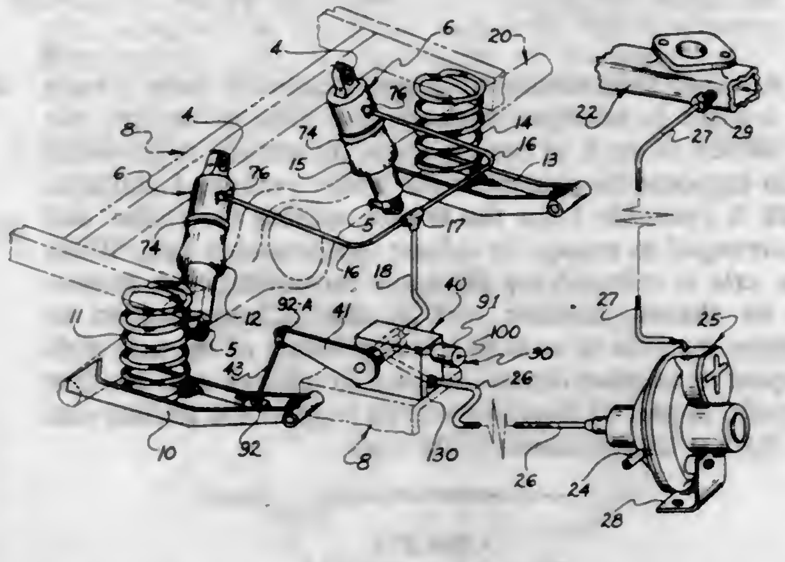
A lifting dolly usable as one of a set of dollies for lifting and transporting an object having a predetermined floor clearance. The dolly is capable of being inserted under the object and twisted to lift the object. It comprises a support having two approximately parallel upper edges suitable for carrying the object. These upper edges are spaced apart a given distance which is less than the floor clearance of the object. The dolly also comprises at least one wheel arranged on the bottom of the support. The distance from the bottom of the wheel to the upper edges of the support is greater than the floor clearance of the object. The wheel is rotatable about an axis which, when the dolly is upright, is horizontal and, after the dolly has been twisted to lift the object and stands upright, is parallel to the two upper edges and lies between the two vertical planes passing, respectively, through the outermost part of the two upper edges.



**3,480,293**

### CONTROL SYSTEM FOR VEHICLE SUSPENSIONS

**Arthur E. Vogel, 1860 E. Cherry St. 43205, and Palmer Fultz, 3832 Riverside Drive 43220, both of Columbus, Ohio**
**Filed Sept. 15, 1966, Ser. No. 579,707**
**Int. Cl. B60g** *17/04, 17/06*
**U.S. Cl. 280—124** **18 Claims**



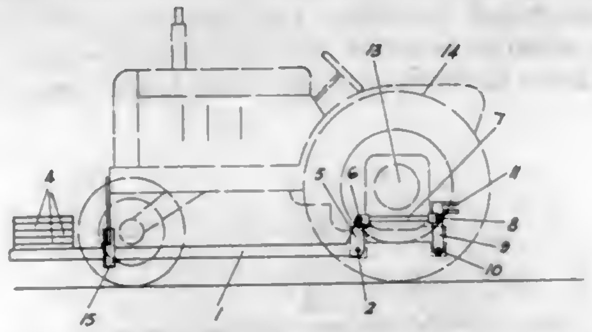
A control system for vehicle suspensions of the type that include sprung and unsprung weight portions, air chambers operative between the weight portions and an air compressor for delivering pressurized air to said chambers. The system is further characterized by the compressor being stallable at predetermined pressure selected for the air chambers by a height control valve means mounted on one of said weight portions and provided with a pivoted valve actuating arm mounted on the other of said weight portions.

**3,480,294**

### TRACTOR CONTROL DEVICE

**Walter Lichti, Kelvin, Via Gunnedah, New South Wales, Australia**
**Filed Sept. 14, 1967, Ser. No. 667,696**
**Claims priority, application Australia, Sept. 20, 1966, 11,341/66; Nov. 8, 1966, 13,597/66, 13,598/66**
**Int. Cl. B60d** *1/00;* **A01b** *67/00*
**U.S. Cl. 280—405** **7 Claims**

A means for ensuring that the traction wheels of a tractor have sufficient traction and comprising a beam mounted longitudinally below the axles of the tractor and pivoted near the traction wheels and a link attached to form a bell crank lever with the beam and attached to



the draw bar. A mass located on the end of the beam applies a downward force near the traction wheels proportional to the reactive force applied by the load.

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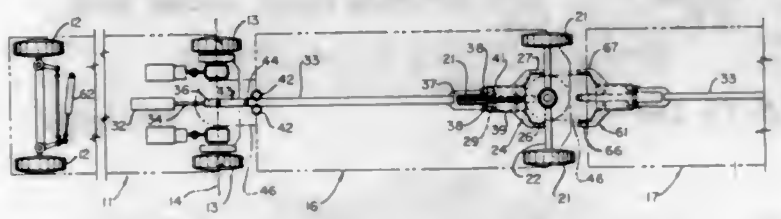
### 3,480,295
### REVERSIBLE TRAILER TRAIN CONSTRUCTION

**Arnold Duerksen, Salinas, Calif., assignor, by mesne assignments, to Cochran Western Corporation, Salinas, Calif., a corporation of California**
**Filed Aug. 8, 1967, Ser. No. 659,052**
**Int. Cl. B60d** *1/00;* **B62d** *53/00, 13/06*
**U.S. Cl. 280—408** **6 Claims**



A trailer construction of a type adapted to form a train of trailers is arranged whereby the train of trailers can be driven in each of two opposite directions. A pivotable axle supports the chassis of the trailer vehicle. A shiftable fork is operable from the tractor pulling the trailer and is arranged to engage or release the pivotable axle. When the axle is released for pivotable movement with respect to its chassis, another fork is moved into position to engage the axle so as to preclude pivoting of the axle with respect to another chassis coupled in tandem with the first chassis. A pair of steerable wheels support the trailing end of the last trailer chassis of the train.

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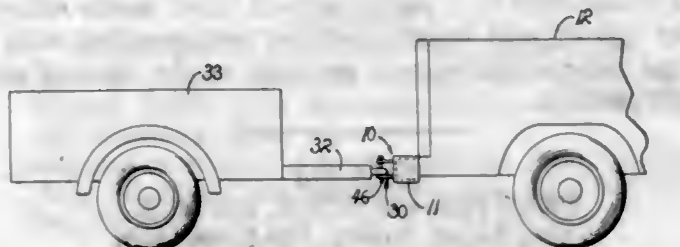
### 3,480,296
### TRAILER HITCH

**Edward L. Starling, Tulare, Calif., assignor of one-half to Nichols Farms, a corporation of California**
**Filed Nov. 30, 1967, Ser. No. 687,002**
**Int. Cl. B60d** *1/02;* **B60r** *21/00*
**U.S. Cl. 280—491** **5 Claims**



A trailer hitch for mounting in a vehicle bumper or the like providing a drawbar pivotally mounted within a recess in the bumper for swinging movement between a draft position outwardly extended from the bumper and a position with the drawbar fully retracted within the recess in the bumper to present a clean, uncluttered bumper surface.

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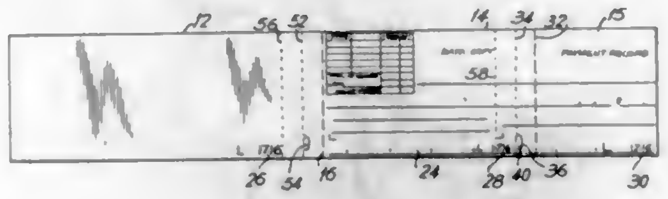
### 3,480,297
### BUSINESS FORM

**Arthur M. Cohen, 2775 E. 12th St., Brooklyn, N.Y. 11235**
**Filed Sept. 27, 1967, Ser. No. 671,072**
**Int. Cl. B42d** *15/06, 15/02*
**U.S. Cl. 282—22** **10 Claims**



This business form facilitates arrangement of a plurality of written sheets from a plurality of such forms. The sheets have an area along one edge for receiving basic data or information, and the sheets have perforations defining a fold line which is perpendicular to that edge area which receives the basic information. The sheets have a cut defining a tab located at the fold line, and the line of perforations is interrupted at the tab so that the tab remains unfolded when folding a sheet on the fold line, and projects somewhat even when the sheet is again spread open. The tab then acts as a sheet locating stop when shingling the sheets, and only the area with the basic information is exposed. Appropriate slits interlock with adjacent material to help prevent relative movement of the shingled sheets. The residual fold acts as a "spine" which helps align and hold the shingled sheets against relative rotation.

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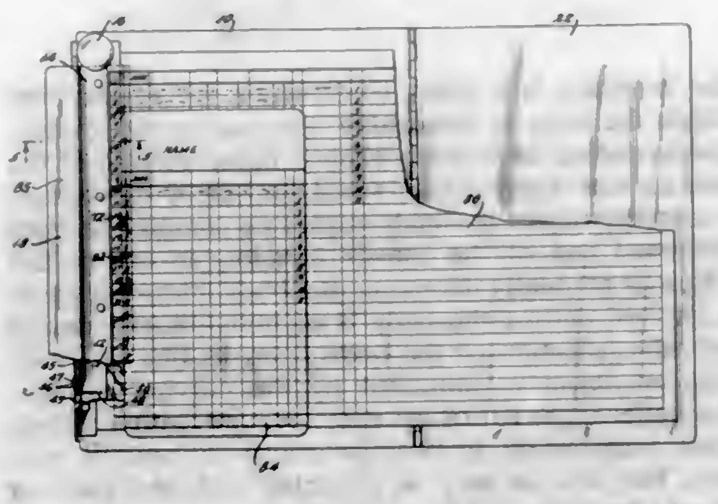
### 3,480,298
### HOLDER FOR SUPERPOSED BUSINESS FORMS

**Lila S. Garber, 33 East End Ave., New York, N.Y. 10028**
**Filed Oct. 24, 1967, Ser. No. 677,683**
**Int. Cl. B42d** *5/00;* **B42f** *1/00;* **B43l** *5/02*
**U.S. Cl. 282—29** **1 Claim**



A business form holder is provided with upper and lower clamps for superposed forms. A lifting knob on the lower clamp can be raised to lift both clamps together to release all forms. A portion of the knob overlies and is spaced above upper clamp. Slight raising of the upper clamp releases the upper form. Further raising lifts the knob to lift the lower clamp. A lever plate extends from the upper clamp to permit opening of the clamp with the same hand that holds the form holder. Both clamps are hinged on a common pintle mounted in hinge knuckles formed from tongues extending from the edges of the form receiving plate and the clamps. Coil springs surrounding the pintle bias the clamps to the closed position.

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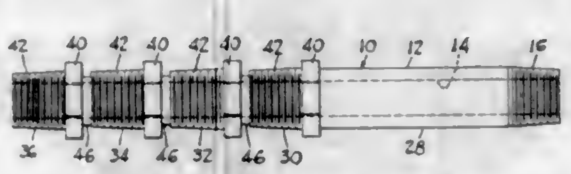
### 3,480,299
### PIPE NIPPLE

**Harold P. Henderson, 271 Northwood Drive, Kenmore, N.Y. 14223**
**Filed Sept. 11, 1968, Ser. No. 758,962**
**Int. Cl. F16l** *9/22*
**U.S. Cl. 285—4** **4 Claims**



A pipe nipple having a tubular body composed of a plastic material and having a bore longitudinally therethrough. A plurality of integral separable sections form the composite nipple whereby one or more sections may be severed to provide nipples of selective lengths. Each section has a hex formation at one end and an externally threaded portion at the other end.

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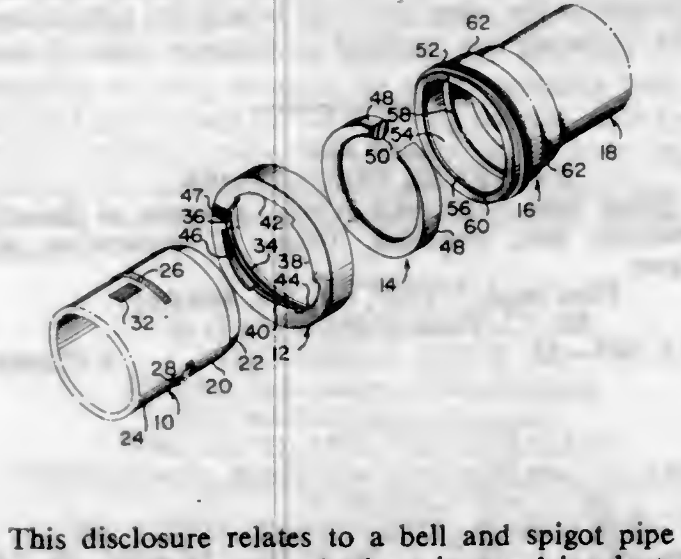
### 3,480,300
### PIPE COUPLING

**Warren C. Jeffery and Sidney P. Teague, Birmingham, Ala., assignors to McWane Cast Iron Pipe Company, Birmingham, Ala., a corporation of Delaware**
**Filed Feb. 24, 1966, Ser. No. 529,823**
**Int. Cl. F16l** *35/00, 55/00, 19/00*
**U.S. Cl. 285—93** **10 Claims**



This disclosure relates to a bell and spigot pipe joint wherein a collar surrounds the spigot and is adapted for axial sliding and rotational movement relative thereto, the collar and spigot each include a single discontinuous projection which when in axial alignment prevent the collar from sliding relative to the spigot but when in nonaxial alignment the collar can be readily applied to the spigot, rotated and brought to the first-mentioned position at which coupling means maintain the bell, collar and spigot in assembled relationship.

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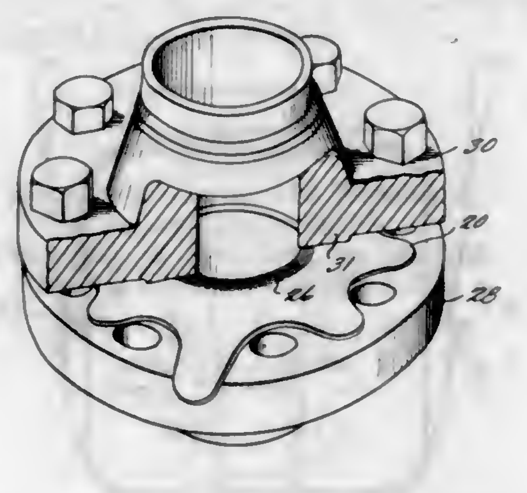
### 3,480,301
### SELF-CENTERING GAUGE RING

**Walter H. Kroening, 24 Star Lake Drive, Warrington, Fla. 32507**
**Filed June 27, 1968, Ser. No. 740,537**
**Int. Cl. F16l** *55/00, 21/02;* **F16j** *9/04*
**U.S. Cl. 285—119** **13 Claims**

Apparatus for installing a gasket to form a seal between two assemblies fastened together with bolts whereby the gasket is mounted within a compression gauge ring having a peripheral portion extending outwardly for manually rotating the ring and an outer camming surface engageable with the bolts in response to the rotation to center the gasket. To install and position the gasket, the gauge ring is set loosely inside the area bounded by the bolts which have been inserted into one assembly. The two assemblies are then bolted loosely together so that the ring can be rotated to cause the camming surface to engage the bolts and thereby precisely center the gasket which is then held immobile after the assemblies are tightly bolted together.



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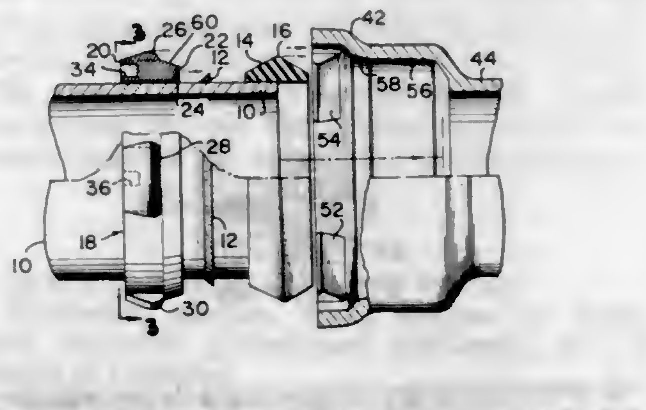
### 3,480,302
### INTERNAL LOCK RING BELL AND SPIGOT JOINT

**Warren C. Jeffery and Sidney P. Teague, Birmingham, Ala., assignors to McWane Cast Iron Pipe Company, Birmingham, Ala., a corporation of Delaware**
**Filed Feb. 24, 1966, Ser. No. 529,775**
**Int. Cl. F16l** *19/00, 17/00, 23/00*
**U.S. Cl. 285—362** **10 Claims**



This disclosure relates to a pipe joint comprised of a bell and spigot wherein a seal is effected therebetween by an annular resilient sealing member, the bell including a plurality of inwardly directed lugs formed adjacent a front end opening of the bell, locking ring means carried by the spigot for interlockingly engaging the bell lugs with the sealing member being constrained against axial movement by the locking ring means, the locking ring means being an annular locking ring having a split to permit deflection thereof for in-field assembly thereof within a peripheral groove of the spigot.

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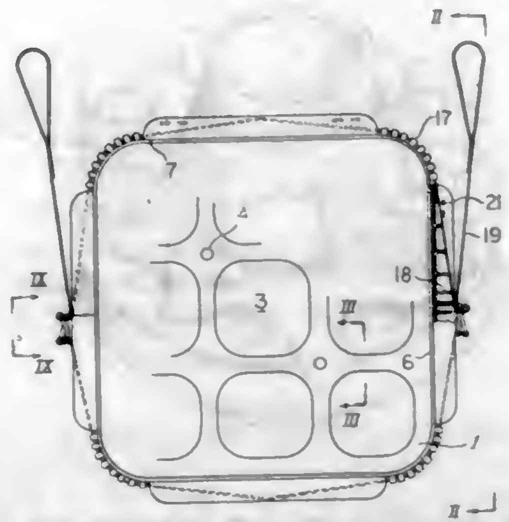
### 3,480,303
### CONNECTORS FOR CABLE CONDUITS

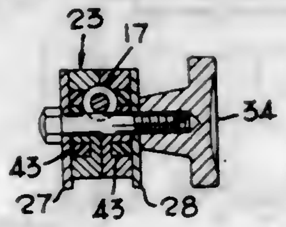
**Edwin E. Reiber, 505 King Ave., Columbus, Ohio 43200**
**Filed June 21, 1968, Ser. No. 738,879**
**Int. Cl. F16l** *21/02, 19/00, 17/00, 33/18*
**U.S. Cl. 285—373** **3 Claims**

The disclosure deals with sealing off the connected ends of cable conduits having several ducts in which the cable is laid and separated from each other. The purpose of the connectors, which are made of suitable water-resistant materials, is to prevent the accumulation of slit in the conduits so that the ducts will be kept open and clean to permit the easy drawing of cables therethrough. The ends of the conduits are provided with aligning members and the connectors are drawn into intimate contact with the outer surface of the conduit by means of straps which are also the fastening means and which are buried underground with the conduits.



### 3,480,304
### SWIVEL JOINT FOR A LAMP

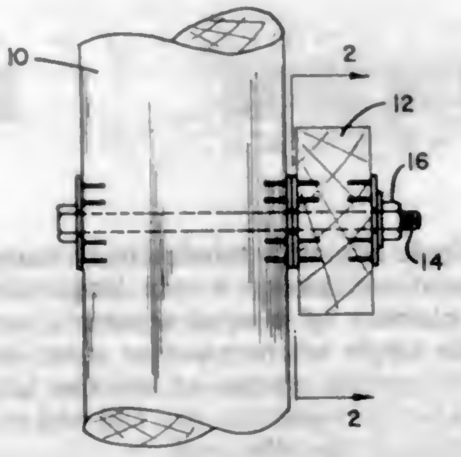
**Jacob A. Mehr, deceased, late of Kirkwood, Mo., by Edna A. Mehr, administratrix, Kirkwood, Mo., assignor to Dazor Manufacturing Corp., a corporation of Delaware**
**Filed May 31, 1968, Ser. No. 744,240**
**Int. Cl. F16l** *27/00;* **F16c** *11/00*
**U.S. Cl. 287—14** **11 Claims**



A swivel joint for supporting a lamp reflector or any other device in adjusted position about two axes. The joint includes a fitting connected to the device which has a stem received in a socket provided between separable body sections, the stem defining a first axis. A clamping means engages opposite sides of a pair of brackets to clamp the body sections to the stem. The clamping means includes a pin, defining a second axis, extending transversely through the bracket and body sections and extending past a reduced stem portion and between axially spaced stem shoulder portions of greater diameter to preclude unintentional longitudinal axial movement of, and to position, the stem in the body. An abutment means on the stem outwardly of the socket selectively engages a stop means carried by the body outwardly of the socket to determine the limits of the range of rotational adjustment of the stem about the first axis. In one embodiment, a washer of low friction material is carried by each body section and is located about the second axis, the washer projecting into the socket and engaging the stem to enable easy stem rotation yet to hold the stem in adjusted position when clamped.

### 3,480,305
### BOLT-HOLE REINFORCING PLATE

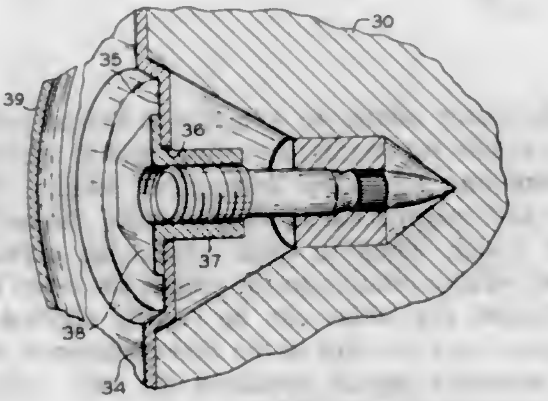
**William E. Jureit, Miami, Fla., assignor to Automated Building Components, Inc., Miami, Fla., a corporation of Florida**
**Filed June 26, 1967, Ser. No. 648,848**
**Int. Cl. F16b** *5/00, 7/00, 9/00*
**U.S. Cl. 287—20.92** **3 Claims**



The reinforcing plate comprises a plurality of nail-like teeth struck therefrom for embedment into a wooden member and a central opening for receiving a bolt passing through adjoining structural members whereby stress concentrations acting on the wooden bore hole are borne by the plate and distributed by the teeth to the area surrounding the bore hole opening. A like reinforcing plate may be embedded into the adjoining wooden member with the bolt passing through a central opening therethrough locating the plates in back-to-back relation at the joint interface whereby stress concentration acting on both bore holes are distributed through the plates and teeth thereof to the areas about the bore holes. Like plates for like purposes are provided at opposite ends of the bolt.

### 3,480,306
### FASTENER STRUCTURES

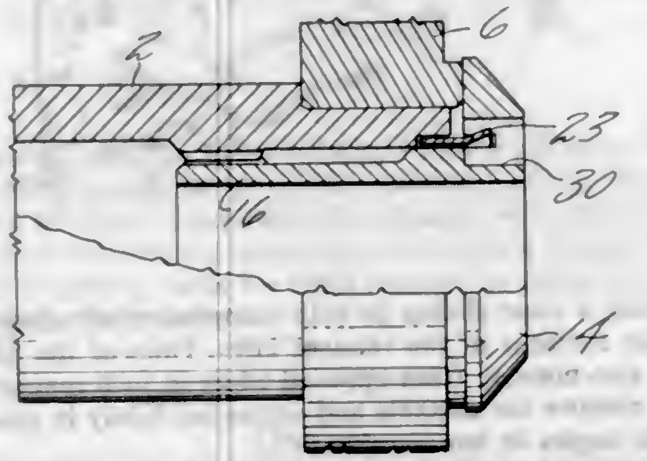
**Yung Shing Hsu, Milwaukie, Oreg., assignor to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon**
**Filed Sept. 7, 1967, Ser. No. 666,094**
**Int. Cl. F16b** *11/00;* **F16c** *3/10*
**U.S. Cl. 287—53** **3 Claims**



A fastener structure including a hard metal pin **10** driven by a powder actuated tool into a soft metal annular plug **22** in a blind hole **26** in a railroad car axle **30**. The pin **10** and plug are preassembled together for ease of handling before being so driven. The pin expands the plug to lock itself in the plug and the plug in the hole **26**. A ribbed or knurled portion **18** keys the pin to the plug. A cup **34** is held against the end of the axle by a sleeve nut **37**, and the cup **34** holds a hotbox detector **39**. In another embodiment a pin **40** anchored to a plug **52** and anchoring the plug **52** in an axle **60** holds, with a nut **67**, a deep drawn cup **64** against the axle, and the cup **64** holds a hotbox detector **69**. A hard pin **80** has been driven by a powder actuated tool into an undersized bore **106** in a softer metal member **110** to greatly compress the adjacent portions of the member **110** to securely lock the pin to the member **110**.

### 3,480,307
### LOCK MEANS FOR FIXING RETAINING BOLTS ON ROTATING SHAFTS

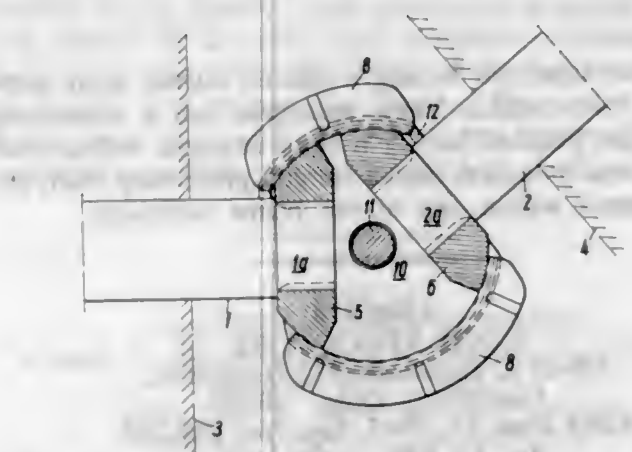
**Ernest W. Wilcox, Lake Park, and John W. Lillberg, Jupiter, Fla., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Feb. 24, 1969, Ser. No. 801,679**
**Int. Cl. F16d** *1/06;* **F16c** *3/10*
**U.S. Cl. 287—53** **7 Claims**



A shaft adapted to rotate has means for retaining a member on a free end which includes a retaining bolt and a lock ring. The free end of the shaft is hollow and is threaded therein to receive threads on the retaining bolt. The part retained extends past the free end of the shaft and engages the inner side of the bolt head. When the retaining bolt is torqued in position the lock ring is contained in an area between the shaft, retaining bolt, and retained part. Tangs fix the lock ring and the shaft against relative rotation and a bent portion of the lock ring extending into an opening in the head of the retaining bolt fixes the lock ring and retaining bolt against relative rotation.

### 3,480,308
### UNIVERSAL JOINT

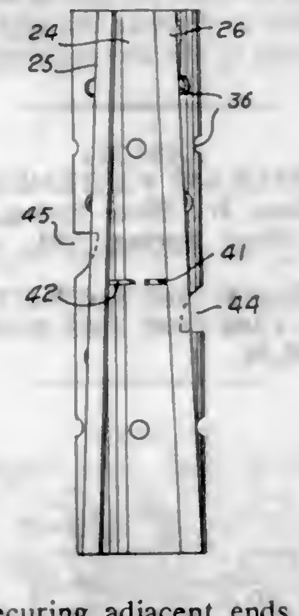
**Heinrich Schommer, 3 Schulstrasse, 6603 Sulzbach-Saar, Germany**
**Filed Oct. 11, 1967, Ser. No. 674,515**
**Claims priority, application Germany, Oct. 14, 1966, P 40,578**
**Int. Cl. F16c** *11/06;* **F16b** *7/00;* **B25g** *3/38*
**U.S. Cl. 287—87** **10 Claims**



A universal joint which provides an articulate connection between idler rollers or the like. The shafts of the rollers carry spherical heads which are received in a hollow socket composed of two sections having faces which abut against each other in a plane including the axes of the shafts. The faces of the sections are provided with recesses which together form two elongated slots for the shafts. The fastener means for connecting the sections to each other comprises a bolt which is normal to the plane wherein the faces of the sections abut against each other and extends between the spherical heads. The shafts can be removed from the socket as soon as the two sections are separated from each other.

### 3,480,309
### CLAMP

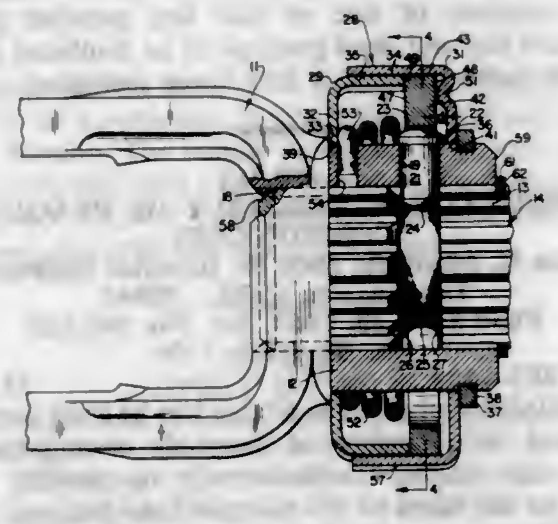
**Kenneth D. Harris, 108 Windward, Euless, Tex. 76039**
**Filed July 19, 1967, Ser. No. 654,522**
**Int. Cl. F16b** *7/00;* **F16d** *1/00*
**U.S. Cl. 287—110** **2 Claims**



A clamp for securing adjacent ends of longitudinally aligned reinforcing bars of concrete structures which includes a tubular longitudinally split sleeve and a contracting member for pulling the ends of the tubular sleeve toward one another to contract the sleeve radially into firm gripping engagement with adjacent end portions of the reinforcing bars which are telescoped into opposite ends of the sleeve, the sleeve having internal support means intermediate its ends for holding the sleeve in a predetermined position on one of the reinforcing bars.

### 3,480,310
### QUICK DETACHABLE COUPLING

**John C. McElwain, Allegan, Mich., assignor to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware**
**Filed Sept. 29, 1967, Ser. No. 671,877**
**Int. Cl. F16b** *7/00;* **F16d** *1/00*
**U.S. Cl. 287—119** **5 Claims**



A universal joint member has an internally splined hub axially slidably mounted upon a splined shaft having an annular groove adapted to receive the inner ends of locking pins radially slidable in the hub. The hub is surrounded by a rotatable but axially fixed casing rigidly carrying a cam having inclined inner surfaces for engaging the outer heads of the locking pins, and a torsion spring normally urges the casing and cam to a rotated position where the cam surfaces positively project the pins into the groove to lock the hub axially with the shaft. Upon manual rotation of the casing and cam as a unit against the force of the spring, deeper portions of the cam recesses are radially aligned with the pins so that upon axial pull the annular inclined side of the groove will cam the pins outwardly of the groove and permit full axial separation of the shaft and hub. For reassembly the casing and cam are turned to the unlocking position and the shaft is thrust into the hub, an inclined end surface on the shaft cams the pins outwardly, and then the casing is released to permit the spring to rotate the casing and cam to displace the pins into locking relation with the groove to thereby lock the hub to the shaft.

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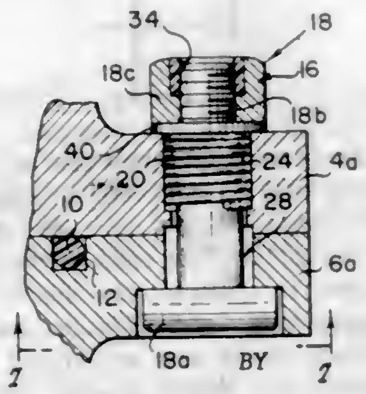
### 3,480,311
## QUICK-RELEASE FASTENER MEANS

**Charles W. Lanham, Jr., Silver Spring, Md., assignor to Entron, Inc., Silver Spring, Md., a corporation of Delaware**
**Filed June 5, 1968, Ser. No. 734,762**
**Int. Cl. F16b** *1/00, 3/00, 5/00, 7/00*
**U.S. Cl. 287—189.36** **8 Claims**



Quick-release fastener means of the quarter-turn type, characterized by the provision of a segmented key member having a lower key portion, a shank portion extending upwardly through a vertical passage contained in an upper member, and a head portion at the upper end of said shank portion. Friction means are provided for rotating said key member from an unlocked position to a locked position when said key portion is inserted in a recess contained in a lower member in contiguous engagement with said upper member, following which further rotation of one of said key member portions causes said key and head portions to be displaced together to tightly fasten the upper and lower members.

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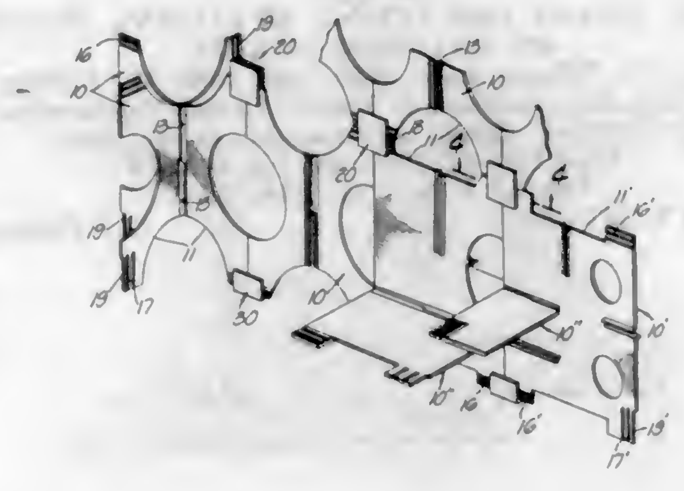
### 3,480,312
## STRUCTURAL ASSEMBLY OF PLAQUE COMPONENTS

**John G. Merideth, 5000 W. Imperial Highway, Los Angeles, Calif. 90045**
**Filed Sept. 18, 1967, Ser. No. 668,525**
**Int. Cl. F16b** *1/00*
**U.S. Cl. 287—189.36** **15 Claims**

A multiplicity of plaques adapted to be held detachably interlocked in a variety of assembly arrangements by retainer clips shaped complementally to specially shaped surfaces on the faces of the plaques. One diagonal pair of retainer clips is assembled between two or more abutting plaques in a direction at right angles to the assembly direction of another diagonal pair and cooperate with the complementally shaped surfaces to lock the plaques assembled except as respects a separating force applied in a predetermined direction. The interlocking features may comprise mating tongues and grooves or bosses, and having a close sliding fit with complementally-shaped interior surfaces of the retainer clips. Pairs of the plaques are also notched from opposed edges in such manner that the plaques are nestable and supported firmly in planes at right angles to one another.



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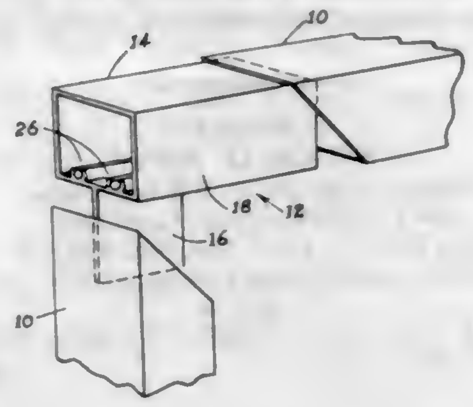
### 3,480,313
## FRAME STRUCTURE

**John J. Halko, Jr., Inglewood, Ontario, Canada, assignor to John J. Halko, Jr., Ben Burke & Allan A. Blackstien, Downsview, Ontario, Canada, a partnership**
**Filed July 25, 1968, Ser. No. 747,719**
**Int. Cl. F16b** *1/00, 5/00, 7/00, 9/00*
**U.S. Cl. 287—189.36** **10 Claims**



A frame structure having a mitred corner joint comprised of two tubular frame members and a connecting bracket; the bracket having a stem engaged within both of the frame members and a tongue projecting from the stem engaged within one of the frame members.

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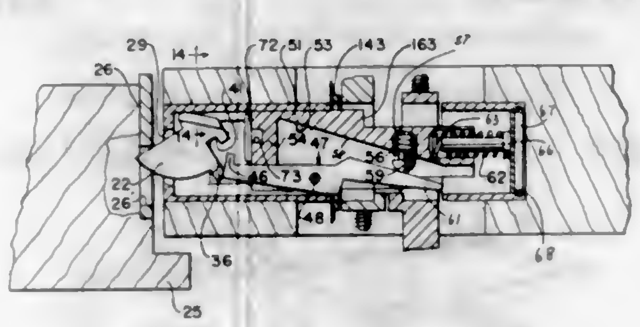
### 3,480,314
## LOCK STRUCTURE

**Albert L. Robinson, 557 Oregon St., Cincinnati, Ohio 45202**
**Filed June 27, 1967, Ser. No. 649,200**
**Int. Cl. E05c** *5/00, 1/14*
**U.S. Cl. 292—64** **5 Claims**

A lock structure for a door which includes a bolt housing for mounting in the door, a latch member mounted in the bolt housing, a bolt mounted in the bolt housing for movement therealong, a latch holding member movably mounted on the bolt, means on the latch holding member engageable with the latch member to cause the latch member to move with the bolt, means urging the bolt to a latch extended position at which the latch is engageable with a latch keeper, and a latch actuating slide engageable with the latch holding member to move the latch holding member to a latch released position, movement of the door in door opening direction when the latch member is released causing action of the latch member on a latch keeper to cause the latch member to swing for releasing the latch keeper.



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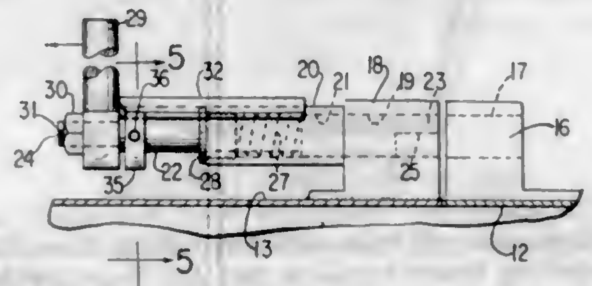
### 3,480,315
## RECIPROCAL DOOR LATCH FOR LAUNDRY WASHING MACHINE

**Kenneth H. Wolverton, Moline, Ill., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware**
**Filed July 21, 1967, Ser. No. 655,205**
**Int. Cl. E05c** *1/04;* **D06f** *39/14*
**U.S. Cl. 292—175** **5 Claims**



A latch mounted on the door of a cylindrical drum rotatably journaled in an outer cylindrical shell and having a reciprocable latch bolt urged to the locking position by a spring. The latch is held in the unlocked position by its handle being pivoted to a radial position with respect to the door and releasably retained in this position so that when the inner drum begins to rotate, the handle will engage the edge of the access opening of the outer shell and will be pivoted outwardly of the retaining means to permit the latch to lock.

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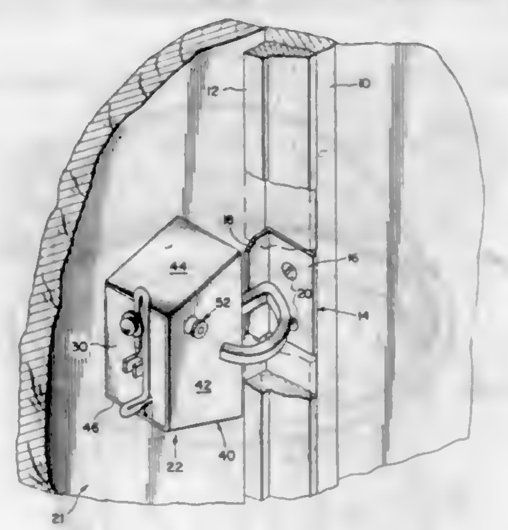
### 3,480,316
## SAFETY DOOR FASTENER

**Claude O. Westover, 2008 S. Westmoreland Drive, Orlando, Fla. 32805**
**Filed Feb. 9, 1968, Ser. No. 704,407**
**Int. Cl. E05c** *1/10;* **E05b** *63/20*
**U.S. Cl. 292—175** **7 Claims**

A safety door fastener is mounted on the inside of a door or the like and includes a slidably mounted spring pressed latch adapted to cooperate with a conventional keeper to latch the door. A detent means is provided for holding the latch in either lock or unlock position. A pivotally mounted retaining means is supported adjacent the latch and is engageable therewith. This retaining means is adapted to engage an edge of an associated keeper and hold the latch in unlock position and subsequently pivots away from the latch to allow the latch to move to lock position.



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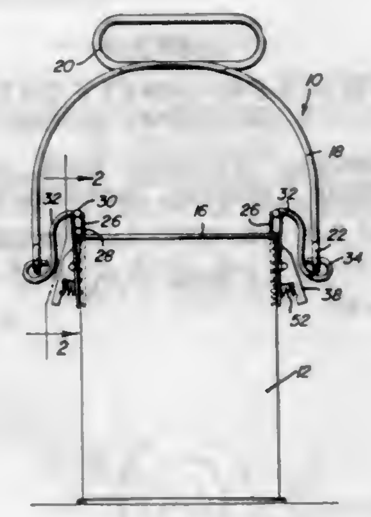
### 3,480,317
## SNAP-ON BAIL FOR BUCKETS

**James C. Bayless, P.O. Box 1133, Canadian, Tex. 79014**
**Filed Feb. 8, 1968, Ser. No. 704,046**
**Int. Cl. A47j** *45/10*
**U.S. Cl. 294—31** **8 Claims**



A handle in the form of a bail for attachment to the upper end of a container having a peripheral external rim or bead thereon. The handle includes a U-shaped or semicircular wire bail with a loop formed in the center thereof and snap-on brackets or connectors at each end thereof for engagement with the pail or container.

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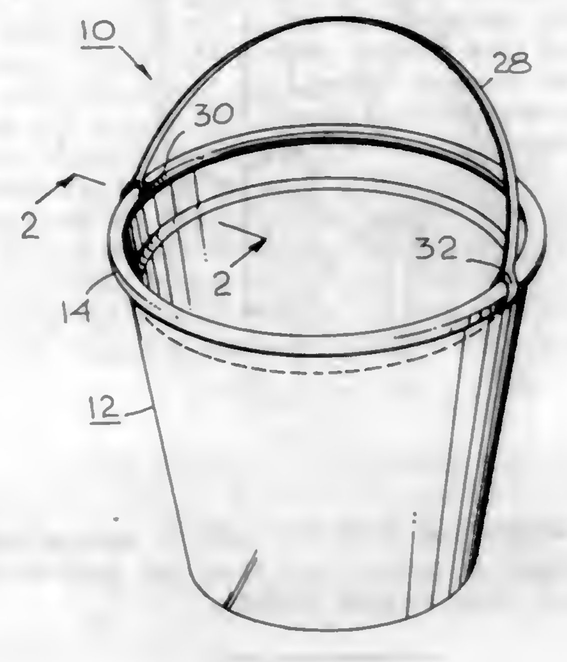
### 3,480,318
## STRAP HANDLE

**Jack Berger, Los Angeles, Calif. (6622 Lautrec Place, Palos Verdes Peninsula, Calif. 90274)**
**Filed Apr. 6, 1967, Ser. No. 629,022**
**Int. Cl. B65g** *25/28;* **A47j** *45/00*
**U.S. Cl. 294—33** **7 Claims**

A flexible strap handle for detachable coupling to beaded rim containers. The handle is flexible and resilient and at each end of an elongated body member has a coupling portion for detachable coupling to the bead on the rim of containers such as food containers, paint cans, and the like. Each coupling portion has a hook section engaging the outside of the bead and a tongue section engaging the inside of the bead and the resiliency of the material and the shape thereof frictionally pinches the bead between the tongue section and the hook section thereby restraining the strap on the container during handling and other utilization thereof. The flexibility of the strap allows it to be deformed so it may be removed from the container to facilitate removal of the contents of the container.



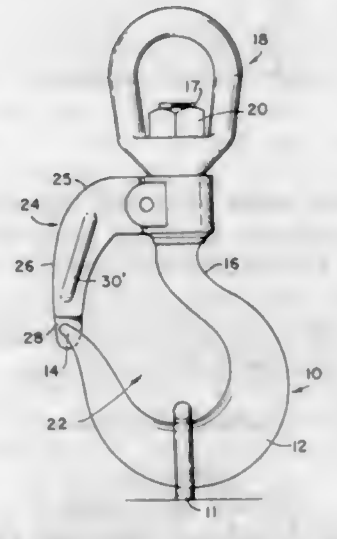
## 3,480,319
## ANTIFOULING SAFETY GATE FOR A HOISTING HOOK

**Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.**

**Filed July 17, 1967, Ser. No. 653,720**

**Int. Cl. B66c** *1/36, 1/40*

**U.S. Cl. 294—82** **3 Claims**



A safety gate for a lifting hook which gate includes projections of sufficient width to prevent the hook from being aligned so that the gate acts as the bearing surface for supporting the weight of a cargo load.

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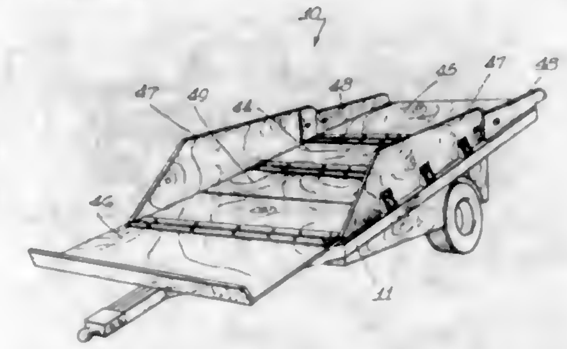
## 3,480,320
## UNIVERSAL TRAILER VEHICLE

**Thomas C. Turner, 1116 Victoria Ave., and Lynden Y. McIntosh, 308 Victoria Ave., both of Fort William, Ontario, Canada**

**Filed Oct. 24, 1967, Ser. No. 677,703**

**Int. Cl. B60p** *3/42;* **B62c** *1/06;* **B62b** *13/18*

**U.S. Cl. 296—10** **5 Claims**



A trailer to be propelled by suitable means on land or snow and so constructed as to be readily converted from a flat, horizontal, load bearing work unit to a compact pleasure unit by means of a plurality of hingedly connected members arranged on the trailer.

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## 3,480,321
## LINING PLATE FOR LOADING CAGE OR SIMILAR DEVICE

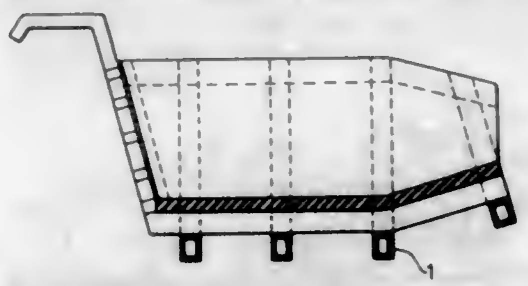
**Bertil Brandt, Skelleftea, and Assar Svensson, Ersmark, Sweden, assignors to Skelleftea Gummifabriks A.B., Ersmark, Sweden, a joint-stock company of Sweden**

**Filed Nov. 3, 1967, Ser. No. 680,555**

**Claims priority, application Sweden, Nov. 10, 1966, 15,393/66**

**Int. Cl. B61d** *11/02;* **B62d** *33/02*

**U.S. Cl. 296—28** **4 Claims**



A lining plate of wear resistant rubber for a loading cage receiving heavy boulders that fall from a relatively great height. At least two of the opposite sides of the plate are provided with fastening means for the plate. The fastening means simultaneously serve as an anchoring for an elastic reinforcement arranged in the plate. The plate is mounted freely hanging above the basic structure of the loading cage at a distance from the bottom of the cage which corresponds to more than the maximum deflection caused by the greatest load encountered.

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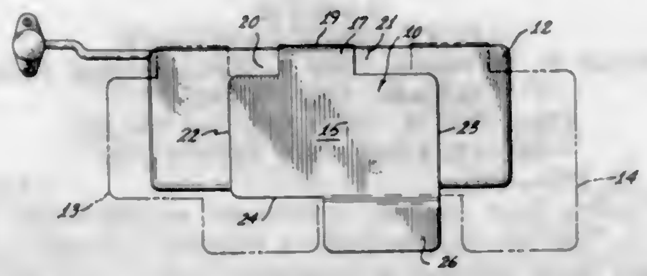
## 3,480,322
## SUN VISOR

**Lud Pollak, R.F.D. 3, Pocatello, Idaho 83201**

**Filed Mar. 29, 1968, Ser. No. 717,260**

**Int. Cl. B60j** *3/02*

**U.S. Cl. 296—97** **1 Claim**



A slip-over sun visor extension comprising a sleeve of opaque or transparent material having a bottom extension panel and cut-outs in its upper edge which slips over the regular sun visor to provide full protection when driving against the blinding glare of the sun.

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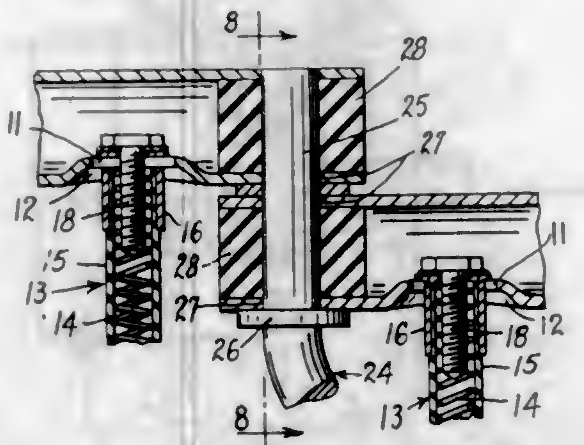
## 3,480,323
## RESILIENT VENTILATED BACK AND SEAT SUPPORT

**Louis Propus, 1942 Barclay, Montreal 26, Quebec, Canada**

**Filed Feb. 6, 1968, Ser. No. 703,322**

**Int. Cl. A47c** *4/02*

**U.S. Cl. 297—253** **9 Claims**



A back and seat support in which both the back and seat are skeletal frames pivotally joined together and a series of coil springs are stretched between side members of the frames and are covered by rubber or plastic tubing. In one form the skeletal frames are U shaped, pivotally joined together at the free ends of the side members of the U shape, and in a modified form the frames consist of straight side members pivotally joined together at adjacent ends and shallow U shaped members are pivotally joined to the opposite ends of the straight side members, one of the latter shallow U shaped members forming an adjustable head rest.

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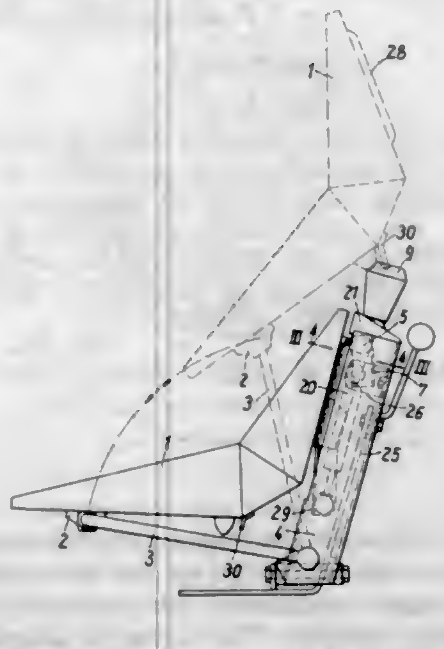
## 3,480,324
## SPRUNG VEHICLE SEATS

**Simon Bauer and Josef Wittmann, Bruckmuhl, Germany, assignors to Georg Fritzmeier KG, Grobhelfendorf, Germany**

**Filed Dec. 27, 1966, Ser. No. 604,755**

**Int. Cl. B60n** *1/02*

**U.S. Cl. 297—308** **6 Claims**



A seat structure of the type wherein the seat may be displaced to an out of the way position realtive to its normal in-use position, comprising a seat having a first suspension member fixedly mounted therein and slidably engaging a second suspension member which is resiliently suspended from an upright support means, the first suspension member normally being supported by the second one but being upwardly slidable relative thereto in order to become completely disengaged therefrom.

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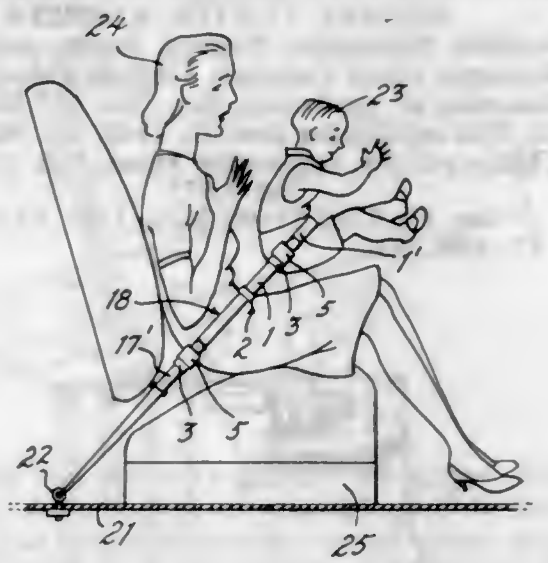
## 3,480,325
## VEHICLE SAFETY BELT MEANS FOR INFANT OR CHILD

**Howard A. Kramer, 12 Willow Terrace, Willow Terrace Apartments, Chapel Hill, N.C. 27514**

**Filed July 25, 1967, Ser. No. 655,853**

**Int. Cl. B60r** *21/10;* **A47d** *15/00;* **A62b** *35/00*

**U.S. Cl. 297—385** **3 Claims**



A safety seat belt means for restraining an infant or child on the lap of an adult seated in an air, land or sea vehicle, or the like, is provided by an auxiliary seat belt which is releasably attachable to at least one, and preferably both, of the individual belts of a conventional adult type lap seat belt means.

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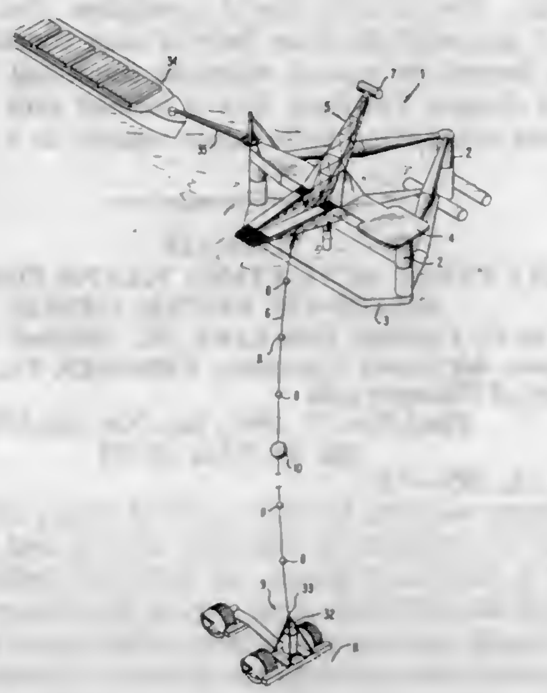
## 3,480,326
## MECHANICAL DEEP SEA NODULE HARVESTER

**George W. Sheary III, Bethlehem, and James E. Steele, Quakertown, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware**

**Filed Dec. 18, 1968, Ser. No. 784,718**

**Int. Cl. E02f** *7/00*

**U.S. Cl. 299—8** **4 Claims**



Bottom crawler traverses marine floor under control of floating vessel. Crawler is provided with wheels having radially extending treads which penetrate the ocean floor and collect solid material therebetween. The solid material is jetted out of the treads by high pressure water, passed over a grizzly, and delivered to a separator for further classification. Large solids fall to the bottom of the separator, while smaller solids and water are pumped out of the top of the separator. Another pump in riser pipe communicating between crawler and floating vessel creates fast upwardly moving stream of water entraining large solids from bottom of separator and transporting said solids to floating vessel.

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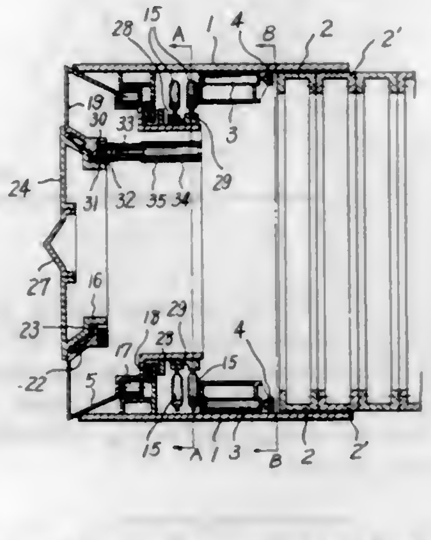
### 3,480,327
## EXCAVATION TYPE SHIELD WITH CONCENTRIC ROTARY CUTTER BARRELS

**Kunijiro Matsushita, Nagoya, Japan, assignor to Kumagai Gumi Company Limited, Fukui, Japan**
**Continuation of application Ser. No. 527,224, Feb. 14, 1966. This application June 13, 1968, Ser. No. 740,770**
**Claims priority, application Japan, Feb. 19, 1965, 40/9,577**
**Int. Cl. E21d** *23/00;* **E21c** *1/10, 35/02*
**U.S. Cl. 299—33** **1 Claim**



A rotary head tunneling machine adapted for excavating tunnels comprising a slidably advancing shield rotatably supporting at its front end a cutting barrel. The slidably advancing shield serves to withstand the reaction force exerted thereto by the friction produced between the tunnel force and the shield and is short in length and light in weight and makes it possible to rotatably support at its front end the cutting barrel for excavating the tunnel and assemble at its rear end cover rings in a simple and easy manner. The cutting barrel comprises two concentric barrel elements, the front face of each consists of a disc plate formed by several segments connected together by radial flanges. The front face is formed with radially extending slits having knife edges secured to a side of the slits.

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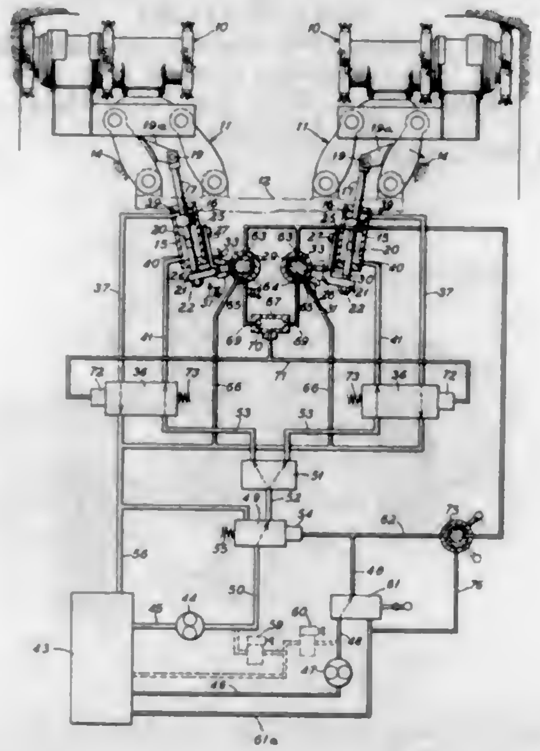
### 3,480,328
## OSCILLATING ACTUATING MEANS FOR MINING HEADS OF RIPPER MINER

**Melvin G. Carlson, Oak Lawn, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Nov. 7, 1967, Ser. No. 681,175**
**Int. Cl. E21c** *25/08*
**U.S. Cl. 299—71** **9 Claims**

Mining machine having a pair of rotary mining heads which are oscillatably movable toward and from each other in horizontal planes. An individual hydraulic cylinder for each mining head, forms the power means for oscillatably moving the mining heads toward and from each other. The circuit to the hydraulic cylinders includes a sensing valve associated with each mining head, which senses the end of oscillatory movements of the mining heads and reverse the oscillatory forces to the mining heads. A response delay valve is provided to hold the mining head which reaches the end of its oscillatory movement in an outward direction first, in a fixed position until the other mining head reaches the end of its oscillatory movement in an outward direction. Both mining heads reverse their directions simultaneously at the outer ends of their paths of travel, and any deviations in synchronization of the mining heads, caused by hard inclusions in the mine face are corrected at the end of each outward oscillatory stroke of each mining head.



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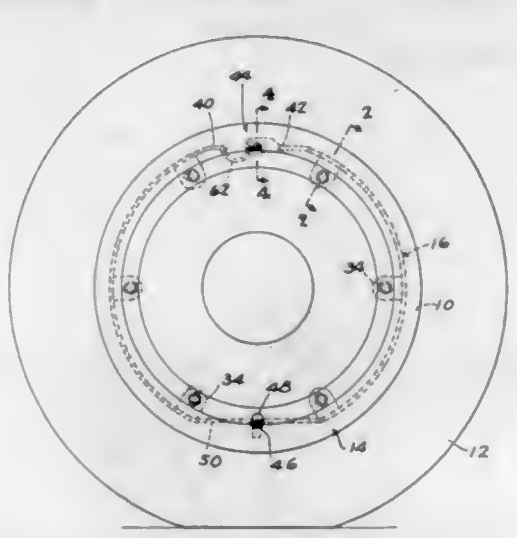
### 3,480,329
## WHEEL COVER

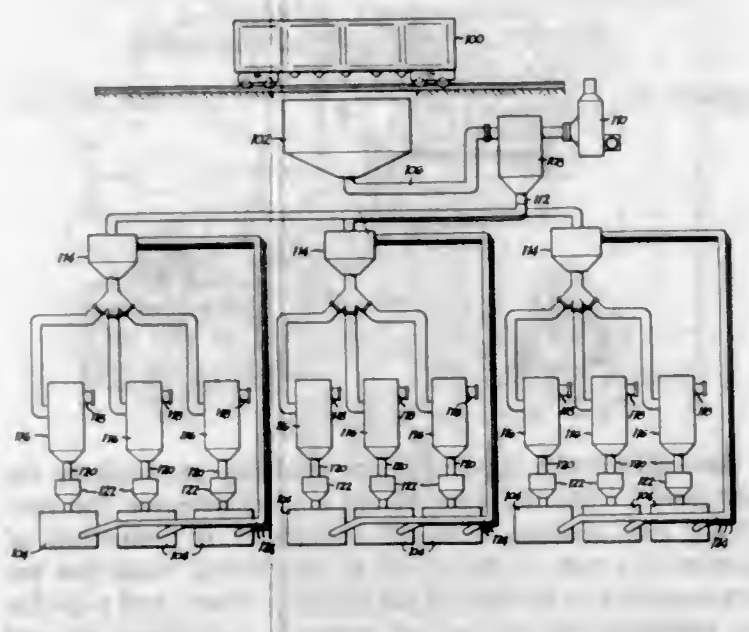
**Edwin E. Foster and Thomas E. Foster, Austin, Tex., assignors of one-half to Edwin E. Foster**
**Continuation-in-part of application Ser. No. 685,382, Nov. 24, 1967. This application Jan. 6, 1969, Ser. No. 789,251**
**Int. Cl. B60b** *7/06*
**U.S. Cl. 301—37** **28 Claims**



A vehicle wheel cover having a circumferentially expandable ring member mounted on the rear side thereof and a rotary toggle mechanism for contacting and expanding the ring member. The cover is adapted to be placed against a wheel cover and the toggle mechanism actuated to expand the ring member into tight frictional engagement with an annular surface on the rim of the wheel to retain the cover on the wheel.

### 3,480,330
## DUST COLLECTOR

**Gene Hirs, Birmingham, and Alfred H. Stein, Southfield, Mich., assignors to Hydromation Engineering Company, Livonia, Mich.**
**Continuation-in-part of application Ser. No. 542,546, Apr. 14, 1966. This application Feb. 8, 1967, Ser. No. 621,094**
**Int. Cl. B65g** *53/04;* **B01d** *46/02*
**U.S. Cl. 302—28** **4 Claims**



A dust collector of the dry bag type is provided in which dust laden gas flows downwardly over air permeable filter tubes, with the gas only flowing into the tubes and upwardly to a discharge point. Dust deposits on the exterior of the tubes and is periodically blasted off by exploding the tubes with compressed air. The dust settles to a lower discharge point, and this setting is aided by the downward flow of gas over the filter tubes so that both fine and coarser particles settle to the discharge point without substantially altering the distribution of particle sizes. Because this distribution remains unchanged, the dust collector can be used as part of a system for bulk handling and conveying of powder material wherein powder discharged from one dust collector can be passed through another dust collector without altering the distribution of particle sizes. In a spray coating application, powder is passed through a dust collector and is fed to spray coating apparatus. Excess or overspray powder is returned to the inlet of the dust collector to be passed through the system again.

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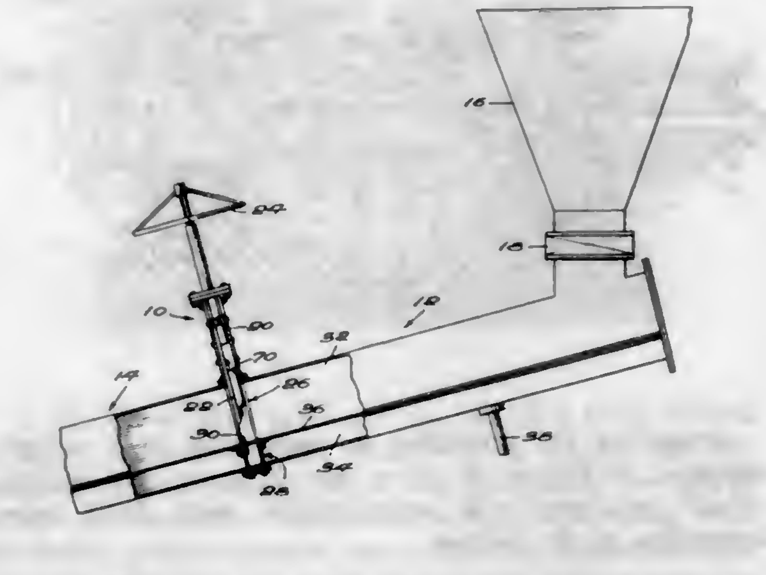
### 3,480,331
## FLUIDIZING CONVEYOR APPARATUS

**Norman L. Freeman, Jr., and Bruce J. Frazier, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware**
**Continuation of application Ser. No. 594,831, Nov. 16, 1966. This application Apr. 3, 1968, Ser. No. 718,634**
**Int. Cl. B65g** *53/18, 53/46*
**U.S. Cl. 302—29** **4 Claims**

A conveyor system having a gate valve for metering the flow of fluidized material along a conveyor. The fluidized conveyor has a transverse partition which extends longitudinally of an enclosed conveyor section. The partition is gas permeable and divides the interior of the conveyor section into a material conveying chamber above the partition and a gas chamber or plenum below the partition. Gas flows through the plenum chamber from one end to the other of the conveyor section, and since the partition is gas permeable, the gas flows upwardly through the partition with sufficient velocity to cause the pulverulent material to become fluidized. The conveyor is usually arranged in a sloping position so that the fluidized material flows from the upper end to the lower end of the conveyor section. A gate valve is provided between adjacent ends of two conveyor sections for metering the flow of fluidized material along the conveyor. The valve includes a continuous passage that is aligned with the plenum chamber of each conveyor section, and a material conveying passage which is aligned with the material conveying chamber of each conveyor section. The gate valve is very thin and has a blade which moves vertically to adjust the size of the passage through which the fluidized material flows. Resilient springs on the blade urge the plate against the valve seat to minimize leakage of material between the edges of the valve plate and the seat. A rigid non-permeable plate separates the gas passage from the fluidized material passage in the gate valve assembly and forms a rigid stop for the gate valve blade when it is closed.



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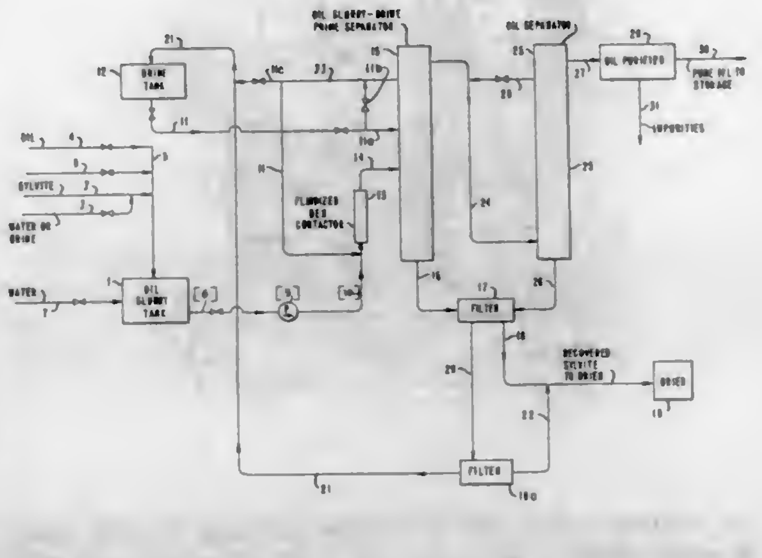
### 3,480,332
## USE OF WATER TO IMPROVE SEPARATION OF SOLIDS FROM SLURRIES WITH OIL

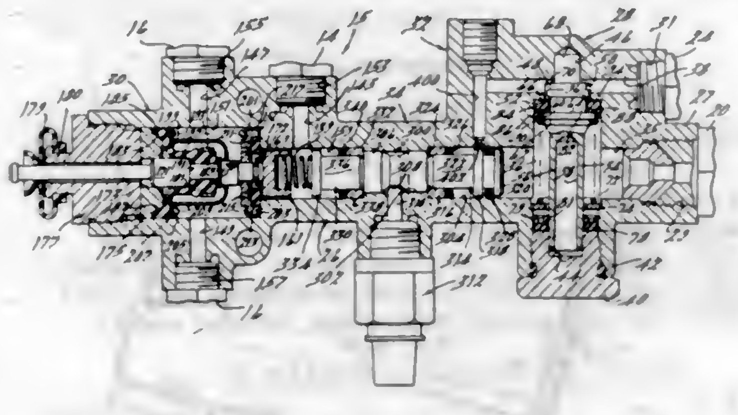
**Calvin J. Kuhre, Kensington, and Ronald K. June, Pleasant Hill, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**Filed July 19, 1967, Ser. No. 654,416**
**Int. Cl. B65g** *53/04*
**U.S. Cl. 302—66** **15 Claims**



An improved method of recovering water-soluble solid particles from an oil slurry by contacting the oil slurry with an aqueous solution of an electrolyte comprising treating the water-soluble solid particles with a small amount of an aqueous solution prior to, during or after the formation of the oil slurry.

### 3,480,333
### BRAKE FAILURE INDICATOR

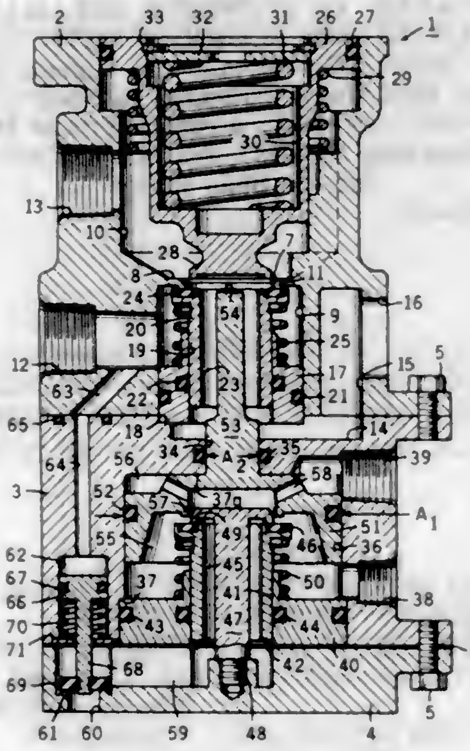
**William Stelzer, Bloomfield Hills, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware**
**Filed Mar. 4, 1968, Ser. No. 710,200**
**Int. Cl. B60t** *17/22*
**U.S. Cl. 303—6** **18 Claims**



Apparatus for providing an indication to a vehicle operator of failure of either the front or rear brakes, which apparatus will automatically reset itself upon correction of the failure.

### 3,480,334
### CONTROL VALVE

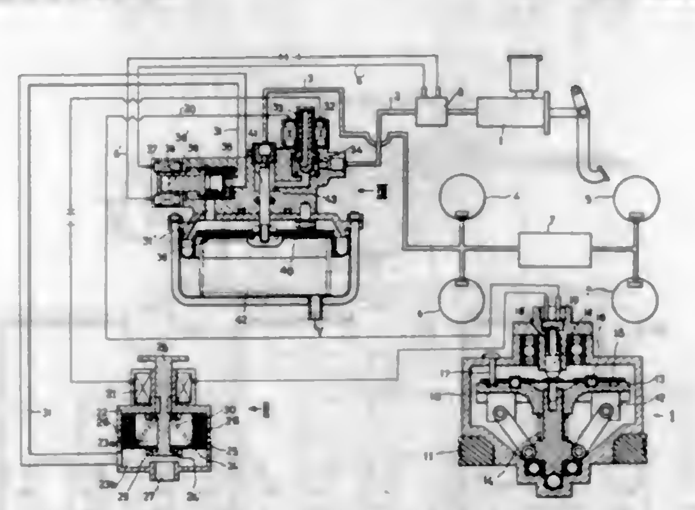
**Oliver B. Cruse, Florissant, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware**
**Filed Mar. 29, 1968, Ser. No. 717,299**
**Int. Cl. B60t** *15/16, 17/02*
**U.S. Cl. 303—13** **29 Claims**



A control valve having means movable therein from a normal position effecting the application through said control valve of fluid pressure supplied thereto toward another position isolating the supplied and applied fluid pressures to effect the exhaustion of the applied fluid pressure, and means movable in said control valve in response to a control fluid pressure to obviate the exhaustion of the applied fluid pressure.

### 3,480,335
### ANTI-SKID BRAKE APPARATUS FOR A VEHICLE

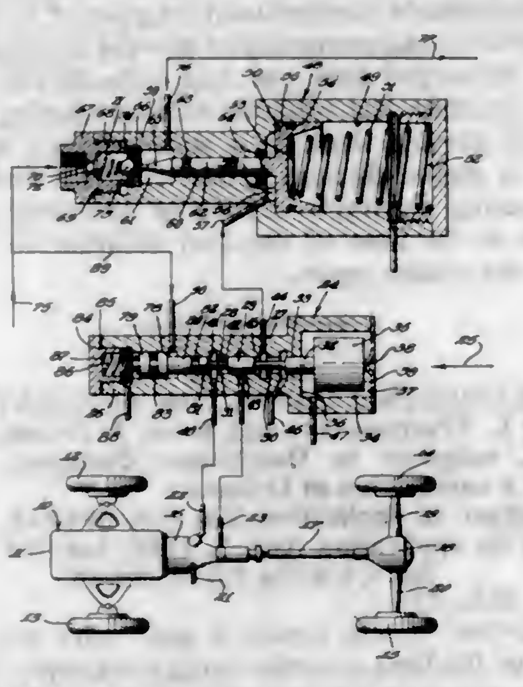
**Masami Inada, Kariya, Japan, assignor to Aisin Seiki Kabushiki Kaisha, Kariya, Aichi Prefecture, Japan**
**Filed July 3, 1967, Ser. No. 650,878**
**Claims priority, application Japan, July 5, 1966, 41/43,983**
**Int. Cl. B60t** *8/06*
**U.S. Cl. 303—21** **2 Claims**



Anti-skid brake apparatus for vehicles, particularly for automotive vehicles, comprising a skid detector for producing and sending a signal responsive to reduction of number of r.p.m. of the wheel to the critical value just before resulting in locking of the running wheel, and a device for reducing the brake oil pressure according to said signal from the skid detector.

### 3,480,336
### HYDRAULIC ACTUATED SKID CONTROL DEVICE

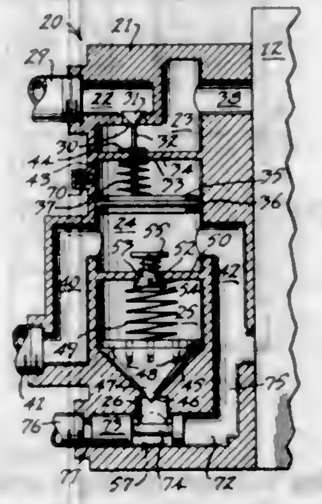
**Hubert M. Clark and Gilbert H. Drutchas, Birmingham, Mich., assignors to TRW, Inc., Cleveland, Ohio, a corporation of Ohio**
**Filed Nov. 27, 1967, Ser. No. 685,885**
**Int. Cl. B60t** *8/06*
**U.S. Cl. 303—21** **12 Claims**



A wheel acceleration control device having means for sensing the linear acceleration of the vehicle and comparing the sensed linear acceleration with the angular acceleration of the vehicle wheels. Should the deceleration rates so sensed deviate beyond permissible limits, the sensing device enables an actuation mechanism for controlling the rate of acceleration of the vehicle wheels, in particular, an anti-skid brake device utilizing transmission hydraulic governor pressure as an indicator of wheel deceleration and utilizing said governor pressure to resist the inertial motion of a linear acceleration mass. Should the governor pressure drop more rapidly than desirable, indicating wheel lock, the linear acceleration mass overcomes the governor pressure and opens the transmission system pressure directly to a fluid actuator for closing off the normally open coupling between the master brake cylinder and the wheel brake motor means.

### 3,480,337
### BRAKE RELEASING DEVICE FOR A RAILWAY AIR BRAKE SYSTEM

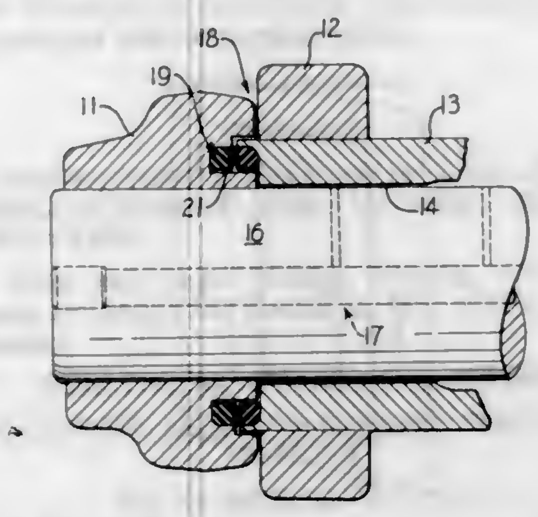
**Marvin E. Cook, 3800 Creekside Drive,**
**Nashville, Tenn. 37211**
**Filed July 2, 1968, Ser. No. 741,949**
**Int. Cl. B60t** *15/46*
**U.S. Cl. 303—72** **10 Claims**



A brake releasing device for a railway air brake system including a bleeder line communicating the train line with the brake cylinder and an auxiliary line communicating the auxiliary reservoir and the triple valve, a check valve in the bleeder line normally closing the bleeder line when the train line pressure is normal and adapted to open the bleeder line when the brake cylinder pressure exceeds the train line pressure, and an auxiliary valve adapted to open the auxiliary line when the train line pressure is at least sufficient to actuate the triple valve and adapted to close the auxiliary valve when the train line pressure is less than sufficient for actuating the triple valve.

### 3,480,338
### SEALS FOR TRACK LINK ASSEMBLIES

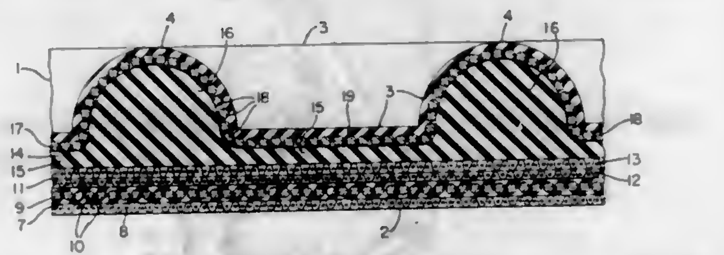
**Donald F. Durham and Duane L. Burk, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California**
**Filed Nov. 13, 1967, Ser. No. 682,412**
**Int. Cl. B62d** *55/26;* **F16j** *15/38, 15/54*
**U.S. Cl. 305—11** **4 Claims**



A seal assembly disposed in an annular recess formed by a track link and bushing of a track link assembly comprises a pair of thin frustoconical spring washer seals with their outer edges urged into angular sealing engagement by resilient members respectively bonded thereto. To provide for continuous, long-life sealing operation, that portion of the annular recess which contains the seal assembly is generally symmetrical.

### 3,480,339
### BELT TRACK FOR VEHICLES

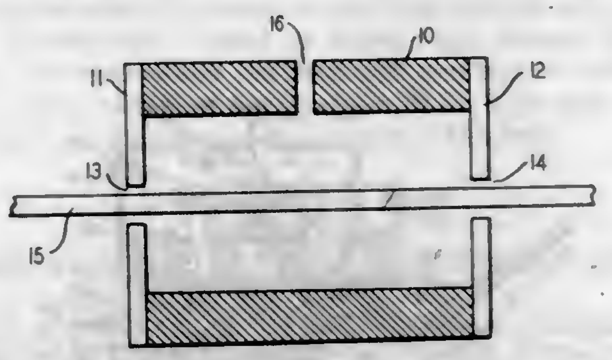
**Ralph W. Kell, Lincoln, Nebr., assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio**
**Filed Feb. 1, 1968, Ser. No. 702,395**
**Int. Cl. B62d** *55/24*
**U.S. Cl. 305—35** **15 Claims**



A flexible endless belt track for use on a track vehicle having a substantially flat drive cover, a transversely corrugated ground-engaging cover, and containing two spaced layers of transversely extending non-metallic cords such as textile cords separated by a layer of elastomeric-like material. One layer of cords substantially follows the contour of the transverse corrugations and the resulting beam or column effect attained by the spacing of the cord imparts a significant degree of transverse rigidity to the belt. The elastomeric layer may also contain a multitude of short lengths of flexible filamentary material which may be oriented generally in a transverse direction to provide additional transverse stiffness.

### 3,480,340
### GAS BEARING

**Edward Eisner, Gillette, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**
**Filed Sept. 26, 1967, Ser. No. 670,608**
**Int. Cl. F16c** *17/16, 39/04*
**U.S. Cl. 308—5** **3 Claims**

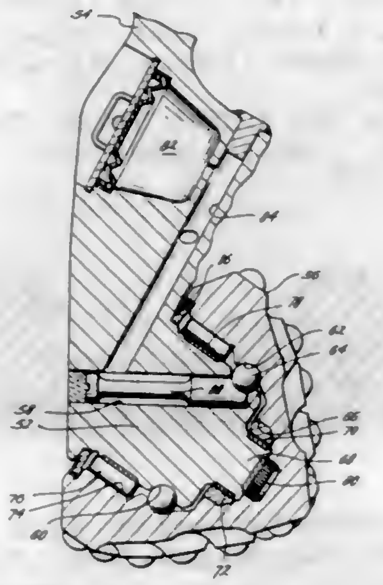


The specification describes a form of gas bearing useful primarily for supporting small wires. The gas flow, rather than supporting the wire directly, creates a lift via the bernoulli effect, which is distributed around the wire to maintain it spaced from the bearing surface.

### 3,480,341
### FRICTION BEARING

**James L. Hickernell, Houston, Tex., assignors to G. W. Murphy Industries, Inc., Houston, Tex., a corporation of Texas**
**Filed Oct. 16, 1967, Ser. No. 675,424**
**Int. Cl. F16c** *19/00, 29/00;* **E21b** *9/08*
**U.S. Cl. 308—8.2** **6 Claims**

An improved friction bearing which in its preferred form is applied to a conical cutter-type earth boring drill bit and includes a sintered tungsten carbide bushing held in compression by the cutter, the tungsten carbide particles before sintering have a size range of 0.8 to 6 microns, the bushing engaging a tungsten carbide bearing surface on the shaft, the tungsten carbide particles forming said surface initially having a size of minus 30 mesh with a substantial portion of the particles having a size of minus 40 mesh. This abstract is neither intended to define the invention of the application which, of course, is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.



### 3,480,342

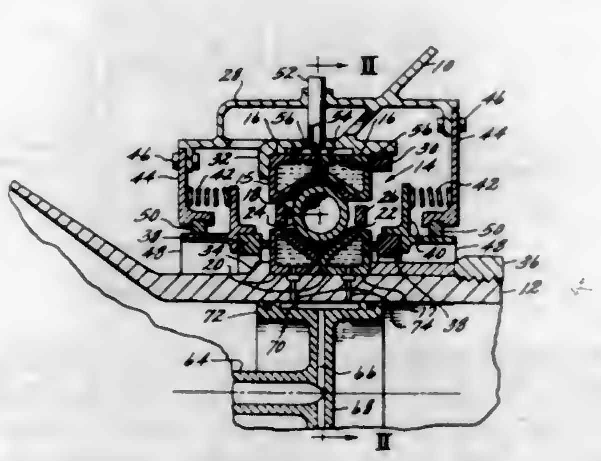
### SHAFT JOURNALS

**Lawrence B. Venable, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York**

**Filed Sept. 22, 1967, Ser. No. 669,770**

**Int. Cl. F16c** *1/24, 3/14, 3/16*

**U.S. Cl. 308—187** **8 Claims**



A roller bearing having compositely formed inner and outer races through which coolant fluid is circulated to maintain a minimum temperature level. Coolant for the inner race is circulated to the bearing rollers to provide lubrication therefor. The bearing is disposed in a stationary sump, into which the lubricant is discharged and from which it is drained to prevent any positive fluid pressure from being built up therein. The rotating shaft and stationary sump, are sealed by seals which engage the cooled, inner bearing race.

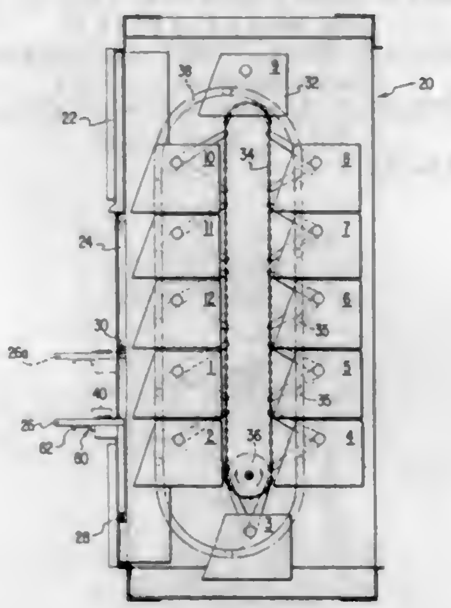
### 3,480,343
### AUTOMATIC TWO-POSITION POSTING MECHANISM

**Roy E. Kanitz, Williamsville, N.Y., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**

**Filed Mar. 20, 1968, Ser. No. 714,503**

**Int. Cl. A47b** *81/00, 77/08;* **A47f** *3/08*

**U.S. Cl. 312—223** **19 Claims**



An orbital filing cabinet having carrier bins that are movable past a posting table that is variably located at an access opening. A shoot bolt type of latch is placed in a first or a second position corresponding to the position of the posting table. Carrier bin selection buttons control a circuit for moving a selected bin to a point on said orbit that is adjacent the posting table in either of its positions. This is accomplished by placing a multipole double throw table position switch in series circuit between each selection button and the control circuit. The table position switches are operative in accordance with the position of the shoot bolt to cause a selected bin to be located in the access opening corresponding to the posting table position associated with the shoot bolt position.

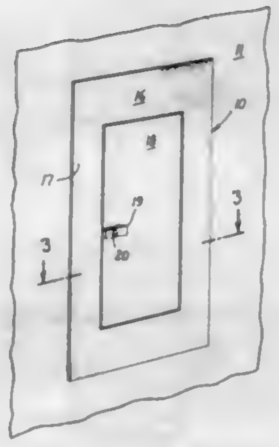
### 3,480,344
### CONCEALED FRONT FASTENER FOR ELECTRICAL POWER DISTRIBUTION PANELBOARDS

**Lawrence C. Goodridge, Bristol, Conn., assignor to General Electric Company, a corporation of New York**

**Filed June 24, 1968, Ser. No. 739,250**

**Int. Cl. A47b** *67/02;* **H02g** *3/08*

**U.S. Cl. 312—242** **7 Claims**



A concealed front cover or "trim" fastener for electrical panelboards, comprising a clamping arm pivotally supported on a bracket carried by the inner surface of the front cover adjacent a door opening therein, and an operating member pivotally supported on the inner surface of the front cover for operating the clamping member to clamping position against a flange of the panelboard enclosure, the operating member being accessible only through the door opening in the front cover.

### 3,480,345

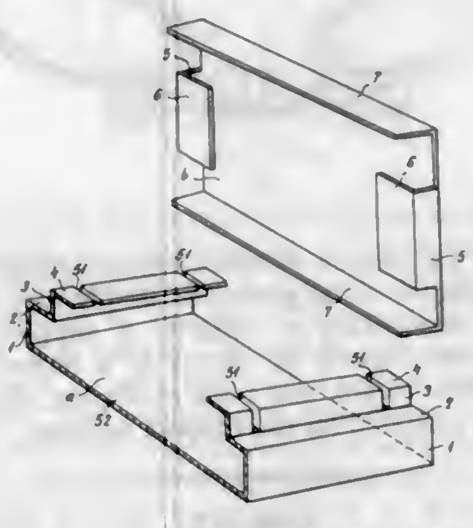
### COMPOSITE SPACE-DEFINING STRUCTURE

**József Török, Budapest, Hungary, assignor to Keripar Kereskedelmi Berendezeseket es Gepeket Gyarto Vallalat, Budapest, Hungary**

**Filed Feb. 23, 1968, Ser. No. 707,641**

**Int. Cl. A47b** *47/00*

**U.S. Cl. 312—257** **4 Claims**



The invention relates to a composite space-defining structure to be assembled of elements which include top and bottom end elements each having edges stepped twice upwards and twice inwards at right angles thereto, and terminating in free edges formed with slots. The space-defining structure has further side elements with edges at right angles on two opposite ends and with edges stepped at right angles at two opposite sides. The stepped edges of the side elements are situated only in the midsection of the element, beginning at a distance from the ends corresponding to the height dimension reduced by the plate thickness of the first step of each end element, whereas the dimensions normal to the plane of the side element of the stepped edges thereof are the same as the distance between the slots of the end element and the side edges thereof. The structure has at least one locking frame locking the end and side elements together.

### 3,480,346

### REPRODUCTION APPARATUS AND SCREEN ARRANGEMENT FOR MOVING PICTURE THEATERS

**Edgar Reitz and Paolo Nestler, Munich, Germany, assignors to Insel-Film GmbH & Co., a corporation of Germany**

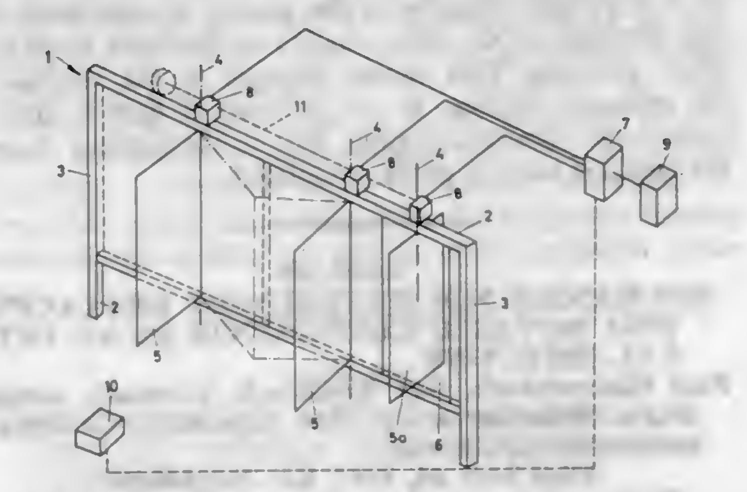
**Filed Dec. 22, 1966, Ser. No. 603,948**

**Claims priority, application Germany, Dec. 23, 1965, J 29,710**

**Int. Cl. G03b** *21/56, 31/00*

**U.S. Cl. 350—120** **10 Claims**

A motion picture screen has movable sections which are pivotable about an axis in the plane of the screen. The movable sections are driven by a motor which is controlled by a programmed signal such that movement of the screen sections is synchronized with the motion picture film being projected. Speakers are arranged to provide directional sound.



### 3,480,347
### OPTICAL DEVICE FOR PROTECTION AGAINST LASER BEAMS

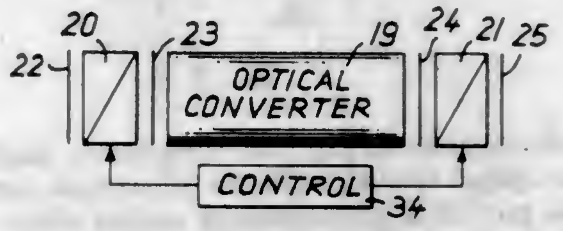
**Conrad Walter, Hamburg-Poppenbuttel, and Siegfried Eberwein, Wedel, Holstein, Germany, assignors to Licentia Patent-Verwaltungs G.m.b.H., Frankfurt am Main, Germany**

**Filed Feb. 16, 1967, Ser. No. 616,706**

**Claims priority, application Germany, Feb. 18, 1966, L 52,959**

**Int. Cl. G02f** *1/26, 1/30*

**U.S. Cl. 350—160** **5 Claims**



An optical protective device including an optical converter with afterglow effect positioned in the light beam path between a light entrance aperture and a light exit aperture. A pair of shutters are positioned on opposite sides of the optical converter, and the shutters are alternately opened and closed to admit laser beams to the optical converter while the light exit aperture is blocked, and to admit afterglow beams through the light exit aperture while the light entrance aperture is blocked.

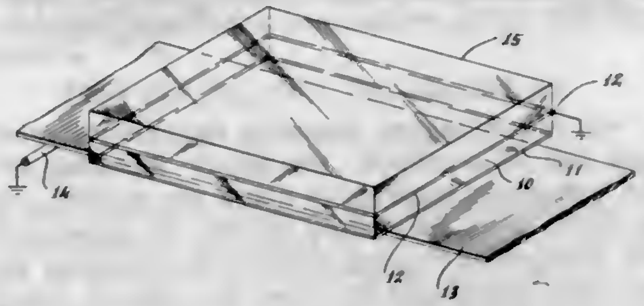
### 3,480,348
### APPARATUS FOR USE IN PHASE MODULATING A BEAM OF LIGHT

**Kendall Preston, Jr., New Haven, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York**

**Filed Dec. 16, 1964, Ser. No. 418,701**

**Int. Cl. G02f** *1/16*

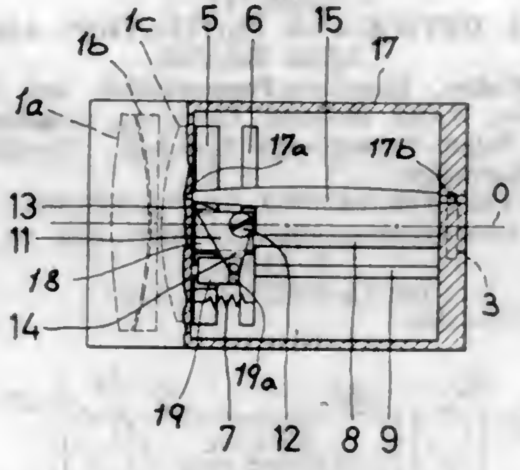
**U.S. Cl. 350—161** **10 Claims**



An apparatus for use in modulating the phase of a beam of light. A layer of piezo crystal material having a reflective coating on one side is excited by means of a recording tape having field producing particles arranged in a pattern. Because of the pattern arrangement, certain portions of the layer change in thickness more than other portions. This causes changes in the contour of the reflective coating. In use, a beam of light is directed toward the reflective coating. Due to the contour changes the reflected beam is phase modulated.

### 3,480,349
### MECHANISM FOR DIFFERENTLY DISPLACING TWO MOVABLE COMPONENTS IN AN OPTICAL OBJECTIVE

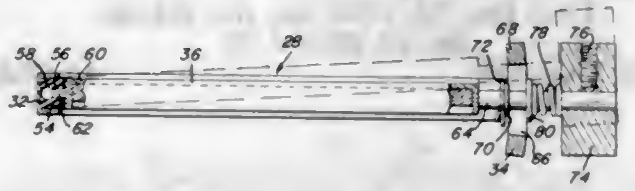
**Paul Himmelsbach, Bad Kreuznach, Germany, assignor to Jos. Schneider & Co., Bad Kreuznach, Germany, a corporation of Germany**
**Filed May 24, 1967, Ser. No. 640,862**
**Claims priority, application Germany, June 2, 1966, Sch 39,060**
**Int. Cl. G02b** *15/14*
**U.S. Cl. 350—187** **4 Claims**



Optical objective having two components displaceable along an optical axis with relative differential motion designed to provide a predetermined optical effect, one of these components being freely movable and being coupled with the other component by an elastic linkage biased in one axial direction; a counter-vailing force is created by a cam follower which coacts with a stationary cam and is movably mounted on one component while bearing upon the other component at a point whose distance from the first component varies in different axial positions of that first component.

### 3,480,350
### THREE-WAY VEHICLE MIRROR

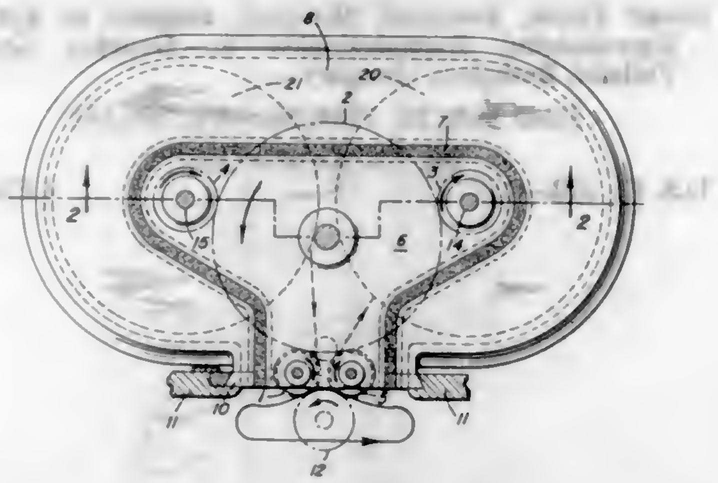
**Robert L. Hamby, Dodge City, Kans., assignor of fifty percent to Sam M. Caughron, Dodge City, Kans.**
**Filed Sept. 15, 1965, Ser. No. 487,371**
**Int. Cl. B60q** *1/30*
**U.S. Cl. 350—304** **3 Claims**



A rear vision mirror assembly for exterior mounting on the side of a vehicle, the mirror including a main frame adjustably oscillatable about an upright axis and from which three upstanding mirrors are supported, one of the three mirrors being stationarily supported relative to the main frame and the other two mirrors being supported from the main frame for individual angular adjustment about both a horizontal axis and a vertical axis relative to the main frame.

### 3,480,351
### CASSETTES AND CAMERAS EQUIPPED THEREWITH

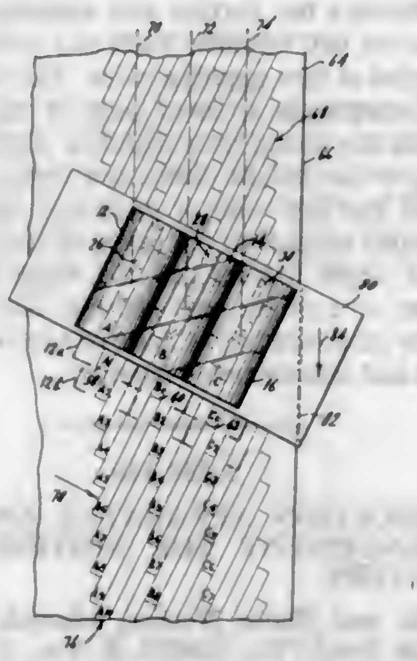
**Otto Blaschek, Munich, Germany, assignor to Arnold & Richter KG, Munich, Germany**
**Continuation-in-part of application Ser. No. 457,071, May 18, 1965. This application June 27, 1968, Ser. No. 740,706**
**Claims priority, application Germany, May 27, 1964, A 46,153**
**Int. Cl. G03b** *31/00, 23/02*
**U.S. Cl. 352—35** **7 Claims**



A cassette for motion picture cameras including means for sound damping noise generated by the film advancing means and comprising a cassette, a support member mounted in the cassette by means of a noise-insulating, light-tight buffer means, and noise producing, film advancing elements mounted on the support member.

### 3,480,352
### SCANNING ASSEMBLY FOR PRODUCING ANIMATED IMAGES

**Jacob Z. Deninson and Joseph H. Deninson, both of 21 W. 86th St., New York, N.Y. 10024**
**Filed Dec. 12, 1966, Ser. No. 600,819**
**Int. Cl. G03b** *41/00, 35/00, 21/00*
**U.S. Cl. 352—81** **10 Claims**



A scanning assembly wherein successive pictures in a motion sequence are reduced transversely, divided into a series of spaced strips and reproduced on a carrier in the form of a band extending parallel along one edge of the carrier, and a scanner composed of a row of multiple cylinders is caused to traverse the band on the carrier in such a manner as to assemble optically the pictures represented by the series of strips in such vision-retention succession to produce an animated image.

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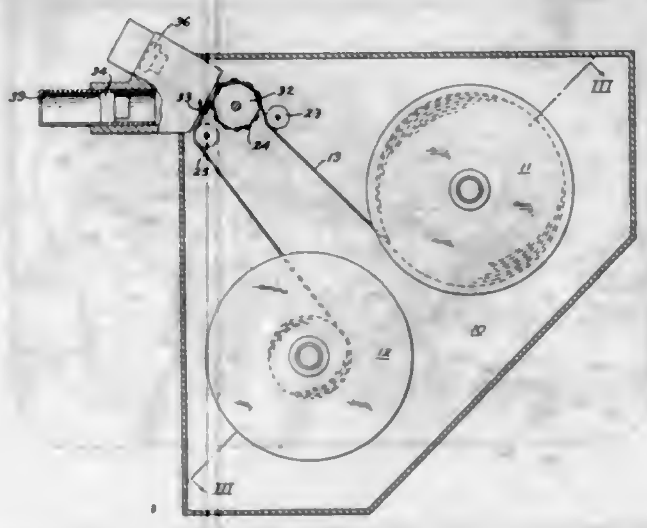
### 3,480,353
### REFLECTING PRISM CAMERA

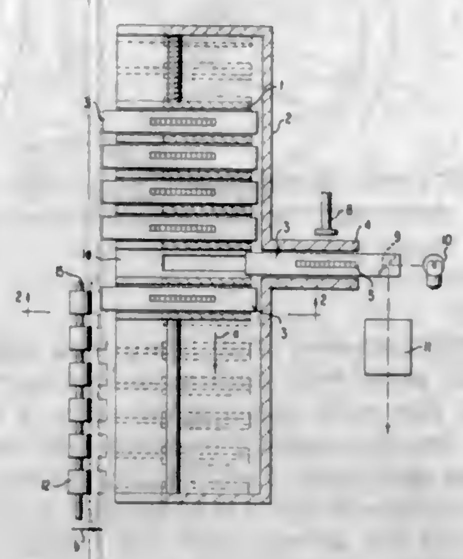
**Willard E. Buck, Santa Clara, Calif., assignor, by mesne assignments, to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware**
**Filed May 25, 1966, Ser. No. 552,880**
**Int. Cl. G03b** *41/06, 41/00*
**U.S. Cl. 352—108** **6 Claims**



A continuous film motion cine camera in which optical compensation is provided by a multi-faceted mirror mounted for rotation on a common shaft with a film-driven sprocket to provide inherent synchronization of image and film motion. The optical compensation components include a relay lens and a corner mirror reflector arrangement for reimaging a first image formed by an objective lens onto the moving film with the appropriate speed and orientation. A film take-up reel for transporting and storing the film strip is driven by a motor through a magnetic clutch and flywheel arrangement.

### 3,480,354
### AUTOMATIC MAGAZINE CHANGING TYPE PROJECTOR WITH AUTOMATIC REWINDING MEANS

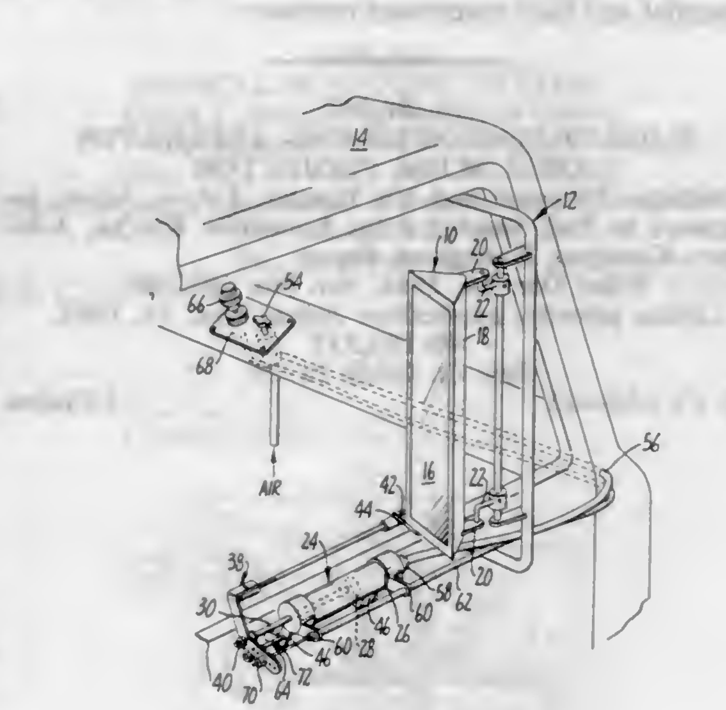
**Susumu Fukuda, Nishinomiya-shi, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha, Ashigara-Kamigun, Kanagawa, Japan**
**Filed Aug. 22, 1967, Ser. No. 662,377**
**Claims priority, application Japan, Aug. 30, 1966, 41/57,142**
**Int. Cl. G03b** *21/02*
**U.S. Cl. 352—123** **2 Claims**



A motion picture projector of the type utilizing film magazines is provided with automatic magazine changing and automatic reel rewinding mechanisms. A projector body has an elongated housing which mounts a movable magazine loading frame for movement transversely past a protruding portion of the body. The magazines may be fed one at a time from the loading frame to the protruding portion where a film drive and projection system cooperate with the magazine. After projection the take-up reels of all the magazines in the magazine loading frames are rewound simultaneously by a friction rewind mechanism. A friction drive mechanism is utilized to move each magazine serially from the magazine loading frame into the protruding portion of the projector housing.

### 3,480,355
### PNEUMATICALLY POWERED REMOTE CONTROLLED MIRROR WITH CONTROLLABLE LIMIT STOP

**Edward M. Smith, Hayward, Calif., assignor to Bigge Drayage Company, a corporation of California**
**Filed Nov. 2, 1967, Ser. No. 680,067**
**Int. Cl. G02f** *3/00;* **F01b** *9/02*
**U.S. Cl. 350—289** **1 Claim**

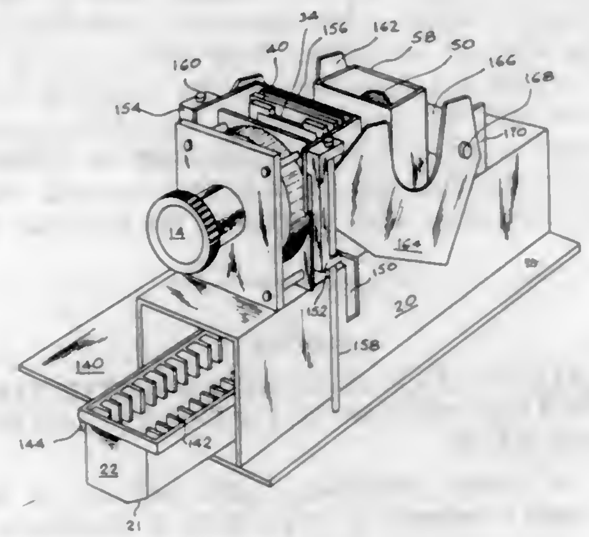


A remote controlled mirror is driven by a pneumatic powered piston rod. An arm attached to the piston rod connects to the mirror to accomplish movement of the mirror. Controls are remote from the mirror. A remote controlled stop limits the stroke of the piston.

### 3,480,356
### AUDIOVISUAL APPARATUS

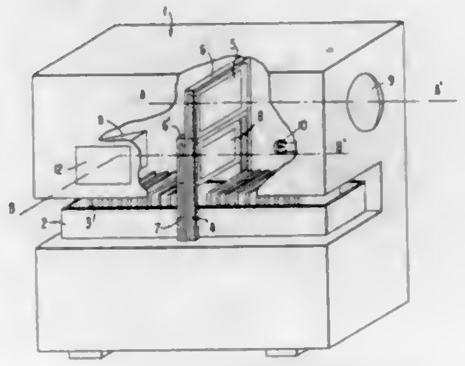
**Panayotis C. Dimitracopoulos, Montreal, Quebec, Canada, assignor to The A.V. Corporation, N.V., Curacao, Netherlands Antilles, a corporation of the Netherlands Antilles**
**Filed Feb. 10, 1967, Ser. No. 615,140**
**Int. Cl. G03b** *31/06*
**U.S. Cl. 353—19** **7 Claims**

An audiovisual apparatus for the simultaneous synchronized optical projection of an image and the reproduction of its associated sound from an audiovisual slide having a projectable transparency surrounded by a spiral sound track. The audiovisual apparatus accepts, beneath its optical projection axis, a compartmented magazine containing a series of such audiovisual slides from which they are individually pulled up, optically projected and reproduced, and then returned to the magazine, in a sequential and fully automated manner.



### 3,480,357
### SLIDE-FILM CONFIRMING APPARATUS OF A SLIDE PROJECTOR

**Tomotsugu Tsuyama and Yo Tanaka, Tokyo, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Ashigara-Kamigun, Kanagawa, Japan**
**Filed Dec. 14, 1966, Ser. No. 601,746**
**Claims priority, application Japan, Dec. 14, 1965, 40/101,237**
**Int. Cl. G03b** *21/26*
**U.S. Cl. 353—21** **3 Claims**

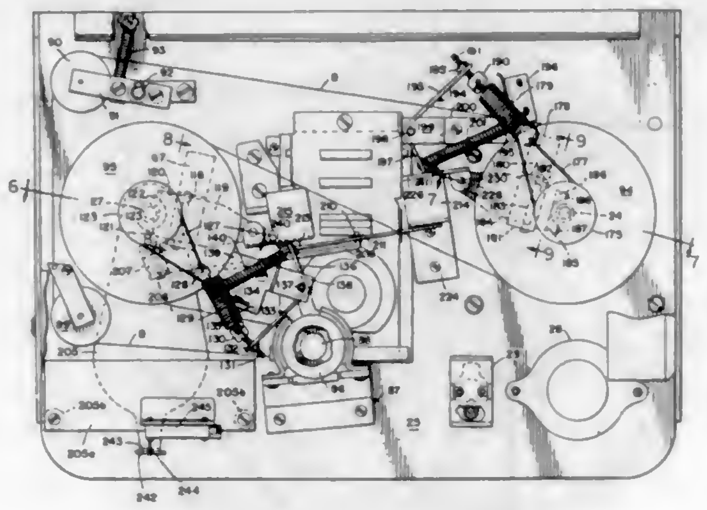


A slide film positioning apparatus used in a slide projector to simultaneously position successive slides into a first normally projecting position and a second confirming position. First and second slides are moved into a first and second predetermined position, respectively, so as to ensure the second slide being properly oriented before actually being projected on a viewing screen. The slides are positioned by means of a linearly movable push-up frame controlled by a rotating disc, associated cam and a reciprocating lever arm which engages the cam as it travels in a circular path.

### 3,480,358
### FILM STRIP REELING APPARATUS

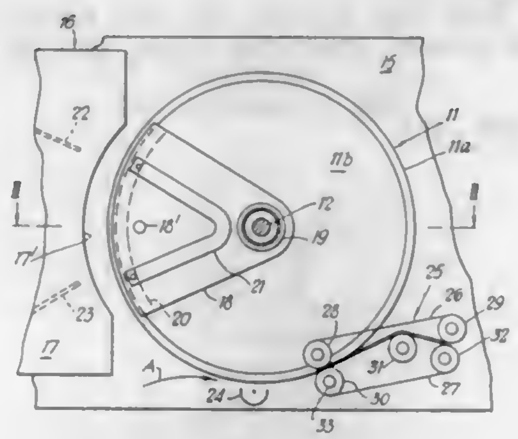
**Philip J. Brownscombe, Millington, N.J., assignor to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware**
**Filed Feb. 1, 1966, Ser. No. 524,123**
**Int. Cl. G03b** *23/12*
**U.S. Cl. 353—26** **17 Claims**

Film reeling apparatus for feeding in either direction a film strip across a light-projection head. The advancement of the film in either direction is achieved through a mechanism embodying a slip clutch drive for the spindles, the drive being applied to the spool upon which the film is being wound, and a flexible band brake operating on the spindle for each spool in a manner whereby the brakes are substantially released for rapid advancement to the film in either direction or are slowly released whereby the friction of the slip clutch drive barely overcomes the frictional resistance of the band brake so that the film advances slowly.



### 3,480,359
### REPROGRAPHIC APPARATUS

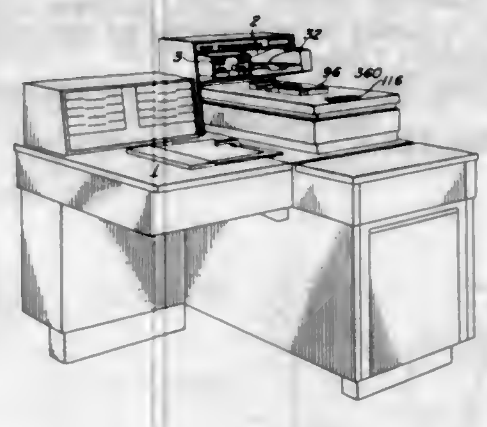
**Louis F. W. Lawes, Walton-on-Thames, Nicholas Gilbert Shreeve, Weybridge, and Nandor Mihalik, Walton-on-Thames, England, assignors to Arlside Limited, Maidenhead, Berkshire, England, a British company**
**Filed June 14, 1967, Ser. No. 645,976**
**Claims priority, application Great Britain, June 16, 1966, 26,954/66**
**Int. Cl. G03g** *15/00*
**U.S. Cl. 355—3** **11 Claims**



A rotatably-mounted drum is provided with an electrostatographic peripherial surface. A developer unit is provided with side walls adjacent the ends of the drum. A stationary bearing member is mated with the edge portions of the developer. Each bearing member is formed with an arcuate end which is concentric to the surface of the drum. At the arcuate ends and laterally thereto the bearing member a sealing strip is frictionally engaged with the drum. A biasing spring located between the side walls and the bearing plate press the sealing strip against the drum thereby preventing the escape of the developer material.

### 3,480,360
### XEROGRAPHIC COPYING APPARATUS

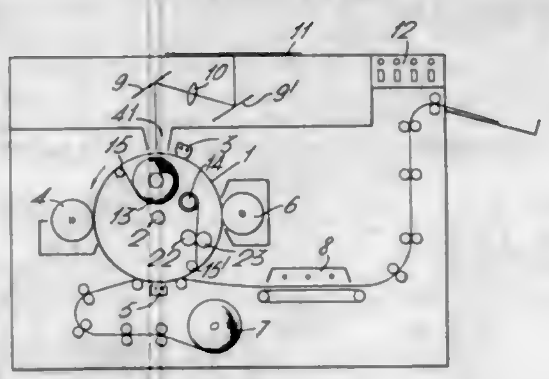
**Donald G. Mallory, Penfield, and Raymond J. Ashton and Robert H. Liva, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York**
**Filed Oct. 13, 1966, Ser. No. 586,477**
**Int. Cl. G03g** *5/00;* **G03b** *27/52, 27/70*
**U.S. Cl. 355—8** **12 Claims**



A multi object plane, copying apparatus for reproducing optical images on an image plane. The image reproduced is of data from an object at one of the object planes while optical elements within the apparatus cut off image light rays from the other object planes. The object planes are positioned to present different magnifications of the objects thereon at the image plane.

### 3,480,361
### PHOTOGRAPHIC COPYING MACHINE

**Tatsumi Doi, Teruo Mineshima, and Etsuro Saito, Tokyo, Japan, assignors to Konishiroku Photo Industry Co., Ltd., a corporation of Japan**
**Filed Jan. 30, 1967, Ser. No. 612,396**
**Claims priority, application Japan, Feb. 3, 1966, 41/5,879**
**Int. Cl. G03g** *15/00*
**U.S. Cl. 355—16** **8 Claims**

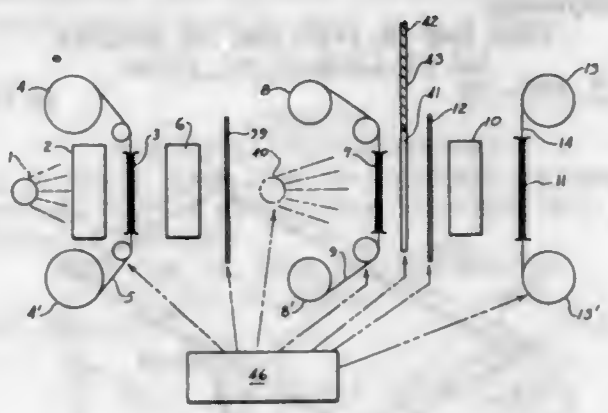


A photographic copying machine includes a drum housing a roll of light sensitive paper. The drum rotates at selective times to feed the light sensitive paper to its surface for the copying of documents. The drum includes an internal supply roll, a take-up spool, and a pair of slits in its periphery.

### 3,480,362
### OPTICAL PRINTER

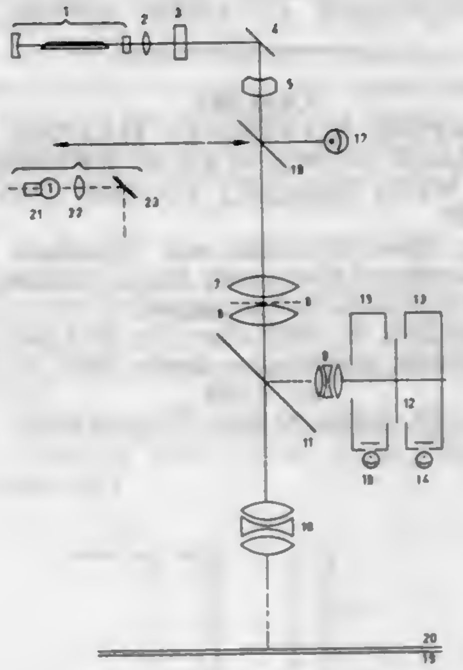
**Jean Veran Dejoux, Paris, France, assignor to Nicolas Reisini, New York, N.Y.**
**Filed Dec. 14, 1966, Ser. No. 601,584**
**Int. Cl. G03b** *27/52, 13/24, 13/26*
**U.S. Cl. 355—40** **9 Claims**

An optical printing device for recording photographically on a single photosensitive film strip a plurality of superimposed images projected from pictures previously recorded on two or more film strips. The film strips are advanced independently and may be advanced simultaneously or in any desired sequence. A single beam of light is used to project the image contained on the first film strip to the second film strip and to pass through the second film strip to project the image of the two film strips, in superposed relation, onto the photosensitive film strip.



### 3,480,363
### OPTICAL SCANNING SYSTEM

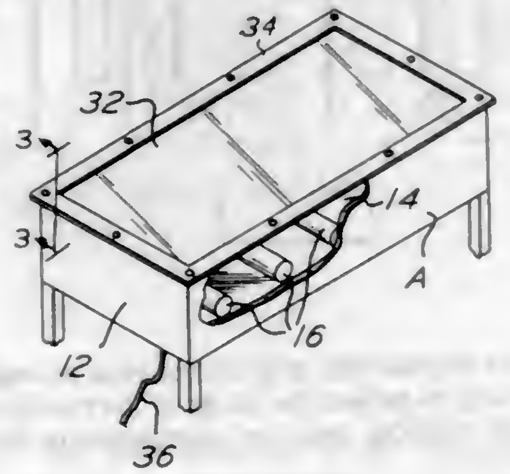
**David J. Stewart, 52 Oaklands Drive, Wokingham, Berkshire, England**
**Filed Dec. 5, 1966, Ser. No. 599,008**
**Claims priority, application Great Britain, Dec. 9, 1965, 52,419/65**
**Int. Cl. G03b** *27/76*
**U.S. Cl. 355—68** **5 Claims**



An optical scanning and reproduction system using a laser radiation source and a reflecting surface rotatable about multiple axes to generate a light spot raster. A beam splitter directs the light beam to both a scanning plane and a reproduction plane. A first photo-electric radiation sensor, placed at the scanning plane, is responsive to modulated radiation resulting from scanning the "original," and directs a first signal to a photoreproduction computer. A second signal is derived from a second photoelectric radiation sensor in the path of a beam split from the main beam path. A beam modulating device is located in the main beam path and receives a signal from the photoreproduction computer derived from the first and second signals. The modulated beam is projected to the reproduction plane by a lens system.

### 3,480,364
### MULTILAYER ELECTROSTATIC COPYBOARD AND LIGHT PANEL

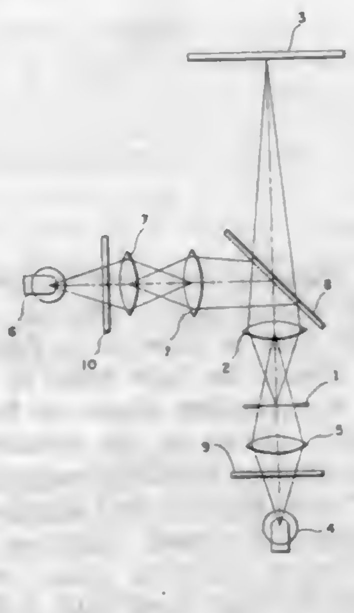
**Guy F. Barnett, Warminster, Pa., assignor to The Simco Company, Inc., Lansdale, Pa., a corporation of Pennsylvania**
**Filed July 28, 1967, Ser. No. 656,914**
**Int. Cl. G03b** *27/62, 27/04*
**U.S. Cl. 355—75** **11 Claims**



An electrostatic copyboard, preferably of the back-lighted type, in which a high voltage D.C. potential is applied to a conductive surface having a dielectric insulative overlay against which articles, such as paper, cardboard, and other conductive and non-conductive components are held by electrostatic forces. In the present board or panel, the insulative overlay includes a plurality of dielectric layers which are superimposed upon each other in face-to-face relationship but spaced from each other by approximately 100 atomic spacings.

### 3,480,365
### PHOTOGRAPHIC MATERIALS HAVING A PICTURE IMAGE WHICH MAY BE REVERSED OR VARIED WITH RESPECT TO THE CONTRAST THEREOF

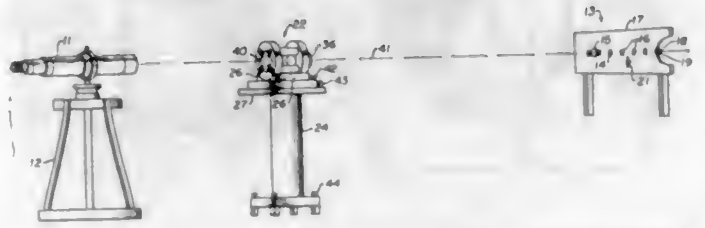
**Shingo Ooue, Hiroyuki Ueda, and Masakazu Hashiue, Ashigara-Kamigun, Kanagawa, Japan, assignors to Fuji Photo Film Co. Ltd., Tokyo, Japan**
**Filed Feb. 8, 1967, Ser. No. 614,643**
**Claims priority, application Japan, Feb. 9, 1966, 41/7,549**
**Int. Cl. G03b** *27/32, 27/02, 27/76*
**U.S. Cl. 355—77** **1 Claim**



High silver content photo-sensitive material having a high specular reflectant and a high transmission density characteristics, particularly a method of polishing the surface of the photo-sensitive material after forming of an image thereon so as to present a specular reflectant, then controlling the ratio of light intensity between the transmission illumination light and the light reflected by the image itself.

### 3,480,366
### METHOD AND APPARATUS FOR DETERMINING IMAGE ASYMMETRY IN OPTICAL LENSES

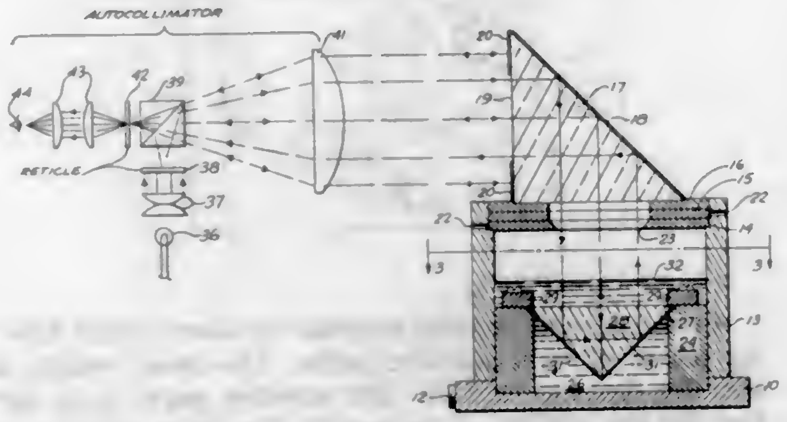
**Duane U. Norgren, Orinda, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Sept. 16, 1966, Ser. No. 580,569**
**Int. Cl. G01b** *11/30*
**U.S. Cl. 356—124** **3 Claims**



A precision technique and apparatus for determining the azimuthal image distortion of an optical lens. The lens is mounted in a special camera which is accurately successively positioned at predetermined rotational intervals about the optical axis of the system to multiply-expose a film to a fixed rectilinear test pattern through different sectors of the lens. Distortion is then measured from separations of the super-imposed test pattern on the developed film.

### 3,480,367
### TRIAXIAL OPTICAL ALIGNMENT

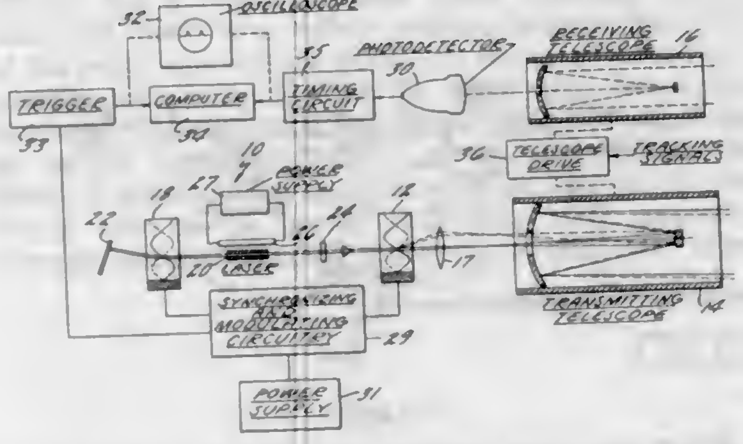
**Hoyt L. Husted, Downey, and Emil L. Van Deventer, Santa Ana, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware**
**Filed May 23, 1966, Ser. No. 552,004**
**Int. Cl. G01b** *11/26*
**U.S. Cl. 356—150** **13 Claims**



A precision alignment unit for obtaining angular alignment about three orthogonal axes with a single line of sight is described. In a preferred embodiment an autocollimator is employed to illuminate the instrument and measure the angular alignment. In another embodiment the information concerning alignment about the three axes is projected from the instrument. In the preferred embodiment light reflected from a surface of a prism back to the autocollimator provides information concerning alignment about two orthogonal axes normal to the line of sight between the autocollimator and the instrument. Information concerning alignment about an axis along the line of sight is provided by reflecting light through a pool of transparent liquid so that refraction by the liquid deflects the light beam by an amount bearing a known relation to any misalignment.

### 3,480,368
### ANGLE SENSING SYSTEM USING A DIVERGING-CONVERGING SCAN

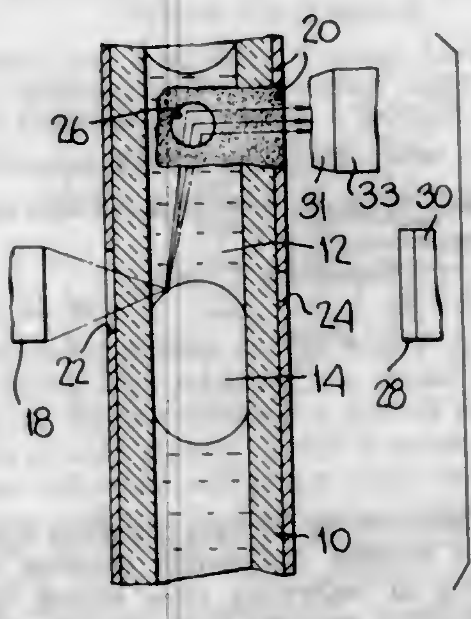
**Robert K. Erf, Glastonbury, Edward C. Wingfield, Wethersfield, and Herbert G. Aas, East Hartford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Aug. 13, 1965, Ser. No. 486,584**
**Int. Cl. G01b** *11/26;* **G01c** *3/08*
**U.S. Cl. 356—172** **7 Claims**



An angle sensing system in which a laser beam is rotated in a diverging-converging spiral scan by an ultrasonic cell to illuminate a target, and the time between receipt of the signals reflected from the target is measured to determine the position of the target within the field of view independent of target range.

### 3,480,369
### METHOD AND APPARATUS FOR THE COLORIMETRIC ANALYSIS OF LIQUID SAMPLES

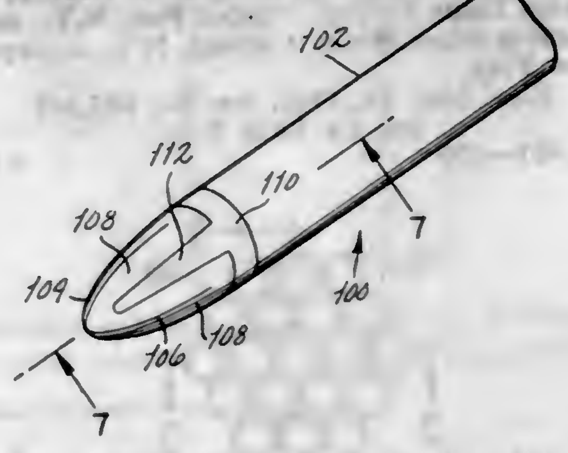
**William J. Smythe, Rye, Morris H. Shamos, New York, and Gary A. Griffin, Yonkers, N.Y., assignors to Technion Corporation, a corporation of New York**
**Filed Feb. 21, 1966, Ser. No. 528,748**
**Int. Cl. G01n** *21/26*
**U.S. Cl. 356—201** **6 Claims**



Method and apparatus are described for the colorimetric analysis of a plurality of liquid samples flowing through a flow cell as a continuous stream which is segmentized by gas segments. The stylus traversal mechanism of a recorder associated with the flow cell is deactivated while each gas segment intercepts the measuring light beam through the flow cell.

### 3,480,370
### WRITING INSTRUMENTS

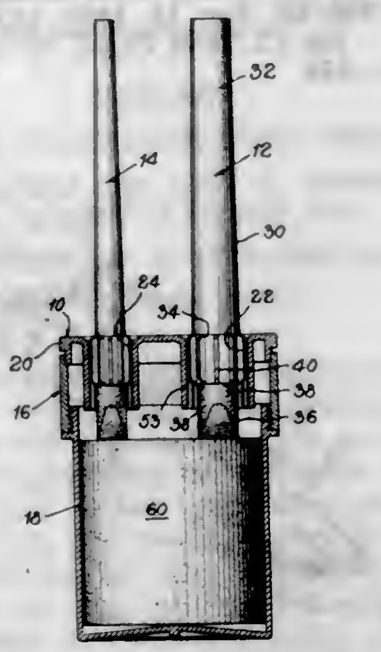
**Harold E. Koeln, Rock Hill, Mo., assignor, by mesne assignments, to Penn Corporation, Princeton, N.J., a corporation of Delaware**
**Filed Jan. 18, 1968, Ser. No. 698,903**
**Int. Cl. B43k** *7/12*
**U.S. Cl. 401—107** **4 Claims**



A writing instrument having a barrel and an ink cartridge shiftably mounted in the barrel and provided at one end with a writing tip. At its end, the barrel has longitudinally extending fingers which close upon themselves and completely shield the writing tip when the cartridge is in its retracted position. A camming surface on the cartridge engages inwardly projecting shoulders on the fingers and spreads the fingers as the cartridge moves to its extended position. Elastomeric or spring metal bands assist in urging the fingers together. In a modified form of the invention the fingers form part of a collet which is shiftable within the barrel.

### 3,480,371
### MARKING APPARATUS INCLUDING MARKING PEN AND INK-DISPENSING RECEPTACLE

**James H. Lee, Walnut Creek, Calif., assignor to Dymo Industries, Inc., Emeryville, Calif., a corporation of California**
**Filed May 7, 1968, Ser. No. 727,248**
**Int. Cl. B43k** *13/00;* **A46b** *17/08*
**U.S. Cl. 401—121** **10 Claims**



Marking apparatus including a marking pen and an ink-dispensing receptacle having an opening for receiving the body of the pen and wherein both the body of the pen and the opening in the receptacle are provided with at least partially complementary ribbed configurations so that any ink which may be wiped from the writing tip of the pen onto the periphery of the opening in the receptacle by insertion or withdrawal of the pen into or out of the receptacle will lie on the crests of the ribs of the opening and will be excluded from the crests of the ribs of the pen body thereby providing an ink-free, finger-grip portion on the body of the pen.

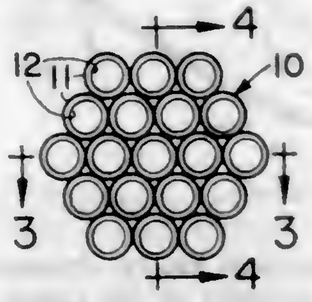
### 3,480,372
### WRITING OR DRAWING INSTRUMENT

**Neal S. Kenny, Horseheads, Douglas A. Warden, Ithaca, and Alan Louis Sapakie, Painted Post, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York**

**Filed Nov. 24, 1967, Ser. No. 685,361**

**Int. Cl. B43k** *8/00*

**U.S. Cl. 401—198** **9 Claims**



An instrument for writing or drawing with ink or a similar fluid and comprising a bundle of relatively minute capillary tubes substantially aligned with each other and joined together at least adjacent the ends of said bundle, one end of such bundle being formed in a wedge, a semi-ellipsoidal, a semispherical or otherwise semispheroidal or similar shape to provide a nib, and a quantity of one of said fluids at least partially filling the capilli or bores of said tubes, such fluid being introduced into said capilli or bores by inserting one end of said bundle in a body of the fluid and thereby at least partially filling said capilli or bores by capillary action.

### 3,480,373
### FANS

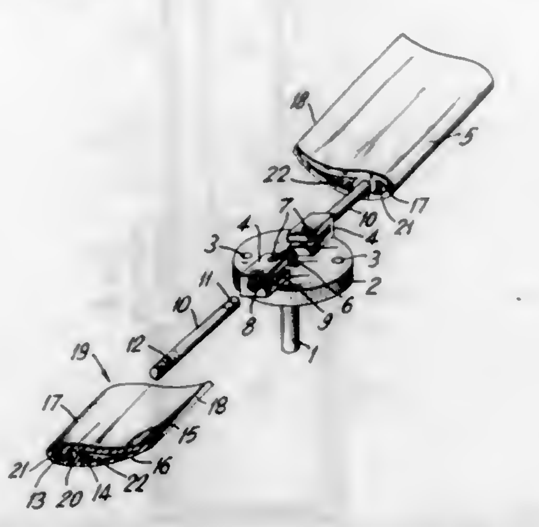
**Edward B. Talbot, Putney, England, assignor to Cooling Development Ltd., Lucerne, Switzerland, a limited company of Switzerland**

**Filed Oct. 3, 1967, Ser. No. 672,608**

**Claims priority, application Great Britain, Nov. 1, 1966, 48,860/66; Apr. 12, 1967, 16,685/67**

**Int. Cl. F04d** *29/34, 29/38*

**U.S. Cl. 416—226** **7 Claims**



Light weight plastic fan blades adapted to be used with a fan impeller. The plastic fan blades are supported on a rod which extends in the longitudinal direction of the blade and protrudes through one end of the blade. The supporting rod may be encased in a plastic longitudinal tube which is fixed to the opposite faces of the fan blade. Alternatively, the supporting rod may be clamped to one or both faces of the fan blade.

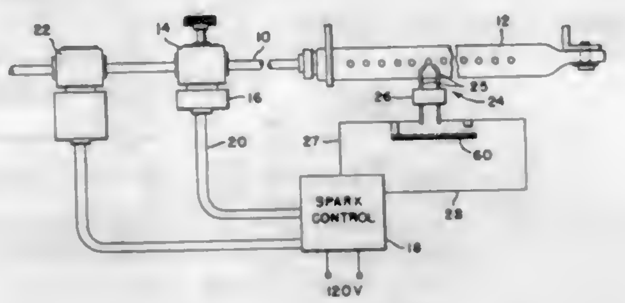
### 3,480,374
### SPARK IGNITION SYSTEM

**John T. Lamb, Mansfield, and Carl L. Anderson, Shiloh, Ohio, assignors to The Tappan Company, Mansfield, Ohio, a corporation of Ohio**

**Filed July 7, 1967, Ser. No. 651,865**

**Int. Cl. F23m** *5/24;* **H02h** *3/18*

**U.S. Cl. 431—66** **4 Claims**



A fail-safe spark ignition system for cooking range burners consisting of circuitry for monitoring spark energy and controlling the gas valve thereby, including a fuse enabling circuit for prevention against circuit malfunctions and spark gap disabling means to eliminate radio interference.

### 3,480,375
### BURNER FOR METALLURGICAL FURNACES

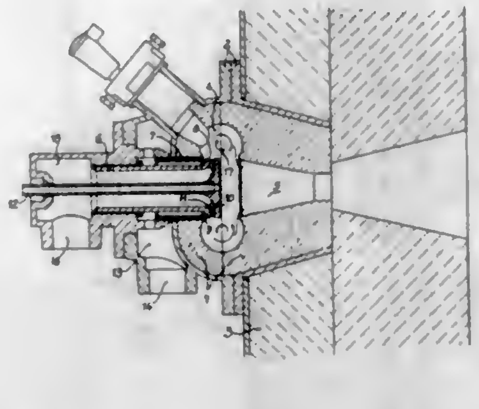
**Richard Sitte, Kleinenbroich, and Günter Willems, Dusseldorf-Heerdt, Germany, assignors to Koppers-Wistra-Ofenbau G.m.b.H., Dusseldorf-Heerdt, Germany**

**Filed Apr. 18, 1968, Ser. No. 722,826**

**Claims priority, application Germany, Apr. 22, 1967, K 62,086**

**Int. Cl. F23d** *15/00;* **F23m** *3/00*

**U.S. Cl. 431—158** **8 Claims**



A burner for heat-treating furnaces comprises a housing which defines a toroidal combustion chamber and a discharge opening of decreasing cross section for admission of combustion products from the chamber into the interior of a furnace. The chamber receives air and gaseous fuel by way of two annular orifices which are spaced from each other in the axial direction of the chamber and discharge gases radially outwardly whereby such gases flow along the internal surface of the housing and are mixed with each other and with burning gases to effect complete combustion of fuel prior to evacuation of resulting hot products by way of the discharge opening.

### 3,480,376
### BURNER FOR PRE-HEATING A REFRACTORY LINED VESSEL

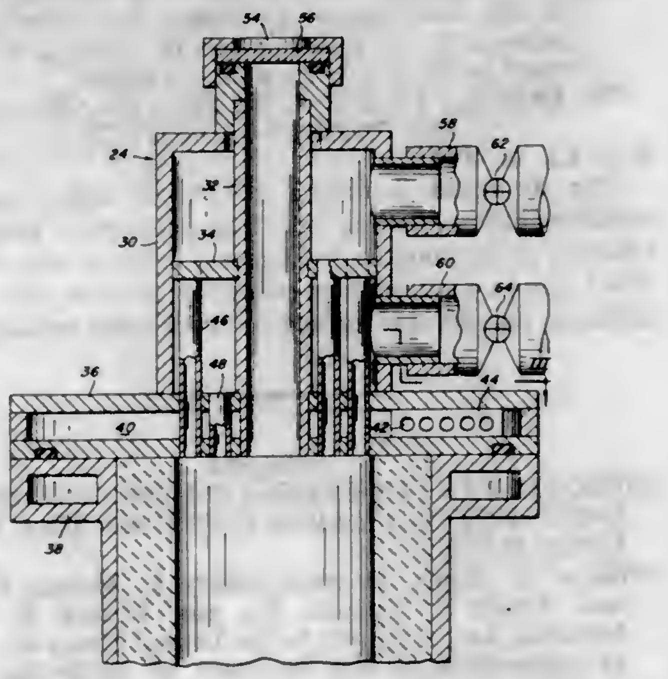
**Richard E. Lyman, Homewood, Ill., assignor to United States Steel Corporation, a corporation of Delaware**

**Original application May 23, 1967, Ser. No. 640,749. Divided and this application June 24, 1968, Ser. No. 739,464**

**Int. Cl. F23d** *13/40*

**U.S. Cl. 431—353** **8 Claims**

A burner for injecting a fluid hydrocarbon fuel and oxygen into a refractory lined vessel including coaxial inner and outer tubes with a partition between the inside of the outer tube and the outside of the inner tubes intermediate their ends dividing the outer tube into a fuel receiving chamber at the end remote from the vessel and an oxygen receiving chamber at the end adjacent the vessel, a collar having spaced transverse walls at the discharge end of the burner with long tubes extending through the partition and spaced walls and short tubes extending through the walls between the long tubes, means for delivering oxygen to the outer tube between the partition and collar, and means for delivering fuel to the outer tube on the inlet side of the partition.



## CHEMICAL

### 3,480,377
### SOLVENT DYEING OF LIVING HUMAN HAIR

**James Ralph Lyons, Hampton, Middlesex, England, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine**

**No Drawing. Filed Apr. 28, 1965, Ser. No. 451,642**

**Claims priority, application Great Britain, May 6, 1964, 18,932/64**

**Int. Cl. A61k** *7/12*

**U.S. Cl. 8—10.1** **4 Claims**

A process for dyeing human hair which comprises contacting the hair with a dyeing composition comprising an aqueous solution, suspension or dispersion of a dye, an organic solvent for the dye, and a dissolved aromatic compound which is solid at the dyeing temperature and acts to increase the rate of uptake of the dye by the hair.

### 3,480,378
### PROCESS FOR DYEING LINEAR POLYESTER FIBER MATERIALS

**Carl Taube and Karl-Heinz Freytag, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation**

**No Drawing. Filed Mar. 10, 1965, Ser. No. 438,749**

**Claims priority, application Germany, Mar. 21, 1964, F 42,390**

**Int. Cl. D06p** *3/52*

**U.S. Cl. 8—39** **9 Claims**

An improved process for the dyeing of synthetic and semi-synthetic fibre materials, e.g. linear polyester with an aqueous liquor containing a dyestuff which is water-insoluble or only slightly soluble in water and having at least one carboxylic acid group, and a volatile amine in an amount sufficient to dissolve the dyestuff; then drying the dyed material and heating it to drive off the volatile amine and leave the free carboxylic acid-containing dyestuff. The method enables the dyeing of hydrophobic synthetic fibres with aqueous solutions of carboxyl-containing dyes which were previously applied by the dispersion method.

### 3,480,379
### TANNING OF LEATHER EMPLOYING SYNTHETIC ANIONIC TANNING AGENTS

**Stanley A. Lipowski, Livingston, and James M. Kelly, Belford, N.J., assignors to Diamond Alkali Company, a corporation of Delaware**

**No Drawing. Original application Aug. 30, 1965, Ser. No. 483,832. Divided and this application May 31, 1968, Ser. No. 739,952**

**Int. Cl. C14c** *3/20*

**U.S. Cl. 8—94.24** **3 Claims**

Processes for pretanning, tanning and retanning leather use an all purpose synthetic tanning agent, which is obtained by condensing formaldehyde and a phenol with a sulfonated condensate of formaldehyde and mixed phenols. The tanning agent is produced by condensing mixed phenols which are a mixture of phenol and lower alkyl phenols with formaldehyde, sulfonating the condensate and thereafter condensing the sulfonated condensate with formaldehyde and a phenol.

### 3,480,380
### COMPOSITE CELLULOSE-WOOL PRODUCTS

**Douglas J. Bridgeford and Albin F. Turbak, Danville, Ill., assignors to Tee-Pak, Inc.**

**No Drawing. Filed Apr. 6, 1966, Ser. No. 540,487**

**Int. Cl. D06m** *13/28*

**U.S. Cl. 8—115.6** **13 Claims**

Wool fibers, yarns, or fabrics are rendered shrink proof by treating with a solution of a decausticized polymeric alcohol xanthate of D.S. greater than 3% and pH less than 13 followed by regenerating the polymeric alcohol as a coating on the wool by heat or by chemical decomposition of the xanthate. The treatment may be preceded by scouring or oxidation or other treatment of the wool fibers to render the same more receptive to the coating or may be provided with a primer coating of an adhesive material or an adhesive material added in admixture with the coating solution.

**3,480,381**

### CELLULOSE-HALOMETHYL METHYL SULFIDE REACTION PROCESS AND PRODUCT

**John V. Beninate, Gretna, Eileen K. Boylston, New Orleans, and George L. Drake, Jr., Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture**

**No Drawing. Filed Mar. 10, 1966, Ser. No. 533,267**
**Int. Cl. D06m** *13/08, 13/28*
**U.S. Cl. 8—120** **7 Claims**

The disclosed invention relates to sulfur containing cellulose ethers, having reducing properties, prepared by reacting halogenated alkyl or aryl sulfides with cellulose. After use in an oxidation-reduction process, the oxidized cellulose can be regenerated to its original reducing state.

**3,480,382**

### CONCOMITANTLY CROSS-LINKING AND IMPARTING STRETCH CHARACTERISTICS TO A CELLULOSIC FABRIC

**William G. Sloan, Metairie, Harry B. Moore, Haraban, and Albert S. Cooper, Jr., and Wilson A. Reeves, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture**

**No Drawing. Filed July 13, 1966, Ser. No. 564,734**
**Int. Cl. D06m** *13/16*
**U.S. Cl. 8—120** **3 Claims**

Immersion of cellulosis fabric in a solution of an alkaline catalyzable cross-linking agent followed by immersion in an alkaline bath of mercerizing strength to concomitantly cross-link and impart stretch characteristics to the fabric.

**3,480,383**

### PROCESS FOR RENDERING WOOL-CONTAINING GARMENTS STABLE TO WATER WASHING AND DRYING

**John F. Krasny, Kensington, and Edward C. Oliva, College Park, Md., assignors to The Wool Bureau, Inc., New York, N.Y., a corporation of New York**

**No Drawing. Continuation-in-part of application Ser. No. 227,728, Oct. 2, 1962. This application Oct. 14, 1964, Ser. No. 403,940**
**Int. Cl. D06m** *3/06*
**U.S. Cl. 8—128** **6 Claims**

Wash-and-wear wool-containing garments are made by constructing a garment from a chemically and mechanically stabilizing wool-containing fabric and dimensionally stable components, wetting the garment with an aqueous solution of a disulfide bond disrupting reducing agent, forming the wetted garment into its desired configuration, subjecting the formed garment to heat and pressing, and drying the garment. The wetting of the garment may be facilitated by the addition of a wetting agent to the solution of the reducing agent.

**3,480,384**

### SELECTIVE REMOVAL OF OXYGEN FROM A HYDROGEN-ETHYLENE STREAM

**Leslie C. Hardison, Chippewa Falls, Wis., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**

**No Drawing. Filed Mar. 14, 1966, Ser. No. 533,843**
**Int. Cl. C01b** *2/00;* **C07c** *11/04*
**U.S. Cl. 23—2** **6 Claims**

1. A method for converting and removing a low oxygen content from a process stream containing at least 20% of both hydrogen and ethylene to substantially preclude ethylene conversion, which comprises, passing such stream into contact with an active oxidation catalyst comprising a noble metal at a temperature above about 650° F. and with sulphur added in an amount from about 1 to about 15 grains per 100 standard cubic feet thereof.

**3,480,385**

### PROCESS FOR GROWING SINGLE CRYSTALS

**Merrill W. Shafer, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Nov. 29, 1965, Ser. No. 510,275**
**Int. Cl. C01b** *9/08;* **C01f** *17/00;* **C01g** *49/06*
**U.S. Cl. 23—20** **5 Claims**

Large, pure single crystals of rare earth and transition element halides or oxides are grown by reduction or oxidation reactions under isothermal conditions. A compound $AB_2$, where A is a metal selected from multivalent rare earth and transition elements and B is an element selected from the halogens and oxygen is heated to its molten temperature and isothermally subjected to an atmosphere of hydrogen, in the case of a reduction reaction, or oxygen where oxidation is desired. The compound AB formed by the reduction or oxidation of $AB_2$ grow as single crystals in the molten compound $AB_2$.

**3,480,386**

### PROCESS FOR ACID DIGESTION OF TITANIFEROUS MATERIALS

**Thomas J. McMahon, Plainfield, N.J., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey**

**Filed Sept. 26, 1967, Ser. No. 670,555**
**Int. Cl. C01g** *23/00*
**U.S. Cl. 23—117** **11 Claims**

The present invention relates to an improved process for digesting titaniferous materials in concentrated sulfuric acid wherein the finely ground titaniferous material is mixed, initially, with an aqueous medium such as water or a dilute sulfuric acid to form a homogeneous slurry of relatively high solids content, and a stream of this slurry is then added continuously to a stream of concentrated surfuric acid, the rate of flow of which is regulated by the flow rate of the stream of slurry.

**3,480,387**

### METHOD FOR PRODUCING GYPSUM PELLETS

**Yoshito Yasutake and Yosisige Fujita, Yamaguchi-ken, Japan, assignors to Central Glass Company, Ltd., Yamaguchi-ken, Japan, a corporation of Japan**

**No Drawing. Filed May 1, 1967, Ser. No. 634,826**
**Claims priority, application Japan, Nov. 15, 1966, 41/74,700**
**Int. Cl. C01f** *11/46;* **C04b** *11/00*
**U.S. Cl. 23—122** **5 Claims**

Crystals of calcium sulfate hemihydrate produced by the so-called wet process, which are very slow to hydrate, are crushed or injured so that they have freshly exposed active surfaces, and immediately thereafter the resulting crystal granules are contacted by water. While thus effecting hydration of these crystal granules, they are pelletized so that very hard pellets of gypsum are obtained.

**3,480,388**

### PREPARATION OF HYDRARGILLITE CRYSTALS

**Max Michel, Sarcelles-les-Rosiers, Val-d'-Oise, France, assignor to Produits Chimiques Pechiney-Saint Gobain, Neuilly-sur-Seine, France**

**No Drawing. Filed May 16, 1966, Ser. No. 550,164**
**Claims priority, application France, May 21, 1965, 17,902**
**Int. Cl. C01f** *7/00*
**U.S. Cl. 23—143** **5 Claims**

The manufacture of fine, separated crystals of hydrargillite having a specific surface area as high as 100 m.²/g. by providing an amorphous alumina gel containing a monovalent anion in the molar ratio to alumina of at least 0.1, digesting the gel at a temperature within the range of room temperature to 60° C. for at least two days under non-dessicating conditions using the digested gel as seed in an aluminate solution in an amount up to 20% by weight based upon alumina in the gel to alumina in the mixture, and separating the hydrargillite precipitated from the mixture.

**3,480,389**

### PREPARATION OF ACTIVE ALUMINA AGGLOMERATES OF HIGH MECHANICAL STRENGTH

**Maxime Graulier, Paris, France, assignor to Produits Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine, France**

**No Drawing. Filed July 1, 1966, Ser. No. 562,076**
**Claims priority, application France, July 9, 1965, 24,121**
**Int. Cl. C01f** *7/02, 7/36*
**U.S. Cl. 23—143** **6 Claims**

The preparation of active alumina agglomerates of high mechanical strength and low active surface consisting of treating pellets of alumina in an autoclave in an acidic medium at a temperature above 100° to 250° C. for a time within the range of 1–20 hours, followed by drying the treated pellets and calcining the dried pellets at elevated temperature.

**3,480,390**

### PROCESS FOR PRODUCING FINELY-DIVIDED PRECIPITATED SILICON DIOXIDE

**Helmut Reinhardt, Hansenweg 7, Frankfurt am Main, Germany, Peter Nauroth, Germanusstrasse 8, Wesseling, Bezirk Cologne, Germany, and Karl Achenbach, Dieburgerstrasse 8, Frankfurt am Main, Germany**

**No Drawing. Filed Jan. 11, 1966, Ser. No. 519,958**
**Claims priority, application Germany, Jan. 13, 1965, D 46,237**
**Int. Cl. C01b** *33/00*
**U.S. Cl. 23—182** **4 Claims**

Finely-divided silicon dioxide with high surface area is obtained by simultaneously introducing an alkali silicate solution and an acid solution into a suitable reaction vessel.

**3,480,391**

### HYDROXYLAMINE SOLUTIONS STABILIZED WITH AN AMIDE OXIME AND METHOD FOR THEIR PREPARATION

**Donald D. Carlos, Crown Point, Ind., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Aug. 24, 1967, Ser. No. 662,859**
**Int. Cl. C01b** *21/14;* **C09k** *3/00*
**U.S. Cl. 23—190** **8 Claims**

Hydroxylamine in aqueous solution stabilized from oxidation deterioration with an amide oxime present in a small amount, usually about .01 to 1 wt. percent based upon the aqueous solution, said amide oxime having about 1 to 10 carbon atoms and molecular weight from about 60 to 200.

**3,480,392**

### HYDROXYLAMINE SOLUTIONS STABILIZED WITH A HYDROXAMIC ACID AND METHOD FOR THEIR PREPARATION

**Donald D. Carlos, Crown Point, Ind., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Aug. 24, 1967, Ser. No. 662,875**
**Int. Cl. C01b** *21/14*
**U.S. Cl. 23—190** **14 Claims**

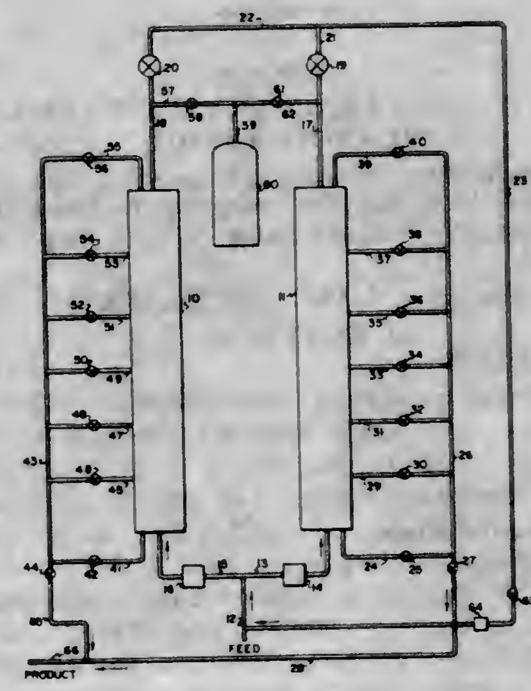
Hydroxylamine in aqueous solution stabilized from oxidation deterioration with a hydroxamic acid present in a small amount, usually about 0.01 to 1 wt. percent based upon the aqueous solution, said hydroxamic acid having about 1 to 10 carbon atoms and a molecular weight from about 61 to 200.

**3,480,393**

### PRODUCT RECOVERY IN A REVERSIBLE VAPOR PHASE CHEMICAL EQUILIBRIUM PROCESS BY MULTIPLE POINT WITHDRAWAL DEPRESSURIZATION

**Thomas M. Stark, Morristown, and Marvin B. Glaser, Scotch Plains, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**

**Filed Jan. 30, 1964, Ser. No. 341,357**
**Int. Cl. C01c** *1/04*
**U.S. Cl. 23—199** **10 Claims**



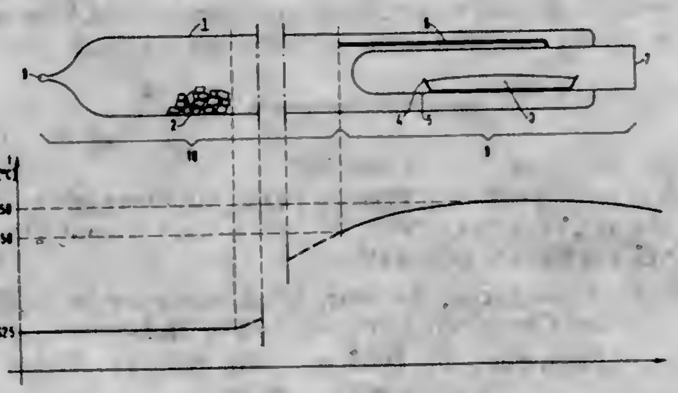
The yield of product in a reversible vapor phase chemical equilibrium process in which the position of equilibrium has been shifted in favor of the products by adsorption of the product onto a selective adsorbent is improved by utilizing a plurality of withdrawal points to depressurize the sorbent bed, This technique minimizes reaction reversal due to product contact with catalyst.

**3,480,394**

### METHOD OF PRODUCING HIGHLY PURE, ESPECIALLY SILICON-FREE, GALLIUM ARSENIDE

**Hans Merkel, Erlangen, and Siegfried Leibenzeder, Erlangen-Buchenbach, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany**

**Filed Sept. 27, 1967, Ser. No. 670,985**
**Claims priority, application Germany, Sept. 30, 1966, S 106,314**
**Int. Cl. C01g** *15/00;* **C01b** *27/00*
**U.S. Cl. 23—204** **4 Claims**



The present invention relates to a method of producing highly pure, particularly silicon-free, gallium arsenide.

The method is characterized by reacting the gallium metal to be used for synthesis with $10^{-1}$ to $10^{-4}$ percent by weight, particularly 0.003% by weight of highly pure silicon. This is subsequently reacted in a quartz vessel, i.e., in the high temperature part of the synthesis ampule which is separated from the low temperature arsenic-containing portion by a diffusion barrier. The reaction occurs above 1238° with arsenic vapor, while maintaining in the high temperature portion a temperature gradient of about 100° C., and removing the added silicon as well as other impurities.

### 3,480,395
### METHOD OF PREPARING EXTRUDED GRAINS OF SILICON CARBIDE

**John C. McMullen, Niagara Falls, N.Y., and Kenneth M. Taylor, Maitland, Fla., assignors to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware**

**Filed Dec. 5, 1967, Ser. No. 688,175**
**Int. Cl. C01b** *31/36*
**U.S. Cl. 23—208** **10 Claims**

A process for producing dense siliconized, silicon carbide abrasive grain which consists of forming an extrudable mix of finely divided silicon carbide, carbon and a suitable temporary binder. The mix is extruded into grains of desired shape and size having a length to diameter ratio of about 2:1. The extruded grains are fed at a controlled rate through a reaction zone maintained at a temperature of between 1800° C. and 2200° C. and having a non-oxidizing atmosphere. Silicon particles are also fed to the reaction zone to provide a source of silicon vapor. The reaction zone is rocked about its longitudinal axis so that the grains are continuously agitated to prevent sintering together of the individual grains as they move through the reaction zone and are siliconized.

### 3,480,396
### GEOCHEMICAL EXPLORATION

**Keith A. Kvenvolden, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York**

**No Drawing. Filed Dec. 1, 1965, Ser. No. 510,978**
**Int. Cl. G01n** *31/06, 31/08*
**U.S. Cl. 23—230** **14 Claims**

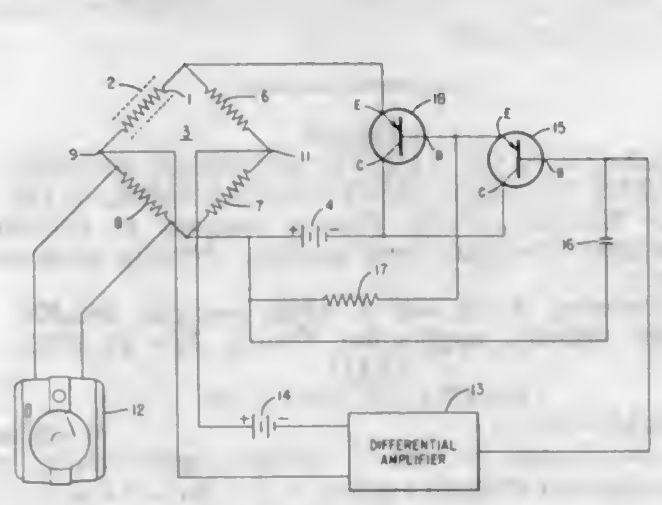
A geochemical exploration technique wherein petroleum source rocks are characterized on the basis of an "acid distribution ratio," i.e., the ratio of relative concentrations of even carbon number fatty acids to odd carbon number fatty acids found in rock samples. Preferably, the acid distribution ratio is determined with respect to fatty acids having more than sixteen carbon atoms and, more desirably, more than eighteen carbon atoms. Where a formation is found to exhibit an acid distribution ratio of 1.3 or less it is indicated as a possible petroleum source rock and a well may be drilled into a reservoir rock formation in fluid communication with the source rock formation.

### 3,480,397
### GAS ANALYSIS METHOD FOR DETERMINING THE OXYGEN CONTENT OF A GAS CONTAINING CARBON DIOXIDE

**Frank A. Baumgartel, Mentor, Ohio, assignor to Bailey Meter Company, a corporation of Delaware**

**Filed Sept. 27, 1965, Ser. No. 490,215**
**Int. Cl. G01n** *27/62*
**U.S. Cl. 23—232** **5 Claims**

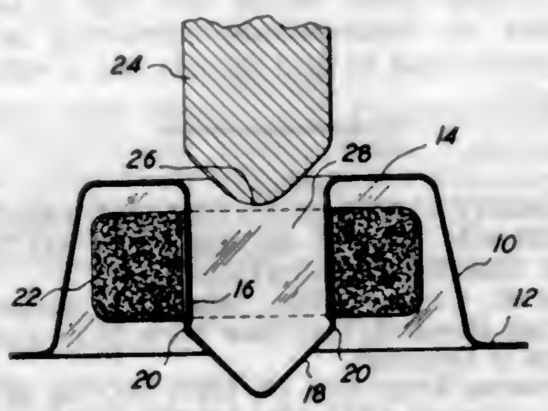
A method for determining the oxygen content of a gas containing carbon dioxide ($CO_2$) by maintaining a heated filament at a constant temperature between 700° F. and 800° F. to minimize the effect of the endothermic $H_2+CO_2=CO+H_2O$ reaction, the $CO_2$ and $H_2O$ thermal conductivity effect and the specific heat effect.



### 3,480,398
### CHEMICAL PACKAGE

**Donald Arthur Hamilton, Pasadena, Calif., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**

**Filed Dec. 26, 1967, Ser. No. 693,401**
**Int. Cl. G01n** *33/16;* **B01l** *3/00*
**U.S. Cl. 23—253** **36 Claims**



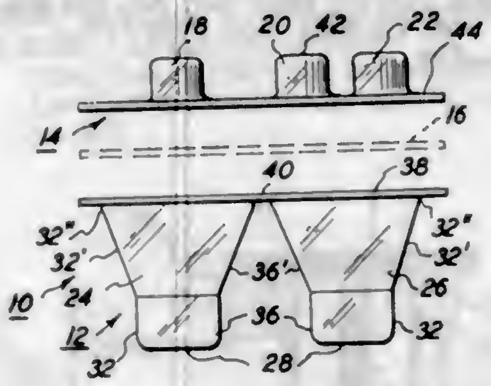
A disposable reaction container comprising a lower section having at least one compartment for the admixing of materials added thereto, an upper section securely mounted on said lower section and having at least one separate reagent storage chamber adjacent each of said compartments, each of said storage chambers having at least one hollow finger extending into said storage chamber from the top portion thereof and adapted for the storage of at least one donut-shaped reagent tablet thereon.

### 3,480,399
### CHEMICAL PACKAGE

**Donald Arthur Hamilton, Pasadena, Calif., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York**

**Filed Dec. 26, 1967, Ser. No. 693,628**
**Int. Cl. G01n** *33/16;* **B01l** *3/00*
**U.S. Cl. 23—253** **27 Claims**

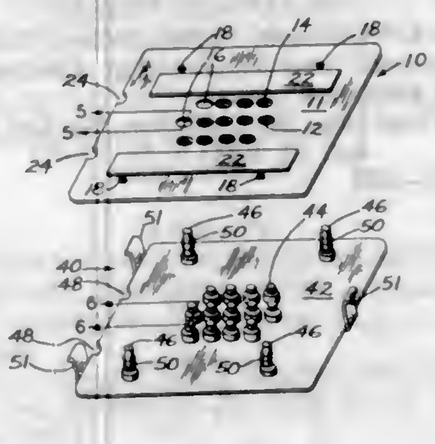
Disposable reaction container comprising a lower section having at least two compartments for the admixing of materials added thereto, an upper section securely mounted on said lower section and having at least one reagent storage chamber in communication with each admixing compartment, one of said admixing compartments having at least one more storage chamber associated therewith than the other of said admixing compartments, and restraining means to prevent the premature movement of prepackaged reagents from said storage chambers.



### 3,480,400
### PLACEMENT DEVICE

**Louis L. Csizmas and Virendra Patel, Elkhart, Ind., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana**

**Filed Mar. 21, 1966, Ser. No. 535,831**
**Int. Cl. B01l** *9/00*
**U.S. Cl. 23—259** **13 Claims**



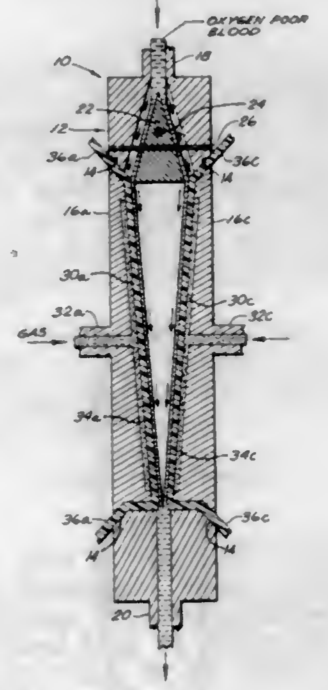
A device for placing at least one reagent-containing transferable article onto a receiving means pursuant to carrying out chemical tests. A plurality of reagent-containing articles can be placed onto the receiving means. The device comprises in combination a positioning means for the reagent-containing transferable articles, a receiving means for the articles and a transferring means for moving the articles from the positioning means to the receiving means. The transferable articles are normally reagent-containing bibulous material discs and the receiving means is normally a gel layer in which the reagents contained in the discs can diffuse once they are placed in contact therewith. The device is of particular utility in conducting immunoprecipitin tests.

### 3,480,401
### BLOOD OXYGENATION APPARATUS

**Allan P. Holm, Long Beach, and Louis J. Raggio, Covina, Calif., assignors to North American Rockwell Corporation**

**Filed Aug. 22, 1967, Ser. No. 662,368**
**Int. Cl. A61m** *5/00*
**U.S. Cl. 23—258.5** **10 Claims**

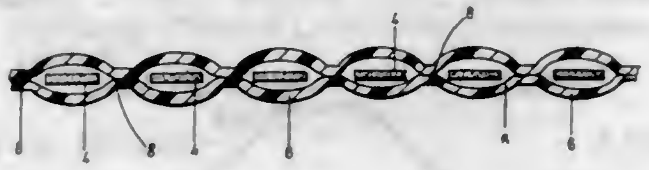
An arrangement for oxygenating small volumes of blood by forming the blood into thin film-like streams that flow along an oxygen-premeable membrane through which oxygen is diffusing from a pressurized oxygen chamber.



### 3,480,402
### TIME INDICATOR

**David Jackson, Whetstone, London, England, assignor to Express Dairy Company (London) Limited, London, England**

**Filed Nov. 8, 1966, Ser. No. 592,778**
**Claims priority, application Great Britain, Nov. 9, 1965, 47,573/65**
**Int. Cl. G01n** *31/06*
**U.S. Cl. 23—254** **15 Claims**



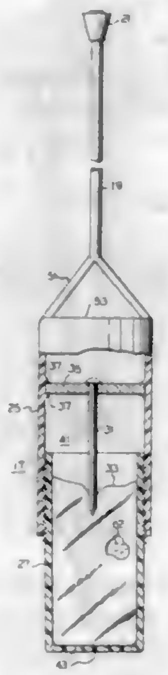
A time indicator formed of an absorbent carrier having absorbed thereon at least one chemical compound which changes color upon exposure to oxygen. The carrier and chemical compound absorbed thereon are protected from ambient oxygen by a non-perforated barrier layer which is transparent and through which atmospheric oxygen can controllably diffuse over a preselected period of time. Thus, when the chemical compound changes color, the preselected period of time is indicated.

### 3,480,403
### CHEMICAL ADDITION OF GAS TO LIQUID SOLVENT APPARATUS

**Daniel I. Hovey, Hillcrest, Niagara Falls, N.Y. 14303**

**Filed Sept. 19, 1966, Ser. No. 580,282**
**Int. Cl. B01j** *7/02;* **C01b** *31/20*
**U.S. Cl. 23—282** **7 Claims**

Apparatus for carbonating water without introducing the solid by-products of the chemical reaction producing the carbon dioxide. An openable cartridge includes a filter bag containing the solid chemicals for reaction. The cartridge material is impervious to the solvent, usually water into which it is immersed, but it does include an opening, closed by fritted glass, capable of passing the gas from the chemical reaction within the cartridge into the surrounding water but precluding water from passing therethrough; also, the bottom of the cartridge is apertured to permit water to enter the cartridge and pass into the filter bag to initiate the reaction. The cartridge further includes internal means for rupturing the bag, preferably near its top, to permit the carbon dioxide to escape via the fritted glass to the surrounding solvent.



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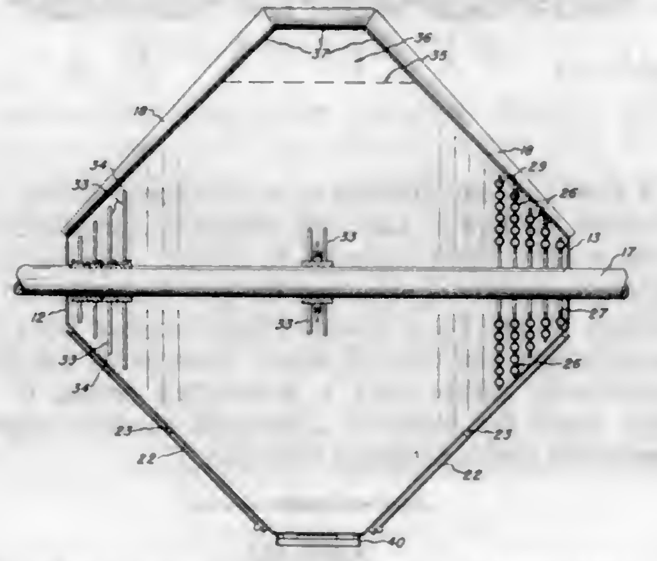
### 3,480,404
### APPARATUS FOR REACTING POLYMERIC MATERIAL

**Frank A. Upson, Hammond, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana**
**Filed Apr. 29, 1966, Ser. No. 546,298**
**Int. Cl. B01t** *1/00*
**U.S. Cl. 23—285** **7 Claims**



Two hollow, truncated, conical members are joined together to form a reaction vessel, and a rotating shaft carrying a plurality of radially extending blades is stretched between the truncated ends of the reaction vessel. Interposed between the blades are circular plate coils through which flows circulating heat exchange medium that heats reacting constituents within the vessel. At the bottom of the vessel is a port, which when open, allows material to quickly flow from the vessel.

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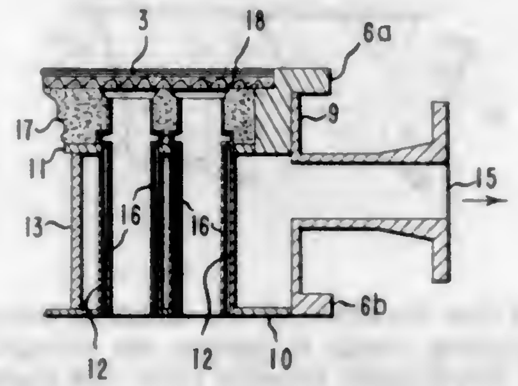
### 3,480,405
### FLUID-COOLED CATALYST SUPPORT STRUCTURE

**John E. Hatcher, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Filed Oct. 26, 1966, Ser. No. 589,658**
**Int. Cl. B01j** *9/00;* **F28f** *21/04*
**U.S. Cl. 23—288** **6 Claims**



A catalyst support structure comprising a cooling means, said cooling means having passages therethrough, ceramic ferrules positioned in said passages, a ceramic filling surrounding a portion of the ferrules that extend beyond the upstream end of the cooling means, said ceramic filling being in contact with the cooling means and with a metal screen.

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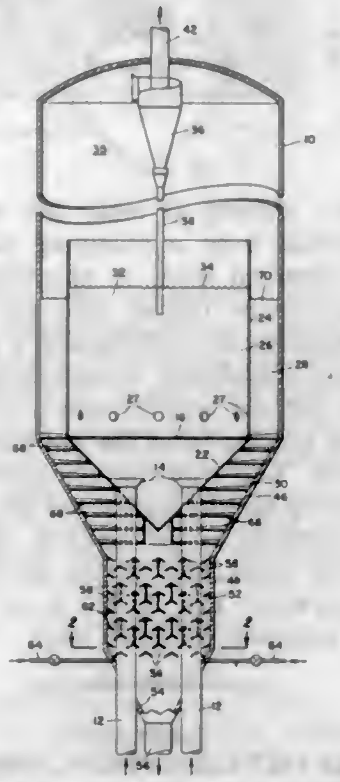
### 3,480,406
### REACTION VESSEL

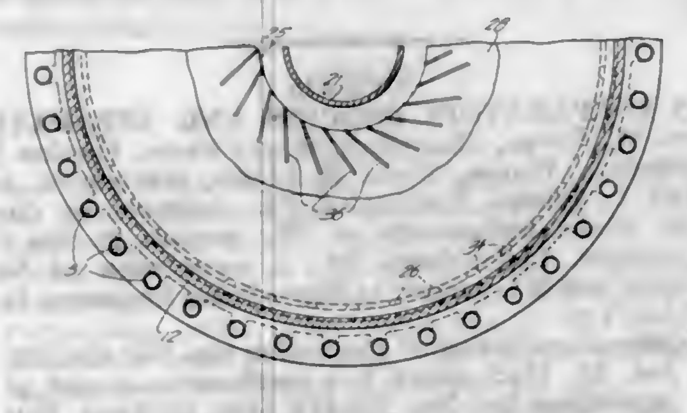
**Edward C. Luckenbach, Mountainside, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware**
**Filed June 30, 1966, Ser. No. 566,700**
**Int. Cl. B01j** *9/12, 11/02*
**U.S. Cl. 23—288** **3 Claims**



Fluidized bed catalytic reactor with provision for stripping in a tapered annular chamber, comprising sheds with sloping roofs and vertical sides having serrations spaced to provide uniform stripping gas flow.

### 3,480,407
### MULTIPLE ZONE APPARATUS FOR THE PROCESSING OF FLUIDS HAVING INTERZONE FLUID MIXING AND REDISTRIBUTION FEATURES

**Theodore O. Wentworth and Clyde G. Anderson, Cincinnati, Ohio, assignors to Vulcan-Cincinnati, Inc., Cincinnati, Ohio, a corporation of Ohio**
**Filed Feb. 2, 1967, Ser. No. 613,565**
**Int. Cl. B01j** *9/00, 1/30;* **C07c** *1/04*
**U.S. Cl. 23—288** **6 Claims**



The invention disclosed relates to an apparatus for the processing of fluids in a series of zones adapted to receive additional fluid in the interzone space, mix that fluid with partially processed fluid from the preceding zone in a two-step mixing operation and redistribute the fluid to the succeeding zone. A gas phase multi-zone catalytic reactor for the production of methanol from carbon monoxide and hydrogen is specifically shown. The reactor, designed for close temperature control, is provided with special ports for the introduction of fresh gases into the interzone space, a baffle in this space to provide further mixing of the fresh gases and partially reacted gases from the preceding catalyst zone, and a series of two distribution plates for redistributing the thoroughly mixed gases into the succeeding catalyst zone.

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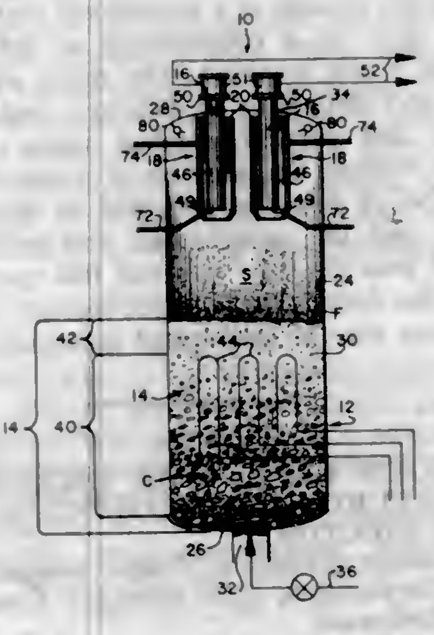
### 3,480,408
### PHTHALIC ANHYDRIDE REACTOR

**Henry N. LaCroix, East Orange, N.J., assignor to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York**
**Filed May 15, 1967, Ser. No. 638,372**
**Int. Cl. B01j** *9/18;* **C07c** *63/18*
**U.S. Cl. 23—288** **5 Claims**



An apparatus for producing a phthalic anhydride-containing effluent gas by reacting oxygen with naphthalene or ortho-xylene in the presence of a suitable fluidized catalyst. The reactor is provided with a filtering zone surrounded by indirect heat exchange units for settling and cooling the catalyst and cooling the effluent gas.

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### 3,480,409
### METHOD OF GROWING $CdCr_2Se_4$ CRYSTALS

**Joseph F. Dillon, Jr., Morristown, Roy Conway Le Craw, Madison, Henning von Philipsborn, Berkeley Heights, and Jack H. Wernick, Madison, N.J., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York**
**Filed Oct. 3, 1966, Ser. No. 583,811**
**Int. Cl. C01b** *19/00;* **C01g** *11/00, 37/00*
**U.S. Cl. 23—315** **2 Claims**

The magnetic chalkogenide $CdCr_2Se_4$ is produced by crystallization within a liquid phase formed between the contacting initial ingredients $CrCl_3$ and CdSe by heating to a temperature of about 700° C.

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### 3,480,410
### WC—CrC—Co SINTERED COMPOSITE

**Julius Hummer, Waukegan, Mich., assignor to Fansteel Inc., North Chicago, Ill., a corporation of New York**
**No Drawing. Filed May 15, 1968, Ser. No. 729,437**
**Int. Cl. C22c** *29/00;* **B22f** *3/12*
**U.S. Cl. 29—182.7** **7 Claims**

A hard metal composition and the method of making the same for use as cutting material, wear parts and the like for cutting tools, dies, and so forth which includes in its composition tungsten carbide, chromium carbide, and cobalt, the chromium carbide being present in the form of particles of an extremely small size below .2 micron and the tungsten carbide is of extremely fine grain size, the resulting metal being much tougher than the average tungsten carbide hard metals and at the same time having a hardness characteristic much higher than that of standard tungsten carbide products with the high range of cobalt included.

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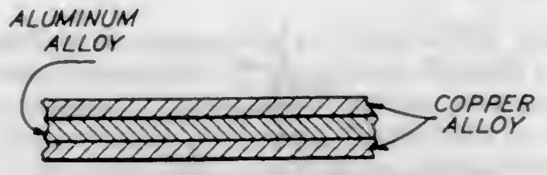
### 3,480,411
### COMPOSITE FIN STOCK MATERIAL

**Michael J. Pryor, Hamden, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia**
**Filed Jan. 23, 1967, Ser. No. 611,018**
**Int. Cl. B21j** *1/00*
**U.S. Cl. 29—191** **8 Claims**



The present invention relates to a composite metallurgically bonded fin stock material and a heat exchange assembly including same wherein said fin stock material has an aluminum base alloy core clad on both sides with copper.

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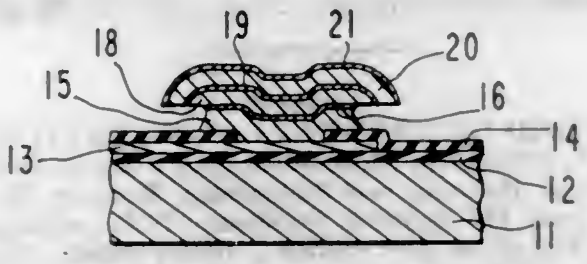
### 3,480,412
### METHOD OF FABRICATION OF SOLDER REFLOW INTERCONNECTIONS FOR FACE DOWN BONDING OF SEMICONDUCTOR DEVICES

**Edward F. Duffek, Jr., Los Altos, and Ilan A. Blech, Sunnyvale, Calif., assignors to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware**
**Filed Sept. 3, 1968, Ser. No. 756,778**
**Int. Cl. H01k** *1/00;* **C23c** *13/06;* **C23b** *5/50*
**U.S. Cl. 29—195** **15 Claims**

Solder bumps possessing long life, low electrical resistance and good adherence to underlying materials are produced on precisely defined areas of a semiconductor wafer containing a plurality of integrated circuit dies, by either



vacuum deposition techniques or by a combination of vacuum deposition, electroplating, and etching techniques.

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### 3,480,413
## GASOLINE CONTAINING 2,6-DI-TERT-BUTYL-4-HALOPHENOL
**Larry Plonsker, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia**
**No Drawing. Filed May 25, 1966, Ser. No. 552,724**
**Int. Cl. C10l** *1/30*
**U.S. Cl. 44—69** **5 Claims**

The exhaust hydrocarbon emission and combustion chamber deposit formation of an internal combustion engine is decreased by use of a liquid hydrocarbon fuel containing a halogenated phenol such as 2,6-di-tert-butyl-4-chlorophenol.

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### 3,480,414
## BROAD SPECTRUM FUEL ADDITIVES
**Enver Mehmedbasich, El Cerrito, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware**
**No Drawing. Filed May 25, 1966, Ser. No. 552,686**
**Int. Cl. C10l** *1/22;* **C09k** *3/00*
**U.S. Cl. 44—72** **2 Claims**

The fluoborate salts of aliphatic hydrocarbon substituted alkylene diamines are provided for fuel detergents as well as antiicing and antirust agents.

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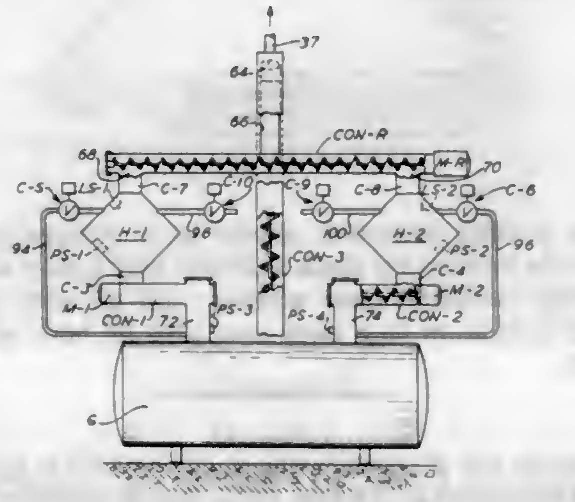
### 3,480,415
## AUTOMATIC SYSTEM FOR ALTERNATE FEED OF ACETYLENE GENERATOR
**Kenneth M. Foster, Arlington, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York**
**Filed Dec. 4, 1967, Ser. No. 688,943**
**Int. Cl. C10h** *15/14*
**U.S. Cl. 48—54** **16 Claims**



An alternate feed control system for an acetylene generator automatically fills in alternate sequence a pair of individual feed hoppers with calcium carbide as each in turn becomes exhausted during continuous production operation of the generator. A conveyor screw driven by a reversible motor, receives carbide from a large capacity storage facility and feeds from either one end of the screw or the other to a corresponding generator feed hopper, according to the direction of motor rotation. Each hopper has at its intake a fill-valve for admitting carbide from the active end of the conveyor during recharging, and for sealing the intake during acetylene generation. A valve at the exhaust end of the hopper isolates the hopper from the generator during the refilling and off-line periods. Control circuitry including timer mechanism, determines the direction and extent of motor-conveyor operation for hopper filling, and also coordinates operation of the storage supply feed, hopper valves and alternate cycling of the over-all generator feed system.

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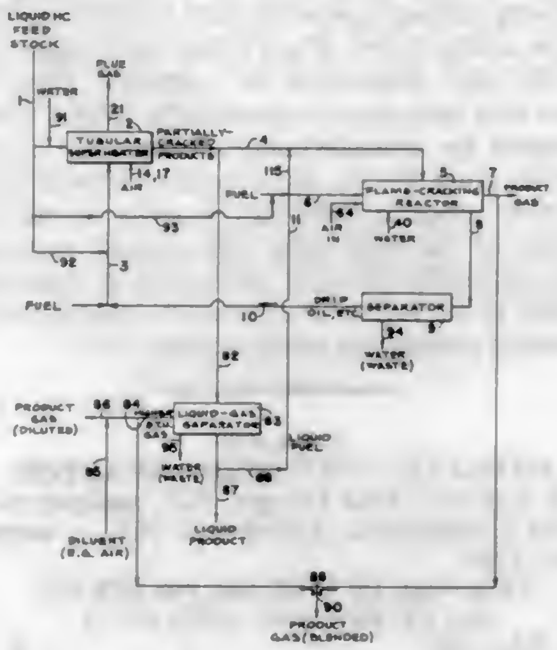
### 3,480,416
## GAS PREPARATION PROCESS AND APPARATUS
**James W. Stoops, Thornbury, West Chester, Gordon M. Bitterlich, Wayne, Moses R. Lipkin, Havertown, and Alex L. Primas, Norristown, Pa., assignors, by direct and mesne assignments, of fifty percent to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey, and fifty percent to Howe-Baker Engineers, Inc., Tyler, Tex.**
**Continuation-in-part of application Ser. No. 426,785, Jan. 21, 1965, which is a continuation-in-part of application Ser. No. 351,412, Mar. 12, 1964. This application Mar. 1, 1966, Ser. No. 530,979**
**Int. Cl. C10j** *3/00*
**U.S. Cl. 48—93** **24 Claims**



A liquid hydrocarbon fraction is converted into a combustible gas (usable as a supplement and/or substitute for natural gas) by a combination of indirect thermal cracking and flame cracking. The make oil is fed as a liquid into and through a superheater, and the resulting superheated and partially-cracked vapor is thereafter fed, with or without the addition of steam, into a flame-cracking tube. A flame is provided at one end of this latter tube, and the superheated and partially-cracked vapor is fed into the tube adjacent this one end and directed into the flame. The indirect thermal cracking and flame cracking may be performed independently of each other.

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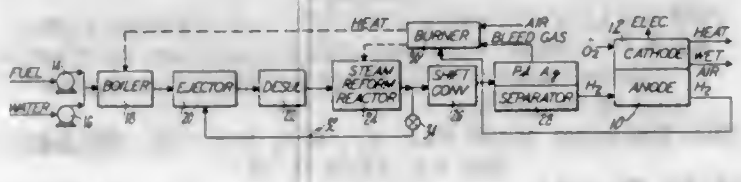
### 3,480,417
## HYDROGEN GENERATOR INCLUDING A DESULFURIZER EMPLOYING A FEED-BACK EJECTOR
**Herbert J. Setzer, Ellington, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Sept. 26, 1967, Ser. No. 670,640**
**Int. Cl. C01l** *3/00*
**U.S. Cl. 48—94** **3 Claims**

A hydrogen generator including a desulfurization device upstream of a steam-reforming reactor. Recycle hydrogen is fed to an ejection device which is utilized as



the means to feed at least the steam feedstream to the desulfurization device.

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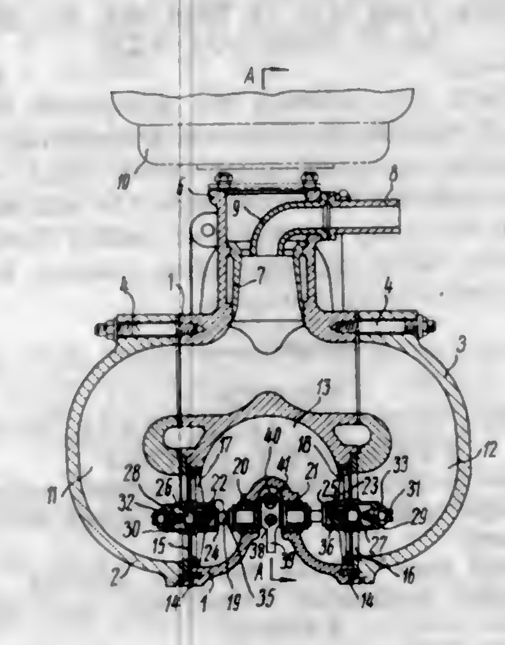
### 3,480,418
## CARBURETOR
**Alexei Sergeevich Khachijan, 2-oi kvartal Gazoprovoda 11, Apt. 1; and Alexandr Kasparovich Skuinj, Pasechnaja ulitsa 4a, Apt. 5, both of Moscow, U.S.S.R.; Moisei Alexandrovich Lekhovitser, Ulitsa Nansena 23, Tokmak, U.S.S.R.; Viktor Vladimirovich Linich, St. Perlovskaja, ulitsa 3-aja Krestjanskaja Ia, Apt. 11, Moskovsky region, U.S.S.R.; and Sergei Vasiljevich Shapovalov, Revoljutsionnaja ulitsa 45, Apt. 22; and Ivan Vasiljevich Ocheretin, Proletarskaja ulitsa 4a, Apt. 8, both of Tokmak, U.S.S.R.**
**Filed July 19, 1965, Ser. No. 472,930**
**Int. Cl. B01f** *3/02*
**U.S. Cl. 48—180** **5 Claims**



A carburetor having a body with symmetrical curvilinear channels leading from an inlet for fuel-air mixture to an outlet for fuel-air mixture, there being two symmetrical slide valves coupled together and positioned in respective channels for controlling flow of fuel-air mixture from the inlet to the outlet, each slide valve being composed of a fixed diaphragm with shaped slots therein and an adjacent rotatable choke also with slots therein which register with the slots in the diaphragm.

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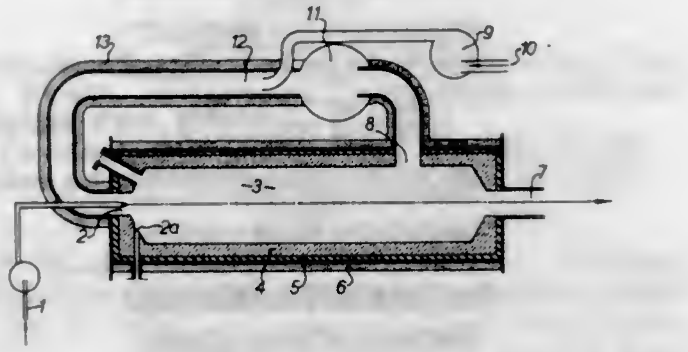
### 3,480,419
## GASIFICATION OF HYDROCARBONS
**Louis Alliot, Rouen, and Michel Auclair and Francois Godouet, Mont-Saint-Aignan, France, assignors to Esso Standard Societe Anonyme Francaise, Paris, France, a corporation of France**
**Filed July 20, 1966, Ser. No. 566,685**
**Claims priority, application France, July 27, 1965, 26,227; Apr. 29, 1966, 59,781**
**Int. Cl. C10k** *3/06*
**U.S. Cl. 48—212** **9 Claims**

Hydrocarbons are gasified in a reaction zone to produce a combustible gas mixture having a calorific value between 800 and 3000K calories per cubic meter minimum free carbon formation by continuously reacting the hydrocarbons and recycling part of the combustible gas



product, mixing the recycled product with free oxygen-containing gases and returning them to the hydrocarbon reaction zone.

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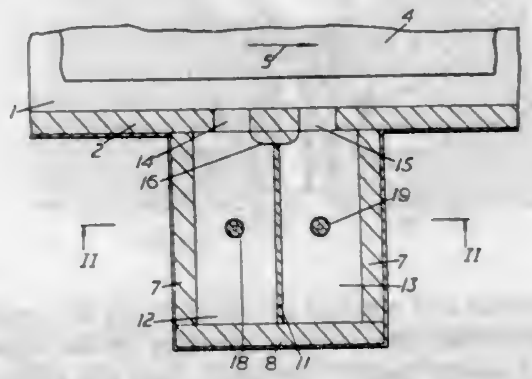
### 3,480,420
## PROCESS AND APPARATUS FOR VACUUM PURIFICATION OF THE FLOAT GLASS BATH
**David Gordon Loukes, Prescot, and Alan Edward Hay, Ormskirk, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain**
**Filed Nov. 15, 1966, Ser. No. 594,613**
**Claims priority, application Great Britain, Nov. 24, 1965, 49,997/65**
**Int. Cl. C03b** *18/00*
**U.S. Cl. 65—27** **8 Claims**



The molten tin supporting a ribbon of flat glass in the float process is purified by circulation through a vacuum chamber where tin impurities volatilize, and the circulation being via a pocket which is divided into an upstream and a downstream part, which parts communicate separately with the main part of the bath.

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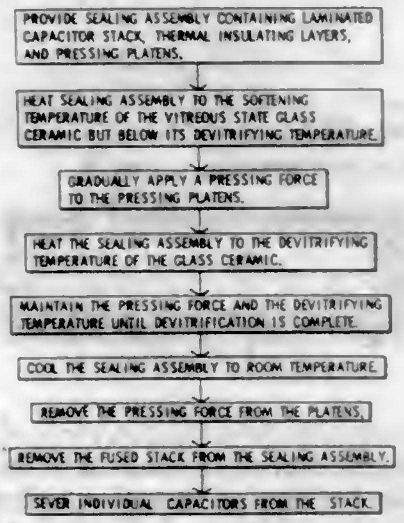
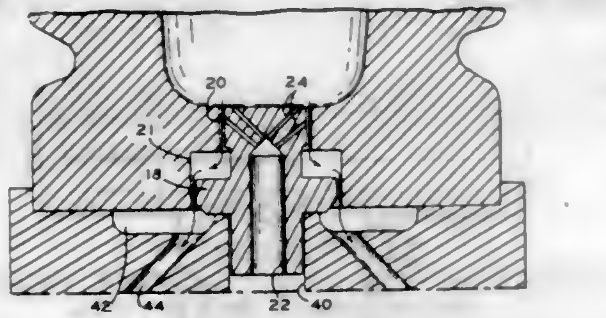
### 3,480,421
## METHOD OF MAKING CAPACITORS
**Richard E. Allen, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York**
**Filed Sept. 22, 1965, Ser. No. 489,330**
**Int. Cl. C03b** *29/00;* **C03c** *27/00*
**U.S. Cl. 65—33** **6 Claims**

A method of making small laminated capacitors, the resultant product comprising alternate layers of deritrified state glass ceramic and metal foil. The method includes the steps of stacking metal foil electrodes and vitreous state glass ceramic strips, heating the stacked assembly to the softening temperature of the vitreous state glass ceramic but below the deritrifying temperature thereof, applying pressure, and thereafter heating to a devitrifying temperature while maintaining pressure for a time sufficient to achieve the desired amount of devitrification. The assembly is advantageously cooled at a controlled rate to improve the T.V.C. characteristic thereof.

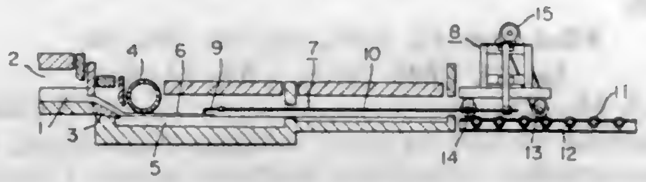

PROVIDE SEALING ASSEMBLY CONTAINING LAMINATED CAPACITOR STACK, THERMAL INSULATING LAYERS, AND PRESSING PLATENS.
HEAT SEALING ASSEMBLY TO THE SOFTENING TEMPERATURE OF THE VITREOUS STATE GLASS CERAMIC BUT BELOW ITS DEVITRIFYING TEMPERATURE.
GRADUALLY APPLY A PRESSING FORCE TO THE PRESSING PLATENS.
HEAT THE SEALING ASSEMBLY TO THE DEVITRIFYING TEMPERATURE OF THE GLASS CERAMIC.
MAINTAIN THE PRESSING FORCE AND THE DEVITRIFYING TEMPERATURE UNTIL DEVITRIFICATION IS COMPLETE.
COOL THE SEALING ASSEMBLY TO ROOM TEMPERATURE.
REMOVE THE PRESSING FORCE FROM THE PLATENS.
REMOVE THE FUSED STACK FROM THE SEALING ASSEMBLY.
SEVER INDIVIDUAL CAPACITORS FROM THE STACK.

3,480,422
## LUBRICATION SYSTEM FOR A PARISON BLANK
**Daniel J. Lichok, Lancaster, Pa., and George C. Maxwell, Waxahachie, Tex., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania**
**Filed Dec. 23, 1966, Ser. No. 604,266**
**Int. Cl. C03b** *39/00*
**U.S. Cl. 65—169** **1 Claim**



An apparatus and method for lubricating the molds of a glass molding machine. A pop-up valve in the closed end of the mold cavity sprays lubricant onto the sidewalls of of the mold cavity prior to insertion of the glass gob into the mold cavity.

3,480,423
## BAIT APPARATUS FOR DRAWING OUT GLASS RIBBONS FROM MOLTEN BATH
**Kiyoshi Itakura, Higashinada-ku, Kobe, Japan, assignor to Nippon Sheet Glass Co., Ltd., Osaka, Japan**
**Filed Oct. 3, 1966, Ser. No. 583,716**
**Claims priority, application Japan, Oct. 12, 1965, 40/62,114**
**Int. Cl. C03b** *18/02*
**U.S. Cl. 65—182** **5 Claims**



Apparatus for drawing molten glass into continuous sheet form on a molten bath, and having apparatus mounted on a track longitudinally adjacent to the bath for both drawing the glass horizontally and to simultaneously slightly raise it while in a substantially horizontal plane to place it onto driven conveying rollers.

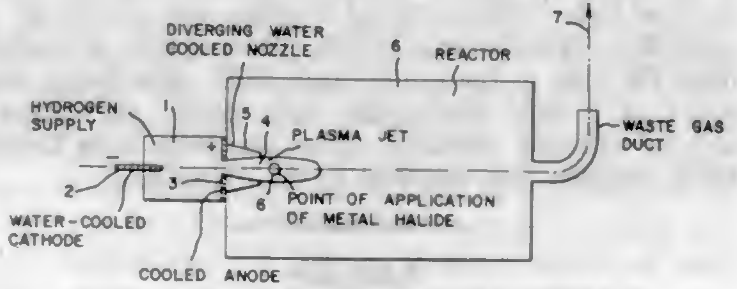
3,480,424
## PHENYLISOTHIOCYANATES AS HERBICIDES
**Alan J. Lemin, Richland, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware**
**No Drawing. Filed Feb. 4, 1966, Ser. No. 536,568**
**Int. Cl. A01n** *9/18*
**U.S. Cl. 71—104** **11 Claims**

Certain substituted phenyl isothiocyanates have been found to possess herbicidal activity. Tests have shown significant activity against carbgrass, wild oats, quackgrass, bindweed, lambsquarters, and pigweed. The compounds are used at rates of about 1 to about 20 lbs. per acre depending, inter alia, upon weed species to be controlled, degree of selectivity desired, and soil conditions. A preferred class of the compounds has a cyano, nitro, lower-alkanoyl, or a trifluoromethyl group in the para-position. Method of treatment and representative herbicidal compositions are described.

3,480,425
## METHOD FOR REDUCING THE PYROPHORICITY OF METALLIC POWDERS
**John F. Hardy, Andover, and Leonard H. Doppler, Lexington, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware**
**No Drawing. Filed May 24, 1966, Ser. No. 552,429**
**Int Cl. C21d** *1/74;* **C23f**
**U.S. Cl. 75—.5** **8 Claims**

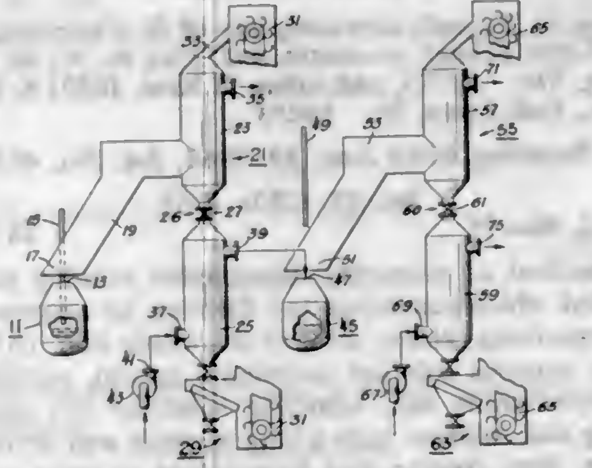
1. A process for reducing the pyrophoric character of pyrophoric metallic powders which comprises contacting said powder at temperatures below about −20° C. with a gas chemically inert with respect to said metal and chosen from the group consisting of carbon dioxide, carbon monoxide, sulfur dioxide, sulfur trioxide, hydrogen sulfide, ammonia and the halogens.

3,480,426
## PRODUCTION OF PARTICULATE, NON-PYROPHORIC METALS
**Ernst Neuenschwander, Basel, Switzerland, assignor, by mesne assignments, to Hermann C. Starck Berlin, Berlin, Germany**
**Filed June 7, 1966, Ser. No. 555,904**
**Claims priority, application Switzerland, June 25, 1965, 8,950/65**
**Int. Cl. C22b** *5/14;* **B22f** *9/00;* **C22d** *5/00*
**U.S. Cl. 75—.5** **3 Claims**



A process is provided for manufacturing non-pyrophoric, ultrafine powders of metals of the Groups IV*b*, V*b*, VI*b* or of the actinium series of the periodic chart in which a halide of the desired metal is reduced in a hydrogen plasma containing 5 to 10 molecular proportions of hydrogen for each molecular proportion of the metal halide. The ultrafine metal powders of this invention are especially useful for preparing sintered metal articles such a capacitors.

3,480,427
## METHOD AND APPARATUS FOR TREATING METALLURGICAL FURNACE GASES
**Fred Denig, Kilchberg, Zurich, Switzerland, and Robert E. Powers, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware**
**Continuation of application Ser. No. 375,912, June 17, 1964. This application July 26, 1967, Ser. No. 656,294**
**Int. Cl. C21b** *1/02;* **F27d** *17/00*
**U.S. Cl. 75—43** **2 Claims**



Oxygen-bearing gases are mixed with CO-bearing gases in a zone outside of a BOF converter where the CO is oxidized to $CO_2$. The liberated heat of oxidation is given up to a heat retentive medium in a pebble heater. Cold air passing through the pebble heater absorbs heat and the heated air is directed onto cold scrap in a second BOF converter to preheat the scrap, which is subsequently melted and refined. The CO containing off gases from the second BOF are burned and the heat thereof recovered in a second pebble heater. Cold gas is heated in the second pebble heater and utilized to preheat scrap in the first BOF converter.

3,480,428
## PROCESS FOR THE PRODUCTION OF MOLYBDENUM AND TUNGSTEN AND THEIR ALLOYS USING AMALGAMS
**Gerhard Jangg, Gebreidemarkt 9, Vienna A1060, Austria**
**No Drawing. Filed Feb. 7, 1967, Ser. No. 614,416**
**Int. Cl. C22d** *1/24, 1/26, 5/00*
**U.S. Cl. 75—84.5** **9 Claims**

Process for preparing molybdenum and tungsten by reacting a halide of molybdenum or tungsten with a quantity of zinc amalgam. The quantity of zinc amalgam employed is in excess of the stoichiometric amount needed to reduce the halide to the metallic state. The reaction mixture essentially consisting of zinc halide, an amalgam of molybdenum or tungsten, and excess of metallic zinc, is heated to a temperature at least close to or above the melting temperature of the zinc halide. The reaction mixture is then cooled to solidify it and to separate the zinc halide from the amalgam. The mercury and the excess zinc are then separated from molybdenum or tungsten by distilling.

3,480,429
## ALLOY FOR PEN POINTS
**Maria Thiede, nee Mentzner, and Konrad Ruthardt, Hanau am Main, Germany, assignors to W. C. Heraeus G.m.b.H., Hanau am Main, Germany, a corporation of Germany**
**No Drawing. Continuation of application Ser. No. 560,883, June 27, 1966. This application Jan. 23, 1969, Ser. No. 796,296**
**Int. Cl. C22c** *5/00*
**U.S. Cl. 75—134** **5 Claims**

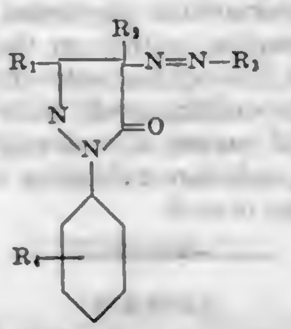
An alloy suitable for use in the casting of pen points having up to 50 weight percent of osmium and/or rhenium, 30 to 45 weight percent iridium, 5 to 20 weight percent ruthenium, up to 25 weight percent of a noble metal, and up to 15 weight percent of a base metal of Group 8, such as cobalt.

3,480,430
## ZIRCONIUM ALLOY
**Pierre Baque, Viry Chatillon, and Raymond Darras, Viroflay, France, assignors to Commissariat a l'Energie Atomique, Paris, France**
**No Drawing. Filed Aug. 17, 1966, Ser. No. 572,885**
**Claims priority, application France, Aug. 27, 1965, 29,688**
**Int. Cl. C22c** *15/00, 1/04*
**U.S. Cl. 75—177** **6 Claims**

A zirconium-base alloy resistant to corrosion contains 0.5 to 6% by weight of copper and at least one additive of magnesium, platinum or manganese in amounts from 0.1 to 5%, the balance being zirconium of nuclear purity.

3,480,431
## PHOTOGRAPHIC MATERIAL FOR A DRY COPYING METHOD
**Wolfgang Lässig, Cologne-Stammheim, Alexander Riebel and Walter Püchel, Leverkusen, and Wolfgang Himmelmann, Cologne-Stammheim, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed Oct. 23, 1965, Ser. No. 504,144**
**Claims priority, application Germany, Nov. 9, 1964, A 47,553**
**Int. Cl. G03c** *5/04, 1/76*
**U.S. Cl. 96—27** **4 Claims**

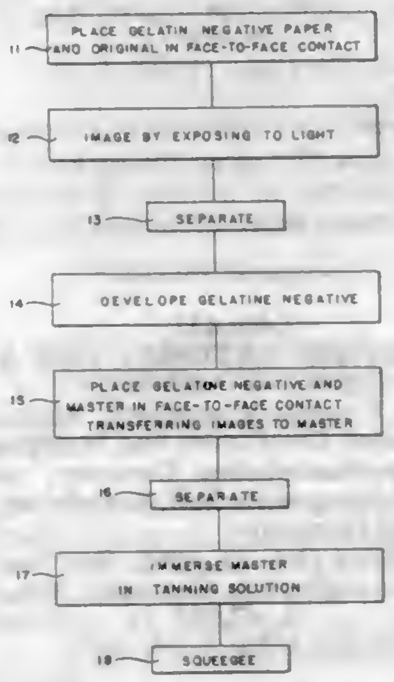
The present invention relates to a photographic material for a dry copying process, which material contains a uniformly dyed layer and an azopyrazolone of the formula:



wherein $R_1$=a substituent of the class consisting of hydrogen, alkyl up to 20 carbon atoms, phenyl, cycloalkyl, aralkyl, amino, alkylamino, acylamino, hydroxyl and alkoxy; $R_2$=a substituent of the group consisting of alkyl, olefinically unsaturated alkyl, carboxyl substituted alkyl, carbalkoxy substituted alkyl, phenyl substituted alkyl, phenyl, nitrile and the members that with $R_1$ complete a cyclopentyl, cyclohexyl, morphonyl or piperidyl ring; $R_3$=a radical of the phenyl series; $R_4$=a substituent of the groups consisting of hydrogen, alkyl, phenyl, amino, alkylamino, acylamino, sulfo, sulfonamide, alkylsulfonamide, carboxy, carbalkoxy, carbamyl, nitride, nitro, alkoxy and halogen which decomposes on heating, giving off nitrogen.

3,480,432
## IMAGING OF LITHOGRAPHIC PLATES BY GELATIN TRANSFER
**Raymond L. Oransky and Richard H. Rombalski, Portland, Maine, assignors to Scott Paper Company, a corporation of Pennsylvania**
**Continuation-in-part of application Ser. No. 518,622, Jan. 4, 1966. This application Oct. 20, 1967, Ser. No. 676,750**
**Int. Cl. G03c** *11/12;* **G03f** *7/10*
**U.S. Cl. 96—28** **3 Claims**

A process of readying a paper lithographic master for use on an offset duplicator comprising imaging a planographic master by contact transfer of gelatin silver-halide emulsion images thereto, passing the imaged master through a tanning solution and thoroughly wetting both sides thereof and hardening said images, and removing excess tanning solution from said surfaces, said master being flexible enough to withstand bending in the dry state into a 180°—¼ inch arc without damage and being composed of (1) a paper web machine coated on at least one side (2) semi-barrier coatings on both sides, having a Cobb water absorption value in the range of 0.04 to 0.15 (grams/100 sq. cm.—120 seconds) and composed of a flexible water-insoluble pigmented cured latex and (3) a top planographic coating on the machine coated side composed of a hydrophilic water-insoluble binder, an oil-obsorptive paper-coating-grade mineral pigment and colloidal silica, said master after transfer and treatment with said tanning solution exhibiting no more than a momentary tendency to curl.


11
PLACE GELATIN NEGATIVE PAPER AND ORIGINAL IN FACE-TO-FACE CONTACT
12
IMAGE BY EXPOSING TO LIGHT
13
SEPARATE
14
DEVELOPE GELATINE NEGATIVE
15
PLACE GELATINE NEGATIVE AND MASTER IN FACE-TO-FACE CONTACT TRANSFERRING IMAGES TO MASTER
16
SEPARATE
17
IMMERSE MASTER IN TANNING SOLUTION
18
SQUEEGEE

**3,480,433**

### THERMALLY ACTIVATABLE DIAZOTYPE COMPOSITIONS

**Grant M. Haist and James R. King, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed Mar. 22, 1967, Ser. No. 624,991**

**Int. Cl. G03c** *1/58*

**U.S. Cl. 96—49** **17 Claims**

Substituted s-triazinyl-thioketones and triazinyl ketones are couplers in thermally developable photographic elements incorporating diazonium compounds as the light-sensitive component, which development does not require additional alkali or alkaline release materials.

**3,480,434**

### SENSITIZER FOR BLUE-SENSITIVE EMULSIONS

**Ernest R. Hanna, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed Nov. 26, 1965, Ser. No. 513,145**

**Int. Cl. G03c** *1/76, 7/16*

**U.S. Cl. 96—74** **4 Claims**

In photographic elements comprising an opaque support having coated thereon a blue sensitive silver halide emulsion layer containing yellow dye former, and green and red sensitive silver halide emulsions coated thereover containing, respectively, magneta and cyan dye former, a sulfo substituted merocyanine dye is incorporated in the blue sensitive emulsion layer.

**3,480,435**

### PRODUCTION OF PRINTING PLATES AND THE LIKE

**William C. Toland, deceased, late of St. Petersburg, Fla., by Edith Toland, executrix, 441 33rd St. N., St. Petersburg, Fla. 33713, and Adam T. Krol, 10501 S. Kildare Ave., Oak Lawn, Ill. 60453**

**No Drawing. Filed Aug. 19, 1965, Ser. No. 481,451**

**Int. Cl. G03c** *1/66*

**U.S. Cl. 96—75** **26 Claims**

A method of preparing lithographic printing plates is provided which comprises (a) forming an aqueous solution containing gelatin, sorbitol and oxalic acid, (b) forming an aqueous solution containing gelatin, sorbitol and an amphetamine salt, admixing solutions (a) and (b), coating said solution onto a base member and drying said coating, then coating said base-coated member with an aqueous sensitizer solution containing an amphetamine salt, a colloid, ferric chloride, and a water soluble bichromate, and drying said sensitizer coating.

In addition new an improved light-sensitized articles are provided comprising lithographic printing plates, as well as a substantially non-reticulated gelatin printing plate comprising a base coating in which gelatin is a constituent and a top coating in the form of a thin skin containing a light sensitizer.

**3,480,436**

### ANTIHALATION COMPOSITIONS CONTAINING PENTAMETHINE OXONOL DYES IN AROMATIC ALCOHOLS

**Burton D. Wilson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed Aug. 29, 1966, Ser. No. 575,504**

**Int. Cl. G03c** *1/84*

**U.S. Cl. 96—84** **6 Claims**

Novel compositions are provided comprising a hydrophilic colloid having dispersed therein a solution of a pentamethine oxonol dye in an aromatic alcohol, said dye containing two nuclei, each of said nuclei being a 1,3-dialkyl substituted thiobarbituric acid nucleus attached, by the respective 5-carbon atoms thereof, to the terminal carbon atoms of the pentamethine chain. Photographic elements having antihalation layers comprising such compositions are also provided.

**3,480,437**

### TWO COMPONENT DIAZO SENSITIZING COMPOSITIONS CONTAINING A XANTHINE COMPOUND

**Chester E. Slimowicz, Vestal, N.Y., assignor to GAF Corporation, a corporation of Delaware**

**No Drawing. Filed Nov. 30, 1965, Ser. No. 510,669**

**Int. Cl. G03c** *1/58, 5/34*

**U.S. Cl. 96—91** **10 Claims**

A two-component, light-sensitive diazotype sensitizing composition comprising an azo dye coupling component, a xanthine compound and a diazo derivative of a paraphenylene diamine, which yields, on alkaline development, a pure blue to blue-green dye-stuff image in the nonexposed areas.

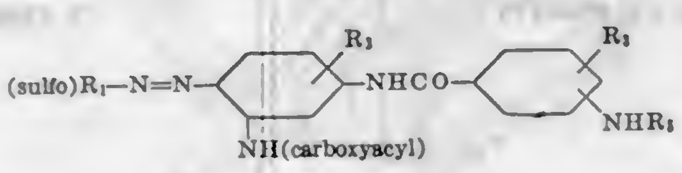
**3,480,438**

### PHOTOGRAPHIC MATERIALS FOR THE SILVER DYE-BLEACH PROCESS

**Karl-Heinz Freytag, Leverkusen-Steinbuchel, Carl Taube, Leverkusen, and Bernhard Seidel, Cologne-Mulheim, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed July 14, 1965, Ser. No. 472,052**
**Claims priority, application Germany, Aug. 14, 1964, A 46,856**
**Int. Cl. G03c** *1/10, 5/52*

**U.S. Cl. 96—99** **6 Claims**

Azo dyes for the silver dye-bleach process having the formula



as defined below, are particularly readily bleached out in the processing.

**3,480,439**

### LIGHT-SENSITIVE MATERIALS OPTICALLY SENSITIZED WITH CHLOROPROPYLSULFONIC ACID SUBSTITUTED MEROCYANINES

**Helmut Kampfer, Cologne-Stammheim, Johannes Götze, Bergisch-Neukirchen, and Oskar Riester and Erich Böckly, Leverkusen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed Sept. 28, 1965, Ser. No. 491,014**
**Claims priority, application Germany, Oct. 15, 1965, A 47,336**
**Int. Cl. G03c** *1/10*

**U.S. Cl. 96—102** **6 Claims**

Light-sensitive materials, more especially silver halide emulsions, are optically sensitized with merocyanines containing heterocyclic nitrogen atoms at least one of which is substituted with a chloropropylsulfonic acid radical.

**3,480,440**

### HARDENING OF PHOTOGRAPHIC GELATIN-CONTAINING LAYERS

**Wolfgang Himmelmann, Cologne-Stammheim, Alexander Riebel, Leverkusen, and Karl-Friedrich Zenner and Heinz Meckl, Cologne-Flittard, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed June 1, 1966, Ser. No. 554,365**
**Claims priority, application Germany, June 11, 1965, A 49,449; Sept. 27, 1965, A 50,354**
**Int. Cl. G03c** *1/30*

**U.S. Cl. 96—111** **7 Claims**

This invention relates to the hardening of gelatin-containing layers to enhance resistance to water, by incorporating therein compounds containing alkoxymethylurea-groups.

**3,480,441**

### PHOTOSENSITIVE COMPOSITIONS

**Rangaswamy Srinivasan, Briarcliff Manor, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**No Drawing. Filed Aug. 9, 1966, Ser. No. 571,171**
**Int. Cl. G03c** *1/68*

**U.S. Cl. 96—115** **8 Claims**

The invention relates to photoresist compositions comprising poly 1,3-butadiene with or without alkyl substituents and a perchlorinated compound of an unsaturated nature.

**3,480,442**

### PROCESS FOR PREPARING A HIGH PROTEIN SNACK

**William T. Atkinson, Minneapolis, Minn., assignor to Archer-Daniels-Midland Company, Minneapolis, Minn., a corporation of Delaware**
**No Drawing. Filed June 22, 1966, Ser. No. 559,428**
**Int. Cl. A23j** *1/02, 1/04, 1/14*

**U.S. Cl. 99—17** **6 Claims**

A process for the preparation of a friable, crisp, edible snack in which the cells are of random distribution and size of high protein content obtained by extruding a protein mix of a solid protein derivative having a protein content of at least 30% by weight of the solid and from 12 to 20% by weight of the mix of water at a temperature of 200 to 480° F. at a pressure of at least 1000 p.s.i.

**3,480,443**

### MANUFACTURE OF FERMENTED MILK PRODUCTS

**Rolf Schuler, Berg, Starnberger See, Germany, assignor to EVOG, Etablissement fur Verwaltung and Organisation, Vaduz, Liechtenstein**
**No Drawing. Filed Mar. 30, 1966, Ser. No. 538,543**
**Claims priority, application Austria, Apr. 2, 1965, A 3,039/65**
**The portion of the term of the patent subsequent to June 20, 1984, has been disclaimed**
**Int. Cl. A23c** *9/12, 19/02*

**U.S. Cl. 99—59** **3 Claims**

A method of manufacturing a fermented milk product in which a bacteria selected from the group consisting of *Lactobacillus acidophilus, Lactobacillus bifudus,* intestinal streptococci and mixtures thereof is inoculated in a preliminary culture medium consisting essentially of (a) sterile milk, (b) between about 0.0005–0.09 percent by weight of growth medium and (c) about 1–6 percent by weight of nutrient medium in order to form a preliminary culture and the preliminary culture including the culture medium is then inoculated into a further quantity of sterile milk in order to produce a cultured milk product which contains the bacteria in a viable and propagable condition.

**3,480,444**

### COLD WATER SOLUBLE ACID COMPOSITION

**William A. Mitchell, Lincoln Park, N.J., and William C. Seidel, Monsey, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 360,062, Apr. 15, 1964. This application Oct. 19, 1967, Ser. No. 676,640**
**Int. Cl. A23l** *1/00*

**U.S. Cl. 99—78** **9 Claims**

A cold water soluble adipic acid or fumaric acid composition is prepared by heating dextrose sufficiently to form a melt, uniformly dispersing the acid into the melt and cooling the melt to effect crystallization of the mixture. Crystallization may be promoted by seeding the acid-dextrose melt with a sugar. The resulting mixture can then be comminuted to produce a powdered composition which dissolves rapidly in cold water.

**3,480,445**

### METHOD AND MEANS FOR MAKING A COMPOSITE FOOD PRODUCT

**Lyle Slaybaugh, Battle Creek, Mich., assignor to Kellogg Company, Battle Creek, Mich., a corporation of Delaware**
**Filed Oct. 21, 1965, Ser. No. 499,612**
**Int. Cl. A23l** *1/10, 1/18*

**U.S. Cl. 99—83** **10 Claims**

A method and apparatus for making a composite food product by extruding a puffed cereal product in ready-to-eat form in the shape of a tube and jointly extruding and filling said tube with a different food product while cooling the latter.

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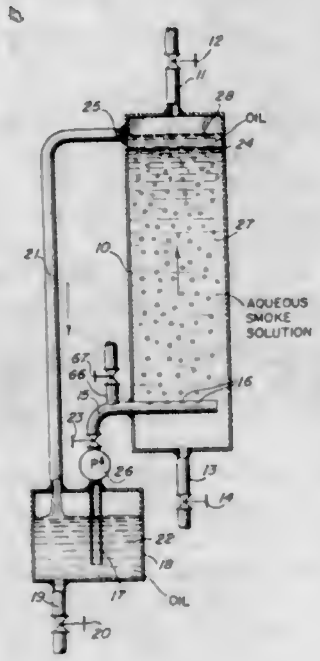
### 3,480,446

### PREPARATION AND USE OF A SMOKE-FLAVORED EDIBLE OIL

**Clifford M. Hollenbeck, Manitowoc, Wis., assignor, by mesne assignments, to Red Arrow Products Corporation, Milwaukee, Wis., a corporation of Wisconsin**
**Filed Feb. 26, 1965, Ser. No. 435,438**
**Int. Cl. A23d** *5/02;* **A23l** *1/00*
**U.S. Cl. 99—118** **9 Claims**



Disclosed is a process of making a smoke-flavored edible oil by contacting the oil with an aqueous smoke-flavored solution.

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### 3,480,447

### PRODUCTION OF SEASONINGS WITH A FLAVOR SIMILAR TO MEAT EXTRACT

**Arthur W. Hack, Heilbronn, and Wolfgang Konigsdorf, Flein, near Heilbronn, Germany, assignors to Corn Products Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed July 11, 1966, Ser. No. 564,018**
**Claims priority, application Germany, July 22, 1965, D 47,797**
**Int. Cl. A23l** *1/22*
**U.S. Cl. 99—140** **11 Claims**

A process for the production of seasonings with a flavor similar to meat extract by reacting together a substantial cysteine-free amino acid component, a reducing sugar and a sulfonic acid component and product produced thereby.

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### 3,480,448

### PURE CULTURE FERMENTATION OF GREEN OLIVES

**John L. Etchells and Thomas A. Bell, Raleigh, N.C., and Ivan D. Kittel, Shakopee, Minn., assignors to the United States of America as represented by the Secretary of Agriculture**
**Filed Oct. 10, 1966, Ser. No. 586,323**
**Int. Cl. A23b** *7/00*
**U.S. Cl. 99—156** **6 Claims**

An improved brine-curing process for olives comprising fermentation controlled by selected microorganisms is provided. Introduction and growth of competing microorganisms is inhibited by the employment of aseptic processing conditions and by the use of a heat-shocking operation. The heat-shocking operation is performed on the olives after lye treatment for debittering but before introduction of the selected microorganisms.

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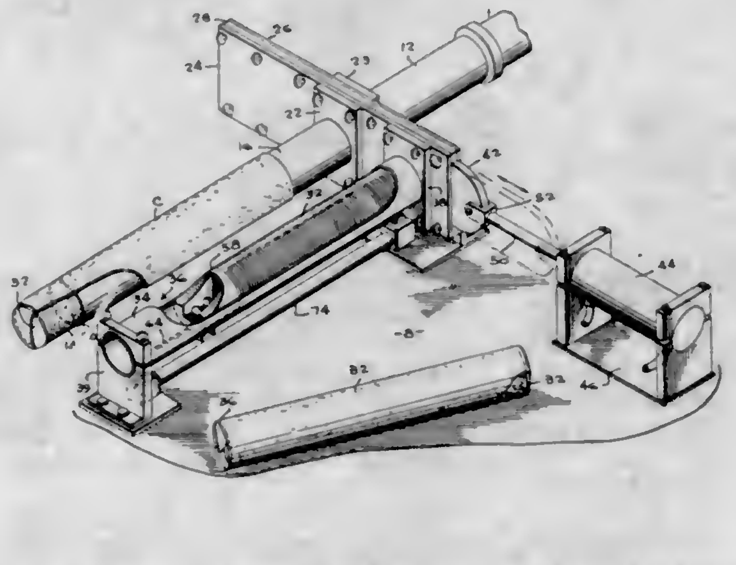
### 3,480,449

### METHOD FOR PROVIDING STUFFED FOOD CASINGS HAVING FLATTENED ENDS

**Richard F. Sumption, Portsmouth, Va., assignor to Gwaltney Incorporated, Smithfield, Va., a corporation of Virginia**
**Original application June 6, 1967, Ser. No. 643,906. Divided and this application Mar. 3, 1969, Ser. No. 803,631**
**Int. Cl. B65b** *3/00*
**U.S. Cl. 99—175** **2 Claims**



A method for forming stuffed food products by insertion of pairs of separator elements in a tubular extrusion mold to separate ground food products being extruded from the mold into discrete batches in elongated form with flattened ends for insertion into discrete casings.

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### 3,480,450

### CANNED CREAMED MEAT-CONTAINING FOOD PRODUCTS BY INCORPORATION THEREIN OF A WATER SOLUBLE ALGINATE AND A SOLUBLE MAGNESIUM SALT

**Ray L. Edlin and James K. Rocks, San Diego, Calif., assignors to Kelco Company, San Diego, Calif., a corporation of Delaware**
**No Drawing. Filed Apr. 8, 1966, Ser. No. 541,091**
**Int. Cl. A23b** *1/00, 3/00*
**U.S. Cl. 99—187** **24 Claims**

The process of preparing a canned, creamed, food product containing starch, a calcium source and meat, poultry, fish or broth thereof wherein part of the starch is replaced by a water soluble alginate and a somewhat water-soluble magnesium salt is added to enhance the formation of the calcium alginate gel, and the mixture is heated to at least 160° F.

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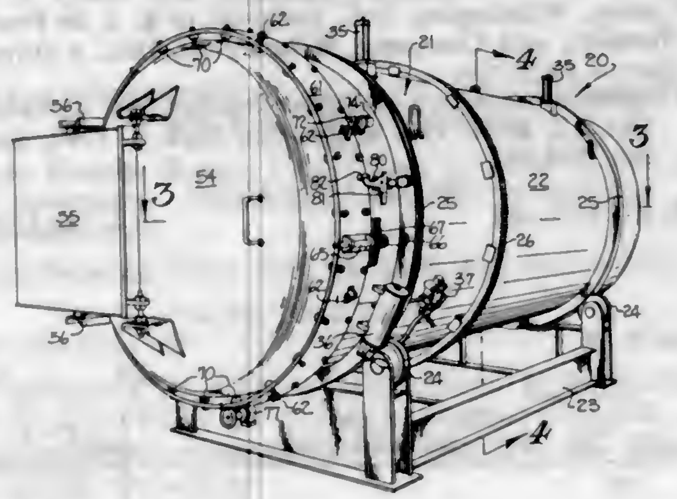
### 3,480,451

### APPARATUS FOR PROCESSING LIQUID FOOD PRODUCTS

**Adam M. Hardison, P.O. Box 279, Wadesboro, N.C. 28170**
**Filed Jan. 8, 1965, Ser. No. 424,384**
**Int. Cl. A23l** *3/10*
**U.S. Cl. 99—234** **14 Claims**

Apparatus for processing liquid food products to impart improved non-refrigerated storage life without excessive loss of flavor, wherein the liquid food products are confined within an autoclave, a fluid heating medium is admitted into the autoclave and heats the food products to a pre-determined temperature while the food products are agitated to insure even and thorough heating thereof, and a fluid cooling medium at a temperature below 32° F. is admitted into the autoclave to quickly cool the liquid food products.



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### 3,480,452

### CORDIERITE CERAMIC PROCESS AND PRODUCT

**Peter L. Fleischner, Piscataway, and Edward J. Smoke, Metuchen, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**No Drawing. Filed Aug. 26, 1966, Ser. No. 575,928**
**Int. Cl. C04b** *35/14;* **C03c** *3/22*
**U.S. Cl. 106—39** **3 Claims**

Method of making a void free crystalline-glass ceramic from two frits, one being a thermally crystallizable

$$MgO\text{-}Al_2O_3\text{-}SiO_2$$

glass and the other 10–30% of a bonding frit

$$MgO\text{-}CaO\text{-}BaO\text{-}Al_2O_3\text{-}SiO_2$$

the resultant body contains cordierite crystalline phase.

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### 3,480,453

### OPTICAL GLASS

**Alexander Mailer Reid, St. Helens, Richard John Parry, Upholland, and Michael Eastoe Burrows, Reigate, Surrey, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain**
**No Drawing. Filed Sept. 8, 1966, Ser. No. 577,800**
**Claims priority, application Great Britain, Sept. 13, 1965, 39,029/65**
**Int. Cl. C03c** *3/14, 3/30*
**U.S. Cl. 106—47** **9 Claims**

Optical glass having a reduced partial dispersion at the blue end of the spectrum without corresponding reduction in partial dispersion at the centre and red end of the spectrum, contains boric oxide, lead oxide, alumina and optional ingredients chosen from silica, alkali metal oxide, titania and other compatible oxides.

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### 3,480,454

### SHOCK RESISTANT ALUMINA REFRACTORY

**James J. Spachman, Fremont, Ohio, assignor to Basic Incorporated, Cleveland, Ohio, a corporation of Ohio**
**No Drawing. Continuation-in-part of application Ser. No. 545,879, Apr. 28, 1966. This application July 30, 1968, Ser. No. 748,601**
**Int. Cl. C04b** *35/10*
**U.S. Cl. 106—65** **15 Claims**

A ceramically bonded refractory article formed from a refractory batch of alumina and alumina-silica grain in graded sizes with approximately 0.5 to about 6 weight percent of spodumene. The batch may also include from approximately 1 to about 10 weight percent of clay as a binding agent.

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### 3,480,455

### PAPER COATING COMPOSITION

**Charles A. Richardson, Cohasset, Minn., assignor to Blandin Paper Company, Grand Rapids, Minn., a corporation of Minnesota**
**No Drawing. Filed Mar. 2, 1966, Ser. No. 531,092**
**Int. Cl. C09h** *11/00;* **C09d** *3/04;* **C08h** *1/00*
**U.S. Cl. 106—137** **5 Claims**

Coating compositions useful in the manufacture of publication papers are prepared as oil-in-water emulsions containing pigment, water-soluble gum, and an alkali-soluble, water insoluble protein which has been made water soluble by pH adjustment These coating compositions are prepared by first forming an oil-in-water emulsion containing the solubilized protein and gum, and thereafter adding pigment to the emulsion. A typical coating composition will contain a liquid hydrocarbon, water, soya protein, finely divided pigment, and animal glue or polyvinyl alcohol.

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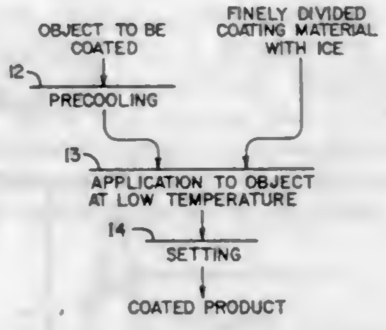
### 3,480,456

### COATING METHOD

**John H. Forkner, 6870 W. Herndon, Fresno, Calif. 93705**
**Continuation-in-part of applications Ser. No. 211,181, July 20, 1962, and Ser. No. 289,277, June 20, 1963. This application Jan. 3, 1968, Ser. No. 695,520**
**Int. Cl. B44d** *1/02*
**U.S. Cl. 117—3** **10 Claims**


OBJECT TO BE COATED
FINELY DIVIDED COATING MATERIAL WITH ICE
12
PRECOOLING
13
APPLICATION TO OBJECT AT LOW TEMPERATURE
14
SETTING
COATED PRODUCT

A method for applying resin or resin containing materials to the surfaces of various products. The material is applied as powder particles under low temperature conditions, and thereafter the powder is set or cured at a higher temperature. The resin may be thermoplastic or thermosetting and may contain a blowing agent.

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### 3,480,457

### POLYAMIDE TAPE FOR POWER TRANSMISSION BELTING

**Howard Warner Starkweather, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 551,951, May 23, 1966. This application Dec. 19, 1966, Ser. No. 602,515**
**Int. Cl. B44d** *1/32;* **B32b** *31/12*
**U.S. Cl. 117—7** **8 Claims**

Power transmission belting is provided herein of a wear surface material adhered to a polyamide tape of improved resistance to splitting, the polyamide tape having a deformation ratio of at least 3 and a composition comprising (a) 80 to 100% by weight of a copolymer of

70 to 92% by weight of 6 or 66 nylon with 8 to 30% of each other and/or 610 nylon, and (b) 0 to 20% by weight of a plasticizer, the 8 to 30% component plus the plasticizer constituting at least 15% by weight of the composition.

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### 3,480,458

### METHOD OF PRODUCING LIGHT-CONDUCTING SYSTEMS

**Helmut Dislich, Mainz-Gonsenheim, and Alfred Jacobsen, Mainz-Mombach, Germany, assignors to JENAer Glaswerk Schott & Gen., Mainz, Germany, a corporation of Germany**
**No Drawing. Filed June 24, 1966, Ser. No. 560,084**

**Claims priority, application Germany, July 7, 1965, J 28,534**

**Int. Cl. C03c** *25/02*
**U.S. Cl. 117—8** **3 Claims**

A method of producing light conducting systems comprising the coating of rods and bundles of fibers made of glass, which is permeable to ultraviolet light, with a hardenable polysiloxane whose index of refraction is lower than that of the glass to be coated.

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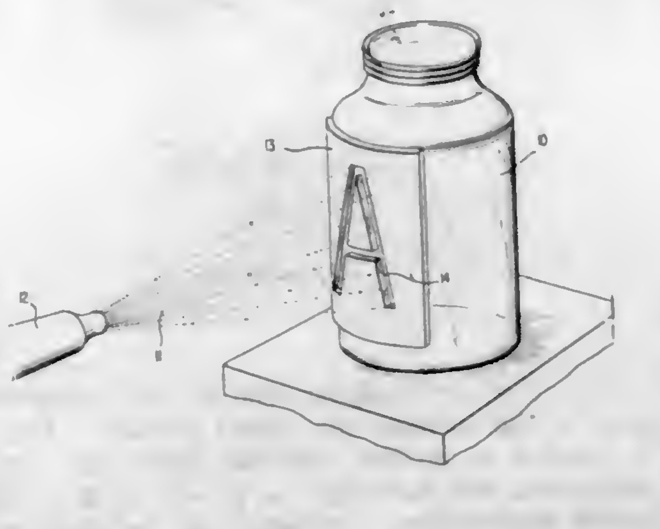
### 3,480,459

### DECORATING ARTICLES UTILIZING HIGH ENERGY RADIATION

**Saara K. Asunmaa, Laguna Beach, Calif., and Bernard L. Steierman, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio**

**Filed Sept. 20, 1965, Ser. No. 488,685**

**Int. Cl. G03g** *13/00;* **B44c** *1/06*
**U.S. Cl. 117—17.5** **10 Claims**

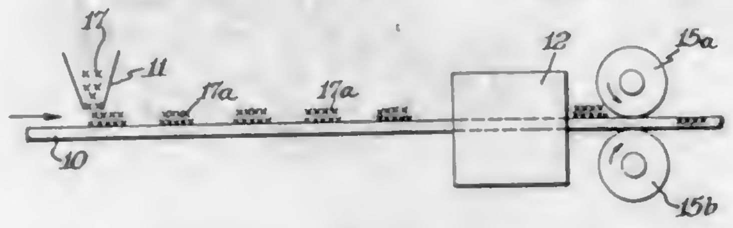


Glass or glass ceramic members can be decorated by directing high energy radiation in the form of electrons or ions toward the surface of the article, a stencil of the desired pattern and configuration being interposed between the article and the source of the radiation. The radiation is impinged on the surface of the article as permitted by the stencil for a sufficient period of time to develop concentrations of charges in the surface of the article conforming to the configuration of the stencil. Thereafter, the desired decoration is obtained by depositing printing powder onto the surface of the article exposed to the radiation whereby the powder is attracted to and held to the surface of the member in the desired pattern. Subsequently, the printing powder can be permanently fixed to the surface of the member by heating. A copying member may also be employed whereby a pattern is first formed on the copying member and then transferred to the surface to be decorated.

### 3,480,460

### METHOD OF INTEGRATION OF PARTICULATE MATERIAL WITHIN A METAL SUBSTRATE AND THE PRODUCT THEREOF

**Ernest J. Breton, Albert L. Eustice, and Harry J. McCauley, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 403,020, Oct. 12, 1964. This application Sept. 3, 1968, Ser. No. 756,891**
**Int. Cl. C03c** *17/06*
**U.S. Cl. 117—22** **24 Claims**



A non-porous metal substrate having embedded within its surface and substantially coplanar therewith attached particulate glass, glass-metal mixtures or glass-metal composites, and a method for the production thereof.

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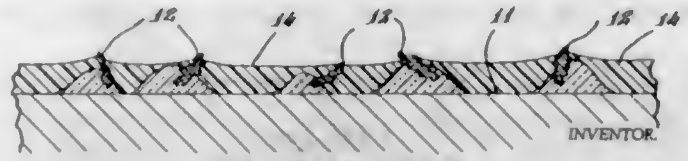
### 3,480,461

### METAL ARTICLES HAVING POLYTETRAFLUOROETHYLENE-COATED PRESSING SURFACES AND METHODS OF THEIR MANUFACTURE

**Carl H. Lynge, Fairfield, Conn., assignor to Hamlin-Stevens, Incorporated, Bridgeport, Conn.**
**Filed Nov. 14, 1966, Ser. No. 594,221**
**Int. Cl. B44d** *1/10, 1/08, 1/36*
**U.S. Cl. 117—45** **11 Claims**



"Teflon" coated metal objects and methods and compositions employed in their manufacture. Clean, smooth metal surfaces are provided with an intermittent, discontinuous coating of a multiplicity of separate, discrete, independent bodies of ceramic material incorporating a minor proportion of unfused flint glass particles, and a thin coating of polytetrafluoroethylene surrounds the major proportion of the overall height of the fused ceramic bodies. Protruding unfused flint glass particles serve to anchor the polymer coating, prevent snagging or peeling, and provide wear-points or "bumpers" for contacting abrading objects, producing polymer-coated articles having significantly extended useful lives.

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### 3,480,462

### HOT MELT COATING PROCESS

**Jesse P. Shanok, Brooklyn, and Victor Shanok, New York, N.Y., assignors to Glass Laboratories Company, Brooklyn, N.Y., a partnership of Jesse P. Shanok and Victor Shanok**
**No Drawing. Filed Oct. 21, 1965, Ser. No. 500,184**
**Int. Cl. B44d** *1/38*
**U.S. Cl. 117—47** **9 Claims**

In a hot melt coating process the adhesion of the coating to the base is increased by wetting the base with the thin layer of a liquid which is a swelling agent for the polymer and then bringing the base wet with liquid into contact with the bath of molten polymer.

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### 3,480,463

### SELF-CROSS-LINKING ACRYLIC RESIN COATING PROCESS AND PRODUCT

**David Rankin, Kansas City, Kans., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Nov. 18, 1964, Ser. No. 412,261**

**Int. Cl. B44d** *1/09, 1/14*
**U.S. Cl. 117—62** **14 Claims**

Copolymers of ethylene and selected N-disubstituted amino alkyl esters of acrylic or methacrylic acids are cross-linked by heating said copolymers in an oxygen-containing atmosphere.

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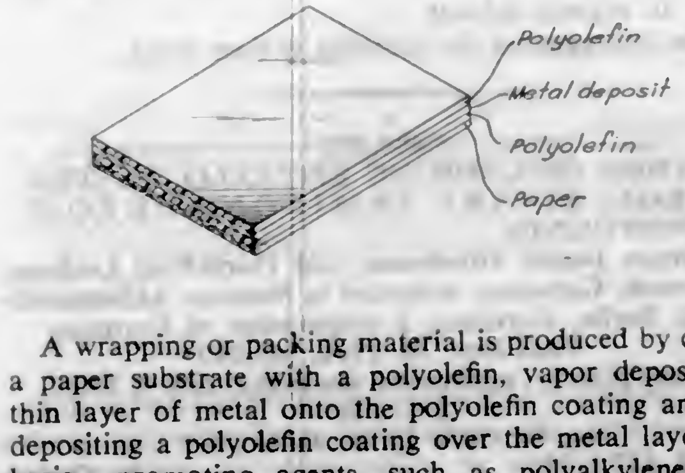
### 3,480,464

### LAMINATE MATERIAL AND METHOD OF MAKING

**George H. Lacy, Rocky River, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**Filed Sept. 21, 1964, Ser. No. 397,688**

**Int. Cl. B44d** *1/14;* **D21h** *1/18*
**U.S. Cl. 117—71** **19 Claims**



A wrapping or packing material is produced by coating a paper substrate with a polyolefin, vapor depositing a thin layer of metal onto the polyolefin coating and then depositing a polyolefin coating over the metal layer. Adhesion promoting agents, such as polyalkyleneimines, and oxidizing treatments, such as methane flame and electrostatic treatments, are employed to effect an improved bond between the layers of the structure.

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### 3,480,465

### METHOD OF CHEMICALLY BONDING ALUMINUM OR ALUMINUM ALLOYS TO FERROUS ALLOYS

**Mamoru Imabayashi, Ibaragi-ken, Japan, and Shichiro Ohshima, 1198, 1-chome, Honcho, Funabachi-shi, Chiba-ken, Japan; said Imabayashi assignor to said Ohshima**

**No Drawing. Filed Mar. 30, 1966, Ser. No. 538,554**

**Int. Cl. B44d** *1/34;* **B32b** *15/20*
**U.S. Cl. 117—71** **6 Claims**

A method of bonding aluminum or aluminum alloys to ferrous alloys including the step of dipping the ferrous alloy in a bath of molten zinc alloy containing 0.001 to 0.01% beryllium, 0.2 to 2% aluminum, less than 7% copper and less than 3% manganese. After the zinc-base alloy solidifies, molten aluminum is brought into association therewith and set to form the aluminum layer on the ferrous alloy.

### 3,480,466

### RELEASE PAPER FOR DEBOSSING PLASTIC SHEETS

**Robert A. Benson, Gorham, Maine, and Robert L. Jones, Gorham, N.H., assignors, by mesne assignments, to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Mar. 17, 1967, Ser. No. 623,823**

**Int. Cl. B44d** *1/14, 1/16*
**U.S. Cl. 117—76** **5 Claims**

Disclosed is a release paper useful for embossing plastic sheets. The release paper consists of a conventional paper sheet base coated with a select aqueous clay-adhesive coating composition and top coated with a tough film of a resinous polymer. The top coating is known per se. The invention resides in the use of a base coating that has an internal cohesiveness that is less than its adhesiveness to the paper sheet or the top film coat, which is achieved by regulating the amount of adhesive binder used in the coating.

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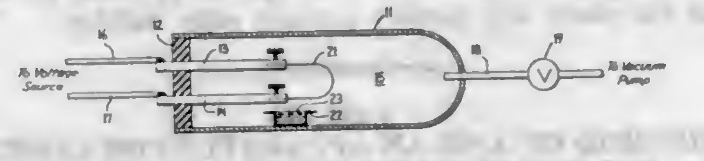
### 3,480,467

### PROCESS FOR DEPOSITING BORON CARBIDE

**Joseph J. Gebhardt, Malvern, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**

**Filed Mar. 30, 1966, Ser. No. 538,933**

**Int. Cl. C23c** *13/02*
**U.S. Cl. 117—93** **3 Claims**



A process for depositing boron carbide on a substrate by heating a substrate to a temperature of about 1215 degrees C. while in an enclosed chamber containing a container of ethyl decaborane and while the pressure within said enclosed chamber is reduced to between about 0.1 and 0.5 mm. of mercury whereby ethyl decaborane vaporizes and boron carbide is deposited upon the substrate.

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### 3,480,468

### PROCESS OF PREPARING PHARMACEUTICAL TABLET WITH ORANGE-PEEL-LIKE PROTECTIVE SUGAR COATING

**Luciano Carletti and Alessandro Rigamonti, Milan, Italy, assignors to Società Farmaceutici Italia, Milan, Italy, an Italian corporation**

**No Drawing. Filed Feb. 9, 1966, Ser. No. 526,035**

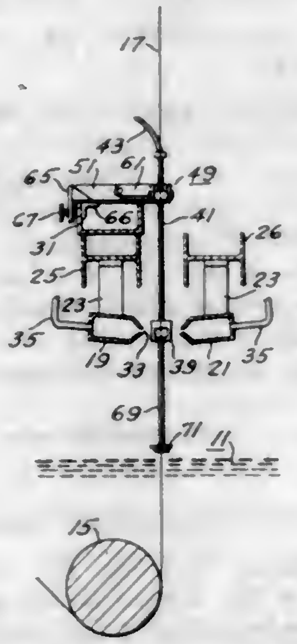
**Claims priority, application Italy, Feb. 12, 1965, 2,917/65**

**Int. Cl. B44d** *1/08;* **A61k** *9/00*
**U.S. Cl. 117—84** **6 Claims**

Described is a process for preparing a pharmaceutical form, which comprises heating tablets from 35 to 60° C. while rotating at from 5 to 30 r.p.m., spraying a protective sugar coating solution, in the presence of air under pressure, onto the tablets, whereby the tablets are given an orange-peel-like protective sugar coating. The ratio of sugar mixture solution to air is between 1:4 and 1:20, while the pressure of the sprayed air is from 0.5 to 2.5 atmospheres in the general circuit and 0.1 to 1.5 atmospheres in the liquid coating container. The temperature of the sprayed air is between 20 and 65° C., while the temperature of the sugar coating solution is between 15° and 80° C. The density of the sugar coating solution is between 1.15 and 1.37 at a temperature of 17.5° C.

### 3,480,469
### AIR KNIFE AND VACUUM DOCTORING

**Robert S. Shaffer, Glen Burnie, Md., assignor to Bethlehem Steel Corporation, a corporation of Delaware**
**Filed Jan. 19, 1967, Ser. No. 610,400**
**Int. Cl. B05c** *11/06, 3/02;* **C23c** *1/14*
**U.S. Cl. 117—102** **2 Claims**



Aspirating devices are positioned adjacent the edges of sheet or strip passing from a molten coating bath between gas wiping dies to draw gas away from the edge of the sheet and thereby prevent edge buildup.

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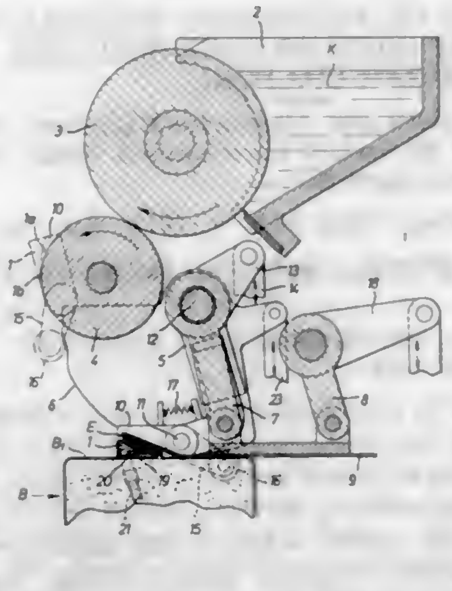
### 3,480,470
### METHOD OF AND AN APPARATUS FOR CEMENTING THE CLOSURE JOINTS OF PACKAGES

**Heinz Kiefer, Stuttgart-Bad Cannstatt, Germany, assignor to Fr. Hesser Maschinenfabrik - Aktiengesellschaft, Stuttgart-Bad Cannstatt, Germany, a corporation of Germany**
**Filed June 9, 1966, Ser. No. 556,301**
**Claims priority, application Germany, July 9, 1965, H 56,543**
**Int. Cl. B44d** *1/02*
**U.S. Cl. 117—111** **6 Claims**



A method and device for cementing the closure joint of a package or bag. The device comprises a cement applicator member and means coupled thereto for applying the member to the sealing surface of the closure joint to apply cement thereto. The device also comprises blowing nozzles associated with the member for directing a stream of a pressurized gas onto the cement to force the cement into the joint.

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### 3,480,471
### PROCESS FOR THE MANUFACTURE OF PRE-IMPREGNATED WEBS

**Karl-Heinz Rembold, Arlesheim, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland**
**No Drawing. Filed May 16, 1966, Ser. No. 550,108**
**Claims priority, application Switzerland, May 22, 1965, 7,146/65**
**Int. Cl. B44d** *1/09;* **C08c** *17/16*
**U.S. Cl. 117—161** **9 Claims**

A process for the manufacture of pre-impregnated flat materials for the manufacture of laminates, wherein a porous flat material is impregnated with a solution containing

(a) a pre-lengthened, still soluble epoxy resin obtained by reacting at an elevated temperautre a liquid to highly viscous epoxy compound having an epoxide equivalency greater than 1 and an epoxide content of over 2.0 1,2-epoxide equivalents per kg. with a curing agent which on reaction with the epoxy compound produces a certain drop in the epoxide content depending on the amount of its addition, the amount of the said curing agent being selected so that at least about 10 to at most about 70%, preferably from 15 to 40%, of epoxide groups present are consumed, with the proviso, however, that the epoxide content should not drop below 2.0 epoxide equivalents per kg. and the reaction is continued until the stage of a stable, pre-lengthened product is reached and all of the curing agent has been consumed,

(b) a curing agent in an amount sufficient to ensure complete curing of the pre-lengthened epoxy resin (a), and

(c) an organic solvent

and the impregnated flat material is then dried.

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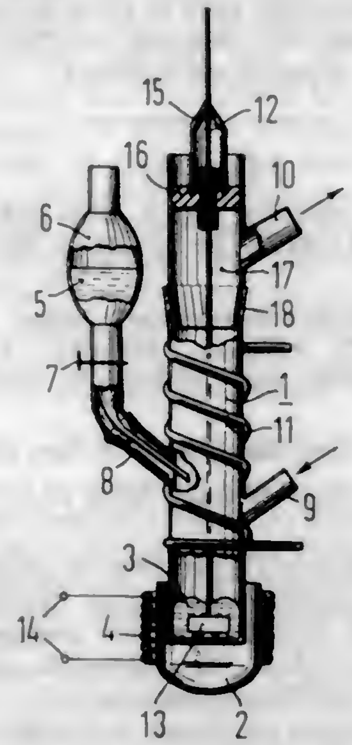
### 3,480,472
### METHOD OF GROWING EPITAXIAL LAYERS FROM BINARY SEMICONDUCTOR COMPOUNDS

**Hansjürgen Dersin Ottobrunn, and Horst-Paul Lochner, Bayreuth, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany**
**Filed June 30, 1966, 561,803**
**Claims priority, application Germany, July 5, 1965, S 97,994**
**Int. Cl. C23c** *13/04;* **B44d** *1/02*
**U.S. Cl. 117—201** **20 Claims**



Described is a method of producing epitaxially grown layers of hyperpure III–V binary semiconductor compounds of stoichiometric composition by precipitation from the gaseous phase. The method comprises the steps of placing a first component of the compound in elemental form into a first reaction vessel and heating the first component to a reaction temperature above its melting point but below the minimum temperature of reaction with the vessel material, then successively adding small quantities of the second component in form of a halogen compound to the molten first component while maintaining the melt in motion, and continuing the supply of the second component until the two components have reacted to form a pulverulent semiconductor compound, liberating the pulverulent semiconductor compound from the by-products of the reaction, thereafter placing the semiconductor compound into a second reaction vessel of annealable material and subjecting the semiconductor compound in the second vessel to a reaction gas at a temperature higher than the reaction temperature to thereby form a dissociable compound, precipitating the semiconductor compound from said dissociable compound upon a heated carrier in said second vessel, and thereafter transferring the precipitated semiconductor material from the carrier by transport reaction to a substrate to form a layer thereupon.

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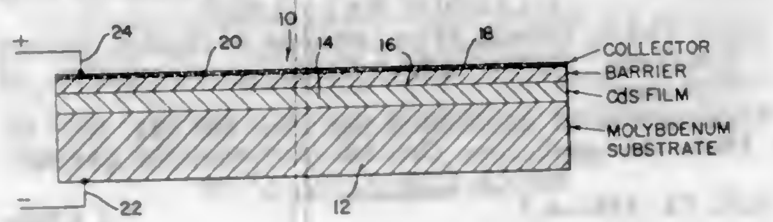
### 3,480,473
### METHOD OF PRODUCING POLYCRYSTALLINE PHOTOVOLTAIC CELLS

**Andrew B. Tanos, Cleveland, Ohio, assignor to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware**
**Filed June 24, 1966, Ser. No. 560,141**
**Int. Cl. C23b** *5/50;* **H01m** *15/04*
**U.S. Cl. 117—217** **8 Claims**



This invention comprises a method of producing an improved polycrystalline photovoltaic cell, preferably of polycrystalline cadmium sulfide, by etching the surface of the polycrystalline semi-conductive material such as cadmium sulfide with hydrochloric acid, or preferably sulfuric acid, before the barrier is formed thereon. Photovoltaic cells made by the process of this invention have an output efficiency 30–50 percent higher than efficiencies of the same cells in which the etching step is omitted.

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### 3,480,474
### METHOD FOR PREPARING SEMICONDUCTOR CRYSTALS

**Reimer Emeis, Ebermannstadt, and Wolfgang Weber, Pretzfeld, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany**
**No Drawing. Filed Mar. 2, 1967, Ser. No. 619,917**
**Claims priority, application Germany, Mar. 4, 1966, S 102,364**
**Int. Cl. B44d** *1/02;* **C23c** *9/00*
**U.S. Cl. 117—224** **7 Claims**

A process for treating semiconductor slices, particularly silicon, which comprises contacting etched and rinsed crystals with an aqueous boron-containing alkali hydroxide solution. The etching and rinsing usually follows slicing and lapping operations.

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### 3,480,475
### METHOD FOR FORMING ELECTRODE IN SEMICONDUCTOR DEVICES

**Morio Inoue and Gota Kano, Suita-shi, and Jinichi Matsuno and Shigetoshi Takayanagi, Kyoto, Japan, assignors to Matsushita Electronics Corporation, Oaza Kadoma, Kadoma-shi, Osaka, Japan, a corporation of Japan**
**Filed Mar. 21, 1967, Ser. No. 624,938**
**Claims priority, application Japan, Mar. 29, 1966, 41/20,210**
**Int. Cl. B44d** *1/14, 1/20*
**U.S. Cl. 117—227** **1 Claim**

A method of depositing a molybdenum or tungsten electrode from a halide or carbonyl compound of such metal onto semiconductor substrate having a surface impurity concentration of $10^{18}$ $cm.^{-3}$ or over while it is heated at 500° C. or lower, wherein the depositing operation can be carried out at a low reaction temperature by preheating said halide or carbonyl compound before the halide is subjected to hydrogen reduction or before said carbonyl compound is subjected to thermal decomposition for inducing deposition.

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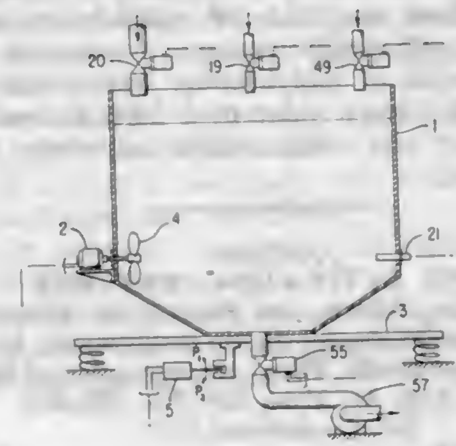
### 3,480,476
### CONTROL SYSTEM FOR SUGAR INVERSION PROCESS

**Ralph E. Abbott, San Francisco, Calif., assignor to Bailey Meter Company, a corporation of Delaware**
**Filed Oct. 17, 1966, Ser. No. 587,027**
**Int. Cl. C13k** *3/00*
**U.S. Cl. 127—1** **8 Claims**



An apparatus for and method of sequentially controlling a batch process for the inversion of sugar. The system compensates for the effect of ambient temperature conditions existing prior to initiating the inversion process while also compensating for the exothermic reaction heat which is lost from a vat, containing the batch, to the ambient environment during the process operation. The means of compensating for the ambient temperature conditions includes a servo follower unit which provides a reverse polarity memory, and the means for compensating for the lost reaction heat includes an integral unit producing a ramp output signal representing total heat lost during the inversion process.

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### 3,480,477
### COPPER RECOVERY

**Allan F. Levin, Doylestown, Pa., assignor to Metal Wire Recovery Corporation, a corporation of the Commonwealth of Pennsylvania**
**No Drawing. Filed May 19, 1967, Ser. No. 639,614**
**Int. Cl. B08b** *3/10*
**U.S. Cl. 134—25** **4 Claims**

A process for recovering electrolytic grade copper from insulated copper wire. The chopped insulated wire is subjected to a bath of low paraffinic content, high aromatic content oil at 450–500° F. Polyethylene must be absent or of very low percentage. A minimum percentage of polyvinyl chloride is necessary.

## 3,480,478

### ADHESION BETWEEN LEAD ELECTRODES AND PARTICLES EMBEDDED THEREIN AND METHOD OF MAKING SAME

**August Wilhelm Sohn, Mannheim-Waldhof, and Albert Erasmus, Mannheim-Kafertal, Germany, assignors to Zellsloffabrik Waldhof A.G., Mannheim-Waldhof, Germany, a corporation of Germany**
**No Drawing. Filed Feb. 6, 1967, Ser. No. 613,998**
**Claims priority, application Germany, Feb. 12, 1966, Z 12,025**
**Int. Cl. H01m** *39/00;* **B32b** *15/04*
**U.S. Cl. 136—26** **8 Claims**

Light weight lead electrodes having embedded therein particles coated with a ligninsulfonate, which ligninsulfonate has been tempered in powder form at temperatures above 100° C.

## 3,480,479

### FUEL CELL AND PROCESS USING MOLYBDENUM OXIDE AND TUNGSTEN DISULFIDE CATALYST

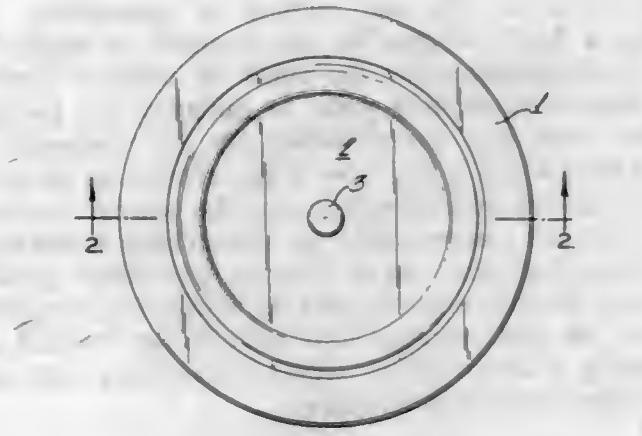
**James F. Nestor, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**No Drawing. Filed Nov. 1, 1967, Ser. No. 679,629**
**Int. Cl. H01m** *27/04*
**U.S. Cl. 136—86** **10 Claims**

A relatively inexpensive catalyst for a fuel cell electrode, particularly useful with acid electrolytes, is an acid-insoluble solid material composed of 10–99 weight percent of at least one oxide of molybdenum and, correspondingly, 1–90 weight percent of tungsten disulfide ($WS_2$), said oxide of molybdenum having the formula $MoO_x$, wherein $x$ has a value of 2–2.88, at least the exposed regions of said solid material containing said sulfide of tungsten.

## 3,480,480

### RAPID ACTIVATING BATTERY

**William C. Merz, Aldan, and Donald W. Klopp, North Wales, Pa., assignors, by mesne assignments, to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**
**Filed Aug. 31, 1964, Ser. No. 393,020**
**Int. Cl. H01m** *17/06*
**U.S. Cl. 136—90** **7 Claims**



1. A compact, rapid activating, reserve electrochemical current producing cell, comprising:
- a housing;
- a rupturable, electrolyte-impermeable barrier dividing said housing into first and second compartments;
- a cathode mounted in a fixed position in said first compartment;
- an anode mounted in relatively fixed and operating position with respect to the cathode and the electrolyte but isolated from a liquid electrolyte by said electrolyte impermeable rupturable barrier in said second compartment;
- liquid electrolyte in said first compartment, said electrolyte and said cathode are in their operating positions with respect to each other with the electrolyte in a preprimed wetting contact with said cathode; and
- means for destroying the rupturable barrier, whereby a substantially instantaneous contact is established between said electrolyte and said anode, to thereby fully activate the cell, said cell being so constructed that said electrodes are mounted in substantially the same position relative to each other prior and subsequent to breaking of said rupturable barrier.

## 3,480,481

### ELECTROCHEMICAL GENERATOR

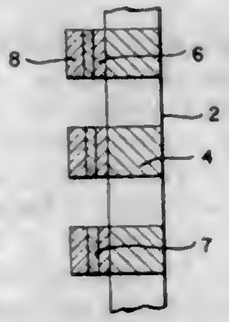
**Adrien Gauthier, Saint-Ouen, and Maurice M. P. Garcin, Paris, France, assignors to Societe Les Piles Wonder, a corporation of France**
**Filed Feb. 12, 1968, Ser. No. 704,772**
**Claims priority, application France, Feb. 17, 1967, 94,500**
**Int. Cl. H01m** *21/00*
**U.S. Cl. 136—111** **4 Claims**

A battery including two opposed upper and lower shell members united along their opposing edges, each shell member comprising a battery terminal. One of the shell members is protected by a piece of insulating material, the periphery of which is disposed between the opposing edges of said shell members. A central part of the piece of insulating material substantially overlies the base wall of one shell member and is connected to the peripheral part of said material by a plurality of connecting elements, which are easily broken to permit removal of the central part.

## 3,480,482

### METHOD FOR MAKING STORAGE TARGETS FOR CATHODE RAY TUBES

**Amos Picker, Sharon, Mass., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**
**Continuation of application Ser. No. 501,191, Oct. 22, 1965. This application Oct. 18, 1967, Ser. No. 684,581**
**Int. Cl. C23c** *13/02, 17/00*
**U.S. Cl. 148—6.3** **1 Claim**



Method of fabricating a storage target for storage tubes wherein zinc sulfide is deposited on and insulated from a mesh support member by a layer of aluminum oxide or titanium oxide formed by glow discharge.

## 3,480,483

### RAZOR BLADES AND METHODS OF MANUFACTURE THEREOF

**Anthony E. F. Wilkinson, Maidenhead, England, assignor to Wilkinson Sword Limited, London, England, a British company**
**No Drawing. Filed May 4, 1966, Ser. No. 547,403**
**Claims priority, application Great Britain, May 6, 1965, 19,085/65**
**Int. Cl. C23c** *11/04;* **C23b** *5/48*
**U.S. Cl. 148—6.3** **11 Claims**

Coatings are formed on the cutting edge of steel razor blades by the steps of cleaning the cutting edge, applying to the cutting edge a thin layer of chromium of less than 400 Angstroms in thickness, preferably of less than 100 Angstroms, after which the blade is heat treated in a controlled oxidising atmosphere. The heat treating may be at a temperature of approximately 400° C. and at a pressure of approximately $10^{-5}$ torricelli.

The chromium content of the blades may be increased in the surface region of the cutting edge by a chromating process. Conversion of a substantial portion of the chromium on the cutting edge to chromium oxide may be effected by anodising, for example by means of a glow discharge or in a liquid electrolyte.

## 3,480,484

### METHOD FOR PREPARING HIGH MOBILITY INDIUM ANTIMONIDE THIN FILMS

**James A. Carroll, Farmingdale, N.Y., and Joel F. Spivak, Hightstown, N.J., assignors to Loral Corporation, Scarsdale, N.Y., a corporation of New York**
**No Drawing. Filed June 28, 1966, Ser. No. 561,022**
**Int. Cl. C23c** *13/02;* **C23b** *5/50*
**U.S. Cl. 148—6.3** **7 Claims**

The process of forming high mobility InSb films which comprises oxidizing a flash-evaporated film of InSb followed by heating to its melting point to recrystallize the deposited oxide coated film.

## 3,480,485

### CORROSION RESISTANT IRON OR STEEL

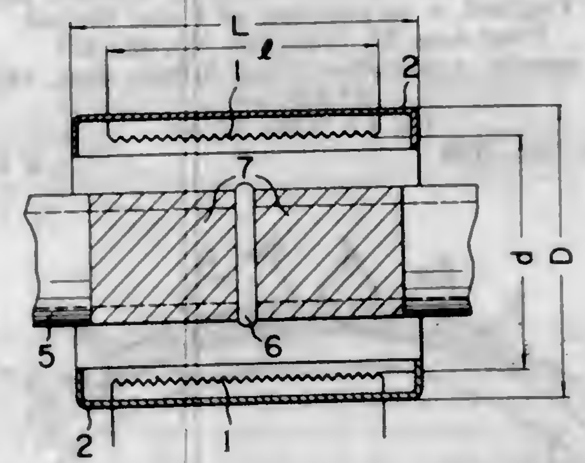
**Gerald M. Hart and James K. Rieke, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 339,074, Jan. 21, 1964. This application Dec. 15, 1967, Ser. No. 690,790**
**Int. Cl. C23f** *7/10*
**U.S. Cl. 148—6.15** **9 Claims**

Corrosion resistant ferrous metal articles are produced by treating the articles with iron phosphate prior to applying a strongly adherent coating of a copolymer of an olefin such as ethylene and an ethylenically unsaturated carboxylic acid such as acrylic acid.

## 3,480,486

### HEATING METHOD FOR LOCAL ANNEALING OR STRESS RELIEVING OF PARTS OF METAL ARTICLES

**Yukio Tanaka, Katsuji Soya, and Hitoshi Yamagishi, Tokyo-to, Japan, assignors to Kokusai Denki Kabushiki Kaisha (known as Kokusai Electric Co., Ltd.), Tokyo-to, Japan, a joint-stock company of Japan**
**Filed June 2, 1966, Ser. No. 554,706**
**Claims priority, application Japan, June 18, 1965, 40/35,982, 40/35,983; Aug. 20, 1965, 40/50,396**
**Int. Cl. C21d** *1/68, 1/30*
**U.S. Cl. 148—18** **4 Claims**



Metal parts are annealed efficiently by first coating the part to be annealed with an absorbent of radiant energy which is principally ferric oxide and then heating the part.

## 3,480,487

### ARC WELDING COMPOSITIONS

**Thomas L. Coless, Maplewood, and Kenneth W. Rimer, Carteret, N.J., assignors to Union Carbide Corporation, a corporation of New York**
**Filed Jan. 3, 1966, Ser. No. 518,161**
**Int. Cl. B23k** *35/36*
**U.S. Cl. 148—26** **5 Claims**

A welding flux composition containing at least one stable oxide selected from the oxides such as aluminum, manganese, magnesium, titanium, calcium and silicon oxides. The sources of these oxides are selected so as to intentionally exclude high valence unstable oxides and to maintain such oxides, if present at all, to a limit of 5 wt.-percent.

## 3,480,488

### SELF-REGULATING COATING PROCESS FOR PROPELLANT MATERIALS

**Thomas P. Rudy, Saratoga, Toshio W. Nakagawa, San Jose, and Joseph M. Greendorfer, Redwood City, Calif., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**
**Filed Aug. 1, 1966, Ser. No. 569,172**
**Int. Cl. C06b** *19/02*
**U.S. Cl. 149—7** **17 Claims**

The coating of a substrate with a polymeric material of uniform and controllable thickness, which thickness is controlled by chemical rather than physical interactions is obtained by immersion of a substrate in a solution of the monomer of the polymer in an inert solvent, if the monomer, the solvent for the monomer, and the substrate are selected within the following guidelines:

(1) the substrate is selected from a material which is an initiator or co-reagent for polymerization of the monomer,
(2) the substrate material is essentially insoluble in the solvent for the monomer,
(3) the solvent is essentially inert with respect to both the monomer and the substrate,
(4) the substrate is capable of forming a solution with the monomer, and
(5) the fugacity of the monomer in solution with the substrate is less than the fugacity of the monomer in solution with the solvent.

## 3,480,489

### PYROTECHNIC COMPOSITION

**Donald Edgar Olander, Fair Oaks, Calif., assignor to Explosive Technology, Inc., Fairfield, Calif., a corporation of California**
**No Drawing. Filed Sept. 20, 1967, Ser. No. 669,296**
**Int. Cl. C06d** *1/10, 1/04*
**U.S. Cl. 149—22** **4 Claims**

Pyrotechnic composition for use as a first fire or ignition mixture consisting of a mixture of amorphous boron and anhydrous calcium chromate.

## 3,480,490

### MULTIPHASE EXTRUDABLE EXPLOSIVES CONTAINING CYCLOTRIMETHYLENETRINITRAMINE OR CYCLOTETRAMETHYLENETETRANITRAMINE

**Milton Finger, Hayward, Edward James, Jr., Castro Valley, and Paul B. Archibald, Pleasanton, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission**
**No Drawing. Filed Aug. 10, 1964, Ser. No. 388,987**
**Int. Cl. C06b** *7/00, 15/00*
**U.S. Cl. 149—92** **14 Claims**

1. A multiphase explosive composition of matter comprising a solid phase of powdered explosive material selected from the group consisting of cyclo-1,3,5,7-tetramethylene-2,4,6,8-tetranitramine and cyclo-1,3,5-trimeth-

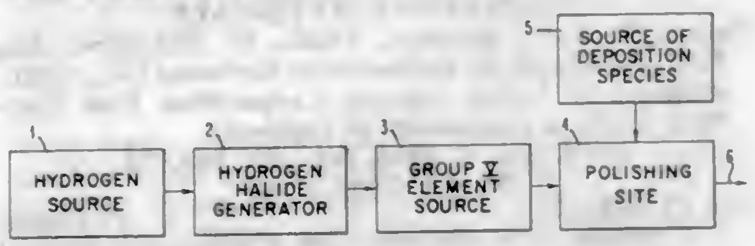
ylene-2,4,6-trinitramine and a liquid phase comprising at least one material selected from the group consisting of methyl-4,4-dinitropentanoate, 2,2-dinitropropyl acrylate, dinitropentano nitrile, ethyl-4,4-dinitropentanoate, and bis (2,2-dinitro-2-fluoroethyl) formal; said cyclo-1,3,5,7-tetramethylene - 2,4,6,8 - tetranitramine being dispersed throughout said liquid.

## 3,480,491

### VAPOR POLISHING TECHNIQUE

**Arnold Reisman, Yorktown Heights, and Horst R. Leonhardt, Ossining, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed Nov. 17, 1965, Ser. No. 508,313**
**Int. Cl. H01l** *7/00*
**U.S. Cl. 156—17** **14 Claims**



A method of polishing semiconductor compounds selected from elements of Group III and Group IV of the Periodic Table such as gallium arsenide is disclosed. The method includes the step of reacting the semiconductor of a substrate with a hydrogen halide at a temperature sufficient to polish a semiconductor and at a gas pressure of an element selected from the Group V elements of the Periodic Table sufficient to prevent dissociation of the semiconductor compound.

## 3,480,492

### METHOD OF BONDING USING EXOTHERMIC ADHESIVE ACTIVATED BY ULTRASONIC ENERGY

**Ray L. Hauser, Boulder, Colo., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware**

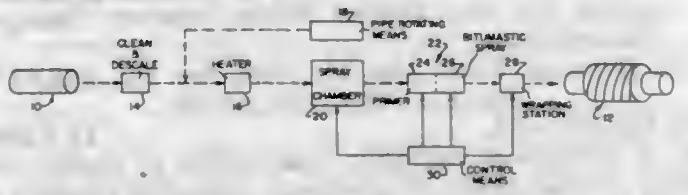
**Filed Feb. 20, 1967, Ser. No. 617,180**
**Int. Cl. B29c** *27/08;* **B32b** *31/16*
**U.S. Cl. 156—73** **5 Claims**

Adhesive material suitable for bonding two parts together using sonic energy for adhesive activation is provided with an ingredient which undergoes an exothermic reaction in order to cause an increase in temperature above that which is normally obtained using sonic energy alone, and which serves to render the surfaces of nonpolar materials polar to provide for better adhesive bonding.

## 3,480,493

### METHOD AND APPARATUS FOR SPRAY FOAM INSULATING A PIPE

**Richard H. Bauer, West Caldwell, and Richard Kilpert, Berkeley Heights, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware**
**Continuation-in-part of application Ser. No. 420,083, Dec. 21, 1964. This application Aug. 27, 1965, Ser. No. 486,591**
**Int. Cl. B32b** *5/18, 31/14;* **B65h** *81/06*
**U.S. Cl. 156—78** **10 Claims**



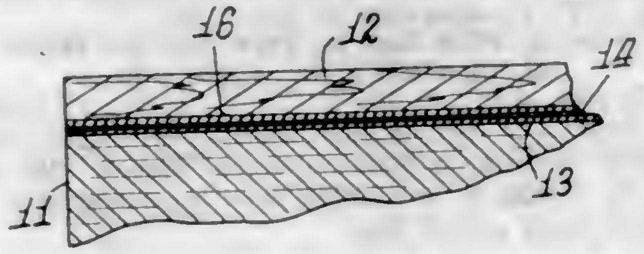
A method and apparatus for applying a sprayed plastic foam insulation to a pipe wherein the pipe is cleaned and preheated to at least 90° F. prior to spray application of foam. The cleaning and preheating assist in the foaming process and enhances the physical bond of the initial layer of sprayed foam to the pipe. A subsequent bitumastic and kraft paper vapor-barrier is subsequently applied to the exterior surface of the insulation.

## 3,480,494

### METHOD OF FORMING FIRE RETARDANT PANELS

**George F. Wilhelm, Oak Park, Ill., assignor to R. S. Bacon Veneer Company, Chicago, Ill., a corporation of Illinois**

**Filed Feb. 11, 1966, Ser. No. 526,747**
**Int. Cl. B32b** *21/04, 31/12;* **C09j** *5/06*
**U.S. Cl. 156—90** **3 Claims**



The method of preparing a fire resistant panel which includes securing a thin layer of cross banded veneer to an asbestos-fiber core by an adhesive which is allowed to cure, then reducing the thickness of the cross-banded veneer to a thin film, followed by application of an adhesive thereon for securing a decorative face veneer thereover.

## 3,480,495

### PROCESS FOR CEMENTING ION-EXCHANGE MATERIAL

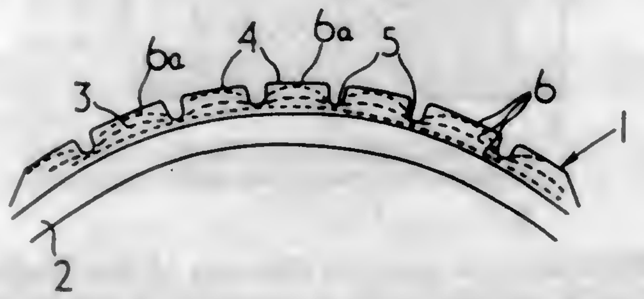
**Bernard I. Sohn, Brookline, John L. Eisenmann, Hingham, and Samuel S. Alexander, Boxboro, Mass., assignors to Ionics, Incorporated, Watertown, Mass.**
**No Drawing. Filed July 11, 1966, Ser. No. 563,969**
**Int. Cl. B32b** *35/00*
**U.S. Cl. 156—94** **9 Claims**

This invention provides a method of filling and repairing holes or ruptures occurring in ion-exchange membranes to make them reusable and also to a process of fabricating bags, boxes etc. by cementing together sheets of ion-exchange material employing an adhesive which will polymerize to form a firm, leak-proof bond.

## 3,480,496

### METHODS OF MANUFACTURING PNEUMATIC TIRES

**Henry Raymond Fletcher, Birmingham, England, assignor to Dunlop Rubber Company Limited, Birmingham, England, a corporation of Great Britain**
**Filed Aug. 27, 1965, Ser. No. 483,261**
**Claims priority, application Great Britain, Sept. 15, 1964, 37,555/64**
**Int. Cl. B29h** *17/02*
**U.S. Cl. 156—128** **6 Claims**

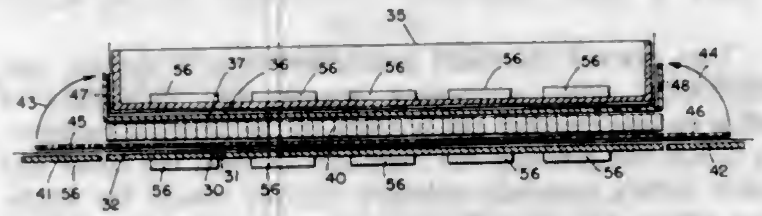


In the present invention, which relates to a manufacture of pneumatic tires, the tire carcass is constructed with a crown portion having a diameter less than that of the carcass in the finished tire. A tread portion is located around the crown portion of the carcass and comprises a plurality of filaments which are longitudinally compressed and are located within the tread. The carcass is formed to its shape in the finished tire and simultaneously the diameter of the tread portion is increased, thereby decompressing the filaments.

## 3,480,497

### METHOD OF MAKING A REINFORCED RESIN PANEL USING A SOLUBLE COVER SHEET

**Donald B. Morse and Alfred B. Menzer, Joliet, Ill., assignors to Kemlite Corporation, Joliet, Ill., a corporation of Illinois**
**Original application Feb. 12, 1963, Ser. No. 258,068. Divided and this application Mar. 27, 1967, Ser. No. 626,270**
**Int. Cl. B32b** *31/12;* **C09j** *5/02*
**U.S. Cl. 156—155** **7 Claims**



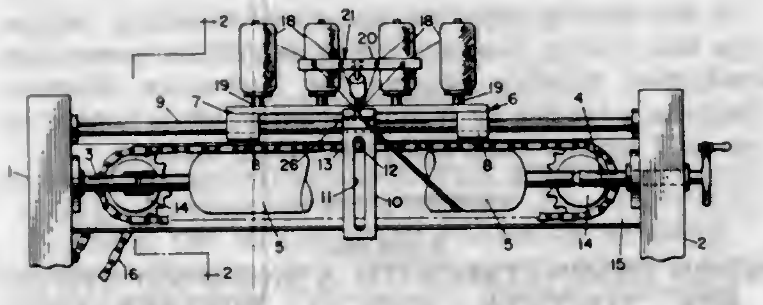
A method of preparing a laminate in which a fibrous sheet is impregnated with a thermosetting resin and a protective film placed over the impregnated sheet, the film being soluble in the resin, and the film and sheet then being passed between rolls before the film dissolves in the resin, and the laminate then heated to cure the resin. Also the method wherein the laminate, before curing, is pressed against the surface of a body to cause the laminate to be bonded to the body.

## 3,480,498

### METHOD OF MAKING FILAMENT WOUND ARTICLES

**James T. Paul, Jr., Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware**

**Filed Sept. 12, 1966, Ser. No. 578,604**
**Int. Cl. B32b** *31/04*
**U.S. Cl. 156—175** **8 Claims**

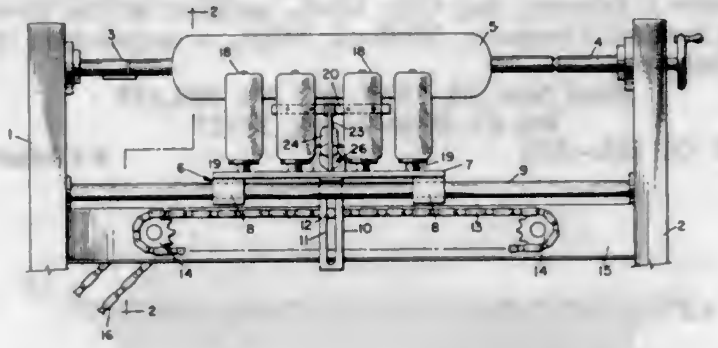


A method of making a low-void filament wound structure wherein the dry filaments are wound on a mandrel, which structure, after winding, is introduced into an enclosure that is then sealed and evacuated, and the binding material is introduced into the evacuated enclosure. After the binding material completely penetrates the windings, the wound structure is cured and removed from the mandrel.

## 3,480,499

### METHOD OF MAKING LOW-VOID FILAMENT WOUND STRUCTURES

**James T. Paul, Jr., Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware**
**Filed Sept. 12, 1966, Ser. No. 578,605**
**Int. Cl. B65h** *54/04;* **B32b** *1/02*
**U.S. Cl. 156—175** **3 Claims**

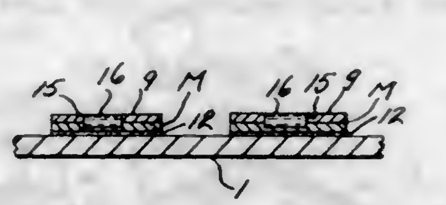


A process for making low-void filament wound structures wherein the roving is directed onto the rotating winding mandrel of a winding machine by means of a roving guide that traverses a path along the mandrel and directs the roving onto the mandrel in accordance with the predetermined pattern, the roving being passed through a vacuum chamber directly into immersion in a resin supply whereby the roving is substantially void-free prior to winding.

## 3,480,500

### PROCESSES FOR MAKING DEBOSSED DECORATIVE METAL FOIL

**Joe M. Hotter, Cleveland, Ohio, assignor to American Greetings Corporation, Cleveland, Ohio, a corporation of Ohio**
**Filed May 24, 1965, Ser. No. 458,270**
**Int. Cl. B44c** *1/28*
**U.S. Cl. 156—220** **1 Claim**

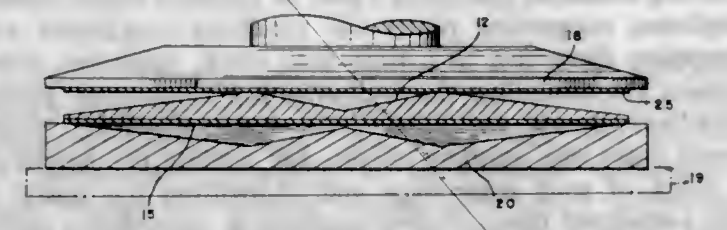


A method of decorating a metallic foil bonded to a base by linking the debossing portions of a printing plate, and pressing the plate against the foil simultaneously to deboss the foil and to deposit ink in the depressions formed.

## 3,480,501

### METHOD OF MANUFACTURING PATTERNED PANEL

**Oren P. Burch, 7001 Harrison Road, Aberdeen, Wash. 98520**
**Filed Mar. 26, 1965, Ser. No. 442,861**
**Int. Cl. B32b** *21/04, 31/20*
**U.S. Cl. 156—228** **3 Claims**



This invention relates to "contoured paneling" and the method of forming the panels wherein the face of the panel is an ornamental design in relief and the method includes the contouring of the back surface of the core panel and then pressing the core panel and a veneer in a die to reshape the core panel to produce the desired decorative surface and to bond the veneer to the reshaped, contoured surface.

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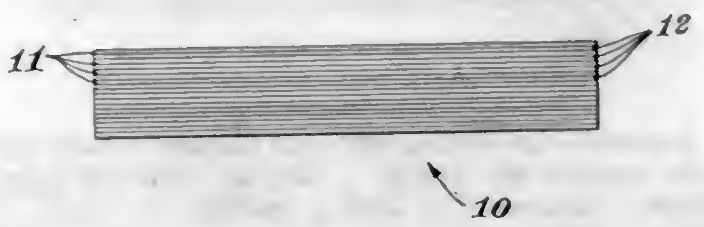
### 3,480,502
### METHOD OF MAKING CHRISTMAS TINSEL

**Walter J. Schrenk, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**Filed Nov. 22, 1965, Ser. No. 509,199**

**Int. Cl. B32b** *27/08, 31/18*

**U.S. Cl. 156—271** **5 Claims**



Christmas tinsel is prepared by slitting an iridescent pigment free plastic film having very thin layers.

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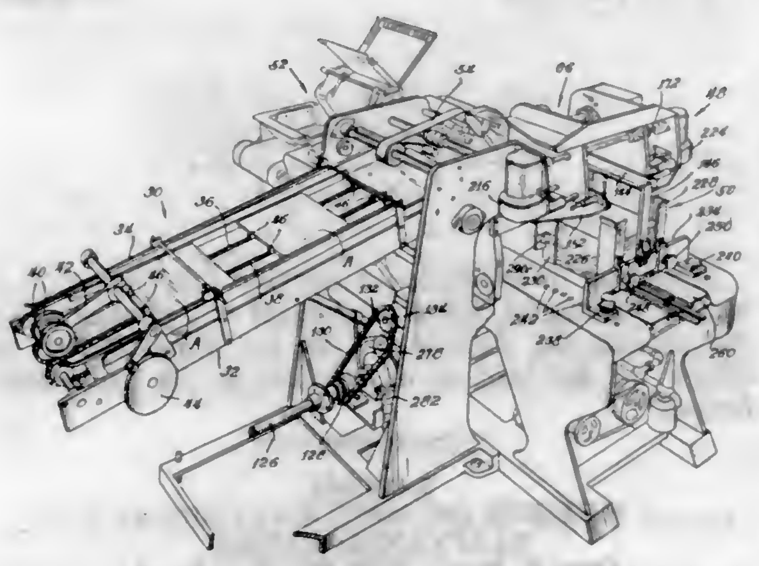
### 3,480,503
### STACKING MACHINE

**John H. Morrow, Oak Lawn, and Charles Mednick, Posen, Ill., assignors to Magnacraft Manufacturing Company, Chicago, Ill., a copartnership**

**Filed Mar. 10, 1966, Ser. No. 533,392**

**Int. Cl. B65c** *1/02*

**U.S. Cl. 156—351** **13 Claims**



An improved system for conveying magazines, stacking the same, and feeding such magazines to a label-affixing machine, including a pair of opposed reciprocating coplanar supporting plates for receiving magazines and dropping them one at a time to a stack, improved drive means for actuating the reciprocating supporting plates, auxiliary means for biasing the two supporting plates away from one another, means for sensing the height of a stack of such magazines and controlling the speed of the associated label-affixing machine in accordance therewith, and an improved conveyor arrangement for feeding the magazines from an inserting machine to a stacking machine and then to the label-affixing machine.

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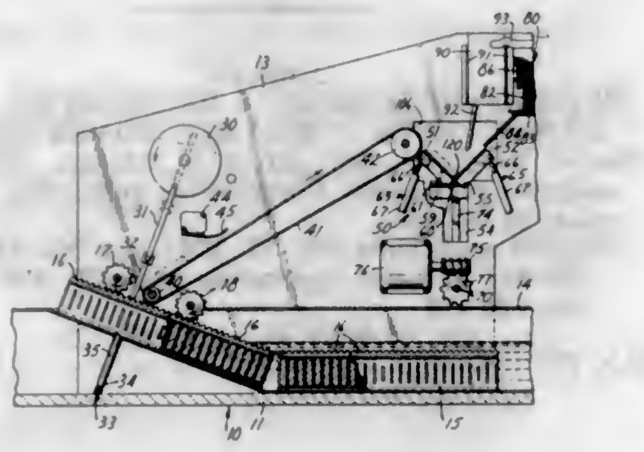
### 3,480,504
### AUTOMATIC APPARATUS FOR APPLYING COVERS TO BIOLOGICAL SLIDES

**Dorothy I. Good and Rose M. Morgan, Fargo, N. Dak., assignors to Lab-Line Biomedical Products, Inc., Melrose Park, Ill., a corporation of Illinois**

**Filed Sept. 13, 1966, Ser. No. 578,622**

**Int. Cl. B65b** *51/02*

**U.S. Cl. 156—356** **9 Claims**



Two pivotal members positioned in a V-shaped configuration with conveying means for depositing a slide on one member and a cover on the opposite member, a motor for pivoting the members to press the cover and slide tightly together, adhesive ejecting means for applying adhesive to the adjacent surface of either the slide or cover and timing means for sequentially operating the apparatus positioning the slide and the cover, the adhesive ejecting means and the pivotally mounted members to automatically fix covers on slides.

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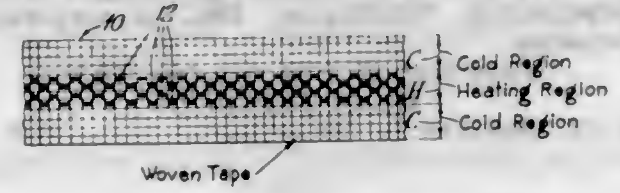
### 3,480,505
### HEAT SEALING

**Emerson Bradford Donnell, Jr., Neshanic, and William L. Calvert, Westfield, N.J., assignors to Union Carbide Corporation, a corporation of New York**

**Continuation-in-part of application Ser. No. 478,348, Aug. 9, 1965. This application Apr. 8, 1966, Ser. No. 541,121**

**Int. Cl. B32b** *31/00;* **H05b** *3/34*

**U.S. Cl. 156—498** **9 Claims**



A heat sealing apparatus and method utilizing impulse type heat sealing filaments interwoven into a woven nonconductive member wherein the interwoven filaments comprise a heating or sealing region which is flanked by two cold regions made up by the woven member.

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### 3,480,506
### WOOD LAMINATED WITH A MODIFIED ETHYLENE POLYMER AND A POLYALKYLENE IMINE

**Gerald M. Hart, Midland, and Glen L. Gunderman, Clare, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Filed Aug. 20, 1964, Ser. No. 391,036**

**Int. Cl. B32b** *21/08, 27/08, 27/04*

**U.S. Cl. 161—165** **14 Claims**

Laminated wood structures having improved resistance to delamination, especially in the presence of considerable moisture, are prepared by bonding plies of wood by

the use of a combination of a polyalkylenimine adhesion promoter and modified ethylene polymer films. The modified ethylene polymers include graft polymers such as of acrylic acid or methacrylic acid grafted onto polyethylene, interpolymers of ethylene and an $\alpha,\beta$-ethylenically unsaturated carboxylic acid or a monomer having groups which are convertible after polymerization to provide carboxyl groups and ethylene polymers modified by surface activation such as by treatment with corona discharge or high energy electrons, for example as produced by electron accelerators, e.g., Van de Graaff generators, resonant transformers or linear accelerators.

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### 3,480,507
### PROCESS FOR THE PREPARATION OF FIBROUS, FILAMENTOUS PRODUCTS AND THE RESULTANT PRODUCT

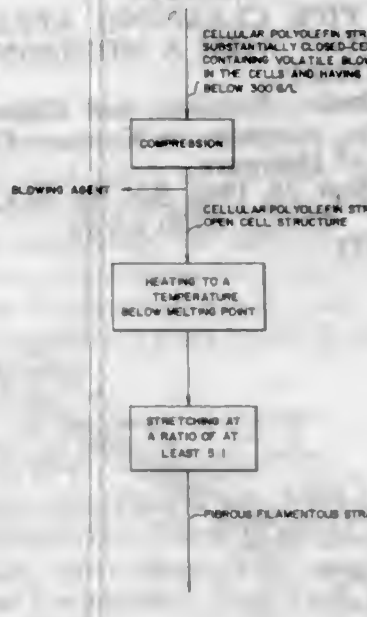
**Lam H. Gouw, Josef H. Voncken, and Hans Frielingsdorf, Delft, Netherlands, and Gene W. Powers, Woodbury Heights, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**Filed Aug. 25, 1966, Ser. No. 574,932**

**Claims priority, application Netherlands, Sept. 2, 1965, 6511455**

**Int. Cl. B29h** *7/20;* **B29c** *25/00*

**U.S. Cl. 161—178** **6 Claims**


CELLULAR POLYOLEFIN STRAND OF SUBSTANTIALLY CLOSED-CELL STRUCTURE CONTAINING VOLATILE BLOWING AGENT IN THE CELLS AND HAVING A DENSITY BELOW 300 G/L
COMPRESSION
BLOWING AGENT
CELLULAR POLYOLEFIN STRAND OF OPEN CELL STRUCTURE
HEATING TO A TEMPERATURE BELOW MELTING POINT
STRETCHING AT A RATIO OF AT LEAST 5:1
FIBROUS FILAMENTOUS STRAND

An improved process is provided for the production of fibrous filamentous strands or plexifilaments from polyolefins. The method comprises extruding a mixture of polyolefin and blowing agent to form strands of low density foam, compressing the strands to convert them from a closed-cell to an open-cell structure and thereafter stretching the strands to at least five times their original length to produce plexifilaments suitable for textile uses and the like.

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### 3,480,508
### METHOD FOR IMPROVING THE PHYSICAL AND CORD-ADHESION PROPERTIES OF NATURAL RUBBER OR STYRENE-BUTADIENE RUBBER

**Hrishikesh Chandra Roy, Grafelfing, near Munich, Germany, assignor to Metzeler AG, Munich, Germany**

**No Drawing. Continuation of application Ser. No. 308,330, Sept. 12, 1963. This application June 15, 1967, Ser. No. 646,428**

**Claims priority, application Germany, Oct. 17, 1962, M 54,533**

**Int. Cl. B32b** *25/12, 25/16*

**U.S. Cl. 161—227** **19 Claims**

Adhesion of tire cord to rubber is improved by the inclusion of dibenzothiazyldisulfide, mercaptobenzothiazol, tetramethylthiuram-disulfide and a quinone dioxime in the rubber vulcanization recipe.

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### 3,480,509
### CONTINUOUS PRODUCTION OF HEAT-INSULATING SHEETS

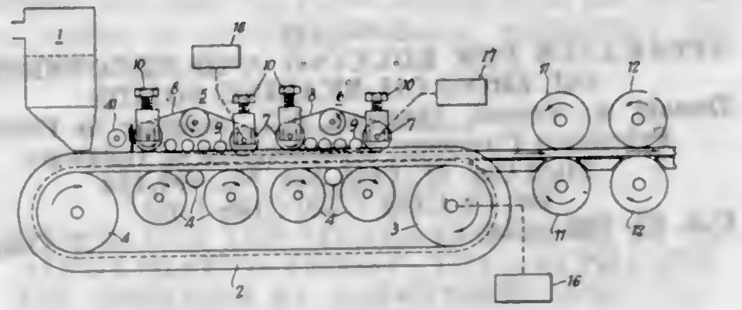
**Paolo Mario Stein, Langenjohnstrasse 9, Postfach, Chur 2, Graubunden, Switzerland**

**Filed Sept. 12, 1966, Ser. No. 578,694**

**Claims priority, application Great Britain, Sept. 14, 1965, 39,212/65**

**Int. Cl. D21h** *5/06*

**U.S. Cl. 162—309** **6 Claims**



Apparatus for the continuous production of refractory heat-insulating sheets from a slurry of refractory and fibrous ingredients including a slurry dispensing tank, an endless permeable support belt with lateral guide elements, adjustable pressure belts for compacting the slurry, and an Archimedean screw for evenly spreading the slurry on the support belt.

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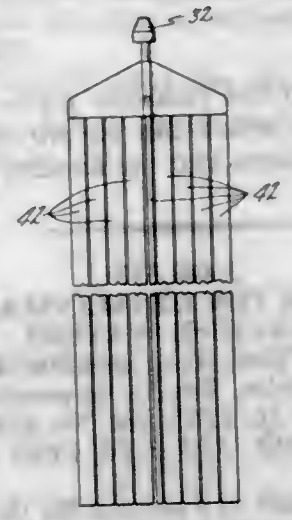
### 3,480,510
### NUCLEAR REACTOR AND CONTROL ROD THEREFOR

**Andrew J. Anthony, Tariffville, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware**

**Continuation-in-part of application Ser. No. 422,290, Dec. 30, 1964. This application Aug. 4, 1966, Ser. No. 573,755**

**Int. Cl. G21c** *7/00*

**U.S. Cl. 176—35** **11 Claims**



A nuclear reactor and a flexible control rod therefor wherein less tolerance is required for the control rod opening between adjacent fuel assemblies. The control rod comprises a plurality of independent rectangular blades located in different planes and rigidly connected at the driven end. Each blade is in spaced relation with the other blades of the control rod throughout substantially its entire remaining length, providing flexibility of each blade in one plane.

**3,480,511**

### ENZYMATIC BREAKER SYSTEM FOR TAMARIND POLYSACCHARIDE

**Duane A. Jones, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware**

**No Drawing. Filed Aug. 11, 1966, Ser. No. 571,717**

**Int. Cl. C12b** *1/00;* **C12k** *1/00*

**U.S. Cl. 195—31** **11 Claims**

This invention relates to enzymatic degradation of the polysaccharide present in the tamarind seed kernel by using a proteolytic enzyme of fungal origin derived from the *Aspergillus orzyaeniger* group. An enzyme degraded polysaccharide finds utility in the oil drilling industry and in the preparation of gelling agents.

**3,480,512**

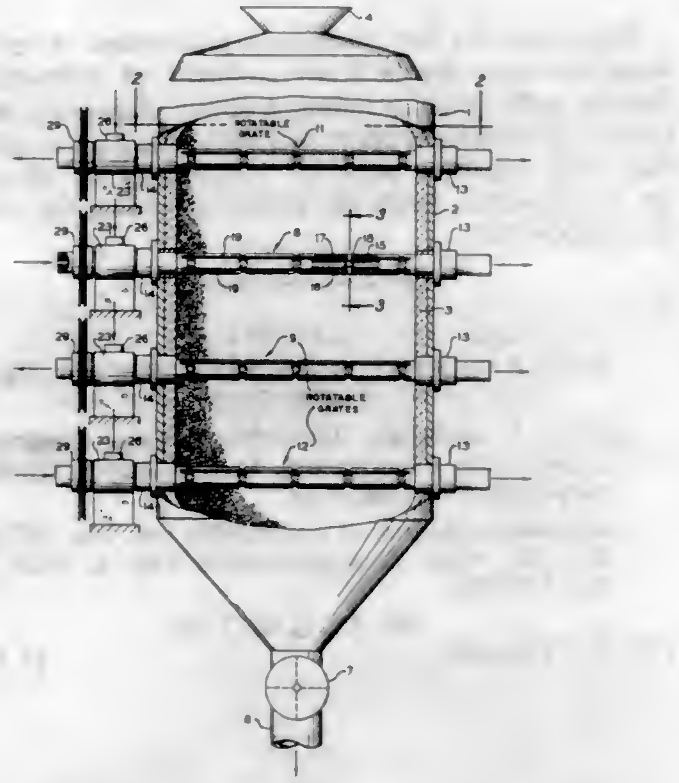
### APPARATUS FOR EDUCING AND RECOVERING OIL FROM OIL-BEARING SOLIDS

**Donald A. Vorum, Madison, N.J., assignor to Phillips Petroleum Company, a corporation of Delaware**

**Filed Oct. 21, 1965, Ser. No. 499,194**

**Int. Cl. C10g** *7/00;* **C10b** *1/04*

**U.S. Cl. 196—124** **7 Claims**



A retorting vessel has rotatable grates comprising rotatable jacket tubes which can be provided with means for introducing coolants into the annulus of the jacketed tubes.

**3,480,513**

### PROCESS FOR THE DESALINIZATION OF BRACKISH WATERS

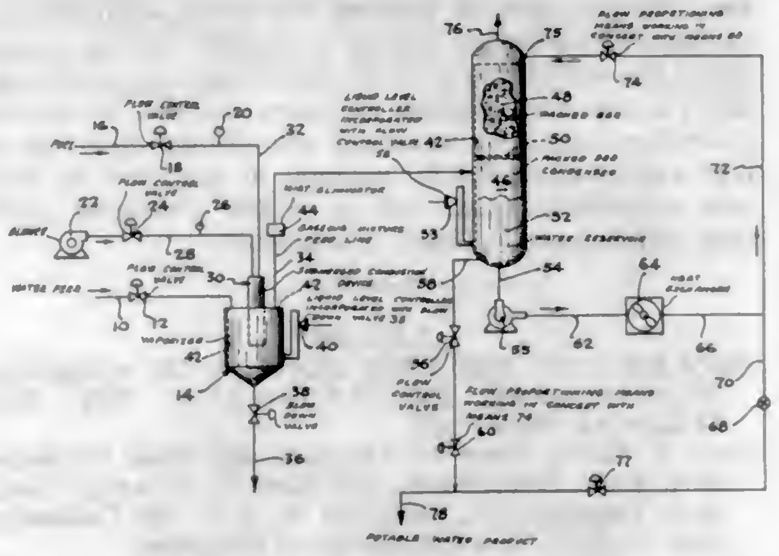
**Ralph E. Martin, Tyler, Tex., assignor to Howe-Baker Engineers, Inc., Tyler, Tex., a corporation of Texas**

**Filed June 26, 1967, Ser. No. 648,600**

**Int. Cl. B01d** *1/14, 3/00;* **C02b** *1/06*

**U.S. Cl. 202—185** **5 Claims**

This invention relates to a process for the desalinization of waters which have dissolved therein large quantities of salts. The desalinization is accomplished by passing such waters through a series of treatment zones whereby a high quality low dissolved solids water is produced. The invention contemplates treating a high dissolved solids water in a vaporizing zone to cause the vaporization thereof by direct contact with the combustion gases produced by the burning of hydrocarbons. The vaporized product from the vaporizing zone is then transferred to a condensing zone. The condensing zone is in the form of a vertical packed column. The packed column is divided into at least two sections with the upper section preferably containing a high capacity, low pressure drop packing material. The bottom section of the vertical column is a hot water reservoir. It is critical to the success of the invention that the temperature of the water in the hot water reservoir to be held at a temperature of at least 165° F.



**3,480,514**

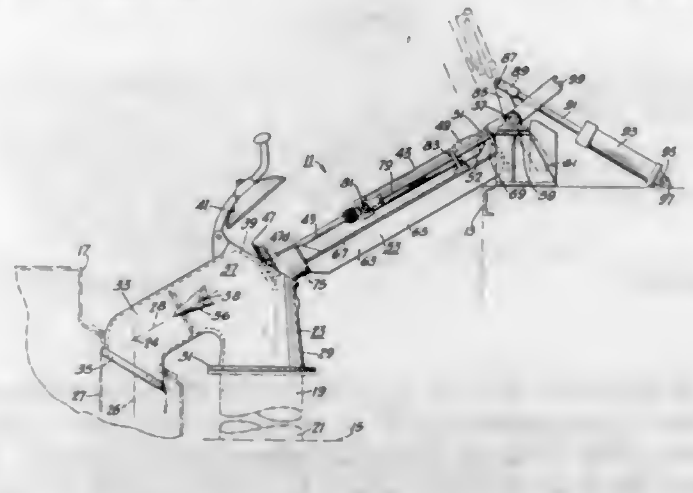
### ASCENSION PIPE CLEANING APPARATUS IN COMBINATION WITH A HORIZONTAL COKE OVEN BATTERY

**Raymond C. Kinzler, Carnegie, and Gilbert C. Nestler, Pittsburgh, Pa., assignors to Koppers Company Inc., a corporation of Delaware**

**Filed Sept. 30, 1966, Ser. No. 583,376**

**Int. Cl. C10b** *43/06*

**U.S. Cl. 202—241** **7 Claims**



Apparatus for cleaning depository material from within elbows of ascension pipes of a coke oven battery includes a ram, pivotally mounted to a frame that is pivotally mounted to a larry car, the ram carrying a cutter head or abrading tool which is inserted into the ascension pipe and reciprocated therein to remove depository material from the ascension pipe elbow. The outer end of the frame carries a guide that engages the opening in the ascension pipe to insure axial alignment for the abrading tool.

**3,480,515**

### METHOD AND APPARATUS FOR VAPOR COMPRESSION DISTILLATION AND VAPOR WASHING OF IMPURE WATER

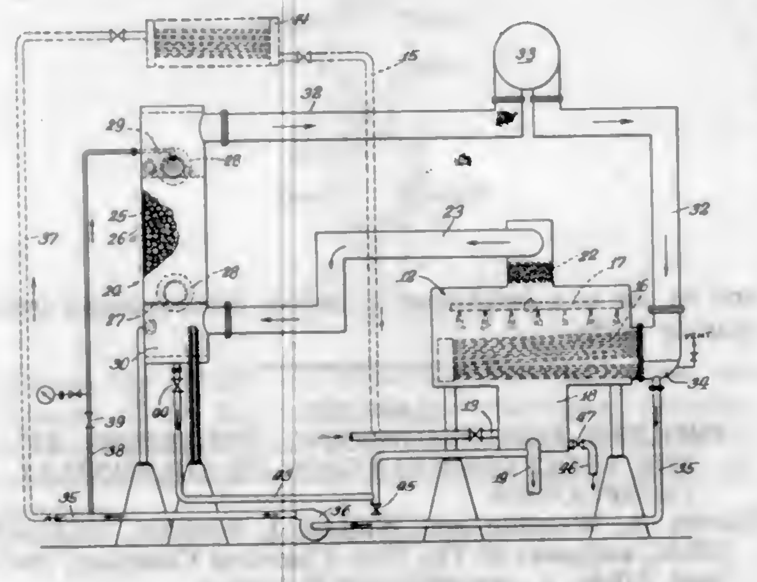
**Richard W. Goeldner, Brookfield, Wis., assignor to Aqua-Chem, Inc., a corporation of Wisconsin**

**Filed Apr. 3, 1964, Ser. No. 357,105**

**Int. Cl. G21c** *19/32;* **C02b** *1/04;* **B01d** *3/00*

**U.S. Cl. 203—10** **10 Claims**

1. A distillation system for purifying impure water which system comprises a vapor compression still system including a shell defining an evaporation chamber, heat exchange tubes in said evaporation chamber for heating said chamber, means for distributing water to be distilled on the outer surface of said tubes, a bottom collection chamber for collecting undistilled water from said tubes, means for recirculating concentrate from said bottom collection chamber to said distributing means, and a vapor compression line receiving vapors from said evaporation chamber including a compressor for compressing the vapors and delivering the compressed vapors through said heat exchange tubes for condensing the vapors and heating said tubes, means for collecting distillate from said tubes as product, said vapor compression line including between said evaporation chamber and said compressor an upward extent defining a packed column containing packing material through which the vapors are delivered upwardly prior to compression and means for delivering wash liquid downwardly through said packed column.



**3,480,516**

### SEPARATION OF NITROALKANES AND ALKANES BY CODISTILLING WITH METHANOL

**John B. Tindall, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland**

**No Drawing. Filed Aug. 26, 1968, Ser. No. 755,437**

**Int. Cl. B01d** *3/14;* **C07c** *79/14*

**U.S. Cl. 203—66** **5 Claims**

A process for the separation of a mixture of one or more nitroalkanes and an alkane having 5–9 carbon atoms by adding methanol to the mixture, codistilling to remove the methanol and alkane, and fractionating to remove excess methanol from the nitroalkane residue.

**3,480,517**

### PURIFICATION OF NITROETHANE BY AZEOTROPIC DISTILLATION WITH n-HEPTANE OR ISOOCTANE

**John B. Tindall, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland**

**No Drawing. Filed Aug. 26, 1968, Ser. No. 755,430**

**Int. Cl. B01d** *3/36;* **C07c** *79/14*

**U.S. Cl. 203—70** **4 Claims**

A process for the purification of nitroethane in a mixture with nitromethane and/or higher nitroalkanes by conducing an azeotropic distillation with n-heptane or isooctane to separate the nitromethane and nitroethane from residual higher nitroalkanes then redistilling to separate the nitromethane and hydrocarbon from the nitroethane.

**3,480,518**

### SEPARATION OF NITROMETHANE AND NITROETHANE BY CO-DISTILLING WITH PENTANE

**John B. Tindall, Terre Haute, Ind., assignor to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland**

**No Drawing. Filed Aug. 26, 1968, Ser. No. 755,439**

**Int. Cl. B01d** *3/34*

**U.S. Cl. 203—70** **4 Claims**

A process for the separation of a mixture of nitromethane and nitroethane by adding pentane to the mixture, co-distilling the nitromethane and pentane, condensing and separating the distillate to produce purified nitromethane, and removing excess pentane from the distillation residue to produce nitroethane substantially free from nitromethane.

**3,480,519**

### METHOD FOR THE SEPARATION OF $C_6$ TO $C_{10}$ ALPHA OLEFINS FROM $C_6$ TO $C_{10}$ ALPHA OLEFIN EPOXIDES BY AZEOTROPIC AND VACUUM DISTILLATION

**Thomas Nelson Baker III, Philadelphia, and Conrad Michalski, Media, Pa., Ming Nan Sheng, Cherry Hill, N.J., Thomas A. Washall, Wilmington, Del., and John G. Zajacek, Strafford, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Oct. 1, 1968, Ser. No. 764,341**

**Int. Cl. B01d** *3/36, 3/10*

**U.S. Cl. 203—55** **4 Claims**

$C_6$ to $C_{10}$ alpha olefins are separated from admixture with $C_6$ to $C_{10}$ alpha olefin epoxides by the steps of azeotropic distillation with a $C_4$ alcohol azeotropic distillation with the $C_4$ alcohol and water, vacuum distillation and azeotropic distillation with a $C_5$ alcohol.

**3,480,520**

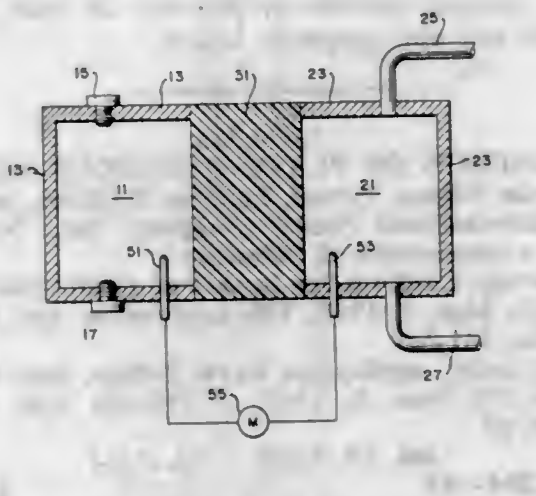
### METHOD FOR SODIUM CONCENTRATION SENSING

**Robert Eugene Smith, Annapolis, Md., assignor to the United States of America as represented by the Secretary of the Navy**

**Filed Nov. 17, 1966, Ser. No. 595,274**

**Int. Cl. B01k** *3/00*

**U.S. Cl. 204—1** **2 Claims**



A method for continuous sensing of a concentration of an amalgam to determine the amount of alkali or base metal dissolved in the mercury.

### 3,480,521

### PROCESS FOR THE ELECTROLYTIC FORMATION OF ALUMINUM COATINGS ON METALLIC SURFACES IN MOLTEN SALT BATH

**Akira Miyata, Chikayoshi Tomita, and Akio Suzuki, Tokyo, and Hideyo Okubo and Masahiko Nagakuni, Kanagawa-ken, Japan, assignors to Nippon Kokan Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan**
**No Drawing. Filed Nov. 9, 1965, Ser. No. 507,034**
**Claims priority, application Japan, Nov. 13, 1964, 39/63,827; Feb. 24, 1965, 40/10,330, 40/10,331**
**Int. Cl. C22d** *3/12;* **C23b** *5/22*
**U.S. Cl. 204—39** **1 Claim**

Process for coating electrolytically metallic surfaces with aluminum in a molten salt bath having an aluminum anode and containing aluminum chloride, which comprises the improvement of intentionally supplying hydrogen ions to the reacting zone between the metallic surface and the molten salts by positively supplying, in the form of small bubbles, gaseous hydrogen or hydrogen chloride while the electrolytic coating process proceeds, said hydrogen or hydrogen chloride being present in the bath in ionized state. The process results in coatings of superior smoothness and bonding strength between the surfaces.

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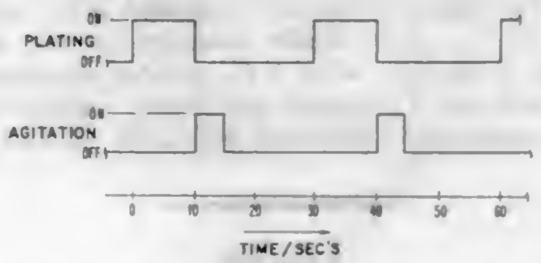
### 3,480,522

### METHOD OF MAKING MAGNETIC THIN FILM DEVICE

**James M. Brownlow, Crompond, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Aug. 18, 1966, Ser. No. 573,417**
**Int. Cl. C23b** *5/50;* **C22c** *39/12*
**U.S. Cl. 204—40** **18 Claims**



The magnetic nickel iron film element is plated from a relatively dilute aqueous bath. A pulse plating technique is employed with a series of current pulses being applied to the bath and the bath being agitated only during the time between current pulses The bath includes, in addition to the nickel and iron ions, copper ions. Each current pulse plates two layers. The first layer is a nickel iron alloy which is rich in copper and is non-magnetic and the second layer is a nickel iron alloy which has a low percentage of copper and is magnetic. The magnetic storage element includes a plurality of such alternate magnetic and non magnetic layers.

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### 3,480,523

### DEPOSITION OF PLATINUM-GROUP METALS

**Colin John Nelson Tyrrell, London, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 436,319, Mar. 1, 1965. This application Apr. 12, 1966, Ser. No. 541,944**
**Claims priority, application Great Britain, Apr. 15, 1965, 16,256/65; Nov. 8, 1965, 47,295/65; Apr. 4, 1966, 16,256/65**
**Int. Cl. C23b** *5/30, 5/24*
**U.S. Cl. 204—43** **14 Claims**

A bath (and process) for plating iridium, palladium, platinum, rhodium and ruthenium and alloys thereof comprises a water solution of the bromide salt of the metal and excess hydrobromic acid.

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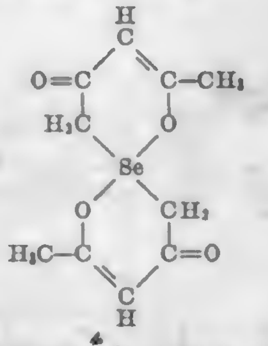
### 3,480,524

### SELENIUM COMPOUND AND ITS USE AS A BRIGHTENER IN A COPPER PLATING BATH

**Paul W. Moy, Cleveland, Ohio, assignor to Kewanee Oil Company, Bryn Mawr, Pa., a corporation of Delaware**
**No Drawing. Filed Sept. 21, 1967, Ser. No. 669,401**
**Int. Cl. C23b** *5/46, 5/18*
**U.S. Cl. 204—52** **6 Claims**

The compound of the formula



and its use as a brightener in copper electroplating from cyanide baths.

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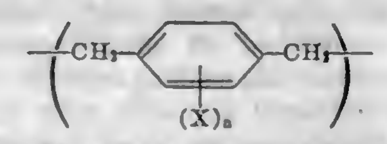
### 3,480,525

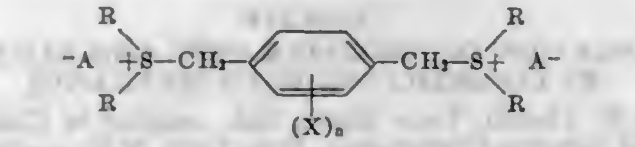
### PROCESS FOR PRODUCING POLYMERS BY THE ELECTROREDUCTION OF SULFONIUM COMPOUNDS

**Ritchie A. Wessling and William J. Settineri, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**No Drawing. Filed June 22, 1967, Ser. No. 647,895**
**Int. Cl. B01k** *1/00*
**U.S. Cl. 204—59** **11 Claims**

A process for preparing polymers of repeat units having the formula



(e.g., poly-p-xylylene) by subjecting a solution in an electrolysis solvent (e.g., water or a polar organic solvent) of a sulfonium salt having the formula



wherein X is a halogen or lower alkyl group, *n* is an integer of from 0 to 4, R is a lower alkyl or hydroxyalkyl group, and $A^-$ is an electrolytically acceptable anion (typically an anion of a strong acid), to an electrical potential sufficient to reduce the sulfonium salt.

The resulting polymers are thermoplastic solids useful as coatings, molding resins, and the like.

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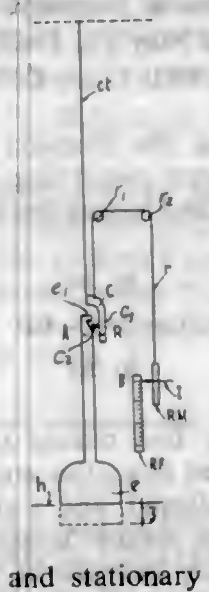
### 3,480,526

### ELECTRODE GUIDE AND PLACEMENT MEANS AND METHOD

**Daniel Duclaux, Lille, France, assignor to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France**
**Filed May 3, 1967, Ser. No. 635,852**
**Claims priority, application France, May 12, 1966, 61,256**
**Int. Cl. C22d** *3/12, 3/02*
**U.S. Cl. 204—67** **10 Claims**

This invention is addressed to a means and method for the proper positioning of replacement electrodes in an electrolysis cell wherein use is made of a key mounted for vertical translatory movement and means thereon for interengagement with the electrode and with a reference mark on the key adapted to relate to reference marks on the electrodes for proper orientation of the key with the electrode and in which the means for vertical adjustment of the key and electrode are mounted in spaced relationship from the key and include a stationary rule having graduations thereon and another rule mounted for movement relative to the stationary rule with an indicator means releasably engaging the mobile and stationary rules for indicating the amount of relative movement between the mobile and stationary rules for proper adjustment of the key and electrode and means interconnecting the mobile rule with the key for translation of movements of the mobile rule to the key to effect adjustments.



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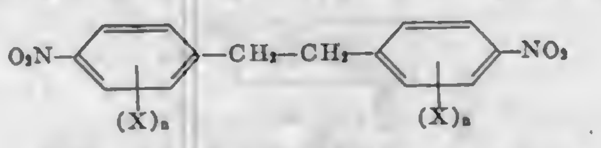
### 3,480,527

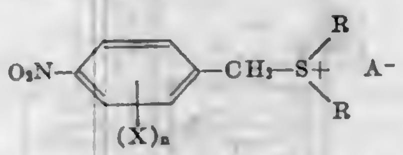
### PROCESS FOR PRODUCING p,p'-DINITROBIBENZYL COMPOUNDS BY THE ELECTROREDUCTION OF SULFONIUM COMPOUNDS

**Ritchie A. Wessling and William J. Settineri, Midland, Mich., assignors to Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**No Drawing. Filed June 22, 1967, Ser. No. 647,896**
**Int. Cl. B01k** *1/00*
**U.S. Cl. 204—73** **10 Claims**

A process for preparing compounds having the formula



(e.g., p,p'-dinitrobibenzyl) by subjecting a solution in an electrolysis solvent (e.g. water or a polar organic solvent) of a sulfonium salt having the formula



wherein X is a lower alkyl group, *n* is an integer of from 0 to 4, R is an alkyl or hydroxyalkyl group, and $A^-$ is an electrolytically acceptable anion (typically an anion of a strong acid), to an electrical potential sufficient to reduce the sulfonium salt.

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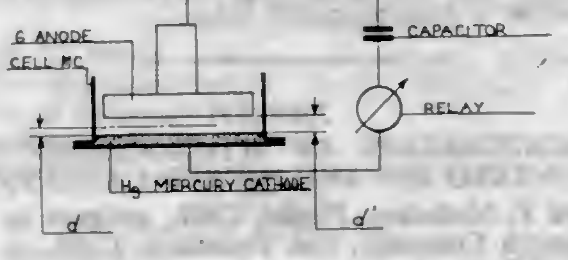
### 3,480,528

### PROCESS FOR THE ADJUSTMENT OF THE DISTANCE BETWEEN THE ELECTRODES OF OPERATING ELECTROLYSIS CELLS

**Jean Max Clement, Boitsforth, Belgium, assignor to Solvay & Cie, Brussels, Belgium**
**Filed Sept. 1, 1965, Ser. No. 484,180**
**Claims priority, application Belgium, Oct. 19, 1964, 654,539**
**Int. Cl. B01k** *3/00;* **C22d** *1/04*
**U.S. Cl. 204—99** **7 Claims**

Method of accurately setting a desired gap between the anodes and mercury cathode of an electrolytic cell by immersing each anode in the mercury cathode, thereby short circuiting it during operation of the cell and sensing the electrolytic current or potential upon withdrawal of the individual anodes and determining cessation of the established short circuit, said cessation of short circuit corresponding to a point at which each anode is again effective as an active electrode. This is a reference point to be used for spacing the individual anodes a vertical distance from the cathode representative of the optimum gap corresponding to the optimum yield of the cell.



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### 3,480,529

### ELECTRO-CHEMICAL METHOD FOR SELECTED DISSOCIATION

**Owen R. Waltrip, Roseville, Calif., assignor of twenty-five percent to John Konsonlas, ten percent to Paul J. Lunardi, and ten percent to Willis Hampton, all of Roseville, Calif.**
**Continuation-in-part of application Ser. No. 497,044, Oct. 18, 1965. This application Oct. 31, 1967, Ser. No. 679,484**
**Int. Cl. C02b** *1/82;* **C01d** *7/34;* **B01k** *1/00*
**U.S. Cl. 204—130** **9 Claims**

A method for dissociating a medium within a treating zone to recover predetermined elemental components of the medium by establishing a D.C. potential within the treating zone, super-imposing oscillating electrical energy, at a radio frequency value, on the D.C. potential, and simultaneously imparting oscillating mechanical energy within the audio frequency range to the medium entering the treating zone for controlled dissociation of at least a portion of the medium to recover, and thus effectively remove, preselected elemental components of the medium.

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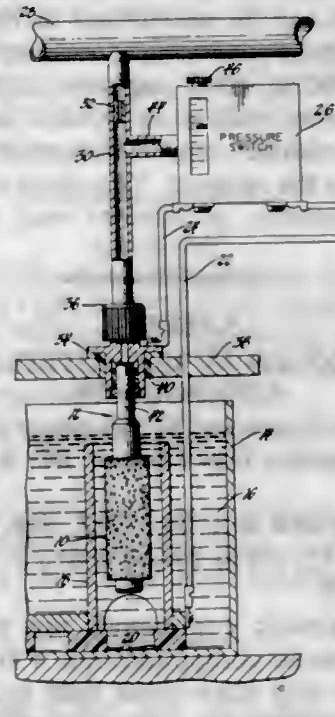
### 3,480,530

### METHOD FOR PRODUCING POROUS METAL PARTS HAVING UNIFORM FLUID PERMEABILITY

**Donald A. Voorhies, West Hartford, Conn., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 15, 1966, Ser. No. 594,480**
**Int. Cl. B23p** *1/00;* **B22f** *3/24*
**U.S. Cl. 204—141** **5 Claims**



Precise control over the permeability of a porous metal part is accomplished by monitoring the flow rate of the air through the part during electrolytic erosion of metal from the surface pores. The electrolytic erosion is automatically discontinued when the back pressure of the air falls below a predetermined value.

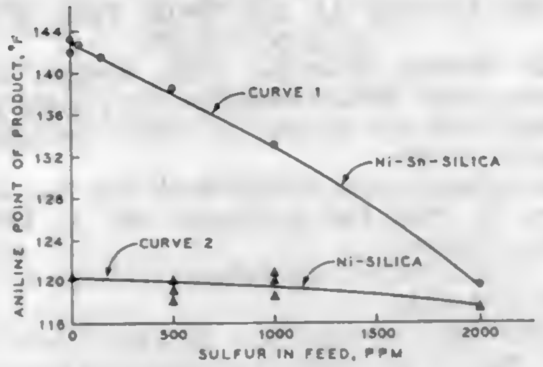
### 3,480,531
### HYDROGENATION OF HYDROCARBONS WITH MIXED TIN AND NICKEL CATALYST

**Bernard F. Mulaskey, Pinole, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware**

**Continuation-in-part of application Ser. No. 645,855, June 8, 1967. This application July 12, 1968, Ser. No. 744,370**

**Int. Cl. C10g** *23/02*

**U.S. Cl. 208—143** **11 Claims**



Unsaturated hydrocarbons, particularly aromatics, are converted to more saturated hydrocarbons, without substantial cracking, by contacting the hydrocarbons in the presence of hydrogen at hydrogenation conditions with a catalyst comprising nickel and tin, or their compounds, associated with a porous solid carrier.

### 3,480,532
### PHOTOCHEMICAL PROCESS FOR PRODUCING ADDUCTS

**Derek Bryce-Smith, Andrew Gilbert, and Brian Vickery, Reading, England**

**No Drawing. Continuation-in-part of application Ser. No. 328,505, Dec. 6, 1963. This application Dec. 23, 1964, Ser. No. 420,785**

**Int. Cl. C07c** *51/54;* **C07b** *29/00*

**U.S. Cl. 204—158** **13 Claims**

A process for producing a tricyclic tetracarboxylic dianhydride which can be substituted in the 7 and 8 positions which comprises exposing to radiant energy of wavelengths from 2700 to 4000 angstrom units a solution of substituted benzene, maleic anhydride and an aromatic carbonyl photosensitizer and subsequently separating the dianhydride from the mixture. The dianhydrides produced are useful in forming polyimides and as cross-linking agents.

### 3,480,533
### PREPARATION OF SUBSTITUTED AROMATIC COMPOUNDS

**James J. Louvar, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**

**No Drawing. Filed July 24, 1967, Ser. No. 655,297**

**Int. Cl. C07b** *29/04;* **C07c** *3/50*

**U.S. Cl. 204—158** **12 Claims**

Substituted aromatic compounds are prepared by irradiating an aromatic compound and a free radical generating precursor with ultra-violet light in the presence of a catalyst comprising an organometallic coordinating complex.

### 3,480,534
### TRANSBROMINATION PROCESS

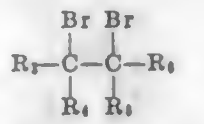
**David E. Harmer, Midland, Ramon A. Mount, East Lansing, and James J. Vanderbush, Jr., Edenville, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Filed May 13, 1965, Ser. No. 455,653**

**Int. Cl. B01j** *1/10;* **C07b** *9/00*

**U.S. Cl. 204—163** **8 Claims**

Compounds having the formula $R_1—C\equiv C—R_2$ are brominated by a process comprising contacting said compounds with a compound having the formula



$$R_3-\underset{R_4}{\overset{Br}{C}}-\underset{R_5}{\overset{Br}{C}}-R_6$$

in the presence of a free radical initiator. Each R independently is selected from the group consisting of hydrogen; alkyl; aryl; alkenyl; and a chloro or bromo-substituted alkyl, aryl, or alkenyl group provided that each of $R_3$–$R_6$ independently can also be bromo or chloro.

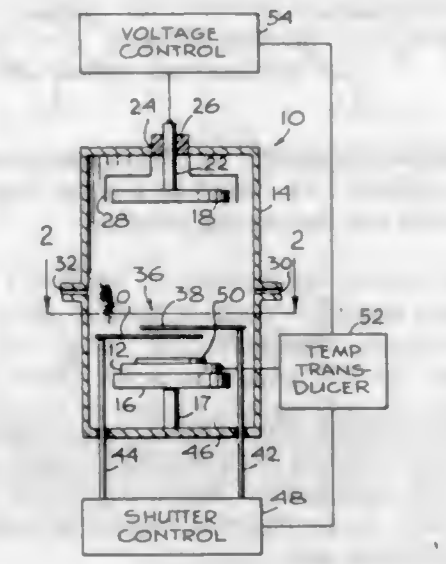
### 3,480,535
### SPUTTER DEPOSITING SEMICONDUCTOR MATERIAL AND FORMING SEMICONDUCTOR JUNCTIONS THROUGH A MOLTEN LAYER

**Murray Bloom, Los Angeles, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio**

**Filed July 7, 1966, Ser. No. 563,467**

**Int. Cl. C23c** *15/00*

**U.S. Cl. 204—192** **6 Claims**



There is disclosed a method and apparatus for sputter depositing a layer of semiconductor material from a cathode onto a semiconductor substrate through a molten metal alloy layer on the substrate. The surface of the molten layer away from the substrate is at a higher temperature which is above the melting point of the sputtered semiconductor so that it will go into solution, whereas the temperature of the surface of the substrate contacting the bottom of the alloy layer is below the melting point of the sputtered material so that it will crystallize out of solution and deposit onto the substrate. If the sputtered semiconductor is of the opposite conductivity type from the semiconductor substrate a very efficient method of establishing a p–n junction without diffusion into the substrate is afforded.

### 3,480,536
### ION SENSITIVE LANTHANUM-CERIUM CONTAINING GLASS ELECTRODE

**Edwin P. Arthur, Fullerton, Calif., assignor to Beckman Instruments, Inc., a corporation of California**

**No Drawing. Filed Nov. 19, 1965, Ser. No. 508,865**

**Int. Cl. B01k** *3/04, 3/10*

**U.S. Cl. 204—195** **2 Claims**

A glass electrode having a low resistance, low sodium ion error glass membrane for hydrogen ion concentration measurements. The preferred membrane composition comprises, in mole percent, about 51.2 silica, 9.3 titanium dioxide, 26.3 lithia, 6.1 barium oxide, 2.7 lanthanum oxide and 4.4 cerium oxide.

### 3,480,537
### ELECTROCHEMICAL MARKING ARRANGEMENT WITH CURRENT LIMITING DEVICE

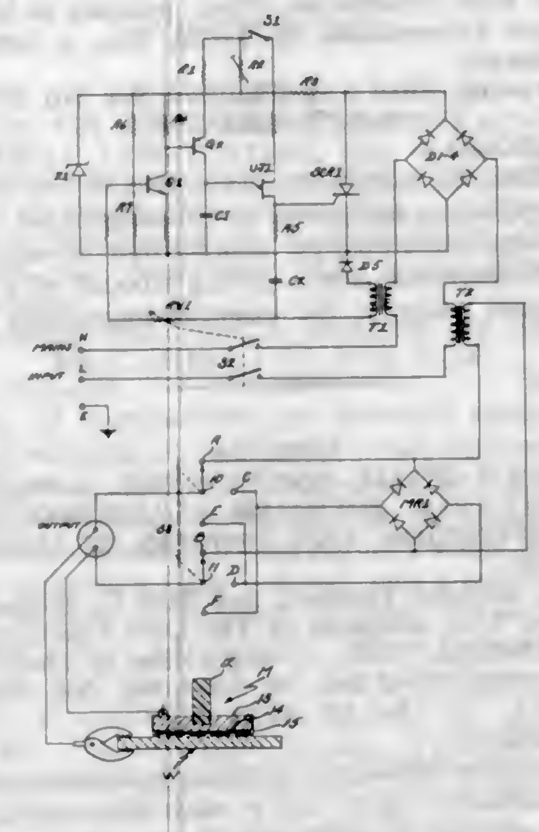
**Clifford Garnett, Calmady, Darby Gardens, Sunbury-on-Thames, Surrey, England**

**Filed Oct. 5, 1966, Ser. No. 584,506**

**Claims priority, application Great Britain, Oct. 8, 1965, 42,848/65**

**Int. Cl. C23b** *5/68*

**U.S. Cl. 204—224** **4 Claims**



An electro-chemical marking arrangement comprises a stencil applied to a metal workpiece and having an electrolyte-retaining pad contacting the upper surface of the stencil and a metal base in contact with the pad. An electronically controlled current supply connected between the base and the workpiece incorporates a current-limiting device comprising a bridge rectifier, the current through which is controlled by a silicon controlled rectifier. A pulse generator is connected with the unsmoothed voltage output of the bridge rectifier so that each pulse turns on the silicon controlled rectifier, and a current sensing device in circuit with the bridge rectifier is arranged to delay the delivery of each pulse as the current sensed by the device increases so as to delay the turning on of the silicon controlled rectifier to a later point in the positive half-cycle, whereby to limit the current to the bridge rectifier.

### 3,480,538
### CATALYST ELECTRODE FOR ELECTROCHEMICAL CELLS

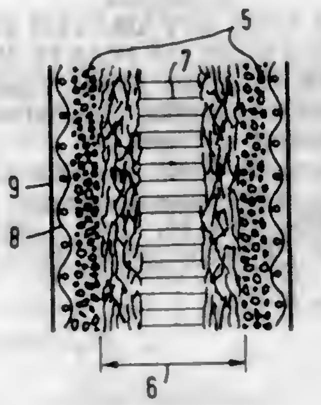
**Ferdinand V. Sturm, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany**

**Filed Feb. 1, 1966, Ser. No. 524,225**

**Claims priority, application Germany, Feb. 5, 1965, S 95,327**

**Int. Cl. B01k** *3/04*

**U.S. Cl. 204—290** **6 Claims**



Electrode assembly for an electrochemical cell having a side engageable with reaction gas in the cell and a side engageable with electrolyte in the cell includes a nonmetallic cover layer on the electrolyte-engaging side thereof, and a layer formed of pulverulent catalyst material located on the gas-engaging side thereof and intermixed with binder material bonding the particles of pulverulent material to one another and to the cover layer.

### 3,480,539
### MORDENITE CATALYST COMPOSITIONS

**Alexis Voorhies, Jr., Charles Newton Kimberlin, Jr., and Elroy Merle Gladrow, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware**

**Filed Oct. 14, 1966, Ser. No. 586,695**

**Int. Cl. B01j** *11/60;* **C07c** *5/14;* **C10g** *35/08*

**U.S. Cl. 208—111** **9 Claims**

The catalytic properties of crystalline aluminosilicate zeolites having the mordenite crystal structure are improved by treating said zeolites with a mineral acid. The treatment is accomplished at conditions such that alumina is extracted from the crystalline lattice. The improved catalytic properties are obtained when sufficient alumina has been removed to increase the silica/alumina ratio to at least 25 to 1. Best results are obtained when this ratio is increased to a value greater than 55 to 1.

### 3,480,540
### PROCESS FOR HYDROFINING BITUMEN DERIVED FROM TAR SANDS

**Jackson Eng and William R. Guggisberg, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware**

**Filed Mar. 16, 1967, Ser. No. 623,621**

**Int. Cl. C10c** *1/20;* **C10g** *31/14, 23/00*

**U.S. Cl. 208—93** **11 Claims**

Process for hydrofining bitumen derived from tar sands comprising blending virgin fractions and cracked fractions, hydrofining the blend and recovering hydrofined products.

### ERRATA

For Class 208—143 see:
Patent No. 3,480,531

For Class 210—4 see:
Patent No. 3,480,144

**3,480,541**

### SEWAGE FLOCCULATION

**Ronald D. Lees, Houston, Tex., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Dec. 31, 1968, Ser. No. 789,015**

**Int. Cl. C02c** *1/40, 5/10, 1/02*

**U.S. Cl. 210—18** **8 Claims**

A process of providing for the flocculation and sedimentation of solids of raw influence sewage slurry with cationic polymers, at least a portion of said sewage slurry having been subjected to aerobic microbial action.

**3,480,542**

### METHOD AND APPARATUS FOR THE PURIFICATION OF WASTE WATER

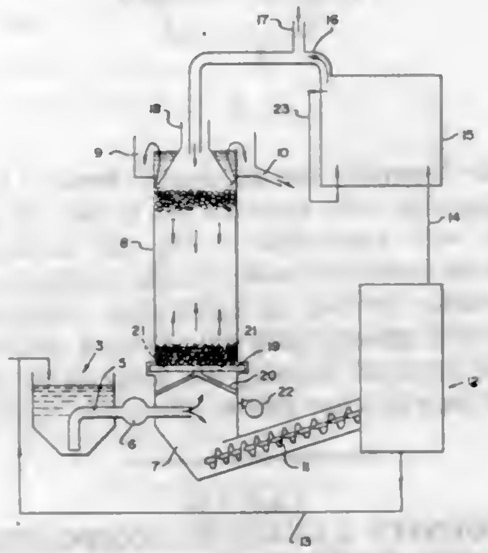
**Wilhelm Bucksteeg and Hans Thiele, Essen, Germany, assignors to Passavant-Werke, Michelbacherbutte, Germany, a corporation of Germany**

**Filed Apr. 10, 1967, Ser. No. 629,652**

**Claims priority, application Germany, Apr. 9, 1966, 1,584,866; July 16, 1966, 1,584,867**

**Int. Cl. B01d** *29/08, 29/02*

**U.S. Cl. 210—20** **32 Claims**



A method and apparatus for treating sewage wherein carbonized sludge smolder coke forms a filter bed for clarifying effluent separated from the sludge. The smolder coke may also be mixed with the sewage sludge for accelerating decomposition thereof.

**3,480,543**

### PROCESS AND APPARATUS FOR DISINFECTION OF SEWAGE

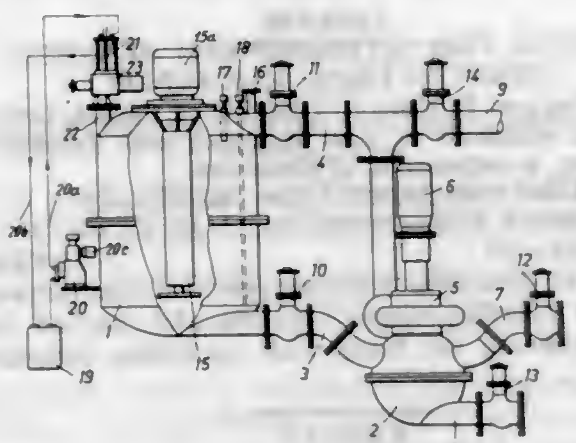
**Karl-Heinz Hildebrand, Sommerstrasse 53, Fachbach, near Bad Ems, Germany**

**Filed May 26, 1967, Ser. No. 641,544**

**Claims priority, application Germany, May 28, 1966, H 59,550**

**Int. Cl. B01d** *21/01*

**U.S. Cl. 210—60** **10 Claims**



Apparatus for treatment of sewage with chlorine. Comprises a hydraulic circuit wherein a batch of sewage is circulated by a pump which simultaneously serves as a means to comminute certain solid ingredients. An agitator provided in a tank which forms part of the hydraulic circuit serves to mix sewage with air, and a feeding device dumps measured amounts of chlorine into the tank so that the circulating sewage is disinfected within a matter of seconds. Unbreakable solids of high specific weight accumulate in a second tank of the hydraulic system and are sterilized by the circulating fraction of sewage. The solids accumulating in the second tank can be evacuated by gravity or by attendants. An electric control system regulates the operation of valves, motors for the pump and agitator, and the operation of the feeding device.

**3,480,544**

### LECITHIN COMPOSITIONS

**Walden K. Hilty, Chatham, N.J., assignor to Ross & Rowe, Inc., Fort Lauderdale, Fla., a corporation of Florida**

**No Drawing. Filed Mar. 27, 1967, Ser. No. 625,958**

**Int. Cl. A23k** *7/02;* **C09k** *3/00*

**U.S. Cl. 252—1** **4 Claims**

In relatively simple manner, novel, low cost, finely divided, free flowing compositions containing oils and high lecithin content are made available.

**3,480,545**

### METHOD OF CONTROLLING THE SPREAD OF FIRES

**James W. Dale, Winchester, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware**

**No Drawing. Filed Aug. 17, 1966, Ser. No. 572,911**

**Int. Cl. A62d** *1/00*

**U.S. Cl. 252—2** **12 Claims**

A method for controlling the spread of fire which involves applying to an ignited or ignitable object, a viscoelastic, flame inhibiting gel composition having a halogenated hydrocarbon and a gelling amount of a mixture of aluminum soaps as the essential ingredients thereof.

**3,480,546**

### AQUEOUS FOAM CONTAINING A WATER-SWELLABLE POLYMER FLAMEPROOFING COMPOSITION AND PROCESS OF MAKING SAME

**Robert N. Bashaw, Freeport, and Billy G. Harper, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Filed Feb. 28, 1964, Ser. No. 348,301**

**Int. Cl. A62d** *1/00*

**U.S. Cl. 252—3** **8 Claims**

The invention relates to a foaming concentrate containing a spumiferous agent and a water-dispersable, water-swellable polymer in particulate form and a process of making same into a gelled aqueous foam for use in fighting fires.

**3,480,547**

### LOW-FRICTION PACKING OR BEARING MATERIAL

**John W. Van Dyk, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed July 7, 1967, Ser. No. 651,694**

**Int. Cl. C10m** *7/28;* **F16d** *69/00*

**U.S. Cl. 252—12.6** **13 Claims**

An article adapted for use as a low-friction packing, sealing or bearing material is prepared by providing a porous fibrous substrate of ordinary organic textile fibers (e.g., polyester or nylon fibers) containing a porous flexible polymeric impregnant, coating the substrate with a dispersion of fine particles of polytetrafluoroethylene or the like so that the dispersion penetrates the pores of the substrate drying the coated substrate without fusing said particles, and preferably hot-press-consolidating the article to lock said particles within said pores without fusing the particles.

**3,480,548**

### ALKALINE EARTH METAL POLYBORATE CARBONATE OVERBASED ALKALINE EARTH METAL SULFONATE LUBE OIL COMPOSITION

**Walter W. Hellmuth, Beacon, Doris Kivelevich and James G. Dadura. Fishkill, and Bertrand G. Morissette, Beacon, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed June 21, 1967, Ser. No. 647,607**

**Int. Cl. C10m** *1/40*

**U.S. Cl. 252—33.4** **13 Claims**

A lubricating oil composition comprising hydrocarbon lubricating oil and an amount sufficient to impart detergent properties thereto of an additive consisting of an oil soluble normal alkaline earth metal hydrocarbon sulfonate and an alkaline earth metal polyborate alkaline earth metal carbonate in colloidal-like dispersion in said composition. The lubricating oil composition is prepared by reacting a lubricating oil dispersion of an alkaline earth metal carbonate and alkaline earth metal hydrocarbon sulfonate with a boron compound selected from the group consisting of boric acids, boron oxides and aqueous alkyl esters of boric acids.

**3,480,549**

### CUTTING OIL COMPOSITIONS CONTAINING A MINERAL LUBRICATING OIL BASE AND A POLYDIENE-POLYHALOMETHANE ADDUCT

**Donald D. Carlos, Crown Point, Ind., and David W. Young, Homewood, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Nov. 9, 1966, Ser. No. 592,972**

**Int. Cl. C10m** *1/30, 3/24, 5/18*

**U.S. Cl. 252—54** **9 Claims**

Cutting oil compositions are provided comprising a mineral lubricating oil base as the major component and a small amount, effective to enhance cutting, e.g. effective to reduce feed force when used in the machining of metals, of an adduct of a polymer of a diene, such as a hydroxyl-containing diene polymer, and a polyhalomethane. The latter component has no more than two fluorine atoms, and can be, for example, carbon tetrachloride or chloroform. The diene polymer has a Staudinger molecular weight of about 200 to 25,000, and the adduct contains about 1 to 35 weight percent of halogen of said polyhalomethane. Said adduct is formed by free radical initiation.

**3,480,550**

### LUBRICANT CONTAINING MIXTURE OF LOW AND HIGH MOLECULAR WEIGHT SULFONATES

**Bennett M. Henderson, Edwardsville, Ill., and Hyman Ratner and Eugene Wittner, Florissant, Mo., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Jan. 17, 1967, Ser. No. 609,785**

**Int. Cl. C10m** *3/34, 1/40*

**U.S. Cl. 252—33** **6 Claims**

Anti-rust and cleanliness properties of lubricating oils are improved by the addition of a blend of high and low molecular weight highly basic alkaline-earth metal petroleum sulfonates.

**3,480,551**

### LUBRICATING COMPOSITION

**Frederic C. McCoy, Beacon, and Edwin C. Knowles, Poughkeepsie, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed May 22, 1964, Ser. No. 369,627**

**Int. Cl. C10m** *3/48, 3/26, 3/14*

**U.S. Cl. 252—42.7** **11 Claims**

1. A lubricating composition comprising a major proportion of a lubricating oil and 0.05 to 10 percent by weight of an oil-soluble adduct represented by the formula:

$$(RR'_mOH)_2.MX_z$$

wherein R is a hydrocarbyl radical having from 12 to 30 carbon atoms, R′ is a divalent radical selected from the group consisting of $—OCH_2CH_2—$ and $—NHCH_2CH_2$, *m* is an integer from 0 to 10, M is a polyvalent cation selected from the class consisting of titanium, zinc, copper, zirconium and antimony, X is an anion selected from the group consisting of chloride, bromide, fluoride, iodide and thiocyanate anions and *z* is an integer from 2 to 4 equal to the valence of M.

**3,480,552**

### MANUFACTURE OF MATERIALS CAPABLE OF AMPLIFYING WAVE ENERGY

**Joseph V. Fisher, Valencia, Pa., assignor to Semi-Elements, Inc., Saxonburg, Pa., a corporation of Pennsylvania**

**No Drawing. Continuation of application Ser. No. 194,151, May 11, 1962. This application June 9, 1965, Ser. No. 462,710**

**Int. Cl. H01p** *3/16, 1/02;* **C09k** *1/04*

**U.S. Cl. 252—62.51** **6 Claims**

1. In the method for producing single crystals capable of amplifying wave energy by stimulated emission of radiation, the steps of mixing a host material with a leaching agent and a compound containing a dopant element selected from the group consisting of the rare earths and transition elements, the host material being such as to accommodate stimulated emission of radiation in single crystal form, placing said mixture in a container, heating said container with the mixture therein in a heating zone to melt the mixture within the container, withdrawing melted material from the heating zone whereby a single crystal will be formed starting from a seed, and subjecting the crystal thus formed to infrared energy to permanently change the valence state of the dopant element therein, which change in valence state will persist at room temperature.

**3,480,553**

### OXIDATION RESISTANT HIGH ENERGY MAGNETIC MATERIAL

**Archibald N. Wright, Schenectady, N.Y., and John R. Feller, Trufant, Mich., assignors to General Electric Company, a corporation of New York**

**Filed Feb. 20, 1967, Ser. No. 617,371**

**Int. Cl. H01f** *1/26, 10/00*

**U.S. Cl. 252—62.54** **10 Claims**

High energy magnetic material composed of single domain magnetic particles with an oxidation inhibiting film on at least a portion of the surfaces of the particles. The film is formed by ultraviolet surface photopolymerization of a monomer in the gaseous phase.

### 3,480,554
### SINGLE PHASE LEAD TELLURIDE

**Louis F. Kendall, Jr., Scotia, and James H. Bredt, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York**

**No Drawing. Continuation-in-part of application Ser. No. 547,425, May 4, 1966. This application Dec. 5, 1966, Ser. No. 598,937**

**Int. Cl. C01b** *19/00;* **H01v** *1/18*

**U.S. Cl. 252—62.3** **9 Claims**

The provision of high density polycrystalline single phase n-type and p-type lead telluride semiconductive thermoelectric generator elements is disclosed. In these materials, a single phase structure is achieved by the substantial elimination of the excess lead in the n-type and the excess tellurium in the p-type over stoichiometric PbTe, previously thought to be essential. The elimination of the lower melting point second phase improves certain thermoelectric, mechanical, and physical properties and provides materials having improved properties for use in the thermoelectric generation of power.

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### 3,480,555
### SOLS OF GAMMA FERRIC OXIDE AND THEIR PREPARATION

**William M. Jackson and Frank W. Hengeveld, Painesville, Ohio, assignors to Diamond Shamrock Corporation, Cleveland, Ohio, a corporation of Delaware**

**No Drawing. Filed May 11, 1964, Ser. No. 370,143**

**Int. Cl. H01f** *1/34;* **B01j** *1/04*

**U.S. Cl. 252—62.56** **24 Claims**

Stable magnetic gamma ferric oxide aquasols are prepared by treating an aqueous solution of ferric and ferrous salts in which the molar ratio of ferric ions to ferrous ions is between 3:1 and 1:1 with an anion exchange resin. The pH of the mixture during ion exchange is between 7.5 and 9.5 and the sol is stabilized by rapidly reducing its pH to between 1 and 3. The aquasol may be dialyzed to form a gel and the gel contacted with a solution of a lyophillic anionic transfer agent in an organic liquid to form a stable organosol of gamma ferric oxide.

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### 3,480,556
### PRIMARY ALCOHOL SULFATE DETERGENT COMPOSITIONS

**William J. De Witt, Burlington, N.J., and Robert C. Taylor, King of Prussia, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Sept. 29 1966, Ser. No. 583,104**

**Int. Cl. C11d** *1/60, 11/42*

**U.S. Cl. 252—152** **10 Claims**

Detergent compositions having superior washing properties comprise a mixture of straight chain and beta-branched chain primary alcohol sulfates.

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### 3,480,557
### SOLID STABILIZED HYDROGEN PEROXIDE COMPOSITIONS

**Dimitry Alexis Shiraeff, Kutztown, Pa., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Jan. 30, 1967, Ser. No. 612,316**

**Int. Cl. C01b** *15/02*

**U.S. Cl. 252—186** **5 Claims**

A solid stabilized hydrogen peroxide composition comprising hydrogen peroxide and a stabilizing amount of a water-soluble polymeric N-vinyl heterocyclic compound which may be prepared by drying an aqueous solution of said components.

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### 3,480,558
### CATALYST REGENERATION

**David W. Lum and Irving L. Mador, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia**

**No Drawing. Filed June 10, 1966, Ser. No. 557,599**

**Int. Cl. B01j** *11/18;* **C07c** *67/04*

**U.S. Cl. 252—416** **6 Claims**

A method for the regeneration of a spent Group VIII noble metal catalyst such as palladium for reuse in the preparation of unsaturated organic esters. The spent catalyst is sequentially treated with oxygen and hydrogen to effect regeneration. An inert gas stream is passed over the catalyst initially, intermediate to the oxygen and hydrogen treatments, and subsequent to the hydrogen treatment.

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### 3,480,559
### PRODUCTION OF 1-HALO-3,3-DIALKYL ALKANES USING AN EXCESS OF ETHYLENE

**Emmett H. Burk, Jr., Glenwood, and William D. Hoffman, Park Forest, Ill., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 314,601, Oct. 8, 1963. This application July 17, 1967, Ser. No. 653,679**

**Int. Cl. B01j** *11/78;* **C07c** *17/28*

**U.S. Cl. 252—431** **4 Claims**

The present invention provides a process for reacting a tertiary-alkyl halide with ethylene to form 1-halo-3,3-dialkyl alkanes. The reaction requires that the reactants be combined with a Friedel-Crafts catalyst at low temperature. The present invention comprises the discovery that essentially quantitative yields are provided if at the inception of ethylene consumption, an excess of at least about 75 moles of ethylene per mole of catalyst per hour is provided.

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### 3,480,560
### CURING CATALYST

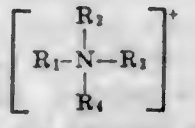
**Joseph A. Vasta, Sharon Hill, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Original application Feb. 16, 1965, Ser. No. 433,207, now Patent No. 3,347,951. Divided and this application July 25, 1967, Ser. No. 662,253**

**Int. Cl. C07c** *87/30*

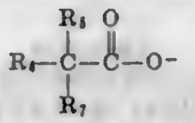
**U.S. Cl. 252—426** **6 Claims**

A curing catalyst consisting essentially of a mixture of two quaternary ammonium salts, each having a cation with the structural formula



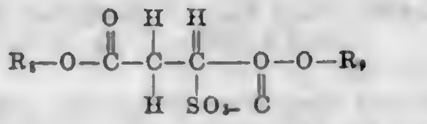
$$\left[R_1-\overset{R_2}{\underset{R_4}{N}}-R_3\right]^+$$

wherein $R_1$ is a $C_{12}$ to $C_{20}$ straight chain alkyl group, and $R_2$, $R_3$ and $R_4$ are individually selected from the group consisting of hydrogen and $C_1$ to $C_8$ alkyl groups, one of the organic anions of said salts being (A) an anion of a tertiary carboxylic acid having the structural formula



$$R_6-\overset{R_5}{\underset{R_7}{C}}-\overset{O}{\overset{\|}{C}}-O^-$$

wherein $R_5$ is methyl and $R_6$ and $R_7$ are individually $C_1$ to $C_{12}$ straight chain alkyl groups, and the other anion being (B) an anion of a dialkyl sulfosuccinate having the structural formula,



$$R_8-O-\overset{O}{\overset{\|}{C}}-\overset{H}{\underset{H}{C}}-\overset{H}{\underset{SO_3^-}{C}}-\underset{\overset{\|}{C}}{O}-O-R_9$$

wherein $R_8$ and $R_9$ are $C_8$ to $C_9$ alkyl groups, the curing catalyst mixture having from 1 to 3 parts by weight of the quaternary ammonium salt of anion (A) to 1 part by

weight of the quaternary ammonium salt of anion (B). This curing catalyst is useful in providing a curing means for blends of a carboxy-containing addition polymer and a vic-epoxy resin because it prevents binder cure at low temperatures and increases the curing rate at elevated temperatures thereby making it possible to provide a practical coating composition in one package, said composition being suitable for application even after storage for extended periods.

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### 3,480,561
### CURING OF POLYESTER COMPOSITIONS

**Shoshana Abrahami, Beersheba, Aharon Molcho, Rehovot, and Reuven (Roman) Wachs, Beersheba, Israel, assignors to Makhteshim Chemical Works Ltd., Beersheba, Israel, a corporation of Israel**

**No Drawing. Filed June 20, 1966, Ser. No. 558,627**

**Claims priority, application Israel, June 24, 1965, 23,798**

**Int. Cl. B01j** *11/58, 11/32*

**U.S. Cl. 252—428** **4 Claims**

Accelerators for use in curable polyester compositions are provided by dissolving vanadium pentoxide in concentrated hydrochloric acid, removing water, and admixing with an ester of phosphorous acid.

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### 3,480,562
### METHOD FOR FORMING OLEFIN POLYMERIZATION CATALYSTS

**Erik Tornqvist, Roselle, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 536,648, Mar. 23, 1966. This application Dec. 2, 1966, Ser. No. 598,594**

**The portion of the term of the patent subsequent to Jan. 17, 1984, has been disclaimed**

**Int. Cl. B01j** *11/84*

**U.S. Cl. 252—429** **9 Claims**

Monoolefin and diolefin polymerization catalysts are formed by heating a transition metal trihalide with aluminum triiodide at temperatures in excess of 200° C. The product can then be activated with an organo-aluminum compound.

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### 3,480,563
### ORGANIC-SOLUBLE MOLYBDENUM CATALYSTS

**Giovanni A. Bonetti, Wynnewood, and Rudolph Rosenthal, Broomall, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Oct. 25, 1967, Ser. No. 677,874**

**Int. Cl. B01j** *11/32;* **C07d** *1/08*

**U.S. Cl. 252—431** **7 Claims**

Method for the preparation of organic-soluble molybdenum containing catalysts useful for the epoxidation of olefinic compounds by reacting molybdenum trioxide with a monohydric primary saturated acyclic alcohol having from 4 to 22 carbon atoms in the molecule or with a mono- or polyalkylene glycol monoalkyl ether or mixtures thereof and the catalyst prepared by such method.

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### 3,480,564
### OXIDATION CATALYST

**John F. O'Brien, Louisville, Ky., and Donald R. Broughton, New Albany, Ind., assignors to Catalysts and Chemicals, Inc., Louisville, Ky., a corporation of Delaware**

**No Drawing. Filed Jan. 22, 1968, Ser. No. 699,292**

**Int. Cl. B01j** *11/82, 11/46*

**U.S. Cl. 252—435** **3 Claims**

A catalyst particularly effective for the oxidation of propylene-ammonia mixtures to form acrylonitrile consists essentially of oxides of molybdenum and phosphorus in conjunction with a synergistic combination of arsenic and tin oxides. The mol ratio of tin to arsenic is 1.8 to 3.2:1. The catalyst is also useful for the oxidation of olefins to aldehydes and ketones and for the oxidative dehydrogenation of olefins to diolefins.

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### 3,480,565
### NAPHTHALENE AND ORTHOXYLENE OXIDATION CATALYSTS

**Rodney A. Adams, Louisville, Ky., assignor to Catalysts and Chemicals, Inc., a corporation of Delaware**

**No Drawing. Filed Aug. 4, 1967, Ser. No. 658,338**

**Int. Cl. B01j** *11/82*

**U.S. Cl. 252—443** **6 Claims**

Phthalic anhydride is almost entirely produced by the direct air oxidation of either naphthalene or orthoxylene. A vanadium pentoxide type catalyst especially suitable for the oxidation of orthoxylene is prepared herein containing vanadium pentoxide, chromic oxide and vanadyl sulfate prior to calcination.

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### 3,480,566
### LOW MELTING GLASS AND COMPOSITIONS CONTAINING THE SAME

**Lewis C. Hoffman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Oct. 22, 1965, Ser. No. 502,486**

**Int. Cl. H01b** *1/00;* **C03c** *3/30*

**U.S. Cl. 252—514** **4 Claims**

This invention relates to vitreous compositions comprising small but substantial amounts of certain metal oxides which impart unexpected and beneficial high wetting and low temperature softening characteristics to the vitreous composition in which they are included. More especially, the invention relates to the inclusion of either $WO_3$ or $V_2O_5$ into glasses containing $Bi_2O_3$, PbO, and at least one of the two oxides $B_2O_3$ and $SiO_2$. The invention, in addition, is directed to overglazing and metallizing compositions which include the novel vitreous compositions referred to above.

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### 3,480,567
### POLYMERIZATION OF A VICINAL ALKYLENE OXIDE USING A NOVEL ORGANOMETALLIC COMPOUND-POLYOL COCATALYST

**Yutaka Matsui, Ashiya, Norishige Hashimoto, Nishinomiya, and Noritoshi Mise, Higashinada-ku, Kobe, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan**

**No Drawing. Filed May 23, 1962, Ser. No. 196,899**

**Int. Cl. C08g** *23/06, 23/14*

**U.S. Cl. 260—2** **13 Claims**

**1.** A catalyst for the polymerization of vicinal alkylene oxides which is the product of the reaction in an inert gas, in the presence of a suitable solvent, and, at a temperature which is maximally ambient, of di(lower) alkyl zinc with polyhydric thioalcohol free of interfering functional groups, the latter being present in an amount of about 0.05 to 2 moles per mole of dialkyl zinc.

**6.** A method for polymerizing vicinal alkylene oxides, which comprises contacting under polymerizing conditions a monomeric vicinal alkylene oxide free of interfering functional groups with about 0.01 to 1 percent by weight, relative to said alkylene oxide, of a polymerization catalyst consisting of the product of the reaction of a di(lower alkyl) zinc having the formula:

$$Zn(R)_2$$

wherein R stands for a lower alkyl selected from the group consisting of methyl, ethyl, propyl and butyl with a member selected from the group consisting of polyhydric thioalcohol free of interfering functional groups, ethylene glycol, sorbitol, sucrose monopalmitate, sucrose dipalmitate, said member being present in an amount of about 0.05 to 2 moles per mole of dialkyl zinc.

### 3,480,568

### POLYMERIZATION OF BENZENE IN THE PRESENCE OF OXYGEN AND CUPRIC AND ALUMINUM CHLORIDE

**Roger L. Weichman, Orono, Maine, and John W. Walsh and William L. Fierce, Crystal Lake, Ill., assignors, by mesne assignments, to Union Oil Company of California, Los Angeles, Calif., a corporation of California**

**No Drawing. Filed Feb. 24, 1965, Ser. No. 435,061**

**Int. Cl. C08f** *1/60, 1/72, 13/02*

**U.S. Cl. 260—2** **9 Claims**

The invention comprises the polymerization of benzene to p-polyphenyl by contacting benzene with a catalyst comprising mixed aluminum and cupric chlorides while introducing oxygen into contact with the catalyst to achieve a yield of polymer in excess of the theoretical oxidizing power of the catalyst.

The polymerization is performed at temperatures from 50°–200° C. The ratio of oxygen to cupric chloride employed is from about 10:1 to about 1:100 and the polymerization is performed over a period from 5 to 500 minutes. The resultant product is a solid useful as a moderator for nuclear reactors or for the fabrication of structural materials that are radiation, thermal and oxidation resistant.

### 3,480,569

### POLYMER FOAMS REINFORCED WITH POLYAMIDES, POLYESTERS AND POLYCARBONATES

**David C. Chappelear, Thomas J. Stolki, Seymour Newman, and Quirino A. Trementozzi, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**

**No Drawing. Filed Jan. 3, 1966, Ser. No. 517,917**

**Int. Cl. C08g** *22/44, 53/08*

**U.S. Cl. 260—2.5** **12 Claims**

The invention relates to a foamed thermoplastic resin reinforced with a fibrous component selected from the group consisting of polyester, polyamide, and polycarbonate, and process for making said composition.

### 3,480,570

### METHOD OF FOAMING POLYMERIC PARTICLES CONTAINING A FOAMING AGENT

**Brinley Roberts, Goole, and Robert James Stephenson, Cwmbran, England, assignors to Monsanto Chemicals Limited, London, England, a British company**

**No Drawing. Filed Sept. 20, 1966, Ser. No. 580,603**

**Claims priority, application Great Britain, Sept. 21, 1965, 40,150/65**

**Int. Cl. C08f** *47/10*

**U.S. Cl. 260—2.5** **10 Claims**

Foamable resin particles for use in a process for preparing a foamed resin by (1) heating foamable particles comprising a vinylaromatic polymer and a volatile blowing agent to form a prefoam of foamed particles, (2) treating the prefoam with steam in a mold to form a shaped article, and (3) allowing the shaped article to cool before removing it from the mold. The particles comprise a lipophilic surface-active agent which serves to (a) reduce cluster formation during prefoaming, (b) increase the maximum flow angle of the prefoam, (c) reduce the cooling time required before the shaped article can safely be removed from the mold, and (d) improve the consolidation of the individual particles in the final molded article.

### 3,480,571

### POLYHALOGENATED UNSATURATED CYCLIC ALCOHOLS

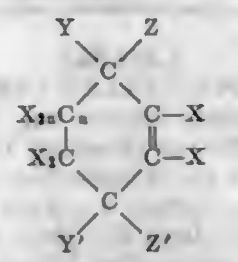
**Louis G. Anello, Basking Ridge, and Richard F. Sweeney, Randolph Township, Dover, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York**

**No Drawing. Filed Oct. 24, 1965, Ser. No. 505,008**

**Int. Cl. C07c** *35/18, 29/24;* **C08g** *51/34*

**U.S. Cl. 260—617** **12 Claims**

Compounds of the formula:



wherein *n* is 0 or 1; X is F or Cl; Y or Y' is Cl, F or H and Z or Z' is Cl, F or OH; provided that at least one of Y or Y' is H and that when Y is H, Z is OH and when Y' is H, Z' is OH and also provided that there is present at least two fluorine atoms in the molecule, are prepared by reducing the corresponding perhalogenated cycloalkenone or cycloalkenedione. These compounds are useful as solvents for "Capran" type nylon (nylon 6), as intermediates for the preparation of polyacrylates; some of the compounds are useful as herbicides and some as solvents and sealing adjuvants for films of polytrifluorochloroethylene.

### 3,480,572

### STARCH RESIN REINFORCED RUBBERS

**Russell A. Buchanan and Charles R. Russell, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture**

**No Drawing. Filed Jan. 31, 1968, Ser. No. 701,843**

**Int. Cl. C08d** *9/06, 9/10*

**U.S. Cl. 260—172** **1 Claim**

High strength white type rubber is produced by milling and vulcanizing the coprecipitate from a preferably synthetic rubber latex that has been fortified by the prior addition per se of certain resol resin components and either gelatinized starch or starch xanthate having a D.S. of about 0.08.

The instant invention is an extension of the invention taught and claimed in commonly assigned copending application S.N. 580,555 of Buchanan et al. wherein it is disclosed that vulcanized white sidewall grade rubber having astonishingly improved mechanical strengths despite the absence of reinforcing carbon blacks or lignin, is obtained by conventionally milling and vulcanizing the crumbs of coprecipitate from a rubber latex that has been augmented prior to coagulation of the latex by the in situ addition of critical proportions of either gelatinized starch or of lowly substituted sodium starch xanthate, which disclosure is hereby incorporated by reference.

### 3,480,573

### BINDER COMPOSITION FOR MOLDS AND CORES COMPRISING REDUCING SUGARS AND SUGARS THAT HYDROLYZE TO FORM REDUCING SUGARS, UREA, FORMALDEHYDE, AND FURFURYL ALCOHOL

**Alfred R. Thompson, Jr., Mishawaka, Ind., and William H. Foley, Chicago, Ill., assignors to Corn Products Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 541,024, Apr. 7, 1966, which is a continuation-in-part of application Ser. No. 362,485, Apr. 24, 1964. This application Nov. 23, 1966, Ser. No. 596,423**

**Int. Cl. C08g** *37/28, 51/74, 51/14*

**U.S. Cl. 260—17.2** **23 Claims**

A binder for foundry cores and the like comprises from 5 to 50 parts of a sugar component, from 35 to 75 parts of a urea formaldehyde component, and from 5 to 50 parts of furfuryl alcohol. The binder is used in conjunction with a "catalyst component" comprising a mixture of an acid salt, water, and sufficient additional urea to result in a mole ratio of formaldehyde to urea in the final composition of from 1.8 to 1 to 3.0 to 1. Alternatively, the sugar component may be placed in the catalyst component rather than with the urea, formaldehyde and furfuryl alcohol. The ingrediens may be simply blended together, or two or more may be prereacted together. Minor amounts of other resins or resin-forming ingredients, e.g. phenol-formaldehyde, melamine-aldehyde, melamine or the like may be added.

### 3,480,574

### NON-AQUEOUS SOLUTION OF A BUTYLATED MELAMINE - FORMALDEHYDE CONDENSATE AND A MALEIC ANHYDRIDE ADDUCT WITH AN OLEIC ACID ESTER OF ALLYL ALCOHOL-STYRENE COPOLYMER

**Frank J. Hahn, Wilbraham, and Robert A. Isaksen, East Longmeadow, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**

**No Drawing. Filed Jan. 3, 1966, Ser. No. 517,945**

**Int. Cl. C08f** *43/06, 27/12*

**U.S. Cl. 260—21** **1 Claim**

Disclosed herein are surface coating compositions based upon non-aqueous solutions of

(A) an adduct of
  (1) an alpha, beta-ethylenically unsaturated carboxlic compound and
  (2) an ester of
    (a) at least one unsaturated acid and
    (b) a copolymer of a styrene monomer and a allyl alcohol comonomer and
(B) at least 1 alkylated melamine-aldehyde condensate.

### 3,480,575

### PROCESS FOR PRODUCING MONOCARBOXYLIC ACID MODIFIED ALKYD RESINS

**Carlton E. Coats, Savage, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky**

**No Drawing. Filed Mar. 30, 1967, Ser. No. 626,972**

**Int. Cl. C08g** *17/16*

**U.S. Cl. 260—22** **3 Claims**

A process for producing a monocarboxylic acid- modified alkyd resin composition comprising the steps of:

(I) contacting at 350° F. to 550° F. at 50 to 300 p.s.i.g. in the presence of water of reaction a reaction mixture comprising:
  (A) an aryl polycarboxylic acid,
  (B) a monocarboxylic acid of 7 to 22 carbon atoms, and
  (C) a polyhydric alcohol wherein the weight ratio of *A*:*B* is from 5:1 to 1:20 and wherein C is present in an amount substantially stoichiometrically equivalent to A and B and wherein at least a portion of C consists of a polyhydric alcohol having more than 2 hydroxyl groups, to esterify the reaction mixture, and then
(II) further esterifying the reaction mixture to produce a monocarboxylic acid-modified alkyd resin.

The resin compositions produced by this process are useful as coating compositions for a wide variety of substrates and as paint substitutes.

### 3,480,576

### ALKYD RESIN-DEPOLYMERIZED POLYMER BLENDS

**Brian Edward Bailey, Brockenhurst, and Vivian Charles Owen Dando, Hythe, England, assignors to The International Synthetic Rubber Company Limited, Southampton, England, a corporation of the United Kingdom**

**No Drawing. Filed Apr. 5, 1967, Ser. No. 628,564**

**Claims priority, application Great Britain, Apr. 14, 1966, 16,420/66**

**Int. Cl. C08g** *39/10*

**U.S. Cl. 260—22** **8 Claims**

An alkyd resin blend includes a low molecular weight depolymerized (co)polymer of butadiene and a compatible alkyd resin. The alkyd resin is one prepared from an unsaturated oil or the fatty acids thereof having a linolenic acid component of less than 10%.

### 3,480,577

### PAINT COMPOSITIONS COMPRISING EPOXY RESIN ESTER, PIGMENT AND GLASS FIBERS OR POLYPROPYLENE POWDER

**James R. Hallstrom, Fanwood, and John A. Lopez, Springfield, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Dec. 27, 1965, Ser. No. 516,712**

**Int. Cl. C09d** *3/64, 5/22;* **E01f** *9/08*

**U.S. Cl. 260—23** **2 Claims**

Wear-resistant compositions which are especially suitable as traffic markers comprise (1) a film-forming resin, (2) an organic solvent, (3) pigment and (4) short milled glass fibers or polypropylene powder.

### 3,480,578

### PREPARATION OF CARBOXYLIC POLYMERS IN ACIDIC AQUEOUS MEDIA

**Edward Witt, Dover, Del., assignor to Standard Brands Chemical Industries, Inc., Dover, Del., a corporation of Delaware**

**No Drawing. Filed Jan. 19, 1966, Ser. No. 536,222**

**Int. Cl. C08d** *9/14;* **C08f** *21/04;* **C08h** *9/00*

**U.S. Cl. 260—23.7** **19 Claims**

A polymerization system for preparing polymeric latices containing alkaline sensitive groups which comprises an aqueous emulsion containing a carboxylic emulsifier, i.e., fatty acids, rosin acids, their partial soaps or mixtures thereof, and polymerizable monomeric material containing monomers having alkaline sensitive groups, i.e., carboxyl groups or their ester derivatives, at an acid pH, i.e. below 7.

### 3,480,579

### WATER REPELLENT COMPOSITIONS

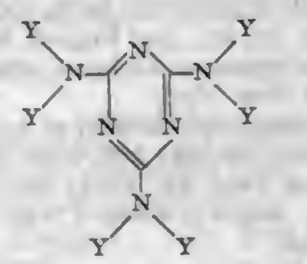
**Stuart Raynolds, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed July 8, 1965, Ser. No. 470,567**

**Int. Cl. C08g** *37/30, 37/32;* **D06m** *15/54*

**U.S. Cl. 260—28.5** **10 Claims**

A water-repellent composition comprising a melamine derivative having the structure



in which Y is $CH_2O$-alkyl or $CH_2O_2C$-alkyl, provided that at least two Y groups are the latter and at least one Y group is the former; a surfactant of the formula $R^3N(R^3)_2 \cdot HO_2CR^4$ wherein $R^2$, $R^3$ and $R^4$ are alkyl; and a wax.

The above composition which contains, additionally, an oil and water repellent fluorinated copolymer.

The process of treating a textile with a pad bath which contains either one of the above compositions.

### 3,480,580
### MODIFIED POLYMERS

**Frederick B. Joyner and Richard L. McConnell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**
**No Drawing. Filed Oct. 22, 1965, Ser. No. 502,437**
**Int. Cl. C08f** *27/00, 27/28*
**U.S. Cl. 260—29.6 17 Claims**

A process for making emulsifiable polyolefins by reacting thermally degraded polypropylene and higher alpha-olefins with an unsaturated polycarboxylic compound in the presence of a free radical source.

### 3,480,581
### ENHANCEMENT OF RESISTANCE OF OLEFIN POLYMERS TO HEAT DETERIORATION

**Harry Braus, Springdale, Ohio, and Jerome E. Hager, Decatur, and Lestera A. Hill, Jr., Tuscola, Ill., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia**
**No Drawing. Continuation-in-part of application Ser. No. 519,476, Jan. 10, 1966. This application Oct. 20, 1966, Ser. No. 587,966**
**Int. Cl. C08f** *45/56, 45/08*
**U.S. Cl. 260—41 16 Claims**

A stabilizer combination is provided for use in improving the resistance of olefin polymers, such as ethylene polymers, to deterioration in physical properties upon exposure to heat. The stabilizer combination contains a bis-substituted thioxylene compound in combination with carbon black, and optionally, a hindered phenol. In addition, olefin polymer compositions, such as ethylene polymer compositions containing a bis-substituted thioxylene compound in combination with carbon black, are provided.

### 3,480,582
### FIRE-RESISTANT FIBER BLENDS

**Robert Bruce Brooks, Darien, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine**
**Continuation-in-part of application Ser. No. 528,090, Feb. 17, 1966. This application Oct. 31, 1966, Ser. No. 591,015**
**Int. Cl. C08f** *45/56, 47/12, 45/58*
**U.S. Cl. 260—45.75 10 Claims**

Fire-retardant fiber blends of improved luster comprising, in combination, (a) about 5% to 90% treated synthetic fibers having solid fire-retardant additive in finely divided particulate form dispersed therein and (b) 10% to 95% untreated synthetic fibers; the amount of said fire-retardant additive in said treated fibers being sufficient to render fabrics of the fiber blend fire-retardant.

### 3,480,583
### ORGANO-SILICONE BLOCK COPOLYMERS

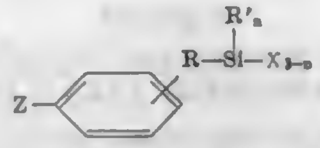
**Donald L. Bailey, Snyder, and Francis M. O'Connor, Kenmore, N.Y., assignors to Union Carbide Corporation, a corporation of New York**
**No Drawing. Continuation-in-part of applications Ser. No. 660,997, and Ser. No. 661,009, both filed May 23, 1957. This application Dec. 28, 1961, Ser. No. 162,980.**
**Int. Cl. C08g** *31/18*
**U.S. Cl. 260—46.5 10 Claims**

A mixture of block copolymers wherein each copolymer contains at least one siloxane polymer and at least one oxyalkylene polymer in combination, each such siloxane polymer being (1) composed only of trifunctional silicon atoms, each of which silicon atoms is bonded to one hydrocarbon group and bonded to three oxygen atoms that link the silicon atoms to from 1 to 3 other silicon atoms by silicon to oxygen to silicon bonds, and at least one of which silicon atoms is bonded to from 1 to 2 oxyalkylene polymers by a silicon to oxygen to carbon bond in each instance and (2) end-blocked by a member selected from the group consisting of the trihydrocarbonsiloxy groups, alkoxy groups and another of said oxyalkylene polymers; and each such oxyalkylene polymer being composed of at least five oxyalkylene units joined to each other by oxycarbon bonds and being joined at one end to said siloxane polymer and at the other end to a member selected from the group consisting of another of said siloxane polymers by a carbon-oxy-silicon bond, the hydroxyl group, the trihydrocarbonsiloxy groups and alkoxy groups, said mixture of block copolymers being free of any silicon atom linked to two oxygen atoms and two carbon atoms hydrocarbon groups. Said mixtures of block copolymers are useful as metal to metal lubricants for moving surfaces.

### 3,480,584
### ORGANOSILICON MODIFIED MATERIALS

**David Frederick Archer, Cowbridge, Glamorgan, and Glyn Islwyn Harris, Dinas Powis, Glamorgan, Wales, assignors to Midland Silicones Limited, Reading, England, a British company**
**No Drawing. Filed May 24, 1967, Ser. No. 640,819**
**Claims priority, application Great Britain, June 2, 1966, 24,683/66; Oct. 12, 1966, 45,655/66**
**Int. Cl. C08g** *31/16*
**U.S. Cl. 260—46.5 18 Claims**

A composition which cures when exposed to atmospheric moisture consisting of an anhydrous mixture of a silanol condensation catalyst with an organo-silicon modified organic polymer comprising a carbon chain backbone resulting from the copolymerization of at least one vinylic monomer selected from the group consisting of styrene, alkyl acrylates, alkyl methacrylates, acrylonitrile, isoprene, chloroprene, butadiene, vinyl pyridine, vinyl alkyl ethers, vinylidene chloride and isobutylene, with an organosilicon monomer of the general formula



wherein Z is a monovalent olefinically-unsaturated hydrocarbon radical, R is a divalent aliphatic hydrocarbon radical, R' is selected from the group consisting of hydrogen, monovalent hydrocarbon radicals and monovalent halogenated hydrocarbon radicals, X is an alkoxy radical and *n* is an integer of from zero to 2, 0.1 to 20 units derived from said organosilicon monomer being present per 100 units derived from said vinylic monomer. The composition is cured to form a solid polymeric material by exposing said mixture to moisture.

### 3,480,585
### POLYCARBONATE RESINS

**Everett E. Gilbert, Morris Township, Morris County, Bryce C. Oxenrider, Florham Park, and George J. Schmitt, Madison, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York**
**No Drawing. Filed Mar. 31, 1965, Ser. No. 444,408**
**Int. Cl. C08g** *17/13*
**U.S. Cl. 260—47 2 Claims**

Polycarbonate resins of enhanced thermal stability can be prepared by reacting phosgene with 2,2-bis (4'-hydroxyphenyl) - 1,1a,3,3a,4,5,5,5a,5b,6 - decachlorooctahydro-1,3,4-mentheno-2H-cyclobuta[c,d]pentalene, and its methyl and ethyl derivatives.

### 3,480,586
### PROCESS FOR THE MANUFACTURE OF SHAPED ARTICLES, SUCH AS FIBERS, FILAMENTS AND FILMS, OF POLYESTERS

**Paul-Friedrich Forster, Herbert Kurzke, Helmut Sattler, and Gunter Schnock, Bobingen, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany**
**No Drawing. Filed Sept. 16, 1966, Ser. No. 579,856**
**Claims priority, application Germany, Sept. 16, 1965, F 47,205**
**Int. Cl. C08g** *53/14, 53/16*
**U.S. Cl. 260—47 4 Claims**

Production of shaped articles such as fibers, filaments and films of linear polyesters of high molecular weight by continuously melting a polyester having a water content within the range of 0.05 to 0.5% by weight and a specific viscosity $\eta$ spec. within the range of 0.4 to 0.9, maintaining the melt in a reaction space under a pressure within the range of 0.01 to 20 mm. of mercury for a residence time of 1 minute to 10 hours at a temperature within the range of 260° to 300° C., and then continuously shaping the melt by forcing it through nozzles.

### 3,480,587
### POLYESTER PREPARATION

**Kenneth Porter, Harrogate, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain**
**No Drawing. Filed Apr. 17, 1967, Ser. No. 631,177**
**Claims priority, application Great Britain, Apr. 22, 1966, 17,728/66**
**Int. Cl. C08g** *17/003*
**U.S. Cl. 260—47 4 Claims**

Production of polyesters and copolyesters with at least a part of the polycondensation carried out under conditions of turbannular flow with inert gas driving medium.

### 3,480,588
### STABLE COATING COMPOSITION OF A TRICARBOXYLIC ACID OR ITS PARTIAL OR FULL ESTER AND A DIAMINE

**Edward Lavin, Longmeadow, Albert H. Markhart, Wilbraham, and James O. Santer, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**No Drawing. Continuation-in-part of application Ser. No. 303,395, Aug. 20, 1963. This application Jan. 2, 1968, Ser. No. 694,860**
**Int. Cl. C08g** *20/20*
**U.S. Cl. 260—47 12 Claims**

Disclosed herein are novel coating compositions comprising an aromatic tricarboxylic component and a polyamine containing at least two primary groups per molecule wherein the aromatic tricarboxylic component is selected from the group consisting of free tricarboxylic acids and partial and full ester derivatives of tricarboxylic acids.

### 3,480,589
### POLYESTER OF BENZOPHENONE DICARBOXYLIC ACID AND TRIS (2-HYDROXYETHYL) ISOCYANURATE

**Manuel A. Jordan, John F. Meyer, and Edmund J. Zalewski, Schenectady, N.Y., assignors to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York**
**No Drawing. Continuation of application Ser. No. 397,019, Sept. 16, 1964. This application Nov. 6, 1968, Ser. No. 781,684**
**Int. Cl. C08g** *17/08*
**U.S. Cl. 260—63 7 Claims**

A polymeric ester of 4,4'-benzophenone dicarboxylic acid and tris (2-hydroxyethyl) isocyanurate is prepared. It is useful for coating electrical conductors. A portion of the acid can be replaced by other polycarboxylic acids, and a portion of the isocyanurate can be replaced by other polyhydric alcohols.

### 3,480,590
### POLYMERISATION PROCESS

**Herbert May, Oldbury, near Birmingham, Brian John Kendall-Smith, Northfield, Birmingham, and Susannah Burr, Camargue, Welland, England, assignors to British Industrial Plastics Limited, Manchester, England**
**No Drawing. Filed July 26, 1965, Ser. No. 474,971**
**Claims priority, application Great Britain, July 31, 1964, 30,330/64**
**The portion of the term of the patent subsequent to Apr. 23, 1985, has been disclaimed**
**Int. Cl. C08g** *1/20*
**U.S. Cl. 260—73 10 Claims**

A process for producing high polymers from trioxan, tetroxan, 1,3-dioxolan, 1,3-dioxepan or 1,3,5-trioxepan comprises polymerising them, with or without a comonomer, under substantially anhydrous conditions, at a temperature between −100° C. and 150° C., and in the presence of a carbonium hexafluoroantimonate or a carboxonium hexafluoroantimonate.

### 3,480,591
### POLYMERS CONTAINING N-ALKOXYMETHYL GROUPS

**Günter Oertel, Cologne-Flittard, Hans Holtschmidt, Leverkusen-Steinbuechel, Kuno Wagner, Leverkusen, and Karl-Friedrich Zenner, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed Feb. 2, 1966, Ser. No. 524,467**
**Claims priority, application Germany, Feb. 3, 1965, F 45,132**
**Int. Cl. C08g** *22/02, 22/04*
**U.S. Cl. 260—75 3 Claims**

Self-cross-linkable polymers are prepared by reacting organic compounds containing active hydrogen atoms that are reactive with NCO groups with an alkoxymethyl isocyanate.

### 3,480,592
### ELASTOMERIC POLYURETHANES

**Dieter Dieterich and Erwin Müller, Leverkusen, and Otto Bayer, Leverkusen-Bayerwerk, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation**
**No Drawing. Filed Dec. 3, 1963, Ser. No. 327,793**
**Claims priority, application Germany, Dec. 5, 1962, F 38,472; Feb. 28, 1963, F 39,135**
**Int. Cl. C08g** *22/04*
**U.S. Cl. 260—77.5 14 Claims**

Elastic polyurethanes prepared by reacting a predominantly linear polyurethane containing tertiary nitrogen atoms with an acid having a $P_k$ value of a maximum of 6 in a solvent to convert it into the corresponding salt and then removing the solvent to yield an elastic, non-tacky, water insoluble polyurethane having the properties of a cross-linked polyurethane elastomer.

### 3,480,593
### CONDENSATION POLYMERS OF BENZIMIDAZOLONE

**Paul J. George, West Richfield, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York**
**No Drawing. Filed June 22, 1967, Ser. No. 647,902**
**Int. Cl. C08g** *20/20, 33/02*
**U.S. Cl. 260—77.5 9 Claims**

Benzimidazolone and difunctional halogen-containing compounds, wherein the difunctionality consists of an acid halide or haloalkyl grouping, are reacted to form highly stable condensation polymers containing amide linkages and having highly rigid backbones. The thermoplastic polymers of this invention are useful as coating agents and are capable of being drawn into fibers.

### 3,480,594
### PHOSPHORUS CONTAINING URETHANE FOAMS

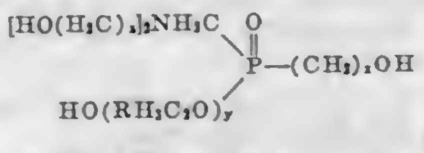
**Glenn R. Price, San German, Puerto Rico, assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Original application Apr. 15, 1966, Ser. No. 542,717. Divided and this application Dec. 5, 1967, Ser. No. 708,460**

**Int. Cl. C08g** *22/16, 22/44*

**U.S. Cl. 260—2.5** **3 Claims**

Phosphorus containing flame resistant polymers. The polymers are prepared by reacting an organic polyisocyanate and a hydroxy terminated phosphorus compound of the formula:



wherein R is selected from the group consisting of hydrogen, halogen, alkyl, and haloalkyl, said alkyl and haloalkyl having 1 or 2 carbon atoms, and *x*, *y*, and *z* are integers of from 1 to 10.

### 3,480,595
### ADDITION POLYMERS OF ETHYLENICALLY-UNSATURATED CYCLIC NITRILE SULFITES, CARBONATES AND OXALATES

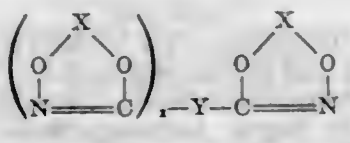
**Emmett H. Burk, Jr., Glenwood, Ill., and Donald D. Carlos, Crown Point, Ind., assignors to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 592,285, Nov. 7, 1966. This application Nov. 9, 1967, Ser. No. 681,925**

**Int. Cl. C08f** *19/18;* **C08g** *33/00*

**U.S. Cl. 260—77.5** **13 Claims**

The disclosure is of ethylenically-unsaturated cyclic nitrile compounds of the formula



wherein X is a thionyl, carbonyl or oxalyl group, Y is an addition - polymerizable, ethylenically - unsaturated group (e.g., vinyl), and *x* is 0 or 1. The compounds may be polymerized to form homopolymers or addition polymers with ethylenically-unsaturated polymerizable monomers (e.g. styrene).

### 3,480,596
### PROCESS OF FORMING POLYMERIC MATERIAL OF INCREASED RELATIVE VISCOSITY

**Frank Holmes Simons, Matthews, N.C., assignor to Fiber Industries, Inc., a corporation of Delaware**

**Filed Mar. 9, 1967, Ser. No. 621,868**

**Int. Cl. C08g** *17/003, 20/02, 53/00*

**U.S. Cl. 260—78** **9 Claims**

A condensation polymer in chip form is heated at a temperature less than the melting point while passing an inert gas over the chips. The water content in the chips is reduced to such an extent that the polymeric material is no longer in equilibrium with its water of condensation. Upon melting the polymeric material equilibrates rapidly and results in a polymer of increased relative viscosity.

An apparatus for practicing the above process includes in combination an elongated tubular heater affixed to a conventional melter.

### 3,480,597
### METHOD FOR THE PRODUCTION OF POLYARYLATES

**Vasily Vladimirovich Korshak, Ul. Gubkina 4, kv. 81; Svetlana Vasilievna Vinogradova, Jugozapad, kvartal 42–a, korp. 1, kv. 35; and Sergei Nikolaevich Salazkin, Televideniya 14/1, korp. 1, kv. 8, all of Moscow, U.S.S.R.; and Svetlana Veniaminovna Bereza, Ul. Tule 125, kv. 13, Alma-Ata, U.S.S.R.**

**No Drawing. Filed Mar. 1, 1967, Ser. No. 619,614**

**Int. Cl. C08g** *33/10, 17/00*

**U.S. Cl. 260—78.5** **1 Claim**

A method for producing polyarylates by reacting 2-β-hydroxyethyl - 3,3 - bis(4 - hydroxyphenyl) phthalimidine with a dicarboxyl chloride.

### 3,480,598
### ORGANIC POLYMERIC MATERIALS

**Eric Nield, Ware, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain**

**No Drawing. Continuation of application Ser. No. 463,869, June 14, 1965. This application Oct. 16, 1968, Ser. No. 781,673**

**Claims priority, application Great Britain, June 25, 1964, 26,347/64**

**Int. Cl. C08f** *19/10*

**U.S. Cl. 260—78.5** **11 Claims**

A polymeric product of an alkyl methacrylate in which the alkyl group contains not more than four carbon atoms, α-methyl styrene and maleic anhydride, maleimide and/or its N-substituted derivative, the product containing from 45 to 99% by weight of alkyl methacrylate units, and from 55 to 1% by weight of α-methyl styrene units and maleic anhydride, maleimide and/or its N-substituted derivative taken together, the latter units being in the proportion of 0.05 to 2 moles per mole of said α-methyl styrene units.

### 3,480,599
### UNSATURATED INTERPOLYMERS OF LINEAR ALIPHATIC HEPTADIENES AND/OR HEPTATRIENES AND ALPHA-OLEFINS

**John C. Park, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York**

**No Drawing. Filed Sept. 28, 1965, Ser. No. 491,012**

**Int. Cl. C08f** *15/40*

**U.S. Cl. 260—80.7** **6 Claims**

Sulfur-vulcanizable interpolymers of one or more alpha-olefins such as ethylene and propylene interpolymerized with 4-ethylidene-1,6-heptadiene and/or 3-ethyl-1, 3,6-heptatriene provide vulcanizates having a good balance of physical properties which are particularly desirable in tire applications.

### 3,480,600
### SHAPED ARTICLES MADE FROM ACRYLONITRILE AND NEOPENTYL TRIBROMO ACRYLATES

**Charles T. Pumpelly, Midland, Joseph J. Pedjac, Mount Pleasant, and John S. Somerville, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Filed Apr. 24, 1967, Ser. No. 632,919**

**Int. Cl. C08f** *15/38, 47/12*

**U.S. Cl. 260—85.5** **3 Claims**

This application deals with fire-retardant, shaped articles, such as fibers and films, made from an interpolymer of at least 85 weight percent acrylonitrile and enough of a neopentyl tribromo ester of an acrylic acid to provide from 2 to 10 weight percent bromine in the interpolymer.

### 3,480,601
### POLYMER COMPOUNDS WITH 2-(1-AZIRIDINYL) ALKYL ACRYLATES AND METHACRYLATES

**Theodore L. Ashby and Donald B. Parrish, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 468,576, June 30, 1965. This application Oct. 30, 1967, Ser. No. 679,232**

**Int. Cl. C08f** *15/00*

**U.S. Cl. 260—86.1** **11 Claims**

Copolymers useful as protective coatings, sizes for paper and textiles, and the like are prepared by copolymerizing 2-(1-aziridinyl) alkyl acrylates or methacrylates.

### 3,480,602
### POLYMERISATION PROCESS

**Malcolm James Abercrombie, Dinas Powis, Glamorgan, and David B. Thomas, Cardiff, Glamorgan, Wales, assignors to British Geon Limited, London, England, a British company**

**No Drawing. Filed Sept. 1, 1965, Ser. No. 484,465**

**Claims priority, application Great Britain, Sept. 10, 1964, 37,050/64**

**Int. Cl. C08f** *1/11, 3/30, 15/30*

**U.S. Cl. 260—87.1** **4 Claims**

Vinyl chloride homopolymers or copolymers with vinyl acetate having improved bulk densities and improved powder flow properties are prepared by suspension polymerising 70 to 100 parts by weight of vinyl chloride and 30 to 0 parts by weight of vinyl acetate in an aqueous medium containing hydroxyethyl cellulose having a viscosity in the range of 10 to 10,000 cps., as measured on a 1% w./w. aqueous suspension at 23° C. on a Brookfield viscometer, as suspension stabilizer and in the presence of an oil soluble polymerisation initiator.

### 3,480,603
### POLYMERS OF DIFLUOROKETENE DIALKYL ACETALS

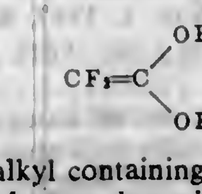
**Stanley Selman, Wilmington, Del., and Edward N. Squire, Glen Mills, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Sept. 17, 1965, Ser. No. 488,247**

**Int. Cl. C08f** *3/38, 15/10*

**U.S. Cl. 260—87.5** **13 Claims**

Polymers of difluoroketene dialkyl acetals of the formula



$$\mathrm{CF_2{=}C}\begin{array}{l}\diagup\mathrm{OR}\\\diagdown\mathrm{OR}\end{array}$$

in which R is an alkyl containing up to 30 carbon atoms can be made by homopolymerizing or copolymerizing the monomer with TFE or other ethylenically unsaturated monomers in solution, emulsion or in bulk, at temperatures ranging from —80° C. to 200° C., in a sealed container with an inert atmosphere and in the presence of free radical initiator.

### 3,480,604
### ETHYLENE POLYMERISATION PROCESS IN THE PRESENCE OF FREE RADICALS AND SOLID CATALYSTS INCLUDING CERTAIN TRIHALIDES OF VANADIUM OR TITANIUM

**Edward William Duck, Dibden Purlieu, and Brian John Ridgewell, Hythe, Southampton, England, assignors to The International Synthetic Rubber Company Limited, Southampton, England, a corporation of the United Kingdom**

**No Drawing. Filed July 21, 1966, Ser. No. 566,738**

**Claims priority, application Great Britain, July 27, 1965, 32,004/65**

**Int. Cl. C08f** *15/04*

**U.S. Cl. 260—88.2** **15 Claims**

A polymerisation process comprising the step of polymerising monomers in the presence of free radicals generated from diazomethane in the vicinity of a solid catalyst, the monomers being selected from the group consisting of (a) ethylene and (b) mixtures of ethylene and other alpha-olefins, the solid catalyst, when the monomer is ethylene being selected from the group consisting of (a) trihalides of vanadium, (b) trihalides of titanium and (c) mixtures of trihalides of vanadium and trihalides of titanium, wherein the halides exclude fluorides, and when the monomer is a mixture of ethylene and other alpha-olefins, at least vanadium trihalide is present in the solid catalyst, wherein the halides exclude fluorides.

### 3,480,605
### FLUORINATED VINYL ETHERS AND USE THEREOF

**Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture**

**No Drawing. Original application May 20, 1965, Ser. No. 457,533. Divided and this application Nov. 22, 1967, Ser. No. 703,808**

**Int. Cl. C08f** *3/38*

**U.S. Cl. 260—91.1** **11 Claims**

Described herein are novel fluoroalkyl vinyl ethers, typically

$$(CF_3)_2CF—O—CH{=}CH_2$$

These compounds may be polymerized, and the polymers applied to textiles to improve their oil-, water-, and soil-repellency.

### 3,480,606
### POLYMERIZATION OF ETHYLENIC MONOMERS

**Jean Claude Thomas, Lyon, France, assignor to Produits Chimiques Pechiney-Saint-Gobain, Paris, France**

**No Drawing. Filed Dec. 27, 1965, Ser. No. 516,696**

**Claims priority, application France, Dec. 30, 1964, 400; Jan. 7, 1965, 1,157; Jan. 13, 1965, 1,757; Jan. 14, 1965, 1,923; Jan. 15, 1965, 2,098**

**Int. Cl. C08f** *3/30, 15/24, 15/32*

**U.S. Cl. 260—92.8** **11 Claims**

A process for the manufacture of ethylenic polymers, and particularly polyvinylchloride, in the form of smoother spherical particles, which involves a two stage polymerization using a sequence of different catalysts and different modes of agitation.

### 3,480,607
### POLYMERIZATION

**Henry L. Hsieh, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed Dec. 3, 1965, Ser. No. 511,326**

**Int. Cl. C08d** *1/14;* **B01j** *11/00;* **C08f** *1/32*

**U.S. Cl. 260—94.3** **9 Claims**

A polymerization method for conjugated dienes and a contacting catalyst comprised on mixing at least one organoaluminum compound, at least one cobalt or vanadium salt of a beta-diketone and a substantial amount of water carried out in a preferred presence of a hydrocarbon diluent and producing a tough and tacky polymer possessing adhesive qualities.

### 3,480,608
### POLYMERIZATION OF 1,3-BUTADIENE

**Rudolf H. Gaeth and Floyd E. Naylor, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed Mar. 11, 1966, Ser. No. 533,453**

**Int. Cl. B01j** *11/84;* **C08f** *1/42, 3/16*

**U.S. Cl. 260—94.3** **8 Claims**

A polymerization process for 1,3-butadiene and a method for controlling the molecular weight and the microstructure of the polybutadiene product are provided by employing a catalyst system which forms on mixing molybdenum pentachloride with a mixture of (1) a reducing component such as lithium aluminum hydride or an organometallic compound and (2) a nickel component selected from the group consisting of metallic nickel having a large surface area for its weight and a reducible nickel compound capable of being reduced by said reducing component.

### 3,480,609
### HIGH-MOLECULAR WEIGHT, ACETOXY-SUBSTITUTED SATURATED POLYBUTADIENE

**Duncan W. Frew, Jr., Pleasant Hill, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Apr. 12, 1968, Ser. No. 721,116**

**Int. Cl. C08f** *29/08;* **C09j** *3/14*

**U.S. Cl. 260—94.7** **1 Claim**

Novel compositions comprising a petroleum wax and from about 5 to about 50% of a novel polymer having an intrinsic viscosity of at least 1.2 dl./g., said polymer produced by (a) epoxidizing between about 10% and 25% of the ethylenic unsaturation of a polybutadiene having up to about 10% 1,2-units, (b) selectively hydrogenating the partially epoxidized polymer of (a) until the remaining ethylenic unsaturation is removed, (c) converting the epoxide groups to hydroxyl groups by treating the polymer of (b) with a reducing agent, and (d) acetylating the hydroxyl groups of the polymer of (c). The wax-polymer compositions are useful as laminating waxes and coatings for cartons, corrugated board and the like.

### 3,480,610
### ALKALINE EXTRACTION OF M PROTEIN FROM GROUP A HEMOLYTIC STREPTOCOCCI AND PRODUCTS THEREOF

**Eugene N. Fox, Chicago, Ill., assignor to the United States of America as represented by the Secretary of the Department of Health, Education and Welfare**

**Filed Mar. 20, 1967, Ser. No. 624,318**

**Int. Cl. C07g** *7/00;* **A61k** *23/00*

**U.S. Cl. 260—112** **13 Claims**

Method of preparing a high molecular weight M protein by subjecting group A hemolytic streptococci cell walls to an alkaline extraction, and recovering the solubilized protein.

### 3,480,611
### AZO DYESTUFFS CONTAINING A 2-ORGANO SULFONYLBENZOTHIAZOLE GROUP

**Horst Jäger and Walter Horstmann, Cologne-Buchheim, and Karl-Heinz Schündebütte, Opladen, Kersten Trautner, Cologne-Stammheim, Edgar Siegel, Leverkusen, and Klaus Sasse, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**

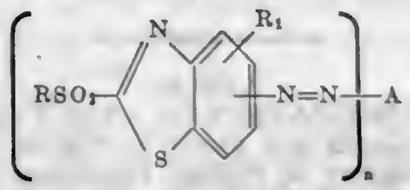
**No Drawing. Filed May 18, 1966, Ser. No. 550,915**

**Claims priority, application Germany, May 24, 1965, F 46,133**

**Int. Cl. C09b** *45/28;* **D06p** *1/10;* **C07d** *91/44*

**U.S. Cl. 260—145** **16 Claims**

A dyestuff of the formula



wherein A stands for the residue of a coupling component, $R_1$ is hydrogen or a substituent, R is an aliphatic, carbocyclic, or heterocyclic substituent, and *n* is a number ranging from 1 to 2. The dyestuffs are useful in the dyeing of especially natural and regenerated cellulose textiles as well as those of wool, silk, polyamides, and polyurethanes with excellent fastness to wet processing.

### 3,480,612
### MONO- AND POLYAZO DYESTUFFS CONTAINING A POLYFLUOROALKANOL OR A LOWER ALKOXY POLYFLUOROALKYL

**Audley L. Cain, Amherst, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York**

**No Drawing. Filed May 18, 1966, Ser. No. 550,959**

**Int. Cl. C09b** *45/32, 29/26;* **C07d** *91/46*

**U.S. Cl. 260—146** **10 Claims**

Mono- and polyazo dyestuffs containing a polyfluoro alkanol or alkyl ether group and their corresponding quarternary alkyl ammonium salts which are particularly useful as dyes for acrylic fiber in bright, attractive level shades with excellent fastness to light, washing and sublimation.

### 3,480,613
### 2-C OR 3-C-ALKYLRIBOFURANOSYL - 1-SUBSTITUTED COMPOUNDS AND THE NUCLEOSIDES THEREOF

**Edward Walton, Scotch Plains, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**No Drawing. Continuation-in-part of applications Ser. No. 507,697 and Ser. No. 507,718, both Nov. 15, 1965, and Ser. No. 546,531, May 2, 1966. This application July 3, 1967, Ser. No. 650,610**

**Int. Cl. C07c** *47/18;* **C17k** *9/00*

**U.S. Cl. 260—209** **30 Claims**

Novel branched-chain sugar nucleosides, for instance, 2-(or 3)-C-alkylribofuranosyl purine or pyrimidine nucleosides are prepared by reaction of novel 2,3,5-tri-O-acyl-2-(or 3)-C-alkyl-D-ribofuranosyl halides with a known chloromercuri purine or pyrimidine compound. The novel nucleosides are useful in in vitro inhibition of KB cells.

### 3,480,614
### KASUGANOBIOSAMINE DIMEDONE DERIVATIVES AND SALTS THEREOF

**Martin John Cron, Fayetteville, and Robert Edward Smith, Syracuse, N.Y., assignors to Bristol-Myers Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Nov. 1, 1967, Ser. No. 679,631**

**Int. Cl. C07d** *7/06;* **A61k** *21/00*

**U.S. Cl. 260—210** **11 Claims**

Semi-synthetic derivatives of kasugamycin have been found to possess substantially improved antibacterial properties. Most particularly the compound 5-[2-amino-2,3,4,6 - tetradeoxy - 4 - acetamidino - α - D - arabino-hexopyranosyl] - [1R:2S:3S:4R:5R:6R] - inositol has been found to be especially useful in the treatment of infectious diseases caused by gram-positive and gram-negative bacteria, most particularly those caused by the Pseudomonas genus.

### 3,480,615
### PRETREATMENT OF CELLULOSE WITH A SULFO-LOWER FATTY ACID UNDER ANHYDROUS CONDITIONS

**Gordon D. Hiatt and John W. Mench, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed Sept. 20, 1967, Ser. No. 669,262**

**Int. Cl. C08b** *1/02*

**U.S. Cl. 260—229** **6 Claims**

The pretreatment of cellulose with a sulfo-lower fatty acid such as sulfoacetic acid under anhydrous conditions results in a product having a significantly enhanced reactivity toward dicarboxylic acid anhydrides.

### 3,480,616
### ESTERIFICATION OF POLYHYDRIC COMPOUNDS IN THE PRESENCE OF TRANSPARENT EMULSIFYING AGENT

**Lloyd I. Osipow, New York, and William Rosenblatt, Spring Valley, N.Y., assignors to The State of Nebraska, Lincoln, Nebr.**

**No Drawing. Continuation-in-part of application Ser. No. 540,505, Apr. 6, 1966. This application Mar. 21, 1967, Ser. No. 624,718**

**Int. Cl. C07c** *67/00, 69/32, 69/30*

**U.S. Cl. 260—234** **10 Claims**

This invention relates to an improved process for the synthesis of organic compounds where the reactants are insoluble or only slightly soluble in each other. Such process involves forming a transparent emulsion containing immiscible reactants and maintaining the transparent emulsion under appropriate conditions to permit the reaction between the immiscible reactants to take place.

### 3,480,617
### N-(p - SUBSTITUTED AMINOPHENYL) CYCLIC ALKYLENEIMINES AND THEIR PREPARATION

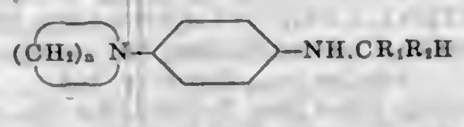
**Kelly Farhat, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio**

**No Drawing. Filed July 12, 1965, Ser. No. 471,409**

**Int. Cl. C07d** *41/04, 29/28, 27/04*

**U.S. Cl. 260—239** **19 Claims**

N-(p-substituted aminophenyl) cyclic alkyleneimines are disclosed which have the formula



in which *n* is 4 to 6 and $R_1$ and $R_2$ are each from the class consisting of straight and branched chain and hydroxy alkyl groups of 1 to 10 carbon atoms and aryl groups of the class consisting of phenyl and naphthyl and alkyl and alkoxy derivatives thereof in which the alkyl group is a lower straight or branched chain alkyl group of 1 to 4 carbon atoms, except that $R_1CHR_2$ may be a cycloalkyl group containing 5 to 8 carbon atoms.

### 3,480,618
### 17-OXYGENATED 3-ALKOXY-2-AMINOSULFONYL-ESTRA-1,3,5(10)-TRIENES AND CONGENERS

**Arthur H. Goldkamp, Winnetka, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware**

**No Drawing. Filed Jan. 19, 1968, Ser. No. 699,040**

**Int. Cl. C07c** *173/00, 169/00*

**U.S. Cl. 260—239.5** **7 Claims**

The preparation of the captioned compounds—for example, 17β - acetoxy - 3-methoxy-2-sulfamoylestra-1,3-5(10)-triene—and their valuable surfactant properties are disclosed.

### 3,480,619
### KETAL INTERMEDIATE

**Bjarte Loken, Shrewsbury, Mass., and Irving V. Sollins, Rye, N.Y., assignors to Phytogen Products, Inc., Mamaroneck, N.Y., a corporation of Delaware**

**No Drawing. Filed Jan. 19, 1966, Ser. No. 521,545**

**Int. Cl. C07c** *173/00, 169/36;* **A61k** *27/00*

**U.S. Cl. 260—239.55** **7 Claims**

The present invention relates to a novel steroid compound 5α,17β - dihydroxy - 20-ethylenedioxy-6β-methylpregnan-3-one, to its preparation and to its conversion into progestationally active steroids. This compound is considered to be an important intermediate in steroid chemistry because of its facile transformation into many steriods of known and potential significance.

### 3,480,620
### 1,2-EPOXY-STEROIDS

**Andor Furst, Basel, and Marcel Muller, Frenkendorf, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey**

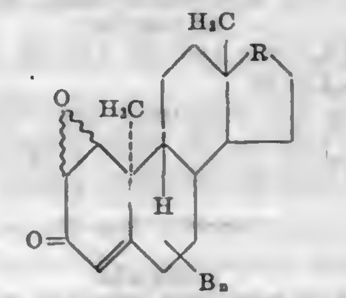
**No Drawing. Filed July 14, 1966, Ser. No. 565,093**

**Claims priority, application Switzerland, July 19, 1965, 10,075/65**

**Int. Cl. C07c** *173/00, 169/66, 167/26*

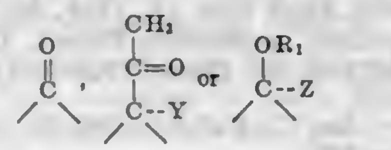
**U.S. Cl. 260—239.55** **9 Claims**

Compounds of the formula



(I)

wherein B is an additional unsaturation between the carbon atoms in the 6- or 7-position and *n* is a whole integer from 0 to 1; R is



$R_1$ is hydrogen or a substituent containing from 1 to 10 carbon atoms selected from the group consisting of alkyl, alkanoyl, ar-alkanoyl or aroyl; Y is hydrogen, hydroxy or a substituent containing from 1 to 10 carbon atoms selected from the group consisting of alkoxy, alkanoyloxy, ar-alkanoyloxy and aroyloxy; and Z is hydrogen, lower alkyl, lower alkenyl or lower alkynyl.

1,2-epoxy steroids of the aforementioned series of Formula I above are intermediates which can be converted to pharmaceutically useful C–1 and C–2 substituted 9β,10α-steroids.

### 3,480,621
### STEROID KETAL

**Bjarte Loken, Santurce, Puerto Rico, and Marcel Gut, Worcester, Mass., assignors to Phytogen Products, Inc., Mamaroneck, N.Y., a corporation of Delaware**

**No Drawing. Filed Jan. 17, 1967, Ser. No. 609,736**

**Int. Cl. C07c** *173/00, 167/30;* **A61k** *27/00*

**U.S. Cl. 260—239.55** **7 Claims**

The present application is directed to certain novel steroids, identifiable as the 20-ketals of 21-halo pregnan-20-ones. These compounds are active estrogen antagonists.

### 3,480,622
### PROCESS FOR THE PREPARATION OF DEBROMINATED ANALOGUES OF BROMO-STEROIDS OF THE PREGNANE, ANDROSTANE AND CHOLESTANE SERIES

**Derek Harold Richard Barton, London, England, assignor to Research Institute for Medicine and Chemistry, Inc., Cambridge, Mass., a corporation of Massachusetts**

**No Drawing. Continuation-in-part of application Ser. No. 418,903, Dec. 17, 1964. This application May 8, 1967, Ser. No. 636,636**

**Claims priority, application Great Britain, Jan. 21, 1964, 2,631/64**

**Int. Cl. C07c** *167/00*

**U.S. Cl. 260—239.55** **18 Claims**

A process for the preparation of a debrominated analogue of a bromo-steroid without attack on a normally readily eliminatable substituent carried by a carbon atom adjacent to the carbon atom carrying the bromo-substituent by reacting the bromo-steroid with a salt of a polyvalent metal in which the metal is in a lower state of valence capable of oxidation to a higher state in the presence of a substance capable of providing hydrogen free radicals.

### 3,480,623
### 3-(2′-CHLOROETHYLTHIO)-6-FORMYL-9α-FLUORO-STEROIDS

**Alberto Consonni, Ugo Pallini, and Roberto Sciaky, Milan, Italy, assignors to Societá Farmaceutici Italia, Milan, Italy, a corporation of Italy**

**No Drawing. Filed Dec. 26, 1967, Ser. No. 693,096**

**Claims priority, application Italy, Dec. 29, 1966, 31,646/66**

**Int. Cl. C07c** *169/36, 173/00, 167/36*

**U.S. Cl. 260—239.55** **8 Claims**

Described are 3-(2′-chloroethylthio)-6-formyl-9α-fluorosteroids and a process for their preparation. The compounds display anti-inflammatory activity.

### 3,480,624
### DIBENZOCYCLOHEPTATRIENE DERIVATIVES

**Jean Clement Louis Fouche, Bourg-la-Reine, France, assignor to Phone-Poulenc S.A., Paris, France, a French body corporate**

**No Drawing. Filed May 28, 1965, Ser. No. 459,921**

**Claims priority, application France, June 1, 1964, 976,650; Oct. 29, 1964, 993,217; Apr. 22, 1965, 14,253**

**Int. Cl. C07d** *87/26, 29/28*

**U.S. Cl. 260—240** **7 Claims**

New 10-aminoalkyldibenzocycloheptatriene derivatives and their salts have useful pharmacodynamic properties and have, inter alia, antidepressant, tranquillising, neuroleptic, analgesic, antiemetic, antihistaminic, spasmolytic, coronary dilating, and anticonvulsive properties.

### 3,480,625
### DIOXAZINE DYESTUFFS HAVING IN 6 AND 13 POSITION A HETEROCYCLIC ACYLAMINO GROUP

**Karl Ronco, Riehen, and Istvan Hari, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland**

**No Drawing. Filed Jan. 17, 1967, Ser. No. 609,744**

**Claims priority, application Switzerland, Jan. 25, 1966, 940/66**

**Int. Cl. C09b** *19/02;* **C07d** *87/48*

**U.S. Cl. 260—246** **6 Claims**

The present invention concerns pigment dyestuffs of the triphendioxazine series. They are characterized by the presence in each of the 6 and 13 positions of an acylamino group which is derived from a heterocyclic carboxylic acid, especially a pyridine or thiophene carboxylic acid.

*Use.*—For coloring high molecular organic products, such as plastics and lacquers.

### 3,480,626
### CERTAIN AZONIASPIRONORTROPINE DERIVATIVES

**Robert Pfleger, Bamberg, Heinz Bertholdt, Lichteneiche, and Wolfram Schulz, Darmstadt, Germany, assignors to Chemische Fabrik Dr. R. Pfleger, Bamberg, Germany**

**No Drawing. Continuation-in-part of application Ser. No. 348,751, Mar. 2, 1964. This application May 18, 1967, Ser. No. 639,305**

**Int. Cl. C07d** *43/12, 87/36, 51/72*

**U.S. Cl. 260—247.2** **2 Claims**

The present case relates to a new class of azoniaspiranes of the nor-3α- or 3β-tropanols or esters thereof which in addition to other interesting properties have been found to possess spasmolytic properties surpassing any of the known tropine derivatives and at the same time producing fewer undesirable side effects than previous compounds having such properties. The new derivative may be produced by reacting nortropine, or suitable derivative thereof, with suitable dihalides.

### 3,480,627
### PREPARATION OF TRIALKENYL ISOCYANURATES

**Dietrich H. Heinert, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Filed Oct. 26, 1966, Ser. No. 589,537**

**Int. Cl. C07d** *55/38;* **C08f** *7/12*

**U.S. Cl. 260—248** **10 Claims**

The corresponding trialkenyl isocyanurate is obtained by reacting cyanuric acid with acetylene or methylacetylene at 150–225° C. in an inert solvent medium and in the presence of a zinc or cadmium catalyst which may include an organic tertiary nitrogen base. The trialkenyl isocyanurate product is convertible by vinyl polymerization techniques to chemically inert, heat resistant polymers.

### 3,480,628
### 3-CHLOROTRIAZINOINDOLES

**Alfred W. Chow, Radnor, and Norman M. Hall, Norristown, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Dec. 22, 1967, Ser. No. 692,722**

**Int. Cl. C07d** *55/10, 27/56;* **A61k** *27/00*

**U.S. Cl. 260—249.5** **5 Claims**

3-chlorotriazino[5,6-b]indoles are prepared by reaction of the corresponding 3-hydroxy compounds with phosphorus oxychloride. The chloro compounds are intermediates convertible into amino compounds with antiviral activity.

### 3,480,629
### 3-CARBALKOXYMETHYL AND 3-CARBOXYMETHYL-4-PHENYL-QUINAZOLINES

**Hans Ott, Convent Station, N.J., assignor to Sandoz Inc., Hanover, N.J.**

**No Drawing. Filed Dec. 9, 1966, Ser. No. 600,404**

**Int. Cl. C07d** *51/48;* **A61k** *25/00*

**U.S. Cl. 260—251** **5 Claims**

Disclosed are 1,4-methano bridged 5-phenyl-benzodiazepin-2-ones, and process for preparation involving the intermediates which are 3-carbalkoxymethyl-4-phenyl-3,4-dihydroquinazolines, 3-carboxymethyl-4-phenyl-3,4-dihydroquinazolines and 3-carboxymethyl - 4 - phenyl-1,2,3,4-tetrahydroquinazolines.

### 3,480,630
### 2-ARYLHYDRAZINO-IMIDAZOLINES-(2) AND SALTS THEREOF

**Helmut Stahle, Werner Kummer, Herbert Koppe, and Karl Zeile, Ingelheim (Rhine), Wolfgang Hoefke, Budenheim (Rhine), and Hans-Wolfgang Samtleben, Ingelheim (Rhine), Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim (Rhine), Germany, a corporation of Germany**

**No Drawing. Filed August 7, 1967, Ser. No. 658,662**

**Claims priority, application Germany, Aug. 5, 1966, B 88,361; Jan. 20, 1967, B 90,823**

**Int. Cl. C07d** *49/34;* **A61k** *27/00;* **C07c** *87/50*

**U.S. Cl. 260—254** **9 Claims**

The compounds are 2-arylhydrazino-imidazolines-(2) and acid addition salts thereof, useful as hypotensives in warm-blooded animals.

### 3,480,631
### CHLORINATION OF 3,6-DISUBSTITUTED URACILS

**Earl W. Cummins, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Mar. 24, 1967, Ser. No. 625,631**

**Int. Cl. C07d** *51/30*

**U.S. Cl. 260—260** **11 Claims**

A process for making 5-chloro-3,6-disubstituted uracils by reacting a mixture of a 3,6-disubstituted uracil in an aprotic solvent with sulfuryl chloride at a temperature between 40 and 100° C., adding water to the reaction mixture, adding caustic to adjust the pH between 5.5 and 8, and subsequently distilling away the solvent. The desired 5-chloro-3,6-disubstituted uracil is then recovered from the distillation residue.

### 3,480,632
### PROCESS FOR CYCLODIMERIZING 1,2-OXIRANES, 1,2 THIIRANES AND 1,2-AZIRIDINES

**John A. Scheben, Erlanger, Ky., and Irving L. Mador, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia**

**No Drawing. Filed Dec. 28, 1965, Ser. No. 517,113**

**Int. Cl. C07d** *51/72*

**U.S. Cl. 260—268** **10 Claims**

A process is provided for cyclodimerizing 1,2-oxiranes to 1,4-dioxanes, 1,2-thiiranes to 1,4-dithianes, and 1,2-aziridines to piperazines, in the presence of a platinum or palladium triad catalyst. New perhydrodibenzo-1,4-dioxanes also are provided.

### 3,480,633
### 2,3,4,6,7,12-HEXAHYDROINDOLO[2,3-a]QUINOLIZINE-METHYL VINYL KETONE ADDUCTS

**Robert Norman Schut, Edwardsburg, Mich., assignor to Miles Laboratories Inc., Elkhart, Ind., a corporation of Indiana**

**No Drawing. Filed Nov. 22, 1967, Ser. No. 684,914**

**Int. Cl. C07d** *39/12*

**U.S. Cl. 260—288** **4 Claims**

A series of 2, 3, 4, 6, 7, 12-hexadydroindolo [2, 3-a] quinolizine-methyl vinyl ketone adducts exhibiting a mydriatic activity characterized by pupillary dialtation. These compounds are prepared by reacting 2, 3, 4, 6, 7, 12-hexahydroindolo [2, 3-a] quinolizine with methyl vinyl ketone.

### 3,480,634
### 1,4-DIHYDRO-3(2H)-ISOQUINOLONES AND PROCESS FOR THEIR PREPARATION

**Jacob Finkelstein, West Englewood, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey**

**No Drawing. Filed Feb. 28, 1966, Ser. No. 530,398**

**Int. Cl. C07d** *35/30, 35/14*

**U.S. Cl. 260—289** **6 Claims**

1,4-dihydro-3(2H)-isoquinolones, having, for example, an aliphatic hydrocarbyl substituent at the 1-position, are prepared, inter alia, by reacting a phenylacetic acid or a phenylacetate with an aliphatic hydrocarbyl aldehyde to form a 3-isochromanone, treating the latter with a saturated aliphatic alcohol to form an alkyl [(haloalkyl)-phenyl]acetate, and treating this product with a primary amine, e.g., alkylamine or alkoxy-substituted alkylamine. The end products are useful as intermediates for the preparation of known isoquinolines.

### 3,480,635
### N-PIPERIDYL SUBSTITUTED PHENYLENEDIAMINES

**Elmar R. Altwicker, Somerville, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**

**No Drawing. Filed Sept. 28, 1966, Ser. No. 582,547**

**Int. Cl. C07d** *29/10, 29/28*

**U.S. Cl. 260—293** **7 Claims**

Novel N-piperidyl substituted phenylenediamines can be prepared by reductively alkylating a nitro or amino-substituted phenylamine with a piperidone. These compounds are useful as antiozonants and antioxidants.

### 3,480,636
### PROCESS FOR PREPARING α-NITROSULFONIC ACIDS

**Bernard Loev, Broomall, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Sept. 29, 1966, Ser. No. 583,067**

**Int. Cl. C07c** *143/08, 143/06, 143/20*

**U.S. Cl. 260—293.4** **3 Claims**

A process for preparing α-nitrosulfonic acids by reacting an α-halo-α-nitro compound with an alkaline sulfurous acid solution and acidifying the resulting α-nitrosulfonic acid salt α-nitrosulfonic acids prepared by this process are useful as wetting agents, detergents, emulsifying agents and blowing agents, in the treatment of rubber, leather, paper and oil and as intermediates, insecticides, herbicides, antibacterials, coccidiostats and anthelmintics.

### 3,480,637
### 3,3-BIS(CARBO-LOWER-ALKOXY)INDOLO[2,3-a] QUINOLIZINIUM SALTS

**Bryce Douglas, Phoenixville, Pa., and Jerry A. Weisbach, Cherry Hill, N.J., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Apr. 18, 1967, Ser. No. 631,609**

**Int. Cl. C07d** *39/12*

**U.S. Cl. 260—294.3** **7 Claims**

Indolo[2,3-a]quinolizinium salts having two carbo-lower alkoxy substituents in the 3-position, which are prepared by reacting a 3-(2-aminoethyl)indole, formaldehyde and a tetraester and dehydrating the resulting lactam, have analgesic activity. 3,3 - bis(carbo-lower alkoxy)indolo[2,3 - a]quinolizines are useful as intermediates for preparing the quinolizinium salts.

### 3,480,638
### DERIVATIVES OF 5-HYDROXYALKYL-6,7-BENZOMORPHANS

**Fred B. Block, Hartsdale, and Frank H. Clarke, Jr., Armonk, N.Y., assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware**

**No Drawing. Continuation of application Ser. No. 435,359, Feb. 25, 1965. This application Nov. 10, 1966, Ser. No. 593,582**

**Int. Cl. C07d** *29/24*

**U.S. Cl. 260—294.3** **24 Claims**

5-hydroxyalkyl - 6,7 - benzomorphans and esters and ethers thereof are analgesic agents.

### 3,480,639
### PROCESS FOR PREPARING CRYSTALLINE PYRIDINIUM 2-NITRO-1 BUTYL SULFATE

**John F. Stucker, Houston, Tex., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware**

**No Drawing. Filed June 6, 1966, Ser. No. 555,216**

**Int. Cl. C07d** *31/48, 31/40*

**U.S. Cl. 260—294.8** **6 Claims**

Crystalline pyridinium 2-nitro-1-butyl sulfate is prepared by neutralizing 2-nitro-1-butyl hydrogen sulfate with pyridine in 1-propanol. A crystalline product of high purity is obtained in a stable form which can be used in solvent solutions as an anti-microbial agent without giving off lachrymatory fumes under conditions of use.

### 3,480,640
### CERTAIN PHENOXY OXAZOLIDINE DERIVATIVES

**Max Wilhelm, Allschwil, Switzerland, Hans Ulrich Daeniker, Clifton, N.J., and Karl Schenker, Binningen, and Paul Schmidt, Therwil, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware**

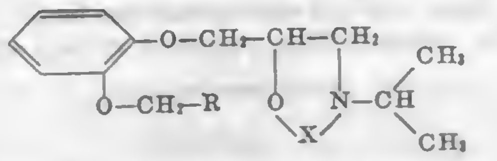
**No Drawing. Continuation-in-part of application Ser. No. 554,309, June 1, 1966. This application Apr. 5, 1967, Ser. No. 628,520**

**Claims priority, application Switzerland, July 9, 1965, 9,629/65**

**Int. Cl. C07d** *85/26, 31/42;* **A61k** *27/00*

**U.S. Cl. 260—296** **10 Claims**

The invention concerns compounds of the formula



in which R is a lower alkenyl radical containing at least 2 and preferably not more than 4 carbon atoms and X represents an alkylidene group, which compounds are useful as adrenergic $\beta$-receptor blockers.

### 3,480,641
### METAL PHTHALOCYANINE DYESTUFFS CONTAINING A DIHALOISOTHIAZOLE CARBOXAMIDO GROUP

**Karl-Heinz Schündehütte, Opladen, and Kersten Trautner, Cologne-Stammheim, Germany (both % Farbenfabriken Bayer AG., Leverkusen, Germany)**

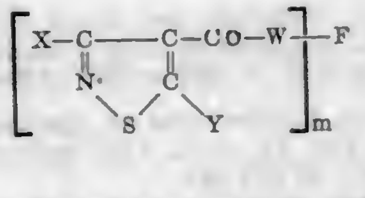
**No Drawing. Original application July 6, 1965, Ser. No. 469,907. Divided and this application Dec. 29, 1965, Ser. No. 517,424**

**Claims priority, appilcation Germany, July 17, 1964, F 43,472**

**Int. Cl. C07f** *107/00;* **D06p** *3/24;* **C07d** *91/34*

**U.S. Cl. 260—299** **3 Claims**

Dyestuffs of the formula



wherein F is a radical of an organic dyestuff, W is a bridge member, X and Y are halogen atoms, arylthio or aryloxy, and *m* is an integer. The dyestuffs of this invention are particularly suitable for dyeing textile materials containing nitrogen or hydroxyl groups, i.e., cellulose, wool, silk, synthetic polyamide, and polyurethane.

### 3,480,642
### PROCESS FOR PRODUCING 2-CARBALKOXY-AMINOBENZIMIDAZOLES

**Robert John Stedman, Paoli, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Mar. 22, 1967, Ser. No. 625,009**

**Int. Cl. C07d** *49/38*

**U.S. Cl. 260—309.2** **10 Claims**

A process for selectively acylating 2-aminobenzimidazoles in the 2-position, by heating the reaction product of 2-aminobenzimidazole and an alkyl haloformate in the presence of a suitable non-hydroxylic solvent. The resulting 2-carboalkoxyaminobenzimidazoles are generally known compounds, which have anthelmintic activity.

### 3,480,643
### ALKYLSULFONYLBENZIMIDAZOLES

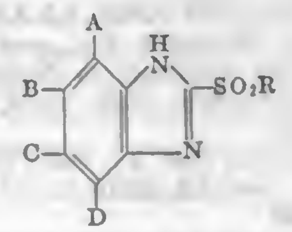
**Albert William Lutz, Montgomery Township, Somerset County, and Richard Joseph Magee, Princeton, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Connecticut**

**No Drawing. Filed May 9, 1967, Ser. No. 637,066**

**Int. Cl. C07d** *49/38*

**U.S. Cl. 260—309.2** **4 Claims**

Substituted alkylsulfonylbenzimidazole compounds of the formula:



wherein R is lower alkyl and A, B, C, and D are hydrogen or halogen, provided that when any three A, B, C, and D are hydrogen, the one remaining member is halogen. The compounds are prepared by oxidation with m-chloroperbenzoic acid or monoperphthalic acid of their corresponding 2-alkylthiobenzimidazole intermediates and are postemergence herbicides.

### 3,480,644
### ALKOXY-3,6-ENDOXOHEXAHYDROPHTHALIMIDES

**Russell Theodore Nelson, Tacoma, Wash., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Oct. 17, 1966, Ser. No. 586,977**

**Int. Cl. C07d** *99/04;* **A01n** *5/00*

**U.S. Cl. 260—326** **5 Claims**

Alkoxy - 3,6 - endoxohexahydrophthalimide compounds useful for controlling plant growth.

### 3,480,645
### PROCESS FOR OPTICAL RESOLUTION OF RACEMIC PANTOLACTONE

**Noriyuki Okuda, Tokyo, Ieji Kuniyoshi, Ichikawa-shi, and Tadashi Saito and Koji Oguri, Tokyo, Japan, assignors to Daiichi Seiyaku Company, Limited, Nihonbashi, Chuo-ku, Tokyo, Japan**

**No Drawing. Filed Dec. 19, 1966, Ser. No. 602,493**

**Claims priority, application Japan, Dec. 25, 1965, 40/79,618**

**Int. Cl. C07d** *27/60;* **C07c** *101/72*

**U.S. Cl. 260—326.14** **1 Claim**

Alkali or alkaline earth metal salts of L-amino acids are added to racemic pantolactone; the thus obtained mixture of the corresponding metal salts of N-(D-pantoyl)-L-amino acid and N-(L-pantoyl)-L-amino acid is desalted to produce a mixture of the free acids; the N-(D-pantoyl)-L-amino acid is separated from the other in water; and mineral acid is added to each of the acids to produce D(—)-pantolactone and L(+)-pantolactone.

### 3,480,646
### ORTHOCARBOXY - SULFO - DODECACHLORO-OCTAHYDRODIMETHANOTRIPHENYLENE ANHYDRIDE

**Melvin Look, El Cerrito, Weldon M. Padgett II, Berkeley, Julius Hyman, Piedmont, Joseph G. E. Fenyes, Berkeley, and Herbert P. C. Lee, Albany, Calif., assignors to Fundamental Research Company, Berkeley, Calif., a partnership**

**No Drawing. Original application May 3, 1962, Ser. No. 192,285. Divided and this application July 27, 1965, Ser. No. 484,503**

**Int. Cl. C07d** *89/00;* **C07c** *143/38, 65/16*

**U.S. Cl. 260—327** **1 Claim**

Di-substituted Diels-Alder adducts of two molecules of hexachlorocyclopentadiene and one molecule of napthalene, e.g. 2-methyl-3-sulfonic acid-DHA, useful as intermediates, e.g. for the preparation of BON acid.

### 3,480,647
### 2-ACYLIMINO-1,3-OXATHIOLANES AND PROCESS FOR THEIR PRODUCTION

**Roland Feinauer, Haltern, Karl Hamann, Leonberg, and Manfred Jacobi, Dusseldorf-Gerresheim, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Marl, Germany, a corporation of Germany**

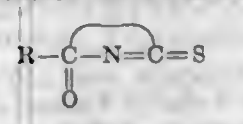
**No Drawing. Filed Apr. 1, 1966, Ser. No. 539,328**

**Claims priority, application Germany, Apr. 10, 1965, C 35,561**

**Int. Cl. C07d** *89/06*

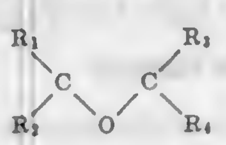
**U.S. Cl. 260—327** **12 Claims**

A 2-carbacylimino-1, 3-oxathiolane compound is producible by heating, for some hours, at a temperature within the range 90–200° C., a mixture of approximately one mol of an acyl mustard oil of the formula



$$R-\underset{\overset{\|}{O}}{C}-N=C=S$$

in which R is a lower aliphatic or cycloaliphatic or aromatic group with from 0.5 to 2.0 mols of an epoxide of the formula



in which $R_1$ to $R_4$ stands for one of the combinations

(1) each of $R_1$ to $R_4$ stands for hydrogen or an aliphatic group;

(2) $R_1$ and $R_3$ are bound in a cycloaliphatic ring containing 6 carbon atoms;,

(3) $R_2$ and $R_4$ are bound in a cycloaliphatic ring containing 6 carbon atoms;

(4) $R_1$ stands for an aryloxymethylene or an alkoxymethylene group and $R_2$, $R_3$ and $R_4$ each stands for hydrogen.

### 3,480,648
### ORGANIC PEROXIDES OBTAINED BY REACTION OF HYDROPEROXIDES WITH HYDROXY- ACETONE AND PROCESS

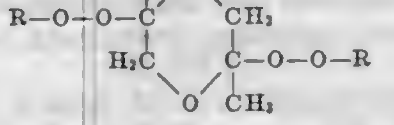
**Yun G. Chang, Austin, Tex., assignor to Reichhold Chemicals, Inc., White Plaines, N.Y.**

**No Drawing. Filed Jan. 19, 1968, Ser. No. 699,064**

**Int. Cl. C07d** *15/10;* **C08f** *1/60*

**U.S. Cl. 260—340.6** **11 Claims**

This invention discloses a novel class of peroxides having the following formula:



wherein R is a hydrogen atom, an alkyl group, an aralkyl group, an acyl or aracyl group and the method of preparing same by reacting hydroxy-acetone with hydroperoxide at a temperature of 0° C. to 80° C. in the presence of an acidic catalyst.

### 3,480,649
### PREPARATION OF 1,3-DIOXOLENIUM AND 1,3-DIOXENIUM SALTS

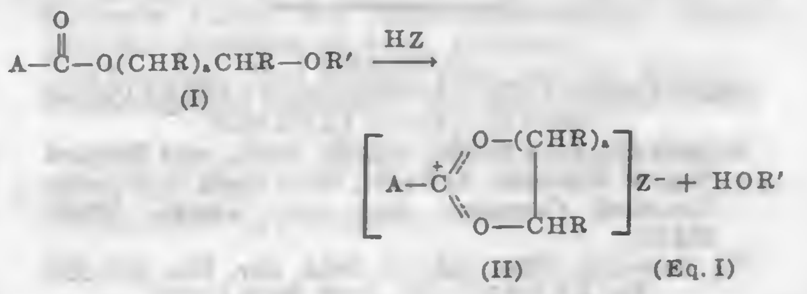
**Donald A. Tomalia, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**

**No Drawing. Filed July 11, 1966, Ser. No. 564,043**

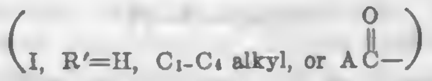
**Int. Cl. C07d** *13/03, 15/04;* **C07c** *69/54*

**U.S. Cl. 260—340.9** **10 Claims**

This invention concerns a new process for the preparation of 1,3-dioxolenium and 1,3-dioxenium salts by the cyclization of an organic ester (I) in the presence of certain strong protonic acids (HZ) as shown in Equation 1.



The process is applicable to a wide variety of organic esters containing a beta- or gamma-hydroxy-, alkoxy- or carboxyalkyl group



$$\left(I,\ R'=H,\ C_1\text{-}C_4\text{ alkyl, or }A\overset{\overset{O}{\|}}{C}-\right)$$

provided that the anion of the salt ($Z^-$) has a low nucleophilicity such as perchlorate, bisulfate or tetrafluoroborate.

### 3,480,650
### DIHYDROPYRANYL POLYESTERS

**Josef Sikora, St. Hilaire, Quebec, Canada, assignor to Canadian Industries Limited, Montreal, Quebec, Canada, a corporation of Canada**

**No Drawing. Filed May 31, 1966, Ser. No. 553,665**

**Claims priority, application Great Britain, July 6, 1965, 28,574/65**

**Int. Cl. C08g** *17/14, 53/08*

**U.S. Cl. 260—345.8** **3 Claims**

Dihydropyranyl group-terminated polyesters formed by ester exchange between a dialkyl ester of a phthalic acid and both an aliphatic polyol and a dihydropyranyl monohydric alcohol or an ester of a dihydropyranyl monohydric alcohol. The polyesters comprise an inner segment containing both phthalic acid and aliphatic polyol residues, the inner segment being terminated by dihydropyranyl alcohol residues. The polyesters are useful as ingredients of foamed cellular polymeric materials.

### 3,480,651
### PREPARATION OF 2,5-SORBITAN

**Ludwig A. Hartmann, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware**

**No Drawing. Filed Mar. 31, 1967, Ser. No. 627,324**

**Int. Cl. C07c** *45/24, 47/18;* **C13k** *9/00*

**U.S. Cl. 260—347.8** **11 Claims**

A process of preparing pure crystalline 2,5-sorbitan from mannitol which comprises heating mannitol in the presence of an acid catalyst until from about 0.7 to about 1.7 mols of water, per mol of mannitol is formed. Substantially pure crystalline, 2,5-sorbitan may be recovered from the reaction mixture by acetalizing the mixture with an aldehyde or ketone, separating the acetalized 2,5-sorbitan by conventional separation techniques, and regenerating 2,5-sorbitan from the separated acetalized 2,5-sorbitan.

### 3,480,652
### 2,4-DISULFAMYL ACYLANILIDES

**William M. McLamore, Kew Gardens, N.Y., and Gerald D. Laubach, Niantic, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Original application Aug. 4, 1959, Ser. No. 831,462, now Patent No. 3,440,244, dated Apr. 22, 1969. Divided and this application Dec. 8, 1967, Ser. No. 703,812**

**Int. Cl. C07d** *93/34;* **A61k** *27/00*

**U.S. Cl. 260—397.7** **4 Claims**

Novel 3,6 - disubstituted - 7-sulfamylbenzo-1,1-dioxo-1-thia-2,4-diazines, their utility as diuretic agents and

5-substituted-2,4-disulfamylacylanilide and 5-substituted-2,4-disulfamylaniline intermediates for the same.

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### 3,480,653
### METAL ORGANIC COMPOUNDS CONTAINING METAL—O—N LINKAGE

**Kailash Chandra Pande, Adrian, Mich., and Richard Eugene Ridenour, Sylvania, Ohio (both % Stauffer Chemical Company, Box 428, Adrian, Mich. 49221)**

**No Drawing. Filed July 5, 1966, Ser. No. 567,339**

**Int. Cl. C07f** *7/28, 5/06;* **B01j** *11/06*

**U.S. Cl. 260—429.3** **15 Claims**

This invention relates to a new class of organic compounds, distinguished in that they comprise a

metal—O—N

linkage,

The compounds of the invention are embraced by the general formula

$$X_nM(ONR_2)_y$$

in which X represents halogen or alkoxy, M represents a metal from any of Groups I–IV of the Periodic Table, R represents alkyl, aryl, or alkenyl, most preferably a low molecular weight alkyl group (i.e. 1–4 carbon atoms), $y=1–4$, $n=0$ when the valence of M is 1, 0 or 1 when the valence of M is 2, 0–2 when the valence of M is 3, and 0–3 when the valence of M is 4 and $n+y$ equals the valence of M.

Such compounds have application in a variety of fields. Thus, among them may be found bonding agents, cross-linking agents for use in silicone chemistry, intermediates, adhesion promoters, film forming agents, fuel and oil additives, hair waving agents, components for flame-proofing or fire-retarding formulations, water-proofing agents, and catalysts for chemical reactions, particularly polymerizations reactions.

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### 3,480,654
### PROCESS FOR PREPARING ORGANO-TIN, -BORON, -ALUMINUM, -SILICON, -PHOSPHOROUS, -ZINC AND -MERCURY COMPOUNDS

**Wolfgang Sundermeyer, Gottingen, and Wolfgang Verbeek, Hamburg-Volksdorf, Germany, assignors to Th. Goldschmidt A.G., Essen, Germany**

**Filed Mar. 11, 1966, Ser. No. 533,606**

**Claims priority, application Germany, Mar. 12, 1965, S 95,928**

**Int. Cl. C07f** *7/22, 5/00, 3/06*

**U.S. Cl. 260—429.7** **9 Claims**

Process of preparing the methyl, aryl and aralkyl compounds of the elements of Groups III–A, IV–A, V–A and II–B of the Periodic System. The halides of these elements are reacted with the respective methyl, aryl or aralkyl halides in the presence of a halogen acceptor metal. In accordance with the inventive process, the reaction is carried out in a melt of a non-oxidizing salt or salt mixture.

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### 3,480,655
### DIHYDROXY HYDROCARBYL TIN HALIDES AND THE PREPARATION THEREOF

**Anatole Wowk, Rahway, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Sept. 1, 1967, Ser. No. 664,939**

**Int. Cl. C07f** *7/22;* **C08f** *45/62*

**U.S. Cl. 260—429.7** **10 Claims**

In accordance with certain of its aspects, this invention comprises novel compounds $RSn(OH)_2X$ wherein R is hydrocarbon and X is halogen; and methods of preparing these novel compounds. The organo-dihydroxy tin halides find utility as stabilizers for resins, fungicides and active additives to anti-fouling paint.

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### 3,480,656
### N-TIN CARBAMIC ACID DERIVATIVES

**Herbert L. Heiss, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 381,240, July 8, 1964. This application Mar. 18, 1969, Ser. No. 808,334**

**Int. Cl. C07f** *7/22*

**U.S. Cl. 260—429.7** **9 Claims**

N-tin carbamic acid derivatives are prepared by reacting organic isocyanates with organic compounds containing at least one tin to oxygen bond, the product containing tin, nitrogen, carbon, hydrogen and oxygen atoms and the nitrogen is present only as part of a carbamyl moiety.

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### 3,480,657
### 1,3-DICYANO-4,7-METHANO-3a,4,7,7a-TETRAHYDROINDANE COMPOUNDS

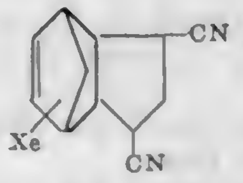
**Sidney B. Richter, Chicago, and Alfred A. Levin, Skokie, Ill., assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois**

**No Drawing. Filed June 14, 1967, Ser. No. 645,874**

**Int. Cl. C07c** *121/46, 121/48*

**U.S. Cl. 260—464** **6 Claims**

Compounds of the formula



wherein each X is independently selected from the group consisting of hydrogen, halogen and alkyl; provided a minimum of 4X are halogen. An insecticidal composition comprising an inert carrier and, in a quantity toxic to insects, a compound heretofore described. A method of destroying insects which comprises applying to the locus of the insects, an insecticidal composition comprising an inert carrier and, as an essential active ingredient a compound as described above.

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### 3,480,658
### 3,5-DIHALO-4-CARBAMATO BENZONITRILES

**Otto Rohr, Neu-Allschwil, Switzerland, assignor to Ciba Limited, a company of Switzerland**

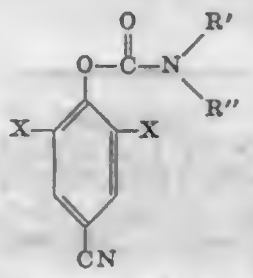
**No Drawing. Filed Aug. 31, 1966, Ser. No. 576,231**

**Claims priority, application Switzerland, Sept. 24, 1965, 13,276/65**

**Int. Cl. C07c** *121/52;* **A01n** *9/20*

**U.S. Cl. 260—465** **4 Claims**

Compounds are provided which are represented by the formula



in which X represents halogen, R′ hydrogen or alkyl, and R″ alkyl, lower chloroalkyl, phenyl, and phenyl substituted with —$NO_2$ halogen, —$CF_3$ or alkyl. The compounds of this invention are especially useful as herbicides and pesticides.

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### 3,480,659
### HYDROGENATION PROCESS

**Kenneth C. Dewhirst, San Pablo, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed July 19, 1965, Ser. No. 473,222**

**Int. Cl. C07c** *121/32, 49/20, 47/20*

**U.S. Cl. 260—465.1** **9 Claims**

A homogeneous hydrogenation process employs a catalyst composition comprising certain rhodium hydride complexes incorporating stabilizing phosphine or carbonyl ligands and an excess of phospine ligands.

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### 3,480,660
### CATALYST FOR FLUIDIZED BED OPERATION

**Darrell W. Walker and Leo A. McReynolds, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware**

**No Drawing. Filed Feb. 7, 1966, Ser. No. 525,284**

**Int. Cl. C07c** *121/04, 121/32;* **B01j** *11/46*

**U.S. Cl. 260—465.3** **8 Claims**

Calcium oxide is incorporated in silica particles impregnated with alkali metal cyanide to render the resulting composite catalyst useful in fluidized bed operation in the synthesis of acrylonitrile from HCN and $C_2H_2$, whereas the silica-alkali metal cyanide particles, alone, do not remain fluidized in the reaction ambient for a suitable period.

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### 3,480,661
### HALIDE ADDITION PROCESS

**Frederick F. Rust, Orinda, and Harvey S. Klein, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Feb. 6, 1964, Ser. No. 343,136**

**Int. Cl. C07c** *121/40, 69/02, 53/22*

**U.S. Cl. 260—465.4** **11 Claims**

Halogenated carbonylic compounds are prepared by the addition of α-(di to polyhalo) carbonylic compounds to olefins and dienes in the presence of a copper salt as catalyst.

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### 3,480,662
### OLEFIN ACTIVATOR FOR LIGANDS IN CUPROUS HALIDE SLURRY

**Jesse M. Carr, Jr., Baton Rouge, Gerald A. Byars, Denham Springs, and Richard J. De Feo, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware**

**No Drawing. Filed Sept. 19, 1966, Ser. No. 580,172**

**Int. Cl. C07c** *121/32, 7/16, 11/24*

**U.S. Cl. 260—465.9** **16 Claims**

A process for the recovery of complexible ligands using active cuprous chloride sorbent particles of molar ratios of copper:complexing ligand of greater than 1:1 wherein the sorbent particles are slurried in a hydrocarbon organic liquid diluent essentially inert to reaction with cuprous chloride and, as well, the additional presence of a $C_5^+$ monoolefin activator to effect liquid phase slurry complexing. Sorption is followed by desorption, while the sorbent particles are slurried in said diluent, in the presence of, or without the presence of, the said $C_5^+$ monoolefin, to recover said ligand. The presence of the $C_5^+$ monoolefin increases sorption and desorption rate without adverse effect on product quality.

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### 3,480,663
### TERPENE ESTER CARBAMIC ACIDS

**Kurt Thiele, Frankfurt am Main, Germany, assignor to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany**

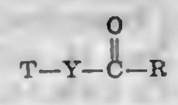
**No Drawing. Filed July 12, 1966, Ser. No. 564,547**

**Claims priority, application Germany, July 13, 1965, D 47,716**

**Int. Cl. C07c** *125/06;* **C07d** *29/24;* **A61k** *27/00*

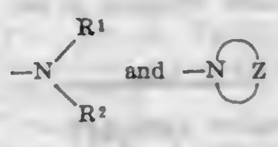
**U.S. Cl. 260—482** **6 Claims**

Terpene esters of the formula



$$T—Y—\overset{O}{\overset{\|}{C}}—R$$

wherein T is a terpinyl radical selected from the group consisting of linalyl, neryl, citronellyl, geranyl, menthyl, t-terpinyl, bornyl, fenchyl and bisabolyl, Y is selected from the group consisting of oxygen and sulfur and R is selected from the group



wherein R¹ and R² each taken individually is selected from the group consisting of hydrogen, cycloalkyl, aralkyl, aryl, substituted aryl, pyridyl, substituted pyridyl, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl and Z is selected from the group consisting of alkylene, oxa-alkylene and aza-alkylene which have antiinflammatory action.

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### 3,480,664
### 2,3-BIS(HEPTAFLUOROISOPROPOXY)-n-PROPYL ACRYLATE

**Allen G. Pittman, El Cerrito, and William L. Wasley, Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture**

**No Drawing. Filed June 7, 1966, Ser. No. 555,703**

**Int. Cl. C07c** *69/54, 43/12;* **C08f** *15/16*

**U.S. Cl. 260—486** **1 Claim**

Novel fluorinated esters, derived from acrylic and methacrylic acids, are disclosed. These compounds are characterized by the presence of two heptafluoroisopropyl groups per molecule of ester. The esters are further characterized by the presence of a fluoro-group on an α-carbon and the presence of an acrylic or methacrylic acid moiety separated from the heptafluoroisopropyl groups by a three-carbon atom bridge. This combination of properties permits the production of polymers which are stable against hydrolysis and fluorine shift and which, when applied to any substrate, render the latter oleophobic.

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### 3,480,665
### METHOD OF PREPARATION OF BETAINE HYDRATE

**Georges Nagy, Montrouge, France, assignor, by mesne assignments, to Ugine Kuhlmann (societe anonyme), Paris, France, a corporation of France**

**No Drawing. Filed Mar. 17, 1966, Ser. No. 535,028**

**Claims priority, application France, Mar. 22, 1965, 10,245; July 8, 1965, 24,003**

**Int. Cl. C07c** *101/12*

**U.S. Cl. 260—501.13** **6 Claims**

In the production of betaine by reacting trimethylamine with a monochloroacetate salt of an alkali metal or an alkaline earth metal in an aqueous medium whereby an aqueous solution results containing betaine and a reaction byproduct selected from the group consisting of alkali metal chlorides and alkaline earth metal chlorides, the process for separating betaine from the reaction byproduct comprising the steps of passing said aqueous solution over a strongly acidic cation exchange resin having a gel structure and containing, as a counter-ion, the metallic ion present in the aqueous solution, and thereafter passing water through the cation exchange resin whereby the reaction byproduct is eluted first, and then betaine.

### 3,480,666
### PRODUCTION OF EPOXIDE-TAURINE SALT CONDENSATION PRODUCTS

**Louie S. Bitar and Henry R. Grane, Springfield, Pa., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania**

**No Drawing. Filed Nov. 21, 1967, Ser. No. 684,612**

**Int. Cl. C07c** *143/14*

**U.S. Cl. 260—513** **10 Claims**

Method of producing high yields of epoxide-taurine salt condensation products by effecting the condensation of the epoxide with an aqueous solution of the taurine salt and the minimum amount of a $C_1$ to $C_4$ alcohol to give a single phase solution at the condensation reaction temperature.

### 3,480,667
### METHOD OF PRODUCING FLUORINATED COMPOUNDS

**William R. Siegart, Poughkeepsie, William D. Blackley, Wappingers Falls, Harry Chafetz, Poughkeepsie, and Matthew A. McMahon, Jr., Hopewell Junction, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Apr. 28, 1965, Ser. No. 451,632**

**Int. Cl. C07b** *9/00;* **C08f** *27/03;* **C07c** *17/00*

**U.S. Cl. 260—514** **21 Claims**

A method of fluorinating an organic compound comprising contacting said compound with fluorine in the presence of an alkali metal fluoride catalyst.

### 3,480,668
### SUBSTITUTED 3,6-DIHYDROXY-4-CYCLOHEXENECARBOXYLIC ACIDS

**Allen K. Sparks, Des Plaines, and Robert A. Dombro, Chicago, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**

**No Drawing. Filed Oct. 18, 1965, Ser. No. 497,458**

**Int. Cl. C07c** *61/22*

**U.S. Cl. 260—514** **11 Claims**

3,6-dihydroxy-4-cyclohexenecarboxylic acid and derivatives thereof, and polymeric reaction products thereof with monomers containing reactive functional groups.

### 3,480,669
### OXIDATIVE CARBONYLATION OF AROMATICS

**Donald M. Fenton, Anaheim, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California**

**No Drawing. Filed Sept. 8, 1966, Ser. No. 577,814**

**Int. Cl. C07c** *63/36;* **C07f** *3/12*

**U.S. Cl. 260—515** **5 Claims**

1. The oxidative carbonylation of the ring of a carbocyclic aromatic ring compound to produce aromatic carboxylic acids that comprises contacting an aromatic compound having from about 6 to about 25 carbons and selected from the class of benzene, naphthalene, anthracene, halogen derivatives thereof having 1 to 5 halogens and alkyl derivatives thereof having from about 1 to 5 alkyl groups, said alkyl groups having from 1 to about 12 carbons; with a reaction medium comprising an inert organic solvent containing as the sole catalyst a soluble mercuric compound and carbon monoxide at a temperature between about 30° and about 300° C. and sufficient pressure to maintain liquid phase conditions.

### 3,480,670
### RESOLUTION OF RACEMIC CHEMICAL COMPOUNDS

**Donald F. Reinhold, North Plainfield, Walter A. Gaines, Rahway, and Meyer Sletzinger, North Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey**

**No Drawing. Filed Aug. 11, 1964, Ser. No. 388,952**

**Int. Cl. C07c** *101/08*

**U.S. Cl. 260—559** **4 Claims**

A process is described for the preparation of L-α-methyl-β-(3,4-disubstituted - phenyl)alanines which comprises resolution of the intermediate corresponding amide and hydrolysis of the L-amide to the amino acid.

### 3,480,671
### α-NAPHTHOXY ACETAMIDE COMPOSITIONS

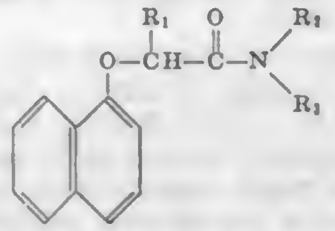
**Harry Tilles, El Cerrito, and Don R. Baker, Pinole, Calif., and Chester L. Dewald, Houston, Tex., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Continuation of application Ser. No. 637,624, May 11, 1967. This application Jan. 16, 1969, Ser. No. 796,278**

**Int. Cl. C07c** *103/22, 103/30;* **A01n** *9/20*

**U.S. Cl. 260—559** **11 Claims**

Substituted α-naphthoxy acetamides having the general formula



wherein $R_1$ is selected from the group consisting of hydrogen and lower alkyl, $R_2$ is selected from the group consisting of hydrogen, lower alkyl and lower alkenyl, and $R_3$ is selected from the group consisting of lower alkyl and lower alkenyl; provided that when $R_1$ and $R_2$ are both hydrogen, $R_3$ is lower alkyl having from 1 to 2 carbon atoms, inclusive, or lower alkenyl. The compounds are effective as herbicides in the control of grasses and broadleaf plants with both pre-emergence and post-emergence activity. Representative compounds are N,N-dimethyl α-naphthoxyacetamide, N,N-diethyl 2(α-naphthoxy)-propionamide, N-isopropyl 2(α-naphthoxy)-butyramide, N,N-dialkyl 2(α-naphthoxy)-propionamide and N-methyl α-naphthoxy-acetamide.

### 3,480,672
### PROCESS FOR REDUCTION OF NITRO COMPOUNDS TO CORRESPONDING OXIMES AND KETONES

**Ehrenfried H. Kober and Gerhard F. Ottmann, Hamden, and Haywood Hooks, Jr., West Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia**

**No Drawing. Filed Mar. 28, 1967, Ser. No. 626,428**

**Int. Cl. C07c** *131/00, 45/00*

**U.S. Cl. 260—566** **8 Claims**

A process for preparing oximes and ketones in which a primary or secondary nitro compound is caused to react with carbonyl sulfide in the presence of a base and at elevated temperatures and pressures.

### 3,480,673
### POLYHALODIPHENYL MONOAMINES

**Eric Smith, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia**

**No Drawing. Filed June 1, 1964, Ser. No. 371,785**

**Int. Cl. C07c** *87/60, 119/04;* **A01n** *9/20*

**U.S. Cl. 260—578** **3 Claims**

Halogenated polyphenyl compounds are reacted with a nitrogen-containing compound of the formula $R_2NH$, such as ammonia, in the presence of a metal halide to form halogenated diphenyl polyamines, which are reacted with phosgene to yield the corresponding halogenerated diphenyl polyisocyanates. The halogenated polyphenylene amines are useful as pesticides and the halogenated diphenyl polyisocyanates are useful as a reactant in the preparation of polyurethane foams.

### 3,480,674
### N-SECONDARY-ALKYL TERTIARY POLYAMINE COMPOUNDS

**Eugene J. Miller, Jr., Wheaton, Ill., and Ago Mais, Trenton, N.J., assignors to Armour Industrial Chemical Company, Chicago, Ill., a corporation of Delaware**

**No Drawing. Original application Feb. 23, 1965, Ser. No. 434,607. Divided and this application July 1, 1968, Ser. No. 741,346**

**Int. Cl. C07c** *87/18*

**U.S. Cl. 260—583** **5 Claims**

Tertiary amine compounds wherein one tertiary nitrogen atom has a secondary-alkyl group attached to it, useful as fuel additives and bactericides.

### 3,480,675
### PREPARATION OF BIS[BETA-(N,N-DIMETHYLAMINO)ALKYL]ETHERS

**Fedor Poppelsdorf, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York**

**No Drawing. Filed Apr. 6, 1966, Ser. No. 540,502**

**Int. Cl. C07c** *85/06, 93/04*

**U.S. Cl. 260—584** **6 Claims**

Bis[beta - (N,N-dimethylamino)alkyl] ethers are prepared by reacting a beta-(N,N - dimethylamino)alkanol with a beta-(N,N-dimethylamino)alkyl chloride (or acid salt thereof) in the presence of alkali metal hydroxide. The product ethers are useful as urethane catalysts.

### 3,480,676
### PROCESS OF PURIFYING KETENE

**Hermann Scheuber, Viege, Switzerland, assignor to Lonza Ltd., Gampel, Valais, Switzerland**

**No Drawing. Filed Nov. 3, 1967, Ser. No. 680,346**

**Claims priority, application Switzerland, Nov. 3, 1966, 15,869/66**

**Int. Cl. C07c** *49/22, 45/24*

**U.S. Cl. 260—585.5** **7 Claims**

Raw ketene, which is obtained by separating it from a mixture of ketene, water, acetic acid and acetic anhydride formed by thermal dissociation of acetic acid under pressures lower than normal pressure in the presence of catalysts, is purified by increasing the temperature of this raw ketene for a short duration whereby additional acetic anhydride is formed and then cooling the raw ketene to temperatures at which the acetic anhydride is separated by condensation.

### 3,480,677
### NOVEL IONONE

**Walter C. Meuly, Piscataway Township, New Brunswick County, and Peter S. Gradeff, Somerset, N.J., assignors to Rhodia Inc., New Brunswick, N.J., a corporation of New York**

**No Drawing. Continuation-in-part of application Ser. No. 300,907, Aug. 8, 1963. This application Aug. 29, 1966, Ser. No. 575,558**

**Int. Cl. C07c** *49/26, 45/00*

**U.S. Cl. 260—587** **1 Claim**

4[(9 - 10)-dehydro-2,2-dimethyldecahydronaphthy-1]3-butene-2-one, with utility as an odorant in perfume compositions, has been prepared.

### 3,480,678
### PREPARATION OF ACETALS OF 5-OXOPENTANALS

**John G. Thweatt, Kingsport, Tenn., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey**

**No Drawing. Filed June 27, 1967, Ser. No. 649,133**

**Int. Cl. C07c** *45/00, 49/06, 43/30*

**U.S. Cl. 260—594** **4 Claims**

A novel ring-opening reaction of 6-alkyl- or 6-aryl-2-alkoxy-3,4-dihydro-2H-pyrans with alcohols in the presence of acid catalysts yields acetals of 5-alkyl- or 5-aryl-5-oxopentanals. Substituents such as alkyl or aryl may be present in other positions of the pyran component. The acetals of the invention are useful as intermediates for the preparation of aldehydes, mono- and dibasic acids and cyclic ketones employed in the manufacture of many commercial products.

### 3,480,679
### 1,2 - DIPHENYL - 1,2,3,4 - TETRAHYDRO - 1-NAPHTHOLS AND 1,2 - DIPHENYL - 1-HYDROXYINDANES

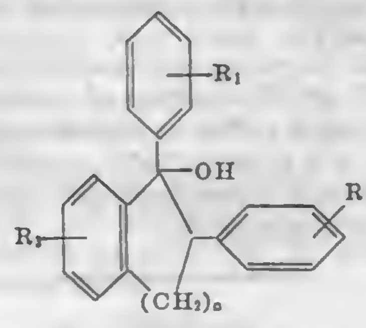
**Daniel Lednicer, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware**

**No Drawing. Original application Dec. 9, 1963, Ser. No. 329,220, now Patent No. 3,293,263, dated Dec. 20, 1966. Divided and this application Aug. 18, 1966, Ser. No. 573,200**

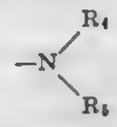
**Int. Cl. C07c** *149/30, 43/20, 39/12*

**U.S. Cl. 260—609** **4 Claims**

This invention is a class of new organic compounds with the formula:

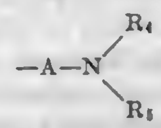


wherein *n* is an integer from 1 to 2 inclusive, and $R_1$ is selected from the class consisting of hydrogen, lower-alkyl, trifluoromethyl, lower-alkenyl, lower-alkenyloxy, halogen, lower-alkylmercapto,



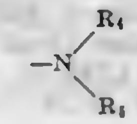
$$-N\begin{matrix}R_4\\ \\R_5\end{matrix}$$

and



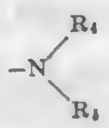
$$-A-N\begin{matrix}R_4\\ \\R_5\end{matrix}$$

wherein $R_4$ and $R_5$ taken individually represent lower-alkyl and $R_4$ and $R_5$ taken together with the attached nitrogen atom represent a 5 to 7 ring atom saturated heterocyclic radical, and A is an alkylene group containing from 1 to 6 carbon atoms, inclusive; $R_2$ represents at least one substituent selected from the class consisting of hydrogen, lower-alkyl, trifluoromethyl, lower-alkenyl, lower-alkenyloxy, halogen, lower-alkylmercapto and



$$-N\begin{matrix}R_4\\ \\R_5\end{matrix}$$

wherein $R_4$ and $R_5$ have the significance above defined; $R_3$ represents at least one substituent selected from the class consisting of hydrogen, hydroxy, lower-alkyl, trifluoromethyl, lower-alkenyl, lower-alkoxy, lower-alkenyloxy, halogen, lower-alkylmercapto and



wherein $R_4$ and $R_5$ have the significance above defined, provided that $R_1$, $R_2$ and $R_3$ do not each represent hydrogen simultaneously. This invention also includes (a) the addition salts with pharmaceutically acceptable acids of those compounds of the above formula which contain a tertiaryamino substituent, and (b) the quaternary ammonium salts of those compounds of the above formula which contain a tertiaryamino substituent wherein the anion of the quaternary salt is that of a pharmaceutically acceptable acid. These compounds are useful as chemical intermediates to produce, by dehydration, useful 1,2-diphenyl-3,4-dihydronaphthalenes. These compounds also have biological properties which cause them to be useful as antifertility, estrogenic, antiestrogenic, and hypocholesteremic agents.

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### 3,480,680
### PREPARATION OF BIS(1-HALOALKYL)SULFIDES

**Wolfgang T. Eisfeld, Troisdorf, Germany, and Walter Stamm, Tarrytown, N.Y., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Nov. 14, 1966, Ser. No. 593,641**
**Int. Cl. C07c** *149/18, 147/14*
**U.S. Cl. 260—609** **6 Claims**

A method for preparing bis(1-haloalkyl)sulfides and 1-haloalkyl thiols by the reaction of a vinyl halide compound and hydrogen sulfide at superatmospheric pressure in the presence of a Friedel-Crafts catalyst at from —30° C. to 120° C.—said compounds are useful as chemical intermediates, and insecticides.

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### 3,480,681
### PROCESS FOR THE PREPARATION AND PURIFICATION OF P-NITROBENZENES

**Dominic A. Zanella, Lock Haven, Pa., assignor to American Aniline Products, Inc., a corporation of Delaware**

**No Drawing. Filed Mar. 18, 1968, Ser. No. 714,059**
**Int. Cl. C07c** *79/12*
**U.S. Cl. 260—646** **7 Claims**

Pure 1, 2-dichloro-4-nitrobenzene is separated from an isomeric mixture of 1,2-dichloro-4-nitrobenzene and 1,2-dichloro-3-nitrobenzene dissolved in concentrated sulfuric acid by a fractional crystallization process. According to the invention, sufficient water is added to the concentrated sulfuric acid solution to form an ultimate concentration of 65–90% by weight of sulfuric acid whereby 1,2-dichloro-4-nitrobenzene selectively crystallizes from the concentrated acid solution to the exclusion of the 1,2-dichloro-3-nitrobenzene isomer.

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### 3,480,682
### MANUFACTURE OF HALOGENATED HYDROCARBONS

**David Geoffrey Mead, Widnes, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain**

**No Drawing. Filed Jan. 3, 1966, Ser. No. 518,015**
**Claims priority, application Great Britain, Jan. 14, 1965, 1,743/65**
**Int. Cl. C07c** *25/28, 23/10, 21/02*
**U.S. Cl. 260—648** **22 Claims**

There is provided a process producing monohalogenated olefines by reacting an olefine with hydrogen halide and a source of molecular oxygen at a temperature of between 300° and 550° C. and in the presence of a supported catalyst. The improvement resides in the use of a catalyst having 0.01% to 2% by weight of platinum or rhodium carried on a support selected from titania, zirconia and alumina and wherein the support has its specific surface area of between about 0.5 to 50 m.$^2$ per gram. The catalyst may additionally include a metal of variable valence, a rare earth metal and alkaline metal or alkaline earth metal. The support material may be processed to have the required specific surface by calcining at a temperature of about 600° C. to about 1000° C. The preferred olefins are ethylene, propylene and styrene.

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### 3,480,683
### 2-BROMO-1,1,2,3,3-PENTAFLUOROPROPANE

**Bernard M. Regan, Chicago, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 583,523, Feb. 2, 1966. This application Aug. 31, 1967, Ser. No. 664,604**
**Int. Cl. C07c** *17/02, 19/08;* **A61k** *27/00*
**U.S. Cl. 260—653** **5 Claims**

2-bromo-1,1,2,3,3-pentafluoropropane, useful as a nonflammable inhalation anesthetic which is stable toward soda-lime.

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### 3,480,684
### DEHYDROCYCLIZATION PROCESS AND CATALYST

**Rowland C. Hansford, 19463 Oriente Drive, Yorba Linda, Calif. 92686**

**No Drawing. Filed Aug. 21, 1967, Ser. No. 661,777**
**Int. Cl. C07c** *5/24;* **B01j** *11/06*
**U.S. Cl. 260—673.5** **16 Claims**

Paraffin hydrocarbons are converted to aromatic hydrocarbons by dehydrocyclization at elevated temperatures and low pressures, in the presence of a catalyst comprising an intimate mixture of alumina and chromium oxide, upon which is deposited a minor proportion of a promoter selected from the class consisting of the oxides of niobium and tantalum, and preferably a minor proportion of an inhibitor selected from the class consisting of the oxides of the alkali metals and the alkaline earth metals.

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### 3,480,685
### OCTATRIENE PROCESS

**Julian Feldman, Bernard A. Saffer, and Orville D. Frampton, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia**

**No Drawing. Continuation-in-part of application Ser. No. 248,518, Dec. 31, 1962. This application Mar. 20, 1963, Ser. No. 266,514**
**Int. Cl. C07c** *11/00, 11/12, 3/20*
**U.S. Cl. 260—677** **23 Claims**

1. A process for the production of linear dimers of open chain conjugated diolefin which comprises polymerizing an open chain conjugated diolefin at a temperature within the range of 70° C. to 160° C. in contact with a zerovalent nickel catalyst derived from nickel carbonyl, and a cocatalyst selected from the group consisting of aliphatic and alicyclic alcohols having more than two carbon atom, said nickel catalyst being present in an amount equal to 0.5% to 5% by weight of said diolefin, and said alcohol co-catalyst being present in an amount equal to about 10% to 30% by weight of said diolefin.

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### 3,480,686
### PROCEDURE FOR THE THERMAL CRACKING OF HYDROCARBONS

**Guy Martens, Brussels, Belgium, assignor to Solvay & Cie, Brussels, Belgium, a Belgian corporation**

**No Drawing. Filed Nov. 24, 1967, Ser. No. 685,286**
**Claims priority, application France, Nov. 24, 1966, 84,794**
**Int. Cl. C07c** *3/30, 11/24*
**U.S. Cl. 260—679** **13 Claims**

Hydrocarbons are subjected to thermal cracking to produce acetylene, at temperatures of 1000° C. and higher admixed with a diluent of aromatic hydrocarbon.

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### 3,480,687
### PROMOTION OF OLEFIN CRACKING

**Kenneth J. Frech, Tallmadge, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio**

**No Drawing. Continuation-in-part of application Ser. No. 449,278, Apr. 19, 1965. This application Mar. 3, 1966, Ser. No. 531,353**
**The portion of the term of the patent subsequent to May 31, 1983, has been disclaimed**
**Int. Cl. C07c** *3/32, 11/12*
**U.S. Cl. 260—680** **12 Claims**

The decomposition of 2-methylpentene-2 and 3-methylpentene-2 to isoprene is enhanced by cracking in the presence of hydrogen sulfide. The pyrolysis of various other olefins which contain in their molecule a carbon-to-carbon single bond in a position beta to the double bond likewise is disclosed as being enhanced if pyrolyzed in the presence of hydrogen sulfide.

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### 3,480,688
### PREPARATION OF ISOPRENE

**Kenneth J. Frech, Tallmadge, and Victor J. Anhorn, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio**

**No Drawing. Continuation-in-part of application Ser. No. 492,861, Oct. 4, 1965. This application June 30, 1966, Ser. No. 561,717**
**Int. Cl. C07c** *5/24*
**U.S. Cl. 260—680** **7 Claims**

There is disclosed a method of preparing isoprene which comprises rearranging the carbon skeleton of 2-methyl-1-pentene or 4-methyl-2-pentene to form 3-methyl-2-pentene and subsequently pyrolyzing the 3-methyl-2-pentene to form isoprene. There is further disclosed the fact that 2-methyl-1-pentene and 4-methyl-2-pentene can be prepared by the dimerization of propylene and some specific methods for the carbon skeleton rearrangement or isomerization of 2-methyl-1-pentene and 4-methyl-2-pentene.

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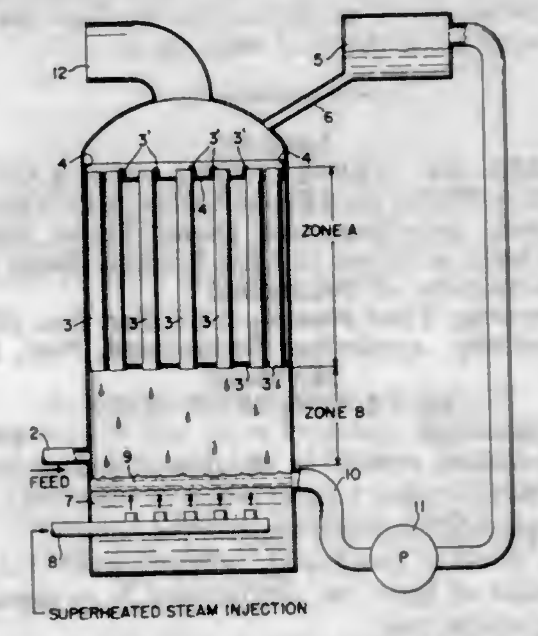
### 3,480,689
### CRACKING OF HYDROCARBONS

**Byron B. Bohrer, Rosemont, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey**

**Filed May 10, 1967, Ser. No. 637,554**
**Int. Cl. C07c** *3/30*
**U.S. Cl. 260—683** **10 Claims**

A hydrocarbon cracking process which provides heat to the cracking zone and mitigates carbon deposition on structure surfaces thereof by providing for the coating of cracking zone structure surfaces with flowing molten metal. The molten metal coating is accomplished by providing the walls of the structure with grooves as a flow path for the molten metal. Grooves are provided by machine rifling the walls or by compressing a helical coil of wire until it engages the cracking zone wall and affixing it in that position. A preferred manner of grooving the walls and for providing heat to the reaction zone involves the use of a double-wire helical coil member affixed to the cracking zone wall and the upper end of the double-wire coil terminates in a molten metal bath whereby molten metal is fed down the double-wire member by capillary action. In a modification such double-wire helical coils are suspended within the cracking zone in lieu of or in addition to affixing same to the cracking zone wall. Cracking conditions are conventional, in the temperature range of about 1200° to 1900° F. and about 1 to 3 atmospheres of pressure.



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### 3,480,690
### NATURAL RUBBER CONTAINING n-ALKYLAMINE PHOSPHATE SALTS

**Philip C. Kelley, Brecksville, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York**

**No Drawing. Filed Dec. 14, 1967, Ser. No. 690,391**
**Int. Cl. C08c** *11/66, 11/44*
**U.S. Cl. 260—814** **5 Claims**

n-Alkylamine phosphate salts, such as n-dodecyl ammonium phosphate, are useful protective agents against oxidative degradation as promoted by manganese contaminants in natural rubber.

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### 3,480,691
### PRIMER COATING COMPOSITIONS CONTAINING CARBOXYLATED BUTADIENE ACRYLONITRILE COPOLYMER, VINYL CHLORIDE COPOLYMER, A POLYACRYLATE, AN EPOXIDE RESIN AND A PHENOL-FORMALDEHYDE RESIN

**William C. Jeff, North Plainfield, Thomas Luyster, Jr., Saddle Brook, James F. Lynch, Jr., Newark, and Frank A. Moroli, Clark, N.J., assignors to John L. Armitage & Co., Newark, N.J., a corporation of New Jersey**

**No Drawing. Filed Sept. 5, 1967, Ser. No. 665,280**
**Int. Cl. C08f** *3/76*
**U.S. Cl. 260—831** **8 Claims**

Primer compositions especially suitable for use in making special textured organic coating systems are disclosed. The special systems referred to are those in which a form-retaining member such as a metal sheet is first coated with a primer, a discontinuous ink pattern is then applied, and, finally, a resinous top layer is applied, the end result being a textured effect with a pattern determined by the inked design, the high points of the textured coating being over the uninked portions and the low points being over the inked portions.

The primer compositions comprise a mixture of five different resins, as follows:

Resin No. I—a carboxyl-modified, butadieneacrylonitrile copolymer;
Resin No. II—a vinyl chloride-vinylidene chloride copolymer;
Resin No. III—methyl methacrylate polymer or a methyl methacrylate-ethyl acrylate copolymer;
Resin No. IV—an epoxy resin; and

Resin No. V—a compatible, alkaline-catalyzed, oil insoluble, phenol-formaldehyde resin, hereinafter also referred to as heat reactive oil insoluble phenolic resin.

A number of specific formulations of primer compositions is given, as well as instructions for their use to form textured articles of the kind referred to.

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### 3,480,692

## MIXTURES OF TRIGLYCIDYL ISOCYANURATE AND OTHER HETEROCYCLIC EPOXIDES

**Hans Batzer, Arlesheim, and Daniel Porret, Binningen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland**
**No Drawing. Filed Nov. 7, 1967, Ser. No. 681,079**
**Claims priority, application Switzerland, Nov. 8, 1966, 16,095/66**
**Int. Cl. C08g** *30/08, 45/00*
**U.S. Cl. 260—830** **10 Claims**

The invention relates to curable mixtures containing triazine-epoxy resins, characterized in that they contain

(a) triglycidylisocyanurate,
(b) a glycidyl compound different from (a), which contains at least one nitrogenous 5- or 6-membered heterocycle, and
(c) a curing agent for epoxy resins.

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### 3,480,693

## AMINOPLAST COATINGS HAVING HYDROXYL CONTAINING STYRENE COPOLYMER AND ALKYD RESIN INCORPORATED THEREIN

**Robert W. Hill, Leawood, and Francis R. Galiano, Prairie Village, Kans., assignors to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**No Drawing. Filed Jan. 11, 1966, Ser. No. 519,962**
**Int. Cl. C08g** *37/34*
**U.S. Cl. 260—850** **14 Claims**

A heat curable resin blend of (A) a copolymer of styrene and methallyl alcohol or allyl alcohol or, alternatively, a hydrogenated copolymer of styrene with acrolein or methacrolein, (B) a curable aminoplast, such as polyakylol melamine or poly(alkoxyalkyl) melamine, and (C) an alkyl resin is disclosed as a coating for various substrates, particularly plastic bottles.

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### 3,480,694

## STABILIZATION OF POLYOXYMETHYLENE WITH TRIS-m-METHYL PHENOXY SYN-1,3,5-TRIAZINE AND A POLYAMIDE

**Henry Moncure, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**No Drawing. Filed Oct. 19, 1967, Ser. No. 676,625**
**Int. Cl. C08g** *37/04, 51/60*
**U.S. Cl. 260—857** **3 Claims**

The melt stability of high molecular weight polyoxymethylenes is improved by the addition of selected superpolyamides, e.g. a terpolymer containing approximately 43.3% polycaprolactam, 33.6% polyhexamethylene adipamide and 23.1% polyhexamethylene sebacamide, and selected substituted triazines, e.g. tri tolyl cyanurate.

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### 3,480,695

## POLYHYDROXYETHER COMPOSITIONS CONTAINING POLYCARBONATES

**Warren F. Hale, Somerville, N.J., assignor to Union Carbide Corporation, a corporation of New York**
**No Drawing. Filed Dec. 14, 1965, Ser. No. 513,852**
**Int. Cl. C08g** *43/02*
**U.S. Cl. 260—860** **16 Claims**

Polyblends of thermoplastic polyhydroxyethers and polycarbonates having from about 5 to 50 parts of polycarbonate per 100 parts of polyhydroxyether are characterized by improved properties.

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### 3,480,696

## ALPHA OLEFIN BLOCK COPOLYMERS AND THEIR PREPARATION

**Howard L. Hassell, San Leandro, and Roy G. Hayter, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Nov. 16, 1966, Ser. No. 594,696**
**Int. Cl. C08f** *15/04*
**U.S. Cl. 260—878** **6 Claims**

Block copolymer of alpha olefins having highly isotactic plastic blocks and highly random elastomeric copolymers blocks are prepared by the use of a catalyst system comprising gamma titanium trichloride and a dialkyl hydrocarbyloxy aluminum. The copolymers are especially useful as elastomers which do not require vulcanization.

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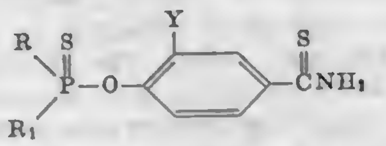
### 3,480,697

## PARA-THIOCARBAMOYLPHENYL PHOSPHOROTHIOATES

**Bernard Miller, Princeton, and Howard Margulies, Princeton Junction, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine**
**No Drawing. Filed Feb. 2, 1966, Ser. No. 524,496**
**Int. Cl. C07f** *9/18, 9/24, 9/40*
**U.S. Cl. 260—944** **4 Claims**

A miticidal compound of the formula:



wherein R represents alkoxy having from 2–3 carbon atoms; $R_1$ is a substituent such as lower alkoxy, phenyl, chloro- or bromo-substituted (lower)alkoxy or di(lower alkyl)amino; and Y is hydrogen, chloro or bromo, said compound being prepared by reacting a p-hydroxythiobenzamide with a halothiophosphate.

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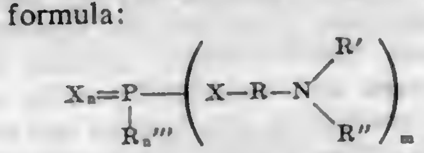
### 3,480,698

## AMINOALKYL PHOSPHITES

**Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware**
**No Drawing. Filed Oct. 27, 1966, Ser. No. 589,841**
**Int. Cl. C07f** *9/08;* **C08k** *1/60;* **C10m** *3/40*
**U.S. Cl. 260—945** **5 Claims**

Phosphorus and nitrogen-containing compounds having the general formula:



where X is oxygen or sulfur, R is alkylene, R′ and R″ are alkyl or cycloalkyl, R‴ is hydrogen, alkyl, aryl or cycloalkyl, *n* ranges from zero to 2, *m* ranges from one to 3 and the sum of $m+n$ is 3. These compounds are useful as stabilizers in gasolines.

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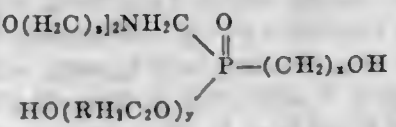
### 3,480,699

## CHLORO-SUBSTITUTED HYDROXYPOLYALKOXY AMINOMETHYLPHOSPHINATES

**Glenn R. Price, San German, Puerto Rico, assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware**
**No Drawing. Filed Apr. 15, 1966, Ser. No. 542,717**
**Int. Cl. C07f** *9/32;* **C09k** *3/28;* **C08g** *41/00*
**U.S. Cl. 260—945** **2 Claims**

Flame resistant compounds of the formula:



wherein R is chloro or chloroalkyl and *x*, *y* and *z* are integers of from 1 to 10. The compounds are prepared

by reacting a hydroxyalkyl phosphinic acid and an epoxy chloroalkane with the reaction product of formaldehyde and a dialkanolamine.

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### 3,480,700

## TRIS(3,5-DIHYDROCARBYL-4-HYDROXYPHENYL)PHOSPHOTHIONATES

**Bernard R. Meltsner, Royal Oak, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia**
**No Drawing. Filed May 20, 1966, Ser. No. 551,538**
**Int. Cl. C07f** *9/18;* **C08f** *45/58;* **C08d** *7/10*
**U.S. Cl. 260—953** **5 Claims**

Organic material normally subject to oxidative degradation such as polypropylene is stabilized by the addition of a tris(3,5-dihydrocarbyl - 4 - hydroxyphenyl)phosphothionate such as tris(3,5-di-tert-butyl-4-hydroxyphenyl)-phosphothionate. Effectiveness is synergistically improved by adding dihydrocarbyl thiodialkanoates such as dilaurylthiodipropionate.

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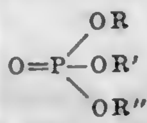
### 3,480,701

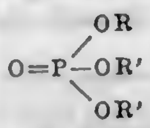
## PROCESS FOR THE PRODUCTION OF MIXED PHOSPHONIC ACID ESTERS

**Klaus Kleine-Weischede, Leverkusen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany**
**No Drawing. Filed Mar. 18, 1966, Ser. No. 535,310**
**Claims priority, application Germany, Mar. 20, 1965, F 45,585**
**Int. Cl. C07f** *9/40;* **C08k** *1/60;* **C10l** *1/26*
**U.S. Cl. 260—982** **1 Claim**

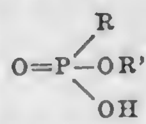
A process for the production of phosphonic acid esters of the formula



wherein R stands for a hydrocarbon radical containing 1–18 carbon atoms, R′ stands for an alkyl radical containing 1–3 carbon atoms and R″ for an alkyl or aralkyl radical containing 4–18 carbon atoms or for an alkenyl radical containing 3–18 carbon atoms comprising reacting phosphonic acid diesters of the formula



wherein R and R′ have the above meaning while heating with a halide of the formula R″X wherein R″ has the above meaning and X stands for chlorine, bromine or iodine in the presence of alkali metal, alkaline earth metal or ammonium salts of hydrohalic acids or partially esterified phosphonic acids of the formula



wherein R and R′ have the above meaning.

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### 3,480,702

## METHOD OF PRODUCING A NUCLEAR REACTOR FUEL ELEMENT

**Lionel Houston Ford, St. Anne's-on-the-Sea, England, assignor to United Kingdom Atomic Energy Authority, London, England**
**No Drawing. Filed June 5, 1967, Ser. No. 643,399**
**Claims priority, application Great Britain, May 26, 1967, 24,663/67**
**Int. Cl. G21c** *3/06, 3/20, 21/00*
**U.S. Cl. 264—.5** **2 Claims**

A nuclear reactor fuel element comprises particles of ceramic fissile material, each having a coating of nonfissile ceramic material. The particles are contained in an outer ceramic container and the particles are bonded together in a region about each of their points of contact in the container by an individual bridge of a metal such that the interspaces between the particles are free of the metallic bonding material. The method of making the fuel element comprises the steps of overcoating the particles with a solid layer of metal, and then filling said ceramic container with the metal coated particles. The ceramic container and contained particles are heated to melt the metal coating on the particles so that the molten metal moves by capillary action to form individual bridges of the metal bonding said particles together in the region about each of their points of contact in the container.

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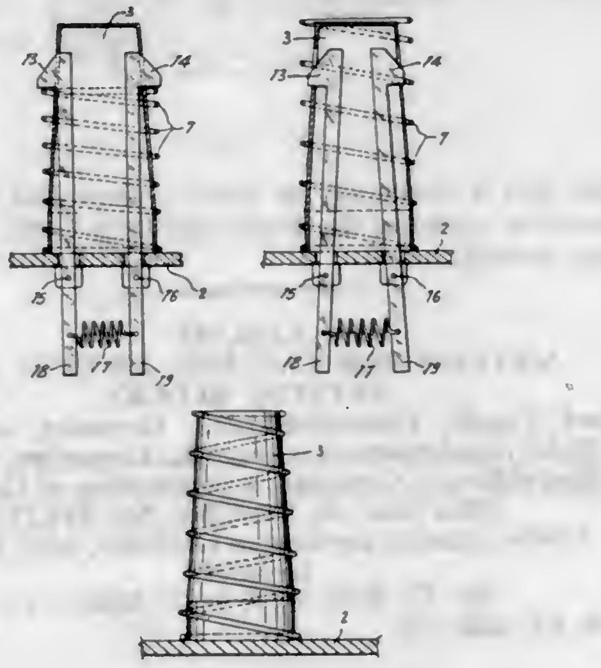
### 3,480,703

## MATTRESSES AND PADDINGS

**Victor Moritz, 10 Rue de la Pepiniere, Paris, France, and Paul Moritz, deceased, late of Chatou, France, by Madeleine France Louise Marechal, legal representative, 16 Rue Labelonye, Chatou, Yvelines, France**
**Filed Nov. 24, 1965, Ser. No. 510,451**
**Int. Cl. B29h** *7/20, 9/10*
**U.S. Cl. 264—45** **2 Claims**



Plastic foam mattresses, cushions, seats and the like are provided with springs embedded therein by use of a mold having a plurality of inwardly directed hollow mandrels on which the springs are resiliently retained during molding. The springs are compressed on the mandrels and maintained compressed during setting of the plastic foam, by means of oppositely swingable outwardly extending hooks that project into each hollow mandrel and that are moved apart to provide retainers for maintaining the springs compressed, and that are moved together for retraction from the mandrel after setting of the molded material.

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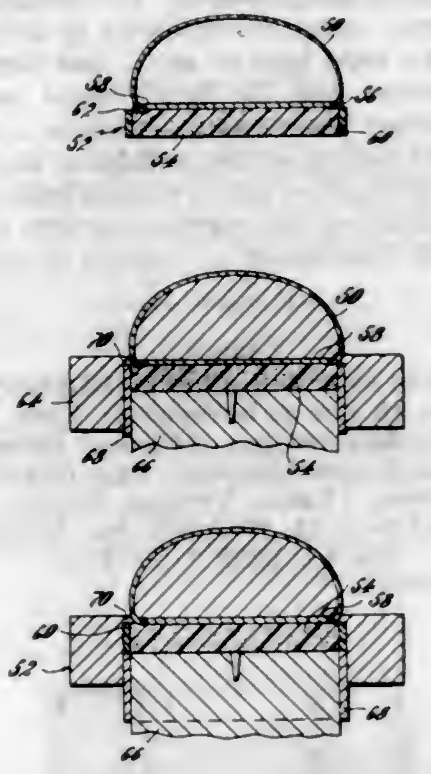
### 3,480,704

## SHOE WITH INJECTION MOLDED BOTTOM PROVIDED WITH DENSE EDGE STRIP, AND METHOD AND APPARATUS FOR MAKING THE SAME

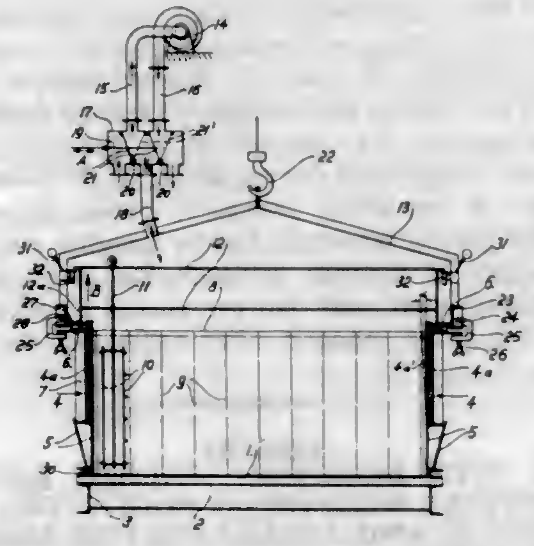
**Herbert Ludwig, Desmastr. 112, Uesen, near Bremen, Germany**
**Filed Mar. 10, 1966, Ser. No. 533,189**
**Int. Cl. A43d** *65/00;* **A43b** *9/16;* **B29h** *7/08*
**U.S. Cl. 264—45** **3 Claims**

A method of shoe making comprising injecting plastisol containing a foaming agent into a mold beneath a lasted upper held against the top, allowing the plastisol to expand to form a cushion sole of the desired shape and thickness and then injecting plastisol that does not contain a foaming agent into the mold around the edge of the sole to form a dense edge strip peripherally of the sole. The method also includes injecting an already expanded plas-



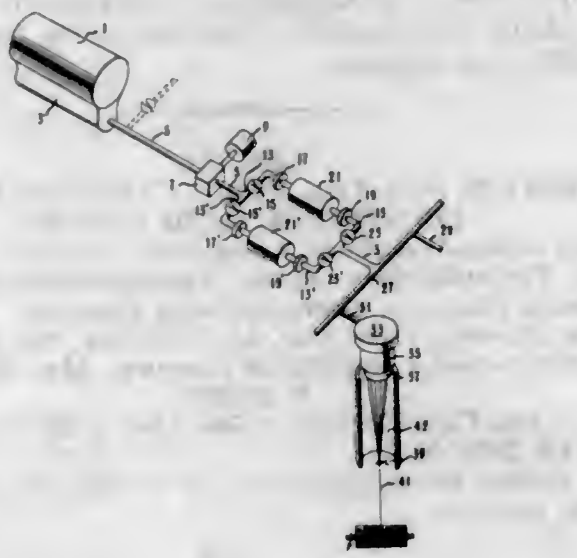
tisol into a cavity of the desired shape and depth and thereafter applying the dense edge strip to the peripheral edge thereof.

### 3,480,705
### METHOD FOR CASTING, LIFTING AND SETTING BLOCKS
**Josef Vogele, Furstenfeldbruck, Germany, assignor to Hebel Gasbetonwerk G.m.b.H., Emmering, near Furstenfeldbruck, Germany, a corporation of Germany**
**Filed Mar. 31, 1966, Ser. No. 539,192**
**Claims priority, application Germany, Apr. 3, 1965, G 43,262**
**Int. Cl. B29c** *5/00, 7/00;* **B28b** *7/10*
**U.S. Cl. 264—90** **2 Claims**



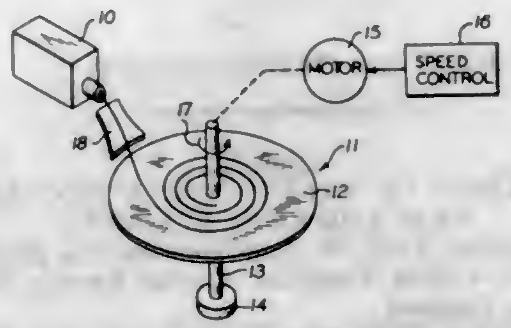
A method is provided for casting, lifting, transporting, and setting down a large porous concrete block wherein concrete is placed in a casting frame comprising four vertical walls positioned on a stationary base. A hood is placed over the mold with the concrete therein and a vacuum is drawn in the hood and above the concrete to prevent the concrete from cracking or sagging during lifting and transportation of the mold walls and concrete to a cutting station. The vacuum is replaced by a positive pressure in order to force the casting frame up and off the cast block after positioning at the cutting station.

### 3,480,706
### SPINNING FIBER-FORMING LINEAR CONDENSATION POLYMER
**John McMurray Carpenter III, Kinston, N.C., and Drexel Kermit Smith, Richmond, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware**
**Continuation-in-part of application Ser. No. 670,052, Sept. 25, 1967. This application Oct. 10, 1968, Ser. No. 767,064**
**Int. Cl. D01d** *1/10*
**U.S. Cl. 264—176** **7 Claims**



An improvement in the production of synthetic textile filaments of fiber-forming linear condensation polymer that provides better filament continuity and a longer spinneret pack life, the improvement including the step of pumping the polymer at a high pressure in excess of 1,000 pounds per square inch gage through a low pressure drop filter having a pressure drop of 200 to 800 p.s.i. to filter the polymer, the filtering being done prior to meter-pumping the polymer through the spinneret pack for melt-spinning.

### 3,480,707
### PRODUCTION OF P.T.F.E. TUBING
**Irving D. Press, West Orange, N.J., assignor to Resistoflex Corporation, Roseland, N.J., a corporation of New York**
**Filed Oct. 7, 1965, Ser. No. 493,698**
**Int. Cl. B29d** *23/01, 23/04*
**U.S. Cl. 264—209** **9 Claims**

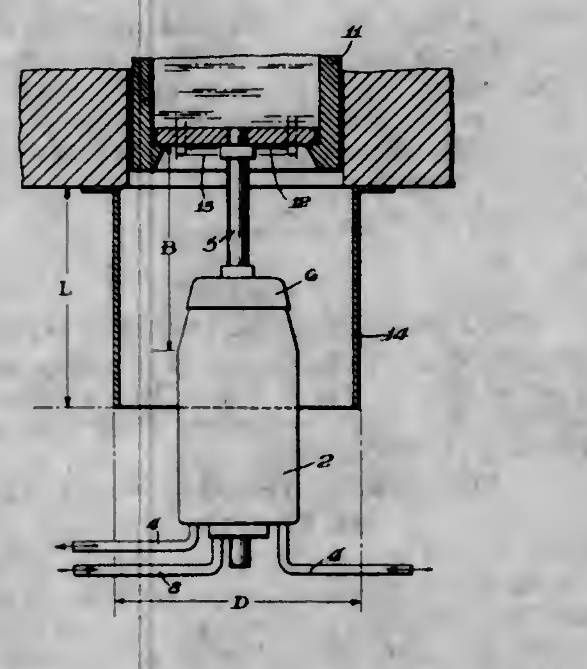


Unsintered P.T.F.E. resin in paste form is extruded directly upon the periphery of a spiral ramp which is rotated in front of the mouth of the extruder and translated axially relative thereto. While so supported, the unsintered tubing on the rack is placed within an oven and sintered. The tubing is then withdrawn from the rack as the rack is positively driven in step with the rate of withdrawal, the tubing being withdrawn through the wall of the oven directly into a quenching trough and onto a take-up drum or reel.

### 3,480,708
### USING EXPENDABLE METAL CORES FOR CASTING PLASTICS OR ORGANIC POLYMERS
**John C. St. Clair, Box 333, R.R. 2, London, Ohio 43140**
**No Drawing. Continuation-in-part of application Ser. No. 608,506, Jan. 11, 1967. This application May 18, 1967, Ser. No. 639,299**
**The portion of the term of the patent subsequent to Aug. 26, 1986, has been disclaimed**
**Int. Cl. B29c** *1/14, 1/02*
**U.S. Cl. 264—221** **3 Claims**

A method for casting large and complicated plastic objects using a metal core which is later dissolved out and the metal and solvent recovered. The amount of metal required for the core is reduced by 65% to 90% by casting the metal core so as to make the metal core hollow. This is done by casting the metal core in a permanent mold whose walls are selectively chilled. After the outer walls of the metal core have solidified the rest of the molten metal between the solidified walls of the metal core is poured out.

### 3,480,709
### PROCESS FOR THE MANUFACTURE OF FILAMENTS OF SYNTHETIC LINEAR POLYMERS OF HIGH MOLECULAR WEIGHT CRIMPED DURING SPINNING
**Ingolf Jacob, Strassberg, near Augsburg, and Ralf Ueberdiek, Goggingen, near Augsburg, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany**
**Filed Dec. 28, 1967, Ser. No. 694,158**
**Claims priority, application Germany, Jan. 3, 1967, F 51,163**
**Int. Cl. D01d** *5/22;* **D02g** *1/00;* **B29c** *25/00*
**U.S. Cl. 264—237** **5 Claims**



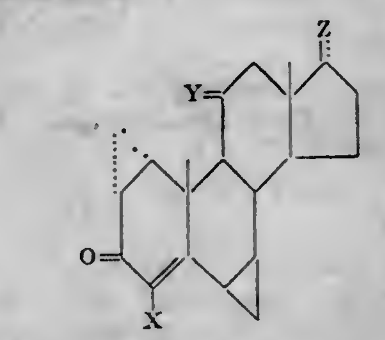
Manufacture of filaments of synthetic linear polymers of high molecular weight having a permanent three-dimensional crimp by melt-spinning the filaments, cooling them rapidly on one side below the spinneret on a special cylindrical or flat cooling body, the minimum length of contact between the filaments and the surface of the cooling body depending on the titer of the individual filaments and the draw-off rate, and developing the latent crimp so obtained by drawing the filaments and subsequently heating them without tension.

### 3,480,710
### PROCESS FOR THE CONTROL OF BOLL WEEVIL AND BOLL WORM WITH TDE AND MALATHION
**Gordon S. Batchelor, Mountain Lakes, and Edwin F. Hawkins, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York**
**No Drawing. Filed June 21, 1967, Ser. No. 647,616**
**Int. Cl. A01n** *9/36, 9/34, 17/00*
**U.S. Cl. 424—213** **15 Claims**

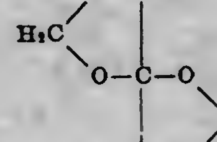
A process of combatting boll weevil and boll worm by spraying the cotton crop with 1,1-dichloro-2,2 bis parachlorophenyl ethane, commonly known as TDE, dissolved in xylol or cyclohexanone or both and combined with malathion.

### 3,480,711
### 4-HALOGENO - 1α,2α; 6β,7β - BIMETHYLENE - Δ⁴-3-KETO-STEROIDS AND PROCESS FOR MAKING THE SAME
**Rudolf Wiechert, Berlin, Germany, assignor to Schering Aktiengesellschaft, Berlin, Germany**
**No Drawing. Filed Aug. 2, 1967, Ser. No. 657,749**
**Claims priority, application Germany, Aug. 25, 1966, Sch 39,449**
**Int. Cl. A61k** *17/06;* **C07c** *173/00, 169/34*
**U.S. Cl. 424—241** **21 Claims**

4-halogeno - 1,2α;6,7β - bismethylene-$\Delta^4$-3-ketosteroids of the general formula

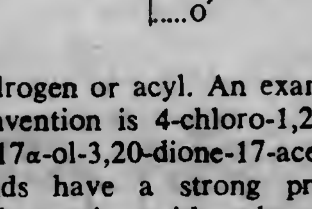


wherein X is halogen with an atomic weight not in excess of 81, Y is hydrogen or oxygen and Z is a member selected from the group consisting of



$$\overset{OR}{|}\ldots H,\quad \overset{\overset{CH_3}{|}}{\overset{C=O}{|}}\ldots OR$$

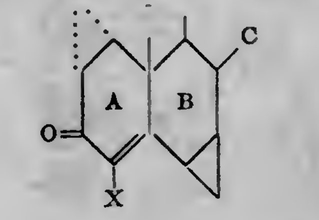
or



wherein R is hydrogen or acyl. An example of the compounds of the invention is 4-chloro-1,2α;6,7β-bismethylene-$\Delta^4$-pregnene-17α-ol-3,20-dione-17-acetate.

The compounds have a strong progestational and ovulation inhibiting action with only minor antiandrogenous side effects.

The invention also embraces a process of making 4-halogeno-1,2α;6,7β-bismethylene-$\Delta^4$-3-ketosteroids of the skeleton formula



wherein X has the meaning given above which process comprises methylenating the 1,2- and 6,7-double bond of the desired 4-halogeno-$\Delta^{1,4,6}$-3-ketosteroids. The compounds of the invention can be made by this process in a convenient manner.

### 3,480,712
### PROCESS OF REPELLING RODENTS

**Paul F. Thompson, Deer Park, Ohio, assignor to Carlisle Chemical Works, Inc., Reading, Ohio, a corporation of Ohio**

**No Drawing. Continuation-in-part of application Ser. No. 294,248, July 11, 1963. This application June 8, 1964 Ser. No. 373,526**

**The portion of the term of the patent subsequent to Mar. 14, 1984, has been disclaimed**

**Int. Cl. A01n** *9/24*

**U.S. Cl. 424—245** **13 Claims**

Rodents are repelled from food and other materials by applying to the environment certain di- or tri-alkyltin compounds.

### 3,480,713
### 1,2,3,4-TETRAHYDROPHENAZINE-5,10-DIOXIDES AS GROWTH PROMOTING AGENTS

**James David Johnston, Old Saybrook, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware**

**No Drawing. Continuation-in-part of application Ser. No. 502,602, Oct. 22, 1965. This application Oct. 18, 1966, Ser. No. 587,420**

**Int. Cl. A61k** *27/00*

**U.S. Cl. 424—250** **6 Claims**

A series of 1,2,3,4-tetrahydrophenazine-5,10-dioxides and the non-toxic salts thereof useful in controlling chronic respiratory disease in poultry and in promoting growth and improving feed efficiency of animals in general.

### 3,480,714
### N-SUBSTITUTED ISOQUINOLINES AS ANTIPROTOZOAL AGENTS

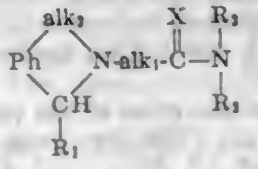
**Lincoln Harvey Werner, Summit, N.J., assignor to Ciba Corporation, New York, N.Y., a corporation of Delaware**

**No Drawing. Filed Feb. 7, 1966, Ser. No. 525,312**

**Int. Cl. A01n** *9/22*

**U.S. Cl. 424—258** **2 Claims**

N-(3,41dihydro- and 1,2,3,4-tetrahyro-2-isoquinolyl-alkyl and -alkanoyl)-N-arylamines of the formula



$\mathrm{Ph}$=a 1,2-phenylene
$\mathrm{alk}_{1,2}$=alkylene
$X=H_2$, O, S
$R_2=H_1$ alkyl, alkanoyl
$R_3$=iso- or heterocyclic aryl

N-oxides, quaternaries and salts thereof exhibit antiprotozoal, especially antileptospiral, effects.

### 3,480,715
### DECONTAMINATION AGENTS

**Alexander Catsch, Durlach, Karlsruhe, Germany, assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware**

**No Drawing. Filed Sept. 30, 1964, Ser. No. 400,571**

**Claims priority, application Switzerland, Jan. 14, 1964, 357/64**

**Int. Cl. A61k** *27/00*

**U.S. Cl. 424—289** **8 Claims**

The trisodium salt of the zinc complex of diethylenetriamine-N,N,N′,N″,N″-pentaacetic acid and the trisodium salt of the zinc complex of triethylenetetramine-N,N,N′,N″,N‴,N‴-hexaacetic acid disclosed in compositions and parenteral methods of eliminating the fission products of heavy atom nuclei or heavy radioactive isotopes from living organisms.

## ELECTRICAL

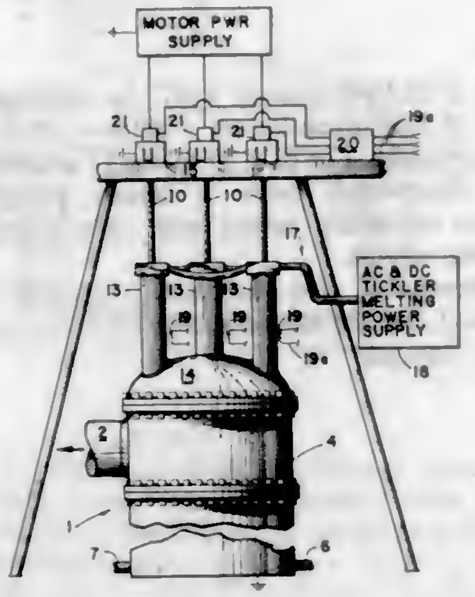
### 3,480,716
### MULTIPLE ELECTRODE VACUUM ARC FURNACE AND METHOD OF REMELT PURIFICATION

**John M. Lynch, Los Gatos, and John G. Hill, San Jose, Calif., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**

**Filed Dec. 11, 1967, Ser. No. 689,552**

**Int. Cl. H05b** *7/18*

**U.S. Cl. 13—9** **8 Claims**



An improved vacuum arc furnace comprising an annular furnace shell and a plurality of electrodes uniformly spaced and supported within said shell. Means are provided to supply and regulate current to all the electrodes for vacuum arc purification of the electrode metal and cooling is provided at both the internal and external walls of the annular shell whereby purified metal of high uniformity is obtained.

### 3,480,717
### ARC FURNACE ELECTRODE ASSEMBLY

**Charles B. Wolf, Irwin, George A. Kemeny, Export, and Maurice G. Fey, Turtle Creek, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

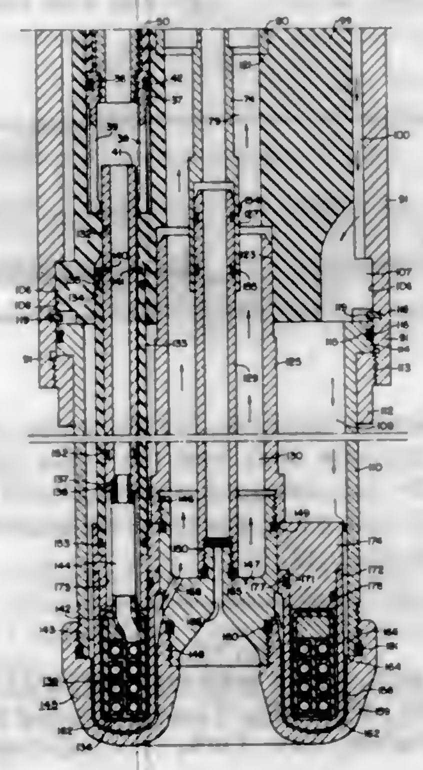
**Filed Mar. 25, 1968, Ser. No. 715,619**

**Int. Cl. H05b** *7/06*

**U.S. Cl. 13—18** **22 Claims**

An electrode comprises three separate assemblies including a tip assembly, an electrode column assembly, and an electrical connection and water manifolding assembly. The tip assembly is held to the electrode column assembly by a single ring nut which when removed permits the entire tip assembly to be pulled from the electrode column assembly. The tip assembly includes a plurality of fluid flow passageways and passageway defining means which, when the tip is inserted in the column assembly, make sealing engagement therewith. In addition, conduits or hollow lead-extensions in the tip assembly for bringing cooling fluid to the field coil make electrical contact with contact finger members mounted in the column assembly,

so that the conduits or lead extensions to the field coil, when a tip assembly is inserted, make good electrical connection, provide for thermal expansion, and make fluid-tight seals.



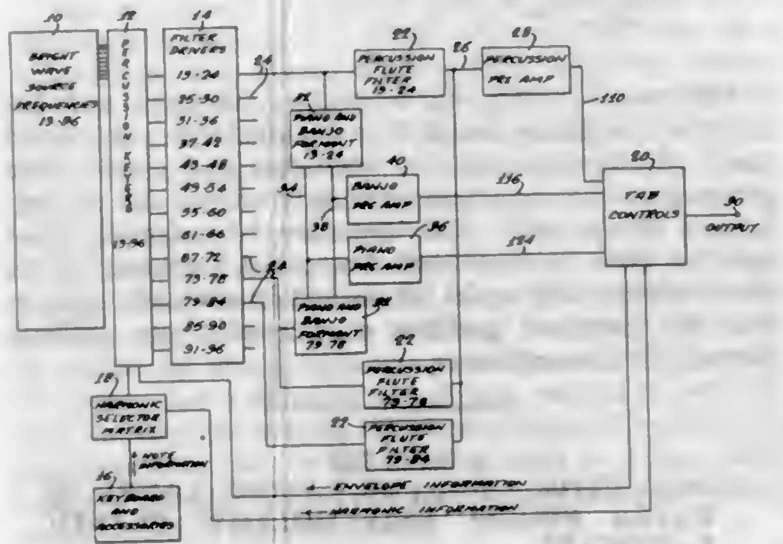
### 3,480,718
### ORGAN PERCUSSION SYSTEM PROVIDING PERCUSSIVE HARMONIC SYNTHESIS

**Norman R. Kohls, Morton Grove, Clarence A. Nykl, Jr., Park Forrest, and William R. Ayres, Park Ridge, Ill., assignors to Hammond Corporation, Chicago, Ill., a corporation of Delaware**

**Filed June 23, 1966, Ser. No. 559,829**

**Int. Cl. G10h** *1/02*

**U.S. Cl. 84—1.01** **13 Claims**



An electronic organ which provides both sine wave and bright wave sources and includes a percussive system which utilizes selected constituents of each of the sources either in additive synthesis or by formanting as desired. Synthesis is accomplished by joint voice tab and playing key control of junctions in a transistor matrix, such that output from the matrix depends upon both tab and key actuation of connections leading to individual matrix junctions, the playing keys controlling the frequency of the note sounded and the voice tabs the harmonic content thereof.

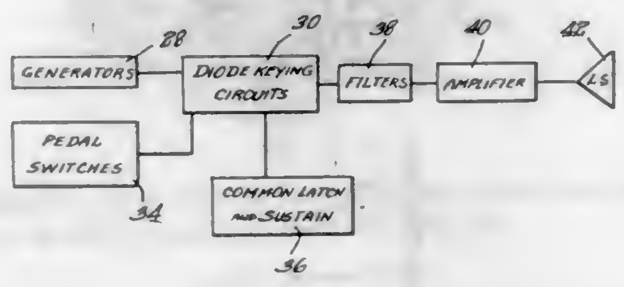
### 3,480,719
### ELECTRONIC ORGAN PEDAL KEYING CIRCUIT WITH SUSTAIN AND CANCELLATION OF SUSTAIN UPON PLAYING OF SUBSEQUENT PEDAL

**Harold O. Schwartz and Robert D. Barry, North Tonawanda, N.Y., assignors to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio**

**Filed June 26, 1967, Ser. No. 648,614**

**Int. Cl. G10h** *1/02, 1/00*

**U.S. Cl. 84—1.26** **8 Claims**



An electronic organ having a pedal keying circuit using solid state componets to maintain any note that has been played with a sustain of selectable length, with solid state means for immediately cancelling any sustained note upon the subsequent playing of another note.

### 3,480,720
### HOOK BUTTON CONTROL DEVICE OF AN AUTOMATIC TELEPHONE ANSWERING APPARATUS

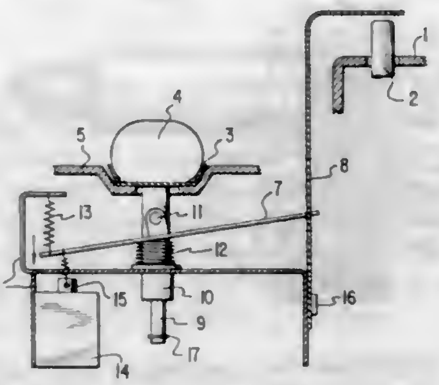
**Hiroshi Aiba, 10–13 2-chome, Igusa Suginama-ku, Tokyo, Japan**

**Filed Mar. 17, 1967, Ser. No. 623,877**

**Claims priority, application Japan, Mar. 18, 1966, 41/16,426**

**Int. Cl. H04m** *1/64*

**U.S. Cl. 179—1** **4 Claims**



An apparatus for raising a telephone hook button having a solenoid, energized by the bell circuit, for raising the button without raising the handset when the solenoid is energized; and having a spring for raising the button when the handset is lifted from its cradle. The solenoid and spring act through a pivoted lever and a sliding lever.

### 3,480,721
### PEDESTAL CLOSURE FOR BURIED TELEPHONE CABLE

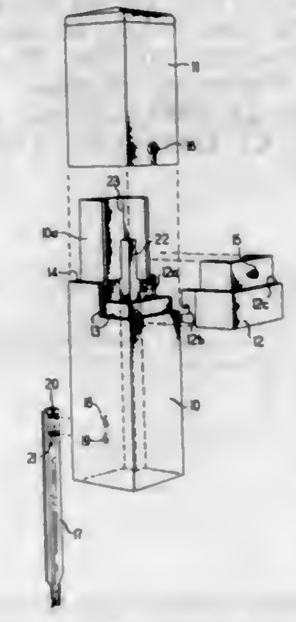
**Robert G. Baumgartner, Baltimore, Md., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**

**Filed Oct. 17, 1968, Ser. No. 768,376**

**Int. Cl. H02g** *9/02*

**U.S. Cl. 174—38** **10 Claims**

This specification discloses a pedestal-type telephone cable closure consisting of a base and an upper housing of like cross section. The base is mounted on a channel post which is driven in the ground separated from the base. A front panel fully removable from the base top provides entry to the closure interior to facilitate cable installation. Cables are led in through the base bottom, and splices and service drops are completed with aid of bracketry connected to the base but extending into the upper housing interior.



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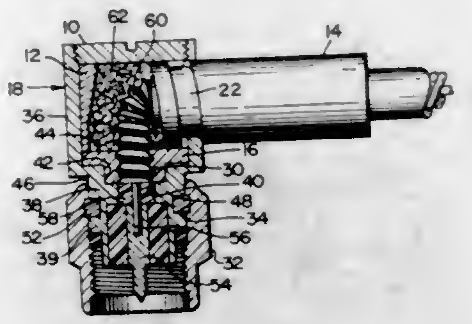
3,480,722

### COAXIAL CABLE CONNECTOR

**Arden D. Van Horssen, Edina, Wydell W. Habig, Fridley, and Raymond E. Shortell, Isanti, Minn., and George C. Smiley, Winchester, Mass., assignors, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware**
**Filed Oct. 9, 1967, Ser. No. 673,839**
**Int. Cl. H02g** *15/08*
**U.S. Cl. 174—87** **6 Claims**



This is a connector for making a right angle attachment with a coaxial cable. The connection is made by providing a threaded engagement with the external conductor and a fixed connection with the internal conductor and bending the cable into an arc within the connector.

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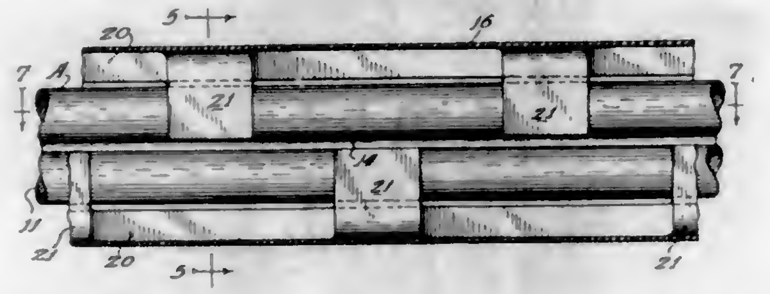
3,480,723

### SPLICE FOR CONDUCTOR PAIRS

**James E. Golden, Evanston, Ill., assignor to Reliable Electric Company, Franklin Park, Ill., a corporation of Illinois**
**Filed May 24, 1968, Ser. No. 731,956**
**Int. Cl. H02g** *15/08*
**U.S. Cl. 174—88** **8 Claims**

The splice comprises a polyolefin tube which surrounds two metallic connector elements arranged parallel to each other with a space between them. Each element has a number of oppositely disposed bent tabs which provide a structure of U-shaped cross section. The tabs of one element are longitudinally offset from the tabs of the other element, but there is no overlapping. Thus each tab set embraces only one wire of a conductor pair. The elements are of laminated stock, the inner layer being beryllium copper .003 inch thick, and the outer layer being soft brass .015 inch thick. The side edges of the tabs have a burr, which constitutes a jacket piercing tang of beryllium copper. After assembly of the elements within the polyolefin tube, the assembly is heated to cause shrinkage of the tube to a point where it interlocks with edge portions of the two connector elements. When conductor pairs are inserted from opposite ends into the space between the elements, and the tabs crimped, the tangs will pierce the insulating jacket and make electrical connection between the wires of like polarity.



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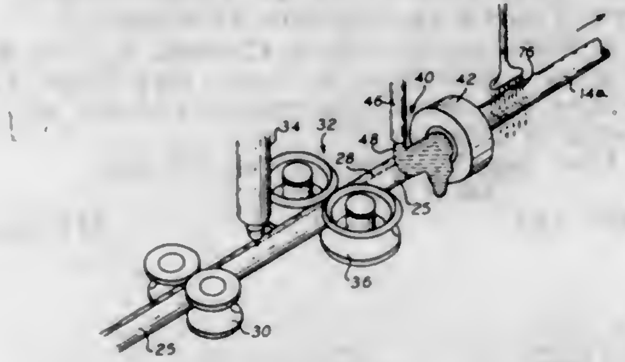
3,480,724

### COAXIAL CABLE WITH WELDED METAL SHEATH

**Oscar G. Garner, Riverside, Conn., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey**
**Original application Dec. 30, 1965, Ser. No. 517,706. Divided and this application July 18, 1968, Ser. No. 745,931**
**Int. Cl. H01b** *7/18*
**U.S. Cl. 174—102** **7 Claims**



This coaxial cable has a center conductor and has electrical insulation bonded to the conductor. A welded metal sheath surrounds the insulation and exerts some pressure on the insulation uniformly around the circumference of the cable. The insulation is preferably foam and the cable is made with the radial thickness of the foam substantially equal all around its circumference so that the electrical qualities of the cable are uniform around the circumference.

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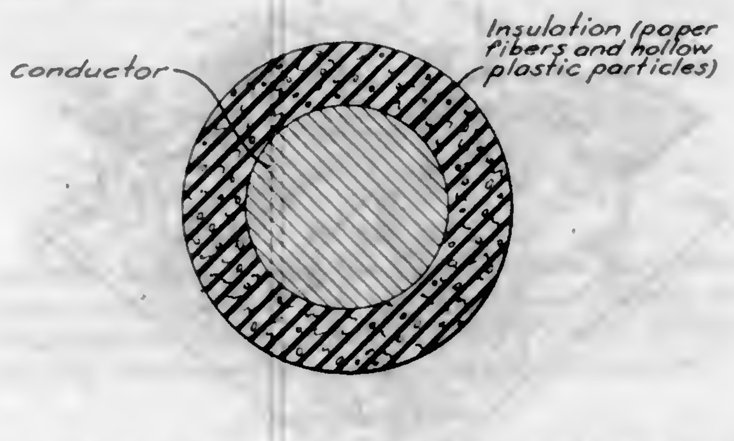
3,480,725

### CONDUCTOR WITH INSULATING LAYER OF PAPER FIBERS AND HOLLOW PLASTIC PARTICLES

**Raymond C. Mildner, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware**
**Filed May 28, 1968, Ser. No. 732,637**
**Int. Cl. H01b** *7/02*
**U.S. Cl. 174—124** **4 Claims**

A conductor for transmitting electrical power or communication signals is provided with an insulating layer comprising paper-making fibers such as a ground wood pulp and a multitude of hollow synthetic particles of a thermoplastic material such as poly(methyl methacrylate). The insulating layer is applied to the conductor by passing the conductor into a separation zone to which the paper-

making fibers and hollow particles have been added and exist as a slurry and wherein the paper-making fibers and the hollow particles are formed into a ribbon around the conductor.



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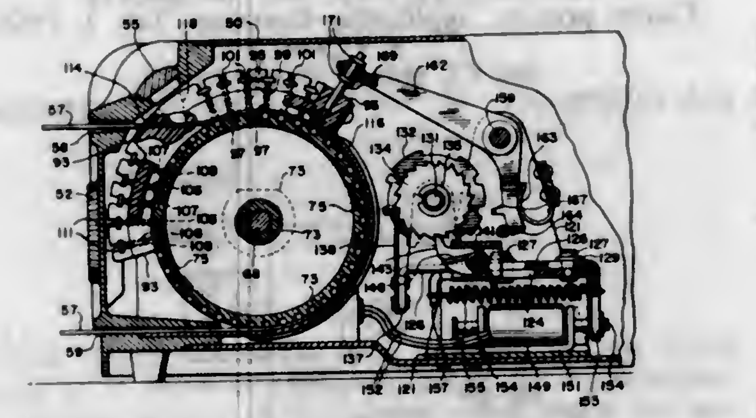
3,480,726

### ADJUSTABLE SWITCHING APPARATUS

**Emil C. Walker, Woodstock, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware**
**Filed June 30, 1965, Ser. No. 468,484**
**Int. Cl. H04n** *1/44;* **G06k** *7/00;* **H01h** *43/08*
**U.S. Cl. 178—5.1** **12 Claims**



Two sets of switch contacts may be permutably interconnected by having one of the sets take the form of a series of parallel, spaced apart metallic slip rings mounted on a rotor or drum, each ring having a multiplicity of notches. The other set of contacts includes a multiplicity of bearing balls held by a stator assembly and arranged in a series of parallel columns extending across the rows formed by the slip rings. The bearing balls of each column are disposed in alignment with and are spring urged toward assigned respective ones of the notches. A perforated code card may be moved from one to another of several different positions and in each position interposes a different and unique pattern of perforations between the bearing balls and notches to permit only predetermined ones of the bearing balls to engage their assigned notches through the perforations and permutably connect the two sets of contacts.

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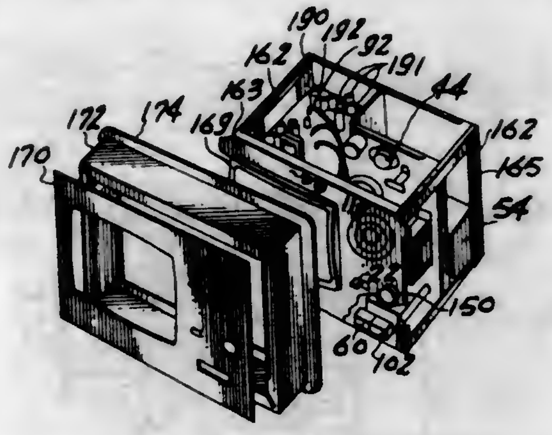
3,480,727

### CLOSED CIRCUIT TELEVISION PROTECTION SYSTEM

**Chester W. Moore, 15 S. Austin Blvd. 60644, and John L. Waner, 5434 S. Archer Ave. 60638, both of Chicago, Ill.**
**Filed Mar. 30, 1966, Ser. No. 538,782**
**Int. Cl. H04n** *7/18*
**U.S. Cl. 178—6** **9 Claims**

This invention relates to a closed circuit television system for use in monitoring a door or other entranceway, to permit recognition of a visitor before the door is opened. The system incorporates a communications system for communicating with the visitor, and a switching network for selectively activating the television monitor, an amplifier, and an audio transducer.



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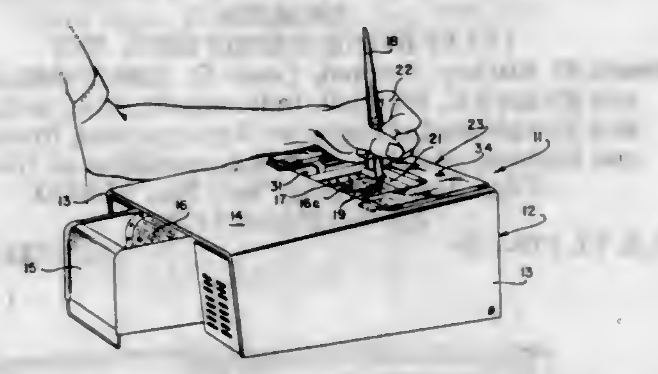
3,480,728

### PROTECTIVE SHIELD FOR TELESCRIBER MACHINES

**Joseph H. Chandler, Decatur, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.**
**Filed Oct. 12, 1967, Ser. No. 674,880**
**Int. Cl. G08c** *21/00*
**U.S. Cl. 178—18** **5 Claims**



A protective shield structure for use with telescriber machines and the like and placed thereupon in a manner to mask a portion of the platen area so that such machines may easily be used by left-handed writing persons. The shield is of U-shaped configuration and positioned so that the user's hand rests upon the shield rather than the platen. Protruding tabs from the free ends of the U assist in maintaining the shield in operative position.

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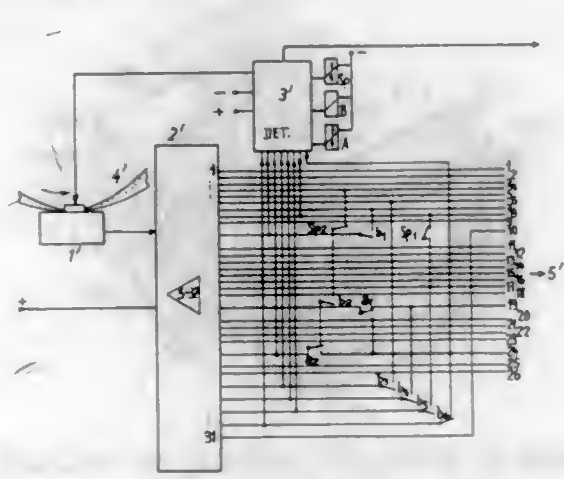
3,480,729

### APPARATUS FOR OBTAINING REDUCED TELECOMMUNICATION ALPHABETS AND CIRCUITS

**Oskar Stürzinger, Baar, Zug, Switzerland, assignor to Anstalt Europaische Handelsgesellschaft, Vaduz, Liechtenstein**
**Filed Mar. 10, 1966, Ser. No. 533,244**
**Claims priority, application Switzerland, Mar. 12, 1965, 3,462/65**
**Int. Cl. H04l** *15/24, 15/34, 17/16*
**U.S. Cl. 178—26** **4 Claims**

A device associated with a teleprinter station condensing to reduced alphabet messages transmitted. An unreduced international standard teleprinter alphabet is used with a code converter having as many outputs as there are combinations in the code of the unreduced international alphabet. A detector means is connected to a plurality of relay means for individually controlling each relay means. Individual means connect to the detector means each output of the code converter that corresponds to a symbol the position of which was changed in the reduction of the alphabet. There are as many outputs as there are distinct combinations in the reduced alphabet. Switch means are controlled by the relay means, for connecting to the corresponding output each of those code converter outputs corresponding to a symbol shifted in position. The detector controls stopping means for stopping operation of the sender during operation of the switch means.

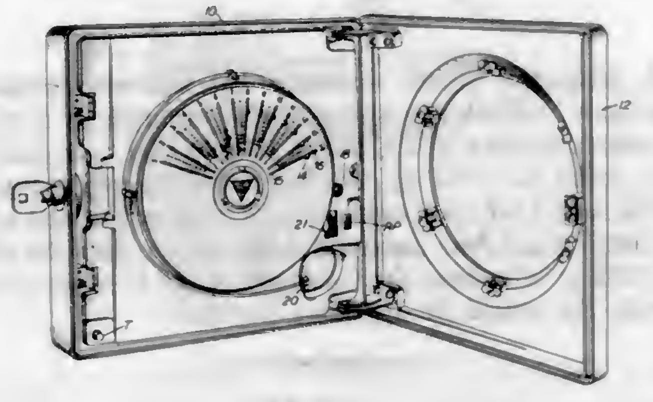


### ERRATUM

For Class 179—1 see:
Patent No. 3,480,720

### 3,480,730
### TELEPHONE REPORTING SET

**James F. Ritchey, Carmel, Louis D. Tate, Fountaintown, and Richard E. Waddell, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed June 1, 1966, Ser. No. 554,431**
**Int. Cl. H04m** *11/04*
**U.S. Cl. 179—5** **11 Claims**

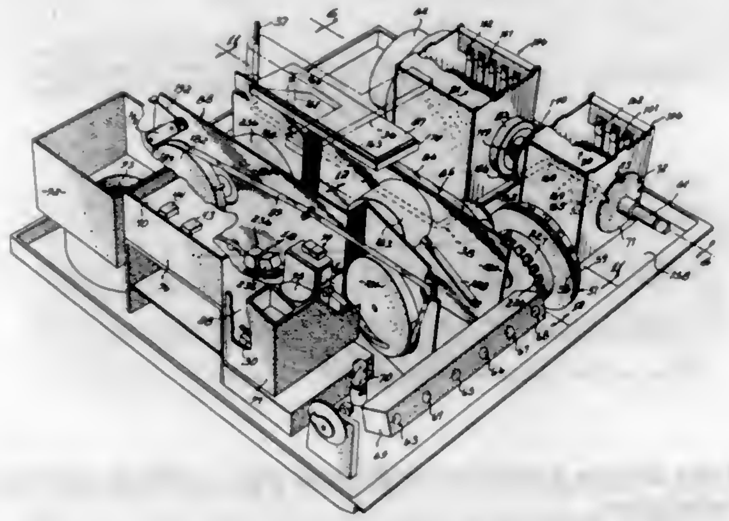


An apparatus for reporting alarm conditions at an unattended location includes an automatic dialer for calling a preselected station, an amplifier-oscillator circuit for transmitting an identification signal to the called station, a record-play circuit for transmitting a prerecorded message to the called station, and a detector circuit for responding to signals received from the called station. Conductive patterned discs rotate relative to spaced contacts for providing switching logic.

### 3,480,731
### TELEPHONE ANSWERING APPARATUS WITH SELECTOR AND CONTROL CAMS ON A COMMON SHAFT

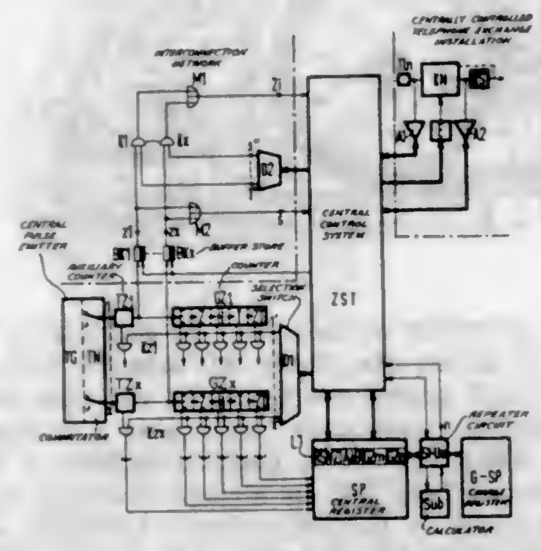
**Robert Boggild, Cincinnati, Ohio, assignor to Echo Development Co., Cincinnati, Ohio, a limited partnership of Ohio**
**Filed Aug. 15, 1966, Ser. No. 572,268**
**Int. Cl. H04m** *11/00*
**U.S. Cl. 179—6** **15 Claims**

Telephone answering apparatus having a set of selector cams and a set of control cams interconnected by an overrunning clutch, a control knob for rotating the cams together, and a timer motor for rotating the control cams independently of the selector cams.



### 3,480,732
### CHARGE ACCUMULATION SYSTEM FOR TELEPHONE INSTALLATIONS

**Hans Baur, Munich, and Hartmut Fabianke, Munich-Solln, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany**
**Filed June 27, 1966, Ser. No. 560,622**
**Claims priority, application Germany, July 1, 1965, S 97,934**
**Int. Cl. H04m** *15/18, 15/22*
**U.S. Cl. 179—7.1** **15 Claims**

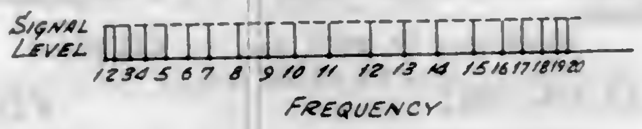


System for accumulating charges for call connections in a telephone system in which cyclic pulses of faster repetition rates are used for greater distances. These pulses are counted in separate central zone counters for the several distance zones, and the difference between the count upon initiation and upon termination of the call is determined, to calculate the total charge units accumulated during the call.

### 3,480,733
### FREQUENCY ALLOCATION SYSTEM FOR COMMON AMPLIFICATION OF MULTIFREQUENCY CARRIERS

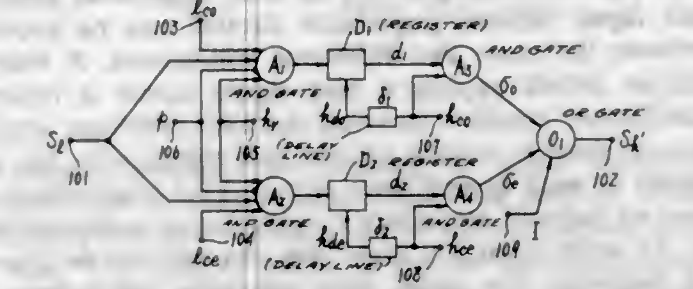
**Masasuke Morita and Masahisa Miyagi, Tokyo, Japan, assignors to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan**
**Filed Aug. 3, 1965, Ser. No. 476,814**
**Claims priority, application Japan, Aug. 4, 1964, 39/44,531**
**Int. Cl. H04j** *1/18*
**U.S. Cl. 179—15** **4 Claims**

A device and method for combining a plurality of carrier signals for amplification by a common amplifier is described wherein the frequencies of the carrier signals are selected in a manner to provide minimum intermodulation products occurring within the pass band of the common amplifier. The spacings between the carrier signals within the pass band are selected to gradually decrease towards an end of the bandwidth. Several relationships for obtaining this gradual spacing are described.



### 3,480,734
### SPEED CONVERSION SYSTEMS FOR PULSE SIGNALS IN A PCM SYSTEM

**Noriyoshi Kuroyanagi and Yoshihisa Matsuura, Tokyo, Japan, assignors to Nippon Telegraph and Telephone Public Corporation, Tokyo, Japan**
**Filed Oct. 10, 1966, Ser. No. 585,584**
**Claims priority, application Japan, Oct. 15, 1965, 40/62,975; Nov. 16, 1965, 40/69,974**
**Int. Cl. H04j** *3/06*
**U.S. Cl. 179—15** **1 Claim**

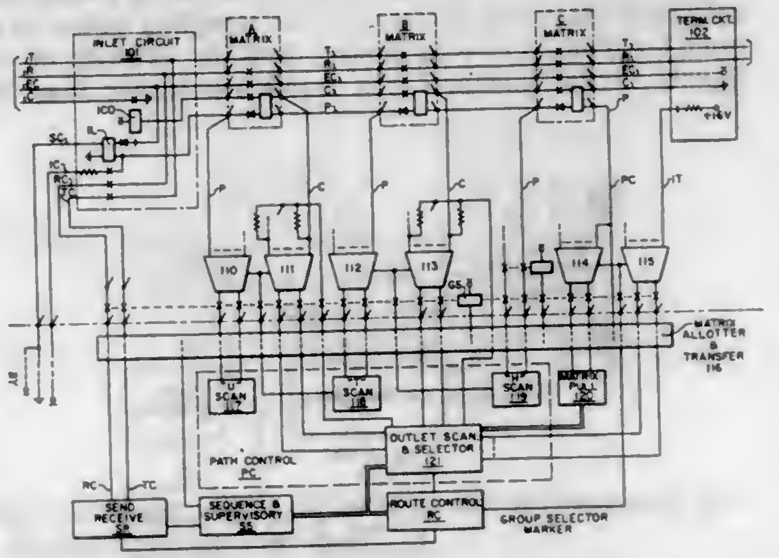


Pulse speed conversion of a plurality of low speed signals in a PCM transmission system is accomplished by forming groups of high speed pulses from the low speed signals in a delay register and reading out a single pulse group having a predetermined phase. The input PCM signals are sampled by sampling pulses, which are synchronous with the converted PCM signals, and which are controlled in response to a selected phase difference between the converted signals and the input PCM signals. Pulses are inserted in the pulse groups to compensate for the phase difference when the phase difference exceeds a predetermined amount. The receiving equipment includes means for recovering the input PCM signals by subtracting the inserted pulses and converting the high speed pulses to the low speed pulses corresponding to the PCM input signals.

### 3,480,735
### COMMUNICATION SWITCHING MARKER HAVING CONTINUITY TESTING ARRANGEMENT

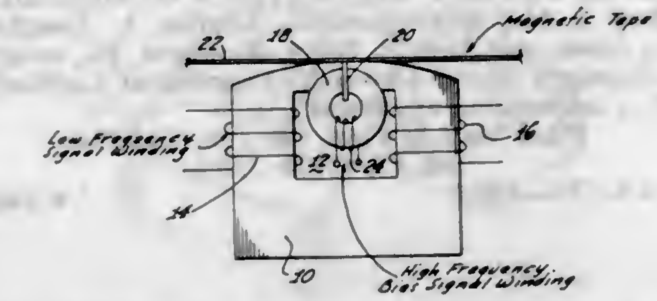
**Donald A. Mnichowicz and Richard F. Waco, Oak Park, Ill., assignors to Automatic Electric Laboratories, Inc., a corporation of Delaware**
**Filed Mar. 6, 1967, Ser. No. 620,879**
**Int. Cl. H04m** *3/00*
**U.S. Cl. 179—18** **4 Claims**

Apparatus for testing conductor continuity of link busy testing leads which are connected to the hold conductor of the interstage links in a crosspoint switching network and are switched through a relay tree to a path selector, for selecting a path between two end terminals in the system. A potential applied to the link test leads prior to path selection provides signals at the inputs to the path selector indicative of whether the relay tree contacts are properly closed or not. An open-contact signal on any lead sets a corresponding latch circuit which, in turn, inhibits that lead and its associated link from being considered for use in a path through the switching network.



### 3,480,736
### MAGNETIC TRANSDUCER

**Keith O. Johnson and David Paul Gregg, Los Angeles, Calif., assignors to Gauss Electrophysics, Inc., Los Angeles, Calif., a corporation of California**
**Filed Sept. 22, 1966, Ser. No. 581,365**
**Int. Cl. G11b** *5/12*
**U.S. Cl. 179—100.2** **5 Claims**

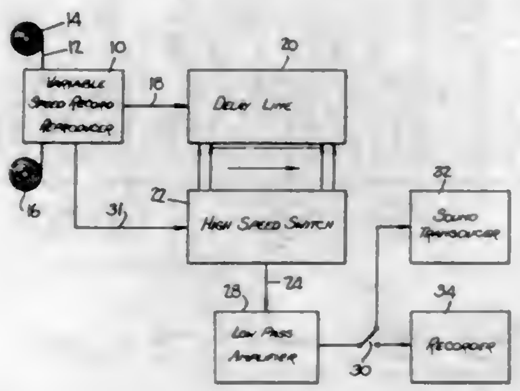

Magnetic Tape
22
18
20
Low Frequency Signal Winding
16
12
24
14
10
High Frequency Bias Signal Winding

An electromagnetic record head is provided for use in conjunction with a magnetic tape, for example, and which includes first and second core sections of dissimilar materials. The core sections have a common portion which defines an air gap, and a non-magnetic electrically conductive shim is positioned in the air gap. A high frequency bias winding is mounted on one of the core sections, and this core section is composed, for example, of a relatively soft ferrite material which exhibits desirable low loss characteristics and low reluctance to the high frequency magnetic flux produced by the high frequency bias winding. An intelligence winding is mounted on the other core section. The latter core section, for example, is composed of a suitable magnetic material exhibiting high permeability and low reluctance to the low frequency magnetic flux produced by the intelligence signals. The magnetic tape is drawn across the latter core section rather than the former, because the material of the latter exhibits much better wearing properties than the ferrite.

### 3,480,737
### APPARATUS FOR REDUCING TIME DURATION OF SIGNAL REPRODUCTION

**Sanford David Greenberg, Buffalo, and Bert E. Norvell, Tuckahoe, N.Y., assignors, by mesne assignments, to Cambridge Research and Development Group, Westport, Conn., a limited partnership of Connecticut**
**Filed Mar. 8, 1966, Ser. No. 532,643**
**Int. Cl. G11b** *5/02*
**U.S. Cl. 179—100.2** **6 Claims**

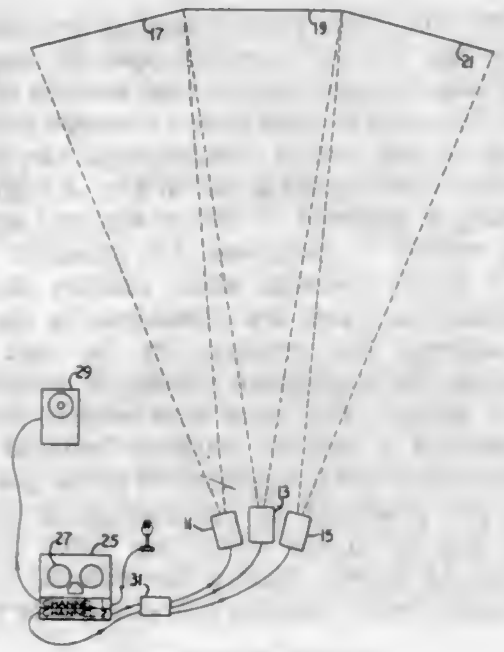
Apparatus for reproducing audio frequency signals in a time less than that in which they are generated comprising means for compressing the signals in time with an accompanying increase in frequency and applying them to a delay line having a plurality of sampling points, and switching means for connecting the sampling points to an output means at a rate slower than the velocity of the signals in the line but at a frequency higher than the frequency components of the signals to provide signals of a frequency lower than the time compressed signals along with sampling frequency components, the output means including a filter for attenuating the sampling frequency components relative to the other components of the last-mentioned signals.



### 3,480,738
### IMAGE DISPLAY APPARATUS AND METHODS

**Herbert J. Meyer, Carbondale, Charles A. Daugherty, Jr., Anna, and John R. Novy, Elmhurst, Ill., assignors to Southern Illinois University Foundation, Carbondale, Ill., a corporation of Illinois**

**Filed May 2, 1966, Ser. No. 546,794**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 179—100.2** **6 Claims**

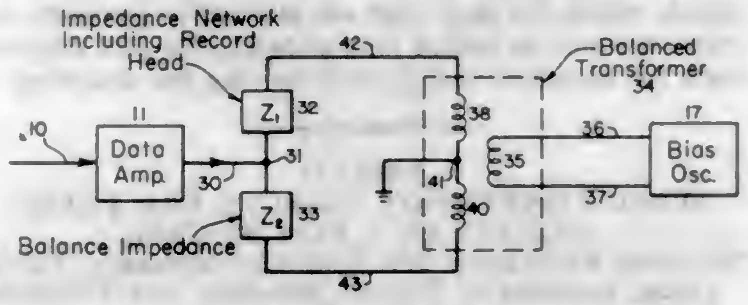


Apparatus for operating a plurality of image display devices in predetermined sequence in timed relation with the playing of a recorded audio program. A tone generator selectively provides a different tone signal for each of the display devices, the tone signals being commonly recordable with the audio program on recording media. Frequency discriminating means are operative during playback of the media for providing a respective electrical signal for each tone signal played back. Also provided are means selectively responsive to each of the electrical signals for operating the respective display device.

### 3,480,739
### BALANCED IMPEDANCE NETWORK FOR APPLYING BIAS AND DATA SIGNALS TO A RECORDING HEAD

**John F. Kinkel, Newport Beach, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois**

**Filed May 29, 1967, Ser. No. 642,053**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 179—100.2** **8 Claims**

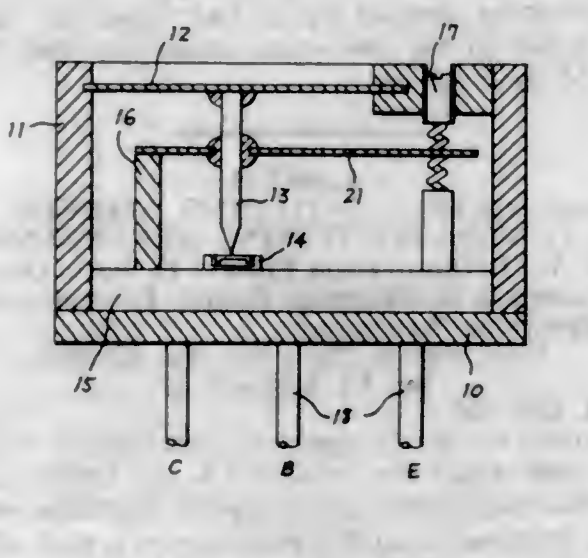


An impedance including a record head is coupled to one reference conductor, and a balance impedance is coupled between the impedance network and a second reference conductor. Data signals are applied to the common point between the impedance network and the balance impedance. A plurality of such impedance network-data input balance impedance circuits can be provided between the same two reference conductors. A bias oscillator circuit applies a bias signal across a balanced transformer coupled between the two reference conductors to provide mixing of the bias signal with the data signals in each record head circuit. This transformer can have an isolated secondary or may be an autotransformer. An erase head for each data channel can be connected between the same two reference conductors for energization from the same bias oscillator.

### 3,480,740
### SOUND TRANSDUCER

**Tadashi Matsumoto, Tokyo, Japan, assignor to Sony Corporation, Shinagawa-ku, Tokyo, Japan, a corporation of Japan**

**Filed Sept. 16, 1964, Ser. No. 396,859**
**Claims priority, application Japan, Sept. 19, 1963, 38/50,179**
**Int. Cl. H04r** *17/02, 19/04*
**U.S. Cl. 179—121** **5 Claims**

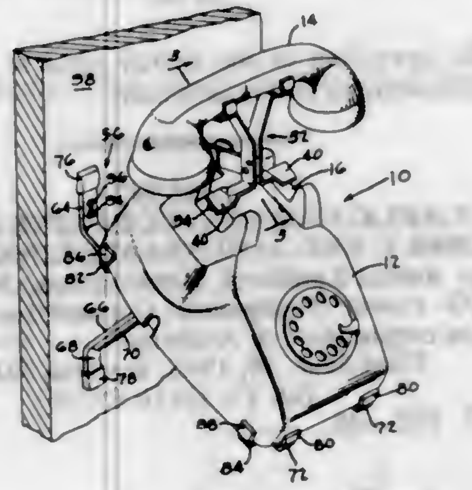


An electromechanical transducer which produces a greatly improved output is disclosed. The output is high due to the placement of a stylus on a very thin layer of semiconductor material. The semiconductor material is formed with thicker edge portions so that electrical contacts or electrical electrodes may be attached thereto. Thus, the stylus is placed near the p-n junction of the structure and produces a very large output voltage or current.

### 3,480,741
### VERTICAL HANGING ATTACHMENT FOR TELEPHONES

**Herbert M. Wiggins, 451 MacDade Blvd., Collingdale, Pa. 19023**

**Filed June 13, 1966, Ser. No. 557,124**
**Int. Cl. H04m** *1/04*
**U.S. Cl. 179—146** **3 Claims**



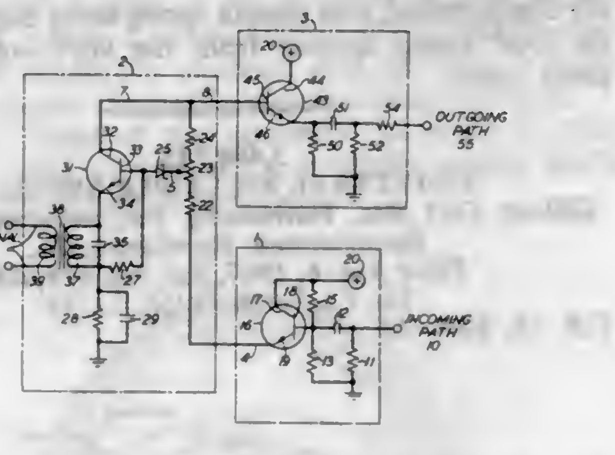
A support assembly for holding an entire desk-type telephone unit in substantially horizontal position while the support assembly is attached to a vertical surface such as a wall. The support assembly has inclined arms upon which the base of the telephone can rest in an inclined but generally horizontal position, and has retaining means for holding the base of the telephone in this position. Connected to the base of the telephone is an attachment which has a horizontal portion overlying the switch buttons on the telephone base and a vertical portion. The horizontal portion has offset ends which are in the same inclined plane as the telephone base when the base rests on the inclined support, these offset ends bearing lightly on the switch buttons. The vertical portion of the attachment extends straight up and has a cradle on the top to receive the telephone itself. In this manner, when the telephone is positioned on the cradle of the attachment, it is in a straight horizontal plane even though the telephone base is inclined. The telephone will, therefore, not tend to roll off. At the same time, as it rests on the cradle, it presses down on the switch buttons, which are inclined, being part of the base, through the offset ends, and thereby effectively opens the telephone switch just as it would if laid directly on the cradle of the base if the base were resting on a flat horizontal surface.

### 3,480,742
### HYBRID CIRCUIT

**Wilmer B. Gaunt, Jr., Boxford, Mass., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**

**Filed Mar. 31, 1967, Ser. No. 627,499**
**Int. Cl. H04b** *3/38, 3/58*
**U.S. Cl. 179—170** **13 Claims**

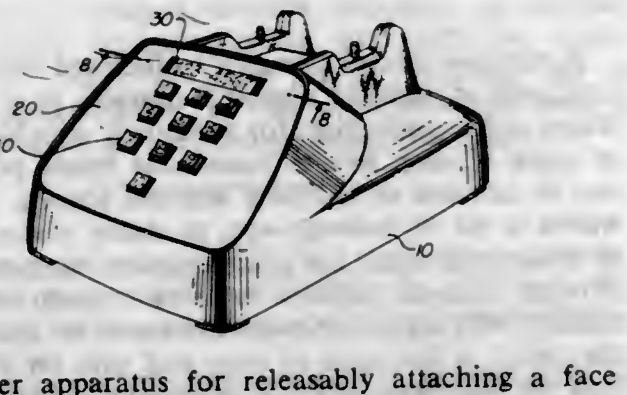
A hybrid circuit for establishing signal transmission between a bidirectional two-wire line and the incoming and outgoing paths of a four-wire line is described. Incoming signals are coupled through an incoming amplifier to a single transistor circuit and therethrough to the bidirectional line. Outgoing signals from the bidirectional line are coupled through the single transistor circuit and an outgoing amplifier to the outgoing path. The single transistor circuit terminates the bidirectional line in its characteristic impedance.



### 3,480,743
### FACE PANEL FASTENER FOR A TELEPHONE

**Howard A. Engh, Franklin Park, and John M. Lord, Park Ridge, Ill., assignors to Automatic Electric Laboratories, Inc., a corporation of Delaware**

**Filed Dec. 27, 1966, Ser. No. 604,908**
**Int. Cl. H04m** *1/00*
**U.S. Cl. 179—178** **6 Claims**

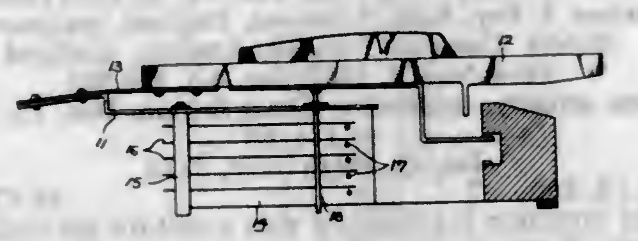


A fastener apparatus for releasably attaching a face panel to the housing of a telephone subset. The panel is supported on a recessed shelf in the housing and is retained by a tongue projecting from an edge of the panel into a slot in the side of the housing and by the fastener slidably latched to the shelf through apertures in the panel.

### 3,480,744
### KEY SWITCH FOR ELECTRONIC KEYED INSTRUMENTS

**Hisayoshi Yamada, Yokohama, Japan, assignor to Victor Company of Japan, Limited, Yokohama, Japan**

**Filed Oct. 30, 1967, Ser. No. 678,816**
**Claims priority, application Japan, Oct. 31, 1966, 41/71,368**
**Int. Cl. H01h** *9/00, 3/00;* **G10h** *1/02*
**U.S. Cl. 200—1** **3 Claims**

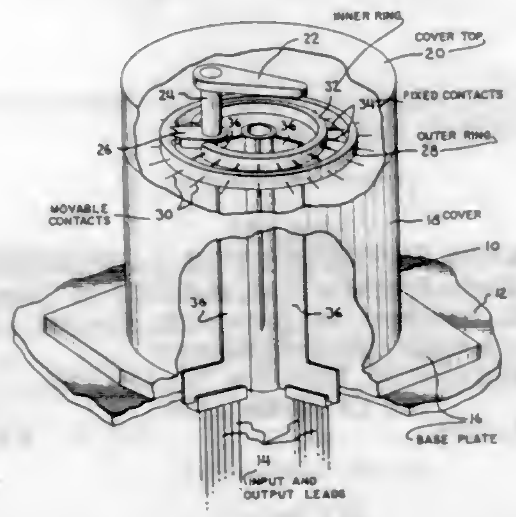


A key switch for electronic keyed instruments having keyboards for causing displacement of an operating rod connected to movable elements to effect switching with a restraining spring connected to the operating rod to restrain the operating rod from its displacement caused by the keyboard and with a control spring included between the keyboard and the operating rod and displaced beforehand by a given amount with the aid of means for adjusting displacement, said control spring being displaced when the load acting thereon from the keyboard exceeds a given value.

### 3,480,745

### UNIVERSAL MULTIPLE SWITCH

**Gilbert Carl Sitz, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.**
**Filed Apr. 6, 1967, Ser. No. 629,010**
**Int. Cl. H01h** *19/58, 21/78*
**U.S. Cl. 200—14** **30 Claims**



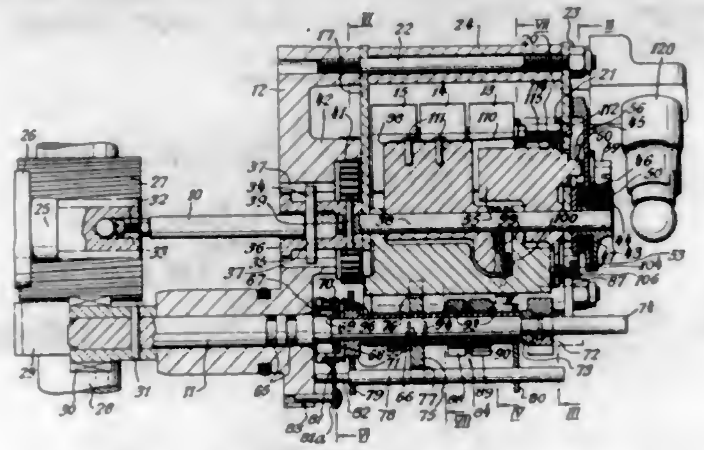
A multiple electrical switch is disclosed which has distinct sets of radially disposed contacts in a removable frame and a mechanism for selectively switching any one or more of such sets. A removable frame positions the sets of contacts to facilitate selected bussing of contacts within a set or between sets to define distinct patterns of interconnections for programming purposes. Stacked circular rings are utilized to carry contact sets oriented radially with input and output connections made through the center of the stack of rings and with the outside surface of the rings carrying projecting contact members exposed to facilitate bussing or patching by patchcords. The rings are made so that the same basic ring elements can be used to construct switches of a wide variety of sizes. A gear drive is provided to rotate contact rings to provide single or double throw operation. The ring construction resists false opening of contacts due to vibrational loading. It also facilitates the use of a fixed contact which is redundant and which traps a movable contact between opposed contact spring members. The fixed contacts are carried within stacked inner rings with input and output leads carried therewithin and movable contacts are carried in outer rings in a frame surrounding the inner rings.

### 3,480,746

### CONTROL UNITS FOR VALVE ACTUATORS

**Jeremy J. Fry, Bath, Somerset, England, assignor to Rotork Controls Limited, London, England**
**Filed Nov. 3, 1967, Ser. No. 680,506**
**Claims priority, application Great Britain, Dec. 15, 1966, 56,186/66**
**Int. Cl. H01h** *3/16, 3/18*
**U.S. Cl. 200—47** **10 Claims**

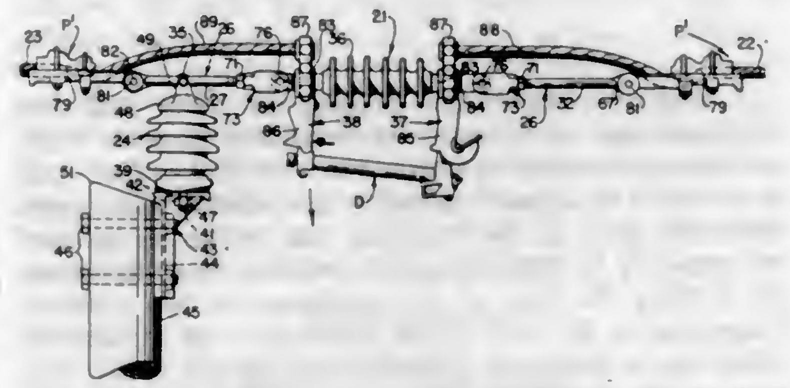
The invention is concerned with a unit for the electrical control of the motor of a valve actuator. The motor circuit includes a pair of switches which are operable by the movement of a switch striker plate in one or other direction depending upon the direction of operation of the actuator. The plate is operable in response to the output thrust of the actuator under the control of a pair of cams which are manually adjustable to vary the torque setting. A second pair of manually adjustable cams controls the operation of the switch plate in response to the output movement of the actuator.



### 3,480,747

### ANGULARLY ADJUSTABLE IN LINE DISCONNECT ASSEMBLY AND ADJUSTABLE LINK THEREFOR

**William Austin Lankford, Birmingham, Ala., assignor to USCO Power Equipment Corporation, Birmingham, Ala., a corporation of Alabama**
**Filed Mar. 26, 1968, Ser. No. 716,085**
**Int. Cl. H01h** *85/36*
**U.S. Cl. 200—48** **10 Claims**



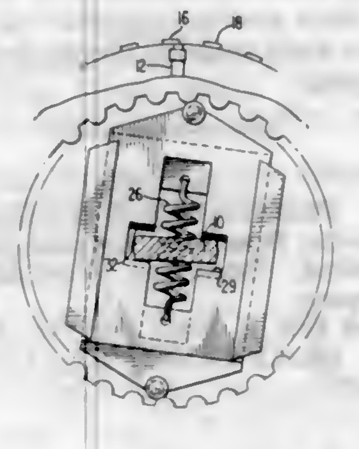
An electrical power line in line strain insulator supported disconnect having an adjustable link connection interposed between an end of the strain insulator and the line post insulator of the opposite ends of the strain insulator and the line post insulator and the conductor line respectively to angularly orient the disconnect around the axis of the conductor line to assure free pivotal movement of the in line strain insulator and its mounted disconnect assembly bodily in a vertical plane irrespective of the angularity of the line post insulator and also to relieve any twist in the conductor line and to orient the disconnect to a preselected plane of operation containing the axis of the conductor line.

### 3,480,748

### INDEX MECHANISM FOR ROTARY SWITCHES

**Dietrich J. Klein, Ormond Beach, Fla., assignor, by mesne assignments, to Electro-Tec Corporation, a corporation of Delaware**
**Filed Oct. 16, 1967, Ser. No. 675,398**
**Int. Cl. H01h** *19/32;* **G05g** *5/06*
**U.S. Cl. 200—66** **9 Claims**

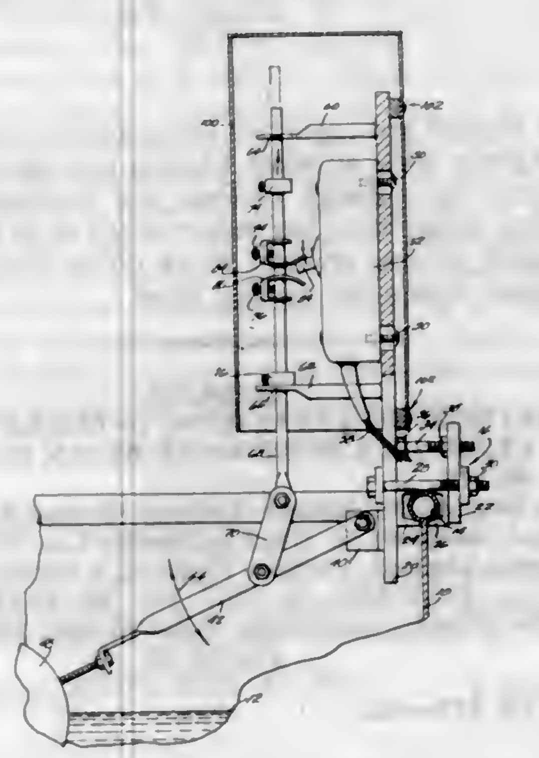
An index mechanism for rotary switches to accelerate the switching rate includes a flat actuator fork, a pair of rotatable and radially slidable detent plates having the openings which cooperate with each other to engage the actuator fork, an index housing having alternately spaced scallops. Detent rollers carried by the detent plates cooperate with the scallops to radially move the detent plates away from the actuator fork during initial rotary movement of the detent plates and to permit opposite radial movement of the detent plates to re-engage the actuator fork during final rotary movement of the detent plates.



### 3,480,749

### FLOAT SWITCH CUTOFF MEANS

**William J. Greutman, Miller, Nebr. 68858**
**Filed Aug. 22, 1968, Ser. No. 754,602**
**Int. Cl. H01h** *35/18*
**U.S. Cl. 200—84** **4 Claims**



An automatic shut-off switch which is actuable by means in response to water level or liquid level of any description and in which an ordinary switch is used. The cutoff means may also be used to turn on the device when the water level reverses.

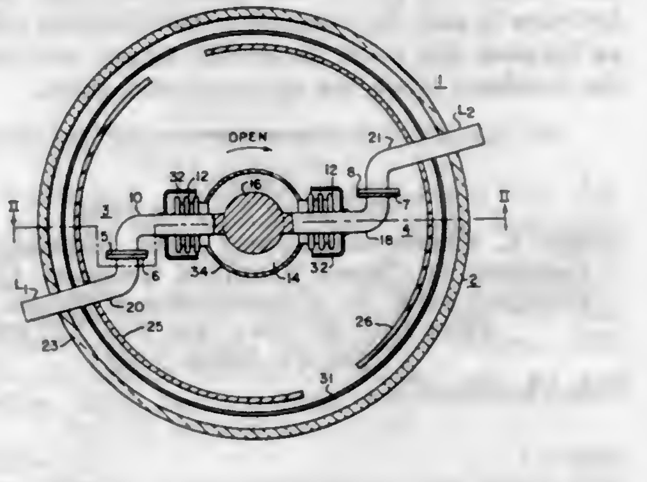
### 3,480,750

### MULTIPLE-BREAK ENCLOSED-TYPE CIRCUIT INTERRUPTERS WITH EXTERNAL ROTARY CONTACT DRIVING MEANS AND SINGLE CHAMBER CONSTRUCTION

**Roy E. Voshall, Mount Lebanon, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Oct. 19, 1966, Ser. No. 587,869**
**Int. Cl. H01h** *9/30*
**U.S. Cl. 200—144** **9 Claims**

A multiple-break enclosed-type of circuit breaker is provided, utilizing a single-envelope construction, and a rotary-type external driving means, which is connected through a sealing device, or devices, interiorly of the single envelope to effect rotary opening and closing motion of the interiorly-situated contact structure. In one form a single sealing device is provided about a lateral arm and a central opening of the envelope is used accommodating a rotary external driving shaft. Internal connecting and supporting structure may be used to simultaneously operate the multiple-break contact structure.

In other forms of the invention, provision is made for purely axial motion of the movable contact shafts, which extend through sealing devices.

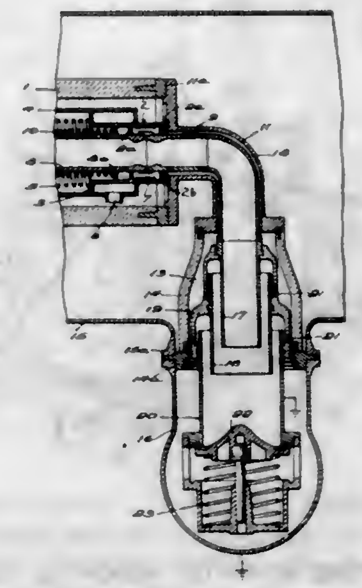


In still other forms of the invention, the single-envelope structure is of annular configuration with the external rotary driving shaft extending through a central opening of the annularly-shaped envelope structure. An enclosed highly-effective arc-extinguishing gas, such as sulfurhexafluoride ($SF_6$) gas, may be the enclosed gas to facilitate arc extinction, or the single envelope may be evacuated, as in a vacuum-type circuit interrupter.

### 3,480,751

### ARRANGEMENT FOR PRESSURE-GAS SWITCH OPERATING WITH CLOSED GAS CIRCUIT AND WITH $SF_6$ AS THE ARC EXTINGUISHING MEDIUM

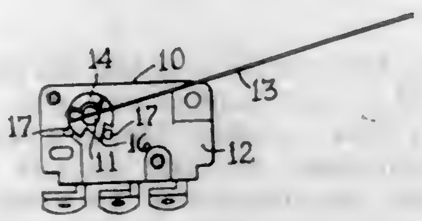
**Egbertus Adrianus Frowein, Arnhem, Netherlands, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint stock company**
**Filed Sept. 16, 1966, Ser. No. 579,887**
**Claims priority, application Switzerland, Oct. 8, 1965, 13,914/65**
**Int. Cl. H01h** *33/82*
**U.S. Cl. 200—148** **2 Claims**



A circuit breaker of the gas blast type utilizes sulphur hexafluoride ($SF_6$) as the gaseous arc extinguishing medium and the gas flows in a closed circuit rather than being exhausted to atmosphere. Contaminated switch gases which flow from the switch chamber pass through a hollow insulator which connects the switch chamber, which is at high potential, with a collecting vessel which is at earth potential. To prevent any deterioration of the insulating capacity of the interior of the hollow insulator, the contaminated gases are passed through a plurality of concentric and longitudinally overslapping metallic tubes located inside the insulator which keep them out of contact with the inner wall of the hollow insulator, and clean $SF_6$ gas is also passed through the insulator between it and the concentric, overlapping tubes as well as between the tubes to further screen the inner wall of the insulator from the contaminated gases.

### 3,480,752
## SWITCH ACTUATOR

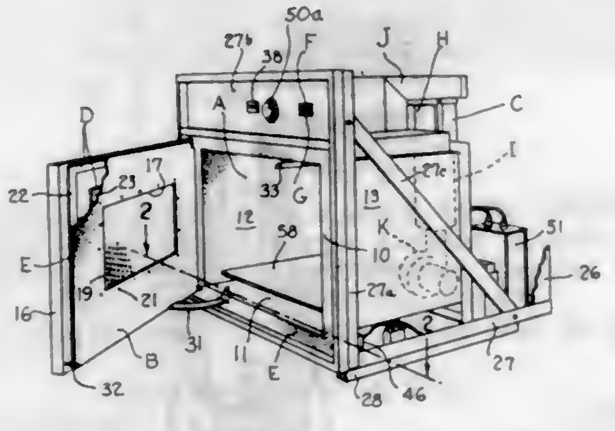
**Walter L. Cherry and Robert Main, Highland Park, Ill., assignors to Cherry Electrical Products Corporation, Highland Park, Ill., a corporation of Illinois**
**Filed July 26, 1968, Ser. No. 747,850**
**Int. Cl. H01h** *3/02*
**U.S. Cl. 200—172** **8 Claims**



An actuator for an assembled switch including an elongated actuating lever that provides a connecting portion by which it is mounted on to and rotatable with an exposed end of the switch actuator, which connection is obtained without the necessity of special tools or application of force that would be harmful to the assembled switch.

### 3,480,753
## ELECTRONIC OVEN

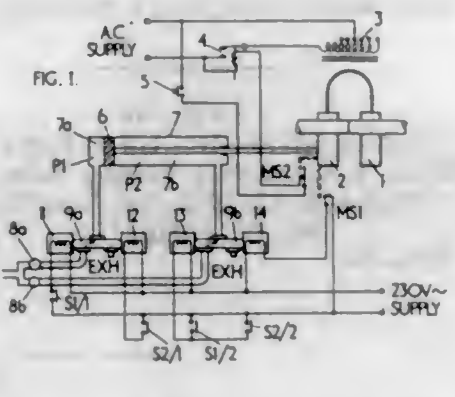
**Robert G. Wilson, 643 E. Faris Road, Greenville, S.C. 29605, and Mark R. Pharr, Jr., New Iberia, La.; said Pharr assignor to said Wilson**
**Filed Feb. 16, 1968, Ser. No. 706,156**
**Int. Cl. H05b** *9/06*
**U.S. Cl. 219—10.55** **4 Claims**



An oven having a cavity receiving high frequency electromagnetic wave energy for heating edibles is provided with a loosely mounted closure means. The oven is provided with a coating of Teflon and the like, between the closure means and cavity wall forming a capacitance coupling therebetween when the closure means is resiliently urged toward the wall. Thus, leakage of energy about the closure means is controlled, while arcing is avoided and cleaning facilitated. A timer arrangement is provided which permits a proper warm-up period for the magnetron while assuring proper timing of the edible heating operation.

### 3,480,754
## RESISTANCE WELDING

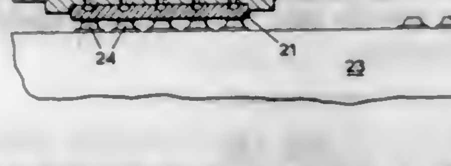
**Jan Klaus Gessler, Doncaster, England, assignor to British Ropes Limited, Doncaster, Yorkshire, England, a British company**
**Filed Feb. 3, 1967, Ser. No. 613,879**
**Int. Cl. B23k** *11/02, 11/04*
**U.S. Cl. 219—57** **8 Claims**



A process and apparatus for resistance butt welding of workpieces such as wires wherein provision is made for varying the pressure between the workpieces when a forging temperature has been reached so as to provide an adequate forging pressure which differs from the contact pressure during the heating stage.

### 3,480,755
## METHOD OF ATTACHING INTEGRATED CIRCUITS TO A SUBSTRATE BY AN ELECTRON BEAM

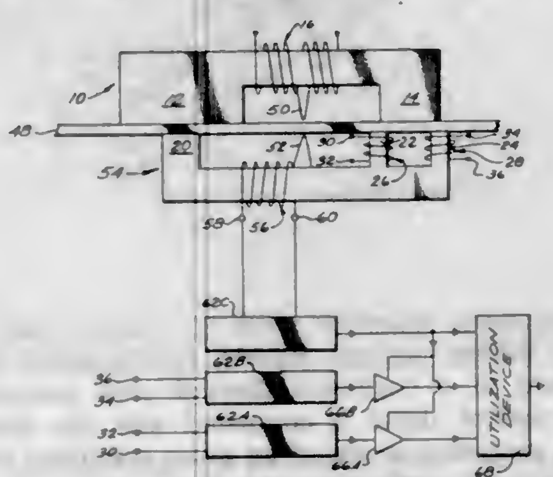
**John Beesley and Robert Anthony Hyman, London, England, assignors to English Electric-Leo-Marconi Computers Limited, London, England, a British company**
**Filed Mar. 16, 1967, Ser. No. 623,604**
**Claims priority, application Great Britain, Mar. 16, 1966, 11,624/66**
**Int. Cl. B23k** *15/00*
**U.S. Cl. 219—121** **4 Claims**



In the utilization of integrated circuits, the connection of inputs and outputs of the circuit chip presents serious problems. For example, one known method involves connecting fine wires between areas on the chip and a set of relatively large terminals provided on a substrate. The present invention provides a method of attaching an integrated circuit chip to a plurality of conducting lands on a substrate, in which an electron beam of appropriate energy is directed on to the chip in at least the regions overlying the lands, the lands being formed of material of lower melting point than the chip and the beam passing through the chip without melting it and into the lands and melting them in the vicinity of the chip, thus welding the chip to the lands. The method is well suited for use in automatic processes.

### 3,480,756
## WELDING APPARATUS

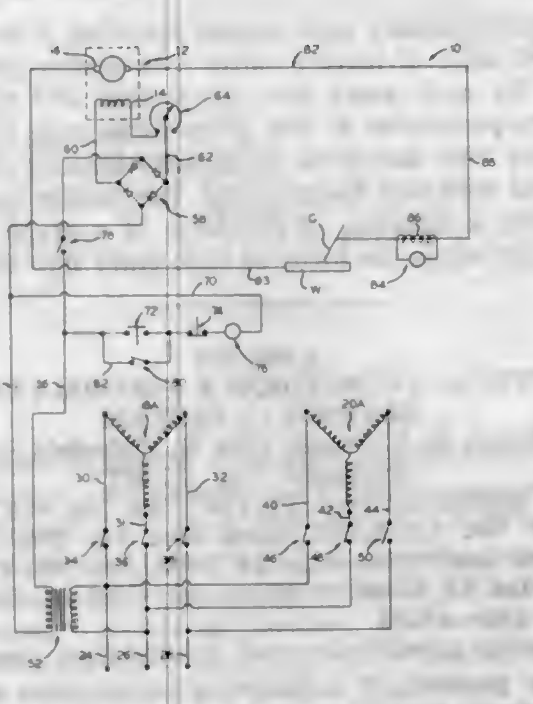
**Fletcher R. Sullivan, Sierra Madre, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware**
**Filed June 20, 1966, Ser. No. 558,805**
**Int. Cl. B23k** *9/12*
**U.S. Cl. 219—125** **13 Claims**



This disclosure relates to apparatus and means for the positioning, aligning, and tracking of objects—such as welding electrodes—that are on opposite sides of an opaque structure, such as a wall or a sheet of material. In general, a transmitter is associated with one of the objects, and a sensor is associated with the other object. Depending upon the alignment/misalignment of the transmitter and sensor, suitable signals are produced to indicate the direction and/or the amount of misalignment. These signals may be used as indicators, or as controls for producing the desired alignment—and may be a "tracking" operation when one of the objects is moving. A modification produces another type of signal that indicates the distance between the transmitter and sensor.

### 3,480,757
## MOTOR GENERATOR TYPE WELDING APPARATUS

**Ralph P. Ogden, Hammond, Ind., assignor to Ogden Engineering Corporation, a corporation of Indiana**
**Filed July 18, 1967, Ser. No. 654,192**
**Int. Cl. B23k** *9/10*
**U.S. Cl. 219—134** **9 Claims**



The invention pertains to motor generator type welding apparatus in which the motor generator is in the form of a welding load driving motor and an idling load driving motor arranged to operate the generator so that the welding load driving motor drives the generator at operating speed when welding is being done, and the idling motor maintains the operating speed of the generator motor during periods when no welding is being done. The result is that the motor generator operates at a power factor of at least about 60 while the apparatus remains in operation regardless of whether welding is actually being done and at a power factor on the order of 80 to 90 when no welding is being done. The application discloses apparatus for both manual stick electrode and semi-automatic welding.

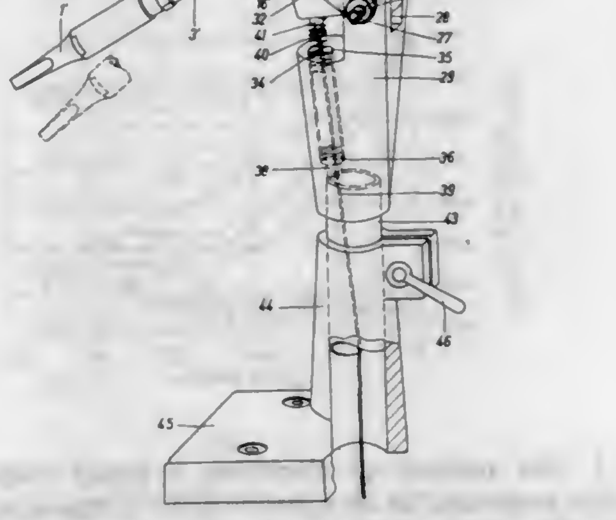
### 3,480,758
## METHOD OF ELECTRIC-ARC WELDING OF PIPE JOINTS

**Vladislav Vasilievich Roschin, Inzhenernaya ul. 10, korp. 1, kv. 16, Moscow, U.S.S.R.; Boris Ivanovich Muromtsev, Ul. Depovskaya 7, kv., Lobnya, Moskovskaya obl., U.S.S.R.; and Gennady Nilolaevich Gusakov, Podmoskovnee shosse, 13a, kv. 96; and Leonid Ivanovich Maslov, Varshavskoe shosse, 194, korp. 3, kv. 61; both of Moscow, U.S.S.R.**
**No Drawing. Filed Jan. 12, 1968, Ser. No. 697,309**
**Int. Cl. B23k** *9/00, 31/06*
**U.S. Cl. 219—137** **1 Claim**

A method of electric arc welding of pipe joints with the use of a non-consumable electrode under protective gas atmosphere and without the use of a filler wire. Welding is carried out in a plurality of passes. Incomplete weld penetration of the pipe wall is obtained in the first pass, subsequent passes yielding increased penetration until complete penetration is reached.

### 3,480,759
## ELECTRICAL SOLDERING TOOL AND PIVOTAL MOUNT THEREFOR

**Ernst Sachs, Wertheim (Main), and Bernhard Schwan, Baden-Baden, Germany, assignors to ERSA Ernst Sachs KG, Wertheim (Main), Germany**
**Filed Dec. 27, 1965, Ser. No. 516,563**
**Claims priority, application Germany, Jan. 13, 1965, E 28,502**
**Int. Cl. H05b** *1/00, 3/42;* **B23k** *3/02*
**U.S. Cl. 219—242** **5 Claims**



A soldering tool and a mounting stand therefor comprise a shank tube having a soldering tip with a heating element therein. A block is secured to the tube at a spaced location from the tip and an electrical cable extends axially in a direction opposite to the tip outwardly through the end of the block. A handle member is pivoted to the block and it includes two arm portions arranged on respective opposite sides of the block which form a cradle therefor, but which do not interfere with the passage of the cable outwardly through the end of the block. The handle member, in one embodiment, is constructed to be pivotally mounted on a holder which, in turn, is mounted for pivotal movement about a vertical axis. The handle member is biased in one direction and it may be moved in an opposite direction to facilitate the positioning of the soldering tip by either a hand key or by a foot pedal connected to the handle through a cable.

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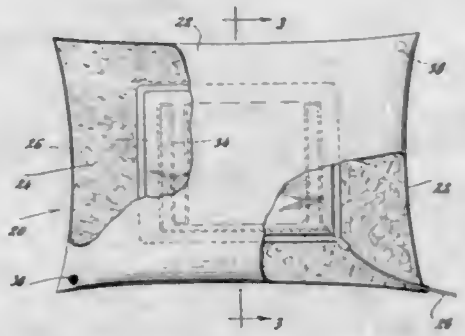
### 3,480,760
### ELECTRICALLY HEATED PILLOW

**Samuel Young, % Fairfield Wool Co. Inc., Taylor St., Danbury, Conn. 06810**
**Filed Nov. 6, 1967, Ser. No. 680,751**
**Int. Cl. H05b** *3/34, 3/54, 3/44*
**U.S. Cl. 219—528** **1 Claim**



A pillow having a substantially planar electrical heating element located in its center, to provide gentle, even heat diffused through at least one inch of stuffing. The stuffing and enclosed casing are permeable to air. The placement of the heating element is preferably symmetrical with respect to the pillow.

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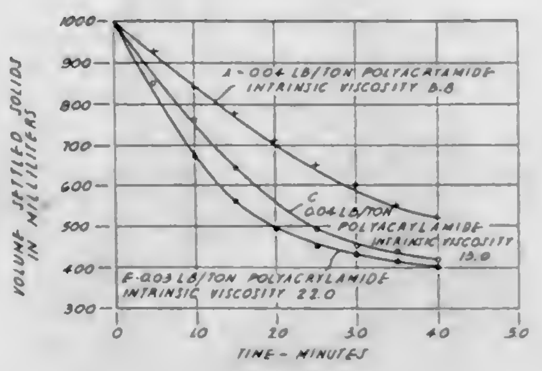
### 3,480,761
### CLEAR OVERFLOW SETTLING WITH VERY HIGH MOLECULAR WEIGHT POLYELECTROLYTES

**Edwin Ralph Kolodny and Robert Ben Booth, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine**
**Continuation-in-part of application Ser. No. 756,677, Aug. 22, 1958. This application Mar. 18, 1963, Ser. No. 274,367**
**Int. Cl. C02b** *1/20*
**U.S. Cl. 210—54** **10 Claims**



1. The method of clarifying a liquid suspension of solids suspended in an aqueous phase comprising the steps of adding to said suspension a water-soluble polyacrylamide, having an intrinsic viscosity of at least 12 deciliters per gram, and a carboxyl content of not more than about ½% of the polymer units, in an amount sufficient to flocculate and agglomerate said suspended solids, and separating the flocculated and agglomerated solids from the aqueous liquid.

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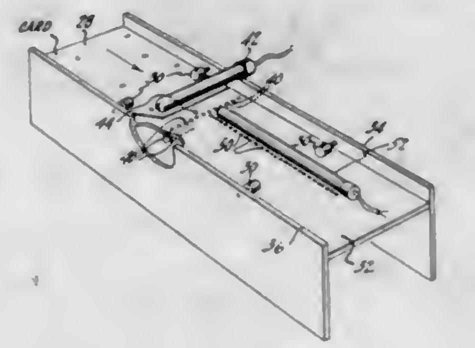
### 3,480,762
### TIMING ARRANGEMENT FOR DOCUMENT PROCESSOR

**Nicholas A. Del Vecchio, Lake Worth, Fla., assignor to RCA Corporation, a corporation of Delaware**
**Filed July 20, 1965, Ser. No. 473,327**
**Int. Cl. G06k** *7/00;* **G01n** *21/30*
**U.S. Cl. 235—61.11** **12 Claims**



A document processor, with an arrangement for generating timing control signals synchronized with the movement of a document through said processor. The timing control signal is compared with the data output of said processor to signal an error condition caused by a misregistered perforation on a document.

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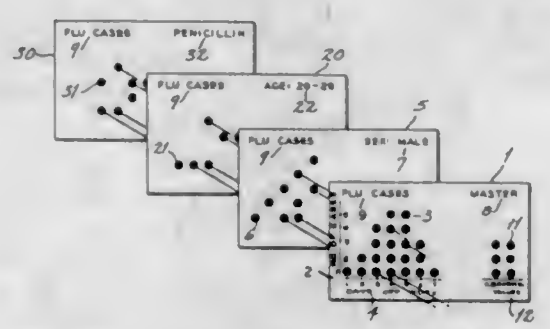
### 3,480,763
### OPTICAL COINCIDENCE DATA ANALYSIS SYSTEM

**George E. Gantner, Jr., 6641 Pershing, University City, Mo. 63130**
**Filed Nov. 8, 1965, Ser. No. 506,740**
**Int. Cl. G06k** *19/00, 7/00, 21/00*
**U.S. Cl. 235—61.12** **1 Claim**



A superimposable card system including a master card and a plurality of feature cards. The master card is perforated for each entry into the system and the feature cards are perforated at any given locus only if an entry associated with that locus is characterized by the feature associated with that feature card. The master card is provided with a diagram, in the form of a graph or chart, which determines the locus of each entry into the system.

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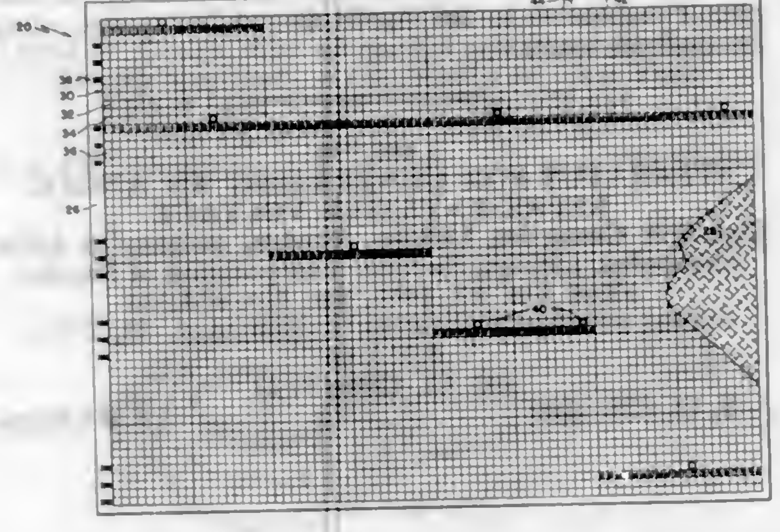
### 3,480,764
### OPTICAL COINCIDENCE INFORMATION RETRIEVAL SYSTEM

**Roger D. Marshall, 2256 N. Wakefield St., Arlington, Va. 22207**
**Original application Sept. 18, 1967, Ser. No. 668,594, now Patent No. 3,421,438, dated Jan. 14, 1969. Divided and this application June 24, 1968, Ser. No. 753,329**
**Int. Cl. G06k** *19/00, 21/00;* **B42f** *21/00*
**U.S. Cl. 235—61.12** **4 Claims**

An optical coincidence card for indexing items of information germane to a selected primary value and comprising a base of clear, transparent plastic material having a coating and a grid of contrasting colors over-printed one upon the other only on one side of the clear base. The grid divides the coating into discrete, ordered spaces, and a numbering system printed on the card identifies the ordered spaces defined by the grid. At least at one of the ordered spaces, the base is free of the coating to expose the said base and thereby provide a clear light transmitting spot for identifying an item of information germane to the primary value by visual inspection. When a deck of such cards are stacked and aligned, the desired common items of information on the cards is observable by passage of light through the aligning clear spots.



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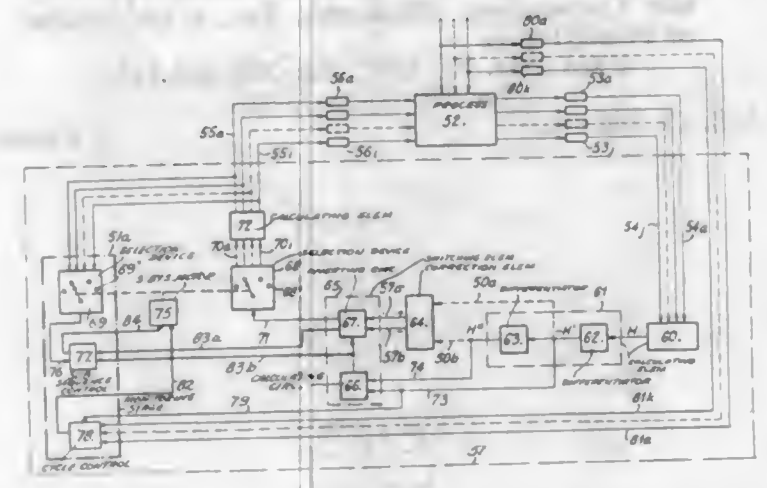
### 3,480,765
### APPARATUS FOR CONTROLLING AN INDUSTRIAL INSTALLATION

**Roland Rouxel, Troinex, Geneva, Switzerland, and Jean G. Helein, Fresnes, France, assignors to Battelle Memorial Institute, International Division Compagnie Francaise Thomson-Houston, Geneva, Switzerland, a corporation of Switzerland**
**Filed Apr. 14, 1965, Ser. No. 448,068**
**Claims priority, application Switzerland, Apr. 14, 1964, 4,742/64**
**Int. Cl. G06f** *15/18;* **G06c** *27/00*
**U.S. Cl. 235—150.1** **6 Claims**



An apparatus for the oscillatory control of an industrial installation, the operation of which is governed by actuating variables and is defined by a final controlled variable depending on physical quantities measured in the installation. The apparatus is connected to the installation through measuring elements which supply signals representing the value of the measured quantities and the value of disturbances and is also connectable to the installation through the intermediary of actuators arranged to vary the actuating variables.

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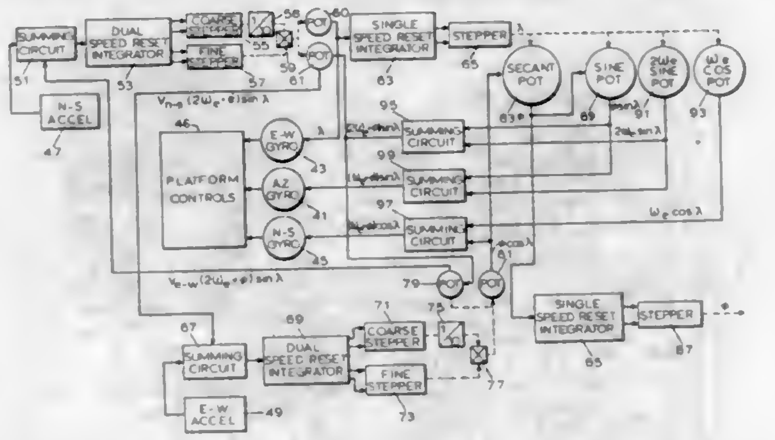
### 3,480,766
### INERTIAL NAVIGATOR USING ANALOG INTEGRATORS WITH DIGITAL LOGIC

**Harold Lerman, Paramus, N.J., and Murray S. Goldstein, Spring Valley, N.Y., assignors to Singer-General Precision Systems Inc., a corporation of Delaware**
**Filed Sept. 30, 1963, Ser. No. 312,684**
**Int. Cl. G06f** *15/50;* **G06g** *7/70, 7/78*
**U.S. Cl. 235—150.25** **7 Claims**



Inertial navigation system using first and second digital reset integrators. The first integrators are used to derive velocity from acceleration and the second integrators are used to derive position from velocity. In order to make use of digital reset integrators in an analog inertial navigation system, stepper motors which rotate incrementally in response to the output pulses are used in conjunction with potentiometers to convert the pulse output from the reset integrators to analog signals. Because conventional stepper motors are limited in the number of pulses per second that they can receive, a dual speed reset integrator is employed.

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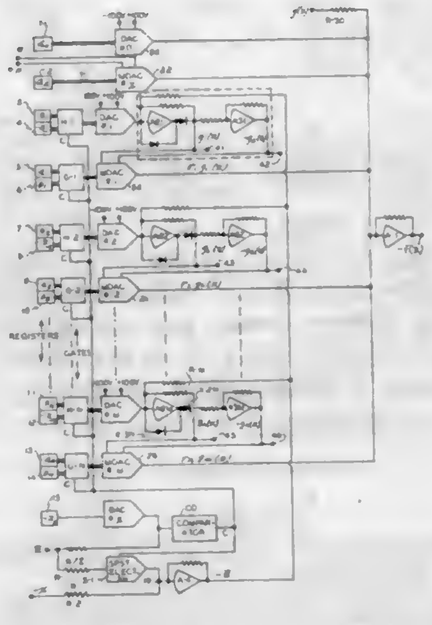
### 3,480,767
### DIGITALLY SETTABLE ELECTRONIC FUNCTION GENERATOR USING TWO-SIDED INTERPOLATION FUNCTIONS

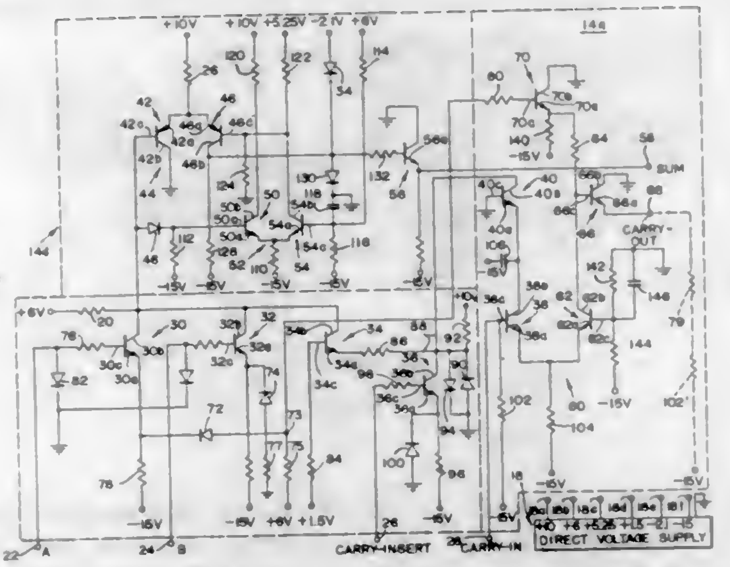
**Robert M. Howe, Ann Arbor, Mich., assignor to Applied Dynamics, Inc., Ann Arbor, Mich., a corporation of Michigan**
**Filed June 12, 1967, Ser. No. 651,932**
**Int. Cl. G06g** *7/26*
**U.S. Cl. 235—150.53** **11 Claims**



A high-bandwidth, high-accuracy, digitally-settable diode function generator which uses two-sided interpolation functions and time-shares digital-to-analog converter devices in generation of both sides of the interpolation functions, for use for both single-variable and multi-variable function generation.

### 3,480,768
### DIGITAL ADDER WITH EXPEDITED INTRASTAGE CARRY

**Richard G. Sogge, Hudson, Mass., assignor to Digital Equipment Corporation, Maynard, Mass.**
**Filed Dec. 27, 1966, Ser. No. 604,765**
**Int. Cl. G06f** *5/02, 7/385*
**U.S. Cl. 235—175** **17 Claims**

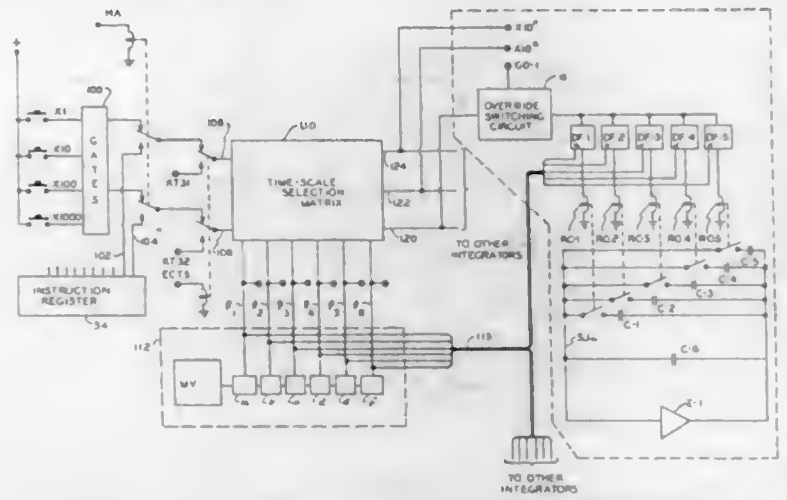


A binary parallel adder stage attains high speed intrastage carry operation with a carry circuit having a switch that combines the carry-in signal with a three-level signal, produced in a digital-to-analog conversion circuit, identifying the sum of the addend and augend signals.

The switch also transfers the carry-in signal to the conversion circuit to produce a four-level signal identifying the sum of the addend, augend and carry-in signals. Two further switches arranged in a summing circuit process the four-level signal to produce the sum signal from the stage.

### 3,480,769
### ANALOG AND ANALOG-DIGITAL COMPUTER MODE AND TIME-SCALE CONTROL SYSTEM

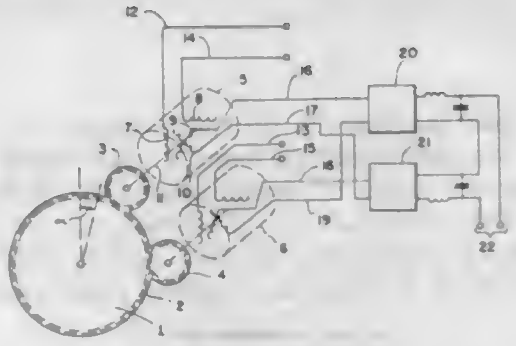
**Elmer G. Gilbert, Ann Arbor, Mich., assignor to Applied Dynamics, Inc., Ann Arbor, Mich., a corporation of Michigan**
**Filed Apr. 14, 1967, Ser. No 635,294**
**Int. Cl. G06g** *7/18, 7/48;* **G06j** *1/02*
**U.S. Cl. 235—183** **16 Claims**



In order to reduce control wiring between control devices such as manual pushbuttons or automatic control registers and analog computer circuits such as integrators which must be switched into many different operating configurations, control signals are encoded and routed over single wire busses and decoded at each analog computer circuit so that the signal on a single buss can provide any one of a fairly large number of operating conditions, such as time-scales, modes, etc. Different coding schemes utilizing phase, frequency, magnitude and pulse width are disclosed. Plural busses carrying different coded signals are provided and each analog computer circuit is connected to be controlled by a predetermined bus unless a patched connection is made to make a given such circuit responsive to the signal on a different bus, using an override switching system.

### 3,480,770
### APPARATUS FOR GENERATING AN ANGLE-REPRESENTATIVE VOLTAGE

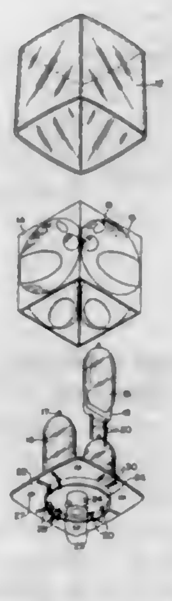
**Carl-Erik Granqvist, Lidingo, Sweden, assignor to AGA Aktiebolag, Lidingo, Sweden, a corporation of Sweden**
**Filed Apr. 27, 1967, Ser. No. 634,336**
**Claims priority, application Sweden, Apr. 28, 1966, 5,813/66**
**Int. Cl. G06g** *7/22*
**U.S. Cl. 235—189** **4 Claims**



To derive a signal having a phase angle representing the angle of rotation $\alpha$ of a rotatable member, signals of the frequencies $n\omega$ and $m\omega$ are phase-modulated by multiples $n\alpha$ and $m\alpha$, respectively, of the angle and the signals thus obtained are heterodyned to form a difference-frequency signal of the type $\sin(n-m)(\omega t+\alpha)$.

### 3,480,771
### BASE AND CONTACT STRUCTURE FOR A MULTI-FLASHLAMP UNIT

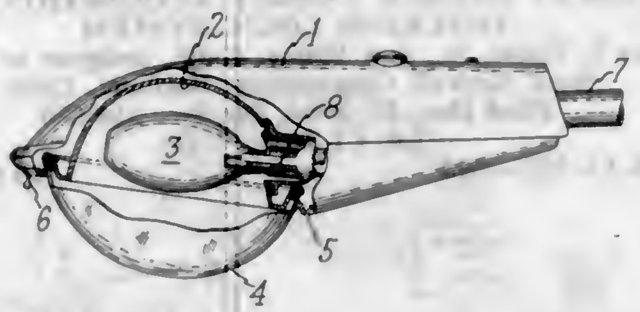
**Henry P. Hasell, Bloomfield, and Bernard Chauvin, Cedar Grove, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Mar. 10, 1967, Ser. No. 622,115**
**Int. Cl. G03b** *15/02*
**U.S. Cl. 240—1.3** **5 Claims**



A multiflash lamp unit, such as a flashcube, having a pair of dual-strand wire contacts for each lamp in the unit. The contacts are made by forming each of the lead wires into a dual-strand wire conductor, bending the latter over the rim of a protruding collar on the base member, and recessing the bent ends of the conductors within radially-extending slots provided in the outer face of the base member.

### 3,480,772
### LUMINAIRE

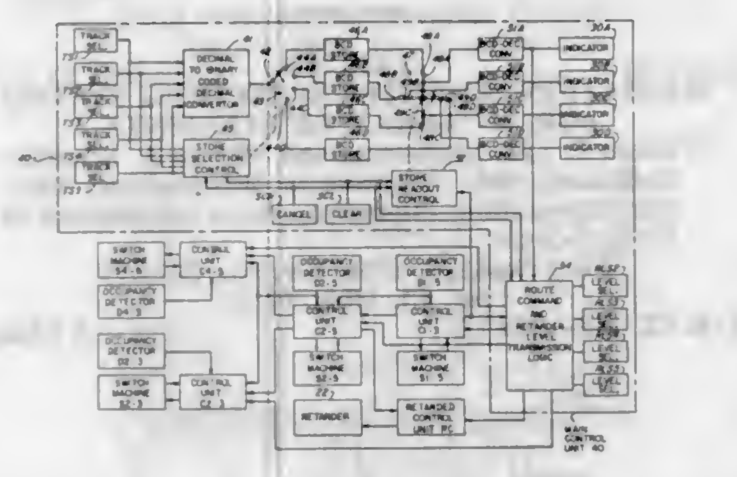
**Alfred B. Gough, Flat Rock, N.C., assignor to General Electric Company, a corporation of New York**
**Filed Mar. 9, 1967, Ser. No. 621,968**
**Int. Cl. F21s** *1/10, 3/10, 13/10*
**U.S. Cl. 240—25** **11 Claims**



Street lighting luminaire comprises a reflector formed with a combination of two parabolic-elliptical surfaces and a paraboloidal surface for reflecting light from a light source located at principal foci of the reflecting surfaces. The reflector is combined with a refractor which coacts therewith to lift the light rays and re-direct them in desired directions along the street. The conjugate foci of the parabolic-elliptical surfaces are arranged in loci outside the region of the light source at points which result in distribution of light uniformly on the refractor.

### 3,480,773
### ROUTE SWITCHING SYSTEMS

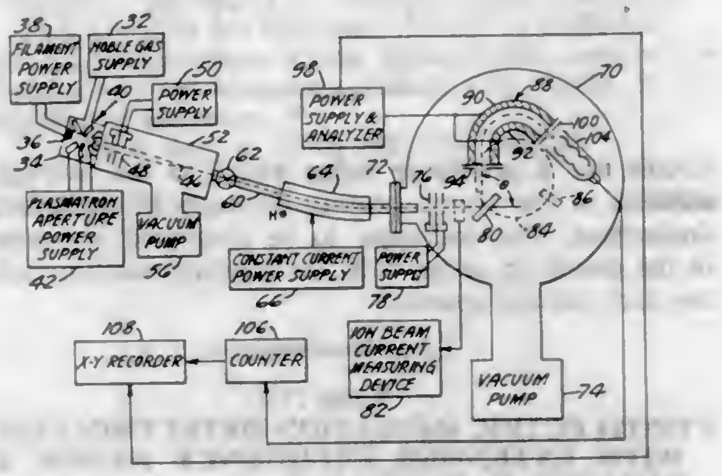
**Robert B. McCune, Allendale, and Rosser L. Wilson, Mahwah, N.J., assignors to Abex Corporation, New York, N.Y., a corporation of Delaware**
**Filed Sept. 13, 1967, Ser. No. 667,504**
**Int. Cl. B61l** *27/04;* **B61b** *1/00*
**U.S. Cl. 246—4** **12 Claims**



An automatic route switching system for a railroad classification yard, including a main control and storage unit for recording a number of different route command signals and a transmission system for simultaneously transmitting the pertinent parts of each route command to each of a plurality of individual track switch control units. These control units each afford local storage for several partial route commands, and each actuates its associated track switch in accordance with the partial route commands and in accordance with traffic conditions at the track switch.

### 3,480,774
### LOW-ENERGY ION SCATTERING APPARATUS AND METHOD FOR ANALYZING THE SURFACE OF A SOLID

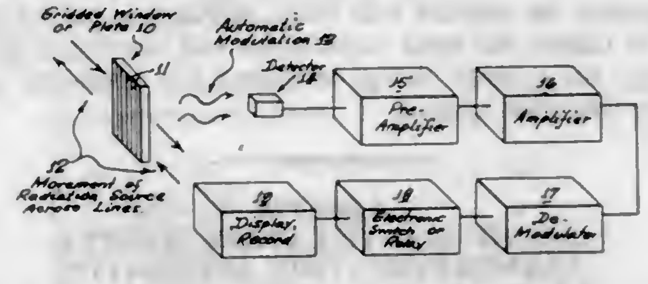
**David P. Smith, Cottage Grove, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**
**Filed May 26, 1967, Ser. No. 641,582**
**Int. Cl. H01j** *37/00*
**U.S. Cl. 250—49.5** **12 Claims**



Apparatus and method for analyzing a solid surface utilizing a low-energy primary ion beam with ions of known mass, charge and energy by directing the primary ion beam onto the solid surface to be analyzed whereby said primary ions from said beam are scattered from the elements forming the solid surface and the quantity and energy of the scattered ions are analyzed during a predetermined time interval and are used to determine the elements and quantity of elements forming the solid surface.

### 3,480,775
### RADIATION SENSITIVE OMNIDIRECTIONAL MOTION DETECTOR SYSTEM

**William E. Osborne, Whittier, Calif., assignor to General Dynamics Corporation, Pomona, Calif., a corporation of Delaware**
**Filed Aug. 17, 1964, Ser. No. 389,870**
**Int. Cl. G01t** *1/16;* **H01j** *39/00*
**U.S. Cl. 250—83.3** **4 Claims**

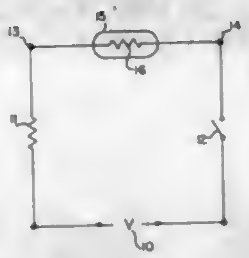


Broadly, this invention is directed to a motion detector system of the passive type which is activated by a source of radiant energy moving past a gridded dome. The grid lines of the dome are in the order of about 25 to 400 lines per inch and function to modulate a detector assembly which transmits the signal to a point of use.

### 3,480,776
### THERMOLUMINESCENT DOSIMETRY TEST SYSTEM AND METHOD

**Frank H. Attix, Hillcrest Heights, Md., assignor to the United States of America as represented by the Secretary of the Navy**
**Filed Mar. 31, 1967, Ser. No. 628,240**
**Int. Cl. G01t** *1/16*
**U.S. Cl. 250—83.3** **4 Claims**

This disclosure is directed to a simple circuit for delivering constant power to a single dosimeter chosen from a group of thermoluminescent dosimeters which are designed with internal ohmic heating elements of substantially the same resistance value. The circuit includes a constant voltage source and a resistor within a series circuit which is controlled by a switch. The resistor in the circuit has a resistance value equal to the average resistance of the ohmic heating elements of the group of dosimeters. The dosimeter to be measured is connected in the circuit in series with the constant resistor and the constant voltage source.



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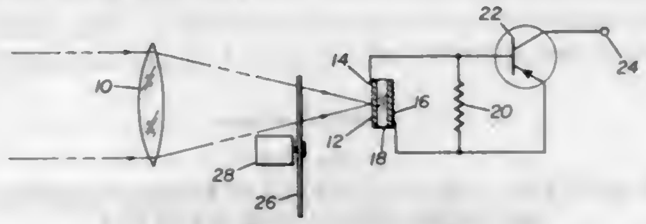
### 3,480,777

### PYROELECTRIC RADIATION DETECTION SYSTEM WITH EXTENDED FREQUENCY RANGE AND REDUCED CAPACITANCE

**Robert W. Astheimer, Westport, Conn., assignor to Barnes Engineering Company, Stamford, Conn., a corporation of Delaware**
**Continuation of application Ser. No. 560,193, June 24, 1966. This application Feb. 28, 1969, Ser. No. 804,382**
**Int. Cl. G01t** *1/16*
**U.S. Cl. 250—83.3** **3 Claims**



A pyroelectric radiation detection system utilizes a pyroelectric radiation detector in which the crystals thereof exhibit temperature-dependent change effects which are read out by a high impedance voltage device. The crystalline pyroelectric detector has electrodes on which a charge is built up proportional to the incident radiation. These electrodes are divided and interconnected in such a manner to reduce the total capacitance and develop a greater voltage for a given charge to extend the frequency range of the detection system.

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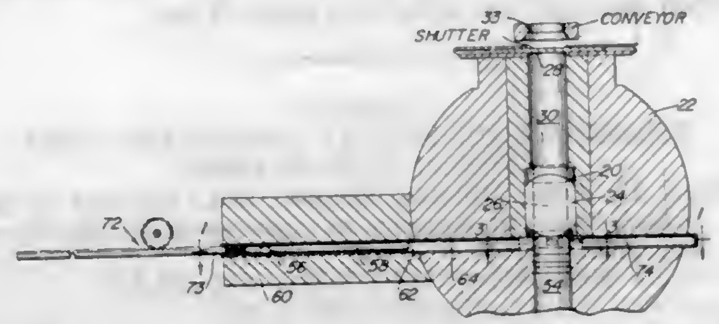
### 3,480,778

### LIQUID SCINTILLATION SAMPLE STANDARDIZATION APPARATUS

**Raymond L. Meeder, Palos Heights, and Joseph E. Kus, Mount Prospect, Ill., assignors to Nuclear-Chicago Corporation, Des Plaines, Ill., a corporation of Delaware**
**Filed Apr. 11, 1966, Ser. No. 541,767**
**Int. Cl. G21h** *5/00*
**U.S. Cl. 250—106** **8 Claims**



Liquid scintillation or similar samples within a shield forming a counting chamber are selectively exposed to a standardizing source by reciprocation of the source through a source-transport passage. Samples are introduced by a holder movable through a sample-transport passage. The source is affixed to a forwardly extending elongated shielding member. When the standard source is inserted adjacent to a sample in the chamber, the forwardly-extending shielding member seats in a recess in the shield wall, and when the source is withdrawn, the forwardly extending portion of the shielding member shields the chamber from the source. Specific construction for the external standardization mechanism of an automatic liquid-scintillation counting system is described.

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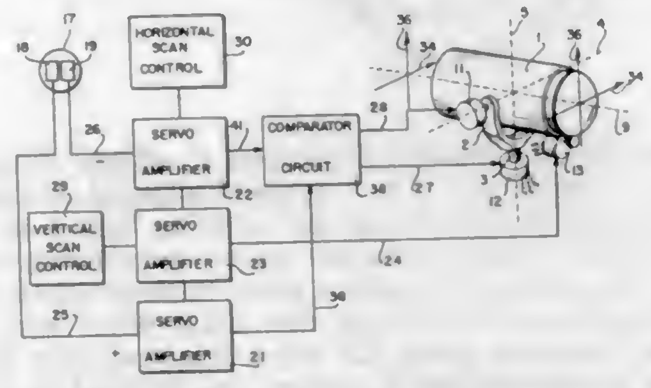
### 3,480,779

### RADIANT ENERGY TARGET ACQUISITION AND TRACKING LOGIC SYSTEM

**Ross L. Hand, Jr., Sun Valley, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.**
**Filed Dec. 27, 1965, Ser. No. 516,650**
**Int. Cl. G01j** *1/20*
**U.S. Cl. 250—203** **10 Claims**



An optical scanning system is described which employs a single pair of side-by-side radiation detectors to initially acquire the image of moving emissive target and thereafter track the target. In its acquisition mode, the device continuously moves the pair of detectors in an oscillatory path along two orthogonal degrees of freedom (e.g., pitch and yaw axes). Acquiring the image of the target on either of the two detectors will stop the oscillation in one of the initial two degrees of freedom and automatically commence movement of the detectors in a third degree of freedom (e.g., roll axis) to the extent required to maintain the target image centered between them.

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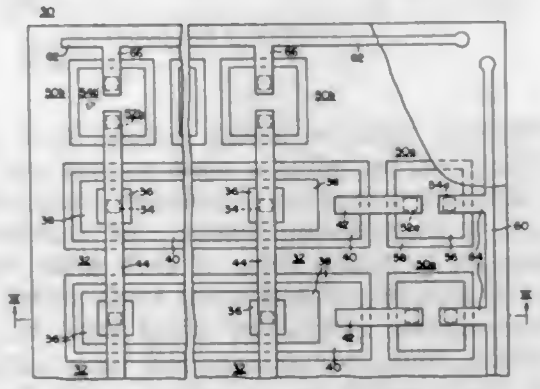
### 3,480,780

### RADIATION SENSITIVE SWITCHING SYSTEM FOR AN ARRAY OF ELEMENTS

**William F. List, Linthicum, and Marvin A. Schuster, Baltimore, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Sept. 28, 1966, Ser. No. 582,679**
**Int. Cl. H01j** *39/12*
**U.S. Cl. 250—209** **5 Claims**



This invention relates to a system for electrically connecting each of a plurality of semiconductor elements disposed in an array in an external circuit. The semiconductor elements may be disposed in rows and column with a plurality of electrically conductive members aligned with the rows and the columns so as to connect each of the seimconductive devices in an XY matrix.

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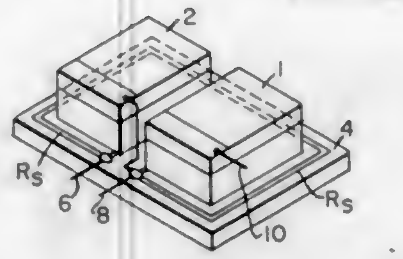
### 3,480,781

### TEMPERATURE COMPENSATED SOLAR CELL LIGHT SENSOR

**John N. Mandalakas, Greensburg, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Sept. 15, 1967, Ser. No. 668,056**
**Int. Cl. H01j** *39/12*
**U.S. Cl. 250—209** **9 Claims**



A temperature compensated solar cell light sensor wherein two solar cells of substantially identical characteristics are mounted on a thermal equalizing plate with a temperature sensitive resistor. The cells and the resistor are exposed to the same light and temperature conditions. In order to obtain precise measurements of the light intensity, temperature compensation of the light sensor is obtained by subtracting a temperature dependent part of the output of one cell from the entire output of the other. The temperature sensitive resistor, in close thermal contact with the thermal equalizing plate permits compensation in a suitable circuit. One such suitable circuit includes an emitter follower configuration controlled by an operational amplifier to maintain substantially short-circuit conditions across each solar cell.

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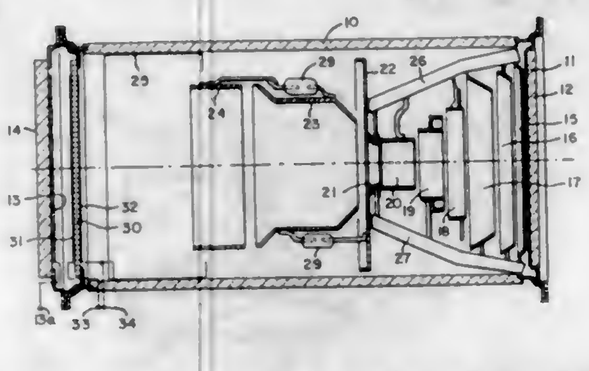
### 3,480,782

### ELECTRONIC IMAGE-INTENSIFYING TUBE

**Joseph Burns, Pequannock, N.J., assignor to Fairchild Camera and Instrument Corporation, a corporation of Delaware**
**Filed Nov. 1, 1967, Ser. No. 679,709**
**Int. Cl. H01j** *29/62, 31/50*
**U.S. Cl. 250—213** **10 Claims**



An image-intensifying tube comprises an evacuated envelope in which are disposed, in sequence, a substantially planar photocathode; a first group of annular electrodes forming a field-flattening electron lens; a second group of annular electrodes forming a cross-over-point determining electron lens for controlling the magnification of the image; a third group of annular electrodes forming a focusing electron lens; and a substantially planar phosphor display screen parallel to the photocathode. Preferably, there are disposed between the third group of electrodes and the display screen a fourth group of annular electrodes forming a weak diverging electron lens and a fifth group of annular electrodes forming a weak converging electron lens, these last two electrode groups being effective substantially to eliminate geometrical distortion, such as the pincushion effect, of the image on the substantially planar display screen.

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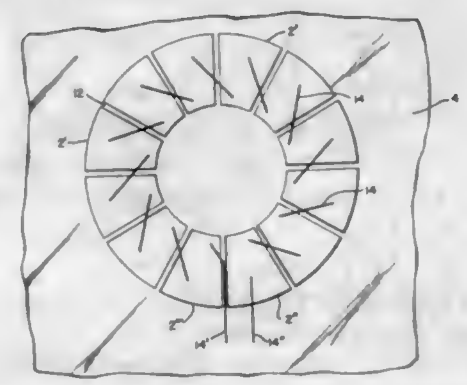
### 3,480,783

### PHOTON COUPLER HAVING RADIALLY-DISPOSED, SERIALLY CONNECTED DIODES ARRANGED AS SEGMENTS OF A CIRCLE

**Ramzy G. Mankarious, Costa Mesa, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**
**Filed Aug. 1, 1966, Ser. No. 569,285**
**Int. Cl. H01j** *39/12*
**U.S. Cl. 250—211** **2 Claims**



A photon coupler having a plurality of light emitting diodes arranged in radially-disposed segments with the segments being serially connected. A glass substrate separates the light emitting diodes from a light-responsive diode.

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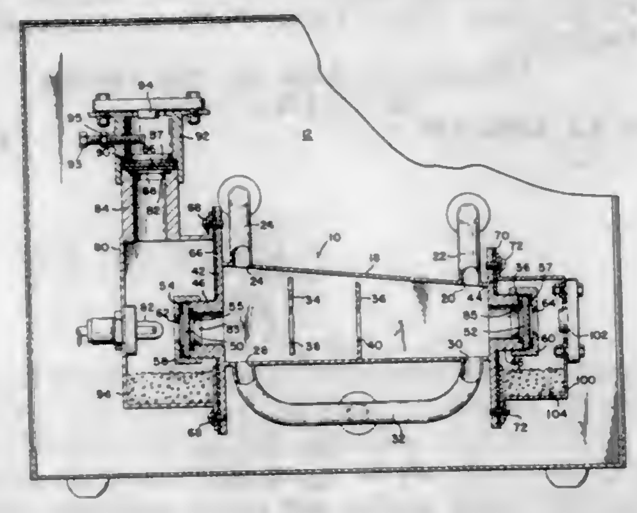
### 3,480,784

### ABSORPTION TESTER HAVING PORTS AND TRAPEZOIDAL ENCLOSURE WITH PROVISION FOR ELIMINATING BUBBLES FROM THE OPTICAL TEST PATH

**Robert W. Pierce, Seattle, Wash., assignor to Sweden Freezer Mfg. Co., Seattle, Wash., a corporation of Washington**
**Filed Feb. 13, 1967, Ser. No. 617,011**
**Int. Cl. G01n** *21/26*
**U.S. Cl. 250—218** **5 Claims**



An opacity change-sensing system is provided for use as a blood leak detecting device for sensing the presence of a patient's blood in the dialysis effluent from a blood weight exchange dialyzer. The device provides a bubble-free low fluctuating-reflection fluid flow path through which a light beam from a stabilized light source is longitudinally passed to an opacity-change sensing-photocell and an electrical circuit operable by the differential impedance output of two photocells to indicate changes in the sensed fluid opacity and to actuate over-ranging alarm circuitry upon the detection of blood in the dialysis effluent.

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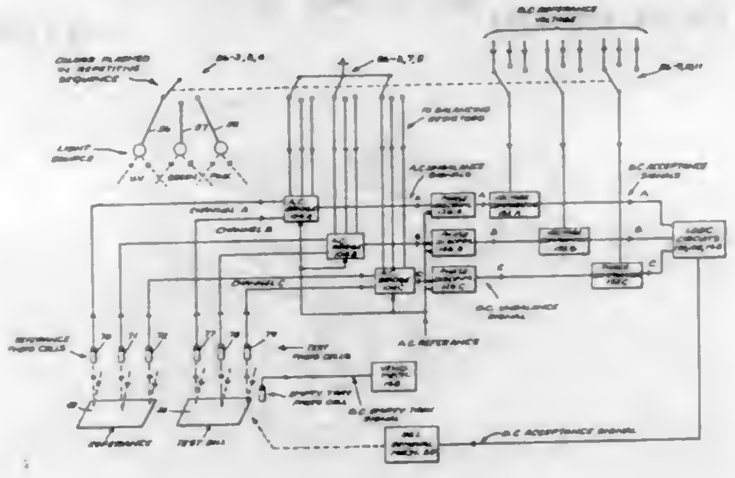
### 3,480,785
### METHOD AND APPARATUS FOR VALIDATING DOCUMENTS BY SPECTRAL ANALYSIS OF LIGHT REFLECTED THEREFROM

**Don R. Aufderheide, Indianapolis, Ind., assignor to Vendit, Inc., Anderson, Ind., a corporation of Indiana**

**Filed July 26, 1965, Ser. No. 474,785**
**Int. Cl. G01n** *21/30*
U.S. Cl. 250—219 **20 Claims**



A method and apparatus for discriminating between desired and undesired documents which employs a plurality of narrow band light sources each emitting light in a different color spectra, the light sources being sequentially illuminated, one at a time. The document to be inspected is positioned to receive light from the light sources and a plurality of sensors are positioned to receive light reflected from preselected discrete areas on one surface of the document and to provide signals in response to the spectral content thereof. Such signals must be within predetermined limits for each sequential color emission.

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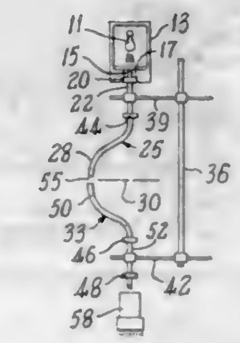
### 3,480,786
### FLAW DETECTING SYSTEM INCLUDING SYNCHRONOUSLY ROTATING OPTIC FIBER TUBES

**Joseph J. Kottman, Binghamton, N.Y., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware**

**Filed Jan. 13, 1966, Ser. No. 520,486**
**Int. Cl. G01n** *21/30*
U.S. Cl. 250—219 **1 Claim**



Disclosed in this application is a flaw detecting system for travelling webs including a light transmitting fiber pipe mounted for rotation on one side of the travelling web and a light receiving fiber pipe mounted on the opposite side of the travelling web. The light pipes are mounted on a common axis and offset from the common axis to an equal extent with the light pipes rotating synchronously and in superimposed relation. The end of the light receiving pipe away from the travelling web is positioned adjacent a light sensitive means so that any variation in the light transmissive properties of the web passing between the rotating light pipes is sensed by the light sensitive means.

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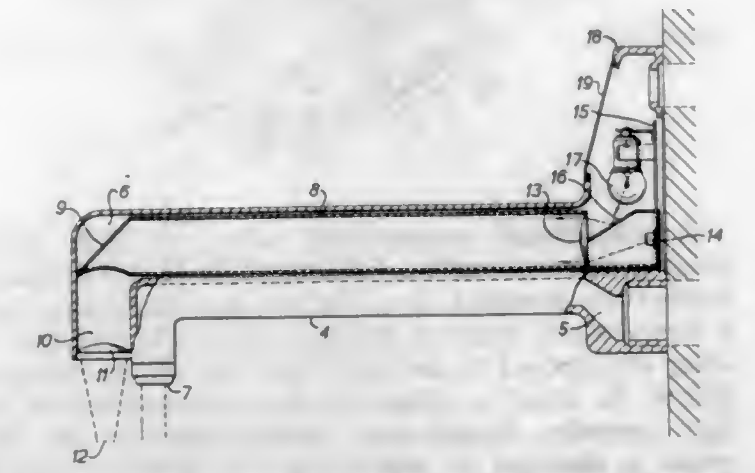
### 3,480,787
### AUTOMATIC INSTALLATION FOR WASHING HANDS

**Knud Harald Storm Johansen, Sonderborg, Denmark, assignor to Servodan A/S, Sonderborg, Denmark**

**Filed Apr. 8, 1966, Ser. No. 541,240**
**Claims priority, application Denmark, June 30, 1965, 3,344/65**
**Int. Cl. H01j** *39/12*
U.S. Cl. 250—221 **12 Claims**



An automatic installation for actuating a valve permitting the flow of water from a nozzle for washing hands placed beneath the nozzle, the installation including a transmitter of radiation impulses directed toward the location in which hands are to be placed and a receiver of radiation impulses reflected from hands so located, the receiver being connected to a valve-actuating circuit.

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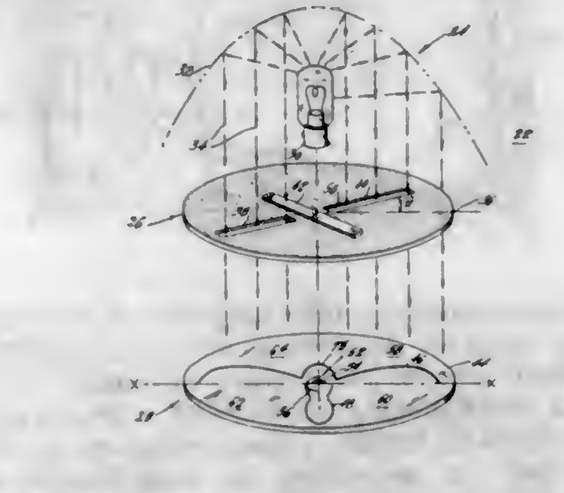
### 3,480,788
### RESOLVING COMPASS UTILIZING PHOTO-POTENTIOMETERS

**John Dante Barbieri and George Gucker, Howard Beach, N.Y. (both of Ford Institute Co., Division of Sperry Rand Corp., 31—10 Thomson Ave., Long Island City, N.Y. 11101)**

**Filed Apr. 7, 1966, Ser. No. 540,908**
**Int. Cl. H01j** *3/14, 5/16*
U.S. Cl. 250—237 **17 Claims**



A resolving compass utilizes a photo-potentiometer to obtain output information related to angular position of a rotatable member. The light sensitive pattern of the photo-potentiometer is stationary and is actuated by light passing through aperture means driven by the movable compass member. The aperture provides a pattern which cooperates with the light sensitive pattern to produce an electrical output indicating angular position. One of the patterns (aperture or light sensitive) is of a straight line configuration while the other pattern is a curve configuration.

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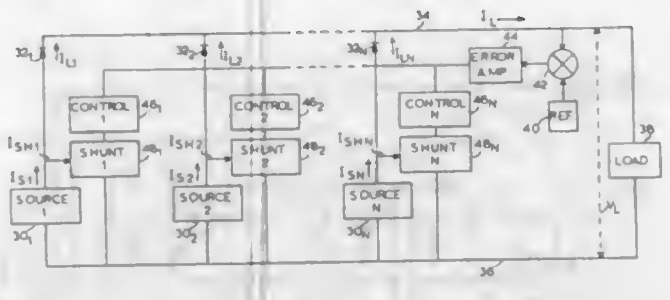
### 3,480,789
### VOLTAGE REGULATOR WITH PLURAL PARALLEL POWER SOURCE SECTIONS

**William G. Binckley, Alhambra, and Warren H. Wright, Palos Verdes, Calif.; may be granted to National Aeronautics and Space Administration under provisions of 42 U.S.C. 2457(d)**

**Filed July 28, 1966, Ser. No. 568,620**
**Int. Cl. H02j** *1/10, 3/38, 7/34*
U.S. Cl. 307—53 **13 Claims**



1. In combination with a supply line having a variable load coupled thereto, power source means connected to said supply line for establishing a predetermined voltage thereon over a wide range of load current demands, said power source means comprising:

- a plurality of first power source sections connected to said supply line in parallel;
- a plurality of actuatable dissipation paths each connected to a different one of said first sections; and
- means responsive to a changing difference between the voltage on said supply line and said predetermined voltage for actuating said dissipation paths in accordance with a predetermined sequence.

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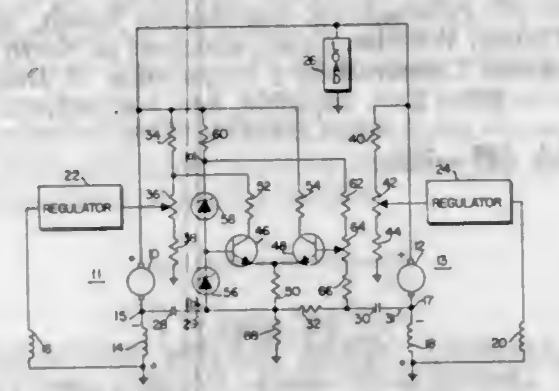
### 3,480,790
### LOAD DIVISION CIRCUIT

**Dennis A. Porter, Ada, Mich., and Robert R. White, Waynesboro, Va., assignors to General Electric Company, a corporation of New York**

**Filed May 18, 1967, Ser. No. 639,527**
**Int. Cl. H02j** *1/10, 3/00*
U.S. Cl. 307—57 **5 Claims**



A load division circuit for balancing the load supplied by paralleled DC generators. A differential amplifier is coupled to the series compensating windings of the parallel generators by a resistor in the emitter base circuit. The voltage differential realized when load unbalance is present appears across the resistor and serves to drive the normally balanced amplifier to apply an amplified differential to the generator voltage regulator.

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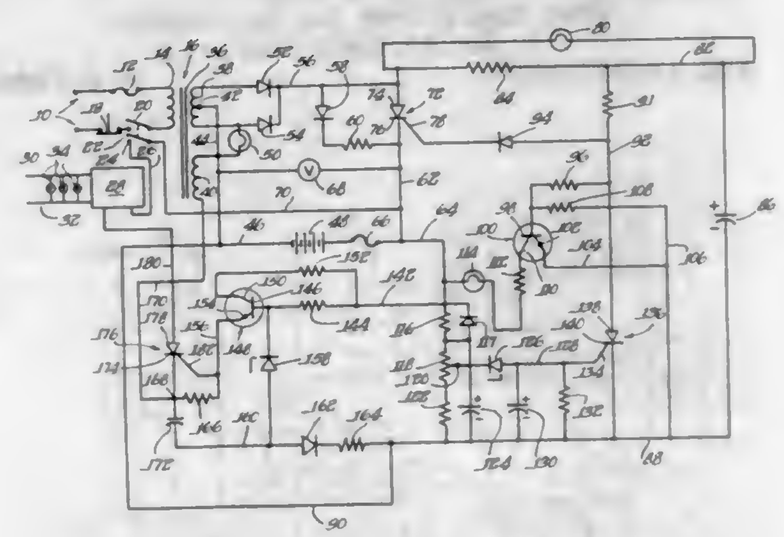
### 3,480,791
### EMERGENCY LIGHTING SYSTEM WITH TWO RATE BATTERY CHARGER

**John C. Lesher, Erie, Pa., assignor to Penn-Western Electric, Erie, Pa., a corporation of Pennsylvania**

**Filed May 26, 1967, Ser. No. 641,581**
**Int. Cl. H02j** *7/06, 9/02*
U.S. Cl. 307—66 **14 Claims**



An emergency or stand-by D.C. lighting system connected to the A.C. mains, and utilizing solid state switches or controlled rectifiers for effecting a two rate battery charge, and for turning the emergency or stand-by lamps on, Zener diodes affording close control of the solid state switches or controlled rectifiers.

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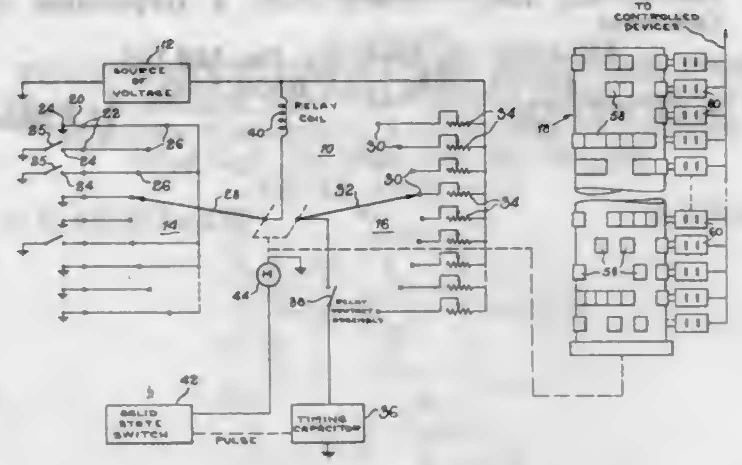
### 3,480,792
### PROGRAMMER

**Kenneth J. Matheis, East Paterson, N.J., assignor, by mesne assignments, to Amerace Esna Corporation, New York, N.Y., a corporation of Delaware**

**Filed Aug. 16, 1967, Ser. No. 660,970**
**Int. Cl. H01h** *7/00, 43/00;* **H03k** *17/28*
U.S. Cl. 307—141 **24 Claims**

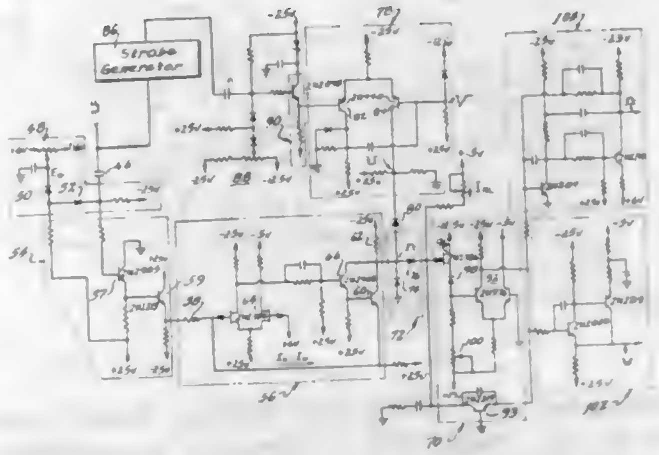


A programmer for controlling a plurality of sequential operations and having a plurality of spaced terminals wherein at least one of the operations depends upon the happening of an event external of the electronic device including providing means for making direct connection among the terminals not associated with the happening of the external event and to a return circuit and connecting the terminal which is associated with the happening of the external event to a control dependent thereupon such that the timing of the electronic device is interrupted until connection is made to the return circuit through the control.

The programmer having a timing circuit including a resistor and a capacitor and means for selecting at least one of a plurality of timing capacitors to change the time constant of the timing circuit.

### 3,480,793
### LOGARITHMIC FUNCTION GENERATOR

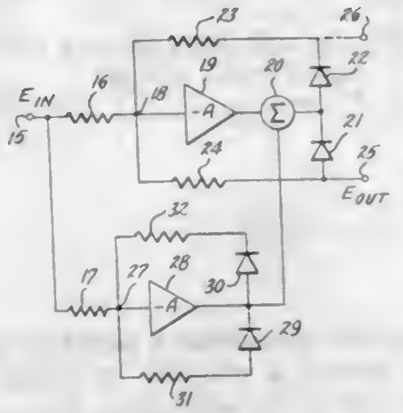
**Michael G. Strauss, Downers Grove, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Aug. 2, 1966, Ser. No. 569,761**
**Int. Cl. G06g** *7/24*
**U.S. Cl. 307—229** **6 Claims**



The circuit produces an output signal which is a logarithmic function of pulsed input voltage signals. A voltage-to-current converter changes the applied input pulse to a current pulse which is coupled by way of a gate to a logarithmic function generator. The applied input pulses also generate control signals for actuating the gate so that an output signal is produced only when an applied input pulse is present.

### 3,480,794
### PARALLEL OPERATIONAL RECTIFIERS

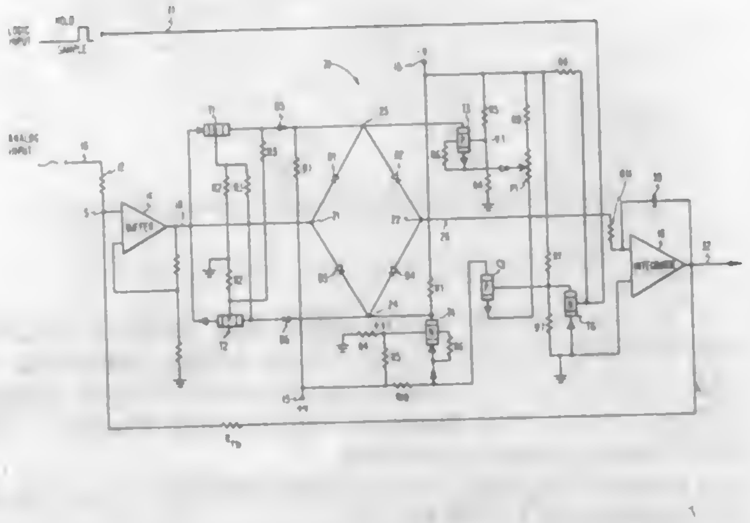
**Peter L. Richman, Lexington, Mass., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware**
**Filed Oct. 20, 1966, Ser. No. 588,195**
**Int. Cl. G06g** *7/12;* **H03k** *5/00*
**U.S. Cl. 307—229** **11 Claims**



Operation rectifier apparatus including two operational rectifier channels each of which has an operational amplifier and two diode feedback circuits. An input signal is connected to the iputs of both channels. A summing circuit is connected in one of the channels to sum the output of the operational amplifier of the first channel with the output of the second channel. The recifier output is taken from an intermediate point in one of the feedback circuits of the first channel. A particularly useful summing circuit is also disclosed in which the signals to be summed are connected to the base electrodes of two transistors connected in an emitter-follower pair, or long-tailed pair, the emitter-collector current thus developed being used to control conductivity in a third transistor.

### 3,480,795
### SAMPLE AND HOLD CIRCUIT

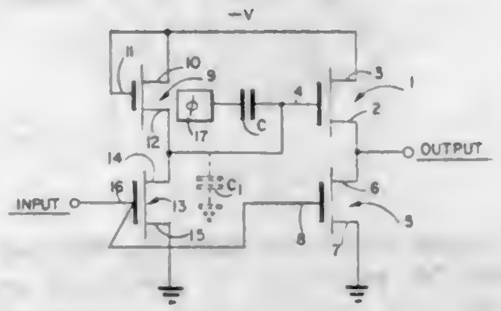
**Allen B. Benson, George G. Gorbatenko, James Jursik, Ronald E. Kath, Jerry D. Ovrebo, and David H. Skrenes, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed June 15, 1966, Ser. No. 557,805**
**Int. Cl. H03k** *5/20*
**U.S. Cl. 307—235** **11 Claims**



An analog signal to be sampled is fed to one input of a differential buffer amplifier connected by a diode-quad sampling switch to an integrating amplifier which provides a signal-storage function. The output of the integrator is fed back to another input of the buffer amplifier. A control circuit causes the charging current to the diode-quad to increase above its quiescent bias current during a sampling interval whenever the buffer-amplifier output exceeds a predetermined threshold. The increased charging current may be taken either from the buffer output itself or from a separate current source.

### 3,480,796
### MOS TRANSISTOR DRIVER USING A CONTROL SIGNAL

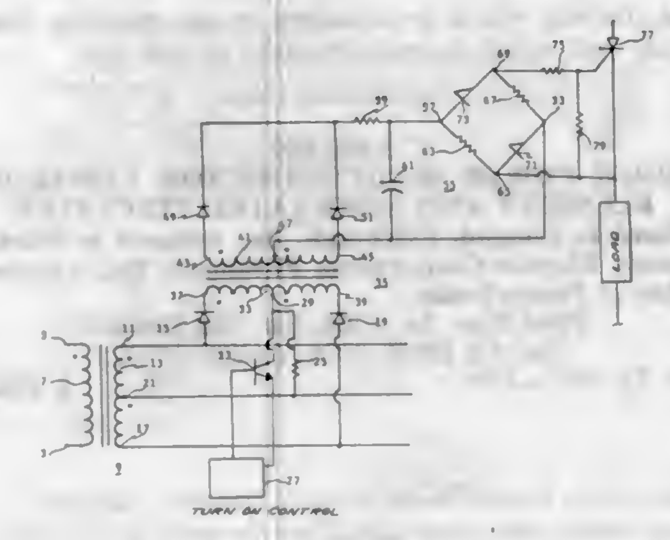
**Robert W. Polkinghorn, Huntington Beach, and Arthur F. Pfeifer, Whittier, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware**
**Filed Dec. 14, 1966, Ser. No. 601,602**
**Int. Cl. H03k** *17/02*
**U.S. Cl. 307—251** **6 Claims**



A driver for MOS devices comprising a capacitor connected between the gate electrode of an output MOS transistor and a signal source, including switch means connected to said capacitor. A control signal is provided which increases the voltage on the gate electrode of the output transistor in proportion to the charge distribution between said capacitor and the parasitic capacitance of the circuit.

### 3,480,797
### CONTROLLED SILICON RECTIFIER CIRCUIT HAVING HIGH NON-CONDUCTING NEGATIVE BIAS RATIO

**Burnice D. Bedford, Scotia, and Fred G. Turnbull, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York**
**Filed Oct. 21, 1966, Ser. No. 588,431**
**Int. Cl. H03k** *17/30*
**U.S. Cl. 307—252** **7 Claims**

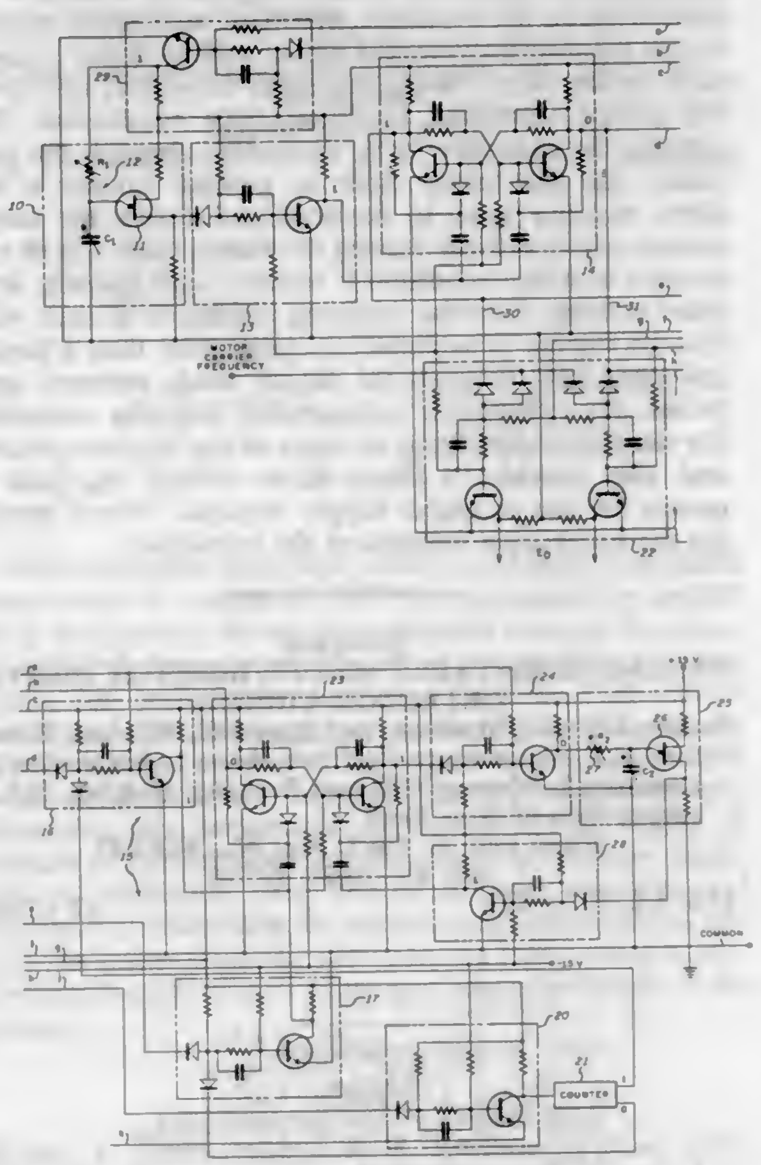


There is disclosed herein a gating circuit for a silicon controlled rectifier having the conventional anode, cathode, and gate electrode. A high frequency alternating current source for producing a high frequency alternating current signal is provided. A bridge circuit having breakdown diodes connected in two legs of the bridge circuit is connected to the gate electrode of the silicon controlled rectifier. A first transformer has a primary winding connected to the high frequency alternating current source and a center tapped secondary winding. A second transformer has a center tapped primary winding connected to the secondary winding of the first transformer and a center tapped secondary winding connected to the bridge circuit. A transistor and resistor are connected in parallel between the center tap of the secondary winding of the first transformer and the center tap of the primary winding of the second transformer. The transistor may be turned on to apply breakdown voltage to the breakdown diodes in the bridge circuit and apply a gating signal to the gate electrode of the silicon controlled rectifier.

### 3,480,798
### ASYMMETRIC PULSE TRAIN GENERATOR HAVING MEANS FOR REVERSING THE ASYMMETRICAL CHARACTERISTIC

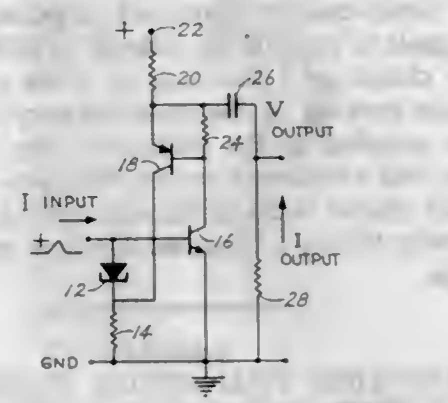
**George E. Mas, West Hempsted, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware**
**Filed July 12, 1966, Ser. No. 564,610**
**Int. Cl. H03k** *5/20;* **G01c** *19/00*
**U.S. Cl. 307—260** **6 Claims**

An asymmetric pulse train generator in which first and second pulses are algebraically combined on alternate cycles for providing an asymmetric pulse train having alternate pulses representative of the first pulse width and of the first pulse width algebraically combined with the second pulse width that includes means for periodically reversing the asymmetrical characteristic of the asymmetric pulse train.



### 3,480,799
### PULSE GENERATOR HAVING FAST RISE TIME

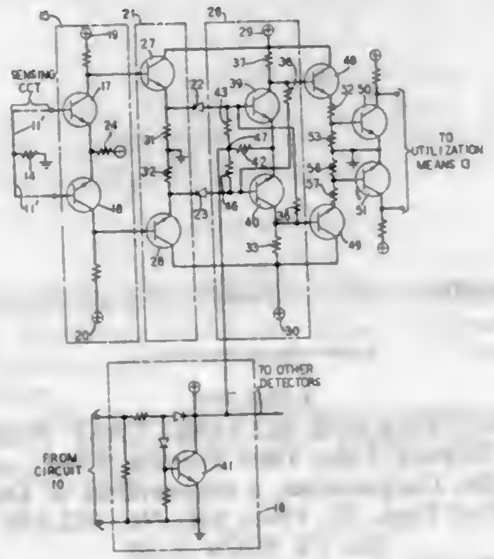
**Dennis E. Tschudi, Lake View Terrace, Calif., assignor to The Bendix Corporation, a corporation of Delaware**
**Filed Sept. 28, 1966, Ser. No. 582,620**
**Int. Cl. H03k** *3/28*
**U.S. Cl. 307—273** **8 Claims**



A circuit is disclosed for producing high current amplitude pulse signals having extremely fast rise times and sharp cut-off characteristics. A tunnel diode and a resistor are connected across the input to a pair of regeneratively coupled transistors. The direct current power source is connected through a dropping resistor to the transistors and to a capacitor connected in series with an output resistor. The value of the dropping resistor is such that, in the absence of an input pulse, the input transistor is maintained in quiescent condition, while a charge is accumulated on the capacitor. When an input pulse appears across the tunnel diode it is driven into its negative resistance region, thus biasing the input transistor, and hence the second transistor, into immediate conduction. This permits the capacitor to be discharged through the transistors and the tunnel diode to ground, causing a very sharp negative peak to be developed across the output resistor and positively driving the tunnel diode out of conduction in which condition it remains until the next input pulse arrives, since the dropping resistor is of such value that no current is available to cause more than a limited quiescent flow through the tunnel diode between input pulses. An alternative arrangement provides essentially the same operation from an input of the opposite polarity and also provides a Zener diode voltage regulator to permit the use of higher supply voltages without exceeding the breakdown voltages of the transistors.

### 3,480,800
## BALANCED BISTABLE MULTIVIBRATOR DIGITAL DETECTOR CIRCUIT

**Dennis J. Lynes, Madison, and Sigurd G. Waaben, Princeton, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed Feb. 6, 1967, Ser. No. 614,237**
**Int. Cl. H03k** *3/286*
**U.S. Cl. 307—292** **17 Claims**

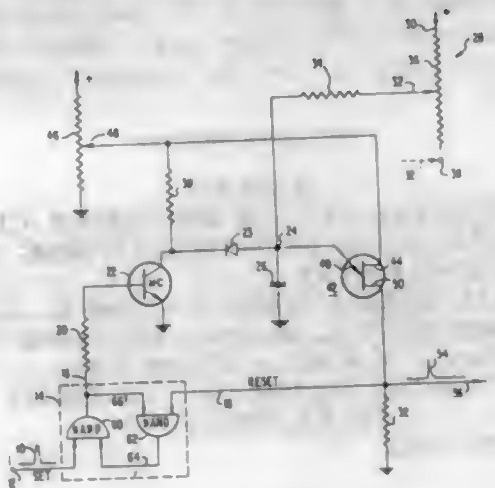


In a direct-coupled balanced detector, diodes couple input signals to control the state of an emitter-gated multivibrator circuit as a function of diode conduction levels during the turn-on of the multivibrator circuit. Input signals are supplied to the diodes by way of a differential amplifier and a balanced emitter-follower. The multivibrator circuit output is taken through another balanced emitter-follower driving a balanced common emitter amplification stage.

### 3,480,801
## UNIJUNCTION TRANSISTOR TIMING CIRCUIT

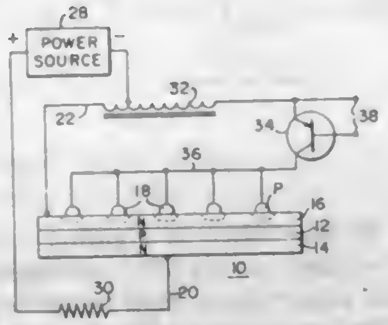
**George E. Smith, Bridgeton, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware**
**Filed Sept. 27, 1965, Ser. No. 490,227**
**Int. Cl. H03k** *17/26, 17/28, 3/26*
**U.S. Cl. 307—293** **2 Claims**

A unijunction transistor timing or pulse delay circuit including a unijunction transistor which is fired by the voltage on a timing capacitor to discharge the capacitor and to produce an output pulse at a controllable time interval after the application of a start pulse to the circuit. The time interval is controllable over a wide range from a fraction of a second to many seconds, including a sudden transition to an infinite time delay, by means of a rheostat which is connected in the capacitor timing circuit and which is open-circuited at one end.



### 3,480,802
## HIGH POWER SEMICONDUCTOR CONTROL ELEMENT AND ASSOCIATED CIRCUITRY

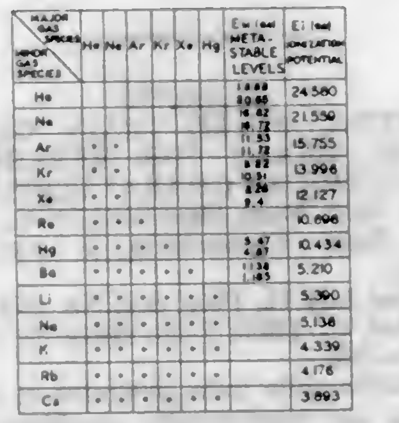
**Richard L. Longini, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Nov. 16, 1966, Ser. No. 594,894**
**Int. Cl. H03k** *3/26, 19/08, 23/22*
**U.S. Cl. 307—299** **2 Claims**



This disclosure relates to a four-region three junction semiconductor device which is functionally two transistors in tandem. In the device of this disclosure, base current for one transistor is provided by the injection of carriers into the base by means of the other transistor.

### 3,480,803
## NUCLEAR THERMIONIC CONVERTER

**Frank E. Jamerson, Birmingham, Charles B. Leffert, Oak Park, and David B. Rees, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Oct. 20, 1965, Ser. No. 498,837**
**Int. Cl. H02n** *3/00, 7/00*
**U.S. Cl. 310—4** **8 Claims**



| MAJOR GAS SPECIES / MINOR GAS SPECIES | He | Ne | Ar | Kr | Xe | Hg | Ex (ev) META-STABLE LEVELS | Ei (ev) IONIZATION POTENTIAL |
|---|---|---|---|---|---|---|---|---|
| He | | | | | | | 19.82<br>20.65 | 24.580 |
| Ne | | | | | | | 16.62<br>16.72 | 21.559 |
| Ar | • | • | | | | | 11.53<br>11.72 | 15.755 |
| Kr | • | • | | | | | 9.82<br>10.51 | 13.996 |
| Xe | • | • | | | | | 8.28<br>9.4 | 12.127 |
| Rn | • | • | • | | | | | 10.696 |
| Hg | • | • | • | • | | | 5.47<br>4.67 | 10.434 |
| Ba | • | • | • | • | • | | 1.134<br>1.143 | 5.210 |
| Li | • | • | • | • | • | • | | 5.390 |
| Na | • | • | • | • | • | • | | 5.138 |
| K | • | • | • | • | • | • | | 4.339 |
| Rb | • | • | • | • | • | • | | 4.176 |
| Cs | • | • | • | • | • | • | | 3.893 |

A nuclear thermionic diode having a binary gas mixture in the interelectrode spacing. The mixture comprises a major species having a metastable state of higher energy than the ionization potential of the minor species and the pressure and ratio of gas quantities are chosen to produce a maximum electron density in the plasma produced by fission fragment bombardment.

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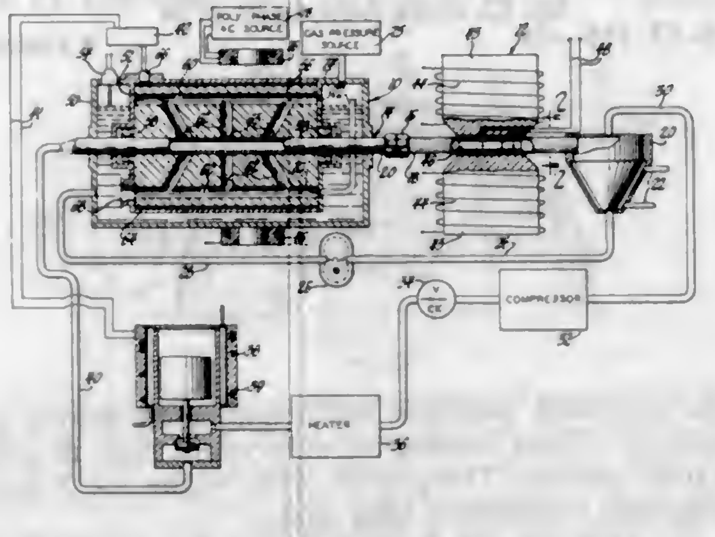
### 3,480,804
## METHOD AND APPARATUS FOR LIQUID MHD GENERATOR SYSTEMS

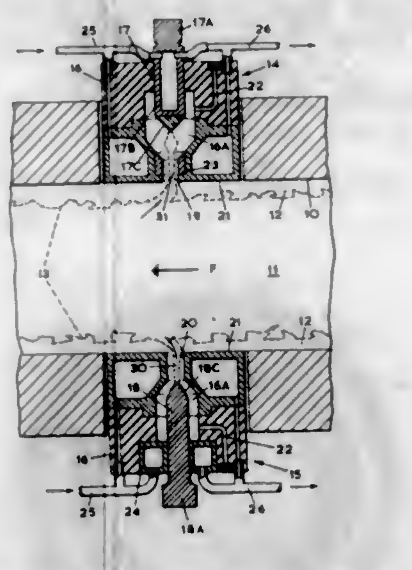
**Donald L. Tipton, Speedway, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed July 25, 1966, Ser. No. 567,571**
**Int. Cl. H02k** *45/00;* **H02n** *4/02*
**U.S. Cl. 310—11** **14 Claims**



A rotating cylinder feeds slugs of liquid metal to the working fluid duct of an MHD generator where pulses of pressurized gas propel the liquid slugs through the generator in rapid succession.

### 3,480,805
## MAGNETOHYDRODYNAMIC APPARATUS

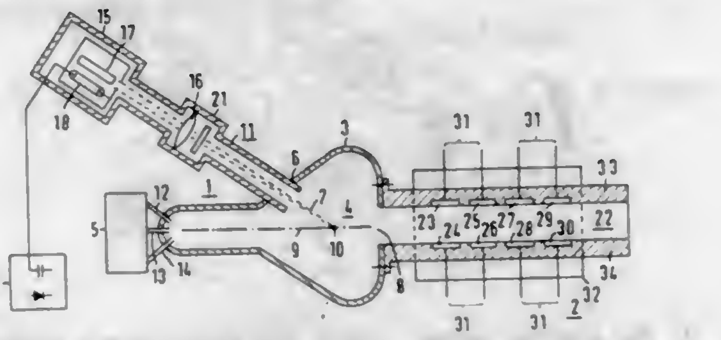
**John Stuart Yerrell, Stafford, England, assignor to The English Electric Company, Limited, London, England, a British company**
**Filed Sept. 8, 1966, Ser. No. 577,936**
**Claims priority, application Great Britain, Sept. 8, 1965, 38,363/65**
**Int. Cl. H02k** *45/00*
**U.S. Cl. 310—11** **9 Claims**



A pair of MHD electrode assemblies each comprising a main electrode in a hollow body set back from the wall of the MHD duct, the body having a constricted nozzle formed in an auxiliary electrode which is flush with the duct wall. The plasma jet from the main electrode is maintained through this nozzle.

### 3,480,806
## MHD GENERATOR

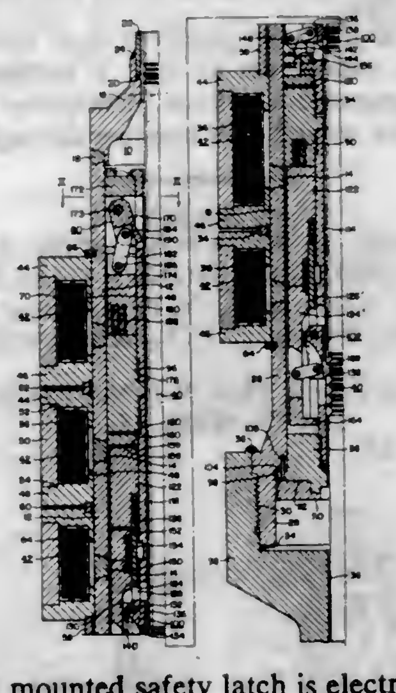
**Bertold Berberich, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany**
**Filed Sept. 22, 1966, Ser. No. 581,285**
**Claims priority, application Germany, Sept. 25, 1965, S 99,668**
**Int. Cl. H02k** *45/00*
**U.S. Cl. 310—11** **4 Claims**



MHD generator assembly includes a channel disposable transversely to a magnetic field, burner means for supplying a hot gaseous stream intermittently through the channel and including a constant-volume combustion chamber, means for periodically supplying ignitable fuel-oxidant mixture to the chamber, laser device for directing an intermittent beam of laser radiation pulses into the chamber to ignite the mixture supplied thereto, means for synchronizing the frequencies respectively of the supply of mixture to the chamber and the pulses of the laser beam, and an oscillation tube located between chamber and channel and traversible by periodic succession of hot and cold gas pulses from the chamber, the tube having a nonresonant length relative to the periodic wavelength of the pulses.

### 3,480,807
## LINEAR MOTION DEVICES

**Robert E. Downs and John S. Karbowski, Penn Hills, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Apr. 11, 1967, Ser. No. 630,005**
**Int. Cl. H02k** *41/02, 33/18, 35/04*
**U.S. Cl. 310—12** **12 Claims**



A pivotally mounted safety latch is electrically actuated to a released position to permit free movement of a rectilinearly movable element in either of two opposite directions and spring biased to a latched position to so engage the element that it is permitted to move in one direction but prevented from moving in the opposite direction. The latch is so incorporated in a hermetically sealed step-by-step mechanism for actuating the rectilinearly movable element that it does not affect normal operation of the mechanism.

**3,480,808**

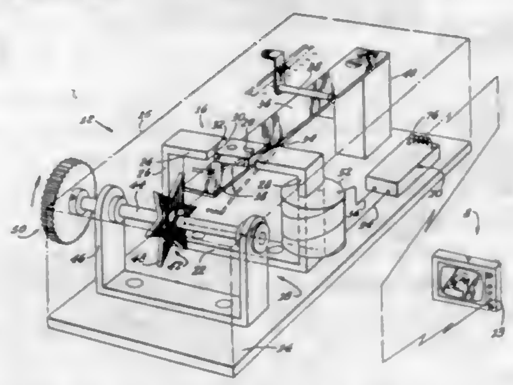
### POWER GENERATOR

**Harold F. Rieth, Santa Monica, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California**

**Filed Jan. 14, 1964, Ser. No. 337,582**

**Int. Cl. H02k** *33/00, 35/02*

**U.S. Cl. 310—25** **3 Claims**



1. An electric power supply for generating a pulse of electrical energy, including the combination of:

a magnetic circuit having a first group of core members arranged concentrically about an axis at predetermined circumferential increments,

a second group of core members disposed concentrically about said axis and spaced from the first core members to form a plurality of magnetic circuits having air gaps,

means for movably supporting the two groups, said means being effective to allow the members in the first group to move about the axis relative to the members in the second group to vary the size of the air gaps and vary the reluctance of the magnetic circuits,

resilient means interconnected with the first group to cause the second group of members to oscillate about the axis relative to the first group,

a source of magnetomotive force in each of the magnetic circuits to maintain flux fields that circulate through the core members in the first and second groups and across said air gap, said flux fields having flux densities that are functions of the positions of the core members in the group and the sizes of the air gaps, and

coil means on the core members in at least one of said groups to encompass at least a portion of the flux fields to generate a voltage in response to the movement of the second core member through the air gap.

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**3,480,809**

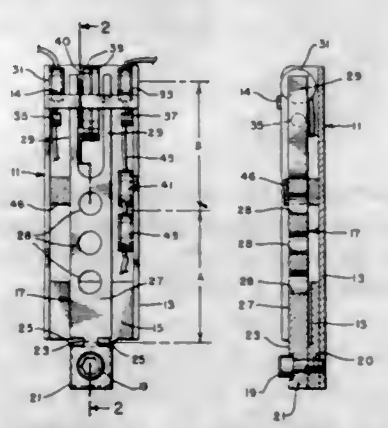
### TUNING FORK RESONATOR WITH REED-MODE DAMPING AND REED SIGNAL CANCELLATION

**Boris F. Grib, Huntington, N.Y., assignor to Philamon Incorporated, Westbury, N.Y., a corporation of New York**

**Filed July 9, 1968, Ser. No. 743,445**

**Int. Cl. H02k** *35/02*

**U.S. Cl. 310—25** **8 Claims**



There is disclosed a tuning fork resonator with electrical drive and pick up coils and a tuning fork having a pair of tines, a common tine junction section, a heel portion for securing the fork in place and a pliant section between the common tine junction portion and the heel portion of the fork. The common tine junction portion has an extension rigidly coupled therewith. The extension of the common tine junction portion oscillates in phase with any reed mode vibration of the fork and is provided with physical damping to damp the reed mode vibration and also with one or more pick-up coils generating a signal which will tend to cancel the reed mode signal generated in the principal tuning fork pick-up coil.

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**3,480,810**

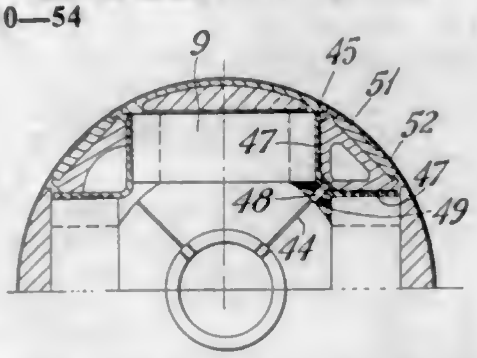
### OIL COOLED GENERATOR

**Frederick Milton Potter, Little Silver, N.J., assignor to The Bendix Corporation, a corporation of Delaware**

**Filed June 5, 1968, Ser. No. 734,728**

**Int. Cl. H02k** *9/00, 9/20, 1/24*

**U.S. Cl. 310—54** **8 Claims**



An oil cooled generator which utilizes oil flowing in grooves in wedges between the poles of the rotor to cool the rotor windings. The grooves in the wedges are in turn fed through a channeled rotor shaft.

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**3,480,811**

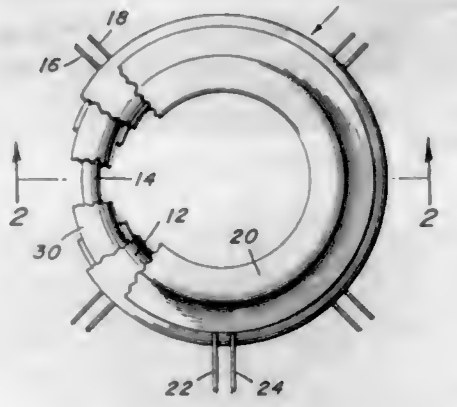
### MAGNETIC ACCELERATOR

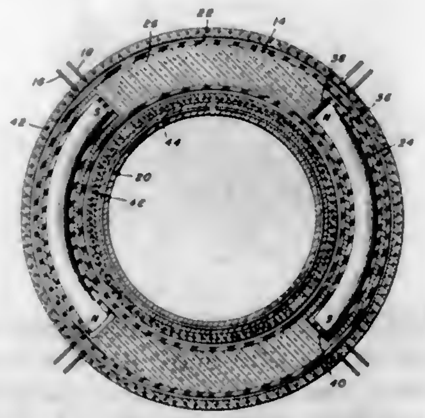
**Gregory Grosbard, El Paso, Tex., assignor of fifteen and one-fourth percent each to Francis R. Salazar and Max Brooks, both of Denver, Colo., and two and one-half percent to Texas S. Ward, El Paso, Tex.**

**Filed June 17, 1966, Ser. No. 558,465**

**Int. Cl. H02k** *17/00*

**U.S. Cl. 310—156** **18 Claims**





An annular rotor is accelerated to or decelerated from rotational movement at a constant speed corresponding to some energy level by an input or withdrawal of electrical energy through electromagnetic coils to thereby convert energy between electrical and kinetic forms. Energy is stored in kinetic form by electromagnetically maintaining the rotor rotating at a substantially constant speed while it is supported or suspended by anti-friction means within a toroidal shell.

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**3,480,812**

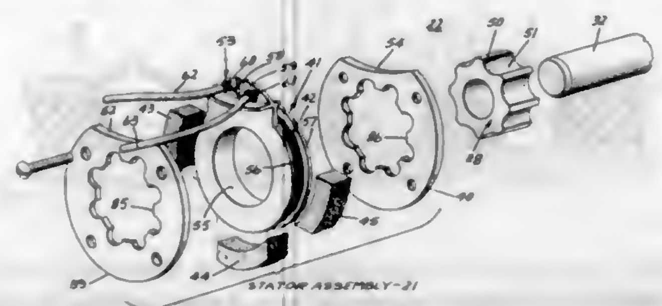
### SIGNAL GENERATING DEVICE FOR USE IN CONJUNCTION WITH A DYNAMOELECTRIC MACHINE AND THE LIKE

**Doran D. Hershberger, Sycamore, Ill., assignor to General Electric Company, a corporation of New York**

**Filed Aug. 17, 1967, Ser. No. 661,277**

**Int. Cl. H02k** *17/44, 21/00*

**U.S. Cl. 310—168** **5 Claims**



A device develops a signal indicative of the angular velocity of a rotating shaft of a machine. The device includes a pair of plate-like stator core members with circumferentially spaced and radially extending teeth that define a rotor-receiving opening, a coil assembly with a bobbin having a coil-receiving opening and a resilient permanent magnet for establishing magnetic flux. The coil assembly and the resilient permanent magnet are sandwiched between the stator core members, the stator assembly being attached to the machine so that a toothed rotor carried on the rotating shaft is positioned within the rotor-receiving openings of the stator core members and the coil assembly. Rotation of the rotor relative to the fixed stator core members introduces a variable magnetic reluctance into the magnetic flux path thereby to produce an alternating current signal in said pickup coil having an amplitude and frequency that varies with the angular velocity of the shaft.

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**3,480,813**

### ADJUSTABLE BRUSH HOLDER ASSEMBLY FOR COMMUTATOR OF ELECTRIC MOTORS

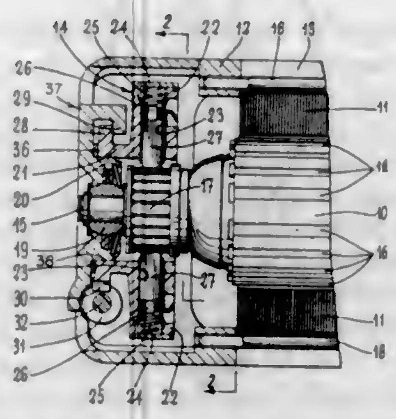
**Pietro Sillano, Pavia, Italy, assignor to Necchi Societa per Azioni, Pavia, Italy**

**Filed Oct. 19, 1967, Ser. No. 676,524**

**Claims priority, application Italy, Feb. 6, 1967, 32,401/67**

**Int. Cl. H02k** *13/00*; **H01r** *39/44*

**U.S. Cl. 310—241** **2 Claims**



An angularly adjustable brush holder assembly for electric motors comprising a rotatable brush holder housing which includes a circular worm wheel segment which engages a worm shaft which in turn is rotatably mounted on the motor frame, whereby rotation of the worm shaft effects an angular displacement of the brush holder housing.

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**3,480,814**

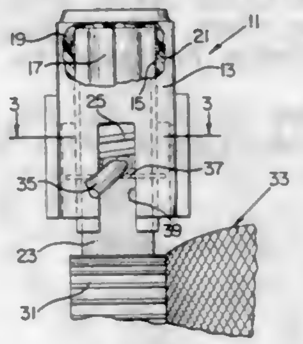
### BRUSH HOLDER ASSEMBLY WITH INSERT

**Carl J. Amrein, Baltimore, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland**

**Filed June 3, 1968, Ser. No. 733,863**

**Int. Cl. H02k** *5/14*

**U.S. Cl. 310—247** **6 Claims**



The device disclosed herein is a brush holder assembly for use in an electric motor. The assembly includes a hollow insulating body having a rigidifying, hollow metallic insert positioned therein. A carbon brush is slidable within the insert and is biased by a compressive spring outwardly of one end of the insert and into engagement with a commutator. An electric lead terminal is slidable within the insert and is held in electrical contact with the brush by the spring while being prevented by means on the insert from withdrawing therefrom.

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**3,480,815**

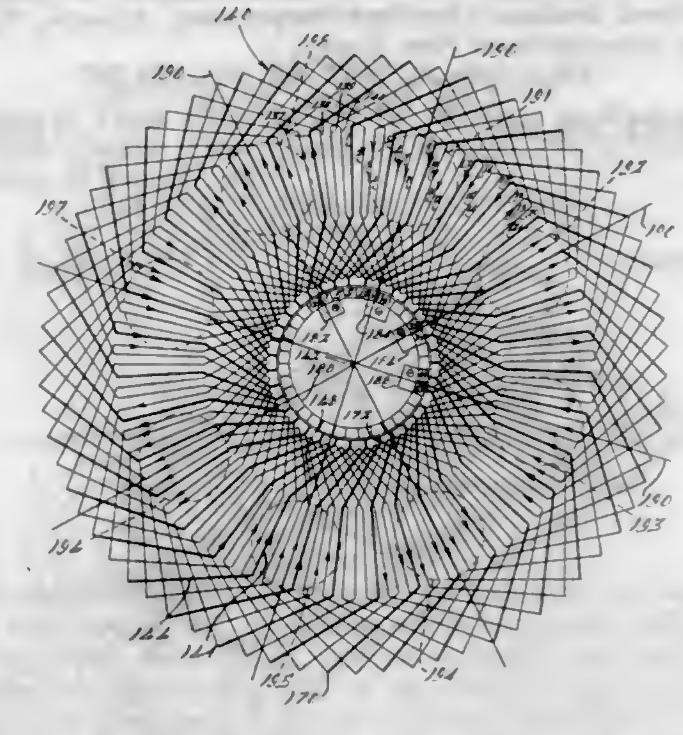
### MOTOR WITH MULTIPLEX WAVE WOUND DISC ARMATURE

**Theodore F. Knapp, Farmington, Mich., assignor, by mesne assignments, to Dura Corporation, a wholly-owned subsidiary of Walter Kidde & Company, Inc., Oak Park, Mich., a corporation of New York**

**Filed Dec. 27, 1965, Ser. No. 516,565**

**Int. Cl. H02k** *1/22*

**U.S. Cl. 310—268** **6 Claims**



An axial air gap motor with P-M stator and disc armature having at least four layers (equivalent to two windings) of radially extending conductor segments. The disc outer periphery is provided with end portion connectors between pairs of outer layer conductor segments and inner layer conductors segments, and the disc inner periphery is provided with end portion connectors between pairs of outer layer conductor segments and inner layer conductor segments, the connectors and segments providing at least one closed current path. The winding may be multiplex, e.g., duplex or triplex wave, progressive or retrogressive, singly or multiply reentrant. Axially extending commutator brushes directly engage central active portions of the segments of one outside layer.

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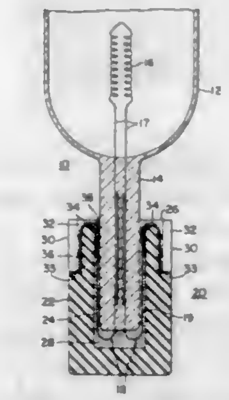
### 3,480,816
### QUARTZ LAMP BASE AND SOCKET

**Bernard R. Fallon, Clark, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Apr. 25, 1967, Ser. No. 633,531**

**Int. Cl. H01j** *5/48, 5/50*

**U.S. Cl. 313—51** **3 Claims**



A novel lamp base and socket is particularly adaptable to projection lamps because accurate orientation of the lamp filament is effected. A large, positive area for electrical contact is provided by flat recessed base conductors. Socket spring conductors effect electrical contact and also act in conjunction with recessed base surfaces to retain the base in position.

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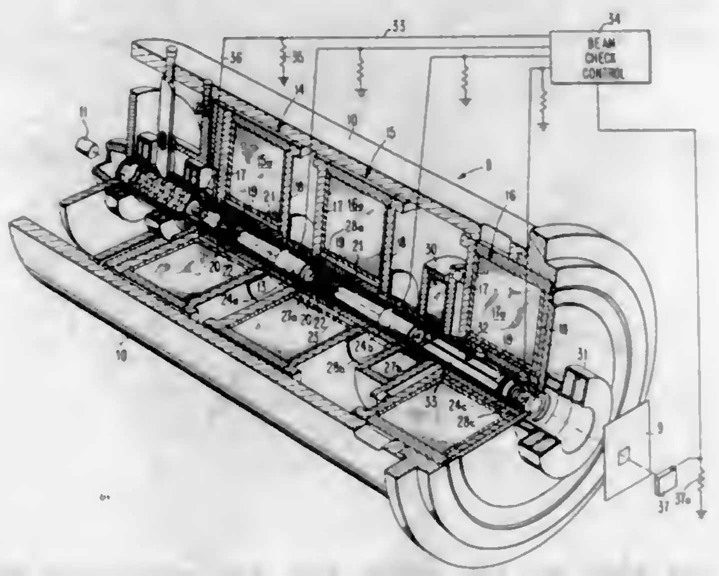
### 3,480,817
### APERTURE ASSEMBLY FOR ELECTRON BEAM DEVICE

**Karl H. Loeffler, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**

**Filed June 30, 1967, Ser. No. 650,397**

**Int. Cl. H01j** *29/46*

**U.S. Cl. 313—82** **7 Claims**



An electron beam generating device utilizing heated aperture plates in a removable heated aperture assembly and incorporating a beam-sensing system for detecting the beam condition by sensing beam current flow from each of the electrically isolated aperture plates.

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### 3,480,818
### ELECTRICAL MONOGRAIN LAYERS HAVING A RADIATION PERMEABLE ELECTRODE

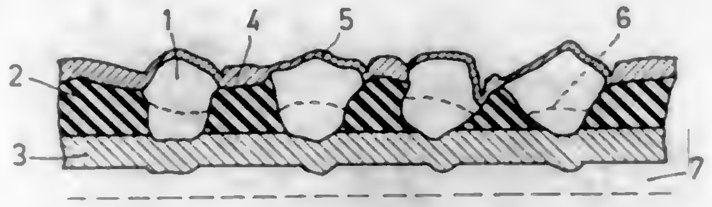
**Ties Siebolt te Velde, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware**

**Filed Aug. 1, 1966, Ser. No. 569,204**

**Claims priority, application Netherlands, Aug. 4, 1965, 6510095**

**Int. Cl. H01j** *39/04, 13/28, 17/24*

**U.S. Cl. 313—94** **12 Claims**



An electrical device comprising a layer of electrically active grains substantially one grain thick provided with electrodes, of which one of the electrodes which is intended to permit radiation to pass through it to the grains or radiation from the grains through it to the outside includes first regions located over the spaces between the grains and second regions located over the grains. The first regions have high electrical conduction but low permeability to the radiation, whereas the second regions have lower electrical conduction but higher radiation permeability. In one embodiment, the second regions located over the grains are thinner than the first regions located over the grain spaces.

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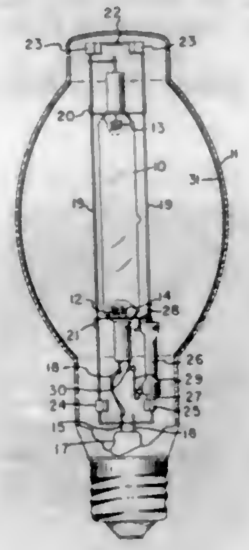
### 3,480,819
### PHOSPHOR COATED HIGH PRESSURE ELECTRIC DISCHARGE DEVICE

**Sixdeniel Faria and Emil J. Mehalchick, Towanda, Pa., assignors to Sylvania Electric Products, Inc., a corporation of Delaware**

**Filed Nov. 22, 1967, Ser. No. 685,139**

**Int. Cl. H01j** *1/62, 63/04*

**U.S. Cl. 313—109** **9 Claims**



A high pressure electric discharge device having a coating of terbium doped, europium activated yttrium vanadate phosphor disposed upon the inner surface of the outer bulbous envelope. The coating improves the red rendition of the device.

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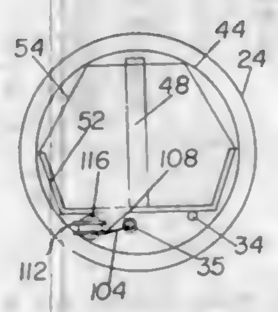
### 3,480,820
### INDICATOR TUBE HAVING AUXILIARY ELECTRODES FOR MAINTAINING CATHODE GLOW

**Richard B. Fehnel, Basking Ridge, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**

**Filed Sept. 8, 1967, Ser. No. 668,740**

**Int. Cl. H01j** *7/42;* **H01k** *1/60*

**U.S. Cl. 313—109.5** **1 Claim**



The disclosure is of an indicator tube having a plurality of glow cathodes in a gas-filled envelope and including an auxiliary electrode arrangement for facilitating ionization of the gas and producing cathode glow.

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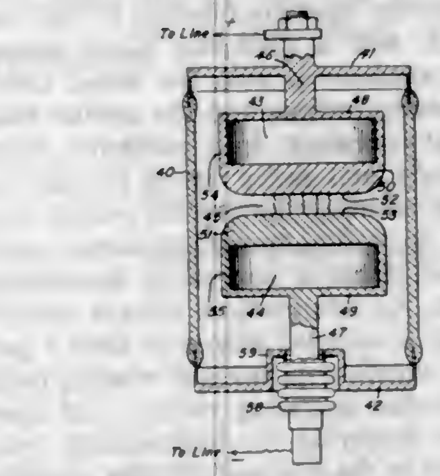
### 3,480,821
### STABILIZED VACUUM GAP DEVICE WITH ELEMENTARY ELECTRODE STRUCTURE

**Joseph A. Rich, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**

**Filed Dec. 18, 1967, Ser. No. 691,468**

**Int. Cl. H01j** *1/02, 21/22, 35/28*

**U.S. Cl. 313—148** **8 Claims**



Vacuum arc devices having a pair of oppositely-disposed arc electrodes of elementary configuration defining a single breakdown gap therebetween are stabilized by forming the electrodes in a hollow structure so that current is peripherally fed to the arcing faces. Due to the peripheral feed of current, the magnetic field in the interelectrode gap due to currents within the electrode interacts with the arc current to produce an inwardly-directed force upon the arc discharge so that the arc is stabilized and controllable. The arc may be kept diffused, covering the entire arcing surface of the electrodes or may be caused to be constricted at the central portion of the electrodes, an important controlling factor being the distance between the arcing surface and the rear surface of each arc-electrode member.

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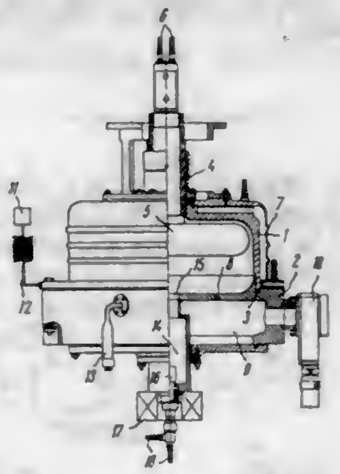
### 3,480,822
### METHOD OF RECTIFYING HEAVY HIGH-VOLTAGE CURRENTS AND A DEVICE FOR REALIZATION THEREOF

**Alexandr Ivanovich Nastjukha, Ulitsa oktyabrskogo Polya 11, kv. 15; Evgeny Alexandrovich Koltypin, Ulitsa Maximova 6, kv. 88; and Pavel Alexandrovich Smirnov, Tikhvinsky per. 9, kv. 9; all of Moscow, U.S.S.R.**

**Filed Feb. 28, 1967, Ser. No. 619,427**

**Int. Cl. H01j** *1/50, 3/20, 23/10*

**U.S. Cl. 313—161** **6 Claims**



A gas-discharge valve for rectifying heavy high-voltage currents, comprising a cold hollow solid-state cathode operating in arc discharge duty characterized by a low voltage of the discharge. The arc gas-discharge valve is essentially fashioned as an enclosed hermetically-sealed metal chamber having an insulated anode inserted thereinside. The anode and cathode form a gas-discharge gap in which there is created a pressure "$p$" (mm. Hg) satisfying the condition $ap<3$ cm. mm. Hg, where "$a$" is a dimension determining the size of the cathode cavity, and the product of the pressure by the distance "$d$" between the anode and the bottom of the cathode cavity is less than $pd_{\min}$ corresponding to the left-hand branch of Paschen's curve ($pd<pd_{\min}$). When cut in an A.C. circuit having a low load resistance, this device provides for rectification of alternating currents. To start the arc valve at a preset moment of time, when it is cut into pulse circuits, the valve is provided with a firing arrangement.

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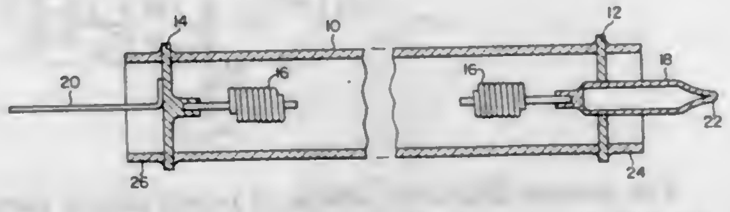
### 3,480,823
### SEALED DISCHARGE DEVICE

**Cheng-Lin Chen, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Aug. 12, 1966, Ser. No. 572,056**

**Int. Cl. H01j** *5/20*

**U.S. Cl. 313—317** **5 Claims**

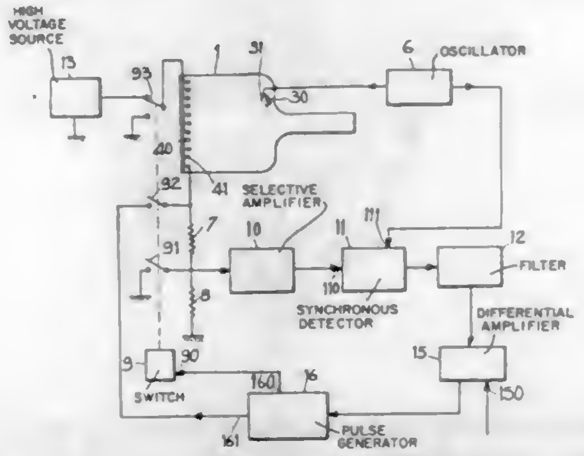


A sealed discharge device including a ceramic envelope and refractory metal or alumina closure members sealing off the open ends of the ceramic envelope and having electrodes adjacent the ends of the envelope electrically connected through the closure members. The sealed discharge device further comprising a sealing composition hermetically bonding the closure members to the ceramic envelope, which sealing composition principally comprises from about 55 to 75% by weight of $Al_2O_3$ and from about

25 to 45% by weight of at least one material selected from the group consisting of BeO, BaO, CaO and SrO.

### 3,480,824
### CONTROL DEVICES FOR DIRECT-VIEWING MEMORY TUBES

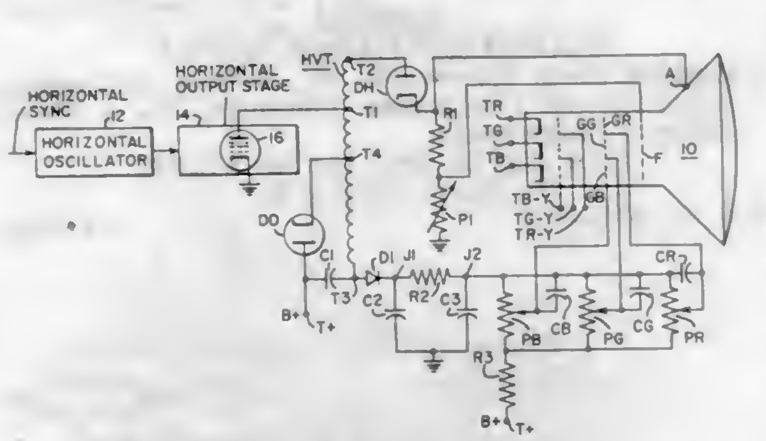
**Pierre Faberes and Georges Ribadier, Paris, France, assignors to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France**
**Filed Sept. 26, 1967, Ser. No. 670,668**
**Claims priority, application France, Oct. 4, 1966, 78,677**
**Int. Cl. H01j** *29/46, 29/56*
**U.S. Cl. 315—12** **4 Claims**



In a direct-viewing memory tube, the holding beam is modulated by a periodic signal; as a consequence an amplitude modulated wave at the frequency of this signal appears in the current of each of the electrodes of the secondary optical system. The amplitude detection of any one of those waves supplies a signal representative of the state of the storage layer.

### 3,480,825
### DETECTED BOOST VOLTAGE SUPPLY

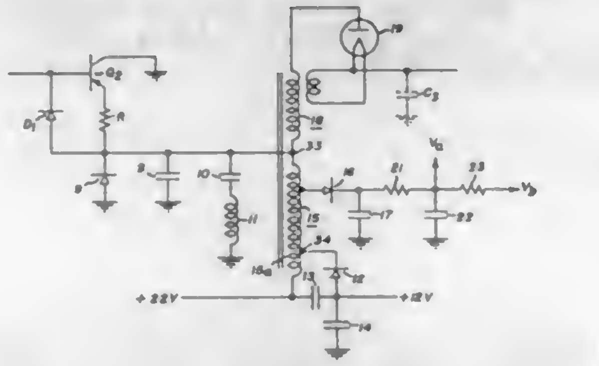
**Richard G. Popovich, Middletown, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Oct. 9, 1967, Ser. No. 673,674**
**Int. Cl. H01j** *29/70*
**U.S. Cl. 315—22** **7 Claims**



The present disclosure relates to power supply circuitry for developing a detected boost operating voltage for use in color television receiver. The operating voltage is derived by peak detecting, via a rectifying device and a capacitor, a voltage waveform appearing at the low voltage end of or at a tap point on the high voltage transformer, with the detected operating voltage appearing across the capacitor which has one end grounded. The detected voltage is filtered and may then be applied to the screen grid electrodes of color picture tube of the receiver.

### 3,480,826
### TELEVISION RECEIVER HORIZONTAL SWEEP CIRCUIT HAVING PROTECTION AGAINST ARCING

**Sabbas N. Xenakis, Portsmouth, Va., assignor to General Electric Company, a corporation of New York**
**Filed Oct. 25, 1968, Ser. No. 770,621**
**Int. Cl. H01j** *29/70*
**U.S. Cl. 315—27** **10 Claims**

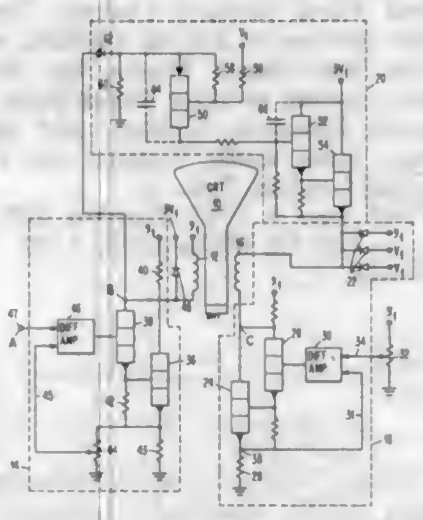


A horizontal sweep circuit for a television receiver is described which includes a high voltage transformer for developing a horizontal sweep current for supply to the horizontal deflection coils of a television receiver, cathode ray picture tube. The high voltage transformer comprises a primary winding that is supplied from a source of energizing potential under the control of a horizontal output transistor, and is inductively coupled to a high voltage tertiary winding. The high voltage tertiary winding is connected to a high voltage rectifier that serves to develop a high voltage direct current for application to the second anode of the cathode ray television picture tube. A protective circuit is provided for protecting the horizontal output transistor from overcurrent and overvoltage conditions that otherwise might be induced by transient arcing in the cathode ray picture tube and/or the high voltage rectifier. The protective circuit is comprised by a sensing resistor connected in series circuit relationship with the emitter-collector of the horizontal output transistor, and a clamping diode connected in parallel circuit relationship with the series circuit comprised by the sensing resistor and the emitter-base of the horizontal output transistor. In a preferred form of the invention, the horizontal sweep circuit further includes a horizontal buffer amplifier having its output coupled to and driving the horizontal output transistor, and having its input supplied from a source of horizontal sweep frequency signals. An intermediate voltage rectifying and smoothing circuit is coupled across at least a portion of the high voltage transformer primary winding for deriving an intermediate value operating voltage, and connections are provided for supplying the intermediate value operating voltage back to the horizontal buffer amplifier as an energizing potential to thereby provide adequate output drive for the horizontal output transistor.

### 3,480,827
### FLYBACK IN DOUBLE-YOKE-DRIVE CATHODE RAY TUBES

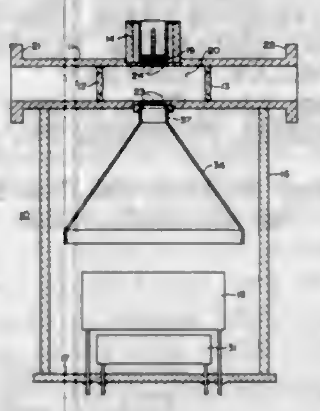
**Nelson K. Arter, Lafayette, and Van C. Martin, Boulder, Colo., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Jan. 14, 1969, Ser. No. 791,051**
**Int. Cl. H01j** *29/70*
**U.S. Cl. 315—27** **8 Claims**

Cathode ray tubes, which have a double-yoke drive in each dimension, inherently contain a flyback problem. In double-yoke drive, one yoke is used as a reference bias, which remains unchanged, while the other yoke contains the normal ramp signal with a flyback signal. During the flyback, the field in the ramp yoke rapidly decreases, which induces a large voltage in the bias yoke via a transformer type action. As a result, this large voltage pulse in the bias yoke can saturate the bias driver circuits. This problem is alleviated herein by use of an additional driver circuit interconnecting the ramp driver and the bias driver, whereby the voltage spike produced on the ramp yoke is passed through circuitry to drive the bias yoke in a direction to compensate for the pulse being induced in the bias yoke. In addition, the interconnecting pedestal driver contains noise thresholding circuitry so as to prevent small noise pulses from initiating operation of the pedestal driver, and, thus, distorting the bias on the bias yoke.



### 3,480,828
### THYRATRON WAVEGUIDE SWITCH WITH DENSITY ENHANCEMENT FOR OPERATION IN 27 TO 40 gHz. RANGE

**Harry Goldie, Randallstown, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Feb. 13, 1967, Ser. No. 615,506**
**Int. Cl. H01j** *19/80, 7/46*
**U.S. Cl. 315—39** **6 Claims**

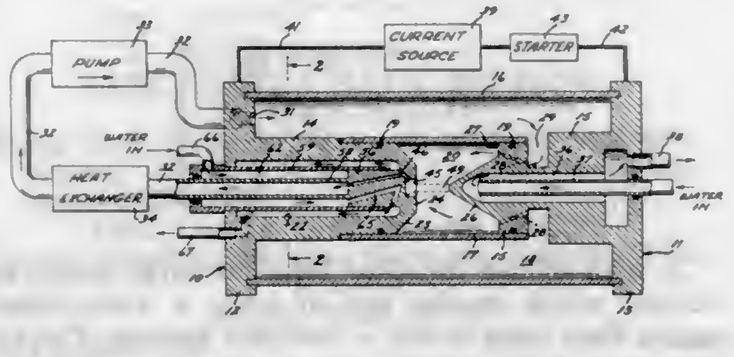


A thyratron waveguide switch having a frusto-conical shaped shield between the cathode and anode to concentrate the electrons into a very high density electron stream capable of producing a plasma barrier which is an effective reflective attenuator of microwaves without requiring excessive input power to the switch.

In applicant's copending patent application Ser. No. 383,639, filed July 20, 1964, there is described a thyratron waveguide switch, sometimes also called a triggered waveguide switch, and also known as a TWS, which is a thyratron type gaseous triode device in which a section of a perforated waveguide, adapted to be incorporated into a waveguide transmission line for propagating electromagnetic waveguide energy, is sealed into an envelope which encloses the cathode and anode of the triode. The perforated waveguide section also serves the additional function of the control electrode. The perforated waveguide section is provided with pressure windows which seal the waveguide on either side of the envelope to complete the gas retaining enclosure for all of the electrodes. When a suitable bias is applied between the cathode and the control electrode to cause the triode to conduct the electron current from the cathode to the anode through the perforated walls of the waveguide section develops a plasma across the waveguide in a region between the two pressure windows in the waveguide and serves as an RF barrier which can be alternately switched on and off by controlling the conduction of the gaseous triode.

### 3,480,829
### ELECTRIC ARC LIGHT SOURCE AND METHOD

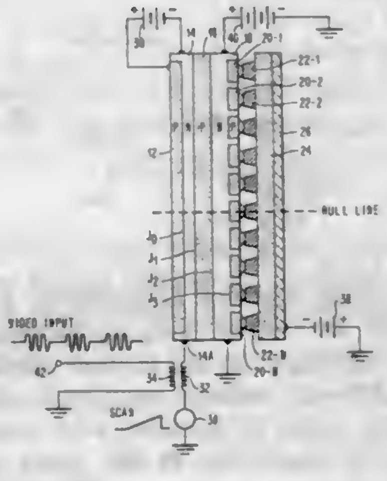
**Delbert G. Van Ornum, Newport Beach, Calif., assignor to Geotel Inc., a corporation of Delaware**
**Filed Mar. 8, 1965, Ser. No. 437,963**
**Int. Cl. H01j** *7/24;* **H05b** *31/26*
**U.S. Cl. 315—111** **17 Claims**



A vortex-stabilized radiation source wherein one of the electrodes has a recess therein, the recess having a generally radial bottom wall which forms the arcing surface of the recessed electrode. Means are provided to drain gas from the peripheral region of the recess.

### 3,480,830
### MULTI-LAYER PN JUNCTION SEMICONDUCTIVE FLYING SPOT GENERATOR

**John W. Horton, Boston, Mass., and Robert J. Lynch, Endicott, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Jan. 13, 1967, Ser. No. 609,141**
**Int. Cl. H05b** *37/00, 39/00, 41/00*
**U.S. Cl. 315—169** **2 Claims**



A multi-layer semiconductive device with an electroluminescent overlay produces a flying spot generator when one of the layers is provided with a potential gradient and another layer is provided with a ramp sweep voltage to establish a moving null-line which divides the device into a conductive volume and a non-conductive volume. An AC modulant causes the null-line to oscillate to excite the electro-luminescent layer in accordance with the amplitude of the modulant.

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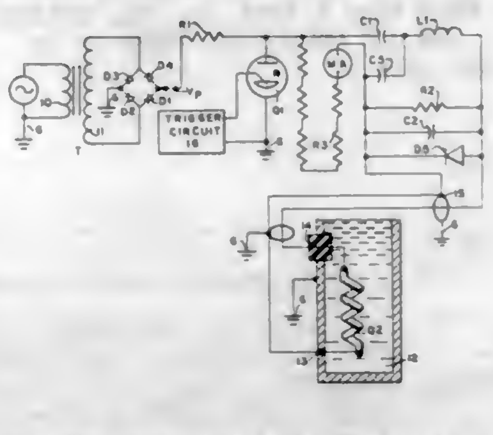
### 3,480,831
## ELECTRONIC IGNITION CIRCUIT FOR FLASH LAMPS

**Ralph F. Wuerker, Palos Verdes Estates, and Robert A. Briones, Granada Hills, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio**
**Filed May 22, 1967, Ser. No. 639,988**
**Int. Cl. H05b** *41/14*
**U.S. Cl. 315—241 9 Claims**



A high-voltage capacitor bank discharge circuit is described which enables one to ignite a water-immersed xenon flash lamp within a grounded housing. The circuit is comprised of an energy storage capacitor which is connected by means of a control rectifier to a low-resistance charging circuit for charging and to a resonating discharge circuit for igniting the flash lamp.

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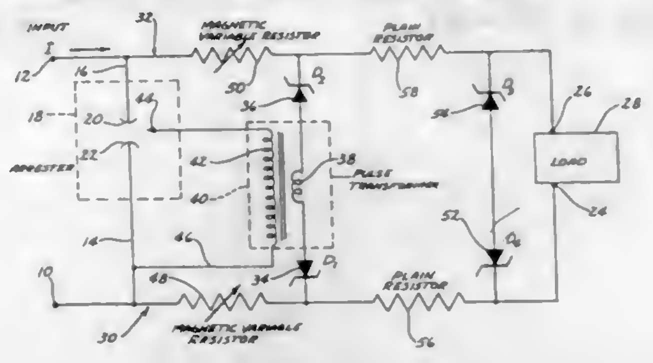
### 3,480,832
## ELECTRICAL SURGE ARRESTOR

**Herman R. Person, Columbus, Nebr., assignor to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska**
**Filed Nov. 14, 1966, Ser. No. 593,998**
**Int. Cl. H02h** *3/08*
**U.S. Cl. 317—16 9 Claims**



An electrical surge arrestor comprising, a circuit having an input and an output with an arrestor connected across the input having first and second spaced apart terminals. A breakdown voltage regulator diode is connected across the input in parallel with the arrestor. A variable resistor is connected to the input of the diode and has a low resistance at low current frequencies and a high resistance at high current frequencies. Separate leads connect the terminals of the arrestor to the input and output and a pulse transformer is provided between a third terminal and one of the leads and has a primary winding connected in series with the diode.

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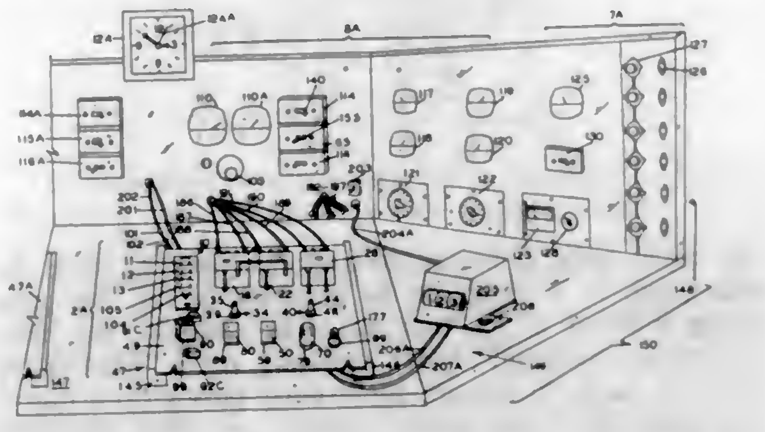
### 3,480,833
## POLYPHASE SYSTEM PROTECTIVE RELAY ASSEMBLY AND CALIBRATING APPARATUS THEREFOR

**Melvin Oland Allen, Randall County, Tex., assignor of twenty-four percent to Joe H. Gidden, nine percent to West Texas State Bank, Trustee for Howard Eugene Gidden, ten percent to West Texas State Bank, Trustee for Maureen Elizabeth Gidden, and nine percent to West Texas State Bank, Trustee for David William Gidden, all of Canyon, Tex.**
**Filed Aug. 9, 1967, Ser. No. 659,413**
**Int. Cl. H02h** *5/00, 3/00*
**U.S. Cl. 317—22 8 Claims**



A protective apparatus comprising a plurality of coacting and rapidly acting thermal delay and electromagnetic relay circuits sensitive to small voltage increments in each phase of a polyphase system and acting to disconnect polyphase actuated apparatus from under voltage conditions therein and providing for reconnection of the apparatus to the system after a predetermined time from correction of the abnormal condition. Also, the method of and apparatus for testing the completed protective apparatus, its subassemblies and its components.

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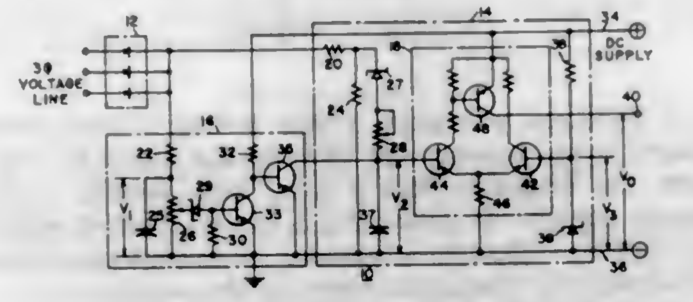
### 3,480,834
## MINIATURE OVERVOLTAGE PROTECTION CIRCUIT HAVING SEPARATE VOLTAGE SENSING AND TIME DELAY CIRCUITS

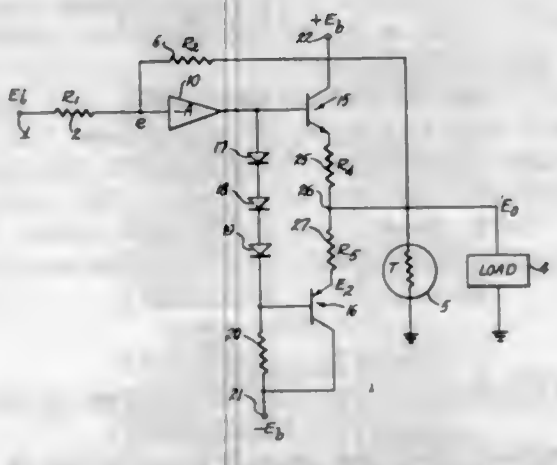
**William W. Billings, Lima, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Sept. 19, 1966, Ser. No. 580,517**
**Int. Cl. H02h** *3/28*
**U.S. Cl. 317—31 1 Claim**



A solid state circuit arrangement for sensing an overvoltage condition comprising a sensing circuit and a time delay circuit, the voltage to be sensed being applied directly and simultaneously to said circuits, said circuits being connected together in a manner to effect independent adjustment and calibration for improved circuit flexibility and adaptation.

### 3,480,835
## THERMAL RMS LIMITER AND SEMICONDUCTOR DRIVING CIRCUIT MEANS

**Peter L. Richman, Lexington, Mass., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware**
**Filed Mar. 10, 1967, Ser. No. 622,251**
**Int. Cl. H02h** *5/04*
**U.S. Cl. 317—41 5 Claims**



A negative temperature coefficient resistor with a fast response is connected in parallel with a power sensitive load. Electrical signals to be delivered to the load are provided through a high gain amplifier having a low resistance output circuit of a type which has an accurately predetermined non-feedback resistance. A feedback resistor is connected between the load and a junction between an input resistor and the input terminal of the high gain amplifier. A typical load with which this circuit can be used is an RMS thermal converter.

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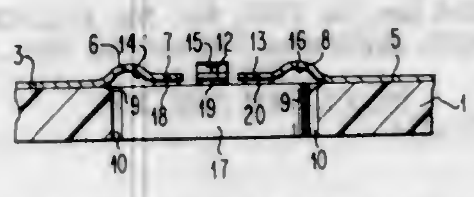
### 3,480,836
## COMPONENT MOUNTED IN A PRINTED CIRCUIT

**Jesse Aronstein, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Aug. 11, 1966, Ser. No. 571,812**
**Int. Cl. H05k** *1/10*
**U.S. Cl. 317—100 10 Claims**



A mounting configuration for electrical components in which the components are mounted in preformed holes provided in a circuit board which is designed to include conductor leads having projecting tabs overlying the holes. The projecting tabs have an end portion concavely bent out of the plane of the board, and the distal portion of the tab is soldered or welded to a terminal of the component mounted in the hole. Such a formed tab permits thermal expansion strains and mechanical strains to be taken up in its bent portion.

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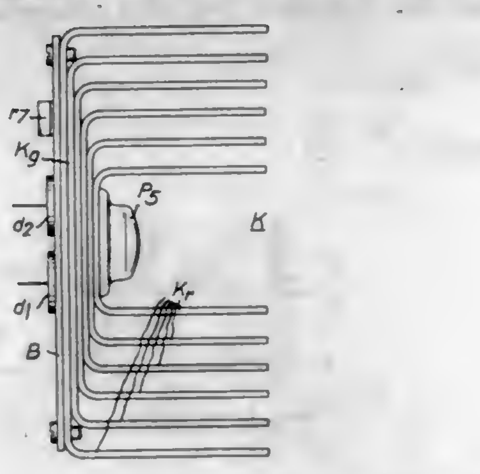
### 3,480,837
## SEMICONDUCTOR CIRCUIT ASSEMBLY

**Hans-Helmut Feldmann, Neu-Isenburg, Germany, assignor to Licentia Patent-Verwaltungs G.m.b.H., Frankfurt am Main, Germany**
**Filed Aug. 8, 1967, Ser. No. 659,070**
**Int. Cl. H02b** *1/02, 1/04, 9/00*
**U.S. Cl. 317—100 17 Claims**

A semiconductor circuit assembly in which a heat-conductive material is positioned between a plurality of semiconductor devices and a plurality of load resistors therefor to simultaneously cool the semiconductor devices and their load resistors. The resistors are formed by relatively thin layers of conductive material on an electrical insulator element which is attached to the side of the heat-conductive material opposite the semiconductor devices. The conductors for connecting the semiconductor devices to the resistors may pass through bores in the heat-conductive material and in the insulator element. In one embodiment, the heat-conductive material includes a plurality of heat-conductive plates which are joined together in their centers and bent at their edges to form a plurality of spaced, substantially parallel radiator fins.



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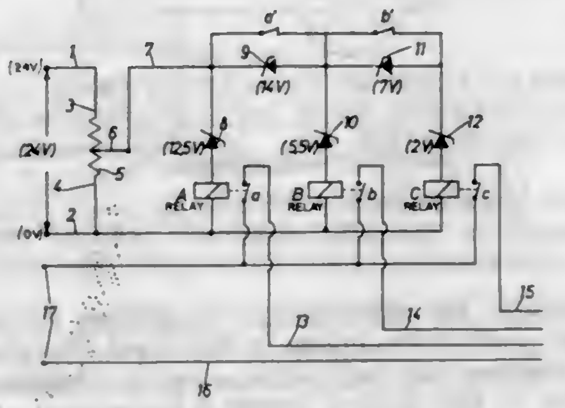
### 3,480,838
## ELECTROPNEUMATIC BRAKING CONTROL SYSTEM

**Franz Meir, Weilheim, Germany, assignor to Knorr-Bremse, Munich, Germany, a limited-liability corporation**
**Filed Aug. 28, 1967, Ser. No. 663,703**
**Claims priority, application Germany, Aug. 31, 1966, K 6,014**
**Int. Cl. H01h** *47/32*
**U.S. Cl. 317—137 3 Claims**



A control system having a potentiometer with a constant voltage difference between its end terminals and having a movable contact connected to one of a number of intermediate circuits corresponding in number to the control circuits with each control circuit actuating a brake operator to establish various combinations of brake settings. The intermediate circuits each comprise a relay connected in series with progressively increasing number of Zener diodes and the voltage levels of the diodes decreasing from the movable contact.

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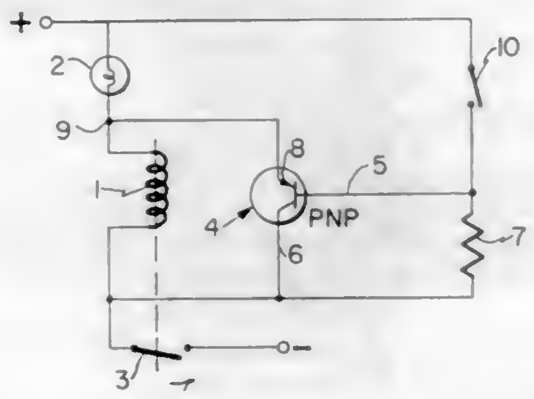
### 3,480,839
## DEVICE FOR DISCOUPLING RELAYS

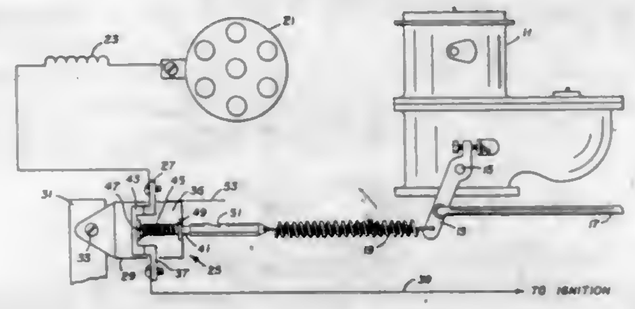
**Carl-Gustav Simon Johansson, Molndal, Sweden, assignor, by mesne assignments, to Aktiebolaget Gylling & Co., Stockholm, Sweden**
**Filed Dec. 8, 1966, Ser. No. 600,236**
**Claims priority, application Sweden, July 1, 1966, 9,002/66**
**Int. Cl. H01h** *47/18*
**U.S. Cl. 317—142 2 Claims**

Means for disconnecting a relay of the self-holding type wherein a current circuit has the relay connected therein, A transistor is connected in parallel with the relay and a resistance controlled by temperature is connected in series with the relay. A resistance controlling the current through the transistor is connected between the base and the collector of the transistor and a switch is connected between the transistor base and one pole of a source of current with a condenser connected in parallel with the switch. A second transistor may be connected between the base and the collector of the first-mentioned transistor with the base of said second transistor connected to the junction point between the resistance controlling the current and the condenser.



### 3,480,840
### IGNITION CUTOFF SWITCH

**Charles J. Stephani, 1185 Pepper Drive,**
**El Cajon, Calif. 92021**
**Filed July 5, 1966, Ser. No. 562,567**
**Int. Cl. H01h** *3/14*
**U.S. Cl. 200—61.90** **5 Claims**

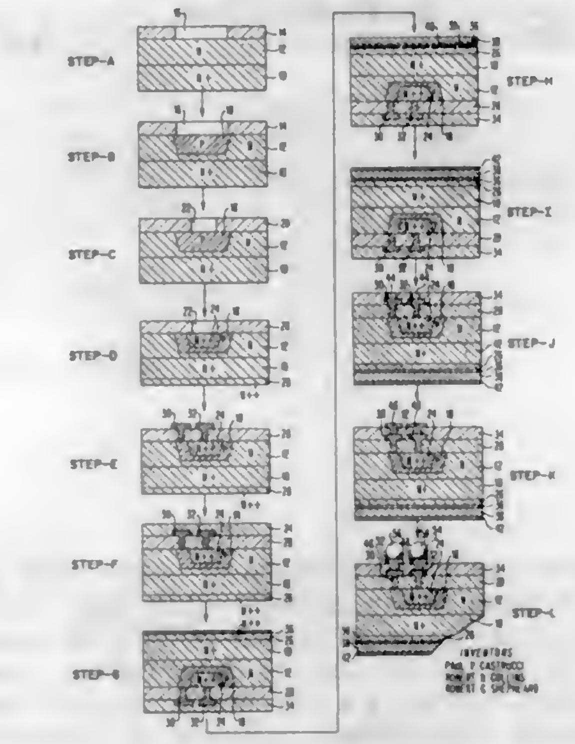


Apparatus for interrupting the ignition circuit of an internal combustion engine in the event that the spring, which opposes the foot pressure on the throttle, breaks. A switch in the ignition circuit is maintained closely by the spring which opposes foot pressure. However, a second spring which is normally overcome by the force of the foot pressure opposing spring, biases the switch to interrupt the ignition circuit when the foot pressure opposing spring breaks.

### 3,480,841
### SOLDERABLE BACKSIDE OHMIC CONTACT METAL SYSTEM FOR SEMICONDUCTOR DEVICES AND FABRICATION PROCESS THEREFOR

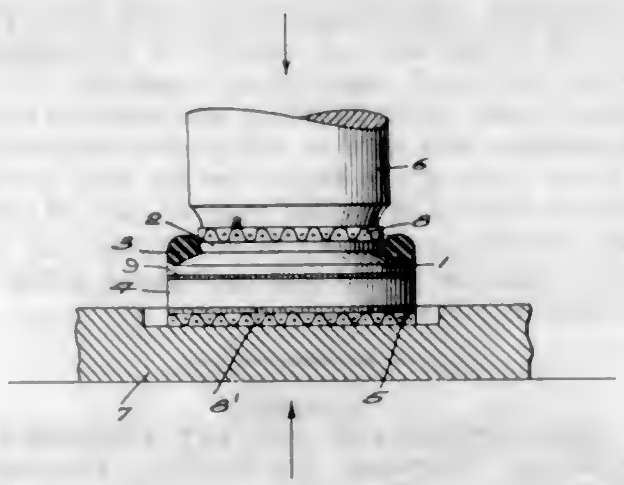
**Paul P. Castrucci and Robert H. Collins, Poughkeepsie, and Robert G. Shepheard, Fishkill, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Jan. 13, 1967, Ser. No. 609,071**
**Int. Cl. H01l** *3/00, 5/00*
**U.S. Cl. 317—234** **25 Claims**

This is an improved solderable backside contact system for providing both a strong mechanical connection between a semiconductor device and a substrate as well as a good ohmic electrical contact to the semiconductor device. The contact system comprises either a two metal film or a three metal film composite structure. The ohmic contact metal for either the two or three metal layer composite structure is selected from the class of metals consisting of Cr, Al, and Ti. The solderable metal film in contact with the ohmic contact metal is selected from one of the class consisting of Cu, CrCu, Ni, and Ag. For the three metal layer, the oxide barrier metal film, in contact with the solderable metal layer, is Au.



### 3,480,842
### SEMICONDUCTOR STRUCTURE DISC HAVING PN JUNCTION WITH IMPROVED HEAT AND ELECTRICAL CONDUCTIVITY AT OUTER LAYER

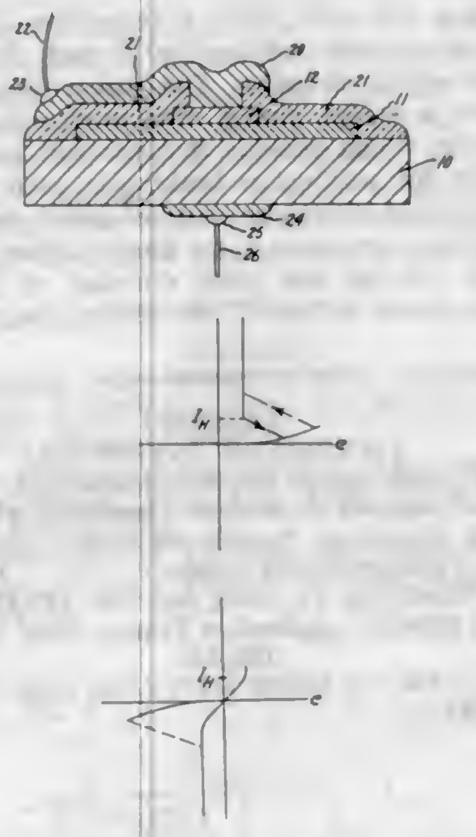
**Otto Scharli, Baden, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint stock company**
**Filed Jan. 24, 1967, Ser. No. 611,332**
**Claims priority, application Switzerland, Mar. 11, 1966, 3,558/66**
**Int. Cl. H01l** *3/00, 5/00*
**U.S. Cl. 317—234** **8 Claims**



Semiconductor structure of the barrier layer type which includes a disc made from crystalline material such as silicon, the disc having established a PN junction therein by application of a doping technique which imparts to the semiconductor structure an asymmetrical current conducting characteristic. A carrier plate such as molybdenum is soldered to one face of the silicon disc and a layer of an alloy containing a doping substance is alloyed onto the opposite face of the disc to establish the PN junction. A perforated sieve-like disc of molybdenum is applied to the outer face of the alloy layer and a similar perforated disc of molybdenum is applied to the outer face of the carrier plate via an intermediate layer of solder. Contact plates having good electrical and heat conductivity characteristics are applied to the opposite faces of the sieve-like molybdenum discs and the whole is then subjected to pressure. The coefficient of thermal expansion of the perforated discs is less than that of the alloy layer and of the solder layer so that the perforated discs are caused to sink into the solder and alloy layers respectively undergoing plastic deformation thus assuring continuous and intimate contact between these elements which imparts good heat and electrical conductivity characteristics to the structure.

### 3,480,843
### THIN-FILM STORAGE DIODE WITH TELLURIUM COUNTERELECTRODE

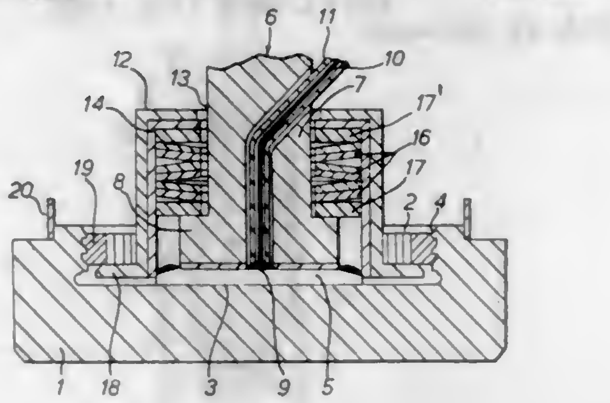
**John R. Richardson, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Apr. 18, 1967, Ser. No. 631,775**
**Int. Cl. H01l** *3/00, 5/00*
**U.S. Cl. 317—234** **12 Claims**



A thin-film diode of stoichiometric gallium arsenide vacuum-deposited on a substrate of polycrystalline molybdenum, with an evaporated counter-electrode of tellurium, exhibits a bistable resistance at zero bias, as well as a negative resistance, when the counterelectrode is contacted either directly by a metal wire or by metal evaporated thereon. Because the stable resistance state of the diode is determined by polarity of applied current when the diode is in its negative resistance state, the diode also exhibits asymmetric characteristics, resulting in a storage capability. Deposition of tellurium directly onto the molybdenum also results in a bistable switching diode with storage capability. To ensure storage, a predetermined current is passed through the newly-fabricated diode, with the counterelectrode at a negative potential with respect to the substrate.

### 3,480,844
### ADJUSTABLE PRESSURE CONTACT SEMICONDUCTOR DEVICES

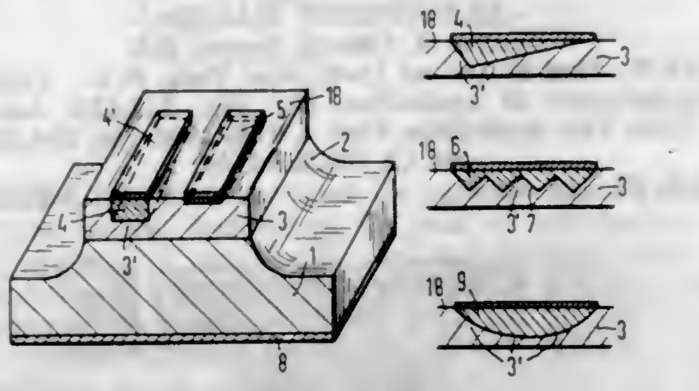
**Colin Bright Lewis, Nettleham, England, assignor to Associated Electrical Industries Limited, London, England, a British company**
**Filed Aug. 22, 1967, Ser. No. 662,518**
**Claims priority, application Great Britain, Nov. 4, 1966, 49,576/66**
**Int. Cl. H01l** *3/00, 5/00, 11/00*
**U.S. Cl. 317—234** **6 Claims**



Semiconductor device in which a semiconductor element having a pair of surface electrodes is held solely by clamping pressure between a pair of conductive members and the element is located in an enclosure formed in part by a conductive base member and in part by a metal cap which is attached to the base member. Spring means are provided to produce the clamping pressure and the spring means act between an elongate conductive member and a part of the metal cap. The cap is attached to the base member in such a way which permits the pressure exerted on the element by the spring means to be adjusted without causing rotation of the cap and therefore of the elongate conductive member.

### 3,480,845
### TRANSISTOR FOR OPERATION IN REGULATING CIRCUITS WITH EMITTER BASE JUNCTION OF SAWTOOTH, CONCAVE, OR WEDGE SHAPE CONFIGURATION

**Hugo Ruchardt, Gauting, and Hans Hargasser and Winfried Meer, Munich, Germany, assignors to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany**
**Continuation of application Ser. No. 497,771, Oct. 19, 1965. This application Feb. 5, 1968, Ser. No. 703,185**
**Claims priority, application Germany, Dec. 1, 1964, S 94,396**
**Int. Cl. H01l** *3/00, 5/02*
**U.S. Cl. 317—234** **6 Claims**



A regulating transistor having a crystalline semiconductor body includes an emitter zone and a base zone and a collector zone, the collector zone having adjacent to the base zone a high resistivity region; and means for injecting charge-carrier non-uniformity from the emitter zone into the base zone, the means comprising a junction between the emitter zone and the base zone extending over the area of charge-carrier injection between the emitter zone and the base zone, the junction having a wedge-shaped, concave-shaped or saw-toothed outline.

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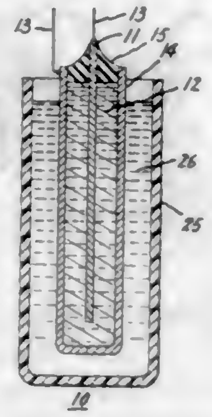
### 3,480,846
### CRYOGENIC CAPACITOR

**Kenneth N. Mathes, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York**
**Filed Apr. 8, 1968, Ser. No. 719,570**
**Int. Cl. H01g** *1/08, 1/00*
**U.S. Cl. 317—243** **7 Claims**



A low temperature capacitor is produced by surrounding a plurality of electrodes with a liquid consisting of 1-nitropropane or a mixture of 1-nitropropane and isopentane and cooling to temperatures below about —100° C., whereby said liquid mixture is frozen or rendered extremely viscous between the electrodes.

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### 3,480,847
### DIELECTRIC CAPACITOR WITH IMPREGNATED PAPER BETWEEN THE ELECTRODES, SAID PAPER CONTAINING CELLULOSIC FIBERS AND AMPHIBOLIC ASBESTOS

**Edgar F. Sewell, West Stockbridge, and William A. Selke, Stockbridge, Mass., assignors to Kimberly-Clark Corporation, a corporation of Delaware**
**No Drawing. Filed May 11, 1966, Ser. No. 549,149**
**Int. Cl. H01g** *3/00;* **D21h** *5/18*
**U.S. Cl. 317—259** **2 Claims**

A dielectric capacitor comprising electrodes with impregnated paper therebetween, said paper containing cellulosic papermaking fibers and amphibolic asbestos selected from among anthophyllite, tremolite, and amosite, as an adsorbent scavanger for ionic constituents in the impregnant. Asbestos may also be part of the paper wrapper for the wound capacitor body.

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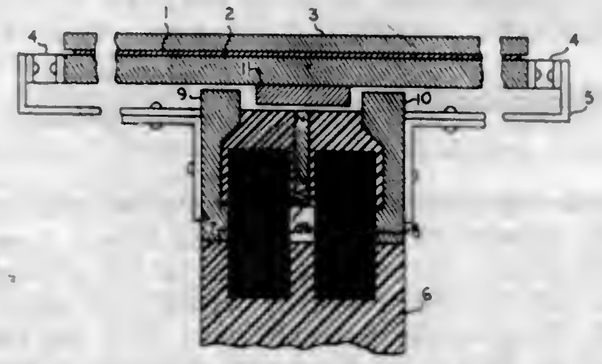
### 3,480,848
### ELECTRONIC RAZOR

**Joseph H. Church, Foster, R.I.**
**(55 W. 42nd St., Room 1545, New York, N.Y. 10036)**
**Continuation of application Ser. No. 518,628, Jan. 4, 1966. This application Mar. 4, 1969, Ser. No. 804,388**
**Int. Cl. H02k** *33/16*
**U.S. Cl. 318—128** **2 Claims**



An electric razor comprising a blade assembly including a cutting blade, a polarizable armature secured to the assembly, a permanent magnet adapted to polarize the armature, and electromagnet means adapted to have its polarity changed in an oscillating fashion whereby it oscillates the armature and blade assembly back and forth over a cutting path.

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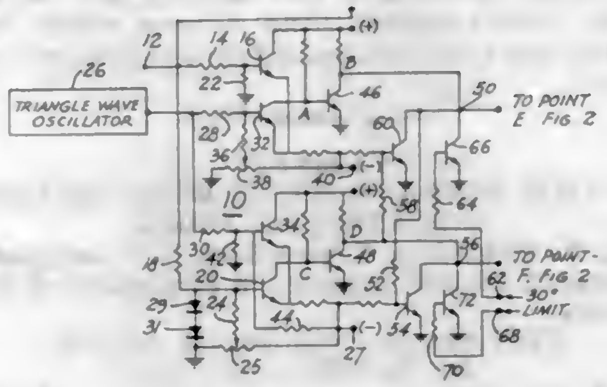
### 3,480,849
### DIRECT CURRENT MOTOR CONTROLLER

**Bernard L. Thornsen, Osceola, Robert S. Henrich, South Bend, and Leo F. Mayer, Bremen, Ind., assignors to The Bendix Corporation, a corporation of Delaware**
**Filed Mar. 30, 1967, Ser. No. 627,093**
**Int. Cl. H02p** *5/16*
**U.S. Cl. 318—257** **8 Claims**



Apparatus for controlling a reversible direct current motor from a single voltage source such that it may be rotated in either direction. The motor winding is connected into a bridge circuit with semiconductor switching elements which provide that the full supply voltage is available for starting or braking in each direction. A time modulation generator receives input signals from a triangular wave generator and a direct current input source to control polarity and pulse duration of the input to the bridge circuit to control the semiconductor switching elements.

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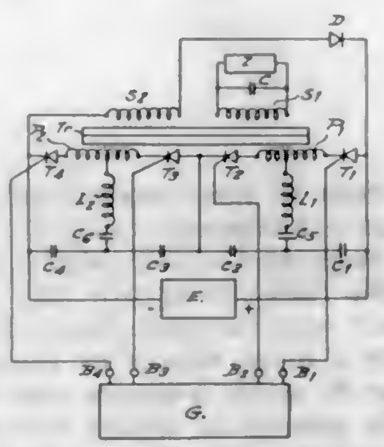
### 3,480,850
### THYRISTOR INVERTER

**Paul L. F. Gaboriaud, Issy-les-Moulineaux, France, assignor of one-half to Societe Alsacienne d'Etudes et de Travaux (Socaltra), Neuilly-sur-Seine, Hauts-de-Seine, France, a corporation of France**
**Filed May 14, 1968, Ser. No. 729,059**
**Claims priority, application France, May 16, 1967, 106,416**
**Int. Cl. H02m** *5/14, 5/16, 5/30*
**U.S. Cl. 321—7** **6 Claims**



A thyristor inverter having *p* stages connected in series with the primary winding of an output transformer. Each stage is supplied from the same direct-current power source by means of a capacitive voltage divider having a division ratio equal to *p*. A drive circuit generates *p* polyphase signals having a frequency *N/p* which are respectively applied to the control electrodes of each stage, said drive signals being successively phase-shifted relative to each other by a quantity equal to 1/*N*.

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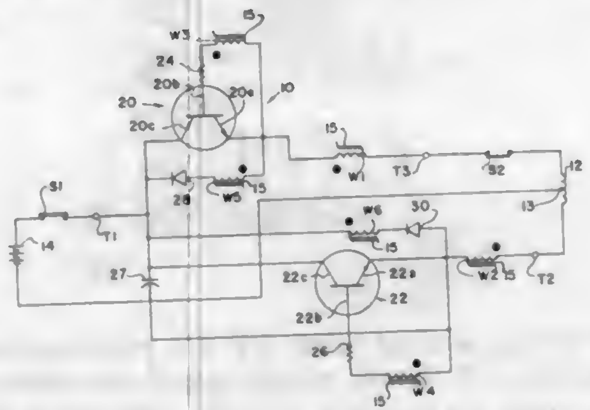
### 3,480,851
### SOLID STATE VIBRATOR

**Henri H. Hoge, Baltimore, Md., assignor to Cambridge Scientific Industries, Cambridge, Md., a corporation of Maryland**
**Filed Nov. 17, 1967, Ser. No. 683,857**
**Int. Cl. H02m** *7/42*
**U.S. Cl. 321—8** **10 Claims**



A solid state vibrator-inverter circuit of the square loop magnetic core type is provided with means for causing the vibrator circuit to be degenerative when an alternating voltage is impressed on its output terminals and therefor nonoperative under these circumstances. In a specific vibrator circuit employing transistors the means comprises an additional winding connected across the collector-to-emitter path of each transistor and wound on the same core as the other vibrator windings. A diode is connected in series with each of the windings to render the windings inoperative during inverter operation.

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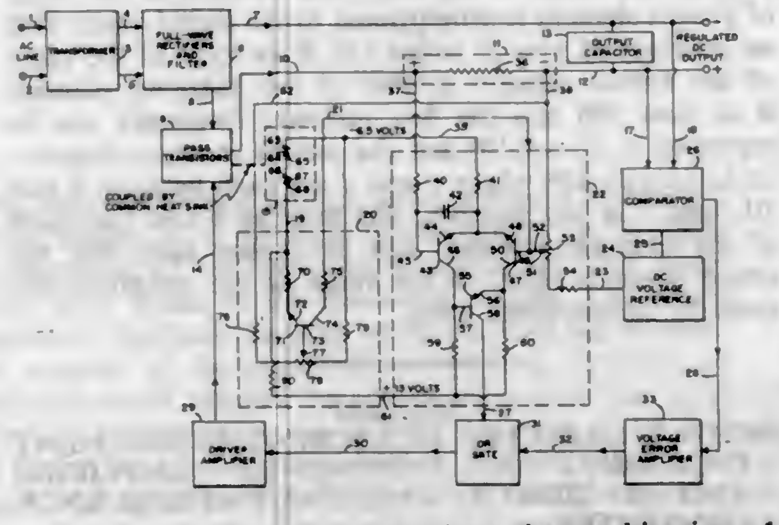
### 3,480,852
### AMBIENT AND COMPONENT TEMPERATURE COMPENSATED VOLTAGE CURRENT REGULATOR

**Han-Min Hung, Cambria Heights, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York**
**Filed Oct. 20, 1967, Ser. No. 676,867**
**Int. Cl. G05f** *1/40, 1/52;* **H02j** *1/04*
**U.S. Cl. 323—4** **5 Claims**



A current limiting circuit monitors the combination of the case temperature of pass transistors or other components and the ambient temperature. When the combination of temperatures exceeds a preset value, the circuit will modify the action of the current limiting circuit or constant current regulator in such a manner as to reduce the current flowing through the pass transistors to a safe operating region, i.e., lower the current limit automatically in situations of high ambient temperature.

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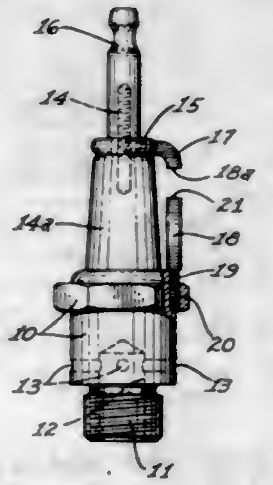
### 3,480,853
### IGNITION SPARK TESTER INCLUDING COMPRESSION RELEASE VENT

**Vernon W. Cloninger, 609 S. 9th, Bozeman, Mont. 59715**
**Filed June 28, 1967, Ser. No. 649,731**
**Int. Cl. G01r** *13/42*
**U.S. Cl. 324—17** **1 Claim**



A spark plug ignition tester comprising a specially constructed spark plug having compression vents in its base and a spark gap on its stem so that the engine may be operated to test the efficiency of the spark at each spark plug hole of the engine.

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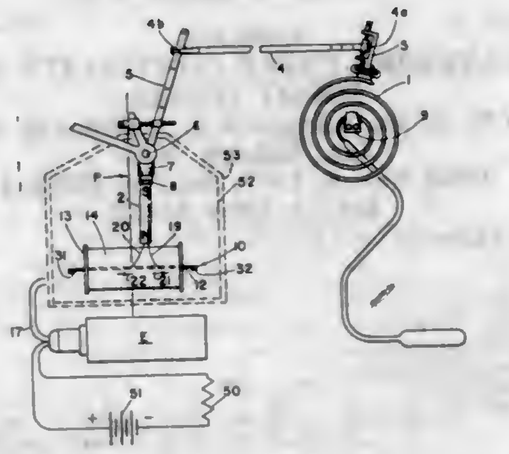
### 3,480,854
### MOVABLE MAGNET MAGNETIC FLUX TRANSDUCERS AND TRANSDUCTION SYSTEMS FOR INDICATING MAGNET POSITION

**Howard R. Jaquith, Rochester, and James L. McCarthy, Chili, N.Y., Nathaniel B. Nichols, Colton, Calif., and Stanley C. Norton, Jr., Spencerport, N.Y., assignors to Sybron Corporation, a corporation of New York**
**Filed Nov. 9, 1964, Ser. No. 409,884**
**Int. Cl. H01f** *21/08*
**U.S. Cl. 324—34** **14 Claims**



A bar magnet is mounted for rotation about an axis normal to and intersecting the axis of polarization of the magnet. A rectangular core the plane of which is parallel to a plane tangent to the arcuate path described by one of the magnet's pole transduces the magnet's angular position to flux induced in core legs parallel to the projection of the arcuate path in the first said plane. This induced flux is sensed electrically by suitable circuitry. The magnet is temperature compensated. The involved flux sensitive structure is shielded magnetically, and houing is provided to mechanically protect the shielding. At the same time, the electrical elements involved are isolated from contact with the external environment, which otherwise has access to the interior of the magnetic shielding, where the means for deflecting the magnet is located in the external environment.

### 3,480,855
### IMAGE DISSECTOR SYSTEM HAVING PATTERN ROTATION MEANS

**Donald E. Lorenzi, Des Plaines, Ill., assignor to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware**
**Filed Apr. 10, 1967, Ser. No. 629,743**
**Int. Cl. G01r** *33/12;* **H01j** *29/70;* **H04n** *5/38*
**U.S. Cl. 324—38** **16 Claims**

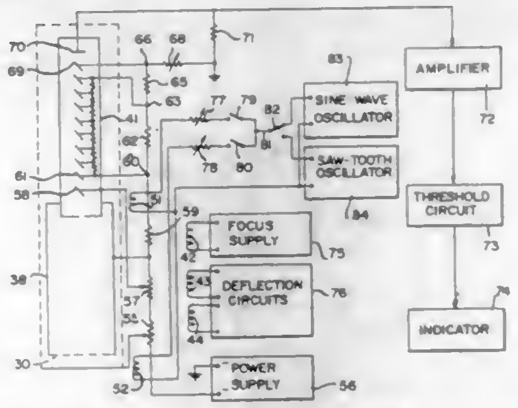
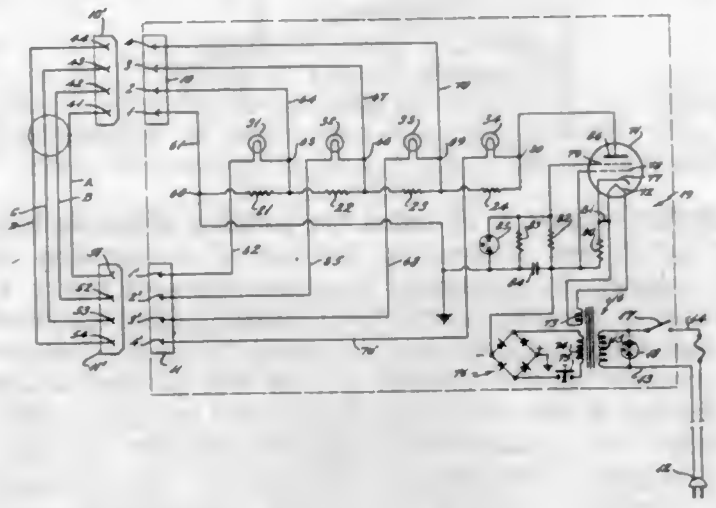


Image dissector system illustrated in use in sensing flaw indications produced on the surface of a part by application of magnetic particles to the surface while magnetizing the part. The system can be used in other applications. An image of the part surface is focused on a photocathode which emits electrons in a pattern corresponding to the image to travel to an aperture in a plane spaced from the cathode plane, an output electrical signal being produced in response to electrons passed through the aperture. During travel from the cathode to the aperture plane, the electron pattern is controllably rotated which may be accomplished magnetically through a coil located either in the cathode plane or the aperture plane, to produce a magnetic field extending radially with respect to the axis of rotation of the pattern. The aperture is preferably a narrow slit extending radially with respect to the axis of rotation and the electron pattern is preferably oscillated about the axis of rotation. The arrangement achieves a high degree of sensitivity to indications while accommodating wide variations in the orientation of the indications.

### 3,480,856
### MULTI-WIRE CABLE CONTINUITY AND SHORT TESTER

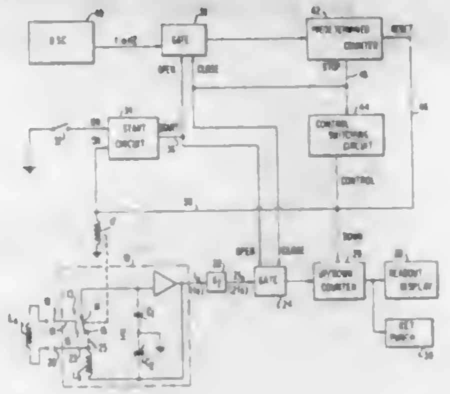
**William W. Scott, Raleigh, N.C., assignor to Aerotron, Inc., Raleigh, N.C.**
**Filed Nov. 6, 1967, Ser. No. 680,631**
**Int. Cl. G01r** *31/02*
**U.S. Cl. 324—51** **3 Claims**



A continuity, short and transposition tester for multi-wire cable has a series loop of resistances, one for each wire, and a series connection of test indicators bridging the loop and each bridging an individual resistor through a wire of the cable.

### 3,480,857
### DIGITAL METHOD AND APPARATUS FOR MEASURING SMALL INDUCTANCES AND CAPACITANCES

**William Frank Bialko, Highland, and Benedict Andrew Boettcher, Fishkill, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Dec. 27, 1967, Ser. No. 693,963**
**Int. Cl. G01r** *27/00, 11/52, 27/26*
**U.S. Cl. 324—57** **10 Claims**

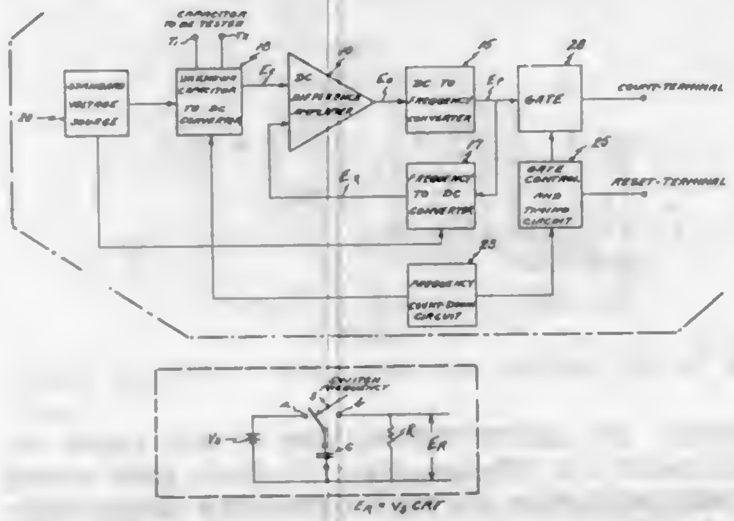


A method and means for quickly measuring the value of an unknown inductance or an unknown capacitance relative to a known inductance or known capacitance, respectively. An LC circuit forms the tank circuit of an oscillator whose output signal at the resonant frequency of the tank circuit is doubled and applied to the input of an up-down counter. The counter counts cycles of the resonant frequency for a time interval fixed by a predetermined counter. At the end of the time interval, the up-down counter has counted up to the number of cycles occurring in the time interval. If it is desired to measure the value of an unknown inductance the unknown inductance is then connected in series with the known inductance in the tank circuit. If it is desired to test the capacitance of an unknown capacitance, the unknown capacitance is connected in parallel with the capacitor of the tank circuit. After the unknown element is connected into the tank circuit, the oscillator output at its new resonant frequency is doubled and applied to the up-down counter which now counts down for the same time interval so that at the end of the time interval the cycle count stored in the up-down counter equals twice the difference between the two resonant frequencies. The ratio of the value of the unknown element to the value of known element is proportional to the stored count with an accuracy of plus or minus 1% if the ratio of the value of the known element to that of the unknown element is at least 100 and the first resonant frequency can be expressed as $(1+c)10^b$ and the second resonant frequency as $(1 \times d)\ 10^b$ where $c$ and $d$ are each between 0 and .01, and $b$ is any number. The number $b$ and the value of the unknown element can be chosen such that the stored count is equal to the value of the unknown element in conventional units.

### 3,480,858
### DIGITAL CAPACITY MEASURING INSTRUMENT INCLUDING A DIFFERENCE AMPLIFIER AND A DIRECT CURRENT-TO-FREQUENCY CONVERTER

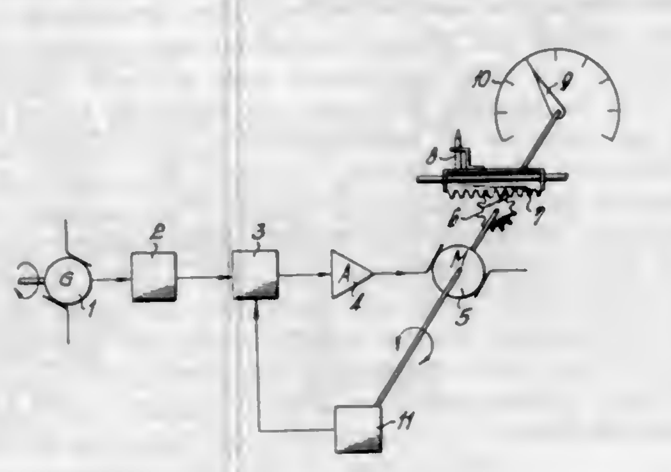
**Robert L. Bauman, Cleveland Heights, and Frederick Rodney Holt, East Cleveland, Ohio, assignors to The Hickok Electric Instrument Company, Cleveland, Ohio, a corporation of Ohio**
**Filed Feb. 21, 1968, Ser. No. 707,083**
**Int. Cl. G01r** *27/26*
**U.S. Cl. 324—60** **10 Claims**

The digital capacitor instrument converts a direct current signal that is proportional to the value of the capacitor under test into a burst of pulses wherein the number of pulses in the burst is precisely equal to the magnitude of the capacitor under test. The pulse burst is applied to a digital counter and display device wherein it is counted and visually displayed.



### 3,480,859
### ELECTRONIC SPEED MEASURING ARRANGEMENT

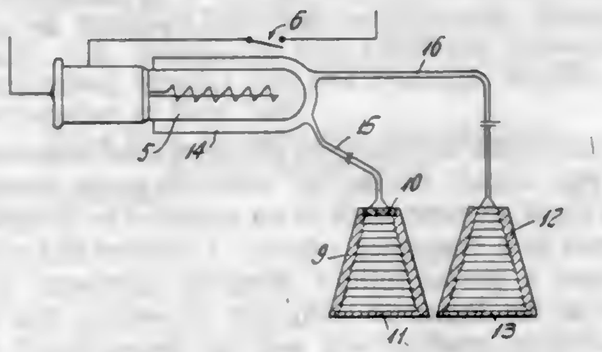
**Manfred Fichter, Weiler, Germany, assignor to Kienzle Apparate GmbH, Villingen, Black Forest, Germany**
**Filed Dec. 12, 1967, Ser. No. 689,915**
**Claims priority, application Germany, Dec. 15, 1966, K 60,931**
**Int. Cl. G01r** *11/02*
**U.S. Cl. 324—70** **13 Claims**



An electronic speed measuring arrangement in which a motor drives to a position corresponding to a signal representative of the speed to be measured. This signal is the input signal to the measuring system. The motor positions a feedback member which converts the mechanical position of the motor into a suitable electrical or magnetic signal adapted for comparison with the input signal. A comparator receives both the input signal and the output signal and compares them through a difference signal. This difference signal representing the difference between the input and output signals is amplified and applied to the motor for driving the latter until the difference signal is null. At this null position of the motor the input and output signals are precisely equal. The comparator is in the form of a magnetic circuit having a constant magnetic flux and a variable magnetic flux or field superimposed upon it. The use of at least one magnetic field dependent resistor within the magnetic circuit provides the desired results in which the output position of the motor corresponds precisely to the input speed signal. The motor can also be used to operate a recorder.

### 3,480,860
### TESTING MEANS FOR AN ELECTRONICALLY OPERATING AUTOMATIC EXPOSURE SYSTEM FOR PHOTOGRAPHIC CAMERAS

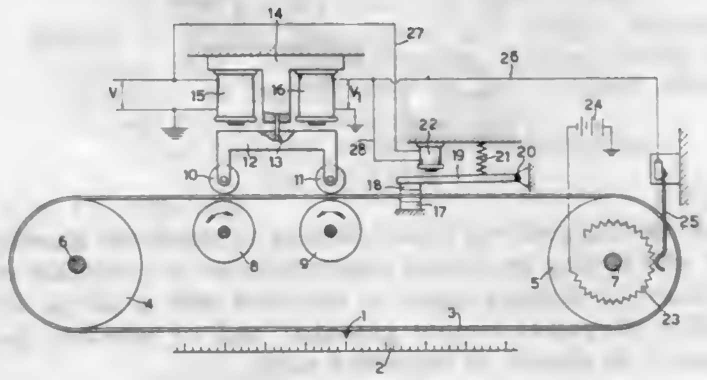
**Waldemar T. Rentschler, Calmbach, Germany, assignor to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany**
**Filed May 19, 1965, Ser. No. 457,015**
**Int. Cl. G01r** *31/02*
**U.S. Cl. 324—96** **2 Claims**



An automatic exposure system for a photographic camera is provided with a battery, a test bulb and a switch to connect the bulb to the battery in order to indicate the voltage of the battery by the intensity of the light produced by the bulb. In addition reference is provided to receive light from the bulb and to transmit the light for observation.

### 3,480,861
### DEVICE FOR INDICATING THE VALUE OF A MAGNITUDE SUCH AS AN ELECTRIC SIGNAL ON A VISIBLE SCALE OR DIAL

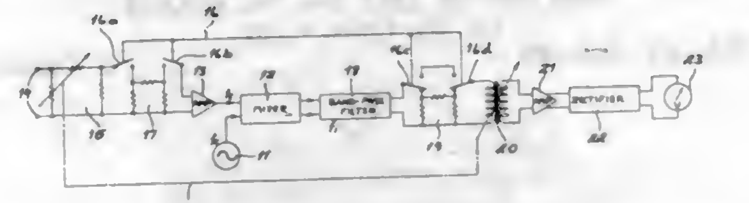
**Mario Possati, Via Stalingrado 11, Bologna, Italy**
**Filed Oct. 27, 1966, Ser. No. 590,036**
**Claims priority, application Italy, Nov. 5, 1965, 24,543**
**Int. Cl. G01r** *17/06*
**U.S. Cl. 324—99** **2 Claims**



A device indicating the value of a magnitude on a scale by an index in which a flexible element carrying the index is supported for free movement with a minimum of friction in either of two opposite directions and a driving unit having two surface portions steadily moving in the vicinity of two surface portions of the flexible element parallel to either possible direction of motion of the last mentioned surface portions is provided. There is also included means for transversely displacing the flexible element into frictional engagement with either of the first mentioned surface portions with such means being actuated by an electric current set up by a difference between the magnitude to be indicated and a magnitude depending upon the position of the flexible element.

### 3,480,862
### FREQUENCY-SELECTIVE SIGNAL-TRANSMISSION SYSTEM WITH LINEARITY-TESTING MEANS

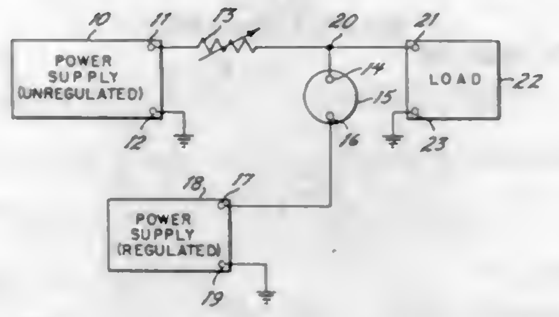
**Herbert Bayer, Reutlingen, Germany, assignor to Wandel & Goltermann, Muhleweg, Germany**
**Filed June 20, 1967, Ser. No. 647,423**
**Claims priority, application Germany, June 22, 1966, W 41,833**
**Int. Cl. G01r** *1/02*
**U.S. Cl. 324—130** **10 Claims**



To determine the linearity of signal-level measurements in a test circuit having an overload-prone broad-band active input element, such as an amplifier or a modulator, followed by a frequency selector, a rectifier and a voltage indicator, a predetermined damping increment is introduced in the input; if distortion is present, the change in indicator reading will not be proportional to the effective reduction in signal voltage due to the added damping. The change in signal strength caused by the varying damping factor is a small fraction of the rated amplitude range of the input stage and is independent of any attenuation that may be provided to scale down an applied signal voltage exceeding that range.

### 3,480,863
### RECEIVER SYSTEM HAVING VISUAL INDICATOR FOR CHANGES IN ELECTRICAL STATE

**Albert Hopengarten, Lafayette Hill, Pa., assignor to Electrosonics International, Inc., Philadelphia, Pa., a corporation of Pennsylvania**
**Filed Sept. 1, 1964, Ser. No. 393,627**
**Int. Cl. G01r** *19/14, 31/02*
**U.S. Cl. 324—133** **17 Claims**

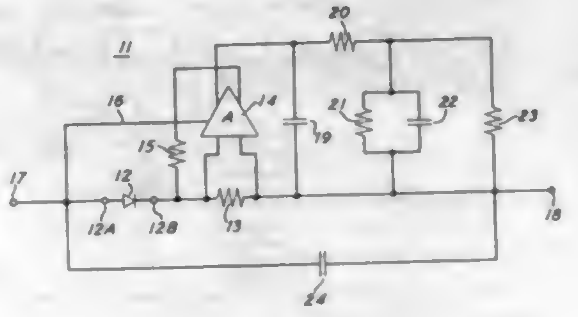


An alerting receiver system having an unalerted standby state and having an alerted state produced by reception of an alarm or alerting signal is provided with a device indicative of power supply potential and of whether the system is in alerted or unalerted state.

### 3,480,864
### TIME-SCALED TEST CIRCUIT FOR SEMICONDUCTIVE ELEMENT HAVING A CURRENT CONTROLLED CHARGE STORAGE MODEL

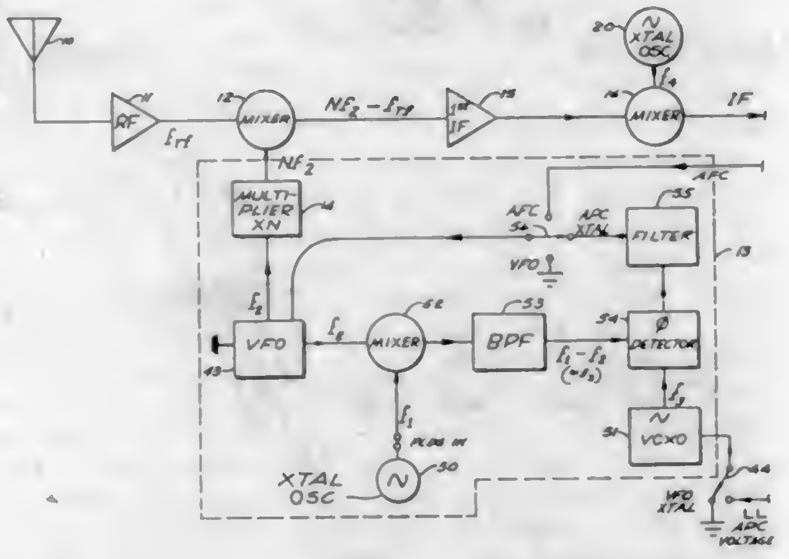
**Bernard T. Murphy, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York**
**Filed Dec. 4, 1967, Ser. No. 687,626**
**Int. Cl. G01r** *11/00;* **H03k** *3/26, 19/08*
**U.S. Cl. 324—158** **6 Claims**

An analog model of a semiconductive element in a circuit can be achieved by utilizing the element itself as its DC model and proportionately multiplying stored charge to effect time scaling for the AC model. Voltage controlled charge storage is modeled by shunting the region of controlled charge storage with suitably chosen capacitors. Current controlled charge storage is modeled by sampling the controlling currents and applying voltages derived therefrom to resistance-conductance-capacitance networks. This allows representation of both carrier recombination and diffusion delays. Feedback paths among the sampling devices are used to provide a unique correspondence between charge stored in the element and charge stored in the model.



### 3,480,865
### PHASE LOCKED CRYSTAL CONTROLLED VOLTAGE VARIABLE OSCILLATOR

**Ray W. Sanders, Los Angeles, Calif., assignor to Space-General Corporation, El Monte, Calif., a corporation of California**
**Filed Sept. 27, 1965, Ser. No. 490,564**
**Int. Cl. H04b** *1/16*
**U.S. Cl. 325—419** **4 Claims**



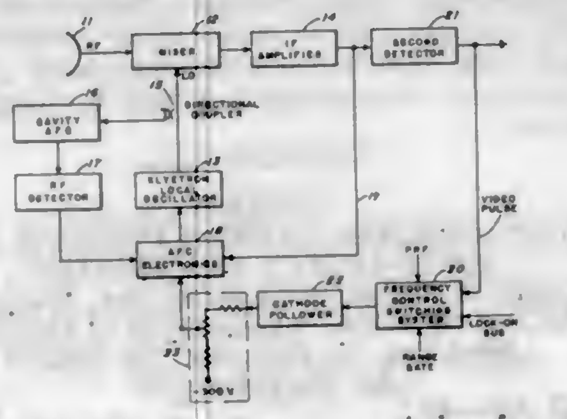
This invention relates to radio telemetry receivers and more particularly to such receivers employing phase locked loop circuits to track radio frequency carrier waves of varying frequency, phase and amplitude.

### 3,480,866
### FREQUENCY CONTROL SWITCHING SYSTEM

**Andrew P. Hadjandreas, Plainview, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy**
**Filed Nov. 29, 1966, Ser. No. 597,802**
**Int. Cl. H04b** *1/26*
**U.S. Cl. 325—423** **7 Claims**

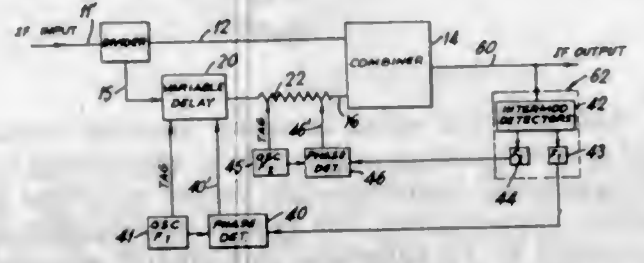
This invention is directed to an improved frequency control system for a beacon receiver utilized to establish the range and range rate of a guided missile. In the system the local oscillator of the beacon receiver is sequentially moved from one frequency to another and the system sequentially receives signals in three 10-mc. sectors. If the beacon return is received in one of the sectors, the

switching is stopped and the A.F.C. equipment is utilized to center the return signal. If the beacon return frequency varies, the A.F.C. will follow the variation for at least 5 mc.



### 3,480,867
### ADAPTIVE RECEIVER SYSTEM FOR MINIMIZING PATH INTERMODULATION NOISE

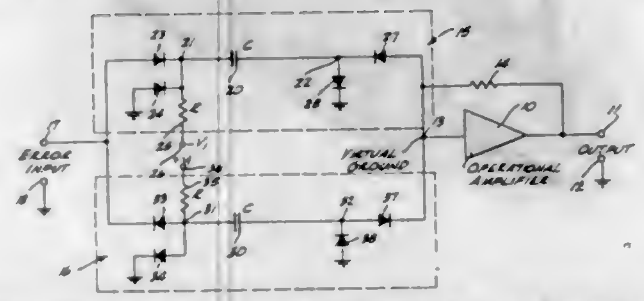
**William Sichak, Nutley, N.J., assignor to Communication Systems, Incorporated, Carson City, Nev., a corporation of Nevada**
**Filed Oct. 14, 1965, Ser. No. 496,120**
**Int. Cl. H04b** *1/10*
**U.S. Cl. 325—476** **12 Claims**



A method and device for minimizing path intermodulation noise wherein the incoming signal is divided into two parts, one part of which is delayed and attenuated until it approximates the undesired signals. The delayed and attenuated signal is then recombined with the received signal to as to cancel the undesired portions of the received signal. This is accomplished by dividing the incoming signal and sending a portion thereof to variable delay means and variable attenuation means wherein separate identification signals are impressed upon the incoming signal. After the incoming signal and the delayed signal are combined, the identifying signals are detected and any phase change therein employed to adjust the variable delay and attenuation means so that said delayed and attenuated signal will most closely approximate the unwanted incoming signals and cancel the same when combined with the incoming signal.

### 3,480,868
### LARGE ERROR SERVO OSCILLATION INHIBITOR

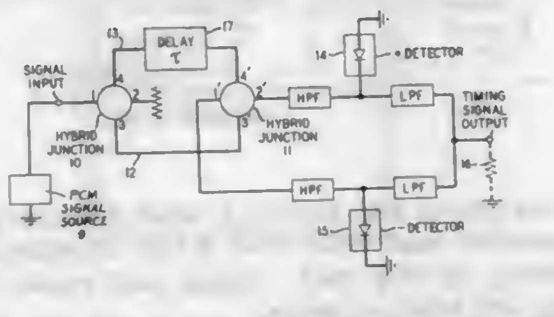
**Victor J. Modiano, Anaheim, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware**
**Filed Feb. 13, 1967, Ser. No. 615,528**
**Int. Cl. H03k** *5/00;* **H02p** *3/00*
**U.S. Cl. 328—132** **6 Claims**



The subject invention constitutes a non-linear circuit which provides a signal proportional to error rate only when the error is decreasing in absolute magnitude. In operation, the apparatus of the invention inhibits overshooting by commencing deceleration prior to the time zero position is reached whereby when zero error is reached the error rate is near zero. Thus, it is possible to use maximum position velocities at all times when the error is increasing.

### 3,480,869
### TIMING RECOVERY CIRCUIT FOR USE IN FREQUENCY-MODULATED, DIFFERENTIALLY COHERENT PHASE MODULATION (FM-DPM) COMMUNICATION SYSTEM

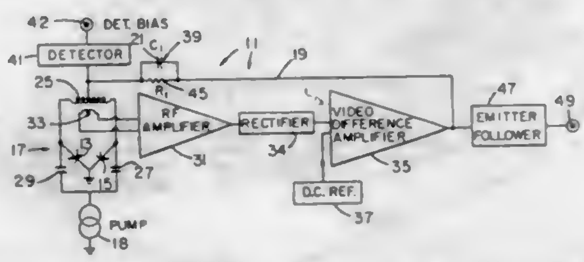
**William M. Hubbard, Middletown Township, Monmouth County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed Dec. 27, 1966, Ser. No. 604,924**
**Int. Cl. H03d** *3/00*
**U.S. Cl. 329—112** **6 Claims**



A circuit for extracting timing information directly from an FM-DPM pulse code modulated signal. The signal is divided into two equal components which are delayed relative to each other a fraction of a time slot and then recombined in the sum and difference branches of a hybrid junction. The two signals thus produced are amplitude-detected in oppositely-poled detectors and the outputs combined in a common load. The timing information is shown to be independent of signal content.

### 3,480,870
### PARAMETRIC PRE-AMPLIFIER CIRCUIT FOR CHARGED PARTICLE DETECTORS

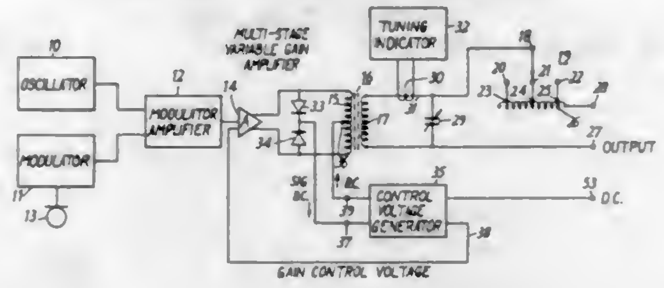
**Robert L. Chase, Blue Point, and Veljko Radeka, Upton, N.Y., assignors to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Nov. 23, 1966, Ser. No. 596,734**
**Int. Cl. H03f** *7/00*
**U.S. Cl. 330—4.9** **5 Claims**



This invention relates to a parametric pre-amplifier circuit having feedback control means for providing high gain with low noise for use with solid state charged particle detectors. The circuit consists of a tank circuit that is self-resonant at a first frequency; pumping means providing a voltage input to the tank circuit at a second frequency; and feedback control means for tuning the tank circuit, comprising a transformer and an R-F amplifier coupled through a low-pass filter to a video-difference amplifier, in turn coupled via a high impedance network followed by an R-F filter to the charge input to the tank circuit.

### 3,480,871
### RADIO FREQUENCY AMPLIFIER WITH VARIABLE-GAIN STAGE FOR OVERLOAD PROTECTION

**Ernest William Rogers, Burstow, Horley, Peter Dillon, Ifield, Crawley, and Christopher Richard Mitchell, Eastbourne, England, assignors to Redifon Limited, London, England, a British company**
**Filed Nov. 20, 1967, Ser. No. 684,277**
**Claims priority, application Great Britain, Apr. 20, 1967, 18,205/67**
**Int. Cl. H03g** *3/30, 5/16*
**U.S. Cl. 330—29 10 Claims**

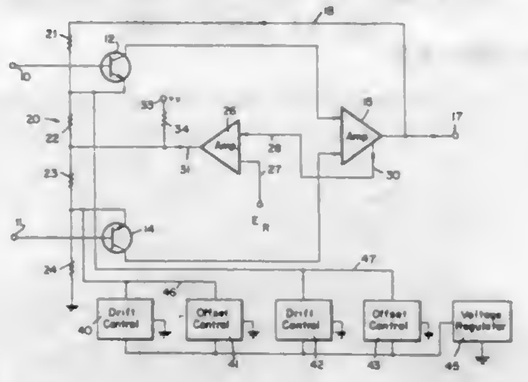


When tuning and loading a radio frequency amplifier, the amplifier load varies from a high impedance to a low resistance, so that peak voltage and power dissipation ratings are easily exceeded.

The invention comprises a radio frequency amplifier having a variable-gain stage and an output stage. A control voltage generating circuit monitors both the input D.C. current and the output voltage of the R.F. output stage. If either value exceeds a predetermined maximum, a control signal is supplied to the variable-gain stage to reduce its gain.

### 3,480,872
### DIRECT-COUPLED DIFFERENTIAL-INPUT AMPLIFIER

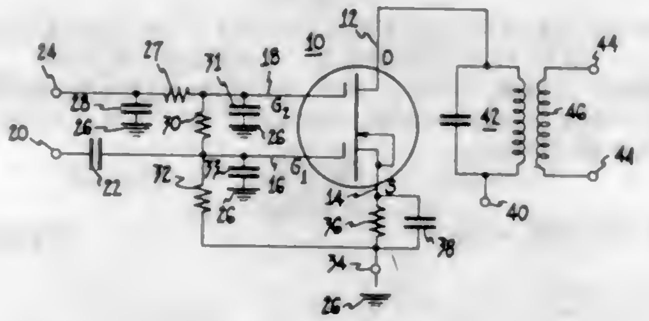
**David Roy Breuer, Malibu, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio**
**Filed Jan. 16, 1968, Ser. No. 698,239**
**Int. Cl. H03f** *3/68*
**U.S. Cl. 330—30 3 Claims**



A direct-coupled differential-input amplifier suitable for use with a monolithic integrated circuit. The amplifier has a differential signal input circuit and a common-mode feedback loop for maintaining the amplification or the bias level of the input transistors constant in spite of variations of the average or common-mode input voltages. Additionally the circuit has high stability under varying temperatures. This is effected by injecting operating currents into the transistors having a substantially temperature independent and a linearly temperature dependent component. By adjusting the magnitudes of the two current components, output voltage variations due to temperature changes can be substantially eliminated. The common-mode rejection and the temperature compensation functions are separate and may be independently controlled.

### 3,480,873
### GAIN CONTROL BIASING CIRCUITS FOR FIELD-EFFECT TRANSISTORS

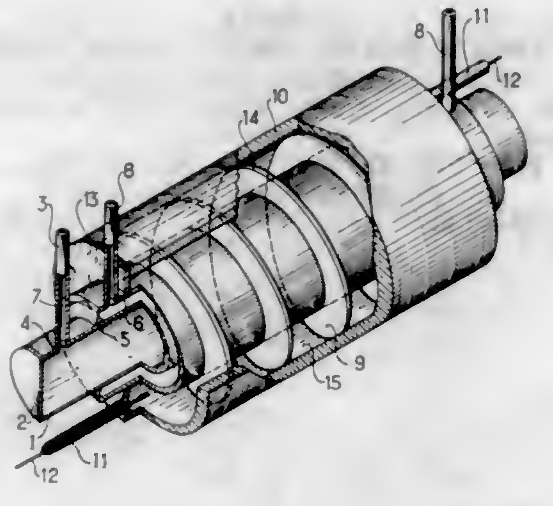
**George W. Carter, Indianapolis, Ind., assignor to RCA Corporation, a corporation of Delaware**
**Filed Dec. 11, 1967, Ser. No. 689,454**
**Int. Cl. H03g** *3/30*
**U.S. Cl. 330—29 5 Claims**



A dual gate field effect transistor amplifier circuit includes a source resistor which aids in establishing a relatively predictable operating point despite variations in the transistor characteristics. The gain of the amplifier circuit is controlled by an automatic gain control potential applied to the second gate electrode, and a portion of a gain controlling potential is applied to the first gate electrode to minimize voltage variations between the first gate electrode and the source electrode as the gain controlling potential changes.

### 3,480,874
### LIQUID LASER CONSTRUCTION

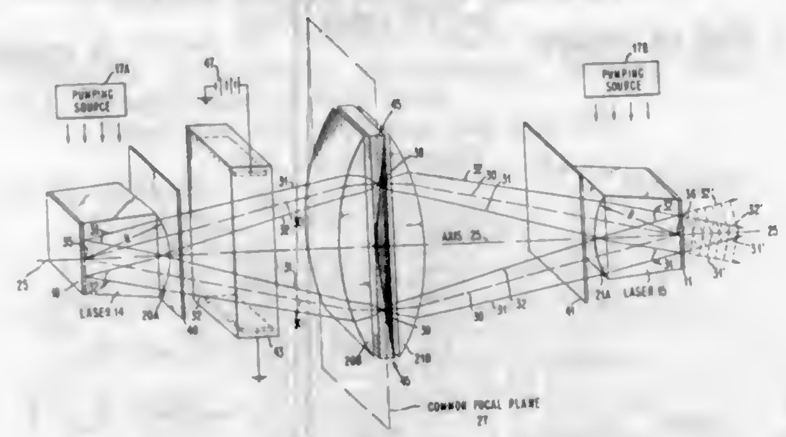
**Alexandre Milochevitch and Serge Rousseau, Saint-Michel-sur-Orge, France, assignors to Compagnie Generale d'Electricite, Paris, France, a corporation of France**
**Filed Dec. 19, 1968, Ser. No. 785,212**
**Claims priority, application France, Dec. 26, 1967, 133,770**
**Int. Cl. H01s** *3/02*
**U.S. Cl. 330—4.3 4 Claims**



The invention relates to a liquid laser structure characterized by the fact that it comprises three coaxial tubes welded to one another. The first of which tubes constitutes the reservoir of the laser liquid and the space between the first and second tubes constitutes a duct for a cooling fluid and for absorbing parasitic rays. The space between the second and third tubes defines the volume necessary for obtaining a spark tube.

### 3,480,875
### LASER SCANNING DEVICE HAVING TWO LENS SYSTEMS WITH A COMMON FOCAL PLANE

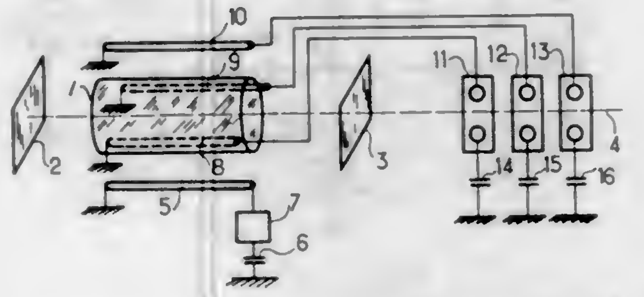
**Robert V. Pole, Yorktown Heights, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Dec. 6, 1965, Ser. No. 511,841**
**Int. Cl. H01s** *3/02*
**U.S. Cl. 331—94.5 7 Claims**



A laser cavity is set up between a pair of plane mirrors. At least one active laser element is located between the mirrors. A pair of lens systems are positioned between the mirrors so that they have a common focal plane located between them. A Kerr cell, polarizers, and a compensator suppress light oscillations along certain reflection paths within the cavity, thereby setting up preferred modes of oscillation along other paths. Laser emission occurs along the preferred paths. Rays of light diverging from points along the common focal plane are converged into parallel rays by the lens systems before striking the mirrors. After reflection by the mirrors, the parallel rays are once again converged by the lens systems into points on the common focal plane. Therefore, the only focused, high energy laser light in the cavity occurs along the common focal plane rather than at the location of mirrors.

### 3,480,876
### LASER CONTROL APPARATUS

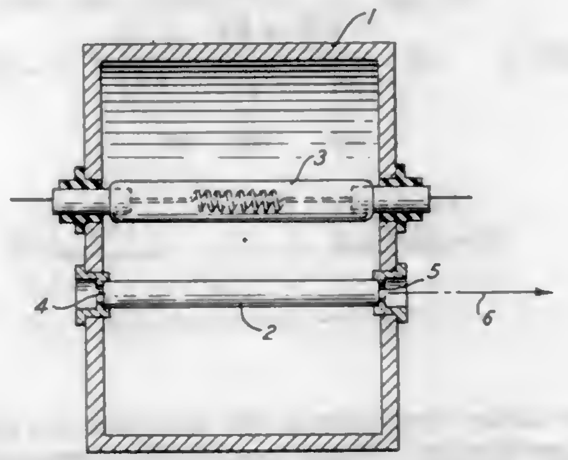
**Spartacus Barbini, Chaville, France, assignor to Compagnie Generale d'Electricite, Paris, France**
**Filed Mar. 14, 1966, Ser. No. 534,113**
**Claims priority, application France, Mar. 12, 1965, 9,011**
**Int. Cl. H01s** *3/09*
**U.S. Cl. 331—94.5 7 Claims**



A laser beam generator utilizing a laser beam emitter which includes a series of flash tubes for optically pumping the laser beam from a crystal. A high speed power switch circuit breaker device is provided for controlling the successive discharge of the flash tubes at very close intervals.

### 3,480,877
### SOLID STATE LASER

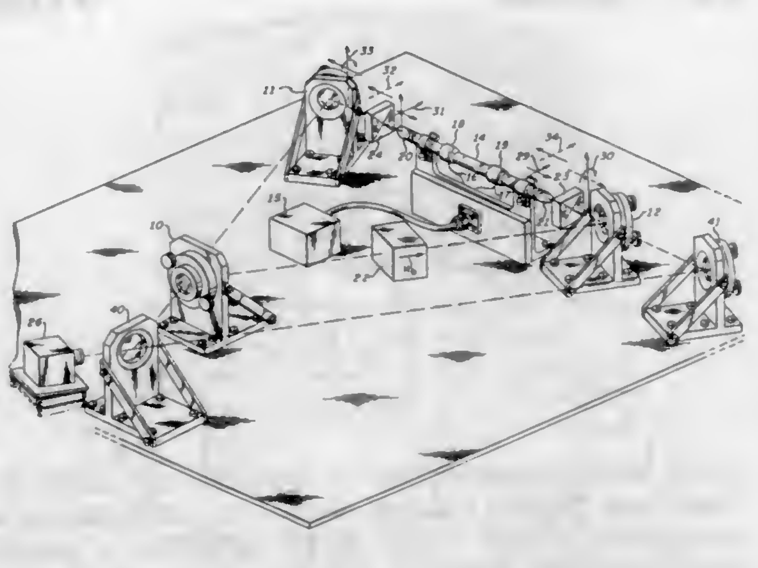
**Joseph F. Dillon, Jr., Morris Township, Morris County, Leo F. Johnson, Bedminster, and Joseph P. Remeika, Warren Township, Somerset County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York**
**Filed Mar. 23, 1966, Ser. No. 536,722**
**Int. Cl. H01s** *3/18*
**U.S. Cl. 331—94.5 8 Claims**



Laser action is produced from one of the rare earth ions of holmium, thulium or erbium within a ferrimagnetic garnet crystalline composition. Laser emission may be modulated by means of an applied magnetic field.

### 3,480,878
### RING LASER WITH MEANS FOR REDUCING COUPLING TO BACKSCATTERED WAVES

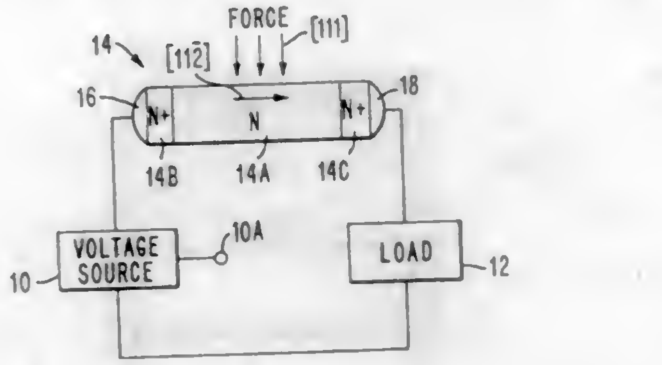
**Warren M. Macek, Huntington, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware**
**Filed Sept. 20, 1966, Ser. No. 580,773**
**Int. Cl. H01s** *3/10*
**U.S. Cl. 331—94.5 4 Claims**



A ring laser including polarization converters positioned adjacent each end of the active lasing medium to render the contra-directionally propagating ring laser modes orthogonally polarized throughout the length of the laser circulatory paths exclusive of that portion wherein the lasing medium is located whereby coupling between each wave and a backscattered component of the oppositely propagating wave is reduced and the mode locking threshold is lowered accordingly.

### 3,480,879
### BULK OSCILLATOR USING STRAINED SEMICONDUCTOR

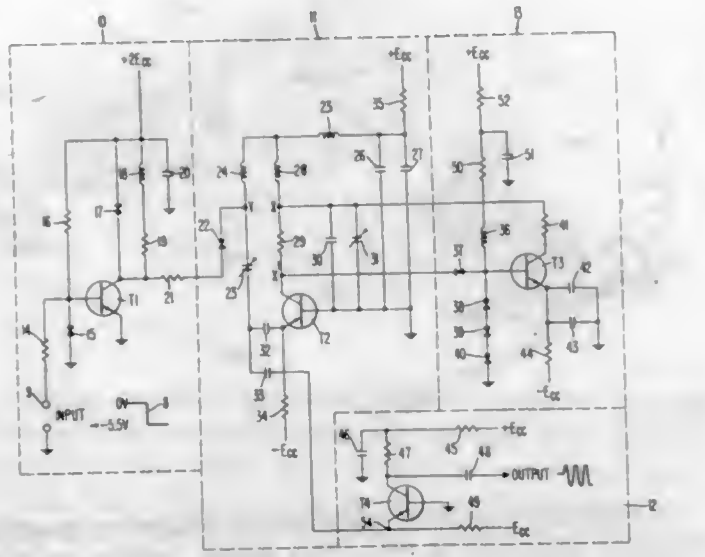
**Marshall I. Nathan, Mount Kisco, and John E. Smith, Jr., Ossining, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Jan. 4, 1968, Ser. No. 695,681**
**Int. Cl. H03b** *5/12, 5/24, 5/36*
U.S. Cl. 331—107 19 Claims



The active component of the oscillator is a body of N type germanium. Ohmic noninjecting connections are made to the body which is so oriented that a voltage applied between these contacts is paralleled to a [11$\bar{2}$] crystallographic direction. A compressive stress is applied in a direction which is perpendicular to the direction of applied voltage and oriented to be paralleled to the [111] direction. A negative bulk conductivity due to intervalley transfer and high frequency oscillations are produced when the applied field and stress are raised above critical values.

### 3,480,880
### AMPLITUDE STABILIZED LC TRANSISTOR OSCILLATOR

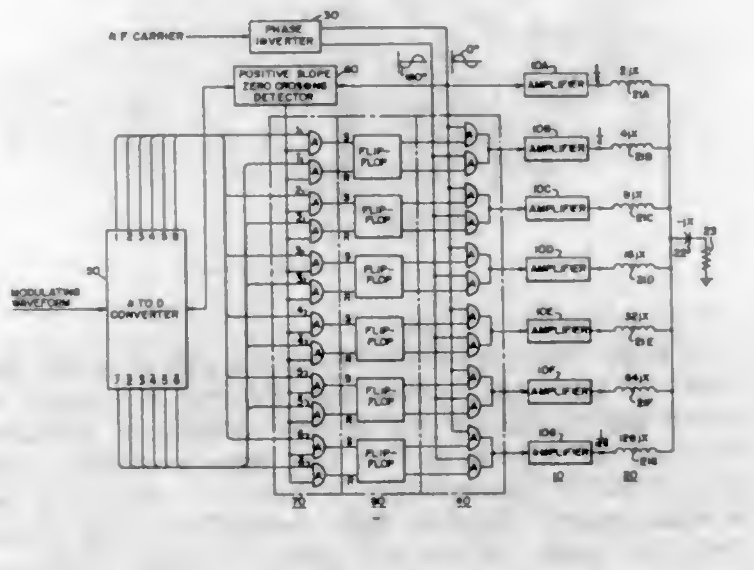
**David A. Starr, Jr., San Mateo, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**
**Filed Oct. 9, 1967, Ser. No. 673,617**
**Int. Cl. H03b** *3/02*
U.S. Cl. 331—109 9 Claims



A transistor oscillator system which includes a series resonant circuit, a parallel resonant circuit and a transistor. The resonant circuits consist of LC combinations. The transistor circuit oscillates at the resonant frequency of the series resonant circuit. The parallel resonant circuit acts to increase the overall gain of the oscillator since the transistor output current gain is less than one. The oscillator system includes impedance coupling to the series resonant circuit from the transistor output. An output buffer, an amplitude stabilizer and a control switch make up the remaining components of the oscillator system.

### 3,480,881
### CIRCUITRY FOR SIMULTANEOUSLY MODULATING AND AMPLIFYING A CARRIER SIGNAL

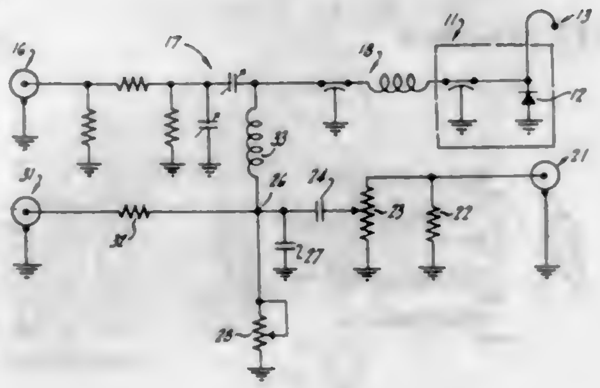
**John R. Boykin, Arnold, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Aug. 19, 1966, Ser. No. 573,668**
**Int. Cl. H03k** *9/10*
U.S. Cl. 332—9 14 Claims



Circuitry for simultaneously modulating and amplifying a carrier signal wherein the carrier signal is used to drive a plurality of power related switching amplifiers in accordance with a digitally coded modulation signal to thereby modulate the carrier with the original modulation signal without waste of power.

### 3,480,882
### STEP-RECOVERY MULTIPLIER MODULATOR

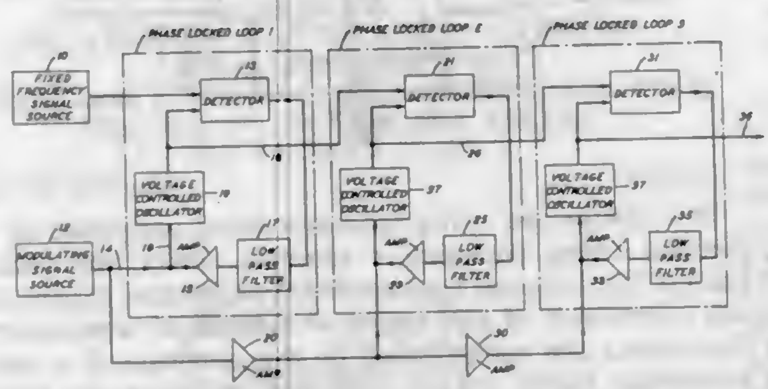
**David O. Fairley, San Jose, Calif., assignor, by mesne assignments, to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware**
**Filed Feb. 14, 1966, Ser. No. 527,025**
**Int. Cl. H03c** *3/02*
U.S. Cl. 332—16 4 Claims



1. Apparatus for multiplying the frequency of an alternating current input signal and phase-modulating the frequency multiplied signal, said apparatus comprising, in combination, a resonant circuit including a step-recovery semiconductor diode having a much higher charge storage capability in the forward direction than in the reverse direction, input means connected to said resonant circuit for coupling an alternating current input signal of first frequency to said resonant circuit, said input signal causing said diode to switch thereby causing said resonant circuit to resonate and to generate signals of a frequency which is a multiple of said first frequency, an output circuit coupled to said resonant circuit, and means for applying a modulating voltage across said diode to thereby phase modulate the frequency multiplied signals at said output circuit.

### 3,480,883
### FREQUENCY MODULATED PHASE-LOCKED OSCILLATOR

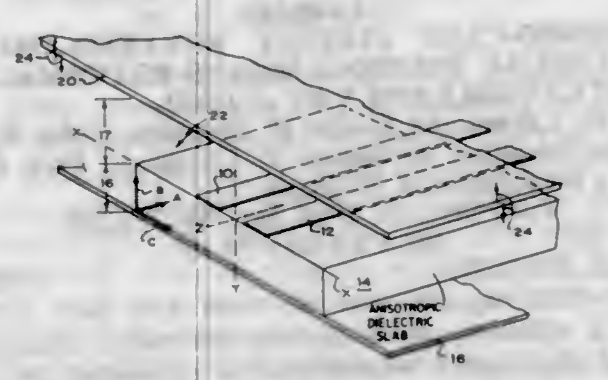
**Wilmer B. Gaunt, Jr., Boxford, Mass., assignor to Bell Telephone Laboratories Incorporated, Murray Hill, N.J., a corporation of New York**
**Filed Aug. 15, 1967, Ser. No. 660,755**
**Int. Cl. H03c** *3/02*
U.S. Cl. 332—19 9 Claims



A frequency modulated oscillator is described in which high modulation levels can be obtained without carrier frequency drift. A fixed frequency carrier signal is applied to the phase detector of the first of a cascaded series of frequency modulated phase-locked loops. The modulated output signal from each phase-locked loop is applied to the phase detector of the succeeding loop together with the modulated output signal of that succeeding loop. A control signal from the phase detector locks the carrier frequency of each loop to that of the externally generated fixed frequency signal at modulation levels which reduce the carrier component of the modulated output to zero.

### 3,480,884
### ELECTROMAGNETIC WAVE ENERGY COUPLING APPARATUS COMPRISING AN ANISOTROPIC DIELECTRIC SLAB

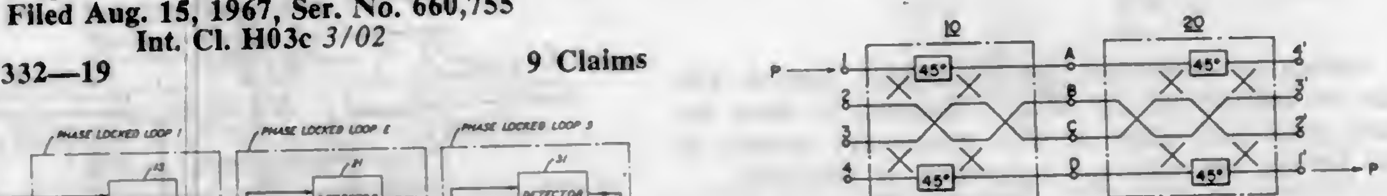
**William S. Metcalf, Impington, England, assignor to Hewlett-Packard Company, Palo Alto, Calif., a Corporation of California**
**Filed Aug. 26, 1968, Ser. No. 755,128**
**Int. Cl. H01p** *5/12*
U.S. Cl. 333—6 15 Claims



Two parallel line conductors are disposed on a slab of oriented anisotropic dielectric material in a plane between and parallel to a pair of parallel ground plane conductors to provide an electromagnetic wave energy signal coupler having improved electrical properties. The anisotropic dielectric slab is oriented with a greater dielectric constant along a transverse axis perpendicular to the longitudinal axes of the line conductors and parallel to the plane of the ground plane conductors than the dielectric constant along an axis perpendicular to the ground plane conductors.

### 3,480,885
### HIGH POWER MICROWAVE SWITCH

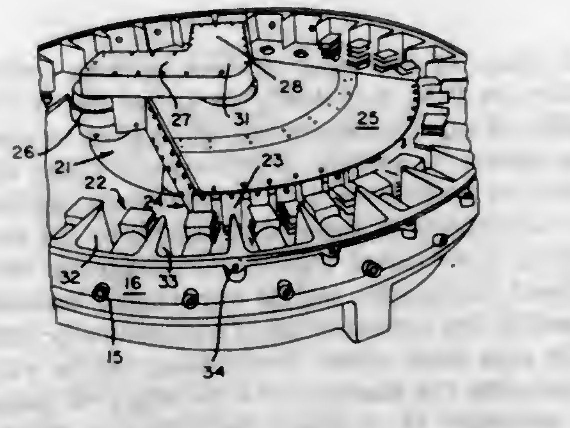
**Helmut E. Schrank, Cockeysville, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**
**Filed Oct. 5, 1965, Ser. No. 493,028**
**Int. Cl. H01p** *5/12*
U.S. Cl. 333—7 4 Claims



A high power microwave multichannel switch wherein a first Butler matrix divides a high power input into lower-power parts, a phase shifter digitally shifting the lower-power parts or levels, and a second Butler matrix recombining the lower-power parts into any one of a number of high power output channels.

### 3,480,886
### SCANNING APPARATUS COMPRISING PARALLEL CONDUCTOR TRANSMISSION LINE MEANS

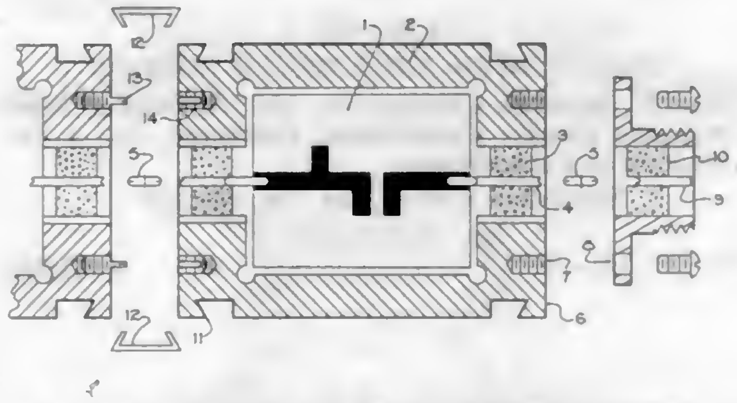
**Chester B. Watts, Jr., Annandale, Va., assignor to Andrew Alford, Winchester, Mass.**
**Filed Mar. 16, 1967, Ser. No. 623,630**
**Int. Cl. H01p** *5/12*
U.S. Cl. 333—7 17 Claims



A scanner has a number of fixed terminals spaced about the circumference of a circle that are scanned by a rotor arranged to exchange energy with a selected contiguous group of the stator terminals energized with controlled relative phases and amplitudes. One rotor has a "serpentine" transmission line in which folded segments of different lengths intercouple contiguous rotor taps. In another rotor a sectorial plate including a dielectric element forms parallel plate transmission lines with fixed radial strips connected to the stator terminals to furnish the desired relative attenuation and phase displacement.

### 3,480,887
### SYSTEM OF ENCLOSURES AND CONNECTORS FOR MICROWAVE CIRCUITS

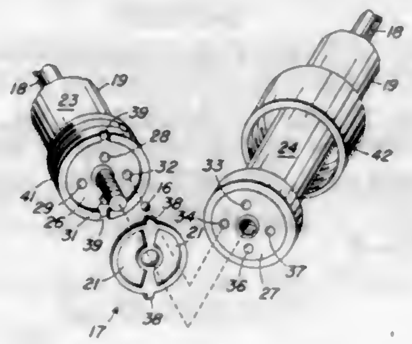
**Arthur Uhlir, Jr., Weston, Mass., assignor to Microwave Associates, Inc., Burlington, Mass., a corporation of Massachusetts**
**Filed July 17, 1967, Ser. No. 653,879**
**Int. Cl. H03h** *5/00;* **H01p** *1/00*
**U.S. Cl. 333—24** **7 Claims**



A system of enclosures for microwave circuits and means for interconnecting circuits mounted in these enclosures with each other or with microwave circuits or cables having conventional connectors is disclosed.

### 3,480,888
### ELECTRONICALLY TUNED FILTER

**William S. Elliott, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa**
**Filed Mar. 3, 1966, Ser. No. 531,529**
**Int. Cl. H03h** *7/10*
**U.S. Cl. 333—73** **3 Claims**



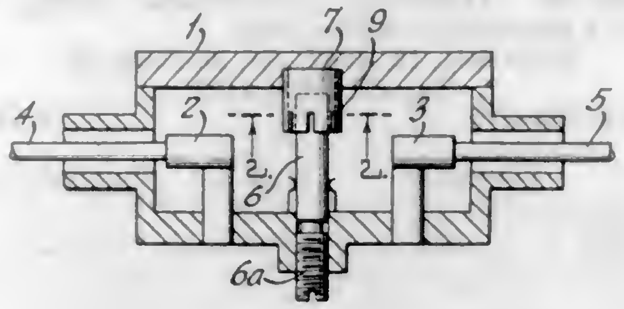
In many of the most modern systems concepts in the microwave field it is desirable to use narrow-band filters capable of rapid tuning or sweeping over frequency ranges of an octave or greater. Narrow-band filters consisting of quarter or half-wavelength coaxial lines, cavities, etc. are seriously limited in these applications by the accuracy and speed of mechanical tuning. Ferrimagnetic resonators as disclosed hereinafter are of importance because they can be used in the construction of electronically tunable filters whose pass band center frequencies can be varied simply by changing the strength of a biasing D-C magnetic field. The unloaded Q of these resonators at microwave frequencies compares favorably with the Q's of transmission line and hollow cavity resonators.

The resonance frequency of the filter herein described can be varied electronically by changing a D-C magnetic bias applied to the resonator. The frequency discriminator characteristic therefore can be swept, or tuned, across a range of frequencies with relative ease without the need for mechanical tuning means.

The invention is therefore directed to an electrically tunable filter which utilizes the magnetic properties of YIG resonators in conjunction with the coupling characteristics of an iris placed in the path of electromagnetic waves to control the center frequency of the band of frequencies passed by the filter simply by changing the strength of a D-C magnetic field which biases the filter.

### 3,480,889
### TEMPERATURE STABILIZED CAVITY RESONATOR

**Alfred Käch, Nussbaumen, near Baden, Switzerland, assignor to Patelhold Patentverwertungs- & Elektro-Holding AG, Glarus, Switzerland**
**Filed July 13, 1967, Ser. No. 653,200**
**Claims priority, application Switzerland, July 25, 1966, 10,702/66**
**Int. Cl. H01p** *7/06*
**U.S. Cl. 333—83** **8 Claims**



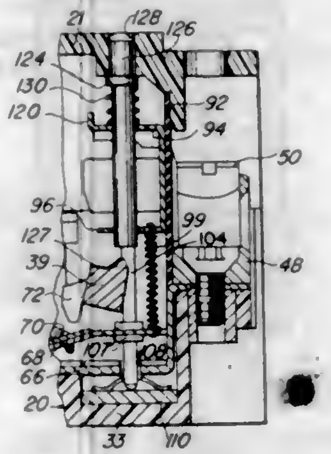
In a microwave cavity resonator being comprised of a metallic casing enclosing a resonant cavity, the variations of the resonant frequency due to thermal expansion and contraction of said casing as a result of temperature fluctuations are compensated by the provision of a split bi-metallic sleeve coaxial with and enclosing the inner end portion of a tuning plunger, both said sleeve and plunger being connected to and projecting from opposite end walls of said casing and into said cavity. The plunger cooperates with the bi-metallic strips of the sleeve, to form a reentrant or lumped capacity of the cavity determining its resonant frequency. Besides, the bi-metallic strips, produced for instance by simple longitudinal slitting of the end of a bimetallic cylinder, are so designed as to cause the same to be deflected away from the plunger with increasing temperature, to reduce said capacity and to in turn increase the resonant frequency of the cavity, and to be deflected towards the plunger with decreasing temperature, to increase said capacity and to in turn decrease the resonant frequency, in such a manner as to counteract the increase and decrease, respectively, of the resonant frequency fluctuations resulting from thermal expansion and contraction of the cavity. By providing for relative axial adjustment of both the sleeve and plunger, the effect of thermal volume changes of the cavity on and other causes affecting the resonant frequency may be substantially compensated by the stabilizing means according to the invention.

### 3,480,890
### MOLDED-CASE CIRCUIT BREAKER WITH MANUAL TRIPPING MEANS EXTERNALLY ACCESSIBLE ONLY BY A TOOL

**Beryl W. Layton and Robert W. Dunham, Cedar Rapids, Iowa, assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan**
**Filed Mar. 26, 1968, Ser. No. 716,210**
**Int. Cl. H01h** *73/48*
**U.S. Cl. 335—23** **3 Claims**

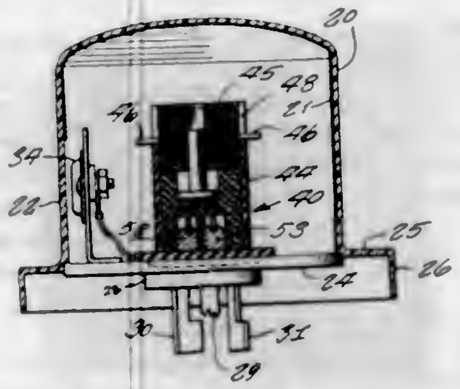
A push-to-trip rod has its outer end face disposed within a relatively small opening extending through the case of the circuit breaker and is restrained for rectilinear motion by the wall of the case about the opening and by a bracket inside the case. The rod is biased

outwardly by a helical spring. The inner end face of the rod, when the rod is moved inwardly by a tool received in the opening, engages a common trip bar to effect tripping of the circuit breaker.



### 3,480,891
### RELAY WITH CONTACTS OF MERCURY METAL COMPOSITION

**George Merkl, 517 Boulevard, New Milford, N.J. 07646**
**Filed July 24, 1967, Ser. No. 655,514**
**Int. Cl. H01h** *29/00*
**U.S. Cl. 335—52** **3 Claims**

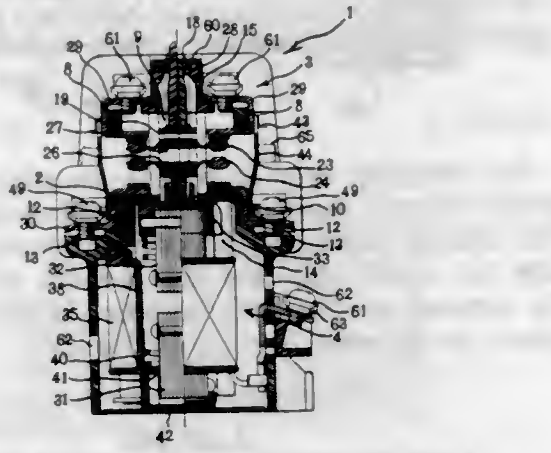


A photoelectric street lighting control unit including a thermistor thermally coupled to the photocell for retarding the response of the control unit to rapid fluctuations in level of the ambient illumination. A relay with stationary contacts formed of a meltable mercury-metal composition is disclosed.

### 3,480,892
### ELECTROMAGNETIC RELAY FOR SWITCHING AN ELECTRIC CIRCUIT

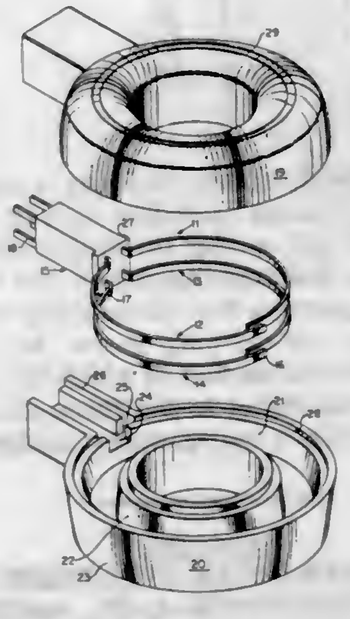
**Shizuka Horii, Shiga Prefecture, Japan, assignor to Tateisi Electronics Co., Kyoto, Japan**
**Filed July 3, 1967, Ser. No. 650,873**
**Claims priority, application Japan, July 7, 1966, 41/44,583; Dec. 19, 1966, 41/115,515**
**Int. Cl. H01h** *67/02*
**U.S. Cl. 335—132** **7 Claims**

An improved electromagnetic relay for switching an electric circuit, comprising a case of insulating material having a shoulder dividing the interior of the case into an upper space and a lower space, an electromagnetic unit in the lower space having movable and stationary cores, an electromagnetic coil and a frame, partition walls extending upwardly from the shoulder separating the upper space into cavities, a movable contacting member support in each of the cavities reciprocally movable in the vertical direction along the partition walls. An upper movable contacting member and a lower movable contacting member having a spring extending between them are disposed in an element receiving section in each of the supports. Lower stationary contacting members corresponding to the lower movable contacting members are mounted on respective seats on the shoulder, and further springs are mounted in the respective movable contact member supports and urge the movable contacting member support against a core cap mounted on the movable core of the electromagnetic unit. There are provided upper stationary contacting members corresponding to the upper movable contacting members and which are mounted in a readily movable manner on connecting members connecting each partition wall above the shoulder. Each upper stationary contacting member is fitted onto a flange of a receiving member so as to prevent the receiving member from being removed upwardly from the cavity, and a return spring is provided in the electromagnetic unit to press the movable contacting supports and movable core upwardly against the springs which press these supports against the core cap.



### 3,480,893
### TOROIDAL REED SWITCH

**Edward F. Sidor, Lombard, and William A. Reimer, Wheaton, Ill., assignors to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware**
**Filed July 1, 1968, Ser. No. 741,525**
**Int. Cl. H01h** *9/02, 13/04*
**U.S. Cl. 335—202** **4 Claims**

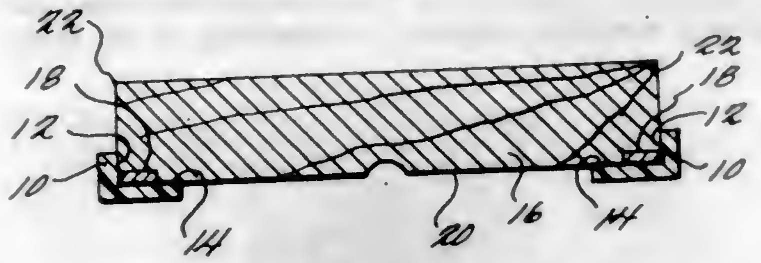


A toroidal housing contains pairs of arcuate reeds with fixed ends mounted on a plug extending radially from the housing. Either a single housing or a plurality of housings arranged coaxially functions as a bobbin for an operating winding.

### 3,480,894
### MAGNETIC EDGE PROTECTOR FOR A SKI

**Kevin E. Joyce, Bridge Hill, R.F.D. 1,
Davidsonville, Md. 21035
Filed Feb. 28, 1968, Ser. No. 709,067
Int. Cl. H01f** *7/02*

**U.S. Cl. 335—303** **11 Claims**



An elongated strip of flexible material having an L-shaped channel therein is magnetized along the channel. The flexible strip is positioned with respect to the metal edge of a ski such that the channel surfaces overlap the exposed portions of the edge causing the strip to adhere to the edge by magnetic action.

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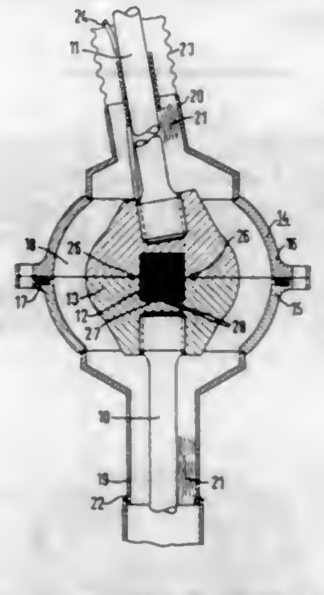
### 3,480,895
### COIL-SUPPORTING STRUCTURE FOR SUPERCONDUCTIVE APPARATUS

**Cord Albrecht, Erlangen, Wilhelm Kafka, Tennenlohe, and Dieter Kullmann, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed May 19, 1966, Ser. No. 551,399
Claims priority, application Germany, Dec. 10, 1965, S 100,885
Int. Cl. H01f** *27/08*

**U.S. Cl. 336—60** **8 Claims**



Superconductive apparatus includes a superconductive coil, coil-carrying means extending at least partly around and carrying the coil so that the coil is situated at least in part within the coil-carrying means, and support means enclosing and supporting the coil-carrying means with the coil therein. The coil-carrying means has an elongated wall of U-shaped cross section in which the coil is situated and is formed with spaces in the form of elongated passages through which a refrigerating medium is adapted to flow.

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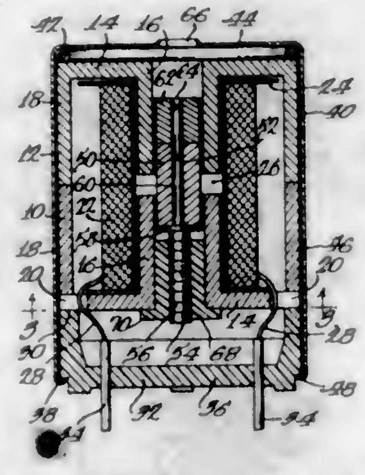
### 3,480,896
### ADJUSTABLE INDUCTOR

**Werner E. Neuman, Deerfield, Ill., assignor to Components Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 1, 1967, Ser. No. 679,798
Int. Cl. H01f** *15/02, 21/06, 27/02*

**U.S. Cl. 336—83** **3 Claims**

In a variable inductor including a pair of facing cup cores and a tuning slug narrowly spaced from a central aperture in said cores, an improved mount for the slug providing a high friction screw thread for adjustment.



Also, an improved assembly for such an inductor providing solid, shake-resistant support without core-deforming pressure.

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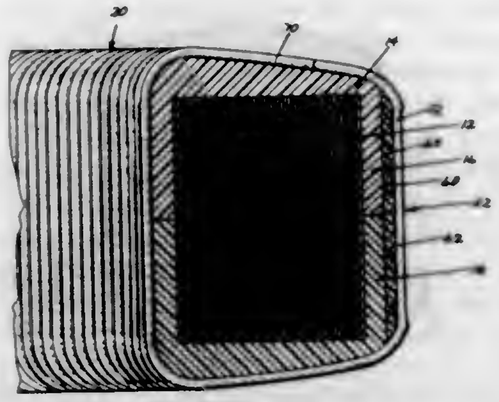
### 3,480,897
### ADJUSTABLE SLIDING BRUSH TRANSFORMER AND METHOD OF PRODUCING SAME

**Henry J. Helberg and Harry J. Proxmire, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York
Filed Sept. 5, 1967, Ser. No. 665,402
Int. Cl. H01f** *29/06*

**U.S. Cl. 336—149** **6 Claims**



An adjustable sliding brush transformer having a backing strip of interstitial or permeable insulating material sandwiched between the contact surface portion of the winding and the core insulating member. The electrical contact surface portion of the winding is bonded to the core insulating member by a cured thermosetting resin carried in the backing strip. The backing strip is disposed along the outer periphery of the core insulating member adjacent to the contact surface portion of the winding. In the process of manufacture the coil turns are wound over the backing strip and around the insulating member with the thermosetting resin impregnant being in a semi-cured and tacky condition. Preferably, the coil turn portions of the winding which form the contact surface portion are embedded in the backing strip and when cured, the thermosetting resin firmly bonds the contact surface portion of the winding to the core insulating member.

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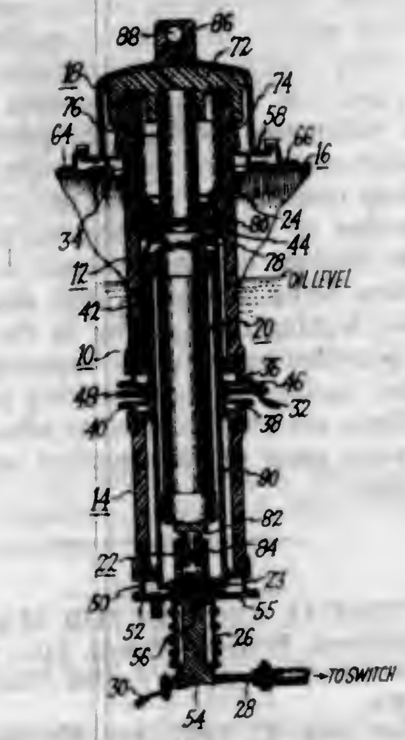
### 3,480,898
### COMBINED FUSE AND SWITCH OPERATOR ASSEMBLY

**Bertrand V. Giegerich, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Apr. 12, 1967, Ser. No. 630,330
Int. Cl. H01h** *85/22*

**U.S. Cl. 337—4** **4 Claims**

A combined fuse and switch assembly especially useful in electrical apparatus, such as submersible distribution

transformers. The apparatus is provided with a fuse holder mounted in the interior of the apparatus. The fuse holder has a lower rotatable fuse contact which is hermetically sealed and connected to a switch mounted in the interior of the apparatus. The rotatable fuse contact operates the switch. A second fuse contact is provided in the fuse holder. A removable cover has the fuse secured thereto such that when the cover is placed on the top of the fuse holder, outside of the apparatus, such as a transformer, the fuse is inserted into the holder contacting both fuse contacts. Rotation of the fuse cover, to lock and seal the cover on the outside of the fuse holder, closes the internal switch. To remove the fuse, the cover must first be rotated to unlock the cover which opens the internal switch.



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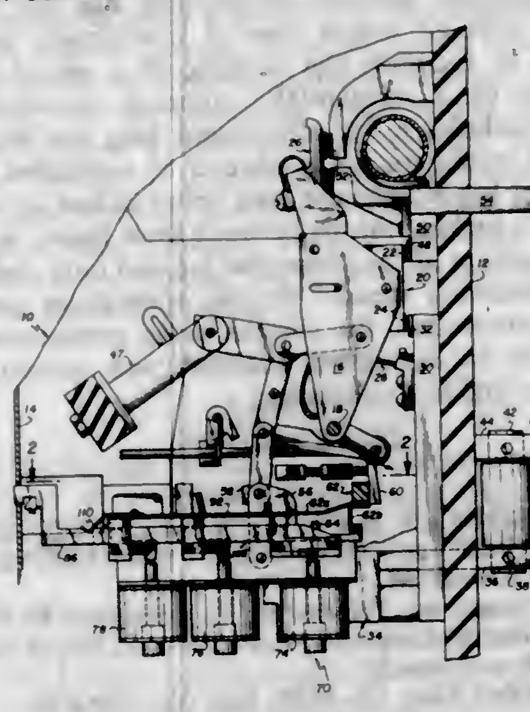
### 3,480,899
### CIRCUIT INTERRUPTERS

**William Laakso, Burnaby, British Columbia, Canada, assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed Mar. 18, 1968, Ser. No. 713,659
Int. Cl. H01h** *85/30*

**U.S. Cl. 337—6** **5 Claims**



A circuit breaker with a fuse mounted in series with each of the separable contacts. A responder is provided which is responsive to the operative condition of the fuses and which functions to trip and lock the circuit breaker open upon the operation of one of the fuses. The responder gives protection against single phasing and also provides a visual indication at the front of the breaker of the operation of the remotely mounted fuses.

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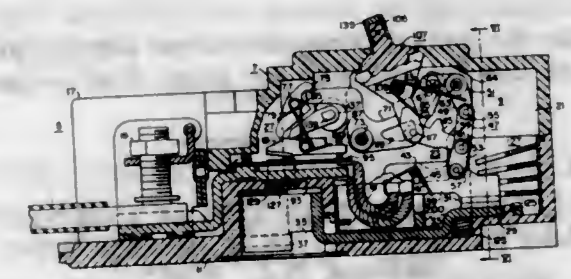
### 3,480,900
### CIRCUIT BREAKER WITH IMPROVED CONDUCTING PATH AND TRIP MEANS

**Francis L. Gelzheiser, Fairfield, and Gerald J. DeAngelo, Monroe, Conn., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 18, 1968, Ser. No. 698,848
Int. Cl. H01h** *71/16*

**U.S. Cl. 337—75** **9 Claims**



A circuit breaker is provided with an improved compact arrangement of parts and with an improved trip device for tripping the circuit breaker upon the occurrence of overload current conditions.

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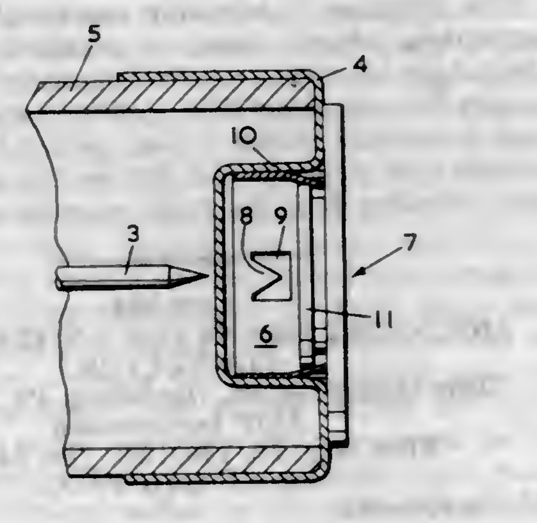
### 3,480,901
### FUSE UNIT HAVING AN OPERATION INDICATOR

**Eric Jacks and Charles Rowe, Liverpool, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Oct. 16, 1967, Ser. No. 675,667
Claims priority, application Great Britain, Oct. 14, 1966, 46,051/66
Int. Cl. H01h** *85/30*

**U.S. Cl. 337—244** **3 Claims**



A fuse unit having a striker pin operable upon rupture of the fusible element to eject a disc from the body of the fuse unit and provide thereby an indication of this operation.

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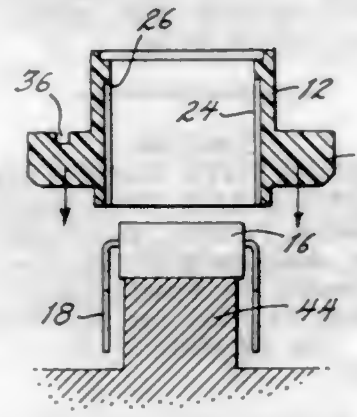
### 3,480,902
### INTEGRATED CIRCUIT CARRIER

**James W. Barnes, Drexel Hill, and Kenneth R. Hook, Devon, Pa., assignors to Barnes Development Company, Lansdowne, Pa., a corporation of Pennsylvania
Filed May 11, 1967, Ser. No. 637,834
Int. Cl. H05k** *1/00*

**U.S. Cl. 339—17** **5 Claims**

A carrier for a dual in-line package integrated circuit having central box open at either end with guide grooves formed in the sides to receive package leads. The carrier is provided with a flange having polarization notches and slots for fully mechanized handling. A cooperating contactor for the carrier to connect to test stand is provided. Contactor can be modified for loose dual in-line packages.



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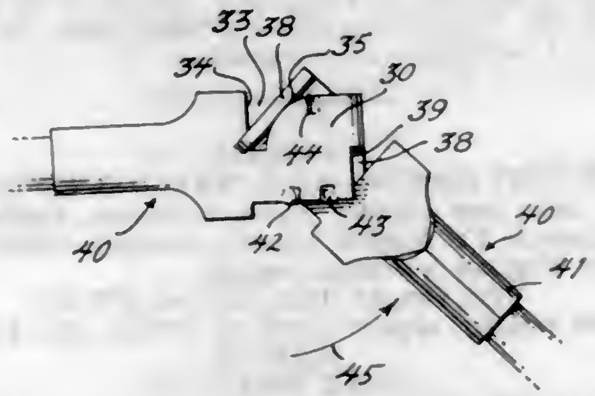
### 3,480,903
### HERMAPHRODITE ELECTRICAL CONNECTOR

**John Richard Filson, 95 N. Lakeside Drive, Medford, N.J. 08055**

**Filed Nov. 22, 1967, Ser. No. 685,186**
**Int. Cl. H01r** *25/00;* **F16b** *7/00*
**U.S. Cl. 339—47** **5 Claims**



This invention is especially concerned with electrical connections wherein identical electrical connectors are adapted for interfitting relationship, sometimes called hermaphrodite connectors. The specific connector of the instant invention includes a plate portion having a flange, wherein both the flange and plate portion are formed with slots extending inwardly from opposite respective sides.

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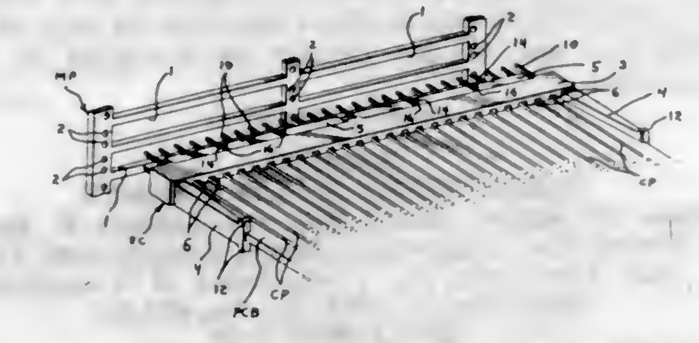
### 3,480,904
### MOUNTING MEANS FOR AN ELECTRICAL CONNECTOR

**Glenn Harlan Gluntz, Harrisburg, Pa., assignor to AMP Incorporated**

**Filed Aug. 21, 1967, Ser. No. 661,898**
**Int. Cl. H01r** *13/20*
**U.S. Cl. 339—65** **11 Claims**



An electrical connector mounting arrangement which constitutes a mounting panel having an opening extending therethrough, an electrical connector including a dielectric housing and electrical terminals disposed in passageways in the dielectric housing, the dielectric housing having a protruding section disposed within the opening of the mounting panel and including the terminals provided with sections extending outwardly beyond the protruding section, spaced projections disposed along an exterior surface of the protruding section adjacent an outer end thereof and in engagement with one surface of the mounting panel, and engaging section means provided on the protruding section inwardly from the spaced projections and being directed toward another surface of the mounting panel for limiting movement of the protruding section within the opening. The portions of the protruding section carrying the spaced projections are flexible due to oblong openings to permit the projections to flex during insertion of the protruding section in the panel opening, the sections of the terminals in alignment with the projections being twisted to limit flexure of the portions thereby locking the housing in the panel opening. Means are provided between the engaging section means and the other surface of the mounting panel to take up any play. Means are also provided to effect a ground connection between some of the electrical terminals and the mounting panel.

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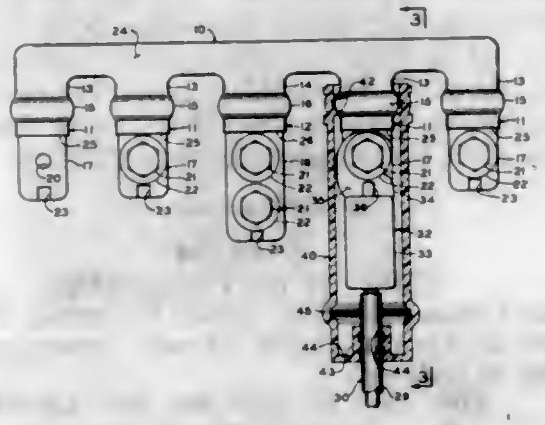
### 3,480,905
### ELECTRICAL CONNECTOR MANIFOLD

**John A. Toedtman, Warson Woods, Mo., assignor to ITT Blackburn Corporation, St. Louis, Mo., a corporation of Delaware**

**Filed Aug. 17, 1967, Ser. No. 661,318**
**Int. Cl. H01r** *9/10, 11/12, 13/52*
**U.S. Cl. 339—213** **8 Claims**



The manifold includes an elongate bus bar which is provided with an in-line row of transversely projecting terminals to facilitate the bending of a set of attached conductors on a substantially common curvature. Each terminal includes a lug attachment tang for the attachment of a conductor lug, each pair of associated conductor lug and lug attachment tang being locked by a tongue and groove locking means between their faces, to prevent relative rotation of the connected lug and tang. Individual, flexible insulating sheaths provide waterproof protection for each connection, the sheaths being pressure-sealed at one end to an associated terminal, and pressure-sealed at the other end to a conductor.

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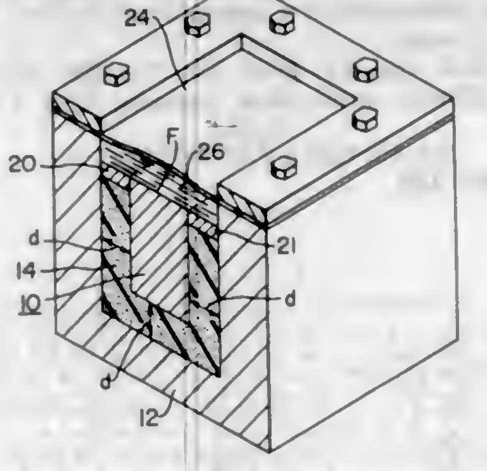
### 3,480,906
### TRANSDUCER HAVING A BACKING MASS SPACED A QUARTER WAVELENGTH THEREFROM

**John H. Thompson, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania**

**Filed Mar. 13, 1968, Ser. No. 712,829**
**Int. Cl. H04b** *13/02*
**U.S. Cl. 340—8** **7 Claims**

A transducer for deep sea operation having a front radiating surface with an inertia loading mass extending around the remaining surfaces of the transducer element at a distance *d* therefrom. The distance *d* is equal to a quarter wavelength (λ/4) of the operating frequency of the transducer. The space between the inertia loading mass and the transducer element is filled with a pressure transmitting compliant material.



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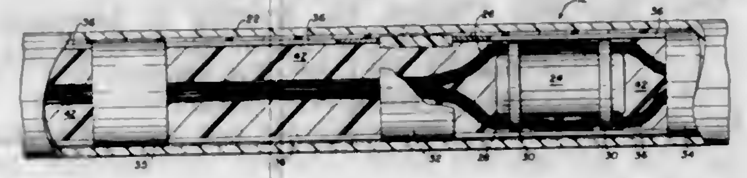
### 3,480,907
### NEUTRALLY BUOYANT HYDROPHONE STREAMER

**Joel D. King, Mesquite, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware**

**Filed Dec. 29, 1967, Ser. No. 694,532**
**Int. Cl. H04b** *13/00*
**U.S. Cl. 340—9** **13 Claims**



An elongated hollow jacket towable underwater by a marine vessel includes a plurality of hydrophones spaced along the interior thereof. Solid polymeric material having a plurality of discrete air-filled particles distributed throughout fills all remaining space within the hollow jacket to provide a uniform cross-sectional hydrophone streamer having a specific gravity approximating the specific gravity of the surrounding water. The hydrophone streamer is thus neutrally buoyant and may be towed underwater at a selected depth without the requirement of exterior floats or weights.

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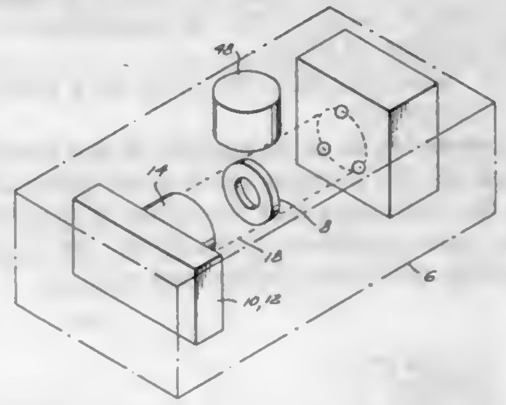
### 3,480,908
### SEISMOGRAPH

**Jorge G. Codina, Hartsdale, N.Y., assignor to Gravimetrics Incorporated, Washington, D.C., a corporation of Delaware**

**Filed May 16, 1968, Ser. No. 729,745**
**Int. Cl. G01v** *1/18*
**U.S. Cl. 340—17** **13 Claims**

A seismograph for measuring seismographic disturbances with extremely high sensitivity and accuracy, utilizing a mass which is free to move incrementally in any direction and a frame which receives the disturbance. The mass has an equilibrium position in the absence of disturbance, but is moved incrementally in the presence of disturbance. The mass is moved under the influence of a servo controlled electromagnetic field, and signals varying with both direction and severity of the disturbance are generated by the mass movement.



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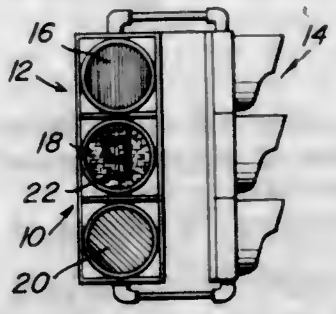
### 3,480,909
### TIME COUNTING TRAFFIC SIGNALLING SYSTEM

**James L. R. Hines, 826 Rivercrest, Abilene, Tex. 79605**

**Filed Nov. 2, 1966, Ser. No. 591,562**
**Int. Cl. G08g** *1/095*
**U.S. Cl. 340—43** **4 Claims**



1. In combination with a plural direction traffic signalling assembly having three different signal lamps for each direction and time countdown display means, a controller for governing operation of the signalling assembly and the countdown display means comprising, a lamp control section having a plurality of switching devices respectively connected to each of the signal lamps for rendering the same operative and inoperative, control gate means operatively connected to said switching devices for externally controlling operation of two of the signal lamps for each direction and means interconnecting said switching devices and the control gate means for internally controlling operation of the third signal lamp for each direction in a predetermined sequence with the two signal lamps, a timing section connected to said control gate means of the lamp control section for supply of timed signal pulses to sequentially operate the switching devices during a timing cycle, and logic circuit means connecting the timing section to the display means for displaying timing information during a portion of said timing cycle when one of said two externally controlled signal lamps is operative.

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### 3,480,910
### PULSE VALUE DETERMINING RECEIVER

**James G. Brenza, Putnam Valley, and Arthur A. Kusnick, Peekskill, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York**

**Filed Nov. 4, 1963, Ser. No. 321,227**
**Int. Cl. G08b** *29/00;* **H03k** *17/00*
**U.S. Cl. 340—146.1** **6 Claims**

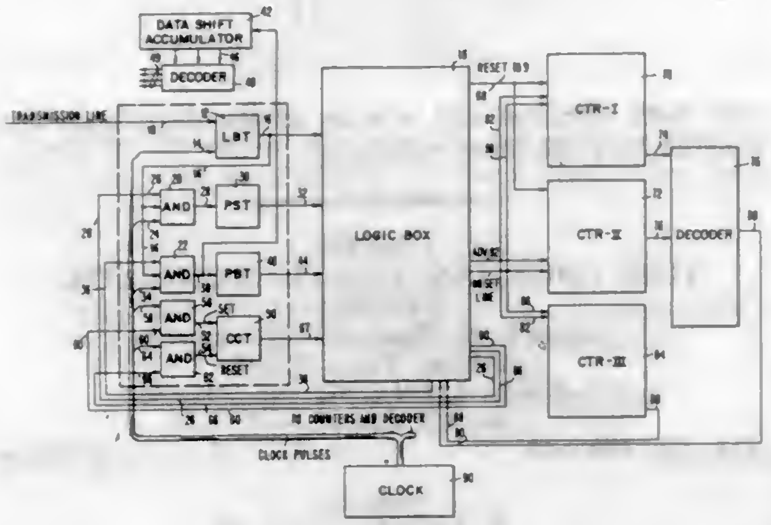
1. A device for determining the value of each pulse in a train of received data pulses where the clocks at the

data transmitter and at the data receiver may be out of synchronism comprising:

means for sampling said pulses, said sampling means attempting to sample each of said pulses a predetermined number of times;

means for indicating that the value of a data pulse has been determined;

means responsive to an indication that a predetermined fraction of the samples on a given pulse are of like value for indicating that the value of the pulse is that of the predetermined fraction of the samples and for setting said value determined means;



means for resetting said value determined means when the equivalent of said predetermined number of samples has been taken on a pulse;

means for counting the number of consecutive like samples;

and means responsive to the counting by said consecutive sample counting means when said value determined means is reset of a number of consecutive like samples equal to said predetermined fraction of the samples, said consecutive samples being of a value different from that stored in said indicating means, for indicating that the value of the next pulse in the train is that of the detected consecutive like samples and for indicating that the number of consecutive like samples have been taken on said next pulse.

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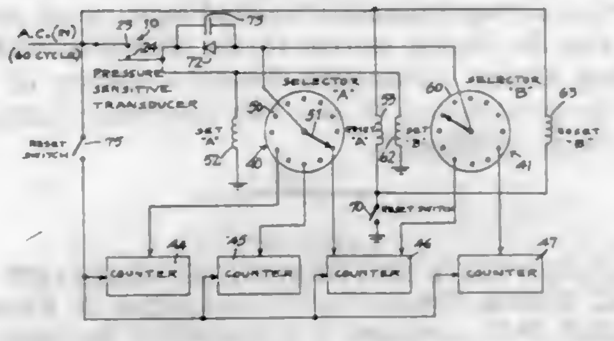
### 3,480,911

## SIGNATURE IDENTIFICATION INSTRUMENT

**Salvatore R. Danna, Ridgefield, Conn., assignor to Conetta Manufacturing Company, Inc., Stamford, Conn.**
**Filed Oct. 20, 1965, Ser. No. 498,604**
**Int. Cl. G01l** *3/24, 1/18;* **G01d** *1/00*
**U.S. Cl. 340—146.3 9 Claims**



A signature identification instrument in which the pressure exerted by a person's handwriting produces signals which are a function of the number of times predetermined writing pressure is applied and the duration of the application of each writing pressure.

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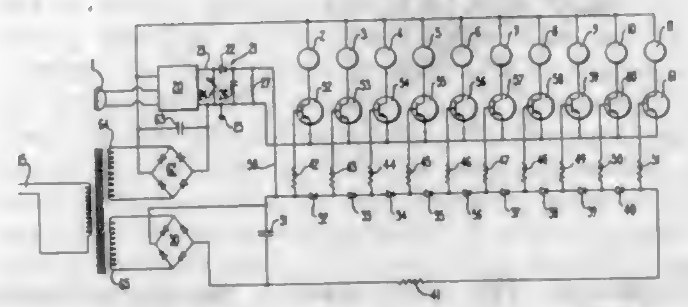
### 3,480,912

## SOUND LEVEL VISUAL INDICATOR HAVING CONTROL CIRCUITS FOR CONTROLLING PLURAL LAMPS

**Sheridan D. Speeth, Buffalo, N.Y., and Philip C. Norem, Fort Erie, Ontario, Canada, assignors to Peninsula Research & Development Corporation Limited, Fort Erie, Ontario, Canada**
**Filed Aug. 14, 1968, Ser. No. 752,693**
**Claims priority, application Canada, May 17, 1968, 20,315**
**Int. Cl. G01d** *7/00;* **G10g** *7/00*
**U.S. Cl. 340—148 14 Claims**



A visual sound level indicator for use in a classroom to indicate to a pupil when he is not speaking loud enough. The indicator has a semi-transparent front panel divided into parallel strips each of a different colour with an indicating lamp behind each strip. A microphone and electrical circuit controls the indicator lamps to illuminate the coloured strips in succession so as to indicate the level of the pupil's voice.

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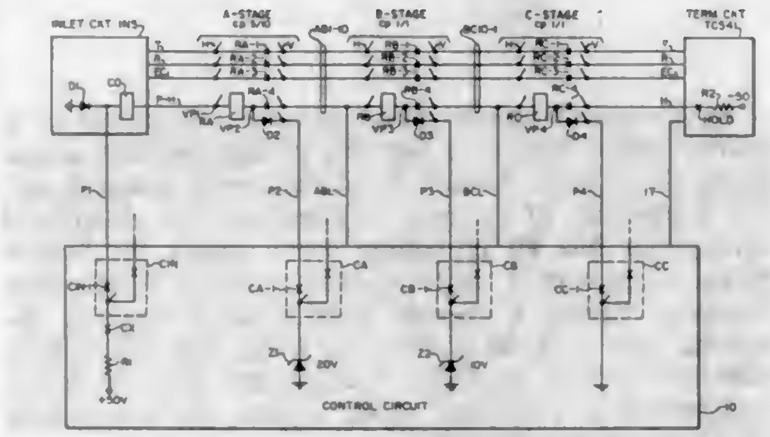
### 4,480,913

## MARKING ARRANGEMENT FOR A CROSS-POINT SWITCHING SYSTEM

**Boris Sherstiuk, Chicago, Ill., assignor to Automatic Electric Laboratories, Inc., a corporation of Delaware**
**Filed Mar. 27, 1967, Ser. No. 626,090**
**Int. Cl. H04q** *1/00, 3/00*
**U.S. Cl. 340—166 4 Claims**



Apparatus for establishment of a communication path in a multi-stage relay cross-point switching system employing a single winding relay for each cross-point and having a make contact connected in series with its operating winding. A Zener diode connected in series with a marking potential to the junction between the winding and the make contacts of inter-stage links, provides an operating path for the associated relay. Each relay in the selected path is then sequentially operated starting from a particular end with succeeding relays operating upon the closing of the contacts of its immediately preceding relay. The closing of these contacts, in addition to extending an operating potential to the succeeding relay, serves to extinguish the associated Zener diode.

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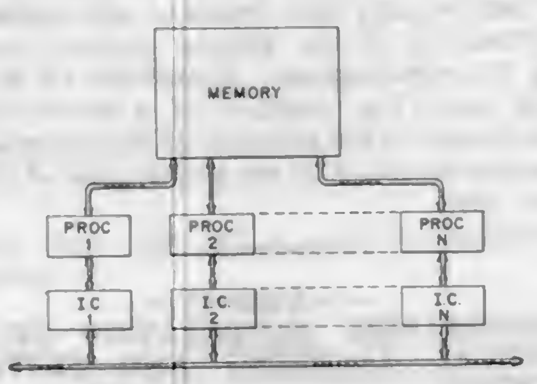
### 3,480,914

## CONTROL MECHANISM FOR A MULTI-PROCESSOR COMPUTING SYSTEM

**Hans P. Schlaeppi, Chappaqua, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Jan. 3, 1967, Ser. No. 607,040**
**Int. Cl. G11b** *13/00;* **G06f** *1/00, 7/00*
**U.S. Cl. 340—172.5 22 Claims**



The present invention relates to improved control facilities for a computer organization comprising several processing units or processors. More particularly, it relates to such control facilities wherein each processor can be thought of as being associated with a separate control mechanism or interaction unit wherein each of said units can communicate directly with like units associated with other processors. The interaction units communicate with each other over a special shared communication bus wherein only one unit can be transmitting over the bus at any one time. Any of these special interaction units may be working on a task on behalf of their own individual processor or performing a task or request which was requested by one of the other interaction units. A significant feature of the proposed control mechanism is that each of the special interaction units works in parallel with its own processor and may additionally perform tasks for other processors which in more conventional systems would require an interruption of the task the processor is currently performing. Additionally, special control features are provided so that the interaction units may communicate directly with each other without going through time consuming memory access cycles. While the present embodiment illustrates a satisfactory method of achieving the interaction control, it will be apparent that many other hardware configurations could be utilized which would be capable of performing the broad functional operation prescribed by the present invention.

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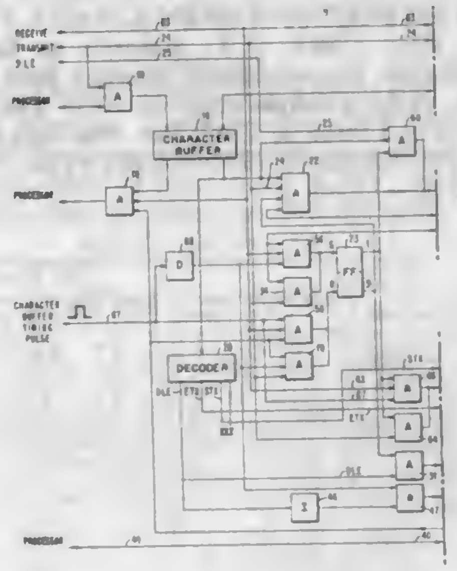
### 3,480,915

## DATA TRANSMISSION APPARATUS

**John L. Eisenbies, Raleigh, N.C., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Jan. 30, 1967, Ser. No. 612,454**
**Int. Cl. G11b** *13/00;* **G06f** *1/00, 7/00*
**U.S. Cl. 340—172.5 2 Claims**

A transmitter and receiver transfers data characters which may include numeric, alphabetics and special by utilization of permutations of signals each referrable to a character. In accordance with the number of bits available ($n$) for a data character and the coding system used, is determined the maximum number of different characters available which is the data set: $2^n$. To transfer binary data or data in another code set, the transmitter transmits a sequence of special characters to control the receiver to surpress normal interpretation of characters and interpret all characters as binary data. To transfer from this mode of data transmission to the regular code set, a second sequence comprising two special characters is transmitted. To prevent random binary data containing the required two character sequence from switching the mode of transmission erroneously, the transmitter recognizes the first character of the two character sequence whenever it occurs in the binary data and transmits immediately following another character identical to the first character. Control apparatus in the receiver responsive to the first character of the two character set is reset by the second character when it is the same as the first character—only one of the pair is treated as binary data by the receiver; the other one is discarded.



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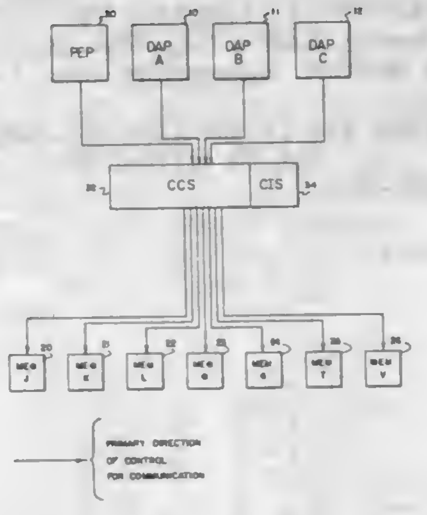
### 3,480,916

## APPARATUS PROVIDING IDENTIFICATION OF PROGRAMS IN A MULTIPROGRAMMED DATA PROCESSING SYSTEM

**John E. Belt, Tucson, and Lorenz A. Hittel, Phoenix, Ariz., and Laszlo L. Rakoczi, Newport Beach, Calif., assignors to General Electric Company, a corporation of New York**
**Filed Jan. 30, 1967, Ser. No. 612,560**
**Int. Cl. G11c** *7/00*
**U.S. Cl. 340—172.5 11 Claims**



A data processing system effecting multiprogramming, each program symbolically addressing the memory bank when communication between the executing processor and the memory bank is required, each of the multiprogrammed programs being assigned a unique identifier element, wherein apparatus employing the identifier elements provides a respective topological relationship between the storage cells of the memory bank and the symbolic addresses provided by the corresponding program to enable the cells utilized by each program to be located in non-contiguous regions of the memory bank and to enable a plurality of the programs to have common access to other regions of the memory bank.

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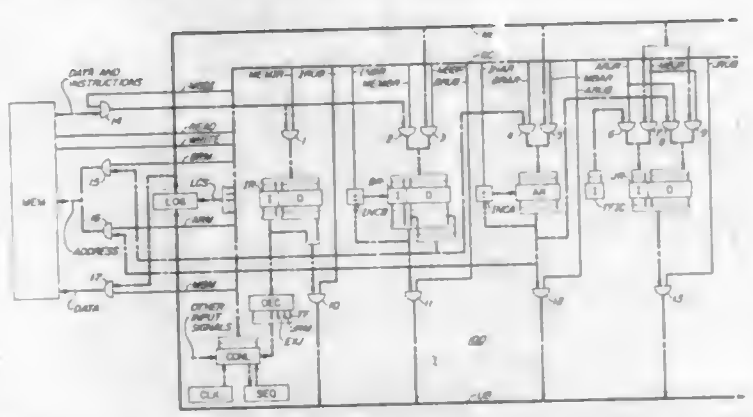
### 3,480,917
## ARRANGEMENT FOR TRANSFERRING BETWEEN PROGRAM SEQUENCES IN A DATA PROCESSOR
**James F. Day, Clark, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed June 1, 1967, Ser. No. 642,867**
**Int. Cl. G11b** *13/00;* **G06f** *1/00, 7/00*
**U.S. Cl. 340—172.5** **5 Claims**



The disclosed program controlled data processor includes a random access bulk memory for storing a main program, subroutines and data and a computer or processing section. The computer section comprises address, instruction, data and jump registers, memory access circuits, an instruction decoder, timing and control logic, and a prewired transfer instruction code generator. The generator inserts a fixed transfer instruction code into the jump register at the same time a return address obtained from the address register is placed in the jump register during execution of a jump transfer to a subroutine. The first instruction of the subroutine then causes the jump register contents to be written into memory as the last instruction of the subroutine.

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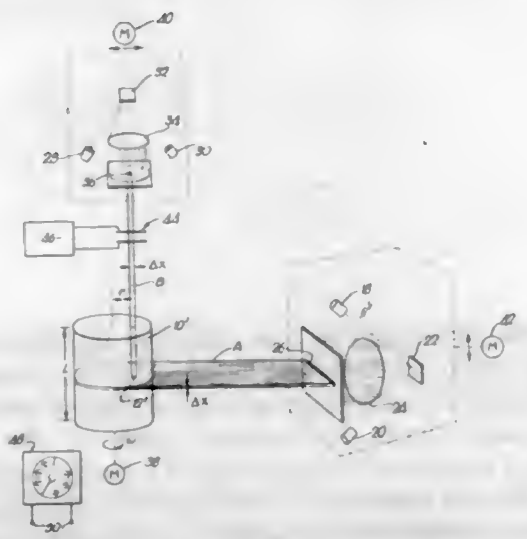
### 3,480,918
## THREE-DIMENSIONAL MEMORY HAVING PHOTON EXCITABLE IMPURITY SEMICONDUCTOR STORAGE VOLUME
**David K. Benson, Kansas City, Mo., assignor to Midwest Research Institute, Kansas City, Mo., a corporation of Missouri**
**Filed Apr. 14, 1965, Ser. No. 448,169**
**Int. Cl. G11b** *7/00*
**U.S. Cl. 340—173** **7 Claims**



A three-dimensional, optical memory has high information density and employs a storage medium consisting of a homogeneous volume of a photon excitable impurity semiconductor. Information is stored and retrieved by intersecting light beams which scan the volume of the memory. Information storage in a given volume element is effected when two recording light beams of appropriate frequencies intersect therein, causing two-step electronic transitions which transfer electrons from one kind of impurity atom site to another. This altered electron distribution, which represents the stored bit of information, remains unaltered until the volume element is interrogated by two interrogating light beams of appropriate frequencies intersecting in the volume element, such beams causing two-step-electronic transistions to the original impurity sites. The presence of a stored information bit is indicated by the emission of fluorescence radiation as the electrons return to the ground state of the original impurity sites.

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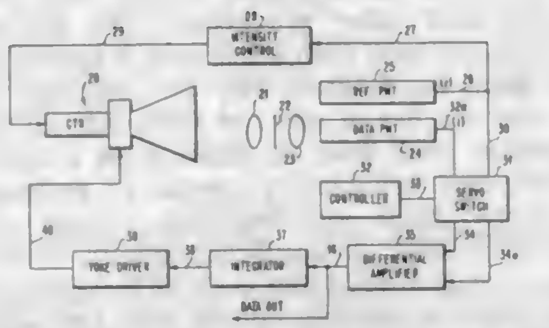
### 3,480,919
## PHOTOGRAPHIC INFORMATION STORAGE OPTICAL TRACKING AND SWITCHING SYSTEM
**Roy A. Jensen, San Jose, and Ira B. Oldham, Los Gatos, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Nov. 22, 1965, Ser. No. 509,080**
**Int. Cl. G11b** *7/00, 9/00*
**U.S. Cl. 340—173** **12 Claims**



A track switching system for use with a photographic storage element. Optical digital information recorded in tracks on a photographic element, is read by a scanning CRT. During scanning, a tracking servomechanism is utilized which is grey level sensitive. The grey level is monitored to supply servo signals to the cathode ray tube to cause the spot to correctly follow the line of information. Each group of two lines of information is separated by an opaque bar and from adjacent groups by a transparent bar so that the grey level signal from the line being scanned will provide an indication as to whether the spot is too high or too low. Too much light will cause the spot to be moved in one direction while a lesser amount of light will cause the spot to be moved in the opposite direction relative to the line of information. By the generation of an apparent tracking error signal this corrective operation is utilized to accomplish the transfer of the scanning spot from one line of information to another line.

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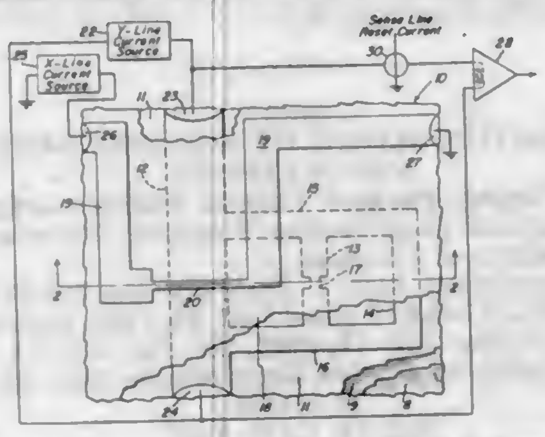
### 3,480,920
## MULTIAPERTURE CRYOGENIC STORAGE CELL
**Vernon L. Newhouse, Scotia, and Joseph L. Mundy, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York**
**Filed Mar. 10, 1967, Ser. No. 622,229**
**Int. Cl. G11q** *11/44*
**U.S. Cl. 340—173.1** **17 Claims**

A persistent current cryogenic storage cell, for use in a bit-organized memory matrix, comprising a Y-line layer of tin or indium on an insulated, permanently superconducting ground plane, crossed by a permanently superconducting lead X-line. Persistent current can circulate through two additional legs in parallel with the Y-line leg, thus providing storage. Any cell can be interrogated, or

its contents changed, by driving current through both the X and Y lines of the cell so as to inject Y current into the storage loop. The cell is read by destroying the stored current.



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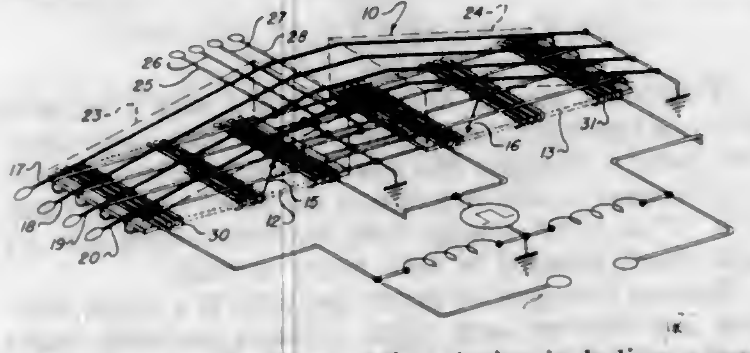
### 3,480,921
## PULSE RECORDING MEANS
**Robert P. Matthews, Albuquerque, Gustavus J. Simmons, Cedar Crest, and Fred J. Wymer, Albuquerque, N. Mex., assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission**
**Filed Oct. 7, 1964, Ser. No. 402,371**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174** **10 Claims**



A pulse amplitude recording device including a magnetic element having an original, stable direction of magnetization and a pulse conducting means overlying the magnetic element in a direction at an angle less than or greater than 90 degrees to said original direction for conveying a pulse at least partially across said element to provide a magnetic field in the plane of the element in a direction greater than 90 degrees from said original direction to reverse the magnetization of a portion of the element proportional to the pulse amplitude adjacent the pulse conducting means, and also including means for recording pulses of opposite polarity.

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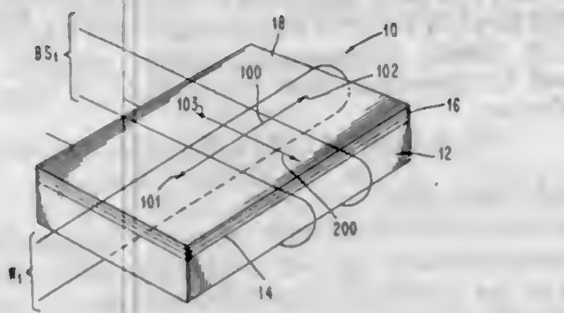
### 3,480,922
## MAGNETIC FILM DEVICE
**Barry L. Flur, Pieter D. Davidse, and Leon I. Maissel, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed May 5, 1965, Ser. No. 453,396**
**Int. Cl. G11b** *5/62*
**U.S. Cl. 340—174** **7 Claims**



A magnetic film device wherein a dielectric film that is disposed between the magnetic film and its supporting substrate. The use of a radio frequency sputtered dielectric film layer in place of the vacuum evaporated dielectric layers conventionally employed in magnetic films gives a high degree of uniformity to the magnetic film devices thus produced.

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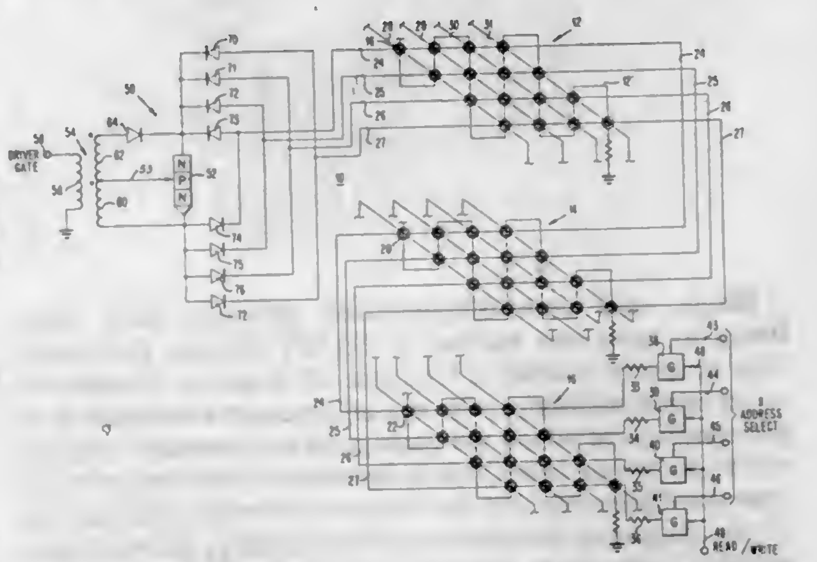
### 3,480,923
## MEMORY DRIVING CIRCUIT
**David Elliott Norton, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York**
**Filed Dec. 6, 1965, Ser. No. 511,640**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174** **8 Claims**



A memory accessing system for selecting a magnetic core in a memory segment including conductive means associated with all magnetic cores of a memory segment. A gate means is operative to selectively apply gate potentials to the conductive means. The gate means is responsive to apply a first potential to a selected conductive means and a complementary potential to all other conductive means so as to allow full energizing current to flow in one direction through the selected conductive means and equal portions of said energizing current to flow in the opposite direction through the unselected conductive means.

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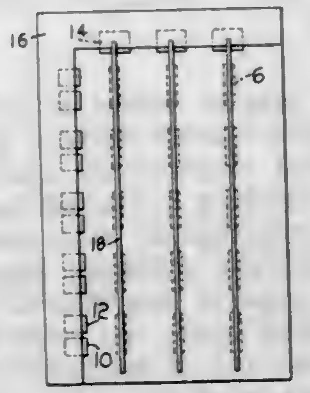
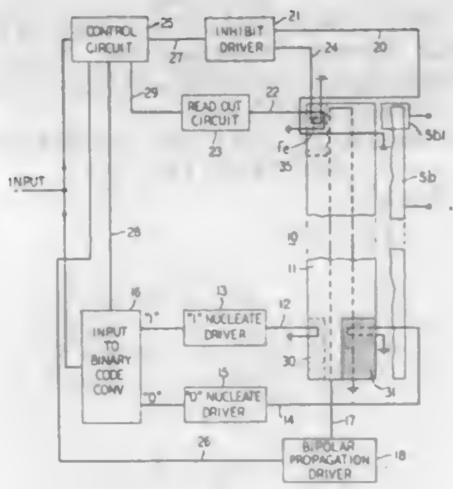
### 3,480,924
## HIGH SPEED THIN FILM MEMORY
**David J. Addis, Swampscott, Walter R. J. Brown, Lexington, and Martin S. Osman, Newton, Mass., assignors, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware**
**Filed Jan. 26, 1967, Ser. No. 611,880**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174** **4 Claims**



This invention relates to the fabrication of a thin film memory utilizing electro-deposition techniques both for the memory elements and the terminating resistors on the word, sense and digit lines.

### 3,480,925
## ASYNCHRONOUS MAGNETIC CIRCUIT

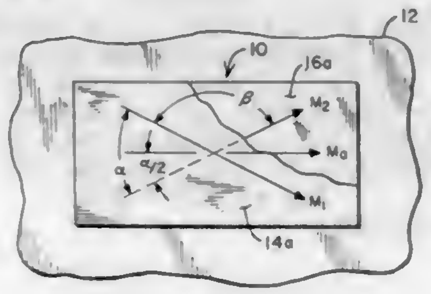
**Paul C. Michaelis, Scotch Plains, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York**
**Filed May 19, 1967, Ser. No. 639,831**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174** **11 Claims**



Single wall reverse-magnetized domains have been found to repel one another as do like charged pith balls. This property enables a sequence of domains, introduced at an input position, to be moved through a medium to a gate position at which the passage of the foremost domain of the sequence is selectively inhibited. Next consecutive domains "queue up" on the foremost domain. The passage of the foremost domain and, subsequently, of next consecutive "foremost" domains, to a detector adjacent the gate position is controlled by the gate at any arbitrary rate different from the rate at which the domains are introduced. A simple asynchronous circuit is provided.

### 3,480,926
## SYNTHETIC BULK ELEMENT HAVING THIN-FERROMAGNETIC-FILM SWITCHING CHARACTERISTICS

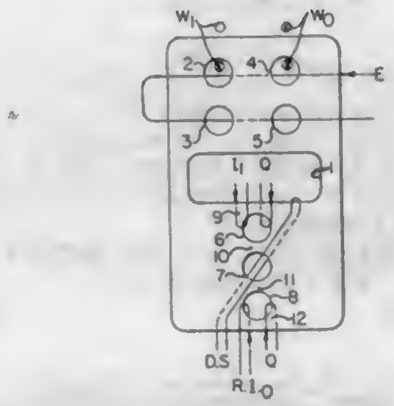
**Paul E. Oberg, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed June 16, 1967, Ser. No. 646,639**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174** **9 Claims**



An element that may be utilized as a transformer, or inductor, core or as a bistable memory core comprising a plurality of stacked, magnetizable layers of thin-ferromagnetic-films separated by interstitial layers of insulating material. The magnetizable layers possess the magnetic property of uniaxial anisotropy providing an easy axis thereby with adjacent magnetizable layers having their easy axes aligned along two respectively different axes forming a mean axis of magnetization $M_a$ that is intermediate the two axes of the two sets, each set formed by the alternate magnetizable layers. Operation as a transformer, or inductor, core is achieved by the application and detection of an AC field along a magnetic axis that is orthogonal to the mean axis $M_a$; operation as a memory core is achieved by the application of drive fields and detection of switching fields along a magnetic axis that is parallel to the mean axis $M_a$.

### 3,480,927
## ASSOCIATIVE MAGNETIC MEMORY DEVICES AND MATRICES

**Michael Godfrey Harman, London, England, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**
**Original application Mar. 6, 1963, Ser. No. 263,271, now Patent No. 3,341,828, dated Sept. 12, 1967. Divided and this application July 12, 1967, Ser. No. 652,818**
**Claims priority, application Great Britain, Mar. 30, 1962, 12,264/62**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174** **4 Claims**



A magnetic storage device is formed with a plurality of major apertures, the circumference of each major aperture being a magnetic flux storage path. The storage flux is established in one direction or the other, corresponding to a "1" or a "0" storage state, by write means that are individually coupled to each major aperture.

Between each pair of major apertures is a minor aperture, and between each minor aperture and each major aperture is an interrogate and readout aperture. The interrogate and readout apertures are each linked by a sense winding, and the minor apertures are each linked by a bias winding.

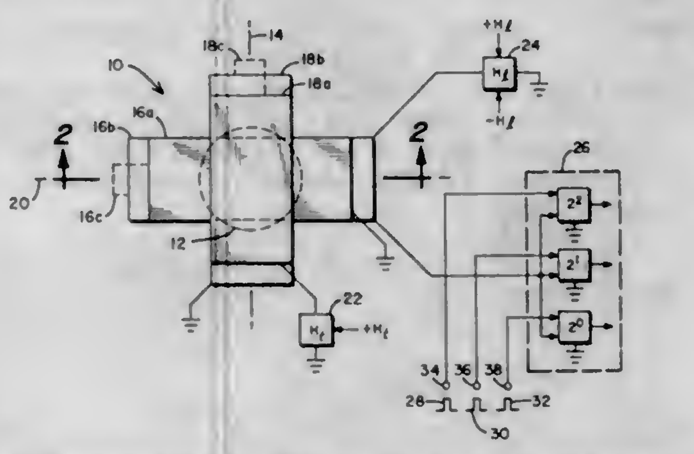
A multiple-aperture write branch for magnetic storage devices is provided, by which, through coincident energization of an enable winding that links all of the apertures, and one of a number of individual write windings each of which passes through only one of the apertures, the storage state of the magnetic storage device is established.

A magnetic write branch having a number of first write apertures with individual write windings coupled to each first write aperture is disclosed. A plurality of second write apertures are positioned intermediate the first write apertures and a storage loop. An enable winding passes through each aperture, and current through the enable winding and the write winding establishes the magnetic flux storage state of the storage loop.

### 3,480,928
## MAGNETIZABLE MEMORY ELEMENT HAVING A PLURALITY OF READ-ONLY DATA STATES

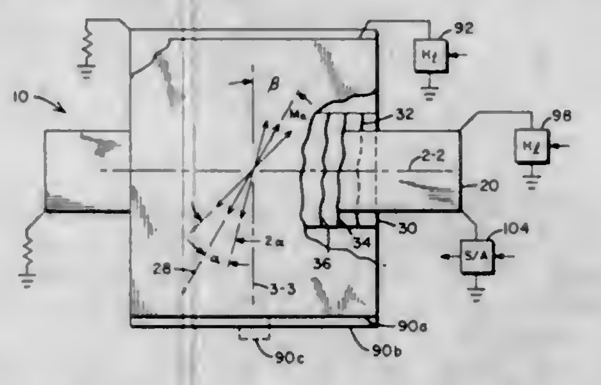
**Alan D. Kaske, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Sept. 21, 1967, Ser. No. 669,493**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174** **5 Claims**

A magnetizable read-only memory element that permits the storage of any one of a plurality of read-only data states in the nondestructive (NDRO) mode. The NDRO storage mode involves the relative angle of skew of the element's magnetic easy axis from a line that is parallel to the magnetic axis of the inductively coupled sense line. By utilizing a read drive field that is directed orthogonal to the sense line's magnetic axis and that is of a "stepped" configuration in conjunction with step field intensities of particular relationships there are provided uniquely distinguishable output signals for each skew angle, i.e., each memory state.



### 3,480,929
## MULTILAYERED MATED-FILM MEMORY ELEMENT HAVING PAIRS OF LAYERS OF DIFFERING $H_k$

**Robert J. Bergman, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Filed Sept. 27, 1967, Ser. No. 671,026**
**Int. Cl. G11b** *5/74*
**U.S. Cl. 340—174** **7 Claims**

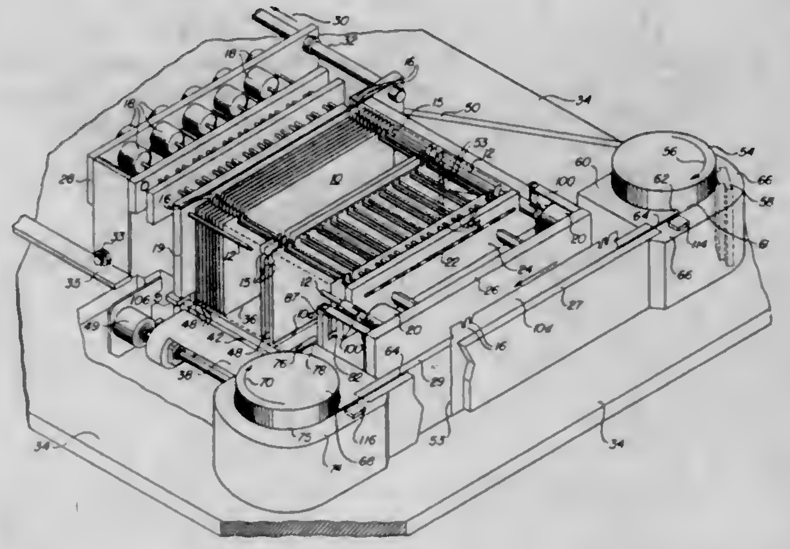


A magnetizable memory element that includes a plurality of layers of thin-ferromagnetic-films that are formed in a stacked, superposed relationship about and sandwiching therebetween a current conducting drive line. The magnetizable layers have opposing sides that overlap the drive line to form closely-coupled portions on both sides of the enveloped drive line for creating a substantially closed flux path about the enveloped drive line. The layers' easy axes are skewed away from the magnetic axis, i.e., a line orthogonal to the longitudinal axis, of the enveloped drive line providing single-domain rotational switching of the layers' magnetization during both the write and read operations. Pairs of layers on each side of the enveloped drive line are comprised of layers of relatively high and low $H_k$ characteristics whereby an energized enveloped drive line substantially effects only the low $H_k$ layers upon read-out providing nondestructive readout of the information stored in the high $H_k$ layers.

### 3,480,930
## RECORD PROCESSING APPARATUS

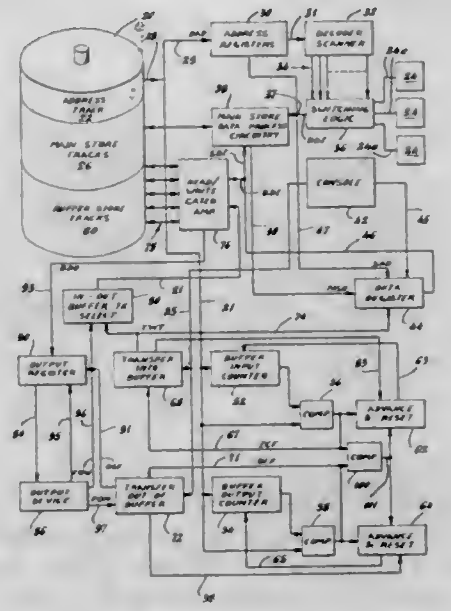
**Michael S. Shebanow, Medfield, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**
**Filed June 21, 1965, Ser. No. 465,690**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174.1** **33 Claims**

A random access system for storing and processing rectangular cards having information stored thereon in tracks. The cards are suspended in a vertical storage position above a reference surface by holding rods which cooperate with notches in the side edges of the cards and by a set of selection rods having particular cross-sections designed to cooperate with notches in the top major edges of the cards. Rotation of the selection rods in accordance with an address code permits any selected card to drop to the reference surface, whereupon the card is accelerated along a raceway by an impelling bar to a revolving vacuum capstan. As the card is rotated by a capstan, it passes by a read station adjacent to the capstan and the desired data transfer is effected at the rate of one track per revolution. Upon completion of data transfer the card is released and propelled down a return raceway to a second decelerating capstan. A lift plate is provided to receive the decelerated card from the second capstan and return it to a storage position at the end of the stack.



### 3,480,931
## BUFFER DATA STORAGE SYSTEM USING A CYCLICAL MEMORY

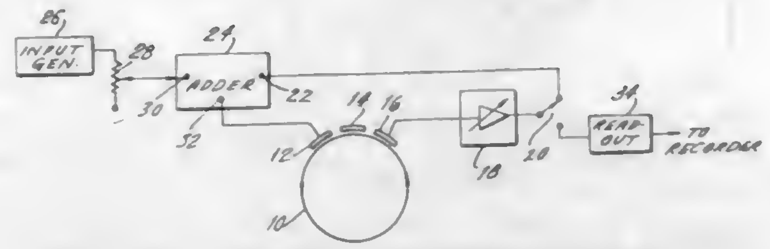
**Ambros Geissler, Wilton, and Edwin Singer, Stamford, Conn., assignors, by mesne assignments, to Vogue Instrument Corp., Plainview, N.Y., a corporation of New York**
**Continuation-in-part of applications Ser. No. 437,781, Mar. 8, 1965, and Ser. No. 484,522, Sept. 2, 1965. This application Sept. 7, 1965, Ser. No. 485,484**
**Int. Cl. G11b** *5/00, 13/00;* **G06f** *1/00*
**U.S. Cl. 340—174.1** **22 Claims**



The disclosed apparatus employs a drum address track to control the read-in and read-out of data in a buffer store consisting of a plurality of drum tracks. A buffer input counter operating in conjunction with address circuitry and the address track locates successive buffer storage locations for recording of each successive data input. Similarly, a buffer output counter operating in conjunction with the address circuitry and the address track locates successive buffer storage locations for read-out. The relative contents of the input and output counters manifest the number of stored data inputs waiting read-out.

### 3,480,932
### ANALOG SPECTRUM ACCUMULATOR

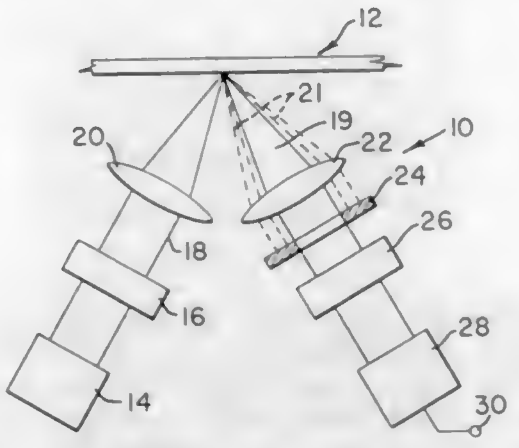
**Isaac Joseph Brandstadter, Jerusalem, Israel, assignor to Yissum Research Development Company, Hebrew University, Jerusalem, Israel, a company of Israel**
**Filed Mar. 29, 1966, Ser. No. 538,419**
**Claims priority, application Great Britain, Oct. 29, 1965, 45,810/65**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174.1** **15 Claims**



Apparatus for increasing the signal-to-noise ratio of a recurring signal including means for producing an output signal representative of the algebraic sum of recurring signals previously received, and means for coupling that output signal to an accumulator to be added in synchronism with the next recurring signal.

### 3,480,933
### SPATIAL FILTERING NOISE REDUCTION SCHEME FOR A MAGNETOOPTIC READOUT SYSTEM

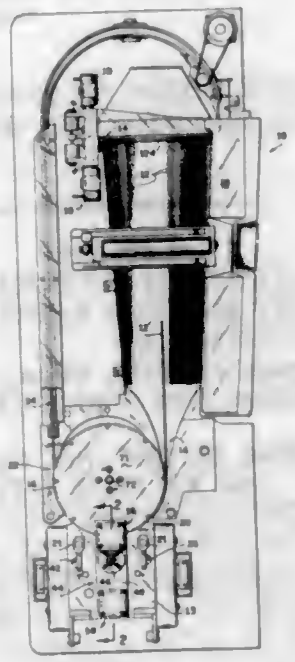
**David Treves, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California**
**Filed Oct. 12, 1966, Ser. No. 586,255**
**Int. Cl. G11b** *5/00;* **G02f** *1/22*
**U.S. Cl. 340—174.1** **4 Claims**



An optical iris is disposed at a preselected position in the viewing optical branch of a magnetooptic readout system, wherein the position and size of the iris is chosen to remove from the overall reflected beam the noise originating from surface imperfections in the storage medium. The positioning of the iris takes advantage of the fact that the surface imperfections cause scattering of the light in a larger solid angle than the angle imparted to the light which forms the main information carrying beam.

### 3,480,934
### POSITIONING MECHANISM FOR TRANSDUCING HEAD UNIT

**Meryl E. Miller, Gardena, Stanley R. Huddleston, Manhattan Beach, and Carl F. Work, Torrance, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**
**Filed Aug. 18, 1966, Ser. No. 573,313**
**Int. Cl. G11b** *5/00;* **B65h** *3/44;* **G06k** *7/00*
**U.S. Cl. 340—174.1** **13 Claims**

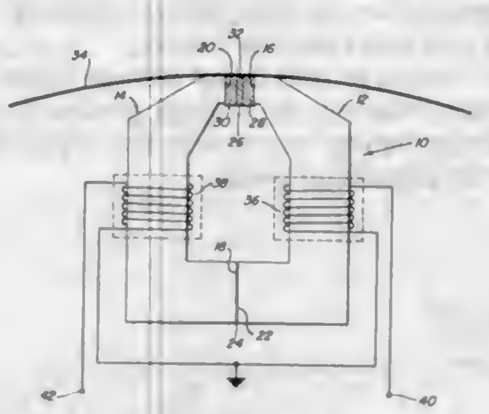


A random access storage arrangement for performing transducing operations on data recorded in parallel tracks on a magnetically coated strip. The arrangement includes an assembled group of strips from which any one strip can be dropped to a rotary capstan transport means adapted to engage and move the strip past a slidably mounted head unit including a plurality of magnetic transducing heads. Actuator means is provided capable of selectively moving the head unit at fixed increments to dispose the transducing heads thereof over predetermined ones of the parallel tracks of the transported strip. Control means which provides a command for selecting the strip and the track thereon to be operated upon also provides for delaying a transducing operation to be performed on the selected track of the transported strip dependent upon whether the head unit must be shifted by the actuator to enable the proper transducing head of the head unit to cooperate with the selected track.

### 3,480,935
### ELECTROMAGNETIC TRANSDUCER HAVING A VARIABLE GAP WIDTH FOR RECORDING AND CHECKING SAID RECORDING

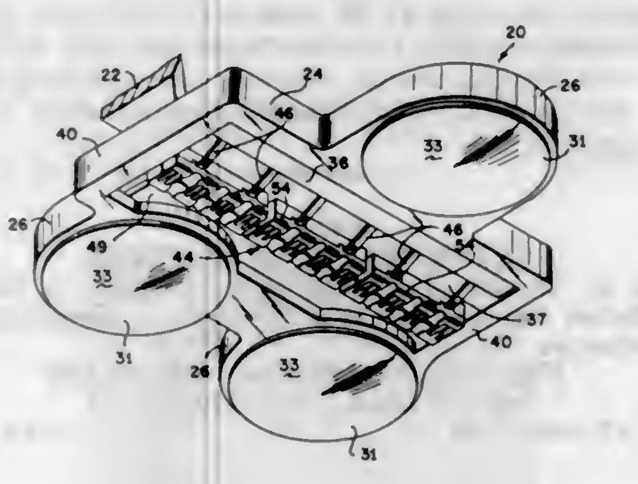
**Charles L. Springer, Denver, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware**
**Filed Sept. 7, 1966, Ser. No. 577,624**
**Int. Cl. G11b** *5/30*
**U.S. Cl. 340—174.1** **6 Claims**

An electromagnetic transducer is shown having a core piece and a gap formed therein in which a pair of intermediate magnetic gap spacers are arranged on opposite sides of a nonmagnetic gap spacer. The intermediate gap spacers saturate at a lower level than the core piece material wherein a recording signal applied to the core piece saturates the intermediate gap spacers. The transducer thus records across a wide gap upon a contacting magnetic tape which gap includes the magnetic and nonmagentic spacers. The magnetic tape is then moved for generating a reproduce signal within a narrow gap including only the nonmagnetic gap spacer, as the intermediate gap spacers are not saturated by the lower level reproduce signal. This arrangement checks that the recording signal was actually recorded upon the tape.



### 3,480,936
### MAGNETIC TRANSDUCER HEAD ASSEMBLY

**Richard K. Gerlach, Rolling Hills Estates, and William H. Lawrence, Palos Verdes Estates, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland**
**Filed Oct. 10, 1966, Ser. No. 585,674**
**Int. Cl. G11b** *5/00*
**U.S. Cl. 340—174.1** **10 Claims**

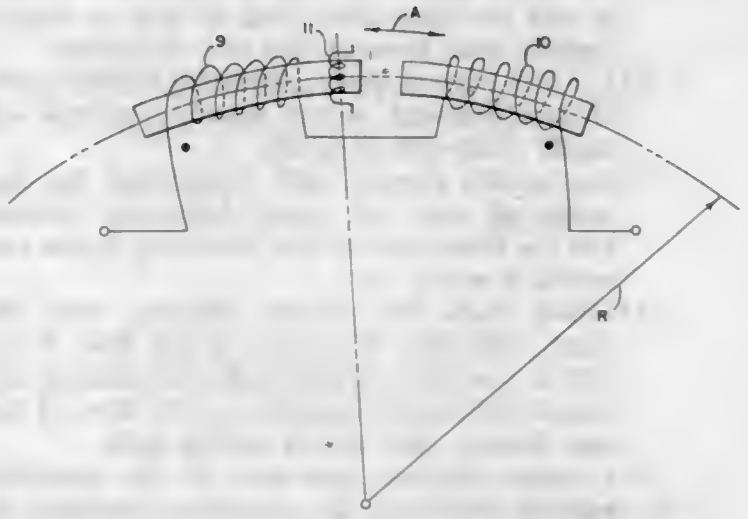


A head mounting assembly for a recording apparatus comprising a transducer head unit adapted to fly in an air film produced by a moving recording surface. The mounting assembly comprises an anchor assembly including a pad having a surface that forms an air foil whereby the pad is caused to ride on the air film spaced from the recording surface. Biasing means connecting the transducer head unit to the anchor assembly serves to bias the head unit at a substantially predetermined distance from the recording surface.

### 3,480,937
### ELECTRICAL POSITION INDICATORS

**Anthony George Robinson, East Cowes, Isle of Wight, England, assignor to Westland Aircraft Limited, Somerset, England**
**Filed Sept. 24, 1965, Ser. No. 489,809**
**Claims priority, application Great Britain, Sept. 27, 1964, 39,911/64**
**Int. Cl. G08c** *19/06;* **H01f** *21/06*
**U.S. Cl. 340—196** **6 Claims**

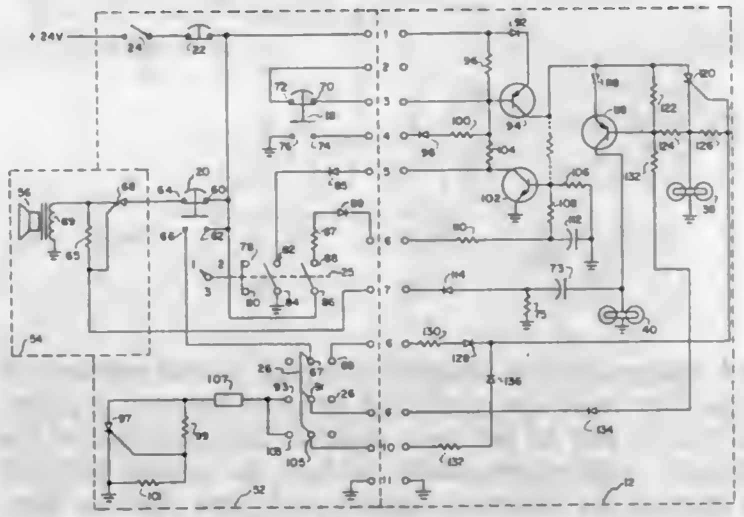
An electric indicator for controlling the positions of two relatively moveable parts consisting of a detector attached to one part and a coil attached to the other part. The relative movement of the two parts is pivotal and the coil is wound on a curved core the radius of the curve being equal to the distance between the detector and the pivotal point. The coil is in two portions wound in phase opposition and the windings of the two positions are arranged so that the density of turns is highest at



the ends of the core and lowest at the adjacent ends of the two portions. This arrangement of turns provides a magnetic field in which the flux density is highest at the ends and decreases to a null point at the center. The detector moves in close proximity to the coil and generates a signal the strength and phase of which depends upon the flux density of the part of the magnetic field in which it is positioned.

### 3,480,938
### ANNUNCIATOR SYSTEM

**Merle E. Martin, Dallas, Tex., assignor to Beta Corporation, Dallas, Tex., a corporation of Texas**
**Filed Feb. 5, 1965, Ser. No. 430,577**
**Int. Cl. G08b** *25/00*
**U.S. Cl. 340—213.1** **17 Claims**



1. An annunciator system comprising:
(a) a group of indicating means to be associated with a group of variables;
(b) each of said indicating means being capable of producing two different indications;
(c) control circuit means effective to provide different indications by said indicating means including:
  (1) first and second signal responsive elements each having first and second electrodes, said first and second signal responsive elements normally

exhibiting a high impedance between said two electrodes and a lower impedance when a signal is applied thereto,

(2) a switching device having two electrodes, said device normally exhibiting a high impedance between said two electrodes and being switched to exhibit a low impedance between said two electrodes responsive to a control signal being applied to said device and remaining in said low impedance state so long as holding current flows through said two electrodes,

(3) a first current path comprising the electrodes of said first and second signal responsive elements connected in series,

(4) a second current path comprising the electrodes of said first signal responsive element and the electrodes of said switching device connected in series,

(5) said indicating means effecting said first alarm indication responsive to the flow of current at said first current path and effecting said second indication responsive to the flow of current through said second current path,

(6) means effective responsive to the associated variable exhibiting an abnormal condition for applying signals to said first and second signal responsive elements to cause said first and second signal responsive elements to exhibit said lower impedance and permit current to flow in said first current path, and

(7) means for controlling the application of a control signal to said switching device to thereby control the flow of current in said second current path.

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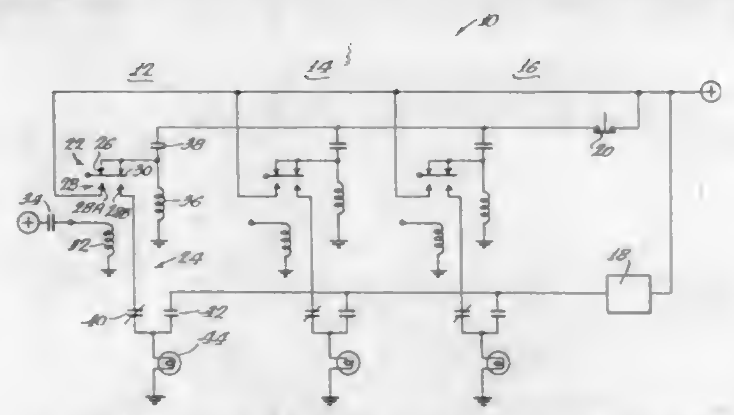
## 3,480,939
## CHANGE-OF-STATE DETECTOR

**Wyman L. Deeg, Glenview, Ill., assignor to C. P. Clare & Company, Chicago, Ill., a corporation of Delaware**
**Filed June 19, 1967, Ser. No. 646,933**
**Int. Cl. G08b** *25/00;* **H04q** *9/00*
**U.S. Cl. 340—213.2** **10 Claims**



A change-of-state detector in which spaced contacts of a mercury relay are connected in series between a potential source and an indicator control. The armature of the mercury relay momentarily bridges the spaced contacts to operate the indicator control each time that the mercury relay is operated or released by the field contacts in response to a change in the state of the monitored value or device.

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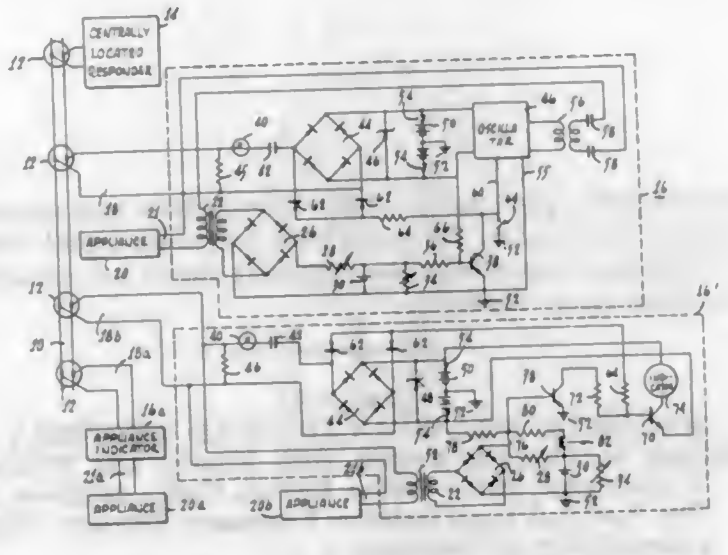
## 3,480,940
## CONDITION INDICATOR FOR APPLIANCE

**Zeev Lieser, New York, N.Y., assignor to RCA Corporation, a corporation of Delaware**
**Filed Dec. 14, 1966, Ser. No. 601,766**
**Int. Cl. G08b** *21/00, 1/08*
**U.S. Cl. 340—253** **9 Claims**

1. Apparatus for indicating inoperativeness of an appliance of the type which draws power from a power supply at discrete intervals through a power conductor comprising:

a current sensing means connected to said power conductor,
a delay storage battery,
means responsive to said current sensing means to charge said delay storage battery,
means to discharge said delay storage battery at a desired rate, whereby the voltage produced by said delay storage battery varies with the charge thereof,
a blockable signalling means,



means to normally block operation of said signalling means, and
means responsive to the voltage of said delay storage battery reaching a predetermined low value to disable said blocking means, whereby said signalling means provides a signal indicating inoperativeness of said appliance.

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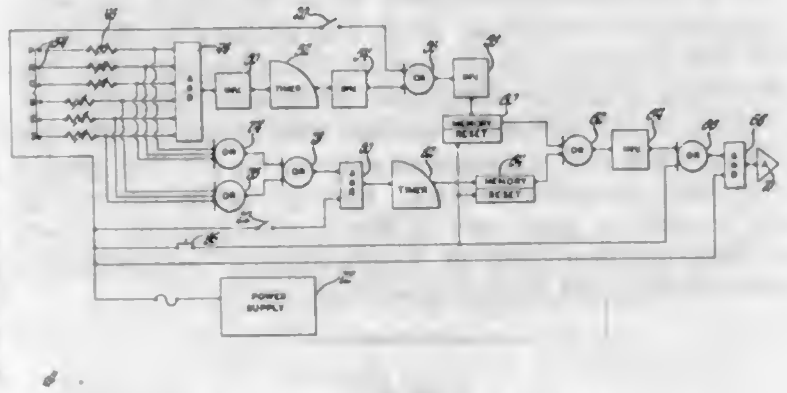
## 3,480,941
## PARTS DETECTOR CONTROL

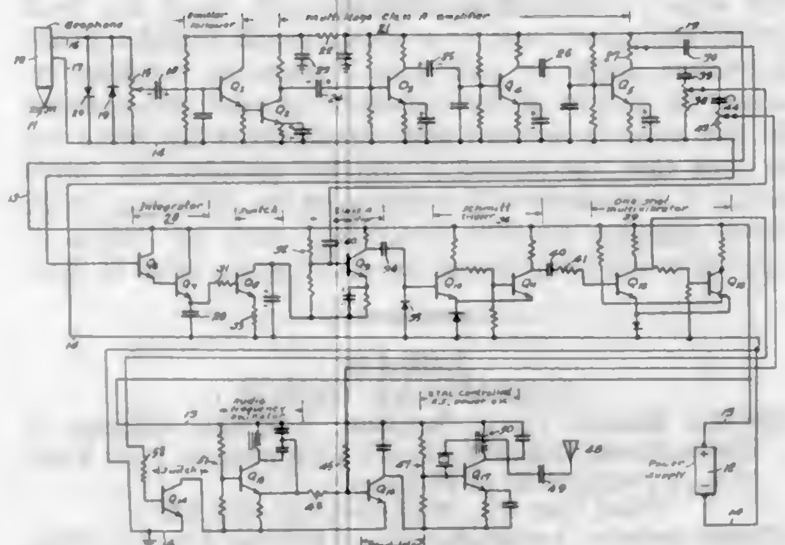
**Paul A. Thomas, Lockport, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware**
**Filed Nov. 29, 1966, Ser. No. 597,685**
**Int. Cl. G08b** *21/00;* **H02b** *1/24*
**U.S. Cl. 340—259** **17 Claims**



A machine control circuit for detecting missing parts in a transfer device has several probes, each in contact with a part during transfer between work stations. A logic circuit connected with the probes monitors the presence of the parts throughout substantially the entire transfer cycle and monitors shorting of the probes during a nontransfer portion of the machine cycle. The circuit halts machine operation if either a missing part or a shorted probe is detected.

## 3,480,942
## TRANSMITTING SEISMIC SENSOR SYSTEM

**Kenneth A. Hirschberg, Saratoga, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army**
**Filed Aug. 2, 1968, Ser. No. 749,643**
**Int. Cl. G08b** *21/00*
**U.S. Cl. 340—261** **5 Claims**



A wireless seismic ambush aid consisting of a low power telemetry set for the purpose of both transmitting and converting into recognizable form information from a seismometer which is received by a remotely located radio frequency receiver.

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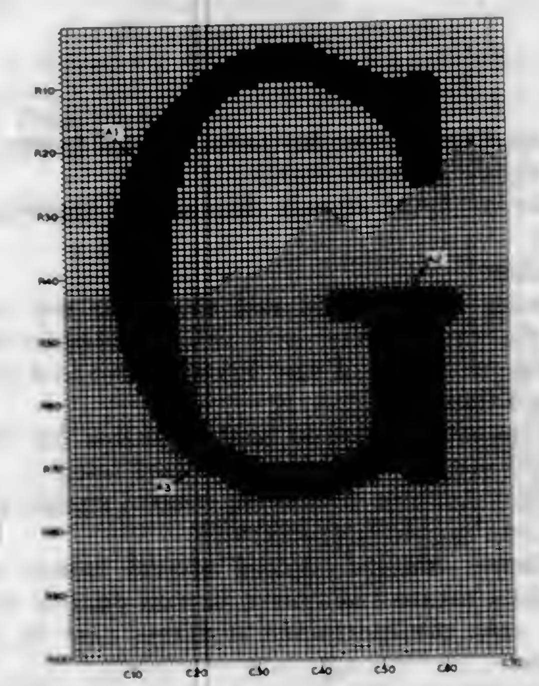
## 3,480,943
## PATTERN GENERATOR

**Solomon Manber, Sands Point, N.Y., assignor to Alphanumeric Incorporated, Hicksville, N.Y., a corporation of Delaware**
**Filed Apr. 3, 1967, Ser. No. 628,034**
**Int. Cl. G08b** *23/00;* **G11b** *13/00*
**U.S. Cl. 340—324** **14 Claims**



Patterns are traced on the face of a cathode ray tube past which moves a photosensitive film. The patterns are generated in response to coded combinations of indicia which position the electron beam of the cathode ray tube to specified points on the face of the tube. After the beam has been horizontally and vertically positioned as directed by some of the coded combinations of indicia, the electron beam is turned on and controlled to vertically scan for a given distance related to portions of some of the coded combinations of indicia. In this way, the pattern is built up by generating contiguous linear regions.

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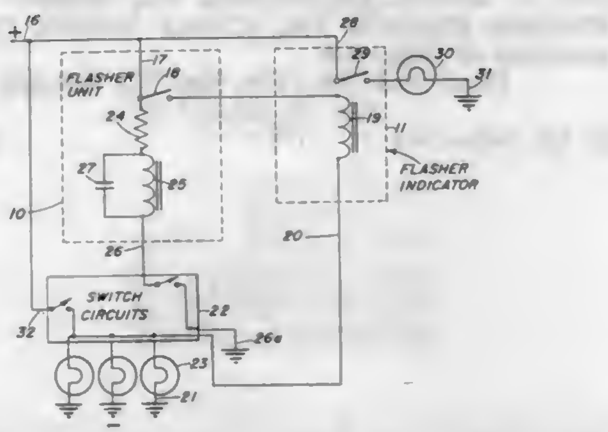
## 3,480,944
## LAMP FLASHING SYSTEM FOR VEHICLES

**Rodney Hayden, Stoney Creek, Ontario, Canada, assignor, by mesne assignments, to United-Carr Incorporated, Boston, Mass., a corporation of Delaware**
**Filed June 10, 1966, Ser. No. 556,750**
**Claims priority, application Canada, Apr. 19, 1966, 958,288**
**Int. Cl. G08b** *5/00;* **H05b** *39/00;* **B60q** *1/46*
**U.S. Cl. 340—331** **2 Claims**



This is a flasher system for use in an automobile or the like which utilizes a high resistance circuit having a resistor in series with a coil which in turn is shunted by a capacitor and a low resistance circuit which utilizes a second coil which is activated by closing of the relay of the first coil. The second coil actuates a relay which in turn causes a warning light to flash but will not cause the light to flash if one of the main bulbs is not working.

This invention relates to improvements in lamp flashing systems for vehicles such as for instance for automobiles.

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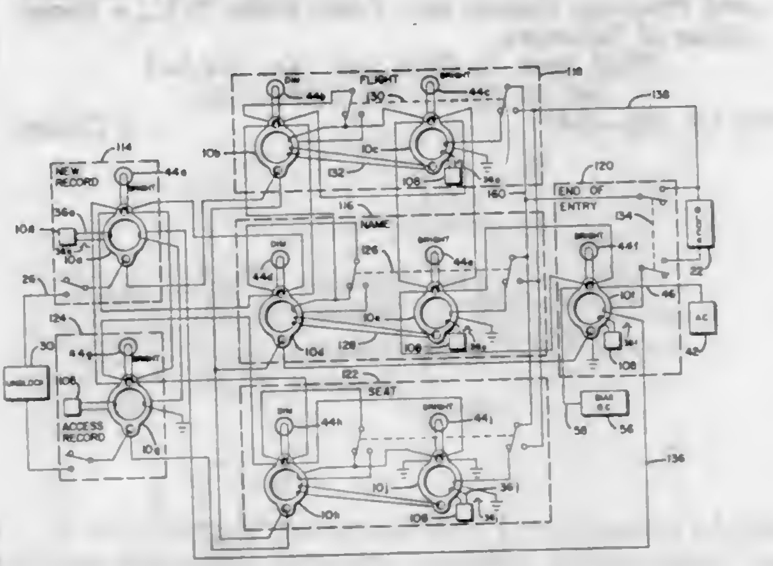
## 3,480,945
## MANUALLY OPERABLE FORMAT CONTROL UNIT FOR THE REAL-TIME OPERATION OF A DATA PROCESSING SYSTEM

**Hilding E. Nelson, Scandia Township, Washington County, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware**
**Original application July 2, 1962, Ser. No. 206,915, now Patent No. 3,302,189, dated Jan. 31, 1967. Divided and this application Dec. 16, 1966, Ser. No. 602,265**
**Int. Cl. G06c** *7/09*
**U.S. Cl. 340—345** **7 Claims**



A Central Processor and a remotely located Operator's Control Unit coupled thereto for permitting an operator to transmit to the Central Processor, by means of a Format Control Unit, data representative of activated transaction buttons, and, by means of a Typewriter Control Unit, data associated with the particular activated transaction button. A master transaction button illuminates certain associated transaction buttons alerting the operator of associated data that must be transmitted to the Central Processor by the Typewriter Control Unit and an end-of-entry transaction button alerts the operator of data associated with the master button that has not been transmitted to the Central Processor.

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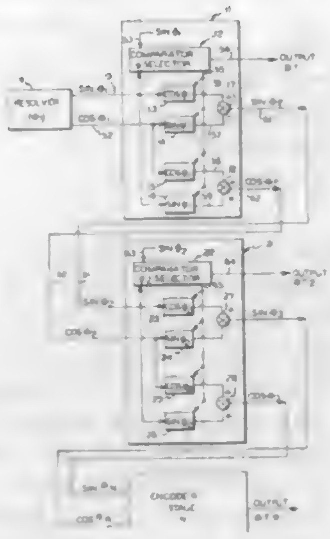
### 3,480,946
## SUCCESSIVE APPROXIMATION ROTARY ANGLE TO DIGITAL CONVERTER

**Frank N. DiMeo, Philadelphia, Pa., assignor to Litton Precision Products, Inc., Clifton Heights, Pa., a corporation of Delaware**

**Filed Mar. 31, 1966, Ser. No. 539,060**
**Int. Cl. H04l** *3/00*
**U.S. Cl. 340—347** **10 Claims**



A rotary angle to digital converter having a plurality of cascaded stages for successively reducing an angular quadrant of the rotary angle to be determined and with each stage employing circuits for subtracting fixed reference angles from the angle by trigonometric identity processing.

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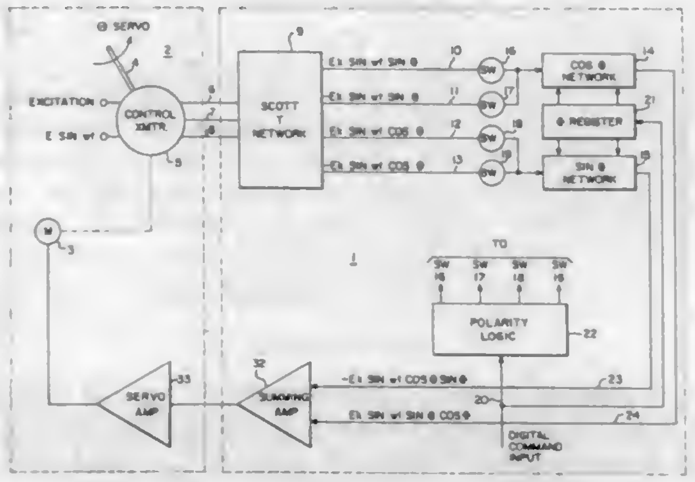
### 3,480,947
## SOLID STATE DIGITAL CONTROL TRANSFORMER

**Bob N. Naydan, Oakland, N.J., assignor to Singer-General Precision System Inc., Little Falls, N.Y., a corporation of Delaware**

**Filed Sept. 1, 1966, Ser. No. 576,747**
**Int. Cl. H04l** *3/00;* **G08c** *9/00*
**U.S. Cl. 340—347** **6 Claims**



A control transmitter which receives both an analog signal representing servo position and digital input command signals produces analog error signals for controlling the servo. Each embodiment includes a resistance network arrangement to which the servo position signals are applied under control of a switching network responsive to the digital command signals. The resistance network arrangement may take the form of sine and cosine networks or a linear network, depending on the form of the information in the digital command signals. For example, the digital command information may be in the form of the command angle or a trigonometric function of the command angle. In each case a summing amplifier receives the output of the resistance network arrangement. In one case, it receives also signals from the servo but in each case, the summing amplifier produces an output which is a trigonometric function of the difference in the servo position and the command. Such an output is applied to the servo motor for reducing the error to zero.

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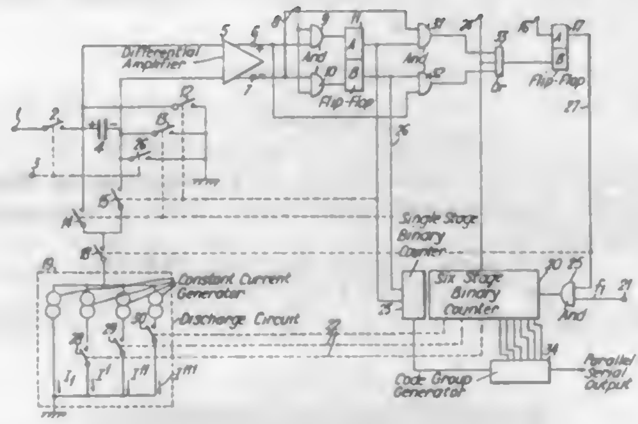
### 3,480,948
## NON-LINEAR CODER

**Michael Robert Lord, Basildon, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware**

**Filed Dec. 12, 1966, Ser. No. 601,180**
**Claims priority, application Great Britain, Jan. 14, 1966, 1,856/66**
**Int. Cl. H04l** *3/00;* **H03k** *13/00*
**U.S. Cl. 340—347** **10 Claims**



1. A non-linear coder for pulse amplitude modiulation (PAM) signals comprising:

a source of PAM signals disposed in sequential time slots;

a capacitor;

first means for coupling said source to said capacitor for charging thereof to a value proportional to the amplitude of one of said PAM signals in a given one of said time slots;

second means coupled to said capacitor for discharge thereof at a predetermined constant rate;

counting means for producing control signals at predetermined spaced time intervals;

third means coupled to said second means and said counting means responsive to said control signals to alter said predetermined dicharge rate to different values;

fourth means coupled to said capacitor and said counter for determining the instant the charge on said capacitor is zero and for stopping said counting means at said instant;

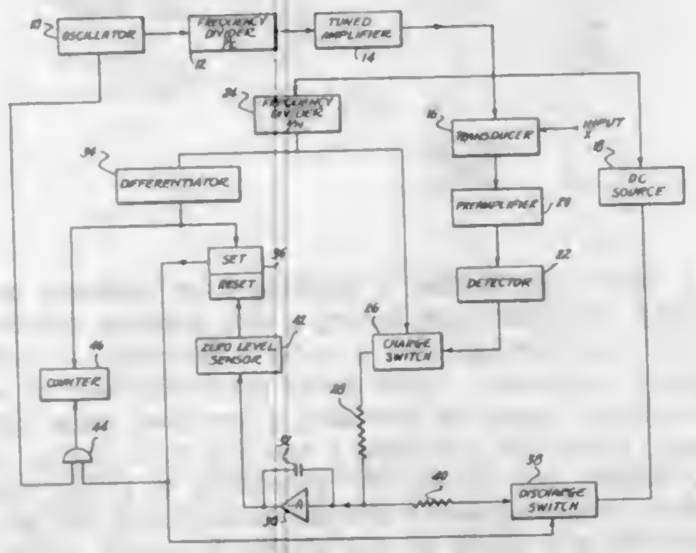
fifth means coupled to said counting means for generating a code signal indicative of the setting of said counting means at said instant; and

sixth means coupled to said counting means for resetting thereof in preparation for repeating the sequence of operations for the next succeeding one of said PAM signals.

### 3,480,949
## ANALOG TO DIGITAL CONVERTERS

**Roger Charbonnier, Meudon, and Stephane Estrabaud, Antony, France, assignors to Societe d'Instrumentation Schlumberger, Paris, France, a French corporation**

**Continuation of application Ser. No. 519,280, Jan. 7, 1966. This application Jan. 10, 1969, Ser. No. 796,272**
**Claims priority, application France, Jan. 8, 1965, 1,344**
**Int. Cl. R04l** *3/00;* **H03k** *13/00*
**U.S. Cl. 340—347** **11 Claims**



An analog to digital converter employs an integrating circuit which integrates a rectified modulated alternating current signal for a measured time period equal to an integral submultiple of the alternating current frequency. The integrator is then discharged through a known resistance and a counter counts gated oscillator pulses until the integrator reaches a predetermined level. The count in the counter is therefore a measure of the modulating analog signal.

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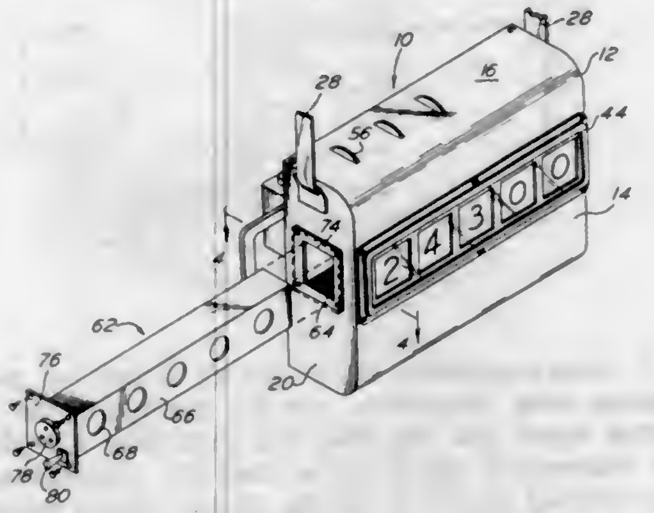
### 3,480,950
## DIGITAL INDICATOR

**Isadore B. Rachman, Philadelphia, Pa., assignor to Metal Dynamics Corporation, Philadelphia, Pa., a corporation of Pennsylvania**

**Filed Jan. 11, 1967, Ser. No. 608,538**
**Int. Cl. G08b** *5/00*
**U.S. Cl. 340—378** **6 Claims**

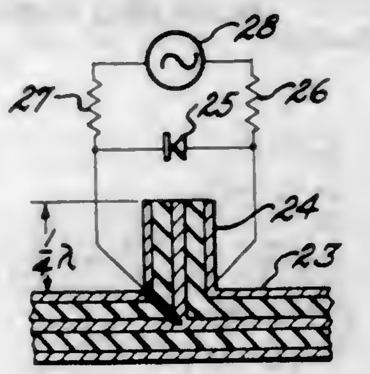


A digital indicator is provided in the form of a portable housing having a plurality of windows for exhibiting selectively variable indicia. When the proper indicia are exhibited, a wireless signal may be transmitted to a remote receiver adapted to exhibit the corresponding indicia on a light board.

### 3,480,951
## RETRODIRECTIVE PHASE SHIFTING TRANSPONDER

**Nathan Freedman, West Newton, Mass., assignor to the United States of America as represented by the Secretary of the Air Force**

**Filed May 15, 1968, Ser. No. 729,326**
**Int. Cl. G01s** *9/56;* **H04b** *7/00*
**U.S. Cl. 343—6.8** **5 Claims**



A radar beacon system having a pseudo-passive transponder. The transponder comprises a retrodirective antenna array that effectively re-radiates the interrogating signal back toward the interrogator and means for shifting the received interrogating signal 180° before re-radiating it. A particular embodiment of the invention comprehends a Van Atta antenna array having conjugate members of radiating element pairs connected by coaxial cables equidistant from the array center. A quarter wave length stub is located on each coaxial cable at the array center and is periodically shorted out by a diode that is biased off and on by a square wave generator.

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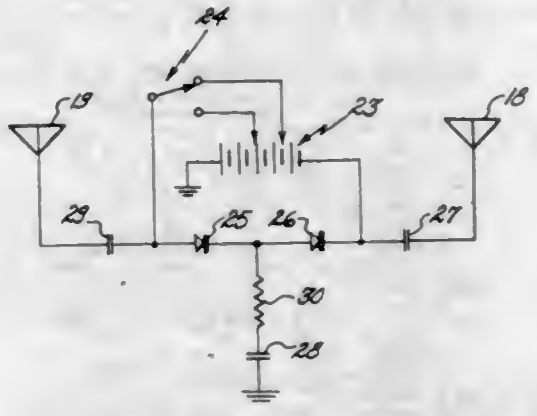
### 3,480,952
## RADAR BEACON SYSTEM WITH TRANSPONDER FOR PRODUCING AMPLIFIED, PHASE SHIFTED RETRODIRECTED SIGNALS

**Nathan Freedman, West Newton, Mass., assignor to the United States of America as represented by the Secretary of the Air Force**

**Filed May 15, 1968, Ser. No. 729,329**
**Int. Cl. G01s** *9/56*
**U.S. Cl. 343—6.8** **4 Claims**



A radar beacon system including a transponder adapted to retrodirectively reradiate amplified, phase shifted signals to the system interrogator. A bidirectional negative resistance amplifier is used in combination with a retrodirective antenna array and particular switching means to provide a simplified lightweight transponder. Negative resistance bidirectional amplifiers, preferably of the tunnel diode type, are inserted into the connecting cables of conjugate radiator element pairs of a Van Atta type antenna array. Switching between different conduction levels of the tunnel diodes at a discrete frequency provides 180° phase shifting of signals as they are received by one conjugate radiator element and reradiated by other.

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**3,480,953**

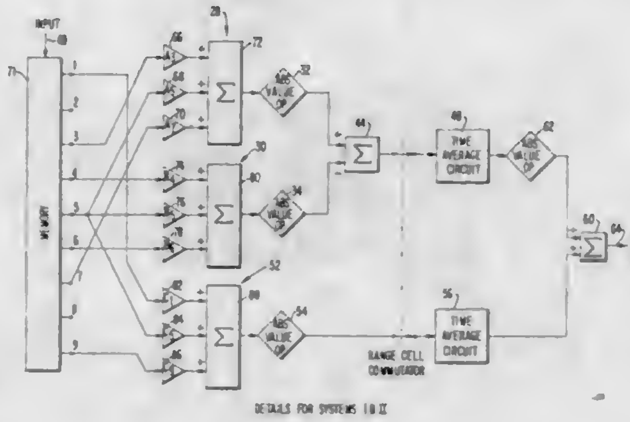
### MOVING TARGET INDICATOR HAVING STAGGERED PULSE REPETITION FREQUENCY

**James S. Shreve, Arlington, Va., assignor to the United States of America as represented by the Secretary of the Army**

**Filed May 17, 1968, Ser. No. 730,194**

**Int. Cl. G01s** *9/42*

**U.S. Cl. 343—7.7** **7 Claims**



Disclosed is a moving target indicator utilizing pulse-Doppler radar techniques in which the transmitted pulse train has a staggered multiple repetition frequency. A weighted digital filtering system is incorporated in the receiver for eliminating ambiguous echo returns from stationary second time-around targets. The system eliminates the blind speed and blind range problems evidenced by previous pulse-Doppler systems operating above L-band frequencies.

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**3,480,954**

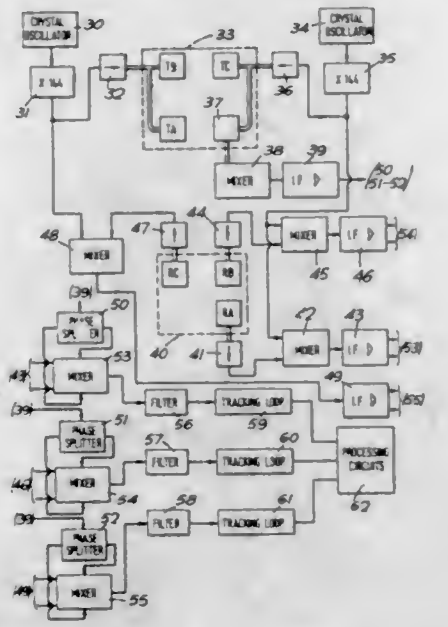
### DOPPLER NAVIGATION APPARATUS

**Trevor Gray and David Anthony Neish, London, England assignors to Decca Limited, London, England, a British company**

**Filed Oct. 10, 1968, Ser. No. 766,423**

**Int. Cl. G01s** *9/44*

**U.S. Cl. 343—8** **8 Claims**



A continuous wave fixed antenna Doppler navigation apparatus that incorporates a Janus system. The signals radiated on the two beams of the system are substantially different. The source oscillator for each beam acts as a local oscillator for heterodyning signals received from areas illuminated by the other beam.

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**3,480,955**

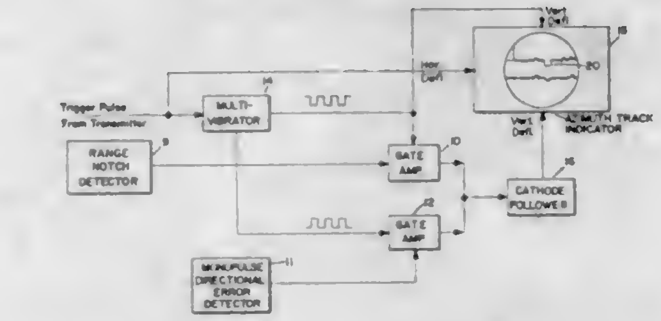
### RADAR TRACKING ERROR INDICATOR

**Thomas E. Lenigan, Morris Township, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army**

**Filed June 29, 1960, Ser. No. 39,745**

**Int. Cl. G01s** *9/06*

**U.S. Cl. 343—11** **3 Claims**



1. In a radar system, a tracking error indicator comprising: an oscilloscope having a first direction deflection circuit synchronized with a radar transmitter, a second direction deflection circuit acting perpendicularly to said first circuit, means for providing a combined range notch signal, means for providing a tracking error signal, gating means, and means for generating a gating signal which changes between a first and second value, said gating signal being coupled to said second deflection circuit of said oscilloscope and to said gating means, said range notch signal and said error signal being coupled to said gating means, said gating means including means responsive to said gating signal to alternately couple said range notch signal and said error signal to said second deflection circuit, said gating signal acting on said second deflection circuit to provide first and second trace presentations, said first presentation corresponding to said range notch and said second presentation corresponding to said error signal.

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**3,480,956**

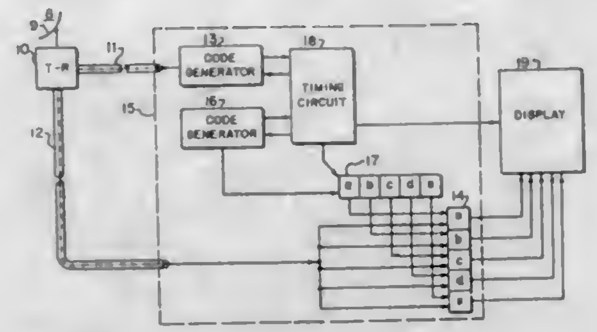
### CROSS-CORRELATION RADAR

**George H. Sanderson, New Hyde Park, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army**

**Filed Mar. 29, 1968, Ser. No. 717,190**

**Int. Cl. G01s** *9/06*

**U.S. Cl. 343—13** **1 Claim**



A cross-correlation radar having a pair of pseudo-random code generators, one for generating the transmitted signal and the other for generating a replica of the transmitted signal, to be used for correlation with the received signal. A timing circuit, which includes a clock, adjusts the relative phase relationship between the code generators such that the difference in phase between the generators is equal to a predetermined delay. This predetermined delay may be a result of the inherent internal delays of the circuitry alone, or may also include the round trip transmission delay of some predetermined portion of the range.

**3,480,957**

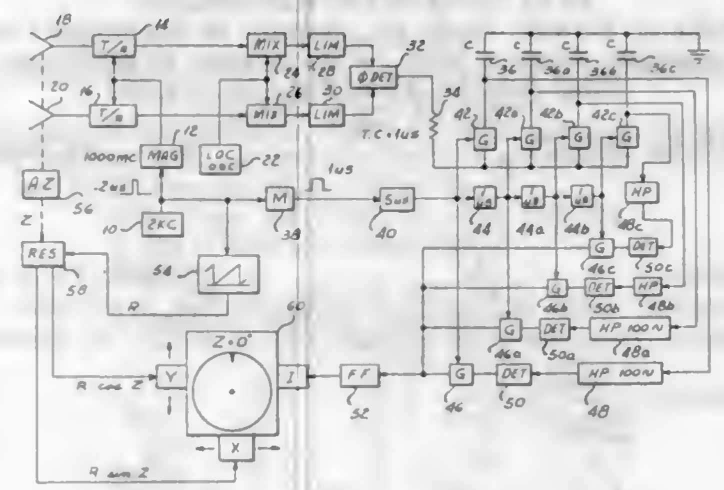
### INTERFEROMETER RADAR MOVING TARGET INDICATOR

**Lester H. Kosowsky, Norwalk, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**

**Filed Aug. 2, 1967, Ser. No. 657,997**

**Int. Cl. G01s** *9/02*

**U.S. Cl. 343—16** **2 Claims**



In general, my invention contemplates the provision of an interferometer radar system having a pair of spaced receiving horns, the signals from which are impressed upon a phase detector. The output of the phase detector is coupled to a comb filter comprising a plurality of range-gated capacitors. The various capacitor outputs are coupled to corresponding high-pass filters which sense variations in the indicated angular position of the target occasioned by motion of such target relative to the ground which provides a simultaneous return at some angle different from that of the target. The outputs of the various highpass filters are detected and then range-gated to control the intensity input of a display tube.

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**3,480,958**

### ELECTRONIC SCANNING ANTENNA

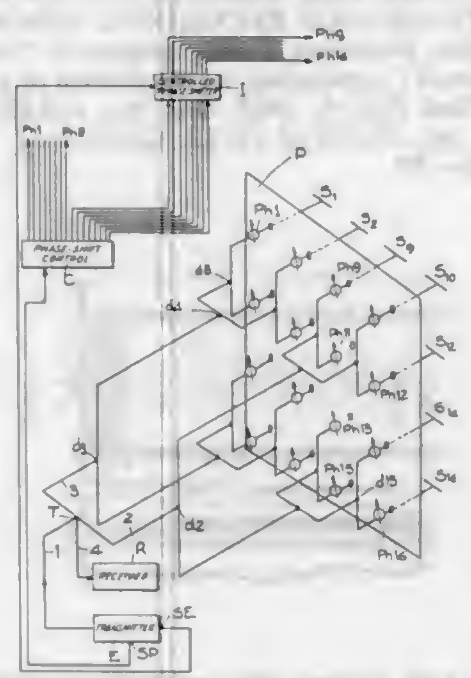
**Pierre Tcheditch, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France**

**Filed Nov. 29, 1966, Ser. No. 597,805**

**Claims priority, application France, Nov. 29, 1965, 40,060**

**Int. Cl. G01s** *9/02*

**U.S. Cl. 343—16** **5 Claims**



In a transmit receive system comprising an electronic scanning antenna formed by a network of elementary sources and associated phase-shifters, the conventional T–R switch is replaced by the combination of at least one four arm balanced junction and $\pi$ phase-shifting means.

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**3,480,959**

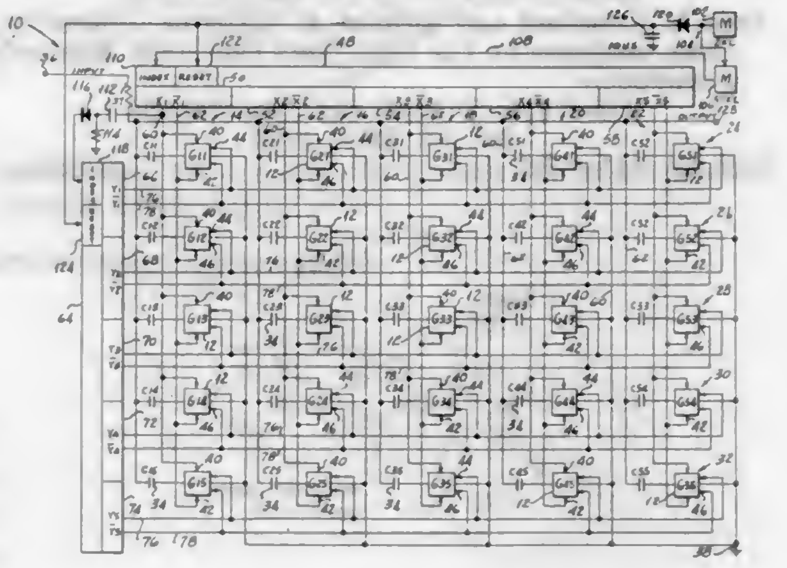
### RANGE GATED INTEGRATOR

**Irving D. Richmond, Norwalk, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware**

**Filed May 7, 1968, Ser. No. 727,226**

**Int. Cl. G01s** *7/28*

**U.S. Cl. 343—17.1** **9 Claims**



A range gated integrator in which a plurality of diode gating circuits corresponding in number to the number of range values to be provided are arranged in rows and columns in a matrix with each gate connected in series between ground and a respective integrating capacitor to which the radar return is applied. The outputs of respective column and row registers control the matrix gating circuits. Transmision of a pulse initiates clock pulses which index the column register, which indexes the row register once for each complete count of the column register, thus sequentially to render the gates of the matrix conductive.

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**3,480,960**

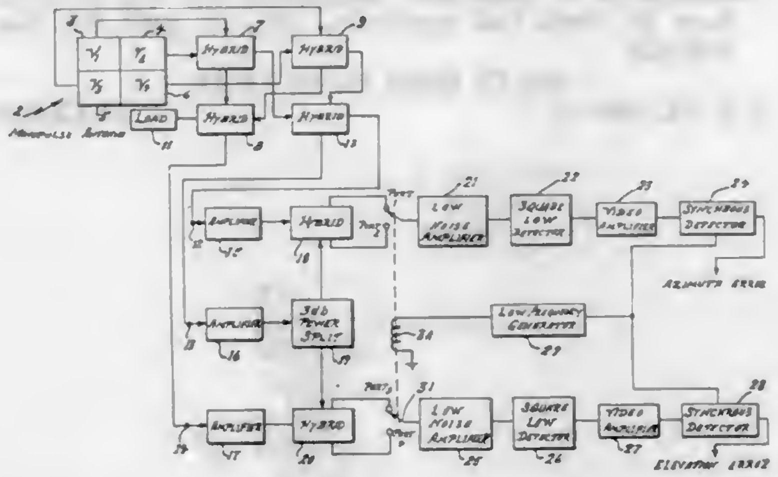
### RADIOMETRIC MONOPULSE RECEIVER SYSTEMS

**Donald I. Zulch, Oneida, N.Y., and Hugh P. Taylor, Cochituate, Mass.; said Zulch assignor to the United States of America as represented by the Secretary of the Air Force**

**Filed Aug. 30, 1968, Ser. No. 756,525**

**Int. Cl. G01s** *5/04*

**U.S. Cl. 343—119** **6 Claims**



The invention is an improved monopulse radar receiver. The azimuth and elevation error signals and the sum reference signal received from a conventional monopulse antenna and hybrid junction circuit are recombined to provide sum and difference signals for the azimuth error and reference signals and for the elevation error and reference signals. A radiometer detector alternately samples the sum signals and difference signals by means of a synchronously operated switch and provides outputs responsive to the azimuth and elevation error signals. In a preferred embodiment, amplification is provided for the sum reference signal.

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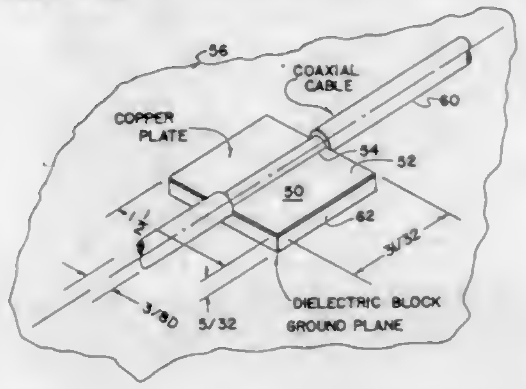
### 3,480,961
### SURFACE-WAVE ANTENNA HAVING DISCONTINUOUS COAXIAL LINE

**John R. Copeland and Richard A. Kitzerow, Columbus, Ohio, assignors to The Ohio State University Research Foundation**

**Filed Feb. 2, 1968, Ser. No. 709,158**

**Int. Cl. H01q** *3/00*

**U.S. Cl. 343—765** **4 Claims**



The invention is for an integrated TEM-line antenna and particularly relates to a traveling-wave antenna integrally formed into a surface wave ground plane of a uniformly-periodic slow-wave structure capable of scanning with frequency one or more beams from the backfire direction to the endfire direction. In a preferred embodiment the antenna is a current sensitive array comprising a periodically interrupted coaxial transmission line bonded to a metal ground plane. The antenna is fed at one end of the line and terminated at the opposite end. The termination influences the number of traveling waves on the line, and hence the number of scanning beams in the far-field pattern. Other configurations of the invention result in alternative current or voltage sensitive arrays and arrays shortened in overall length.

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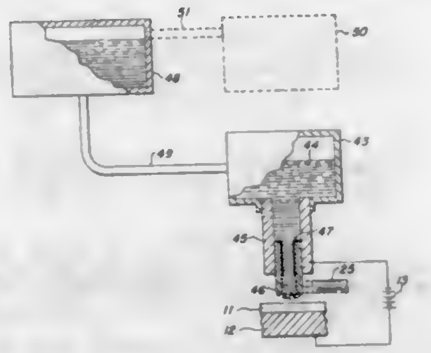
### 3,480,962
### FACSIMILE RECORDING SYSTEM

**John W. Weigl, West Webster, Edward Forest, Rochester, and Carol K. Keller, Webster, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York**

**Continuation of abandoned application Ser. No. 491,256, Sept. 29, 1965. This application May 22, 1967, Ser. No. 640,424**

**Int. Cl. G01d** *15/16, 15/18*

**U.S. Cl. 346—1** **11 Claims**



Method and apparatus for producing graphic displays wherein the flow of a liquid ink having photoconductive properties is controlled by intermittently exposing the ink to light energy in response to intelligence information whereby the conductive properties of the ink are sufficiently altered to permit a constant electric field to impart motion to the ink.

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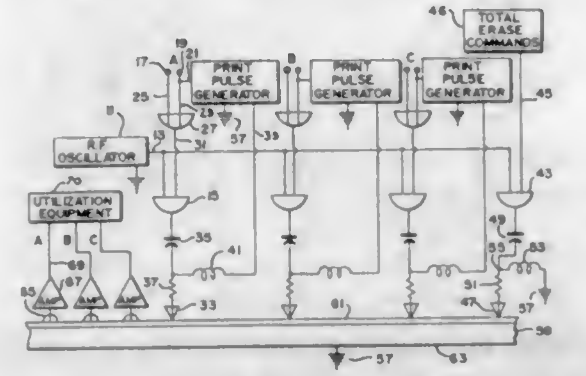
### 3,480,963
### COMMAND RESPONSIVE MULTI-CHANNEL ELECTROSTATIC RECORDER

**Philip A. Stowell, Paoli, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan**

**Filed July 27, 1965, Ser. No. 475,163**

**Int. Cl. G01d** *15/06*

**U.S. Cl. 346—74** **6 Claims**



A command responsive multi-channel electrostatic recorder which has N recording/erasing transducers, where N is an integer representing the number of channels, a common RF oscillator gatably connected to said transducers, a plurality of pulse print generators, one for each channel, individually connected to said transducers, electronic gating means arranged to respond to individual erase and print command for applying said RF oscillation either individually or in combination with signals from said print pulse generators to selected transducers to deposit or erase information on a dielectric recording medium, an all channel erase transducer having a gated input from said RF oscillator when a total erase command is present and read-out means for sensing recorded information located collinearly with the recording/erasing transducers along the direction of travel with the recording medium.

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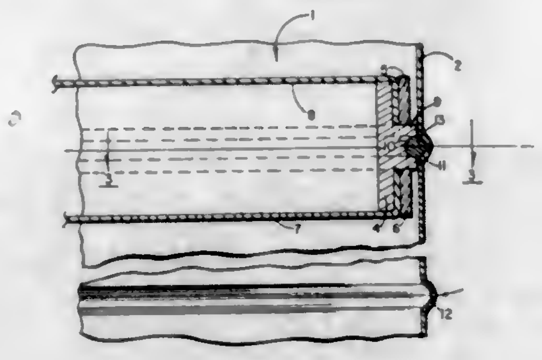
### 3,480,964
### STRUCTURE FOR ASSEMBLING ANNULAR TENSIONED RECORDING DISCS

**Albert E. Siler, Fullerton, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware**

**Filed Feb. 9, 1967, Ser. No. 614,835**

**Int. Cl. G01d** *15/12;* **G11b** *5/82*

**U.S. Cl. 346—74** **3 Claims**



Structure and process for assembling annularly tensioned recording discs inside a thin walled cylindrical enclosure. The outer rims of the discs are provided with circumferentially extending and continuous grooves which are held in position adjacent to and facing circumferentially extending grooves in the cylindrical enclosure while a hardenable filler or adhesive material is forced into the grooves under pressure and hardened. The grooves form a common cavity between the discs and the enclosure. The process is repeated for each disc until the plurality of discs is assembled.

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### 3,480,965
### APPARATUS FOR PYROGENICALLY RECORDING ON TRANSPARENCIES

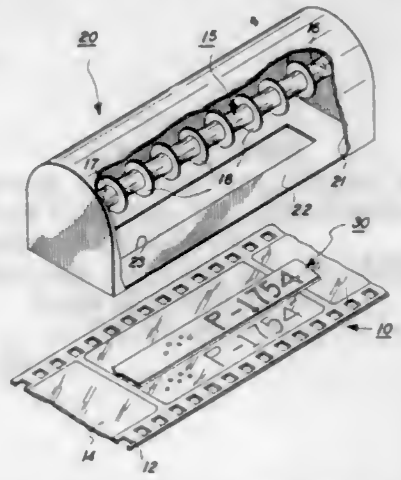
**Raymond Carl Zoppoth, Rochester, and James E. Young, Pittsford, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York**

**Filed Apr. 15, 1968, Ser. No. 721,332**

**Int. Cl. G01d** *15/10*

**U.S. Cl. 346—76** **7 Claims**

Apparatus for recording information onto transparencies in which a transparency is masked to expose selected areas thereon according to a desired pattern of information and subjected to high intensity electromagnetic radiations to pyrogenically alter the optical characteristics in the exposed areas.



# DESIGNS

NOVEMBER 25, 1969

### 216,071
### SAFETY HELMET

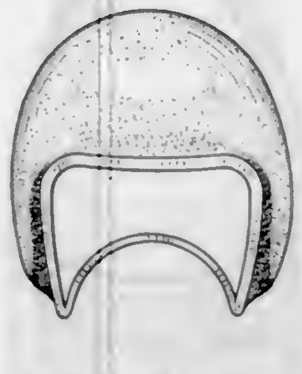
Eitaro Kamata, Tokyo, Japan, assignor to American Safety Equipment Corporation, Sherman Oaks, Calif., a corporation of New York

Filed Nov. 12, 1968, Ser. No. 14,412

Term of patent 14 years

Int. Cl. D2—*03*

U.S. Cl. D2—231



### 216,072
### BUCKLE

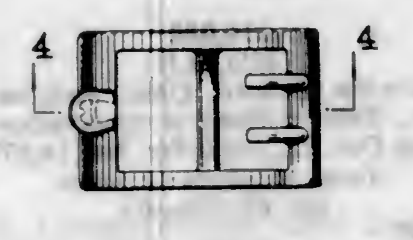
Etienne Aigner, New York, N.Y., assignor to Villager Industries Inc., Philadelphia, Pa., a corporation of Delaware

Filed Sept. 18, 1968, Ser. No. 13,590

Term of patent 14 years

Int. Cl. D2—*08*

U.S. Cl. D2—427



### 216,073
### CONCRETE FORM STAKE

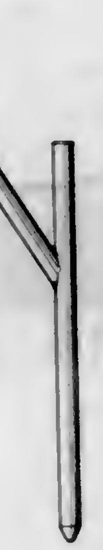
Earl E. Gutschmidt, 11802 111th Ave. NE., Kirkland, Wash. 98033, and Edward J. Gutschmidt, 6630 E. Mercer Way, Mercer Island, Wash. 98040

Filed Nov. 29, 1968, Ser. No. 14,721

Term of patent 14 years

Int. Cl. D25—*99*

U.S. Cl. D8—45



### 216,074
### CUTTING TOOL

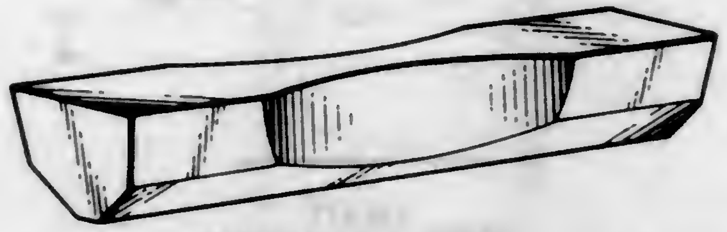
Robert J. Hood, East Hartford, Conn., assignor to Eastern Tool Company, Inc., East Hartford, Conn., a corporation of Connecticut

Filed Aug. 24, 1967, Ser. No. 8,368

Term of patent 14 years

Int. Cl. D8—*02*

U.S. Cl. D8—98



### 216,075
### STRAP FOR LUGGAGE

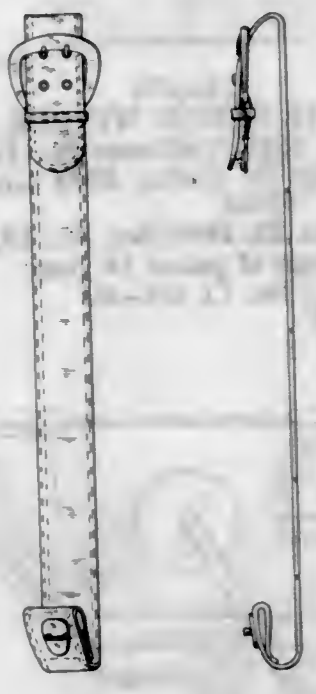
Anthony N. D'Elia, Riverdale, and Edward M. Stolarz, Yorktown Heights, N.Y., assignors to Reliable Luggage, Incorporated

Filed Mar. 1, 1968, Ser. No. 10,796

Term of patent 14 years

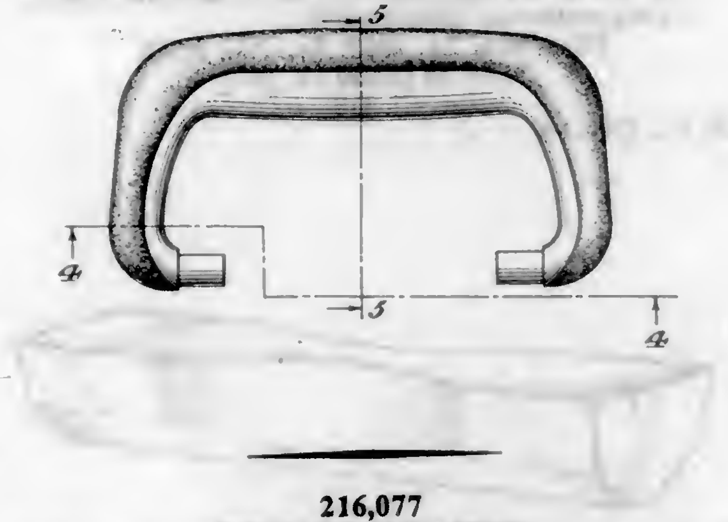
Int. Cl. D8—*03*

U.S. Cl. D8—154



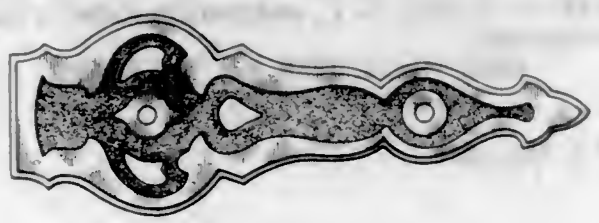
216,076
**LUGGAGE HANDLE**
Lou F. Marks, Pittsburgh, Pa., assignor to Bruce Molded Plastic Products Inc., Mon Run, Pa., a corporation of Pennsylvania
Filed Sept. 17, 1968, Ser. No. 13,559
Term of patent 14 years
Int. Cl. D8—*03*

U.S. Cl. D8—154



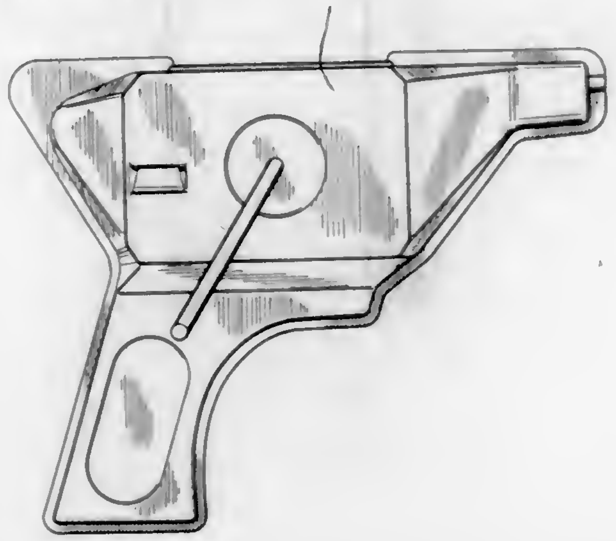
216,077
**DOOR DECORATION**
Frank A. Holmes, La Habra, and Lawrence McCain, Beverly Hills, Calif., assignors to Ajax Hardware Manufacturing Corporation, Industry, Calif., a corporation of California
Filed Sept. 11, 1968, Ser. No. 13,494
Term of patent 14 years
Int. Cl. D8—*03*

U.S. Cl. D8—179



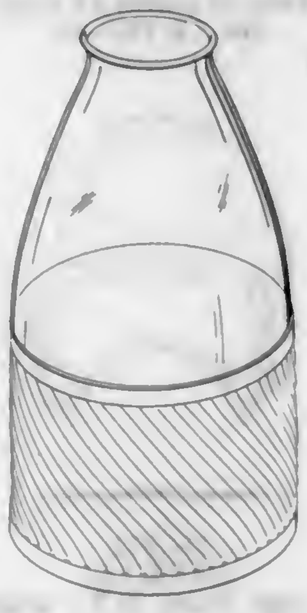
216,078
**KITE STRING WINDER**
Lewis E. Howser, 1680 Goldstone St., El Cajon, Calif. 92021, and Philip D. Gatlin, 8984 Grossmont Blvd., La Mesa, Calif. 92041
Filed Jan. 22, 1969, Ser. No. 15,449
Term of patent 14 years
Int. Cl. D8—*03*

U.S. Cl. D8—222



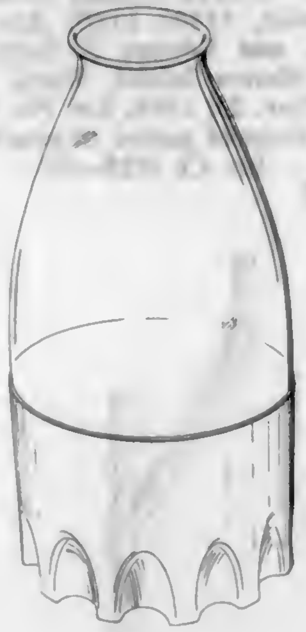
216,079
**BOTTLE**
Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,874
Term of patent 14 years
Int. Cl. D9—*01*

U.S. Cl. D9—1



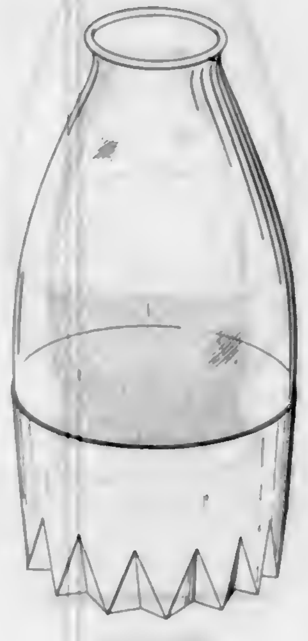
216,080
**BOTTLE**
Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,877
Term of patent 14 years
Int. Cl. D9—*01*

U.S. Cl. D9—1



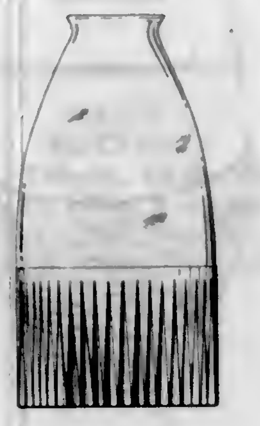
216,081
**BOTTLE**
Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,878
Term of patent 14 years
Int. Cl. D9—*01*

U.S. Cl. D9—1



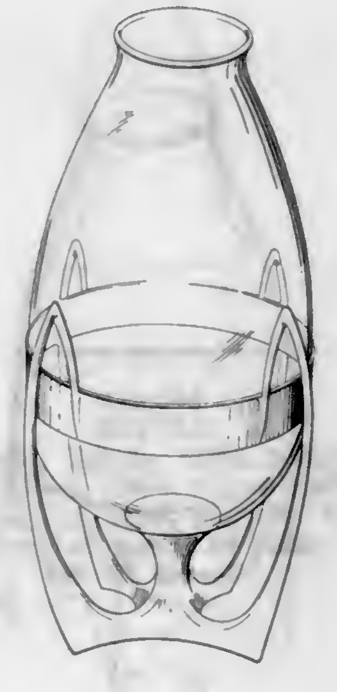
216,082
**BOTTLE**
Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,879
Term of patent 14 years
Int. Cl. D9—*01*

U.S. Cl. D9—1



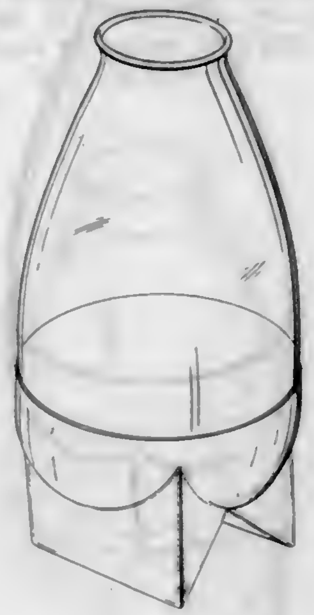
216,083
**BOTTLE**
Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,899
Term of patent 14 years
Int. Cl. D9—*01*

U.S. Cl. D9—1



216,084
**BOTTLE**
Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,915
Term of patent 14 years
Int. Cl. D9—*01*

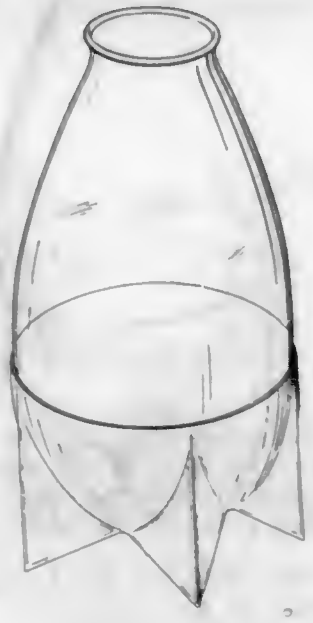
U.S. Cl. D9—1



### 216,085
### BOTTLE

Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,916
Term of patent 14 years
Int. Cl. D9—*01*

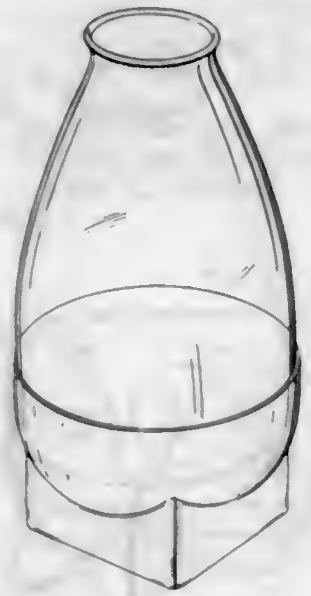
U.S. Cl. D9—1



### 216,086
### BOTTLE

Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,917
Term of patent 14 years
Int. Cl. D9—*01*

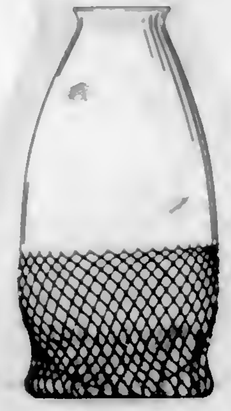
U.S. Cl. D9—1



### 216,087
### BOTTLE

Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,901
Term of patent 14 years
Int. Cl. D9—*01*

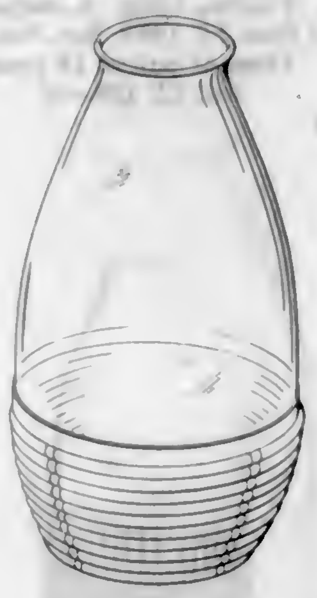
U.S. Cl. D9—12



### 216,088
### BOTTLE

Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,875
Term of patent 14 years
Int. Cl. D9—*01*

U.S. Cl. D9—100



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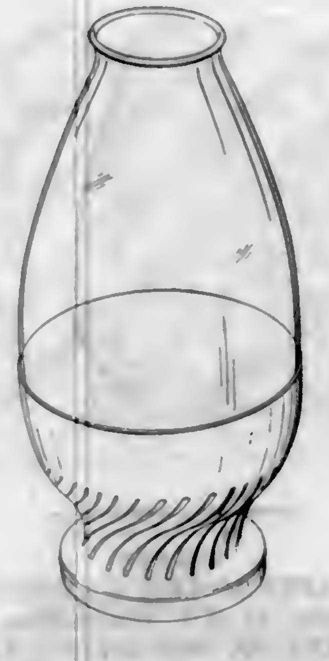
### 216,089
### BOTTLE

Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,882
Term of patent 14 years
Int. Cl. D9—*01*

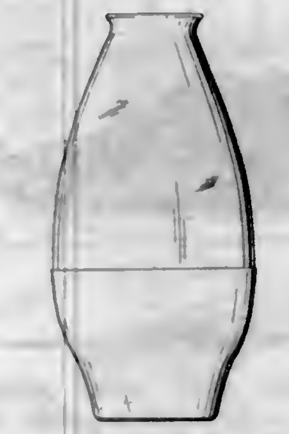
U.S. Cl. D9—100



### 216,090
### BOTTLE

Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,884
Term of patent 14 years
Int. Cl. D9—*01*

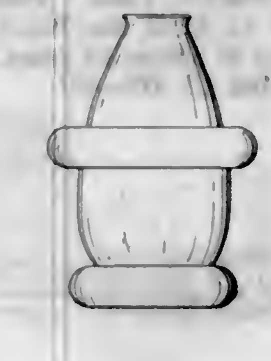
U.S. Cl. D9—100



### 216,091
### BOTTLE

Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,885
Term of patent 14 years
Int. Cl. D9—*01*

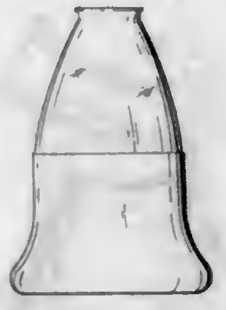
U.S. Cl. D9—100



### 216,092
### BOTTLE

Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,891
Term of patent 14 years
Int. Cl. D9—*01*

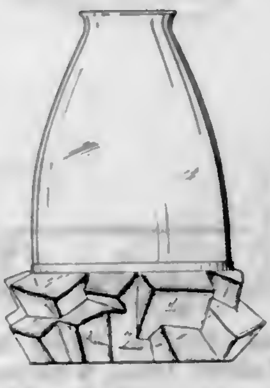
U.S. Cl. D9—100



### 216,093
### BOTTLE

Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,928
Term of patent 14 years
Int. Cl. D9—*01*

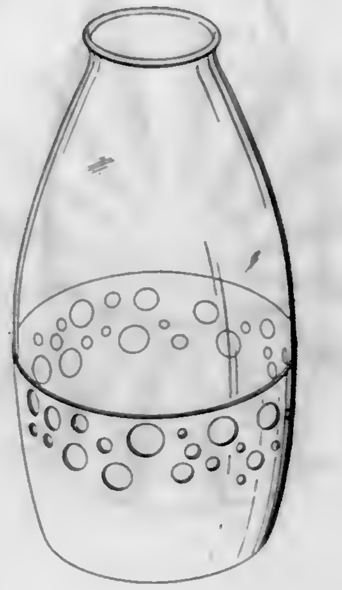
U.S. Cl. D9—100



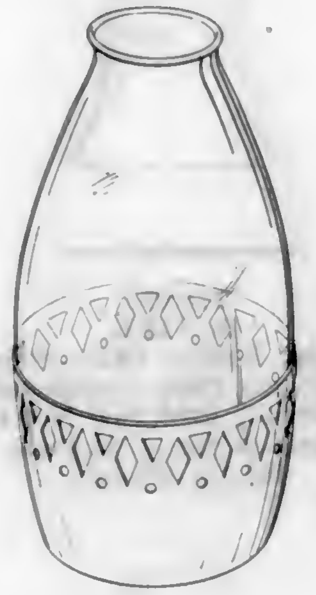
### 216,094
### BOTTLE

Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 14,880
Term of patent 14 years
Int. Cl. D9—*01*

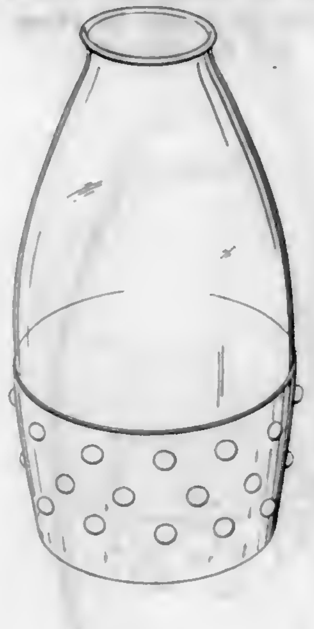
U.S. Cl. D9—140



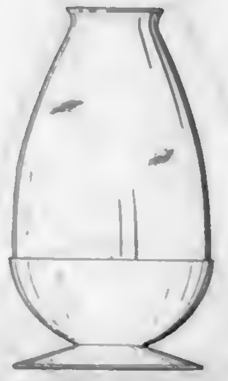
**216,095**
**BOTTLE**
**Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio**
**Filed Dec. 11, 1968, Ser. No. 14,913**
**Term of patent 14 years**
**Int. Cl. D9—*01***
**U.S. Cl. D9—140**



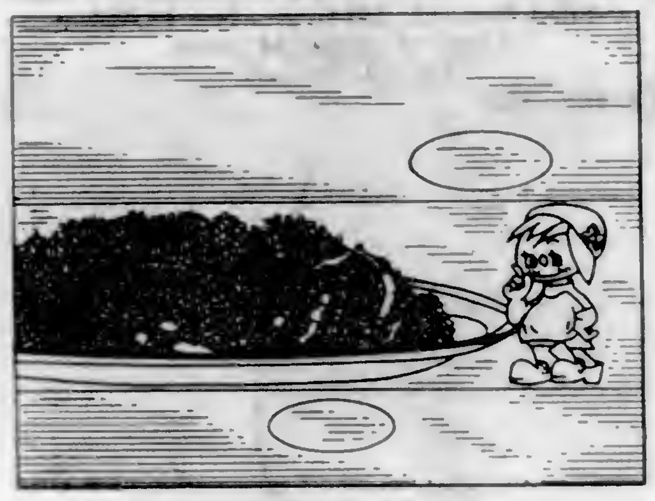
**216,096**
**BOTTLE**
**Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio**
**Filed Dec. 11, 1968, Ser. No. 14,914**
**Term of patent 14 years**
**Int. Cl. D9—*01***
**U.S. Cl. D9—140**



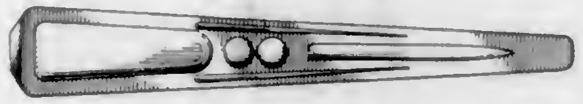
**216,097**
**BOTTLE**
**Edward H. Lawton, Toledo, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio**
**Filed Dec. 11, 1968, Ser. No. 14,927**
**Term of patent 14 years**
**Int. Cl. D9—*01***
**U.S. Cl. D9—140**



**216,098**
**PAPERBOARD CARTON**
**Momofuku Ando, 34 of 7, Masumicho, Ikeda, Japan**
**Filed Oct. 30, 1968, Ser. No. 14,224**
**Term of patent 14 years**
**Int. Cl. D9—*04***
**U.S. Cl. D9—226**



**216,099**
**COMBINED BEVERAGE AND BEVERAGE ADDITIVE CONCENTRATE PACKAGE AND STIRRER**
**Laurice D. Ely, 722 26th St., Santa Monica, Calif. 90402**
**Filed June 14, 1968, Ser. No. 12,350**
**Term of patent 14 years**
**Int. Cl. D9—*99***
**U.S. Cl. D9—185**



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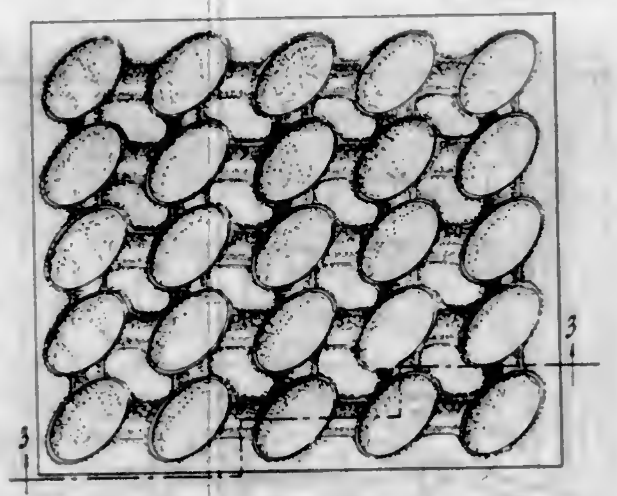
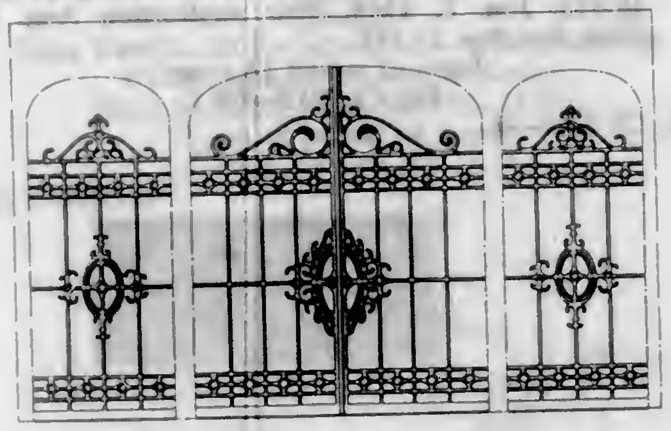
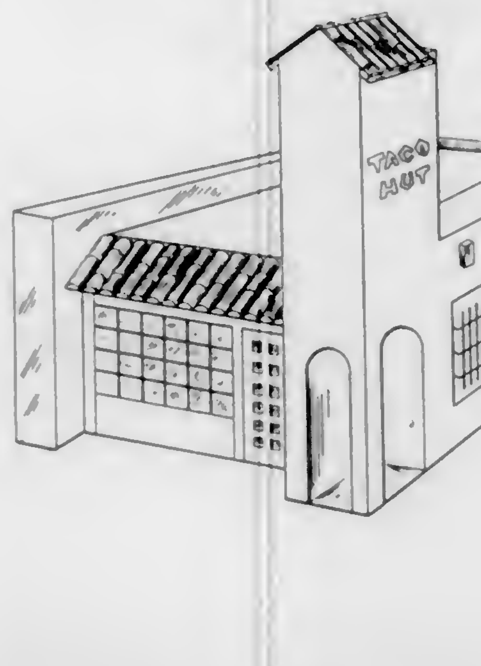
**216,100**
**SHIPPING TRAY FOR WATCHES**
**Hyman Dintsman, New York, N.Y.**
**(137—11 90th Ave., Jamaica, N.Y. 11435)**
**Filed Apr. 14, 1969, Ser. No. 16,725**
**Term of patent 14 years**
**Int. Cl. D9—*99***
**U.S. Cl. D9—187**



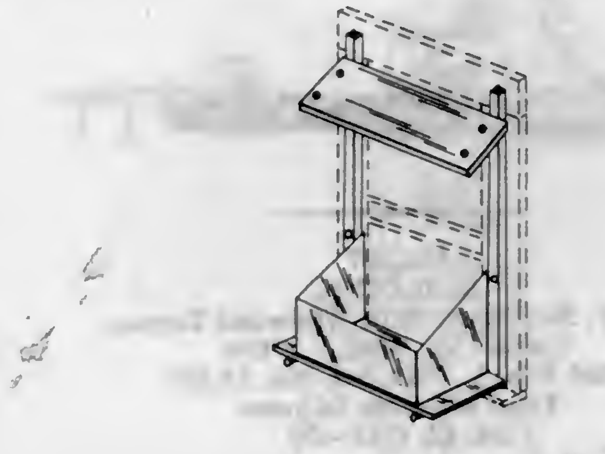
**216,101**
**WINDOW PANEL**
**Allan Landsman, 60—15 Calloway St., Corona, N.Y. 11368**
**Filed July 26, 1968, Ser. No. 12,912**
**Term of patent 14 years**
**Int. Cl. D25—*02***
**U.S. Cl. D13—1**



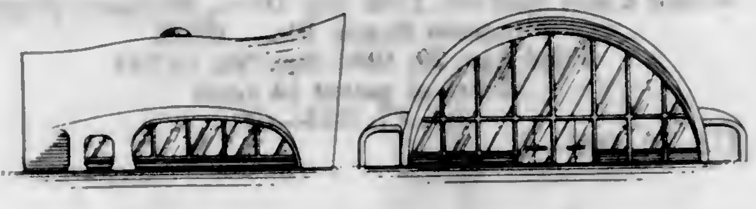
**216,102**
**BUILDING**
**Thomas C. Thixton, Tulsa, Okla., assignor to Taco Hut, Inc., Tulsa, Okla., a corporation of Oklahoma**
**Filed Aug. 29, 1968, Ser. No. 13,318**
**Term of patent 14 years**
**Int. Cl. D25—*04***
**U.S. Cl. D13—1**



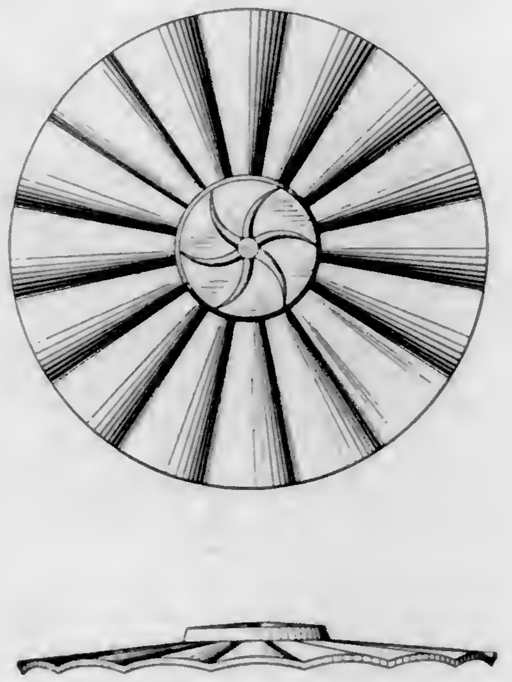
**216,103**
**COMBINATION WINDOW AWNING AND CAGE STRUCTURE**
**John P. Francis, 20 Boston St., Haverhill, Mass. 01830**
**Filed Sept. 4, 1968, Ser. No. 13,387**
**Term of patent 14 years**
**Int. Cl. D25—*02***
**U.S. Cl. D13—1**



**216,104**
**RESTAURANT BUILDING**
**Rocco E. Marino, 4747 Collins Ave., Miami Beach, Fla. 33140**
**Filed Nov. 29, 1968, Ser. No. 14,726**
**Term of patent 14 years**
**Int. Cl. D25—*04***
**U.S. Cl. D13—1**

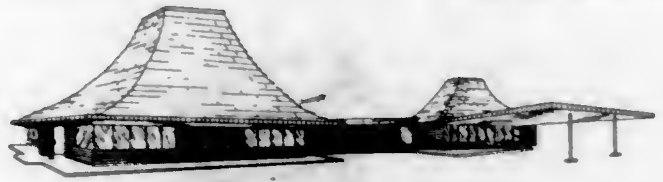


**216,105**
**BUILDING ROOF**
**Jack W. Beck, Kansas City, Mo., assignor to Plasto Incorporated, Mission, Kans., a corporation of Kansas**
**Filed Dec. 11, 1968, Ser. No. 14,910**
**Term of patent 14 years**
**Int. Cl. D25—*02***
**U.S. Cl. D13—1**



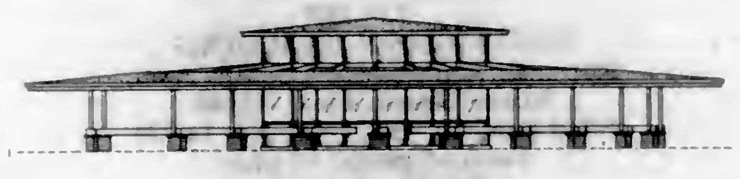
**216,106**
**BUILDING**
**Sidney S. Platt, Wichita, Kans., assignor to The Service Oil Company, Colby, Kans., a corporation of Kansas**
**Filed Jan. 24, 1969, Ser. No. 15,492**
**Term of patent 14 years**
**Int. Cl. D25—*04***

**U.S. Cl. D13—1**



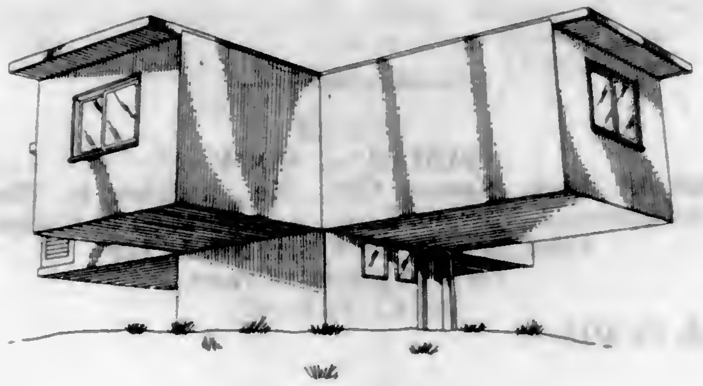
**216,107**
**BUILDING**
**Rufus P. Steadman, 2014 Wildwood Terrace, Yazoo City, Miss. 39194**
**Filed Feb. 3, 1969, Ser. No. 15,591**
**Term of patent 14 years**
**Int. Cl. D25—*04***

**U.S. Cl. D13—1**



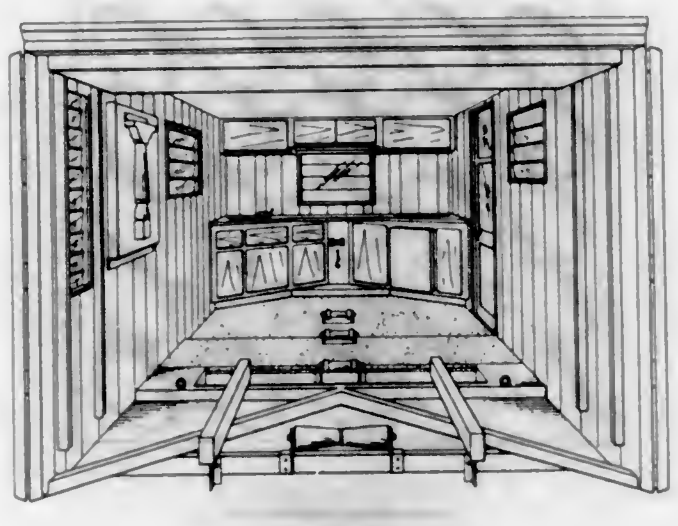
**216,108**
**RESIDENTIAL BUILDING**
**Arthur Carol Sanford, 2308 Bay Drive, Hillsboro Shores, Pompano Beach, Fla. 33062**
**Filed Apr. 29, 1969, Ser. No. 16,943**
**Term of patent 14 years**
**Int. Cl. D25—*04***

**U.S. Cl. D13—1**



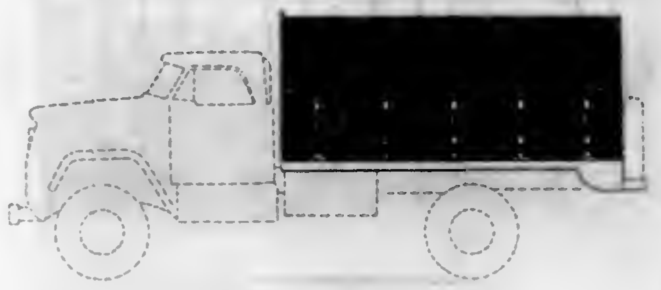
**216,109**
**TRAILER**
**Paul H. Kirk, 605 Fairlane, Oklahoma City, Okla. 73110**
**Continuation-in-part of design application Ser. No. 8,409, Aug. 28, 1967. This application Aug. 15, 1968, Ser. No. 13,293**
**Term of patent 14 years**
**Int. Cl. D12—*10***

**U.S. Cl. D14—3**



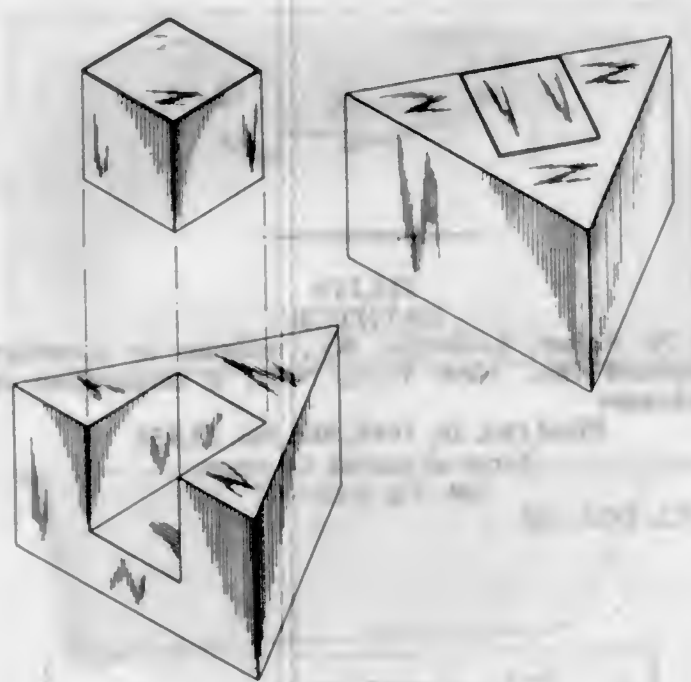
**216,110**
**CABLE AND SEISMOMETER TRUCK**
**Clifford D. Dransfield and Darvin D. Shields, Dallas, and Oswald Paxton, Plano, Tex., assignors to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania**
**Continuation-in-part of design application Ser. No. 10,073, Jan. 8, 1968. This application Aug. 9, 1968, Ser. No. 13,352**
**Term of patent 14 years**
**Int. Cl. D12—*09***

**U.S. Cl. D14—3**



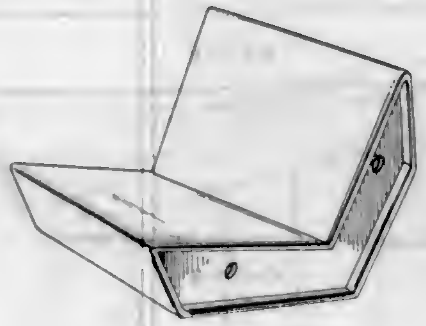
**216,111**
**CHAIR OR THE LIKE**
**Jeffrey Owen Brosk, 150 E. 69th St., New York, N.Y. 10021**
**Filed Sept. 2, 1967, Ser. No. 8,575**
**Term of patent 14 years**
**Int. Cl. D6—*01***

**U.S. Cl. D15—1**



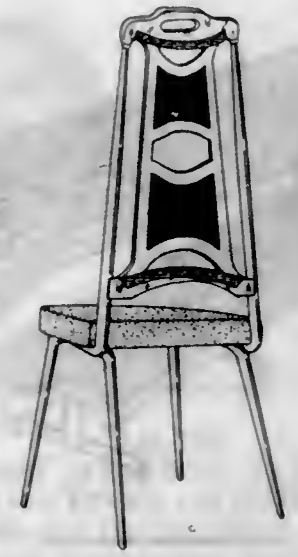
**216,112**
**CHAIR**
**Peter Raacke, 20 Parkstrasse, 50, 6451 Postfach, Wolfgang, near Hanau, Germany**
**Filed Mar. 28, 1968, Ser. No. 11,165**
**Term of patent 14 years**
**Int. Cl. D6—*01***

**U.S. Cl. D15—1**



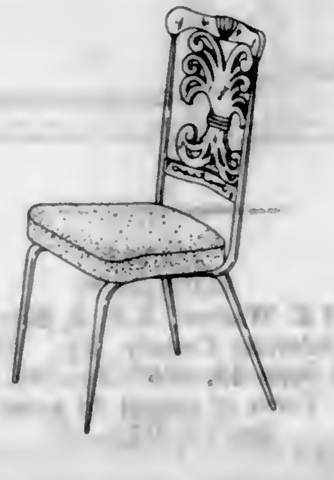
**216,113**
**CHAIR**
**Theodore D. Cretin, Houston, Tex., assignor to National Services Industries, Inc., Houston, Tex.**
**Filed Feb. 6, 1969, Ser. No. 15,670**
**Term of patent 3½ years**
**Int. Cl. D6—*01***

**U.S. Cl. D15—1**

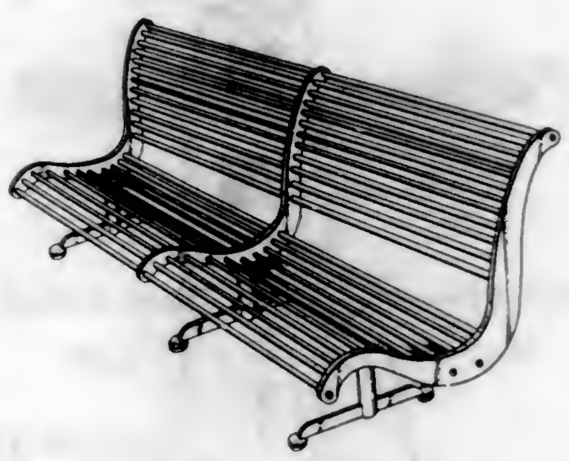


**216,114**
**CHAIR**
**Theodore D. Cretin, Houston, Tex., assignor to National Services Industries, Inc., Houston, Tex.**
**Filed Feb. 6, 1969, Ser. No. 15,671**
**Term of patent 3½ years**
**Int. Cl. D6—*01***

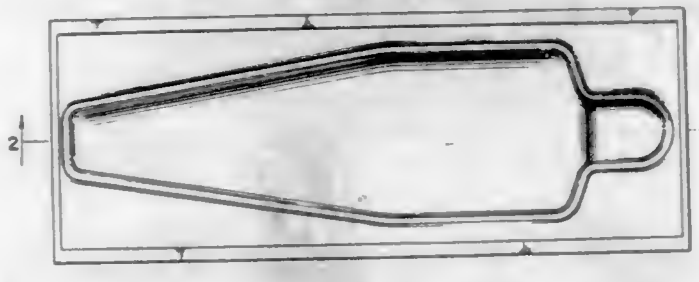
**U.S. Cl. D15—1**



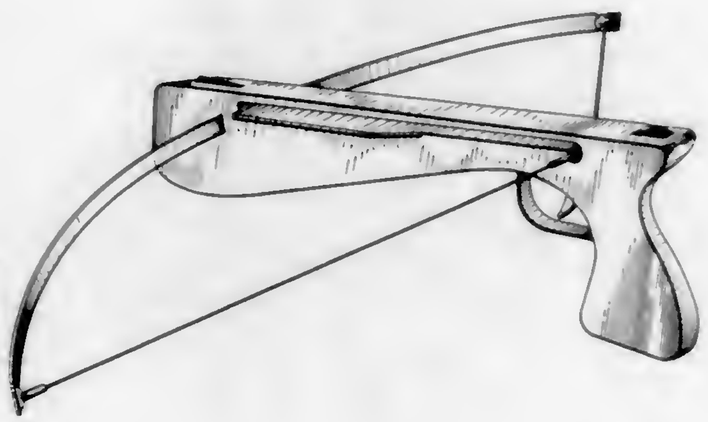
**216,115**
**BENCH**
**Sohei Suzuki, Gifu-shi, Gifu-ken, Japan, assignor to Tenryu Kogyo Kabushiki Kaisha, Kagamihara-shi, Gifu-ken, Japan, a company of Japan**
**Filed Aug. 30, 1968, Ser. No. 13,350**
**Term of patent 14 years**
**Int. Cl. D6—*01***
**U.S. Cl. D15—11**



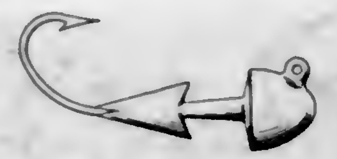
**216,116**
**SHIPPING CONTAINER FOR HUMAN REMAINS**
**Howard B. Holman and William M. Holman, both of 2610 SE. Hawthorne Blvd., Portland, Oreg. 97214**
**Filed Sept. 19, 1968, Ser. No. 13,612**
**Term of patent 14 years**
**Int. Cl. D31**
**U.S. Cl. D19—1**



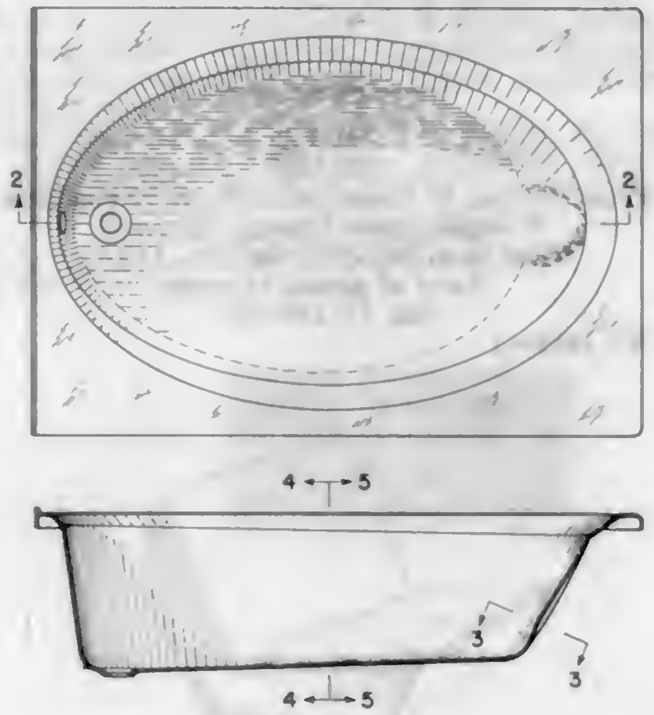
**216,117**
**BOW GUN**
**Carl E. Watson, R.R. 2, Box 259, Henderson County, Ky. 42420**
**Filed Sept. 15, 1967, Ser. No. 8,609**
**Term of patent 14 years**
**Int. Cl. D22—*02***
**U.S. Cl. D22—5**



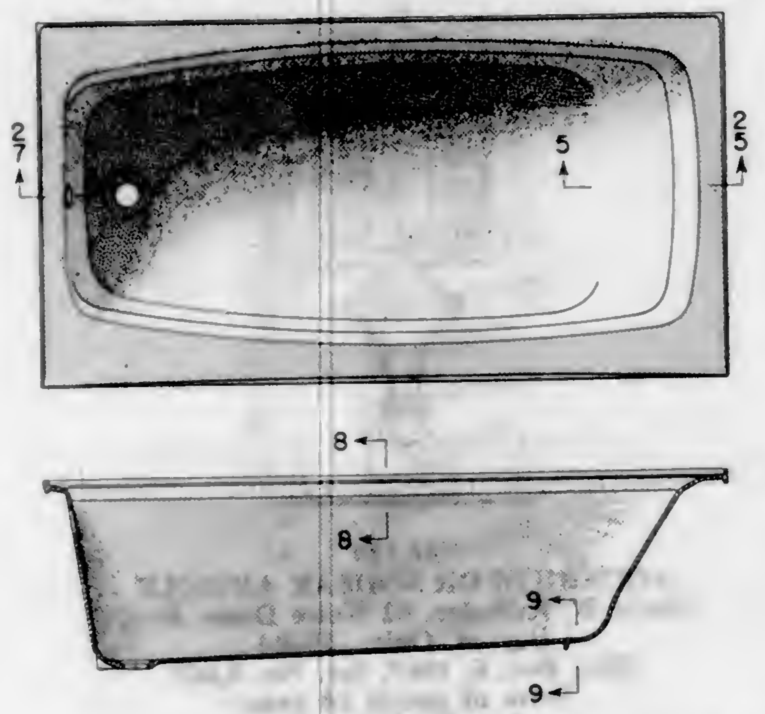
**216,118**
**WEIGHTED FISH HOOK**
**Joseph S. Showalter, Winter Park, Fla., assignor to Boone Bait Co., Inc., Winter Park, Fla., a corporation of Florida**
**Filed Sept. 27, 1968, Ser. No. 13,754**
**Term of patent 14 years**
**Int. Cl. D22—*07***
**U.S. Cl. D22—27**



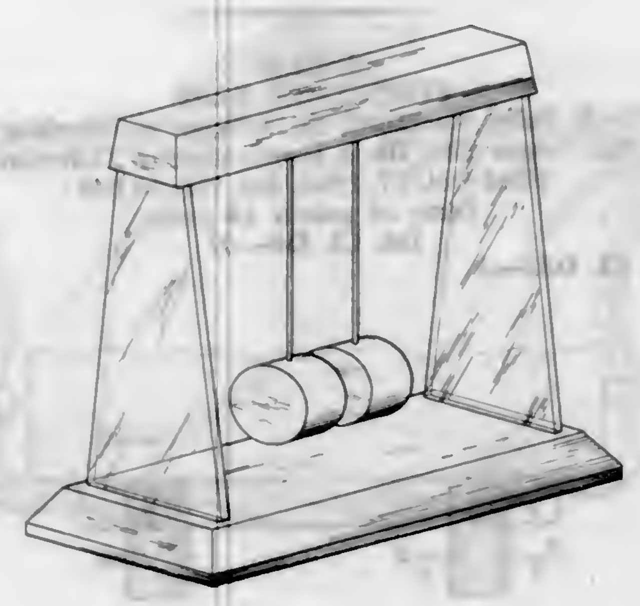
**216,119**
**BATHTUB**
**Jack N. Kaiser, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware**
**Filed Oct. 10, 1968, Ser. No. 13,938**
**Term of patent 14 years**
**Int. Cl. D23—*02***
**U.S. Cl. D23—55**



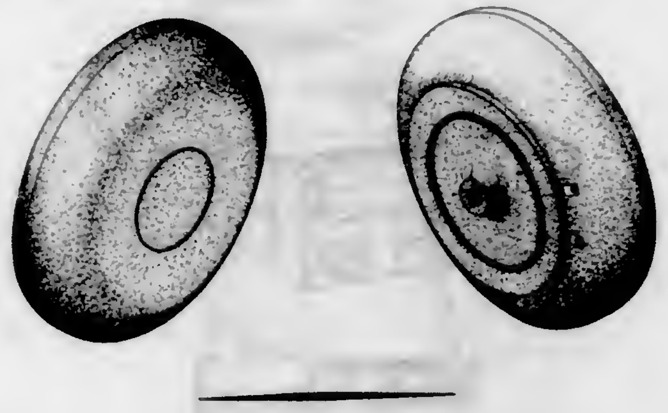
**216,120**
**BATHTUB**
**James Edward Niemann and Raymond Wallace Young, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware**
**Filed Nov. 29, 1968, Ser. No. 14,727**
**Term of patent 14 years**
**Int. Cl. D23—*02***
**U.S. Cl. D23—55**



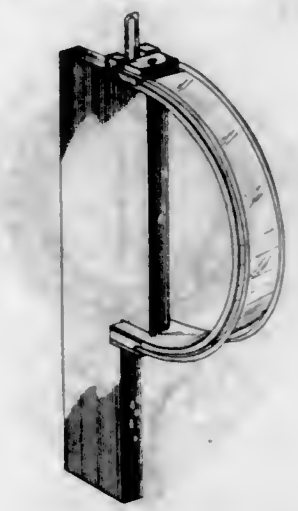
**216,121**
**EDUCATIONAL PENDULUM TOY**
**Arnold G. Edson, 71 Stony Run, New Rochelle, N.Y. 10804**
**Filed Apr. 10, 1969, Ser. No. 16,659**
**Term of patent 3½ years**
**Int. Cl. D21—*02;* D19—*08***
**U.S. Cl. D25—1**



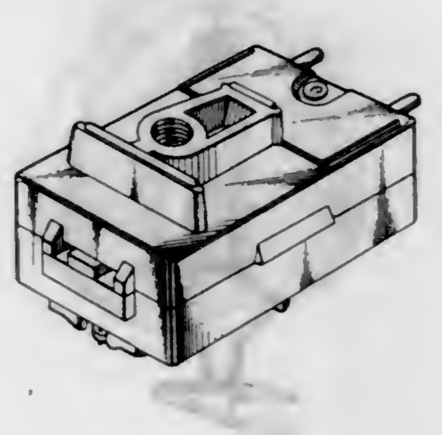
**216,122**
**WALL MOUNTED SOUND TRANSDUCER**
**Benigno A. Rivera, Milaville, Puerto Rico, assignor to Harold D. Linden and Lawrence A. Gordon, both of San Juan, Puerto Rico**
**Filed Mar. 13, 1968, Ser. No. 10,965**
**Term of patent 14 years**
**Int. Cl. D14—*01***
**U.S. Cl. D26—14**



**216,123**
**FLEXIBLE SHEET MATERIAL GUIDE FOR A FACSIMILE TRANSCEIVER OR SIMILAR ARTICLE**
**Robert E. Kalvitis and Paul S. Heller, Fairport, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York**
**Filed Oct. 15, 1968, Ser. No. 14,003**
**Term of patent 14 years**
**Int. Cl. D14—*03***
**U.S. Cl. D26—14**



**216,124**
**PHONOGRAPH CARTRIDGE**
**Norman Lane, Halesowen, England, assignor to BSR Limited, Warley, England, a British company**
**Filed Dec. 12, 1968, Ser. No. 15,014**
**Term of patent 14 years**
**Int. Cl. D14—*99***
**U.S. Cl. D26—14**

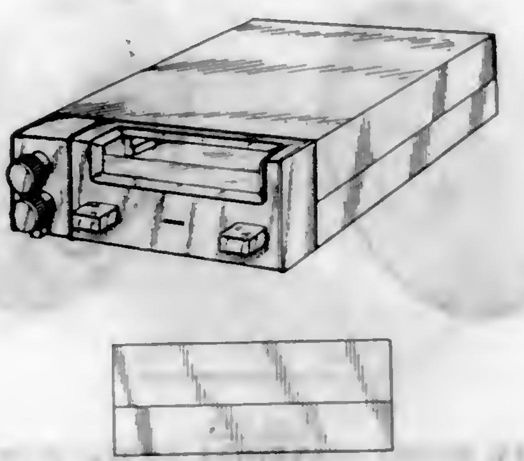


**216,125**

### TAPE PLAYER

Kazuo Kawakami, Tokyo, Japan, assignor to Teikoku Dempa Co., Ltd., Bunkyo-ku, Tokyo, Japan
Filed Dec. 6, 1968, Ser. No. 15,074
Term of patent 14 years
Claims priority, application Japan July 12, 1968
Int. Cl. D14—*01*

U.S. Cl. D26—14

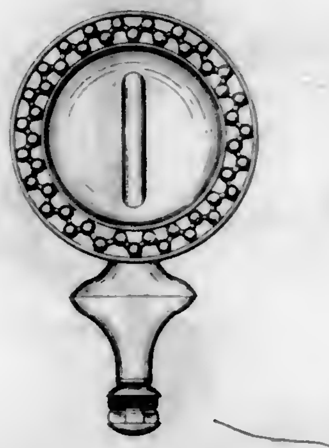


**216,126**

### CHRISTMAS TREE ORNAMENT

Kurt S. Adler, 1107 Broadway, Riverdale, N.Y. 10010
Filed Feb. 5, 1969, Ser. No. 15,649
Term of patent 3½ years
Int. Cl. D11—*05*

U.S. Cl. D29—1

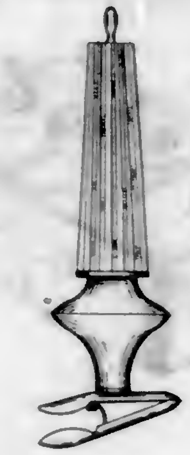


**216,127**

### CHRISTMAS TREE ORNAMENT

Kurt S. Adler, 1107 Broadway, Riverdale, N.Y. 10010
Filed Feb. 5, 1969, Ser. No. 15,655
Term of patent 3½ years
Int. Cl. D11—*05*

U.S. Cl. D29—1

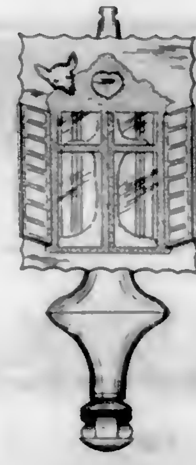


**216,128**

### CHRISTMAS TREE ORNAMENT

Kurt S. Adler, 1107 Broadway, Riverdale, N.Y. 10010
Filed Feb. 5, 1969, Ser. No. 15,656
Term of patent 3½ years
Int. Cl. D11—*05*

U.S. Cl. D29—1

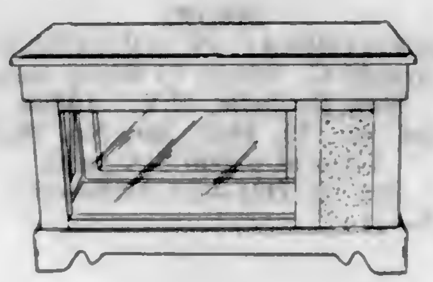


**216,129**

### AQUARIUM OR SIMILAR ARTICLE

Garry W. Rutledge, 92 Notre Dame Ave., Dayton, Ohio 45404
Filed Dec. 6, 1967, Ser. No. 9,665
Term of patent 14 years
Int. Cl. D30—*01*

U.S. Cl. D30—6

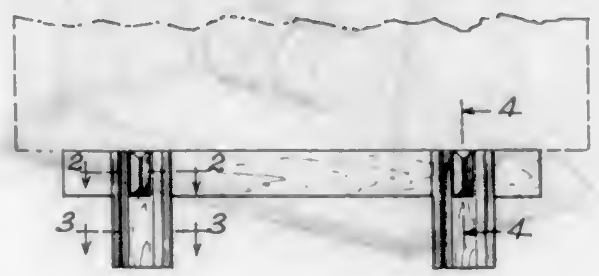


**216,130**

### FURNITURE BASE

Orville B. Solie, Rockford, Ill., assignor to Kroehler Mfg. Co., Naperville, Ill., a corporation of Delaware
Filed Oct. 17, 1968, Ser. No. 14,040
Term of patent 14 years
Int. Cl. D6—*01*

U.S. Cl. D33—1

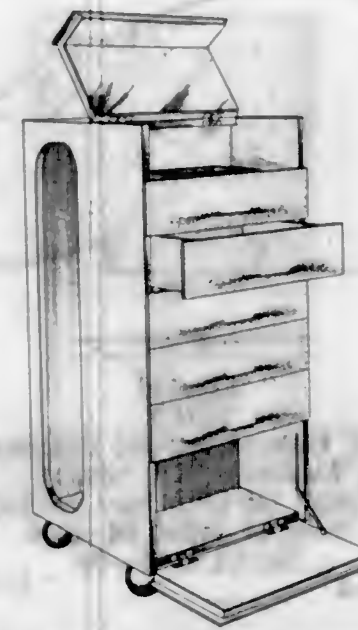


**216,131**

### CLOTHES BUREAU

Raymond Loewy, 39 Avenue d'Iéna, Paris 16ème, France
Filed Oct. 18, 1968, Ser. No. 14,049
Term of patent 7 years
Int. Cl. D6—*01*

U.S. Cl. D33—6

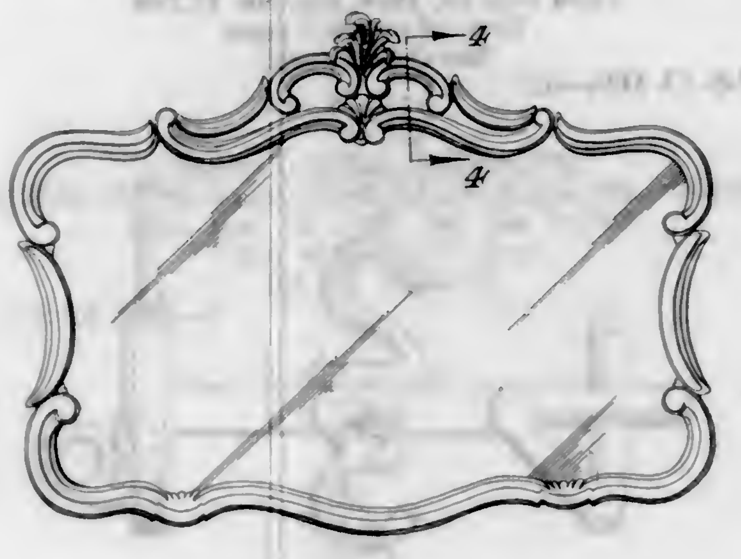


**216,132**

### MIRROR OR THE LIKE

Richard M. Chapin, Charlotte, N.C., assignor to C. B. Atkin Company, Knoxville, Tenn., a corporation of Tennessee
Filed Oct. 14, 1968, Ser. No. 13,976
Term of patent 3½ years
Int. Cl. D6—*06*

U.S. Cl. D33—9

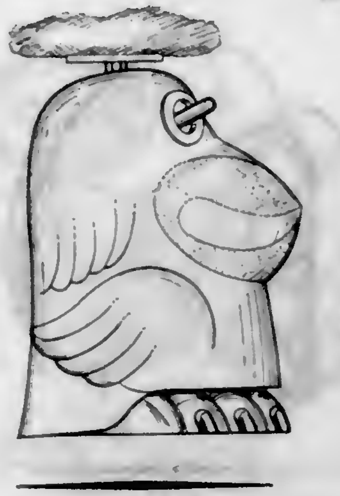


**216,133**

### PLAYING PIECE FOR A GAME

Harry Zelenko, 150 E. 61st St., New York, N.Y. 10021
Filed Sept. 17, 1968, Ser. No. 13,563
Term of patent 14 years
Int. Cl. D21—*01*

U.S. Cl. D34—2

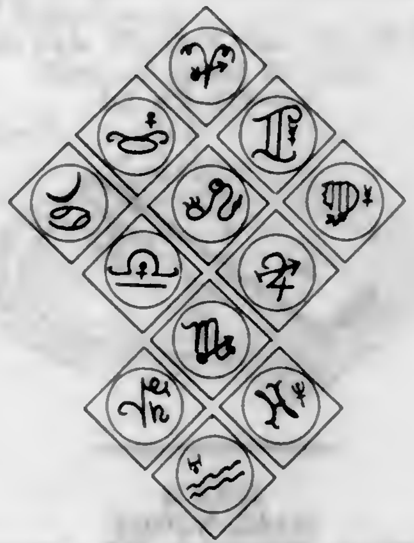


**216,134**

### SET OF GAME TILES OR THE LIKE

Emily C. Parsons, 246 South St., Randolph, Mass. 02368
Filed Dec. 2, 1968, Ser. No. 14,740
Term of patent 14 years
Int. Cl. D21—*01*

U.S. Cl. D34—5

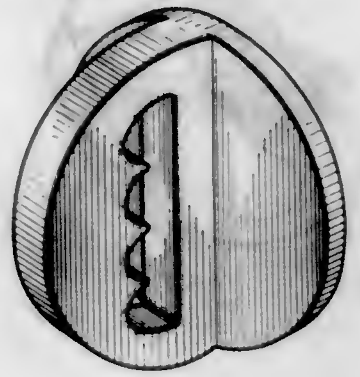


**216,135**

### ATHLETIC GAME PADDLE

James W. Maddox, 6515 S. Laflin, Chicago, Ill. 60636
Filed Jan. 28, 1969, Ser. No. 15,533
Term of patent 14 years
Int. Cl. D21—*03*

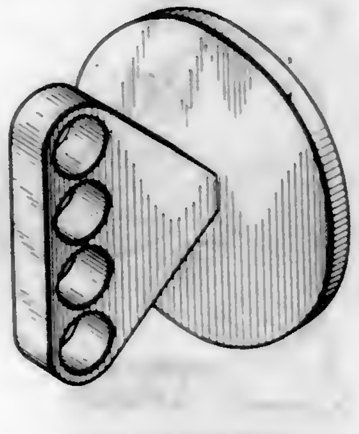
U.S. Cl. D34—5



### 216,136
### ATHLETIC GAME PADDLE

James W. Maddox, 6515 S. Laflin,
Chicago, Ill. 60636
Filed Jan. 28, 1969, Ser. No. 15,541
Term of patent 14 years
Int. Cl. D21—*03*

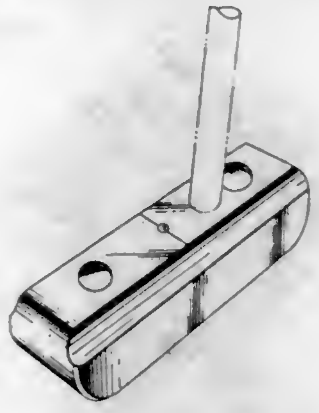
U.S. Cl. D34—5



### 216,137
### GOLF PUTTER HEAD

Roy A. Hemsoth, 4333 Winter St.,
Fort Wayne, Ind. 46806
Filed Jan. 28, 1969, Ser. No. 15,545
Term of patent 14 years
Int. Cl. D21—*03*

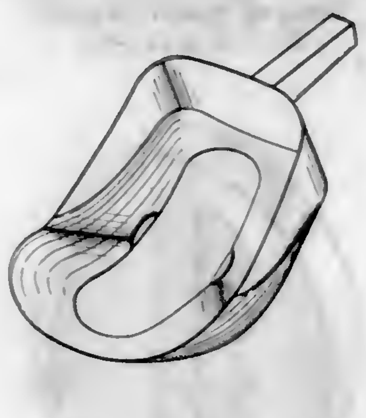
U.S. Cl. D34—5



### 216,138
### BALL SCOOP

Robert L. Carignan, Providence, R.I., assignor to Hasbro Industries, Inc., Pawtucket, R.I., a corporation of Rhode Island
Filed Apr. 29, 1969, Ser. No. 16,942
Term of patent 14 years
Int. Cl. D21—*02*

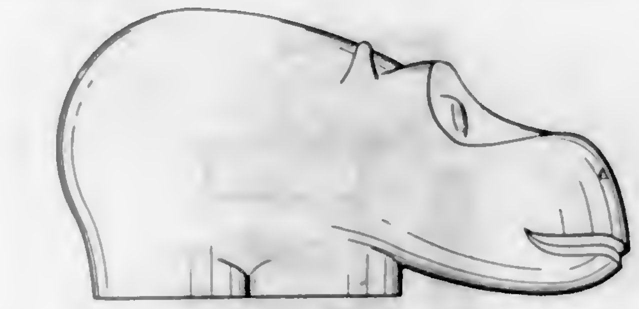
U.S. Cl. D34—5



### 216,139
### SAVINGS-BOX

Heikki Tavela, Tiilimaki 30, Helsinki 33, Finland
Filed Mar. 27, 1969, Ser. No. 16,482
Term of patent 14 years
Int. Cl. D21—*02*

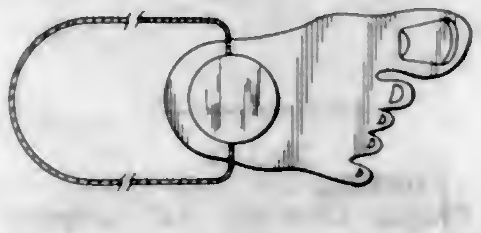
U.S. Cl. D34—11



### 216,140
### STILT

Luther T. Goheen, Jr., 200 Hillcrest Ave.,
Louisville, Ky. 40206
Filed Sept. 16, 1968, Ser. No. 13,543
Term of patent 14 years
Int. Cl. D21—*04*

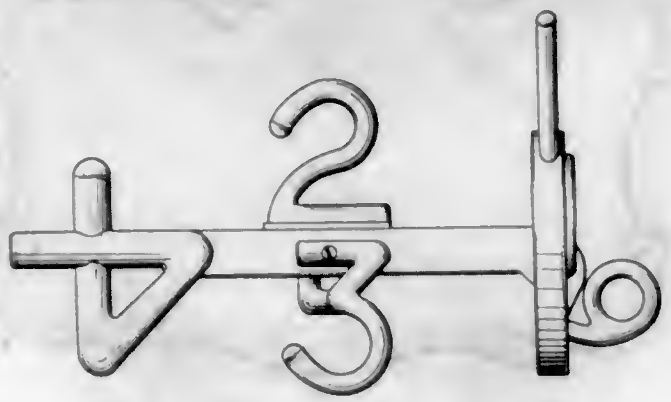
U.S. Cl. D34—14



### 216,141
### EDUCATIONAL TOY FIGURE

William B. Moody, 627 Terrell Mill Road, College Park, Ga. 30377, and Dorothy B. Whitney, 2060 Sylvania Ave., Decatur, Ga. 30467
Filed Feb. 12, 1969, Ser. No. 15,749
Term of patent 7 years
Int. Cl. D21—*02*

U.S. Cl. D34—15



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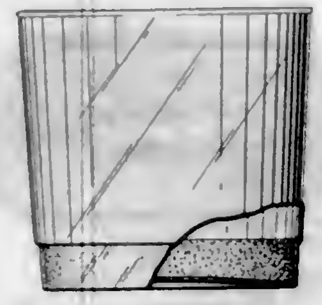
### 216,142
### DRINKING TUMBLER

William J. Gribbens, St. Paul, Minn., assignor, by mesne assignments, to Plastics, Inc., St. Paul, Minn., a corporation of Delaware
Filed Mar. 14, 1968, Ser. No. 10,970
Term of patent 14 years
Int. Cl. D7—*01*

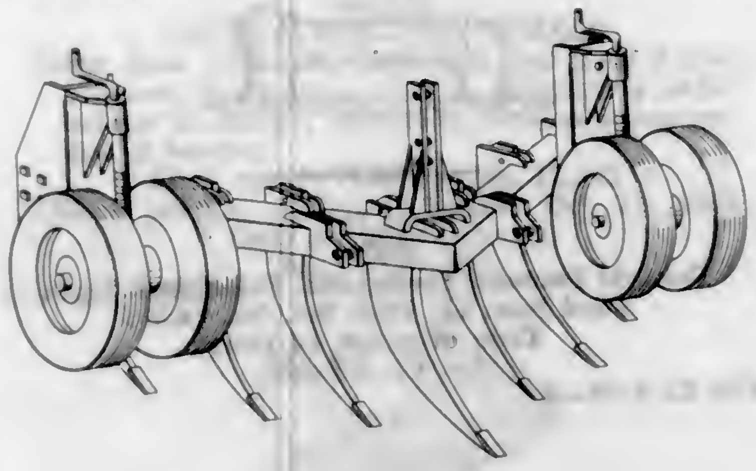
U.S. Cl. D36—8



### 216,143
### DEEP TILLAGE PLOW

Ted L. Cline, P.O. Box 38, Oklahoma City, Okla. 73082
Filed May 15, 1968, Ser. No. 11,949
Term of patent 14 years
Int. Cl. D15—*03*

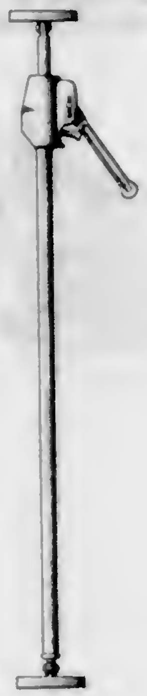
U.S. Cl. D40—1



### 216,144
### JACK

Martin L. Gillen, Hialeah, Fla.
(17941 NE. 9th Court, North Miami Beach, Fla. 33125)
Filed Dec. 16, 1968, Ser. No. 14,983
Term of patent 14 years
Int. Cl. D12—*05*

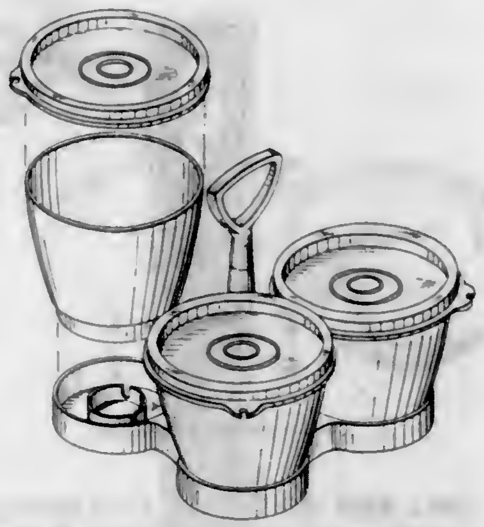
U.S. Cl. D41—1



### 216,145
### CASTER OR THE LIKE

James B. Swett, Barrington, and Harold P. Ashton, Providence, R.I., assignors to Dart Industries Inc., a corporation of Delaware
Filed Aug. 12, 1968, Ser. No. 13,093
Term of patent 14 years
Int. Cl. D7—*99*

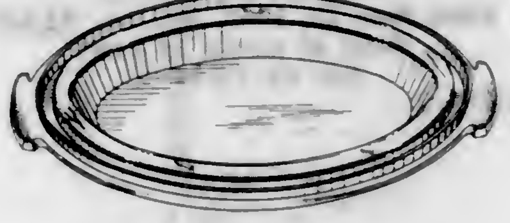
U.S. Cl. D44—7



### 216,146
### PLATE FOR PASTRIES OR THE LIKE

Robert R. Bateman, Providence, and James B. Swett, Barrington, R.I., assignors to Dart Industries Inc., a corporation of Delaware
Filed Feb. 29, 1968, Ser. No. 10,783
Term of patent 14 years
Int. Cl. D7—*01*

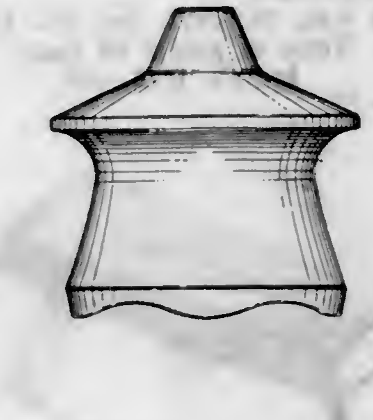
U.S. Cl. D44—19



### 216,147
### PIE FUNNEL

John Thomas Clark, High Pines, Beech Hill,
Hexham, Northumberland, England
Filed Oct. 2, 1968, Ser. No. 13,813
Claims priority, application Great Britain Apr. 6, 1968
Term of patent 14 years
Int. Cl. D7—*02*

U.S. Cl. D44—29

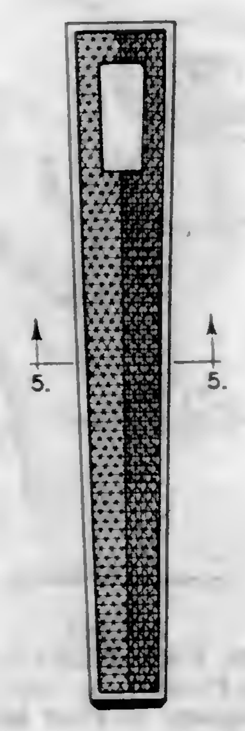


### 216,148
### HANDLE FOR A CULINARY IMPLEMENT

Dorothy J. Connor, Northlake, Ill., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 3, 1969, Ser. No. 15,606
Term of patent 14 years
Int. Cl. D7—99

U.S. Cl. D44—29

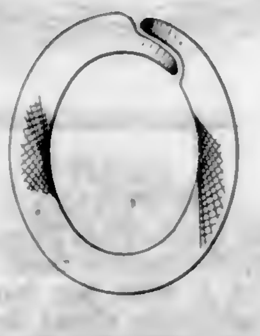


### 216,149
### EARRING

Bernard D. Shapiro, 74 Tars Drive, Nassau County, Roslyn, N.Y. 11576

Filed June 28, 1968, Ser. No. 12,549
Term of patent 14 years
Int. Cl. D11—*01*

U.S. Cl. D45—9

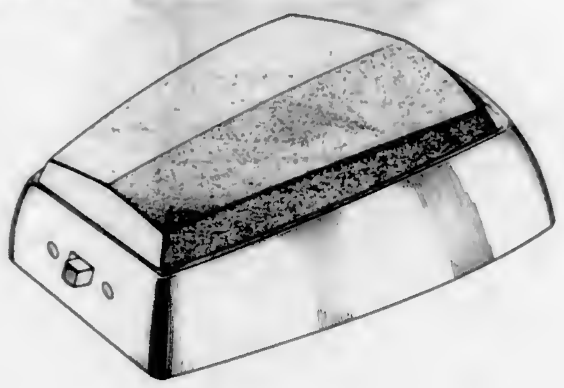


### 216,150
### RECREATIONAL VEHICLE LIGHT

Humphrey A. Lee, Pasadena, Calif., assignor to Coronado Manufacturing Company, Long Beach, Calif., a corporation of Delaware

Filed Aug. 16, 1968, Ser. No. 13,163
Term of patent 14 years
Int. Cl. D12—*99*

U.S. Cl. D48—32

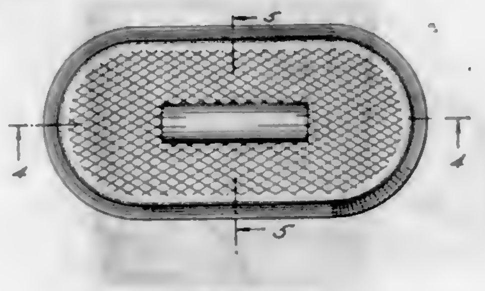


### 216,151
### REFLECTOR LIGHT HOUSING

Walter T. Cox, Royal Oak, Mich., assignor to Theodore Bargman Company, Detroit, Mich., a corporation of Michigan

Filed Feb. 3, 1969, Ser. No. 15,611
Term of patent 14 years
Int. Cl. D12—*99;* D29—*99*

U.S. Cl. D48—32

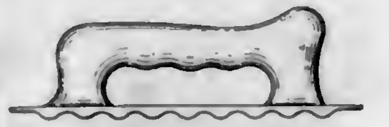


### 216,152
### HAND WASHBOARD

David Bressler, 330 W. 58th St., New York, N.Y. 10019

Filed Nov. 6, 1968, Ser. No. 14,333
Term of patent 7 years
Int. Cl. D7—*06*

U.S. Cl. D49—1

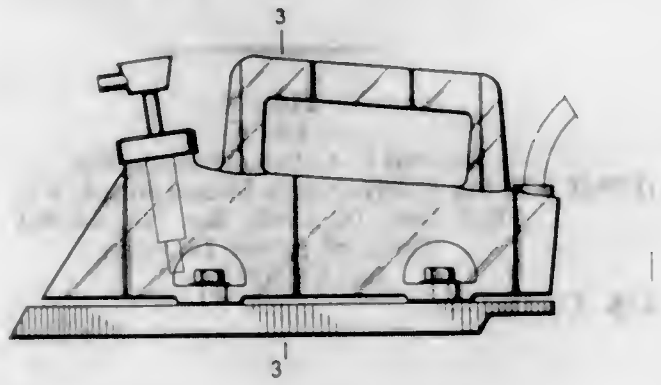


### 216,153
### IRON

Fukuyki Tsunoda, Tamiga-cho, Tokushima, Japan

Filed Nov. 12, 1968, Ser. No. 14,395
Term of patent 14 years
Int. Cl. D7—*06*

U.S. Cl. D49—6

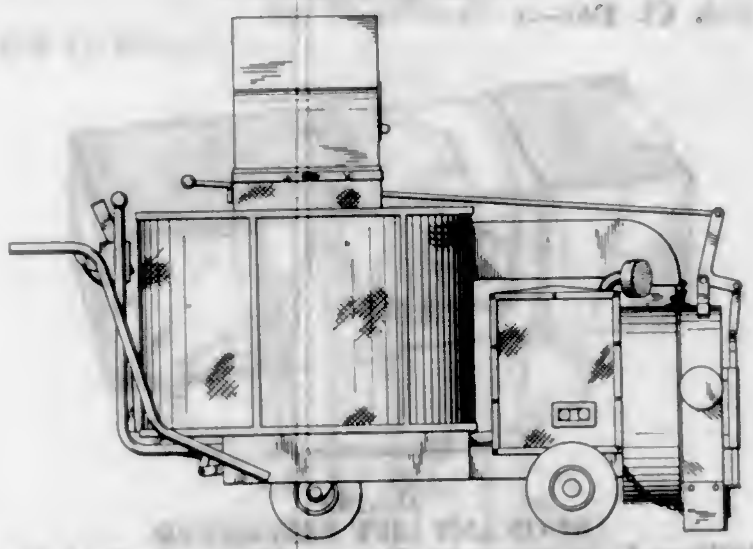


### 216,154
### PORTABLE STREET AND PARKING LOT CLEANER

Berl L. Bell, 1196 N. Neff St., Canby, Oreg. 97013

Filed Mar. 3, 1969, Ser. No. 16,009
Term of patent 14 years
Int. Cl. D15—*06*

U.S. Cl. D49—9.1

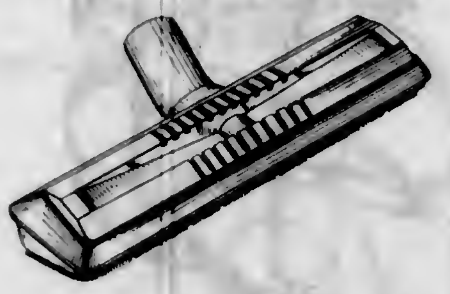


### 216,155
### VACUUM CLEANER NOZZLE

Johan Arne Dömstedt, Hagersten, and Knut Yngve Karlsson, Skarholmen, Sweden, assignors to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden

Filed Apr. 5, 1968, Ser. No. 11,312
Claims priority, application Sweden Oct. 13, 1967
Term of Patent 14 years
Int. Cl. D4—*01*

U.S. Cl. D49—19

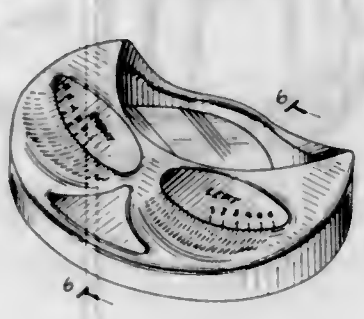


### 216,156
### EYE MEASURER FOR EYELASHES

Charles Kim, 215 W. 83rd St., New York, N.Y. 10024

Filed Mar. 4, 1969, Ser. No. 16,019
Term of patent 14 years
Int. Cl. D10—*08*

U.S. Cl. D52—6

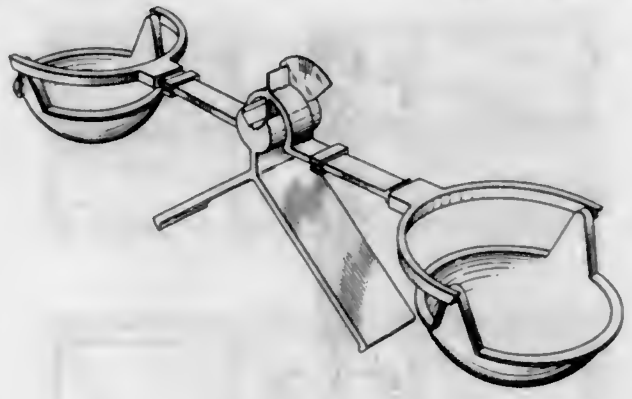


### 216,157
### BALANCE SCALE

George R. Stehl, Stoney Brook, N.Y., assignor, by mesne assignments, to Xerox Corporation, Rochester, N.Y.

Filed May 14, 1968, Ser. No. 11,928
Term of patent 14 years
Int. Cl. D10—*99*

U.S. Cl. D52—10

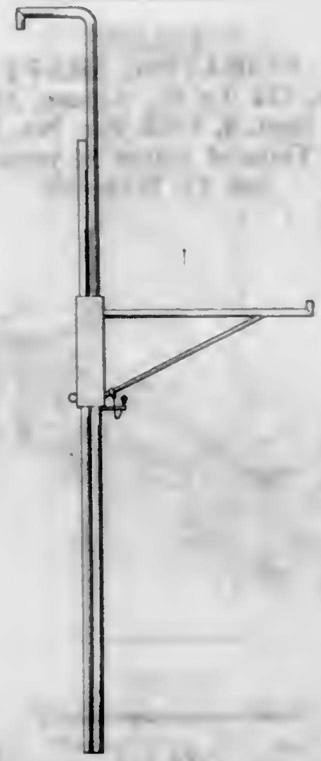


### 216,158
### SCAFFOLD SUPPORT OR THE LIKE

James R. Williams, 1816 Peters Road, Irving, Tex. 75060

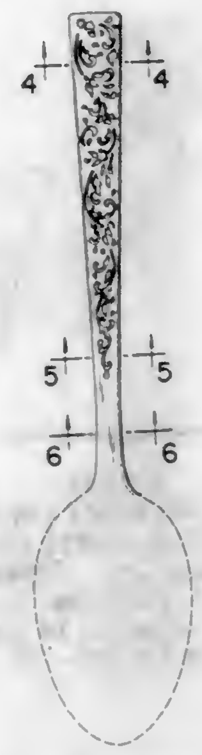
Filed Aug. 5, 1968, Ser. No. 13,142
Term of patent 14 years
Int. Cl. D8—*99*

U.S. Cl. D54—1



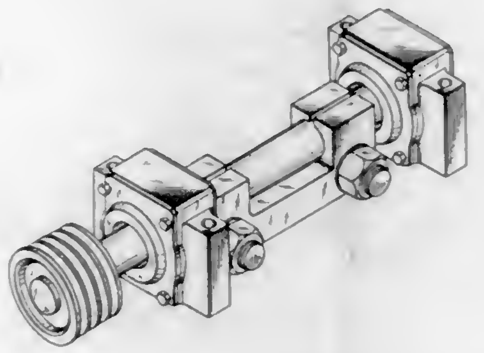
**216,159**
**SPOON OR SIMILAR ARTICLE OF FLATWARE**
**Siro R. Toffolon, Meriden, Conn., assignor to World Tableware Corporation, Meriden, Conn., a corporation of Delaware**
**Filed July 25, 1968, Ser. No. 12,900**
**Term of patent 14 years**
**Int. Cl. D7—*03***

**U.S. Cl. D54—12**



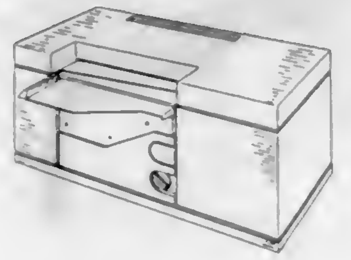
**216,160**
**VIBRATING SHAFT**
**Jesse Besser, 232 1st St., Alpena, Mich. 49707**
**Filed Sept. 4, 1968, Ser. No. 13,462**
**Term of patent 14 years**
**Int. Cl. D15—*99***

**U.S. Cl. D55—1**



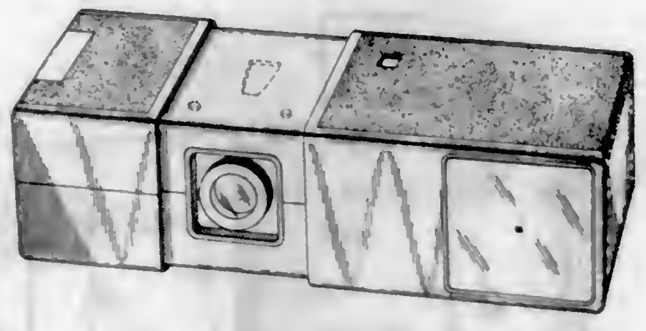
**216,161**
**DOCUMENT REPRODUCING UNIT**
**Mario Bellini, Milan, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Torino, Italy**
**Filed Oct. 13, 1967, Ser. No. 9,033**
**Term of patent 7 years**
**Claims priority, application Italy Apr. 13, 1967**
**Int. Cl. D16—*05***

**U.S. Cl. D61—1**



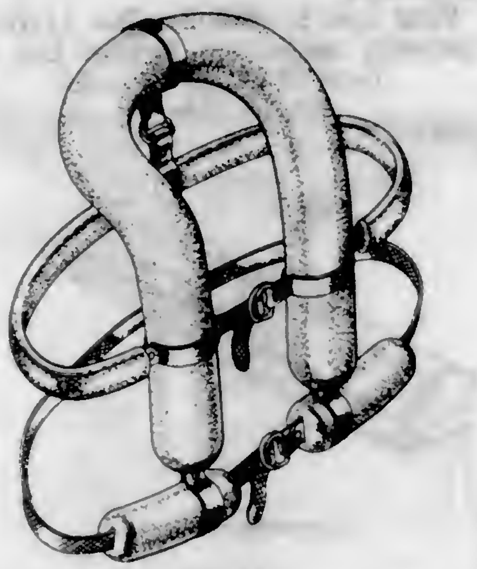
**216,162**
**CAMERA**
**Raymond A. Grosso, Troy, Mich., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware**
**Filed Feb. 7, 1969, Ser. No. 15,692**
**Term of patent 14 years**
**Int. Cl. D16—*01***

**U.S. Cl. D61—1**



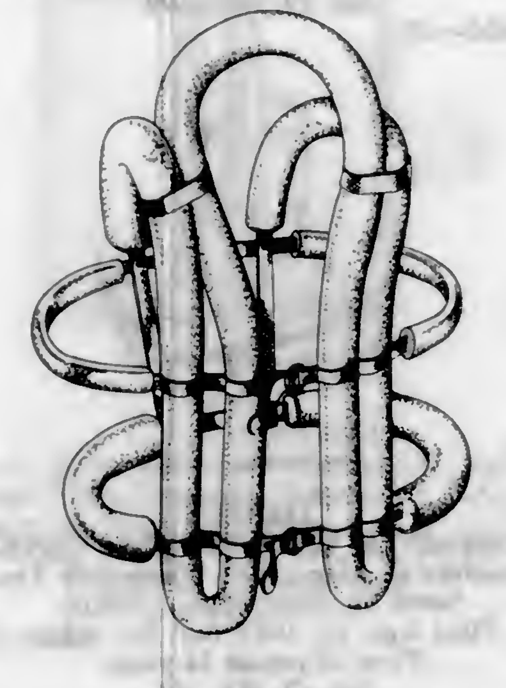
**216,163**
**BUOYANT LIFE PRESERVER**
**William C. Walters and Clarence Maxey, Bedford, Va., assignors to Groendyk Manufacturing Company, Inc., Buchanan, Va., a corporation of Delaware**
**Filed Feb. 27, 1969, Ser. No. 15,948**
**Term of patent 14 years**
**Int. Cl. D29—*02***

**U.S. Cl. D71—1**



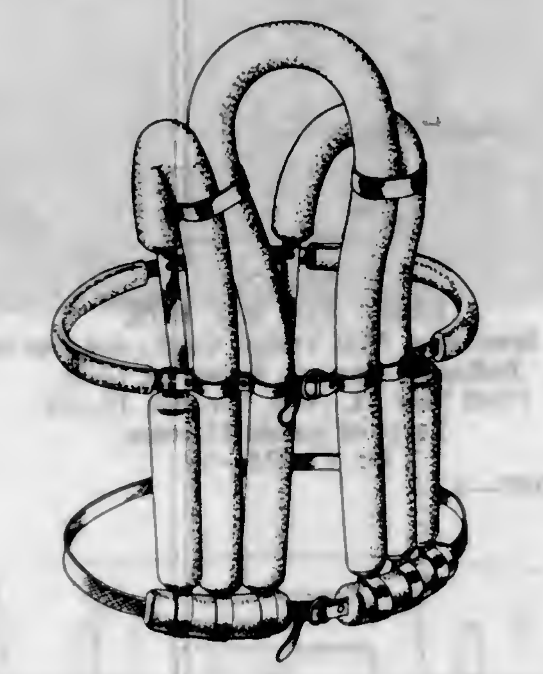
**216,164**
**BUOYANT LIFE PRESERVER**
**William C. Walters and Clarence Maxey, Bedford, Va., assignors to Groendyk Manufacturing Company, Inc., Buchanan, Va., a corporation of Delaware**
**Filed Feb. 28, 1969, Ser. No. 15,962**
**Term of patent 14 years**
**Int. Cl. D29—*02***

**U.S. Cl. D71—1**



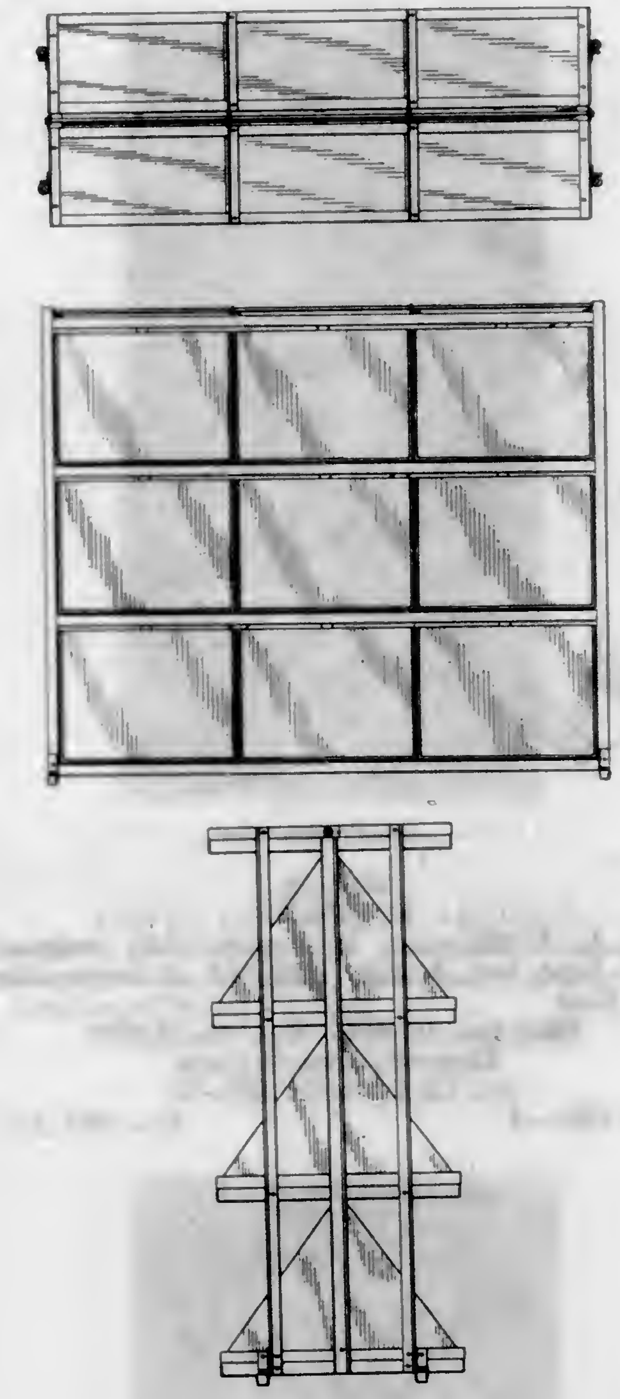
**216,165**
**BUOYANT LIFE PRESERVER**
**William C. Walters and Clarence Maxey, Bedford, Va., assignors to Groendyk Manufacturing Company, Inc., Buchanan, Va., a corporation of Delaware**
**Filed Feb. 28, 1969, Ser. No. 15,977**
**Term of patent 14 years**
**Int. Cl. D29—*02***

**U.S. Cl. D71—1**



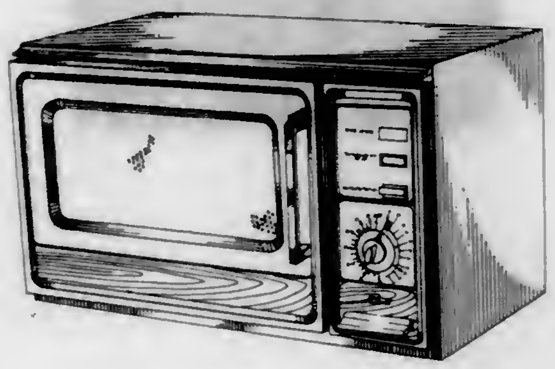
**216,166**
**DISPLAY RACK FOR LEAFLETS AND THE LIKE**
**Harrison I. Montague, 37 West High Terrace, Rochester, N.Y. 14619**
**Filed Dec. 6, 1968, Ser. No. 14,825**
**Term of patent 14 years**
**Int. Cl. D6—*01***

**U.S. Cl. D80—9**



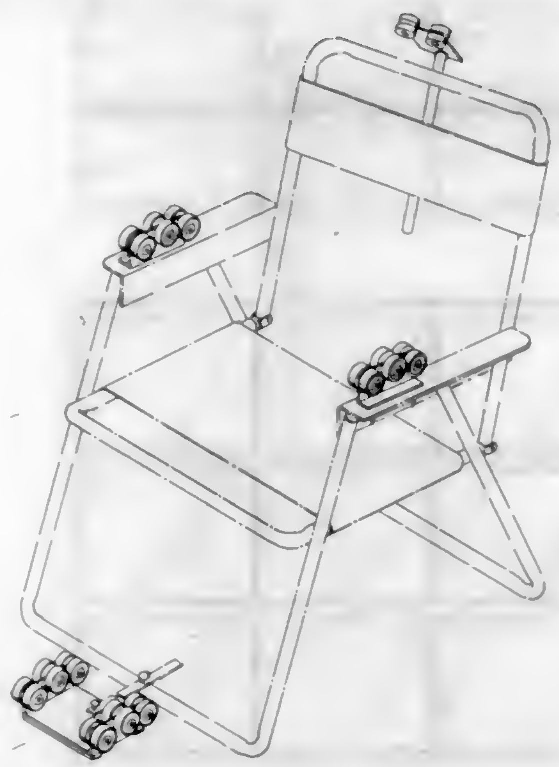
**216,167**
**MICROWAVE OVEN**
**Joseph R. Mango, Midlothian, Ill., and Donald Barnabas Hendricks, Bloomington, and Edwin S. Collins, Jr., Edina, Minn., assignors to Litton Precision Products, Inc., Minneapolis, Minn., a corporation of Delaware**
**Filed Apr. 16, 1969, Ser. No. 16,775**
**Term of patent 14 years**
**Int. Cl. D7—*04***

**U.S. Cl. D81—20**



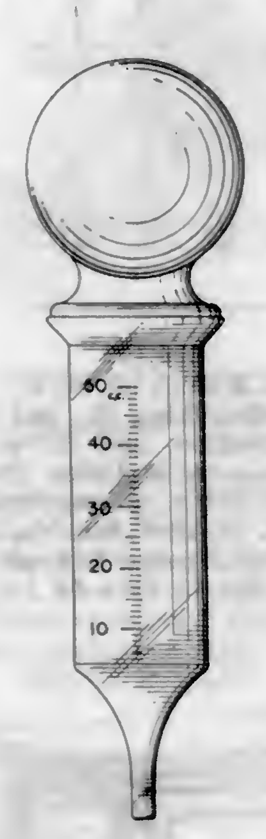
**216,168**
**ROLLER MASSAGE UNIT**
**John Waldeck, 2764 Faber Ave.,**
**Cincinnati, Ohio 45211**
**Filed Apr. 4, 1968, Ser. No. 11,308**
**Term of patent 14 years**
**Int. Cl. D24—*99***

**U.S. Cl. D83—1**



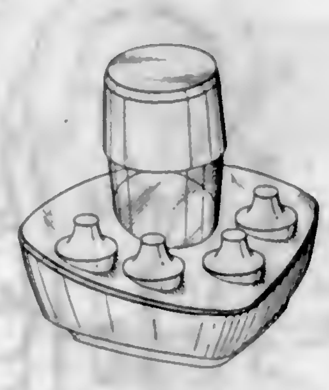
**216,169**
**SYRINGE**
**Vincent L. Vaillancourt, Livingston, N.J., assignor to C. R. Bard, Inc., Murray Hill, N.J., a corporation of New York**
**Filed Jan. 16, 1969, Ser. No. 15,376**
**Term of patent 14 years**
**Int. Cl. D24—*03;* D7—*02***

**U.S. Cl. D83—1**



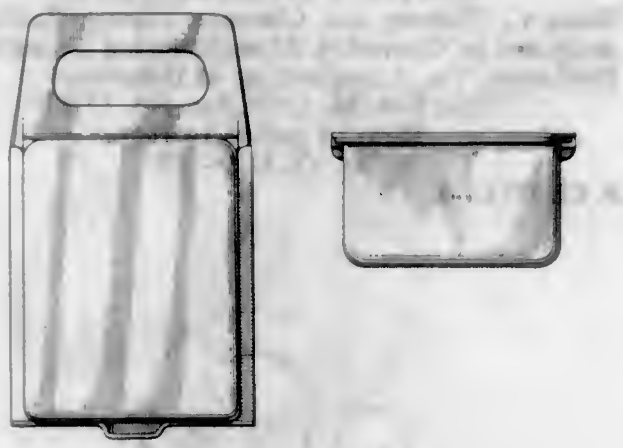
**216,170**
**COMBINED COSMETICS BLENDER, INGREDIENT HOLDERS AND STAND THEREFOR**
**Monte L. Levin, New York, N.Y., and Samuel Bernstein, West Hartford, Conn., assignors to Dynamics Corporation of America, Waring Products Division, New Hartford, Conn., a corporation of New York**
**Filed Dec. 2, 1968, Ser. No. 14,734**
**Term of patent 14 years**
**Int. Cl. D28—*99***

**U.S. Cl. D86—10**



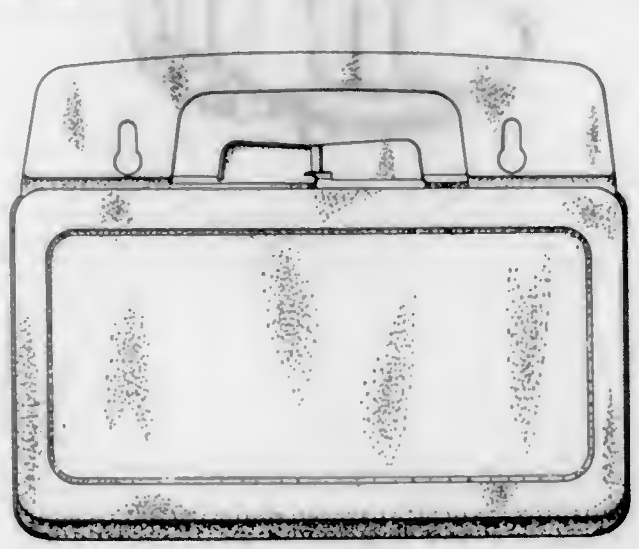
**216,171**
**CONTAINER WITH SLIDING COVER**
**Theodore C. Murr, 2001 Wentworth Ave.,**
**South St. Paul, Minn. 55118**
**Filed Apr. 28, 1967, Ser. No. 6,880**
**Term of patent 14 years**
**Int. Cl. D3—*99***

**U.S. Cl. D87—1**



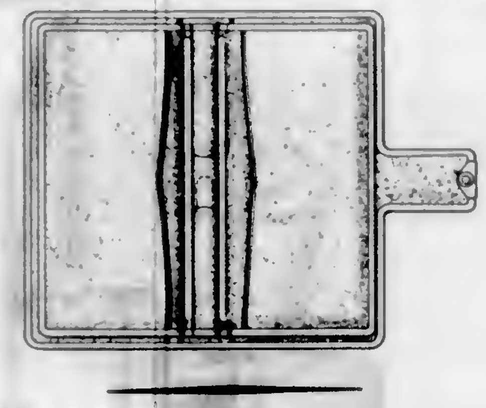
**216,172**
**FIRST AID KIT BOX**
**Brock F. Brockway, Mill Valley, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.**
**Filed May 31, 1968, Ser. No. 12,165**
**Term of patent 14 years**
**Int. Cl. D3—*99***

**U.S. Cl. D87—1**



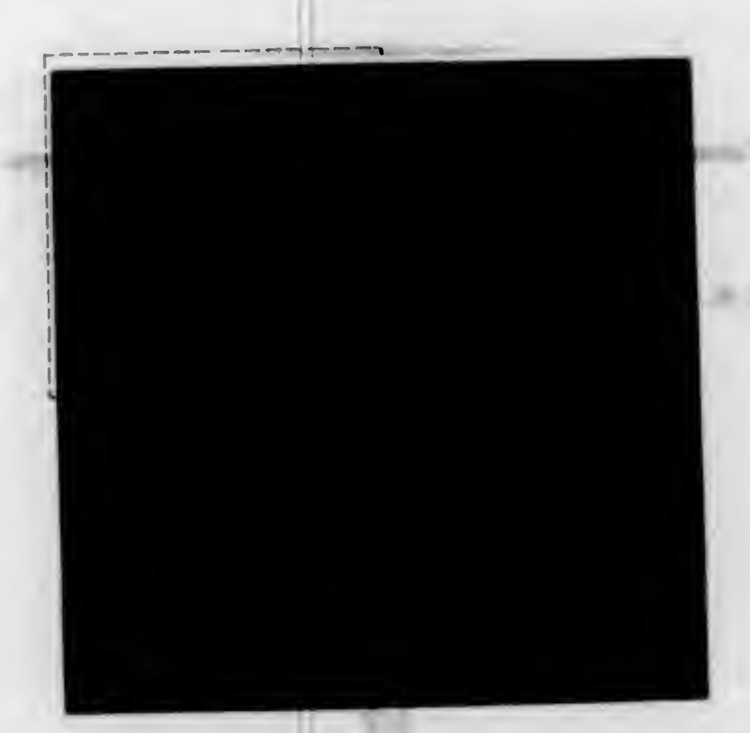
**216,173**
**WALLET-CHECK HOLDER COMBINATION**
**Samuel M. Kogutt, 5925 Waggoner Drive,**
**Dallas, Tex. 75230**
**Filed Apr. 10, 1968, Ser. No. 11,379**
**Term of patent 14 years**
**Int. Cl. D3—*02***

**U.S. Cl. D87—3**



**216,174**
**TEXTILE FABRIC**
**Connie C. Willoughby, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina**
**Filed Nov. 25, 1968, Ser. No. 14,632**
**Term of patent 14 years**
**Int. Cl. D5—*02***

**U.S. Cl. D92—1**



**216,175**
**TOWEL OR SIMILAR ARTICLE**
**Connie C. Willoughby, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina**
**Filed Nov. 25, 1968, Ser. No. 14,633**
**Term of patent 14 years**
**Int. Cl. D6—*09***

**U.S. Cl. D92—26**

**216,176**
**TOWEL OR SIMILAR ARTICLE**
**Connie C. Willoughby, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina**
**Filed Nov. 25, 1968, Ser. No. 14,640**
**Term of patent 14 years**
**Int. Cl. D6—*09***

**U.S. Cl. D92—26**

### 216,177
### TOWEL OR SIMILAR ARTICLE

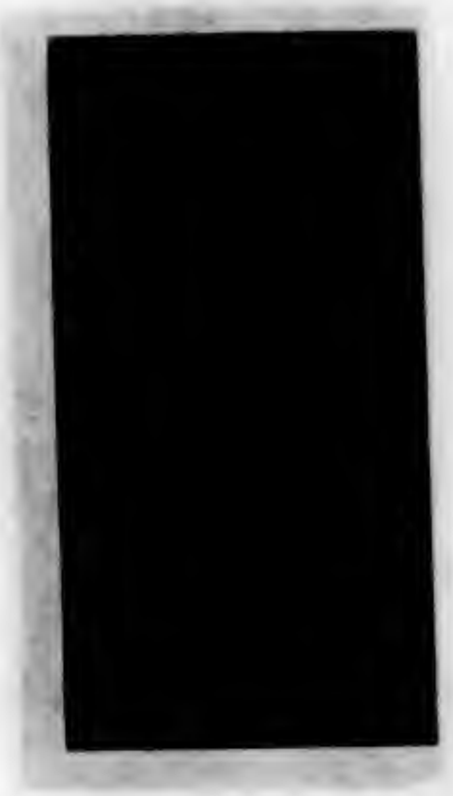
Connie C. Willoughby, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Nov. 25, 1968, Ser. No. 14,657
Term of patent 14 years
Int. Cl. D6—*09*

U.S. Cl. D92—26

### 216,178
### TOWEL OR SIMILAR ARTICLE

Connie C. Willoughby, New York, N.Y., assignor to Cannon Mills Company, Kannapolis, N.C., a corporation of North Carolina
Filed Nov. 25, 1968, Ser. No. 14,664
Term of patent 14 years
Int. Cl. D6—*09*

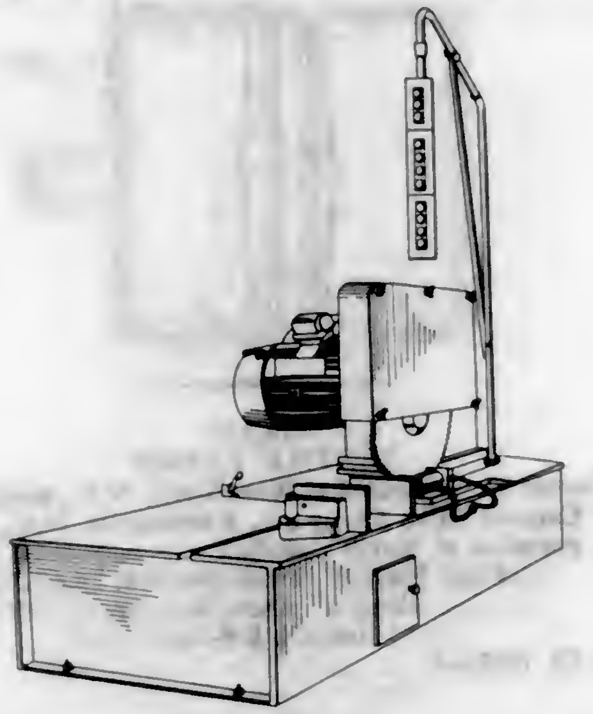
U.S. Cl. D92—26



### 216,179
### FRICTION SAW FOR CUTTING OFF METAL OR THE LIKE

Walter Grabes, Houston, Tex.
(P.O. Box 895, Bellaire, Tex. 77401)
Filed Sept. 26, 1968, Ser. No. 13,721
Term of patent 14 years
Int. Cl. D15—*05*

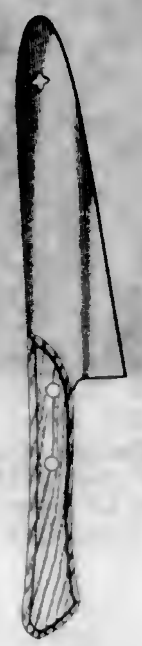
U.S. Cl. D95—3



### 216,180
### KNIFE

Tatsuo Kobayashi, Tokyo, Japan, assignor to Mac Corporation, Osaka, Japan, a corporation of Japan
Filed Sept. 25, 1967, Ser. No. 8,724
Term of patent 3½ years
Int. Cl. D7—*03*

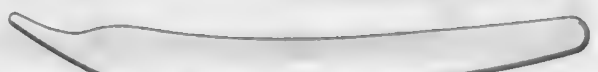
U.S. Cl. D95—3



### 216,181
### STRAIGHT RAZOR HANDLE

James R. Stiltner, 10237 NE. Halsey, Portland, Oreg. 97220
Filed Mar. 6, 1969, Ser. No. 16,091
Term of patent 14 years
Int. Cl. D28—*03*

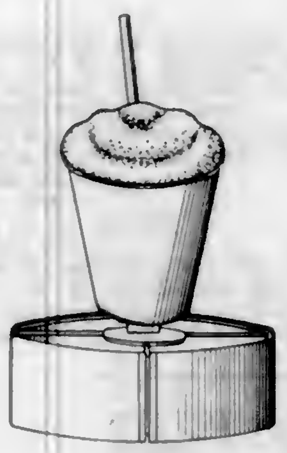
U.S. Cl. D95—3



### 216,182
### ROTATABLE SIGN OR SIMILAR ARTICLE

Clark L. Lofgren, Golden Valley, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed Dec. 3, 1968, Ser. No. 14,754
Term of patent 14 years
Int. Cl. D20—*02*

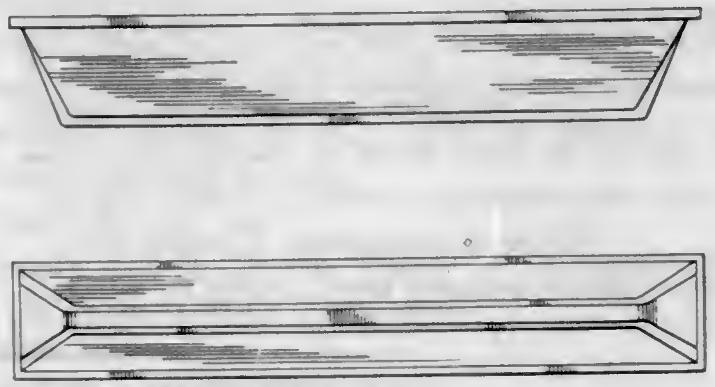
U.S. Cl. D96—12



### 216,183
### UNDER-CANOPY SIGN

Lorimer B. Winkler, Chattanooga, Tenn., assignor to Winkler Sign Company, Chattanooga, Tenn., a corporation of Tennessee
Filed Jan. 3, 1969, Ser. No. 15,206
Term of patent 14 years
Int. Cl. D20—*03*

U.S. Cl. D96—12



# LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 25TH DAY OF NOVEMBER, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

- AMP Inc.: *See*—
  - Shlesinger, Bernard E., Jr. Re. 26,721.
- Averill, Eugene F., and M. L. Kloostra, to Titus Mfg. Corp. Air distribution devices. Re. 26,723, 11–25–69, Cl. 98—40.
- Bell Telephone Laboratories, Inc.: *See*—
  - Limiero, Albert D., McEowen, and Spencer. Re. 26,722.
- Canadian Patents and Development Ltd.: *See*—
  - Visman, Jan. Re. 26,720.
- Glacier Ware, Inc.: *See*—
  - Paquin, Roger L. Re. 26,724.
- Kloostra, Marvin L.: *See*—
  - Averill, Eugene F., and Kloostra. Re. 26,723.
- Limiero, Albert D., J. R. McEowen, and J. A. Spencer, to Bell Telephone Laboratories, Inc. Key telephone control systems. Re. 26,722, 11–25–69, Cl. 179—99.
- McEowen, James R.: *See*—
  - Limiero, Albert D., McEowen, and Spencer. Re. 26,722.
- Paquin, Roger L., to Glacier Ware, Inc. Refrigerated tumbler. Re. 26,724, 11–25–69, Cl. 62—457.
- Sellner, John W. Combined reclining exercising and massaging device. Re. 26,725, 11–25–69, Cl. 128—57.
- Shlesinger, Bernard E., Jr., to AMP Inc. One piece plugboard plug connector. Re. 26,721, 11–25–69, Cl. 339—217.
- Spencer, Jonathan A.: *See*—
  - Limiero, Albert D., McEowen, and Spencer. Re. 26,722.
- Titus Mfg. Corp.: *See*—
  - Averill, Eugene F., and Kloostra. Re. 26,723.
- Visman, Jan, to Canadian Patents and Development Ltd. Apparatus for specific gravity separation of solid particles. Re. 26,720, 11–25–69, Cl. 209—211.

# LIST OF PLANT PATENTEES

- Armstrong, David L., to Armstrong Nurseries, Inc. Nectarine tree. 2,943, 11–25–69, Cl. 41.
- Armstrong, David L., to Stark Bro's Nurseries & Orchards Co. Peach tree. 2,944, 11–25–69, Cl. 43.
- Armstrong Nurseries, Inc.: *See*—
  - Armstrong, David L. 2,943.
- Mackay, Ian F., to Texas Rose Research Foundation, Inc. Rose plant. 2,942, 11–25–69, Cl. 20.
- Texas Rose Research Foundation, Inc.: *See*—
  - Mackay, Ian F. 2,942.
- Stark Bro's Nurseries & Orchards Co.: *See*—
  - Armstrong, David L. 2,944.

# LIST OF DESIGN PATENTEES

- BSR Ltd.: *See*—
  - Lane, Norman. 216,124.
- Adler, Kurt S. Christmas tree ornament. 216,126, 11–25–69, Cl. D29—1.
- Adler, Kurt S. Christmas tree ornament. 216,127, 11–25–69, Cl. D29—1.
- Adler, Kurt S. Christmas tree ornament. 216,128, 11–25–69, Cl. D29—1.
- Aigner, Etienne, to The Villager, Inc. Buckle. 216,072, 11–25–69, Cl. D2—427.
- Ajax Hardware Mfg. Corp.: *See*—
  - Holmes, Frank A., and McCain. 216,077.
- Aktiebolaget Electrolux: *See*—
  - Domstedt, Johan A., and Karlsson. 216,155.
- American Home Products Corp.: *See*—
  - Connor, Dorothy J. 216,148.
- American Safety Equipment Corp.: *See*—
  - Kamata, Eitaro. 216,071.
- American Standard Inc.: *See*—
  - Kaiser, Jack N. 216,119.
  - Niemann, James E., and Young. 216,120.
- Ando, Momofuku. Paperboard carton. 216,098, 11–25–69, Cl. D9—226.
- Ashton, Harold P.: *See*—
  - Swett, James B., and Ashton. 216,145.
- Atkin, C. B., Co.: *See*—
  - Chapin, Richard M. 216,132.
- Bard, C. R., Inc.: *See*—
  - Vaillancourt, Vincent L. 216,169.
- Bateman, Robert F., and J. B. Swett, to Dart Industries Inc. Plate for pastries or the like. 216,146, 11–25–69, Cl. D44—19.
- Beck, Jack W., to Plasto Inc. Building roof. 216,105, 11–25–69, Cl. D13—1.
- Bell, Berl L. Portable street and parking lot cleaner. 216,154, 11–25–69, Cl. D49—9.1.
- Bellini, Mario, to Ing. C. Olivetti & C., S.p.A. Document reproducing unit. 216,161, 11–25–69, Cl. D61—1.
- Borgman, Theodore, Co.: *See*—
  - Cox, Walter T. 216,151.
- Bernstein, Samuel: *See*—
  - Levin, Monte L., and Bernstein. 216,170.
- Besser, Jesse. Vibrating shaft. 216,160, 11–25–69, Cl. D55—1.
- Boone Bait Co., Inc.: *See*—
  - Showalter, Joseph S. 216,118.
- Bressler, David. Hand washboard. 216,152, 11–25–69, Cl. D49—1.
- Brockway, Brock F., to E. D. Bullard Co. First aid kit box. 216,172, 11–25–69, Cl. D87—1.
- Brosk, Jeffrey O. Chair or the like. 216,111, 11–25–69, Cl. D15—1.
- Bruce Molded Plastic Products Inc.: *See*—
  - Marks, Lou F. 216,076.
- Bullard, E. D., Co.: *See*—
  - Brockway, Brock F. 216,172.
- Cannon Mills Co.: *See*—
  - Willoughby, Connie C. 216,174.
  - Willoughby, Connie C. 216,175.
  - Willoughby, Connie C. 216,176.
  - Willoughby, Connie C. 216,177.
  - Willoughby, Connie C. 216,178.
- Chapin, Richard M., to C. B. Atkin Co. Mirror or the like. 216,132, 11–25–69, Cl. D33—9.
- Clark, John T. Pie funnel. 216,147, 11–25–69, Cl. D44—29.
- Cline, Ted L. Deep tillage plow. 216,143, 11–25–69, Cl. D40—1.
- Carignan, Robert L., to Hasbro Industries, Inc. Ball scoop. 216,138, 11–25–69, Cl. D34—5.
- Collins, Edwin S., Jr.: *See*—
  - Mango, Joseph R., Hendricks, and Collins. 216,167.
- Connor, Dorothy J., to American Home Products Corp. Handle for a culinary implement. 216,148, 11–25–69, Cl. D44—29.
- Cornelius Co., The: *See*—
  - Lofgren, Clark L. 216,182.
- Coronado Mfg. Co.: *See*—
  - Lee, Humphrey A. 216,150.
- Cox, Walter T., to Theodore Borgman Co. Reflector light housing. 216,151, 11–25–69, Cl. D48—32.
- Cretin, Theodore D., to National Services Industries, Inc. Chair. 216,113, 11–25–69, Cl. D15—1.
- Cretin, Theodore D., to National Services Industries, Inc. Chair. 216,114, 11–25–69, Cl. D15—1.
- Dart Industries Inc.: *See*—
  - Bateman, Robert F., and Swett. 216,146.
  - Swett, James B., and Ashton. 216,145.
- D'Elia, Anthony N., and E. M. Stolarz, to Reliable Luggage, Inc. Strap for luggage. 216,075, 11–25–69, Cl. D8—154.
- Dintsman, Hyman. Shipping tray for watches. 216,100, 11–25–69, Cl. D9—187.
- Domstedt, Johan A., and K. Y. Karlsson, to Aktiebolaget Electrolux. Vacuum cleaner nozzle. 216,155, 11–25–69, Cl. D49—19.
- Dransfield, Clifford D., D. D. Shields, and O. Paxton. Cable and seismometer truck. 216,110, 11–25–69, Cl. D14—3.
- Dynamics Corp. of America, Waring Products Division: *See*—
  - Levin, Monte L., and Bernstein. 216,170.
- Eastern Tool Co., Inc.: *See*—
  - Hood, Robert J. 216,074.
- Edson, Arnold G. Educational pendulum toy. 216,121, 11–25–69, Cl. D25—1.
- Ely, Laurice D. Combined beverage and beverage additive concentrate package and stirrer. 216,099, 11–25–69, Cl. D9—185.
- Francis, John P. Combination window awning and case structure. 216,103, 11–25–69, Cl. D13—1.
- Gatlin, Philip D.: *See*—
  - Howser, Lewis E., and Gatlin. 216,078.
- Gillen, Martin I. Jack. 216,144, 11–25–69, Cl. D41—1.
- Goheen, Luther T., Jr. Stilt. 216,140, 11–25–69, Cl. D34—14.
- Gordon, A.: *See*—
  - Rivera, Benigno A. 216,122.
- Grabes, Walter. Friction saw for cutting off metal or the like. 216,179, 11–25–69, Cl. D93—3.
- Gribbens, William J., to Plastics, Inc. Drinking tumbler. 216,142, 11–25–69, Cl. D36—8.
- Grosso, Raymond A., to Minnesota Mining and Mfg. Co. Camera. 216,162, 11–25–69, Cl. D61—1.
- Gutschmidt, Earl E. and E. J. Concrete form stake. 216,073, 11–25–69, Cl. D8—45.

Gutschmidt, Edward J.: *See*—
  Gutschmidt, Earl E. and E. J. 216,073.
Hasbro Industries, Inc.: *See*—
  Carignan, Robert L. 216,138.
Heller, Paul S.: *See*—
  Kalvitis, Robert E., and Heller. 216,123.
Hemsoth, Roy A. Golf putter head. 216,137, 11–25–69, Cl. D34—5.
Hendricks, Donald B.: *See*—
  Mango, Joseph R., Hendricks, and Collins. 216,167.
Holman, Howard B. and W. M. Shipping container for human remains. 216,116, 11–25–69, Cl. D19—1.
Holman, William M.: *See*—
  Holman, Howard B. and W. M. 216,116.
Holmes, Frank A., and L. McCain, to Ajax Hardware Mfg. Corp. Door decoration. 216,077, 11–25–69, Cl. D8—179.
Hood, Robert J., to Eastern Tool Co., Inc. Cutting tool. 216,074, 11–25–69, Cl. D8—98.
Howser, Lewis E., and P. D. Gatlin. Kite string winder. 216,078, 11–25–69, Cl. D8—222.
Kaiser, Jack N., to American Standard Inc. Bathtub. 216,119, 11–25–69, Cl. D23—55.
Kalvitis, Robert E., and P. S. Heller, to Xerox Corp. Flexible sheet material guide for a facsimile transceiver or similar article. 216,123, 11–25–69, Cl. D26—14.
Kamata, Eitaro, to American Safety Equipment Corp. Safety helmet. 216,071, 11–25–69, Cl. D2—231.
Karlsson, Knut Y.: *See*—
  Domstedt, Johan A., and Karlsson. 216,155.
Kawakami, Kazuo, to Teikoku Dempa Co., Ltd. Tape player. 216,125, 11–25–69, Cl. D26—14.
Kim, Charles. Eye measurer for eyelashes. 216,156, 11–25–69, Cl. D52—6.
Kirk, Paul H. Trailer. 216,109, 11–25–69, Cl. D14—3.
Kobayashi, Tatsuo, to Mac Corp. Knife. 216,180, 11–25–69, Cl. D95—3.
Kogutt, Samuel M. Wallet-check holder combination. 216,173, 11–25–69, Cl. D87—3.
Kroehler Mfg. Co.: *See*—
  Solie, Orville B. 216,130.
Landsman, Allan. Window panel. 216,101, 11–25–69, Cl. D13—1.
Lane, Norman, to BSR Ltd. Phonograph cartridge. 216,124, 11–25–69, Cl. D26—14.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,084, 11–25–69, Cl. D9—1.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,079, 11–25–69, Cl. D9—1.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,080, 11–25–69, Cl. D9—1.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,081, 11–25–69, Cl. D9—1.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,082, 11–25–69, Cl. D9—1.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,083, 11–25–69, Cl. D9—1.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,085, 11–25–69, Cl. D9—1.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,086, 11–25–69, Cl. D9—1.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,087, 11–25–69, Cl. D9—1.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,089, 11–25–69, Cl. D9—100.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,090, 11–25–69, Cl. D9—100.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,091, 11–25–69, Cl. D9—100.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,092, 11–25–69, Cl. D9—100.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,093, 11–25–69, Cl. D9—100.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,094, 11–25–69, Cl. D9—140.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,095, 11–25–69, Cl. D9—140.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,096, 11–25–69, Cl. D9—140.
Lawton, Edward H., to Owens-Illinois, Inc. Bottle. 216,097, 11–25–69, Cl. D9—140.
Lee, Humphrey A., to Coronado Mfg. Co. Recreational vehicle light. 216,150, 11–25–69, Cl. D48—32.
Levin, Monte L., and S. Bernstein, to Dynamics Corp. of America, Waring Products Division. Combined cosmetics blender ingredient holders and stand therefor. 216,170, 11–25–69, Cl. D86—10.
Linden, Harold D.: *See*—
  Rivera, Benigno A. 216,122.
Litton Precision Products, Inc.: *See*—
  Mango, Joseph R., Hendricks, and Collins. 216,167.
Loewy, Raymond. Clothes bureau. 216,131, 11–25–69, Cl. D33—6.
Lofgren, Clark L., to The Cornelius Co. Rotatable sign or similar article. 216,182, 11–25–69, Cl. D96—12.
Mac Corp.: *See*—
  Kobayashi, Tatsuo. 216,180.
Maddox, James W. Athletic game paddle. 216,135, 11–25–69, Cl. D34—5.
Maddox, James W. Athletic game paddle. 216,136, 11–25–69, Cl. D34—5.
Mango, Joseph R., D. B. Hendricks, and E. S. Collins, Jr., to Litton Precision Products, Inc. Microwave oven. 216,167, 11–25–69, Cl. D81—20.
Montague, Harrison I. Display rack for leaflets and the like. 216,166, 11–25–69, Cl. D80—9.
Marino, Rocco E. Restaurant building. 216,104, 11–25–69, Cl. D13—1.
Marks, Lou F., to Bruce Molded Plastic Products Inc. Luggage handle. 216,076, 11–25–69, Cl. D8—154.
Maxey, Clarence: *See*—
  Walters, William C., and Maxey. 216,163.
  Walters, William C., and Maxey. 216,164.
  Walters, William C., and Maxey. 216,165.
McCain, Lawrence: *See*—
  Holmes, Frank A., and McCain. 216,077.
Minnesota Mining and Mfg. Co.: *See*—
  Grosso, Raymond A. 216,162.
Moody, William B., and D. B. Whitney. Educational toy figure. 216,141, 11–25–69, Cl. D34—15.
Murr, Theodore C. Container with sliding cover. 216,171, 11–25–69, Cl. D87—1.
National Services Industries, Inc.: *See*—
  Cretin, Theodore D. 216,113.
  Cretin, Theodore D. 216,114.
Niemann, James E., and R. W. Young, to American Standard Inc. Bathtub. 216,120, 11–25–69, Cl. D23—55.
Olivetti, Ing. C., & C. S.p.A.: *See*—
  Bellini, Mario. 216,161.
Owens-Illinois, Inc.: *See*—
  Lawton, Edward H. 216,079.
  Lawton, Edward H. 216,080.
  Lawton, Edward H. 216,081.
  Lawton, Edward H. 216,082.
  Lawton, Edward H. 216,083.
  Lawton, Edward H. 216,084.
  Lawton, Edward H. 216,085.
  Lawton, Edward H. 216,086.
  Lawton, Edward H. 216,087.
  Lawton, Edward H. 216,089.
  Lawton, Edward H. 216,090.
  Lawton, Edward H. 216,091.
  Lawton, Edward H. 216,092.
  Lawton, Edward H. 216,093.
  Lawton, Edward H. 216,094.
  Lawton, Edward H. 216,095.
  Lawton, Edward H. 216,096.
  Lawton, Edward H. 216,097.
Parsons, Emily C. Set of game tiles or the like. 216,134, 11–25–69, Cl. D34—5.
Paxton, Oswald: *See*—
  Dransfield, Clifford D., Shields, and Paxton. 216,110.
Plastics, Inc.: *See*—
  Gribbens, William J. 216,142.
Plasto Inc.: *See*—
  Beck, Jack W. 216,105.
Platt, Sidney S., to The Service Oil Co. Building. 216,106, 11–25–69, Cl. D13—1.
Raacke, Peter. Chair. 216,112, 11–25–69, Cl. D15—1.
Reliable Luggage, Inc.: *See*—
  D'Elia, Anthony N., and Stolarz. 216,075.
Rivera, Benigno A., to H. D. Linden and A. Gordon. Wall mounted sound transducer. 216,122, 11–25–69, Cl. D26—14.
Rutledge, Garry W. Aquarium or similar article. 216,129, 11–25–69, Cl. D30—6.
Sanford, Arthur C. Residential building. 216,108, 11–25–69, Cl. D13—1.
Service Oil Co., The: *See*—
  Platt, Sidney S. 216,106.
Shapiro, Bernard D. Earring. 216,149, 11–25–69, Cl. D45—9.
Shields, Darvin D.: *See*—
  Dransfield, Clifford D., Shields, and Paxton. 216,110.
Showalter, Joseph S., to Boone Bait Co., Inc. Weighted fish hook. 216,118, 11–25–69, Cl. D22—27.
Solie, Orville B., to Kroehler Mfg. Co. Furniture base. 216,130, 11–25–69, Cl. D33—1.
Steadman, Rufus P. Building. 216,107, 11–25–69, Cl. D13—1.
Stehl, George R., to Xerox Corp. Balance scale. 216,157, 11–25–69, Cl. D52—10.
Stolarz, Edward M.: *See*—
  D'Elia, Anthony N., and Stolarz. 216,075.
Suzuki, Sohei. Bench. 216,115, 11–25–69, Cl. D15—11.
Swett, James B., and H. P. Ashton, to Dart Industries Inc. Caster or the like. 216,145, 11–25–69, Cl. D44—7.
Swett, James B.: *See*—
  Bateman, Robert F., and Swett. 216,146.
Taco Hut, Inc.: *See*—
  Thixton, Thomas C. 216,102.
Tavela, Heikki. Savings-box. 216,139, 11–25–69, Cl. D34—11.
Teikoku Dempa Co., Ltd.: *See*—
  Kawakami, Kazuo. 216,125.
Thixton, Thomas C., to Taco Hut, Inc. Building. 216,102, 11–25–69, Cl. D13—1.
Toffolon, Siro R., to World Tableware Corp. Spoon or similar article of flatware. 216,159, 11–25–69, Cl. D54—12.
Tsunoda, Fukuyki. Iron. 216,153, 11–25–69, Cl. D49—6.
Vaillancourt, Vincent L., to C. R. Bard, Inc. Syringe. 216,169, 11–25–69, Cl. D83—1.
Villager, Inc., The: *See*—
  Aigner, Etienne. 216,072.
Waldeck, John. Roller massage unit. 216,168, 11–25–69, Cl. D83—1.
Walters, William C., and C. Maxey. Buoyant life preserver. 216,163, 11–25–69, Cl. D71—1.
Walters, William C., and C. Maxey. Buoyant life preserver. 216,164, 11–25–69, Cl. D71—1.
Walters, William C., and C. Maxey. Buoyant life preserver. 216,165, 11–25–69, Cl. D71—1.
Watson, Carl E. Bow gun. 216,117, 11–25–69, Cl. D22—5.
Whitney, Dorothy B.: *See*—
  Moody, William B., and Whitney. 216,141.
Williams, James R. Scaffold support or the like. 216,158, 11–25–69, Cl. D54—1.
Willoughby, Connie C., to Cannon Mills Co. Fabric textile. 216,174, 11–25–69, Cl. D92—1.
Willoughby, Connie C., to Cannon Mills Co. Towel or similar article. 216,175, 11–25–69, Cl. D92—26.

Willoughby, Connie C., to Cannon Mills Co. Towel or similar article. 216,176, 11–25–69, Cl. D92—26.
Willoughby, Connie C., to Cannon Mills Co. Towel or similar article. 216,177, 11–25–69, Cl. D92—26.
Willoughby, Connie C., to Cannon Mills Co. Towel or similar article. 216,178, 11–25–69, Cl. D92—26.
Winkler, Lorimer B., to Winkler Sign Co. Under-canopy sign. 216,183, 11–25–69, Cl. D96—12.
Winkler Sign Co.: *See*—
  Winkler, Lorimer B. 216,183.
World Tableware Corp.: *See*—
  Toffolon, Siro R. 216,159.
Young, Raymond W.: *See*—
  Niemann, James E., and Young. 216,120.
Xerox Corp.: *See*—
  Kalvitis, Robert E., and Heller. 216,123.
  Stehl, George R. 216,157.
Stiltner, James R. Straight razor handle. 216,181, 11–25–69, Cl. D95—3.
Zelenko, Harry. Playing piece for a game. 216,133, 11–25–69, Cl. D34—2.

# LIST OF PATENTEES

TO WHOM

## PATENTS WERE ISSUED ON THE 25TH DAY OF NOVEMBER, 1969

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

A-C Equipment Company: *See—*
Clark, Merlin G., 3,480,224.
A. V. Corporation, The, N.V.: *See—*
Dimitracopoulos, Panayotis C., 3,480,356.
Aas, Herbert G.: *See—*
Erf, Robert K., Wingfield, Edward C., and Aas, Herbert G. 3,480,368.
Abbott, Alfred J. Radial hinge assembly. 3,479,684, Cl. 016-163.
Abbott, Bobby R. Car top carrier. 3,480,166, Cl. 214-450.
Abbott, Ralph E., to Bailey Meter Company. Control system for sugar inversion process. 3,480,476, Cl. 127-001.
Abercrombie, Malcolm James, and Thomas, David B., to British Geon Limited. Polymerisation process. 3,480,602, Cl. 260-087.1
Abex Corporation: *See—*
Beetle, Robert H., and Dabney, John B., 3,480,070.
Mc Cune, Robert B., and Wilson, Rosser L., 3,480,773.
Abrahami, Shoshana, Molcho, Aharon, and Wachs, Reuven (Roman), to Makhteshim Chemical Works Ltd. Curing of polyester compositions. 3,480,561, Cl. 252-428.
ACF Industries, Incorporated: *See—*
Hammonds, James C., 3,479,969.
Achenbach, Karl: *See—*
Reinhardt, Helmut, Nauroth, Peter, and Achenbach, Karl 3,480,390.
Adams Rite Manufacturing Company: *See—*
Davidson, Robert E., Eads, Charles L., and Soter, Samuel A., 3,479,851.
Adams, Rodney A., to Catalysts and Chemicals, Inc. Napthalene and orthoxylene oxidation catalysts. 3,480,565, Cl. 252-443.
Addis, David J., Brown, Walter R. J., and Osman, Martin S., to United-Carr Incorporated, mesne. High speed thin film memory. 3,480,924, Cl. 340-174.
Aerotron, Inc.: *See—*
Scott, William W., 3,480,856.
Aetna Casualty and Surety Company: *See—*
Swanson, Richard T., 3,479,750.
AGA Aktiebolag: *See—*
Granqvist, Carl-Erik, 3,480,770.
Agatsuma, Takashi: *See—*
Toki, Hisashi, and Agatsuma, Takashi 3,479,736.
Agfa-Gavaert Aktiengesellschaft: *See—*
Winkler, Alfred, and Ernst, Heinz, 3,479,938.
Agfa-Gevaert Aktiengesellschaft: *See—*
Freytag, Karl-Heinz, Taube, Carl, and Seidel, Bernhard, 3,480,438.
Himmelmann, Wolfgang, Riebel, Alexander, Zenner, Karl-Friedrich, and Meckl, Heinz, 3,480,440.
Kampfer, Helmut, Gotze, Johannes, Reister, Oskar, and Bockly, Erich, 3,480,439.
Lassig, Wolfgang, Riebel, Alexander, Puschel, Walter, and Himmelmann, Wolfgang, 3,480,431.
Agren, Sven Birger, Andersson, Bjorn A. H., and Andersson, Nils Svante, to Aktiebolaget Hagglund & Soner. Disk brake. 3,480,117, Cl. 188-264.
Aiba, Hiroshi. Hook button control device of an automatic telephone answering apparatus. 3,480,720, Cl. 179-001.
Air Logistics Corporation: *See—*
Harr, George B., 3,480,058.
Air Reduction Company, Incorporated: *See—*
Foster, Kenneth M., 3,480,415.
Aisin Seiki Kabushiki Kaisha: *See—*
Inada, Masami, 3,480,335.
Aktiebolaget Gylling & Co.: *See—*
Johansson, Carl-Gustav Simon, 3,480,839.
Aktiebolaget Hagglund & Soner: *See—*
Agren, Sven Birger, Andersson, Bjorn A. H., and Andersson, Nils Svante, 3,480,117.
Aktiengesellschaft Brown, Boveri & Cie: *See—*
Frowein, Egbertus Adrianus, 3,480,751.
Scharli, Otto, 3,480,842.
Alamance Industries, Inc.: *See—*
Shields, Harper, 3,479,843.
Albrecht, Cord, Kafka, Wilhelm, and Kullmann, Dieter, to Siemens Aktiengesellschaft. Coil-supporting structure for superconductive apparatus. 3,480,895, Cl. 336-060.
Alexander, Granison T., Jr., to Gem Oil Tool Company. Adjustable positive choke. 3,480,037, Cl. 137-329.06
Alexander, Samuel S.: *See—*
Sohn, Bernard I., Eisenmann, John L., and Alexander, Samuel S. 3,480,495.
Alexeff, Alexander V., to Alexeff-Snyder Enterprises. Self-locking chuck for roll shafts. 3,480,225, Cl. 242-068.4
Alexeff-Snyder Enterprises: *See—*
Alexeff, Alexander V., 3,480,225.
Alford, Andrew: *See—*
Watts, Chester B., Jr., 3,480,886.
Allen Clayton H.: *See—*
Jones, Royal V., Jr., Allen Clayton H., and Gordon, Colin G. 3,480,283.
Allen, Clayton H., and Heine, John C., to Bolt Beranek and Newman Inc. Method of phonograph record fabrication. 3,480,281, Cl. 274-003.
Allen, layton H., to Bolt Beranek and Newman Inc. Acoustical ear muff and the like. 3,479,669, Cl. 002-209.
Allen, Melvin Oland, 24% to Gidden, Joe H. 9% to West Texas State Bank, trustee for Gidden, Howard Eugene, 10% to West Texas State Bank, trustee for Gidden, Maureen Elizabeth, and Gidden, David William. Polyphase system protective relay assembly and calibrating apparatus therefor. 3,480,833, Cl. 317-022.
Allen, Michael G., Errede, Louis A., and Hannula, Rodney R., to Minnesota Mining and Manufacturing Company. Time-temperature indicator. 3,479,877, Cl. 073-358.
Allen, Richard E., to Corning Glass Works. Method of making capacitors. 3,480,421, Cl. 065-033.
Allied Chemical Corporation: *See—*
Anello, Louis G., and Sweeney, Richard F., 3,480,571.
Batchelor, Gordon S., and Hawkins, Edwin F., 3,480,710.
Cain, Audley L., 3,480,612.
Gilbert, Everett E., Oxenrider, Bryce C., and Schmitt, George J., 3,480,585.
Alliot, Louis, Auclair, Michel, and Godouet, Francois, to Esso Standard Societe Anonyme Francaise. Gasification of hydrocarbons. 3,480,419, Cl. 048-212.
Allis-Chalmers Manufacturing Company: *See—*
Johnson, James N., and Lorenc, Donald D., 3,479,758.
Lenzen, Leo W., Olsen, Norman G., and Wenda, Raymond N., 3,480,120.
Moore, Robert A., 3,479,891.
Varilek, Ronald D., 3,480,167.
Allsop, Robert T., to G.K.N. Screws & Fasteners Limited G.K.N. Screws & Fasterners Limited. Apparatus for tightening and locking nuts on bolts. 3,479,714, Cl. 029-200.
Altwicker, Elmar R., to Universal Oil Products Company. N-piperidyl substituted phenylenediamines. 3,480,635, Cl. 260-293.
Aluminum Company of America: *See—*
Dunn, Lloyd G., 3,479,979.
La Barge, Robert L., 3,479,790.
Amerace Esna Corporation: *See—*
Matheis, Kenneth J., 3,480,792.
American Air Filter Company, Inc.: *See—*
Cole, Saxon, 3,480,029.
Smith, Tom R., 3,479,803.
American Aniline Products, Inc.: *See—*
Zanella, Dominic A., 3,480,681.
American Bosch Arma Corporation: *See—*
Litman, Bernard, Silvia, Everett R., and Stabile, Christopher, 3,479,888.
American Cyanamid Company: *See—*
Brooks, Robert Bruce, 3,480,582.
Callahan, John C., 3,480,014.
Kolodny, Edwin Ralph, and Booth, Robert Ben, 3,480,761.
Lutz, Albert William, and Magee, Richard Joseph, 3,480,643.
Miller, Bernard, and Margulies, Howard, 3,480,697.
American Enka Corporation: *See—*
Eshuis, Jannes, 3,479,810.
Van Den Biggelaar, Paul V. M., 3,479,692.
American Greetings Corporation: *See—*
Hotter, Joe M., 3,480,500.
American Hospital Supply Corporation: *See—*
Beich, Frank R., 3,479,671.
American Safety Equipment: *See—*
Webb, Daniel D., 3,479,666.
American Standard Inc.: *See—*
Hsu, Charles T., and Hamer, Geoffrey, 3,480,025.
Kanyok, Anthony J., 3,480,147.
Ametek, Inc.: *See—*
Lumn, John H., 3,480,231.
Wolverton, Kenneth H., 3,480,315.
AMK Subsidiary Corporation: *See—*
Cantarutti, Armindo, 3,479,693.
AMP Incorporated: *See—*
Gluntz, Glenn Harlan, 3,480,904.
Hadden, Edward Leal, 3,479,719.
Howard, David Francis, 3,479,717.

Sitz, Gilbert Carl, 3,480,745.
van de Kerkhof, Lodevicus Lambertus Johannes, and de Vries, Joseph Gerardus Maria, 3,479,718.
Ampex Corporation: *See—*
Treves, David, 3,480,933.
Waddington, Max D., 3,480,134.
Amrein, Carl J., to Black and Decker Manufacturing Company, The. Brush holder assembly with insert. 3,480,814, Cl. 310-247.
Amsted Industries Incorporated: *See—*
Jeffreys, Lyman W., 3,479,678.
Anderson, Alfred G.: *See—*
Southerland, Arthur, Jr., Cirer, Frank H., and Anderson, Alfred G. 3,480,157.
Anderson, Carl L.: *See—*
Lamb, John T., and Anderson, Carl L. 3,480,374.
Anderson, Clyde G.: *See—*
Wentworth, Theodore O., and Anderson, Clyde G. 3,480,407.
Anderson, Gordon Campbell: *See—*
Von Kaenel, John Clifford, Anderson, Gordon Campbell, and Seymore, Stephen David, Jr. 3,479,699.
Anderson, James H. Mechanical shaft seal. 3,480,285, Cl. 277-088.
Anderson, Norman J., and Decker, John L., to Zurn Industries, Inc. Synchronizing flexible coupling. 3,480,123, Cl. 192-053.
Anderson, Robert L., and Rohrig, John M., to United States Steel Corporation. Seating arrangement for subsurface pumps. 3,479,958, Cl. 103-046.
Andersson, Bjorn A. H.: *See—*
Agren, Sven Birger, Andersson, Bjorn A. H., and Andersson, Nils Svante 3,480,117.
Andersson, Nils Svante: *See—*
Agren, Sven Birger, Andersson, Bjorn A. H., and Andersson, Nils Svante 3,480,117.
Anello, Louis G., and Sweeney, Richard F., to Allied Chemical Corporation. Polyhalogenated unsaturated cyclic alcohols. 3,480,571, Cl. 260-617.
Anglin, Paul E.: *See—*
Anglin, William E., and Anglin, Paul E. 3,479,834.
Anglin, William E., and Anglin, Paul E., to Capitol Refrigeration, Inc. Method and apparatus for air conditioning automobiles and the like. 3,479,834, Cl. 062-115.
Anhorn, Victor J.: *See—*
Frech, Kenneth J., and Anhorn, Victor J. 3,480,688.
Anjac Plastics Inc.: *See—*
Mock, Donald E., 3,479,770.
Anstalt Europaische Handelsgesellschaft: *See—*
Sturzinger, Oskar, 3,480,729.
Anthony, Andrew J., to Combustion Engineering, Inc. Nuclear reactor and control rod therefor. 3,480,510, Cl. 176-035.
Aoki, Toyohiko, to Naigaikogyo Kabushiki Kaisha. Apparatus for purifying polluted gas. 3,479,799, Cl. 055-230.
Appleby, James Kenneth, to British Aircraft Corporation (Operating) Limited. Aircraft having variable sweep-back wings. 3,480,237, Cl. 244-046.
Appleby, John Edwin Herbert: *See—*
Pope, Joseph Albert, and Appleby, John Edwin Herbert 3,480,113.
Appleton, Bernard S. Transmission belt. 3,479,893, Cl. 074-235.
Applied Dynamics, Inc.: *See—*
Gilbert, Elmer G., 3,480,769.
Howe, Robert M., 3,480,767.
Aqua-Chem, Inc.: *See—*
Goeldner, Richard W., 3,480,515.
AquaMatic Inc.: *See—*
Whitlock, Robert A., 3,480,041.
Archer-Daniels-Midland Company: *See—*
Atkinson, William T., 3,480,442.
Archer, David Frederick, and Harris, Glyn Islwyn, to Midland Silicones Limited. Organosilicon modified materials. 3,480,584, Cl. 260-046.5
Archer Products, Incorporated: *See—*
Conrad, Lucas J., and Everhart, John R., 3,479,852.
Archibald, Paul B.: *See—*
Finger, Milton, James, Edward, Jr., and Archibald, Paul B. 3,480,490.
Arenco Aktiebolag: *See—*
Osterdahl, Ragnar, 3,479,794.
Armitage, John L., & Co.: *See—*
Jeff, William C., Luyster, Thomas, Jr., Lynch, James F., Jr., and Moroli, Frank A., 3,480,691.
Armour Industrial Chemical Company: *See—*
Miller, Eugene J., Jr., and Mais, Ago, 3,480,674.
Armstrong Cork Company: *See—*
Lickok, Daniel J., and Maxwell, George C., 3,480,422.
Arnold & Richter KG.: *See—*
Blaschek, Otto, 3,480,351.
Aro of Buffalo, Incorporated: *See—*
Phlipot, James R., Gill, Lawrence H., and Clifford, Earl W., 3,480,026.
Aronstein, Jesse, to International Business Machines Corporation. Component mounted in a printed circuit. 3,480,836, Cl. 317-100.
Arside Limited: *See—*
Lawes, Louis F.W., Shreeve, Nicholas Gilbert, and Mihalik, Nandor, 3,480,359.
Arter, Nelson K., and Martin, Van C., to International Business Machines Corporation. Flyback in double-yoke-drive cathode ray tubes. 3,480,827, Cl. 315-027.
Arthur, Edwin P., to Beckman Instruments, Inc. Ion sensitive lanthanum-cerium containing glass electrode. 3,480,536, Cl. 204-195.
Asch, Gale. Installation of fasteners in concrete. 3,479,785, Cl. 052-701.
Ash, Malcolm Donald, to Morgan Refractories Limited. Fibrous insulating materials and channels lined with same. 3,480,125, Cl. 193-002.
Ashby, Theodore L., and Parrish, Donald B., to Dow Chemical Company, The. Polymer compounds with 2-(1-aziridinyl) alkyl acrylates and methacrylates. 3,480,601, Cl. 260-086.1
Ashland Oil & Refining Company: *See—*
Coats, Carlton E., 3,480,575.
Ashton, Raymond J.: *See—*
Mallory, Donald G., Ashton, Raymond J., and Liva, Robert H. 3,480,360.
Associated Electrical Industries Limited: *See—*
Lewis, Colin Bright, 3,480,844.
Astheimer, Robert W., to Barnes Engineering Company. Pyroelectric radiation detection system with extended frequency range and reduced capacitance. 3,480,777, Cl. 250-083.3
Asunmaa, Saara K., and Steierman, Bernard L., to Owens-Illinois, Inc. Decorating articles utilizing high energy radiation. 3,480,459, Cl. 117-017.5
Atkinson, William T., to Archer-Daniels-Midland Company. Process for preparing a high protein snack. 3,480,442, Cl. 099-017.
Atlantic Richfield Company: *See—*
Baker, Thomas Nelson, III, Michalski, Conrad, Sheng, Ming Nan, and Zajacek, John G., 3,480,519.
Bitar, Louie S., and Grane, Henry R., 3,480,666.
Bonetti, Giovanni A., and Rosenthal, Rudolph, 3,480,563.
De Witt, William J., and Taylor, Robert C., 3,480,556.
Atlas Chemical Industries, Inc.: *See—*
Hartmann, Ludwig A., 3,480,651.
Attix, Frank H., to United States of America, Navy. Thermoluminescent dosimetry test system and method. 3,480,776, Cl. 250-083.3
Auclair, Michel: *See—*
Alliot, Louis, Auclair, Michel, and Godouet, Francois 3,480,419.
Aufderheide, Don R., to Vendit, Inc. Method and apparatus for validating documents by spectral analysis of light reflected therefrom. 3,480,785, Cl. 250-219.
Austin, Arthur C., Gorka, Edward R., and Kaleta, Norbert W., to National Gypsum Company. Acoustic tile laminate. 3,480,104, Cl. 181-033.
Automated Building Components, Inc.: *See—*
Jureit, John Calvin, 3,479,783.
Jureit, William E., 3,480,305.
Automatic Electric Laboratories, Inc.: *See—*
Engh, Howard A., and Lord, John M., 3,480,743.
Fairley, David O., 3,480,882.
Mnichowicz, Donald A., and Waco, Richard F., 3,480,735.
Sherstiuk, Boris, 3,480,913.
Sidor, Edward F., and Reimer, William A., 3,480,893.
Automatic Sprinkler Corporation of America: *See—*
Holloway, Robert L., 3,480,033.
Automation Development Corporation: *See—*
White, Frank F., Tanno, Norman J., and Chipps, Elmer T., 3,480,159.
Ayres, William R.: *See—*
Kohls, Norman R., Nykl, Clarence A., Jr., and Ayres, William R. 3,480,718.
Babcock & Wilcox Company, The: *See—*
Kreider, Edward W., and Lavey, John A., 3,479,994.
Backman, Ralf: *See—*
Stal, Sture, and Backman, Ralf 3,479,932.
Bacon, R. S., Veneer Company: *See—*
Wilhelm, George F., 3,480,494.
Bahmsen, Erwin B., to Steiner American Corporation. Continuous drying method and apparatus. 3,479,746, Cl. 034-017.
Bailey, Brian Edward, and Dando, Vivian Charles Owen, to International Synthetic Rubber Company Limited, The. Alkyd resin-depolymerized polymer blends. 3,480,576, Cl. 260-022.
Bailey, Donald L., and O'Connor, Francis M., to Union Carbide Corporation. Organo-Silicone block copolymers. 3,480,583, Cl. 260-046.5
Bailey Meter Company: *See—*
Abbott, Ralph E., 3,480,476.
Baumgartel, Frank A., 3,480,397.
Baird, Truette H., to Stevens Hosiery, division of Stevens, J.P., & Co., Inc. Anti-twist insert for circular knitting machines and method. 3,479,842, Cl. 066-149.
Baker, Don R.: *See—*
Tilles, Harry, Baker, Don R., and Dewald, Chester L. 3,480,671.
Baker, Ernest C., to Newey Goodman Limited. Display packs. 3,480,138, Cl. 206-078.
Baker, Thomas Nelson, III, Michalski, Conrad, Sheng, Ming Nan, and Zajacek, John G., to Atlantic Richfield Company. Method for the separation of $C_6$ to $C_{10}$ alpha olefins from $C_6$ to $C_{10}$ alpha olefin epoxides by azeotropic and vacuum distillation. 3,480,519, Cl. 203-055.
Baker, William J., and Hurst, Richard J., to Gardner-Denver Company. Wire-wrapping tool with predetermined position stop. 3,480,119, Cl. 192-003.
Balhouse, Harold J., to Grinnell Corporation. Apparatus for molding liners in hollow metal bodies. 3,479,696, Cl. 018-030.

- Ball, Glenn A., Lichtenstein, Le Roy, and Webber, Philip S., to Caterpillar Tractor Company. Self-synchronizing gear coupler. 3,480,122, Cl. 192-053.
- Baque, Pierre, and Darras, Raymond, to Commissariat a l'Energie Atomique. Zirconium alloy. 3,480,430, Cl. 075-177.
- Barber-Colman Company: *See—*
  - Trost, Wayne C., and Mahoney, Robert J., 3,479,988.
- Barbieri, John Dante, and Gucker, George. Resolving compass utilizing photo- potentiometers. 3,480,788, Cl. 250-237.
- Barbini, Spartacus, to Compagnie Generale d'Electricite. Laser control apparatus. 3,480,876, Cl. 331-094.5
- Bardenhagen, Dietrich, and Schubert, Bernhard, to Hauni Werke Korber & Co., KG. Method and apparatus for packing blocks of cigarettes and the like. 3,479,787, Cl. 053-014.
- Barish Associates, Inc.: *See—*
  - Barish, David T., 3,480,238.
- Barish, David T., to Barish Associates, Inc. Glide wing. 3,480,238, Cl. 244-142.
- Barker, Pierce, Jr., to Barker Rockford Co. Hydraulic reservoir. 3,480,146, Cl. 210-250.
- Barker Rockford Co.: *See—*
  - Barker, Pierce, Jr., 3,480,146.
- Barnes Development: *See—*
  - Barnes, James W., and Hook, Kenneth R., 3,480,902.
- Barnes Engineering Company: *See—*
  - Astheimer, Robert W., 3,480,777.
- Barnes, James W., and Hook, Kenneth R., to Barnes Development. Integrated circuit carrier. 3,480,902, Cl. 339-017.
- Barnett, Guy F., to Simco Company, Inc., The. Multilayer electrostatic copyboard and light panel. 3,480,364, Cl. 355-075.
- Barogenics, Inc.: *See—*
  - Boggio, F. George, and Zeitlin, Alexander, 3,479,856.
  - Kramarow, Nathan M., 3,479,697.
- Barr, John Denzil, to Rank Organisation Limited, The. Apparatus for controlling the focusing mechanism of a camera. 3,479,944, Cl. 095-045.
- Barradell-Smith, Richard, Hall, James Edward, and Roby, James, to Pilkington Brothers Limited. Stacking glass sheets. 3,480,160, Cl. 214-006.
- Barry, Adelbert, Chalmers, Franklin L., and Pearson, John B., to Esso Production Research Company. Seismic wave source using explosive gas in an expansible enclosure. 3,480,101, Cl. 181-000.5
- Barry, Robert D.: *See—*
  - Schwartz, Harold O., and Barry, Robert D. 3,480,719.
- Barth, Edwin F., and Ettinger, Morris B., to United States of America, Interior. Process for removing phosphorus from waste water. 3,480,144, Cl. 210-004.
- Bartlett, Ronald K., and O'Sullivan, Thomas M.,to O'Sullivan Industries, Inc. Adjustable TV table. 3,479,973, Cl. 108-141.
- Barton, Derek Harold Richard, to Research Institute for Medicine and Chemistry, Inc. Process for the preparation of debrominated analogues of bromo-steroids of the pregnane, androstane and cholestane series. 3,480,622, Cl. 260-239.55
- Bashaw, Robert N., and Harper, Billy G., to Dow Chemical Company, The. Aqueous foam containing a water-swellable polymer flame proofing composition and process of making same. 3,480,546, Cl. 252-003.
- Basic Incorporated: *See—*
  - Spachman, James J., 3,480,454.
- Bason, James M., to Bason & Sons Limited. Mechanical handling apparatus. 3,480,161, Cl. 214-006.
- Bason & Sons Limited: *See—*
  - Bason, James M., 3,480,161.
- Batchelor, Gordon S., and Hawkins, Edwin F., to Allied Chemical Corporation. Process for the control of boll weevil and boll worm with TDE and malathion. 3,480,710, Cl. 424-213.
- Battelle Development Corporation, The: *See—*
  - Crites, Nelson A., 3,480,003.
- Battelle Memorial Institute: *See—*
  - Rouxel, Roland, and Helein, Jean G., 3,480,765.
- Batzer, Hans, and Porret, Daniel, to Ciba Limited. Mixtures of triglycidyl isocyanurate and other heterocyclic epoxides. 3,480,692, Cl. 260-830.
- Bauer, Friedrich, to Hoerbiger Ventilwerke Aktiengesellschaft. Capacity control system for compressor units. 3,480,199, Cl. 230-004.
- Bauer, Gunther: *See—*
  - Kurzke, Herbert, Bauer, Gunther, and Heinrich, Karl 3,479,689.
- Bauer, Hugo. Dispensing device with follower as discharge assistant. 3,480,181, Cl. 221-279.
- Bauer, Richard H., and Kilpert, Richard, to Esso Research and Engineering Company. Method and apparatus for spray foam insulating a pipe. 3,480,493, Cl. 156-078.
- Bauer, Simon, and Wittmann, Josef, to Fritzmeier, Georg, KG. Sprung vehicle seats. 3,480,324, Cl. 297-308.
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- Baur, Hans, and Fabianke, Hartmut, to Siemens Aktiengesellschaft. Charge accumulation system for telephone installations. 3,480,732, Cl. 179-007.1
- Baxter Laboratories, Inc.: *See—*
  - Regan, Bernard M., 3,480,683.
  - Shine, Dennis F., 3,480,172.
- Bayer, Herbert, to Wandel & Goltermann. Frequency-selective signal-transmission system with linearity-testing means. 3,480,862, Cl. 324-130.
- Bayer, Otto: *See—*
  - Dieterich, Dieter, Muller, Erwin, and Bayer, Otto 3,480,592.
- Bayless, James C. Snap on bail for buckets. 3,480,317, Cl. 294-031.
- Becker, John E., to Robson Leather Company. Leather working machine. 3,479,847, Cl. 069-046.
- Beckman Instruments, Inc.: *See—*
  - Arthur, Edwin P., 3,480,536.
- Bedford, Burnice D., and Turnbull, Fred G., to General Electric Company. Controlled silicon rectifier circuit having non- conducting negative bias ratio. 3,480,797, Cl. 307-252.
- Beesley, John, and Hyman, Robert Anthony, to English Electric-Leo-Marconi Computers Limited. Method of attaching integrated circuits to a substrate by an electron beam. 3,480,755, Cl. 219-121.
- Beetle, Robert H., and Dabney, John B., to Abex Corporation. Permanent mold for casting a wheel. 3,480,070, Cl. 164-365.
- Beich, Frank R., to American Hospital Supply Corporation. Male urinal. 3,479,671, Cl. 004-110.
- Bell Telephone Laboratories, Incorporated: *See—*
  - Baumgartner, Robert G., 3,480,721.
  - Day, James F., 3,480,917.
  - Dillon, Joseph F., Jr., Le Craw, Roy Conway, von Philipsborn, Henning, and Wernick, Jack H., 3,480,409.
  - Dillon, Joseph F., Jr., Johnson, Leo F., and Remeika, Joseph P., 3,480,877.
  - Eisner, Edward, 3,480,340.
  - Gaunt, Wilmer B., Jr., 3,480,742.
  - Gaunt, Wilmer B., Jr., 3,480,883.
  - Hubbard, William M., 3,480,869.
  - Lynes, Dennis J., and Waaben, Sigurd G., 3,480,800.
  - Michaelis, Paul C., 3,480,925.
  - Reingold, Gordon A., 3,480,092.
  - Ritchey, James F., Tate, Louis D., and Waddell, Richard E., 3,480,730.
- Bell, Thomas A.: *See—*
  - Etchells, John L., Bell, Thomas A., and Kittel, Ivan D. 3,480,448.
- Belt, John E., Hittel, Lorenz A., and Rakoczi, Laszlo L., to General Electric Company. Apparatus providing identification of programs in a multiprogrammed data processing system. 3,480,916, Cl. 340-172.5
- Bender, Erwin L., and Swanson, Richard H., to Manitowoc Company Inc., The. Method and apparatus for proofing a bakery product. 3,479,971, Cl. 107-054.
- Bendix Corporation, The: *See—*
  - Potter, Frederick Milton, 3,480,810.
  - Thornsen, Bernard L., Henrich, Robert S., and Mayer, Leo F., 3,480,849.
  - Tschudi, Dennis E., 3,480,799.
- Beninate, John V., Boylston, Eileen K., and Drake, George L., Jr., to United States of America, Agriculture. Cellulose-halomethyl methyl sulfide reaction process and product. 3,480,381, Cl. 008-120.
- Benson, Allen B., Gorbatenko, George G., Jursik, James, Kath, Ronald E., Ovrebo, Jerry D., and Skrenes, David H., to International Business Machines Corporation. Sample and hold circuit. 3,480,795, Cl. 307-235.
- Benson, David K., to Midwest Research Institute. Three-dimensional memory having photon excitable impurity semiconductor storage volume. 3,480,918, Cl. 340-173.
- Benson, Robert A., and Jones, Robert L., to Scott Paper Company, mesne. Release paper for debossing plastic sheets. 3,480,466, Cl. 117-076.
- Berberich, Bertold, to Siemens Aktiengesellschaft. MHD generator. 3,480,806, Cl. 310-011.
- Bereza, Svetlana Veniaminovna: *See—*
  - Korshak, Vasily Vladimirovich, Vinogradova, Svetlana Vasilievna, Salazkin, Sergei Nikolaevich, and Bereza, Svetlana Veniaminovna 3,480,597.
- Berg, Raymond J. O. Blade sharpener. 3,479,776, Cl. 051-249.
- Berger, Jack. strap handle. 3,480,318, Cl. 294-033.
- Bergman, Robert J., to Sperry Rand Corporation. Multilayered mated-film memory element having pairs of layers of differing H-. 3,480,929, Cl. 340-174.
- Bergwerksverband GmbH: *See—*
  - Luft, Karl-Friedrich, 3,479,860.
- Bermel, Thomas W., to Corning Glass Works. Fluidic diode. 3,480,030, Cl. 137-081.5
- Bernardi, Eugene L., and Krysiak, Henry A., to Reichhold Chemicals, Inc. Production of plastic printing plates. 3,479,952, Cl. 101-401.1
- Berry, George L., to Jones & Laughlin Steel Corporation. Hot rolling of light gauge strip. 3,479,853, Cl. 072-128.
- Bertholdt, Heinz: *See—*
  - Pfleger, Robert, Bertholdt, Heinz, and Schulz, Wolfram 3,480,626.
- Beta Corporation: *See—*
  - Martin, Merle E., 3,480,938.
- Bethlehem Steel Corporation: *See—*
  - Shaffer, Robert S., 3,480,469.

  - Sheary, George W., III, and Steele, James E., 3,480,326.
- Beymer, Richard L. Water shoe. 3,479,674, Cl. 009-310.
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- Bierbower, John B.: *See—*
  - Lucchino, Joseph A., and Bierbower, John B. 3,480,248.
- Bigge Drayage Company: *See—*
  - Smith, Edward M., 3,480,355.
- Bigler, Sam, to M & B Headwear Co., Inc. Waterproof hat construction. 3,479,668, Cl. 002-175.
- Billings, William W., to Westinghouse Electric Corporation. Miniature overvoltage protection circuit having separate voltage sensing and time delay circuits. 3,480,834, Cl. 317-031.
- Binckley, William G., and Wright, Warren H., to United States of America, National Aeronautics and Space Administration. Voltage regulator with plural parallel power source sections. 3,480,789, Cl. 307-053.
- Bindel, Wolfgang: *See—*
  - Hesse, Alfred, and Bindel, Wolfgang 3,480,127.
- Binder, Herbert, and Krupick, Walter J., to Singer-General Precision, Inc. Two-axis inductance bridge pickoff. 3,479,889, Cl. 074-005.6
- Birkigt, Louis, to Brevets Aero-Mecaniques S.A. Explosive shell with base detonating fuse. 3,479,955, Cl. 102-056.
- Birkigt, Louis, to Brevets Aero-Mecanigues S.A. Self-propelled rifle grenade capable of being launched by bullet impact. 3,479,956, Cl. 102-065.2
- Bishop, Thomas D., to Deritend Engineering Company Limited, The. Rotary dies. 3,479,931, Cl. 093-058.2
- Bitar, Louie S., and Grane, Henry R., to Atlantic Richfield Company. Production of epoxide-taurine salt condensation products. 3,480,666, Cl. 260-513.
- Bitjugov, Jury Alexeevich: *See—*
  - Keller, Ulrikh Ulrikhovich, Ledokhovich, Adolf Nikodimovich, Bitjugov, Jury Alexeevich, and Stratulatov, Gennady Yakovlevich 3,479,999.
- Bitterlich, Gordon M.: *See—*
  - Stoops, James W., Bitterlich, Gordon M., Lipkin, Moses R., and Primas, Alex L. 3,480,416.
- Bitterly, Jack G., to McDonnell Douglas Corporation. Cooling material. 3,479,838, Cl. 062-259.
- Black and Decker Manufacturing Company, The: *See—*
  - Amrein, Carl J., 3,480,814.
- Blackley, William D.: *See—*
  - Siegart, William R., Blackley, William D., Chafetz, Harry, and McMahon, Matthew A., Jr. 3,480,667.
- Blackstien, Allan A.: *See—*
  - Halko, John J., Jr., 3,480,313.
- Blandin Paper Company: *See—*
  - Richardson, Charles A., 3,480,455.
- Blaschek, Otto, to Arnold & Richter KG. Cassettes and cameras equipped therewith. 3,480,351, Cl. 352-035.
- Blech, Ilan A.: *See—*
  - Duffek, Edward F., Jr., and Blech, Ilan A. 3,480,412.
- Bliss, E. W., Company: *See—*
  - Helrigel, Robert Arthur, 3,479,905.
  - Hook, Bernard K., and Nelsen, Roger J., 3,480,180.
  - Maigrot, Robert, 3,480,121.
  - Ross, Sheldon I., 3,479,887.
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- Block, Paul E., to Warner Electric Brake & Clutch Company. Fill break detector for a loom. 3,480,048, Cl. 139-374.
- Bloom, Murray, to TRW Inc. Sputter depositing semiconductor material and forming semiconductor junctions through a molten layer. 3,480,535, Cl. 204-192.
- Bloxsom, Daniel Edgar, Jr., and Rhodes, Barry V. Micrometeorite shower creating apparatus and method. 3,479,857, Cl. 073-012.
- Blunt, Owen T. Device for boxing shotgun shells. 3,479,796, Cl. 053-390
- Bockly, Erich: *See—*
  - Kampfer, Helmut, Gotze, Johannes, Reister, Oskar, and Bockly, Erich 3,480,439.
- Boeger, James H., to Gardner-Denver Company. Fluid operated tool with pressure indicator. 3,480,087, Cl. 173-020.
- Boehringer-Ingelheim G.m.b.H.: *See—*
  - Stahle, Helmut, Kummer, Werner, Koppe, Herbert, Zeile, Karl, Hoefke, Wolfgang, and Samtleben, Hans-Wolfgang, 3,480,630.
- Boettcher, Benedict Andrew: *See—*
  - Bialko, William Frank, and Boettcher, Benedict Andrew 3,480,857.
- Boggild, Robert, to Echo Development Co. Telephone answering apparatus with selector and control cams on a common shaft. 3,480,731, Cl. 179-006.
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- Bogue, David L., to United Aircraft Corporation. Injector. 3,479,819, Cl. 060-039.74
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- Bohrer, Byron B., to Sun Oil Company. Cracking of hydrocarbons. 3,480,689, Cl. 260-683.
- Bolieau, Christopher W., to Thiokol Chemical Corporation. Igniter system for illuminating compositions. 3,479,954, Cl. 102-037.8
- Bolkow Gesellschaft mit beschrankter Haftung: *See—*
  - Strohl, Heinrich, 3,479,818.
- Bolt Beranek and Newman Inc.: *See—*
  - Allen, Clayton H., and Heine, John C., 3,480,281.
  - Allen, layton H., 3,479,669.
  - Jones, Royal V., Jr., Allen Clayton H., and Gordon, Colin G., 3,480,283.
- Boltz, Charles D., Jr.: *See—*
  - Nelson, Robert E., and Boltz, Charles D., Jr. 3,479,822.
- Boneck, Roger L. Window supports. 3,479,685, Cl. 016-172.
- Bonetti, Giovanni A., and Rosenthal, Rudolph, to Atlantic Richfield Company. Organic-soluble molybdenum catalysts. 3,480,563, Cl. 252-431.
- Bonn, Francis H. Air bags for pressing machines. 3,480,187, Cl. 223-067.
- Bonnet, Andre, to Societe Aria. Method and apparatus for pneumatically separating solid particles. 3,480,142, Cl. 209-133.
- Booth, Robert Ben: *See—*
  - Kolodny, Edwin Ralph, and Booth, Robert Ben 3,480,761.
- Borg-Warner Corporation: *See—*
  - Harlin, Lester E., 3,480,204.
  - Kinkel, John F., 3,480,739.
  - La Masters, George D., 3,479,816.
  - Randa, Gerald, and Stephens, William T., 3,479,963.
- Borkey, Karl August, to Borkey, Walter, KG. Lifting dolly. 3,480,292, Cl. 280-043.17
- Borkey, Walter, KG.: *See—*
  - Borkey, Karl August, 3,480,292.
- Bourn, Helen Louise: *See—*
  - Bourn, Jesse T., Ridenhour, Banks L., and Lum, Robert C. 3,480,257.
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- Boyd, A. C. Animal shock devices for refuse cans. 3,480,176, Cl. 220-085.
- Boyer, Ralph K., to Goodyear Tire & Rubber Company, The. Gauge for determining and adjusting pressure in two chamber tire. 3,479,868, Cl. 073-146.8
- Boyertown Burial Casket Company: *See—*
  - Yoder, Harold R., 3,479,772.
- Boykin, John R., to Westinghouse Electric Corporation. Circuitry for simultaneously modulating and amplifying a carrier signal. 3,480,881, Cl. 332-009.
- Boylston, Eileen K.: *See—*
  - Beninate, John V., Boylston, Eileen K., and Drake, George L., Jr. 3,480,381.
- Brandstadter, Isaac Joseph, to Yissum Research Development Company. Analog spectrum accumulator. 3,480,932, Cl. 340-174.1
- Brandt, Bertil, and Svensson, Assar, to Skelleftea Gummifabriks A.B. Lining plate for loading cage or similar device. 3,480,321, Cl. 296-028.
- Brannon, Edward O., and Petersen, Irving J., to Racine Hydraulics, Inc. Control valve. 3,480,039, Cl. 137-596.2
- Branson Instruments Incorporated: *See—*
  - Hauser, Ray L., 3,480,492.
- Braus, Harry, Hager, Jerome E., and Hill, Lestera A., Jr., to National Distillers and Chemical Corporation. Enhancement of resistance of olefin polymers to heat deterioration. 3,480,581, Cl. 260-041.
- Bredt, James H.: *See—*
  - Kendall, Louis F., Jr., and Bredt, James H. 3,480,554.
- Brenza, James G., and Kusnick, Arthur A., to International Business Machines Corporation. Pulse value determining receiver. 3,480,910, Cl. 340-146.1
- Breton, Ernest J., Eustice, Albert L., and McCauley, Harry J., to Du Pont de Nemours, E. I., and Company. Method of integration of particulate material within a metal substrate and the product thereof. 3,480,460, Cl. 117-022.
- Breuer, David Roy, to TRW Inc. Direct-coupled differential-input amplifier. 3,480,872, Cl. 330-030.
- Brevets Aero-Mecanigues S.A.: *See—*
  - Birkigt, Louis, 3,479,956.
- Brevets Aero-Mecaniques S.A.: *See—*
  - Birkigt, Louis, 3,479,955.
- Bridgeford, Douglas J., and Turbak, Albin F., to Tee-Pak, Inc. Composite cellulose-wool products. 3,480,380, Cl. 008-115.6
- Briggin, Edward: *See—*
  - Katzman, Lawrence, and Briggin, Edward 3,480,001.
- Brion, Jacques, Cousin, Michel, Talejkinski, Wulf, and Volk, Andre, to Commissariat a l'Energie Atomique. Gas filtering installation. 3,479,800, Cl. 055-294.
- Briones, Robert A.: *See—*
  - Wuerker, Ralph F., and Briones, Robert A. 3,480,831.
- Bristol-Myers Company: *See—*
  - Cron, Martin John, and Smith, Robert Edward, 3,480,614.
- British Aircraft Corporation (Operating) Limited: *See—*
  - Appleby, James Kenneth, 3,480,237.

British Geon Limited: *See*—

Abercrombie, Malcolm James, and Thomas, David B., 3,480,602.

British Industrial Plastics Limited: *See*—

May, Herbert, Kendall-Smith, Brian John, and Burr, Susannah, 3,480,590.

British Ropes Limited: *See*—

Gessler, Jan Klaus, 3,480,754.

Britt, Ramon P., to United States of America, Agriculture. Method of attaching leads to a cylindrical piezoelectric transducer. 3,479,729, Cl. 029-471.3

Brooks, Max: *See*—

Grosbard, Gregory, 3,480,811.

Brooks, Robert Bruce, to American Cyanamid Company. Fire-resistant fiber blends. 3,480,582, Cl. 260-045.75

Broughton, Donald R.: *See*—

O'Brien, John F., and Broughton, Donald R. 3,480,564.

Brouwer, Charles W., Cruickshank, David G., and Tata, Raymond V., to Leesona Corporation. Bobbin distributing installation. 3,480,128, Cl. 198-001.

Brown, D. S., Company, The: *See*—

Hall, Frank K., 3,479,933.

Brown, Omar L., to Fraze, Ermal C. Method of making a can end. 3,479,733, Cl. 029-509.

Brown, Walter R. J.: *See*—

Addis, David J., Brown, Walter R. J., and Osman, Martin S. 3,480,924.

Brownlow, James M., to International Business Machines Corporation. Method of making magnetic thin film device. 3,480,522, Cl. 204-040

Brownscombe, Philip J., to Dietzgen, Eugene, Co. Film strip reeling apparatus. 3,480,358, Cl. 353-026.

Brunswick Corporation: *See*—

Torresen, Robert, 3,480,276.

Bryand, Edward T., to Metal-Tech Inc. Conical honeycomb structure. 3,480,148, Cl. 210-380.

Bryce-Smith, Derek, Gilbert, Andrew, and Vickery, Brian. Photochemical process for producing adducts. 3,480,532, Cl. 204-158.

Buchanan, Russell A., and Russell, Charles R., to United States of America, Agriculture. Starch resin reinforced rubbers. 3,480,572, Cl. 260-017.2

Buck, Willard E., to Technical Operations, Incorporated, mesne. Reflecting prism camera. 3,480,353, Cl. 352-108.

Bucksteeg, Wilhelm, and Thiele, Hans, to Passavant-Werke. Method and apparatus for the purification of waste water. 3,480,542, Cl. 210-020.

Burch, Oren P. Method of manufacturing patterned panel. 3,480,501, Cl. 156-228.

Buren Watch Company S.A.: *See*—

Kocher, Hans, 3,479,813.

Burfield, Peter C., and Micai, Louis Z., to Federal-Mogul Corporation. Method of making a unitized seal. 3,479,728, Cl. 029-450.

Burk, Duane L.: *See*—

Durham, Donald F., and Burk, Duane L. 3,480,338.

Burk, Emmett H., Jr., and Carlos, Donald D., to Sinclair Research, Inc. Addition polymers of ethylenically-unsaturated cyclic nitrile sulfites, carbonates and oxalates. 3,480,595, Cl. 260-077.5

Burk, Emmett H., Jr., and Hoffman, William D., to Sinclair Research, Inc. Production of 1-halo-3,3-dialkyl alkanes using an excess of ethylene. 3,480,559, Cl. 252-431.

Burke, Ben: *See*—

Halko, John J., Jr., 3,480,313.

Burns, Joseph, to Fairchild Camera and Instrument Corporation. Electronic image-intensifying tube. 3,480,782, Cl. 250-213.

Burns, Walter R., to Stanray Corporation. Canopy for airplane loading ramp. 3,479,677, Cl. 014-071.

Burr, Susannah: *See*—

May, Herbert, Kendall-Smith, Brian John, and Burr, Susannah 3,480,590.

Burris, Haward T., to Con-Rad, division of U.S. Industries, Inc. Device for silencing gas flow streams. 3,480,105, Cl. 181-047.

Burroughs Corporation: *See*—

Fehnel, Richard B., 3,480,820.

Starr, David A., Jr., 3,480,880.

Stowell, Philip, A., 3,480,963.

Burrows, Michael Eastoe: *See*—

Reid, Alexander Mailer, Parry, Richard John, and Burrows, Michael Eastoe 3,480,453.

Busch, Gerhard. Card and etiquette punching machine. 3,479,914, Cl. 083-448.

Byars, Gerald A.: *See*—

Carr, Jesse M., Jr., Byars, Gerald A., and De Feo, Richard J. 3,480,662.

Bydalek, Floyd J.: *See*—

Lukas, Gus J., and Bydalek, Floyd J. 3,479,874.

Bykov, Vladimir Alexandrovich, Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Karlinsky, Stanislav Evgenievich, Niskovskikh, Vitaly Maximovich, Orlov, Boris Yakovlevich, Sokolovsky, Oleg Petrovich, and Khimich, Georgy Lukich. Alternately operated walking bars device for extracting an ingot from a curved mold. 3,480,074, Cl. 164-282.

Byllard, E. D., Company: *See*—

Raschke, Herbert A., 3,480,319.

Cabot Corporation: *See*—

Hardy, John F., and Doppler, Leonard H., 3,480,425.

Cadman, Harold O., to Phelan, Louis, A. M. Positive displacement gear type pump. 3,479,957, Cl. 103-002.

Cadman, Harold O., to Phelan, Louis, A. M. Pump. 3,479,961, Cl. 103-126.

Cain, Audley L., to Allied Chemical Corporation. Mono- and polyazo dyestuffs containing a polyfluoroalkanol or a lower alkoxy polyfluoroalkyl group and quaternary ammonium derivatives thereof. 3,480,612, Cl. 260-146.

Callahan, John C., to American Cyanamid Company. Method for ointment storage and dispensing. 3,480,014, Cl. 128-261.

Calvert, William L.: *See*—

Donnell, Emerson Bradford, Jr., and Calvert, William L. 3,480,505.

Cambridge Research and Development Group: *See*—

Greenberg, Sanford David, and Norvell, Bert E., 3,480,737.

Cambridge Scientific Industries: *See*—

Hoge, Henri H., 3,480,851.

Canadian Industries Limited: *See*—

Sikora, Josef, 3,480,650.

Canfield, Eugene B., to General Electric Company. Accelerometer. 3,479,886, Cl. 073-516.

Cannon, Don L.: *See*—

Trapp, Orlin D., and Cannon, Don L. 3,479,862.

Canon Camera Company, Incorporated: *See*—

Goshima, Takeshi, 3,479,943.

Cantarutti, Armindo, to AMK Subsidiary Corporation, mesne. Tire mold construction. 3,479,693, Cl. 018-017.

Capitol Refrigeration, Inc.: *See*—

Anglin, William E., and Anglin, Paul E., 3,479,834.

Carbajal, Joe. Tamale making machine. 3,479,970, Cl. 107-001.

Cardinal Chemical, Inc.: *See*—

Guinn, Jerry H., and Wright, William Sherwood, 3,480,079.

Cardoso, Jose Joaquim, to Magnesita S.A. Encased electric pump. 3,479,960, Cl. 103-117.

Carletti, Luciano, and Rigamonti, Alessandro, to Societa Farmaceutici Italia. Process of preparing pharmaceutical tablet with orange-peel-like protective sugar coating. 3,480,468, Cl. 117-084.

Carlisle Chemical Works, Inc.: *See*—

Thompson, Paul F., 3,480,712.

Carlos, Donald D.: *See*—

Burk, Emmett H., Jr., and Carlos, Donald D. 3,480,595.

Carlos, Donald D., to Sinclair Research, Inc. Hydroxylamine solutions stabilized with an amide oxime and method for their preparation. 3,480,391, Cl. 023-190.

Carlos, Donald D., to Sinclair Research, Inc. Hydroxylamine solutions stabilized with a hydroxamic acid and method for their preparation. 3,480,392, Cl. 023-190.

Carlos, Donald D., and Young, David W., to Sinclair Research, Inc. Cutting oil compositions containing a mineral lubricating oil base and a polydiene-polyhalomethane adduct. 3,480,549, Cl. 252-054.

Carlson, Melvin G., to Westinghouse Air Brake Company. Oscillating actuating means for mining heads of ripper miner. 3,480,328, Cl. 299-071.

Carnation Company: *See*—

Martin, Russell John, 3,479,795.

Carpenter, John Mc Murray, III, and Smith, Drexel Kermit, to Du Pont de Nemours, E. I., and Company. Spinning fiber-forming linear condensation polymer. 3,480,706, Cl. 264-176.

Carr, Jesse M., Jr., Byars, Gerald A., and De Feo, Richard J., to Esso Research and Engineering Company. Olefin activator for ligards in caprons halide slurry. 3,480,662, Cl. 260-465.9

Carroll, James A., and Spivak, Joel F., to Loral Corporation. Method for preparing high mobility indium antimonide thin films. 3,480,484, Cl. 148-006.3

Carter, George W., to RCA Corporation. Gain control biasing circuits for field-effect transistors. 3,480,873, Cl. 330-029.

Case, J. I., Company: *See*—

Mays, Vance H., 3,479,900.

Tilbury, Lawrence E., and Maple, Steven E., 3,480,085.

Castrucci, Paul P., Collins, Robert H., and Shepheard, Robert G., to International Business Machines Corporation. Solderable backside ohmic contact metal system for semiconductor devices and fabrication process therefor. 3,480,841, Cl. 317-234.

Catallo, Frank, to Fab-Con Machinery Development Corporation. Spreader for tubular knit fabrics. 3,479,706, Cl. 026-055.

Catalysts and Chemicals, Inc.: *See*—

Adams, Rodney A., 3,480,565.

O'Brien, John F., and Broughton, Donald R., 3,480,564.

Caterpillar Tractor Company: *See*—

Ball, Glenn A., Lichtenstein, Le Roy, and Webber, Philip S., 3,480,122.

Durham, Donald F., and Burk, Duane L., 3,480,338.

Fungman, Charles N., 3,479,929.

Catsch, Alexander, to Geigy Chemical Corporation. Decontamination agents. 3,480,715, Cl. 424-289.

Caughron, Sam M.: *See*—

Hamby, Robert L., 3,480,350.

Celanese Corporation: *See*—

Costanza, John R., and Dunay, Michael, 3,480,016.

Central Glass Company, Ltd.: *See*—

Yasutake, Yoshito, and Fujita, Yosisige, 3,480,387.

Chafetz, Harry: *See*—

Siegart, William R., Blackley, William D., Chafetz, Harry, and McMahon, Matthew A., Jr. 3,480,667.

Chalmers, Franklin L.: *See*—

Barry, Adelbert, Chalmers, Franklin L., and Pearson, John B. 3,480,101.

Chandler, Joseph H., to Lockheed Aircraft Corporation. Protective shield for telescriber machines. 3,480,728, Cl. 178-018.

Chang, Yun G., to Reichold Chemicals, Inc. Organic peroxides obtained by reaction of hydroperoxides with hydroxy-acetone and process. 3,480,648, Cl. 260-340.6

Chao, Wu Wai, to Sperry Rand Corporation. Oral cleansing and gum massaging means. 3,480,008, Cl. 128-066.

Chappelear, David C., Stolki, Thomas J., Newman, Seymour, and Trementozzi, Quirino A., to Monsanto Company. Polymer foams reinforced with polyamides, polyesters and polycarbonates. 3,480,569, Cl. 260-002.5

Charbonnier, Roger, and Estrabaud, Stephane, to Societe d'Instrumentation Schlumberger. Analog to digital converters. 3,480,949, Cl. 340-347.

Chase, Robert L., and Radeka, Veljko, to United States of America, Atomic Energy Commission. Parametric pre-amplifier circuit for charged particle detectors. 3,480,870, Cl. 330-004.9

Chauvin, Bernard: *See*—

Hasell, Henry P., and Chauvin, Bernard 3,480,771.

Check, Mathias M. Pin tumbler side bar cylinder lock. 3,479,849, Cl. 070-364.

Cheek, James H.: *See*—

Spencer, John R., Greathouse, Walton D., and Cheek, James H. 3,479,797.

Chemicals & Phosphated Ltd.: *See*—

Mitzmager, Abraham, and Gorin, Chanuch, 3,480,143.

Chemische Fabrik Dr. R. Pfleger: *See*—

Pfleger, Robert, Bertholdt, Heinz, and Schulz, Wolfram, 3,480,626.

Chemische Werke Huls Aktiengesellschaft: *See*—

Feinauer, Roland, Hamann, Karl, and Jacobi, Manfred, 3,480,647.

Chen, Cheng-Lin, to Westinghouse Electric Corporation. Sealed discharge device. 3,480,823, Cl. 313-317.

Cherry Electrical Products Corporation: *See*—

Cherry, Walter L., and Main, Robert, 3,480,752.

Cherry, Walter L., and Main, Robert, to Cherry Electrical Products Corporation. Switch actuator. 3,480,752, Cl. 200-172.

Chevron Research Company: *See*—

Mehmedbasich, Enver, 3,480,414.

Mulaskey, Bernard F., 3,480,531.

Chiappe, Orlando J.: *See*—

Shaff, Gerald H., Smith, Frank R., Haren, Ralph J., and Chiappe, Orlando J. 3,479,725.

Chicago Display Company: *See*—

Snyder, H. Kent, Jr., 3,479,760.

Child Guidance Toys Inc.: *See*—

Genin, Robert I., 3,479,918.

Chipps, Elmer T.: *See*—

White, Frank F., Tanno, Norman J., and Chipps, Elmer T. 3,480,159.

Chisholm-Ryder Company, Inc.: *See*—

Holloway, Robert L., 3,480,131.

Chojnowski, Manfred: *See*—

Sucher, Josef, Werner, Siegfried, Schlosser, Hellmut, Chojnowski, Manfred, and Hain, Josef 3,479,723.

Chore-Time Equipment, Inc.: *See*—

Myers, Lawrence A., 3,479,947.

Chow, Alfred W., and Hall, Norman M., to Smith Kline & French Laboratories. 3-Chlorotriazinoindoles. 3,480,628, Cl. 260-249.5

Christensen, William N., deceased (by Slaughter, Robert L., administrator). Electromagnetic metering pump. 3,479,959, Cl. 103-053.

Chrysler Corporation: *See*—

Koch, David A., 3,480,203.

Chu, Lan J., to United States of America, Navy. Missile guidance method and apparatus. 3,480,233, Cl. 244-003.18

Church, Joseph H. Electronic razor. 3,480,848, Cl. 318-128.

Ciba Corporation: *See*—

Werner, Lincoln Harvey, 3,480,714.

Wilhelm, Max, Daeniker, Hans Ulrich, Schenker, Karl, and Schmidt, Paul, 3,480,640.

Ciba Limited: *See*—

Batzer, Hans, and Porret, Daniel, 3,480,692.

Rembold, Karl-Heinz, 3,480,471.

Rohr, Otto, 3,480,658.

Ronco, Karl, and Hari, Istvan, 3,480,625.

Cicognani, Mario, to Pirelli S.p.A. V-Belt. 3,479,892, Cl. 074-233.

Ciochetto, Joseph J., to Koppers Company, Inc. Apparatus for making steel. 3,480,266, Cl. 266-027.

Cirer, Frank H.: *See*—

Southerland, Arthur, Jr., Cirer, Frank H., and Anderson, Alfred G. 3,480,157.

CKD Praha, oborovy podnik: *See*—

Pospisil, Jaroslav, and Hubacek, Vaclav, 3,479,882.

Clare, C. P., & Company: *See*—

Deeg, Wyman L., 3,480,939.

Clark Equipment Company: *See*—

Jung, Richard R., 3,480,126.

Clark, Hubert M., and Drutchas, Gilbert H., to TRW, Inc. Hydraulic actuated skid control device. 3,480,336, Cl. 303-021.

Clark, Merlin G., to A-C Equipment Company. Core chuck. 3,480,224, Cl. 242-068.2

Clarke, Christopher H. Segment severing implement. 3,479,740, Cl. 030-024.

Clarke, Frank H., Jr.: *See*—

Block, Fred B., and Clarke, Frank H., Jr. 3,480,638.

Clement, Jean Max, to Solvay & Cie. Process for the adjustment of the distance between the electrodes of operating electrolysis cells. 3,480,528, Cl. 204-099.

Cleveland, Floyd M., to General Safety, Inc. Removable stanchion. 3,480,242, Cl. 248-226.

Clifford, Earl W.: *See*—

Phlipot, James R., Gill, Lawrence H., and Clifford, Earl W. 3,480,026.

Clinton, Edwin T., and Kramcsak, Michael, Jr., to Steward-Warner Corporation. Caster seal. 3,479,680, Cl. 016-021.

Cloninger, Vernon W. Ignition spark tester including compression release vent. 3,480,853, Cl. 324.017

Clynch, Frank, to Continental Oil Company. Total recovery core catcher. 3,480,093, Cl. 175-058.

Coats, Carlton E., to Ashland Oil & Refining Company. Process for producing monocarboxylic acid modified alkyd resins. 3,480,575, Cl. 260-022.

Cochran Western Corporation: *See*—

Duerksen, Arnold, 3,480,295.

Codina, Jorge G., to Gravimetrics Incorporated. Seismograph. 3,480,908, Cl. 340-017.

Cofer, Larry Wilson: *See*—

DeBuhr, Harold Eugene, and Cofer, Larry Wilson 3,479,894.

Cohen, Arthur M. Business form. 3,480,297, Cl. 282-022.

Colautti, Albert J., and Suszko, Donald H., to General Motors Corporation. Riveting. 3,479,727, Cl. 029-444.

Cole, Saxon, to American Air Filter Company, Inc. Shutoff valve. 3,480,029, Cl. 137-079.

Coleman, Joseph B.: *See*—

Johnson, Howard M., 3,479,778.

Coleman, Ronald C. Extendable scaffold. 3,480,110, Cl. 182-184.

Coless, Thomas L., and Rimer, Kenneth W., to Union Carbide Corporation. Arc welding compositions. 3,480,487, Cl. 148-026.

Collin, Herbert S. Hanger bar for garment cartons. 3,480,153, Cl. 211-124.

Collins, Henry R., Jr., to Phillips Petroleum Company. Temperature compensation for viscosity measurements. 3,480,032, Cl. 137-092.

Collins Radio Company: *See*—

Elliott, William S., 3,480,888.

Collins, Robert H.: *See*—

Castrucci, Paul P., Collins, Robert H., and Shepheard, Robert G. 3,480,841.

Columbia Gas System Service Corporation: *See*—

Teague, Walter Dorwin, Jr., 3,479,831.

Combustion Engineering, Inc.: *See*—

Anthony, Andrew J., 3,480,510.

Commercial Solvents Corporation: *See*—

Tindall, John B., 3,480,516.

Tindall, John B., 3,480,517.

Tindall, John B., 3,480,518.

Commissariat a l'Energie Atomique: *See*—

Baque, Pierre, and Darras, Raymond, 3,480,430.

Brion, Jacques, Cousin, Michel, Talejkinski, Wulf, and Volk, Andre, 3,479,800.

Commodity Marketers, Inc.: *See*—

Kliewer, George G., 3,479,876.

Communication Systems, Incorporated: *See*—

Sichak, William, 3,480,867.

Compagnie Financiere et Commerciale: *See*—

Smadja, Jean Claude, 3,479,768.

Compagnie Generale d'Electricite: *See*—

Barbini, Spartacus, 3,480,876.

Milochevitch, Alexandre, and Rousseau, Serge, 3,480,874.

Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie: *See*—

Verdier, Henri, 3,480,065.

Components Corporation: *See*—

Neuman, Werner E., 3,480,896.

Con-Rad: *See*—

Burris, Haward T., 3,480,105.

Concrete Conduit Company, Inc.: *See*—

Schack, John B., 3,479,777.

Conetta Manufacturing Company, Inc.: *See*—

Danna, Salvatore R., 3,480,911.

Congleton, Wayne L.: *See*—

Lattis, Donald J., Congleton, Wayne L., and Gomez, Jose J. 3,479,759.

Conley, William J. Accessory for use in playing word forming game. 3,480,278, Cl. 273-148.

Conrad, Lucas J., and Everhart, John R., to Archer Products, Incorporated. Rolling apparatus for rounding the edges of strip metal. 3,479,852, Cl. 072-040.

Consonni, Alberto, Pallini, Ugo, and Sciaky, Roberto, to Societa Farmaceutici Italia. 3-(2'-Chloroethylthio)-6-formyl-$9\alpha$-fluoro-steroids. 3,480,623, Cl. 260-239.55

Container Corporation of America: *See*—

Koboldt, Melvin A., 3,480,195.

Continental Can Company, Inc.: *See*—

Khoury, Nick S., 3,480,175.

- Continental Illinois National Bank and Trust Company of Chicago: *See—*
  - Voitik, Robert M., 3,480,284.
- Continental Motors Corporation: *See—*
  - Fryer, Ross L., and Hill, Dennis C., 3,479,997.
- Continental Oil Company: *See—*
  - Clynch, Frank, 3,480,093.
  - Felsenthal, Martin, Ferrell, Howard H., and Matthews, Robert R., 3,480,081.
  - Gilliland, Harold E., 3,480,082.
  - Spencer, John R., Greathouse, Walton D., and Cheek, James H., 3,479,797.
- Cook, Marvin E. Brake releasing device for a railway air brake system. 3,480,337, Cl. 303-073.
- Cooling Development Ltd.: *See—*
  - Talbot, Edward B., 3,480,373.
- Cooper, Albert S., Jr.: *See—*
  - Sloan, William G., Moore, Harry B., Cooper, Albert S., Jr., and Reeves, Wilson A. 3,480,382.
- Cooper, Daniel Waumsley, to G.Q. Parachute Company Limited. Means for lowering loads. 3,480,108, Cl. 182-133.
- Cooper, Guy F. Vertical-track free-fall system. 3,479,883, Cl. 073-432.
- Copeland, John R., and Kitzerow, Richard A., to Ohio State University Research Foundation, The. Surface wave antenna having discontinuous coaxial line. 3,480,961, Cl. 343-765.
- Copolymer Rubber & Chemical Corporation: *See—*
  - Meredith, Curtis L., 3,480,066.
- Corborundum Company, The: *See—*
  - McMullen, John C., and Taylor, Kenneth M., 3,480,395.
- Corn Products Company: *See—*
  - Hack, Arthur W., and Konigsdorf, Wolfgang, 3,480,447.
  - Thompson, Alfred R., Jr., and Foley, William H., 3,480,573.
- Cornell, Dudley E., III: *See—*
  - , Cornell, Dudley E., III, and Evans, James L. 3,480,150.
- Corning Glass Works: *See—*
  - Allen, Richard E., 3,480,421.
  - Bermel, Thomas W., 3,480,030.
  - Kenny, Neal S., Warden, Douglas A., and Sapakie, Alan Louis, 3,480,372.
- Cornish, Joseph J., III, to Lockheed Aircraft Corporation. Method and apparatus for modifying airfoil fluid flow. 3,480,234, Cl. 244-040.
- Corum, Donald A., to Phillips Petroleum Company. Apparatus for educing and recovering oil from oil-bearing solids. 3,480,512, Cl. 196-124.
- Costanza, John R., and Dunay, Michael, to Celanese Corporation. Sanitary products. 3,480,016, Cl. 128-284.
- Cournoyer, George R., to USM Corporation. Roll positioning mechanism. 3,479,951, Cl. 100-170.
- Cousin, Michel: *See—*
  - Brion, Jacques, Cousin, Michel, Talejkinski, Wulf, and Volk, Andre 3,479,800.
- Cousteau, Jacques Yves, and Gagnan, Emile, to La Spirotechnique. Device for discharging the gases exhaled by the wearer of a respiratory apparatus. 3,480,011, Cl. 128-142.2
- Coutilish, George P., to General Motors Corporation. Toggle clamp. 3,480,271, Cl. 269-228.
- Craig, Burnie M.: *See—*
  - Proudfoot, Ward M., Craig, Burnie M., and Viancour, Albert D. 3,480,043.
- Criger, Robert O. Publication layout guide. 3,479,752, Cl. 035-053.
- Crites, Nelson A., to Battelle Development Corporation, The. Apparatus for measuring esophageal motility. 3,480,003, Cl. 128-002.
- Crompton, George. Electric locomotive. 3,479,967, Cl. 105-053.
- Crompton, George. Low slung railroad car. 3,479,968, Cl. 105-238.
- Cron, Martin John, and Smith, Robert Edward, to Bristol-Myers Company. Kasuganobiosamine dimedone derivatives and salts thereof. 3,480,614, Cl. 260-210.
- Crossley, Robert B. Electronic snore depressor. 3,480,010, Cl. 128-132.
- Crow, Frank L. Cat tree. 3,479,990, Cl. 119-001.
- Cruickshank, David G.: *See—*
  - Brouwer, Charles W., Cruickshank, David G., and Tata, Raymond V. 3,480,128.
- Cruse, Oliver B., to Wagner Electric Corporation. Control valve. 3,480,334, Cl. 303-013.
- CSF-Compagnie Generale de Telegraphie Sans Fil: *See—*
  - Faberes, Pierre, and Ribadier, Georges, 3,480,824.
  - Tcheditch, Pierre, 3,480,958.
- Csizmas, Louis L., and Patel, Virendra, to Miles Laboratories, Inc. Placement device. 3,480,400, Cl. 023-259.
- Cummins, Earl W., to Du Pont de Nemours, E. I., and Company. Chlorination of 3,6-disubstituted uracils. 3,480,631, Cl. 260-260.
- Cushing, Russell Emery, to Pennsalt Chemicals Corporation. Electropneumatic transducer. 3,480,031, Cl. 137-082.
- Cushing, Vincent J. Electromagnetic flowmeter including hum compensation means. 3,479,871, Cl. 073-194.
- Cyba, Henryk A., to Universal Oil Products Company. Arylaminoalkyl phosphites. 3,480,698, Cl. 260-945.
- Dabney, John B.: *See—*
  - Beetle, Robert H., and Dabney, John B. 3,480,070.
- Dadura, James G.: *See—*
  - Hellmuth, Walter W., Kivelevich, Doris, Dadura, James G., and Morissette, Bertrand G. 3,480,548.
- Daeniker, Hans Ulrich: *See—*
  - Wilhelm, Max, Daeniker, Hans Ulrich, Schenker, Karl, and Schmidt, Paul 3,480,640.
- Daiichi Seiyaku Company, Limited: *See—*
  - Okuda, Noriyuki, Kuniyoshi, Ieji, Saito, Tadashi, and Oguri, Koji, 3,480,645.
- Dal Negro, Ruggero, to Italo American Prentice S.p.A. Loom attachment for weaving slide-fastener elements onto tapes. 3,480,045, Cl. 139-116.
- Dale Electronics, Inc.: *See—*
  - Person, Herman R., 3,480,832.
- Dale, James W., to Monsanto Research Corporation. Method of controlling the spread of fires. 3,480,545, Cl. 282-002.
- Dale, William L.: *See—*
  - Boggild, Robert, and Dale, William L. 3,480,274.
- D'Amato, Nicholas J. Picture frame fastener. 3,479,761, Cl. 040-156.
- Dana Corporation: *See—*
  - Meyers, Richard P., 3,479,840.
- Dando, Vivian Charles Owen: *See—*
  - Bailey, Brian Edward, and Dando, Vivian Charles Owen 3,480,576.
- Danfoss A/S: *See—*
  - Enemark, Arne F., Kjeldsen, Kjeld, and Larsen, Bendt Wegge, 3,480,206.
- Daniel, Benjamin S., to Techniservice Corporation, mesne. Strand treatment. 3,479,709, Cl. 028-072.
- Danna, Salvatore R., to Conetta Manufacturing Company, Inc. Signature identification instrument. 3,480,911, Cl. 340-146.3
- Darras, Raymond: *See—*
  - Baque, Pierre, and Darras, Raymond 3,480,430.
- Daugherty, Charles A., Jr.: *See—*
  - Meyer, Herbert J., Daugherty, Charles A., Jr., and Novy, John R. 3,480,738.
- Davidse, Pieter D.: *See—*
  - Flur, Barry L., Davidse, Pieter D., and Maissel, Leon I. 3,480,922.
- Davidson, Robert E., Eads, Charles L., and Soter, Samuel A., to Adams Rite Manufacturing Company. Lock mounting means for narrow stile door frame. 3,479,851, Cl. 070-451.
- Davidson, Watson P. Air humidifier and filter. 3,480,263, Cl. 261-029.
- Davies, David J.: *See—*
  - Priese, Werner K., and Davies, David J. 3,480,253.
- Davy and United Engineering Company, Limited: *See—*
  - Stubbs, Dennis, 3,479,854.
- Day, James F., to Bell Telephone Laboratories, Incorporated. Arrangement for transferring between program sequences in a data processor. 3,480,917, Cl. 340-172.5
- Dazor Manufacturing Corporation: *See—*
  - Mehr, Jacob A., 3,480,304.
- De Angelo, Gerald J.: *See—*
  - Gelzheiser, Francis L., and De Angelo, Gerald J. 3,480,900.
- DeBuhr, Harold Eugene, and Cofer, Larry Wilson, to Deere & Company. Belt tensioning device. 3,479,894, Cl. 074-242.11
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- Decca Limited: *See—*
  - Gray, Trevor, and Neish, David Anthony, 3,480,954
- Decker, John L.: *See—*
  - Anderson, Norman J., and Decker, John L. 3,480,123.
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  - DeBuhr, Harold Eugene, and Cofer, Larry Wilson, 3,479,894.
  - Kress, James Henry, and Lemons, David Forrest, 3,479,908.
  - Nighswonger, Lester Leroy, Hunk, Billie Gene, and Malm, Donald Irwin, 3,480,099.
  - Soteropulos, Gust, 3,479,805.
  - Soteropulos, Gust, 3,480,164.
- De Feo, Richard J.: *See—*
  - Carr, Jesse M., Jr., Byars, Gerald A., and De Feo, Richard J. 3,480,662.
- Dejoux, Jean Veran, to Reisini, Nicolas. Optical printer. 3,480,362, Cl. 355-040.
- Delany, James F., and Walter, Gerard O., to RCA Corporation. Photocomposing apparatus support structure. 3,479,934, Cl. 095-004.5
- Del Giudice, Frank J., to Hardman Aerospace, mesne. Aircraft seat assembly with lateral positioning facility. 3,480,240, Cl. 244-118.
- Della Torre, Giancarlo, to Singer Company, The. Compensating loop taker mechanisms. 3,479,978, Cl. 112-159.
- del Moral, Martin Duarte. Appliance for drying moist articles. 3,479,749, Cl. 034-103.
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- Del Vecchio, Nicholas A., to RCA Corporation. Timing arrangement for document processor. 3,480,762, Cl. 235-061.11
- Dendel, Gerald F.: *See—*
  - Sietmann, Vernon H., 3,479,748.
- Denig, Fred, and Powers, Robert E., to Koppers Company, Inc. Method and apparatus for treating metallurgical furnace gases. 3,480,427, Cl. 075-043.
- Deninson, Jacob Z., and Deninson, Joseph H. Scanning assembly for producing animated images. 3,480,352, Cl. 352-081.
- Deninson, Joseph H.: *See—*
  - Deninson, Jacob Z., and Deninson, Joseph H. 3,480,352.

- D'Entremont, Franklin R., to General Electric Company. Coil winding form. 3,480,229, Cl. 242-118.4
- De Pauw, Richard A., and Knapp, William H., to International Harvester Company. Feeder hitch. 3,479,804, Cl. 056-021.
- Deritend Engineering Company Limited, The: *See—*
  - Bishop, Thomas D., 3,479,931.
- Dersin, Hensjurgen, and Lochner, Horst-Paul, to Siemens Aktiengesellschaft. Method of growing epitaxial layers from binary semiconductor compounds. 3,480,472, Cl. 117-201.
- deSimas, John. Cargo containers. 3,480,196, Cl. 229-023.
- Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See—*
  - Thiele, Kurt, 3,480,663.
- Deve, Vagn. Shell sand treating apparatus and method. 3,480,265, Cl. 263-021.
- DeVries, George: *See—*
  - Sonnenberg, Frederic A., and DeVries, George 3,479,865.
- de Vries, Joseph Gerardus Maria: *See—*
  - van de Kerkhof, Lodevicus Lambertus Johannes, and de Vries, Joseph Gerardus Maria 3,479,718.
- Dewald, Chester L.: *See—*
  - Tilles, Harry, Baker, Don R., and Dewald, Chester L. 3,480,671.
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- De Witt, William J., and Taylor, Robert C., to Atlantic Richfield Company. Primary alcohol sulfate detergent compositions. 3,480,556, Cl. 252-152.
- Diack, Arthur G. Latching and locking device for bypassing sliding doors. 3,479,769, Cl. 049-449.
- Diamond Alkali Company: *See—*
  - Lipowski, Stanley A., and Kelly, James M., 3,480,379.
- Diamond International Corporation: *See—*
  - Peppler, William S., 3,479,930.
- Diamond Shamrock Corporation: *See—*
  - Jackson, William M., and Hengeveld, Frank W., 3,480,555.
- Dieterich, Dieter, Muller, Erwin, and Bayer, Otto, to Farbenfabriken Bayer Aktiengesellschaft. Elastomeric polyurethanes. 3,480,592, Cl. 260-077.5
- Dietzgen, Eugene, Co.: *See—*
  - Brownscombe, Philip J., 3,480,358.
- Digital Equipment Corporation: *See—*
  - Sogge, Richard G., 3,480,768.
- Dillon, Joseph F., Jr., Johnson, Leo F., and Remeika, Joseph P., to Bell Telephone Laboratories, Incorporated. Solid state laser. 3,480,877, Cl. 331-094.5
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- Dillon, Peter: *See—*
  - Rogers, Ernest William, Dillon, Peter, and Mitchell, Christopher Richard 3,480,871.
- Di Meo, Frank N. Litton Precision Products, Inc. Successive approximation rotary angle to digital converter. 3,480,946, Cl. 340-347.
- Dimitracopoulos, Panayotis C., to A. V. Corporation, The, N.V..Audiovisual apparatus. 3,480,356, Cl. 353-019.
- Dislich, Helmut, and Jacobsen, Alfred, to Jenaer Glaswerk Schott & Gen. Method of producing light-conducting systems. 3,480,458, Cl. 117-008.
- Dockery, Benjamin F.: *See—*
  - Haney, Benjamine H., and Dockery, Benjamin F. 3,479,672.
- Doi, Tatsumi, Mineshima, Teruo, and Saito, Etsuro, to Konishiroku Photo Industry Co., Ltd. Photographic copying machine. 3,480,361, Cl. 355-016:
- Dokes, George E.: *See—*
  - Schwarz, Julius, Dokes, George E., Von Bradsky, Otokar, and Goodman, Sidney J. 3,479,780.
- Dole Valve Company, The: *See—*
  - Erickson, Howard L., 3,480,040.
- Dombro, Robert A.: *See—*
  - Sparks, Allen K., and Dombro, Robert A. 3,480,668.
- Donnell, Emerson Bradford, Jr., and Calvert, William L., to Union Carbide Corporation. Heat sealing. 3,480,505, Cl. 156-498.
- Doppler, Leonard H.: *See—*
  - Hardy, John F., and Doppler, Leonard H. 3,480,425.
- Dosal, Martin R., and Salas-Humara, Carlos. Boat drain and valve unit. 3,479,981, Cl. 114-183.
- Douglas, Bryce, and Weisbach, Jerry A., to Smith Kline & French Laboratories. 3,3-Bis(carbo-lower alkoxy) indolo [2,3-a] quinolizinium salts. 3,480,637, Cl. 260-294.3
- Dow Chemical Company, The: *See—*
  - Ashby, Theodore L., and Parrish, Donald B., 3,480,601.
  - Bashaw, Robert N., and Harper, Billy G., 3,480,546.
  - Eilers, Louis H., 3,480,084.
  - Frevel, Ludo K., 3,479,992.
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  - Harmer, David E., Mount, Ramon A., and Vanderbush, James J., Jr., 3,480,534.
  - Hart, Gerald M., and Ricke, James K., 3,480,485.
  - Hart, Gerald M., and Gunderman, Glen L., 3,480,506.
  - Heinert, Dietrich H., 3,480,627.
  - Lacy, George H., 3,480,464.
  - Lee, Richard J., 3,480,168.
  - Mildner, Raymond C., 3,480,725.
  - Pumpelly, Charles T., Pedjac, Joseph J., and Somerville, John S., 3,480,600.
  - Repko, John P., 3,480,198.
  - Schrenk, Walter J., 3,480,502.
  - Tomalia, Donald A., 3,480,649.
  - Topolski, Alvin S., and Trumbull, Walter A., 3,480,189.
  - Walters, Harold A., 3,479,811.
  - Wessling, Ritchie A., and Settineri, William J., 3,480,525.
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  - Woody, Robert, 3,479,896.
  - Ziegler, Earl E., 3,479,779.
- Downs, Robert E., and Karbowski, John S., to Westinghouse Electric Corporation. Linear motion devices. 3,480,807, Cl. 310-012.
- Drake, George L., Jr.: *See—*
  - Beninate, John V., Boylston, Eileen K., and Drake, George L., Jr. 3,480,381.
- Dreyfus, Robert L., to Grace, W. R., & Co. Packaging. 3,479,788, Cl. 053-033.
- Drummond Automotive Inc.: *See—*
  - Grondin, Ernest, 3,480,063.
- Drutchas, Gilbert H.: *See—*
  - Clark, Hubert M., and Drutchas, Gilbert H. 3,480,336.
- Dubuque, Donald J.: *See—*
  - Torrey, Sumner H., Dubuque, Donald J., Weiss, Johnny C., and Sloan, Norman R. 3,480,000.
- Duck, Edward William, and Ridgewell, Brian John, to International Synthetic Rubber Company Limited. Ethylene polymerisation process in the presence of free radicals and solid catalysts including certain trihalides of vanadium or titanium. 3,480,604, Cl. 260-088.2
- Duclaux, Daniel, to Pechiney-Compagnie de Produits Chimiques et Electro metallurgiques. Electrode guide and placement means and method. 3,480,526, Cl. 204-067.
- Duerksen, Arnold, to Cochran Western Corporation, mesne. Reversible trailer train construction. 3,480,295, Cl. 280-408.
- Duffek, Edward F., Jr., and Blech, Ilan A., to Fairchild Camera and Instrument Corporation. Method of fabrication of solder reflow interconnections for face down bonding of semiconductor devices. 3,480,412, Cl. 029-195.
- Duke, Edward D., and Hermiz, Ramiz Y., to International Harvester Company. Elevator mounting for self-loading elevator scraper. 3,479,754, Cl. 037-008.
- Dunay, Michael: *See—*
  - Costanza, John R., and Dunay, Michael 3,480,016.
- Dunham, Robert W.: *See—*
  - Layton, Beryl W., and Dunham, Robert W. 3,480,890.
- Dunlop Rubber Company Limited: *See—*
  - Fletcher, Henry Raymond, 3,480,496.
- Dunn, Lloyd G., to Aluminum Company of America. Metal forming. 3,479,979, Cl. 113-121.
- Duplex, Inc.: *See—*
  - Matthews, Walter T., 3,480,227.
- Du Pont de Nemours, E. I., and Company: *See—*
  - Breton, Ernest J., Eustice, Albert L., and McCauley, Harry J., 3,480,460.
  - Carpenter, John Mc Murray, III, and Smith, Drexel Kermit, 3,480,706.
  - Cummins, Earl W., 3,480,631.
  - Hatcher, John E., 3,480,405.
  - Hoffman, Lewis C., 3,480,566.
  - Mathews, Ralph T., 3,479,948.
  - Moncure, Henry, Jr., 3,480,694.
  - Nestor, James F., 3,480,479.
  - Raynolds, Stuart, 3,480,579.
  - Selman, Stanley, and Squire, Edward N., 3,480,603.
  - Starkweather, Howard Warner, Jr., 3,480,457.
  - Van Dyk, John W., 3,480,547.
  - Vasta, Joseph A., 3,480,560.
  - Waldin, Vincent H., 3,479,833.
- Dura Corporation: *See—*
  - Knapp, Theodore F., 3,480,815.
- Durham, Donald F., and Burk, Duane L., to Caterpillar Tractor Company. Seals for track link assemblies. 3,480,338, Cl. 305-011.
- Durland, Donovan D. Device for making sculpture. 3,479,691, Cl. 018-005.1
- Dyke, Herbert Gordon. Expansible carrying case with web having two stable states. 3,480,118, Cl. 190-044.
- Dymo Industries, Inc.: *See—*
  - Hull, Milton E., 3,479,683.
  - Lee, James H., 3,480,371.
- E-Z Mount Corporation: *See—*
  - Moyer, Paul H., 3,480,241.
- Eads, Charles L.: *See—*
  - Davidson, Robert E., Eads, Charles L., and Soter, Samuel A. 3,479,851.
- Eastman Kodak Company: *See—*
  - Haist, Grant M., and King, James R., 3,480,433.
  - Hanna, Ernest R., 3,480,434.
  - Harvey, Donald M., 3,479,935.
  - Hiatt, Gordon D., and Mench, John W., 3,480,615.
  - Hunter, Walker F., and Mizma, Edward J., 3,479,989.
  - Joyner, Frederick B., and McConnell, Richard L., 3,480,580.
  - Nerwin, Hubert, 3,479,940.
  - Roman, Robert J., 3,480,226.
  - Thweatt, John G., 3,480,678.

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- Wilson, Burton D., 3,480,436.
- Eaton Yale & Towne Inc.: *See—*
  - Golden, Abraham H., 3,479,848.
- Eberman, Augustus H.: *See—*
  - Jensen, Hans A., and Eberman, Augustus H. 3,479,792.
- Eberwein, Siegfried: *See—*
  - Walter, Conrad, and Eberwein, Siegfried 3,480,347.
- Echo Development Co.: *See—*
  - Boggild, Robert, 3,480,731.
- Eckstein, Philipp, to Gustav Gockel Maschinenfabrik G.m.b.H. Stropping device. 3,479,774, Cl. 051-173.
- Edlin, Ray L., and Rocks, James K., to Kelco Company. Canned creamed meat-containing food products by incorporation therein of a water soluble alginate and a soluble magnesium salt. 3,480,450, Cl. 099-187.
- Edwards, William C., to Smith Kline & French Laboratories. Apparatus for measuring blood pressure with an in-cuff microphone and preamplifier. 3,480,004, Cl. 128-002.05
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- Ehrens, Henry, and Weiner, Sidney, to Sealed Unit Parts Co., Inc. Line tap valve and method for tapping into a pipeline. 3,480,036, Cl. 137-318.
- Eiger, William H., to General Motors Corporation. Control for scraper bowl to remove load from hydraulic curcuit when bowl is raised. 3,479,757, Cl. 037-129.
- Eilers, Louis H., to Dow Chemical Company, The. Composition and method using temporary solid diverting agent for aqueous fluids. 3,480,084, Cl. 166-282.
- Eirich, Gustav: *See—*
  - Eirich, Wilhelm, and Eirich, Gustav 3,480,261.
- Eirich, Wilhelm, and Eirich, Gustav. Process of mixing. 3,480,261, Cl. 259-148.
- Eisenbies, John L., to International Business Machines Corporation. Data transmission apparatus. 3,480,915, Cl. 340-172.5
- Eisenmann, John L.: *See—*
  - Sohn, Bernard I., Eisenmann, John L., and Alexander, Samuel S. 3,480,495.
- Eisfeld, Wolfgang T., and Stamm, Walter, to Stauffer Chemical Company. Preparation of bis(1-haloalkyl) sulfides. 3,480,680, Cl. 260-609.
- Eisner, Edward, to Bell Telephone Laboratories, Incorporated. Gas bearing. 3,480,340, Cl. 308-005.
- Eldridge, David G.: *See—*
  - Hayner, Paul F., and Eldridge, David G. 3,479,925.
- Electro-Tec Corporation: *See—*
  - Klein, Dietrich J., 3,480,748.
- Electrosonics International, Inc.: *See—*
  - Hopengarten, Albert, 3,480,863.
- Elliott, Neil C., to Monsanto Company. Container Lid. 3,480,177, Cl. 220-097.
- Elliott, William S., to Collins Radio Company. Electronically tuned filter. 3,480,888, Cl. 333-073.
- Eloranta, Vaito K.: *See—*
  - Land, Edwin H., and Eloranta, Vaito K. 3,479,942.
- Embry, Elisama: *See—*
  - Embry, Raymond S. 3,479,703.
- Embry, Raymond S., deceased (by Embry, Elisama, administratrix). Snap-on button. 3,479,703, Cl. 024-107.
- Emeis, Reimer, and Weber, Wolfgang, to Siemens Aktiengesellschaft. Method for preparing semiconductor crystals. 3,480,474, Cl. 117-224.
- Enemark, Arne F., Kjeldsen, Kjeld, and Larsen, Bendt Wegge, to Danfoss A/S. Fabricated cylinder head and silencer chamber assembly for a refrigerant compressor. 3,480,206, Cl. 230-232.
- Eng, Jackson, and Guggisberg, William R., to Esso Research and Engineering Company. Process for hydrofining bitumen derived from tar sands. 3,480,540, Cl. 208-093.
- Engebretsen, Einar O., to General Electric Company. Additive dispensing means for a washing machine. 3,479,845, Cl. 068-017.
- Engh, Howard A., and Lord, John M., to Automatic Electric Laboratories, Inc. Face panel fastener for a telephone. 3,480,743, Cl. 179-178.
- English Electric Company Limited, The: *See—*
  - Jacks, Eric, and Rowe, Charles, 3,480,901.
  - Yerrell, John Stuart, 3,480,805.
- English Electric-Leo-Marconi Computers Limited: *See—*
  - Beesley, John, and Hyman, Robert Anthony, 3,480,755.
- Entron, Inc.: *See—*
  - Lanham, Charles W., Jr., 3,480,311.
- Envirotech Corporation: *See—*
  - Winter, Heinz, 3,479,904.
- Epstein, Julius,: *See—*
  - Ulert, Izaak A., 3,480,228.
- Erasumus, Albert: *See—*
  - Sohn, August Wilhelm, and Erasumus, Albert 3,480,478.
- Erf, Robert K., Wingfield, Edward C., and Aas, Herbert G., to United Aircraft Corporation. Angle sensing system using a diverging- converging scan. 3,480,368, Cl. 356-172.
- Erickson, Howard L., to Dole Valve Company, The. Single-inlet, double-outlet valve. 3,480,040, Cl. 137-608.
- Erlichman, Irving, to Polaroid Corporation. Extensible camera. 3,479,941, Cl. 095-039.
- Ernest, Frances H. Manicure means. 3,480,020, Cl. 132-088.5
- Ernst, Heinz: *See—*
  - Winkler, Alfred, and Ernst, Heinz 3,479,938.
- Errede, Louis A.: *See—*
  - Allen, Michael G., Errede, Louis A., and Hannula, Rodney R. 3,479,877.
- ERSA Ernst Sachs KG: *See—*
  - Sachs, Ernst, and Schwan, Bernhard, 3,480,759.
- Eshuis, Jannes, to American Enka Corporation. Process for the preparation of yarns for pile fabrics. 3,479,810, Cl. 057-140.
- Esso Production Research Company: *See—*
  - Barry, Adelbert, Chalmers, Franklin L., and Pearson, John B., 3,480,101.
- Esso Research and Engineering Company: *See—*
  - Bauer, Richard H., and Kilpert, Richard, 3,480,493.
  - Carr, Jesse M., Jr., Byars, Gerald A., and De Feo, Richard J., 3,480,662.
  - Eng, Jackson, and Guggisberg, William R., 3,480,540.
  - Luckenbach, Edward C., 3,480,406.
  - Sarsten, Jan A., and Myers, Michael C., 3,479,832.
  - Stark, Thomas M., and Glaser, Marvin B., 3,480,393.
  - Tornqvist, Erik, 3,480,562.
  - Voorhies, Alexis, Jr., Kimberlin, Charles Newton, Jr., and Gladrow, Elroy Merle, 3,480,539.
- Esso Standard Societe Anonyme Francaise: *See—*
  - Alliot, Louis, Auclair, Michel, and Godouet, Francois, 3,480,419.
- Estrabaud, Stephane: *See—*
  - Charbonnier, Roger, and Estrabaud, Stephane 3,480,949.
- Etchells, John L., Bell, Thomas A., and Kittel, Ivan D., to United States of America, Agriculture. Pure culture fermentation of green olives. 3,480,448, Cl. 099-156.
- Ethicon, Inc.: *See—*
  - Medell, Irving Bridgman, 3,479,670.
- Ethyl Corporation: *See—*
  - Meltsner, Bernard R., 3,480,700.
  - Plonsker, Larry, 3,480,413.
- Ettinger, Morris B.: *See—*
  - Barth, Edwin F., and Ettinger, Morris B. 3,480,144.
- Eustice, Albert L.: *See—*
  - Breton, Ernest J., Eustice, Albert L., and McCauley, Harry J. 3,480,460.
- Evans, James L.: *See—*
  - Cornell, Dudley E., III, and Evans, James L. 3,480,150.
- Evans, Trevor Gwilym, and Ryder, Geoffrey Alan, 1/3 to Michael, James. Screw-threaded bottle closures. 3,480,170, Cl. 215-043.
- Everhart, John R.: *See—*
  - Conrad, Lucas J., and Everhart, John R. 3,479,852.
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- Evog, Etablissement fur Verwaltung: *See—*
  - Schuler, Rolf, 3,480,443.
- Ewald, John N., Jr. Method for cleaning toilet bowls. 3,480,021, Cl. 134-024.
- Explosive Technology, Inc.: *See—*
  - Olander, Donald Edgar, 3,480,489.
- Express Dairy Company (London) Limited: *See—*
  - Jackson, David, 3,480,402.
- Fab-Con Machinery Development Corporation: *See—*
  - Catallo, Frank, 3,479,706.
- Faberes, Pierre, and Ribadier, Georges, to CSF-Compagnie Generale de Telegraphie Sans Fil. Control devices for direct-viewing memory tubes. 3,480,824, Cl. 315-012.
- Fabianke, Hartmut: *See—*
  - Baur, Hans, and Fabianke, Hartmut 3,480,732.
- Fairchild Camera and Instrument Corporation: *See—*
  - Burns, Joseph, 3,480,782.
  - Duffek, Edward F., Jr., and Blech, Ilan A., 3,480,412.
- Fairchild Hiller Corporation: *See—*
  - Howell, Russell B., 3,479,890.
- Fairchild, William P., to Kelco Company. Gelled tobacco sheets and method of making same. 3,480,018, Cl. 131-017.
- Fairley, David O., to Automatic Electric Laboratories, Inc., mesne. Step-recovery multiplier modulator. 3,480,882, Cl. 332-016.
- Fallon, Bernard R., to Westinghouse Electric Corporation. Quartz lamp base and socket. 3,480,816, Cl. 313-051.
- Fangman, Charles N., to Caterpillar Tractor Company. Piston pin. 3,479,929, Cl. 092-187.
- Fansteel Inc.: *See—*
  - Hummer, Julius, 3,480,410.
- Farbenfabriken Bayer Aktiengesellschaft: *See—*
  - Dieterich, Dieter, Muller, Erwin, and Bayer, Otto, 3,480,592.
  - Jager, Horst, Horstmann, Walter, Schundehutte, Karl-Heinz, Trautner, Kersten, Siegel, Edgar, and Sasse, Klaus, 3,480,611.
  - Kleine-Weischede, Klaus, 3,480,701.
  - Oertel, Gunter, Holtschmidt, Hans, Wagner, Kuno, and Zenner, Karl-Friedrich, 3,480,591.
  - Taube, Carl, and Freytag, Karl-Heinz, 3,480,378.
- Farbwerke Hoechst Aktiengesellschaft: *See—*
  - Kurzke, Herbert, Bauer, Gunther, and Heinrich, Karl, 3,479,689.
  - Forster, Paul Friedrich, Kurzke, Herbert, Sattler, Helmut, and Schnock, Gunter, 3,480,586.
  - Jacob, Ingolf, and Ueberdiek, Ralf, 3,480,709.

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- Farms, Nichols: *See—*
  - Starling, Edward L., 3,480,296.
- Fawkes, Donald G., to Pratt, Henry, Company. Angle seating butterfly valve with skewed disc. 3,480,254, Cl. 251-305.
- Federal-Mogul Corporation: *See—*
  - Burfield, Peter C., and Micai, Louis Z., 3,479,728.
- Federal Pacific Electric Company: *See—*
  - Laakso, William, 3,480,899.
- Federal Tool Engineering Company: *See—*
  - Pityo, Albert F., 3,479,712.
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- Fejmert, Erik Valdemar. Method and means for mixing a mass of concrete or other material. 3,480,260, Cl. 259-147.
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- Feldmann, Hans-Helmut, to Licentia Patent-Verwaltungs G.m.b.H. Semiconductor circuit assembly. 3,480,837, Cl. 317-100.
- Feller, John R.: *See—*
  - Wright, Achibald N., and Feller, John R. 3,480,553.
- Felsenthal, Martin, Ferrell, Howard H., and Matthews, Robert R., to Continental Oil Company. Pressure pulsing oil production process. 3,480,081, Cl. 166-263.
- Fenton, Donald M., to Union Oil Company of California. Oxidative carbonylation of aromatics. 3,480,669, Cl. 260-515.
- Fenyes, Joseph G. E.: *See—*
  - Look, Melvin, Padgett, Weldon M., II, Hyman, Julius, Fenyes, Joseph G. E., and Lee, Herbert P. C. 3,480,646.
- Ferdinand, Irwin J., and Handler, Milton E., to Hirsh Company. Knockdown steel shelving. 3,479,974, Cl. 108-144.
- Ferdinand, Irwin J., and Handler, Milton J., to Hirsch Company. Lightweight steel shelving. 3,479,975, Cl. 108-144.
- Ferdinand, Irwin J., and Kulbersh, Irwin R., to Hirsh Company. Steel shelving. 3,480,155, Cl. 211-148.
- Ferguson, Harold W., to Stanley Works, The. Piston type operator with power checking. 3,479,924, Cl. 091-165.
- Ferrell, Howard H.: *See—*
  - Felsenthal, Martin, Ferrell, Howard H., and Matthews, Robert R. 3,480,081.
- Fesco, John J., to Studley Paper Company, Inc. Multi-compartment vacuum cleaner filter bag. 3,479,802, Cl. 055-367.
- Fey, Maurice G.: *See—*
  - Wolf, Charles B., Kemeny, George A., and Fey, Maurice G. 3,480,717.
- Fey, Robert M., to General Electric Company. Electro-magnetic clutch. 3,480,124, Cl. 192-084.
- Fiber Industries, Inc.: *See—*
  - Simons, Frank Holmes, 3,480,596.
- Fichter, Manfred, to Kienzle Apparate GmbH. Electronic speed measuring arrangement. 3,480,859, Cl. 324-070.
- Fierce, William L.: *See—*
  - Weichman, Roger L., Walsh, John W., and Fierce, William L. 3,480,568.
- Filson, John Richard. Hermaphrodite electrical connector. 3,480,903, Cl. 339-047.
- Finger, Milton, James, Edward, Jr., and Archibald, Paul B., to United States of America, Atomic Energy Commission. Multiphase extrudable explosive containing cyclotrimethylenetrinitramine or cyclotetramethylenetetranitramine. 3,480,490, Cl. 149-092.
- Finkelstein, Jacob, to Hoffmann-La Roche Ic. 1,4,-Dihydro-3(2H)-isoquinolines and process for their preparation. 3,480,634, Cl. 260-289.
- Firestone Tire & Rubber Company, The: *See—*
  - Farhat, Kelly, 3,480,617.
- Fischbach, Alfred. Injection molding machine. 3,479,695, Cl. 018-030.
- Fischer, Artur. Toy construction kit. 3,479,762, Cl. 046-011.
- Fischer, Artur. Assembly kit having dovetail connection with reduced contact area. 3,479,763, Cl. 046-025.
- Fischer & Porter Co.: *See—*
  - Hermanns, Henry, 3,479,873.
- Fishbaugh, Byron L., to Goodyear Tire & Rubber Company, The. Shock absorber. 3,480,268, Cl. 267-001.
- Fisher, Joseph V., to Semi-Elements, Inc. Manufacture of materials capable of amplifying wave energy. 3,480,552, Cl. 252-062.51
- Fitel, Jay M., and Leigh, Bertram J., to Telsta Corporation. Lifting equipment. 3,480,109, Cl. 182-148.
- Flach, Rolf, and Krause, Fritz, to Kemptener Maschinenfabrik G.m.b.H. Circular binding machine for woven and knitted goods. 3,479,976, Cl. 112-025.
- Flaherty, John J., and O'Connor, Donald T., to Magnaflux Corporation. Medical ultrasonic scanning system. 3,480,002, Cl. 128-002.
- Fleischner, Peter L., and Smoke, Edward J., to United States of America, Navy, mesne. Cordierite ceramic process and product. 3,480,452, Cl. 106-039.
- Fletcher, Henry Raymond, to Dunlop Rubber Company Limited. Methods of manufacturing pneumatic tires. 3,480,496, Cl. 156-128.
- Flur, Barry L., Davidse, Pieter D., and Maissel, Leon I., to International Business Machines Corporation. Magnetic film device. 3,480,922, Cl. 340-174.
- Foley, William H.: *See—*
  - Thompson, Alfred R., Jr., and Foley, William H. 3,480,573.
- Forbro Design Corporation: *See—*
  - Hung, Han-Min, 3,480,852.
- Ford, Lionel Houston, to United Kingdom Atomic Energy Authority. Method of producing a nuclear reactor fuel element. 3,480,702, Cl. 264-000.5
- Forest, Edward: *See—*
  - Weigl, John W., Forest, Edward, and Keller, Carol K. 3,480,962.
- Forkner, John H. Coating method. 3,480,456, Cl. 117-003.
- Forster, Paul Friedrich, Kurzke, Herbert, Sattler, Helmut, and Schnock, Gunter, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of shaped articles, such as fibers, filaments and films, or polyesters. 3,480,586, Cl. 260-047.
- Foster, Edson P. Felting needle. 3,479,708, Cl. 028-004.
- Foster, Edwin E., and Foster, Thomas E., 1/2 to said Foster, Edwin E. Wheel cover. 3,480,329, Cl. 301.037.
- Foster, Kenneth M., to Air Reduction Company, Incorporated. Automatic system for alternate feed of acetylene generator. 3,480,415, Cl. 048-054.
- Foster, Thomas E.: *See—*
  - Foster, Edwin E., and Foster, Thomas E. 3,480,329.
- Foster Wheeler Corporation: *See—*
  - LaCroix, Henry N., 3,480,408.
- Fouche, Jean Clement Louis, to Rhone-Poulenc S.A. Dibenzocycloheptatriene derivatives. 3,480,624, Cl. 260-240.
- Fox, Carl B., Jr.: *See—*
  - Ulert, Izaak A., 3,480,228.
- Fox, Eugene N., to United States of America, Health, Education and Welfare. Alkaline extraction of M protein from group A hemolytic streptococci and products thereof. 3,480,610, Cl. 260-112.
- Foxboro Company, The: *See—*
  - Sonnenberg, Frederic A., and DeVries, George, 3,479,865.
- Fr. Hesser Maschinenfabrik-Aktiengesellschaft: *See—*
  - Kiefer, Heinz, 3,480,470.
- Frampton, Orville D.: *See—*
  - Feldman, Julian, Saffer, Bernard A., and Frampton, Orville D. 3,480,685.
- Francis, James M.: *See—*
  - Mecklin, Charles D., and Francis, James M. 3,479,766.
- Fraser, Ralph. Table football game. 3,480,277, Cl. 273-094.
- Frauendorf, Manfred, to Normbau Maschinenfabrik GmbH & Co. Automatic trouser pressing machine. 3,480,188, Cl. 223-073.
- Fraze, Ermal C.: *See—*
  - Brown, Omar L., 3,479,733.
- Frazier, Bruce J.: *See—*
  - Freeman, Norman L., Jr., and Frazier, Bruce J. 3,480,331.
- Frech, Kenneth J., to Goodyear Tire & Rubber Company, The. Promotion of olefin cracking. 3,480,687, Cl. 260-680.
- Frech, Kenneth J., and Anhorn, Victor J., to Goodyear Tire & Rubber Company, The. Preparation of isoprene. 3,480,688, Cl. 260-680.
- Frederick, Arthur I.: *See—*
  - Pandjiris, Anthony K., and Frederick, Arthur I. 3,480,158.
- Freedman, Hyman. Dental floss container and dispenser. 3,480,190, Cl. 225-033.
- Freedman, Nathan, to United States of America, Air Force. Retrodirective phase shifting transponder. 3,480,951, Cl. 343-006.8
- Freedman, Nathan, to United States of America, Air Force. Radar beacon system with transponder for producing amplified, phase shifted retrodirected signals. 3,480,952, Cl. 343-006.8
- Freeman, Norman L., Jr., and Frazier, Bruce J., to Halliburton Company. Fluidizing conveyor apparatus. 3,480,331, Cl. 302-029.
- Freeman, Percy F. Baler for cotton motes and other materials. 3,479,950, Cl. 100-049.
- French, Walter K., to International Business Machines Corporation. Apparatus for taking fingerprints. 3,479,987, Cl. 118-031.5
- Frevel, Ludo K., to Dow Chemical Company, The. Boiler or the like. 3,479,992, Cl. 122-235
- Frevel, Ludo K., to Dow Chemical Company, The. Wet bottom boiler floor or the like. 3,479,993, Cl. 122-235.
- Frew, Duncan W., Jr., to Shell Oil Company: High-molecular weight, acetoxy-substituted saturated polybutadiene. 3,480,609, Cl. 260-094.7
- Freytag, Karl-Heinz: *See—*
  - Taube, Carl, and Freytag, Karl-Heinz 3,480,378.
- Freytag, Karl-Heinz, Taube, Carl, and Seidel, Bernhard, to Agfa-Gevaert Aktiengesellschaft. Photographic materials for the silver dye-bleach process. 3,480,438, Cl. 096-099.
- Fricke, Guenter, and Singewald, Arno, to Wintershall Aktiengesellschaft. Recovery of kieserite from crude mineral salts. 3,480,139, Cl. 209-009.
- Friedmann, Harry: *See—*
  - Tarpinian, Haiq D., and Friedmann, Harry 3,479,867.

- Frielingsdorf, Hans: *See—*
  - Gouw, Lam H., Voncken, Josef H., Frielingsdorf, Hans, and Powers, Gene W. 3,480,507.
- Frill, Robert H., to North American Rockwell Corporation. Strand guide means for spiral winders. 3,479,808, Cl. 057-010.
- Fritsch, Daniel F.: *See—*
  - Prindell, Stuart M., Jr., Perry, Malcolm R., Martin, Vincent W., and Fritsch, Daniel F. 3,479,815.
- Fritsch, Felix, to Simmerin-Graz-Pauker Aktiengesellschaft fur Maschinen-Kessel-und Waggonbau. Tooth gearing with power distribution. 3,479,909, Cl. 074-714.
- Fritzmeier, Georg, KG.: *See—*
  - Bauer, Simon, and Wittmann, Josef, 3,480,324.
- Frowein, Egbertus Adrianus, to Aktiengesellschaft Brown, Boveri & Cie. Arrangement for pressure-gas switch operating with closed gas circuit and with $SF_6$ as the arc extinguishing medium. 3,480,751, Cl. 200-148.
- Fry, Jeremy J., to Rotork Controls Limited. Control units for valve uctuators. 3,480,746, Cl. 200-047.
- Frye, Jud K. Master key attachment. 3,479,850, Cl. 070-447.
- Fryer, Ross L., and Hill, Dennis C., to Continental Motors Corporation, mesne. In-let valve for internal combustion engine. 3,479,997, Cl. 123-075.
- Fuji Photo Film Co., Ltd.: *See—*
  - Ooue, Shingo, Ueda, Hiroyuki, and Hashiue, Masakazu, 3,480,365.
- Fuji Shashin Film Kabushiki Kaisha: *See—*
  - Tsuyama, Tomotsugu, and Tanaka, Yo, 3,480,357.
- Fuji Shashin Film KabushikiKaisha: *See—*
  - Fukuda, Susumu, 3,480,354.
- Fujita, Yosisige: *See—*
  - Yasutake, Yoshito, and Fujita, Yosisige 3,480,387.
- Fukuda, Susumu, to Fuji Shashin Film KabushikiKaisha. Automatic magazine changing type projector with automatic rewinding means. 3,480,354, Cl. 352-123.
- Fultz, Palmer: *See—*
  - Vogel, Arthur E., and Fultz, Palmer 3,480,288.
  - Vogel, Arthur E., and Fultz, Palmer 3,480,293.
- Funahashi, Muneaki: *See—*
  - Matsui, Isamu, Miyagi, Tamotsu, and Funahashi, Muneaki 3,480,215.
- Fundamental Research Company: *See—*
  - Look, Melvin, Padgett, Weldon M., II, Hyman, Julius, Fenyes, Joseph G. E., and Lee, Herbert P. C., 3,480,646.
- Furst, Andor, and Muller, Marcel, to Hoffman-La Roche Inc. 1,2-Epoxy-steroids. 3,480,620, Cl. 260-239.55
- G.K.N. Screws & Fasteners Limited: *See—*
  - Allsop, Robert T., 3,479,714.
- G.K.N. Screws & Fasterners Limited: *See—*
  - Allsop, Robert T., 3,479,714.
- G.Q. Parachute Company Limited: *See—*
  - Cooper, Daniel Waumsley, 3,480,108.
- Gaboriaud, Paul L. F., 1/2 to Societe Alsacienne d'Etudes et de Travaux (Socaltra). Thyristor inverter. 3,480,850, Cl. 321-007.
- Gaeth, Rudolf H., and Naylor, Floyd E., to Phillips Petroleum Company. Polymerization of 1,3-butadiene. 3,480,608, Cl. 260-094.3
- GAF Corporation: *See—*
  - Goodman, Robert C., and Sames, Delbert W., 3,480,222.
  - Hoover, James E., 3,479,986.
  - Kottman, Joseph J., 3,480,786.
  - Shiraeff, Dimitry Alexis, 3,480,557.
  - Slimowicz, Chester E., 3,480,437.
- Gagnan, Emile: *See—*
  - Cousteau, Jacques Yves, and Gagnan, Emile 3,480,011.
- Gaines, Walter A.: *See—*
  - Reinhold, Donald F., Gaines, Walter A., and Sletzinger, Meyer 3,480,670.
- Galdden, Donald W. Magnetic filter. 3,480,145, Cl. 210-223.
- Galiano, Francis R.: *See—*
  - Hill, Robert W., and Galiano, Francis R. 3,480,693.
- Galkin, Warren. Strap feed and cutoff machine. 3,479,911, Cl. 083-065.
- Gamertsfelder, Allen M. Bean bag game projectile. 3,480,280, Cl. 273-106.
- Gamma Engineering Limited: *See—*
  - Vertesi, Tibor Miklos, and Philipps, Bruce Allan, 3,480,211.
- Gantner, George E., Jr. Optical coincidence data analysis system. 3,480,763, Cl. 235-061.12
- Garber, Lila S. Holder for superposed business forms. 3,480,298, Cl. 282-029.
- Garber, Max J. Limb restraint for intravenous injections and the like. 3,480,013, Cl. 128-133.
- Garcin, Maurice M.P.: *See—*
  - Gauthier, Adrien, and Garcin, Maurice M.P. 3,480,481.
- Gardco Industries, Inc.: *See—*
  - Summerville, Donald V., Jr., 3,480,243.
- Gardner-Denver Company: *See—*
  - Baker, William J., and Hurst, Richard J., 3,480,119.
  - Boeger, James H., 3,480,087.
- Gardner, Newell J., and Lastinger, William R. Emergency door opener for automobiles. 3,479,767, Cl. 049-280.
- Garner, Oscar G., to General Cable Corporation. Coaxial cable with welded metal sheath. 3,480,724, Cl. 174-102.
- Garnett, Clifford. Electrochemical marking arrangement with current limiting device. 3,480,537, Cl. 204-224.
- Gates Rubber Company, The: *See—*
  - Jewell, David E., and Givens, William R., 3,480,269.
- Gaulke, Gary L., to Hyster Company. Steering axle. 3,480,100, Cl. 180-079.2
- Gaunt, Wilmer B., Jr., to Bell Telephone Laboratories, Incorporated. Hybrid circuit. 3,480,742, Cl. 179-170.
- Gaunt, Wilmer B., Jr., to Bell Telephone Laboratories, Incorporated. Frequency modulated phase-locked oscillator. 3,480,883, Cl. 332-019.
- Gauss Electrophysics, Inc.: *See—*
  - Johnson, Keith O., and Gregg, David Paul, 3,480,736.
- Gauthier, Adrien, and Garcin, Maurice M.P., to Societe Les Piles Wonder. Electrochemical generator. 3,480,481, Cl. 136-111.
- Gebhardt, Joseph J., to United States of America, Navy, mesne. Process for depositing boron carbide. 3,480,467, Cl. 117-093.
- Geigy Chemical Corporation: *See—*
  - Block, Fred B., and Clarke, Frank H., Jr., 3,480,638.
  - Catsch, Alexander, 3,480,715.
- Geissler, Ambros, and Singer, Edwin, to Vogue Instrument Corporation, mesne. Buffer data storage system using a cyclical memory. 3,480,931, Cl. 340-174.1
- Gelfenbein, Evgeny Jukhimovich: *See—*
  - Bykov, Vladimir Alexandrovich, Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Karlinsky, Stanislav Evgenievich, Niskovskikh, Vitaly Maximovich, Orlov, Boris Yakovlevich, Sokolovsky, Oleg Petrovich, and Khimich, Georgy Lukich 3,480,074.
  - Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Kuznetsov, Leonid Georgievich, Niskovskikh, Vitaly Maximovich, and Rolnik, Savva Abramovich 3,480,075.
- Gelzheiser, Francis L., and De Angelo, Gerald J. Circuit breaker with improved conducting path and trip means. 3,480,900, Cl. 337-075.
- Gem Oil Tool Company: *See—*
  - Alexander, Granison T., Jr., 3,480,037.
- General Cable Corporation: *See—*
  - Garner, Oscar G., 3,480,724.
- General Dynamics Corporation: *See—*
  - Osborne, William E., 3,480,775.
- General Electric Company: *See—*
  - Bedford, Burnice D., and Turnbull, Fred G., 3,480,797.
  - Belt, John E., Hittel, Lorenz A., and Rakoczi, Laszlo L., 3,480,916.
  - Canfield, Eugene B., 3,479,886.
  - D'Entremont, Franklin R., 3,480,229.
  - Engebretsen, Einar O., 3,479,845.
  - Fey, Robert M., 3,480,124.
  - Giegerich, Bertrand V., 3,480,898.
  - Goodridge, Lawrence C.4 General Electric Company, 3,480,344.
  - Gough, Alfred B., 3,480,772.
  - Helberg, Henry J., and Proxmire, Harry J., 3,480,897.
  - Hershberger, Doran D., 3,480,812.
  - Kendall, Louis F., Jr., and Bredt, James H., 3,480,554.
  - Mathes, Kenneth N., 3,480,846.
  - Nash, Dudley O., 3,480,236.
  - Newhouse, Vernon L., and Mundy, Joseph L., 3,480,920.
  - Porter, Dennis A., and White, Robert R., 3,480,790.
  - Rich, Joseph A., 3,480,821.
  - Richardson, John R., 3,480,843.
  - Venable, Lawrence B., 3,480,342.
  - Wright, Achibald N., and Feller, John R., 3,480,553.
  - Xenakis, Sabbas N., 3,480,826.
  - Zerfoss, Robert W., 3,479,701.
- General Foods Corporation: *See—*
  - Mitchell, William A., and Seidel, William C., 3,480,444.
- General Mills, Inc.: *See—*
  - Jones, Duane A., 3,480,511.
- General Motors Corporation: *See—*
  - Colautti, Albert J., and Suszko, Donald H., 3,479,727.
  - Coutilish, George P., 3,480,271.
  - Eiger, William H., 3,479,757.
  - Houser, Robert L., 3,480,149.
  - Jamerson, Frank E., Leffert, Charles B., and Rees, David B., 3,480,803.
  - Mantel, Edward R., Vigor, Charles W., and Iwankovitsch, Stephen W., 3,479,731.
  - Noirot, Michel, and Quatredeniers, Claude, 3,479,928.
  - Pietrzak, Joe P., 3,480,251.
  - Riddel, John W., 3,479,875.
  - Thomas, Paul A., 3,480,941.
  - Tipton, Donald L., 3,480,804.
  - Valus, James K., 3,479,906.
  - Voorhies, Donald A., 3,480,530.
- General Safety, Inc.: *See—*
  - Cleveland, Floyd M., 3,480,242.
- Genin, Robert I., to Child Guidance Toys Inc. Musical typewriter. 3,479,918, Cl. 084-404.
- George, Paul J., to Goodrich, B. F., Company, The. Condensation polymers of benzimidazolone. 3,480,593, Cl. 260-077.5
- Gerlach, Richard K., and Lawrence, William H., to National Cash Register Company, The. Magnetic transducer head assembly. 3,480,936, Cl. 340-174.1

- Gessler, Jan Klaus, to British Ropes Limited. Resistance welding. 3,480,754, Cl. 219-057.
- Gewerkschaft Eisenhutte Westfalia: *See—*
  - Kerschek, Rudi, 3,480,130.
- Ghelfi, Leo L. Differential pressure tool. 3,480,088, Cl. 173-078.
- Gidden, David William: *See—*
  - Allen, Melvin Oland, 3,480,833.
- Gidden, Howard Eugene: *See—*
  - Allen, Melvin Oland, 3,480,833.
- Gidden, Joe H.: *See—*
  - Allen, Melvin Oland, 3,480,833.
- Giegerich, Bertrand V., to General Electric Company. Combined fuse and switch operator assembly. 3,480,898, Cl. 337-004.
- Giese, Jack W. Adjustable applicator for lubricating ball bearings. 3,480,112, Cl. 184-001.
- Gilbert, Andrew: *See—*
  - Bryce-Smith, Derek, Gilbert, Andrew, and Vickery, Brian 3,480,532.
- Gilbert, Elmer G., to Applied Dynamics, Inc. Analog and analog-digital computer mode and time-scale control system. 3,480,769, Cl. 235-183.
- Gilbert, Everett E., Oxenrider, Bryce C., and Schmitt, George J., to Allied Chemical Corporation. Polycarbonate resins. 3,480,585, Cl. 260-047.
- Gill, John B. Apparatus for gripping a pipe. 3,480,270, Cl. 269-131.
- Gill, Lawrence H.: *See—*
  - Phlipot, James R., Gill, Lawrence H., and Clifford, Earl W. 3,480,026.
- Gilliland, Harold E., to Continental Oil Company. In situ retorting of oil shale using $CO_2$ carrier. 3,480,082, Cl. 166-266.
- Gingher, Carl E. Hanger stem. 3,480,245, Cl. 248-317.
- Girling Limited: *See—*
  - Rath, Heinrich Bernhard, 3,480,116.
- Givens, William R.: *See—*
  - Jewell, David E., and Givens, William R. 3,480,269.
- Gladrow, Elroy Merle: *See—*
  - Voorhies, Alexis, Jr., Kimberlin, Charles Newton, Jr., and Gladrow, Elroy Merle 3,480,539.
- Glaser, Marvin B.: *See—*
  - Stark, Thomas M., and Glaser, Marvin B. 3,480,393.
- Glass Laboratories Company: *See—*
  - Shanok, Jesse P., and Shanok, Victor, 3,480,462.
- Glass, Marvin, & Associates: *See—*
  - Jernstrom, Hans, and Glass, Marvin I., 3,480,275.
  - Meyer, Burton C., and Glass, Marvin I., 3,479,764.
- Glass, Marvin I.: *See—*
  - Meyer, Burton C., and Glass, Marvin I. 3,479,764.
  - Jernstrom, Hans, and Glass, Marvin I. 3,480,275.
- Glemby, Kenneth: *See—*
  - Lane, Curtis, Glemby, Kenneth, and Greenstein, Leon 3,479,835.
- Global Divers and Contractors, Inc.: *See—*
  - Ostarly, Adam R., 3,479,830.
- Gluntz, Glenn Harlan, to AMP Incorporated. Mounting means for an electrical connector. 3,480,904, Cl. 339-065.
- Godouet, Francois: *See—*
  - Alliot, Louis, Auclair, Michel, and Godouet, Francois 3,480,419.
- Goeldner, Richard W., to Aqua-Chem, Inc. Method and apparatus for vapor compression distillation and vapor washing of impure water. 3,480,515, Cl. 203-010.
- Goemann, Juergen, and Grimm, Wolfgang, to Hauni-Werke Koerber & Co., K.G. Cutting mechanism for cigarette machines or the like. 3,479,913, Cl. 083-310.
- Goetel Inc.: *See—*
  - Van Ornum, Delbert G., 3,480,829.
- Golden, Abraham H., to Eaton Yale & Towne Inc. Side bar lock. 3,479,848, Cl. 070-364.
- Golden, James E., to Reliable Electric Company. Splice for conductor pairs. 3,480,723, Cl. 174-088.
- Goldfaden, Louis: *See—*
  - Ulert, Izaak A., 3,480,228.
- Goldie, Harry, to Westinghouse Electric Corporation. Thyratron waveguide switch with density enhancement for operation in 27 to 40 gHz. range. 3,480,828, Cl. 315-039.
- Goldkamp, Arthur H., to Searle, G. D., & Co. 17-Oxygenated 3-alkoxy-2-aminosulfonylestra-1,3, 5(10)-trienes and congeners. 3,480,618, Cl. 260-239.5
- Goldstein, Murray S.: *See—*
  - Lerman, Harold, and Goldstein, Murray S. ,480,965.
- Gomez, Jose J.: *See—*
  - Lattis, Donald J., Congleton, Wayne L., and Gomez, Jose J. 3,479,759.
- Gonzalez, Frank A., to Medical Electroscience Inc. Apparatus for collecting and cooling blood. 3,480,015, Cl. 128-276.
- Good, Dorothy I., and Morgan, Rose M., to Lab-Line Bromedical Products, Inc. Automatic apparatus for applying covers to biological slides. 3,480,504, Cl. 156-356.
- Goodhue, John B. Climbing apparatus adapted for installation on piers and the like. 3,480,107, Cl. 182-097.
- Goodman, Robert C., and Sames, Delbert W., to GAF Corporation. Photocopy apparatus having roll sheet material support means. 3,480,222, Cl. 242-055.3
- Goodman, Sidney J.: *See—*
  - Schwarz, Julius, Dokes, George E., Von Bradsky, Otokar, and Goodman, Sidney J. 3,479,780.
- Goodman, Willard B., to Shell Oil Company. Method and apparatus for forming end bearing piles. 3,479,829, Cl. 061-053.6
- Goodrich, B. F., Company, The: *See—*
  - George, Paul J., 3,480,593.
  - Huber, Victor R., 3,480,064.
  - Kelley, Philip C., 3,480,690.
  - Park, John C., 3,480,599.
- Goodridge, Lawrence C.4 General Electric Company, to General Electric Company. Concealed front fastener for electrical power distribution panelboards. 3,480,344, Cl. 312-242.
- Goodyear Tire & Rubber Company, The: *See—*
  - Boyer, Ralph K., 3,479,868.
  - Fishbaugh, Byron L., 3,480,268.
  - Frech, Kenneth J., 3,480,687.
  - Frech, Kenneth J., and Anhorn, Victor J., 3,480,688.
  - Hillhouse, Mial T., 3,480,062.
  - Kell, Ralph W., 3,480,339.
- Goodykoontz, James R., to TRW Inc. Fluidic numeric readout device. 3,480,208, Cl. 235-201.
- Gorbatenko, George G.: *See—*
  - Benson, Allen B., Gorbatenko, George G., Jursik, James, Kath, Ronald E., Ovrebo, Jerry D., and Skrenes, David H. 3,480,795.
- Gordon, Colin G.: *See—*
  - Jones, Royal V., Jr., Allen Clayton H., and Gordon, Colin G. 3,480,283.
- Gordon, Kenneth: *See—*
  - Siddons, John Royston, and Gordon, Kenneth 3,480,089.
- Gorin, Chanuch: *See—*
  - Mitzmager, Abraham, and Gorin, Chanuch 3,480,143.
- Gorka, Edward R.: *See—*
  - Austin, Arthur C., Gorka, Edward R., and Kaleta, Norbert W. 3,480,104.
- Goshima, Takeshi, to Canon Camera Company, Incorporated. Automatic focussing device for photographic cameras. 3,479,943, Cl. 095-045.
- Gotze, Johannes: *See—*
  - Kampfer, Helmut, Gotze, Johannes, Reister, Oskar, and Bockly, Erich 3,480,439.
- Gough, Alfred B., to General Electric Company. Luminaire. 3,480,772, Cl. 240-025.
- Gouw, Lam H., Voncken, Josef H., Frielingsdorf, Hans, and Powers, Gene W., to Shell Oil Company. Process for the preparation of fibrous, filamentous products and the resultant product. 3,480,507, Cl. 161-178.
- Grace, W. R., & Co.: *See—*
  - Dreyfus, Robert L., 3,479,788.
  - Harrison, John W., 3,479,789.
- Gradeff, Peter S.: *See—*
  - Meuly, Walter C., and Gradeff, Peter S. 3,480,677.
- Grane, Henry R.: *See—*
  - Bitar, Louie S., and Grane, Henry R. 3,480,666.
- Granqvist, Carl-Erik, to AGA Aktiebolag. Apparatus for generating an angle-representative voltage. 3,480,770, Cl. 235-189.
- Graulier, Maxime, to Produits Chimiques Pechiney-Saint Gobain. Preparation of active alumina agglomerates of high mechanical strength. 3,480,389, Cl. 023-143.
- Graves, Donald C.: *See—*
  - Kruizenga, Jack R., Graves, Donald C., and Role, Harry 3,479,724.
- Gravimetrics Incorporated: *See—*
  - Codina, Jorge G., 3,480,908.
- Gray, Charles E. Folding bandsaw-disc sander. 3,480,051, Cl. 144-001.
- Gray, Trevor, and Neish, David Anthony, to Decca Limited. Doppler navigation apparatus. 3,480,954, Cl. 343-008.
- Greathouse, Walton D.: *See—*
  - Spencer, John R., Greathouse, Walton D., and Cheek, James H. 3,479,797.
- Greenberg, Sanford David, and Norvell, Bert E., to Cambridge Research and Development Group, mesne. Apparatus for reducing time duration of signal reproduction. 3,480,737, Cl. 179-100.2
- Greendorfer, Joseph M.: *See—*
  - Rudy, Thomas P., Nakagawa, Toshio W., and Greendorfer, Joseph M. 3,480,488.
- Greenstein, Leon: *See—*
  - Lane, Curtis, Glemby, Kenneth, and Greenstein, Leon 3,479,835.
- Gregg, David Paul: *See—*
  - Johnson, Keith O., and Gregg, David Paul 3,480,736.
- Gregord, Thomas, and Kania, Robert Charles, to Koppers Company, Inc. Horizontally movable platform having a vertically movable carriage for oxygen steelmaking operations. 3,480,267, Cl. 266-034.
- Greutman, William J. Float switch cutoff means. 3,480,749, Cl. 200-084.
- Grib, Boris F., to Philamon Incorporated. Tuning fork resonator with reed-mode damping and reed signal cancellation. 3,480,809, Cl. 310-025.
- Griffin, Gary A.: *See—*
  - Smythe, William J., Shamos, Morris H., and Griffin, Gary A. 3,480,369.
- Griffolyn Company, Inc.: *See—*
  - Schoening, Werner Peter, 3,480,059.
- Grimm, Wolfgang: *See—*
  - Goemann, Juergen, and Grimm, Wolfgang 3,479,913.
- Grinnell Corporation: *See—*
  - Balhouse, Harold J., 3,479,696.

Groat, Marshall O., to Kingsberry Homes Corporation. Process and apparatus for setting nails in elongated members. 3,479,734, Cl. 029-525.
Groenke, Merlin A., to Portable Elevator Manufacturing Company. Adjustable shank assembly. 3,480,086, Cl. 172-710.
Grondin, Ernest, to Drummond Automotive Inc. Tire chains. 3,480,063, Cl. 152-230.
Grosbard, Gregory, 15 1/4% to Salazar, Francis R. 15 1/4% to Brooks, Max, and 2 1/2% to Ward, Texas. Magnetic accelerator. 3,480,811, Cl. 310-156.
Grosko, John A., to United States Steel Corporation. Sliding gate for metal-holding vessel. 3,480,186, Cl. 222-512.
Gruendler Crusher & Pulverizer Co.: *See—*
Shelton, Harry J., Jr., 3,480,213.
Gucker, George: *See—*
Barbieri, John Dante, and Gucker, George 3,480,788.
Guggisberg, William R.: *See—*
Eng, Jackson, and Guggisberg, William R. 3,480,540.
Guinn, Jerry H., and Wright, William Sherwood, 50% to Cardinal Chemical, Inc., and Producers Chemical Company. Well treating methods using temperature surveys. 3,480,079, Cl. 166-250.
Gulf Oil Corporation: *See—*
Hill, Robert W., and Galiano, Francis R., 3,480,693.
Rankin, David, 3,480,463.
Gunderman, Glen L.: *See—*
Hart, Gerald M., and Gunderman, Glen L. 3,480,506.
Gusakov, Gennady Nilolaevich: *See—*
Roschin, Vladislav Vasilievich, Muromtsev, Boris Ivanovich, Gusakov, Gennady Nilolaevich, and Maslov, Leonid Ivanovich 3,480,758.
Gustav Gockel Maschinenfabrik G.m.b.H.: *See—*
Eckstein, Philipp, 3,479,774.
Gut, Marcel: *See—*
Loken, Bjarte, and Gut, Marcel 3,480,621.
Gwaltney Incorporated: *See—*
Sumption, Richard F., 3,480,449.
Gyongyosi, Laszlo, to Ingersoll-Rand Company. Feed apparatus for rock drills. 3,480,091, Cl. 173-160.
Habig, Wydell W.: *See—*
Van Horssen, Arden D., Habig, Wydell W., Shortell, Raymond E., and Smiley, George C. 3,480,722.
Hack, Arthur W., and Konigsdorf, Wolfgang, to Corn Products Company. Production of seasonings with a flavor similar to meat extract. 3,480,447, Cl. 099-140.
Hadden, Edward Leal, to AMP Incorporated. Tool for making clip-type electrical connections. 3,479,719, Cl. 029-203.
Hadjandreas, Andrew P., to United States of America, Navy, mesne. Frequency control switching system. 3,480,866, Cl. 325-423.
Hagen, Reinold. Apparatus for producing hollow plastic articles. 3,479,690, Cl. 018-005.
Hager, Jerome E.: *See—*
Braus, Harry, Hager, Jerome E., and Hill, Lestera A., Jr. 3,480,581.
Hager, Jurg, to Mettler Instrumente AG. Method and apparatus for measuring the boiling point of a liquid. 3,479,859, Cl. 073-017.
Hahn, Frank J., and Isaksen, Robert A., to Monsanto Company. Non-aqueous solution of butylated melamine- formaldehyde condensate and a maleic anhydride adduct with an oleic acid ester of allyl alcohol— styrene copolymer. 3,480,574, Cl. 260-021.
Hain, Josef: *See—*
Sucher, Josef, Werner, Siegfried, Schlosser, Hellmut, Chojnowski, Manfred, and Hain, Josef 3,479,723.
Haist, Grant M., and King, James R., to Eastman Kodak Company. Thermally activatable diazotype compositions. 3,480,433, Cl. 096-049.
Hale, Warren F., to Union Carbide Corporation. Polyhydroxyether compositions containing polycarbonates. 3,480,695, Cl. 260-860
Halka, John J., Jr.: *See—*
Halko, John J., Jr., 3,480,313.
Halko, John J., Jr., to Burke, Ben, and Halka, John J., Jr., and Blackstien, Allan A. Frame structure. 3,480,313, Cl. 287-189.36
Hall, Frank K., to Brown, D. S., Company, The. Elongated, hollow, elastomer sealing strip with elongated, laterally deformable spring. 3,479,933, Cl. 094-018.
Hall, James Edward: *See—*
Barradell-Smith, Richard, Hall, James Edward, and Roby, James 3,480,160.
Hall, Jeffrey, to Holset Engineering Company Limited. Torsional vibration damper. 3,479,907, Cl. 074-574.
Hall, Norman M.: *See—*
Chow, Alfred W., and Hall, Norman M. 3,480,628.
Halliburton Company: *See—*
Freeman, Norman L., Jr., and Frazier, Bruce J., 3,480,331.
Hallstrom, James R., and Lopez, John A., to Shell Oil Company. Paint compositions comprising epoxy resin ester, pigment and glass fibers or polypropylene powder. 3,480,577, Cl. 260-023.
Hamann, Karl: *See—*
Feinauer, Roland, Hamann, Karl, and Jacobi, Manfred 3,480,647.
Hamby, Robert L., 50% to Caughron, Sam M. Three-way vehicle mirror. 3,480,350, Cl. 350-304.
Hamer, Geoffrey: *See—*
Hsu, Charles T., and Hamer, Geoffrey 3,480,025.
Hamilton, Donald Arthur, to Xerox Corporation. Chemical package. 3,480,398, Cl. 023-253.
Hamilton, Donald Arthur, to Xerox Corporation. Chemical package. 3,480,399, Cl. 023-253.
Hamilton Watch Company: *See—*
Prindell, Stuart M., Jr., Perry, Malcolm R., Martin, Vincent W., and Fritsch, Daniel F., 3,479,815.
Hamlin-Stevens, Incorporated: *See—*
Lynge, Carl H., 3,480,461.
Hammes, Wilhelm, to Mauser Kommandit-Gesellschaft. Closure. 3,480,169, Cl. 215-040.
Hammitt, Max M. Suspension system for a snow vehicle. 3,480,096, Cl. 180-005.
Hammond Corporation: *See—*
Kohls, Norman R., Nykl, Clarence A., Jr., and Ayres, William R., 3,480,718.
Hammond, Ellane B.: *See—*
Morley, Ervin W., 3,479,985.
Hammonds, James C., to ACF Industries, Incorporated. Cushioned support structure for railway car. 3,479,969, Cl. 105-368.
Hampton, Willis: *See—*
Waltrip, Owen R., 3,480,529.
Hanak, Joseph John, to RCA Corporation. Magnetic heads. 3,479,738, Cl. 029-603.
Hand, Ross L., Jr., to Lockheed Aircraft Corporation. Radiant energy target acquisition and tracking logic system. 3,480,779, Cl. 250-203.
Handler, Milton E.: *See—*
Ferdinand, Irwin J., and Handler, Milton E. 3,479,974.
Handler, Milton J.: *See—*
Ferdinand, Irwin J., and Handler, Milton J. 3,479,975.
Handwerker, Gary R., to Midwest Canvas Corporation. Temporary wall construction. 3,480,069, Cl. 160-354.
Haney, Benjamine H., and Dockery, Benjamin F., to Hickory Springs Manufacturing Company, Inc. Upholstery edge springs. 3,479,672, Cl. 005-260.
Hankins, Maxey A., to Mole-Richardson Co. Upright stand with adjustable leg span. 3,480,250, Cl. 248-168.
Hanna, Ernest R., to Eastman Kodak Company. Sensitizer for blue-sensitive emulsions. 3,480,434, Cl. 096-074.
Hannula, Rodney R.: *See—*
Allen, Michael G., Errede, Louis A., and Hannula, Rodney R. 3,479,877.
Hanscom, H. F., & Company, Inc.: *See—*
Hanscom, Harris F., 3,480,219.
Hanscom, Harris F., 3,480,220.
Hanscom, Harris F., to Hanscom, H. F., & Company, Inc. Machine for winding cord-like members into hank form. 3,480,219, Cl. 242-053.
Hanscom, Harris F., to Hanscom H. F., & Company, Inc. Machine for winding and transferring hanked material. 3,480,220, Cl. 242-053.
Hansford, Rowland C. Dehydrocyclization process and catalyst. 3,480,684, Cl. 260-673.5
Hardison, Adam M. Apparatus for processing liquid food products. 3,480,451, Cl. 099-234.
Hardison, Leslie C., to Universal Oil Products Company. Selective removal of oxygen from a hydrogen- ethylene stream. 3,480,384, Cl. 023-002.
Hardman Aerospace: *See—*
Del Giudice, Frank J., 3,480,240.
Hardy, John F., and Doppler, Leonard H., to Cabot Corporation. Method for reducing the pyrophoricity of metallic powders. 3,480,425, Cl. 075-000.5
Haren, Ralph J.: *See—*
Shaff, Gerald H., Smith, Frank R., Haren, Ralph J., and Chiappe, Orlando J. 3,479,725.
Hargasser, Hans: *See—*
Ruchardt, Hugo, Hargasser, Hans, and Meer, Winfried 3,480,845.
Hari, Istvan: *See—*
Ronco, Karl, and Hari, Istvan 3,480,625.
Harlin, Lester E., to Borg-Warner Corporation. Lubrication system for rotary compressor. 3,480,204, Cl. 230-152.
Harman, Michael Godfrey, to National Cash Register Company, The. Associative magnetic memory devices and matrices. 3,480,927, Cl. 340-174.
Harmer, David E., Mount, Ramon A., and Vanderbush, James J., Jr., to Dow Chemical Company, The. Transbromination process. 3,480,534, Cl. 204-163.
Harper, Billy G.: *See—*
Bashaw, Robert N., and Harper, Billy G. 3,480,546.
Harr, George B., to Air Logistics Corporation. Container safety wall. 3,480,058, Cl. 150-000.5
Harris, Glyn Islwyn: *See—*
Archer, David Frederick, and Harris, Glyn Islwyn 3,480,584.
Harris, Kenneth D. Clamp. 3,480,309, Cl. 287-110.
Harrison, John W., to Grace, W. R., & Co. Package and method of making same. 3,479,789, Cl. 053-034.
Hart, Gerald M., and Gunderman, Glen L., to Dow Chemical Company, The. Wood laminated with a modified ethylene polymer and a polyalkylene imine. 3,480,506, Cl. 161-165.
Hart, Gerald M., and Rieke, James K., to Dow Chemical Company, The. Corrosion resistant iron or steel. 3,480,485, Cl. 148-006.15
Hartmann, Ludwig A., to Atlas Chemical Industries, Inc. Preparation of 2,5-sorbitan. 3,480,651, Cl. 260-347.8
Harvey, Donald M., to Eastman Kodak Company. Automatic shutter control. 3,479,935, Cl. 095-010.
Hasell, Henry P., and Chauvin, Bernard, to Westinghouse Electric Corporation. Base and contact structure for a multi-flashlamp unit. 3,480,771, Cl. 240-001.3

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Hashimoto, NRISHIGE: *See—*
Matsui, Yutaka, Hashimoto, NRISHIGE, and Mise, Nritoshi 3,480,567.
Hashiue, Masakazu: *See—*
Ooue, Shingo, Ueda, Hiroyuki, and Hashiue, Masakazu 3,480,365.
Hassell, Howard L., and Hayter, Roy G., to Shell Oil Company. Alpha olefin block copolymers and their preparation. 3,480,696, Cl. 260-878.
Hatcher, John E., to Du Pont de Nemours, E. I., and Company. Fluid-cooled catalyst support structure. 3,480,405, Cl. 023-288.
Hatten, Bernard W., to Westinghouse Electric Corporation. Oil noise baffle. 3,480,205, Cl. 230-232.
Hauffe, William L.: *See—*
Mueller, Frank H., Hauffe, William L., and Hood, William A. 3,480,042.
Hauni-Werke Koerber & Co., K.G.: *See—*
Goemann, Juergen, and Grimm, Wolfgang, 3,479,913.
Hauni Werke Korber & Co., KG.: *See—*
Bardenhagen, Dietrich, and Schubert, Bernhard, 3,479,787.
Hauser, Ray L., to Branson Instruments Incorporated. Method of bonding using exothermic adhesive activated by ultrasonic energy. 3,480,492, Cl. 156-073.
Hawkins, Edwin F.: *See—*
Batchelor, Gordon S., and Hawkins, Edwin F. 3,480,710.
Hay, Alan Edward: *See—*
Loukes, David Gordon, and Hay, Alan Edward 3,480,420.
Hayden, Rodney, to United-Carr Incorporated, mesne. Lamp flashing system for vehicles. 3,480,944, Cl. 340-331.
Hayes, Leonard L., to Potlatch Forests, Inc. Chucks for veneer lathe loaders. 3,480,052, Cl. 144-209.
Hayner, Paul F., and Eldridge, David G., to Sanders Associates, Inc. Hydraulic signal summing and control system. 3,479,925, Cl. 091-367.
Hayter, Roy G.: *See—*
Hassell, Howard L., and Hayter, Roy G. 3,480,696.
Hebel Gasbetonwerk G.m.b.H.: *See—*
Vogele, Josef, 3,480,705.
Heil, Hans W., to Hughes Aircraft Company. Method and apparatus for producing a color kinescope and blank unit therefor. 3,479,711, Cl. 029-025.13
Heim, Armin, and Hillebrand, Friedhelm, to Kloeckner-Werke AG. Core portion of a railroad frog and method of making the same. 3,480,072, Cl. 164-093.
Heimel, Kurt: *See—*
Debus, Karl, and Heimel, Kurt 3,480,133.
Heine, John C.: *See—*
Allen, Clayton H., and Heine, John C. 3,480,281.
Heinert, Dietrich H., to Dow Chemical Company, The. Preparation of trialkenyl isocyanurates. 3,480,627, Cl. 260-248.
Heinrich, Karl: *See—*
Kurzke, Herbert, Bauer, Gunther, and Heinrich, Karl 3,479,689.
Heiss, Herbert L., to Mobay Chemical Company. N-tin carbamic acid derivatives. 3,480,656, Cl. 260-429.7
Helberg, Henry J., and Proxmire, Harry J., to General Electric Company. Adjustable sliding brush transformer and method of producing same. 3,480,897, Cl. 336-149.
Helein, Jean G.: *See—*
Rouxel, Roland, and Helein, Jean G. 3,480,765.
Hellborg, Lars Ingvar, to Sobrefina S.A., mesne. Method of uniting a plurality of first objects with a corresponding number of second objects. 3,479,726, Cl. 029-429.
Hellige, Fritz, & Co. G.m.b,H.: *See—*
Schomber, Veit, 3,480,006.
Hellmuth, Walter W., Kivelevich, Doris, Dadura, James G., and Morissette, Bertrand G., to Texaco Inc. Alkaline earth metal polyborate carbonate overbased alkaline earth metal sulfonate lube oil composition. 3,480,548, Cl. 252-033.4
Hellstrom, Harold Richard. Irrigational systems. 3,479,825, Cl. 061-013.
Hellthaler, Arno: *See—*
Hermanson, Ronald O., and Hellthaler, Arno 3,479,903.
Helrigel, Robert Arthur, to Bliss, E. W., Company. Flywheel assembly. 3,479,905, Cl. 074-572.
Henderson, Bennett M., Ratner, Hyman, and Wittner, Eugene, to Shell Oil Company. Lubicant containing mixture of low and high molecular weight sulfonates. 3,480,550, Cl. 252-033.
Henderson, Harold P. Pipe nipple. 3,480,299, Cl. 285-004.
Hendon Construction Company: *See—*
Schwarz, Julius, Dokes, George E., Von Bradsky, Otokar, and Goodman, Sidney J., 3,479,780.
Hendrickson, George H., to United States Steel Corporation. Apparatus for replacing rotatable members. 3,479,715, Cl. 029-200.
Hengeveld, Frank W.: *See—*
Jackson, William M., and Hengeveld, Frank W. 3,480,555.
Henrich, Robert S.: *See—*
Thornsen, Bernard L., Henrich, Robert S., and Mayer, Leo F. 3,480,849.
Heraeus-Schott Quarzschmelze G.m.b.H.: *See—*
Schmitt, Heinz, 3,480,151.
Heraeus, W. C., G.m.b.H.: *See—*
Thiede, Maria nee Mentzner, and Ruthardt, Konrad, 3,480,429.
Hercules Incorporated: *See—*
Lees, Ronald D., 3,480,541.
Paul, James T., Jr., 3,480,498.
Paul, James T., Jr., 3,480,499.
Hermanns, Henry, to Fischer & Porter Co. Self-cleaning electrodes. 3,479,873, Cl. 073-194.
Hermanson, Ronald O., and Hellthaler, Arno, to Teleflex Incorporated. Motion transmitting remote control assembly. 3,479,903, Cl. 074-502.
Hermiz, Ramiz Y.: *See—*
Duke, Edward D., and Hermiz, Ramiz Y. 3,479,754.
Heron, John Aherne. Method of shell moulding and casting. 3,480,071, Cl. 164-036.
Hershberger, Doran D., to General Electric Company. Signal generating device for use in conjunction with a dynamoelectric machine and the like. 3,480,812, Cl. 310-168.
Herubel, Jean-Frederic, to N. Schlumberger & Cie. Belt drive for spindles on continuous spinning or twisting frames. 3,479,809, Cl. 057-105
Hesse, Alfred, and Bindel, Wolfgang, to Olympia Werke AG. Printing platen for calculating and bookkeeping machines. 3,480,127, Cl. 197-144.
Hewlett-Packard Company: *See—*
Metcalf, William S., 3,480,884.
Hiatt, Gordon D., and Mench, John W., to Eastman Kodak Company. Pretreatment of cellulose with a sulfo-lower fatty acid under anhydrous conditions. 3,480,615, Cl. 260-229.
Hickernell, James L., to Murphy, G. W., Industries, Inc. Friction bearing. 3,480,341, Cl. 308-008.2
Hickok Electrical Instrument Company, The: *See—*
Bauman, Robert L., and Holt, Frederick Rodney, 3,480,858.
Hickory Springs Manufacturing Company, Inc.: *See—*
Haney, Benjamine H., and Dockery, Benjamin F., 3,479,672.
Hildebrand, Karl-Heinz. Process and apparatus for disinfection of sewage. 3,480,543, Cl. 210-060.
Hilfiker, Harlan D. Safety construction for vehicles. 3,480,291, Cl. 280-087.
Hill, Dennis C.: *See—*
Fryer, Ross L., and Hill, Dennis C. 3,479,997.
Hill, John G.: *See—*
Lynch, John M., and Hill, John G. 3,480,716.
Hill, Lestera A., Jr.: *See—*
Braus, Harry, Hager, Jerome E., and Hill, Lestera A., Jr. 3,480,581.
Hill, Robert W., and Galiano, Francis R., to Gulf Oil Corporation. Aminoplast coatings having hydroxyl containing styrene copolymer and alkyd resin incorporated therein. 3,480,693, Cl. 260-850.
Hillebrand, Friedhelm: *See—*
Heim, Armin, and Hillebrand, Friedhelm 3,480,072.
Hillhouse, Mial T., to Goodyear Tire & Rubber Company, The. Tire stud. 3,480,062, Cl. 152-210.
Hillier, Malcolm Edwin, to Marbaix, Gaston E., Limited. Pneumatic devices for driving fasteners or like purposes. 3,479,926, Cl. 091-461.
Hills-MacCanna Company: *See—*
Priese, Werner K., and Davies, David J., 3,480,253.
Hilty, Walden K., to Ross & Rowe, Inc. Lecithin compositions. 3,480,544, Cl. 252-001.
Himel, Curtis Joseph. Air cleaning apparatus. 3,480,262, Cl. 261-022.
Himmelmann, Wolfgang: *See—*
Lassig, Wolfgang, Riebel, Alexander, Puschel, Walter, and Himmelmann, Wolfgang 3,480,431.
Himmelmann, Wolfgang, Riebel, Alexander, Zenner, Karl-Friedrich, and Meckl, Heinz, to Agfa-Gevaert Aktiengesellschaft. Hardening of photographic gelatin-containing layers. 3,480,440, Cl. 096-111.
Himmelsbach, Paul, to Schneider, Jos., & Co. Mechanism for differently displacing two movable components in an optical objective. 3,480,349, Cl. 350-187.
Hines, James L. R. Time counting traffic signalling system. 3,480,909, Cl. 340-043.
Hinlein, Sigmund, to Honeywell Inc. Method of fabricating magnetic transducers. 3,479,737, Cl. 029-603.
Hirs, Gene, and Stein, Alfred H., to Hydromation Engineering Company. Dust collector. 3,480,330, Cl. 302-028.
Hirsch Company: *See—*
Ferdinand, Irwin J., and Handler, Milton J., 3,479,975.
Hirschberg, Kenneth A., to United States of America, Army, mesne. Transmitting seismic sensor system. 3,480,942, Cl. 340-261.
Hirsh Company: *See—*
Ferdinand, Irwin J., and Handler, Milton E., 3,479,974.
Ferdinand, Irwin J., and Kulbersh, Irwin R., 3,480,155.
Hitachi, Ltd.: *See—*
Toki, Hisashi, and Agatsuma, Takashi, 3,479,736.
Hittel, Lorenz A.: *See—*
Belt, John E., Hittel, Lorenz A., and Rakoczi, Laszlo L. 3,480,916.
Hobson, H. M., Limited: *See—*
Mills, John Penrose, 3,479,773.
Hoefke, Wolfgang: *See—*
Stahle, Helmut, Kummer, Werner, Koppe, Herbert, Zeile, Karl, Hoefke, Wolfgang, and Samtleben, Hans-Wolfgang 3,480,630.
Hoerbiger Ventilwerke Aktiengesellschaft: *See—*
Bauer, Friedrich, 3,480,199.
Hoersch, Theodore M., to Swift & Company. Cold treatment before slaughtering. 3,479,688, Cl. 017-045.
Hoffman-La Roche Inc.: *See—*
Furst, Andor, and Muller, Marcel, 3,480,620.
Hoffman, Lewis C., to Du Pont de Nemours, E. I., and Company. Low melting glass and compositions containing the same. 3,480,566, Cl. 252-514.

- Hoffman, William D.: *See—*
  - Burk, Emmett H., Jr., and Hoffman, William D. 3,480,559.
- Hoffmann-La Roche Ic.: *See—*
  - Finkelstein, Jacob, 3,480,634.
- Hoge, Henri H., to Cambridge Scientific Industries. Solid state vibrator. 3,480,851, Cl. 321-008.
- Hollenbeck, Clifford M., to Red Arrow Products Corporation, mesne. Preparation and use of a smoke-flavored edible oil. 3,480,446, Cl. 099.118.
- Holloway, Robert L., Automatic Sprinkler Corporation of America, d.b.a. Inhalation-exhalation valve. 3,480,033, Cl. 137-102.
- Holloway, Robert L., to Chisholm-Ryder Company, Inc. Bucket conveyer. 3,480,131, Cl. 198-151.
- Holly, Harry H., to Hollymatic Corporation. Molding apparatus with expansion release. 3,479,687, Cl. 017-032.
- Hollymatic Corporation: *See—*
  - Holly, Harry H., 3,479,687.
- Holm, Allan P., and Raggio, Louis J., to North American Rockwell Corporation. Blood oxygenation apparatus. 3,480,401, Cl. 023-258.5
- Holset Engineering Company Limited: *See—*
  - Hall, Jeffrey, 3,479,907.
- Holt, Frederick Rodney: *See—*
  - Bauman, Robert L., and Holt, Frederick Rodney 3,480,858.
- Holthofer, Donald J., to Saginaw Products Corporation. Variably preloaded ball nut and screw assembly. 3,479,897, Cl. 074-441.
- Holtschmidt, Hans: *See—*
  - Oertel, Gunter, Holtschmidt, Hans, Wagner, Kuno, and Zenner, Karl-Friedrich 3,480,591.
- Hombak Maschinenfabrik KG: *See—*
  - Marian, Josef E., 3,480,054.
- Honcharenko, Peter. Sudden stop actuated vehicle warning signal. 3,479,982, Cl. 116-035.
- Honeywell Inc.: *See—*
  - Hinlein, Sigmund, 3,479,737.
  - Merz, William C., and Klopp, Donald W., 3,480,480.
  - Shebanow, Michael S., 3,480,930.
  - Springer, Charles L., 3,480,935.
  - van der Zee, Jan H., 3,480,028.
- Hood, William A.: *See—*
  - Mueller, Frank H., Hauffe, William L., and Hood, William A. 3,480,042.
- Hook, Bernard K., and Nelsen, Roger J., to Bliss, E. W., Company. Blank feeding apparatus. 3,480,180, Cl. 221-211.
- Hook, Kenneth R.: *See—*
  - Barnes, James W., and Hook, Kenneth R. 3,480,902.
- Hooks, Haywood, Jr.: *See—*
  - Kober, Ehrenfried H., Ottmann, Gerhard F., and Hooks, Haywood, Jr. 3,480,672.
- Hoover, James E., to GAF Corporation. Apparatus for liquid solvent sealing of plastic film cartridges. 3,479,986, Cl. 118-002.
- Hopengarten, Albert, to Electrosonics International, Inc. Receiver system having visual indicator for changes in electrical state. 3,480,863, Cl. 324-133.
- Horii, Shizuka, to Tateisi Electronics Co. Electromagnetic relay for switching an electric circuit. 3,480,892, Cl. 335-132.
- Horstmann, Walter: *See—*
  - Jager, Horst, Horstmann, Walter, Schundehutte, Karl-Heinz, Trautner, Kersten, Siegel, Edgar, and Sasse, Klaus 3,480,611.
- Horton, John W., and Lynch, Robert J. Multi-layer PN junction semiconductive flying spot generator. 3,480,830, Cl. 315-169.
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  - Martin, Ralph E., 3,480,513.
  - Stoops, James W., Bitterlich, Gordon M., Lipkin, Moses R., and Primas, Alex L., 3,480,416.
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- Howell, Russell B., to Fairchild Hiller Corporation. Seat reclining mechanism. 3,479,890, Cl. 074-089.15
- Howland, Bradford, and Wiesner, Stephen Jay. Convertible torsion measure. 3,479,744, Cl. 033-172.
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- Hubacek, Vaclav: *See—*
  - Pospisil, Jaroslav, and Hubacek, Vaclav 3,479,882.
- Hubbard, William M., to Bell Telephone Laboratories, Incorporated. Timing recovery circuit for use in frequency- modulated, differentially coherent phase modulation (FM-DPM) communication system. 3,480,869, Cl. 329-112.
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  - Miller, Meryl E., Huddleston, Stanley R., and Work, Carl F. 3,480,934.
- Hughes Aircraft Company: *See—*
  - Heil, Hans W., 3,479,711.
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- Hung, Han-Min, to Forbro Design Corporation. Ambient and component temperature compensated voltage current regulator. 3,480,852, Cl. 323-004.
- Hunk, Billie Gene: *See—*
  - Nighswonger, Lester Leroy, Hunk, Billie Gene, and Malm, Donald Irwin 3,480,099.
- Hunter, Walker F., and Mizma, Edward J., to Eastman Kodak Company. Extrusion coating apparatus. 3,479,989, Cl. 118-608
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- Hurst, Richard J.: *See—*
  - Baker, William J., and Hurst, Richard J. 3,480,119.
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- Hydromation Engineering Company: *See—*
  - Hirs, Gene, and Stein, Alfred H., 3,480,330.
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- Hyman, Robert Anthony: *See—*
  - Beesley, John, and Hyman, Robert Anthony 3,480,755.
- Hyster Company: *See—*
  - Gaulke, Gary L., 3,480,100.
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- Iglewitz, Meyer. Inflatable tubeless tire seating device with quick release. 3,480,067, Cl. 157-001.21
- Illinois Tool Works Inc.: *See—*
  - Poupitch, Ougljesa Jules, 3,480,136.
- Imabayashi, Mamoru, and Ohshima, Shichiro. Method of chemically bonding aluminium or aluminum alloys to ferrous alloys. 3,480,465, Cl. 117-071.
- Impact Container Corporation: *See—*
  - Rockwell, Dean M., 3,480,183.
- Imperial Chemical Industries Limited: *See—*
  - Mead, David Geoffrey, 3,480,682.
  - Nield, Eric, 3,480,598.
  - Porter, Kenneth, 3,480,587.
- Imris, Paul. Method and apparatus for measuring specific surface area of powders. 3,479,884, Cl. 073-432.
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- Industrial Development AB: *See—*
  - Stal, Sture, and Backman, Ralf, 3,479,932.
- Industrias Romi S.A.: *See—*
  - Romi, Giordano, 3,479,899.
- Ingebo, Alvin C. Bowling pin setter apparatus. 3,480,279, Cl. 273-044.
- Ingersoll-Rand Company: *See—*
  - Gyongyosi, Laszlo, 3,480,091.
- Inoue, Morio, Kano, Gota, Matsuno, Jinichi, and Takayanagi, Shigetoshi, to Matsushita Electronics Corporation. Method for forming electrode in semiconductor devices. 3,480,475, Cl. 117-227.
- Insel-Film GmbH & Co.: *See—*
  - Reitz, Edgar, and Nestler, Paolo, 3,480,346.
- Insterstabella A.G.: *See—*
  - Evers, Heinz, 3,479,793.
- International Business Machines Corporation: *See—*
  - Aronstein, Jesse, 3,480,836.
  - Arter, Nelson K., and Martin, Van C., 3,480,827.
  - Benson, Allen B., Gorbatenko, George G., Jursik, James, Kath, Ronald E., Ovrebo, Jerry D., and Skrenes, David H., 3,480,795.
  - Bialko, William Frank, and Boettcher, Benedict Andrew, 3,480,857.
  - Brenza, James G., and Kusnick, Arthur A., 3,480,910.
  - Brownlow, James M., 3,480,522.
  - Castrucci, Paul P., Collins, Robert H., and Shepheard, Robert G., 3,480,841.
  - Eisenbies, John L., 3,480,915.
  - Flur, Barry L., Davidse, Pieter D., and Maissel, Leon I., 3,480,922.
  - French, Walter K., 3,479,987.
  - Jensen, Roy A., and Oldham, Ira B., 3,480,919.
  - Loeffler, Karl H., 3,480,817.
  - Nathan, Marshall I., and Smith, John E., Jr., 3,480,879.
  - Norton, David Elliott, 3,480,923.
  - Pole, Robert V., 3,480,875.
  - Reisman, Arnold, and Leonhardt, Horst R., 3,480,491.
  - Schlaeppi, Hans P., 3,480,914.

  - Shafer, Merrill W., 3,480,385.
  - Srinivasan, Rangaswamy, 3,480,441.
- International Division Compagnie Francaise Thomson-Houston: *See—*
  - Rouxel, Roland, and Helein, Jean G., 3,480,765.
- International Harvester Company: *See—*
  - De Pauw, Richard A., and Knapp, William H., 3,479,804.
  - Duke, Edward D., and Hermiz, Ramiz Y., 3,479,754.
  - McAdams, Allan C., 3,480,163.
  - Mecklin, Charles D., and Francis, James M., 3,479,766.
  - Pool, Stuart D., and Steingas, Richard R., 3,479,806.
- International Nickel Company, Inc., The: *See—*
  - Tyrrell, Colin John Nelson, 3,480,523.
- International Standard Electric Corporation: *See—*
  - Lord, Michael Robert, 3,480,948.
- International Synthetic Rubber Company Limited: *See—*
  - Duck, Edward William, and Ridgewell, Brian John, 3,480,604.
  - Bailey, Brian Edward, and Dando, Vivian Charles Owen, 3,480,576.
- Ionics, Incorporated: *See—*
  - Sohn, Bernard I., Eisenmann, John L., and Alexander, Samuel S., 3,480,495.
- Isaksen, Robert A.: *See—*
  - Hahn, Frank J., and Isaksen, Robert A. 3,480,574.
- Itakura, Kiyoshi, to Nippon Sheet Glass Co., Ltd. Bait apparatus for drawing out glass ribbons from bolten bath. 3,480,423, Cl. 065-182.
- Italo American Prentice S.p.A.: *See—*
  - Dal Negro, Ruggero, 3,480,045.
- ITT Blackburn Corporation: *See—*
  - Toedtman, John A., 3,480,905.
- Iversen, Hans H. Wall mounted bracket for holding containers. 3,480,244, Cl. 248-312.
- Iwankovitsch, Stephen W.: *See—*
  - Mantel, Edward R., Vigor, Charles W., and Iwankovitsch, Stephen W. 3,479,731.
- Jacks, Eric, and Rowe, Charles, to English Electric Company Limited, The. Fuse unit having an operation indicator. 3,480,901, Cl. 337-244.
- Jackson, David, to Express Dairy Company (London) Limited. Time indicator. 3,480,402, Cl. 023-254.
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- Jacob, Ingolf, and Ueberdick, Ralf, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of filaments of synthetic linear polymers of high molecular weight crimped during spinning. 3,480,709, Cl. 264-237.
- Jacobi, Manfred: *See—*
  - Feinauer, Roland, Hamann, Karl, and Jacobi, Manfred 3,480,647.
- Jacobsen, Alfred: *See—*
  - Dislich, Helmut, and Jacobsen, Alfred 3,480,458.
- Jager, Edwin. Cooling device for cylindrical electrical components. 3,480,078, Cl. 165-185.
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- Jamerson, Frank E., Leffert, Charles B., and Rees, David B., to General Motors Corporation. Nuclear thermionic converter. 3,480,803, Cl. 310-004.
- James, Edward, Jr.: *See—*
  - Finger, Milton, James, Edward, Jr., and Archibald, Paul B. 3,480,490.
- Jangg, Gerhard. Process for the production of molybdenum and tungsten and their alloys using amalgams. 3,480,428, Cl. 075-084.5
- Japan Synthetic Rubber Co., Ltd.: *See—*
  - Umeno, Masashi, Miyake, Makoto, and Tosaki, Chikao, 3,479,858.
- Jaquith, Howard R., McCarthy, James L., Nichols, Nathaniel B., and Norton, Stanley C., Jr., to Sybron Corporation. Movable magnet magnetic flux transducers and transduction systems for indicating magnet position. 3,480,854, Cl. 324-034.
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- Jeffery, Warren C., and Teague, Sidney P., to McWane Cast Iron Pipe Company. Pipe coupling. 3,480,300, Cl. 285-093.
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- Jeffreys, Lyman W., to Amsted Industries Incorporated. Mold cleaner. 3,479,678, Cl. 015-021.
- Jenaer Glaswerk Schott & Gen.: *See—*
  - Dislich, Helmut, and Jacobsen, Alfred, 3,480,458.
- Jensen, Hans A., and Eberman, Augustus H., to Oscar Mayer & Co., Inc. Package banding machine. 3,479,792, Cl. 053-062.
- Jensen, Richard H., and Nordstrom, Arnold B., to Tridair Industries, mesne. Quick change system. 3,480,239, Cl. 244-118.
- Jensen, Roy A., and Oldham, Ira B., to International Business Machines Corporation. Photographic information storage optical tracking and switching system. 3,480,919, Cl. 340-173.
- Jernstrom, Hans, and Glass, Marvin I., to Glass, Marvin, & Associates. Game. 3,480,275, Cl. 273-001.
- Jerome, Maurice William, to Wright Rain Limited. Valve responsive to a pulsating fluid pressure. 3,480,034, Cl. 137-119.
- Jewell, David E., and Givens, William R., to Gates Rubber Company, The. Hydraulic suspension unit. 3,480,269, Cl. 267-064.
- Jewett, Barry K.: *See—*
  - , and Jewett, Barry K. 3,479,910.
- Johansen, Knud Harald Storm, to Servodan A/S. Automatic installation for washing hands. 3,480,787, Cl. 250-221
- Johansson, Carl-Gustav Simon, to Aktiebolaget Gylling & Co., mesne. Device for discoupling relays. 3,480,839, Cl. 317-142.
- Johnson, Howard M., 1/2 to Coleman, Joseph B. Bath shell enclosure for bathtubs. 3,479,778, Cl. 052-035.
- Johnson, James N., and Lorenc, Donald D., to Allis-Chalmers Manufacturing Company. Ejection mechanism for scraper. 3,479,758, Cl. 037-129.
- Johnson & Johnson: *See—*
  - Steinberg, Wallace H., and Kohn, Saul R., 3,480,185.
- Johnson, Keith O., and Gregg, David Paul, to Gauss Electrophysics, Inc. Magnetic transducer. 3,480,736, Cl. 179-100.2
- Johnson, Leo F.: *See—*
  - Dillon, Joseph F., Jr., Johnson, Leo F., and Remeika, Joseph P. 3,480,877.
- Johnson, Stanley O. Rotary engine. 3,479,995, Cl. 123-011.
- Johnson, Wallace J. S., to Up-Right, Inc. Multiple-dwelling structure. 3,479,781, Cl. 052-169.
- Johnston, James David, to Pfizer, Chas., & Co., Inc. 1,2,3,4-Tetrahydrophenazine-5,10-dioxides as growth promoting agents. 3,480,713, Cl. 424-250.
- Jones, Duane A., to General Mills, Inc. Enzymatic breaker system for tamarind polysaccharide. 3,480,511, Cl. 195-031.
- Jones, Emil T., to Jones Precision Photo Finish, Inc. Strip film camera and method of operating same. 3,479,939, Cl. 095-015.
- Jones & Laughlin Steel Corporation: *See—*
  - Berry, George L., 3,479,853.
- Jones Precision Photo Finish, Inc.: *See—*
  - Jones, Emil T., 3,479,939.
- Jones, Robert L.: *See—*
  - Benson, Robert A., and Jones, Robert L. 3,480,466.
- Jones, Royal V., Jr., Allen Clayton H., and Gordon, Colin G., to Bolt Beranek and Newman Inc. Phonograph system. 3,480,283, Cl. 274-017.
- Jordan, Manuel A., Meyer, John F., and Zalewiski, Edmund J., to Schenectady Chemicals, Inc. Polyester of benzophenone dicarboxylic acid and tris(2-hydroxyethyl) isocyanurate. 3,480,589, Cl. 260-063.
- Joyce, Kevin E. Magnetic edge protector for a ski. 3,480,894, Cl. 335-303.
- Joyner, Frederick B., and McConnell, Richard L., to Eastman Kodak Company. Modified polymers. 3,480,580, Cl. 260-029.6
- Jugle, Lawrence C., to Union Carbide Corporation. Air pollution measuring system. 3,479,869, Cl. 073-170.
- June, Ronald K.: *See—*
  - Kuhre, Calvin J., and June, Ronald K. 3,480,332.
- Jung, Richard R., to Clark Equipment Company. Pallet conveyor withlock mechanism. 3,480,126, Cl. 193-035.
- Jureit, John Calvin, to Automated Building Components, Inc. Joint. 3,479,783, Cl. 052-584.
- Jureit, William E., to Automated Building Components, Inc. Bolt-hole reinforcing plate. 3,480,305, Cl. 287-020.92
- Jursik, James: *See—*
  - Benson, Allen B., Gorbatenko, George G., Jursik, James, Kath, Ronald E., Ovrebo, Jerry D., and Skrenes, David H. 3,480,795.
- Kach, Alfred, to Patelhold Patentverwertungs- Elektro-Holding AG. Temperature stabilized cavity resonator. 3,480,889, Cl. 333-083.
- Kafka, Wilhelm: *See—*
  - Albrecht, Cord, Kafka, Wilhelm, and Kullmann, Dieter 3,480,895.
- Kaleta, Norbert W.: *See—*
  - Austin, Arthur C., Gorka, Edward R., and Kaleta, Norbert W. 3,480,104.
- Kampfer, Helmut, Gotze, Johannes, Reister, Oskar, and Bockly, Erich, to Agfa-Gevaert Aktiengesellschaft. Light-sensitive materials optically sensitized with chloropropylsulfonic acid substituted merocyanines. 3,480,439, Cl. 096-102.
- Kania, Robert Charles: *See—*
  - Gregord, Thomas, and Kania, Robert Charles 3,480,267.
- Kanitz, Roy E., to Sperry Rand Corporation. Automatic two position posting mechanism. 3,480,343, Cl. 312-223.
- Kano, Gota: *See—*
  - Inoue, Morio, Kano, Gota, Matsuno, Jinichi, and Takayanagi, Shigetoshi 3,480,475.
- Kanyok, Anthony J., to American Standard Inc. Filtration system seal. 3,480,147, Cl. 210-321.
- Karbowski, John S.: *See—*
  - Downs, Robert E., and Karbowski, John S. 3,480,807.
- Karlinsky, Stanislav Evgenievich: *See—*
  - Bykov, Vladimir Alexandrovich, Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Karlinsky, Stanislav Evgenievich, Niskovskikh, Vitaly Maximovich, Orlov, Boris Yakovlevich, Sokolovsky, Oleg Petrovich, and Khimich, Georgy Lukich 3,480,074.
- Karpchuk, Sylvester, to Tinius Olsen Testing Machine Company. High speed balancing machine. 3,479,885, Cl. 073-460.

- Kaske, Alan D., to Sperry Rand Corporation. Magnetizable memory element having a plurality of read-only data states. 3,480,928, Cl. 340-174.
- Kath, Ronald E.: *See*—
  - Benson, Allen B., Gorbatenko, George G., Jursik, James, Kath, Ronald E., Ovrebo, Jerry D., and Skrenes, David H. 3,480,795.
- Katzman, Lawrence, and Briggin, Edward, to Kaz Manufacturing Co., Inc. Bottle warmer attachment for vaporizer. 3,480,001, Cl. 126-261.
- Kaz Manufacturing Co., Inc.: *See*—
  - Katzman, Lawrence, and Briggin, Edward, 3,480,001.
- Keese, Beth: *See*—
  - Sietmann, Vernon H., 3,479,748.
- Keese, Larry: *See*—
  - Sietmann, Vernon H., 3,479,748.
- Kelco Company: *See*—
  - Edlin, Ray L., and Rocks, James K., 3,480,450.
  - Fairchild, William P., 3,480,018.
- Kell, Ralph W., to Goodyear Tire & Rubber Company, The. Belt track for vehicles. 3,480,339, Cl. 305-035.
- Keller, Carol K.: *See*—
  - Weigl, John W., Forest, Edward, and Keller, Carol K. 3,480,962.
- Keller, Ulrikh Ulrikhovich, Ledokhovich, Adolf Nikodimovich, Bitjugov, Jury Alexeevich, and Stratulatov, Gennady Yakovlevich. Injection pump valve. 3,479,999, Cl. 123-139.
- Kelley, Philip C., to Goodrich, B. F., Company, The. Natural rubber containing $\eta$-alkyl amine phosphate salts. 3,480,690, Cl. 260-814.
- Kellogg Company: *See*—
  - Slaybaugh, Lyle, 3,480,445.
- Kelly, James M.: *See*—
  - Lipowski, Stanley A., and Kelly, James M. 3,480,379.
- Kelsey-Hayes Company: *See*—
  - Stelzer, William, 3,480,333.
- Kemeny, George A.: *See*—
  - Wolf, Charles B., Kemeny, George A., and Fey, Maurice G. 3,480,717.
- Kemlite Corporation: *See*—
  - Morse, Donald B., and Menzer, Alfred B., 3,480,497.
- Kemptener Maschinenfabrik G.m.b.H.: *See*—
  - Flach, Rolf, and Krause, Fritz, 3,479,976.
- Kendall, Louis F., Jr., and Bredt, James H., to General Electric Company. Single phase lead telluride. 3,480,554, Cl. 252-062.3
- Kendall-Smith, Brian John: *See*—
  - May, Herbert, Kendall-Smith, Brian John, and Burr, Susannah 3,480,590.
- Kennedy, Melvin H., to SCM Corporation. Envelope opener. 3,479,912, Cl. 083-176.
- Kenny, Neal S., Warden, Douglas A., and Sapakie, Alan Louis, to Corning Glass Works. Writing or drawing instrument. 3,480,372, Cl. 401-198.
- Keripar Kereskedelmi Berendezeseket es Gepeket Gyarto Vallalat: *See*—
  - Torok, Jozsef, 3,480,345.
- Kerschek, Rudi, to Gewerkschaft Eisenhutte Westfalia. Prop and conveyor arrangement for removing loose mineral. 3,480,130, Cl. 198-126.
- Kewanee Oil Company: *See*—
  - Moy, Paul W., 3,480,524.
  - Tanos, Andrew B., 3,480,473.
- Khachijan, Alexei Sergeevich, Skuinj, Alexandr Kasparovich, Lekhovitser, Moisei Alexandrovich, Linich, Viktor Vladimirovich, Shapovalov, Sergei Vasiljavich, and Ocheretin, Ivan Vasiljevich. Carburetor. 3,480,418, Cl. 048-180.
- Khimich, Georgy Lukich: *See*—
  - Bykov, Vladimir Alexandrovich, Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Karlinsky, Stanislav Evgenievich, Niskovskikh, Vitaly Maximovich, Orlov, Boris Yakovlevich, Sokolovsky, Oleg Petrovich, and Khimich, Georgy Lukich 3,480,074.
- Khoury, Nick S., to Continental Can Company, Inc. Single pull ring tab. 3,480,175, Cl. 220-054.
- Kidde, Walter, & Company, Inc.: *See*—
  - Knapp, Theodore F., 3,480,815.
- Kiefer, Heinz, to Fr. Hesser Maschinenfabrik-Aktiengesellschaft. Method of and an apparatus for cementing the closure joints of packages. 3,480,470, Cl. 117-111.
- Kienzle Apparate GmbH: *See*—
  - Fichter, Manfred, 3,480,859.
- Kilcup, Dillon K. Roller back chair. 3,480,007, Cl. 128-058.
- Kilmer, Lauren G., to Sinclair Research, Inc. Seismic wave generating apparatus. 3,480,102, Cl. 181-000.5
- Kilmer, Lauren G., to Sinclair Research, Inc. Method of generating repetitive seismic shock waves. 3,480,103, Cl. 181-000.5
- Kilpert, Richard: *See*—
  - Bauer, Richard H., and Kilpert, Richard 3,480,493.
- Kimberlin, Charles Newton, Jr.: *See*—
  - Voorhies, Alexis, Jr., Kimberlin, Charles Newton, Jr., and Gladrow, Elroy Merle 3,480,539.
- Kimberly-Clark Corporation: *See*—
  - Sewell, Edgar F., and Selke, William A., 3,480,847.
- Kinetics Corporation: *See*—
  - Minto, Wallace L., 3,479,817.
- King, Harold O.: *See*—
  - Bohannon, William D., Jr., and King, Harold O. 3,479,720.
- King, James R.: *See*—
  - Haist, Grant M., and King, James R. 3,480,433.
- King, Joel D., to Texas Instruments, Incorporated. Neutrally buoyant hydrophone streamer. 3,480,907, Cl. 340-009.
- Kingsberry Homes Corporation: *See*—
  - Groat, Marshall O., 3,479,734.
- Kinkel, John F., to Borg-Warner Corporation. Balanced impedance network for applying bias and data signals to a recording head. 3,480,739, Cl. 179-100.2
- Kinzler, Raymond C., and Nestler, Gilbert C., to Koppers Company Inc. Ascension pipe cleaning apparatus in combination with a horizontal coke oven battery. 3,480,514, Cl. 202-241.
- Kitahara, Naotake, and Yoshida, Terue, to Tokyo Kutsushita Kabushiki Kaisha. Circular tricot knitting machine. 3,479,841, Cl. 066-031.
- Kittel, Ivan D.: *See*—
  - Etchells, John L., Bell, Thomas A., and Kittel, Ivan D. 3,480,448.
- Kitzerow, Richard A.: *See*—
  - Copeland, John R., and Kitzerow, Richard A. 3,480,961.
- Kivelevich, Doris: *See*—
  - Hellmuth, Walter W., Kivelevich, Doris, Dadura, James G., and Morissette, Bertrand G. 3,480,548.
- Kjeldsen, Kjeld: *See*—
  - Enemark, Arne F., Kjeldsen, Kjeld, and Larsen, Bendt Wegge 3,480,206.
- Klein, Dietrich J., to Electro-Tec Corporation, mesne. Index mechanism for rotary switches. 3,480,748, Cl. 200-066.
- Klein, Harvey S.: *See*—
  - Rust, Frederick F., and Klein, Harvey S. 3,480,661.
- Kleine-Weischede, Klaus, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of mixed phosphonic acid esters. 3,480,701, Cl. 260-982.
- Kleinsmith, Joseph P.: *See*—
  - Simon, George, and Simon, Joseph A., 3,480,256.
- Kleiss, Louis D., to Phillips Petroleum Company. Compensation of viscometer for variations in temperature profile of sample. 3,479,863, Cl. 073-054.
- Kliewer, George G., to Commodity Marketers, Inc. Successive temperature indicator. 3,479,876, Cl. 073-358.
- Kloeckner-Werke AG.: *See*—
  - Heim, Armin, and Hillebrand, Friedhelm, 3,480,072.
- Klopp, Donald W.: *See*—
  - Merz, William C., and Klopp, Donald W. 3,480,480.
- Knapp, Theodore F., to Dura Corporation, mesne, a wholly-owned subsidiary of Kidde, Walter, & Company, Inc. Motor with multiplex wave wound disc armature. 3,480,815, Cl. 310-268.
- Knapp, William H.: *See*—
  - De Pauw, Richard A., and Knapp, William H. 3,479,804.
- Knorr-Bremse: *See*—
  - Meir, Franz, 3,480,838.
- Knowles, Edwin C.: *See*—
  - McCoy, Frederic C., and Knowles, Edwin C. 3,480,551.
- Kober, Ehrenfried H., Ottmann, Gerhard F., and Hooks, Haywood, Jr., to Olin Mathieson Chemical Corporation. Process for reduction of nitro compounds to corresponding oximes and ketones. 3,480,672, Cl. 260-566.
- Koboldt, Melvin A., to Container Corporation of America. Stackable container. 3,480,195, Cl. 229-005.5
- Koch, Carl, to Sinar AG Schaffhausen. Photographic focusing camera. 3,479,945, Cl. 095-050.
- Koch, David A., to Chrysler Corporation. Sealing apparatus for rotary mechanism. 3,480,203, Cl. 230-145.
- Kocher, Hans, to Buren Watch Company S.A. Drive spring arrangement for watch movement using two barrels. 3,479,813, Cl. 058-059.
- Koeln, Harold E., to Penn Corporation, mesne. Writing instruments. 3,480,370, Cl. 401-107.
- Kohls, Norman R., Nykl, Clarence A., Jr., and Ayres, William R., to Hammond Corporation. Organ percussion system providing percussive harmonic synthesis. 3,480,718, Cl. 084-001.01
- Kohn, Saul R.: *See*—
  - Steinberg, Wallace H., and Kohn, Saul R. 3,480,185.
- Kokusai Denki Kabushiki Kaisha (known as Kokusai Electric Co., Ltd.): *See*—
  - Tanaka, Yukio, Soya, Katsuji, and Yamagishi, Hitoshi, 3,480,486.
- Kolodny, Edwin Ralph, and Booth, Robert Ben, to American Cyanamid Company. Clear overflow settling with very high molecular weight polyelectrolytes. 3,480,761, Cl. 210-054.
- Koltypin, Evgeny Alexandrovich: *See*—
  - Nastjukha, Alexandr Ivanovich, Koltypin, Evgeny Alexandrovich, and Smirnov, Pavel Alexandrovich 3,480,822.
- Konigsdorf, Wolfgang: *See*—
  - Hack, Arthur W., and Konigsdorf, Wolfgang 3,480,447.
- Konishiroku Photo Industry Co., Ltd.: *See*—
  - Doi, Tatsumi, Mineshima, Teruo, and Saito, Etsuro, 3,480,361.
- Konsonlas, John: *See*—
  - Waltrip, Owen R., 3,480,529.
- Koppe, Herbert: *See*—
  - Stahle, Helmut, Kummer, Werner, Koppe, Herbert, Zeile, Karl, Hoefke, Wolfgang, and Samtleben, Hans-Wolfgang 3,480,630.
- Koppers Company, Inc.: *See*—
  - Ciochetto, Joseph J., 3,480,266.
  - Denig, Fred, and Powers, Robert E., 3,480,427.
  - Gregord, Thomas, and Kania, Robert Charles, 3,480,267.
  - Kinzler, Raymond C., and Nestler, Gilbert C., 3,480,514.

- Koppers-Wistra-Ofenbau GmbH: *See*—
  - Krause, Wilhelm, 3,480,264.
  - Sitte, Richard, and Willems, Gunter, 3,480,375.
- Korshak, Vasily Vladimirovich, Vinogradova, Svetlana Vasilievna, Salazkin, Sergei Nikolaevich, and Bereza, Svetlana Veniaminovna. Method for the production of polyarylates. 3,480,597, Cl. 260-078.5
- Kosatka, Thomas O., to Victor Manufacturing and Gasket Company. Valve stem seal. 3,480,286, Cl. 277-182.
- Kosowsky, Lester H., to United Aircraft Corporation. Interferometer radar moving target indicator. 3,480,957, Cl. 343-016.
- Kotone, Eimatsu. Pneumatic impact hammer. 3,480,090, Cl. 173-135.
- Kottman, Joseph J., to GAF Corporation. Flaw detecting system including synchronously rotating optic fiber tubes. 3,480,786, Cl. 250-219.
- Kramarow, Nathan M., to Barogenics, Inc. Pin-type connecting joint and method of assembling. 3,479,697, Cl. 018-034.
- Kramesak, Michael, Jr.: *See*—
  - Clinton, Edwin T., and Kramesak, Michael, Jr. 3,479,680.
- Kramer, Howard A. Vehicle safety belt means for infant or child. 3,480,325, Cl. 297-385.
- Kramer, Roger G., to Simplex Time Recorder Company. Master clock. 3,479,812, Cl. 058-025.
- Krasny, John F., and Oliva, Edward C., to Wool Bureau, Inc., The. Process for rendering wool-containing garments stable to water washing and drying. 3,480,383, Cl. 008-128.
- Krause, Fritz: *See*—
  - Flach, Rolf, and Krause, Fritz 3,479,976.
- Krause, Wilhelm, to Koppers-Wistra-Ofenbau GmbH. Metallurgical walking beam furnace. 3,480,264, Cl. 263-006.
- Krauze, Gennady Nikolaevich: *See*—
  - Solokhin, Boris Ivanovich, Krauze, Gennady Nikolaevich, and Vargasov, Alexandr Ivanovich 3,480,097.
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- Kreier, George J., Jr. Method for making low cost large thin concrete panels in seamless reinforced plastic molds. 3,479,786, Cl. 052-745.
- Kress, James Henry, and Lemons, David Forrest, to Deere & Company. Combined variable-speed and planetary drive. 3,479,908, Cl. 074-681.
- Kroening, Walter H. Self-centering gauge ring. 3,480,301, Cl. 285-119.
- Krol, Adam T.: *See*—
  - Toland, William C., and Krol, Adam T. 3,480,435.
- Krueger, Harvey R.: *See*—
  - Reynolds, Donald S., and Krueger, Harvey R. 3,479,949.
- Kruger, Gustav. Drive for electric clocks. 3,479,814, Cl. 058-041.
- Kruizenga, Jack R., Graves, Donald C., and Role, Harry, to Union Tank Car Company, mesne. Method of expanding a railway tank car by lengthening same. 3,479,724, Cl. 029-412.
- Krupick, Walter J.: *See*—
  - Binder, Herbert, and Krupick, Walter J. 3,479,889.
- Krysiak, Henry A.: *See*—
  - Bernardi, Eugene L., and Krysiak, Henry A. 3,479,952.
- Kuhre, Calvin J., and June, Ronald K., to Shell Oil Company. Use of water to improve separation of solids from slurries with oil. 3,480,332, Cl. 302-066.
- Kulbersh, Irwin R.: *See*—
  - Ferdinand, Irwin J., and Kulbersh, Irwin R. 3,480,155.
- Kulicke, Frederick W., Jr.: *See*—
  - Zanger, Earl A., Jr., and Kulicke, Frederick W., Jr. 3,479,716.
- Kulicke & Soffa Industries, Inc.: *See*—
  - Zanger, Earl A., Jr., and Kulicke, Frederick W., Jr., 3,479,716.
- Kullmann, Dieter: *See*—
  - Albrecht, Cord, Kafka, Wilhelm, and Kullmann, Dieter 3,480,895.
- Kumagai Gumi Company Limited: *See*—
  - Matsushita, Kunijiro, 3,480,327.
- Kumm, William H., to Westinghouse Electric Corporation. Oceanographic apparatus. 3,479,870, Cl. 073-170.
- Kummer, Werner: *See*—
  - Stahle, Helmut, Kummer, Werner, Koppe, Herbert, Zeile, Karl, Hoefke, Wolfgang, and Samtleben, Hans-Wolfgang 3,480,630.
- Kuniyoshi, Ieji: *See*—
  - Okuda, Noriyuki, Kuniyoshi, Ieji, Saito, Tadashi, and Oguri, Koji 3,480,645.
- Kuroyanagi, Noriyoshi, and Matsuura, Yoshihisa, to Nippon Telegraph and Telephone Public Corporation. Speed conversion systems for pulse signals in a PCM system. 3,480,734, Cl. 179-015.
- Kurtz, Samuel E.: *See*—
  - Hurst, Jerry C., and Kurtz, Samuel E. 3,480,165.
- Kurzke, Herbert: *See*—
  - Forster, Paul Friedrich, Kurzke, Herbert, Sattler, Helmut, and Schnock, Gunter 3,480,586.
- Kurzke, Herbert, Bauer, Gunther, and Heinrich, Karl, to Farbwerke Hoechst Aktiengesellschaft. Heated godet for stretching synthetic filaments and films. 3,479,689, Cl. 018-001.
- Kus, Joseph E.: *See*—
  - Meeder, Raymond L., and Kus, Joseph E. 3,480,778.
- Kusnick, Arthur A.: *See*—
  - Brenza, James G., and Kusnick, Arthur A. 3,480,910.
- Kuznetsov, Leonid Georgievich: *See*—
  - Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Kuznetsov, Leonid Georgievich, Niskovskikh, Vitaly Maximovich, and Rolnik, Savva Abramovich 3,480,075.
- Kvenvolden, Keith A., to Mobil Oil Corporation. Geochemical exploration. 3,480,396, Cl. 023-230.
- Laakso, William, to Federal Pacific Electric Company. Circuit interrupters. 3,480,899, Cl. 337-006.
- Lab-Line Bromedical Products, Inc.: *See*—
  - Good, Dorothy I., and Morgan, Rose M., 3,480,504.
- La Barge, Robert L., to Aluminum Company of America. Method of sealing a container assembly and sealed container assembly. 3,479,790, Cl. 053-042.
- La Brot, Adrian G.: *See*—
  - Wilkaitis, Norman J., and La Brot, Adrian G. 3,479,983.
- LaCroix, Henry N., to Foster Wheeler Corporation. Phthalic anhydride reactor. 3,480,408, Cl. 023-288.
- Lacy, George H., to Dow Chemical Company, The. Laminate material and method of making. 3,480,464, Cl. 117-071.
- Lallemant, Pierre Joseph Martin, to Societe Hispano-Suiza-Lallemant. Disc brakes. 3,480,115, Cl. 188-072.
- La Masters, George D., to Borg-Warner Corporation. By-pass valve for air injection system. 3,479,816, Cl. 060-030.
- Lamb, John T., and Anderson, Carl L., to Tappan Company, The. Spark ignition system. 3,480,374, Cl. 431-066.
- Land, Edwin H., to Polaroid Corporation. Exposure control system. 3,479,936, Cl. 095-010.
- Land, Edwin H., and Eloranta, Vaito K., to Polaroid Corporation. Camera apparatus. 3,479,942, Cl. 095-044.
- Landis, Henry Richard. Protective closure for aerosol containers. 3,480,184, Cl. 222-153.
- Lane, Curtis, Glemby, Kenneth, and Greenstein, Leon, to Lanex Importing Company. Machine for dispensing a semi-solid, chilled, edible product. 3,479,835, Cl. 062-135.
- Lanex Importing Company: *See*—
  - Lane, Curtis, Glemby, Kenneth, and Greenstein, Leon, 3,479,835.
- Lanham, Charles W., Jr., to Entron, Inc. Quick-release fastener means. 3,480,311, Cl. 287-189.36
- Lankford, William Austin, to USCO Power Equipment Corporation. Angularly adjustable in line disconnect assembly and adjustable link therefor. 3,480,747, Cl. 200-048.
- LaPointe, Gabriel M., to Parker Manufacturing Company. Saw holder. 3,480,055, Cl. 145-108.
- Larkin, Wallace K. Surface vehicle. 3,480,289, Cl. 280-021.
- Larsen, Bendt Wegge: *See*—
  - Enemark, Arne F., Kjeldsen, Kjeld, and Larsen, Bendt Wegge 3,480,206.
- Larson, Charles D., Co.: *See*—
  - Larson, Charles O., 3,480,111.
- Larson, Charles O., to Larson, Charles D., Co. Sawhorse bracket assembly. 3,480,111, Cl. 182-224.
- La Spirotechnique: *See*—
  - Cousteau, Jacques Yves, and Gagnan, Emile, 3,480,011.
- Lassig, Wolfgang, Riebel, Alexander, Puschel, Walter, and Himmelmann, Wolfgang, to Agfa-Gevaert Aktiengesellschaft. Photographic material for a dry copying method. 3,480,431, Cl. 096-027.
- Lastinger, William R.: *See*—
  - Gardner, Newell J., and Lastinger, William R. 3,479,767.
- Lattis, Donald J., Congleton, Wayne L., and Gomez, Jose J. Combustion exhaust simulator. 3,479,759, Cl. 040-106.51
- Laubach, Gerald D.: *See*—
  - McLamore, William M., and Laubach, Gerald D. 3,480,652.
- Lauer, George E.: *See*—
  - Rock, Frank C., Jr., 3,480,141.
- Lavey, John A.: *See*—
  - Kreider, Edward W., and Lavey, John A. 3,479,994.
- Lavin, Edward, Markhart, Albert H., and Santer, James O., to Monsanto Company. Stable coating composition of a tricarboxylic acid or its partial or full ester and a diamine. 3,480,588, Cl. 260-047.
- Lawes, Louis F.W., Shreeve, Nicholas Gilbert, and Mihalik, Nandor, to Arside Limited. Reprographic apparatus. 3,480,359, Cl. 355-003.
- Lawrence Brothers, Inc.: *See*—
  - McNinch, Delmar D., 3,479,682.
- Lawrence, William H.: *See*—
  - Gerlach, Richard K., and Lawrence, William H. 3,480,936.
- Lawson, John B., to Robison Rayon Company, Inc. Yarn furnisher for winding machines. 3,480,218, Cl. 242-045.
- Layton, Beryl W., and Dunham, Robert W., to Square D Company. Molded-case circuit breaker with manual tripping means externally accessible only by a tool. 3,480,890, Cl. 335-023.
- Le Craw, Roy Conway: *See*—
  - Dillon, Joseph F., Jr., Le Craw, Roy Conway, von Philipsborn, Henning, and Wernick, Jack H. 3,480,409.
- Lednicer, Daniel, to Upjohn Company, The. 1,2-Dipheny-1,2,3,4-tetrahydro-1- naphthols and 1,2-diphenyl-1-hydroxyindanes. 3,480,679, Cl. 260-609.
- Ledokhovich, Adolf Nikodimovich: *See*—
  - Keller, Ulrikh Ulrikhovich, Ledokhovich, Adolf Nikodimovich, Bitjugov, Jury Alexeevich, and Stratulatov, Gennady Yakovlevich 3,479,999.
- Lee, Herbert P. C.: *See*—
  - Look, Melvin, Padgett, Weldon M., II, Hyman, Julius, Fenyes, Joseph G. E., and Lee, Herbert P. C. 3,480,646.
- Lee, James H., to Dymo Industries, Inc. Marking apparatus including marking pen and ink-dispensing receptacle. 3,480,371, Cl. 401-121.
- Lee, Richard J., to Dow Chemical Company, The. Thermoplastic pressure vessel for carbonated beverages. 3,480,168, Cl. 215-001.
- Lee, Robert E. Arm control-mechanism for commercial-type sewing machines. 3,479,901, Cl. 074-491.
- Lees, Ronald D., to Hercules Incorporated. Sewage flocculation. 3,480,541, Cl. 210-018

Leesona Corporation: *See—*
- Brouwer, Charles W., Cruickshank, David G., and Tata, Raymond V., 3,480,128.
- O'Brien, Willaim H., 3,480,217.

Leffert, Charles B.: *See—*
- Jamerson, Frank E., Leffert, Charles B., and Rees, David B. 3,480,803.

Leibenzeder, Siegfried: *See—*
- Merkel, Hans, and Leibenzeder, Siegfried 3,480,394.

Leigh, Bertram J.: *See—*
- Fitel, Jay M., and Leigh, Bertram J. 3,480,109.

Leistner, Walter Herman. Fastener member. 3,480,061, Cl. 151-041.73

Lekhovitser, Moisei Alexandrovich: *See—*
- Khachijan, Alexei Sergeevich, Skuinj, Alexandr Kasparovich, Lekhovitser, Moisei Alexandrovich, Linich, Viktor Vladimirovich, Shapovalov, Sergei Vasiljavich, and Ocheretin, Ivan Vasiljevich 3,480,418.

Lemin, Alan J., to Upjohn Company, The. Phenylisothiocyanates as herbicides. 3,480,424, Cl. 071-104.

Lemons, David Forrest: *See—*
- Kress, James Henry, and Lemons, David Forrest 3,479,908.

Lenigan, Thomas E. United States of America, Army, mesne Radar tracking error indicator. 3,480,955, Cl. 343-011.

Lenzen, Leo W., Olsen, Norman G., and Wenda, Raymond N., to Allis-Chalmers Manufacturing Company. Means for interlocking transmission and parking brake controls. 3,480,120, Cl. 192-004.

Leonhardt, Horst R.: *See—*
- Reisman, Arnold, and Leonhardt, Horst R. 3,480,491.

Lerman, Harold, and Goldstein, Murray S., to Singer-General Precision Systems Inc. Inertial navigator using analog integrators with digital logic. ,480,965, Cl. 235-150.25

Lesher, John C., to Penn-Western Electric. Emergency lighting system with two rate battery charger. 3,480,791, Cl. 307-066.

Lever Brothers Company: *See—*
- Lyons, James Ralph, 3,480,377.

Levin, Alfred A.: *See—*
- Richter, Sidney, and Levin, Alfred A. 3,480,657.

Levin, Allan F., to Metal Wire Recovery Corporation. Copper recovery. 3,480,477, Cl. 134-025.

Lewis, Colin Bright, to Associated Electrical Industries Limited. Adjustable pressure contact semiconductor devices. 3,480,844, Cl. 317-234.

Libby, Carl F., to Riordan, John D., and Libby, Gertrude C., trustees of the Libby Family Trust. Pattern control mechanism for looms. 3,480,047, Cl. 139-319.

Libby Family Trust: *See—*
- Libby, Carl F., 3,480,047.

Libby, Gertrude C.: *See—*
- Libby, Carl F., 3,480,047.

Licentia Patent-Verwaltungs G.m.b.H.: *See—*
- Feldmann, Hans-Helmut, 3,480,837.
- Walter, Conrad, and Eberwein, Siegfried, 3,480,347.

Lichtenberger, William J. Animal climbing structure. 3,479,991, Cl. 119-001.

Lichtenstein, Le Roy: *See—*
- Ball, Glenn A., Lichtenstein, Le Roy, and Webber, Philip S. 3,480,122.

Lichti, Walter. Tractor control device. 3,480,294, Cl. 280-405.

Lickok, Daniel J., and Maxwell, George C., to Armstrong Cork Company. Lubrication system for a parison blank. 3,480,422, Cl. 065-169.

Lidsky, Julius, to Ronel Corporation. Pronged fasteners for structural members. 3,479,919, Cl. 085-013.

Lie, Finn. Tilting chair construction. 3,480,249, Cl. 248-373.

Lieser, Zeev, to RCA Corporation. Condition indicator for appliance. 3,480,940, Cl. 340-253.

Liljegren, Jack G., Schaal, Wayne G., and Schubert, Lawrence F., to Reserve Mining Company. Control apparatus. 3,480,212, Cl. 241-034.

Lillberg, John W.: *See—*
- Wilcox, Ernest W., and Lillberg, John W. 3,480,307.

Linde Aktiengesellschaft: *See—*
- Poth, Leonhard, 3,479,730.

Linich, Viktor Vladimirovich: *See—*
- Khachijan, Alexei Sergeevich, Skuinj, Alexandr Kasparovich, Lekhovitser, Moisei Alexandrovich, Linich, Viktor Vladimirovich, Shapoval ov, Sergei Vasiljavich, and Ocheretin, Ivan Vasiljevich 3,480,418.

Linotype, G.m.b.H.: *See—*
- Debus, Karl, and Heimel, Kurt, 3,480,133.

Lipkin, Moses R.: *See—*
- Stoops, James W., Bitterlich, Gordon M., Lipkin, Moses R., and Primas, Alex L. 3,480,416.

Lipowski, Stanley A., and Kelly, James M., to Diamond Alkali Company. Tanning of leather employing synthetic anionic tanning agents. 3,480,379, Cl. 008-094.24

List, William F., and Schuster, Marvin A., to Westinghouse Electric Corporation. Radiation sensitive switching system for an array of elements. 3,480,780, Cl. 250-209.

Litman, Bernard, Silvia, Everett R., and Stabile, Christopher, to American Bosch Arma Corporation. Vibration attenuator and gyroscope apparatus employing same. 3,479,888, Cl. 074-005.5

Liva, Robert H.: *See—*
- Mallory, Donald G., Ashton, Raymond J., and Liva, Robert H. 3,480,360.

Livingst on, Emmett S., to Warner & Swasey Company, The, mesne. Textile drafting system. 3,479,700, Cl. 019-260.

Lochner, Horst-Paul: *See—*
- Dersin, Hensjurgen, and Lochner, Horst-Paul 3,480,472.

Lockheed Aircraft Corporation: *See—*
- Chandler, Joseph H., 3,480,728.
- Cornish, Joseph J., III, 3,480,234.
- Hand, Ross L., Jr., 3,480,779.
- Lucchino, Joseph A., and Bierbower, John B., 3,480,248.
- Movich, Richard C., and Topp, Ronald L., 3,479,866.
- Unkefer, Robert J., 3,480,140.

Loeffler, Herbert H., to Pro-Tee-Off Company. Practice golf driving device. 3,479,878, Cl. 073-379.

Loeffler, Karl H., to International Business Machines Corporation. Aperture assembly for electron beam device. 3,480,817, Cl. 313-082.

Loev, Bernard, to Smith Kline & French Laboratories. Process for preparing α -nitrosulfonic acids. 3,480,636, Cl. 260-293.4

Loken, Bjarte, and Gut, Marcel, to Phytogen Products, Inc. Steroid ketal. 3,480,621, Cl. 260-239.55

Loken, Bjarte, and Sollins, Irving V., to Phytogen Products, Inc. Ketal intermediate. 3,480,619, Cl. 260-239.55

Longini, Richard L., to Westinghouse Electric Corporation. High power semiconductor control element and associated circuitry. 3,480,802, Cl. 307-299.

Lonza Ltd.: *See—*
- Scheuber, Hermann, 3,480,676.

Look, Melvin, Padgett, Weldon M., II, Hyman, Julius, Fenyes, Joseph G. E., and Lee, Herbert P. C., to Fundamental Research Company. Orthocarboxy-sulfo-dedecachloro- octahydrodimethanotriphenylene anhydride. 3,480,646, Cl. 260-327.

Lopez, John A.: *See—*
- Hallstrom, James R., and Lopez, John A. 3,480,577.

Loral Corporation: *See—*
- Carroll, James A., and Spivak, Joel F., 3,480,484.

Lorbeer, Ernest H., to United States of America, Atomic Energy Commission. Dimensional measuring machine for test specimens. 3,479,745, Cl. 033-174.

Lord, John M.: *See—*
- Engh, Howard A., and Lord, John M. 3,480,743.

Lord, Michael Robert, to International Standard Electric Corporation. Non-linear coder. 3,480,948, Cl. 340-347.

Lorenc, Donald D.: *See—*
- Johnson, James N., and Lorenc, Donald D. 3,479,758.

Lorenzi, Donald E., to Magnaflux Corporation. Image dissector system having pattern rotation means. 3,480,855, Cl. 324-038.

Loukes, David Gordon, and Hay, Alan Edward, to Pilkington Brothers Limited. Process and apparatus for vacuum purification of the float glass bath. 3,480,420, Cl. 065-027.

Louvar, James J., to Universal Oil Products Company. Preparation of substituted aromatic compounds. 3,480,533, Cl. 204-658.

Loveland, Chester L., to U.S. Textile Machine Company. Jet fiber texturizer. 3,479,707, Cl. 028-001.

Lube Devices, Inc.: *See—*
- Lukas, Gus J., and Bydalek, Floyd J., 3,479,874.

Lucchino, Joseph A., and Bierbower, John B., to Lockheed Aircraft Corporation. Clamp assembly. 3,480,248, Cl. 248-361.

Luckenbach, Edward C., to Esso Research and Engineering Company. Reaction vessel. 3,480,406, Cl. 023-288.

Ludwig, Herbert. Shoe with injection molded bottom provided with dense edge strip, and method and apparatus for making the same. 3,480,704, Cl. 264-045.

Luft, Karl-Friedrich, to Bergwerksverband GmbH. Oxygen determination. 3,479,860, Cl. 073-027.

Lugue, Rafael Fernandez, to Shell Oil Company. Platform leg. 3,479,828, Cl. 061-046.5

Lukas, Gus J., and Bydalek, Floyd J., to Lube Devices, Inc. Mounting fasteners for liquid level gauges. 3,479,874, Cl. 073-292.

Lum, David W., and Mador, Irving L., to National Distillers and Chemical Corporation. Catalyst regeneration. 3,480,558, Cl. 252-416.

Lum, Robert C.: *See—*
- Bourn, Jesse T., Ridenhour, Banks L., and Lum, Robert C. 3,480,257.

Lumn, John H., to Ametek, Inc., mesne. Lightning protection for aircraft components. 3,480,231, Cl. 244-001.

Lunardi, Paul J.: *See—*
- Waltrip, Owen R., 3,480,529.

Lutz, Albert William, and Magee; Richard Joseph, to American Cyanamid Company. Alkysulfonylbenzimidazoles. 3,480,643, Cl. 260-309.2

Luyster, Thomas, Jr.: *See—*
- Jeff, William C., Luyster, Thomas, Jr., Lynch, James F., Jr., and Moroli, Frank A. 3,480,691.

Lyman, Richard E., to United States Steel Corporation. Burner for preheating a refractory lined vessel. 3,480,376, Cl. 431-353.

Lynch, James F., Jr.: *See—*
- Jeff, William C., Luyster, Thomas, Jr., Lynch, James F., Jr., and Moroli, Frank A. 3,480,691.

Lynch, John M., and Hill, John G., to United Aircraft Corporation. Multiple electrode vacuum arc furnace and method of remelt purification. 3,480,716, Cl. 013-009.

Lynch, Robert J.: *See—*
- Horton, John W., and Lynch, Robert J. 3,480,830.

Lynes, Dennis J., and Waaben, Sigurd G., to Bell Telephone Laboratories, Incorporated. Balanced bistable multivibrator digital detector circuit. 3,480,800, Cl. 327-292.

Lynge, Carl H., to Hamlin-Stevens, Incorporated. Metal articles having polytetrafluoroethylene- coated pressing surfaces and methods of their manufacture. 3,480,461, Cl. 117-045.

Lyons, James Ralph, to Lever Brothers Company. Solvent dyeing of living human hair. 3,480,377, Cl. 008-010.1

M & B Headwear Co., Inc.: *See—*
- Bigler, Sam, 3,479,668.

M & T Chemicals Inc.: *See—*
- Wowk, Anatole, 3,480,655.

Macciomei, Walter: *See—*
- Schaaf, Cecil F., and Macciomei, Walter 3,479,824.

Macek, Warren M., to Sperry Rand Corporation. Ring laser with means for reducing coupling to backscattered waves. 3,480,878, Cl. 331-094.5

Mador, Irving L.: *See—*
- Lum, David W., and Mador, Irving L. 3,480,558.
- Scheben, John A., and Mador, Irving L. 3,480,632.

Magee, Richard Joseph: *See—*
- Lutz, Albert William, and Magee, Richard Joseph 3,480,643.

Magnacraft Manufacturing Company: *See—*
- Morrow, John H., and Mednick, Charles, 3,480,503.

Magnaflux Corporation: *See—*
- Flaherty, John J., and O'Connor, Donald T., 3,480,002.
- Lorenzi, Donald E., 3,480,855.

Magnesita S.A.: *See—*
- Cardoso, Jose Joaquim, 3,479,960.

Mahoney, Robert J.: *See—*
- Trost, Wayne C., and Mahoney, Robert J. 3,479,988.

Maigrot, Robert, to Bliss, E. W., Company. Press brake and exhaust valve therefor. 3,480,121, Cl. 192-018.

Main, Robert: *See—*
- Cherry, Walter L., and Main, Robert 3,480,752.

Mais, Ago: *See—*
- Miller, Eugene J., Jr., and Mais, Ago 3,480,674.

Maissel, Leon I.: *See—*
- Flur, Barry L., Davidse, Pieter D., and Maissel, Leon I. 3,480,922.

Makhteshim Chemical Works Ltd.: *See—*
- Abrahami, Shoshana, Molcho, Aharon, and Wachs, Reuven (Roman), 3,480,561.

Mallory, Donald G., Ashton, Raymond J., and Liva, Robert H., to Xerox Corporation. Xerographic copying apparatus. 3,480,360, Cl. 355-008.

Malm, Donald Irwin: *See—*
- Nighswonger, Lester Leroy, Hunk, Billie Gene, and Malm, Donald Irwin 3,480,099.

Manber, Solomon. Alphanumeric Incorporated Pattern generator. 3,480,943, Cl. 340-324.

Mandalakas, John N., to Westinghouse Electric Corporation. Temperature compensated solar cell light sensor. 3,480,781, Cl. 250-209.

Maness, John F. Valve lifter pulling means. 3,479,722, Cl. 029-213.

Manitowoc Company Inc., The: *See—*
- Bender, Erwin L., and Swanson, Richard H., 3,479,971.

Mankarious, Ramzy G., to Hughes Aircraft Company. Photon coupler having radially-disposed, serially connected diodes arranged as segments of a circle. 3,480,783, Cl. 250-211.

Manning, William F., to Mobil Oil Corporation. Apparatus and method for transporting fluids between a submerged storage tank and a floating vessel. 3,479,673, Cl. 009-008.

Mantel, Edward R., Vigor, Charles W., and Iwankovitsch, Stephen W., to General Motors Corporation. Brazing method. 3,479,731, Cl. 029-472.3

Maple, Steven E.: *See—*
- Tilbury, Lawrence E., and Maple, Steven E. 3,480,085.

Marbaix, Gaston E., Limited: *See—*
- Hillier, Malcolm Edwin, 3,479,926.

Marechal, Madeleine France Louise: *See—*
- Moritz, Victor, and Moritz, Paul 3,480,703.

Maremont Corporation: *See—*
- Von Kaenel, John Clifford, Anderson, Gordon Campbell, and Seymore, Stephen David, Jr., 3,479,699.

Margulies, Howard: *See—*
- Miller, Bernard, and Margulies, Howard 3,480,697.

Marian, Josef E., to Hombak Maschinenfabrik KG. Method of forming finger joints. 3,480,054, Cl. 144-317.

Markhart, Albert H.: *See—*
- Lavin, Edward, Markhart, Albert H., and Santer, James O. 3,480,588.

Marshall, Roger D. Optical coincidence information retrieval system. 3,480,764, Cl. 235-061.12

Martens, Guy, to Solvay & Cie. Procedure for the thermal cracking of hydrocarbons. 3,480,686, Cl. 260-679.

Martin, Merle E., to Beta Corporation. Annunciator system. 3,480,938, Cl. 340-213.1

Martin, Ralph E., to Howe-Baker Engineers, Inc. Process for the desalinization of brackish waters. 3,480,513, Cl. 202-185.

Martin, Russell John, to Carnation Company. Automatic packaging apparatus. 3,479,795, Cl. 053-160.

Martin, Van C.: *See—*
- Arter, Nelson K., and Martin, Van C. 3,480,827.

Martin, Vincent W.: *See—*
- Prindell, Stuart M., Jr., Perry, Malcolm R., Martin, Vincent W., and Fritsch, Daniel F. 3,479,815.

Martin, William E. Reversible cutting blade means. 3,479,756, Cl. 037-129.

Mas, George E., to Sperry Rand Corporation. Asymmetric pulse train generator having means for reversing the asymmetrical characteristic. 3,480,798, Cl. 307-260.

Maslov, Leonid Ivanovich: *See—*
- Roschin, Vladislav Vasilievich, Muromtsev, Boris Ivanovich, Gusakov, Gennady Nilolaevich, and Maslov, Leonid Ivanovich 3,480,758.

Maslow, Louis. Caster assembly. 3,479,681, Cl. 016-035.

Massa Division, Dyamics Corporation of America: *See—*
- Massa, Frank, 3,480,258.

Massa, Frank, to Massa Division, Dyamics Corporation of America. Ultrasonic cleaner. 3,480,258, Cl. 259-072.

Massagli, Daniel, to Tru-lok Metal Fabricating Company, Inc. Construction panel. 3,479,784, Cl. 052-588.

Massey-Ferguson Services N.V.: *See—*
- Pensa, Pietro, 3,480,156.

Massey, Ronald, to Monsanto Chemicals Limited. Containers. 3,480,197, Cl. 229-043.

Matheis, Kenneth J., to Amerace Esna Corporation, mesne. Programmer. 3,480,792, Cl. 307-141 .

Mathers, Harold M., and Scott, Paul. Load share control mechanism. 3,479,821, Cl. 060-097.

Mathes, Kenneth N., to General Electric Company. Cryogenic capacitor. 3,480,846, Cl. 317-243.

Mathews, Ralph T., to Du Pont de Nemours, E. I., and Company. Louver. 3,479,948, Cl. 098-121.

Matsui, Isamu, Miyagi, Tamotsu, and Funahashi, Muneaki, to Murata Machinery, Ltd., and Toyo Boseki Kabushiki Kaisha. Automatic cop supplying method and its apparatus of automatic winding machine. 3,480,215, Cl. 242-035.5

Matsui, Yutaka, Hashimoto, NRISHIGE, and Mise, Nritoshi, to Takeda Chemical Industries, Ltd. Polymerization of vicinal alkylene oxide using a novel organometallic compound polyol cocatalyst. 3,480,567, Cl. 260-002

Matsumoto, Tadashi, to Sony Corporation. Sound transducer. 3,480,740, Cl. 179-121.

Matsumoto, Yoshiyuki, to Nippon Gakki Seizo Kabushiki Kaisha. Action mechanisms for grand pianos. 3,479,915, Cl. 084-239.

Matsuno, Jinichi: *See—*
- Inoue, Morio, Kano, Gota, Matsuno, Jinichi, and Takayanagi, Shigetoshi 3,480,475.

Matsushita Electric Industrial Co., Ltd.: *See—*
- Hosono, Hiroo, and Nagahiro, Michinori, 3,480,230.

Matsushita Electronics Corporation: *See—*
- Inoue, Morio, Kano, Gota, Matsuno, Jinichi, and Takayanagi, Shigetoshi, 3,480,475.

Matsushita, Kunijiro, to Kumagai Gumi Company Limited. Excavation type shield with concentric rotary cutter barrels. 3,480,327, Cl. 299-033.

Matsuura, Yoshihisa: *See—*
- Kuroyanagi, Noriyoshi, and Matsuura, Yoshihisa 3,480,734.

Matthews, Robert P., Simmons, Gustavus J., and Wymer, Fred J., to United States of America, Atomic Energy Commission, mesne. Pulse recording means. 3,480,921, Cl. 340-174.

Matthews, Robert R.: *See—*
- Felsenthal, Martin, Ferrell, Howard H., and Matthews, Robert R. 3,480,081.

Matthews, Walter T., to Duplex, Inc. Retractor device with compensating brake. 3,480,227, Cl. 242-107.83

Mauser Kommandit-Gesellschaft: *See—*
- Hammes, Wilhelm, 3,480,169.

Maxwell, George C.: *See—*
- Lickok, Daniel J., and Maxwell, George C. 3,480,422.

May, Herbert, Kendall-Smith, Brian John, and Burr, Susannah, to British Industrial Plastics Limited. Polymerisation process. 3,480,590, Cl. 260-073.

Mayer, Leo F.: *See—*
- Thornsen, Bernard L., Henrich, Robert S., and Mayer, Leo F. 3,480,849.

Mays, Vance H., to Case, J. I., Company. Sliding gear shifting mechanism. 3,479,900, Cl. 074-477.

Mazzone, Charles: *See—*
- Turton, Walter, and Mazzone, Charles 3,479,710.

McAdams, Allan C., to International Harvester Company. Steering arm for bale thrower. 3,480,163, Cl. 214-042.

McCarthy, James L.: *See—*
- Jaquith, Howard R., McCarthy, James L., Nichols, Nathaniel B., and Norton, Stanley C., Jr. 3,480,854.

McCauley, Harry J.: *See—*
- Breton, Ernest J., Eustice, Albert L., and McCauley, Harry J. 3,480,460.

McConnell, Inc.: *See—*
- McConnell, John A., and Williamson, Everett Wayne, 3,480,023.

McConnell, John A., and Williamson, Everett Wayne, to McConnell, Inc. Collapsible tent. 3,480,023, Cl. 135-001.

- McConnell, Richard L.: *See—*
  - Joyner, Frederick B., and McConnell, Richard L. 3,480,580.
- McCoy, Frederic C., and Knowles, Edwin C., to Texaco Inc. Lubricating composition. 3,480,551, Cl. 252-042.7
- Mc Cune, Robert B., and Wilson, Rosser L., to Abex Corporation. Route switching systems. 3,480,773, Cl. 246-004.
- McDonnell Douglas Corporation: *See—*
  - Bitterly, Jack G., 3,479,838.
- McElwain, John C., to North American Rockwell Corporation. Quick detachable coupling. 3,480,310, Cl. 287-119.
- Mc Gill, Charles H., to Monsanto Company. Control of dimensions of newly-opened bales of acrylic staple fibers. 3,479,747, Cl. 034-022.
- McHale, William L., to Robertshaw Controls Company. Defrost control system using a fluid amplifier. 3,479,836, Cl. 062-140.
- McIntosh, Lynden Y.: *See—*
  - Turner, Thomas C., and McIntosh, Lynden Y. 3,480,320.
- McLamore, William M., and Laubach, Gerald D., to Pfizer, Chas., & Co., Inc. 2,4-Disulfamyl acylanilides. 3,480,652, Cl. 260-397.7
- McMahon, Matthew A., Jr.: *See—*
  - Siegart, William R., Blackley, William D., Chafetz, Harry, and McMahon, Matthew A., Jr. 3,480,667.
- McMahon, Thomas J., to National Lead Company. Process for acid digestion of titaniferous materials. 3,480,386, Cl. 023-117.
- McMullen, John C., and Taylor, Kenneth M., to Corborundum Company, The. Method of preparing extruded grains of silicon carbide. 3,480,395, Cl. 023-208.
- McNinch, Delmar D., to Lawrence Brothers, Inc. Hanger device. 3,479,692, Cl. 016-097.
- McReynolds, Leo A.: *See—*
  - Walker, Darrell W., and McReynolds, Leo A. 3,480,660.
- McWane Cast Iron Pipe Company: *See—*
  - Jeffery, Warren C., and Teague, Sidney P., 3,480,300.
  - Jeffery, Warren C., and Teague, Sidney P., 3,480,302.
- Mead, David Geoffrey, to Imperial Chemical Industries Limited. Manufacture of halogenated hydrocarbons. 3,480,682, Cl. 260-648.
- Meckl, Heinz: *See—*
  - Himmelmann, Wolfgang, Riebel, Alexander, Zenner, Karl-Friedrich, and Meckl, Heinz 3,480,440.
- Mecklin, Charles D., and Francis, James M., to International Harvester Company. Drop panel door fastener. 3,479,766, Cl. 049-236.
- Medell, Irving Bridgman, to Ethicon, Inc. Tubular prosthetic implant having helical thermoplastic wrapping therearound. 3,479,670, Cl. 003-001.
- Medical Electroscience Inc.: *See—*
  - Gonzalez, Frank A., 3,480,015.
- Mednick, Charles: *See—*
  - Morrow, John H., and Mednick, Charles 3,480,503.
- Meeder, Raymond L., and Kus, Joseph E., to Nuclear-Chicago Corporation. Liquid scintillation sample standardization apparatus. 3,480,778, Cl. 250-106.
- Meer, Winfried: *See—*
  - Ruchardt, Hugo, Hargasser, Hans, and Meer, Winfried 3,480,845.
- Mehalchick, Emil J.: *See—*
  - Faria, Sixdeniel, and Mehalchick, Emil J. 3,480,819.
- Mehl, Thomas L. Decorative furpiece. 3,479,667, Cl. 002-065.
- Mehmedbasich, Enver, to Chevron Research Company. Broad spectrum fuel additives. 3,480,414, Cl. 044-072.
- Mehr, Edna A.: *See—*
  - Mehr, Jacob A. 3,480,304.
- Mehr, Jacob A., deceased (by Mehr, Edna A., administratrix), to Dazor Manufacturing Corporation. Swivel joint for a lamp. 3,480,304, Cl. 287-014.
- Meier, Willi, to Pfoff, G. M., A.G. Control apparatus for zigzag sewing machines, in particular for the production of buttonholes. 3,479,977, Cl. 112-158.
- Meir, Franz, to Knorr-Bremse. Electropneumatic braking control system. 3,480,838, Cl. 317-137.
- Meltsner, Bernard R., to Ethyl Corporation. Tris(3,5-Dihydrocarbyl-4-hydroxyphenyl) phosphothionates. 3,480,700, Cl. 260-953.
- Mench, John W.: *See—*
  - Hiatt, Gordon D., and Mench, John W. 3,480,615.
- Menzer, Alfred B.: *See—*
  - Morse, Donald B., and Menzer, Alfred B. 3,480,497.
- Merck & Co., Inc.: *See—*
  - Reinhold, Donald F., Gaines, Walter A., and Sletzinger, Meyer, 3,480,670.
  - Walton, Edward, 3,480,613.
- Meredith, Curtis L., to Copolymer Rubber & Chemical Corporation. Reinforced rubber articles with latex rubberized organic reinforcements and method of preparing the same. 3,480,066, Cl. 152-359.
- Merideth, John G. Structural assembly of plaque components. 3,480,312, Cl. 287-189.36
- Merkel, Hans, and Leibenzeder, Siegfried, to Siemens Aktiengesellschaft. Method of producing highly pure, especially silicon-free, gallium arsenide. 3,480,394, Cl. 023-204.
- Merkl, George. Relay with contacts of mercury metal composition. 3,480,891, Cl. 335-052.
- Merz, William C., and Klopp, Donald W., to Honeywell Inc., mesne. Rapid activating battery. 3,480,480, Cl. 136-090.
- Metal Dynamics Corporation: *See—*
  - Rachman, Isadore B., 3,480,950.
- Metal-Tech Inc.: *See—*
  - Bryand, Edward T., 3,480,148.
- Metal Wire Recovery Corporation: *See—*
  - Levin, Allan F., 3,480,477.
- Metcalf, William S., to Hewlett-Packard Company. Electromagnetic wave energy coupling apparatus comprising an anistropic dielectric slab. 3,480,884, Cl. 333-006.
- Mettler Instrumente AG: *See—*
  - Hager, Jurg, 3,479,859.
- Metzeler AG: *See—*
  - Roy, Hrishikesh Chandra, 3,480,508.
- Meuly, Walter C., and Gradeff, Peter S., to Rhodia Inc. Novel ionone. 3,480,677, Cl. 260-587.
- Meyer, Burton C., and Glass, Marvin I., to Glass, Marvin & Associates. Aerial toy. 3,479,764, Cl. 046-074.
- Meyer, Herbert J., Daugherty, Charles A., Jr., and Novy, John R., to Southern Illinois University Foundation. Image display apparatus and methods. 3,480,738, Cl. 179-100.2
- Meyer, John F.: *See—*
  - Jordan, Manuel A., Meyer, John F., and Zalewiski, Edmund J. 3,480,589.
- Meyers, Richard P., to Dana Corporation. Trunnion seal for Cardan-type universal joint. 3,479,840, Cl. 064-017.
- Miami Brick and Stone, Inc.: *See—*
  - Poynter, Kenneth L., 3,479,705.
- Micai, Louis Z.: *See—*
  - Burfield, Peter C., and Micai, Louis Z. 3,479,728.
- Michael, James: *See—*
  - Evans, Trevor Gwilym, and Ryder, Geoffrey Alan, 3,480,170.
- Michaelis, Paul C., to Bell Telephone Laboratories, Incorporated. Asynchronous magnetic circuit. 3,480,925, Cl. 340-174.
- Michalski, Conrad: *See—*
  - Baker, Thomas Nelson, III, Michalski, Conrad, Sheng, Ming Nan, and Zajacek, John G. 3,480,519.
- Michel, Max, to Produits Chimiques Pechiney-Saint Gobain. Preparation of hydrargillite crystals. 3,480,388, Cl. 023-143.
- Microwave Associates, Inc.: *See—*
  - Uhlir, Arthur, Jr., 3,480,887.
- Midland Silicones Limited: *See—*
  - Archer, David Frederick, and Harris, Glyn Islwyn, 3,480,584.
- Midwest Canvas Corporation: *See—*
  - Handwerker, Gary R., 3,480,069.
- Midwest Research Institute: *See—*
  - Benson, David K., 3,480,918.
- Mihalik, Nandor: *See—*
  - Lawes, Louis F.W., Shreeve, Nicholas Gilbert, and Mihalik, Nandor 3,480,359.
- Mildner, Raymond C., to Dow Chemical Company, The. Conductor with insulating layer of paper fibers and hollow plastic particles. 3,480,725, Cl. 174-124.
- Miles, Harry E., Jr., and Wright, Dale W., to Miles Machinery Company, mesne. Shaft end machining method and machine tool. 3,479,735, Cl. 029-558.
- Miles Laboratories, Inc.: *See—*
  - Csizmas, Louis L., and Patel, Virendra, 3,480,400.
  - Schut, Robert Norman, 3,480,633.
- Miles Machinery Company: *See—*
  - Miles, Harry E., Jr., and Wright, Dale W., 3,479,735.
- Miller, Bernard, and Margulies, Howard, to American Cyanamid Company. Para-thiocarbamoylphenyl phosphorothioates. 3,480,697, Cl. 260-944.
- Miller, Eugene J., Jr., and Mais, Ago, to Armour Industrial Chemical Company. N-secondary-alkyl tertiary polyamine compounds. 3,480,674, Cl. 260-583.
- Miller, Meryl E., Huddleston, Stanley R., and Work, Carl F., to National Cash Register Company, The. Positioning mechanism for transducing head unit. 3,480,934, Cl. 340-174.1
- Mills, John Penrose, to Hobson, H. M., Limited. Grinding machines. 3,479,773, Cl. 051-165
- Milochevitch, Alexandre, and Rousseau, Serge, to Compagnie Generale d'Electricite. Liquid laser construction. 3,480,874, Cl. 330-004.3
- Mindell, Marvin, and Rudzitis, Karl, to Viewlex, Inc. Automatic record player. 3,480,282, Cl. 274-009.
- Miner, Robert G., to Trane Company, The. Motor control for refrigeration system. 3,479,837, Cl. 062-230.
- Mineshima, Teruo: *See—*
  - Doi, Tatsumi, Mineshima, Teruo, and Saito, Etsuro 3,480,361.
- Minnesota Mining and Manufacturing Company: *See—*
  - Allen, Michael G., Errede, Louis A., and Hannula, Rodney R., 3,479,877.
  - Smith, David P., 3,480,774.
- Minto, Wallace L., to Kinetics Corporation. Low entropy engine. 3,479,817, Cl. 060-036.
- Mirrlees National Limited: *See—*
  - Pope, Joseph Albert, and Appleby, John Edwin Herbert, 3,480,113.
- Mise, Nritoshi: *See—*
  - Matsui, Yutaka, Hashimoto, NRISHIGE, and Mise, Nritoshi 3,480,567.
- Mitchell, Christopher Richard: *See—*
  - Rogers, Ernest William, Dillon, Peter, and Mitchell, Christopher Richard 3,480,871.
- Mitchell, William A., and Seidel, William C., to General Foods Corporation. Cold water soluble acid composition. 3,480,444, Cl. 099-078.

- Mitsubishi Jukogyo Kabushiki Kaisha: *See—*
  - Noguchi, Sadao, 3,480,049.
- Mitzmager, Abraham, and Gorin, Chanuch, to Chemicals & Phosphated Ltd. Flotation of siliceous ores. 3,480,143, Cl. 209-166.
- Miyagi, Masahisa: *See—*
  - Morita, Masasuke, and Miyagi, Masahisa 3,480,733.
- Miyagi, Tamotsu: *See—*
  - Matsui, Isamu, Miyagi, Tamotsu, and Funahashi, Muneaki 3,480,215.
- Miyake, Makoto: *See—*
  - Umeno, Masashi, Miyake, Makoto, and Tosaki, Chikao 3,479,858.
- Miyata, Akira, Tomita, Chikayoshi, Suzuki, Akio, Okubo, Hideyo, and Nagakuni, Masahiko, to Nippon Kokan Kabushiki Kaisha. Process for the electrolytic formation of aluminum coatings on metallic surfaces in molten salt bath. 3,480,521, Cl. 204/039.
- Mizma, Edward J.: *See—*
  - Hunter, Walker F., and Mizma, Edward J. 3,479,989.
- Mnichowicz, Donald A., and Waco, Richard F., to Automatic Electric Laboratories, Inc. Communication switching marker having continuity testing arrangement. 3,480,735, Cl. 179-018.
- Mobay Chemical Company: *See—*
  - Heiss, Herbert L., 3,480,656.
- Mobil Oil Corporation: *See—*
  - Kvenvolden, Keith A., 3,480,396.
  - Manning, William F., 3,479,673.
  - Murphy, Charles L., 3,480,080.
- Mock, Donald E., to Anjac Plastics Inc. Structural members and doors and related structures formed from the same. 3,479,770, Cl. 049-501.
- Modiano, Victor J., to Hughes Aircraft Company. Large error servo oscillation inhibitor. 3,480,868, Cl. 328-132.
- Molcho, Aharon: *See—*
  - Abrahami, Shoshana, Molcho, Aharon, and Wachs, Reuven (Roman) 3,480,561.
- Mole-Richardson Co.: *See—*
  - Hankins, Maxey A., 3,480,250.
- Moncure, Henry, Jr., to Du Pont de Nemours, E. I., and Company. Stablilization of polyoxymethylene with tris-m- methyl phenoxy syn-1,3,5-triazine, and polyamide. 3,480,694, Cl. 260-857.
- Monge, Antonio Camarasa. Driving mechanism for the weft inserters of shuttleless looms. 3,480,046, Cl. 139-122.
- Monsanto Chemicals Limited: *See—*
  - Massey, Ronald, 3,480,197.
  - Roberts, Brinley, and Stephenson, Robert James, 3,480,570.
- Monsanto Company: *See—*
  - Chappelear, David C., Stolki, Thomas J., Newman, Seymour, and Trementozzi, Quirino A., 3,480,569.
  - Elliott, Neil C., 3,480,177.
  - Hahn, Frank J., and Isaksen, Robert A., 3,480,574.
  - Lavin, Edward, Markhart, Albert H., and Santer, James O., 3,480,588.
  - Mc Gill, Charles H., 3,479,747.
  - Smith, George E., 3,480,801.
  - Stevens, Harry M., 3,480,077.
- Monsanto Research Corporation: *See—*
  - Dale, James W., 3,480,545.
- Moore, Chester W., and Waner, John L. Closed circuit television protection system. 3,480,727, Cl. 178-006.
- Moore, Harry B.: *See—*
  - Sloan, William G., Moore, Harry B., Cooper, Albert S., Jr., and Reeves, Wilson A. 3,480,382.
- Moore, James T.: *See—*
  - Zitnik, Anthony, Jr., and Moore, James T. 3,479,917.
- Moore, Robert A., to Allis-Chalmers Manufacturing Company. Friction drive transmission. 3,479,891, Cl. 074-191.
- Morgan, Henry Z. Containers that are compactly nestable when empty and stackable in spaced relation when full. 3,480,178, Cl. 220-097.
- Morgan Refractories Limited: *See—*
  - Ash, Malcolm Donald, 3,480,125.
- Morgan, Rose M.: *See—*
  - Good, Dorothy I., and Morgan, Rose M. 3,480,504.
- Morissette, Bertrand G.: *See—*
  - Hellmuth, Walter W., Kivelevich, Doris, Dadura, James G., and Morissette, Bertrand G. 3,480,548.
- Morita, Masasuke, and Miyagi, Masahisa, to Nippon Electric Company Limited. Frequency allocation system for common amplification of multifrequency carriers. 3,480,733, Cl. 179-015.
- Moritz, Paul: *See—*
  - Moritz, Victor, and Moritz, Paul 3,480,703.
- Moritz, Victor, and Moritz, Paul, deceased (by Marechal, Madeleine France Louise, legal representative). Mattresses and paddings. 3,480,703, Cl. 264-045.
- Moriya, Tsutomu, to NGK Insulators, Ltd. Method of detecting defects in a head portion of a procelain shell of a suspension insulator. 3,479,861, Cl. 073-037.
- Morley, Ervin W., 10% to Hammond, Ellane B. Record keeping and viewing device. 3,479,985, Cl. 116-135.
- Moroli, Frank A.: *See—*
  - Jeff, William C., Luyster, Thomas, Jr., Lynch, James F., Jr., and Moroli, Frank A. 3,480,691.
- Morrice, Anthony Ronald Seaton. Trench shoring frame. 3,479,827, Cl. 061-041.
- Morris, James B. N. Drill collar for protecting drill string. 3,480,094, Cl. 175-325.
- Morris, Leslie Joe. Binding of sheets of paper, card or other sheet material. 3,479,676, Cl. 011-001.
- Morris, Philip, Incorporated: *See—*
  - Mutter, Walter F., and Watson, Duane C., 3,479,880.
- Morrow, John H., and Mednick, Charles, to Magnacraft Manufacturing Company. Stacking machine. 3,480,503, Cl. 156-351.
- Morse, Donald B., and Menzer, Alfred B., to Kemlite Corporation. Method of making a reinforced resin panel using a soluble cover sheet. 3,480,497, Cl. 156-155.
- Mount, Ramon A.: *See—*
  - Harmer, David E., Mount, Ramon A., and Vanderbush, James J., Jr. 3,480,534.
- Movich, Richard C., and Topp, Ronald L., to Lockheed Aircraft Corporation. Hydrogen embrittlement testing method and apparatus. 3,479,866, Cl. 073-100
- Moy, Paul W., to Kewanee Oil Company. Selenium compound and its use as a brightener in a copper plating bath. 3,480,524, Cl. 204-052.
- Moyer, Paul H., to E-Z Mount Corporation. Christmas tree holder. 3,480,241, Cl. 248-044.
- Mueller Co.: *See—*
  - Mueller, Frank H., Hauffe, William L., and Hood, William A., 3,480,042.
- Mueller, Frank H., Hauffe, William L., and Hood, William A., to Mueller Co. O-ring seal seating arrangement for rotary plug valve. 3,480,042, Cl. 137-625.22
- Mueller, Howard C.: *See—*
  - Ornstein, Jacob L., and Mueller, Howard C. 3,479,732.
- Mulaskey, Bernard F., to Chevron Research Company. Hydrogenation of hydrocarbons with mixed tin and nickel catalyst. 3,480,531, Cl. 208-143.
- Muller, Erwin: *See—*
  - Dieterich, Dieter, Muller, Erwin, and Bayer, Otto 3,480,592.
- Muller, Marcel: *See—*
  - Furst, Andor, and Muller, Marcel 3,480,620.
- Multhopp, Hans, to Syscon, Inc. Multiple slotted air-foil system for aircraft. 3,480,235, Cl. 244-042.
- Mundy, Joseph L.: *See—*
  - Newhouse, Vernon L., and Mundy, Joseph L. 3,480,920.
- Murata Machinery, Ltd.: *See—*
  - Matsui, Isamu, Miyagi, Tamotsu, and Funahashi, Muneaki, 3,480,215.
- Muromtsev, Boris Ivanovich: *See—*
  - Roschin, Vladislav Vasilievich, Muromtsev, Boris Ivanovich, Gusakov, Gennady Nilolaevich, and Maslov, Leonid Ivanovich 3,480,758.
- Murphy, Bernard T. Bell Telephone Laboratories, Incorporated Time-scaled test circuit for semiconductive element having a current controlled charge storage model. 3,480,864, Cl. 324-158.
- Murphy, Charles L., to Mobil Oil Corporation. Waterflooding with an aqueous, saline solution of a hydrocarbon sulfonate having an optimum degree of sulfonation. 3,480,080, Cl. 166-252.
- Murphy, G. W., Industries, Inc.: *See—*
  - Hickernell, James L., 3,480,341.
- Murray, William A.: *See—*
  - Smithers, John A., and Murray, William A. 3,480,012.
- Muse, George B. Construction block. 3,479,782, Cl. 052-438.
- Music, William A., to Schwien Engineering, Inc. Manometer. 3,479,879, Cl. 073-398.
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- Myers, Lawrence A., to Chore-Time Equipment, Inc. Ventilator unit. 3,479,947, Cl. 098-116.
- Myers, Michael C.: *See—*
  - Sarsten, Jan A., and Myers, Michael C. 3,479,832.
- N. Schlumberger & Cie: *See—*
  - Herubel, Jean-Frederic, 3,479,809.
- Nagahiro, Michinori: *See—*
  - Hosono, Hiroo, and Nagahiro, Michinori 3,480,230.
- Nagakuni, Masahiko: *See—*
  - Miyata, Akira, Tomita, Chikayoshi, Suzuki, Akio, Okubo, Hideyo, and Nagakuni, Masahiko 3,480,521.
- Nagy, Georges, to Ugine Kuhlmann (societe anonyme), mesne. Method of preparation of betaine hydrate. 3,480,665, Cl. 260-501.13
- Naigaikogyo Kabushiki Kaisha: *See—*
  - Aoki, Toyohiko, 3,479,799.
- Nakagawa, Toshio W.: *See—*
  - Rudy, Thomas P., Nakagawa, Toshio W., and Greendorfer, Joseph M. 3,480,488.
- Nalco Chemical Company: *See—*
  - Oleen, Donald C., 3,480,083.
  - Stucker, John F., 3,480,639.
- Nash, Dudley O., to General Electric Company. Thrust vectoring exhaust system. 3,480,236, Cl. 244-053.
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- Nathan, Marshall I., and Smith, John E., Jr., to International Business Machines Corporation. Bulk oscillator using strained semiconductor. 3,480,879, Cl. 331-107.
- National Cash Register Company, The: *See—*
  - Gerlach, Richard K., and Lawrence, William H., 3,480,936.
  - Harman, Michael Godfrey, 3,480,927.

- Miller, Meryl E., Huddleston, Stanley R., and Work, Carl F., 3,480,934.
- National Distillers and Chemical Corporation: *See—*
  - Braus, Harry, Hager, Jerome E., and Hill, Lestera A., Jr., 3,480,581.
  - Feldman, Julian, Saffer, Bernard A., and Frampton, Orville D., 3,480,685.
  - Lum, David W., and Mador, Irving L., 3,480,558.
  - Scheben, John A., and Mador, Irving L., 3,480,632.
- National Gypsum Company: *See—*
  - Austin, Arthur C., Gorka, Edward R., and Kaleta, Norbert W., 3,480,104.
- National Lead Company: *See—*
  - McMahon, Thomas J., 3,480,386.
- Nauroth, Peter: *See—*
  - Reinhardt, Helmut, Nauroth, Peter, and Achenbach, Karl 3,480,390.
- Naydan, Bob N., to Singer-General Precision, Inc. Solid state digital control transformer. 3,480,947, Cl. 340-347.
- Naylor, Floyd E.: *See—*
  - Gaeth, Rudolf H., and Naylor, Floyd E. 3,480,608.
- Necchi Societa per Azioni: *See—*
  - Sillano, Pietro, 3,480,813.
- Neish, David Anthony: *See—*
  - Gray, Trevor, and Neish, David Anthony 3,480,954.
- Nelsen, Roger J.: *See—*
  - Hook, Bernard K., and Nelsen, Roger J. 3,480,180.
- Nelson, Hiding E., to Sperry Rand Corporation. Manually operable format control unit for the real-time operation of a data processing system. 3,480,945, Cl. 340-345.
- Nelson, Robert E., and Boltz, Charles D., Jr., to United States of America, Navy, mesne. Engine synchronizer. 3,479,822, Cl. 060-097.
- Nelson, Russell Theodore, to Pennsalt Chemicals Corporation. Alkoxy-3,6-endoxohexahydrophthalimides. 3,480,644, Cl. 260-326.
- Nerwin, Hubert, to Eastman Kodak Company. Automatic film advancing and rewinding system. 3,479,940, Cl. 095-031.
- Nestler, Gilbert C.: *See—*
  - Kinzler, Raymond C., and Nestler, Gilbert C. 3,480,514.
- Nestler, Paolo: *See—*
  - Reitz, Edgar, and Nestler, Paolo 3,480,346.
- Nestor, James F., to Du Pont de Nemours, E. I., and Company. Fuel cell and process using molybdenum oxide and tungsten disulfide catalyst. 3,480,479, Cl. 136-086.
- Neuenschwander, Ernst, to Starck, Hermann C., mesne. Production of particulate, non-pyrophoric metals. 3,480,426, Cl. 075.000.5
- Neuman, Werner E., to Components Corporation. Adjustable inductor. 3,480,896, Cl. 336-083.
- Newey Goodman Limited: *See—*
  - Baker, Ernest C., 3,480,128.
- Newhouse, Vernon L., and Mundy, Joseph L., to General Electric Company. Multiaperture cryogenic storage cell. 3,480,920, Cl. 340-173.1
- Newman, Seymour: *See—*
  - Chappelear, David C., Stolki, Thomas J., Newman, Seymour, and Trementozzi, Quirino A. 3,480,569.
- NGK Insulators, Ltd.: *See—*
  - Moriya, Tsutomu, 3,479,861.
- Nichols, Nathaniel B.: *See—*
  - Jaquith, Howard R., McCarthy, James L., Nichols, Nathaniel B., and Norton, Stanley C., Jr. 3,480,854.
- Nicol, John: *See—*
  - Weatherhead, Albert J., Jr., and Nicol, John 3,479,713.
- Nicyper, Raymond. Set of underlay drafting panels. 3,479,741, Cl. 033-001.
- Nield, Eric, to Imperial Chemical Industries Limited. Organic polymeric materials. 3,480,598, Cl. 260-078.5
- Nighswonger, Lester Leroy, Hunk, Billie Gene, and Malm, Donald Irwin, to Deere & Company. Interlocked change speed and auxiliary hydrostatic front wheel drive motor controls. 3,480,099, Cl. 180-044.
- Nippon Electric Company Limited: *See—*
  - Morita, Masasuke, and Miyagi, Masahisa, 3,480,733.
- Nippon Gakki Seizo Kabushiki Kaisha: *See—*
  - Matsumoto, Yoshiyuki, 3,479,915.
- Nippon Kokan Kabushiki Kaisha: *See—*
  - Miyata, Akira, Tomita, Chikayoshi, Suzuki, Akio, Okubo, Hideyo, and Nagakuni, Masahiko, 3,480,521.
- Nippon Seiko Kabushiki Kaisha: *See—*
  - Okamoto, Kenjiro, 3,479,902.
- Nippon Sheet Glass Co., Ltd.: *See—*
  - Itakura, Kiyoshi, 3,480,423.
- Nippon Telegraph and Telephone Public Corporation: *See—*
  - Kuroyanagi, Noriyoshi, and Matsuura, Yoshihisa, 3,480,734.
- Niskovskikh, Vitaly Maximovich: *See—*
  - Bykov, Vladimir Alexandrovich, Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Karlinsky, Stanislav Evgenievich, Niskovskikh, Vitaly Maximovich, Orlov, Boris Yakovlevich, Sokolovsky, Oleg Petrovich, and Khimich, Georgy Lukich 3,480,074.
  - Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Kuznetsov, Leonid Georgievich, Niskovskikh, Vitaly Maximovich, and Rolnik, Savva Abramovich 3,480,075.
- Noguchi, Sadao, to Mitsubishi Jukogyo Kabushiki Kaisha. Bottle filling apparatus. 3,480,049, Cl. 141-141.
- Noirot, Michel, and Quatredeniers, Claude, to General Motors Corporation. Diaphragm pump rocker arms. 3,479,928, Cl. 092-129.
- Noland, Wayne B., to Woodford Manufacturing Company. Non freezable hydrant. 3,480,027, Cl. 137-059.
- Nordstrom, Arnold B.: *See—*
  - Jensen, Richard H., and Nordstrom, Arnold B. 3,480,239.
- Norem, Philip C.: *See—*
  - Speeth, Sheridan D., and Norem, Philip C. 3,480,912.
- Norgren, Duane U., to United States of America, Atomic Energy Commission. Method and apparatus for determining image asymmetry in optical lenses. 3,480,366, Cl. 356-124.
- Normbau Maschinenfabrik GmbH & Co.: *See—*
  - Frauendorf, Manfred, 3,480,188.
- North American Rockwell Corporation: *See—*
  - Frill, Robert H., 3,479,808.
  - Holm, Allan P., and Raggio, Louis J., 3,480,401.
  - Husted, Hoyt L., and Van Deventer, Emil L., 3,480,367.
  - Iannucci, Vincent A., and Schartel, Ronald S., 3,480,216.
  - McElwain, John C., 3,480,310.
  - Polkinghorn, Robert W., and Pfeifer, Arthur F., 3,480,796.
  - Siler, Albert E., 3,480,964.
  - Sullivan, Fletcher R., 3,480,756.
  - Waner, Donald W., 3,480,247.
- Norton, David Elliott, to International Business Machines Corporation. Memory driving circuit. 3,480,923, Cl. 340-174.
- Norton, Stanley C., Jr.: *See—*
  - Jaquith, Howard R., McCarthy, James L., Nichols, Nathaniel B., and Norton, Stanley C., Jr. 3,480,854.
- Norvell, Bert E.: *See—*
  - Greenberg, Sanford David, and Norvell, Bert E. 3,480,737.
- Novy, John R.: *See—*
  - Meyer, Herbert J., Daugherty, Charles A., Jr., and Novy, John R. 3,480,738.
- Nuclear-Chicago Corporation: *See—*
  - Meeder, Raymond L., and Kus, Joseph E., 3,480,778.
- Nykl, Clarence A., Jr.: *See—*
  - Kohls, Norman R., Nykl, Clarence A., Jr., and Ayres, William R. 3,480,718.
- Oberg, Paul E., to Sperry Rand Corporation. Synthetic bulk element having thin-ferromagnetic- film switching characteristics. 3,480,926, Cl. 340-174.
- O'Brien, John F., and Broughton, Donald R., to Catalysts and Chemicals, Inc. Oxidation catalyst. 3,480,564, Cl. 252-435.
- O'Brien, Willaim H., to Leesona Corporation. Traverse roll. 3,480,217, Cl. 242-043.2
- Ocheretin, Ivan Vasiljevich: *See—*
  - Khachijan, Alexei Sergeevich, Skuinj, Alexandr Kasparovich, Lekhovitser, Moisei Alexandrovich, Linich, Viktor Vladimirovich, Shapovalov, Sergei Vasiljavich, and Ocheretin, Ivan Vasiljevich 3,480,418.
- O'Connor, Donald T.:*See—*
  - Flaherty, John J., and O'Connor, Donald T. 3,480,002.
- O'Connor, Francis M.:*See—*
  - Bailey, Donald L., and O'Connor, Francis M. 3,480,583.
- O'Donnell, James E. Boring tool head. 3,480,287, Cl. 279-006.
- Oertel, Gunter, Holtschmidt, Hans, Wagner, Kuno, and Zenner, Karl-Friedrich, to Farbenfabriken Bayer Aktiengesellschaft. Polymers containing N-alkoxymethyl groups. 3,480,591, Cl. 260-075.
- Ogden Engineering Corporation: *See—*
  - Ogden, Ralph P., 3,480,757.
- Ogden, Ralph P., to Ogden Engineering Corporation. Motor generator type welding apparatus. 3,480,757, Cl. 219-134.
- Ogilvie, Frank. Corrugating machine. 3,479,855, Cl. 072-383.
- Oguri, Koji: *See—*
  - Okuda, Noriyuki, Kuniyoshi, Ieji, Saito, Tadashi, and Oguri, Koji 3,480,645.
- Ohio State University Research Foundation, The: *See—*
  - Copeland, John R., and Kitzerow, Richard A., 3,480,961.
- Ohshima, Shichiro: *See—*
  - Imabayashi, Mamoru, and Ohshima, Shichiro 3,480,465.
- Okamoto, Kenjiro, to Nippon Seiko Kabushiki Kaisha. Safety steering assembly. 3,479,902, Cl. 074-492
- Okubo, Hideyo: *See—*
  - Miyata, Akira, Tomita, Chikayoshi, Suzuki, Akio, Okubo, Hideyo, and Nagakuni, Masahiko 3,480,521.
- Okuda, Noriyuki, Kuniyoshi, Ieji, Saito, Tadashi, and Oguri, Koji, to Daiichi Seiyaku Company, Limited. Process for optical resolution of racemic pantolactone. 3,480,645, Cl. 260-326.14
- Olander, Donald Edgar, to Explosive Technology, Inc. Pyrotechnic composition. 3,480,489, Cl. 149-022.
- Oldham, Ira B.: *See—*
  - Jensen, Roy A., and Oldham, Ira B. 3,480,919.
- Oleen, Donald C., to Nalco Chemical Company. Waterflood process using organic phosphate esters. 3,480,083, Cl. 166-275.
- Olin Mathieson Chemical Corporation: *See—*
  - Kober, Ehrenfried H., Ottmann, Gerhard F., and Hooks, Haywood, Jr., 3,480,672.
  - Pryor, Michael J., 3,480,411.
  - Smith, Eric, 3,480,673.
  - Wilkaitis, Norman J., and La Brot, Adrian G., 3,479,983.
- Oliva, Edward C.: *See—*
  - Krasny, John F., and Oliva, Edward C. 3,480,383.

- Olsen, Norman G.: *See—*
  - Lenzen, Leo W., Olsen, Norman G., and Wenda, Raymond N. 3,480,120.
- Olympia Werke AG: *See—*
  - Hesse, Alfred, and Bindel, Wolfgang, 3,480,127.
- Omark Industries, Inc.: *See—*
  - Hsu, Yung Shing, 3,480,306.
- Omoto, Seiji, assor. to 1/2 to Osawa, Hideo. Non-circular screws. 3,479,921, Cl. 085-046.
- Ooue, Shingo, Ueda, Hiroyuki, and Hashiue, Masakazu, to Fuji Photo Film Co., Ltd. Photographic materials having a picture image which may be reversed or varied with respect to the contrast thereof. 3,480,365, Cl. 355-077.
- Oransky, Raymond L., and Rombalski, Richard H., to Scott Paper Company. Imaging of lithographic plates by gelatin transfer. 3,480,432, Cl. 096-028.
- Orlov, Boris Yakovlevich: *See—*
  - Bykov, Vladimir Alexandrovich, Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Karlinsky, Stanislav Evgenievich, Niskovskikh, Vitaly Maximovich, Orlov, Boris Yakovlevich, Sokolovsky, Oleg Petrovich, and Khimich, Georgy Lukich 3,480,074.
- Ornstein, Jacob L., and Mueller, Howard C., to Texas Instruments, Incorporated. Manufacture of composite thermostatic metal. 3,479,732, Cl. 029-497.5
- Osaka Transformer Co., Ltd., The: *See—*
  - Sekino, Shigeo, 3,480,221.
- Osborne, William E., to General Dynamics Corporation. Radiation sensitive omnidirectional motion detector system. 3,480,775, Cl. 250-083.3
- Oscar Mayer & Co., Inc.: *See—*
  - Jensen, Hans A., and Eberman, Augustus H., 3,479,792.
- Osipow, Lloyd I., and Rosenblatt, William, to States of Nebraska, The. Esterification of polyhydric compounds in the presence of transparent emulsifying agent. 3,480,616, Cl. 260-234.
- Osman, Martin S.: *See—*
  - Addis, David J., Brown, Walter R. J., and Osman, Martin S. 3,480,924.
- Ostarly, Adam R., to Global Divers and Contractors, Inc. Anchoring machine. 3,479,830, Cl. 061-072.3
- Osterdahl, Ragnar, to Arenco Aktiebolag. Feeding out device in a cigarette packeting machine. 3,479,794, Cl. 053-151.
- O'Sullivan Industries, Inc.:*See—*
  - Bartlett, Ronald K., and O'Sullivan, Thomas M., 3,479,973.
- O'Sullivan, Thomas M.:*See—*
  - Bartlett, Ronald K., and O'Sullivan, Thomas M. 3,479,973.
- Ott, Hans, to Sandoz Inc. 3-Carbalkoxymethyl and 3-carboxymethyl-4-phenyl-quinazolines. 3,480,629, Cl. 260-251.
- Ottmann, Gerhard F.: *See—*
  - Kober, Ehrenfried H., Ottmann, Gerhard F., and Hooks, Haywood, Jr. 3,480,672.
- Ovrebo, Jerry D.: *See—*
  - Benson, Allen B., Gorbatenko, George G., Jursik, James, Kath, Ronald E., Ovrebo, Jerry D., and Skrenes, David H. 3,480,795.
- Owens-Illinois, Inc.: *See—*
  - Asunmaa, Saara K., and Steierman, Bernard L., 3,480,459.
  - Wheaton, Jack M., 3,480,173.
- Oxenrider, Bryce C.: *See—*
  - Gilbert, Everett E., Oxenrider, Bryce C., and Schmitt, George J. 3,480,585.
- Packaging Corporation of America: *See—*
  - Wallace, Wendell J., 3,480,137.
- Packard-Bell Electronics Corporation: *See—*
  - Rieth, Harold F., 3,480,808.
- Padgett, Weldon M., II: *See—*
  - Look, Melvin, Padgett, Weldon M., II, Hyman, Julius, Fenyes, Joseph G. E., and Lee, Herbert P. C. 3,480,646.
- Pallini, Ugo: *See—*
  - Consonni, Alberto, Pallini, Ugo, and Sciaky, Roberto 3,480,623.
- Pande, Kailash Chandra, and Ridenour, Richard Eugene. Metal organic compounds containing metal-O-N linkage. 3,480,653, Cl. 260-429.3
- Pandjiris, Anthony K., and Frederick, Arthur I., to Pandjiris Weldment Co., The. Idler roll assembly. 3,480,158, Cl. 214-001.
- Pandjiris Weldment Co., The: *See—*
  - Pandjiris, Anthony K., and Frederick, Arthur I., 3,480,158.
- Pankow, Melvin W. Car coupling means for toy trains. 3,47 ,976, Cl. 046-242.
- Park, John C., to Goodrich, B. F., Company, The. Unsaturated interpolymers of linear aliphatic heptadienes and/or heptatrienes and alpha- olefins. 3,480,599, Cl. 260-080.7
- Parker Manufacturing Company: *See—*
  - LaPointe, Gabriel M., 3,480,055.
- Parnell, David Harding, and Sotheran, Arthur, to Rolls-Royce Limited, mesne. Combustion apparatus. 3,479,823, Cl. 060-224.
- Parrish, Donald B.: *See—*
  - Ashby, Theodore L., and Parrish, Donald B. 3,480,601.
- Parry, Richard John: *See—*
  - Reid, Alexander Mailer, Parry, Richard John, and Burrows, Michael Eastoe 3,480,453.
- Passavant-Werke: *See—*
  - Bucksteeg, Wilhelm, and Thiele, Hans, 3,480,542.
- Patel, Virendra: *See—*
  - Csizmas, Louis L., and Patel, Virendra 3,480,400.
- Patelhold Patentverwertungs- Elektro-Holding AG: *See—*
  - Kach, Alfred, 3,480,889.
- Patterson, James A. Analytical method and free energy measuring apparatus. 3,479,864, Cl. 073-064.3
- Paul, James T., Jr., to Hercules Incorporated. Method of making filament wound articles. 3,480,498, Cl. 156-175.
- Paul, James T., Jr., to Hercules Incorporated. Method of making low-void filament wound structures. 3,480,499, Cl. 156-175.
- Pearson, John B.: *See—*
  - Barry, Adelbert, Chalmers, Franklin L., and Pearson, John B. 3,480,101.
- Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques: *See—*
  - Duclaux, Daniel, 3,480,526.
- Pedjac, Joseph J.: *See—*
  - Pumpelly, Charles T., Pedjac, Joseph J., and Somerville, John S. 3,480,600.
- Pegg, Samuel, & Son Limited: *See—*
  - Walsom, Derek J., 3,479,846.
- Peninsula Research & Development Corporation Limited: *See—*
  - Speeth, Sheridan D., and Norem, Philip C., 3,480,912.
- Penn Corporation: *See—*
  - Koeln, Harold E., 3,480,370.
- Penn-Western Electric: *See—*
  - Lesher, John C., 3,480,791.
- Pennsalt Chemicals Corporation: *See—*
  - Cushing, Russell Emery, 3,480,031.
  - Nelson, Russell Theodore, 3,480,644.
- Pensa, Pietro, to Massey-Ferguson Services N.V. Self-propelled vehicle with rotatable superstructure. 3,480,156, Cl. 212-038.
- Peppler, William S., to Diamond International Corporation. Automatic stretch bag machine. 3,479,930, Cl. 093-008.
- Perkin-Elmer Corporation, The: *See—*
  - Preston, Kendall, Jr., 3,480,348.
- Perrinjaquet, Roger Paul. Race track. 3,480,210, Cl. 238-010.
- Perry, Malcolm R.: *See—*
  - Prindell, Stuart M., Jr., Perry, Malcolm R., Martin, Vincent W., and Fritsch, Daniel F. 3,479,815.
- Person, Herman R., to Dale Electronics, Inc. Electrical surge arrestor. 3,480,832, Cl. 317-016.
- Petersen, Irving J.: *See—*
  - Brannon, Edward O., and Petersen, Irving J. 3,480,039.
- Peterson, A. E., Mfg., Co.: *See—*
  - Peterson, Arnold E., 3,480,290.
- Peterson, Arnold E., to Peterson, A. E., Mfg., Co. Collapsible baby stroller. 3,480,290, Cl. 280-036.
- Pettibone, Raymond B., to Sperry Rand Corporation. Power transmission. 3,479,962, Cl. 103-136
- Pfaffle, Merle L.: *See—*
  - Reid, Donald G., and Pfaffle, Merle L. 3,480,068.
- Pfeifer, Arthur F.: *See—*
  - Polkinghorn, Robert W., and Pfeifer, Arthur F. 3,480,796.
- Pfeiffer, Philip W.: *See—*
  - Schwartz, Robert A. D., and Pfeiffer, Philip W. 3,480,246.
- Pfizer, Chas., & Co., Inc.: *See—*
  - Johnston, James David, 3,480,713.
  - McLamore, William M., and Laubach, Gerald D., 3,480,652.
- Pfleger, Robert, Bertholdt, Heinz, and Schulz, Wolfram, to Chemische Fabrik Dr. R. Pfleger. Certain azoniaspironortropine derivatives. 3,480,626, Cl. 260-247.2
- Pfoff, G. M., A.G.: *See—*
  - Meier, Willi, 3,479,977.
- Pharr, Mark R., Jr.: *See—*
  - Wilson, Robert G., and Pharr, Mark R., Jr. 3,480,753.
- Phelan, Louis, A. M.: *See—*
  - Cadman, Harold O., 3,479,957.
  - Cadman, Harold O., 3,479,961.
- Philadelphia Handle Company, Inc.: *See—*
  - Szabo, Marton, 3,479,702.
- Philamon Incorporated: *See—*
  - Grib, Boris F., 3,480,809.
- Philipps, Bruce Allan: *See—*
  - Vertesi, Tibor Miklos, and Philipps, Bruce Allan 3,480,211.
- Phillips Petroleum Company: *See—*
  - Collins, Henry R., Jr., 3,480,032.
  - Corum, Donald A., 3,480,512.
  - Gaeth, Rudolf H., and Naylor, Floyd E., 3,480,608.
  - Hsieh, Henry L., 3,480,607.
  - Kleiss, Louis D., 3,479,863.
  - Walker, Darrell W., and McReynolds, Leo A., 3,480,660.
- Phlipot, James R., Gill, Lawrence H., and Clifford, Earl W., to Aro of Buffalo, Incorporated. Valve responsive to changes in speed. 3,480,026, Cl. 137-038.
- Phytogen Products, Inc.: *See—*
  - Loken, Bjarte, and Sollins, Irving V., 3,480,619.
  - Loken, Bjarte, and Gut, Marcel, 3,480,621.
- Picker, Amos, to Hughes Aircraft Company. Method for making storage targets for cathode ray tubes. 3,480,482, Cl. 148-006.3
- Pierce, Robert W., to Sweden Freezer Mfg. Co. Absorption tester having ports and trapezoidal enclosure with provision for eliminating bubbles from the optical test path. 3,480,784, Cl. 250-218.
- Pietrzak, Joe P., to General Motors Corporation. Tray and grid with grooves. 3,480,251, Cl. 249-127.

- Pilkington Brothers Limited: *See—*
  - Barradell-Smith, Richard, Hall, James Edward, and Roby, James, 3,480,160.
  - Loukes, David Gordon, and Hay, Alan Edward, 3,480,420.
  - Reid, Alexander Mailer, Parry, Richard John, and Burrows, Michael Eastoe, 3,480,453.
- Pillsbury Company, The: *See—*
  - Wilhelm, Max G., 3,480,057.
- Pilot Research Corporation: *See—*
  - Silvain, Andre Henri, 3,479,844.
- Pirelli S.p.A.: *See—*
  - Cicognani, Mario, 3,479,892.
- Pittman, Allen G., and Wasley, William L., to United States of America, Agriculture. Fluorinated vinyl ethers and use thereof. 3,480,605, Cl. 260-091.1
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- Pityo, Albert F., to Federal Tool Engineering Company. Parts farbicating apparatus having readily replaceable units and indexable work holding ring structure. 3,479,712, Cl. 029-038.
- Plasser, Franz, and Theurer, Josef. Mobile track correction apparatus. 3,479,964, Cl. 104-007.
- Plasser, Franz, and Theurer, Josef. Ballast tamping tool for mobile tamper. 3,479,965, Cl. 104-012.
- Plonsker, Larry, to Ethyl Corporation. Gasoline containing 2,6-di-tert-butyl-4-halophenol. 3,480,413, Cl. 044-069.
- Polaroid Corporation: *See—*
  - Erlichman, Irving, 3,479,941.
  - Land, Edwin H., 3,479,936.
  - Land, Edwin H., and Eloranta, Vaito K., 3,479,942.
  - Sullivan, Robert T., 3,479,937.
- Pole, Robert V., to International Business Machines Corporation. Laser scanning device having two lens systems with a common focal plane. 3,480,875, Cl. 331-094.5
- Polkinghorn, Robert W., and Pfeifer, Arthur F., to North American Rockwell Corporation. MOS transistor driver using a control signal. 3,480,796, Cl. 307-251.
- Pollak, Lud. Sun visor. 3,480,322, Cl. 296-097.
- Pool, Stuart D., and Steingas, Richard R., to International Harvester Company. Inertia shaker construction. 3,479,806, Cl. 056-328.
- Pope, Joseph Albert, and Appleby, John Edwin Herbert, to Mirrlees National Limited. Pressure lubrication systems. 3,480,113, Cl. 184-006.
- Popeil, Samuel J. Roller, clip and composition of matter. 3,480,019, Cl. 132-040.
- Popovich, Richard G., to Westinghouse Electric Corporation. Detected boost voltage supply. 3,480,825, Cl. 315-022.
- Poppelsdorf, Fedor, to Union Carbide Corporation. Preparation of bis [beta-(N,N-dimethylamino) alkyl] ethers. 3,480,675, Cl. 260-584.
- Porret, Daniel: *See—*
  - Batzer, Hans, and Porret, Daniel 3,480,692.
- Portable Elevator Manufacturing Company: *See—*
  - Groenke, Merlin A., 3,480,086.
- Porter, Clive H., to Talcott, James, Inc., mesne. Split key for spider arm. 3,480,223, Cl. 242-064.
- Porter, Dennis A., and White, Robert R., to General Electric Company. Load division circuit. 3,480,790, Cl. 307-057.
- Porter, Kenneth, to Imperial Chemical Industries Limited. Polyester preparation. 3,480,587, Cl. 260-047.
- Pospisil, Jaroslav, and Hubacek, Vaclav, to CKD Praha, oborovy podnik. Method for inspecting liners and shells of heating devices and apparatus for performing the method. 3,479,882, Cl. 073-432.
- Possati, Mario. Device for indicating the value of a magnitude such as an electric signal on a visible scale or dial. 3,480,861, Cl. 324-099.
- Poth, Leonhard, to Linde Aktiengesellschaft. Method of and assembly for the joining of elements of different materials. 3,479,730, Cl. 029-472.1
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  - Hayes, Leonard L., 3,480,052.
- Potter, Frederick Milton, to Bendix Corporation, The. Oil cooled generator. 3,480,810, Cl. 310-054.
- Poupitch, Ougljesa Jules, to Illinois Tool Works Inc. Clip device. 3,480,136, Cl. 206-065.
- Powers, Gene W.: *See—*
  - Gouw, Lam H., Voncken, Josef H., Frielingsdorf, Hans, and Powers, Gene W. 3,480,507.
- Powers, Robert E.: *See—*
  - Denig, Fred, and Powers, Robert E. 3,480,427.
- Poynter, Kenneth L., to Miami Brick and Stone, Inc., mesne. Molding apparatus. 3,479,705, Cl. 025-041.
- Prager, Jay H. Multiple selection control structure. 3,479,898, Cl. 074-471.
- Pratt, Henry, Company: *See—*
  - Fawkes, Donald G., 3,480,254.
- Press, Irving D., to Resistoflex Corporation. Production of P.T.F.E. tubing. 3,480,707, Cl. 264-209.
- Preston, Kendall, Jr., to Perkin-Elmer Corporation, The. Apparatus for use in phase modulating a beam of light. 3,480,348, Cl. 350-161.
- Price, Glenn R., to Stauffer Chemical Company. Phosphorus containing urethane foams. 3,480,594, Cl. 260-077.5
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- Priese, Werner K., and Davies, David J., to Hills-MacCanna Company. Ball valve with seats for journalled ball. 3,480,253, Cl. 251-174.
- Primas, Alex L.: *See—*
  - Stoops, James W., Bitterlich, Gordon M., Lipkin, Moses R., and Primas, Alex L. 3,480,416.
- Prindell, Stuart M., Jr., Perry, Malcolm R., Martin, Vincent W., and Fritsch, Daniel F., to Hamilton Watch Company. Elapsed time indicator. 3,479,815, Cl. 058-145.
- Pro-Tee-Off Company: *See—*
  - Loeffler, Herbert H., 3,479,878.
- Producers Chemical Company: *See—*
  - Guinn, Jerry H., and Wright, William Sherwood, 3,480,079.
- Produits Chimiques Pechiney-Saint Gobain: *See—*
  - Graulier, Maxime, 3,480,389.
  - Michel, Max, 3,480,388.
  - Thomas, Jean Claude, 3,480,606.
- Prontor-Werk Alfred Gauthier, G.m.b.H.: *See—*
  - Rentschler, Waldemar T., 3,480,860.
- Propus, Louis. Resilient ventilated back and seat support. 3,480,323, Cl. 297-253.
- Proudfoot, Ward M.: *See—*
  - Proudfoot, Ward M., Craig, Burnie M., and Viancour, Albert D., 3,480,043.
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- Proxmire, Harry J.: *See—*
  - Helberg, Henry J., and Proxmire, Harry J. 3,480,897.
- Pryor, Michael J., to Olin Mathieson Chemical Corporation. Composite fin stock material. 3,480,411, Cl. 029-191.
- Pumpelly, Charles T., Pedjac, Joseph J., and Somerville, John S., to Dow Chemical Company, The. Shaped articles made from acrylonitrile and neopentyl tribromo acrylates. 3,480,600, Cl. 260-085.5
- Puschel, Walter: *See—*
  - Lassig, Wolfgang, Riebel, Alexander, Puschel, Walter, and Himmelmann, Wolfgang 3,480,431.
- Quatredeniers, Claude: *See—*
  - Noirot, Michel, and Quatredeniers, Claude 3,479,928.
- Rachman, Isadore B., to Metal Dynamics Corporation. Digital indicator. 3,480,950, Cl. 340-378.
- Racine Hydraulics, Inc.: *See—*
  - Brannon, Edward O., and Petersen, Irving J., 3,480,039.
- Radeka, Veljko: *See—*
  - Chase, Robert L., and Radeka, Veljko 3,480,870.
- Raggio, Louis J.: *See—*
  - Holm, Allan P., and Raggio, Louis J. 3,480,401.
- Railway Express Agency, Incorporated: *See—*
  - Tuchman, Martin, 3,480,095.
- Rakoczi, Laszlo L.: *See—*
  - Belt, John E., Hittel, Lorenz A., and Rakoczi, Laszlo L. 3,480,916.
- Ralston, Robert E. Power-operable fastener applying device. 3,480,193, Cl. 227-130
- Randa, Gerald, and Stephens, William T., to Borg-Warner Corporation. Fluid device. 3,479,963, Cl. 103-162.
- Rank Organisation Limited, The: *See—*
  - Barr, John Denzil, 3,479,944.
- Rankin, David, to Gulf Oil Corporation. Self-cross-linking acrylic resin coating process and product. 3,480,463, Cl. 117-062.
- Raschke, Herbert A., to Byllard, E. D., Company. Antifouling safety gate for a hoisting hook. 3,480,319, Cl. 294-082.
- Rath, Heinrich Bernhard, to Girling Limited. Yoke mounting and guide means for spot-type disc brake. 3,480,116, Cl. 188-073.
- Ratner, Hyman: *See—*
  - Henderson, Bennett M., Ratner, Hyman, and Wittner, Eugene 3,480,550.
- Raynolds, Stuart, to Du Pont de Nemours, E. I., and Company. Water repellent compositions. 3,480,579, Cl. 260-028.5
- RCA Corporation: *See—*
  - Carter, George W., 3,480,873.
  - Del Vecchio, Nicholas A., 3,480,762.
  - Delany, James F., and Walter, Gerard O., 3,479,934.
  - Hanak, Joseph John, 3,479,738.
  - Lieser, Zeev, 3,480,940.
- Red Arrow Products Corporation: *See—*
  - Hollenbeck, Clifford M., 3,480,446.
- Redifon Limited: *See—*
  - Rogers, Ernest William, Dillon, Peter, and Mitchell, Christopher Richard, 3,480,871.
- Reed, Oscar Lee. Post forming machine. 3,479,704, Cl. 025-041.
- Rees, David B.: *See—*
  - Jamerson, Frank E., Leffert, Charles B., and Rees, David B. 3,480,803.
- Reeves, Wilson A.: *See—*
  - Sloan, William G., Moore, Harry B., Cooper, Albert S., Jr., and Reeves, Wilson A. 3,480,382.
- Regan, Bernard M., to Baxter Laboratories, Inc. 2-Bromo-1,1,2,3,3-pentafluoropropane. 3,480,683, Cl. 260-653.
- Reiber, Edwin E. Connectors for cable conduits. 3,480,303, Cl. 285-373.
- Reichhold Chemicals, Inc.: *See—*
  - Bernardi, Eugene L., and Krysiak, Henry A., 3,479,952.
- Reichold Chemicals, Inc.: *See—*
  - Chang, Yun G., 3,480,648.

- Reid, Alexander Mailer, Parry, Richard John, and Burrows, Michael Eastoe, to Pilkington Brothers Limited. Optical glass. 3,480,453, Cl. 106-047.
- Reid, Donald G., and Pfaffle, Merle L. Tire preconditioner. 3,480,068, Cl. 157-013.
- Reimer, William A.: *See—*
  - Sidor, Edward F., and Reimer, William A. 3,480,893.
- Reingold, Gordon A., to Bell Telephone Laboratories, Incorporated. Rotary impact burrowing device. 3,480,092, Cl. 175-019.
- Reinhardt, Helmut, Nauroth, Peter, and Achenbach, Karl. Process for producing finely-divided precipitated silicon dioxide. 3,480,390, Cl. 023-182.
- Reinhold, Donald F., Gaines, Walter A., and Sletzinger, Meyer, to Merck & Co., Inc. Resolution of racemic chemical compounds. 3,480,670, Cl. 260-559.
- Reisini, Nicolas: *See—*
  - Dejoux, Jean Veran, 3,480,362.
- Reisman, Arnold, and Leonhardt, Horst R., to International Business Machines Corporation. Vapor polishing technique. 3,480,491, Cl. 156-017.
- Reister, Oskar: *See—*
  - Kampfer, Helmut, Gotze, Johannes, Reister, Oskar, and Bockly, Erich 3,480,439.
- Reitz, Edgar, and Nestler, Paolo, to Insel-Film GmbH & Co. Reproduction apparatus and screen arrangement for moving picture theaters. 3,480,346, Cl. 350-120.
- Reliable Electric Company: *See—*
  - Golden, James E., 3,480,723.
- Rembold, Karl-Heinz, to Ciba Limited. Process for the manufacture of pre-impregnated webs. 3,480,471, Cl. 117-161.
- Remeika, Joseph P.: *See—*
  - Dillon, Joseph F., Jr., Johnson, Leo F., and Remeika, Joseph P. 3,480,877.
- Rentschler, Waldemar T., to Prontor-Werk Alfred Gauthier, G.m.b.H. Testing means for an electronically operating automatic exposure system for photographic cameras. 3,480,860, Cl. 324-096.
- Repko, John P., to Dow Chemical Company, The. Bag opening device. 3,480,198, Cl. 229-066.
- Research Institute for Medicine and Chemistry, Inc.: *See—*
  - Barton, Derek Harold Richard, 3,480,622.
- Reserve Mining Company: *See—*
  - Liljegren, Jack G., Schaal, Wayne G., and Schubert, Lawrence F., 3,480,212.
- Resistoflex Corporation: *See—*
  - Press, Irving D., 3,480,707.
- Reynolds, Donald S., and Krueger, Harvey R., to Reynolds Products, Inc. Beverage brewing machine. 3,479,949, Cl. 099-282.
- Reynolds Products, Inc.: *See—*
  - Reynolds, Donald S., and Krueger, Harvey R., 3,479,949.
- Rhodes, Barry V.: *See—*
  - Bloxsom, Daniel Edgar, Jr., and Rhodes, Barry V. 3,479,857.
- Rhodia Inc.: *See—*
  - Meuly, Walter C., and Gradeff, Peter S., 3,480,677.
- Rhone-Poulenc S.A.: *See—*
  - Fouche, Jean Clement Louis, 3,480,624.
- Ribadier, Georges: *See—*
  - Faberes, Pierre, and Ribadier, Georges 3,480,824.
- Ricca, Anthony S. Self-locking screw-threaded element and method of making it. 3,479,675, Cl. 010-010.
- Rich, Joseph A., to General Electric Company. Stabilized vacuum gap device with elementary electrode structure. 3,480,821, Cl. 313-148.
- Richardson, Charles A., to Blandin Paper Company. Paper coating composition. 3,480,455, Cl. 106-137.
- Richardson, John R., to General Electric Company. Thin-film storage diode with tellurium counterelectrode. 3,480,843, Cl. 317-234.
- Richardson, Joseph W., and Woodhouse, Dal C. Cleaning device for eyeglasses. 3,480,022, Cl. 134-112.
- Richens, Charles. Irrigation valve. 3,479,826, Cl. 061-022.
- Richman, Peter L., to Weston Instruments, Inc. Parallel operational rectifiers. 3,480,794, Cl. 307-229.
- Richman, Peter L., to Weston Instruments, Inc. Thermal RMS limiter and semiconductor driving circuit means. 3,480,835, Cl. 317-041.
- Richmond, Irving D., to United Aircraft Corporation. Range gated integrator. 3,480,959, Cl. 343-017.1
- Richter, Sidney, and Levin, Alfred A., to Velsicol Chemical Corporation. 1,3-Dicyano-4,7-methano-3 a,4,7,7a- tetrahydroindane compounds. 3,480,657, Cl. 260-464.
- Riddel, John W., to General Motors Corporation. Thermistor liquid level sensor and method for making the same. 3,479,875, Cl. 073-295.
- Ridenhour, Banks L.: *See—*
  - Bourn, Jesse T., Ridenhour, Banks L., and Lum, Robert C. 3,480,257.
- Ridenour, Richard Eugene: *See—*
  - Pande, Kailash Chandra, and Ridenour, Richard Eugene 3,480,653.
- Ridgewell, Brian John: *See—*
  - Duck, Edward William, and Ridgewell, Brian John 3,480,604.
- Riebel, Alexander: *See—*
  - Lassig, Wolfgang, Riebel, Alexander, Puschel, Walter, and Himmelmann, Wolfgang 3,480,431.
  - Himmelmann, Wolfgang, Riebel, Alexander, Zenner, Karl-Friedrich, and Meckl, Heinz 3,480,440.
- Rieke, James K.: *See—*
  - Hart, Gerald M., and Rieke, James K. 3,480,485.
- Rieth, Harold F., to Packard-Bell Electronics Corporation. Power generator. 3,480,808, Cl. 310-025.
- Rigamonti, Alessandro: *See—*
  - Carletti, Luciano, and Rigamonti, Alessandro 3,480,468.
- Rigor, Herbert W. Pill dispensing container. 3,480,182, Cl. 221-288.
- Rimer, Kenneth W.: *See—*
  - Coless, Thomas L., and Rimer, Kenneth W. 3,480,487.
- Riordan, John D.: *See—*
  - Libby, Carl F., 3,480,047.
- Ritchey, James F., Tate, Louis D., and Waddell, Richard E., to Bell Telephone Laboratories, Incorporated. Telephone reportiong set. 3,480,730, Cl. 179-005.
- Ritzerfeld, Gerhard. Method of producing and regenerating regenerable printing forms. 3,479,953, Cl. 101-470.
- Roberts, Brinley, and Stephenson, Robert James, to Monsanto Chemicals Limited. Method of foaming polymeric particles containing a foaming agent. 3,480,570, Cl. 260-002.5
- Robertshaw Controls Company: *See—*
  - McHale, William L., 3,479,836.
- Robinson, Albert L. Lock structure. 3,480,314, Cl. 292-064.
- Robinson, Anthony George, to Westland Aircraft Limited. Electrical position indicators. 3,480,937, Cl. 340-196.
- Robison Rayon Company, Inc.: *See—*
  - Lawson, John B., 3,480,218.
- Rohson Leather Company: *See—*
  - Becker, John E., 3,479,847.
- Roby, James: *See—*
  - Barradell-Smith, Richard, Hall, James Edward, and Roby, James 3,480,160.
- Rock, Frank C., Jr., to Lauer, George E. Photoelectric system for grading objects according to length and width. 3,480,141, Cl. 209-080.
- Rockett, James D. Cord type container carrier. 3,480,135, Cl. 206-065.
- Rocks, James K.: *See—*
  - Edlin, Ray L., and Rocks, James K. 3,480,450.
- Rockwell, Dean M., to Impact Container Corporation. Container outlet opening outfitted with one piece, double seal gasket. 3,480,183, Cl. 222-003.
- Rogers, Ernest William, Dillon, Peter, and Mitchell, Christopher Richard, to Redifon Limited. Radio frequency amplifier with variable- gain stage for overload protection. 3,480,871, Cl. 330-029.
- Rohde, LeRoy H., to West Company, The. Container closure. 3,480,171, Cl. 215-046.
- Rohr, Otto, to Ciba Limited. 3,5-Dihalo-4-carbamato benzonitriles. 3,480,658, Cl. 260-465.
- Rohrer, Daniel F., to Varian Associates. Vacuum actuator and vacuum system using same. 3,480,200, Cl. 230-045.
- Rohrig, John M.: *See—*
  - Anderson, Robert L., and Rohrig, John M. 3,479,958.
- Role, Harry: *See—*
  - Kruizenga, Jack R., Graves, Donald C., and Role, Harry 3,479,724.
- Rolls-Royce Limited: *See—*
  - Parnell, David Harding, and Sotheran, Arthur, 3,479,823.
- Rolnik, Savva Abramovich: *See—*
  - Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Kuznetsov, Leonid Georgievich, Niskovskikh, Vitaly Maximovich, and Rolnik, Savva Abramovich 3,480,075.
- Roman, Robert J., to Eastman Kodak Company. Projection cartridge. 3,480,226, Cl. 242-071.1
- Rombalski, Richard H.: *See—*
  - Oransky, Raymond L., and Rombalski, Richard H. 3,480,432.
- Romi, Giordano, to Industrias Romi S.A. Mechanism for regulating the operation of trans- missions or the like. 3,479,899, Cl. 074-473.
- Ronco, Karl, and Hari, Istvan, to Ciba Limited. Dioxazine dyestuffs having in 6 and 13 position a heterocyclic acylamino group. 3,480,625, Cl. 260-246.
- Ronel Corporation: *See—*
  - Lidsky, Julius, 3,479,919.
- Roper, Geo. D., Corporation: *See—*
  - Torrey, Sumner H., Dubuque, Donald J., Weiss, Johnny C., and Sloan, Norman R., 3,480,000.
- Roschin, Vladislav Vasilievich, Muromtsev, Boris Ivanovich, Gusakov, Gennady Nilolaevich, and Maslov, Leonid Ivanovich. Method of electric-arc welding of pipe joints. 3,480,758, Cl. 219-137.
- Rosenblatt, William: *See—*
  - Osipow, Lloyd I., and Rosenblatt, William 3,480,616.
- Rosenthal, Rudolph: *See—*
  - Bonetti, Giovanni A., and Rosenthal, Rudolph 3,480,563.
- Ross & Rowe, Inc.: *See—*
  - Hilty, Walden K., 3,480,544.
- Ross, Sheldon I., to Bliss, E. W., Company. Repeat cycle release mechanism. 3,479,887, Cl. 070-003.52
- Rotondo, Anthony J., to SI Handling Systems, Inc. Tow truck switching system. 3,479,966, Cl. 104-088.
- Rotork Controls Limited: *See—*
  - Fry, Jeremy J., 3,480,746.
- Rousseau, Serge: *See—*
  - Milochevitch, Alexandre, and Rousseau, Serge 3,480,874.
- Rouxel, Roland, and Helein, Jean G., to Battelle Memorial Institute, and International Division Compagnie Francaise Thomson-Houston.

Apparatus for controlling an industrial installation. 3,480,765, Cl. 235-150.1

- Rowe, Charles: *See—*
  - Jacks, Eric, and Rowe, Charles 3,480,901.
- Rowland, David L. Dispensing package for paper-cup ashtrays and the like. 3,480,179, Cl. 221-063.
- Roy, Hrishikesh Chandra, to Metzeler AG. Method for improving the physical and cord- adhesion properties of natural rubber or styrene butadiene rubber. 3,480,508, Cl. 161-227.
- Ruchardt, Hugo, Hargasser, Hans, and Meer, Winfried, to Siemens Aktiengesellschaft. Transistor for operation in regulating circuits with emitter base junction of sawtooth, concave, or wedge shape configuration. 3,480,845, Cl. 317-234.
- Rudy, Thomas P., Nakagawa, Toshio W., and Greendorfer, Joseph M., to United Aircraft Corporation. Self-regulating coating process for propellant materials. 3,480,488, Cl. 149-007.
- Rudzitis, Karl: *See—*
  - Mindell, Marvin, and Rudzitis, Karl 3,480,282.
- Russell, Charles R.: *See—*
  - Buchanan, Russell A., and Russell, Charles R. 3,480,572.
- Rust, Frederick F., and Klein, Harvey S., to Shell Oil Company. Halide addition process. 3,480,661, Cl. 260-465.4
- Rutenberg, Abraham. Economical utilization of existing power plants. 3,479,820, Cl. 060-064.
- Ruthardt, Konrad: *See—*
  - Thiede, Maria nee Mentzner, and Ruthardt, Konrad 3,480,429.
- Ryder, Geoffrey Alan: *See—*
  - Evans, Trevor Gwilym, and Ryder, Geoffrey Alan 3,480,170.
- Ryhage, Erik Ragnar. Methods in the analysis of gases. 3,479,798, Cl. 055-158.
- Sachs, Ernst, and Schwan, Bernhard, to ERSA Ernst Sachs KG. Electrical soldering tool and pivotal mount therefor. 3,480,759, Cl. 219-242.
- Saffer, Bernard A.: *See—*
  - Feldman, Julian, Saffer, Bernard A., and Frampton, Orville D. 3,480,685.
- Saginaw Products Corporation: *See—*
  - Holthofer, Donald J., 3,479,897.
- Saito, Etsuro: *See—*
  - Doi, Tatsumi, Mineshima, Teruo, and Saito, Etsuro 3,480,361.
- Saito, Tadashi: *See—*
  - Okuda, Noriyuki, Kuniyoshi, Ieji, Saito, Tadashi, and Oguri, Koji 3,480,645.
- Salas-Humara, Carlos: *See—*
  - Dosal, Martin R., and Salas-Humara, Carlos 3,479,981.
- Salazar, Francis R.: *See—*
  - Grosbard, Gregory, 3,480,811.
- Salazkin, Sergei Nikolaevich: *See—*
  - Korshak, Vasily Vladimirovich, Vinogradova, Svetlana Vasilievna, Salazkin, Sergei Nikolaevich, and Bereza, Svetlana Veniaminovna 3,480,597.
- Sames, Delbert W.: *See—*
  - Goodman, Robert C., and Sames, Delbert W. 3,480,222.
- Samtleben, Hans-Wolfgang: *See—*
  - Stahle, Helmut, Kummer, Werner, Koppe, Herbert, Zeile, Karl, Hoefke, Wolfgang, and Samtleben, Hans-Wolfgang 3,480,630.
- Sanders Associates, Inc.: *See—*
  - Hayner, Paul F., and Eldridge, David G., 3,479,925.
- Sanders, Ray W., to Space-General Corporation. Phase locked crystal controlled voltage variable oscillator. 3,480,865, Cl. 325-419.
- Sanderson, George H., to United States of America, Army, mesne. Cross-correlation radar. 3,480,956, Cl. 343-013.
- Sandoz Inc.: *See—*
  - Ott, Hans. 3,480,629.
- Sanford, Arthur Carol. Connector plate. 3,479,920, Cl. 085-013.
- Santer, James O.: *See—*
  - Lavin, Edward, Markhart, Albert H., and Santer, James O. 3,480,588.
- Sapakie, Alan Louis: *See—*
  - Kenny, Neal S., Warden, Douglas A., and Sapakie, Alan Louis 3,480,372.
- Sarsten, Jan A., and Myers, Michael C., to Esso Research and Engineering Company. Process for vaporizing liquefied natural gas. 3,479,832, Cl. 062-052.
- Sasse, Klaus: *See—*
  - Jager, Horst, Horstmann, Walter, Schundehutte, Karl-Heinz, Trautner, Kersten, Siegel, Edgar, and Sasse, Klaus 3,480,611.
- Sattler, Helmut: *See—*
  - Forster, Paul Friedrich, Kurzke, Herbert, Sattler, Helmut, and Schnock, Gunter 3,480,586.
- Saul, Sanford, to Triax Company, The. Print-out device for warehousing system. 3,480,162, Cl. 214-016.4
- Schaaf, Cecil F., and Macciomei, Walter. Sea wall and fence construction. 3,479,824, Cl. 061-003.
- Schaal, Wayne G.: *See—*
  - Liljegren, Jack G., Schaal, Wayne G., and Schubert, Lawrence F. 3,480,212.
- Schack, John B., to Concrete Conduit Company, Inc. Underground utility vault with a ventilator-type grate. 3,479,777, Cl. 052-020.
- Scharli, Otto, to Aktiengesellschaft Brown, Boveri & Cie. Semiconductor structure disc having PN junction with improved heat and electrical conductivity at outer layer. 3,480,842, Cl. 317-234.
- Schartel, Ronald S.: *See—*
  - Iannucci, Vincent A., and Schartel, Ronald S. 3,480,216.
- Scheben, John A., and Mador, Irving L., to National Distillers and Chemical Corporation. Process for cyclodimerizing 1,2-oxiranes, 1,2- thiiranes and 1,2-aziridines. 3,480,632, Cl. 260-268.
- Schenectady Chemicals, Inc.: *See—*
  - Jordan, Manuel A., Meyer, John F., and Zalewiski, Edmund J., 3,480,589.
- Schenker, Karl: *See—*
  - Wilhelm, Max, Daeniker, Hans Ulrich, Schenker, Karl, and Schmidt, Paul 3,480,640.
- Schering Aktiengesellschaft: *See—*
  - Wiechert, Rudolf, 3,480,711.
- Scheuber, Hermann, to Lonza Ltd. Process of purifying ketene. 3,480,676, Cl. 260-585.5
- Scheuerman, Ronald F.: *See—*
  - Scott, Paul R., and Scheuerman, Ronald F. 3,480,024.
- Schlaeppi, Hans P., to International Business Machines Corporation. Control mechanism for a multiprocessor computing system. 3,480,914, Cl. 340-172.5
- Schletz, Howard D. Paint mixing apparatus. 3,480,259, Cl. 259-075.
- Schlosser, Hellmut: *See—*
  - Sucher, Josef, Werner, Siegfried, Schlosser, Hellmut, Chojnowski, Manfred, and Hain, Josef 3,479,723.
- Schmidt, Paul: *See—*
  - Wilhelm, Max, Daeniker, Hans Ulrich, Schenker, Karl, and Schmidt, Paul 3,480,640.
- Schmitt, George J.: *See—*
  - Gilbert, Everett E., Oxenrider, Bryce C., and Schmitt, George J. 3,480,585.
- Schmitt, Heinz, to Heraeus-Schott Quarzschmelze G.m.b.H. Supporting rack of quartz. 3,480,151, Cl. 211-041.
- Schneider, Jos., & Co.: *See—*
  - Himmelsbach, Paul, 3,480,349.
- Schnock, Gunter: *See—*
  - Forster, Paul Friedrich, Kurzke, Herbert, Sattler, Helmut, and Schnock, Gunter 3,480,586.
- Schoening, Werner Peter, to Griffolyn Company, Inc. Collapsible receptacle for large quantities. 3,480,059, Cl. 150-048.
- Schomber, Veit, to Hellige, Fritz, & Co. G.m.b.H. Physiological volume-pressure diagram recording device. 3,480,006, Cl. 128-002.08
- Schommer, Heinrich. Universal joint. 3,480,308, Cl. 287-087.
- Schrank, Helmut, to Westinghouse Electric Corporation. High power microwave switch. 3,480,885, Cl. 333-007.
- Schrenk, Walter J., to Dow Chemical Company, The. Method of making Christmas tinsel. 3,480,502, Cl. 156-271.
- Schropp, Harold D. Detachable windrow sizer box for material moving scraper. 3,479,755, Cl. 037-008.
- Schubert, Bernhard: *See—*
  - Bardenhagen, Dietrich, and Schubert, Bernhard 3,479,787.
- Schubert, Lawrence F.: *See—*
  - Liljegren, Jack G., Schaal, Wayne G., and Schubert, Lawrence F 3,480,212.
- Schuler, Rolf, to Evog, Etablissement fur Verwaltung. Manufacture of fermented milk products. 3,480,443, Cl. 099-059.
- Schulz, Wolfram: *See—*
  - Pfleger, Robert, Bertholdt, Heinz, and Schulz, Wolfram 3,480,626.
- Schundehutte, Karl-Heinz: *See—*
  - Jager, Horst, Horstmann, Walter, Schundehutte, Karl-Heinz, Trautner, Kersten, Siegel, Edgar, and Sasse, Klaus 3,480,611.
- Schundehutte, Karl-Heinz, and Trautner, Kersten. Metal phthalocyanine dyestuffs containing a dihaloisothiazole carboxamido group. 3,480,641, Cl. 260-299.
- Schuster, Marvin A.: *See—*
  - List, William F., and Schuster, Marvin A. 3,480,780.
- Schut, Robert Norman, to Miles Laboratories Inc.2,3,4,67,12-Hexahydroindolo [2,2,-a] quinolizine- methyl vinyl ketone adducts. 3,480,633, Cl. 260-288.
- Schwan, Bernhard: *See—*
  - Sachs, Ernst, and Schwan, Bernhard 3,480,759.
- Schwartz, Harold O., and Barry, Robert D., to Wurlitzer Company, The. Electronic organ pedal keying circuit with sustain and cancellation of sustain upon playing of subsequent pedal. 3,480,719, Cl. 084-001.26
- Schwartz, Robert A. D., and Pfeiffer, Philip W., to United LGHTING AND Ceiling Co. Hanger assembly for modular panels. 3,480,246, Cl. 248-327.
- Schwarz, Julius, Dokes, George E., Von Bradsky, Otokar, and Goodman, Sidney J., to Hendon Construction Company. Camber truss upper frame supporting means for sidewalls of an above ground swimming pool. 3,479,780, Cl. 052-169
- Schwien Engineering, Inc.: *See—*
  - Music, William A., 3,479,879.
- Sciaky, Roberto: *See—*
  - Consonni, Alberto, Pallini, Ugo, and Sciaky, Roberto 3,480,623.
- SCM Corporation: *See—*
  - Kennedy, Melvin H., 3,479,912.
- Scott, Eugene W., to Westinghouse Electric Corporation. Freezable water cooling chamber. 3,479,839, Cl. 062-394.
- Scott Paper Company: *See—*
  - Benson, Robert A., and Jones, Robert L., 3,480,466.
  - Oransky, Raymond L., and Rombalski, Richard H., 3,480,432.
- Scott, Paul: *See—*
  - Mathers, Harold M., and Scott, Paul 3,479,821.

- Scott, Paul R., and Scheuerman, Ronald F. Shell Oil Company Pipeline transportation of liquid anhydrous ammonia and liquid hydrocarbon solutions. 3,480,024, Cl. 137-001.
- Scott, William W., to Aerotron, Inc. Multi-wire cable continuity and short tester. 3,480,856, Cl. 324-051.
- Scurlock, Inc.: *See—*
  - Scurlock, Robert L., and Torongo, Albert, Jr., 3,480,192.
- Scurlock, Robert L., and Torongo, Albert, Jr., to Scurlock, Inc. Apparatus for attaching buttons. 3,480,192, Cl. 227-120.
- Sealed Unit Parts Co., Inc.: *See—*
  - Ehrens, Henry, and Weiner, Sidney, 3,480,036.
- Searle, G. D., & Co.: *See—*
  - Goldkamp, Arthur H., 3,480,618.
- Seeloff, Melvin M., to Taylor-Winfield Corporation, The. Strip edge detection for machine function initiating device. 3,480,194, Cl. 228-008.
- Seidel, Bernhard: *See—*
  - Freytag, Karl-Heinz, Taube, Carl, and Seidel, Bernhard 3,480,438.
- Seidel, William C.: *See—*
  - Mitchell, William A., and Seidel, William C. 3,480,444.
- Sekino, Shigeo, to Osaka Transformer Co., Ltd., The, Wire feed apparatus. 3,480,221, Cl. 242-054.
- Selke, William A.: *See—*
  - Sewell, Edgar F., and Selke, William A. 3,480,847.
- Selman, Stanley, and Squire, Edward N., to Du Pont de Nemours, E. I., and Company. Polymers of difluoroketene dialkyl acetals. 3,480,603, Cl. 260-087.5
- Semi-Elements, Inc.: *See—*
  - Fisher, Joseph V., 3,480,552.
- Servillat, Gabriel, to Societe des Mecaniques Verdol. Double-lift Jacquards operating with reverse selection. 3,480,044, Cl. 139-059.
- Servodan A/S: *See—*
  - Johansen, Knud Harald Storm, 3,480,787.
- Settineri, William J.: *See—*
  - Wessling, Ritchie A., and Settineri, William J. 3,480,525.
  - Wessling, Ritchie A., and Settineri, William J. 3,480,527.
- Setzer, Herbert J., to United Aircraft Corporation. Hydrogen generator including a desulfurizer employing a feedback ejector. 3,480,417, Cl. 048-094.
- Sewell, Edgar F., and Selke, William A., to Kimberly-Clark Corporation. Dielectric capacitor with impregnated paper between the electrodes, said paper containing cellulosic fibers and amphibolic asbestos. 3,480,847, Cl 317-259.
- Seymore, Stephen David, Jr.: *See—*
  - Von Kaenel, John Clifford, Anderson, Gordon Campbell, and Seymore, Stephen David, Jr. 3,479,699.
- Shafer, Merrill W., to International Business Machines Corporation. Process for growing single crystals. 3,480,385, Cl. 023-020.
- Shaff, Gerald H., Smith, Frank R., Haren, Ralph J., and Chiappe, Orlando J., to Walker Manufacturing Company. Muffler manufacturing system. 3,479,725, Cl. 029-430.
- Shaffer, Robert S., to Bethlehem Steel Corporation. Air knife and vacuum doctoring. 3,480,469, Cl. 117-102.
- Shamos, Morris H.: *See—*
  - Smythe, William J., Shamos, Morris H., and Griffin, Gary A. 3,480,369.
- Shanok, Jesse P., and Shanok, Victor, to Glass Laboratories Company. Hot melt coating process. 3,480,462, Cl. 117-047.
- Shanok, Victor: *See—*
  - Shanok, Jesse P., and Shanok, Victor 3,480,462.
- Shapovalov, Sergei Vasiljavich: *See—*
  - Khachijan, Alexei Sergeevich, Skuinj, Alexandr Kasparovich, Lekhovitser, Moisei Alexandrovich, Linich, Viktor Vladimirovich, Shapovalov, Sergei Vasiljavich, and Ocheretin, Ivan Vasiljevich 3,480,418.
- Shaughnessy, John J. Injection mold assembly. 3,479,698, Cl. 018-042.
- Sheary, George W., III, and Steele, James E., to Bethlehem Steel Corporation. Mechanical deep sea nodule harvester. 3,480,326, Cl. 299-008.
- Shebanow, Michael S., to Honeywell Inc. Record processing apparatus. 3,480,930, Cl. 340-174.1
- Sheldon, Robert W. Spacer construction and method of manufacturing same. 3,480,060, Cl. 151-014.
- Shell Oil Company: *See—*
  - Dewhirst, Kenneth C., 3,480,659.
  - Frew, Duncan W., Jr., 3,480,609.
  - Goodman, Willard B., 3,479,829.
  - Gouw, Lam H., Voncken, Josef H., Frielingsdorf, Hans, and Powers, Gene W., 3,480,507.
  - Hallstrom, James R., and Lopez, John A., 3,480,577.
  - Hassell, Howard L., and Hayter, Roy G., 3,480,696.
  - Henderson, Bennett M., Ratner, Hyman, and Wittner, Eugene, 3,480,550.
  - Kuhre, Calvin J., and June, Ronald K., 3,480,332.
  - Lugue, Rafael Fernandez, 3,479,828.
  - Rust, Frederick F., and Klein, Harvey S., 3,480,661.
- Shelton, Harry J., Jr., to Gruendler Crusher & Pulverizer Co. Vertical shredders. 3,480,213, Cl. 241-092.
- Sheng, Ming Nan: *See—*
  - Baker, Thomas Nelson, III, Michalski, Conrad, Sheng, Ming Nan, and Zajacek, John G. 3,480,519.
- Shepheard, Robert G.: *See—*
  - Castrucci, Paul P., Collins, Robert H., and Shepheard, Robert G. 3,480,841.
- Sherstiuk, Boris, to Automatic Electric Laboratories, Inc. Marking arrangement for a cross-point switching system. 3,480,913, Cl. 340-166.
- Sherwood, James B. Assembly of freight containers and foundation frame for use therewith. 3,480,174, Cl. 220-001.5
- Shields, Harper, to Alamance Industries, Inc. Rib-knit turned cuff sock. 3,479,843, Cl. 066-173
- Shine, Dennis F., to Baxter Laboratories, Inc. Reclosed package. 3,480,172, Cl. 215-046.
- Shiraeff, Dimitry Alexis, to GAF Corporation. Solid stabilized hydrogen peroxide compositions. 3,480,557, Cl. 252-186.
- Shoffner, Willie M. Merchandise check out system. 3,480,114, Cl. 186-001.
- Shortell, Raymond E.: *See—*
  - Van Horssen, Arden D., Habig, Wydell W., Shortell, Raymond E., and Smiley, George C. 3,480,722.
- Shreeve, Nicholas Gilbert: *See—*
  - Lawes, Louis F.W., Shreeve, Nicholas Gilbert, and Mihalik, Nandor 3,480,359.
- Shreve, James S., to United States of America, Army. Moving target indicator having staggered pulse repetition frequency. 3,480,953, Cl. 343-007.7
- Shuey, Robert A. Template controlled router with controlled hydraulic drive means. 3,479,922, Cl. 090-013.
- Shute, Wallace B. Cervical dilator. 3,480,017, Cl. 128-344.
- SI Handling Systems, Inc.: *See—*
  - Rotondo, Anthony J., 3,479,966.
- Sichak, William, to Communication Systems, Incorporated. Adaptive receiver system for minimizing path intermodulation noise. 3,480,867, Cl. 325-476.
- Siddons Industries Limited: *See—*
  - Siddons, John Royston, and Gordon, Kenneth, 3,480,089.
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- Sidor, Edward F., and Reimer, William A., to Automatic Electric Laboratories, Inc. Toroidal reed switch. 3,480,893, Cl. 335-202.
- Siegart, William R., Blackley, William D., Chafetz, Harry, and McMahon, Matthew A., Jr., to Texaco Inc. Method of producing fluorinated compounds. 3,480,667, Cl. 260-514
- Siegel, Edgar: *See—*
  - Jager, Horst, Horstmann, Walter, Schundehutte, Karl-Heinz, Trautner, Kersten, Siegel, Edgar, and Sasse, Klaus 3,480,611.
- Siemens Aktiengesellschaft: *See—*
  - Albrecht, Cord, Kafka, Wilhelm, and Kullmann, Dieter, 3,480,895.
  - Baur, Hans, and Fabianke, Hartmut, 3,480,732.
  - Berberich, Bertold, 3,480,806.
  - Dersin, Hensjurgen, and Lochner, Horst-Paul, 3,480,472.
  - Emeis, Reimer, and Weber, Wolfgang, 3,480,474.
  - Merkel, Hans, and Leibenzeder, Siegfried, 3,480,394.
  - Ruchardt, Hugo, Hargasser, Hans, and Meer, Winfried, 3,480,845.
  - Sturm, Ferdinand V., 3,480,538.
- Sietmann, Vernon H., 50% to Dendel, Gerald F. 10% to Smith, Wanda, and Smith, Raymond 10% to Keese, Beth, and Keese, Larry. Apparatus for and process of drying grain. 3,479,748, Cl. 034-033.
- Sikora, Josef, to Canadian Industries Limited. Dihydropyranyl polyesters. 3,480,650, Cl. 260-345.8
- Siler, Albert E., to North American Rockwell Corporation. Structure for assembling annular tensioned recording discs. 3,480,964, Cl. 346-074.
- Sillano, Pietro, to Necchi Societa per Azioni. Adjustable brush holder assembly for commutator of electric motors. 3,480,813, Cl. 310-241.
- Silvain, Andre Henri, to Pilot Research Corporation. Form-fitting seamless garment and method. 3,479,844, Cl. 066-176.
- Silvia, Everett R.: *See—*
  - Litman, Bernard, Silvia, Everett R., and Stabile, Christopher 3,479,888.
- Simco Company, Inc., The: *See—*
  - Barnett, Guy F., 3,480,364.
- Simmerin-Graz-Pauker Aktiengesellschaft fur Maschinen-Kessel-und Waggonbau: *See—*
  - Fritsch, Felix, 3,479,909.
- Simmons, Donald D. Multi-purpose sport vehicle chassis. 3,479,980, Cl. 114-066.5
- Simmons, Gustavus J.: *See—*
  - Matthews, Robert P., Simmons, Gustavus J., and Wymer, Fred J. 3,480,921.
- Simon, George, and Simon, Joseph A., 1/3 to Kleinsmith, Joseph P. Barbed wire. 3,480,256, Cl. 256-008.
- Simon, Joseph A.: *See—*
  - Simon, George, and Simon, Joseph A. 3,480,256.
- Simons, Clifford G., to Sta-Rite Industries, Inc., mesne. Pulsator unit for milking machine. 3,480,038, Cl. 137-550.
- Simons, Clifford G., to Sta-Rite Industries,Inc. Pipeline milking system. 3,480,252, Cl. 251-146.
- Simons, Frank Holmes, to Fiber Industries, Inc. Process of forming polymeric material of increased relative viscosity. 3,480,596, Cl. 260-078.
- Simplex Time Recorder Company: *See—*
  - Kramer, Roger G., 3,479,812.
- Sinai, William W. Oral hygiene appliance. 3,480,009, Cl. 128-066.
- Sinar AG Schaffhausen: *See—*
  - Koch, Carl, 3,479,945.
- Sinclair Research, Inc.: *See—*
  - Burk, Emmett H., Jr., and Hoffman, William D., 3,480,559.

  - Burk, Emmett H., Jr., and Carlos, Donald D., 3,480,595.
  - Carlos, Donald D., 3,480,391.
  - Carlos, Donald D., 3,480,392.
  - Carlos, Donald D., and Young, David W., 3,480,549.
  - Kilmer, Lauren G., 3,480,102.
  - Kilmer, Lauren G., 3,480,103.
- Singer Company, The: *See—*
  - Della Torre, Giancarlo, 3,479,978.
- Singer, Edwin: *See—*
  - Geissler, Ambros, and Singer, Edwin 3,480,931.
- Singer-General Precision, Inc.: *See—*
  - Binder, Herbert, and Krupick, Walter J., 3,479,889.
  - Naydan, Bob N., 3,480,947.
- Singer-General Precision Systems Inc.: *See—*
  - Lerman, Harold, and Goldstein, Murray S., ,480,965.
- Singewald, Arno: *See—*
  - Fricke, Guenter, and Singewald, Arno 3,480,139.
- Sitte, Richard, and Willems, Gunter, to Koppers-Wistra-Ofenbau GmbH. Burner for metallurgical furnaces. 3,480,375, Cl. 431-158.
- Sitz, Gilbert Carl, to AMP Incorporated. Universal multiple switch. 3,480,745, Cl. 200-014.
- Skelleftea Gummifabriks A.B.: *See—*
  - Brandt, Bertil, and Svensson, Assar, 3,480,321.
- Skrenes, David H.: *See—*
  - Benson, Allen B., Gorbatenko, George G., Jursik, James, Kath, Ronald E., Ovrebo, Jerry D., and Skrenes, David H. 3,480,795.
- Skuinj, Alexandr Kasparovich: *See—*
  - Khachijan, Alexei Sergeevich, Skuinj, Alexandr Kasparovich, Lekhovitser, Moisei Alexandrovich, Linich, Viktor Vladimirovich, Shapovalov, Sergei Vasiljavich, and Ocheretin, Ivan Vasiljevich 3,480,418.
- Skuttle Manufacturing Company: *See—*
  - Stiles, Walter R., 3,480,209.
- Slaughter, Robert L.: *See—*
  - Christensen, William N. 3,479,959.
- Slaybaugh, Lyle, to Kellogg Company. Method and means for making a composite food product. 3,480,445, Cl. 099-083.
- Sletzinger, Meyer: *See—*
  - Reinhold, Donald F., Gaines, Walter A., and Sletzinger, Meyer 3,480,670.
- Slimowicz, Chester E., to GAF Corporation. Two component diazo sensitizing compositions containing a xanthine compound. 3,480,437, Cl. 096-091.
- Sloan, Norman R.: *See—*
  - Torrey, Sumner H., Duhuque, Donald J., Weiss, Johnny C., and Sloan, Norman R. 3,480,000.
- Sloan, William G., Moore, Harry B., Cooper, Albert S., Jr., and Reeves, Wilson A., to United States of America, Agriculture. Concomitantly cross-linking and imparting stretch characteristics to a cellulosic fabric. 3,480,382, Cl. 008-120.
- Smadja, Jean Claude, to Compagnie Financiere et Commerciale. Self fastening recess unit for window assembly. 3,479,768, Cl. 049-441.
- Smiley, George C.: *See—*
  - Van Horssen, Arden D., Habig, Wydell W., Shortell, Raymond E., and Smiley, George C. 3,480,722.
- Smirnov, Pavel Alexandrovich: *See—*
  - Nastjukha, Alexandr Ivanovich, Koltypin, Evgeny Alexandrovich, and Smirnov, Pavel Alexandrovich 3,480,822.
- Smith, David P., to Minnesota Mining and Manufacturing Company. Low-energy ion scattering apparatus and method for analyzing the surface of a solid. 3,480,774, Cl. 250-049.5
- Smith, Drexel Kermit: *See—*
  - Carpenter, John Mc Murray, III, and Smith, Drexel Kermit 3,480,706.
- Smith, Edward M., to Bigge Drayage Company. Pneumatically powered remote controlled mirror with controllable limit stop. 3,480,355, Cl. 350-289.
- Smith, Eric, to Olin Mathieson Chemical Corporation. Polyhalodiphenyl monoamines. 3,480,673, Cl. 260-578.
- Smith, Frank R.: *See—*
  - Shaff, Gerald H., Smith, Frank R., Haren, Ralph J., and Chiappe, Orlando J. 3,479,725.
- Smith, George E., to Monsanto Company. Unijunction transistor timing circuit. 3,480,801, Cl. 307-293.
- Smith, John E., Jr.: *See—*
  - Nathan, Marshall I., and Smith, John E., Jr. 3,480,879.
- Smith, Joseph K. Work handling fixture. 3,479,775, Cl. 051-237.
- Smith Kline & French Laboratories: *See—*
  - Chow, Alfred W., and Hall, Norman M., 3,480,628.
  - Douglas, Bryce, and Weisbach, Jerry A., 3,480,637.
  - Edwards, William C., 3,480,004.
  - Edwards, William C., 3,480,005.
  - Loev, Bernard, 3,480,636.
  - Stedman, Robert John, 3,480,642.
- Smith, Raymond: *See—*
  - Sietmann, Vernon H., 3,479,748.
- Smith, Robert Edward: *See—*
  - Cron, Martin John, and Smith, Robert Edward 3,480,614.
- SMith, Robert Eugene, to United States of America, Navy. Method for sodium concentration sensing. 3,480,520, Cl. 204-001
- Smith, Tom R., to American Air Filter Company, Inc. Pocket-type filter. 3,479,803, Cl. 055-500.
- Smith, Wanda: *See—*
  - Sietmann, Vernon H., 3,479,748.
- Smithers, John A., and Murray, William A. Bandage wrap. 3,480,012, Cl. 128-165.
- Smoke, Edward J.: *See—*
  - Fleischner, Peter L., and Smoke, Edward J. 3,480,452.
- Smythe, William J., Shamos, Morris H., and Griffin, Gary A., to Technion Corporation. Method and apparatus for the colorimetric analysis of liquid samples. 3,480,369, Cl. 356-201.
- Snyder, H. Kent, Jr., to Chicago Display Company. Pole sign. 3,479,760, Cl. 040-145.
- Sobrefina S.A.: *See—*
  - Hellborg, Lars Ingvar, 3,479,726.
- Societa Farmaceutici Italia: *See—*
  - Carletti, Luciano, and Rigamonti, Alessandro, 3,480,468.
  - Consonni, Alberto, Pallini, Ugo, and Sciaky, Roberto, 3,480,623.
- Societe Alsacienne d'Etudes et de Travaux (Socaltra): *See—*
  - Gaboriaud, Paul L. F., 3,480,850.
- Societe Aria: *See—*
  - Bonnet, Andre, 3,480,142.
- Societe d'Instrumentation Schlumberger: *See—*
  - Charbonnier, Roger, and Estrabaud, Stephane, 3,480,949.
- Societe des Mecaniques Verdol: *See—*
  - Servillat, Gabriel, 3,480,044.
- Societe Hispano-Suiza-Lallemant: *See—*
  - Lallemant, Pierre Joseph Martin, 3,480,115.
- Societe Les Piles Wonder: *See—*
  - Gauthier, Adrien, and Garcin, Maurice M.P., 3,480,481.
- Sogge, Richard G., to Digital Equipment Corporation. Digital adder with expedited intrastage carry. 3,480,768, Cl. 235-175.
- Sohn, August Wilhelm, and Erasumus, Albert, to Zellstoffabrik Waldhof A.G. Adhesion between lead electrodes and particles embedded therein and method of making same. 3,480,478, Cl. 136-026.
- Sohn, Bernard I., Eisenmann, John L., and Alexander, Samuel S., to Ionics, Incorporated. Process for cementing ion-exchange material. 3,480,495, Cl. 156-094.
- Sokolovsky, Oleg Petrovich: *See—*
  - Bykov, Vladimir Alexandrovich, Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Karlinsky, Stanislav Evgenievich, Niskovskikh, Vitaly Maximovich, Orlov, Boris Yakovlevich, Sokolovsky, Oleg Petrovich, and Khimich, Georgy Lukich 3,480,074.
- Sollins, Irving V.: *See—*
  - Loken, Bjarte, and Sollins, Irving V. 3,480,619.
- Solokhin, Boris Ivanovich, Krauze, Gennady Nikolaevich, and Vargasov, Alexandr Ivanovich. Driving mechanism of double-track vehicles. 3,480,097, Cl. 180-006.48
- Solvay & Cie: *See—*
  - Clement, Jean Max, 3,480,528.
  - Martens, Guy, 3,480,686.
- Somerville, John S.: *See—*
  - Pumpelly, Charles T., Pedjac, Joseph J., and Somerville, John S. 3,480,600.
- Sonnenberg, Frederic A., and DeVries, George, to Foxboro Company, The. Sanitary liquid level measurement device. 3,479,865, Cl. 073-299.
- Sony Corporation: *See—*
  - Matsumoto, Tadashi, 3,480,740.
- Soter, Samuel A.: *See—*
  - Davidson, Robert E., Eads, Charles L., and Soter, Samuel A. 3,479,851.
- Soteropulos, Gust, to Deere & Company. Combination mower, conditioner and windrower. 3,479,805, Cl. 056-023.
- Soteropulos, Gust, to Deere & Company. Tractor-mounted bale thrower. 3,480,164, Cl. 214-042.
- Sotheran, Arthur: *See—*
  - Parnell, David Harding, and Sotheran, Arthur 3,479,823.
- Southerland, Arthur, Jr., Cirer, Frank H., and Anderson, Alfred G., to United States of America, Navy. Personnel transfer capsule handling system. 3,480,157, Cl. 212-041.
- Southern Illinois University Foundation: *See—*
  - Meyer, Herbert J., Daugherty, Charles A., Jr., and Novy, John R., 3,480,738.
- Soya, Katsuji: *See—*
  - Tanaka, Yukio, Soya, Katsuji, and Yamagishi, Hitoshi 3,480,486.
- Space-General Corporation: *See—*
  - Sanders, Ray W., 3,480,865.
- Spachman, James J., to Basic Incorporated. Shock resistant alumina refractory. 3,480,454, Cl. 106-065.
- Sparks, Allen K., and Dombro, Robert A., to Universal Oil Products Company. Substituted 3,6-dihydroxy-4-cyclohexenecarboxylic acids. 3,480,668, Cl. 260-514.
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- Spencer, John R., Greathouse, Walton D., and Cheek, James H., to Continental Oil Company. Surge chamber for hydrocarbon recovery sorption systems. 3,479,797, Cl. 055-062.
- Sperry Rand Corporation: *See—*
  - Bergman, Robert J., 3,480,929.
  - Chao, Wu Wai, 3,480,008.
  - Kanitz, Roy E., 3,480,343.
  - Kaske, Alan D., 3,480,928.
  - Macek, Warren M., 3,480,878.
  - Mas, George E., 3,480,798.

  - Nelson, Hiding E., 3,480,945.
  - Oberg, Paul E., 3,480,926.
  - Pettibone, Raymond B., 3,479,962.
- Spivak, Joel F.: *See—*
  - Carroll, James A., and Spivak, Joel F. 3,480,484.
- Springer, Charles L., to Honeywell Inc. Electromagnetic transducer having a variable gap width for recording and checking said recording. 3,480,935, Cl. 340-174.1
- Square D Company: *See—*
  - Layton, Beryl W., and Dunham, Robert W., 3,480,890.
- Squire, Edward N.: *See—*
  - Selman, Stanley, and Squire, Edward N. 3,480,603.
- Srinivasan, Rangaswamy, to International Business Machines Corporation. Photosensitive compositions. 3,480,441, Cl. 096-115.
- St. Clair, John C. Using expendable metal cores for casting plastics or organic polymers. 3,480,708, Cl. 264-221.
- Sta-Rite Industries, Inc.: *See—*
  - Simons, Clifford G., 3,480,038.
  - Simons, Clifford G., 3,480,252.
- Stabile, Christopher: *See—*
  - Litman, Bernard, Silvia, Everett R., and Stabile, Christopher 3,479,888.
- Stahle, Helmut, Kummer, Werner, Koppe, Herbert, Zeile, Karl, Hoefke, Wolfgang, and Samtleben, Hans-Wolfgang, to Boehringer-Ingelheim G.m.b.H. 2-Arylhydrazine-imidazolines-(2) and salts thereof. 3,480,630, Cl. 260-254.
- Stal, Sture, and Backman, Ralf, to Industrial Development AB. Bucket drive. 3,479,932, Cl. 093-093.
- Stamm, Walter: *See—*
  - Eisfeld, Wolfgang T., and Stamm, Walter 3,480,680.
- Standard Brands Chemical Industries, Inc.: *See—*
  - Witt, Edward, 3,480,578.
- Standard Oil Company: *See—*
  - Upson, Frank A., 3,480,404.
- Stanley Works, The: *See—*
  - Ferguson, Harold W., 3,479,924.
- Stanray Corporation: *See—*
  - Burns, Walter R., 3,479,677.
- Starck, Hermann C.: *See—*
  - Neuenschwander, Ernst, 3,480,426.
- Stark, Thomas M., and Glaser, Marvin B., to Esso Research and Engineering Company. Product recovery in a reversible vapor phase chemical equilibrium process by multiple point withdrawal depressurization. 3,480,393, Cl. 023-199.
- Starkenberg, Arnold. Marking and measuring implement. 3,479,742, Cl. 033-027.
- Starkweather, Howard Warner, Jr., to Du Pont de Nemours, E. I., and Company. Polyamide tape for power transmission belting. 3,480,457, Cl. 117-007.
- Starling, Edward L., 1/2 to Farms, Nichols. Trailer hitch. 3,480,296, Cl. 280-491.
- Starr, David A., Jr., to Burroughs Corporation. Amplitude stablilized LC transistor oscillator. 3,480,880, Cl. 331-109.
- States of Nebraska, The: *See—*
  - Osipow, Lloyd I., and Rosenblatt, William, 3,480,616.
- Statham Instrument, Inc.: *See—*
  - Stedman, Cecil K., 3,479,739.
- Statler, Lowell E. Rotary engine. 3,479,996, Cl. 123-015.
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  - Eisfeld, Wolfgang T., and Stamm, Walter, 3,480,680.
  - Price, Glenn R., 3,480,594.
  - Price, Glenn R., 3,480,699.
  - Tilles, Harry, Baker, Don R., and Dewald, Chester L., 3,480,671.
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  - Sheary, George W., III, and Steele, James E. 3,480,326.
- Steierman, Bernard L.: *See—*
  - Asunmaa, Saara K., and Steierman, Bernard L. 3,480,459.
- Steiman, Jean. Watchcase. 3,479,771, Cl. 058-090.
- Stein, Alfred H.: *See—*
  - Hirs, Gene, and Stein, Alfred H. 3,480,330.
- Stein, Paolo Mario. Continuous production of heat-insulating sheets. 3,480,509, Cl. 162-309.
- Steinberg, Wallace H., and Kohn, Saul R., to Johnson & Johnson. Charged effervescing agent and medicament dispensing metering valve-actuated aerosol container producing a dose of medicament and carbonation in water. 3,480,185, Cl. 222-192.
- Steiner American Corporation: *See—*
  - Bahmsen, Erwin B., 3,479,746.
- Steingas, Richard R.: *See—*
  - Pool, Stuart D., and Steingas, Richard R. 3,479,806.
- Stelzer, William, to Kelsey-Hayes Company. Brake failure indicator. 3,480,333, Cl. 303-006.
- Stephani, Charles J. Ignition cutoff switch. 3,480,840, Cl. 200-061.90
- Stephens, William T.: *See—*
  - Randa, Gerald, and Stephens, William T. 3,479,963.
- Stephenson, Robert James: *See—*
  - Roberts, Brinley, and Stephenson, Robert James 3,480,570.
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- Stevens, Harry M., to Monsanto Company. Phosphorus condensation apparatus. 3,480,077, Cl. 165-111.
- Stevens Hosiery: *See—*
  - Baird, Truette H., 3,479,842.
- Stevens, J. P., & Co., Inc.: *See—*
  - Turton, Walter, and Mazzone, Charles, 3,479,710.
- Steward-Warner Corporation: *See—*
  - Clinton, Edwin T., and Kramesak, Michael, Jr., 3,479,680.
- Stewart, David J. Optical scanning system. 3,480,363, Cl. 355-068.
- Stiles, Walter R., to Skuttle Manufacturing Company. Humidifier and system. 3,480,209, Cl. 237-001.
- Stolki, Thomas J.: *See—*
  - Chappelear, David C., Stolki, Thomas J., Newman, Seymour, and Trementozzi, Quirino A. 3,480,569.
- Stoops, James W., Bitterlich, Gordon M., Lipkin, Moses R., and Primas, Alex L., 50% to Sun Oil Company, and 50% to Howe-Baker Engineers, Inc., mesne. Gas preparation process and apparatus. 3,480,416, Cl. 048-093.
- Stowell, Philip, A., to Burroughs Corporation. Command responsive multi-channel electrostatic recorder. 3,480,963, Cl. 346-074.
- Stratulatov, Gennady Yakovlevich: *See—*
  - Keller, Ulrikh Ulrikhovich, Ledokhovich, Adolf Nikodimovich, Bitjugov, Jury Alexeevich, and Stratulatov, Gennady Yakovlevich 3,479,999.
- Strauss, Michael G., to United States of America, Atomic Energy Commission. Logarithmic function generator. 3,480,793, Cl. 307-229.
- Strohl, Heinrich, to Bolkow Gesellschaft mit beschrankter Haftung. Apparatus and method for feeding pulsating fluid propellant rocket engines. 3,479,818, Cl. 060-039.48
- Strohmaier, Karl. Centrifuge with efficiency measuring device. 3,480,207, Cl. 233-001.
- Stubbs, Dennis, to Davy and United Engineering Company, Limited. Rolling mills. 3,479,854, Cl. 072-244.
- Stucker, John F., to Nalco Chemical Company. Process for preparing crystalline pyridinium 2-nitro-1 butyl sulfate. 3,480,639, Cl. 260-294.8
- Studley Paper Company, Inc.: *See—*
  - Fesco, John J., 3,479,802.
- Sturm, Ferdinand V., to Siemens Aktiengesellschaft. Catalyst electrode for electrochemical cells. 3,480,538, Cl. 204-290.
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- Sullivan, Fletcher R., to North American Rockwell Corporation. Welding apparatus. 3,480,756, Cl. 219-125.
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- Summerville, Donald V., Jr., to Gardco Industries, Inc. Mounting bracket. 3,480,243, Cl. 248-264.
- Sumption, Richard F., to Gwaltney Incorporated. Method for providing stuffed food casings having flattened ends. 3,480,449, Cl. 099-175.
- Sun Oil Company: *See—*
  - Bohrer, Byron B., 3,480,689.
  - Stoops, James W., Bitterlich, Gordon M., Lipkin, Moses R., and Primas, Alex L., 3,480,416.
- Sundermeyer, Wolfgang, and Verbeek, Wolfgang, to Th. Goldschmidt A.G. Process for preparing organo-tin, -boron, -aluminum, -silicon, -phosphorus, -zinc and -mercury compounds. 3,480,654, Cl. 260-429.7
- Suszko, Donald H.: *See—*
  - Colautti, Albert J., and Suszko, Donald H. 3,479,727.
- Suzuki, Akio: *See—*
  - Miyata, Akira, Tomita, Chikayoshi, Suzuki, Akio, Okubo, Hideyo, and Nagakuni, Masahiko 3,480,521.
- Svensson, Assar: *See—*
  - Brandt, Bertil, and Svensson, Assar 3,480,321.
- Swanson, Richard H.: *See—*
  - Bender, Erwin L., and Swanson, Richard H. 3,479,971.
- Swanson, Richard T., to Aetna Casualty and Surety Company, mesne. Automotive vehicle simulator for demonstrating automatic self-centering of steerable automobile wheels. 3,479,750, Cl. 035-011.
- Sweden Freezer Mfg. Co.: *See—*
  - Pierce, Robert W., 3,480,784.
- Sweeney, Richard F.: *See—*
  - Anello, Louis G., and Sweeney, Richard F. 3,480,571.
- Swift & Company: *See—*
  - Hoersch, Theodore M., 3,479,688.
- Sybron Corporation: *See—*
  - Jaquith, Howard R., McCarthy, James L., Nichols, Nathaniel B., and Norton, Stanley C., Jr., 3,480,854.
- Sylvania Electric Products, Inc.: *See—*
  - Faria, Sixdeniel, and Mehalchick, Emil J., 3,480,819.
- Syscon, Inc.: *See—*
  - Multhopp, Hans, 3,480,235.
- Szabo, Marton, to Philadelphia Handle Company, Inc. Retainer for collapsible handle for a carrying case. 3,479,702, Cl. 024-073.
- Szanto, Joseph J. Valve core. 3,480,035, Cl. 137-294.5

- Takayanagi, Shigetoshi: *See—*
  - Inoue, Morio, Kano, Gota, Matsuno, Jinichi, and Takayanagi, Shigetoshi 3,480,475.
- Takeda Chemical Industries, Ltd.: *See—*
  - Matsui, Yutaka, Hashimoto, NRISHIGE, and Mise, Nritoshi, 3,480,567.
- Talbot, Edward B., to Cooling Development Ltd. Fans. 3,480,373, Cl. 416-226.
- Talcott, James, Inc.: *See—*
  - Porter, Clive H., 3,480,223.
- Talejkinski, Wulf: *See—*
  - Brion, Jacques, Cousin, Michel, Talejkinski, Wulf, and Volk, Andre 3,479,800.
- Tanaka, Yo: *See—*
  - Tsuyama, Tomotsugu, and Tanaka, Yo 3,480,357.
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- Tanno, Norman J.: *See—*
  - White, Frank F., Tanno, Norman J., and Chipps, Elmer T. 3,480,159.
- Tanos, Andrew B., to Kewanee Oil Company. Method of producing polycrystalline photovoltaic cells. 3,480,473, Cl. 117-217.
- Tappan Company, The: *See—*
  - Lamb, John T., and Anderson, Carl L., 3,480,374.
- Tarpinian, Haiq D., and Friedmann, Harry, to Uniroyal, Inc. Harmonic signal analyzer system for testing tires. 3,479,867, Cl. 073-146.
- Tata, Raymond V.: *See—*
  - Brouwer, Charles W., Cruickshank, David G., and Tata, Raymond V. 3,480,128.
- Tate, Louis D.: *See—*
  - Ritchey, James F., Tate, Louis D., and Waddell, Richard E. 3,480,730.
- Tateisi Electronics Co.: *See—*
  - Horii, Shizuka, 3,480,892.
- Tatibana, Hideo. Apparatus for arranging ampules and feeding them onto a conveyor. 3,480,129, Cl. 198-032.
- Tatibana, Hideo. Apparatus for arranging ampules in regular order. 3,480,132, Cl. 198-220.
- Taube, Carl: *See—*
  - Freytag, Karl-Heinz, Taube, Carl, and Seidel, Bernhard 3,480,438.
- Taube, Carl, and Freytag, Karl-Heinz, to Farbenfabriken Bayer Aktiengesellschaft. Process for dyeing linear polyester fiber materials. 3,480,378, Cl. 008-055.
- Tauson, Peter O., to Westinghouse Electric Corporation. Calorimeter apparatus and system. 3,479,872, Cl. 073-192.
- Taylor, Hugh P.: *See—*
  - Zulch, Donald I., and Taylor, Hugh P. 3,480,960.
- Taylor, Kenneth M.: *See—*
  - McMullen, John C., and Taylor, Kenneth M. 3,480,395.
- Taylor, Robert C.: *See—*
  - De Witt, William J., and Taylor, Robert C. 3,480,556.
- Taylor-Winfield Corporation, The: *See—*
  - Seeloff, Melvin M., 3,480,194.
- Tcheditch, Pierre, to CSF-Compagnie Generale de Telegraphic Sans Fil. Electronic scanning antenna. 3,480,958, Cl. 343-016.
- Teague, Sidney P.: *See—*
  - Jeffery, Warren C., and Teague, Sidney P. 3,480,300.
  - Jeffery, Warren C., and Teague, Sidney P. 3,480,302.
- Teague, Walter Dorwin, Jr., to Columbia Gas System Service Corporation. Method and system for laying pipe under water. 3,479,831, Cl. 061-072.3
- Technical Operations, Incorporated: *See—*
  - Buck, Willard E., 3,480,353.
- Technion Corporation: *See—*
  - Smythe, William J., Shamos, Morris H., and Griffin, Gary A., 3,480,369.
- Techniservice Corporation: *See—*
  - Daniel, Benjamin S., 3,479,709.
- Tee-Pak, Inc.: *See—*
  - Bridgeford, Douglas J., and Turbak, Albin F., 3,480,380.
- Teleflex Incorporated: *See—*
  - Hermanson, Ronald O., and Hellthaler, Arno, 3,479,903.
- Telfer, Henri E. Collapsible sorting trays. 3,480,154, Cl. 211-126.
- Telsta Corporation: *See—*
  - Fitel, Jay M., and Leigh, Bertram J., 3,480,109.
- te Velde, Ties Siebolt, to U.S. Philips Corporation, mesne. Electrical monograin layers having a radiation permeable electrode. 3,480,818, Cl. 313-094.
- Texaco Inc.: *See—*
  - Hellmuth, Walter W., Kivelevich, Doris, Dadura, James G., and Morissette, Bertrand G., 3,480,548.
  - McCoy, Frederic C., and Knowles, Edwin C., 3,480,551.
  - Siegart, William R., Blackley, William D., Chafetz, Harry, and McMahon, Matthew A., Jr., 3,480,667.
- Texas Instruments, Incorporated: *See—*
  - King, Joel D., 3,480,907.
  - Ornstein, Jacob L., and Mueller, Howard C., 3,479,732.
- Th. Goldschmidt A.G.: *See—*
  - Sundermeyer, Wolfgang, and Verbeek, Wolfgang, 3,480,654.
- Theurer, Josef: *See—*
  - Plasser, Franz, and Theurer, Josef 3,479,964.
  - Plasser, Franz, and Theurer, Josef 3,479,965.
- Thiede, Maria nee Mentzner, and Ruthardt, Konrad, to Heraeus, W. C., G.m.b.H. Alloy for pen points. 3,480,429, Cl. 075-134.
- Thiele, Hans: *See—*
  - Bucksteeg, Wilhelm, and Thiele, Hans 3,480,542.
- Thiele, Kurt, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Terpene ester carbamic acids. 3,480,663, Cl. 260-482.
- Thiokol Chemical Corporation: *See—*
  - Bolieau, Christopher W., 3,479,954.
- Thomas, David B.: *See—*
  - Abercrombie, Malcolm James, and Thomas, David B. 3,480,602.
- Thomas, Jean Claude, to Produits Chimiques Pechiney-Saint-Gobain. Polymerization of ethylenic monomers. 3,480,606, Cl. 260-092.8
- Thomas, Paul A., to General Motors Corporation. Parts detector control. 3,480,941, Cl. 340-259.
- Thompson, Alfred R., Jr., and Foley, William H., to Corn Products Company. Binder composition for molds and cores comprising reducing sugars and sugars that hydrolyze to form reducing sugars, urea, formaldehyde, and furfuryl alcohol. 3,480,573, Cl. 260-017.2
- Thompson, Delford J. Folding clothes rack and utility dresser. 3,479,972, Cl. 108-029.
- Thompson, John H., to Westinghouse Electric Corporation. Transducer having a backing mass spaced a quarter wavelength therefrom. 3,480,906, Cl. 340-008.
- Thompson, Paul F., to Carlisle Chemical Works, Inc. Process of repelling rodents. 3,480,712, Cl. 424-245.
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- Thweatt, John G., to Eastman Kodak Company Eastman Kodak Company. Preparation of acetals of 5-oxopentanals. 3,480,678, Cl. 260-594.
- Tilbury, Lawrence E., and Maple, Steven E., to Case, J. I., Company. Disk harrow. 3,480,085, Cl. 172-328.
- Tilles, Harry, Baker, Don R., and Dewald, Chester L., to Stauffer Chemical Company. α -Naphthoxy acetamide compositions. 3,480,671, Cl. 260-559.
- Tindall, John B., to Commercial Solvents Corporation. Separation of nitroalkanes and alkanes by codistilling with methanol. 3,480,516, Cl. 203-066.
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- Tinius Olsen Testing Machine Company: *See—*
  - Karpchuk, Sylvester, 3,479,885.
- Tipton, Donald L., to General Motors Corporation. Method and apparatus for liquid MHD generator systems. 3,480,804, Cl. 310-011.
- Tiura, George O., to Tiura Manufacturer & Sales. Bean harvester. 3,479,807, Cl. 056-400.
- Tiura Manufacturer & Sales: *See—*
  - Tiura, George O., 3,479,807.
- 1/2 to Osawa, Hideo: *See—*
  - Omoto, Seiji, 3,479,921.
- Toedtman, John A., to ITT Blackburn Corporation. Electrical connector manifold. 3,480,905, Cl. 339-213.
- Toki, Hisashi, and Agatsuma, Takashi, to Hitachi, Ltd. Method of making a semiconductor device. 3,479,736, Cl. 029-577.
- Tokyo Kulsushita Kabushiki Kaisha: *See—*
  - Kitahara, Naotake, and Yoshida, Terue, 3,479,841.
- Toland, Edith: *See—*
  - Toland, William C., and Krol, Adam T. 3,480,435.
- Toland, William C., deceased (by Toland, Edith, executrix), and Krol, Adam T. Production of printing plates and the like. 3,480,435, Cl. 096-075.
- Tomalia, Donald A., to Dow Chemical Company, The. Preparation of 1,3-dioxolenium and 1,3- dioxenium salts. 3,480,649, Cl. 260-340.9
- Tomita, Chikayoshi: *See—*
  - Miyata, Akira, Tomita, Chikayoshi, Suzuki, Akio, Okubo, Hideyo, and Nagakuni, Masahiko 3,480,521.
- Tomita, Tamaki. Oil temperature control system. 3,480,076, Cl. 165-027.
- Topolski, Alvin S., and Trumbull, Walter A., to Dow Chemical Company, The. Fracturing of solid bodies. 3,480,189, Cl. 225-004.
- Topp, Ronald L.: *See—*
  - Movich, Richard C., and Topp, Ronald L. 3,479,866.
- Tornqvist, Erik, to Esso Research and Engineering Company. Method for forming olefin polymerization catalysts. 3,480,562, Cl. 252-429.
- Torok, Jozsef, to Keripar Kereskedelmi Berendezeseket es Gepeket Gyarto Vallalat. Composite space-defining structure. 3,480,345, Cl. 312-257.
- Torongo, Albert, Jr.: *See—*
  - Scurlock, Robert L., and Torongo, Albert, Jr. 3,480,192.
- Torresen, Robert, to Brunswick Corporation. Bowler identification device. 3,480,276, Cl. 273-054.
- Torrey, Sumner H., Dubuque, Donald J., Weiss, Johnny C., and Sloan, Norman R., to Roper, Geo. D., Corporation. Self-cleaning gas oven. 3,480,000, Cl. 126-039.
- Tosaki, Chikao: *See—*
  - Umeno, Masashi, Miyake, Makoto, and Tosaki, Chikao 3,479,858.
- Toyo Boseki Kabushiki Kaisha: *See—*
  - Matsui, Isamu, Miyagi, Tamotsu, and Funahashi, Muneaki, 3,480,215.

- Trane Company, The: *See—*
  - Miner, Robert G., 3,479,837.
- Trapp, Orlin D., and Cannon, Don L., to Westinghouse Electric Corporation. Hermeticity test for packaged electrical components. 3,479,862, Cl. 073-049.3
- Trautner, Kersten: *See—*
  - Jager, Horst, Horstmann, Walter, ~~Schun~~dehutte, Karl-Heinz, Trautner, Kersten, Siegel, Edgar, and Sasse, Klaus 3,480,611.
  - Schundehutte, Karl-Heinz, and Trautner, Kersten 3,480,641.
- Trementozzi, Quirino A.: *See—*
  - Chappelear, David C., Stolki, Thomas J., Newman, Seymour, and Trementozzi, Quirino A. 3,480,569.
- Treves, David, to Ampex Corporation. Spatial filtering noise reduction scheme for a magnetooptic readout system. 3,480,933, Cl. 340-174.1
- Triax Company, The: *See—*
  - Saul, Sanford, 3,480,162.
- Tridair Industries: *See—*
  - Jensen, Richard H., and Nordstrom, Arnold B., 3,480,239.
- Tripp, Guy H. Hydraulic transmission. 3,479,923, Cl. 091-097.
- Trost, Wayne C., and Mahoney, Robert J., to Barber-Colman Company. Running thread waxer. 3,479,988, Cl. 118-078.
- Troy, John G. Hide removal device. 3,479,686, Cl. 017-021.
- Tru-lok Metal Fabricating Company, Inc.: *See—*
  - Massagli, Daniel, 3,479,784.
- Trumbull, Walter A.: *See—*
  - Topolski, Alvin S., and Trumbull, Walter A. 3,480,189.
- TRW Inc.: *See—*
  - Bloom, Murray, 3,480,535.
  - Breuer, David Roy, 3,480,872.
  - Clark, Hubert M., and Drutchas, Gilbert H., 3,480,336.
  - Goodykoontz, James R., 3,480,208.
  - Wuerker, Ralph F., and Briones, Robert A., 3,480,831.
- Tschudi, Dennis E., to Bendix Corporation, The. Pulse generator having fast rise time. 3,480,799, Cl. 307-273.
- Tsuyama, Tomotsugu, and Tanaka, Yo, to Fuji Shashin Film Kabushiki Kaisha. Slide-film confirming apparatus of a slide projector. 3,480,357, Cl. 353-021.
- Tuchman, Martin, to Railway Express Agency, Incorporated. Axle loading indicator. 3,480,095, Cl. 177-137.
- Turbak, Albin F.: *See—*
  - Bridgeford, Douglas J., and Turbak, Albin F. 3,480,380.
- Turnbull, Fred G.: *See—*
  - Bedford, Burnice D., and Turnbull, Fred G. 3,480,797.
- Turner, Thomas C., and McIntosh, Lynden Y. Universal trailer vehicle. 3,480,320, Cl. 296-010.
- Turton, Walter, and Mazzone, Charles, to Stevens, J. P., & Co., Inc. Textured textile material, 3,479,710, Cl. 028-072.
- Tyrrell, Colin John Nelson, to International Nickel Company, Inc., The. Deposition of Platinum-group metals. 3,480,523, Cl. 204-043
- U.S. Philips Corporation: *See—*
  - te Velde, Ties Siebolt, 3,480,818.
- U.S. Textile Machine Company: *See—*
  - Loveland, Chester L., 3,479,707.
- Ueberdiek, Ralf: *See—*
  - Jacob, Ingolf, and Ueberdiek, Ralf 3,480,709.
- Ueda, Hiroyuki: *See—*
  - Ooue, Shingo, Ueda, Hiroyuki, and Hashiue, Masakazu 3,480,365.
- Ugine Kuhlmann (societe anonyme): *See—*
  - Nagy, Georges, 3,480,665.
- Uhlir, Arthur, Jr., to Microwave Associates, Inc. System of enclosures and connectors for microwave circuits. 3,480,887, Cl. 333-024.
- Ulert, Izaak A., 45% to Epstein, Julius, 10% to Goldfaden, Louis, and 5% to Fox, Carl B., Jr. Safety belt and seat belt apparatus. 3,480,228, Cl. 242-107.4
- Umeno, Masashi, Miyake, Makoto, and Tosaki, Chikao, to Japan Synthetic Rubber Co., Ltd. Apparatus for measuring viscoelasticity. 3,479,858, Cl. 073-015.6
- Unger, Hans Peter Olof. Measuring rod. 3,479,881, Cl. 073-425.4
- Union Carbide Corporation: *See—*
  - Bailey, Donald L., and O'Connor, Francis M., 3,480,583.
  - Coless, Thomas L., and Rimer, Kenneth W., 3,480,487.
  - Donnell, Emerson Bradford, Jr., and Calvert, William L., 3,480,505.
  - Hale, Warren F., 3,480,695.
  - Jugle, Lawrence C., 3,479,869.
  - Poppelsdorf, Fedor, 3,480,675.
- Union Oil Company of California: *See—*
  - Fenton, Donald M., 3,480,669.
  - Weichman, Roger L., Walsh, John W., and Fierce, William L., 3,480,568.
- Union Tank Car Company: *See—*
  - Kruizenga, Jack R. Graves, Donald C., and Role, Harry, 3,479,724.
- Uniroyal, Inc.: *See—*
  - Tarpinian, Haiq D., and Friedmann, Harry, 3,479,867.
- United Aircraft Corporation: *See—*
  - Bogue, David L., 3,479,819.
  - Erf, Robert K., Wingfield, Edward C., and Aas, Herbert G., 3,480,368.
  - Kosowsky, Lester H., 3,480,957.
  - Lynch, John M., and Hill, John G., 3,480,716.
  - Richmond, Irving D., 3,480,959.
  - Rudy, Thomas P., Nakagawa, Toshio W., and Greendorfer, Joseph M., 3,480,488.
  - Setzer, Herbert J., 3,480,417.
  - Wilcox, Ernest W., and Lillberg, John W., 3,480,307.
- United-Carr Incorporated: *See—*
  - Addis, David J., Brown, Walter R. J., and Osman, Martin S., 3,480,924.
  - Hayden, Rodney, 3,480,944.
  - Van Horssen, Arden D., Habig, Wydell W., Shortell, Raymond E., and Smiley, George C., 3,480,722.
- United Kingdom Atomic Energy Authority: *See—*
  - Ford, Lionel Houston, 3,480,702.
- United LGHTING AND Ceiling Co.: *See—*
  - Schwartz, Robert A. D., and Pfeiffer, Philip W., 3,480,246.
- United States of America
  - Agriculture: *See—*
    - Beninate, John V., Boylston, Eileen K., and Drake, George L., Jr., 3,480,381.
    - Britt, Ramon P., 3,479,729.
    - Buchanan, Russell A., and Russell, Charles R., 3,480,572.
    - Etchells, John L., Bell, Thomas A., and Kittel, Ivan D., 3,480,448.
    - Pittman, Allen G., and Wasley, William L., 3,480,605.
    - Pittman, Allen G., and Wasley, William L., 3,480,664.
    - Sloan, William G., Moore, Harry B., Cooper, Albert S., Jr., and Reeves, Wilson A., 3,480,382.
  - Air Force: *See—*
    - Freedman, Nathan, 3,480,951.
    - Freedman, Nathan, 3,480,952.
    - Zulch, Donald I., and Taylor, Hugh P., 3,480,960.
  - Army: *See—*
    - Hirschberg, Kenneth A., 3,480,942.
    - Sanderson, George H., 3,480,956.
    - Shreve, James S., 3,480,953.
  - Atomic Energy Commission: *See—*
    - Chase, Robert L., and Radeka, Veljko, 3,480,870.
    - Finger, Milton, James, Edward, Jr., and Archibald, Paul B., 3,480,490.
    - Lorbeer, Ernest H., 3,479,745.
    - Matthews, Robert P., Simmons, Gustavus J., and Wymer, Fred J., 3,480,921.
    - Norgren, Duane U., 3,480,366.
    - Strauss, Michael G., 3,480,793.
  - Health, Education and Welfare: *See—*
    - Fox, Eugene N., 3,480,610.
  - Interior: *See—*
    - Barth, Edwin F., and Ettinger, Morris B., 3,480,144.
  - National Aeronautics and Space Administration: *See—*
    - Binckley, William G., and Wright, Warren H., 3,480,789.
  - Navy: *See—*
    - Attix, Frank H., 3,480,776.
    - Chu, Lan J., 3,480,233.
    - Fleischner, Peter L., and Smoke, Edward J., 3,480,452.
    - Gebhardt, Joseph J., 3,480,467.
    - Hadjandreas, Andrew P., 3,480,866.
    - Nelson, Robert E., and Boltz, Charles D., Jr., 3,479,822.
    - SMith, Robert Eugene, 3,480,520.
    - Southerland, Arthur, Jr., Cirer, Frank H., and Anderson, Alfred G., 3,480,157.
    - Vogel, Frederick David, 3,479,679.
    - Wyatt, Theodore, 3,480,232.
- United States Steel Corporation: *See—*
  - Anderson, Robert L., and Rohrig, John M., 3,479,958.
  - Grosko, John A., 3,480,186.
  - Hendrickson, George H., 3,479,715.
  - Lyman, Richard E., 3,480,376.
  - Wilson, James H., 3,480,073.
  - Zemberry, William L., 3,479,743.
- Universal Oil Products Company: *See—*
  - Altwicker, Elmar R., 3,480,635.
  - Cyba, Henryk A., 3,480,698.
  - Hardison, Leslie C., 3,480,384.
  - Louvar, James J., 3,480,533.
  - Sparks, Allen K., and Dombro, Robert A., 3,480,668.
- Unkefer, Robert J., to Lockheed Aircraft Corporation. Testing and sorting apparatus for batteries. 3,480,140, Cl. 209-073.
- Up-Right, Inc.: *See—*
  - Johnson, Wallace J. S., 3,479,781.
- Upjohn Company, The: *See—*
  - Lednicer, Daniel, 3,480,679.
  - Lemin, Alan J., 3,480,424.
- Upson, Frank A., to Standard Oil Company. Apparatus for reacting polymeric material. 3,480,404, Cl. 023-285.
- USCO Power Equipment Corporation: *See—*
  - Lankford, William Austin, 3,480,747.
- USM Corporation: *See—*
  - Cournoyer, George R., 3,479,951.
- Valus, James K., to General Motors Corporation. Tuned friction damper. 3,479,906, Cl. 074-574.
- van de Kerkhof, Lodevicus Lambertus Johannes, and de Vries, Joseph Gerardus Maria, to AMP Incorporated. Stripping and crimping apparatus. 3,479,718, Cl. 029-203.
- Van Den Biggelaar, Paul V. M., to American Enka Corporation. Spinneret assembly. 3,479,692, Cl. 018-008.
- van der Zee, Jan H., to Honeywell Inc. Gas valve with a thermoelectric safety device. 3,480,028, Cl. 137-066.

- Vanderbush, James J., Jr.: *See—*
  - Harmer, David E., Mount, Ramon A., and Vanderbush, James J., Jr. 3,480,534.
- Van Deventer, Emil L.: *See—*
  - Husted, Hoyt L., and Van Deventer, Emil L. 3,480,367.
- Van Dyk, John W., to Du Pont de Nemours, E. I., and Company. Low-friction packing or bearing material. 3,480,547, Cl. 252-012.6
- Van Horssen, Arden D., Habig, Wydell W., Shortell, Raymond E., and Smiley, George C., to United-Carr Incorporated, mesne. Coaxial cable connector. 3,480,722, Cl. 174-087.
- Van Ornum, Delbert G., to Goetel Inc. Electric arc light source and method. 3,480,829, Cl. 315-111.
- Van Os, Cornelis Johannes. Drive means for a cylinder processing machine. 3,480,191, Cl. 226-025.
- Varaxin, Alexei Ivanovich: *See—*
  - Bykov, Vladimir Alexandrovich, Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Karlinsky, Stanislav Evgenievich, Niskovskikh, Vitaly Maximovich, Orlov, Boris Yakovlevich, Sokolovsky, Oleg Petrovich, and Khimich, Georgy Lukich 3,480,074.
- Varaxin, Alexei Ivanovich, Gelfenbein, Evgeny Jukhimovich, Kuznetsov, Leonid Georgievich, Niskovskikh, Vitaly Maximovich, and Rolnik, Savva Abramovich. System of secondary cooling in continuous casting plants. 3,480,075, Cl. 164-283.
- Vargasov, Alexandr Ivanovich: *See—*
  - Solokhin, Boris Ivanovich, Krauze, Gennady Nikolaevich, and Vargasov, Alexandr Ivanovich 3,480,097.
- Varian Associates: *See—*
  - Rohrer, Daniel F., 3,480,200.
- Varilek, Ronald D., to Allis-Chalmers Manufacturing Company. Fork interchanger. 3,480,167, Cl. 214-620.
- Varta Aktiengesellschaft: *See—*
  - Sucher, Josef, Werner, Siegfried, Schlosser, Hellmut, Chojnowski, Manfred, and Hain, Josef, 3,479,723.
- Vasta, Joseph A., to Du Pont de Nemours, E. I., and Company. Curing catalyst. 3,480,560, Cl. 252.426.
- VEB Pentacon Dresden Kamera- und Kinowerke: *See—*
  - Bohm, Siegfried, 3,479,946.
- Velsicol Chemical Corporation: *See—*
  - Richter, Sidney, and Levin, Alfred A., 3,480,657.
- Venable, Lawrence B., to General Electric Company. Shaft journals. 3,480,342, Cl. 308-187.
- Vendit, Inc.: *See—*
  - Aufderheide, Don R., 3,480,785.
- Verbeek, Wolfgang: *See—*
  - Sundermeyer, Wolfgang, and Verbeek, Wolfgang 3,480,654.
- Verdier, Henri, to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie. Pneumatic tires. 3,480,065, Cl. 152-353.
- Vertesi, Tibor Miklos, and Philipps, Bruce Allan, to Gamma Engineering Limited. Spray control mechanism for continuous casting machines. 3,480,211, Cl. 239-450.
- Viancour, Albert D.: *See—*
  - Proudfoot, Ward M., Craig, Burnie M., and Viancour, Albert D. 3,480,043.
- Vickery, Brian: *See—*
  - Bryce-Smith, Derek, Gilbert, Andrew, and Vickery, Brian 3,480,532.
- Victor Company of Japan, Limited: *See—*
  - Yamada, Hisayoshi, 3,480,744.
- Victor Manufacturing and Gasket Company: *See—*
  - Kosatka, Thomas O., 3,480,286.
- Viewlex, Inc.: *See—*
  - Mindell, Marvin, and Rudzitis, Karl, 3,480,282.
- Vigor, Charles W.: *See—*
  - Mantel, Edward R., Vigor, Charles W., and Iwankovitsch, Stephen W. 3,479,731.
- Vinogradova, Svetlana Vasilievna: *See—*
  - Korshak, Vasily Vladimirovich, Vinogradova, Svetlana Vasilievna, Salazkin, Sergei Nikolaevich, and Bereza, Svetlana Veniaminovna 3,480,597.
- Vogel, Arthur E., and Fultz, Palmer. Suspension system for vehicles. 3,480,288, Cl. 280-006.1
- Vogel, Arthur E., and Fultz, Palmer. Control system for vehicle suspensions. 3,480,293, Cl. 280-124.
- Vogel, Frederick David, to United States of America, Navy. Apparatus for cleansing a contaminated chamber. 3,479,679, Cl. 015-302.
- Vogele, Josef, to Hebel Gasbetonwerk G.m.b.H. Method for casting, lifting and setting blocks. 3,480,705, Cl. 264-090.
- Vogue Instrument Corporation: *See—*
  - Geissler, Ambros, and Singer, Edwin, 3,480,931.
- Voitik, Robert M., to Continental Illinois National Bank and Trust Company of Chicago. Vented labyrinth seal. 3,480,284, Cl. 277-026.
- Volk, Andre: *See—*
  - Brion, Jacques, Cousin, Michel, Talejkinski, Wulf, and Volk, Andre 3,479,800.
- Von Bradsky, Otokar: *See—*
  - Schwarz, Julius, Dokes, George E., Von Bradsky, Otokar, and Goodman, Sidney J. 3,479,780.
- Voncken, Josef H.: *See—*
  - Gouw, Lam H., Voncken, Josef H., Frielingsdorf, Hans, and Powers, Gene W. 3,480,507.
- Von Kaenel, John Clifford, Anderson, Gordon Campbell, and Seymore, Stephen David, Jr., to Maremont Corporation. Combers. 3,479,699, Cl. 019-223.
- von Philipsborn, Henning: *See—*
  - Dillon, Joseph F., Jr., Le Craw, Roy Conway, von Philipsborn, Henning, and Wernick, Jack H. 3,480,409.
- Voorhies, Alexis, Jr., Kimberlin, Charles Newton, Jr., and Gladrow, Elroy Merle, to Esso Research and Engineering Company. Mordenite catalyst compositions. 3,480,539, Cl. 208-111.
- Voorhies, Donald A., to General Motors Corporation. Method for producing porous metal parts having uniform fluid permeability. 3,480,530, Cl. 204-141.
- Voshall, Roy E., to Westinghouse Electric Corporation. Multiple-break enclosed -type circuit interrupters with external rotary contact driving means and single chamber construction. 3,480,750, Cl. 200-144.
- Vulcan-Cincinnati, Inc.: *See—*
  - Wentworth, Theodore O., and Anderson, Clyde G., 3,480,407.
- Waaben, Sigurd G.: *See—*
  - Lynes, Dennis J., and Waaben, Sigurd G. 3,480,800.
- Wachs, Reuven (Roman): *See—*
  - Abrahami, Shoshana, Molcho, Aharon, and Wachs, Reuven (Roman) 3,480,561.
- Waco, Richard F.: *See—*
  - Mnichowicz, Donald A., and Waco, Richard F. 3,480,735.
- Waddell, Richard E.: *See—*
  - Ritchey, James F., Tate, Louis D., and Waddell, Richard E. 3,480,730.
- Waddington, Max D., to Ampex Corporation. Reel container. 3,480,134, Cl. 206-052.
- Wade, Ammon L. Noise making shoe attachment. 3,479,753, Cl. 036-007.5
- Wageneder, Franz. Rotary disintegrator. 3,480,214, Cl. 241-185.
- Wagner Electric Corporation: *See—*
  - Cruse, Oliver B., 3,480,334.
- Wagner, Kuno: *See—*
  - Oertel, Gunter, Holtschmidt, Hans, Wagner, Kuno, and Zenner, Karl-Friedrich 3,480,591.
- Waldin, Vincent H., to Du Pont de Nemours, E. I., and Company. Method of extracting heat from articles with an ebullient liquid freezant. 3,479,833, Cl. 062-063.
- Walker, Brooks. Spark control. 3,479,998, Cl. 123-097.
- Walker, Darrell W., and McReynolds, Leo A., to Phillips Petroleum Company. Catalyst for fluidized bed operation. 3,480,660, Cl. 260-465.3
- Walker, Emil C., to Zenith Radio Corporation. Adjustable switching apparatus. 3,480,726, Cl. 178-005.1
- Walker Manufacturing Company: *See—*
  - Shaff, Gerald H., Smith, Frank R., Haren, Ralph J., and Chiappe, Orlando J., 3,479,725.
- Wallace, Wendell J., to Packaging Corporation of America. Package for a fragile product. 3,480,137, Cl. 206-065.
- Walsh, Helen A. Storage rack for vessel containing unstable material. 3,480,152, Cl. 211-074.
- Walsh, John W.: *See—*
  - Weichman, Roger L., Walsh, John W., and Fierce, William L. 3,480,568.
- Walsom, Derek J., to Pegg, Samuel, & Son Limited. Winch and like dyeing machines. 3,479,846, Cl. 068-062.
- Walter, Conrad, and Eberwein, Siegfried, to Licentia Patent-Verwaltungs G.m.b.H. Optical device for protection against laser beams. 3,480,347, Cl. 350-160.
- Walter, Gerard O.: *See—*
  - Delany, James F., and Walter, Gerard O. 3,479,934.
- Walters, Harold A., to Dow Chemical Company, The. Yarn and method of making the same. 3,479,811, Cl. 057-153.
- Walton, Edward, to Merck & Co., Inc. 2-C or 3-C-alkylribofuransosyl-1-substituted compounds and the nucleosides thereof. 3,480,613, Cl. 260-209.
- Waltrip, Owen R., 25% to Konsonlas, John, and 10% to Lunardi, Paul J., and 10% to Hampton, Willis. Electro-chemical method for selected dissociation. 3,480,529, Cl. 204-130.
- Wandel & Goltermann: *See—*
  - Bayer, Herbert, 3,480,862.
- Waner, Donald W., to North American Rockwell Corporation, mesne. Self-locking adjustable stanchion. 3,480,247, Cl. 248-355.
- Waner, John L.: *See—*
  - Moore, Chester W., and Waner, John L. 3,480,727.
- Ward, Jesse E., Jr. Hydraulic levelling and control means for tractors and other vehicles. 3,480,098, Cl. 180-041.
- Ward, Texas: *See—*
  - Grosbard, Gregory, 3,480,811.
- Warden, Douglas A.: *See—*
  - Kenny, Neal S., Warden, Douglas A., and Sapakie, Alan Louis 3,480,372.
- Warner Electric Brake & Clutch Company: *See—*
  - Block, Paul E., 3,480,048.
- Warner & Swasey Company, The: *See—*
  - Livingston, Emmett S., 3,479,700.
- Wasley, William L.: *See—*
  - Pittman, Allen G., and Wasley, William L. 3,480,605.
  - Pittman, Allen G., and Wasley, William L. 3,480,664
- Watson, Duane C.: *See—*
  - Mutter, Walter F., and Watson, Duane C. 3,479,880.

- Watts, Chester B., Jr., to Alford, Andrew. Scanning apparatus comprising parallel conductor transmission line means. 3,480,886, Cl. 333-007.
- Weatherhead, Albert J., Jr., and Nicol, John, to Weatherhead Company, The. Method of making a hose coupling. 3,479,713, Cl. 029-157.
- Weatherhead Company, The: *See—*
  - Weatherhead, Albert J., Jr., and Nicol, John, 3,479,713.
- Webb, Daniel D., to American Safety Equipment. Camouflaged helmet shell and method for making same. 3,479,666, Cl. 002-003.
- Webber, Philip S.: *See—*
  - Ball, Glenn A., Lichtenstein, Le Roy, and Webber, Philip S. 3,480,122.
- Weber, Wolfgang: *See—*
  - Emeis, Reimer, and Weber, Wolfgang 3,480,474.
- Wegener, Thure H. Winch mechanism. 3,479,895, Cl. 074-333.
- Weichman, Roger L., Walsh, John W., and Fierce, William L., to Union Oil Company of California, mesne. Polymerization of benzene in the presence of oxygen and cupric and aluminum chloride. 3,480,568, Cl. 260-002.
- Weigl, John W., Forest, Edward, and Keller, Carol K., to Xerox Corporation. Facsimile recording system. 3,480,962, Cl. 346-001.
- Weiner, Jerome J. Fire escape ladder. 3,480,106, Cl. 182-096.
- Weiner, Sidney: *See—*
  - Ehrens, Henry, and Weiner, Sidney 3,480,036.
- Weisbach, Jerry A.: *See—*
  - Douglas, Bryce, and Weisbach, Jerry A. 3,480,637.
- Weiss, Johnny C.: *See—*
  - Torrey, Sumner H., Dubuque, Donald J., Weiss, Johnny C., and Sloan, Norman R. 3,480,000.
- Welbourn, Dale K. Manual dexterity training device. 3,479,751, Cl. 035-029.
- Wenda, Raymond N.: *See—*
  - Lenzen, Leo W., Olsen, Norman G., and Wenda, Raymond N. 3,480,120.
- Wennberg, Olov Carl Gustav, to Wennbergs, C. J., Mekaniska Verkstad, AB. Apparatus for withdrawing suspension rods from cathode plates. 3,479,721, Cl. 029-211.
- Wennbergs, C. J., Mekaniska Verkstad, AB: *See—*
  - Wennberg, Olov Carl Gustav, 3,479,721.
- Wentworth, Theodore O., and Anderson, Clyde G., to Vulcan-Cincinnati, Inc. Multiple zone apparatus for the processing of fluids having interzone fluid mixing and redistribution features. 3,480,407, Cl. 023-288.
- Werner, Lincoln Harvey, to Ciba Corporation. N-substituted isoquinolines as antiprotozoal agents. 3,480,714, Cl. 424-258.
- Werner, Siegfried: *See—*
  - Sucher, Josef, Werner, Siegfried, Schlosser, Hellmut, Chojnowski, Manfred, and Hain, Josef 3,479,723.
- Wernick, Jack H.: *See—*
  - Dillon, Joseph F., Jr., Le Craw, Roy Conway, von Philipsborn, Henning, and Wernick, Jack H. 3,480,409.
- Wessling, Ritchie A., and Settineri, William J., to Dow Chemical Company, The. Process for producing polymers by the electro- reduction of sulfonium compounds. 3,480,525, Cl. 204-059.
- Wessling, Ritchie A., and Settineri, William J., to Dow Chemical Company, The. Process for producing P,P'-dinitrobibenzyl compounds by the electroreduction of sulfonium. 3,480,527, Cl. 204-073.
- West Company, The: *See—*
  - Rohde, LeRoy H., 3,480,171.
- West Texas State Bank: *See—*
  - Allen, Melvin Oland, 3,480,833.
  - Allen, Melvin Oland, 3,480,833.
- Western Electric Company, Incorporated: *See—*
  - Bohannon, William D., Jr., and King, Harold O., 3,479,720.
  - Hurst, Jerry C., and Kurtz, Samuel E., 3,480,165.
- Westinghouse Air Brake Company: *See—*
  - Carlson, Melvin G., 3,480,328.
- Westinghouse Electric Corporation: *See—*
  - Billings, William W., 3,480,834.
  - Boykin, John R., 3,480,881.
  - Chen, Cheng-Lin, 3,480,823.
  - Downs, Robert E., and Karbowski, John S., 3,480,807.
  - Fallon, Bernard R., 3,480,816.
  - Goldie, Harry, 3,480,828.
  - Hasell, Henry P., and Chauvin, Bernard, 3,480,771.
  - Hatten, Bernard W., 3,480,205.
  - Kumm, William H., 3,479,870.
  - List, William F., and Schuster, Marvin A., 3,480,780.
  - Longini, Richard L., 3,480,802.
  - Mandalakas, John N., 3,480,781.
  - Popovich, Richard G., 3,480,825.
  - Schrank, Helmut, 3,480,885.
  - Scott, Eugene W., 3,479,839.
  - Tauson, Peter O., 3,479,872.
  - Thompson, John H., 3,480,906.
  - Trapp, Orlin D., and Cannon, Don L., 3,479,862.
  - Voshall, Roy E., 3,480,750.
  - Wolf, Charles B., Kemeny, George A., and Fey, Maurice G., 3,480,717.
- Westland Aircraft Limited: *See—*
  - Robinson, Anthony George, 3,480,937.
- Weston Instruments, Inc.: *See—*
  - Richman, Peter L., 3,480,794.
  - Richman, Peter L., 3,480,835.
- Westover, Claude O. Safety door fastener. 3,480,316, Cl. 292-175.
- Wheaton, Jack M., to Owens-Illinois, Inc. Composite closure. 3,480,173, Cl. 215-056.
- Whipple, Melvin M. Pressure roll drives. 3,480,053, Cl. 144-213.
- White, Frank F., Tanno, Norman J., and Chipps, Elmer T., to Automation Development Corporation. Bar and tube feeder for automatic machines. 3,480,159, Cl. 214-001.2
- White, Robert R.: *See—*
  - Porter, Dennis A., and White, Robert R. 3,480,790.
- Whiting, Harold W., to Worthington Corporation. Package system for compressing gases. 3,480,201, Cl. 230-182.
- Whitlock, Robert A., to AquaMatic Inc. Timer controlled water softener valve. 3,480,041, Cl. 137-624.2
- Wiechert, Rudolf, to Schering Aktiengesellschaft. 4-Halogeno-1$\alpha$,2$\alpha$; 6$\beta$,7$\beta$-bimethylene-$\Delta^{4}$3-keto- steroids and process for making the same. 3,480,711, Cl. 424-241.
- Wiesner, Stephen Jay: *See—*
  - Howland, Bradford, and Wiesner, Stephen Jay 3,479,744.
- Wiggins, Herbert M. Vertical hanging attachment for telephones. 3,480,741, Cl. 179-146.
- Wiggins, John H. Plural winch lifting unit. 3,480,255, Cl. 254-173.
- Wilcox, Ernest W., and Lillberg, John W., to United Aircraft Corporation. Lock means for fixing retaining bolts on rotating shafts. 3,480,307, Cl. 287-053.
- Wild, Anton J. Stop means for packing equipment. 3,479,791, Cl. 053-061.
- Wilhelm, George F., to Bacon, R. S., Veneer Company. Method of forming fire retardant panels. 3,480,494, Cl. 156-090.
- Wilhelm, Max G., to Pillsbury Company, The. Method and apparatus for peeling fruits and vegetables under low moisture conditions. 3,480,057, Cl. 146-231.
- Wilhelm, Max, Daeniker, Hans Ulrich, Schenker, Karl, and Schmidt, Paul, to Ciba Corporation. Certain phenoxy oxazolidine derivatives. 3,480,640, Cl. 260-296.
- Wilkaitis, Norman J., and La Brot, Adrian G., to Olin Mathieson Chemical Corporation. Temperature sensor. 3,479,983, Cl. 116-114.5
- Wilkinson, Anthony E. F., to Wilkinson Sword Limited. Razor blades and methods of manufacture thereof. 3,480,483, Cl. 148-006.3
- Wilkinson Sword Limited: *See—*
  - Wilkinson, Anthony E. F., 3,480,483.
- Willems, Gunter: *See—*
  - Sitte, Richard, and Willems, Gunter 3,480,375.
- Williamson, Everett Wayne: *See—*
  - McConnell, John A., and Williamson, Everett Wayne 3,480,023.
- Willsey, Charles H. Egg breaking machine. 3,480,056, Cl. 146-002.
- Wilson, Burton D., to Eastman Kodak Company. Antihalation compositions containing pentamethine oxonol dyes in aromatic alcohols. 3,480,436, Cl. 096-084.
- Wilson, James H., to United States Steel Corporation. Apparatus for controlling discharge of metal from a vacuum degassing chamber. 3,480,073, Cl. 164-155.
- Wilson, Robert G., and Pharr, Mark R., Jr. Electronic oven. 3,480,753, Cl. 219-010.55
- Wilson, Rosser L.: *See—*
  - Mc Cune, Robert B., and Wilson, Rosser L. 3,480,773.
- Wingfield, Edward C.: *See—*
  - Erf, Robert K., Wingfield, Edward C., and Aas, Herbert G. 3,480,368.
- Winkler, Alfred, and Ernst, Heinz, to Agfa-Gavaert Aktiengesellschaft. Photographic camera with autoetic film threading means. 3,479,938, Cl. 095-011.
- Winstead, Thomas W. Continuous method and apparatus for manufacturing articles from foamed thermoplastic material. 3,479,694, Cl. 018-019.
- Winter, Heinz, to Envirotech Corporation, mesne. Toggle link mounting mechanism. 3,479,904, Cl. 074-520.
- Wintershall Aktiengesellschaft: *See—*
  - Fricke, Guenter, and Singewald, Arno, 3,480,139.
- Wise, Stephen R. Hurdle and target. 3,480,273, Cl. 272-059
- Witt, Edward, to Standard Brands Chemical Industries, Inc. Preparation of Carboxylic polymers in acidic aqueous media. 3,480,578, Cl. 260-023.7
- Wittmann, Josef: *See—*
  - Bauer, Simon, and Wittmann, Josef 3,480,324.
- Wittner, Eugene: *See—*
  - Henderson, Bennett M., Ratner, Hyman, and Wittner, Eugene 3,480,550.
- Wiz Corporation: *See—*
  - Woodward, Elmer Ralph, 3,479,927.
- Wolf, Charles B., Kemeny, George A., and Fey, Maurice G., to Westinghouse Electric Corporation. Arc furnace electrode assembly. 3,480,717, Cl. 013-018.
- Wolf, Wilhelm. Shoulder rests for stringed instruments. 3,479,916, Cl. 084-280.
- Wolverton, Kenneth H., to Ametek, Inc. Reciprocal door latch for laundry washing machine. 3,480,315, Cl. 292-175.
- Woodford Manufacturing Company: *See—*
  - Noland, Wayne B., 3,480,027.
- Woodhouse, Dal C.: *See—*
  - Richardson, Joseph W., and Woodhouse, Dal C. 3,480,022.
- Woodward, Elmer Ralph, to Wiz Corporation. Vehicle brake operator. 3,479,927, Cl. 092-128.

Woody, Robert, to Dow Chemical Company, The. Gear train and apparatus. 3,479,896, Cl. 074-399.
Wool Bureau, Inc., The: *See—*
  Krasny, John F., and Oliva, Edward C., 3,480,383.
Work, Carl F.: *See—*
  Miller, Meryl E., Huddleston, Stanley R., and Work, Carl F. 3,480,934.
Worthington Corporation: *See—*
  Whiting, Harold W., 3,480,201.
Wowk, Anatole, to M & T Chemicals Inc. Dihydroxy hydrocarbyl tin halides and the preparation thereof. 3,480,655, Cl. 260-429.7
Wright, Achibald N., and Feller, John R., to General Electric Company. Oxidation resistant high energy magnetic material. 3,480,553, Cl. 252-062.54
Wright, Dale W.: *See—*
  Miles, Harry E., Jr., and Wright, Dale W. 3,479,735.
Wright Rain Limited: *See—*
  Jerome, Maurice William, 3,480,034.
Wright, Warren H.: *See—*
  Binckley, William G., and Wright, Warren H. 3,480,789.
Wright, William Sherwood: *See—*
  Guinn, Jerry H., and Wright, William Sherwood 3,480,079.
Wuerker, Ralph F., and Briones, Robert A., to TRW Inc. Electronic ignition circuit for flash lamps. 3,480,831, Cl. 315-241.
Wurlitzer Company, The: *See—*
  Schwartz, Harold O., and Barry, Robert D., 3,480,719.
Wyatt, Theodore, to United States of America, Navy. Damping coupler for satellite attitude control. 3,480,232, Cl. 244-001.
Wymer, Fred J.: *See—*
  Matthews, Robert P., Simmons, Gustavus J., and Wymer, Fred J. 3,480,921.
Xenakis, Sabbas N., to General Electric Company. Television receiver horizontal sweep circuit having protection against arcing. 3,480,826, Cl. 315-027.
Xerox Corporation: *See—*
  Hamilton, Donald Arthur, 3,480,398.
  Hamilton, Donald Arthur, 3,480,399.
  Mallory, Donald G., Ashton, Raymond J., and Liva, Robert H., 3,480,360.
  Weigl, John W., Forest, Edward, and Keller, Carol K., 3,480,962.
  Zoppoth, Raymond Carl, and Young, James E., 3,480,965.
Yamada, Hisayoshi, to Victor Company of Japan, Limited. Key switch for electronic keyed instruments. 3,480,744, Cl. 200.001.
Yamagishi, Hitoshi: *See—*
  Tanaka, Yukio, Soya, Katsuji, and Yamagishi, Hitoshi 3,480,486.
Yamasaki, Shohachiro. Rotary transmitting apparatus of purified and humidified air. 3,479,801, Cl. 055-232.
Yasutake, Yoshito, and Fujita, Yosisige, to Central Glass Company, Ltd. Method for producing gypsum pellets. 3,480,387, Cl. 023-122.
Yerrell, John Stuart, to English Electric Company Limited, The. Magnetohydrodynamic apparatus. 3,480,805, Cl. 310-011.
Yissum Research Development Company: *See—*
  Brandstadter, Isaac Joseph, 3,480,932.
Yoder, Harold R., to Boyertown Burial Casket Company. Swell sander. 3,479,772, Cl. 051-145.
Yoshida, Terue: *See—*
  Kitahara, Naotake, and Yoshida, Terue 3,479,841.
Young, David W.: *See—*
  Carlos, Donald D., and Young, David W. 3,480,549.
Young, James E.: *See—*
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Zeitlin, Alexander: *See—*
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Zellsloffabrik Waldhof A.G.: *See—*
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Zenith Radio Corporation: *See—*
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Zenner, Karl-Friedrich: *See—*
  Himmelmann, Wolfgang, Riebel, Alexander, Zenner, Karl-Friedrich, and Meckl, Heinz 3,480,440.
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| | | |
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| | 103 | 3,479,749 |
| 35– | 11 | 3,479,750 |
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| | | 3,479,757 |
| | | 3,479,758 |
| 40– | 106.51 | 3,479,759 |
| | 145 | 3,479,760 |
| | 156 | 3,479,761 |
| 44– | 69 | 3,480,413 |
| | 72 | 3,480,414 |
| 46– | 11 | 3,479,762 |
| | 25 | 3,479,763 |
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| | 242 | 3,479,765 |
| 48– | 54 | 3,480,415 |
| | 93 | 3,480,416 |
| | 94 | 3,480,417 |
| | 180 | 3,480,418 |
| | 212 | 3,480,419 |
| 49– | 236 | 3,479,766 |
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| | 449 | 3,479,769 |
| | 501 | 3,479,770 |
| 51– | 145 | 3,479,772 |
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| | 237 | 3,479,775 |
| | 249 | 3,479,776 |
| 52– | 20 | 3,479,777 |
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| | 144 | 3,479,779 |
| | 169 | 3,479,780 |
| | | 3,479,781 |
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| | 584 | 3,479,783 |
| | 588 | 3,479,784 |
| | 701 | 3,479,785 |
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| 53– | 14 | 3,479,787 |
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| | 151 | 3,479,794 |
| | 160 | 3,479,795 |
| | 390 | 3,479,796 |
| 55– | 62 | 3,479,797 |
| | 158 | 3,479,798 |
| | 230 | 3,479,799 |
| | 232 | 3,479,801 |
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| 55– | 367 | 3,479,802 |
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| 56– | 21 | 3,479,804 |
| | 23 | 3,479,805 |
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| 57– | 10 | 3,479,808 |
| | 105 | 3,479,809 |
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| | 153 | 3,479,811 |
| 58– | 25 | 3,479,812 |
| | 41 | 3,479,814 |
| | 59 | 3,479,813 |
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| 60– | 30 | 3,479,816 |
| | 36 | 3,479,817 |
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| | 64 | 3,479,820 |
| | 97 | 3,479,821 |
| | | 3,479,822 |
| | 224 | 3,479,823 |
| 61– | 3 | 3,479,824 |
| | 13 | 3,479,825 |
| | 22 | 3,479,826 |
| | 41 | 3,479,827 |
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| | 53.6 | 3,479,829 |
| | 72.3 | 3,479,830 |
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| 62– | 52 | 3,479,832 |
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| | 115 | 3,479,834 |
| | 135 | 3,479,835 |
| | 140 | 3,479,836 |
| | 230 | 3,479,837 |
| | 259 | 3,479,838 |
| | 394 | 3,479,839 |
| | 457 | RE.26,724 |
| 64– | 17 | 3,479,840 |
| 65– | 27 | 3,480,420 |
| | 33 | 3,480,421 |
| | 169 | 3,480,422 |
| | 182 | 3,480,423 |
| 66– | 31 | 3,479,841 |
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| | 173 | 3,479,843 |
| | 176 | 3,479,844 |
| 68– | 17 | 3,479,845 |
| | 62 | 3,479,846 |
| 69– | 46 | 3,479,847 |
| 70– | 364 | 3,479,848 |
| | | 3,479,849 |
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| | 451 | 3,479,851 |
| 71– | 104 | 3,480,424 |
| 72– | 40 | 3,479,852 |
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| | 455 | 3,479,856 |
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| 83– | 65 | 3,479,911 |
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| 85– | 13 | 3,479,919 |
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| 92– | 128 | 3,479,927 |
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| 98– | 40 | RE.26,723 |
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| 122– | 235 | 3,479,992 |
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| | 57 | RE.26,725 |
| | 58 | 3,480,007 |
| | 66 | 3,480,008 |
| 128– | 66 | 3,480,009 |
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| | 13 | 3,480,013 |
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| | 284 | 3,480,016 |
| | 344 | 3,480,017 |
| 131– | 17 | 3,480,018 |
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| | 624.2 | 3,480,041 |
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| 138– | 99 | 3,480,043 |
| 139– | 59 | 3,480,044 |
| | 116 | 3,480,045 |
| | 122 | 3,480,046 |
| | 319 | 3,480,047 |
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| 141– | 141 | 3,480,049 |
| 143– | 26 | 3,480,050 |
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| 156– | 17 | 3,480,491 |
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| | 78 | 3,480,493 |
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| | 155 | 3,480,497 |
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| | 271 | 3,480,502 |
| | 351 | 3,480,503 |
| | 356 | 3,480,504 |
| | 498 | 3,480,505 |
| 157– | 1.21 | 3,480,067 |
| | 13 | 3,480,068 |
| 160– | 354 | 3,480,069 |

161–165 : 3,480,506
178 : 3,480,507
227 : 3,480,508
162–309 : 3,480,509
164–36 : 3,480,071
93 : 3,480,072
155 : 3,480,073
282 : 3,480,074
283 : 3,480,075
365 : 3,480,070
165–27 : 3,480,076
111 : 3,480,077
185 : 3,480,078
250 : 3,480,079
252 : 3,480,080
263 : 3,480,081
266 : 3,480,082
275 : 3,480,083
282 : 3,480,084
172–328 : 3,480,085
710 : 3,480,086
173–20 : 3,480,087
78 : 3,480,088
99 : 3,480,089
135 : 3,480,090
160 : 3,480,091
174–38 : 3,480,721
87 : 3,480,722
88 : 3,480,723
102 : 3,480,724
124 : 3,480,725
175–19 : 3,480,092
58 : 3,480,093
325 : 3,480,094
176–35 : 3,480,510
177–137 : 3,480,095
178–5.1 : 3,480,726
6 : 3,480,727
18 : 3,480,728
26 : 3,480,729
179–1 : 3,480,720
5 : 3,480,730
6 : 3,480,731
7.1 : 3,480,732
15 : 3,480,733
3,480,734
18 : 3,480,735
99 : Re.26,722
100.2 : 3,480,736
3,480,737
3,480,738
3,480,739
121 : 3,480,740
146 : 3,480,741
170 : 3,480,742
178 : 3,480,743
180–5 : 3,480,096
6.48 : 3,480,097
41 : 3,480,098
44 : 3,480,099
79.2 : 3,480,100
181–.5 : 3,480,101
3,480,102
3,480,103
33 : 3,480,104
47 : 3,480,105
182–96 : 3,480,106
97 : 3,480,107
133 : 3,480,108
148 : 3,480,109
184 : 3,480,110
224 : 3,480,111
184–1 : 3,480,112
6 : 3,480,113
186–1 : 3,480,114
188–72 : 3,480,115
73 : 3,480,116
264 : 3,480,117
190–44 : 3,480,118
192–3 : 3,480,119
4 : 3,480,120
18 : 3,480,121
53 : 3,480,122
3,480,123
84 : 3,480,124
193–2 : 3,480,125
35 : 3,480,126
195–31 : 3,480,511
196–124 : 3,480,512
197–144 : 3,480,127
198–1 : 3,480,128
32 : 3,480,129
126 : 3,480,130
151 : 3,480,131
220 : 3,480,132
199–18 : 3,480,133
200–1 : 3,480,744
14 : 3,480,745
47 : 3,480,746
48 : 3,480,747
61.90 : 3,480,840
66 : 3,480,748
84 : 3,480,749
144 : 3,480,750
148 : 3,480,751
172 : 3,480,752

202–185 : 3,480,513
241 : 3,480,514
203–10 : 3,480,515
55 : 3,480,519
66 : 3,480,516
70 : 3,480,517
3,480,518
204–1 : 3,480,520
39 : 3,480,521
40 : 3,480,522
43 : 3,480,523
52 : 3,480,524
59 : 3,480.525
67 : 3,480,526
73 : 3,480,527
99 : 3,480,528
130 : 3,480,529
141 : 3,480,530
158 : 3,480,532
3,480,533
163 : 3,480,534
192 : 3,480,535
195 : 3,480,536
224 : 3,480,537
290 : 3,480,538
206–52 : 3,480,134
65 : 3,480,135
3,480,136
3,480,137
78 : 3,480,138
208–93 : 3,480,540
111 : 3,480,539
143 : 3,480,531
209–9 : 3,480,139
73 : 3,480,140
80 : 3,480,141
133 : 3,480,142
166 : 3,480,143
211 : Re.26,720
210–4 : 3,480,144
18 : 3,480,541
20 : 3,480,542
54 : 3,480,761
60 : 3,480,543
223 : 3,480,145
250 : 3,480,146
321 : 3,480,147
380 : 3,480,148
445 : 3,480,149
211–11 : 3,480,150
41 : 3,480,151
74 : 3,480,152
124 : 3,480,153
126 : 3,480,154
148 : 3,480,155
212–38 : 3,480,156
41 : 3,480,157
214–1 : 3,480,158
.2 : 3,480,159
6 : 3,480,160
3,480,161
16.4 : 3,480,162
42 : 3,480,163
3,480,164
152 : 3,480,165
450 : 3,480,166
620 : 3,480,167
215–1 : 3,480,168
40 : 3,480,169
43 : 3,480,170
46 : 3,480,171
3,480,172
56 : 3,480,173
219–10.55 : 3,480,753
57 : 3,480,754
121 : 3,480,755
125 : 3,480,756
134 : 3,480,757
137 : 3,480,758
242 : 3,480,759
528 : 3,480,760
220–1.5 : 3,480,174
54 : 3,480,175
85 : 3,480,176
97 : 3,480,177
3,480,178
221–63 : 3,480,179
211 : 3,480,180
279 : 3,480,181
288 : 3,480,182
222–3 : 3,480,183
153 : 3,480,184
192 : 3,480,185
512 : 3,480,186
223–67 : 3,480,187
73 : 3,480,188
225–4 : 3,480,189
33 : 3,480,190
226–25 : 3,480,191
227–120 : 3,480,192
130 : 3,480,193
228–8 : 3,480,194
229–5.5 : 3,480,195
23 : 3,480,196
43 : 3,480,197
66 : 3,480,198

230–4 : 3,480,199
45 : 3,480,200
127 : 3,480,202
145 : 3,480,203
152 : 3,480,204
182 : 3,480,201
232 : 3,480,205
3,480,206
233–1 : 3,480,207
235–61.11 : 3,480,762
.12 : 3,480,763
.12 : 3,480,764
150.1 : 3,480,765
.25 : 3,480,766
.53 : 3,480,767
175 : 3,480,768
183 : 3,480,769
189 : 3,480,770
201 : 3,480,208
237–1 : 3,480,209
238–10 : 3,480,210
239–450 : 3,480,211
240–1.3 : 3,480,771
25 : 3,480,772
241–34 : 3,480,212
92 : 3,480,213
185 : 3,480,214
242–35.5 : 3,480,215
.6 : 3,480,216
43.2 : 3,480,217
45 : 3,480,218
53 : 3,480,219
3,480,220
54 : 3,480,221
55.3 : 3,480,222
64 : 3,480,223
68.2 : 3,480,224
.4 : 3,480,225
71.1 : 3,480,226
107.3 : 3,480,227
.4 : 3,480,228
118.4 : 3,480,229
191 : 3,480,230
244–1 : 3,480,231
3,480,232
3.18 : 3,480,233
40 : 3,480,234
42 : 3,480,235
46 : 3,480,237
53 : 3,480,236
118 : 3,480,239
3,480,240
142 : 3,480,238
246–4 : 3,480,773
248–44 : 3,480,241
168 : 3,480,250
226 : 3,480,242
264 : 3,480,243
312 : 3,480,244
317 : 3,480,245
327 : 3,480,246
355 : 3,480,247
361 : 3,480,248
373 : 3,480,249
249–127 : 3,480,251
250–49.5 : 3,480,774
83.3 : 3,480,775
3,480,776
3,480,777
106 : 3,480,778
203 : 3,480,779
209 : 3,480,780
3,480,781
211 : 3,480,783
213 : 3,480,782
218 : 3,480,784
219 : 3,480,785
3,480,786
221 : 3,480,787
237 : 3,480,788
251–146 : 3,480,252
174 : 3,480,253
305 : 3,480,254
252–1 : 3,480,544
2 : 3,480,545
3 : 3,480,546
12.6 : 3,480,547
33 : 3,480,550
.4 : 3,480,548
42.7 : 3,480,551
54 : 3,480,549
62.3 : 3,480,554
.51 : 3,480,552
.54 : 3,480,553
.56 : 3,480,555
152 : 3,480,556
186 : 3,480,557
416 : 3,480,558
426 : 3,480,560
428 : 3,480,561
429 : 3,480,562
431 : 3,480,559
3,480,563
435 : 3,480,564
443 : 3,480,565
514 : 3,480,566

254–173 : 3,480,255
256–8 : 3,480,256
59 : 3,480,257
259–72 : 3,480,258
75 : 3,480,259
147 : 3,480,260
148 : 3,480,261
260–2 : 3,480,567
3,480,568
.5 : 3,480,569
3,480,570
3,480,594
17.2 : 3,480,572
3,480,573
21 : 3,480,574
22 : 3,480,575
3,480,576
23 : 3,480,577
.7 : 3,480,578
28.5 : 3,480,579
29.6 : 3,480,580
41 : 3,480,581
45.75 : 3,480,582
46.5 : 3,480,583
3,480,584
47 : 3,480,585
3,480,586
3,480,587
3,480,588
63 : 3,480,589
73 : 3,480,590
75 : 3,480,591
77.5 : 3,480,592
3,480,593
3,480,595
78 : 3,480,596
.5 : 3,480,597
3,480,598
80.7 : 3,480,599
85.5 : 3,480,600
86.1 : 3,480,601
87.1 : 3,480,602
.5 : 3,480,603
88.2 : 3,480,604
91.1 : 3,480,605
92.8 : 3,480,606
94.3 : 3,480,607
3,480,608
.7 : 3,480,609
112 : 3,480,610
145 : 3,480,611
146 : 3,480,612
209 : 3,480,613
210 : 3,480,614
229 : 3,480,615
234 : 3,480,616
239 : 3,480,617
.5 : 3,480,618
.55 : 3,480,619
3,480,620
3,480,621
3,480,622
3,480,623
240 : 3,480,624
246 : 3,480,625
247.2 : 3,480,626
248 : 3,480,627
249.5 : 3,480,628
251 : 3,480,629
254 : 3,480,630
260 : 3,480,631
268 : 3,480,632
288 : 3,480,633
289 : 3,480,634
293 : 3,480,635
.4 : 3,480,636
294.3 : 3,480,637
3,480,638
.8 : 3,480,639
296 : 3,480,640
299 : 3,480,641
309.2 : 3,480,642
3,480,643
326 : 3,480,644
.14 : 3,480,645
327 : 3,480,646
3,480,647
340.6 : 3,480,648
.9 : 3,480,649
345.8 : 3,480,650
347.8 : 3,480,651
397.7 : 3,480,652
429.3 : 3,480,653
.7 : 3,480,654
3,480,655
3,480,656
464 : 3,480,657
465 : 3,480,658
.1 : 3,480,659
.3 : 3,480,660
.4 : 3,480,661
.9 : 3,480,662
482 : 3,480,663
486 : 3,480,664
501.13 : 3,480,665
513 : 3,480,666

260–514 : 3,480,667
3,480,668
515 : 3,480,669
559 : 3,480,670
3,480,671
566 : 3,480,672
578 : 3,480,673
583 : 3,480,674
584 : 3,480,675
585.5 : 3,480,676
587 : 3,480,677
594 : 3,480,678
609 : 3,480,679
3,480,680
617 : 3,480,571
646 : 3,480,681
648 : 3,480,682
653 : 3,480,683
673.5 : 3,480,684
677 : 3,480,685
679 : 3,480,686
680 : 3,480,687
3,480,688
683 : 3,480,689
814 : 3,480,690
830 : 3,480,692
831 : 3,480,691
850 : 3,480,693
857 : 3,480,694
860 : 3,480,695
878 : 3,480,696
944 : 3,480,697
945 : 3,480,698
3,480,699
953 : 3,480,700
982 : 3,480,701
261–22 : 3,480,262
29 : 3,480,263
263–6 : 3,480,264
21 : 3,480,265
264–.5 : 3,480,702
45 : 3,480,703
3,480,704
90 : 3,480,705
176 : 3,480,706
209 : 3,480,707
221 : 3,480,708
237 : 3,480,709
266–27 : 3,480,266
34 : 3,480,267
267–1 : 3,480,268
64 : 3,480,269
269–131 : 3,480,270
228 : 3,480,271
272–33 : 3,480,272
59 : 3,480,273
60 : 3,480,274
273–1 : 3,480,275
44 : 3,480,279
54 : 3,480,276
94 : 3,480,277
106 : 3,480,280
148 : 3,480,278
274–3 : 3,480,281
9 : 3,480,282
17 : 3,480,283
277–26 : 3,480,284
88 : 3,480,285
182 : 3,480,286
279–6 : 3,480,287
280–6.1 : 3,480,288
21 : 3,480,289
36 : 3,480,290
43.17 : 3,480,292
87 : 3,480,291
124 : 3,480,293
405 : 3,480,294
408 : 3,480,295
491 : 3,480,296
282–22 : 3,480,297
29 : 3,480,298
285–4 : 3,480,299
93 : 3,480,300
119 : 3,480,301
362 : 3,480,302
373 : 3,480,303
287–14 : 3,480,304
20.92 : 3,480,305
53 : 3,480,306
3,480,307
87 : 3,480,308
110 : 3,480,309
119 : 3,480,310
189.36 : 3,480,311
3,480,312
3,480,313
292–64 : 3,480,314
175 : 3,480,315
3,480,316
294–31 : 3,480,317
33 : 3,480,318
82 : 3,480,319
296–10 : 3,480,320
28 : 3,480,321
97 : 3,480,322
297–253 : 3,480,323

297–308 : 3,480,324
385 : 3,480,325
299–8 : 3,480,326
33 : 3,480,327
71 : 3,480,328
301–37 : 3,480,329
302–28 : 3,480,330
29 : 3,480,331
66 : 3,480,332
303–6 : 3,480,333
13 : 3,480,334
21 : 3,480,335
3,480,336
72 : 3,480,337
305–11 : 3,480,338
35 : 3,480,339
307–53 : 3,480,789
57 : 3,480,790
66 : 3,480,791
141 : 3,480,792
229 : 3,480,793
3,480,794
235 : 3,480,795
251 : 3,480,796
252 : 3,480,797
260 : 3,480,798
273 : 3,480,799
292 : 3,480,800
293 : 3,480,801
299 : 3,480,802
308–5 : 3,480,340
8.2 : 3,480,341
187 : 3,480,342
310–4 : 3,480,803
11 : 3,480,804
3,480,805
3,480,806
12 : 3,480,807
25 : 3,480,808
3,480,809
54 : 3,480,810
156 : 3,480,811
168 : 3,480,812
241 : 3,480,813
247 : 3,480,814
268 : 3,480,815
312–223 : 3,480,343
242 : 3,480,344
257 : 3,480,345
313–51 : 3,480,816
82 : 3,480,817
94 : 3,480,818
109 : 3,480,819
.5 : 3,480,820
148 : 3,480,821
161 : 3,480,822
317 : 3,480,823
315–12 : 3,480,824
22 : 3,480,825
27 : 3,480,826
3,480,827
39 : 3,480,828
111 : 3,480,829
169 : 3,480,830
241 : 3,480,831
317–16 : 3,480,832
22 : 3,480,833
31 : 3,480,834
41 : 3,480,835
100 : 3,480,836
3,480,837
137 : 3,480,838
142 : 3,480,839
234 : 3,480,841
3,480,842
3,480,843
3,480,844
3,480,845
243 : 3,480,846
259 : 3,480,847
318–128 : 3,480,848
257 : 3,480,849
321–7 : 3,480,850
8 : 3,480,851
323–4 : 3,480,852
324–17 : 3,480,853
34 : 3,480,854
38 : 3,480,855
51 : 3,480,856
57 : 3,480,857
60 : 3,480,858
70 : 3,480,859
96 : 3,480,860
99 : 3,480,861
130 : 3,480,862
133 : 3,480,863
158 : 3,480,864
325–419 : 3,480,865
423 : 3,480,866
476 : 3,480,867
328–132 : 3,480,868
329–112 : 3,480,869
330–4.3 : 3,480,874
.9 : 3,480,870
29 : 3,480,871
3,480,873

---

330–30 : 3,480,872
331–94.5 : 3,480,875
3,480,876
3,480,877
3,480,878
107 : 3,480,879
109 : 3,480,880
332–9 : 3,480,881
16 : 3,480,882
19 : 3,480,883
333–6 : 3,480,884
7 : 3,480,885
3,480,886
24 : 3,480,887
73 : 3,480,888
83 : 3,480,889
335–23 : 3,480,890
52 : 3,480,891
132 : 3,480,892
202 : 3,480,893
303 : 3,480,894
336–60 : 3,480,895

336–83 : 3,480,896
149 : 3,480,897
337–4 : 3,480,898
6 : 3,480,899
75 : 3,480,900
244 : 3,480,901
339–17 : 3,480,902
47 : 3,480,903
65 : 3,480,904
213 : 3,480,905
217 : Re.26,721
340–8 : 3,480,906
9 : 3,480,907
17 : 3,480,908
43 : 3,480,909
146.1 : 3,480,910
.3 : 3,480,911
148 : 3,480,912
166 : 3,480,913
172.5 : 3,480,914
3,480,915
3,480,916

340–172.5 : 3,480,917
173 : 3,480,918
3,480,919
.1 : 3,480,920
174 : 3,480,921
3,480,922
3,480,923
3,480,924
3,480,925
3,480,926
3,480,927
3,480,928
3,480,929
.1 : 3,480,930
3,480,931
3,480,932
3,480,933
3,480,934
3,480,935
3,480,936
196 : 3,480,937
213.1 : 3,480,938

340–213.2 : 3,480,939
253 : 3,480,940
259 : 3,480,941
261 : 3,480,942
324 : 3,480,943
331 : 3,480,944
345 : 3,480,945
347 : 3,480,946
3,480,947
3,480,948
3,480,949
378 : 3,480,950
343–6.8 : 3,480,951
3,480,952
7.7 : 3,480,953
8 : 3,480,954
11 : 3,480,955
13 : 3,480,956
16 : 3,480,957
3,480,958
17.1 : 3,480,959
119 : 3,480,960

343–765 : 3,480,961
346–1 : 3,480,962
74 : 3,480,963
3,480,964
76 : 3,480,965
350–120 : 3,480,346
160 : 3,480,347
161 : 3,480,348
187 : 3,480,349
289 : 3,480,355
304 : 3,480,350
352–35 : 3,480,351
81 : 3,480,352
108 : 3,480,353
123 : 3,480,354
353–19 : 3,480,356
21 : 3,480,357
26 : 3,480,358
355–3 : 3,480,359
8 : 3,480,360
16 : 3,480,361

355–40 : 3,480,362
68 : 3,480,363
75 : 3,480,364
77 : 3,480,365
356–124 : 3,480,366
150 : 3,480,367
172 : 3,480,368
201 : 3,480,369
401–107 : 3,480,370
121 : 3,480,371
198 : 3,480,372
416–226 : 3,480,373
424–213 : 3,480,710
241 : 3,480,711
245 : 3,480,712
250 : 3,480,713
258 : 3,480,714
289 : 3,480,715
431–66 : 3,480,374
158 : 3,480,375
353 : 3,480,376

## Classification of Designs

D 2–231 : 216,071
427 : 216,072
D 8–45 : 216,073
98 : 216,074
154 : 216,075
216,076
179 : 216,077
222 : 216,078
D 9–1 : 216,079
216,080
216,081
216,082
216,083
216,084
216,085
216,086
12 : 216,087
100 : 216,088
216,089

D 9–100 : 216,090
216,091
216,092
216,093
140 : 216,094
216,095
216,096
216,097
185 : 216,099
187 : 216,100
226 : 216,098
D13–1 : 216,101
216,102
216,103
216,104
216,105
216,106
216,107
216,108

D14–3 : 216,109
216,110
D15–1 : 216,111
216,112
216,113
216,114
11 : 216,115
D19–1 : 216,116
D22–5 : 216,117
27 : 216,118
D23–55 : 216,119
216,120
D25–1 : 216,121
D26–14 : 216,122
216,123
216,124
216,125
D29–1 : 216,126
216,127

D29–1 : 216,128
D30–6 : 216,129
D33–1 : 216,130
6 : 216,131
9 : 216,132
D34–2 : 216,133
5 : 216,134
216,135
216,136
216,137
216,138
11 : 216,139
14 : 216,140
15 : 216,141
D36–8 : 216,142
D40–1 : 216,143
D41–1 : 216,144
D44–7 : 216,145
19 : 216,146

D44–29 : 216,147
216,148
D45–9 : 216,149
D48–32 : 216,150
216,151
D49–1 : 216,152
6 : 216,153
9.1 : 216,154
19 : 216,155
D52–6 : 216,156
10 : 216,157
D54–1 : 216,158
12 : 216,159
D55–1 : 216,160
D61–1 : 216,161
216,162
D71–1 : 216,163
216,164
216,165

D80–9 : 216,166
D81–20 : 216,167
D83–1 : 216,168
216,169
D86–10 : 216,170
D87–1 : 216,171
216,172
3 : 216,173
D92–1 : 216,174
26 : 216,175
216,176
216,177
216,178
D93–3 : 216,179
D95–3 : 216,180
216,181
D96–12 : 216,182
216,183

## Classification of Plants

P.–20 : 2,942
P.–41 : 2,943
P.–43 : 2,944

# GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

| | | | | | |
|---|---|---|---|---|---|
| Alabama | 1 | Kentucky | 21 | Oregon | 41 |
| Alaska | 2 | Louisiana | 22 | Pennsylvania | 42 |
| American Samoa | 3 | Maine | 23 | Puerto Rico | 43 |
| Arizona | 4 | Maryland | 24 | Rhode Island | 44 |
| Arkansas | 5 | Massachusetts | 25 | South Carolina | 45 |
| California | 6 | Michigan | 26 | South Dakota | 46 |
| Canal Zone | 7 | Minnesota | 27 | Tennessee | 47 |
| Colorado | 8 | Mississippi | 28 | Texas | 48 |
| Connecticut | 9 | Missouri | 29 | Utah | 49 |
| Delaware | 10 | Montana | 30 | Vermont | 50 |
| District of Columbia | 11 | Nebraska | 31 | Virginia | 51 |
| Florida | 12 | Nevada | 32 | Virgin Islands | 52 |
| Georgia | 13 | New Hampshire | 33 | Washington | 53 |
| Guam | 14 | New Jersey | 34 | West Virginia | 54 |
| Hawaii | 15 | New Mexico | 35 | Wisconsin | 55 |
| Idaho | 16 | New York | 36 | Wyoming | 56 |
| Illinois | 17 | North Carolina | 37 | U.S. Air Force | 57 |
| Indiana | 18 | North Dakota | 38 | U.S. Army | 58 |
| Iowa | 19 | Ohio | 39 | U.S. Navy | 59 |
| Kansas | 20 | Oklahoma | 40 | | |

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

## PATENTS

1 : 3,479,734
3,479,747
3,480,098
3,480,134
3,480,300
3,480,747
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8 : 3,480,182
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17 : 3,480,019
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3,480,042
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18 : 3,479,822
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19 : Re.26,723
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3,479,776
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22 : 3,479,830
3,480,037
3,480,066
3,480,094
3,480,262
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23 : 3,480,148
3,480,432
3,480,466
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24 : 3,479,694
3,479,729
3,479,812
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3,480,311
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25 : 3,479,669
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25 : 3,479,936
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3,480,126
3,480,149
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27 : 3,479,880
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3,480,212
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27 : 3,480,442
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29 : 3,479,969
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30 : 3,480,853
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34 : Re.26,722
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35 : 3,479,703
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37 : 3,479,672
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40 : 3,480,032
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3,480,093
3,480,102
3,480,103
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3,480,660
41 : 3,479,950
3,479,959
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3,480,100
3,480,200
3,480,279
3,480,306
42 : 3,479,681
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42 : 3,479,716
3,479,717
3,479,719
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3,479,786
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3,480,165
3,480,171
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3,480,906
3,480,946
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43 : 3,480,594
3,480,621
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3,479,911
3,480,128
3,480,217
3,480,218
3,480,219
3,480,220
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3,480,848
45 : 3,479,699
3,479,701
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47 : 3,479,704
3,479,722
3,479,766
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3,480,678
48 : 3,479,673
3,479,785
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3,479,922
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3,480,083
3,480,084
3,480,101
3,480,107
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3,480,228

48 : 3,480,317
3,480,329
3,480,341
3,480,396
3,480,513
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3,480,648
48 : 3,480,811
3,480,833
3,480,907
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3,480,938
49 : 3,479,904
3,479,954
50 : 3,479,826
51 : Re. 26,721
3,479,668
51 : 3,479,761
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3,480,764
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52 : 3,479,972
3,480,807
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3,480,240
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54 : 3,480,656
3,480,675
55 : 3,479,685
3,479,708
3,479,725
3,479,792
3,479,837
3,479,874
3,479,891
55 : 3,479,971
3,480,038
3,480,039
3,480,135
3,480,252
3,480,384
3,480,446
3,480,515
56 : 3,480,809

## Design Patents

6 : 216,077
216,078
216,099
216,150
216,172
9 : 216,074
216,159
12 : 216,104
216,108
216,118
216,144
13 : 216,141
17 : 216,130
216,135
216,136
216,148
216,167
18 : 216,137
20 : 216,106
21 : 216,117
216,119
216,120
216,140
25 : 216,103
216,134
26 : 216,151
216,160
216,162
27 : 216,142
216,171
216,182
28 : 216,107
29 : 216,105
34 : 216,169
36 : 216,072
216,075
216,100
216,101
216,111
216,121
216,123
216,126
216,127
216,128
216,133
216,149
216,152
216,156
216,157
216,166
216,170
36 : 216,174
216,175
216,176
216,177
216,178
37 : 216,132
39 : 216,079
216,080
216,081
216,082
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216,086
216,087
216,088
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39 : 216,090
216,091
216,092
216,093
216,094
216,095
216,096
216,097
216,129
216,168
40 : 216,102
216,109
216,143
41 : 216,116
216,138
216,154
41 : 216,181
42 : 216,076
43 : 216,122
44 : 216,145
216,146
47 : 216,183
48 : 216,110
216,113
216,114
216,158
216,173
216,179
51 : 216,163
216,164
216,165
53 : 216,073

## Plant Patents

6 : 2,943
6 : 2,944
17 : 2,942

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
November 25, 1969 Volume 868 Number 4

# TRADEMARKS

## NOTICES

### Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Alona Corporation, assignee of Comex Trading Co. Inc., New York, N.Y., Reg. No. 383,996, Canc. No. 9400.

Precision Radiator Industries, Inc., assignee of The Radio Craftsman, Inc., Los Angeles, Calif., Reg. No. 555,479, Canc. No. 9401.

Doric Corporation, Fredericksburg, Ohio, Reg. No. 819,375, Canc. No. 9,431.

EDWIN L. REYNOLDS,
*First Assistant Commissioner of Patents.*

### Annual Index of Trademarks

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Price: Buckram bound, $4.25.

### Annual Index of Patents

The 1968 edition of the Annual Index of Patents has been published. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402.

Price: Buckram bound, Part I, $11.50; Part II, $4.50.

### Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

**Reg. No. 225,838** (DAIRY QUEEN BRAND AND DESIGN), American Dairy Queen Corporation, Condensed milk; **Reg. No. 249,120** ("DAIRY QUEEN" ETC. AND DESIGN), The Universal Milk Company, Evaporated milk; **Reg. No. 709,406** (QUEEN OF TARTS), H. H. Hartman, doing business as Dairy Queen, Frozen ice cream tarts consisting only of ice cream with a fruit or syrup topping; **Reg. No. 728,531** (DAIRY QUEEN), McCullough's Dairy Queen, Machine for freezing and dispensing a semi-frozen dairy product; **Reg. No. 728,894**, same, Ice cream and frozen confections in cone, cup, and bar form; **Reg. No. 763,209** (DAIRY QUEEN AND DESIGN), American Dairy Queen Corporation, Ice cream and frozen confections in cone, cup, bar and package form;

## CONDITION OF TRADEMARK APPLICATIONS AS OF SEPTEMBER 30, 1969

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] ---------- 14,986
Date of oldest new application ---------- November 18, 1968
Date of oldest amended application (filing date) ---------- August 5, 1965

| **C. M. WENDT, Director, Trademark Examining Operation**<br>**TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION** | Oldest Application | |
|---|---|---|
| | New | Amended |
| (I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B | 3-17-69 | 10-6-66 |
| (II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200 | 12-23-68 | 8-5-65 |
| (III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36 | 12-17-68 | 2-17-67 |
| (IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107 | 11-18-68 | 8-22-66 |
| Renewals (All Classes) | 8-13-69 | -------- |
| Sec. 12(c) Publications (All Classes) | 8- 8-69 | -------- |

Applications filed during the month of September 1969—2,715

Registrations Issued ---------- 414—No. 881,093 to No. 881,506
Renewals Issued ---------- 120

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

**PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.**

**Reg. No. 776,277** (DAIRY QUEEN), same, Sundaes, strawberry short cake, chocolate bars, ice cream or ice milk cones, ice cream sandwiches, parfay sundaes, food stabilizers, pies, tarts, milk shakes, and mixes both liquid and solid for the making of ice milk and ice cream products; **Reg. No. 801,437** (QUEEN MILK AND DESIGN), same, Fluid milk; **Reg. No. 801,849** (DAIRY QUEEN), same, Semi-frozen ice cream and ice milk dispenser, walk-in cooler, freezing cabinets, refrigerated mix tanks, ice cream and ice milk shake freezers, and cone racks; **Reg. No. 804,002** (DAIRY QUEEN AND DESIGN), same, Hamburger and sandwiches, barbeque sandwiches, and hot dog sandwiches; **Reg. No. 811,416**, same, Flavored carbonated soft drinks; **Reg. No. 834,054** (QUEEN'S CHOICE), same, Ice cream and ice milk—namely, vanilla, chocolate, butterscotch, blackberry, cherry, etc.; and malt and syrup bases for ice cream and ice milk drinks and products; **Reg. No. 855,283** (DAIRY QUEEN), same, Rendering technical assistance to operators of frozen custard stores in all phases of their business operation; **Reg. No. 858,332**, same, Basic mix for semi-frozen milk and ice cream, **filed** Nov. 12, 1968, D.C., N.D. Ill. (Chicago), Doc. 2146, *American Dairy Queen Corporation* v. *Burger Queen Drive-In, Inc.* Plaintiff's motion enter default judgment against defendant enjoining them from using plaintiff's trademark, Mar. 26, 1969. On stipulation, complaint against said Henry H. Rudy be and is dismissed without prejudice, June 25, 1969. **Same, filed** July 2, 1969, D.C., N.D. Ill. (Chicago), Doc. 69c1393, *American Dairy Queen Corp.* v. *Burger Queen Drive-In, Inc.* Plaintiff's trademarks valid; defendant has infringed and is enjoined, Sept. 26, 1969.

**Reg. No. 249,120.** (See Reg. No. 225,838.)

**Reg. No. 709,406.** (See Reg. No. 225,838.)

**Reg. No. 728,531.** (See Reg. No. 225,838.)

**Reg. No. 728,894.** (See Reg. No. 225,838.)

**Reg. No. 747,552** (MATTY), Mattel, Inc., Doll and toy horse, **filed** Jan. 29, 1969, D.C., S.D.N.Y., Doc. 69–C–364, *Mattel Inc.* v. *Mego Corp.* Final judgment, permanently restrained, June 18, 1969.

**Reg. No. 749,386** (MICRO-DATA), Bell & Howell Company, Microfilm recording and reading equipment and electrophotographic recording equipment, **filed** Nov. 22, 1968, D.C., S.D.N.Y., Doc. 68–C–4624, *Bell & Howell Co.* v. *Microdata, Inc.* Consent judgment, June 13, 1969.

**Reg. No. 763,209.** (See Reg. No. 225,838.)

**Reg. No. 776,277.** (See Reg. No. 225,838.)

**Reg. No. 801,437.** (See Reg. No. 225,838.)

**Reg. No. 801,439.** (See Reg. No. 225,838.)

**Reg. No. 804,002.** (See Reg. No. 225,838.)

**Reg. No. 811,416.** (See Reg. No. 225,838.)

**Reg. No. 834,054.** (See Reg. No. 225,838.)

**Reg. No. 855,283.** (See Reg. No. 225,838.)

**Reg. No. 858,332.** (See Reg. No. 225,838.)

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# MARKS PUBLISHED FOR OPPOSITION

## SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 265,059. The Freeman Supply Co., Toledo, Ohio. Filed Feb. 20, 1967.

### SUPERIOR

**Class 1—Raw or Partly Prepared Materials**

For Parting Compounds and Mold Release Agents, Fillet Material and Other Pattern Fillers and Surface Modifying Materials as Used in Producing Patterns for the Foundry Trade (Int. Cl. 1).

**Class 5—Adhesives**

For Glues, Cements, and Adhesives for the Foundry Trade (Int. Cl. 1).

**Class 13—Hardware and Plumbing and Steam-Fitting Supplies**

For Guide Pins, Core Boxes, Flasks, Sand Mold Retainers, and Accessories and Parts Therefor as Used in the Founding Trade (Int. Cl. 6).

**Class 16—Protective and Decorative Coatings**

For Paints and Solvents Therefor for Use in the Foundry Trade (Int. Cl. 2).

**Class 26—Measuring and Scientific Appliances**

For Pattern Plates, Dowels, Accessories and Parts Therefor as Used in the Founding Trade (Int. Cl. 6).

First use on or before Jan. 1, 1945.

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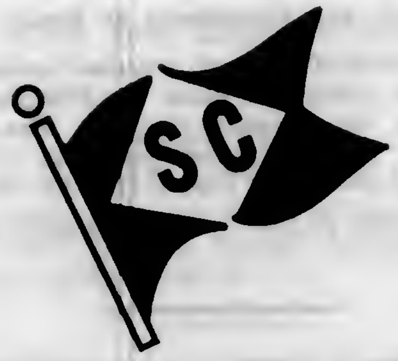
SN 275,553. St. Clair Rubber Company, Detroit, Mich. Filed July 7, 1967.



**Class 5—Adhesives**

For Contact Adhesive (Int. Cl. 1).

**Class 12—Construction Materials**

For Contact Adhesive of Pourable, Extrudable, or Putty Like Consistency Used To Fill Voids, Provide Adhesion Between Surfaces or Seal Against Air, Moisture, Fluids, or Chemicals (Int. Cl. 19).

First use Apr. 12, 1963.

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SN 291,731. Fuller Company, Catasauqua, Pa. Filed Feb. 23, 1968.

### TRAYLOR

**Class 23—Cutlery, Machinery, and Tools, and Parts Thereof**

For Machinery for the Process Industries—Namely, Slackers; Ball, Pebble, Wash, Tube, Rod, and Combination Rod and Tube Grinding Mills; Gyratory, Jaw, and Roll Crushers; Apron, Grizzley, Table, and Slurry Feeders; Non-Refrigerating Rotary Coolers; Hot Material Conveyors; Wash Mills; and Casting Machines, and Parts Thereof (Int. Cl. 7).

**Class 34—Heating, Lighting, and Ventilating Apparatus**

For Rotary Kilns, and Dryers and Control Panels Therefor; Copper Converters—Namely, Melting Pots for Copper Ingots; and Holding Furnaces; and Parts Thereof (Int. Cl. 11).

First use 1920.

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SN 297,723. Trendon Limited, Old Malton, England. Filed May 8, 1968.

### RAINBOW BOX

Priority claimed under Sec. 44(d) on British Reg. Nos. 917,422, dated Nov. 20, 1967, and 917,538, dated Nov. 22, 1967.

**Class 22—Games, Toys, and Sporting Goods**

For Educational Toys and Playthings (Int. Cl. 28).

**Class 26—Measuring and Scientific Appliances**

For Teaching and Instructional Apparatus and Instruments and Parts and Fittings Therefor (Int. Cl. 9).

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SN 301,663. Charles Abreu, d.b.a. Charabre Records, New York, N.Y. Filed July 1, 1968.

### CHARABRE

**Class 36—Musical Instruments and Supplies**

For Phonograph Records (Int. Cl. 9).

**Class 38—Prints and Publications**

For Sheet Music (Int. Cl. 16).

First use Nov. 16, 1964.

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SN 302,717. Chem-Trend Incorporated, Howell, Mich. Filed July 15, 1968.

### CHEM-TREND

**Class 6—Chemicals and Chemical Compositions**

For Hydraulic Fluid (Int. Cl. 1).

**Class 52—Detergents and Soaps**

For Water-Base Industrial Cleaner Compound (Int. Cl. 1).

First use December 1960.

SN 304,277. W. R. Grace & Co., New York, N.Y. Filed Aug. 5, 1968.

### ONE STROKE

Owner of Reg. No. 835,255.

**Class 4—Abrasives and Polishing Materials**

For Floor Wax and Plastic Floor Polish (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Hand Soap Concentrates, Detergent Concentrates for Cleaning Floors and Other Similar Hard Surfaces, and Antiseptic Liquid Soap (Int. Cl. 3).

First use Apr. 22, 1968.

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SN 305,175. Alfred Bloch and Eugene H. Bernstein (co-owners), Highland Park, N.J. Filed Aug. 15, 1968.

### BIO-SEAL

**Class 6—Chemicals and Chemical Compositions**

For Biological Media—Namely, Diagnostic, Immunological and Microbial Culture Media, and Tissue Cultures (Int. Cl. 5).

**Class 26—Measuring and Scientific Appliances**

For Laboratory Ware—Namely, Ampoules, Test Tubes, and Vials With Closures, Culture Plates, Biological Reaction Plates, Immunological Reaction Plates, Petri Dishes and Containers for Biological Media (Int. Cl. 9).

First use July 17, 1968.

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SN 305,506. Avon Products, Inc., New York, N.Y. Filed Aug. 20, 1968.

### PRIMA NATURA

The Spanish words "Prima Natura" mean "natural cousin."

**Class 51—Cosmetics and Toilet Preparations**

For Cosmetic Eye Cream, Facial Mask, Moisturized Face Cream, Hand Lotion, and Facial Cleansing Cream (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Facial Soap (Int. Cl. 3).

First use Aug. 1, 1968.

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SN 305,508. Avon Products, Inc., New York, N.Y. Filed Aug. 20, 1968.

### NATURE KISSED

**Class 51—Cosmetics and Toilet Preparations**

For Facial Cleansing Cream, Facial Mask, Hand Lotion, Cosmetic Eye Cream, Moisturized Face Cream (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Facial Soap (Int. Cl. 3).

First use Aug. 1, 1968.

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SN 305,511. Avon Products, Inc., New York, N.Y. Filed Aug. 20, 1968.

### BANGASA

The word "Bangasa" is a Japanese word meaning "umbrella."

**Class 51—Cosmetics and Toilet Preparations**

For Cologne, Dusting Powder, Perfume, and Bath Oil (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Toilet Soap (Int. Cl. 3).

First use Aug. 1, 1968.

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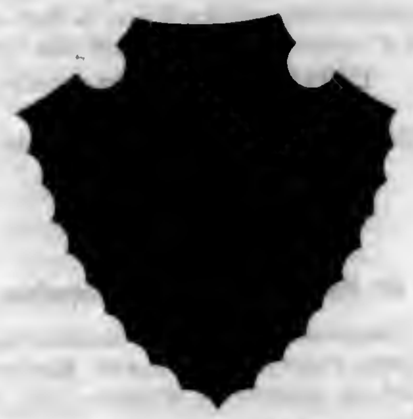
SN 305,701. The Flintkote Company, White Plains, N.Y. Filed Aug. 22, 1968.



Owner of Reg. Nos. 375,585, 516,935, and 527,713.

**Class 6—Chemicals and Chemical Compositions**

For Hydrated Lime and Quicklime Sold as Chemicals for Industrial Use (Int. Cl. 1).

**Class 12—Construction Materials**

For Hydrated Lime and Quicklime (Int. Cl. 19).

First use June 1966.

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SN 310,387. Leslie Salt Co., d.b.a. Leslie Foods, Inc., San Francisco, Calif. Filed Oct. 24, 1968.

### LESLIE

Owner of Reg. Nos. 231,345 and 525,865.

**Class 6—Chemicals and Chemical Compositions**

For Salt for Industrial Uses—Namely, Water Softening, Brining and Refrigeration (Int. Cl. 1).

**Class 46—Foods and Ingredients of Foods**

For Salt—Namely, Table Salt, Vacuum Canning Salt, Salt for Animal Feed Mixes and Block Salt; Mayonnaise, Salad Dressing, Salad Oil, French Dressing, Pancake Syrup; Spices—Namely, Oregano, Salad Seasoning, Cloves, Black Pepper and Dried Sweet Bell Pepper (Int. Cls. 29 and 30).

First use as early as Dec. 1, 1965; as early as September 1902 as to "Leslie."

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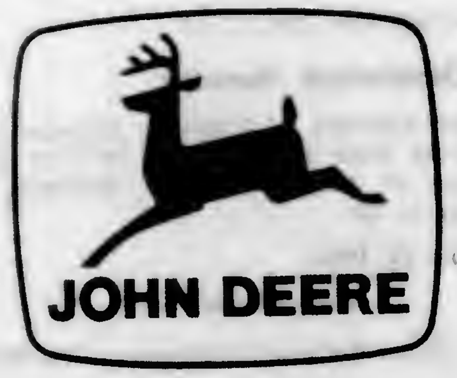
SN 314,010. Deere & Company, d.b.a. John Deere, Moline, Ill. Filed Dec. 10, 1968.



The name "John Deere" is the name of the deceased founder of applicant's business. Owner of Reg. No. 554,259.

**Class 16—Protective and Decorative Coatings**

For Paints, Paint Thinners, Varnishes, Enamels (Int. Cl. 2).

**Class 52—Detergents and Soaps**

For Paint and Decal Removers (Int. Cl. 3).

First use Nov. 20, 1968.

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SN 327,191. Luzier Incorporated, Kansas City, Mo. Filed May 14, 1969.

### FIERY

**Class 51—Cosmetics and Toilet Preparations**

For Bath Crystals, Bath Oil, Cologne, Body Lotion, Dusting Powder, Perfume and Toilet Water (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Toilet Soap (Int. Cl. 3).

First use at least as early as Nov. 27, 1968.

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SN 327,194. Luzier Incorporated, Kansas City, Mo. Filed May 14, 1969.

### DREAMY

**Class 51—Cosmetics and Toilet Preparations**

For Bath Crystals, Bath Oil, Cologne, Body Lotion, Dusting Powder, Perfume and Toilet Water (Int. Cl. 3).

**Class 52—Detergents and Soaps**

For Toilet Soap (Int. Cl. 3).

First use at least as early as Nov. 27, 1968.

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SN 330,803. The Millard Norman Co., Cincinnati, Ohio. Filed June 24, 1969.

### BUSY SUSAN

**Class 2—Receptacles**

For Wooden Trays and Platters Which Rotate and Lazy Susans (Int. Cl. 21).

**Class 32—Furniture and Upholstery**

For Wooden and Plastic Spice Wheels and Wooden and Plastic Wheels With Small Containers Attached to the Spokes for Hanging on Walls for Keeping Buttons, Needles and Other Goods (Int. Cl. 20).

First use June 11, 1969.

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SN 331,267. La Maur, Inc., d.b.a. The House of Style, Minneapolis, Minn. Filed June 30, 1969.

### SIMPLY SUPER

**Class 51—Cosmetics and Toilet Preparations**

For Hair Fixative (Int. Cl. 3).
First use June 25, 1969.

**Class 52—Detergents and Soaps**

For Personal Detergent (Int. Cl. 3).
First use June 23, 1969.

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## SECTION 2

**The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.**

**A fee of twenty-five dollars must accompany the opposition.**

**[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]**

## Class 1—Raw or Partly Prepared Materials

SN 272,906. Asahi Kasei Kogyo Kabushiki Kaisha, d.b.a. Asahi Chemical Industry Co., Ltd., Kita-ku, Osaka, Japan. Filed June 2, 1967.

### TUFPRENE

Priority claimed under Sec. 44(d) on Japanese application filed Dec. 20, 1966; Reg. No. 820,885, dated June 10, 1969.
For Synthetic Rubbers (Int. Cl. 17).

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SN 290,750. Polymers, Inc., Middlebury, Vt. Filed Feb. 9, 1968.

### ANGLE-CUT

Owner of Reg. No. 781,529.
For Extruded Synthetic Fibers, Particularly Adapted for Use as Brush Bristles (Int. Cl. 22).
First use Jan. 21, 1963.

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SN 295,113. Clopay Corporation, Cincinnati, Ohio. Filed Apr. 8, 1968.

### TAFF-A-FLEX

For Plastic in Sheet Form for Use in the Industrial Arts (Int. Cl. 17).
First use Feb. 27, 1968.

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SN 299,557. George Angus & Company Limited, Newcastle Upon Tyne, England. Filed June 3, 1968.

### MICROVON

Owner of British Reg. No. 842,051, dated Nov. 22, 1962.
For Rubber, Synthetic Rubber and Polyurethane Plastics for Use as Substitutes for Rubber (Int. Cl. 17).

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SN 302,866. Rogers Corporation, Rogers, Conn. Filed July 16, 1968.

### PORON

Owner of Reg. Nos. 673,910, 754,815, and 861,519.
For Plastic Sheet Material Used in the Manufacture of Non-Porous and Non-Permeable Printing Plates for the Graphic Arts (Int. Cl. 17).
First use on or about Oct. 19, 1960.

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SN 303,548. Toyad Corporation, Latrobe, Pa. Filed July 24, 1968.

### Lustrafoam

The word "Foam" is disclaimed apart from the mark as used.
For Cellular Thermoplastics, in the Form of Extruded and Molded Shapes for Further Fabrication in the Industrial Arts (Int. Cl. 17).
First use Apr. 22, 1968.

SN 305,256. The Spiratex Company, Dearborn, Mich. Filed Aug. 15, 1968.

**ULTREX**

For Extruded Plastic Rods, Bars and Sections (Int. Cl. 17).
First use June 21, 1968.

SN 307,047. SCM Corporation, Cleveland, Ohio. Filed Sept. 10, 1968.

**NEOLAG**

For Cured Neoprene Sheeting (Int. Cl. 17).
First use Apr. 8, 1960.

SN 309,089. Pioneer Plastics Corporation, Auburn, Maine. Filed Oct. 7, 1968.

**PIOREZ**

Owner of Reg. Nos. 648,807 and 781,761.
For Synthetic Resins (Int. Cl. 1).
First use Jan. 25, 1968.

SN 311,371. Hughes Hybrids, Inc., Woodstock, Ill. Filed Nov. 5, 1968.

**SLX**

For Hybrid Seed Corn (Int. Cl. 31).
First use Mar. 1, 1967.

SN 315,693. Organic Sea Products Corporation, San Francisco, Calif. Filed Dec. 12, 1968.

**SEA-CHILLA**

For Chinchilla Pellets Sold as Animal Feed (Int. Cl. 31).
First use Dec. 1, 1951.

SN 328,105. Arden-Mayfair, Inc., Los Angeles, Calif. Filed May 26, 1969.

**Mayfair**

Owner of Reg. Nos. 794,801, 824,327, and others.
For Charcoal Briquets (Int. Cl. 4).
First use Apr. 18, 1969.

## Class 2 — Receptacles

SN 309,989. Republic Corporation, Beverly Hills, Calif. Filed Oct. 18, 1968.

**MASTERCARVE**

For Simulated Wood Decorator Boxes Made of Plastic Material (Int. Cl. 20).
First use July 26, 1968.

SN 319,237. GAF Corporation, New York, N.Y. Filed Feb. 17, 1969.

**GAF**

Owner of Reg. Nos. 509,124, 837,005, and others.
For Containers, Particularly Boxes and Cartons for Light-Sensitive Materials, Cases, Canisters, Boxes, Cartons, Cans, Foil and Paper and Foil Pouches, Spools and Reels; Slide Trays (Int. Cls. 16 and 20).
First use January 1965.

SN 322,502. Uniplastics, Inc., Seattle, Wash. Filed Mar. 21, 1969.

**UNIPLASTICS**

For Compartment Trays (Int. Cl. 21).
First use Sept. 9, 1968.

SN 322,883. Edwin C. Lynch, d.b.a. Brush-Up Enterprises, Phoenix, Ariz. Filed Mar. 26, 1969.

**BRUSH-UP**

For Toothbrush Holders (Int. Cl. 21).
First use Nov. 1, 1968.

SN 322,911. George Schlatter—Ed Friendly Productions and Romart, Inc., Burbank, Calif. Filed Mar. 26, 1969.

**LAUGH-IN**

For Lunch Kits and Vacuum Bottles (Int. Cl. 21).
First use Jan. 8, 1969.

SN 323,349. Mipro Corporation, South San Francisco, Calif. Filed Apr. 1, 1969.

**POSI-FRICTION**

For Garbage Cans, Waste Receptacles and Tops for the Same (Int. Cl. 21).
First use Mar. 4, 1969.

SN 326,003. Robert A. Stough, d.b.a. Robert A. Stough & Company, Chicago, Ill. Filed Apr. 30, 1969.

**TABLE ART**

For Plastic Containers, Including Plastic Cups, Bags, Carafes, Wash Basins, and Soap Dishes (Int. Cl. 21).
First use Jan. 25, 1968.

SN 326,774. La Velle Corporation, Gainesville, Ga. Filed May 8, 1969.

**La Velle**

Owner of Reg. No. 807,673.
For Pin Curler Bags and Cosmetic Bags (General Utility Type) (Int. Cl. 21).
First use Jan. 28, 1964.

## Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 285,917. Gail Leather Products, Inc., New York, N.Y. Filed Nov. 30, 1967.

**WESTMINSTER**

For Leather Goods—Namely, Wallets, Secretaries, Key Cases, Money Clips and Card Cases (Int. Cl. 18).
First use Sept. 26, 1967.

SN 321,602. Bruce Plastics, Inc., Moon-Run, Pa. Filed Mar. 13, 1969.

**BRUCE wire-core**

The term "Wire-Core" is disclaimed apart from the mark as shown.
For Luggage Handles (Int. Cl. 18).
First use Sept. 13, 1968.

SN 327,565. Villager Industries, Inc., Philadelphia, Pa. Filed May 19, 1969.

**THOM HIRD**

"Thom Hird" is the name of a living individual whose consent is of record.
For Handbags (Int. Cl. 18).
First use May 3, 1967.

## Class 4 — Abrasives and Polishing Materials

SN 324,336. Faultless Starch Company, Kansas City, Mo. Filed Apr. 14, 1969.

**MIKE O'SHEEN**

The term "Mike O'Sheen" is fanciful, and to the best of applicant's knowledge is not the name of any particular living individual.
For Aerosol Spray Polish for Furniture and Like Surfaces (Int. Cl. 3).
First use Jan. 13, 1969.

SN 326,802. Simoniz Company, Chicago, Ill. Filed May 8, 1969.

**NOURISH**

For Furniture Polishing Compounds (Int. Cl. 3).
First use Mar. 18, 1969.

## Class 6 — Chemicals and Chemical Compositions

SN 275,337. Wood Treating Chemicals Co., St. Louis, Mo. Filed July 3, 1967.

**COPPER TREAT**

For Chemical Preservatives for Wood, Burlap and Other Cellulosic Products, Bearing Copper in Solution (Int. Cls. 1 and 2).
First use Sept. 15, 1945.

SN 297,536. Cleanamation, Incorporated, Anderson, Ind. Filed May 7, 1968.

**magic gard**

For Chemical Water Repellents for Fabrics (Int. Cl. 1).
First use Mar. 26, 1968.

SN 298,968. Robert I. Schattner, d.b.a. the R. Schattner Company, Washington, D.C. Filed May 23, 1968.

**PERMACIDE**

For Antibacterial Preparation for Use on Textiles and Fabrics (Int. Cl. 5).
First use May 9, 1968.

SN 303,178. Marlyn Chemical Company, Inc., Lakeview, Ohio. Filed July 19, 1968.

For Powdered Fabric Softener and Bacteriostat; Powdered Fabric Brightener; Textile Softener in Paste and Liquid Form; Quaternary Ammonium Compound in Powdered Form for Fabric Softening; and Dry Crystalline Chlorine Bleach Compounded for Commercial Laundries (Int. Cl. 3).
First use on or about January 1966.

SN 309,840. Ciba Limited, Basel, Switzerland. Filed Oct. 17, 1968.

**PHOBOTESIL**

Owner of Swiss Reg. No. 216,913, dated Mar. 30, 1968, and U.S. Reg. Nos. 402,781 and 828,982.
For Chemical Compositions, Preparations or Compounds for Use as Auxiliary Agents in Textile, Leather, Paper and Plastics Industries (Int. Cl. 1).

SN 309,988. Pet Chemicals, Inc., Miami Springs, Fla. Filed Oct. 18, 1968.

For Insecticide (Int. Cl. 5).
First use Jan. 15, 1968.

SN 319,257. Amchem Products, Inc., Ambler, Pa. Filed Feb. 17, 1969.

**CUPROTEK**

Owner of Reg. No. 406,921.

For Chemical Compositions for Use in the Treatment of Metal Surfaces To Increase Their Resistance to Corrosion (Int. Cl. 2).

First use Mar. 23, 1943.

SN 320,230. Anti-Hydro Waterproofing Co., Newark, N.J. Filed Feb. 27, 1969.

**CLEAR-CURE**

For Chemical Preparation for Curing, Hardening and Sealing Concrete Surfaces (Int. Cl. 1).

First use on or about June 4, 1963.

SN 324,934. P. Robertet, Inc., New York, N.Y. Filed Apr. 18, 1969.

**DERMODULE**

Owner of Reg. No. 715,949.

For Perfume Compounds and Essential Oils for Use as Ingredients in the Manufacture of Cosmetics and Soaps (Int. Cl. 3).

First use Mar. 31, 1969.

## Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 328,166. Fedtro, Inc., Rockville Centre, N.Y. Filed May 23, 1969.

**LECTRO-LITE**

For Electric Cigarette Lighters (Int. Cl. 9).

First use at least as early as June 1960.

## Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 324,978. Bangor Punta Operations, Inc., d.b.a. The Lake Erie Chemical Company, New York, N.Y. Filed Apr. 21, 1969.

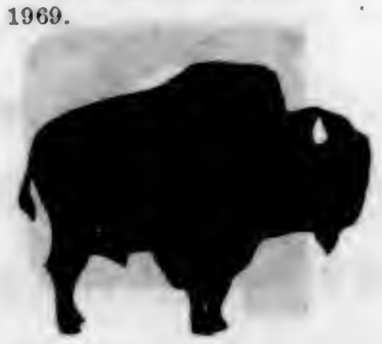
**LECCO LOCK**

The word "Lock" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 764,893, 765,443, and 779,986.

For Electrically Operated Holder for a Riot Gun (Int. Cl. 13).

First use Nov. 29, 1955.

SN 329,312. Sharps Arms Company, Salt Lake City, Utah. Filed June 6, 1969.



For Rifles (Int. Cl. 13).

First use Jan. 3, 1969.

SN 329,315. Sharps Arms Company, Salt Lake City, Utah. Filed June 6, 1969.

**SHARPS ARMS COMPANY**

Exclusive right to use the words "Arms Company" is disclaimed apart from the mark as shown.

For Rifles (Int. Cl. 13).

First use Jan. 3, 1969.

## Class 10 — Fertilizers

SN 273,096. Occidental Petroleum Corporation, Los Angeles, Calif. Filed June 5, 1967.

**Extra·Gro**

For Fertilizers for Lawn and Ornamental Vegetation (Int. Cl. 1).

First use on or about Oct. 31, 1966.

SN 296,764. Standard Oil Company, Flemington, N.J. Filed Apr. 29, 1968.

**EXXON**

For Chemical Fertilizers (Int. Cl. 1).

First use Oct. 23, 1967.

SN 325,977. S. S. Kresge Company, Detroit, Mich. Filed Apr. 30, 1969.

**K-GRO**

For Fertilizer (Int. Cl. 1).

First use on or before Apr. 7, 1969.

## Class 12 — Construction Materials

SN 307,560. Chamberlain Manufacturing Corporation, Elmhurst, Ill. Filed Sept. 17, 1968.

**CHAMBRON**

For Home Improvement Items—Namely, Combination Insulating Doors, Both Screen and Glass; Combination Windows; Patio Canopies, Columns and Doors; Carports; Lawn Storage Buildings; Garage Doors; Awnings; Shutters; Aluminum Facia and Soffit; Aluminum Siding; and Part Therefor (Int. Cls. 6 and 19).

First use Feb. 19, 1968.

SN 317,985. United States Ceramic Tile Company, Canton, Ohio. Filed Jan. 30, 1969.

**PACESETTER**

For Ceramic Floor and Wall Tiles, Glazed and Unglazed (Int. Cl. 19).

First use on or about Mar. 7, 1962.

Subj. to Intf. with SN 322,049.

SN 321,408. Stylon Corporation, Florence, Ala. Filed Mar. 11, 1969.

**ALL-SET**

For Ceramic Tile (Int. Cl. 19).

First use Oct. 13, 1967.

SN 322,566. Diston Industries, Inc., d.b.a. Shower Shield, Hialeah, Fla. Filed Mar. 24, 1969.

**"SNAP-JAMB"**

For Shower Doors, Tub Enclosures, and Shower Enclosures (Int. Cl. 19).

First use Aug. 1, 1968.

SN 323,736. The Soundlock Corporation, Hazlehurst, Ga. Filed Apr. 4, 1969.

**SOUNDCELL**

For Acoustical Panels (Int. Cl. 19).

First use Mar. 21, 1969.

## Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

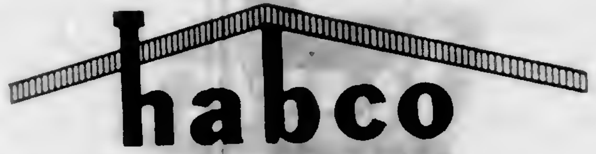
SN 290,351. The Upjohn Company, Kalamazoo, Mich. Filed Feb. 5, 1968.

**CAREMATIC**

For Animal Care Equipment Featuring Drinker Valves, Tanks, and Associated Piping and Fittings Therefor (Int. Cl. 11).

First use Oct. 19, 1967.

SN 293,058. Sterling Faucet Company (Delaware corporation), Pittsburgh, Pa., assignee, by mesne assignment, of Sterling Faucet Company (West Virginia corporation), Morgantown, W. Va. Filed Mar. 12, 1968.



The drawing is lined for the color red.

For Plumbing Products or Goods, Including Valves, Drains, Shower Heads and Assemblies, Fittings, Connectors, Faucets, Spouts, and Traps (Int. Cls. 6 and 11).

First use Dec. 14, 1967.

SN 300,334. Crescent Metal Products, Inc., Cleveland, Ohio. Filed June 13, 1968.

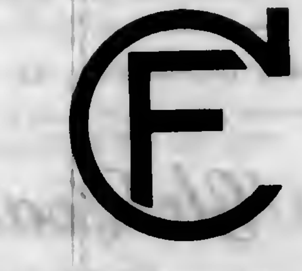
**CRES-COR**

Owner of Reg. Nos. 606,950 and 619,930.

For Trays, Pans, Racks, and Baskets, All Made of Metal (Int. Cl. 6).

First use June 30, 1960.

SN 300,684. C & F Manufacturing & Sales, Inc., Flint, Mich. Filed June 18, 1968.

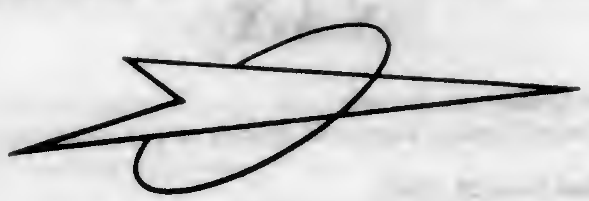


The drawing is lined for the color red.

For Self-Locking Tip Holders Used on Plating, Anodizing, Paint Racks and Conveyor Hooks (Int. Cl. 6).

First use Apr. 10, 1968.

SN 307,483. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed Sept. 16, 1968.



For Containers Made of Aluminum and Suitable for Containing Foods (Int. Cl. 21).

First use at least as early as April 1962.

SN 309,887. Carmel V. Orlando and P. Leonard Orlando (joint owners), Wilmette, Ill. Filed Oct. 17, 1968.

**TOUCH OF ELEGANCE**

For Bathroom and Closet Accessories Comprising Toothbrush Holders, Glass Holders, Towel Trees, Trays, and Tissue Dispensers (Int. Cl. 21).

First use June 1, 1967.

SN 314,936. Heinrich Kuhn Metallwarenfabrik Aktiengesellschaft, Rikon, Tosstal, Zurich, Switzerland. Filed Dec. 20, 1968.

**DUROPARTY**

Priority claimed under Sec. 44(d) on Swiss Reg. No. 233,800, dated June 25, 1968.

For Pans, Pots, Receptacles, Dishes, Pails, and Accessories Thereof for Household Use, Made of Metal and Metal Alloys (Int. Cl. 21).

SN 318,657. Keystone Consolidated Industries, Inc., Peoria, Ill. Filed Feb. 7, 1969.

**PENTA-FLO**

For Screws or Fasteners (Int. Cl. 6).

First use Jan. 26, 1968.

SN 320,681. Maxam, Inc., Dallas, Tex. Filed Mar. 4, 1969.

**MAXAM**

For Steel Cookware—Namely, Pots, Pans, and Other Household Cooking Utensils (Int. Cl. 21).

First use at least as early as January 1969.

SN 325,380. Plumbcraft Manufacturing Corporation, Bedford Heights, Ohio. Filed Apr. 23, 1969.

**MR. FLAPPER**

For Rubber Tankball for Toilet Tanks (Int. Cl. 11).

First use January 1965.

## Class 14 — Metals and Metal Castings and Forgings

SN 301,319. Aluminum Company of Canada Limited, Montreal, Quebec, Canada. Filed June 25, 1968.

**ANOLOK**

Owner of Canadian Reg. No. 156,728, dated May 3, 1968.

For Anodized Aluminum and Aluminum Alloys (Int. Cl. 6).

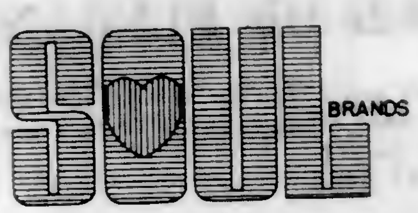
SN 329,881. National Steel Corporation, Pittsburgh, Pa. Filed June 12, 1969.

**N-A-X**

Owner of Reg. No. 383,993.
For Plates, Sheets, Bars, and Shapes of Ferrous Metal (Int. Cl. 6).
First use June 25, 1940.

## Class 15 — Oils and Greases

SN 300,864. Soul Brands, Inc., Memphis, Tenn. Filed June 20, 1968.



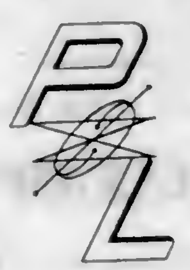
The drawing is lined for the colors red and blue. The word "Brands" is disclaimed apart from the mark as shown.
For Lubricating Oil (Int. Cl. 4).
First use June 15, 1968.

SN 314,733. Skelly Oil Company, Kansas City, Mo. Filed Dec. 17, 1968.

**SKELTANE**

Owner of Reg. Nos. 314,323, 573,554, and 578,226.
For Gasoline (Int. Cl. 4).
First use Jan. 1, 1968.

SN 323,888. Power Lube Company, San Diego, Calif. Filed Apr. 2, 1969.



For Motor Oil Additives (Int. Cl. 1).
First use Aug. 2, 1968.

## Class 16 — Protective and Decorative Coatings

SN 302,094. Maas & Waldstein Co., Newark, N.J. Filed July 5, 1968.

**GLASSDUR**

For Air Drying or Baked-On Enamel (Int. Cl. 2).
First use Mar. 30, 1964.

SN 321,380. Brooklyn Paint & Varnish Co., Inc., Brooklyn, N.Y. Filed Mar. 11, 1969.

**FLIP-FLOP**

For Wall Paint (Int. Cl. 2).
First use Oct. 21, 1968.

## Class 17 — Tobacco Products

SN 322,599. Larus & Brother Company, Richmond, Va. Filed Mar. 24, 1969.

**EDGEWORTH**

Owner of Reg. Nos. 128,095, 705,800, and others.
For Smoking Tobacco, Cigarettes, and Cigars (Int. Cl. 34).
First use Mar. 14, 1969; 1895 in another form.

SN 323,955. Imperial Tobacco Group Limited, Bedminster, Bristol, England. Filed Apr. 8, 1969.

**EXMOOR HUNT**

For Smoking Tobacco (Int. Cl. 34).
First use about 1880; in commerce Nov. 1, 1958.

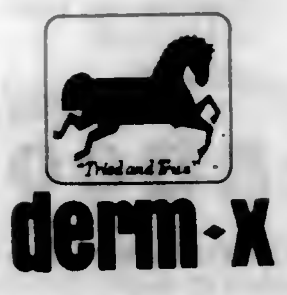
SN 324,205. Larus & Brother Company, Richmond, Va. Filed Apr. 10, 1969.

**ELSINOR**

Owner of Reg. No. 748,620.
For Smoking Tobacco (Int. Cl. 34).
First use Apr. 2, 1969.

## Class 18 — Medicines and Pharmaceutical Preparations

SN 297,848. Corio-Dobbins Laboratories, Phoenix, Ariz. Filed May 10, 1968.



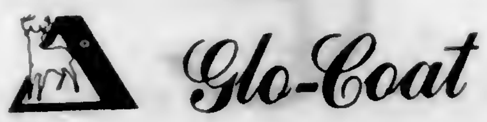
The representation of a horse is disclaimed apart from the mark as shown.
For Veterinary Preparation for Treatment of Girth Disease, Scratches, Dermatitis, and Related Skin Conditions (Int. Cl. 5).
First use Mar. 29, 1967.

SN 303,629. Rachelle Laboratories, Inc., Long Beach, Calif. Filed July 25, 1968.

**RACHELLE**

Owner of Reg. No. 858,522.
For Tetracycline, Chlortetracycline, Oxytetracycline, and Chloramphenicol (Int. Cl. 5).
First use Sept. 16, 1964.

SN 310,229. Hart-Delta, Inc., Zachary, La. Filed Oct. 22, 1968.



For Therapeutic Agent Containing Vitamins for Veterinary Use (Int. Cl. 5).
First use Sept. 3, 1968.

SN 316,347. Smith, Miller & Patch, Inc., New York, N.Y. Filed Jan. 10, 1969.

**DECONAMINE**

For Oral Anti-Histamine Decongestant (Int. Cl. 5).
First use Jan. 6, 1969.

SN 319,432. Chemway Corporation, Wayne, N.J. Filed Feb. 18, 1969.

**I.Q.**

For Smoking Deterrent (Int. Cl. 5).
First use Nov. 8, 1968.

SN 319,442. Geigy Chemical Corporation, Ardsley, N.Y. Filed Feb. 18, 1969.

**DOLOCAV**

Owner of Reg. No. 825,206.
For Analgesic Preparation (Int. Cl. 5).
First use Jan. 20, 1969.

SN 319,443. Geigy Chemical Corporation, Ardsley, N.Y. Filed Feb. 18, 1969.

**ZEPANIN**

For Anti-Bacterial Skin Preparation (Int. Cl. 5).
First use Jan. 20, 1969.

SN 319,631. The Norwich Pharmacal Company, Norwich, N.Y. Filed Feb. 19, 1969.

For Poultry Vaccines and Bacterins (Int. Cl. 5).
First use prior to January 1968.

SN 319,733. The Purdue Frederick Company, Yonkers, N.Y. Filed Feb. 20, 1969.

**STERIBATH**

For Antiseptic Preparation (Int. Cl. 5).
First use Jan. 27, 1969.

SN 320,082. A. H. Robins Company, Incorporated, Richmond, Va. Filed Feb. 25, 1969.

**PANALASE**

For High Potency Enzyme Preparation (Int. Cl. 5).
First use Feb. 18, 1969.

SN 320,205. Warren-Teed Pharmaceuticals Incorporated, Columbus, Ohio. Filed Feb. 26, 1969.

**STAT-PAK**

Owner of Reg. No. 740,704.
For Pharmaceuticals in Unit-Dose Package, Including a Liquid Medicine in a Disposable Syringe (Int. Cl. 5).
First use on or about Dec. 5, 1961.

SN 321,183. Bristol-Myers Company, New York, N.Y. Filed Mar. 10, 1969.

**QUENCH**

For Cold Tablet, Cough Preparation, and Analgesic (Int. Cl. 5).
First use Sept. 17, 1968.

SN 321,410. Tritec Laboratories, Inc., Long Beach, N.Y. Filed Mar. 11, 1969.

**SAVE FACE**

For Preparation for the Treatment of Acne (Int. Cl. 5).
First use Nov. 14, 1968.

SN 322,035. Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. Filed Mar. 18, 1969.

**ALO-MED**

For Ointment (Int. Cl. 5).
First use Apr. 5, 1968.

SN 325,098. Vogarell Products, Inc., Los Angeles, Calif. Filed Apr. 21, 1969.

**BIOZEN**

For Medicinal Ointments and Medicinal Preparations for the Care of the Skin From Discomforts of Itching and Burning (Int. Cl. 5).
First use Apr. 11, 1969.

SN 325,541. Carter-Wallace, Inc., New York, N.Y. Filed Apr. 25, 1969.

**SPECIAL DAY**

For Pleasant and Cleansing Douche (Int. Cl. 5).
First use Apr. 17, 1969.

## Class 19 — Vehicles

SN 261,605. Winner Boats, Inc., Dickson, Tenn. Filed Dec. 28, 1966.

***Travel Yacht***

The word "Yacht" is disclaimed apart from the mark as shown.
For Boats (Int. Cl. 12).
First use Feb. 18, 1963.

SN 303,778. Defoe Shipbuilding Co., Bay City, Mich. Filed July 29, 1968.

For Yachts, Destroyer Escorts, Tugs, Oceanographic Research Vessels, Landing Crafts, Survey Vessels, Cargo Ships, and Parts Thereof (Int. Cl. 12).
First use October 1943.

SN 306,828. Universal Oil Products Company, d.b.a. UOP Aerotherm Division, Des Plaines, Ill. Filed Sept. 6, 1968.

### AEROTHERM

Owner of Reg. No. 850,494.

For Air Cargo Handling Products—Namely, Pallets, Cargo Containers, Baggage Containers, and Parts Thereof (Int. Cl. 12).

First use June 8, 1968.

SN 307,152. Tram Ltd., Sherwood, Oreg. Filed Sept. 11, 1968.

### OTTO KROSS I

The mark "Otto Kross I" is a fanciful name.

For Automobiles (Int. Cl. 12).

First use Feb. 28, 1968.

SN 308,832. Wells Cargo, Inc., Elkhart, Ind. Filed Oct. 3, 1968.

### TOTE WAGON

Owner of Reg. Nos. 804,429, 805,369, and 807,932.

For Trailer Vans (Int. Cl. 12).

First use June 21, 1968.

SN 309,371. The General Tire & Rubber Company, Akron, Ohio. Filed Oct. 10, 1968.

GTR

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R

Owner of Reg. Nos. 581,368, 837,130, and others.

For Bicycles (Int. Cl. 12).

First use Sept. 10, 1968.

SN 311,514. Piaggio & C. S.p.A., Genoa, Italy. Filed Nov. 6, 1968.

### *Ciao*

The word "Ciao" translated in English means "goodbye."

Owner of Italian Reg. No. 198,891, dated Feb. 21, 1967.

For Trailers, Automobiles, Motor Trucks, Busses, Aircraft, Boats, Bicycles, and Motorcycles (Int. Cl. 12).

SN 311,552. Merchants Buying Syndicate, Inc., New York, N.Y. Filed Nov. 7, 1968.

### AIR WING

For Bicycles (Int. Cl. 12).

First use Jan. 1, 1968.

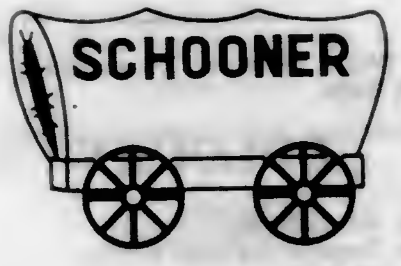
SN 313,580. Holiday Trailer Industries, Inc., Bartlesville, Okla. Filed Dec. 4, 1968.

### KNIGHT RIZER

For Travel Trailers, House Trailers, and Portable Campers of the Type Towed Behind Automobiles (Int. Cl. 12).

First use June 11, 1968.

SN 320,702. Boyd Manufacturing, Inc., Navarre, Ohio. Filed Mar. 4, 1969.



For Pick-Up Campers (Int. Cl. 12).

First use January 1965.

SN 322,426. The Fibre-Metal Products Company, Chester, Pa. Filed Mar. 21, 1969.

### FIBRE-METAL

Owner of Reg. Nos. 622,209 and 811,008.

For Industrial Hand Trucks and Hand Trucks for Hauling Cylinders (Int. Cl. 12).

First use Dec. 19, 1968.

SN 323,352. Navicamper, Inc., Minnetonka, Minn. Filed Apr. 1, 1969.

### NAVI CAMPER

Applicant disclaims the word "Camper" apart from the mark as shown.

For Amphibious Camping Trailer (Int. Cl. 12).

First use Jan. 15, 1969.

SN 324,937. Selje Bruk A/S, Selje, Nordfjord, Norway. Filed Apr. 18, 1969.

### SAGA

Owner of Norwegian Reg. No. 71,825, dated May 5, 1967.

For Boats (Int. Cl. 12).

## Class 21—Electrical Apparatus, Machines, and Supplies

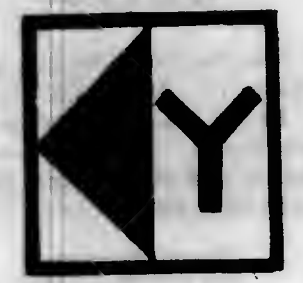
SN 274,491. Bootz Manufacturing Company, Inc., Evansville, Ind. Filed June 22, 1967.

### SEQUIMATE

For Numerical Control System for Sequencing Electrical and Mechanical Operations (Int. Cl. 9).

First use June 12, 1967.

SN 280,317. KY Industries, Inc., Minneapolis, Minn. Filed Sept. 14, 1967.



For Machined Precision Parts, Comprising Electronic Connector Parts (Int. Cl. 9).

First use during October 1964.

SN 287,922. Knox Electronics, Inc., Leawood, Kans. Filed Jan. 2, 1968.

K NOX

E LECTRONICS

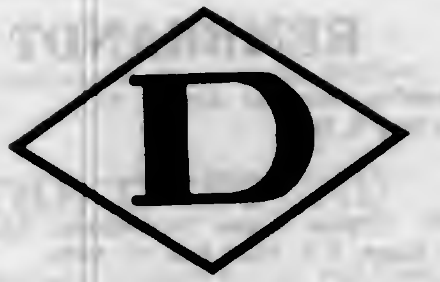
I NC.

The words "Electronics Inc." are disclaimed apart from the mark as shown.

For Electronic Wave Filters (Int. Cl. 9).

First use Nov. 2, 1967.

SN 292,293. Reliance Electric and Engineering Corporation, Mishawaka, Ind. Filed Mar. 1, 1968.



For Electric Motor Adjustable Speed Drives, and Components Thereof (Int. Cl. 9).

First use early February 1968; February 1952 in a different form.

SN 296,958. The Edwin F. Guth Company, St. Louis, Mo. Filed Apr. 30, 1968.

### GRIDLUME

For Electric Lighting Fixtures (Int. Cl. 11).

First use Apr. 10, 1968.

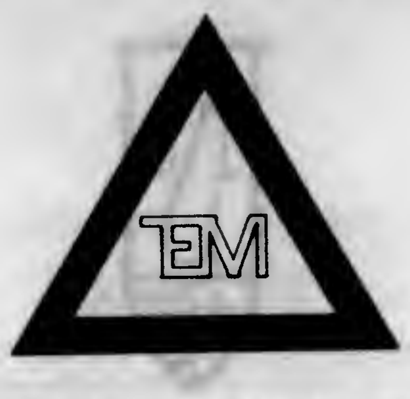
SN 298,364. Sun Battery Company, Inc., Santa Ana, Calif. Filed May 16, 1968.

### PRO. POWER

For Storage Batteries (Int. Cl. 9).

First use Mar. 1, 1968.

SN 299,959. Elecmag Corporation, Monette, Ark. Filed June 7, 1968.

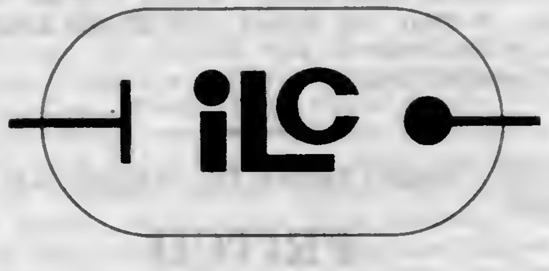


The mark consists of the letters "TEM" enclosed in a triangle, the letters being joined together, and the letter "T" being a part of the letter "E."

For Electronic Magnetos; Ignition Coils; and Ignition Conversion Kits Comprising Electronic Magneto, Ignition Coil, Spark Plugs, Spark Plug Wires, Distributor Cap, Distributor Rotor, Safety Switch, and Lead-In Wire (Int. Cls. 7 and 9).

First use Nov. 29, 1967.

SN 303,679. ILC, Inc., Sunnyvale, Calif. Filed July 26, 1968.



For Pulsed Light Sources and Parts Thereof, and Supporting Electronic Circuitry (Int. Cl. 9).

First use on or about May 28, 1968.

SN 304,165. John C. Traweek, d.b.a. Traco Engineering Co., Chicago, Ill. Filed Aug. 1, 1968.

### SOLICON

For Solid State Electrical Motor Controls (Int. Cl. 9).

First use May 7, 1968.

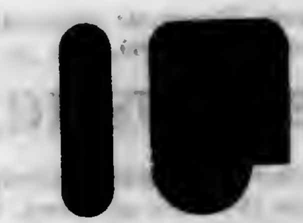
SN 305,647. Erie Technological Products, Inc., Erie, Pa. Filed Aug. 21, 1968.

### JET-SEAL

For Encapsulated Resistors and Capacitors (Int. Cl. 9).

First use July 17, 1967.

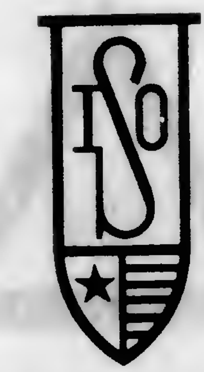
SN 307,895. Logicon, Inc., San Pedro, Calif. Filed Sept. 20, 1968.



For Data Acquisition, Control, and Computer Interface Electronic Modules (Int. Cl. 9).

First use on or about Dec. 1, 1967.

SN 309,389. Isolantite Manufacturing Corporation, Stirling, N.Y. Filed Oct. 10, 1968.



For Non-Corrosive, Heat Resisting, Fired Material Derived by Combination of Materials of Mineralogic Origin, Cut, Extruded, Pressed, or Machined to Shapes and Dimensions for Use as Electric Insulation (Int. Cl. 17).
First use in or about 1955.

SN 310,709. Teledyne, Inc., Los Angeles, Calif. Filed Oct. 28, 1968.

### TELEDYNE

Owner of Reg. No. 637,429.
For Electromagnetic Devices of the Transistor Case Relay Type Comprising Basic Relays; Relays With an Internal Diode Chip; Bi-Filar Coil Relays; and Hybrid Relays With a Transistor Drive (Int. Cl. 9).
First use April 1962.

SN 313,082. Douglas Randall, Inc., Westerly, R.I. Filed Nov. 26, 1968.

### FRITCH

For Frequency Responsive Switches (Int. Cl. 9).
First use on or about Aug. 1, 1968.

SN 315,565. IMC Magnetics Corporation, Maywood, Calif. Filed Jan. 2, 1969.

### TORMAX

For Stepper Motors (Int. Cl. 7).
First use Aug. 1, 1968.

SN 316,524. Delross Electronic Corporation, North Hollywood, Calif. Filed Jan. 14, 1969.

### THE RAT MACHINE

Applicant disclaims any registration rights for the word "Rat," apart from the mark as shown, but waives none of its common law rights in the mark shown or any feature thereof.
For Ultrasonic Apparatus for Repelling Rats and Mice (Int. Cl. 9).
First use Nov. 7, 1968.

SN 316,525. Delross Electronic Corporation, North Hollywood, Calif. Filed Jan. 14, 1969.

### POLY-ISACOUSTIC SOUND

Applicant disclaims any registration rights for the word "Sound," apart from the mark as shown, but waives none of its common law rights in the mark shown or any feature thereof.
For Ultrasonic Apparatus for Repelling Rats and Mice (Int. Cl. 9).
First use Nov. 7, 1968.

SN 317,845. John Oster Manufacturing Co., Milwaukee, Wis. Filed Jan. 29, 1969.

### OSTER

Owner of Reg. Nos. 858,325, 860,036, and others.
For Plastic Articles for Household Electrical Appliances—Namely, Handles, Knobs, Bases, Housings, Lids, Guards, Control Panels, Escutcheons, Push Buttons, Spouts, Vessels, Gears, Levers, Shafts, and Hoods (Int. Cls. 9 and 20).
First use approximately 1930.

SN 317,979. Superior Continental Corporation, Hickory, N.C. Filed Jan. 30, 1969.

### HYDRO COMMUNICATIONS

The term "Communications" is disclaimed apart from the mark as shown.
For Electronic Distribution Equipment—Namely, Telephone and Telecommunications Wire and Cable, Coaxial Cable, Submarine Cable and Pressurized Cable for Underwater, Under Sea, Air-Sea and Land-Sea Areas (Int. Cl. 9).
First use September 1968.

SN 318,084. The Mosler Safe Company, Hamilton, Ohio. Filed Jan. 31, 1969.

### PNEU-VISTA

For Remote Transaction Banking System and the Equipment Used Therewith, Including a Teller Unit for Viewing and Talking With a Customer, a Customer Unit for Viewing and Talking With a Bank Teller, and a Carrier for Transporting Items From a Customer to a Teller (Int. Cl. 9).
First use Sept. 22, 1968.

SN 318,886. All Channel Products Corp., Woodside, N.Y. Filed Feb. 11, 1969.

### REMBRANDT

For Television Antennas (Int. Cl. 9).
First use May 6, 1955.

SN 320,037. Cyprus Mines Corporation, d.b.a. Rome Cable Division, Rome, N.Y. Filed Feb. 25, 1969.

### FORM-PAK

For Wire and Cable (Int. Cl. 9).
First use Nov. 19, 1964.

SN 320,038. Cyprus Mines Corporation, d.b.a. Rome Cable Division, Rome, N.Y. Filed Feb. 25, 1969.

### LES TRAK

For Wire and Cable (Int. Cl. 9).
First use May 17, 1962.

SN 320,039. Cyprus Mines Corporation, d.b.a. Rome Cable Division, Rome, N.Y. Filed Feb. 25, 1969.

### PORTACORD

For Wire and Cable (Int. Cl. 9).
First use July 8, 1964.

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SN 320,040. Cyprus Mines Corporation, d.b.a. Rome Cable Division, Rome, N.Y. Filed Feb. 25, 1969.

### ROFLEX

For Wire and Cable (Int. Cl. 9).
First use Mar. 12, 1947.

SN 320,041. Cyprus Mines Corporation, d.b.a. Rome Cable Division, Rome, N.Y. Filed Feb. 25, 1969.

### ROLENE

For Wire and Cable (Int. Cl. 9).
First use June 13, 1949.

SN 320,044. Cyprus Mines Corporation, d.b.a. Rome Cable Division, Rome, N.Y. Filed Feb. 25, 1969.

### RO PRENE

For Wire and Cable (Int. Cl. 9).
First use Mar. 11, 1947.

SN 320,144. Gulton Industries Inc., Metuchen, N.J. Filed Feb. 26, 1969.

### CROSSLENE

For Electrical Wire and Electrical Cable (Int. Cl. 9).
First use Oct. 11, 1968.

SN 320,145. Gulton Industries, Inc., Metuchen, N.J. Filed Feb. 26, 1969.

### HERM-A-CELL

For Nickel Cadmium Battery (Int. Cl. 9).
First use Jan. 15, 1969.

SN 321,406. Sparkomatic Corporation, Milford, Pa. Filed Mar. 11, 1969.

### THE IN SOUND

For Audio and Sound Products for Car and Home—Namely, Speakers, Speaker Kits, Stereo Speakers, and Parts Thereof (Int. Cl. 9).
First use on or about July 1, 1968.

SN 321,689. Specialized Communications, Inc., Atlanta, Ga. Filed Mar. 13, 1969.

### SPEC-COMM

For Electronic Acoustic Magnetic Coupled Data Set Receiver (Int. Cl. 9).
First use January 1968.

SN 321,692. Standard Oil Company of California, San Francisco, Calif. Filed Mar. 13, 1969.

### CHEVRON

Owner of Reg. No. 837,843.
For Battery Chargers (Int. Cl. 9).
First use Feb. 16, 1969.

SN 322,025. Electricon Corporation, New Knoxville, Ohio. Filed Mar. 18, 1969.

### TASK-WITCH

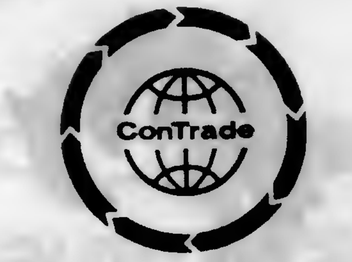
For Electrical Limit Switch (Int. Cl. 9).
First use Jan. 7, 1969.

SN 322,799. Raytheon Company, Lexington, Mass. Filed Mar. 26, 1969.

### DATAVUE

For Numerical Indicator Tubes for Use in Basic Counters, Computer Circuits, and the Like (Int. Cl. 9).
First use January 1966.

SN 325,010. Continental Trading Corporation, Hickory, N.C. Filed Apr. 21, 1969.



Owner of Reg. No. 814,886.
For Electronic Distribution and Communications Equipment—Namely, Telephone and Tele-Communications Wire and Cable, Aerial Drop Wires, Direct Burial Service Wire and, Cable, Inside Telephone Wire, Station Installation Wire (Both Aerial and Duct), Supported Aerial and Equipment Housings for Television System Applications (Both Aerial and Direct Burial), Splice Cases, Wire Connector and Terminal Block Units, Load Coils; and Telephone Carrier Apparatus—Namely, Central Office and Subscriber Carrier Telephone Units for Connection to an Existing Telephone Cable Pair To Create an Additional Talking Circuit at the Subscriber's Location (Int. Cl. 9).
First use no later than Apr. 1, 1969.

SN 325,441. Roberts Tools Sales, Inc., Buffalo, N.Y. Filed Apr. 24, 1969.

### TORQ-MATIC

For Electronic Devices—Namely, Motor Speed Controls and Solid State Variable Drives (Int. Cl. 9).
First use on or before Apr. 18, 1969.

SN 326,485. Rule Industries, Inc., Beverly Farms, Mass. Filed May 6, 1969.

### RULE-A-MATIC

For Water Pumps (Int. Cl. 9).
First use Mar. 9, 1967.

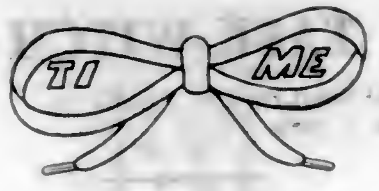
## Class 22 — Games, Toys, and Sporting Goods

SN 294,390. Gould-Cargill & Company, Inc., Minneapolis, Minn. Filed Mar. 28, 1968.

### TANK O'TIGERS

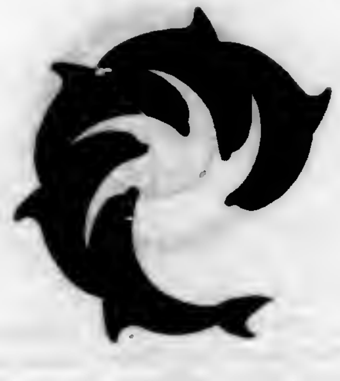
No claim of exclusive right is made to "Tigers" for the goods recited.
For Toys Designed and Constructed To Enable the Player To Utilize Same To Successfully Pick Up a Plurality of Same by Manipulating the Toys Previously Picked Up in Such Manner (Int. Cl. 28).
First use Mar. 4, 1968.

SN 306,951. Sherman Mfg. Company, St. Helen, Mich. Filed Sept. 9, 1968.



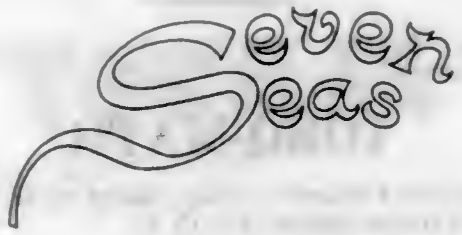
For Educational Toys and Parts Thereof, Particularly, Dutch Wooden Shoes (Int. Cl. 28).
First use July 1, 1968.

SN 308,645. U.S. Fiber Glass Products, Incorporated, d.b.a. Bob White/Wave Riding Vehicles, Virginia Beach, Va. Filed Oct. 1, 1968.



For Surfboards (Int. Cl. 28).
First use July 1, 1968.

SN 310,746. Berkley & Company, Inc., Spirit Lake, Iowa. Filed Oct. 29, 1968.



For Monofilament Nylon Fishing Line (Int. Cl. 28).
First use Oct. 7, 1968.

SN 312,424. Brunswick Corporation, Chicago, Ill. Filed Nov. 18, 1968.

### CENTENNIAL

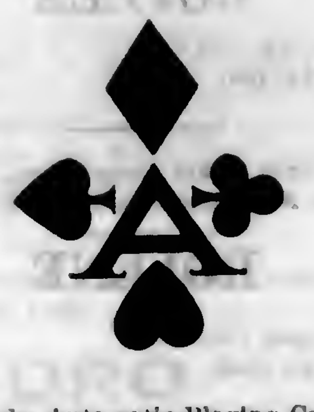
Owner of Reg. No. 525,681.
For Billiard Tables (Int. Cl. 28).
First use Mar. 8, 1968.

SN 321,302. United States Whip Company, d.b.a. U.S. Line Company, Westfield, Mass. Filed Mar. 10, 1969.

### MAHOGANY KING

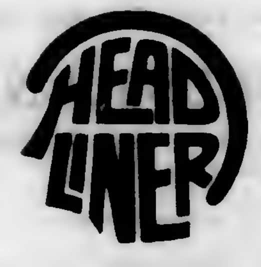
For Fishing Lines (Int. Cl. 28).
First use Sept. 15, 1937.

SN 321,326. Regensteiner Publishing Enterprises, Inc., Chicago, Ill. Filed Mar. 3, 1969.



For Playing Cards, Automatic Playing Card Shufflers, Cribbage Boards, Dice, and Poker Chips (Int. Cls. 16 and 28).
First use on or about Nov. 8, 1965.

SN 321,750. "Automatic" Sprinkler Corporation of America (Rawlings Sporting Goods Company Division), St. Louis, Mo. Filed Mar. 14, 1969.



For Football Helmets and Parts Thereof (Int. Cl. 28).
First use Jan. 26, 1968.

SN 324,986. Mattel, Inc., Hawthorne, Calif. Filed Apr. 21, 1969.

### LOVEY THE LAMB

No claim of exclusive right is made to "The Lamb" for the goods recited, apart from the mark.
For Toy Stuffed Animal (Int. Cl. 28).
First use Oct. 23, 1968.

SN 330,674. Mattel, Inc., Hawthorne, Calif. Filed June 23, 1969.

### SAND CRAB

For Toy Miniature Automobiles (Int. Cl. 28).
First use May 13, 1969.

## Class 23 — Cutlery, Machinery, and Tools and Parts Thereof

SN 286,727. Southwire Company, Carrollton, Ga. Filed Dec. 11, 1967.

### SCR

Owner of Reg. No. 825,191.
For Metal Casting Machines, Rolling Mills, Roller Conveyors, Metal Bar Scrapping and Cutting Machines and Metal Rod Coilers, All of the Above Items Sold as a Combination Unit or as Separate Items (Int. Cl. 7).
First use on or about May 22, 1967.

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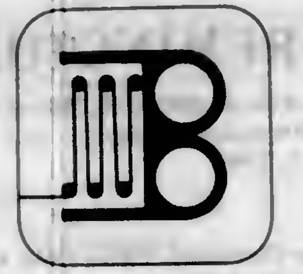
SN 301,644. Servis Equipment Company, Inc., Dallas, Tex. Filed June 28, 1968.

### FLEX XV

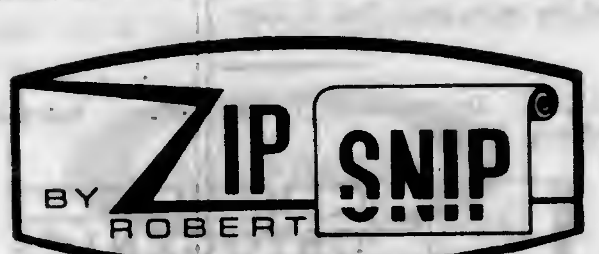
The numerals "XV" are disclaimed apart from the mark.
For Rotary Mowers (Int. Cl. 7).
First use June 4, 1968.

SN 302,589. Butler Automatic Machine, Inc., Canton, Mass. Filed July 12, 1968.



For Machinery for Splicing and Controlling the Winding and Unwinding of Webs, Such as Paper, Cloth, Plastic and the Like, to and From Machines Operating on the Webs, Together With Parts Thereof, for Conditioning the Webs While in Motion (Int. Cl. 7).
First use Mar. 31, 1967.

SN 304,467. Paul D. Hoffman, d.b.a. Robert Manufacturing Company, Newton Highlands, Mass. Filed Aug. 6, 1968.



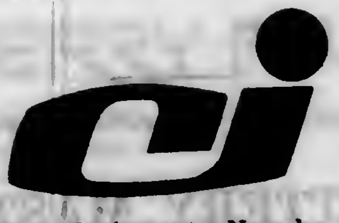
For Dispensing and Cutting Machine for Dispensing and Cutting Rolls of Paper, Plastic, Foil, and the Like (Int. Cl. 7).
First use at least as early as June 14, 1968.

SN 308,060. Walker Manufacturing Company, Racine, Wis. Filed Sept. 23, 1968.

### TELELUBE

For Lubricating Apparatus for Vehicular and Industrial Equipment (Int. Cl. 7).
First use on or about Aug. 30, 1968.

SN 308,188. Carman Industries, Inc., Jeffersonville, Ind. Filed Sept. 25, 1968.



For Bulk Handling Equipment—Namely, Vibratory Mixers and Discharge Units Therefor; Vibratory Bulk Conveyor Units; Screw-Type Conveyors; Vibratory Chutes; Vibratory Hoppers; Vibratory Densifiers for Bulk Materials; and Vibratory Feeders (Int. Cl. 7).
First use March 1968.

SN 311,996. A.V. Electronics, Inc., Fresno, Calif. Filed Nov. 13, 1968.

### SAND MASTER

For Sand Separating Devices for Water Supply Systems (Int. Cl. 11).
First use Oct. 8, 1964.

SN 314,884. Hugo Freund, Wuppertal-Kuellenhahn, Germany. Filed Dec. 19, 1968.

### FARMER BILL

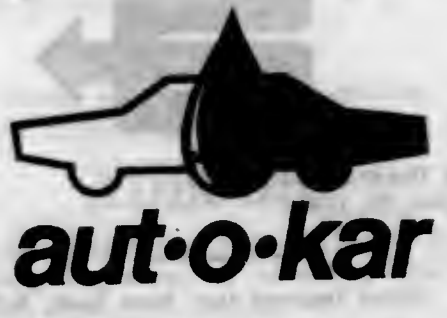
Owner of German Reg. No. 851,424, dated Nov. 6, 1968.
For Animal Shears and Garden Shears (Int. Cl. 8).

SN 320,327. Daystar Corporation, Roselle, N.J. Filed Feb. 28, 1969.

### TRIJET-ACL

For Apparatus for Attachment to Metal Cutting Machine Tools To Dispense Coolant and Lubricants During Metal Cutting Operations (Int. Cl. 7).
First use July 23, 1968.

SN 321,748. Aut-O-Kar Wash Corporation, Dallas, Tex. Filed Mar. 14, 1969.



For Automobile and Truck Washing Machinery, Industrial Vacuum Cleaners, Towel Vendors, and Wax Dispensers (Int. Cl. 7).
First use December 1968.

SN 322,671. Nadex Industries Limited, Port Credit, Ontario, Canada. Filed Mar. 24, 1969.

### DIAL-A-LINE

For Copy Holders (Int. Cl. 16).
First use January 1968; in commerce February 1968.

SN 326,529. Henschen Industrial Corporation, Jackson Center, Ohio. Filed May 6, 1969.

### DURA-FLEX

Owner of Reg. No. 768,415.
For Axle Assemblies for Land Vehicles and Drive Components for Excavating Machines (Int. Cls. 7 and 12).
First use about September 1963.

SN 331,001. Univis, Inc., Fort Lauderdale, Fla. Filed June 26, 1969.

### UNILAP

For Machinery for Grinding Ophthalmic Lenses and Parts Therefor (Int. Cl. 7).
First use May 22, 1968.

## Class 24 — Laundry Appliances and Machines

SN 327,960. Sears, Roebuck and Co., Chicago, Ill. Filed May 21, 1969.

### WRINKLE GUARD

For Automatic Clothes Dryer (Int. Cl. 7).
First use on or about Sept. 28, 1967.

## Class 25 — Locks and Safes

SN 310,672. Keystone Consolidated Industries, Inc., Peoria, Ill. Filed Oct. 28, 1968.

### NATIONAL LOCK

Owner of Reg. Nos. 764,990, 765,050, and 776,049.

For Locks, Latches, Catches, Bolts, Builders' Lock Sets, Keys and Key Blanks (Int. Cl. 6).

First use in 1903.

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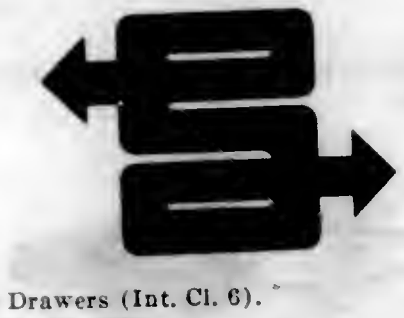
SN 315,367. Top Hat Formal Wear, Inc., Indianapolis, Ind. Filed Dec. 30, 1968.



For Money Drawers (Int. Cl. 6).

First use Dec. 20, 1967.

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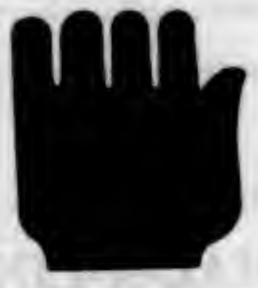
SN 328,781. Sport Imports Inc., New York, N.Y. Filed June 2, 1969.



For Lock for Securing Skis and Ski Equipment (Int. Cl. 6).

First use Feb. 14, 1969.

## Class 26 — Measuring and Scientific Appliances

SN 296,633. C. W. Brabender Instruments Incorporated, South Hackensack, N.J. Filed Apr. 26, 1968.

### ABSORPTI-CORDER

For Torque Rheometer for Measuring the Absorptive Capacity of Dry Materials With Any Liquid Phase (Int. Cl. 9).

First use Feb. 2, 1968.

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SN 301,027. Bailey Meter Company, Wickliffe, Ohio. Filed June 21, 1968.

### FLICKER

For Flame Detectors (Int. Cl. 9).

First use Mar. 20, 1968.

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SN 304,065. John T. Muller, d.b.a. Dynamic Testing and Engineering Laboratory, Hanover, N.J. Filed Aug. 1, 1968.

### KEYOTEEN

For Shock Testing Apparatus, i.e., Impulse Generating Machines, and Parts Thereof and Accessories Therefor—Namely, a Removeable Knife and a Removeable Bar (Int. Cl. 9).

First use Feb. 7, 1968.

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SN 304,358. Orrin E. Lewis, d.b.a. Lewis Engineering Co., Belleville, Kans. Filed Aug. 5, 1968.

### SER-VIS-ALL SCOPE

The term "Scope" is disclaimed apart from the mark as shown.

For Ignition System Tester for Internal Combustion Engines (Int. Cl. 9).

First use on or about June 10, 1968.

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SN 304,404. Sperry Rand Corporation, New York, N.Y. Filed Aug. 5, 1968.

### REMINGTON

Owner of Reg. Nos. 15,960, 836,766, and others.

For Cash Registers (Int. Cl. 9).

First use Sept. 8, 1960.

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SN 304,896. The Cleveland Twist Drill Company, Cleveland, Ohio. Filed Aug. 12, 1968.

### QUICK-SET

Owner of Reg. Nos. 530,478 and 821,106.

For "Go" and "Not Go" Sizing Devices for Checking Tolerances—Namely, Cylindrical Plug Gages, Conical Plug Gages, Double End Plug Gages, Thread Plug Gages, Plain Ring Gages, Cone Ring Gages, Pipe Ring Gages, Measuring Wires, and Handles, Guards and Bushings of Kinds Used in or for Gages (Int. Cl. 9).

First use on or about Dec. 5, 1967.

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SN 305,874. International Controls Corp., Fairfield, N.J. Filed Aug. 26, 1968.

**ICC CRYOGENICS**

Applicant disclaims the right to exclusive use of the word "Cryogenics" apart from the mark as shown. Owner of Reg. No. 812,849.

For Low Temperature Control Systems, Comprising Sensing Probes, Automatic Level Controls, Valves, Connectors, Temperature Switches, Temperature Indicators, Temperature Controls, and Cryogenic Sumps (Int. Cl. 9).

First use December 1967.

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SN 307,670. Quantum Industries, Inc., Hanover, N.J. Filed Sept. 18, 1968.

### QUANTA/GRAM

For Pre-Coated Glass Thin Layer Chromatographic Plates (Int. Cl. 9).

First use July 30, 1968.

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SN 307,762. Studebaker Corporation, South Bend, Ind. Filed Sept. 19, 1968.

### BATTERY MASTER

The word "Battery" is disclaimed apart from the mark as shown.

For Battery Condition Testing Equipment (Int. Cl. 9).

First use November 1963.

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SN 308,320. Scott Paper Company, Philadelphia, Pa. Filed Sept. 26, 1968.

### SCOTT

For Electrostatic Photocopy Machines for Office Use (Int. Cl. 16).

First use Sept. 24, 1968.

SN 310,955. Yewtec Corporation, Larchmont, N.Y. Filed Oct. 30, 1968.

### YEWTEC

Owner of Reg. No. 679,971.

For Electrical Apparatus—Namely, Direct and Alternating Current Ammeters, Voltmeters, Wattmeters, Varmeters, Voltammeters; Battery Testing Voltmeters, Line Current Testers, Power Factor Meters, Frequency Meters, High-Frequency Ammeters, Portable Potential Transformers and Current Transformers, Cycle Counters; Switchboard and Panel Instruments Including Direct and Alternating Current Ammeters, Voltmeters, Wattmeters, Varmeters, and Frequency Meters; Vacuo Junctions, Ampere Hour Meters, Static Volt Meters, Volume Level Indicators, Ground Detectors, Synchronism Indicators, Recording Instruments Including Direct and Alternating Current Ammeters, Voltmeters and Wattmeters, 3-Phase Varmeters and 3-Phase Demand Recorders (Int. Cl. 9).

First use May 24, 1968.

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SN 315,219. Drummond Instrument Company, Broomall, Pa., assignee of Drummond Scientific Company, Broomall, Pa. Filed Dec. 26, 1968.

### CAPTROL

For Pneumatic Squeeze Bulb and Plunger Control Combination for Filling and Emptying Micropipettes (Int. Cl. 9).

First use Nov. 25, 1968.

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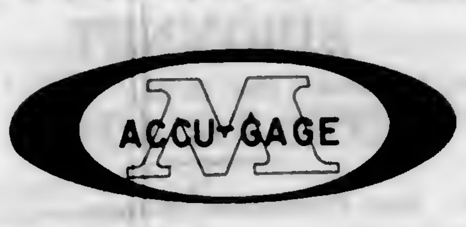
SN 318,080. G. H. Meiser & Co., Blue Island, Ill. Filed Jan. 31, 1969.



Owner of Reg. No. 835,080.

For Tire Gauges (Int. Cl. 9).

First use Jan. 14, 1969.

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SN 318,609. Lapine Scientific Company, Chicago, Ill. Filed Feb. 7, 1969.

### DIGI TIMER

Applicant makes no claim to the exclusive right to use of the word "Timer" apart from the mark.

For Interval Timer (Int. Cl. 9).

First use Jan. 10, 1969.

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SN 319,370. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.

**SPERRY RAND**

Owner of Reg. Nos. 861,348, 873,379, and others.

For Fluid Pressure Gauges (Int. Cl. 9).

First use Aug. 16, 1967.

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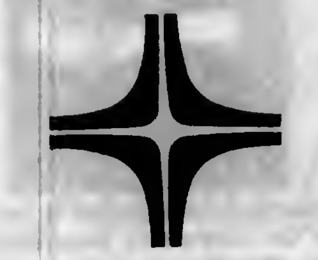
SN 319,376. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.



Owner of Reg. Nos. 861,348, 873,379, and others.

For Fluid Pressure Gauges (Int. Cl. 9).

First use Aug. 16, 1967.

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SN 319,382. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.

**SPERRY RAND**

Owner of Reg. Nos. 861,348, 873,379, and others.

For Fluid Pressure Gauges (Int. Cl. 9).

First use Aug. 16, 1967.

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SN 320,070. MTI Corporation, New York, N.Y. Filed Feb. 25, 1969.

### DIAMOND MASTER

For Vernier Caliper Measuring Devices (Int. Cl. 9).

First use Oct. 25, 1968.

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SN 323,594. Potter Instrument Company, Inc., Plainview, N.Y. Filed Apr. 3, 1969.

### ADLOGIC

For Computer Peripheral Equipment and Embodiments Thereof—Namely, Apparatus for Recording Binary Information on Magnetic Media (Int. Cl. 9).

First use June 21, 1968.

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SN 323,771. Strain Gage Instrumentation Company, San Francisco, Calif. Filed Apr. 1, 1969.

### OMNIBEAM

For Device for Calibrating and Evaluating Strain Gages and Strain Gage Related Instruments (Int. Cl. 9).

First use Jan. 13, 1969.

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SN 330,995. Instrumentation Associates Inc., New York, N.Y. Filed June 26, 1969.

### RAPPOX

For Instrument for Measuring Oxygen Concentration (Int. Cl. 9).

First use June 6, 1969.

## Class 27 — Horological Instruments

SN 272,599. Feurer Bros., Inc., White Plains, N.Y. Filed May 29, 1967.

### "B" RING

The word "Ring" is disclaimed, apart from the mark as shown. Owner of Reg. No. 720,979.

For Watch Crowns and Parts of Same (Int. Cl. 14).

First use on or about Apr. 1, 1967.

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SN 287,225. Kabushiki Kaisha Koparu, Itabashi-ku, Tokyo-tu, Japan. Filed Dec. 19, 1967.

**COPAL**

Owner of Japanese Reg. No. 632,374, dated Dec. 19, 1963.

For Watches and Clocks (Int. Cl. 14).

First use Feb. 15, 1965; in commerce June 25, 1966.

SN 308,199. Fingerhut Manufacturing Co., Minneapolis, Minn. Filed Sept. 25, 1968.

**MANSON**

For Watches (Int. Cl. 14).
First use Nov. 13, 1961.

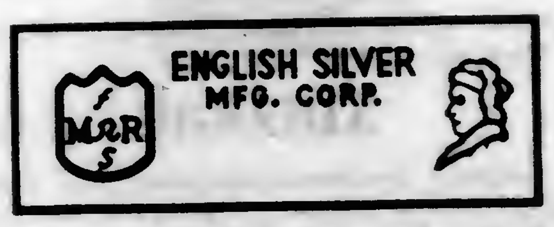
SN 310,838. Belmont Industries Inc. of Delaware, New York, N.Y. Filed Oct. 30, 1968.

**BELATOMIC**

For Watches and Watch Movements (Int. Cl. 14).
First use Aug. 15, 1968.

## Class 28 — Jewelry and Precious-Metal Ware

SN 282,557. English Silver Manufacturing Corp., Brooklyn, N.Y. Filed Oct. 16, 1967.



Applicant disclaims the words "English Silver Mfg. Corp." apart from the mark as a whole.
For Silver Plated Holloware (Int. Cl. 14).
First use at least as early as 1952.

SN 296,415. Fortunoff Silver Sales of Westbury, Inc., Westbury, N.Y. Filed Apr. 24, 1968.

**GEORGIAN HOUSE**

For Silver Plate Holloware (Int. Cl. 14).
First use July 14, 1967.

SN 299,181. Wellington Jewelry Co., Inc., New York, N.Y., assignee, by mesne assignment, of Hattie Carnegie, Inc., New York, N.Y. Filed May 27, 1968.

***Miss Carnegie***

Owner of Reg. Nos. 362,102, 680,783, and 704,295.
For Jewelry—Namely, Buckles and Buttons Made in Whole or in Part of Precious Metal or Plated With the Same, Bracelets, Bracelet Chains and Links, Brooches and Pins, Earrings, Pendants, Finger and Scarf Rings, Lockets, Lavallieres, Breast Pins, Necklaces, and Jewelled Hair Ornaments (Int. Cl. 14).
First use Jan. 1, 1919.

SN 309,071. Oleg Cassini, Inc., New York, N.Y. Filed Oct. 7, 1968.

**OLEG CASSINI**

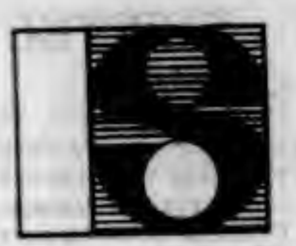
"Oleg Cassini" is the name of a living individual whose consent is of record. Owner of Reg. Nos. 650,952 and 657,489.
For Jewelry (Int. Cl. 14).
First use 1951.

SN 318,647. Hellenique Jewelry Inc., New York, N.Y. Filed Feb. 7, 1969.

**ZOLOTAS**

For Jewelry (Int. Cl. 14).
First use Sept. 10, 1968.

SN 323,469. Pearls by Slutsky Ltd., New York, N.Y. Filed Apr. 2, 1969.



The drawing is lined for the color blue, but no claim is made as to color.
For Jewelry (Int. Cl. 14).
First use on or before Mar. 17, 1969.

SN 325,890. Pakula and Company, Chicago, Ill. Filed Apr. 29, 1969.

***Old Fashionables***

For Jewelry (Int. Cl. 14).
First use on or about Apr. 4, 1969.

## Class 30 — Crockery, Earthenware, and Porcelain

SN 292,509. Interpace Corporation, Parsippany, N.J., assignee of Shenango Ceramics, Inc., New Castle, Pa. Filed Mar. 5, 1968.

**SIBONNET**

For China Dinnerware (Int. Cl. 21).
First use Nov. 7, 1966.

SN 304,830. Sony Corporation, Shinagawa-ku, Tokyo, Japan. Filed Aug. 9, 1968.

**SONY**

Owner of U.S. Reg. Nos. 705,902, 801,885, and others.
For Crockery—Namely, Cups (Int. Cl. 21).
First use July 20, 1967; in commerce July 20, 1967.

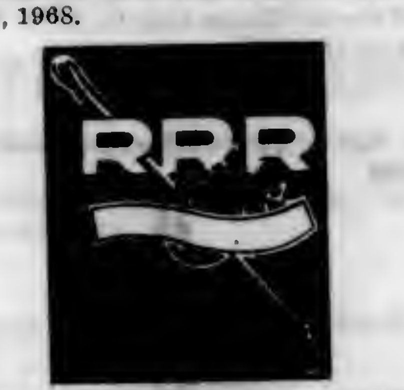
SN 316,947. Seymart Importing Co. Inc., Rockville Centre, N.Y. Filed Jan. 21, 1969.

**ROYAL WARWICK**

For China Dinnerware and Earthenware—Namely, Tableware (Int. Cl. 21).
First use May 8, 1968.

## Class 31 — Filters and Refrigerators

SN 293,602. Triple R Manufacturing, Inc., Philadelphia, Pa. Filed Mar. 18, 1968.



The black rectangular background is not part of the mark, but is merely for the purpose of showing contrast.
For Oil Filters for Internal Combustion Engines (Int. Cl. 7).
First use Dec. 1, 1964.

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SN 313,339. Servodyne Corporation, San Francisco, Calif. Filed Nov. 29, 1968.

**DYNA-FLO**

For Air Filters (Int. Cl. 11).
First use Mar. 20, 1968.

SN 319,371. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.

**SPERRY RAND**

Owner of Reg. Nos. 861,348, 873,379, and others.
For Oil Filters (Int. Cl. 11).
First use Aug. 16, 1967.

SN 319,383. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.

**SPERRY RAND**

Owner of Reg. Nos. 861,348, 873,379, and others.
For Oil Filters (Int. Cl. 11).
First use Aug. 16, 1967.

## Class 32 — Furniture and Upholstery

SN 299,692. National Mattress Company, Huntington, W. Va. Filed June 4, 1968.

**BODY-BRACER**

For Box Springs (Int. Cl. 20).
First use July 8, 1967.

SN 306,274. Schlumberger Limited, Compton, Calif. Filed Aug. 29, 1968.

**VIRTUE**

Owner of Reg. No. 599,972.
For Furniture—Namely, Chairs, Stools, Tables, Buffets and Hutches, Vanity Benches, Headboards and Beds (Int. Cl. 20).
First use August 1968.

SN 308,790. Leggett & Platt, Incorporated, Carthage, Mo. Filed Oct. 3, 1968.

**POSTURE RITE**

For Metal Innerspring Unit Constituting the Spring Support in an Innerspring Mattress, the Metal Foundation Spring Supporting a Mattress; Comparable Innersprings and Foundation Springs Used in Upholstered Furniture (Int. Cl. 6).
First use Apr. 15, 1968.

SN 316,836. Saunda, Inc., Chicago, Ill. Filed Jan. 16, 1969.

***saunda Starlet***

Owner of Reg. Nos. 825,363 and 826,983.
For Portable, Illuminated Mirrors (Int. Cl. 20).
First use Nov. 27, 1968.

SN 317,752. Maraja Industria de Colchoes Anatomicos Ltda., Rio de Janeiro, Brazil. Filed Jan. 28, 1969.

***Anatom***

Owner of Brazilian Reg. No. 379,073, dated July 17, 1968.
For Mattresses (Int. Cl. 20).

SN 323,280. Educational Marketing & Research, Inc., Chicago, Ill. Filed Apr. 1, 1969.

**ANIMATED**

For Bookcases (Int. Cl. 20).
First use Mar. 6, 1969.

SN 324,626. Invincible Metal Furniture Co., Manitowoc, Wis. Filed Apr. 16, 1969.

**S Line**

The drawing is lined for red, but no claim is made to such color.
For Office Furniture—Namely, Desks, Filing Cabinets, Tables, Chests, Telephone Stands, Credenzas, Bookcases, Cabinets, Desk Trays, Letter Trays, and Files, Continuous Tops for Multiple Units, and Parts Thereof (Int. Cl. 20).
First use Sept. 27, 1968.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 267,918. Chicago Welding Sales Company, d.b.a. York Engineering Company, Chicago, Ill. Filed Mar. 30, 1967.

**YORK'S SPAT-R-PRUF**

For Compositions for Coating Metal Surfaces for Facilitating the Release of Metal Splattered on Such Surfaces During a Welding Operation (Int. Cl. 1).
First use Jan. 2, 1961.

SN 301,792. Universal Oil Products Company, d.b.a. REF Dynamics Division, Des Plaines, Ill. Filed July 1, 1968.

**LIQUISPENSER**

For Commercial Coffee Brewer (Int. Cl. 11).
First use Oct. 18, 1955.

SN 302,159. Valley Tow-Rite, Inc., Lodi, Calif. Filed July 5, 1968.

**TEMP-TROLLER**

For Heat Exchangers and Especially Oil Coolers Which Cool Oils Used in Powering Hydraulic Machinery, Equipment and Devices; in Lubricating Various Mechanisms; in Cooling Transformers; in Quenching Baths; and in Other Environments in Which Heat Is To Be Removed From an Oil (Int. Cl. 11).
First use Nov. 16, 1967.

SN 319,366. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.

### SPERRY RAND

Owner of Reg. Nos. 861,348, 873,379, and others.
For Heat Exchangers (Int. Cl. 11).
First use Aug. 16, 1967.

SN 319,372. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.

### SPERRY RAND

Owner of Reg. Nos. 861,348, 873,379, and others.
For Heat Exchangers (Int. Cl. 11).
First use Aug. 16, 1967.

SN 319,384. Sperry Rand Corporation, New York, N.Y. Filed Feb. 17, 1969.

### SPERRY RAND

Owner of Reg. Nos. 861,348, 873,379, and others.
For Heat Exchangers (Int. Cl. 11).
First use Aug. 16, 1967.

SN 320,170. McGraw-Edison Company, Elgin, Ill. Filed Feb. 26, 1969.

### MANNING-BOWMAN

Owner of Reg. No. 574,220.

For Electric Heaters (Radiant, Portable, and Baseboard), Evaporative Coolers, and Ventilating Fans Such as for Window Installation (Int. Cl. 11).

First use 1945.

SN 321,880. Acme Manufacturing Company, Philadelphia, Pa. Filed Mar. 17, 1969.

### HUSH-VENT

For Laundry Dryer Vents (Int. Cl. 11).
First use Mar. 13, 1969.

## Class 35 – Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 285,553. Keil's, Inc., Wilmington, Del. Filed Nov. 24, 1967.

### XPRES★★★★★

For Motor Vehicle Tires (Int. Cl. 12).
First use Nov. 8, 1967.

SN 298,052. Snap-Tite, Inc., Union City, Pa. Filed May 13, 1968.

### SNAP-TITE

Owner of Reg. No. 555,911.

For Sealing Members—Namely, Washers and Gaskets (Int. Cl. 17).

First use at least 1939.

SN 312,460. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Nov. 18, 1968.

### SIMPATCH

For Tire Patching Material in Roll Form for Repairing Tires (Int. Cl. 12).

First use Oct. 8, 1968.

SN 323,300. Jetzon Tire & Rubber Co., Inc., Montgomeryville, Pa. Filed Apr. 1, 1969.

### JETZON RAD-AGE

Owner of Reg. No. 784,839.
For Tires (Int. Cl. 12).
First use Mar. 7, 1969.

SN 324,436. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Apr. 14, 1969.

### FALCON NEW YORKER

Owner of Reg. Nos. 693,862, 849,399, and others.
For Resilient Vehicle Tires (Int. Cl. 12).
First use Mar. 22, 1969.

SN 327,378. The Firestone Tire & Rubber Company, Akron, Ohio. Filed May 15, 1969.

### REGENCY FALCON

Owner of Reg. Nos. 693,862, 849,399, and others.
For Resilient Vehicle Tires (Int. Cl. 12).
First use Nov. 13, 1967.

SN 329,178. J. C. Penney Company, Inc., New York, N.Y. Filed June 3, 1969.

### EL GATO

For Automobile Tires (Int. Cl. 12).
First use Mar. 20, 1969.

## Class 36 – Musical Instruments and Supplies

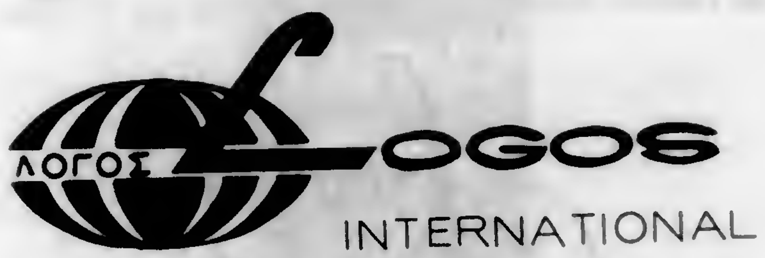
SN 263,421. General Electric Company, Schenectady, N.Y. Filed Jan. 27, 1967.

### SHOW 'N TELL

For Phonoviewers—Namely, a Combination of a Phonograph and a Filmstrip Viewer, Phonograph Records and Associated Filmstrips With Accompanying Jackets Having Printed Explanatory Stories (Int. Cl. 9).

First use Oct. 3, 1964.

SN 285,032. Daniel Malachuk, Plainfield, N.J. Filed Nov. 16, 1967.



The Greek word, appearing on the drawing before the word "Logos," means "word."

For Tape Recorders, Pre-Recorded Magnetic Tapes, and Phonograph Records (Int. Cl. 9).

First use Feb. 15, 1964.

SN 293,366. Education Unlimited Corporation, Inc., Detroit, Mich. Filed Mar. 15, 1968.

### TAPES UNLIMITED

Applicant disclaims the word "Tapes," which is a name for the goods, apart from the mark as shown.

For Educational Recordings of Sound, Such as Prerecorded Magnetic Tapes (Int. Cl. 9).

First use no later than Feb. 1, 1968.

SN 308,181. Arai & Company, Inc., Nakaku, Nagoya, Japan. Filed Sept. 25, 1968.

### ARIA

The word "Aria" means "tune" in the Italian language.

For Guitar, Mandolin and Banjo Patent Heads; Guitar, Mandolin and Ukulele Strings; Guitar Foot Stools; Guitar Capos; Guitar Stands; Guitar Cables; Guitar Straps; Guitar Picks; Guitar Pitch-Pipes; Guitar, Mandolin and Banjo Cases; Guitar Bags; Guitar String Winders; Guitar Pickups; Guitar Bridges; Guitar Tailpieces; Guitar Bridge Pins; Guitar Endpins; Guitar Amplifiers; and Violin, Viola, Cello and Bass Bows (Int. Cl. 15).

First use Apr. 10, 1960; in commerce Apr. 10, 1960.

SN 312,797. Music Mentor, Inc., Newtonville, Mass. Filed Nov. 21, 1968.

### Music Mentor

Applicant disclaims the word "Music" apart from the mark as shown.

For Music Teaching Aids—Namely, Electrically Operated Devices Including a Simulated Keyboard and Used in Conjunction With Sets of Cards Bearing Musical Staff Notations for Training Students in Reading Music and in Musical Theory (Int. Cl. 15).

First use May 1, 1968.

SN 313,893. Bell & Howell Company, Chicago, Ill. Filed Dec. 9, 1968.

### SWING IT

For Tape Recorders and Accessories Therefor, Sold as a Unit in a Kit Consisting of Cassette-Type Tape Reproducer, Carrying Case, Pre-Recorded Cassette, A.C. Adapter, and Earphone (Int. Cl. 9).

First use as early as Nov. 27, 1968.

SN 314,068. Goerlich's, Inc., Toledo, Ohio. Filed Dec. 10, 1968.

### ROAD-RUNNER

For Cartridge Tape Players for Use in Motor Vehicles (Int. Cl. 9).

First use Sept. 24, 1968.

SN 314,191. Columbia Broadcasting System, Inc., New York, N.Y. Filed Dec. 11, 1968.

### ALLEGRO

For Banjos (Int. Cl. 15).
First use in or about August 1966.

SN 314,319. Columbia Broadcasting System, Inc., New York, N.Y. Filed Dec. 12, 1968.

### REDONDO

For Guitars (Int. Cl. 15).
First use in or about September 1968.

SN 323,317. Kenner Products Company, Cincinnati, Ohio. Filed Apr. 1, 1969.

### MY BOOKS THAT TALK

For Phonographs (Int. Cl. 9).
First use on or about Aug. 6, 1968.

SN 323,827. Hugh Laughlin, Washington, D.C. Filed Apr. 7, 1969.

### Alba

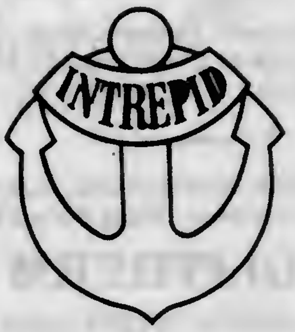
For Phonograph Records (Int. Cl. 9).
First use at least as early as Mar. 27, 1969.

SN 329,946. Capitol Records, Inc., Los Angeles, Calif. Filed June 23, 1969.

### star★line

Owner of Reg. No. 621,325.
For Phonograph Records (Int. Cl. 9).
First use Oct. 31, 1960.

SN 332,356. Mercury Record Productions, Inc., Chicago, Ill. Filed July 11, 1969.



For Phonograph Records (Int. Cl. 9).
First use Apr. 23, 1969.

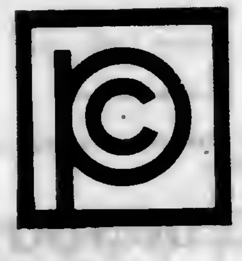
SN 332,366. Radiant Corporation, Morton Grove, Ill. Filed July 11, 1969.

### CASSETTER

For Tape Recorder (Int. Cl. 9).
First use on or about June 4, 1969.

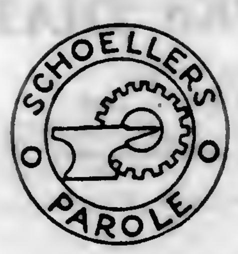
## Class 37—Paper and Stationery

SN 278,413. Papercraft Corporation, Pittsburgh, Pa. Filed Aug. 16, 1967.



For Gift Wrapping Paper, Kraft Wrapping Paper, Wrapping Tissue, and Gift Tags (Int. Cl. 16).
First use Jan. 15, 1966.

SN 309,870. Hugo Albert Schoeller GmbH, Duren, Rhineland, Germany. Filed Oct. 17, 1968.



Owner of German Reg. No. 333,514, dated May 11, 1925.
For Writing, Drawing and Painting Paper, and Cardboard in Sheet Form (Int. Cl. 16).

SN 316,591. Arvey Corporation, Chicago, Ill. Filed Jan. 15, 1969.

**BANKIT**

For Envelopes (Int. Cl. 16).
First use in or about July 1955.

SN 318,205. Lensclean Inc., New York, N.Y. Filed Feb. 3, 1969.

**SMOOTHIES**

For Disposable Paper Facial Tissue for Blotting Oil From the Skin (Int. Cl. 16).
First use Mar. 14, 1968.

SN 319,181. New York Loose Leaf Corp., Bronx, N.Y. Filed Feb. 14, 1969.

**MOD MATES**

For Looseleaf Binders, Stenographers' Note Books, and Composition Books, Sold as a Unit (Int. Cl. 16).
First use Nov. 15, 1968.

SN 329,799. Folienfabrik Forchheim G.m.b.H., Forchheim, Upper Franconia, Germany. Filed June 12, 1969.

**FOLITHERM**

Owner of German Reg. No. 791,260, dated July 17, 1964.
For Plastic Sheeting for Use Primarily as Wrapping and Packaging Material (Int. Cl. 16).

SN 329,800. Folienfabrik Forchheim G.m.b.H., Forchheim, Upper Franconia, Germany. Filed June 12, 1969.

**AGALAN**

Owner of German Reg. No. 784,831, dated Mar. 31, 1964.
For Plastic Sheeting for Use Primarily as Wrapping and Packaging Material (Int. Cl. 16).

SN 331,578. Super Food Services, Inc., Dayton, Ohio. Filed July 2, 1969.

**FAME**

For Notebook Filler Paper, Typing Paper, Writing Tablets and Notebooks (Int. Cl. 16).
First use June 11, 1969.

## Class 38—Prints and Publications

SN 278,013. Magazine Management Co., Inc., d.b.a. Marvel Comics Group, New York, N.Y., assignee, by mesne assignment, of Magazine Management Company, d.b.a. Marvel Comics Group, New York, N.Y. Filed Aug. 10, 1967.

**THE AMAZING SPIDER-MAN**

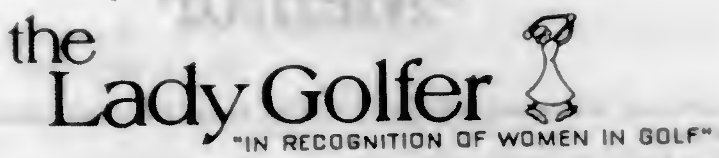
For Publications, Particularly Comic Books and Magazines and Stories in Illustrated Form (Int. Cl. 16).
First use on or about Oct. 29, 1962.

SN 306,013. Board of Publication of the Methodist Church, Inc., d.b.a. Graded Press, Nashville, Tenn. Filed Aug. 22, 1968.

**WEEK END PAC**

For Set of Printed Booklets and Leaflets Enclosed in a Wrapper (Int. Cl. 16).
First use May 7, 1968.

SN 310,135. Seldal Publications, Inc., Tucson, Ariz. Filed Oct. 21, 1968.


the Lady Golfer
"IN RECOGNITION OF WOMEN IN GOLF"

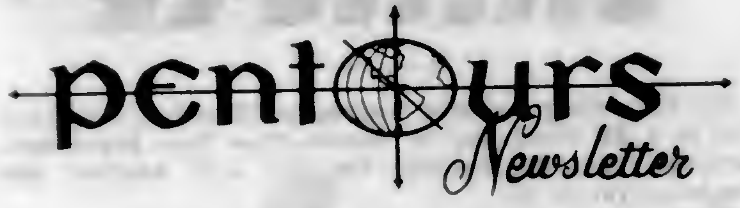
For Periodically Issued Magazine (Int. Cl. 16).
First use Apr. 1, 1968.

SN 316,422. Federal Postal Employees Association, Denver, Colo. Filed Jan. 13, 1969.

**PEN**

For Monthly Magazine (Int. Cl. 16).
First use on or about Aug. 9, 1945.

SN 316,423. Federal Postal Employees Association, Denver, Colo. Filed Jan. 13, 1969.



For Quarterly Publication in the Nature of a Newsletter (Int. Cl. 16).
First use on or about Sept. 18, 1968.

SN 318,095. David C. Cook Foundation, Elgin, Ill. Filed Jan. 31, 1969.

INTERLIT
DAVID C COOK FOUNDATION NEWS

For Quarterly News Bulletin (Int. Cl. 16).
First use June 1, 1964.

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SN 318,840. Time Pattern Research Institute Incorporated, Valley Stream, N.Y. Filed Feb. 10, 1969.

**TIME PATTERN REPORT**

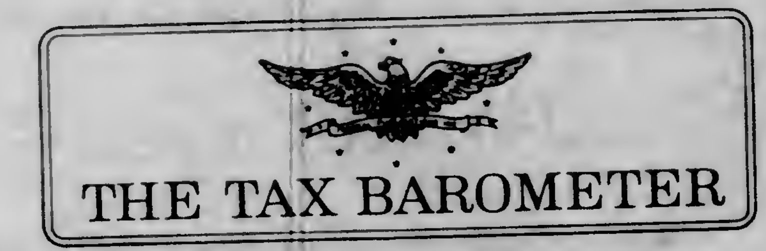
For Computerized Horoscopes (Int. Cl. 16).
First use Sept. 15, 1967.

SN 320,439. Continental Illinois National Bank and Trust Company of Chicago, Chicago, Ill. Filed Mar. 3, 1969.

**COBAND**

For Weekly Digest of Current Financial Articles (Int. Cl. 16).
First use as early as December 1966.

SN 322,057. Federal Publications Inc., Washington, D.C. Filed Mar. 18, 1969.



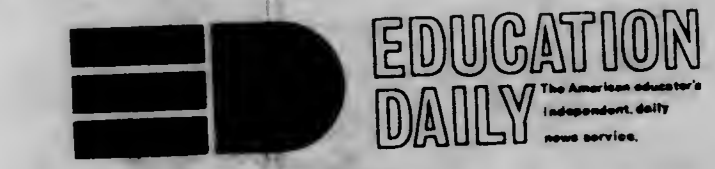
The terminology "Inc." and the word "Tax" are disclaimed apart from the mark as shown. Owner of Reg. Nos. 534,390 and 765,526.
For Periodical Newsletter Containing Digests of Decisions and Other Information Relative to Federal Taxes (Int. Cl. 16).
First use Mar. 14, 1969.

SN 323,614. Young World Corporation, Washington, D.C. Filed Apr. 3, 1969.

**RAPPORT**

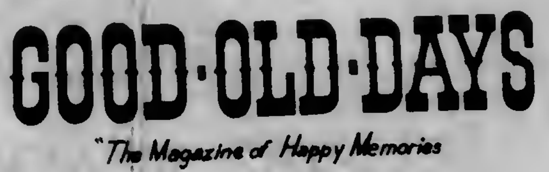
For Magazine (Int. Cl. 16).
First use Mar. 26, 1969.

SN 324,037. Capitol Publications, Inc., Washington, D.C. Filed Apr. 9, 1969.


EDUCATION
DAILY
The American educator's independent, daily news service.

Applicant disclaims exclusive right to use the words "Education Daily" and "The American Educator's Independent Daily News Service" apart from the mark as shown.
For Newsletters (Int. Cl. 16).
First use Sept. 30, 1968.

SN 324,273. Tower Press, Inc., Danvers, Mass. Filed Apr. 14, 1969.


GOOD·OLD·DAYS
"The Magazine of Happy Memories

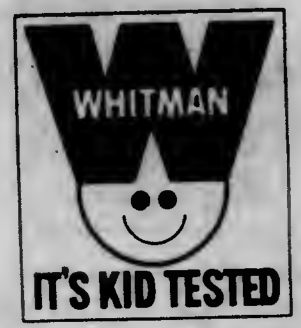
Applicant disclaims the word "Magazine" apart from the mark as shown, reserving to itself any common law rights which it may otherwise have. Owner of Reg. No. 815,011.
For Monthly Magazine (Int. Cl. 16).
First use December 1966.

SN 324,725. Koscot Interplanetary, Inc., Orlando, Fla. Filed Apr. 16, 1969.

**THE HAPPY HEART**

For Periodical Newsletter (Int. Cl. 16).
First use at least as early as September 1968.

SN 328,378. Western Publishing Company, Inc., Racine, Wis. Filed May 26, 1969.



Applicant disclaims its exclusive rights in that component of the mark comprising the words or slogan "It's Kid Tested" apart from the mark shown, but does not waive any of its common law rights therein. Owner of Reg. Nos. 697,472, 865,788, and others.
For Children's Coloring Books (Int. Cl. 16).
First use May 1, 1969; at least six years earlier as to the word "Whitman."

SN 329,372. Metro-Goldwyn-Mayer Inc., New York, N.Y. Filed June 6, 1969.

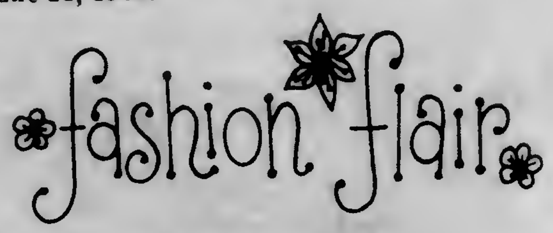
**MGM**

Owner of Reg. Nos. 231,203 and 588,752.
For Motion Pictures With or Without Sound Components (Int. Cl. 9).
First use on or before July 25, 1924.

SN 329,590. Armstrong Cork Company, Lancaster, Pa. Filed June 10, 1969.

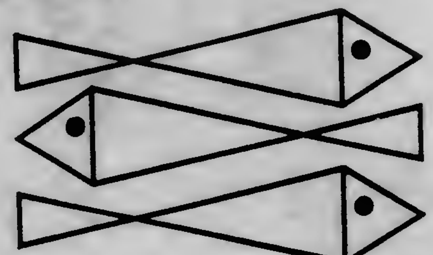
For House Organs Published Periodically (Int. Cl. 16).
First use Dec. 1, 1954.

SN 329,718. Hallmark Cards, Incorporated, Kansas City, Mo. June 11, 1969.



For Greeting Cards (Int. Cl. 16).
First use May 27, 1968.

SN 329,968. Farrar, Straus & Giroux, Inc., New York, N.Y. Filed June 13, 1969.



For Books (Int. Cl. 16).
First use January 1955.

SN 330,220. The Tribune Publishing Co., Oakland, Calif. Filed June 16, 1969.

### Oakland Tribune

For Newspaper (Int. Cl. 16).
First use Jan. 6, 1967.

SN 330,832. Geriatrics Digest, Inc., Northfield, Ill. Filed June 24, 1969.

### GERIATRICS DIGEST

Owner of Reg. No. 851,228.
For Perodical Magazine (Int. Cl. 16).
First use July 1, 1963.

SN 330,946. Newhall Newspapers Incorporated, Newhall, Calif. Filed June 25, 1969.

### SAN FRANCISCO THE SIGNAL

For Newspaper Published Weekly (Int. Cl. 16).
First use May 28, 1969.

SN 331,247. Southern States Cooperative, Inc., Richmond, Va. Filed June 27, 1969.

### PIG-OTEL

Owner of Reg. No. 794,829.
For Blue Prints and Descriptive Literature for Hog Pens (Int. Cl. 16).
First use June 12, 1969.

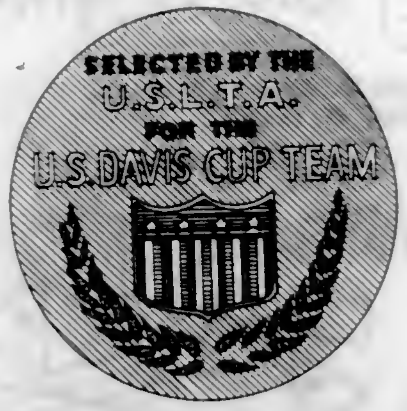
## Class 39 — Clothing

SN 283,591. Phillips-Van Heusen Corporation, New York, N.Y. Filed Oct. 27, 1967.

### GOLDEN SIERRA

For Men's and Boys' Shirts, Cuffs, Collars, Pajamas, Sports Shirts, Underwear, Knit Shirts and Slacks and Sweaters (Int. Cl. 25).
First use Aug. 2, 1967.

SN 297,111. United States Lawn Tennis Association, New York, N.Y. Filed May 1, 1968.



Color is claimed as part of the mark and the drawing is lined for the colors red, green, yellow, and blue.
For Men's Shirts, Shorts, Jackets, Hats, and Men's and Boys' Sweaters (Int. Cl. 25).
First use Oct. 31, 1967, on shirts.

SN 308,844. Gingiss Formalwear, Inc., Chicago, Ill. Filed Oct. 4, 1968.

### FORMALGUILD

For Tuxedos, Tuxedo Trousers, Dinner Jackets, Cutaways, Strollers, Full Dress Suits, Clergymen Suits, Eton Jackets, Blazers, Sport Coats, Shirts, Topcoats, and Bar Vests (Int. Cl. 25).
First use in or about September 1948.

SN 318,829. S.R.L. Manufacture de Blainville, Paris, France. Filed Feb. 10, 1969.

### CLARENCE DIFFUSION

Priority claimed under Sec. 44(d) on French Reg. No. 752,034, dated Dec. 6, 1968.
For Clothing, in Particular, Rainwear, and Including Boots, Shoes, and Slippers (Int. Cl. 25).

SN 323,957. Jaymar-Ruby, Inc., Michigan City, Ind. Filed Apr. 8, 1969.

### A JAYMAR SLACK

Applicant disclaims exclusive right to the words "A" and "Slack" apart from the mark as shown. Owner of Reg. Nos. 546,057 and 729,494.
For Men's and Boys' Trousers (Int. Cl. 25).
First use Sept. 30, 1966; May 15, 1950, as to "Jaymar."

SN 324,184. Ely & Walker, Inc., Memphis, Tenn. Filed Apr. 10, 1969.

### CINDERELLA

Owner of Reg. Nos. 71,420 and 565,167.
For Gloves, Hosiery, and Swimwear (Int. Cl. 25).
First use Jan. 1, 1905.

SN 324,199. Jay Shoe Mfg. Co., Boston, Mass. Filed Apr. 10, 1969.

### DELLAGAMO

For Women's Shoes (Int. Cl. 25).
First use April 1949.

SN 325,283. The Braford Corporation, Studio City, Calif. Filed Apr. 23, 1969.

### Touché

For Brassieres; and Women's Undergarments—Namely, Girdles and Underpants, and Garter Belts (Int. Cl. 25).
First use Mar. 3, 1969.

SN 326,420. Palm Beach Company, Portland, Maine. Filed May 5, 1969.

### COUNTRY WEAVE

Applicant disclaims the word "Weave" apart from the mark shown.
For Men's and Boys' Suits, Slacks, Coats, Trousers, and Sport Coats (Int. Cl. 25).
First use Nov. 4, 1968.

SN 326,421. Palm Beach Company, Portland, Maine. Filed May 5, 1969.

### SOUTHWEAVE

For Men's and Boys' Suits, Slacks, Coats, Trousers, and Sport Coats (Int. Cl. 25).
First use Oct. 21, 1968.

SN 326,776. La Velle Corporation, Gainesville, Ga. Filed May 8, 1969.

### La Velle

Owner of Reg. No. 806,543.
For Make-Up Capes, Make-Up Aprons, Shower Caps, Rain Bonnets, Wind Bonnets, and Pin Curl Bonnets (Int. Cl. 25).
First use Jan. 28, 1964.

SN 327,428. Triton Manufacturing Company, Inc., Fall River, Mass. Filed May 15, 1969.

### TRITON

Owner of Reg. No. 411,870.
For Men's and Boys' Suits and Sport Coats (Int. Cl. 25).
First use Aug. 31, 1962.

SN 328,548. Norman Hilton, New York, N.Y. Filed May 28, 1969.

### NORMAN HILTON

For Men's Suits, Sport Coats, Jackets, Slacks, Neckties, Topcoats, and Sweaters (Int. Cl. 25).
First use at least as early as Mar. 25, 1948.

SN 329,412. Kops Bros., Inc., New York, N.Y. Filed June 9, 1969.

### STOP GAP

For Women's Foundation Garments (Int. Cl. 25).
First use June 3, 1969.

SN 331,694. Horse of a Different Color, Ltd., Chicago, Ill. Filed July 3, 1969.

### HORSE OF A DIFFERENT COLOR

For Suits, Dresses, Sweaters, Vests, Jackets, Skirts, Blouses, Coats, Hats, Boots, Slippers, Shoes, Sandals, Belts, Scarves, and Feather Boas (Int. Cl. 25).
First use in or about September 1963.

## Class 40 — Fancy Goods, Furnishings, and Notions

SN 308,833. Wig Villa Imports, Huntsville, Ala. Filed Oct. 3, 1968.

### Vanity Fair

For Wigs, Falls and Wiglets (Int. Cl. 26).
First use Feb. 25, 1968.

SN 319,353. Paragon Hair Goods, Ltd., New York, N.Y. Filed Feb. 17, 1969.

### FASH-IN-HAIR, "THE IN HAIR"

The word "Hair" is disclaimed apart from the mark as shown.
For Wigs (Int. Cl. 26).
First use Feb. 1, 1968.

SN 323,270. David and David, Inc., Long Island City, N.Y. Filed Apr. 1, 1969.

### S'WIG

Owner of Reg. No. 790,429.
For Wigs (Int. Cl. 26).
First use Mar. 15, 1969.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 297,211. The Pantasote Company of New York, Inc., New York, N.Y. Filed May 2, 1968.

### PANTA-PRODUCTS

For Vinyl and Resin-Base Decorative Fabrics (Int. Cl. 24).
First use November 1967.

SN 327,303. Staff Supermarket Associates, Inc., Jericho, N.Y. Filed May 14, 1969.

### STAFF

Owner of Reg. Nos. 844,124, 866,624, and others.
For Dish Cloths, Kitchen Towels, Wash Cloths, and Utility Cloths (Int. Cl. 24).
First use Oct. 1, 1966.

SN 329,007. Henry Pollak Inc., New York, N.Y. Filed June 3, 1969.

### ANIMA-BLEND

For Pile Fabric Piece Goods (Int. Cl. 24).
First use Apr. 29, 1969.

## Class 44 — Dental, Medical, and Surgical Appliances

SN 303,348. Sybron Corporation, Rochester, N.Y., by change of name from Ritter Pfaudler Corporation, Rochester, N.Y. Filed July 22, 1968.

### Blendánt

For Resinous Tooth Filling Material (Int. Cl. 5).
First use on or about Mar. 28, 1968.

SN 318,936. Thomas Industries Inc., Louisville, Ky. Filed Feb. 12, 1969.

### MEDI-PUMP

For Pneumatic Pressure Pumps and Pneumatic Vacuum Pumps, and Combinations Thereof, for Medical Uses (Int. Cl. 10).
First use May 1962.

## Class 45 – Soft Drinks and Carbonated Waters

SN 313,623. Vernors Inc., Detroit, Mich. Filed Dec. 4, 1968.

### ARCADIA

For Ginger Ale (Int. Cl. 32).
First use June 21, 1968.

SN 316,786. Graf's Beverages, Inc., Milwaukee, Wis. Filed Jan. 16, 1969.

### GRAN'PA GRAF'S

Owner of Reg. No. 406,221.
For Soft Drinks (Int. Cl. 32).
First use in or about May 1944.

SN 322,907. The Pillsbury Company, Minneapolis, Minn. Filed Mar. 26, 1969.

### CAPTAIN BLACK CHERRY

Applicant disclaims the words "Black Cherry" when used separate and apart from the mark as shown.
For Powders for Preparing Black Cherry Flavored Soft Drinks (Int. Cl. 32).
First use Feb. 25, 1969.

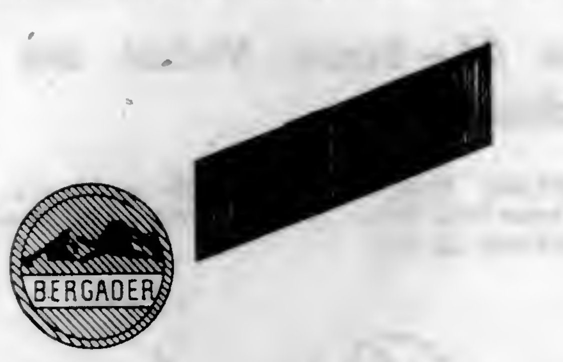
## Class 46 – Foods and Ingredients of Foods

SN 225,040. Lever Brothers Company, New York, N.Y. Filed Aug. 5, 1965.

### MAGI-CAL

For Imitation Margarine (Int. Cl. 29).
First use Oct. 26, 1964.

SN 255,526. Firma Basil Weixler Kommanditgesellschaft, Traunstein, Upper Bavaria, Germany. Filed Sept. 30, 1966.



The drawing is lined for red and green, but no claim is made for color. The word "Bianco" is disclaimed apart from the mark as shown. The word "Bergader" is German for "mountain vein" and the word "Bianco" is Italian for "white."
For Dairy Products—Namely, Cheese (Int. Cl. 29).
First use January 1959; in commerce April 1964.

SN 262,395. Beatrice Foods Co., Chicago, Ill. Filed Jan. 12, 1967.

### ZOOPER DOOPER

Owner of Reg. Nos. 56,820, 840,946, and others.
For All Forms and Combinations of Ice Cream, Ice Milk, Mellorine, Flavored Water Ices, and Sherbet (Int. Cl. 30).
First use Dec. 13, 1966.

SN 283,095. Carnation Company, Los Angeles, Calif. Filed Oct. 23, 1967.

### TASTY RIPE

For Canned Fruits (Int. Cl. 29).
First use at least as early as 1947.

SN 286,892. Pet Incorporated, St. Louis, Mo., assignee of Aunt Fanny's Baking Co., Atlanta, Ga. Filed Dec. 14, 1967.

### BROWNIE NUT
### TWIRLS

Applicant disclaims exclusive right in "Brownie Nut," apart from the mark as shown, but waives no common law rights therein. Owner of Reg. Nos. 767,652 and 811,425.
For Sweet Rolls (Int. Cl. 30).
First use on or about Nov. 21, 1967.

SN 288,951. Haco A.G., d.b.a. Haco S.A. and Haco Ltd., Gumligen, near Bern, Switzerland. Filed Jan. 16, 1968.

### Haco•H

Owner of Swiss Reg. No. 219,876, dated July 28, 1966; and U.S. Reg. No. 196,636.
For Meat Extracts; Coffee Extracts; Powdered and Preserved Eggs; Dry Rice Dishes—Namely, Spanish Rice and Curry Rice; Dehydrated Soup Mixes; Concentrated Bouillon Either in Cube, Paste or Liquid Form—Namely, Beef, Chicken, Clear Soup, and Clear Vegetable Soup; Sauces—Namely, Beef Gravy, Thickened Beef Gravy, Curry, Hunter's (Mushroom), White, and Cream; and Spices (Int. Cls. 29 and 30).

SN 295,918. Costa Ice Cream Company, Woodbridge, N.J. Filed Apr. 18, 1968.

### COFFEE MAID

The word "Coffee" is disclaimed apart from the mark as shown.
For Non-Dairy Coffee Lightener (Int. Cl. 29).
First use Feb. 13, 1968.

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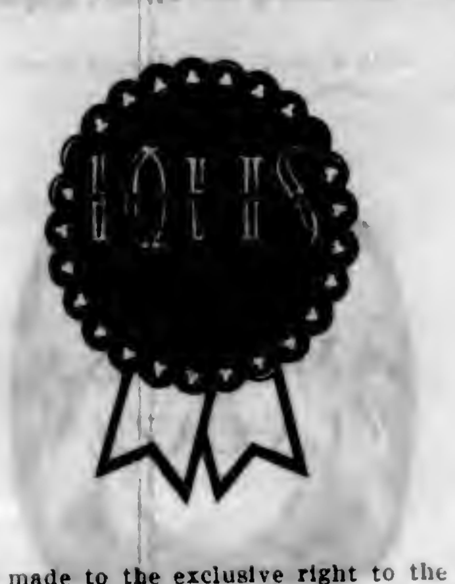
SN 303,998. Jerrico, Inc., Lexington, Ky. Filed July 31, 1968.



No claim is made to the exclusive right to the use of the words "Prize Sandwiches" separate and apart from the mark as shown.
For Sandwiches, Salads, Special Sauces for Meats and Sandwiches; and Food Beverages—Namely, Milk Shakes and Cider (Int. Cls. 29, 30, 31, and 33).
First use May 20, 1968.

SN 305,849. Neumann-Buslee & Wolfe, Inc., Des Plaines, Ill. Filed Aug. 23, 1968.

### KASKA

For Concentrated Citrus Oils for Food Purposes (Int. Cl. 30).
First use July 24, 1933.

SN 314,743. Martha White Foods, Inc., d.b.a. Hay Market Mills, Nashville, Tenn. Filed Dec. 17, 1968.

### TIP-TOP

Owner of Reg. Nos. 555,354, 598,329, and others.
For Corn Meal, Corn Meal Mix, and Flour (Int. Cl. 30).
First use Nov. 1, 1910.

SN 315,013. Mead Johnson & Company, Evansville, Ind. Filed Dec. 23, 1968.

### SIMPLEGGS

For Powdered Dietary Food Containing Egg Whites (Int. Cl. 5).
First use on or prior to Dec. 10, 1968.

SN 315,080. Kaye Frozen Foods, d.b.a. Suzy-K Foods Co., Los Angeles, Calif. Filed Dec. 23, 1968.

### GOLDEN LAKE

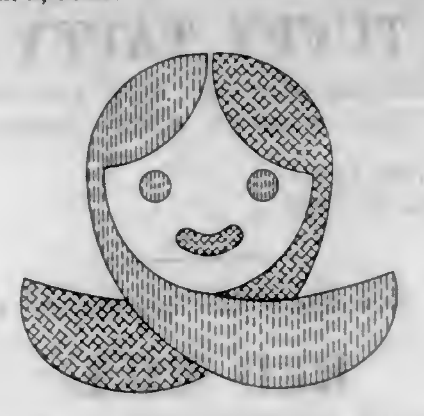
For Frozen Vegetables, Canned Vegetables, Frozen Fruits, Canned Fruits, Frozen Fruit Pies, Frozen Cream Pies, and Frozen Dinners Whose Principal Elements Are Either Poultry, Fish or Meat (Int. Cls. 29 and 30).
First use Dec. 5, 1967.

SN 315,394. Di Mare Brothers, Inc., Boston, Mass. Filed Dec. 30, 1968.

### NEW ENGLAND FARMS

For Fresh Apples, Oranges, Grapefruit, Lemons, Limes, Garlic, Green Peppers, Onions, Potatoes, Tomatoes, Apricots, Prunes, and Popping Corn (Int. Cl. 31).
First use January 1960.

SN 315,566. Interstate Bakeries Corporation, Kansas City, Mo. Filed Jan. 2, 1969.



The drawing is lined for purple and orange, but no claim is made as to specific colors.
For Bakery Products, Specifically, Cakes, Rolls, Donuts, French Pastries, and Cinnamon Bread (Int. Cl. 30).
First use Mar. 19, 1968.

SN 316,780. Etablissements Siclet S.A., Gouaix, Seine-et-Marne, France. Filed Jan. 16, 1969.

### NEC PLUS ULTRA

"Nec Plus Ultra" is a Latent expression meaning "nothing beyond."
For Cheese, Including Pasteurized Processed Cheese, Flavored and Spiced Cheese (Int. Cl. 29).
First use Jan. 31, 1963; in commerce Jan. 21, 1966.

SN 316,858. B/G Foods, Inc., Chicago, Ill. Filed Jan. 17, 1969.

### DUTCHLAND

For Bread, Ice Cream, Custard, Ice Milk, Butter, Fresh Eggs, Fluid Fresh Milk, Potato Chips; and Take-Out Cooked Foods—Namely, Chicken, Fish, Shrimp, Spareribs, Onions, and Potatoes (Int. Cls. 29 and 30).
First use about December 1943.

SN 319,930. Midland Food Laboratories, Inc., Kansas City, Kans. Filed Feb. 24, 1969.

The Bread with the Foreign Accent

### 'taliano

The rectangular design shown in the drawing is only for the purpose of background for showing the words "The Bread With the Foreign Accent." Applicant disclaims the exclusive right to the use of the word "Bread" apart from the mark as shown. Owner of Reg. No. 692,156.
For Bread (Int. Cl. 30).
First use on or about Dec. 23, 1968.

SN 320,846. North Pacific Canners & Packers, Inc., Portland, Oreg. Filed Mar. 5, 1969.

### COB CORN SHORTIES

Applicant disclaims the words "Cob Corn" apart from the mark as shown, and without prejudice to the applicant's rights therein which may have been established or which might be established in the future.
For Frozen Corn on the Cob (Int. Cl. 29).
First use Oct. 17, 1968.

SN 320,918. Philip Morris Incorporated, New York, N.Y. Filed Mar. 6, 1969.

**TUFFY TAFFY**

Applicant disclaims the word "Taffy" apart from the mark as shown, without prejudice to any common law rights therein.
For Candy (Int. Cl. 30).
First use Feb. 17, 1969.

SN 323,028. Southgate Foods, Inc., Norfolk, Va. Filed Mar. 27, 1969.

**RED MILL**

For Spanish Olives, Maraschino Cherries, Prepared Mustard, Vinegar, Dried Beans, and In-Shell Nuts (Int. Cls. 29, 30, and 31).
First use 1937.

SN 323,611. Wajay Bakery, Inc., Miami, Fla. Filed Apr. 3, 1969.

**WAJAY**

For Crackers, Breads, and Biscuits (Int. Cl. 30).
First use Sept. 13, 1961.

SN 324,632. Beri's, Inc., Jacksonville, Fla. Filed Apr. 16, 1969.

**BERI-KITCHENS**

For Ice Cream (Int. Cl. 30).
First use Apr. 9, 1969.

SN 326,894. Malone & Hyde, Inc., Memphis, Tenn. Filed May 9, 1969.

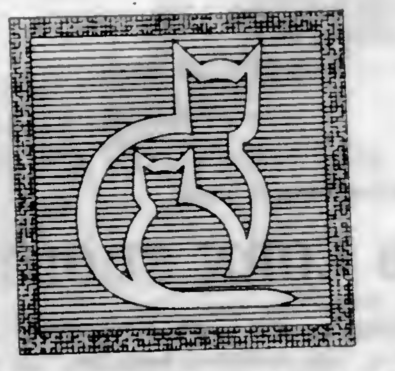
Owner of Reg. Nos. 792,669, 858,036, and others.
For Cheese (Int. Cl. 29).
First use Feb. 21, 1969.

SN 330,327. Conwood Corporation, Memphis, Tenn. Filed June 18, 1969.

**VINTAGES LTD.**

For Candy (Int. Cl. 30).
First use June 9, 1969.

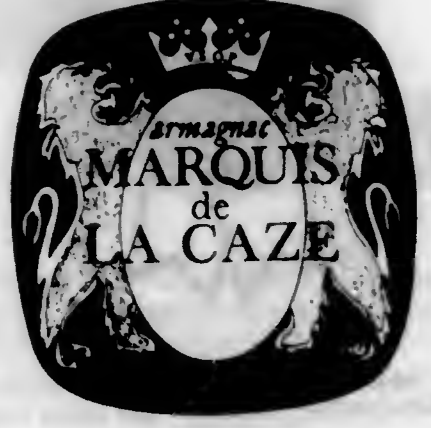
SN 330,999. Ralston Purina Company, St. Louis, Mo. Filed June 26, 1969.



The drawing is lined for the colors blue and gold, but no claim is made to color (Int. Cl. 31).
For Cat Food (Int. Cl. 31).
First use June 2, 1969.

## Class 49 — Distilled Alcoholic Liquors

SN 289,390. Jean Etchart, Castelnau-d'Auzan, Gers, France. Filed Sept. 19, 1969.



"Marquis de la Caze" was a historical person who died in 1755. No exclusive claim is made to the words "Armagnac" and "V.S.O.P." apart from the mark as shown.
For Armagnac (Int. Cl. 33).
First use at least as early as Jan. 1, 1967; in commerce Jan. 1, 1967.

## Class 50 — Merchandise Not Otherwise Classified

SN 308,297. Homewood Industries, Inc., Homewood, Ill. Filed Sept. 26, 1968.

**INSTA-BOND**

For Adhesive Coated End Caps and Banding Strips for Laminated Products Used for Decoration of Cabinets, Counters, and Other Types of Furniture (Int. Cl. 20).
First use Aug. 5, 1968.

SN 311,969. Zapata Industries, Inc., New York, N.Y. Filed Nov. 12, 1968.

**ZAPATA**

For Enclosure Caps for Containers, Such as Bottles and Jars (Int. Cl. 20).
First use Oct. 17, 1968.

SN 312,803. Pictorial Productions, Inc., Mount Vernon, N.Y. Filed Nov. 21, 1968.

**P.P.I.**

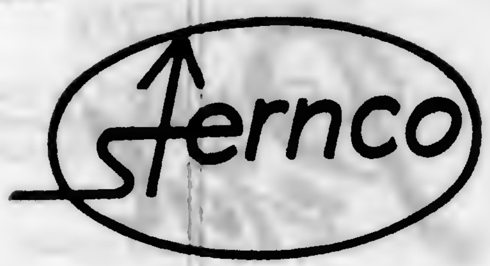
For Signs and Pictorial Displays for Use by Others, for Advertising, Business, and Educational Purposes (Int. Cl. 20).
First use Oct. 11, 1968.

SN 316,977. Bielawski Enterprises, Inc., Yellville, Ark. Filed Jan. 21, 1969.

**MOTHER'S CUPBOARD**

For Plaster Wall Plaques, Statues, and Figurines (Int. Cl. 20).
First use Aug. 20, 1967.

SN 319,411. Sternco Industries, Inc., Harrison, N.J. Filed Feb. 18, 1969.



Owner of Reg. Nos. 858,724, 859,910, and 859,920.
For Terrariums (Int. Cl. 16).
First use Dec. 19, 1968.

SN 320,296. U.S. Industries, Inc., New York, N.Y. Filed Feb. 27, 1969.

**CHIK-EZE**

For Poultry Cages (Int. Cl. 21).
First use on or about July 26, 1968.

SN 323,983. Western Litho Plate & Supply Co., St. Louis, Mo. Filed Apr. 8, 1969.

**THRIFT**

For Lithographic Plates (Int. Cl. 16).
First use Aug. 1, 1963.

SN 323,984. Western Litho Plate & Supply Co., St. Louis, Mo. Filed Apr. 8, 1969.

**GRANITE**

For Lithographic Plates (Int. Cl. 16).
First use Mar. 1, 1965.

SN 325,728. Paul F. Del Conte, d.b.a. Del Conte Enterprises, Miami Springs, Fla. Filed Apr. 28, 1969.

**IT'S . . . FLOWER TIME**

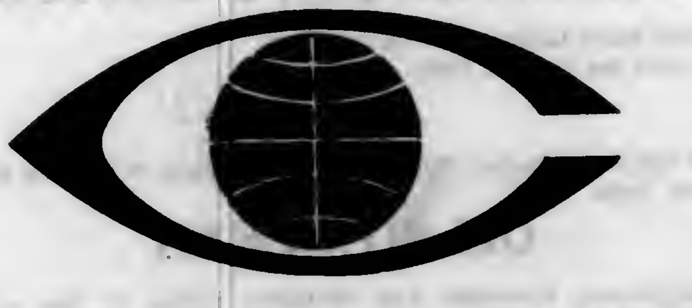
For Paper Flowers (Int. Cl. 26).
First use Jan. 21, 1969.

SN 326,616. American Scenic Company, Inc., Greenville, S.C. Filed May 7, 1969.

**INSTA-KEY**

For Backdrop for Television, Movie or Theatrical Productions (Int. Cl. 16).
First use Sept. 16, 1968.

SN 327,597. Colite Industries, Inc., West Columbia, S.C. Filed May 19, 1969.



For Outdoor Advertising Sign Letters, Illuminated and Non-Illuminated (Int. Cl. 16).
First use on or before Jan. 10, 1969.

SN 329,199. General Plastics Corporation, Marion, Ind. Filed June 5, 1969.

**PINE GLO**

For Artificial Christmas Garland (Int. Cl. 28).
First use Mar. 19, 1969.

SN 332,586. La Pine Scientific Company, Chicago, Ill. Filed July 15, 1969.

**BOTANARIUM**

For Chamber for Growing Plants (Int. Cl. 11).
First use June 17, 1969.

## Class 51 — Cosmetics and Toilet Preparations

SN 290,479. Glenn A. Eaton, d.b.a. Parfums Duvelle, Portland, Oreg. Filed Feb. 7, 1968.

**LE GUI**

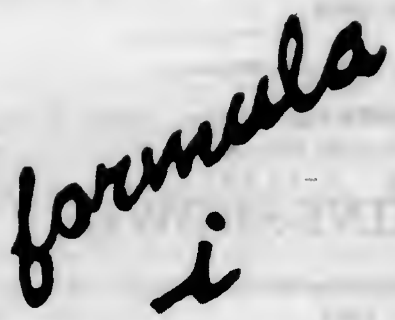
The term "Le Gui" is translated into English to mean "the mistletoe." Owner of Reg. No. 238,850.
For Perfume, Cologne, Toilet Water, Sachet, Bath Powder, and Toiletry Sets Consisting of Two or More of the Aforementioned Goods (Int. Cl. 3).
First use in or about February 1927.

SN 291,750. Johnson Products Co., Inc., Chicago, Ill. Filed Feb. 23, 1968.

**AFRO-SHEEN**

For Hair Conditioner, Hair Spray and Hair Dressing (Int. Cl. 3).
First use Dec. 21, 1967.

SN 294,287. Louis J. Kieran, d.b.a. Tru-Lee Yours Cosmetic Company, New York, N.Y. Filed Mar. 27, 1968.



Applicant disclaims the word "Formula" apart from the mark as shown.
For Eye Shadow (Int. Cl. 3).
First use March 1964.

SN 295,214. George J. Basciani, New York, N.Y. Filed Apr. 9, 1968.

**WALL STREET**

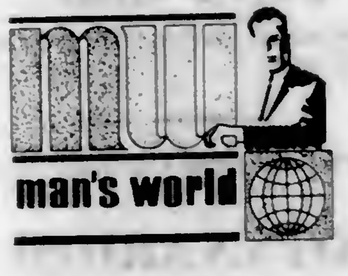
Owner of Reg. No. 434,422.
For Shaving Lotion and Eau de Cologne (Int. Cl. 3).
First use August 1939.

SN 297,290. Noble Harris, Sr., d.b.a. Thel Enterprises, Fort Lauderdale, Fla. Filed May 3, 1968.

**AFRO-AM NATURAL**

For Hair Spray (Int. Cl. 3).
First use Jan. 15, 1968.

SN 299,243. Man's World Hairpieces, Inc., Miami, Fla. Filed May 28, 1968.



Owner of Reg. Nos. 817,444 and 835,530.
For Hair Spray and Hair Conditioner for Men's Hairpieces (Int. Cl. 3).
First use May 17, 1966.

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SN 299,495. Roux Laboratories, Inc., New York, N.Y. Filed May 31, 1968.

**So Silky**

Owner of Reg. No. 784,933.
For Hair Colorings, Hair Rinse and Hair Bleach (Int. Cl. 3).
First use July 24, 1963, on hair rinse.

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SN 300,936. Head-To-Toe Products, Rahway, N.J., assignee of David Jaffe, Scotch Plains, N.J. Filed June 20, 1968.

**MINI-VALET**

For Personal Deodorant (Int. Cl. 5).
First use May 31, 1968.

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SN 300,937. Head-To-Toe Products, Rahway, N.J., assignee of David Jaffe, Scotch Plains, N.J. Filed June 20, 1968.

**MINI-SHOWER**

For Perfume and After Shower Lotion (Int. Cl. 3).
First use May 31, 1968.

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SN 305,322. Micro-Therapeutics, Inc., New York, N.Y., assignee of Geri Creme, Inc., New York, N.Y. Filed Aug. 16, 1968.

**DERMO-PEDIC**

For Foot Lotion for Use as a Deodorant and Anti-Perspirant (Int. Cl. 3).
First use May 14, 1968.

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SN 307,974. Christian Dior Perfumes Corporation, New York, N.Y. Filed Sept. 23, 1968.

**DIOR**

Owner of Reg. Nos. 573,430, 771,600, and others.
For Nail Preparations—Namely, Nail Cream, Nail Polish, Nail Coating, and Cuticle Oil; and Lipsticks (Int. Cl. 3).
First use in 1962.

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SN 308,883. Flower Lane Cosmetics, Ltd., Brooklyn, N.Y. Filed Oct. 4, 1968.

For Nail Polish (Int. Cl. 3).
First use Sept. 12, 1968.

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SN 317,914. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Jan. 30, 1969.

**AKIMBO**

For Heel and Elbow Cosmetic Treatment Cream (Int. Cl. 3).
First use Jan. 9, 1969.

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SN 319,563. Armour-Dial, Inc., Chicago, Ill. Filed Feb. 19, 1969.

**CREED**

Owner of Reg. No. 688,142.
For Personal Deodorant (Int. Cl. 5).
First use on or prior to Dec. 23, 1968.

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SN 320,835. Merle Norman Cosmetics, Inc., Los Angeles, Calif. Filed Mar. 5, 1969.

**BEAUTIFUL YOU**

For Cosmetic Assortment Box Containing Cold Cream, Powder Base, Facial Lotion, Skin Freshener, Fluid Eye Shadow, Moisturizer, and Face Powder (Int. Cl. 3).
First use May 29, 1967.

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SN 320,985. Volos, Ltd., Baltimore, Md. Filed Mar. 6, 1969.

For Hair Grooming Preparation for Men (Int. Cl. 3).
First use Jan. 21, 1969.

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SN 321,186. Bristol-Myers Company, New York, N.Y. Filed Mar. 10, 1969.

**PEDIATRICIAN'S CHOICE**

For Baby Lotion (Int. Cl. 3).
First use Dec. 16, 1968.

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SN 322,381. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 21, 1969.

**OH SO CLEAN**

Applicant disclaims any exclusive rights to the word "Clean" part from the mark as shown.
For Mouthwash and Breath Freshener (Int. Cl. 3).
First use Nov. 30, 1967.

SN 323,200. Majestic Drug Co., Inc., Bronx, N.Y. Filed Apr. 1, 1969.

**DYNAVITE**

Owner of Reg. No. 685,018.
For Hair Dressing Preparation (Int. Cl. 3).
First use Mar. 12, 1969.

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SN 323,920. Protege Corporation, Skokie, Ill. Filed Apr. 8, 1969.

**PROPER**

For Hair Setting Preparation and Hair Conditioner (Int. Cl. 3).
First use on or about Jan. 15, 1969.

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SN 325,750. Gold Medal Hair Products, Inc., Hempstead, N.Y. Filed Apr. 28, 1969.

**BE-GONE**

Owner of Reg. No. 510,416.
For Skin and Hair Cosmetics—Namely, Skin Lotions, Moisturizing Creams, Hair Pomade, Hair Coloring Preparation, and Skin Cosmetic Bleach (Int. Cl. 3).
First use on or about Feb. 20, 1951.

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## Class 52 — Detergents and Soaps

SN 271,711. Jay-Kay Distributors, Inc., State College, Pa. Filed May 17, 1967.

For Wax and Dressing Removers, Terrazzo and Ceramic Surface Scum Remover and Renovator, Cleaning Concentrates for Use in Floor Scrubbing Machines, Spray Cleaners and Degreasers for Use on Floors, Rug and Upholstery Cleaners, All Purpose Synthetic Detergent Cleaners and Scrub Soaps (Int. Cl. 3).
First use September 1936.

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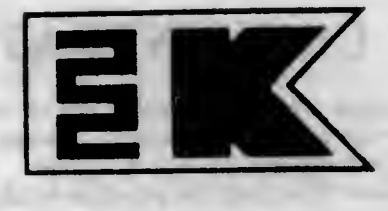
SN 299,494. Roux Laboratories, Inc., New York, N.Y. Filed May 31, 1968.

**So Silky**

Owner of Reg. No. 784,933.
For Hair Shampoo (Int. Cl. 3).
First use May 22, 1968.

SN 308,702. S. S. Kresge Company, Detroit, Mich. Filed Oct. 2, 1968.



Owner of Reg. Nos. 847,759 and 861,857.
For Window Cleaner (Int. Cl. 3).
First use in or before February 1968.

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SN 313,678. Brunswig Drug Company, Vernon, Calif., by change of name and assignment from Brunswig Drug Company, d.b.a. Kip, Inc., Vernon, Calif. Filed Dec. 5, 1968.

**SUN SOAP**

Applicant disclaims the word "Soap" apart from the mark as shown.
For Medicated Soap for Use With Water on Human Sunburned Skin (Int. Cl. 3).
First use Oct. 29, 1968.

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SN 314,752. Calgon Corporation, Pittsburgh, Pa. Filed Dec. 18, 1968.

**SAFE AND SURE**

For All-Laundry Pre-Soak Composition With Stain Removing Enzymes (Int. Cl. 3).
First use Dec. 10, 1968.

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SN 315,424. Malco Products, Inc., Akron, Ohio. Filed Dec. 30, 1968.

**DAIRI-BRITE**

For Laundry Cleaning Detergent for Home Use (Int. Cl. 3).
First use January 1968.

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SN 319,475. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

**ZEP FORMULA 158**

Applicant disclaims exclusive right to use of the term "Formula" apart from the mark as shown. Owner of Reg. Nos. 681,037, 696,197, and others.
For Multi-Purpose Cleaning Preparation (Int. Cl. 3).
First use Jan. 2, 1959.

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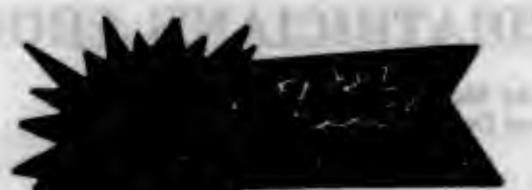
SN 319,478. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.



Owner of Reg. Nos. 681,037, 696,197, and others.
For Multi-Purpose Cleaning Preparation (Int. Cl. 3).
First use Jan. 2, 1959.

SN 319,479. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

## Z-C CONCENTRATE

Applicant disclaims right to exclusive use of the term "Concentrate" apart from the mark as shown. Owner of Reg. Nos. 681,037, 696,197, and others.

For Multi-Purpose Cleaning Preparation (Int. Cl. 3).

First use Apr. 6, 1953.

SN 319,484. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

## ZEP GEM CLEANER

Applicant disclaims exclusive right to use of the word "Cleaner" apart from the mark as shown. Owner of Reg. Nos. 681,037, 696,197, and others.

For Cleaning Preparation for Wood Floors and for Concrete Floors and Other Concrete Surfaces (Int. Cl. 3).

First use 1937.

SN 319,496. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

## ZEP FORMULA 165

Applicant disclaims exclusive right to use of the term "Formula" apart from the mark as shown. Owner of Reg. Nos. 681,037, 696,197, and others.

For Multi-Purpose Cleaning Preparation Having Incidental Germicidal Properties (Int. Cl. 3).

First use June 15, 1959.

SN 319,499. National Service Industries, Inc., d.b.a. Zep Manufacturing Company, Atlanta, Ga. Filed Feb. 18, 1969.

## ZEP FORMULA 6556

Applicant disclaims exclusive right to use of the term "Formula" apart from the mark as shown. Owner of Reg. Nos. 681,037, 696,197, and others.

For Multi-Purpose Cleaning Preparation for Use on Radiators and Cooling Systems, Dishwashing Machines, Concrete Mixers, Concrete, Stone, Masonry, and the Like (Int. Cl. 3).

First use Jan. 2, 1959.

SN 321,182. Bristol-Myers Company, New York, N.Y. Filed Mar. 10, 1969.

## QUENCH

For Toilet Bowl Cleanser (Int. Cl. 3).

First use Sept. 17, 1968.

SN 321,187. Bristol-Myers Company, New York, N.Y. Filed Mar. 10, 1969.

## PEDIATRICIAN'S CHOICE

For Baby Shampoo (Int. Cl. 3).

First use Dec. 16, 1968.

SN 324,803. The Drackett Company, Cincinnati, Ohio. Filed Apr. 17, 1969.

## DAZY

Owner of Reg. No. 576,114.

For Liquid and Spray Toilet Bowl Cleaner (Int. Cl. 3).

First use Mar. 7, 1969.

SN 325,287. Chesebrough-Pond's Inc., New York, N.Y. Filed Apr. 23, 1969.

## BUSY GIRL

Owner of Reg. No. 863,657.

For Hair Shampoo (Int. Cl. 3).

First use Apr. 10, 1969.

SN 325,749. Gold Medal Hair Products, Inc., Hempstead, N.Y. Filed Apr. 28, 1969.

## "Be-Gone"

Owner of Reg. No. 510,416.

For Detergent Cream Liquids—Namely, Detergent Cleansing Cream for Personal Use and Hair Shampoo (Int. Cl. 3).

First use on or about Feb. 21, 1950.

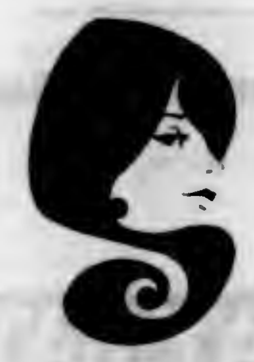
SN 328,248. Purex Corporation, Ltd., Lakewood, Calif. Filed May 26, 1969.

## T.N.T.

For Pre-Soak Preparation for Laundry Use (Int. Cl. 3).

First use Apr. 14, 1969.

SN 329,807. The Procter & Gamble Company, Cincinnati, Ohio. Filed June 12, 1969.



For Hair Shampoo (Int. Cl. 3).

First use Apr. 15, 1969.

SN 330,350. Bristol-Myers Company, New York, N.Y. Filed June 18, 1969.

## IMMERGE

For Toilet Soap (Int. Cl. 3).

First use May 15, 1969.

SN 330,502. Helene Curtis Industries, Inc., Chicago, Ill. Filed June 19, 1969.

## MARDI GRAS

Owner of Reg. No. 866,569.

For Hair Shampoo (Int. Cl. 3).

First use on or about May 15, 1969.

SN 330,612. National Service Industries, Inc., Atlanta, Ga. Filed June 20, 1969.

## MASTER MECHANIC

For Aerosol and Bulk Cleaner and Lubricant for Electrical Equipment (Int. Cl. 3).

First use June 24, 1964.

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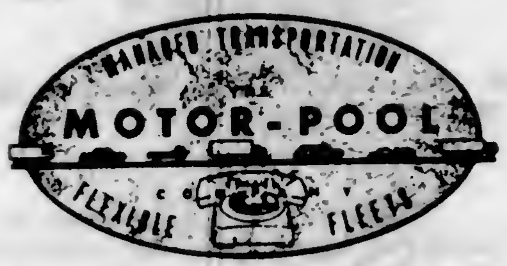
# SERVICE MARKS

## Class 100 – Miscellaneous

SN 254,704. Harry S. Murray, d.b.a. Motor-Pool Company, and Universal Car Leasing Company, Midland, Tex. Filed Sept. 19, 1966.

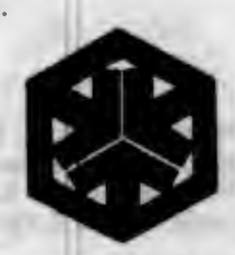


Without waiving any common law or statutory rights, and for the purposes of this registration only, the terms "Managed Transportation" and "Flexible Fleets" are disclaimed apart from their use with the mark as a whole.

For Leasing and Rental Services for Automobiles and Trucks (Int. Cl. 42).

First use May 21, 1966.

SN 303,578. Midwest Research Institute, Kansas City, Mo. Filed July 25, 1968.



For Research for Others and Advisory Services in the Areas of Chemistry, Materials Technology, Environmental Pollution Studies, Biological Sciences, Food Technology, Nutrition and Health Studies, Engineering, Mathematics and Physics, Instrumentation, Data Processing, Atmospheric and Space Technology, Wave Radiation and Propagation, Aerospace Technology, Surface Phenomena, Vacuum Techniques, Socio-Economic and Techno-Economic Research and Analysis for Governmental Agencies, for Nonprofit Institutions, for Public Utilities and for the Building and Chemical Processing Industries; Statistical Analysis of Population Growth and Trends; Land Use Studies; Outdoor Recreation Planning; Educational Systems Research and Analysis; and Regional and Urban Planning (Int. Cl. 42).

First use on or about Jan. 23, 1968.

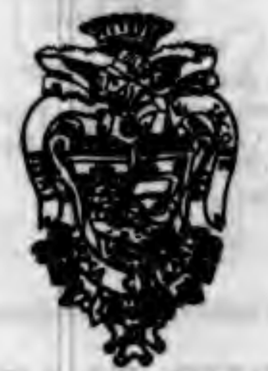
SN 304,536. Swain & Myers Associates, Inc., Decatur, Ill. Filed Aug. 7, 1968.

## GOLDEN HARVEST

For Restaurant Services (Int. Cl. 42).

First use Apr. 16, 1968.

SN 306,562. Casa Grisanti, Inc., Louisville, Ky. Filed Sept. 4, 1968.



The mark contains the Italian words: "Ensis" translated as "the beginning of"; "Iacobe" translated as "Jacob"; and "Arma Grisanti" translated as "Grisanti coat of arms."

For Restaurant Services (Int. Cl. 42).

First use at least as early as Mar. 31, 1959.

SN 309,596. Phillip J. Maddex, New York, N.Y. Filed Oct. 14, 1968.

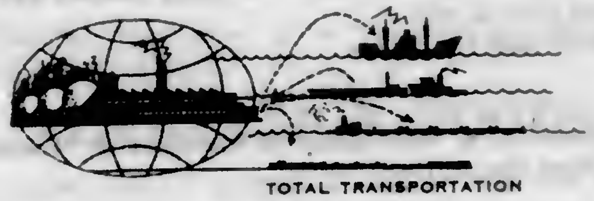
## TOTAL TRANSPORTATION

The word "Transportation," apart from the mark as shown, is disclaimed.

For Management and Engineering Consulting Services Pertaining to Transportation (Int. Cl. 42).

First use May 1, 1966.

SN 309,597. Phillip J. Maddex, New York, N.Y. Filed Oct. 14, 1968.

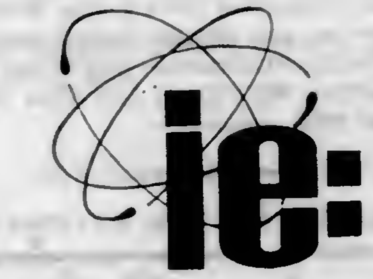


The word "Transportation," apart from the mark as shown, is disclaimed.

For Management and Engineering Consulting Services Pertaining to Transportation (Int. Cl. 42).

First use May 1, 1966.

SN 309,871. Iowa Electric Light and Power Company, Cedar Rapids, Iowa. Filed Oct. 17, 1968.

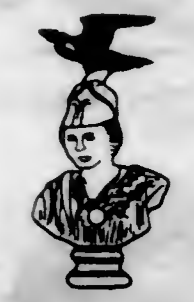


Owner of Reg. No. 840,643.

For Public Utility Supplying Electricity (Int. Cl. 42).

First use Feb. 20, 1968.

SN 310,318. G.E.D.Z. Corporation, New Orleans, La. Filed Oct. 23, 1968.



The Raven

For Restaurant Services (Int. Cl. 42).

First use Sept. 1, 1962.

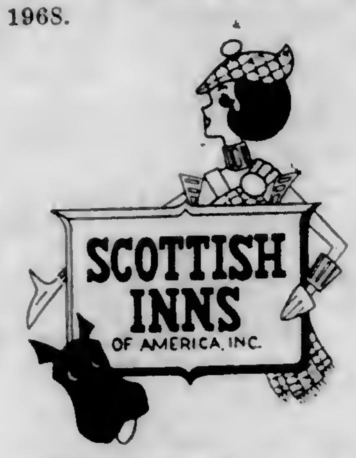
SN 311,517. Recon Incorporated, Tallahassee, Fla. Filed Nov. 6, 1968.

## RECON

For Research and Consulting Services in the Area of Electronics (Int. Cl. 42).

First use May 24, 1961.

SN 312,337. Scottish Inns of America, Inc., Kingston, Tenn. Filed Nov. 15, 1968.

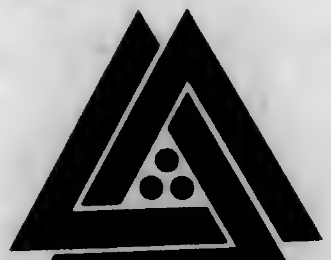


The wording "Inns or America, Inc." is disclaimed apart from the mark as shown.

For Motel Services—Namely, Providing Lodging and Meals in Motels (Int. Cl. 42).

First use May 17, 1968.

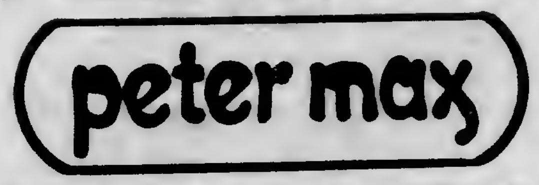
SN 313,747. U.S. Department of the Interior, Washington, D.C. Filed Dec. 5, 1968.



For Operation and Maintenance of Recreational and Educational Facilities in Connection With Parks, Monuments, Camp Sites, Trails, Museums and Similar Institutions, and Making Available to the Public Publications and Other Informational Material in Connection With These Activities (Int. Cl. 42).

First use August 1966.

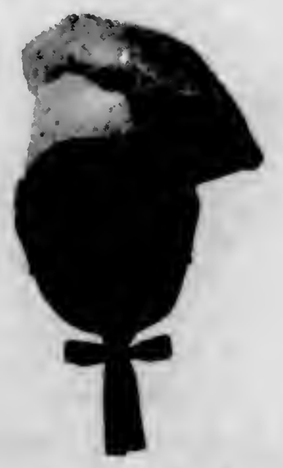
SN 314,587. Peter Max, New York, N.Y. Filed Dec. 16, 1968.



For Preparing Decorative Designs for Posters, Building Interiors, Housewares, and Other Industrial Objects or Products on the Order of Others (Int. Cl. 42).

First use in or about April 1967; 1962 as to "Peter Max."

SN 314,973. Kentucky Fried Chicken Corporation, Nashville, Tenn. Filed Dec. 20, 1968.



The mark is a representation of an actual person, namely, Harland Sanders, whose consent is of record. Owner of Reg. Nos. 757,835, 846,026, and others.

For Restaurant Services (Int. Cl. 42).

First use Feb. 17, 1968.

SN 315,398. El Al Israel Airlines Limited, New York, N.Y. Filed Dec. 30, 1968.

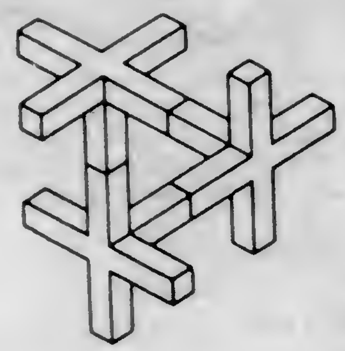
### KING DAVID CLUB

The word "Club" is disclaimed.

For Operating a Club for Air Travellers Who Are Airline Passengers of the Applicant (Int. Cl. 42).

First use July 1, 1967.

SN 319,229. Componoform, Inc., Cambridge, Mass. Filed Feb. 17, 1969.



For Construction Design Consulting, Building Systems Engineering, Research and Development and Consulting on Real Estate Development Proposals (Int. Cl. 42).

First use at least as early as Aug. 7, 1967.

SN 320,464. Tyrone J. Elias, d.b.a. Jamil's Restaurant, Oklahoma City, Okla. Filed Mar. 3, 1969.

### JAMIL'S

For Restaurant Service (Int. Cl. 42).

First use 1951.

SN 320,886. Winegardner & Hammons Operations, Inc., Cincinnati, Ohio. Filed Mar. 5, 1969.

### LITTLE FOXES

For Restaurant Services (Int. Cl. 42).

First use at least as early as Dec. 31, 1964.

SN 322,528. National Football League, New York, N.Y. Filed Mar. 24, 1969.

### NFL

Owner of Reg. No. 841,001.

For Association Services—Namely, Promoting the Interests of Member Football Clubs, Scheduling Games, and Promoting Interest in Football (Int. Cl. 42).

First use June 1, 1941.

SN 324,001. Four Flags, Inc., Minneapolis, Minn. Filed Apr. 9, 1969.

### FOUR FLAGS

For Restaurant Services (Int. Cl. 42).

First use Feb. 6, 1969.

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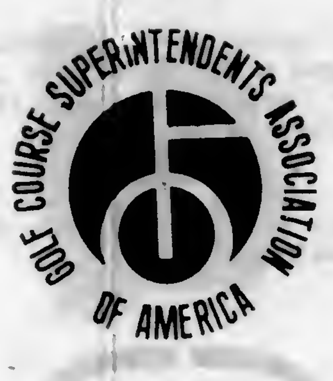
SN 327,453. Golf Course Superintendents Association of America, Des Plaines, Ill. Filed May 16, 1969.

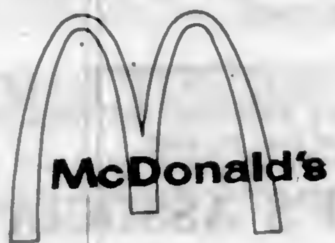


Owner of Reg. Nos. 577,477 and 698,247.

For Association Services—Namely, Advancing the Profession of Golf Course Maintenance Through the Collection, Preservation and Dissemination of Scientific and Practical Knowledge and Information to its Members and the General Public (Int. Cl. 42).

First use Jan. 2, 1966.

SN 327,507. McDonald's Corporation, Chicago, Ill. Filed May 16, 1969.



Owner of Reg. No. 743,572 and others.

For Restaurant Services (Int. Cl. 42).

First use Oct. 21, 1968.

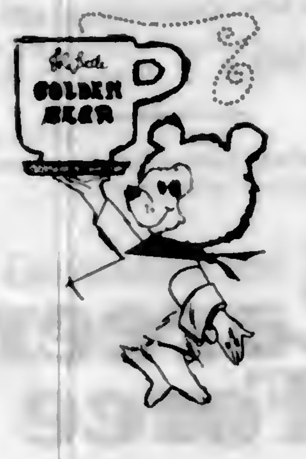
SN 329,345. Ronald L. Downing, d.b.a. Dream Merchants, Inc., Raytown, Mo. Filed June 6, 1969.

### DREAMDATE

For Background Personality and Date Matching Services (Int. Cl. 42).

First use Oct. 2, 1968.

SN 330,559. Golden Bear Pancake House, Inc., Elmwood Park, Ill. Filed June 20, 1969.



Owner of Reg. No. 821,736.

For Restaurant Catering and Carry-Out Services (Int. Cl. 42).

First use at least as early as July 1965.

## Class 101—Advertising and Business

SN 275,395. Rosecliff Realty Co., Inc., d.b.a. Palisades Amusement Park, Palisade, N.J. Filed July 5, 1967.

### PALISADES AMUSEMENT PARK

Without relinquishing any of its common law rights, applicant disclaims the words "Amusement Park" apart from the mark as shown.

For Promoting the Sale of Goods and Services of Commercial Establishments by Making Available Amusement Park Services to Customers and Prospective Customers of Said Commercial Establishments (Int. Cl. 35).

First use at least as early as 1932.

SN 276,169. Plantation Foods Corporation, Miami, Fla. Filed July 17, 1967.

### PLANTATION FOODS

The word "Foods" is disclaimed apart from the mark as shown.

For Distributorship Services in the Field of Foodstuffs (Int. Cl. 35).

First use on or about May 1, 1961.

SN 289,265. Irvin H. Brockstein, Houston, Tex. Filed Jan. 22, 1968.

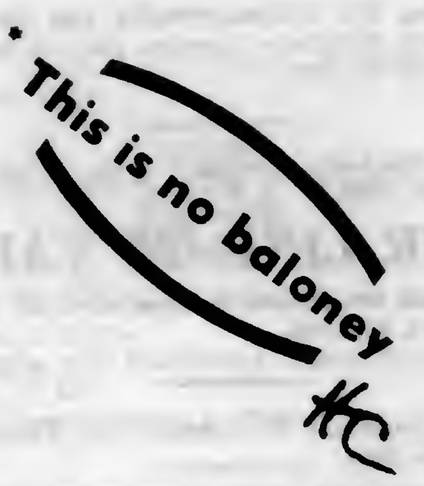
### BAND AIDS

The word "Band" is disclaimed apart from the mark as shown.

For Musical Instrument Store Services (Int. Cl. 35).

First use Sept. 4, 1967.

SN 301,513. Helen Connor, New York, N.Y. Filed June 27, 1968.



For Advertising Services Comprising Evaluation by Applicant of the Products and Services of Others and the Recommendation by Applicant of Statements To Be Made of and in Connection With Such Products and Services in Advertising and Promotion, Which Statements Include Facts Relating to Such Products and Services Which Applicant Considers Necessary Information for Prospective Purchasers (Int. Cl. 35).

First use May 6, 1968.

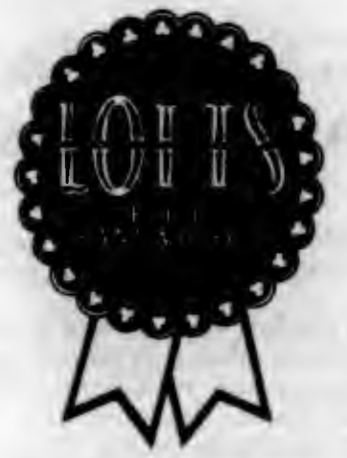
SN 303,771. Chollar-Dollars Corporation, Kingston, N.Y. Filed July 29, 1968.

### 3REE DOLLARBILL

For Promoting the Goods and Services of Others Through the Medium of Coupon Checks Redeemable for Cash, Merchandise or Services (Int. Cl. 35).

First use July 19, 1968.

SN 303,995. Jerrico, Inc., Lexington, Ky. Filed July 31, 1968.



No claim is made to the exclusive right to the use of the words "Prize Sandwiches," separate and apart from the mark as shown.

For Rendering Technical Assistance in the Establishment and Operations of Restaurants (Int. Cl. 35).

First use May 20, 1968.

SN 309,328. Compudyne Corporation, Hatboro, Pa. Filed Oct. 10, 1968.

**ZAP**

For Time-Sharing Computer Programming for the Automated Manufacturing of Goods of Others (Int. Cl. 35).

First use Sept. 25, 1968.

SN 312,466. Hardware Wholesalers, Inc., Fort Wayne, Ind. Filed Nov. 18, 1968.

**HWI**

Owner of Reg. Nos. 711,183, 711,417, and 739,543.

For Hardware Distributor Services (Int. Cl. 35).

First use Sept. 20, 1968.

SN 312,467. Hardware Wholesalers, Inc., Fort Wayne, Ind. Filed Nov. 18, 1968.

**YOUR LINK TO VALUE**

For Hardware Distributor Services (Int. Cl. 35).

First use Sept. 20, 1968.

SN 312,468. Hardware Wholesalers, Inc., Fort Wayne, Ind. Filed Nov. 18, 1968.

**SHOP THE FRIENDLY ONE**

For Hardware Distributor Services (Int. Cl. 35).

First use Sept. 20, 1968.

SN 315,355. Engineering Tabulations, Inc., San Francisco, Calif. Filed Dec. 30, 1968.

**ETI**

For Compilation of Material and Equipment Needed on Construction Jobs Preparatory to Estimating Costs by Others (Int. Cl. 35).

First use as early as Aug. 1, 1963.

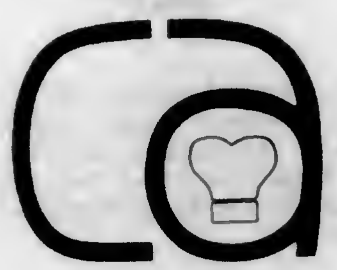
SN 318,717. Patent Management, Inc., Bethesda, Md. Filed Feb. 10, 1969.

**PMI**

For Rendering Complete Assistance to Inventors and Patent Owners with Regard to the Exploitation and Marketing of Their Patented or Unpatented Inventions (Int. Cl. 35).

First use on or about Apr. 26, 1968.

SN 319,581. Chef's Associates, Inc., d.b.a. Chef's Associates, Chicago, Ill. Filed Feb. 19, 1969.



For Consulting Services to Food Establishments on Architecture, Finance, Business Methods, Personnel, Product Development, Management Policies, Kitchen Layouts, Recipe Formulation, and General Promotion (Int. Cl. 35).

First use Jan. 21, 1969.

SN 319,582. Chef's Associates, Inc., d.b.a. Chef's Associates, Chicago, Ill. Filed Feb. 19, 1969.

**CHEF'S ASSOCIATES**

For Consulting Services to Food Establishments on Architecture, Finance, Business Methods, Personnel, Product Development, Management Policies, Kitchen Layouts, Recipe Formulation, and General Promotion (Int. Cl. 35).

First use Jan. 21, 1969.

SN 319,970. Statistical Tabulating Corporation, Chicago, Ill. Filed Feb. 24, 1969.

**CAREER FORCE**

Owner of Reg. Nos. 670,028 and 846,818.

For Employment Service (Int. Cl. 35).

First use June 23, 1968.

SN 324,635. Squires-Sanders, Inc., Atlanta, Ga. Filed Apr. 16, 1969.

**ILP**

For Computer On-Line Programming and Consulting Services (Int. Cl. 35).

First use Mar. 1, 1966.

SN 325,266. Statistical Tabulating Corporation, Chicago, Ill. Filed Feb. 24, 1969.

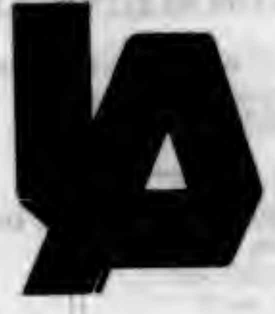
**Career**
**Force**

Owner of Reg. Nos. 670,028 and 846,818.

For Employment Service (Int. Cl. 35).

First use June 23, 1968.

SN 326,302. Liaison Agency, Inc., New York, N.Y. Filed May 5, 1969.



The mark comprises a fanciful representation of the letters "LA."

For Public Relations and Liaison Services Intended To Create Closer Relationships Between Commercial Companies in the United States and France (Int. Cl. 35).

First use Oct. 1, 1968.

## Class 102 — Insurance and Financial

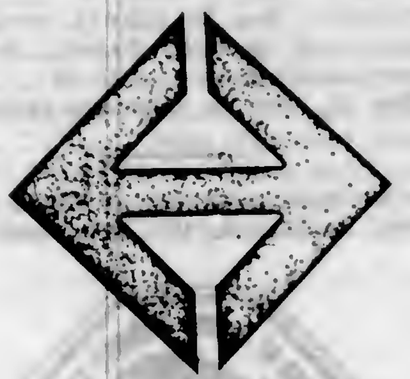
SN 310,643. 3M Credit Plan, Inc., Phoenix, Ariz. Filed Oct. 28, 1968.

**MULTISCRIP**

For Extending Credit to Others for Financing Their Expenditures by Issuing Redeemable Scrip (Int. Cl. 36).

First use Sept. 7, 1968.

SN 315,704. Credit Card Exchange, Inc., Floral Park, N.Y. Filed Oct. 18, 1968.



For Credit Card Services—Namely, Providing Facilities To Enable Merchants To Honor Credit Cards Issued by Various Organizations, and Collection of Bills for Said Merchants (Int. Cl. 36).

First use July 1, 1968.

## Class 103 — Construction and Repair

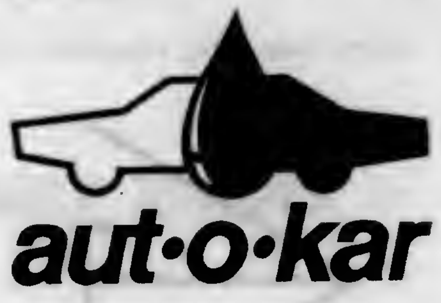
SN 290,575. Brand Industrial Services, Inc., Chicago, Ill. Filed Feb. 8, 1968.

**BISCO**

For Specialty Construction Services to the Building Industry—Namely, Sealing, Insulation and Shielding of Refrigeration and Heating Units, Reactors, and the Like (Int. Cl. 37).

First use on or about July 15, 1967.

SN 321,749. Aut-O-Kar Wash Corporation, Dallas, Tex. Filed Mar. 14, 1969.



For Installation and Service of Automobile and Truck Washing Equipment (Int. Cl. 37).

First use December 1968.

SN 322,681. Oakite Products, Inc., Berkeley Heights, N.J. Filed Mar. 25, 1969.

**OAKLEY**

Owner of Reg. No. 856,730.

For Industrial Cleaning Services (Int. Cl. 37).

First use Dec. 17, 1968.

## Class 105 — Transportation and Storage

SN 303,522. Michal J. M. Galazka, Windsor Locks, Conn. Filed July 24, 1968.

**JOURNEY TO UNDERSTANDING**

For Arranging and Conducting Travel Tours and Travel Programmes (Int. Cl. 39).

First use on or about Sept. 15, 1965.

SN 303,788. Michal J. M. Galazka, Windsor Locks, Conn. Filed July 29, 1968.

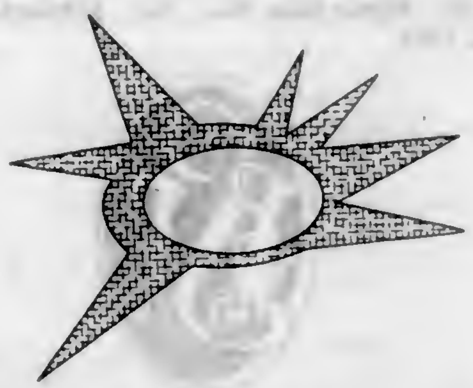
GALA TOURS **gti** INTERNATIONAL

The words "Gala Tours International" are disclaimed apart from the mark as shown.

For Arranging and Conducting Travel Tours and Travel Services (Int. Cl. 39).

First use on or about Sept. 1, 1962.

SN 305,091. Klosters Rederi A/S, New York, N.Y. Filed July 17, 1968.



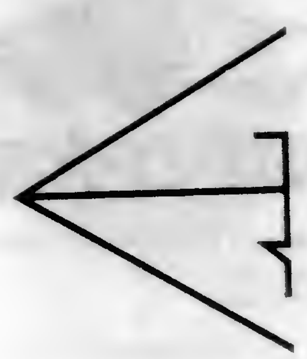
The drawing is lined for the color gold.

For Arranging, Conducting, and Providing Transportation for Ocean Cruises (Int. Cl. 39).

First use Oct. 23, 1967.

## Class 106 – Material Treatment

SN 280,703. Graber-Rogg, Inc., Cranford, N.J. Filed Sept. 19, 1967.



The mark comprises a fanciful representation of the letters "GR."

For Custom Molding Service of Plastic Materials in Accordance With Customers' Specifications (Int. Cl. 40).

First use May 2, 1967.

SN 306,596. Tri-Point Industries, Inc., Commack, N.Y. Filed Sept. 4, 1968.

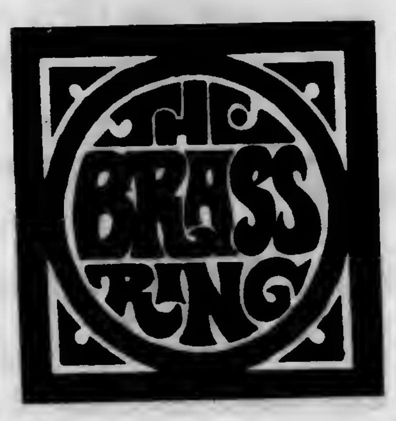
**TRI-PLATE**

For Processing Service Comprised of Electroplating Metal to Polytetrafluoroethylene (Int. Cl. 40).

First use Aug. 13, 1968.

## Class 107 – Education and Entertainment

SN 298,836. Marnel Music Co., Inc., New York, N.Y. Filed May 22, 1968.

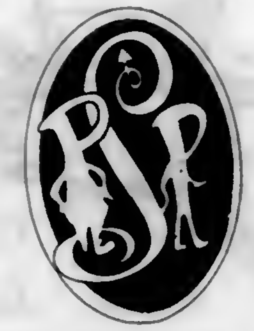


Applicant disclaims the word "Brass" apart from the mark as shown.

For Entertainment Services Rendered by an Instrumental Group (Int. Cl. 41).

First use January 1966.

SN 303,438. Perma-Slim Plan, Inc., Milwaukee, Wis. Filed July 23, 1968.



For Class and Individual Instruction in Weight Control (Int. Cl. 41).

First use June 5, 1968.

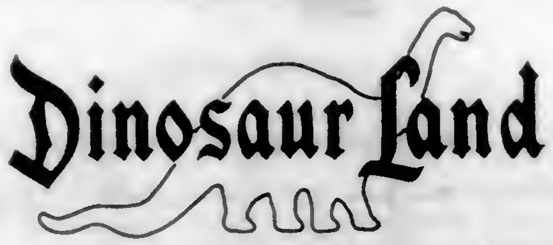
SN 304,838. Henry A. Weil, St. Louis, Mo. Filed Aug. 9, 1968.

**THE UNCOMMON COMMENTARY**

For Entertainment Services in the Form of a News Analysis Radio Program (Int. Cl. 41).

First use June 21, 1968.

SN 310,226. Joseph C. Geraci, d.b.a. Dinosaur Land, White Post, Va. Filed Oct. 22, 1968.



For Operation of an Amusement and Educational Park Including Displays of Simulated Prehistoric Animals (Int. Cl. 41).

First use Apr. 15, 1968.

SN 311,602. Irwin Levine, d.b.a. Paul Baron, Englishtown, N.J. Filed Nov. 7, 1968.

**HARMONICA RASCALS**

For Entertainment Services—Namely, the Rendition of Harmonica Music (Int. Cl. 41).

First use Aug. 30, 1962.

SN 313,625. Will Millar Associates Company Limited, Calgary, Alberta, Canada. Filed Dec. 4, 1968.

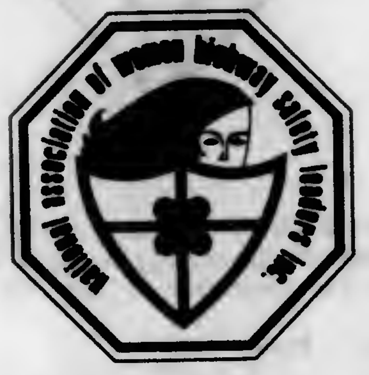
**THE IRISH ROVERS**

Owner of Canadian Reg. No. 152,446, dated Aug. 11, 1967.

For Entertainment Services—Namely, the Rendition of Vocal and Instrumental Music (Int. Cl. 41).

First use Dec. 31, 1964; in commerce February 1965.

SN 315,946. National Association of Women Highway Safety Leaders, Inc., Washington, D.C. Filed Jan. 6, 1969.


national association of women highway safety leaders inc.

For Association Services—Namely, Promotion of Highway Safety Through Dissemination of Information and Advice to Various Organizations (Int. Cl. 41).

First use Nov. 26, 1967.

SN 322,680. Arthur F. Flannel, d.b.a. Flannel Driving School, Pleasantville, N.J. Filed Mar. 25, 1969.

**FLANNEL**

For Automobile Driver Training Services (Int. Cl. 41).

First use at least as early as Feb. 20, 1969.

# COLLECTIVE MEMBERSHIP MARKS

## Class 200

SN 322,019. Youth Tennis League, Inc., Cocoa Beach, Fla. Filed Mar. 17, 1969.

**YOUTH TENNIS LEAGUE**

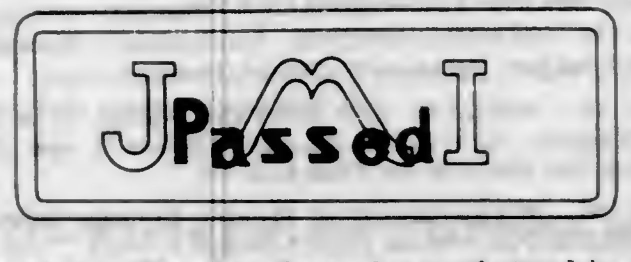
For Indicating Membership in Applicant.

First use Feb. 23, 1967.

# CERTIFICATION MARKS

## Class A – Goods

SN 276,139. Japan Machinery and Metals Inspection Institute, Minato-ku, Tokyo, Japan. Filed July 17, 1967.



The mark certifies that the goods manufactured in Japan have been inspected and approved for export in accordance with government fixed standards.

For Mechanical, Electrical and Electronic Apparatus and Devices and Metal Products—Namely, Tools, Namely, Circular Saws, Hand Saws, Hack Saws, Band Saws, Cutting Pliers, Radio Pliers, Round Nose Pliers, Nippers, Strong Cutting Nippers, Adjustable Wrenches, Screw Drivers, Pipe Wrenches, Spanners, Bomination Pliers, Ratchet Bit Braces, Files, Cemented Tips, Cemented Bites, Cemented Dies for Drawing Wire; Shovels, Scoops, Spades, Rakes, and Hoes; Metal Working Machines, Namely, Metal Working Presses, Nail Making Machines, Center Lathes, Bench Drilling Machines, Upright Drilling Machines, Belt-Drive Upright Drilling Milling Machines, Shaping Machines, Hand Knitting Machines, Rib Knitting Attachments, Needle Beds, Needle Bars, Carriages, Knitting Needles and Sinker Needles; Parts and Accessories for Textile Machines, Namely, Bobbins, Steel Reeds, Wirehealds, Shuttles, Droppers and Knitting Needles; Electric Bulbs for General Lighting, for Automobiles, for Bicycle Dynamo-Lamps, for Christmas Decorations, for Radio Panels, for Projectors, and Other Incandescent Bulbs and Tubes; Decorative Lighting Sets and Midget Base Decorative Lighting Sets; Portable Lamps, Namely, Flash Lights, Lanterns, Bicycle Lights and Pocket Type Lamps; Glowstarters for Discharge Lamps; Electric Communication Parts, Namely, D.C. Paper Condensers, Electrolytic Condensers, Fixed Mica Condensers, Fixed Ceramic Condensers, I.F.T. Variable Carbon Resistors, Fixed Carbon Film Resistors, Variable Air Condensers, Cone Speakers, Fixed Composition Resistors, Transformers; Acoustic Machines, Namely, Transistor Radio Receivers, Battery Type Tube Radios, Battery Type Phonographs and Battery Type Tape Recorders; Screws, Rivets, Woodscrews, Machine Screws, Bolts, Nuts, and Dog Spikes; Wire Nettings for General Use, Namely, Non-Ferrous Wire Netting, Wire Cloth for Paper Making Machines, Iron Wire Netting for General Use and Welded Wire Netting; Automobile Parts, Namely, Hub Bolts, Hub Nuts, Leaf Spring Assemblies, Leaf Springs, Oil Pressure Gauges, Ammeters and Fuel Gauge Thermometers.

First use Feb. 1, 1958; in commerce Mar. 2, 1958.

# TRADEMARK REGISTRATIONS ISSUED

## PRINCIPAL REGISTER

### Class 1 — Raw or Partly Prepared Materials

881,093. BLACKGLAMA. Great Lakes Mink Association. SN 301,938. Pub. 9–9–69. Filed 7–3–68.

881,094. LUNASTONE. Ursul R. Dixon, d.b.a. Plasco. SN 303,601. Pub. 9–9–69. Filed 7–25–68.

881,095. CARGILL. Cargill, Incorporated. SN 311,771. Pub. 9–9–69. Filed 11–12–68.

881,096. FILLWELL. Wellman, Inc. SN 316,702. Pub. 9–9–69. Filed 1–15–69.

881,097. 3M. Minnesota Mining and Manufacturing Company. SN 318,003. Pub. 9–9–69. Filed 1–31–69.

### Class 2 — Receptacles

881,098. MAGNIFIQUE. G. H. Wood and Company Limited. MULTIPLE CLASS (Classes 2, 4, 16, 23, and 52). SN 294,704. Pub. 9–9–69. Filed 4–2–68.

881,099. TAPER FIT. M. Korn Packaging Co., Inc. SN 309,056. Pub. 9–9–69. Filed 10–7–68.

881,100. SNUG FIT. M. Korn Packaging Co., Inc. SN 309,058. Pub. 9–9–69. Filed 10–7–68.

881,101. TATTLE MAIL. Mark E. Powell. SN 311,056. Pub. 9–9–69. Filed 10–31–68.

881,102. SCOTCHLINE. Fleming Metal Fabricators. SN 315,547. Pub. 9–9–69. Filed 1–2–69.

881,103. DANDUX AND DESIGN. C. R. Daniels, Inc. SN 321,477. Pub. 9–9–69. Filed 3–12–69.

### Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

881,104. MISCELLANEOUS DESIGN. Villager Industries, Inc., by change of name from The Villager, Inc. MULTIPLE CLASS (Classes 3 and 39). SN 297,825. Pub. 9–9–69. Filed 5–10–68.

881,105. LONE STAR. Y-Tex Corporation. SN 317,898. Pub. 9–9–69. Filed 1–29–69.

881,106. MCKELVEY'S LOFT. The Higbee Company, assignee of The G. M. McKelvey Co. MULTIPLE CLASS (Classes 3 and 39). SN 319,015. Pub. 9–9–69. Filed 2–13–69.

881,107. SENATOR. Swank, Inc. SN 321,697. Pub. 9–9–69. Filed 3–13–69.

### Class 4 — Abrasives and Polishing Materials

881,098. (See Class 2 for this trademark.)

881,108. ZEPERFEX. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,462. Pub. 9–9–69. Filed 2–18–69.

881,109. ZEPERMEX. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,464. Pub. 9–9–69. Filed 2–18–69.

881,110. ZEP TRIUMPH. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,465. Pub. 9–9–69. Filed 2–18–69.

### Class 5 — Adhesives

881,111. ALBEX. Henningsen Foods, Inc. SN 306,371. Pub. 9–9–69. Filed 8–30–68.

881,112. F AND DESIGN. Fosfatbolaget AB. SN 310,518. Pub. 9–9–69. Filed 10–25–68.

881,113. STIXSO OO. Philadelphia Quartz Company. SN 321,006. Pub. 9–9–69. Filed 3–7–69.

881,114. STIXSO NN. Philadelphia Quartz Company. SN 321,007. Pub. 9–9–69. Filed 3–7–69.

881,115. STIXSO DD. Philadelphia Quartz Company. SN 321,008. Pub. 9–9–69. Filed 3–7–69.

### Class 6 — Chemicals and Chemical Compositions

881,116. JAPANESE SYMBOL. Masanori Konaka. SN 281,591. Pub. 9–9–69. Filed 10–2–67.

881,117. OXYCHLORODENE. International Dioxcide, Inc. SN 295,287. Pub. 8–6–68. Filed 4–10–68.

881,118. ASHLAND AND DESIGN. Ashland Oil & Refining Company. MULTIPLE CLASS (Classes 6 and 15). SN 296,738. Pub. 9–9–69. Filed 4–29–68.

881,119. SPEEKAL. United Fireclay Products Limited. SN 302,251. Pub. 9–9–69. Filed 6–14–68.

881,120. CARGILL. Cargill, Incorporated. SN 311,770. Pub. 9–9–69. Filed 11–12–68.

881,121. PENNAD. Pennsalt Chemicals Corporation. SN 312,601. Pub. 9–9–69. Filed 11–19–68.

881,122. DUPLEX. William Recht Co., Inc. SN 312,604. Pub. 9–9–69. Filed 11–19–68.

881,123. END-O-STAT. William Recht Co., Inc. SN 312,608. Pub. 9–9–69. Filed 11–19–68.

881,124. DUROLITH AND DESIGN. Durolith Corporation. MULTIPLE CLASS (Classes 6 and 50). SN 317,272. Pub. 9–9–69. Filed 1–23–69.

881,125. AATREX. Geigy Chemical Corporation. SN 317,683. Pub. 9–9–69. Filed 1–28–69.

881,126. ZEPREMIER. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,459. Pub. 9–9–69. Filed 2–18–69.

881,127. ZEPRESERVE. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,500. Pub. 9–9–69. Filed 2–18–69.

### Class 9 — Explosives, Firearms, Equipments, and Projectiles

881,128. AEROLAB. The Susquehanna Corporation. SN 300,382. Pub. 9–9–69. Filed 6–13–68.

### Class 10 — Fertilizers

881,129. F AND DESIGN. Fosfatbolaget AB. SN 310,517. Pub. 9–9–69. Filed 10–25–68.

### Class 11 — Inks and Inking Materials

881,130. THINK INK. Lith-O-Way Graphic Supplies. SN 313,512. Pub. 9–9–69. Filed 12–3–68.

### Class 12 — Construction Materials

881,131. NUKEM. Amercoat Corporation. SN 288,068. Pub. 9–9–69. Filed 1–4–68.

881,132. NUKEM. Amercoat Corporation. SN 288,071. Pub. 9–9–69. Filed 1–4–68.

881,133. EPCO. The Engineered Products Company. MULTIPLE CLASS (Classes 12, 13, and 23). SN 292,997. Pub. 9–9–69. Filed 3–12–68.

881,134. GOBIMAT. N.V. Gelders Overijsselse Betonsteen Industrie GOBI. SN 297,056. Pub. 9–9–69. Filed 5–1–68.

881,135. CLMA AND DESIGN. Cariboo Lumber Manufacturers' Association. SN 301,193. COLLECTIVE MARK. Pub. 9–9–69. Filed 6–24–68.

881,136. PAGE. Edward Page, d.b.a. Page Products. SN 304,240. Pub. 9–9–69. Filed 8–2–68.

881,137. CORENTI. Armstrong Cork Company. SN 306,544. Pub. 9–9–69. Filed 9–4–68.

881,138. LIQUI-ROAD. Slip-Pruf Service Corporation. SN 310,499. Pub. 9–9–69. Filed 10–24–68.

881,139. STURD-I-WALL. American Plywood Association. SN 312,735. COLLECTIVE MARK. Pub. 9–9–69. Filed 11–21–68.

881,140. TIQUEWOOD. C. H. Tripp Finishing Company. SN 313,844. Pub. 9–9–69. Filed 12–6–68.

### Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

881,133. (See Class 12 for this trademark.)

881,141. SLIP-LOCK. McCreary Tire & Rubber Company. SN 294,521. Pub. 9–9–69. Filed 3–29–68.

881,142. PM AND DESIGN. Pump-Mates, Inc. SN 296,195. Pub. 9–9–69. Filed 4–22–68.

881,143. FIELD SOAK. Continental Oil Company. SN 309,239. Pub. 9–9–69. Filed 10–9–68.

881,144. COMAFCO AND DESIGN. Continental Manufacturing Company. SN 319,283. Pub. 9–9–69. Filed 2–17–69.

881,145. PREMIER. The Enterprise Aluminum Company. SN 319,849. Pub. 9–9–69. Filed 2–24–69.

881,146. ZIRTECH. Zirconium Technology Corporation. SN 322,658. Pub. 9–9–69. Filed 3–24–69.

### Class 14 — Metals and Metal Castings and Forgings

881,147. SELFPACK AND DESIGN. Selfpack Ges. m.b.H. MULTIPLE CLASS (Classes 14, 23, and 37). SN 267,707. Pub. 9–9–69. Filed 3–28–67.

881,148. S X CROSS DESIGN. The Southern Cross Steel Company (Proprietary) Limited. SN 303,832. Pub. 9–9–69. Filed 7–29–68.

881,149. FM. Federal-Mogul Corporation. SN 309,856. Pub. 9–9–69. Filed 10–17–68.

### Class 15 — Oils and Greases

881,118. (See Class 6 for this trademark.)

881,150. BONDED. Bonded Oil Company. SN 311,010. Pub. 9–9–69. Filed 10–31–68.

### Class 16 — Protective and Decorative Coatings

881,098. (See Class 2 for this trademark.)

881,151. PAN SHIELD. Dow Corning Corporation. SN 292,897. Pub. 9–9–69. Filed 3–11–68.

### Class 18 — Medicines and Pharmaceutical Preparations

881,152. SPRITZL. Colgate-Palmolive Company. SN 291,587. Pub. 9–9–69. Filed 2–21–68.

881,153. VICTORY BRACE. Royal Chemical Corporation. SN 291,897. Pub. 9–9–69. Filed Feb. 26, 1968.

881,154. JIM DANDY WINNERS CIRCLE. The Jim Dandy Company, by change of name from Western Grain Co., Inc., d.b.a. Western Grain Company. MULTIPLE CLASS (Classes 18 and 46). SN 292,231. Pub. 9–9–69. Filed 2–29–68.

881,155. MONEX. White Laboratories, Inc. SN 292,831. Pub. 9–9–69. Filed 3–8–68.

881,156. OSTEOTROPHIN-C. Organic Nutrients, Inc. SN 293,564. Pub. 9–9–69. Filed 3–18–68.

881,157. ANGITRATE. USV Pharmaceutical Corporation. SN 293,604. Pub. 9–9–69. Filed 3–18–68.

881,158. TALOPTIN. Knoll A.G. Chemische Fabriken. SN 295,825. Pub. 9–9–69. Filed 4–17–68.

881,159. DOAN'S. Bristol-Myers Company, assignee of Foster-Milburn Company. SN 305,096. Pub. 9–9–69. Filed 8–14–68.

### Class 19 — Vehicles

881,160. CATEYE AND DESIGN. Tsuyama Manufacturing Company Limited. SN 256,387. Pub. 9–9–69. Filed 10–13–66.

881,161. TUFFY AND DESIGN. Richard W. Snyder, d.b.a. Snyder & Snyder. MULTIPLE CLASS (Classes 19 and 22). SN 282,143. Pub. 9–9–69. Filed 10–9–67.

881,162. AMAX AND DESIGN. Amax Industries, Inc. SN 295,414. Pub. 9–9–69. Filed 4–11–68.

881,163. LANDMARK. Aristocrat Travel Products. SN 298,307. Pub. 9–9–69. Filed 5–16–68.

881,164. LO-LINER. Aristocrat Travel Products. SN 298,308. Pub. 9–9–69. Filed 5–16–68.

881,165. WHX-STAND. Vivienne H. Wolf, d.b.a. Trinka Imports. SN 298,375. Pub. 9–9–69. Filed 5–16–68.

881,166. ALGOODS AND DESIGN. Aluminum Goods Limited, SN 300,669. Pub. 9–9–69. Filed 6–18–68.

881,167. AUTOMOBILE DESIGN. Aimco Industries Limited, d.b.a. Aimco Automotive Industries. MULTIPLE CLASS (Classes 19, 21, and 23). SN 308,072. Pub. 9–9–69. Filed 9–24–68.

881,168. GTR ROUTE 5 AND DESIGN. The General Tire & Rubber Company. SN 310,885. Pub. 9–9–69. Filed 10–30–68.

881,169. GTR HUGGER. The General Tire & Rubber Company. SN 311,477. Pub. 9–9–69. Filed 11–6–68.

881,170. MU–2. Mitsubishi Jukogyo Kabushiki Kaisha. SN 311,610. Pub. 9–9–69. Filed 11–7–68.

881,171. C/STOL. Helio Aircraft Corporation. SN 311,684. Pub. 9–9–69. Filed 11–8–68.

881,172. PEACOCK. Elicon-National, Inc. SN 312,882. Pub. 9–9–69. Filed 11–22–68.

881,173. TANZER. Tanzer Industries Ltd. SN 313,353. Pub. 9–9–69. Filed 11–29–68.

## Class 21 — Electrical Apparatus, Machines, and Supplies

881,167. (See Class 19 for this trademark.)

881,174. TRAFLO. Crouse-Hinds Company. SN 257,696. Pub. 9-9-69. Filed 11-1-66.

881,175. MOND. Mond Industries Limited. MULTIPLE CLASS (Classes 21 and 26). SN 272,511. Pub. 9-9-69. Filed 5-26-67.

881,176. HASLER. Hasler A.-G. MULTIPLE CLASS (Classes 21 and 26). SN 272,605. Pub. 9-9-69. Filed 5-29-67.

881,177. COBAR AND DESIGN. Cobar Corporation. SN 284,165. Pub. 9-9-69. Filed 11-6-67.

881,178. ACCELETRONIC. Electro Dispersion Corporation. SN 285,003. Pub. 9-9-69. Filed 11-16-67.

881,179. MISCELLANEOUS DESIGN. Microwave Chemicals Laboratory, Inc. SN 292,281. Pub. 9-9-69. Filed 3-1-68.

881,180. REBCO. Stovall Batteries, Inc. SN 297,613. Pub. 9-9-69. Filed 5-7-68.

881,181. CATHOBEAM. United Aircraft Corporation. SN 299,600. Pub. 9-9-69. Filed 6-3-68.

881,182. UNILEX. Velmex, Inc. SN 300,144. Pub. 9-9-69. Filed 6-10-68.

881,183. G AND DESIGN. Galaxy Electronics, Inc. SN 300,439. Pub. 9-9-69. Filed 6-14-68.

881,184. DIALALARM AND DESIGN. Dialalarm, Inc. SN 300,568. Pub. 9-9-69. Filed 6-17-68.

881,185. SCOTCH. Minnesota Mining and Manufacturing Company, d.b.a. 3M Company. SN 306,202. Pub. 9-9-69. Filed 8-29-68.

881,186. VISTA 20 SERIES AND DESIGN. HTV Systems, Inc. SN 308,588. Pub. 9-9-69. Filed 10-3-68.

881,187. TRI-MATIC. Tri-Point Industries, Inc. SN 308,644. Pub. 9-9-69. Filed 10-1-68.

881,188. SERVOTRON. Servo Corporation of America. SN 309,304. Pub. 9-9-69. Filed 10-9-68.

881,189. SCRDC-III AND DESIGN. Sola Basic Industries, Inc. SN 310,190. Pub. 9-9-69. Filed 10-22-68.

881,190. MAGIC MIXER BAR. Dynamic Classics, Ltd. SN 311,881. Pub. 9-9-69. Filed 11-13-68.

881,191. LIGHTSAROUND. Frederick Weinstein. SN 311,960. Pub. 9-9-69. Filed 11-12-68.

881,192. NORMDA AND DESIGN. Normda Industries, Inc. SN 312,319. Pub. 9-9-69. Filed 11-15-68.

881,193. MULTIDEX. Oak Electro/Netics Corp. SN 312,321. Pub. 9-9-69. Filed 11-15-68.

881,194. FREQ-LITE. Kaman Corporation. SN 322,026. Pub. 9-9-69. Filed 3-18-69.

## Class 22 — Games, Toys, and Sporting Goods

881,161. (See Class 19 for this trademark.)

881,195. SEA SPORT. Gentex Corporation. SN 289,393. Pub. 9-9-69. Filed 1-23-68.

881,196. AMBASSADEUR. Aktiebolaget Urfabriken. SN 291,335. Pub. 9-9-69. Filed 2-19-68.

881,197. HATE. Michael Stanfield Holdings Limited. SN 291,757. Pub. 9-9-69. Filed 2-23-68.

881,198. WAR ON POVERTY. Henry L. Sullivan. SN 292,823. Pub. 9-9-69. Filed 3-8-68.

881,199. GLOOK. Brooke, Reid & Company, Limited. SN 293,017. Pub. 9-9-69. Filed 3-12-68.

881,200. MAJORETTE. Emile Veron. SN 297,817. Pub. 9-9-69. Filed 5-9-68.

881,201. VALENCIA. Dart Industries Inc., by change of name From Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 299,488. Pub. 9-9-69. Filed 5-31-68.

881,202. IBIZA. Dart Industries Inc., by change of name from Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 299,489. Pub. 9-9-69. Filed 5-31-68.

881,203. JOURNEY THROUGH THE BIBLE AND DESIGN. The Metron Corporation. SN 299,572. Pub. 9-9-69. Filed 6-3-68.

881,204. KABBANETTE. Harry D. Macy, d.b.a. Daybreak Dynamics. SN 300,284. Pub. 9-9-69. Filed 6-12-68.

881,205. TRAVELLER. True Temper Corporation. SN 300,991. Pub. 9-9-69. Filed 6-20-68.

881,206. TYCO. Tyco Industries, Inc. SN 306,524. Pub. 9-9-69. Filed 9-3-68.

881,207. PLUS-PAK. Mattel, Inc. SN 310,969. Pub. 9-9-69. Filed 10-31-68.

## Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

881,098. (See Class 2 for this trademark.)

881,133. (See Class 12 for this trademark.)

881,147. (See Class 14 for this trademark.)

881,167. (See Class 19 for this trademark.)

881,208. FINNELL. Masury-Columbia Company. SN 276,329. Pub. 9-9-69. Filed 7-19-67.

881,209. TAUMEL AND DESIGN. Bodmer, Maschinenbau, Inh. G. & E. Bodmer. SN 280,006. Pub. 9-9-69. Filed 9-11-67.

881,210. SPERRY RAND IN LOGO. Sperry Rand Corporation. SN 286,377. Pub. 9-9-69. Filed 12-6-67.

881,211. RJS AND DESIGN. RJS Corporation. SN 288,852. Pub. 9-9-69. Filed 1-15-68.

881,212. BALL RING. FMC Corporation. SN 289,884. Pub. 9-9-69. Filed 1-30-68.

881,213. HALL JET. Hall Marine Corporation. SN 291,154. Pub. 9-9-69. Filed 2-15-68.

881,214. OMR (DESIGN). Oceanautic Manufacturing and Research Company. SN 293,167. Pub. 9-9-69. Filed 3-13-68.

881,215. MARK-ETTE. Sellon, Inc. SN 294,084. Pub. 9-9-69. Filed 3-25-68.

881,216. TRUE FIT AND DESIGN. Crescent Forge & Shovel Co., Inc. SN 295,920. Pub. 9-9-69. Filed 4-18-68.

881,217. WIND ROSE. Imperial Knife Associated Companies, Inc. SN 297,294. Pub. 9-9-69. Filed 5-3-68.

881,218. OVA. Day/Ton Progress Corp. SN 299,111. Pub. 9-9-69. Filed 5-27-68.

881,219. MI AND DESIGN. Metal Improvement Company. SN 301,130. Pub. 9-9-69. Filed 6-24-68.

881,220. DECOMATIC. R. Hoe & Company, Inc., assignee of Decomatic Corporation. SN 309,164. Pub. 9-9-69. Filed 10-8-68.

881,221. ROTO STOP. Phillips Drill Company, Inc., assignee of Phillips Drill Company. SN 309,614. Pub. 9-9-69. Filed 10-14-68.

881,222. GENERAL. General Radiator, Inc. SN 313,927. Pub. 9-9-69. Filed 12-9-68.

## Class 26 — Measuring and Scientific Appliances

881,175. (See Class 21 for this trademark.)

881,176. (See Class 21 for this trademark.)

881,223. PETRIE R. A. METER. Asenath Petrie. SN 279,852. Pub. 9-9-69. Filed 9-7-67.

881,224. ELECTROGLAS. Electroglas, Inc. SN 280,354. Pub. 9-9-69. Filed 9-11-67.

881,225. SYSTRON DONNER. Systron-Donner Corporation. SN 287,180. Pub. 9-9-69. Filed 12-18-67.

881,226. SPECTRO-FILTERSCOPE. Isay Balinkin. SN 292,466. Pub. 9-9-69. Filed 3-5-68.

881,227. PHOTOSPRINT. Omega Louis Brandt et Frere S.A. SN 297,434. Pub. 9-9-69. Filed 5-6-68.

881,228. TESTMASTER, Educational Computer Systems, Inc. SN 301,661. Pub. 9-9-69. Filed 7-16-68.

881,229. URIN-TEK. Miles Laboratories, Inc. SN 306,035. Pub. 9-9-69. Filed 8-27-68.

881,230. OPTO KING AND DESIGN. Opto Specs, Ltd. SN 309,069. Pub. 9-9-69. Filed 10-7-68.

881,231. OPTO QUEEN AND DESIGN. Opto Specs, Ltd. SN 309,070. Pub. 9-9-69. Filed 10-7-68.

881,232. DELTACHROME. Associated Photographers, Inc. SN 310,628. Pub. 9-9-69. Filed 10-28-68.

881,233. STYLIZED LETTER M (DESIGN). Modutec Incorporated. SN 311,906. Pub. 9-9-69. Filed 11-12-68.

881,234. DYNACAL. Metronics Associates, Inc. SN 313,182. Pub. 9-9-69. Filed 11-27-68.

881,235. DIGIMETRIC. Wm. Ainsworth, Inc. SN 316,578. Pub. 9-9-69. Filed 1-15-69.

881,236. MEASUREX. Measurex, Inc. SN 318,076. Pub. 8-26-69. Filed 1-31-69.

881,237. ACT AND ARROW DESIGN. Automated Control Technology, Inc. SN 318,149. Pub. 9-9-69. Filed 2-3-69.

## Class 27 — Horological Instruments

881,238. QUARTZONIC. Nivada A.G. (Nivada, S.A., Nivada, Ltd.). SN 310,583. Pub. 9-9-69. Filed 10-25-68.

## Class 28 — Jewelry and Precious-Metal Ware

881,239. SKYLINE. Abraham Zacrolsky & Sons, Inc. SN 293,875. Pub. 9-9-69. Filed 3-21-68.

881,240. FSS (DESIGN). Fortunoff Silver Sales of Westbury, Inc. SN 318,041. Pub. 9-9-69. Filed 1-31-69.

881,241. MELISSA. Oneida Ltd. SN 319,184. Pub. 9-9-69. Filed 2-14-69.

## Class 29 — Brooms, Brushes, and Dusters

881,242. THE WHISTLE. The Drackett Company. SN 304,061. Pub. 9-9-69. Filed 8-1-68.

881,243. WEILER. Weiler Brush Company. SN 306,289. Pub. 9-9-69. Filed 8-29-68.

881,244. RADORA-CLOTH. Raymond C. Gilbert, d.b.a. Indispensable Disposables of Iowa. SN 318,539. Pub. 9-9-69. Filed 2-6-69.

## Class 30 — Crockery, Earthenware, and Porcelain

881,245. MITANI. Nikko Ceramics, Inc. SN 313,191. Pub. 9-9-69. Filed 11-27-68.

881,246. KINGSTONE AND DESIGN. Nikko Ceramics, Inc. SN 316,670. Pub. 9-9-69. Filed 1-15-69.

## Class 31 — Filters and Refrigerators

881,247. BANCO AND DESIGN. The Bandage Corporation. MULTIPLE CLASS (Classes 31 and 42). SN 270,041. Pub. 9-9-69. Filed 4-26-67.

881,248. DELTRIC. Borg-Warner Corporation (Delaware corporation), assignee of Borg-Warner Corporation (Illinois corporation). SN 282,433. Pub. 9-9-69. Filed 10-13-67.

881,249. FT AND DESIGN. Appleton Wire Works Corp. SN 318,383. Pub. 9-9-69. Filed 2-5-69.

## Class 32 — Furniture and Upholstery

881,250. STO-A-WAY. Califoam Corporation of America. SN 294,721. Pub. 9-9-69. Filed 4-2-68.

881,251. DENSIFOAM. Canterbury House, Inc. SN 297,763. Pub. 9-9-69. Filed 5-9-68.

881,252. CAMPER'S VALET. Kent B. Huson. SN 303,529. Pub. 9-9-69. Filed 7-24-68.

881,253. COLLECTION STRASSLE INTERNATIONAL S AND DESIGN. Strässle Söhne & Co. SN 304,988. Pub. 9-9-69. Filed 8-12-68.

881,254. KING CHAIR S AND DESIGN. Strässle Söhne & Co. SN 308,932. Pub. 9-9-69. Filed 10-4-68.

881,255. LA GRANDE. Simmons Company. SN 320,866. Pub. 9-9-69. Filed 3-5-69.

881,256. INVINCIBLE MODERNAIRE. Invincible Metal Furniture Co. SN 320,956. Pub. 9-9-69. Filed 3-6-69.

881,257. MAD. Divers International, Inc. SN 322,150. Pub. 9-9-69. Filed 3-19-69.

881,258. UNITED CHAIR AND DESIGN. U.S. Industries, Inc., d.b.a. United Chair Company. SN 322,199. Pub. 9-9-69. Filed 3-19-69.

881,259. EZE-GANG. Hamilton Cosco, Inc. SN 321,216. Pub. 9-9-69. Filed 3-10-69.

## Class 33 — Glassware

881,260. PRISMO KRISTAL GLASS SPHERES AND DESIGN. Prismo Safety Corporation. SN 313,201. Pub. 9-9-69. Filed 11-27-68.

## Class 34 — Heating, Lighting, and Ventilating Apparatus

881,261. ENVIRAFLO. Becton, Dickinson and Company. SN 299,622. Pub. 9-9-69. Filed 6-4-68.

881,262. TROL-A-TEMP AND DESIGN. Trolex Corporation. SN 301,105. Pub. 9-9-69. Filed 6-21-68.

881,263. SPEEDFOIL. Armstrong Cork Company. SN 303,029. Pub. 9-9-69. Filed 7-18-68.

881,264. ENTHALEX. Aero-Flow Dynamics, Inc. SN 316,954. Pub. 9-9-69. Filed 1-21-69.

881,265. SUPER-COR. Air Reduction Company, Incorporated. SN 317,294. Pub. 9-9-69. Filed 1-23-69.

881,266. TUF-COR. Air Reduction Company, Incorporated. SN 317,296. Pub. 9-9-69. Filed 1-23-69.

881,267. RCA. Radio Corporation of America. SN 324,563. Pub. 9-9-69. Filed 4-15-69.

881,268. RCA. Radio Corporation of America. SN 324,568. Pub. 9-9-69. Filed 4-15-69.

## Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

881,269. FCS. The Fluorocarbon Company. SN 320,139. Pub. 9-9-69. Filed 2-26-69.

881,270. HYDRO-FLEX. Hydro-Flex Corporation, Inc. SN 320,265. Pub. 9-9-69. Filed 2-27-69.

881,271. ATLAS. Atlas Supply Company. SN 321,030. Pub. 9-9-69. Filed 3-7-69.

881,272. FLEX-PRENE. Monsanto Company. SN 321,255. Pub. 9-9-69. Filed 3-10-69.

881,273. TALISMAN. The Goodyear Tire & Rubber Company. SN 321,797. Pub. 9-9-69. Filed 3-14-69.

881,274. GOLDENTRAC. Atlas Supply Company. SN 323,427. Pub. 9-9-69. Filed 4-2-69.

881,275. AUTO CLUB AND DESIGN. Regional Services Corporation. SN 324,363. Pub. 9-9-69. Filed 4-14-69.

881,276. MOTOR CLUB AND DESIGN. Regional Services Corporation. SN 324,365. Pub. 9-9-69. Filed 4-14-69.

881,277. HI-HAULER. Oliver Tire & Rubber Company. SN 324,988. Pub. 9-9-69. Filed 4-21-69.

## Class 36 — Musical Instruments and Supplies

881,278. TGR AND DESIGN. Joseph S. Horn, d.b.a. Trans Global Records of America. SN 299,132. Pub. 9-9-69. Filed 5-27-68.

881,279. SUE. Sue Records, Ltd. SN 303,546. Pub. 9-9-69. Filed 7-24-68.

881,280. MISCELLANEOUS DESIGN. Columbia Broadcast-System, Inc. SN 304,308. Pub. 9-9-69. Filed 8-5-68.

881,281. THE SPOKEN WORD AND DESIGN. The Spoken Word, Inc. SN 304,628. Pub. 6-10-69. Filed 8-7-68.

881,282. ENSENADA. Strum & Drum, Inc. SN 318,547. Pub. 9-9-69. Filed 12-4-68.

881,283. COLUMBIA. Columbia Broadcasting System, Inc. SN 315,178. Pub. 9-9-69. Filed 12-26-68.

881,284. PLANTATION AND DESIGN. Shelby Singleton Productions, Inc. SN 316,912. Pub. 9-9-69. Filed 1-17-69.

881,285. ALSHIRE. Budget Sound, Inc. SN 320,791. Pub. 9-9-69. Filed 3-5-69.

881,286. VIBRANT. Radio Corporation of America. SN 324,567. Pub. 9-9-69. Filed 4-15-69.

881,287. RED SEAL. Radio Corporation of America. SN 324,569. Pub. 9-9-69. Filed 4-15-69.

881,288. TRAIL. Curtis R. Steen. SN 324,847. Pub. 9-9-69. Filed 4-17-69.

## Class 37 — Paper and Stationery

881,147. (See Class 14 for this trademark.)

881,289. SOUL BRANDS AND DESIGN. Soul Brands, Inc. SN 305,573. Pub. 9-9-69. Filed 8-20-68.

881,290. ADD·A·TAB. Kwik-File, Inc. SN 314,396. Pub. 9-9-69. Filed 12-13-68.

881,291. THIS IS MY LIFE. Greet Our Babies, Inc. SN 319,308. Pub. 9-9-69. Filed 2-17-69.

881,292. CHEXOTIC. Saml Dodsworth Company. SN 320,454. Pub. 9-9-69. Filed 3-3-69.

881,293. SPEE-D-TAX. Bliss-Nielsen. SN 320,700. Pub. 9-9-69. Filed 3-4-69.

881,294. BLISTER-MATE. International Paper Company. SN 320,723. Pub. 9-9-69. Filed 3-4-69.

## Class 38 — Prints and Publications

881,295. OAG QUICK REFERENCE TRAVEL PLANNER. The Reuben H. Donnelley Corporation. SN 278,476. Pub. 9-9-69. Filed 8-17-67.

881,296. STARTER. B. F. Ascher & Company, Inc. SN 287,871. Pub. 9-9-69. Filed 1-2-68.

881,297. TRENTON. The Greater Trenton Chamber of Commerce. SN 289,192. Pub. 9-9-69. Filed 1-19-68.

881,298. PULMONITOR. Dart Industries Inc., by change of name from Rexall Drug and Chemical Company, d.b.a. Riker Laboratories. SN 298,249. Pub. 9-9-69. Filed 5-15-68.

881,299. ENERGY NEWS. The Petroleum Engineer Publishing Company. SN 299,483. Pub. 9-9-69. Filed 5-31-68.

881,300. BJA. American Chemical Society. SN 304,541. Pub. 9-2-69. Filed 8-7-68.

881,301. AMERICAN EXPRESS AND DESIGN. American Express Company. SN 306,542. Pub. 9-9-69. Filed 9-4-68.

881,302. NATIONAL ASSOCIATION OF MEAT PURVEYORS NAMP AND DESIGN. National Association of Meat Purveyors. MULTIPLE CLASS (Classes 38 and 200). SN 307,059. Pub. 9-9-69. Filed 9-11-68.

881,303. AUTOMOTIVE INSIGHT. Motor & Equipment Manufacturers Association (MEMA). SN 311,389. Pub. 9-9-69. Filed 11-5-68.

881,304. THE NEWHALL SIGNAL ETC. AND DESIGN. Newhall Newspapers Incorporated. SN 316,119. Pub. 9-9-69. Filed 1-8-69.

881,305. GAF. GAF Corporation. SN 317,994. Pub. 9-9-69. Filed 1-31-69.

881,306. BARACA-PHILATHEA. World Wide Baraca and Philathea Union. SN 321,338. Pub. 9-9-69. Filed 2-19-69.

881,307. BARACA PHILATHEA AND DESIGN. World Wide Baraca and Philathea Union. SN 321,339. Pub. 9-9-69. Filed 2-19-69.

881,308. A.K.C. AMERICAN KENNEL CLUB AND DESIGN. The American Kennel Club, Incorporated. SN 323,666. Pub. 9-9-69. Filed 4-4-69.

881,309. HOLIDAY CHARM. Elmcraft, Inc. SN 324,130. Pub. 9-9-69. Filed 4-10-69.

## Class 39 — Clothing

881,104. (See Class 3 for this trademark.)

881,106. (See Class 3 for this trademark.)

881,310. DUNHILL. Alfred Dunhill Limited. SN 290,557. CONCURRENT USE. Pub. 9-9-69. Filed 2-8-68.

881,311. CONTROL MATES AND DESIGN. Kayser-Roth Corporation. SN 298,727. Pub. 9-9-69. Filed 5-21-68.

881,312. SOFEENE. Teijin Kabushiki Kaisha (Teijin Limited). MULTIPLE CLASS (Classes 39 and 42). SN 304,641. Pub. 9-9-69. Filed 8-8-68.

881,313. NANCY AMORY AND DESIGN. Cobbs Corner Casuals, Inc. SN 306,224. Pub. 8-5-69. Filed 8-29-68.

881,314. SLINX. Wm. Gluckin & Co., Inc. SN 310,322. Pub. 9-9-69. Filed 10-23-68.

881,315. SOFTEENE. Teijin Kabushiki Kaisha (Teijin Limited). MULTIPLE CLASS (Classes 39 and 42). SN 311,085. Pub. 9-9-69. Filed 11-1-68.

881,316. JR. JUNCTION. Villager Industries, Inc., by change of name from The Villager, Inc. SN 313,752. Pub. 6-3-69. Filed 12-5-68.

881,317. HIDDEN CIRCLE ETTE AND DESIGN. Shannon Mfg. Co. SN 314,401. Pub. 9-9-69. Filed 12-13-68.

881,318. CURVALON. V. F. Corporation, by change of name from Vanity Fair Mills, Inc. SN 315,799. Pub. 7-1-69. Filed 1-3-69.

881,319. CLING THING. V.F. Corporation, by change of name from Vanity Fair Mills, Inc. SN 315,862. Pub. 5-27-69. Filed 1-6-69.

881,320. MINI·HITCH. Ithaca Textiles, Inc. SN 319,449. Pub. 9-9-69. Filed 2-18-69.

881,321. LANDLUBBERS. M. Hoffman & Co., Inc. SN 321,868. Pub. 7-29-69. Filed 3-17-69.

## Class 40 — Fancy Goods, Furnishings, and Notions

881,322. HOOK AND LOOP (DESIGN). American Velcro, Inc. SN 297,836. Pub. 9-9-69. Filed 5-10-68.

881,323. VELFOAM. American Velcro, Inc. SN 320,415. Pub. 9-9-69. Filed 3-3-69.

## Class 41 — Canes, Parasols, and Umbrellas

881,324. LIFTOMAT. Finkel Outdoor Products, Inc. SN 322,578. Pub. 9-9-69. Filed 3-24-69.

## Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

881,247. (See Class 31 for this trademark.)

881,312. (See Class 39 for this trademark.)

881,315. (See Class 39 for the trademark.)

881,325. SPONGDRY. Lintex Co. Inc. SN 285,928. Pub. 9-9-69. Filed 11-30-67.

881,326. BOND-BAK. Ludlow Corporation. SN 300,282. Pub. 9-9-69. Filed 6-12-68.

881,327. PALVERA. Vargo Industries, Inc. SN 303,000. Pub. 9-9-69. Filed 7-17-68.

881,328. SPINWAY. Vargo Industries, Inc. SN 303,001. Pub. 9-9-69. Filed 7-17-68.

881,329. KITCHEN CLASSICS. E. T. Barwick Industries, Inc. SN 311,754. Pub. 9-9-69. Filed 11-12-68.

881,330. LORD AVON. E. T. Barwick Industries, Inc. SN 312,124. Pub. 9-9-69. Filed 11-14-68.

881,331. SYLVAN. E. T. Barwick Industries, Inc. SN 312,131. Pub. 9-9-69. Filed 11-14-68.

881,332. GABBY. J. Manes Co., Inc. SN 313,637. Pub. 9-9-69. Filed 11-26-68.

881,333. KHALABAR. Pande, Cameron & Co. of New York, Inc. SN 317,606. Pub. 9-9-69. Filed 1-27-69.

881,334. MILLISKIN. Deering Milliken, Inc. SN 323,993. Pub. 9-9-69. Filed 4-9-69.

## Class 44 — Dental, Medical, and Surgical Appliances

881,335. QUIK-LOOK. Physio-Control Corporation. SN 313,833. Pub. 9-9-69. Filed 12-6-68.

881,336. CPR. Brunswick Manufacturing Company, Inc. SN 323,416. Pub. 9-9-69. Filed 4-2-69.

881,337. VETRAP. Minnesota Mining and Manufacturing Company. SN 323,648. Pub. 9-9-69. Filed 4-4-69.

## Class 45 — Soft Drinks and Carbonated Waters

881,338. MISCELLANEOUS DESIGN. Del Monte Corporation. MULTIPLE CLASS (Classes 45 and 46). SN 325,276. Pub. 9-9-69. Filed 4-23-69.

881,339. DEL MONTE. Del Monte Corporation. MULTIPLE CLASS (Classes 45 and 46). SN 325,278. Pub. 9-9-69. Filed 4-23-69.

## Class 46 — Foods and Ingredients of Foods

881,154. (See Class 18 for this trademark.)

881,338. (See Class 45 for this trademark.)

881,339. (See Class 45 for this trademark.)

881,340. MISCELLANEOUS DESIGN. Mountain Empire Dairymen's Association, Inc., by change of name from Denver Milk Producers, Inc. SN 284,630. Pub. 9-9-69. Filed 11-13-67.

881,341. MARMARA ETC. AND DESIGN. Savarin Corporation. SN 294,211. Pub. 9-9-69. Filed 3-26-68.

881,342. SNOW FLAKE. Taterstate Frozen Foods. SN 295,386. Pub. 9-9-69. Filed 4-10-68.

881,343. IT'S WHAT'S INSIDE THAT COUNTS. Van Buren Packing Company. SN 298,984. Pub. 9-9-69. Filed 5-23-68.

881,344. LOWNEY'S AND DESIGN. Walter M. Lowney Company Limited. SN 299,990. Pub. 9-9-69. Filed 6-7-68.

881,345. KING KOW. American Whipped Products, Inc. SN 301,324. Pub. 9-9-69. Filed 6-25-68.

881,346. WESTERN CHILI PROCESSORS AND DESIGN. Clarence A. Donati, d.b.a. Western Chili Processors. SN 301,921. Pub. 9-9-69. Filed 7-3-68.

881,347. P.T.O.'S. A. H. Robins Company, Incorporated. SN 302,971. Pub. 9-9-69. Filed 7-17-68.

881,348. TOHATO. Tohato Tokyo Seika Kabushiki Kaisha. SN 302,989. Pub. 9-9-69. Filed 7-17-68.

881,349. COFFEE FRESH. Delsoy Products Corporation. SN 303,897. Pub. 9-9-69. Filed 7-30-68.

881,350. ELF (DESIGN). Fred Usinger, Inc., d.b.a. Usinger's. SN 304,718. Pub. 9-9-69. Filed 8-8-68.

881,351. QUEEN PAK. American Dairy Queen Corporation. SN 308,070. Pub. 9-9-69. Filed 8-27-68.

881,352. COUNTRY LAD. Country Lad Foods, Inc. SN 308,364. Pub. 9-9-69. Filed 9-27-68.

881,353. BAVARIAN MINTS. C. J. Patterson Company. SN 308,714. Pub. 9-9-69. Filed 10-2-68.

881,354. ECOMAR. Ecomar-Empresa Comercial do Ultramar, Lda. SN 309,669. Pub. 9-9-69. Filed 10-15-68.

881,355. CRUNCH-A-RINOS. Beatrice Foods Co. SN 311,813. Pub. 9-9-69. Filed 11-12-68.

881,356. CRUNCH-A-ROOS. Beatrice Foods Co. SN 311,814. Pub. 9-9-69. Filed 11-12-68.

881,357. DREWKREME. Drew Chemical Corporation. SN 313,086. Pub. 9-9-69. Filed 11-26-68.

881,358. GREEN GIANT. Green Giant Company. SN 313,171. Pub. 9-9-69. Filed 11-27-68.

881,359. NIBLET EARS. Green Giant Company. SN 313,172. Pub. 9-9-69. Filed 11-27-68.

881,360. TYKES. Beatrice Foods Co. SN 313,673. Pub. 9-9-69. Filed 12-5-68.

881,361. FLOPPETS. Beatrice Foods Co. SN 313,674. Pub. 9-9-69. Filed 12-5-68.

881,362. CUISINIER'S CHOICE. Aroma Coffee Company, Inc. SN 313,882. Pub. 9-9-69. Filed 12-9-68.

881,363. "VERY." Pet Incorporated. SN 314,251. Pub. 9-9-69. Filed 12-11-68.

881,364. KOOKIE COCO. Sunline, Inc. SN 315,115. Pub. 9-9-69. Filed 12-23-68.

881,365. PK AND DESIGN. Schleider Foods, Inc. SN 316,393. Pub. 9-9-69. Filed 1-13-69.

881,366. MUNCH MATES. Popped-Right Corn Company. SN 317,467. Pub. 9-9-69. Filed 1-24-69.

881,367. TIMBURGER. Central Dairy Products Company, d.b.a. Timothy Farms. SN 317,821. Pub. 9-9-69. Filed 1-29-69.

881,368. RAPID FOODS. Rapid Foods, Inc. SN 318,371. Pub. 9-9-69. Filed 2-5-69.

881,369. WELLGRO. Weligro, Inc. SN 318,476. Pub. 9-9-69. Filed 2-5-69.

881,370. GRASS STRETCHER. Ralston Purina Company. SN 324,866. Pub. 9-9-69. Filed 4-18-69.

## Class 49 — Distilled Alcoholic Liquors

881,371. MALLARD. Glenmore Distilleries Company. SN 321,214. Pub. 9-9-69. Filed 3-10-69.

## Class 50 — Merchandise Not Otherwise Classified

881,124. (See Class 6 for this trademark.)

881,372. GARDEN GUARDIAN. James D. Basiger. SN 313,671. Pub. 9-9-69. Filed 12-5-68.

881,373. PERMA-LOC. Plasti-Kote Corp. SN 319,727. Pub. 9-9-69. Filed 2-20-69.

881,374. STYROLIDS. Dart Industries Inc., d.b.a. Thompson Industries, by change of name from Rexall Drug and Chemical Company, d.b.a. Thompson Industries. SN 320,291. Pub. 9-9-69. Filed 2-27-69.

881,375. GLAMOR. Quality Products Manufacturing Co., Inc. SN 324,989. Pub. 9-9-69. Filed 4-21-69.

## Class 51 — Cosmetics and Toilet Preparations

881,376. OLIVER PINK. Yardley of London, Inc. SN 289,141. Pub. 9-9-69. Filed 1-18-68.

881,377. EAU VIVE. Jacqueline Cochran, Inc., by merger of Carven Distributors, Inc. SN 290,578. Pub. 9-9-69. Filed 2-8-68.

881,378. CREAM 'N CLEAN. Colgate-Palmolive Company. SN 292,349. Pub. 9-9-69. Filed 3-4-68.

881,379. SUN BLUFF. Elizabeth Arden Sales Corporation. SN 292,363. Pub. 9-9-69. Filed 3-4-68.

881,380. OCEAN MIST. Steven Lewis, d.b.a. The Steven Lewis Company. SN 298,459. Pub. 9-9-69. Filed 5-17-68.

881,381. TROPIC ICE. Elizabeth of Sweden Limited. SN 298,925. Pub. 9-9-69. Filed 5-23-68.

881,382. AFRICAN LURE. Da Vida Cosmetics Inc., d.b.a. Da Vida. SN 300,911. Pub. 9-9-69. Filed 6-20-68.

881,383. EXIRIA. Ugo Ravizza S.A.S. per l'Industria Chimica e Farmaceutica. SN 304,521. Pub. 9-9-69. Filed 8-6-68.

881,384. AMBIANCE. Climate Cosmetics Corp. MULTIPLE CLASS (Classes 51 and 52). SN 307,007. Pub. 9-9-69. Filed 9-10-68.

881,385. PRINCETONIAN. Princetonian Hairstyling for Men. MULTIPLE CLASS (Classes 51 and 52). SN 308,138. Pub. 9-9-69. Filed 9-24-68.

881,386. WHITE TUSK. C.L.I. Cosmetics, Inc. SN 308,462. Pub. 9-9-69. Filed 9-30-68.

881,387. DERMA TIME. Lelord Kordel, d.b.a. Nutrition Enterprises. SN 308,791. Pub. 9-9-69. Filed 10-3-68.

881,388. EMILY ROGERS. Lander Co., Inc., d.b.a. Emily Rogers. SN 316,500. Pub. 9-9-69. Filed 1-14-69.

881,389. MORNING FRESH. Beecham Inc. SN 319,266. Pub. 9-9-69. Filed 2-17-69.

881,390. ULTRABAN. Bristol-Myers Company. SN 321,184. Pub. 9-9-69. Filed 3-10-69.

881,391. LUMICREM. Perma. SN 321,400. Pub. 9-9-69. Filed 3-11-69.

881,392. MADAME C. J. WALKER WONDER POMADE AND DESIGN. The Madam C. J. Walker Manufacturing Co., Inc. SN 321,817. Pub. 9-9-69. Filed 3-14-69.

881,393. WIG-NU. Borden, Inc. SN 322,404. Pub. 9-9-69. Filed 3-21-69.

881,394. BY APPOINTMENT. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 322,765. Pub. 9-9-69. Filed 3-26-69.

881,395. ENTWINE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 322,766. Pub. 9-9-69. Filed 3-26-69.

881,396. EVERY WOMAN HAS THE RIGHT TO BE ELUSIVE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 322,767. Pub. 9-9-69. Filed 3-26-69.

881,397. SHOOTING STAR. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 322,769. Pub. 9-9-69. Filed 3-26-69.

881,398. UNLESS. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 322,770. Pub. 9-9-69. Filed 3-26-69.

881,399. SMUG. Carter-Wallace, Inc. SN 322,943. Pub. 9-9-69. Filed 3-27-69.

881,400. WINTERUB. Majestic Drug Co., Inc. SN 323,198. Pub. 9-9-69. Filed 4-1-69.

## Class 52 — Detergents and Soaps

881,098. (See Class 2 for this trademark.)

881,384. (See Class 51 for this trademark.)

881,385. (See Class 51 for this trademark.)

881,394. (See Class 51 for this trademark.)

881,395. (See Class 51 for this trademark.)

881,396. (See Class 51 for this trademark.)

881,397. (See Class 51 for this trademark.)

881,398. (See Class 51 for this trademark.)

881,401. SANI-PINK. S. & S. Soap Co. SN 296,987. Pub. 9-9-69. Filed 4-30-68.

881,402. MICRO-CELLERATE. Kem Manufacturing Corporation. SN 302,622. Pub. 9-9-69. Filed 7-12-68.

881,403. THE HUNGRY DETERGENT. Lever Brothers Company. SN 303,576. Pub. 9-9-69. Filed 7-25-68.

881,404. SMASHING WHITE. Amway Corporation. SN 305,195. Pub. 9-9-69. Filed 8-15-68.

881,405. BONUS. The Procter & Gamble Company. SN 316,385. Pub. 9-9-69. Filed 1-13-69.

881,406. ZEP PLUS. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,485. Pub. 9-9-69. Filed 2-18-69.

881,407. ZEPVALOR. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,486. Pub. 9-9-69. Filed 2-18-69.

881,408. ZEP-OFF. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,487. Pub. 9-9-69. Filed 2-18-69.

881,409. ZEPRESTO. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,489. Pub. 9-9-69. Filed 2-18-69.

881,410. ZEPGO. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,492. Pub. 9-9-69. Filed 2-18-69.

881,411. ZEP OLD SMOKY. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,493. Pub. 9-9-69. Filed 2-18-69.

881,412. ZEPRO. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,494. Pub. 9-9-69. Filed 2-18-69.

881,413. ZEP-FLO. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,495. Pub. 9-9-69. Filed 2-18-69.

881,414. ZEPSECURE. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,497. Pub. 9-9-69. Filed 2-18-69.

881,415. ZEP-A-LUME. National Service Industries, Inc., d.b.a. Zep Manufacturing Company. SN 319,498. Pub. 9-9-69. Filed 2-18-69.

## Service Marks

## Class 100 — Miscellaneous

881,416. BENDIX AND DESIGN. The Bendix Corporation, assignee of Bendix Field Engineering Corporation. SN 294,910. Pub. 9-9-69. Filed 4-4-68.

881,417. "THE DRIVE-IN WITH THE RAINBOW COLORS." Griffs of America, Inc. SN 305,327. Pub. 9-9-69. Filed 8-16-68.

881,418. BIG ALICE'S KITCHEN. Restaurant Associates Industries, Inc. SN 313,387. Pub. 9-9-69. Filed 12-2-68.

881,419. BABE RUTH BASEBALL AND DESIGN. Babe Ruth League, Inc. SN 313,660. Pub. 9-9-69. Filed 12-5-68.

881,420. BABE RUTH BASEBALL. Babe Ruth League, Inc. SN 313,661. Pub. 9-9-69. Filed 12-5-68.

881,421. ACT AND DESIGN. Advanced Communication Techniques, Inc. MULTIPLE CLASS (Classes 100 and 107). SN 314,013. Pub. 9-9-69. Filed 12-10-68.

881,422. ACT. Advanced Communication Techniques, Inc. MULTIPLE CLASS (Classes 100 and 107). SN 314,014. Pub. 9-9-69. Filed 12-10-68.

881,423. FERDYS ROAST BEEF SANDWICHES AND DESIGN. Fast Foods International, Inc. SN 315,462. Pub. 9-9-69. Filed 12-31-68.

881,424. SHRIMP BOATS. The Shrimp Boats, Inc. SN 317,628. Pub. 9-9-69. Filed 1-27-69.

881,425. JAMES BROWN'S GOLD PLATTER AND DESIGN. Gold Platter, Inc. SN 319,540. Pub. 9-9-69. Filed 2-19-69.

## Class 101 — Advertising and Business

881,426. SAFETY. T. Bragg McLeod. SN 259,668. Pub. 9-9-69. Filed 11-29-66.

881,427. ISEBERG MUSICLAND. Iseburg Musicland, Inc. MULTIPLE CLASS (Classes 101, 103, and 107). SN 270,063. Pub. 9-9-69. Filed 4-26-67.

881,428. SWAP MEET. Swap-Meet, Inc. SN 274,353. Pub. 9-9-69. Filed 6-20-67.

881,429. YU-WYN. Adams, Martin & Nelson, Inc. SN 275,594. Pub. 9-9-69. Filed 7-10-67.

881,430. PLANTATION AND DESIGN. Plantation Foods Corporation. SN 275,683. Pub. 9-9-69. Filed 7-10-67.

881,431. PITMAN. Harold M. Pitman Company. SN 281,390. Pub. 9-9-69. Filed 9-28-67.

881,432. MISCELLANEOUS DESIGN. Seedkem, Inc. SN 283,723. Pub. 9-9-69. Filed 10-30-67.

881,433. SEEDKEM. Seedkem, Inc. SN 283,724. Pub. 9-9-69. Filed 10-30-67.

881,434. 4 PI AND DESIGN. Four Pi, Inc. SN 294,383. Pub. 9-9-69. Filed 3-28-68.

881,435. ESP AND DESIGN. ESP Property Factors, Inc., by change of name from Emery/Selling, Property Factors, Inc. MULTIPLE CLASS (Classes 101 and 102). SN 294,604. Pub. 9-9-69. Filed 4-1-68.

881,436. PPLR. National Design Center Delaware Inc. SN 294,956. Pub. 9-9-69. Filed 4-4-68.

881,437. CAR. National Design Center Delaware Inc. SN 294,957. Pub. 9-9-69. Filed 4-4-68.

881,438. IDAC. National Design Center Delaware Inc. SN 294,960. Pub. 9-9-69. Filed 4-4-68.

881,439. OAR. National Design Center Delaware Inc. SN 294,962. Pub. 9-9-69. Filed 4-4-68.

881,440. IFB AND DESIGN. Institutional Food Brokers, Inc. SN 296,169. Pub. 9-9-69. Filed 4-22-68.

881,441. NATIONAL DATA COMMUNICATIONS. National Data Communications, Inc. SN 298,752. Pub. 9-9-69. Filed 5-21-68.

881,442. F FREDERICKS APPELLATE SERVICE AND DESIGN. Fredericks' Services, Inc. SN 298,933. Pub. 9-9-69. Filed 5-23-68.

881,443. MISCELLANEOUS DESIGN. National Data Communications, Inc. SN 299,691. Pub. 9-9-69. Filed 6-4-68.

881,444. PINPOINT AND DESIGN. Pinpoint Advertising, Inc. SN 303,212. Pub. 9-9-69. Filed 7-5-68.

881,445. NATIONAL TRACTOR PULLING CHAMPIONSHIPS AND DESIGN. Wood County Agricultural Society. SN 305,866. Pub. 9-9-69. Filed 8-23-68.

881,446. I'POM. Donnel D. Jones, d.b.a. Donnel D. Jones Associates. SN 306,673. Pub. 9-9-69. Filed 9-5-68.

881,447. KICK OFF FOR CASH. Petroleum Service Advertising, Inc. SN 308,715. Pub. 9-9-69. Filed 10-2-68.

881,448. EU (DESIGN). Employment Unlimited, Inc. SN 309,561. Pub. 9-9-69. Filed 10-14-68.

881,449. MENU MONEY. Glendinning Companies, Inc. SN 312,189. Pub. 9-9-69. Filed 11-14-68.

881,450. MILLIONAIRE BINGO. Glendinning Companies, Inc. SN 312,190. Pub. 9-9-69. Filed 11-14-68.

881,451. INFORONICS. Inforonics, Inc. SN 312,891. Pub. 9-9-69. Filed 11-22-68.

881,452. NANCY NOLAN. Nancy Nolan, Inc., d.b.a. Nancy Nolan Agency. SN 315,948. Pub. 9-9-69. Filed 1-6-69.

881,453. BLACKMAN ETC. AND DESIGN. Blackman Hicksville Co., Inc. SN 320,763. Pub. 9-9-69. Filed 3-5-69.

881,454. CLOVER REALTY COMPANY AND DESIGN. Clover Realty Company. SN 325,255. Pub. 9-9-69. Filed 4-16-69.

881,455. BE LUCKY—PICK CLOVER. Clover Realty Company. SN 325,256. Pub. 9-9-69. Filed 4-16-69.

## Class 102 — Insurance and Financial

881,435. (See Class 101 for this trademark.)

881,456. BOUNCE FOR BEATS. Sigma Alpha Mu Fraternity, Inc. SN 293,057. Pub. 9-9-69. Filed 3-12-68.

881,457. SET. School Employers Trust. SN 299,871. Pub. 9-9-69. Filed 6-6-68.

881,458. INSTANT FUTURES. First Federal Savings and Loan Association of Wisconsin. SN 314,415. Pub. 9-9-69. Filed 12-13-68.

881,459. FCA. Financial Collection Agencies Ltd. SN 314,879. Pub. 9-9-69. Filed 12-19-68.

881,460. IDS. Investors Diversified Services, Inc. SN 316,892. Pub. 9-9-69. Filed 1-17-69.

881,461. IDS. Investors Syndicate Life Insurance and Annuity Company. SN 317,453. Pub. 9-9-69. Filed 1-24-69.

881,462. THE CASHABLES. Franklin National Bank. SN 324,778. Pub. 9-9-69. Filed 4-17-69.

## Class 103 — Construction and Repair

881,427. (See Class 101 for this trademark.)

881,463. SIEMENS. Siemens Aktiengesellschaft. MULTIPLE CLASS (Classes 103 and 106). SN 271,305. Pub. 9-9-69. Filed 5-12-67.

881,464. MISCELLANEOUS DESIGN. Campanella Corporation. SN 303,768. Pub. 9-9-69. Filed 7-29-68.

881,465. METALLIGRAPHIC. Tompkins' Label Service. SN 314,992. Pub. 9-9-69. Filed 12-20-68.

881,466. RR (DESIGN). Rock Road Construction Co. SN 324,025. Pub. 9-9-69. Filed 4-9-69.

## Class 105 — Transportation and Storage

881,467. OWLY BIRD. Delta Air Lines, Inc. SN 307,318. Pub. 9-9-69. Filed 9-13-68.

881,468. MDS AND DESIGN. Mail Delivery Service Co., Inc., d.b.a. Mail Dispatch Service. SN 319,774. Pub. 9-9-69. Filed 2-24-69.

## Class 106 — Material Treatment

881,463. (See Class 103 for this trademark.)

881,469. JACK THE STRIPPER. Aday Quatomatic, Inc., assignee of Jack R. Aday, d.b.a. Jack the Stripper. SN 286,405. Pub. 9-9-69. Filed 12-7-67.

881,470. CP (DESIGN). Coast Plating, Inc. SN 303,141. Pub. 9-9-69. Filed 7-19-68.

## Class 107 — Education and Entertainment

881,421. (See Class 100 for this trademark.)

881,422. (See Class 100 for this trademark.)

881,427. (See Class 101 for this trademark.)

881,471. MOTOWN. Motown Record Corporation. SN 281,609. Pub. 9-9-69. Filed 10-2-67.

881,472. MISCELLANEOUS DESIGN. Service Engineering Associates, Inc. SN 309,791. Pub. 9-9-69. Filed 10-16-68.

881,473. ST. LOUIS BLUES AND DESIGN. St. Louis Blues Hockey Club, Inc. SN 310,930. Pub. 9-9-69. Filed 10-30-68.

881,474. STEELERS AND DESIGN. Pittsburgh Steelers Sports, Inc. SN 310,976. Pub. 9-9-69. Filed 10-31-68.

881,475. OPRYLAND, USA. WSM, Incorporated. SN 314,478. Pub. 9-9-69. Filed 12-13-68.

## Collective Membership Marks

### Class 200

881,302. (See Class 38 for this trademark.)

881,476. LOS ANGELES RIVER YACHT CLUB AND DESIGN. Los Angeles River Yacht Club. SN 287,077. Pub. 9-9-69. Filed 12-18-67.

881,477. MEMBER NATIONAL CAMPERS & HIKERS ASSOCIATION AND DESIGN. National Campers & Hikers Association, Inc. SN 311,613. Pub. 9-9-69. Filed 11-7-68.

## SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

### Class 2 — Receptacles

881,478. Best Quality Plastics, Inc., Denver, Colo. SN 309,742. Filed P.R. 10-16-68; Am. S.R. 8-22-69.

**STAKFAST**

For Drawn Plastic Box-Type Stacking Containers (Int. Cl. 20).
First use on or about July 1, 1966.

### Class 10 — Fertilizers

881,479. Douglas Oil Company of California, Los Angeles, Calif. SN 325,016. Filed 4-21-69.

**AGRI-MULCH**

For Agricultural Mulch (Int. Cl. 1).
First use Jan. 8, 1968.

### Class 19 — Vehicles

881,480. Ventline, Inc., Bristol, Ind. SN 270,174. Filed P.R. 4-27-67; Am. S.R. 8-11-69.

**VENTADOME**

For Ventilating and Lighting Domes for Mobile Homes, Travel Trailers and Campers (Int. Cl. 12).
First use Feb. 1, 1965.

### Class 21 — Electrical Apparatus, Machines, and Supplies

881,481. Marpac Corporation, Elkhart, Ind. SN 281,905. Filed P.R. 10-5-67; Am. S.R. 8-11-69.

**SOUND SCREEN**

For Sound Conditioners To Aid in Masking the Annoyances of Intermittent Ambient Sounds and Consisting of an Apertured Housing Containing a Motor-Driven Fan (Int. Cl. 11).
First use June 21, 1963.

881,482. Lamb Enterprises, Inc., Toledo, Ohio. SN 307,488. Filed P.R. 9-16-68; Am. S.R. 8-4-69.

**DUSTITE**

For Adhesive Backed Closures for Vacuum Cleaner Bags (Int. Cl. 9).
First use Apr. 1, 1965.

881,483. General Battery and Ceramic Corp., Reading, Pa. SN 316,890. Filed P.R. 1-17-69; Am. S.R. 7-30-69.

**EVER FUL**

For Batteries (Int. Cl. 9).
First use May 14, 1947.

### Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

881,484. Jet Avion Corp., Hialeah, Fla. SN 281,985. Filed P.R. 10-6-67; Am. S.R. 7-24-69.

**CARGORAIL**

For Mechanical Conveyor and Restraining System for Air Freighters (Int. Cl. 7).
First use Mar. 1, 1967.

### Class 37 — Paper and Stationery

881,485. Gibson Greeting Cards, Inc., Cincinnati, Ohio. SN 301,928. Filed P.R. 7-3-68; Am. S.R. 9-16-69.

**GLOSSY GLOW**

For Gift Wrapping Paper (Int. Cl. 16).
First use Aug. 1, 1967.

881,486. Hudson Pen Corp., Pelham, N.Y. SN 306,031. Filed P.R. 8-27-68; Am. S.R. 9-3-69.

**HUDSON**

For Pens (Int. Cl. 16).
First use Aug. 16, 1968.

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### Class 38 — Prints and Publications

881,487. Fairchild Publications, Inc., New York, N.Y. SN 278,792. Filed P.R. 8-22-67; Am. S.R. 9-24-68.

**EYE**

For Column in a Daily Newspaper Dealing With the Apparel Industry (Int. Cl. 16).
First use Mar. 20, 1962.

881,488. American Chemical Society, Washington, D.C. SN 304,539. Filed P.R. 8-7-68; Am. S.R. 9-5-69.

**CHEMICAL-BIOLOGICAL ACTIVITIES**

For Bi-Weekly Index Containing Abstracts From the Current Chemical-Biological Literature (Int. Cl. 16).
First use Jan. 11, 1965.

### Class 39 — Clothing

881,489. Sidney J. Kreiss, Inc., New York, N.Y. SN 326,891. Filed 5-9-69.

**REPLACEABLES**

For Ladies' Hosiery (Int. Cl. 25).
First use Jan. 15, 1968.

### Class 46 — Foods and Ingredients of Foods

881,490. The Baltimore Spice Company, Garrison, Md. SN 289,568. Filed P.R. 1-25-68; Am. S.R. 8-26-69.

**MILD SENSATION**

For Frankfurter Seasoning Consisting of Spices and Other Ingredients and Sold Only in Bulk (Int. Cl. 30).
First use Dec. 14, 1967.

881,491. New York and New England Apple Institute, Inc., Westfield, Mass. SN 290,186. COLLECTIVE MARK. Filed P.R. 2-2-68; Am. S.R. 8-27-69.

**McINTOSH COUNTRY**

For Fresh Apples (Int. Cl. 31).
First use Apr. 12, 1967.

881,492. Brooke Bond Foods, Inc., Lake Success, N.Y. SN 300,901. Filed P.R. 6-20-68; Am. S.R. 7-24-69.

**TASTEA**

For Instant Tea (Int. Cl. 30).
First use as early as June 6, 1968.

881,493. Tri-Valley Growers, San Francisco, Calif. SN 305,103. Filed P.R. 8-14-68; Am. S.R. 8-11-69.

**BITS 'N SAUCE**

For Canned Fruits and Canned Vegetables (Int. Cl. 29).
First use Aug. 6, 1968.

881,494. Ralston Purina Company, St. Louis, Mo. SN 305,755. Filed P.R. 8-22-68; Am. S.R. 8-11-69.

**CHEDDAR KRISP**

For Cereal Based Snack Cracker (Int. Cl. 30).
First use Aug. 5, 1968.

### Class 49 — Distilled Alcoholic Liquors

881,495. Stitzel-Weller Distillery, Louisville, Ky. SN 284,513. Filed P.R. 11-9-67; Am. S.R. 7-17-69.

**Prime Straight**

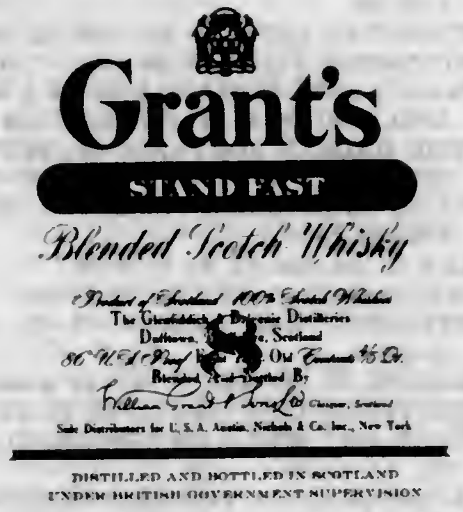
For Bourbon Whiskey (Int. Cl. 33).
First use Feb. 15, 1965.

881,496. Schenley Distillers, Inc., New York, N.Y. SN 294,083. Filed P.R. 3-25-68; Am. S.R. 9-17-69.

**GRANDE CANADIAN**

For Canadian Whisky (Int. Cl. 33).
First use Jan. 16, 1968.

881,497. William Grant & Sons Limited, Glasgow, Scotland. SN 301,620. Filed 8-7-69.


Grant's
STAND FAST
Blended Scotch Whisky
Product of Scotland 100% Scotch Whiskies
Dufftown, Scotland
86 U.S. Proof Old Contents 4/5 Qt.
Blended and Bottled By
William Grant & Sons Ltd Glasgow, Scotland
Sole Distributors for U.S.A. Austin, Nichols & Co. Inc., New York
DISTILLED AND BOTTLED IN SCOTLAND
UNDER BRITISH GOVERNMENT SUPERVISION

Owner of U.S. Reg. Nos. 346,426, 747,756, and others.
For Scotch Whisky (Int. Cl. 33).
First use Oct. 4, 1967; in commerce Nov. 1, 1967.

### Class 51 — Cosmetics and Toilet Preparations

881,498. Deluxol Laboratories, Inc., Chicago, Ill. SN 252,530. Filed P.R. 8-22-66; Am. S.R. 4-22-68.

**FRENCH PERM**

For Liquid Compound for Removing the Curl From Hair (Int. Cl. 3).
First use Aug. 1, 1966.

881,499. Yardley of London, Inc., Totowa, N.J. SN 274,111. Filed P.R. 6–16–67 ; Am. S.R. 5–5–69.

### LITTLE GIRL PINK

For Eye Shadow (Int. Cl. 3).
First use May 29, 1967.

881,500. Clairol Incorporated, New York, N.Y. SN 286,097. Filed P.R. 12–1–67 ; Am. S.R. 7–23–69.

### JUST A LITTLE FLING WITH YOUR OWN HAIRCOLOR

For Hair Tinting, Dyeing and Coloring Preparation (Int. Cl. 3).
First use Aug. 12, 1965.

881,501. Elizabeth Arden Sales Corporation, d.b.a. Elizabeth Arden, New York, N.Y. SN 290,049. Filed P.R. 2–1–68 ; Am. S.R. 8–13–69.

### FROSTY BRONZE

For Creamy Liquid Facial Foundation, Face Powder, Lipstick, Rouge, and Nail Polish (Int. Cl. 3).
First use Jan. 12, 1968.

881,502. Cosmetically Yours, Inc., Yonkers, N.Y. SN 293,912. Filed P.R. 3–22–68 ; Am. S.R. 8–19–69.

### PRETTY WILD BEIGE

For Lipstick (Int. Cl. 3).
First use Mar. 18, 1968.

881,503. Alberto-Culver Company, Melrose Park, Ill. SN 294,115. Filed P.R. 3–26–68 ; Am. S.R. 7–17–69.

### LIGHTER VEIN

For Leg Makeup (Int. Cl. 3).
First use Nov. 22, 1967.

881,504. Elizabeth Arden Sales Corporation, New York, N.Y. SN 302,730. Filed P.R. 7–15–68 ; Am. S.R. 8–13–69.

### PEWTER FROST

For Creamy Eye Shadow (Int. Cl. 3).
First use June 17, 1968.

881,505. The Gillette Company, d.b.a. The Toni Company, Boston, Mass. SN 308,103. Filed P.R. 9–24–68 ; Am. S.R. 8–11–69.

### PRE SET

For Creme Rinse (Int. Cl. 3).
First use June 28, 1968.

## Class 52 — Detergents and Soaps

881,506. Ashland Oil & Refining Company, Ashland, Ky. SN 318,740. Filed P.R. 2–10–69 ; Am. S.R. 8–11–69.

### CHAIN KLEAN

For Chemical Cleaner, Particularly for Roller Chain Applications (Int. Cl. 3).
First use Jan. 15, 1968.

# TRADEMARK REGISTRATIONS RENEWED

259,899. BARDOL. Cl. 6 (Int. Cl. 4). 8–13–29.
260,852. CRICKET. Cl. 39 (Int. Cl. 25). 8–27–29.
261,044. EVERGLOSS. Cl. 51 (Int. Cl. 3). 9–3–29.
261,511. THE EVANSTON REVIEW. Cl. 38 (Int. Cl. 16). 9–17–29.
261,512. WILMETTE LIFE. Cl. 38 (Int. Cl. 16). 9–17–29.
261,513. WINNETKA TALK. Cl. 38 (Int. Cl. 16). 9–17–29.
261,616. "MARCA INDUSTRIAL LANMAN & KEMP" ETC. AND DESIGN. Cl. 6 (Int. Cls. 3 and 5). 9–17–29.
261,652. "THE BALKAN SOBVANIE CIGARETTES" AND DESIGN. Cl. 17 (Int. Cl. 34). 9–17–29.
261,711. T & CO (MONOGRAM). Cl. 28 (Int. Cls. 8 and 14). 9–24–29.
262,022. E.I.S. Cl. 14 (Int. Cl. 6). 9–24–29.
262,768. PALVO. Cl. 18 (Int. Cl. 5). 10–22–29.
263,383. "STE-LIKE" AND DESIGN. Cl. 13 (Int. Cl. 6). 11–5–29.
263,424. MARINE. Cl. 13 (Int. Cl. 6). 11–5–29.
263,767. ERIOTINON. Cl. 6 (Int. Cl. 2). 11–12–29.
264,158. "C.O. & CO." ETC. AND DESIGN. Cl .46 (Int. Cl. 29). 11–19–29.
265,024. "ACME QUALITY PROXLIN" AND DESIGN. Cl. 16 (Int. Cl. 2). 12–10–29.
266,049. HIBAY. Cl. 34 (Int. Cl. 11). 1–14–30.
266,050. CORRECTALITE. Cl. 34 (Int. Cl. 11). 1–14–30.
266,366. NUPERCAINE. Cl. 18 (Int. Cl. 5). 1–14–30.
266,919. TO-TO. Cl. 45 (Int. Cl. 32). 2–11–30.
266,945. PHOENIX. Cl. 39 (Int. Cl. 25). 2–11–30.
267,010. HY-CROME. Cl. 13 (Int. Cl. 6). 2–11–30.
267,150. DETECTIVE SPECIAL. Cl. 9 (Int. Cl. 13). 2–11–30.
267,670. UNITOG. Cl. 39 (Int. Cl. 25). 2–25–30.
267,755. ALBA. Cl. 39 (Int. Cl. 25). 2–25–30.
268,242. REPRESENTATION OF DISC ON WASHER. Cl. 35 (Int. Cl. 17). 3–11–30.
443,425. GRAPETTE. Cl. 45 (Int. Cl. 32). 10–4–49.
443,430. ANTHRAMINE. Cl. 6 (Int. Cl. 1). 10–11–49.
443,590. WONDEREEL. Cl. 22 (Int. Cl. 28). 12–6–49.
443,591. WONDEROD. Cl. 22 (Int. Cl. 28). 12–6–49.
443,620. SEAWARD. Cl. 46 (Int. Cl. 31). 12–13–49.
443,704. MOST PRECIOUS. Cl. 51 (Int. Cl. 3). 1–24–50.
443,777. AMPCO-WELD. Cl. 21 (Int. Cl. 9). 2–28–50.
508,998. TAGOLENE. Cl. 15 (Int. Cl. 4). 4–26–49.
511,525. HUDSON'S WOODWARD SHOPS. Cl. 39 (Int. Cls. 24 and 25). 6–21–49.
511,630. MISCELLANEOUS DESIGN. Cl. 23 (Int. Cl. 7). 6–28–49.
512,117. TERRY AND DESIGN. Cl. 23 (Int. Cl. 7). 7–12–49.
512,238. RAYMOR AND DESIGN. Cl. 18 (Int. Cl. 5). 7–12–49.
512,817. HEV-E-OIL. Cl. 34 (Int. Cl. 11). 7–26–49.
513,095. HONEYWOOD. Cl. 47 (Int. Cl. 33). 8–2–49.
513,318. X. Cl. 13 (Int. Cl. 6). 8–9–49.
513,455. PAGE BELTING CO. AND DESIGN. Cl. 35 (Int. Cls. 7 and 17). 8–9–49.
513,740. RAREPACK. Cl. 39 (Int. Cl. 25). 8–16–49.
513,741. SILMO. Cl. 39 (Int. Cl. 25). 8–16–49.
513,760. AMPEREX. Cl. 21 (Int. Cl. 9). 8–16–49.
513,897. MEAT MASTER. Cl. 31 (Int. Cl. 11). 8–16–49.
514,182. CROWN. Cl. 5 (Int. Cl. 1). 8–23–49.
514,239. IMPERIAL SUPER SPOTTER AND DESIGN. Cl. 52 (Int. Cl. 3). 8–23–49.
514,864. OK. Cl. 5 (Int. Cl. 6). 9–6–49.
515,293. ROBO. Cl. 23 (Int. Cl. 7). 9–20–49.
515,682. K.F.S. Cl. 46 (Int. Cl. 31). 9–27–49.
515,727. RAYVILLE. Cl. 27 (Int. Cl. 14). 9–27–49.
515,745. BUR DENT. Cl. 44. (Int. Cl. 10). 9–27–49.
515,896. W & K. Cl. 19 (Int. Cl. 12). 10–4–49.
515,901. KALO AND DESIGN. Cl. 10 (Int. Cl. 1). 10–4–49.
515,911. VIDEX. Cl. 44 (Int. Cl. 10). 10–4–49.
515,934. CABOT. Cl. 39 (Int. Cl. 25). 10–4–49.
515,940. NASSAU. Cl. 39 (Int. Cl. 25). 10–4–49.
515,944. HART SCHAFFNER & MARX. Cl. 39 (Int. Cl. 25). 10–4–49.
515,945. HART SCHAFFNER & MARX AND DESIGN. Cl, 39 (Int. Cl. 25). 10–4–49.
515,956. LUMPS-O'GOLD. Cl. 46 (Int. Cl. 29). 10–4–49.
515,988. BEN & SALLY. Cl. 30 (Int. Cl. 25). 10–4–49.

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515,999. DIADUST. Cl. 1 (Int. Cl. 14). 10–4–49.
516,015. CHESTER ARMS. Cl. 17 (Int. Cl. 34). 10–4–49.
516,063. SHIP (DESIGN). Cl. 10 (Int. Cl. 1). 10–4–49.
516,071. NOVO. Cl. 14 (Int. Cl. 6). 10–4–49.
516,072. INVINSO. Cl. 52 (Int. Cl. 3). 10–4–49.
516,113. BONYFACE UNLIMITED AND DESIGN. Cl. 50 (Int. Cl. 20). 10–4–49.
516,155. AUTOTUNE. Cl. 21 (Int. Cl. 9). 10–11–49.
516,175. EEMCO AND DESIGN. Cl. 21 (Int. Cl. 7). 10–11–49.
516,190. SORENSEN NOBATRON. Cl. 21 (Int. Cl. 9). 10–11–49.
516,456. KENT. Cl. 39 (Int. Cl. 25). 10–18–49.
516,552. RICKY. Cl. 39 (Int. Cl. 25). 10–18–49.
516,758. PETAL SOFT AND DESIGN. Cl. 29 (Int. Cl. 21). 10–25–49.
517,046. SKAGIT. Cl. 23 (Int. Cl. 7). 11–1–49.
517,104. PICKER. Cl. 26 (Int. Cls. 1, 7, and 9). 11–1–49.
517,227. PROPERSET. Cl. 32 (Int. Cl. 20). 11–1–49.
517,415. BLUE STREAK AND DESIGN. Cl. 21 (Int. Cls. 7, 9, and 12). 11–8–49.
517,454. ALBA. Cl. 39 (Int. Cl. 25). 11–8–49.
517,541. HARTFORD ACCIDENT & INDEMNITY CO. AND DESIGN. Cl. 102 (Int. Cl. 36). 11–8–49.
517,839. TRIANGLE AND CIRCLE (DESIGN). Cl. 27 (Int. Cl. 14). 11–22–49.
518,349. KEM LUSTRAL. Cl. 16 (Int. Cl. 2). 12–6–49.
518,392. TAPERETTE. Cl. 23 (Int. Cl. 8). 12–6–49.
518,438. FLEXTEX. Cl. 12 (Int. Cl. 19). 12–6–49.
518,536. REFLECT-O-FLARE. Cl. 50 (Int. Cl. 11). 12–6–49.
518,565. INVINCIBLE. Cl. 32 (Int. Cl. 20). 12–13–49.
518,656. STANDARD. Cl. 14 (Int. Cl. 6). 12–13–49.
518,890. LUFKIN. Cl. 26 (Int. Cl. 9). 12–20–49.
518,928. FRESH-UP. Cl. 46 (Int. Cl. 31). 12–20–49.
519,467. SILVERSHEEN. Cl. 39 (Int. Cl. 25). 1–3–50.
519,868. GRAD-U-STAT. Cl. 26 (Int. Cl. 9). 1–17–50.
520,125. EMERSON. Cl. 44 (Int. Cls. 9 and 10). 1–24–50.
520,296. "REX." Cl. 27 (Int. Cl. 14). 1–24–50.
520,381. COROFORD. Cl. 37 (Int. Cl. 16). 1–31–50.
520,569. PUBLIC SERVICE. Cl. 37 (Int. Cl. 16). 2–7–50.
520,651. KRANK'S. Cl. 51 (Int. Cl. 3). 2–7–50.
520,679. PAGE BELTING CO. Cl. 35 (Int. Cls. 7 and 17). 2–7–50.
521,035. LAMSDOWN. Cl. 42 (Int. Cl. 24). 2–14–50.
521,110. MOJUD THE DEPENDABLE HOSIERY. Cl. 39 (Int. Cl. 25). 2–21–50.
521,113. PERALTA. Cl. 23 (Int. Cl. 7). 2–21–50.
521,135. HE IN CIRCLE. Cl. 23 (Int. Cl .7). 2–21–50.
521,149. ANT-GO. Cl. 6 (Int. Cl. 5). 2–21–50.
521,160. WESTMINSTER. Cl. 39 (Int. Cl. 25). 2–21–50.
521,183. WASATCH. Cl. 46 (Int. Cl. 30). 2–21–50.
521,191. MERCURY. Cl. 23 (Int. Cl. 7). 2–21–50.
521,201. LYN DELLE. Cl. 39 (Int. Cl. 25). 2–21–50.
521,236. SIR ULTRA. Cl. 39 (Int. Cl. 25). 2–21–50.
521,510. GOLD MEDAL. Cl. 50 (Int. Cl. 6). 2–28–50.
521,798. CHEVRON. Cl. 6 (Int. Cl. 5). 3–7–50.
522,055. CORDTWIST. Cl. 39 (Int. Cl. 25). 3–7–50.
522,394. NOMINEE. Cl. 46 (Int. Cl. 31). 3–14–50.
522,427. AUTHORIZED HAWKINSON TIRE TREAD SERVICE AND DESIGN. Cl. 103 (Int. Cl. 37). 3–14–50.
522,472. CHERE BEST. Cl. 46 (Int. Cl. 31). 3–14–50.
522,474. CADIZ. Cl. 46 (Int. Cl. 29). 3–14–50.
522,475. SPENCER. Cl. 46 (Int. Cl. 29). 3–14–50.
522,499. GRAY CUT. Cl. 14 (Int. Cl. 6). 3–21–50.
522,516. GILWHITE. Cl. 16 (Int. Cl. 2). 3–21–50.
522,517. GIL-LAC. Cl. 16 (Int. Cl. 2). 3–21–50.
522,780. TYROTRACE. Cl. 18 (Int. Cl. 5). 3–21–50.
523,203. KENNEDY. Cl. 22 (Int. Cl. 28). 3–28–50.

# TRADEMARK REGISTRATIONS CANCELED

## Section 7(d)

824,489. BLEEKER-STREET. Cl. 39. 2–21–67.
838,045. SOFTERGENT. Cl. 52. 10–31–67.

## Section 8

734,268. TIZER. Cl. 45. 7–10–62.
734,603. JUSODA. Cl. 45. 7–17–62.
735,227. DRIFTER. Cl. 19. 7–31–62.
735,667. BRAHMS. Cl. 36. 8–7–62.
735,948. DIPAC. Cl. 21. 8–14–62.
738,112. TERRAZZITE. Cl. 12. 9–25–62.
739,122. PENNY SAVER AND DESIGN. Cl. 46. 10–9–62.
739,150. SCRUB. Cl. 51. 10–9–62.
739,315. BLACKEM AND DESIGN. Cl. 22. 10–16–62.
739,394. ADAM & EVE. Cl. 38. 10–16–62.
739,733. HYDRO PROBE. Cl. 26. 10–23–62.
740,385. ECON-O-PAY. Cl. 102. 10–6–62.
740,795. "KRO-FOOT-KIL." Cl. 6. 11–20–62.
741,426. A DOLLAR & A DEED IS ALL YOU NEED. Cl. 103. 11–27–62.
743,210. MOUSE DINER. Cl. 6. 1–8–63.
743,211. RAT DINER. Cl. 6. 1–8–63.
744,375. ECOSEALD. Cl. 23. 1–29–63.
745,197. DESIGN OF A WOMAN'S HEAD. Cl. 46. 2–12–63.
747,390. PRETTY PETITE. Cl. 39. 3–26–63.
747,751. ICE CAFE. Cl. 46. 4–2–63.

*The following registrations issued Oct. 8, 1963*

757,968. VYCRAFT. Cl. 1.
757,993. SUNBOW. Cl. 6.
757,997. DHA-S. Cl. 6.
757,998. VICHEM AND DESIGN. Cl. 6.
757,999. GEOMETRICAL DESIGN. Cl. 6.
758,008. LEOPHEN. Cl. 6.
758,009. HUMECTOL. Cl. 6.
758,012. SUZAC. Cl. 6.
758,015. POLLY-GAZ. Cl. 8.
758,016. TAM-O-SHANTER. Cl. 10.
758,017. GREEN RIBBON. Cl. 10.
758,035. BUTRANIX. Cl. 18.
758,050. MICRO SONIC. Cl. 21.
758,052. MULTIPLE MM AND DESIGN. Cl. 22.
758,054. SKEE-TRAINER. Cl. 22.
758,057. HOLLIDAY. Cl. 22.
758,066. BUDOW. Cl. 23.
758,069. ALPHATRON. Cl. 23.
758,070. ALPHATRON AND DESIGN. Cl. 23.
758,078. CODIR. Cl. 26.
758,080. DATADOT. Cl. 26.
758,081. MUFILE. Cl. 26.
758,082. BABY "DOUGHTER." Cl. 26.
758,084. ILFOCOPY. Cl. 26.
758,085. GAMI 16 AND DESIGN. Cl. 26.
758,093. OVEN-WITH-A-MIND. Cl. 26.
758,096. SPACEOMETER. Cl. 26.
758,098. BI-PED. Cl. 26.
758,101. SCOTCH-MAGIC. Cl. 31.
758,105. MERLINSTONE AND DESIGN. Cl. 31.
758,106. M-PAK AND DESIGN. Cls. 31 and 34.
758,108. SILENT DADDY. Cl. 32.
758,119. TELE-BUFFER. Cl. 36.
758,124. TAP FRAME AND DESIGN. Cl. 37.
758,126. BACLIN. Cl. 37.
758,127. DOLLAR$ FOR $CHOLAR$. Cl. 38.
758,130. BREAKTHRU AND DESIGN. Cl. 38.
758,132. EL CORREO DEL AMOR POR EL DUQUE DE CASALTA. Cl. 38.
758,134. SCALAWAG. Cl. 38.
758,138. AMERICAN STAR. Cl. 39.
758,145. LOCKRIDGE. Cl. 39.
758,150. LASTILEN. Cl. 39.
758,152. LADY WALES. Cl. 39.
758,154. THREE-FERS. Cl. 39.
758,163. KAMPO. Cl. 44.
758,164. KAMPO INTERCHANGEABLE. Cl. 44.
758,165. LEKTRO-SOM. Cl. 44.
758,181. MERCO STORES & M. Cl. 46.
758,185. CINCH MOUNTAIN BREAKFAST. Cl. 46.
758,186. MOUNTAIN BREAKFAST. Cl. 46.
758,187. "GOLDEN LEMON." Cl. 46.
758,188. COLD KING AND DESIGN. Cl. 46.
758,190. SPANISH ROGUE. Cl. 46.
758,192. FAIRMONT IS FINER . . . NATURALLY. Cl. 46.
758,195. PROEX. Cl. 46.
758,197. SURE FIRE. Cl. 46.

758,199. AROUND THE WORLD IN CHEESE. Cl. 46.
758,203. ROUND-ABOUT. Cl. 50.
758,212. STAR-BRITE. Cl. 52.
758,214. DOZ'R AND DESIGN. Cl. 52.
758,216. GSC AND DESIGN. Cl. 52.
758,217. FREQUENTIAL. Cl. 100.
758,219. SANGER HARRIS AND DESIGN. Cl. 101.
758,225. THE CONTEMPORARIES. Cl. 107.
758,230. BOTTEL (DESIGN). Cl. 4.
758,233. CHASE. Cl. 29.
758,234. QUICK PLUG. Cl. 35.
758,235. REVERS-A-SLAK. Cl. 39.
758,236. SLACKS BY CHESTNUT RIDGE AND DESIGN. Cl. 39.

### Section 18

546,735. SPEED-O-MATIC. Cl. 31. 8–14–51.
768,309. KITTY KRUMPETS ETC. AND DESIGN. Cl. 46. 4–14–64.
829,951. PUSS 'N' POOCH. Cl. 2. 6–6–67.

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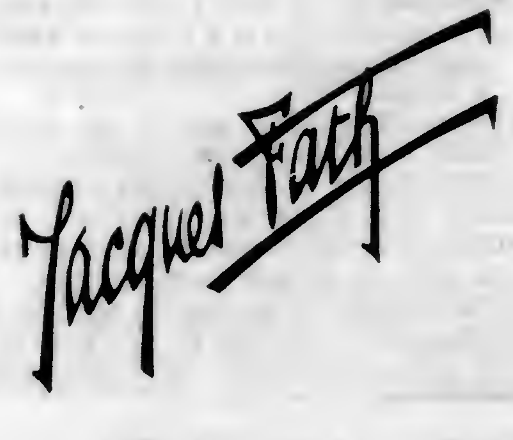
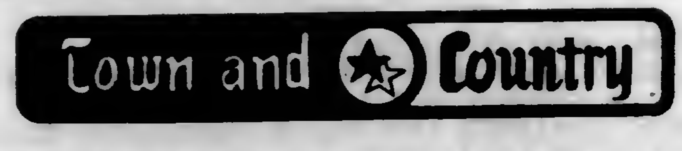
## TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

511,998. JACQUES FATH. Cl. 6. 7–5–49. Societe Jacques F. Fath. Les Parfums Jacques Fath, Societe Anonyme, Paris, France. Amended to appear:



519,199. BERINGER BROS. BB. Cl. 49. 12–27–49. Beringer Bros., Inc., St. Helena, Calif. Corrected: In the certificate, line 5, second occurrence, and in the statement, column 1, line 2, "California" should be deleted and *Nevada* should be inserted.

862,543. TOWN AND COUNTRY DANCE CLUB AND DESIGN. Cl. 107. 12–24–68. Stephen Bernat, Tucson, Ariz. Amended: In the statement, column 2, lines 4 through 6 are deleted, and the drawing is amended to appear:



865,506. MB AND DESIGN. Cls. 100 and 103. 2–25–69. Maul Bros. Inc., Millville, N.J. Corrected: In the statement, column 1, line 1, "Bros.," should be deleted and *Bros.* should be inserted.

873,853. EASY-TIMERS. Cl. 39. 7–29–69. Barrow Manufacturing Company. J. C. Penney Company, New York, N.Y. Corrected: In the statement, column 1, before line 1, *J. C. Penney Company (Delaware corporation), 1301 Avenue of the Americas, New York, N.Y. 10019, assignee of* should be inserted.

875,097. Z AND DESIGN. Cl. 26. 8–19–69. Zyrotron Industries, Inc., South Hackensack, N.J. Corrected: In the statement, column 1, line 1, "New York" should be deleted and *Delaware* should be inserted.

876,365. BLUBORO. Cl. 18. 9–9–69. Marion Laboratories, Inc., Kansas City, Mo. Corrected: In the statement, column 1, line 1, "Missouri" should be deleted and *Delaware* should be inserted.

876,891. CALCITOID. Cl. 18. 9–16–69. Marion Laboratories, Inc., Kansas City, Mo. Corrected: In the statement, column 1, line 1, "Missouri" should be deleted and *Delaware* should be inserted.

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# INDEX OF REGISTRANTS

## NOVEMBER 25, 1969

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

Acme White Lead & Color Works, Hamtramck, Mich., to The Sherwin-Williams Co., Cleveland, Ohio. 265,024, ren. 11–25–69. Cl. 16.
Adams, Martin & Nelson, Inc., Minneapolis, Minn. 881,429, pub. 9–9–69. Cl. 101.
Aday, Jack R.: *See*—
  Aday Quatomatic, Inc.
Aday Quatomatic, Inc., from J. R. Aday, d.b.a. Jack the Stripper, Memphis, Tenn. 881,469, pub. 9–9–69. Cl. 106.
Adler, Charles, Jr., Baltimore, Md. 758,096, canc. Cl. 26.
Advanced Communication Techniques, Inc., Westport, Conn. 881,421–2, pub. 9–9–69. Multiple Class (Classes 100 and 107).
Aero-Flow Dynamics, Inc., Linden, N.J. 881,264, pub. 9–9–69. Cl. 34.
Aimco Automotive Industries: *See*—
  Aimco Industries, Ltd.
Aimco Industries Ltd., d.b.a. Aimco Automotive Industries, Ontario, Canada. 881,167, pub. 9–9–69. Multiple Class (Classes 19, 21, and 23).
Ainsworth, Wm., Denver, Colo. 881,235, pub. 9–9–69. Cl. 26.
Air Reduction Co., Inc., New York, N.Y. 881,265–6, pub. 9–9–69. Cl. 34.
Aktiebolaget Urfabriken, Svangsta, Sweden. 881,196, pub. 9–9–69. Cl. 22.
Alba-Waldensian, Inc.: *See*—
  Pilot Full Fashion Mills, Inc.
  Waldensian Hosiery Mills.
Alberto-Culver, Melrose Park, Ill. 881,503. Cl. 51.
Allied Chemical Corp.: *See*—
  Barrett Co., The.
Alpina Union Horlogere A.G., Biel, Switzerland. 517,839, ren. 11–25–69. Cl. 27.
Aluminum Goods Ltd., Ontario, Canada. 881,166, pub. 9–9–69. Cl. 19.
Amax Industries, Inc., Elgin, Ill. 881,162, pub. 9–9–69. Cl. 19.
Amercoat Corp., Brea, Calif. 881,131–2, pub. 9–9–69. Cl. 12.
American Bosch Arma Corp., Garden City, N.Y. 758,119, canc. Cl. 36.
American Chemical Society, Washington, D.C. 881,300, pub. 9–9–69. Cl. 38.
American Chemical Society, Washington, D.C. 881,448. Cl. 38.
American Dairy Queen Corp., Minneapolis, Minn. 881,351, pub. 9–9–69. Cl. 46.
American Express Co., New York, N.Y. 881,301, pub. 9–9–69. Cl. 38.
American Hospital Supply Corp.: *See*—
  Bur Dent Mfg. Co.
American Kennel Club, Inc., New York, N.Y. 881,308, pub. 9–9–69. Cl. 38.
American Plywood Association, Tacoma, Wash. 881,139, pub. 9–9–69. Cl. 12.
American Velcro, Inc., Manchester, N.H. 881,322–3, pub. 9–9–69. Cl. 40.
American Whipped Products, Inc., Glendale, N.Y. 881,345, pub. 9–9–69. Cl. 46.
Ampco Metal, Inc., Milwaukee, Wis. 443,777, ren. 11–25–69. Cl. 21.
Amperex Electronic Corp., Brooklyn, to Amperex Electronic Corp., Hicksville, N.Y. 513,760, ren. 11–25–69. Cl. 21.
Amway Corp., Ada, Mich. 881,404, pub. 9–9–69. Cl. 52.
Anderson, Clayton & Co., Dallas, Tex. 745,197, canc. Cl. 46.
Apel, I., & Co., Inc., New York, N.Y. 521,201, ren. 11–25–69. Cl. 39.
Appleton Wire Works Corp., Appleton, Wis. 881,249, pub. 9–9–69. Cl. 31.
Arden, Elizabeth, Sales Corp., New York, N.Y. 881,379, pub. 9–9–69. Cl. 51.
Arden, Elizabeth, Sales Corp., d.b.a. Elizabeth Arden, New York, N.Y. 881,501. Cl. 51.
Arden, Elizabeth, Sales Corp., New York, N.Y. 881,504. Cl. 51.
Aristocrat Travel Products, Morgan Hill, Calif. 881,163–4, pub. 9–9–69. Cl. 19.
Arkansas Co., Inc., Newark, N.J. 443,430, ren. 11–25–69. Cl. 6.
Armstrong Cork Co., Lancaster, Pa. 881,137, pub. 9–9–69. Cl. 12.
Armstrong Cork Co., Lancaster, Pa. 881,263, pub. 9–9–69. Cl. 34.
Aroma Coffee Co., Inc., Chicago, Ill. 881,362, pub. 9–9–69. Cl. 46.
Aron, M., Corp.: *See*—
  Ricky Ties, Inc.
Arrow Safety Device Co., Mount Holly, N.J. 518,536, ren. 11–25–69. Cl. 50.
Ascher, B. F., & Co., Inc., Kansas City, Mo. 881,296, pub. 9–9–69. Cl. 38.
Asenath Petrie, Cambridge, Mass. 881,223, pub. 9–9–69. Cl. 26.
Ashland Oil & Refining Co., Ashland, Ky. 881,118, pub. 9–9–69. Multiple Class (Classes 6 and 15).
Ashland Oil & Refining Co., Ashland, Ky. 881,506. Cl. 52.
Associated Photographers, Inc., Kansas City, Mo. 881,232, pub. 9–9–69. Cl. 26.
Atlas Supply Co., Springfield, N.J. 881,271, pub. 9–9–69. Cl. 35.
Atlas Supply Co., Springfield, N.J. 881,274, pub. 9–9–69. Cl. 35.
Atway Products Co., Joliet, Ill. 757,999, canc. Cl. 6.
Automated Control Technology, Inc., Palo Alto, Calif. 881,237, pub. 9–9–69. Cl. 26.
Avon Products, Inc., New York, N.Y. 881,394–8, pub. 9–9–69. Multiple Class (Classes 51 and 52).
Babe Ruth League, Inc., Trenton, N.J. 881,419–20, pub. 9–9–69. Cl. 100.
Back, Frank G., Glen Cove, N.Y. 758,080–1, canc. Cl. 26.
Balinkin, Isay, Cincinnati, Ohio. 881,226, pub. 9–9–69. Cl. 26.
Baltimore Spice Co., The, Garrison, Md. 881,490. Cl. 46.
Bandage Corp., The, Sheboygan, Wis. 881,247, pub. 9–9–69. Multiple Class (Classes 31 and 42).
Barrett Co., The, to Allied Chemical Corp., New York, N.Y. 259,899, ren. 11–25–69. Cl. 6.
Barrow Mfg. Co., J. C. Penney Co., New York, N.Y. 873,853, cor. Cl. 39.
Barwick, E. T., Industries, Inc., Chamblee, Ga. 881,329–31, pub. 9–9–69. Cl. 42.
Basiger, James D., Elsinore, Calif. 881,372, pub. 9–9–69. Cl. 50.
Beatrice Foods Co., Chicago, Ill. 881,355–6, pub. 9–9–69. Cl. 46.
Beatrice Foods Co., Chicago, Ill. 881,360–1, pub. 9–9–69. Cl. 46.
Becton, Dickinson & Co., East Rutherford, N.J. 881,261, pub. 9–9–69. Cl. 34.
Beecham Inc., Clifton, N.J. 881,389, pub. 9–9–69. Cl. 51.
Bell & Gossett Co., Morton Grove, Ill. 758,106, canc. Multiple Class (Classes 31 and 34).
Beloit Corp., Beloit, Wis., from Budow Mfg. Co., Inc., Birmingham, Ala. 758,066, canc. Cl. 23.
Bendix Corp., The, Detroit, Mich., from Bendix Field Engineering Corp., Owings Mills, Md. 881,416, pub. 9–9–69. Cl. 100.
Bendix Field Engineering Corp.: *See*—
  Bendix Corp., The.
Beringer Bros., Inc., St. Helena, Calif. 519,199, cor. Cl. 49.
Bernat, Stephen, Tuscson, Ariz. 862,543. Am. 7(d). Cl. 107.
Best Quality Plastics, Inc., Denver, Colo. 881,478. Cl. 2.
Blackman Hicksville Co., Inc., Hicksville, N.Y. 881,453, pub. 9–9–69. Cl. 101.
Bleeker Street, Inc., New York, N.Y. 824,489, canc. Cl. 39.
Bliss-Nielsen, Chicago, Ill. 881,293, pub. 9–9–69. Cl. 37.
Bodmer, Maschinenbau, G. & E. Bodmer, Kusnacht, Zurich, Switzerland. 881,209, pub. 9–9–69. Cl. 23.
Bonded Oil Co., Springfield, Ohio. 881,150, pub. 9–9–69. Cl. 15.
Borden, Inc., New York, N.Y. 881,393, pub. 9–9–69. Cl. 51.
Borgenight, E., & Co., Inc., New York, N.Y. 758,154, canc. Cl. 39.
Borg-Warner Corp., from Borg-Warner Corp., Chicago, Ill. 881,248, pub. 9–9–69. Cl. 31.
Borneo Sumatra Trading Co., Inc., New York, N.Y. 758,015, canc. Cl. 8.
Bristol-Myers Co., New York, from Foster-Milburn Co., Buffalo, N.Y. 881,159, pub. 9–9–69. Cl. 18.
Bristol-Myers Co., New York, N.Y. 881,390, pub. 9–9–69. Cl. 51.
Brooke Bond Foods, Inc., Lake Success, N.Y. 881,492. Cl. 46.
Brooke, Reid & Co., Ltd., Leeds, England. 881,199, pub. 9–9–69. Cl. 22.
Brunswick Mfg. Co., Inc., North Quincy, Mass. 881,336, pub. 9–9–69. Cl. 44.
Budget Sound, Inc., Burbank, Calif. 881,285, pub. 9–25–69. Cl. 36.
Bukowsky, Edward J., d.b.a. Jan Laboratories, Rockville, Md. 739,150, canc. Cl. 51.
Bur Dent Mfg. Co., Crystal Lake, to American Hospital Supply Corp., Evanston, Ill. 515,745, ren. 11–25–69. Cl. 44.
C.L.I. Cosmetics, Inc., Brooklyn, N.Y. 881,386, pub. 9–9–69. Cl. 51.
Califoam Corp. of America, Compton, Calif. 881,250, pub. 9–9–69. Cl. 32.
Campanella Corp., Warwick, R.I. 881,464, pub. 9–9–69. Cl. 103.
Canterbury House, Inc., Peru, Ind. 881,251, pub. 9–9–69. Cl. 32.
Capezio, Inc., New York, N.Y. 515,988, ren. 11–25–69. Cl. 39.
Cargill, Inc., Minneapolis, Minn. 881,095, pub. 9–9–69. Cl. 1.
Cargill, Inc., Minneapolis, Minn. 881,120, pub. 9–9–69. Cl. 6.
Cariboo Lumber Mfg. Association, British Columbia, Canada. 881,135, pub. 9–9–69. Cl. 12.
Carlise Mfg. Co., Newark, N.J. 829,951, canc. Cl. 2.
Caro, Inc., d.b.a. Kirby Sales Co., Los Angeles, Calif. 758,214, canc. Cl. 52.
Carter-Wallace, Inc., New York, N.Y. 881,399, pub. 9–9–69. Cl. 51.
Carven Distributors, Inc.: *See*—
  Cochran, Jacqueline, Inc.
Central Dairy Products Co., d.b.a. Timothy Farms, Town and State. 881,367, pub. 9–9–69. Cl. 46.
Chase Mfg. Co., Inc., New York, N.Y. 758,233, canc. Cl. 29.
Chatham Mfg. Co., Elkin, N.C. 521,035, ren. 11–25–69. Cl. 42.
Chilcote Co., The, Cleveland, Ohio. 758,124, canc. Cl. 37.

- Cinch Products, Inc., Los Angeles, Calif. 758,185-6, canc. Cl. 46.
- City Stores Co.: *See—*
  - Simon, Franklin, & Co., Inc.
- Clairol Inc., New York, N.Y. 881,500. Cl. 51.
- Cleaver-Brooks Co., to Industrial Combustion, Inc., Milwaukee, Wis. 512,817, ren. 11-25-69. Cl. 34.
- Climate Cosmetics Corp., New York, N.Y. 881,384, pub. 9-9-69. Multiple Class (Classes 51 and 52).
- Clover Realty Co., Atlanta, Ga. 881,451, pub. 9-9-69. Cl. 101.
- Clover Realty Co., Atlanta, Ga. 881,455, pub. 9-9-69. Cl. 101.
- Cluett, Peabody & Co., Inc., Troy, N.Y. 515,934, ren. 11-25-69. Cl. 39.
- Cluett, Peabody & Co., Inc., Troy, N.Y. 515,940, ren. 11-25-69. Cl. 39.
- Cluett, Peabody & Co., Inc., Troy, N.Y. 516,456, ren. 11-25-69. Cl. 39.
- Coast Plating, Inc., Gardena, Calif. 881,470, pub. 9-9-69. Cl. 106.
- Cobar Corp., Dearborn, Mich. 881,177, pub. 9-9-69. Cl. 21.
- Cobbs Corner Casuals, Inc., New York, N.Y. 881,313, pub. 8-5-69. Cl. 39.
- Cochran, Jacqueline, Inc., from Carven Distributors, Inc., New York, N.Y. 881,377, pub. 9-9-69. Cl. 51.
- Colgate-Palmolive Co., New York, N.Y. 838,045, canc. Cl. 52.
- Colgate-Palmolive Co., New York, N.Y. 881,152, pub. 9-9-69. Cl. 18.
- Colgate-Palmolive Co., New York, N.Y. 881,378, pub. 9-9-69. Cl. 51.
- Collins Radio Co., Dallas, Tex. 516,155, ren. 11-25-69. Cl. 21.
- Colorado Milling & Elevator Co., to The Colorado Milling & Elevator Co., Denver, Colo. 521,183, ren. 11-25-69. Cl. 46.
- Colorado Milling & Elevator Co., The: *See—*
  - Colorado Milling & Elevator Co.
- Colts, Inc.: *See—*
  - Colt's Patent Fire Arms Mfg. Co.
- Colt's Patent Fire Arms Mfg. Co., to Colts, Inc., Hartford, Conn. 267,150, ren. 11-25-69. Cl. 9.
- Columbia Broadcasting System, Inc., New York, N.Y. 881,280, pub. 9-9-69. Cl. 36.
- Columbia Broadcasting System, Inc., New York, N.Y. 881,283, pub. 9-9-69. Cl. 36.
- Columbia Fruit Packers, Inc., Wenatchee, Wash. 522,472, ren. 11-25-69. Cl. 46.
- Consolidated Royal Chemical Corp., Chicago, Ill. 520,651, ren. 11-25-69. Cl. 51.
- Continental Mfg. Co., Cincinnati, Ohio. 881,144, pub. 9-9-69. Cl. 13.
- Continental Oil Co., Ponca City, Okla. 881,143, pub. 9-9-69. Cl. 13.
- Cooper Industries, Inc.: *See—*
  - Lufkin Rule Co., The.
- Cosmetically Yours, Inc., Yonkers, N.Y. 881,502. Cl. 51.
- Country Lad Foods, Inc., Atlanta, Ga. 881,352, pub. 9-9-69. Cl. 46.
- Crescent Forge & Shovel Co., Inc., Havana, Ill. 881,216, pub. 9-9-69. Cl. 23.
- Crouse-Hinds Co., Syracuse, N.Y. 881,174, pub. 9-9-69. Cl. 21.
- Crown Zellerbach Corp., San Francisco, Calif. 520,381, ren. 11-25-69. Cl. 37.
- Crown Zellerbach Corp., San Francisco, Calif. 520,569, ren. 11-25-69. Cl. 37.
- Daisy's Originals, Inc., Miami, Fla. 758,235, canc. Cl. 39.
- Daniels, C. R., Inc., Daniels, Md. 881,103, pub. 9-9-69. Cl. 2.
- Dart Industries Inc.: *See—*
  - Rexall Drug Co.
- Dart Industries, Inc., from Rexall Drug & Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 881,201-2, pub. 9-9-69. Cl. 22.
- Dart Industries, Inc., from Rexall Drug & Chemical Co., d.b.a. Riker Laboratories, Los Angeles, Calif. 881,298, pub. 9-9-69. Cl. 38.
- Dart Inudstries, Inc., d.b.a. Thompson Industries, from Rexall Drug & Chemical Co., d.b.a. Thompson Industries, Los Angeles, Calif. 881,374, pub. 9-9-69. Cl. 50.
- Da Vida Cosmetics Inc., d.b.a. daVida, New York, N.Y. 881,382, pub. 9-9-69. Cl. 51.
- Daybreak Dynamics: *See—*
  - Macy, Harry D.
- Day/Ton Progress Corp., Dayton, Ohio. 881,218, pub. 9-9-69. Cl. 23.
- Decomatic Corp.: *See—*
  - Hoe, R., & Co., Inc.
- Deering Milliken, Inc., New York, N.Y. 881,334, pub. 9-9-69. Cl. 42.
- De La Pena, Jose S., d.b.a. El Duque de Casalta, New York, N.Y. 758,132, canc. Cl. 38.
- Delmonte Corp., San Francisco, Calif. 881,338-9, pub. 9-9-69. Multiple Class (Classes 45 and 46).
- Delsoy Products Corp., Dearborn, Mich. 881,349, pub. 9-9-69. Cl. 46.
- Delta Air Lines, Inc., Atlanta, Ga. 881,467, pub. 9-9-69. Cl. 105.
- Deltron, Inc., Philadelphia, Pa. 735,948, canc. Cl. 21.
- Delnxol Laboratories, Inc., Chicago, Ill. 881,498. Cl. 51.
- Dialalarm, Inc., North Hollywood, Calif. 881,184, pub. 9-9-69. Cl. 21.
- Divers International, Inc., New Haven, Conn. 881,257, pub. 9-9-69. Cl. 32.
- Dixon, Ursul R., d.b.a. Plasco, Alvord, Tex. 881,094, pub. 9-9-69. Cl. 1.
- Dodge, Alfa D.: *See—*
  - Terry, George A.
- Dodsworth, Saml, Co., Kansas City, Kans. 881,292, pub. 9-9-69. Cl. 37.
- Donati, Clarence A., d.b.a. Western Chili Processors, Santa Maria, Calif. 881,346, pub. 9-9-69. Cl. 46.
- Donnelley, Reuben H., Corp., The, New York, N.Y. 881,295, pub. 9-9-69. Cl. 38.
- Douglas Oil Co. of California, Los Angeles, Calif. 881,479. Cl. 10.
- Dow Chemical Co., The, Midland, Mich. 757,997, canc. Cl. 6.
- Dow Corning Corp., Midland, Mich. 881,151, pub. 9-9-69. Cl. 16.
- Drackett Co., The, Cincinnati, Ohio. 881,242, pub. 9-9-69. Cl. 29.
- Drew Chemical Corp., New York, N.Y. 881,357, pub. 9-9-69. Cl. 46.
- Duesberg, Hubert, Heusy-Verviers, Belgium, to Duesberg-Bosson of America, Inc., Jefferson, Mass. 521,113, ren. 11-25-69. Cl. 23.
- Duesberg-Bosson of America, Inc.: *See—*
  - Duesberg, Hubert.
- Dunhill, Alfred, Ltd., London, England. 881,310, pub. 9-9-69. Cl. 39.
- Dura Business Machines, Inc., Oak Park, Mich. 758,069-70, canc. Cl. 23.
- Durolith Corp., Easton, Md. 881,124, pub. 9-9-69. Multiple Class (Classes 6 and 50).
- Dynamic Classics, Ltd., New York, N.Y. 881,190, pub. 9-9-69. Cl. 21.
- ESP Property Factors, Inc., from Emery Selling, Property Factors, Inc., Portland, Oreg. 881,435, pub. 9-9-69. Multiple Class (Classes 101 and 102).
- Eco Engineering Co., Division of Economy Faucet Co., Newark, N.J. 744,375, canc. Cl. 23.
- Ecomar-Empresa Comercial Ultramar, Lisbon, Portugal. 881,354, pub. 9-9-69. Cl. 46.
- Econ-O-Pay, Inc., Valley City, N. Dak. 740,385, canc. Cl. 102.
- Educational Computer Systems, Inc., Phoenix, Ariz. 881,228, pub. 9-9-69. Cl. 26.
- Eisenberg, Sidney A., d.b.a. Official Publishing Co., Cleveland, Ohio. 758,127, canc. Cl. 38.
- Electrical Engineering & Mfg. Corp., to Electronic Specialty Co., Pasedana, Calif. 516,175, ren. 11-25-69. Cl. 21.
- Electro Dispersion Corp., Long Island City, N.Y. 881,178, pub. 9-9-69. Cl. 21.
- Electroglas, Inc., Menlo Park, Calif. 881,224, pub. 9-9-69. Cl. 26.
- Electronic Specialty Co.: *See—*
  - Electrical Engineering & Mfg. Corp.
- Elizabeth of Sweden Ltd., Kingston, Jamaica. 881,381, pub. 9-9-69. Cl. 51.
- Ellcon-National, Inc., Totowa, N.J. 881,172, pub. 9-9-69. Cl. 19.
- Elmcraft, Inc., Chicago, Ill. 881,309, pub. 9-9-69. Cl. 38.
- Emerson, J. H., Co., Cambridge, Mass. 520,125, ren. 11-25-69. Cl. 44.
- Emery Selling, Property Factors, Inc.: *See—*
  - ESP Property Factors, Inc.
- Employment Unlimited, Inc., Albuquerque, N. Mex. 881,448, pub. 9-9-69. Cl. 101.
- Engelhard Minerals & Chemicals Corp.: *See—*
  - Wilson, H. A., Co., The.
- Engineered Products Co., The, Flint, Mich. 881,133, pub. 9-9-69. Multiple Class (Classes 12, 13, and 23).
- Englander Co., Inc., The, Chicago, Ill., to The Englander Co., Inc., New York, N.Y. 517,227, ren. 11-25-69. Cl. 32.
- Enterprise Aluminum Co., Massillon, Ohio. 881,145, pub. 9-9-69. Cl. 13.
- Evyan Perfumes, Inc.: *See—*
  - Westall, Evelyn.
- Exquisite Form Industries, Inc., New York, N.Y. 747,390, canc. Cl. 39.
- FMC Corp., Chicago, Ill. 881,212, pub. 9-9-69. Cl. 23.
- Faberge, Inc.: *See—*
  - Tip-Top Prodnets Co.
- Fabrikona, Inc., East Taunton, Mass. 758,057, canc. Cl. 22.
- Fabrique d'Horlogerie Rayville S.A. (Rayville Watch Mfg. Co. Ltd.), to Manufacture d'Horlogeric Rayville S.A., Montres Blancpain, Berne, Switzerland. 515,727, ren. 11-25-69. Cl. 27.
- Fairchild Publications, Inc., New York, N.Y. 881,487. Cl. 38.
- Fairmont Foods Co., Omaha, Nber. 758,192, canc. Cl. 46.
- Farm Automation, Inc.: *See—*
  - Smith, A. O., Harvestore Products.
- Fast Foods International, Inc., Orlando, Fla. 881,423, pub. 9-9-69. Cl. 100.
- Federal-Mogul Corp., Southfield, Mich. 881,149, pub. 9-9-69. Cl. 14.
- Federated Department Stores, Inc., Dallas, Tex. 758,219, canc. Cl. 101.
- Filderman, Irving P., Memphis, Tenn. 758,098, canc. Cl. 26.
- Financial Collection Agenies Ltd., Quebec, Canada. 881,459, pub. 9-9-69. Cl. 102.
- Finkel Outdoor Products, Inc., Garfield, N.J. 881,324, pub. 9-9-69. Cl. 41.
- First Federal Savings & Loan Association, Milwaukee, Wis. 881,458, pub. 9-9-69. Cl. 102.
- Fleming Metal Fabricators, Los Angeles, Calif. 881,102, pub. 9-9-69. Cl. 2.
- Florocarbon Co., The, Anaheim, Calif. 881,269, pub. 9-9-69. Cl. 35.
- Food Corp. of America, Clifton, N.J. 747,751, canc. Cl. 46.
- Fortunoff Silver Sales of Westbury, Inc., Westbury, N.Y. 881,240, pub. 9-9-69. Cl. 28.
- Fosfatbolaget Ab, Stockholm, Sweden. 881,112, pub. 9-9-69. Cl. 5.

- Fosfatbolaget AB, Stockholm, Sweden. 881,129, pub. 9-9-69. Cl. 10.
- Foster-Milburn Co.: *See—*
  - Bristol-Myers Co.
- Four Pi, Inc., Oak Park, Ill. 881,434, pub. 9-9-69. Cl. 101.
- Franklin National Bank, Mineola, N.Y. 881,462, pub. 9-9-69. Cl. 102.
- Fredericks Services, Inc., New York, N.Y. 881,442, pub. 9-9-69. Cl. 101.
- GAF Corp., New York, N.Y. 881,305, pub. 9-9-69. Cl. 38.
- G.M.S. Inc., from Fashion Knits, Inc., Lexington, N.C. 758,145, canc. Cl. 39.
- Galaxy Electronics, Inc., Council Bluffs, Iowa. 881,183, pub. 9-9-69. Cl. 21.
- Galileo Corp. of America, New York, N.Y. 758,085, canc. Cl. 26.
- Gallaher Ltd.: *See—*
  - Redstone, Isaiah.
- Geigy Chemical Corp.: *See—*
  - Geigy Co., Inc.
- Geigy Chemical Corp., Ardsley, N.Y. 881,125, pub. 9-9-69. Cl. 6.
- Geigy Co., Inc., New York, to Geigy Chemical Corp., Ardsley, N.Y. 263,767, ren. 11-25-69. Cl. 6.
- General Aniline & Film Corp., New York, N.Y. 758,008-9, canc. Cl. 6.
- General Battery and Ceramic Corp., Reading, Pa. 881,483. Cl. 21.
- General Mfg. & Distributing Co., Quincy, Mich. 546,735, canc. Cl. 31.
- General Radiator, Inc., Mount Vernon, Ill. 881,222, pub. 9-25-69. Cl. 23.
- General Tire & Rubber Co., The, Akron, Ohio. 881,168-9, pub. 9-9-69. Cl. 19.
- Gentex Corp., New York, N.Y. 881,195, pub. 9-9-69. Cl. 22.
- George Bros., Sultana, Calif. 522,394, ren. 11-25-69. Cl. 46.
- Gibson Greeting Cards, Inc., Cincinnati, Ohio. 881,485. Cl. 37.
- Gilbert, Raymond C., d.b.a. Indispensable Disposables of Iowa, Eldora, Iowa. 881,244, pub. 9-9-69. Cl. 29.
- Gillette Co., The, d.b.a. The Toni Co., Boston, Mass. 881,505. Cl. 51.
- Gilman Paint & Varnish Co., to Gilman Paint & Varnish Co., Chattanooga, Tenn. 522,516-17, ren. 11-25-69. Cl. 16.
- Glendinning Companies, Inc., Westport, Conn. 881,449-50, pub. 9-9-69. Cl. 101.
- Glenmore Distilleries Co., Louisville, Ky. 881,371, pub. 9-9-69. Cl. 40.
- Gluckin, Wm., & Co., Inc., New York, N.Y. 881,314, pub. 9-9-69. Cl. 39.
- Gold Platter, Inc., Macon, Ga. 881,425, pub. 9-9-69. Cl. 100.
- Goodman, George W., Central Point, Oreg. 758,190, canc. Cl. 46.
- Goodyear Tire & Rubber Co., The, Akron, Ohio. 881,273, pub. 9-9-69. Cl. 32.
- Grant, William, & Sons, Ltd., Glasgow, Scotland. 881,497. Cl. 49.
- Grapette Co., Inc., The, Camden, Ark. 443,425, ren. 11-25-69. Cl. 45.
- Great Lakes Mink Association, Kenosha, Wis. 881,093, pub. 9-9-69. Cl. 1.
- Greater Trenton Chamber of Commerce, The, Trenton, N.J. 881,297, pub. 9-9-69. Cl. 38.
- Green Giant Co., Le Sueur, Minn. 881,358-9, pub. 9-9-69. Cl. 46.
- Greenwood, Mary F., Carmel, Calif. 739,315, canc. Cl. 22.
- Greet Our Babies, Inc., Memphis, Tenn. 881,291, pub. 9-9-69. Cl. 37.
- Griffs of America, Inc., Dallas, Tex. 881,417, pub. 9-9-69. Cl. 100.
- HTV Systems, Inc., East Rochester, N.Y. 881,186, pub. 9-9-69. Cl. 21.
- Hale-Halsell Co., Tulsa, Okla. 515,956, ren. 11-25-69. Cl. 46.
- Hall Marine Corp., Princeton, N.J. 881,213, pub. 9-9-69. Cl. 23.
- Hamilton Cosco, Inc., Columbus, Ind. 881,259, pub. 9-9-69. Cl. 32.
- Hansen, A. L., Mfg. Co., Gurnee, Ill. 511,630, ren. 11-25-69. Cl. 23.
- Harris, Edward A., d.b.a. Fortune Features, Huntly, Va. 739,394, canc. Cl. 38.
- Harsco Corp.: *See—*
  - Patent Scaffolding Co., Inc., The.
- Hart Schaffner & Marx, Chicago, Ill. 513,740-1, ren. 11-25-69. Cl. 39.
- Hart Schaffner & Marx, Chicago, Ill. 515,944-5, ren. 11-25-69. Cl. 39.
- Hartford Accident & Indemnity Co., Hartford, Conn. 517,541, ren. 11-25-69. Cl. 102.
- Hasler A-G, Bern, Switzerland. 881,176, pub. 9-9-69. Multiple Class (Classes 21 and 26).
- Haspel Bros., Inc., New Orleans, La. 521,236, ren. 11-25-69. Cl. 39.
- Hawkinson, Paul E., Co., Minneapolis, Minn. 522,427, ren. 11-25-69. Cl. 103.
- Helio Aircraft Corp., Bedford, Mass. 881,171, pub. 9-9-69. Cl. 19.
- Hennigsen Foods, Inc., New York, N.Y. 881,111, pub. 9-9-69. Cl. 5.
- Heppenstall Co.: *See—*
  - Heppenstall Forge & Knife Co.
- Heppenstall Forge & Knife Co., to Heppenstall Co., Pittsburgh, Pa. 262,022, ren. 11-25-69. Cl. 14.
- Higbee Co., The, Cleveland, Ohio, from The G. M. McKelvey Co. 881,106, pub. 9-9-69. Multiple Class (Classes 3 and 39).
- Hill, Richard J., d.b.a. Rilco Products, San Francisco, Calif. 266,919, ren. 11-25-69. Cl. 45.
- Hodges Research & Development Co., Redwood City, Calif., to B. E. Williams, La Grange Park, Ill. 513,897, ren. 11-25-69. Cl. 31.
- Hoe, R., & Co., Inc., Bronx, N.Y., from Decomatic Corp., Mansfield, Ohio. 881,220, pub. 9-9-69. Cl. 23.
- Hoffman, M., & Co., Inc., Boston, Mass. 881,321, pub. 7-29-69. Cl. 39.
- Hollister, Lloyd, Inc., Wilmette, Ill. 261,512-13, ren. 11-25-69. Cl. 38.
- Holophane Co., Inc., to Holophane Co., Inc., New York, N.Y. 266,049-50, ren. 11-25-69. Cl. 34.
- Honeywell Inc.: *See—*
  - Minneapolis-Honeywell Regulator Co.
- Honeywood Distilleries, Inc., to Honeywood, Inc., Salem, Oreg. 513,095, ren. 11-25-69. Cl. 47.
- Honeywood, Inc.: *See—*
  - Honeywood Distilleries, Inc.
- Horn, Joseph S., d.b.a. Trans Global Records of America, Bayard, Nebr. 881,278, pub. 9-9-69. Cl. 36.
- Houston Engineers, Inc., Houston, Tex. 521,135, ren. 11-25-69. Cl. 23.
- Hubbard, C. N., to Hubbard's Imperial, Inc., Kansas City, Mo. 514,239, ren. 11-25-69. Cl. 52.
- Hubbard-Hall Chemical Co., The, d.b.a. Green Ribbon Products Co., Waterbury, Conn. 758,017, canc. Cl. 10.
- Hudnut, Richard: *See—*
  - Standard Laboratories, Inc.
- Hudson, J. L., Co., The, Detroit, Mich. 511,525, ren. 11-25-69. Cl. 39.
- Hudson Pen Corp., Pelham, N.Y. 881,486. Cl. 37.
- Huson, Kent B., Scottsdale, Ariz. 881,252, pub. 9-9-69. Cl. 32.
- Hydro-Flex Corp., Inc., Topeka, Kans. 881,270, pub. 9-9-69. Cl. 35.
- Hygrade Food Products Corp.: *See—*
  - Kennel Food Supply Co., Inc.
- Ilford Ltd., Ilford, Essex, England. 758,084, canc. Cl. 26.
- Illes, A. E., Co., Dallas, Tex. 758,187, canc. Cl. 46.
- Imperial Knife Associated Co., Inc., Providence, R.I. 881,217, pub. 9-9-69. Cl. 23.
- Indispensable Disposables of Iowa: *See—*
  - Gilbert, Raymond C.
- Industrial Combustion, Inc.: *See—*
  - Cleaver-Brooks Co.
- Inforonics, Inc., Maynard, Mass. 881,451, pub. 9-9-69. Cl. 101.
- Institutional Food Brokers, Inc., Waltham, Mass. 881,440, pub. 9-9-69. Cl. 101.
- International Dioxcide, Inc., New York, N.Y. 881,117, pub. 9-9-69. Cl. 6.
- International Drug & Surgical Corp., New York, N.Y. 758,165, canc. Cl. 44.
- International Paper Co., New York, N.Y. 881,294, pub. 9-9-69. Cl. 37.
- Investors Diversfield Services, Inc., Minneapolis, Minn. 881,460, pub. 9-9-69. Cl. 102.
- Investors Syndicate Life Insurance & Annuity Co., Minneapolis, Minn. 881,461, pub. 9-9-69. Cl. 102.
- Invincible Metal Furniture Co., Manitowoc, Wis. 518,565, ren. 11-25-69. Cl. 32.
- Invincible Metal Furniture Co., Manitowoc, Wis. 881,256, pub. 9-9-69. Cl. 32.
- Iseberg Musicland, Inc., Joliet, Ill. 881,427, pub. 9-9-69. Multiple Class (Classes 101, 103, and 107).
- Ithaca Textiles, Inc., Ithaca, N.Y. 881,320, pub. 9-9-69. Cl. 39.
- Jet Avion Corp., Hialeah, Fla. 881,484. Cl. 23.
- Jim Dandy Co., The, from Western Grain Co., Inc., Birmingham, Ala. 881,154, pub. 9-9-69. Multiple Class (Classes 18 and 46).
- Johns, Chet W., & Sons, Phoenix, Ariz. 758,197, canc. Cl. 46.
- Jonas & Colver (Novo) Ltd., Sheffield, England. 516,071, ren. 11-25-69. Cl. 14.
- Jones, Donnel D., d.b.a. Donnel D. Jones, Dayton, Ohio. 881,446, pub. 9-9-69. Cl. 101.
- Kalo Inoculant Co., Quincy, Ill. 515,901, ren. 11-25-69. Cl. 10.
- Kaman Corp., Bloomfield, Conn. 881,194, pub. 9-9-69. Cl. 21.
- Kampo, Padova, Italy. 758,163-4, canc. Cl. 44.
- Kayser-Roth Corp.: *See—*
  - Mojud Hosiery Co., Inc.
  - Nolde & Horst Co., The.
  - Roth, Chester H., Co., Inc.
- Kayser-Roth Corp., New York, N.Y. 881,311, pub. 9-9-69. Cl. 39.
- Kem Mfg. Corp., Tucker, Ga. 881,402, pub. 9-9-69. Cl. 52.
- Kennedy Mfg. Co., Van Wert, Ohio. 523,203, ren. 11-25-69. Cl. 22.
- Kennel Food Supply Co., Inc., The, Fairfield, Conn., to Hygrade Food Products Corp., Detroit, Mich. 515,682, ren. 11-25-69. Cl. 46.
- Kimberly-Clark Corp., Neenah, Wis. 758,126, canc. Cl. 37.
- Knoll A.G. Chemische Fabriken, Ludwigshafen, Germany. 881,158, pub. 9-9-69. Cl. 18.
- Kollsman Instrument Corp., Elmhurst, N.Y. 758,078, canc. Cl. 26.
- Kop-Ron Machine Corp., Gallatin, Tenn. 735,227, canc. Cl. 19.
- Korn, M., Packaging Co., Inc., New York, N.Y. 881,099-100. pub. 9-9-69. Cl. 2.
- Kreiss, Sidney J., Inc., New York, N.Y. 881,489. Cl. 39.
- Kwik-File, Inc., Minneapolis, Minn. 881,290, pub. 9-9-69. Cl. 37.
- Lamb Enterprises, Inc., Toledo, Ohio. 881,482. Cl. 21.

- Lander Co., Inc., d.b.a. Emily Rogers, New York, N.Y. 881,388, pub. 9–9–69. Cl. 51.
- Lanman & Kemp, Inc., New York, N.Y., to Lanman & Kemp-Barclay & Co., Inc., Palisades Park, N.J. 261,616, ren. 11–25–69. Cl. 6.
- Lanman & Kemp-Barclay & Co., Inc.: *See*—
  - Lanman & Kemp, Inc.
- Lelord Kordel d.b.a. Nutrition Enterprises, Detroit, Mich. 881,387, pub. 9–9–69. Cl. 51.
- L'Equilibre Biologique (Association Technique Pharmaceutique et Equilibre Biologique Reunis) Societe Anonyme, Loiret, France. 758,035, canc. Cl. 18.
- Lever Brothers Co., New York, N.Y. 881,403, pub. 9–9–69. Cl. 52.
- Lewis, Steven, d.b.a. The Steven Lewis Co., Los Angeles, Calif. 881,380, pub. 9–9–69. Cl. 51.
- Lintex Co. Inc., Lynbrook, N.Y. 881,325, pub. 9–9–69. Cl. 42.
- Lith-O-Way Graphic Supplies, Mamaroneck, N.Y. 881,130, pub. 9–9–69. Cl. 11.
- Los Angeles River Yacht Club Association, Los Angeles, Calif. 881,476, pub. 9–9–69. Cl. 200.
- Lowney, Walter M., Co., Ltd., Sherbrooke, Quebec, Canada, 881,344, pub. 9–9–69. Cl. 46.
- Ludlow Corp., Needham Heights, Mass. 881,326, pub. 9–9–69. Cl. 42.
- Lufkin Rule Co., The, Saginaw, Mich., to Cooper Industries, Inc., d.b.a. Lufkin, Houston, Tex. 518,890, ren. 11–25–69. Cl. 26.
- Lynchburg Hosiery Mills, Inc., Lynchburg, Va. 519,467, ren. 11–25–69. Cl. 39.
- Machlett Laboratories, Inc., The: *See*—
  - Wright Engineering Co.
- Macy, Harry D., d.b.a. Daybreak Dynamics, Wheaton, Ill. 881,204, pub. 9–9–69. Cl. 22.
- Madam C. J. Walker Mfg. Co., Inc., The, Indianapolis, Ind. 881,392, pub. 9–9–69. Cl. 51.
- Mail Delivery Service Co., Inc., d.b.a. Mail Dispatch Service, San Francisco, Calif. 881,468, pub. 9–9–69. Cl. 105.
- Majestic Drug Co., Inc., Bronx, N.Y. 881,400, pub. 9–9–69. Cl. 51.
- Manes, J., Co., Inc., New York, N.Y. 881,332, pub. 9–9–69. Cl. 42.
- Manufacture d'Horlogerie Rayville S.A.: *See*—
  - Fabrique d'Horlogerie Rayville S.A.
- Marion Laboratories, Inc., Kansas City, Mo. 876,365, cor. Cl. 18.
- Marion Laboratories, Inc., Kansas City, Mo. 876,891, cor. Cl. 18.
- Marpac Corp., Elkhart, Ind. 881,481. Cl. 21.
- Marshall, C. & E., Co., Chicago, Ill. 758,050, canc. Cl. 21.
- Masanori Konaka, Tokyo, Japan. 881,116, pub. 9–9–69. Cl. 6.
- Masury-Columbia Co., Melrose Park, Ill. 881,208, pub. 9–9–69. Cl. 23.
- Mattel, Inc., Hawthorne, Calif. 881,207, pub. 9–9–69. Cl. 22.
- Maul Bros. Inc., Millville, N.J. 865,506, cor. Multiple Class (Classes 100 and 103).
- McCareary Tire & Rubber Co., Indiana, Pa. 881,141, pub. 9–9–69. Cl. 13.
- McKelvey, G. M., Co., The: *See*—
  - Higbee Co., The.
- McLeod, T. Gragg, Charlotte, N.C. 881,426, pub. 9–9–69. Cl. 101.
- Measurex, Inc., Avon-by-the-Sea, N.J. 881,236, pub. 9–9–69. Cl. 26.
- Merck & Co., Inc.: *See*—
  - Sharp & Dohme, Inc.
- Merco Stores, Inc., Jamaica, N.Y. 758,181, canc. Cl. 46.
- Merlinstone Mining Corp., Santa Barbara, Calif. 758,105, canc. Cl. 31.
- Metal Improvement Co., Carlstadt, N.J. 881,219, pub. 9–9–69. Cl. 23.
- Metron Corp., The, Dallas, Tex. 881,203, pub. 9–9–69. Cl. 22.
- Metronics Associates, Inc., Palo Alto, Calif. 881,234, pub. 9–9–69. Cl. 26.
- Microwave Chemicals Laboratory, Inc., New York, N.Y. 881,179, pub. 9–9–69. Cl. 21.
- Miles Laboratories, Inc., Elkhart, Ind. 881,229, pub. 9–9–69. Cl. 26.
- Minneapolis-Honeywell Regulator Co., to Honeywell Inc., Minneapolis, Minn. 519,868, ren. 11–25–69. Cl. 26.
- Minnesota Mining & Mfg. Co., St. Paul, Minn. 881,097, pub. 9–9–69. Cl. 1.
- Minnesota Mining & Mfg. Co., St. Paul, Minn. 881,185, pub. 9–9–69. Cl. 21.
- Minnesota Mining & Mfg. Co., St. Paul, Minn. 881,337, pub. 9–9–69. Cl. 44.
- Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan. 881,170, pub. 9–9–69. Cl. 19.
- Modern Homes Construction Co., Valdosta, Ga. 741,426, canc. Cl. 103.
- Modutec Inc., Norwalk, Conn. 881,233, pub. 9–9–69. Cl. 26.
- Mogavero, Maurice, d.b.a. Star-Brite Mfg. Co., Newark, N.J. 758,212, canc. Cl. 52.
- Mojud Hosiery Co., Inc., to Kayser-Roth Corp., New York, N.Y. 521,110, ren. 11–25–69. Cl. 39.
- Mond Industries Ltd., Ontario, Canada. 881,175, pub. 9–9–69. Multiple Class (Classes 21 and 26).
- Monsanto Chemical Co., St. Louis, Mo. 758,012, canc. Cl. 6.
- Monsanto Co., St. Louis, Mo. 881,272, pub. 9–9–69. Cl. 35.
- Morgan, John A., d.b.a. Bonyface Unlimited, Los Angeles, Calif. 516,113, ren. 11–25–69. Cl. 50.
- Morrell, John, & Co., Chicago, Ill. 768,309, canc. Cl. 46.
- Morse Distributing Corp., Brooklyn, to Morse Electro Products Corp., Ozone Park, N.Y. 521,191, ren. 11–25–69. Cl. 23.
- Morse Electro Products Corp.: *See*—
  - Morse Distributing Corp.
- Motor & Equipment Mfg. Association, New York, N.Y. 881,303, pub. 9–9–69. Cl. 38.
- Motown Record Corp., Detroit, Mich. 881,471, pub. 9–9–69. Cl. 107.
- Mountain Empire Dairymen's, from Denver Milk Producers, Inc., Denver, Colo. 881,340, pub. 9–9–69. Cl. 46.
- Multiple Products Corp., New York, N.Y. 758,052, canc. Cl. 22.
- N.V. Gelders Overijsselse Betonsteen Industrie Gobi, Zutphen, Netherlands. 881,134, pub. 9–9–69. Cl. 12.
- National Association of Meat Purveyors, Chicago, Ill. 881,302, pub. 9–9–69. Multiple Class (Classes 38 and 200).
- National Campers & Hikers Association, Inc., Buffalo, N.Y. 881,477, pub. 9–9–69. Cl. 200.
- National Data Communications, Inc., Dallas, Tex. 881,441, pub. 9–9–69. Cl. 101.
- National Data Communications, Inc., Dallas, Tex. 881,443, pub. 9–9–69. Cl. 101.
- National Design Center Delaware, Inc., New York, N.Y. 881,436–9, pub. 9–9–69. Cl. 101.
- National Service Industries, Inc., d.b.a. Zep Mfg. Co., Atlanta, Ga. 881,108–10, pub. 9–9–69. Cl. 4.
- National Service Industries, Inc., d.b.a. Zep Mfg. Co., Atlanta, Ga. 881,126–7, pub. 9–9–69. Cl. 6.
- National Service Industries, Inc., d.b.a. Zep Mfg. Co., Atlanta, Ga. 881,406–15, pub. 9–9–69. Cl. 52.
- New York & New England Apple Institute, Inc., Westfield, Mass. 881,491. Cl. 46.
- New York Pants Mfg. Co., Baltimore, Md. 758,236, canc. Cl. 39.
- Newhall Newspapers Inc., Newhall, Calif. 881,304, pub. 9–9–69. Cl. 38.
- Nikko Ceramics, Inc., New York, N.Y. 881,246, pub. 9–9–69. Cl. 30.
- Nivada A.G. (Nivada, S.A., Nivada, Ltd.), Solothurn, Switzerland. 881,238, pub. 9–9–69. Cl. 27.
- Nolan, Nancy, Inc., d.b.a. Nancy Nolan Agency, Los Angeles, Calif. 881,452, pub. 9–9–69. Cl. 101.
- Nolde and Horst Co., The, Reading, Pa., to Kayser-Roth Corp., New York, N.Y. 521,160, ren. 11–25–69. Cl. 39.
- Normda Industries, Inc., San Diego, Calif. 881,192, pub. 9–9–69. Cl. 21.
- Norsk Hydro-Elektrisk Kvaelstofaktieselskab, Bygdoy, Norway. 516,063, ren. 11–25–69. Cl. 10.
- North Shore Publishing Co., Wilmette, Ill. 261,511, ren. 11–25–69. Cl. 38.
- Oak Crest Refining, from Chicago Refining Corp., Chicago, Ill. 758,195, canc. Cl. 46.
- Oak Electro/Netics Corp., Crystal Lake, Ill. 881,193, pub. 9–9–69. Cl. 21.
- Oceanutic Mfg. & Research Co., Cincinnati, Ohio. 881,214, pub. 9–9–69. Cl. 23.
- Oliver Tire & Rubber Co., Oakland, Calif. 881,277, pub. 9–9–69. Cl. 35.
- Omega Louis Brandt Frere S.A., Bienne, Switzerland. 881,227, pub. 9–9–69. Cl. 26.
- Oneida Ltd., Oneida, N.Y. 881,241, pub. 9–9–69. Cl. 28.
- Oppenheimer-Straus Co., The, assor. to Phoenix Hosiery Co. of Milwaukee, Wis., Cincinnati, Ohio, to Kayser-Roth Corp., New York, N.Y. 266,945, ren. 11–25–69. Cl. 39.
- Opto Specs, Ltd., New York, N.Y. 881,230–1, pub. 9–9–69. Cl. 26.
- Organic Nutrients, Inc., Houston, Tex. 881,156, pub. 9–9–69. Cl. 18.
- Osborn, C., & Co., to C. Osborn & Co., Ltd., London, England. 264,158, ren. 11–25–69. Cl. 46.
- Overton, Anthony, d.b.a. The Overton-Hygienic Mfg. Co., to The Overton-Hygienic Mfg. Co., Chicago, Ill. 261,044, ren. 11–25–69. Cl. 51.
- Overton-Hygienic Mfg. Co.: *See*—
  - Overton, Anthony.
- Pacific Farm Co., Firebaugh, Calif. 518,928, ren. 11–25–69. Cl. 46.
- Page Belting Co., Concord, N.H. 513,455, ren. 11–25–69. Cl. 35.
- Page Belting Co., Concord, N.H. 514,182, ren. 11–25–69. Cl. 5.
- Page Belting Co., Concord, N.H. 520,679, ren. 11–25–69. Cl. 35.
- Page, Edward, d.b.a. Page Products Westwood, N.J. 881,136, pub. 9–9–69. Cl. 12.
- Page Products: *See*—
  - Page, Edward.
- Pande, Cameron & Co. of New York, Inc., New York, N.Y. 881,333, pub. 9–9–69. Cl. 42.
- Patent Scaffolding Co., Inc., The, Long Island City, N.Y., to Harsco Corp., Camp Hill, Pa. 521,510, ren. 11–25–69. Cl. 50.
- Patterson, C. J., Co., Kansas City, Mo. 881,353, pub. 9–9–69. Cl. 46.
- Penn Fruit Co., Inc., Philadelphia, Pa. 739,122, canc. Cl. 46.
- Pennsalt Chemicals Corp., Philadelphia, Pa. 881,121, pub. 9–9–69. Cl. 6.
- Perma, Paris, France. 881,391, pub. 9–9–69. Cl. 51.
- Pet Inc., St. Louis, Mo. 881,363, pub. 9–9–69. Cl. 46.
- Petroleum Engineer Publishing Co., Dallas, Tex. 881,299, pub. 9–9–69. Cl. 38.
- Petroleum Service Advertising, Inc., Blue Island, Ill. 881,447, pub. 9–9–69. Cl. 101.
- Philadelphia Quartz Co., Philadelphia, Pa. 881,113–15, pub. 9–9–69. Cl. 5.
- Phillips Drill Co.: *See*—
  - Phillips Drill Co., Inc.
- Phillips Drill Co., Inc., Indianapolis, Ind., from Phillips Drill Co., Michigan City, Ind. 881,221, pub. 9–9–69. Cl. 23.
- Physio-Control Corp., Seattle, Wash. 881,335, pub. 9–9–69. Cl. 44.

- Picker Corp.: *See*—
  - Picker X-Ray Corp.
- Picker X-Ray Corp., Waite Mfg. Division, Inc., Cleveland, Ohio, to Picker Corp., White Plains, N.Y. 517,104, ren. 11–25–69. Cl. 26.
- Pilot Full Fashion Mills, Inc., to Alba-Waldensian, Inc., Valdese, N.C. 517,454, ren. 11–25–69. Cl. 39.
- Pinpoint Advertising, Inc., Columbus, Ga. 881,444, pub. 9–9–69. Cl. 101.
- Pitman, Harold M., Co., Chicago, Ill. 881,431, pub. 9–9–69. Cl. 101.
- Pittsburgh Steelers Sports, Inc., Pittsburgh, Pa. 881,474, pub. 9–9–69. Cl. 107.
- Plantation Foods Corp., Miami, Fla. 881,430, pub. 9–9–69. Cl. 101.
- Plasti-Kote Corp., Medina, Ohio. 881,373, pub. 9–9–69. Cl. 50.
- Pollak, Henry, Inc., New York, N.Y. 757,968, canc. Cl. 1.
- Popped-Right Corn Co., Marion, Ohio. 881,366, pub. 9–9–69. Cl. 46.
- Powell, Mark E., Salem, Oreg. 811,101, pub. 9–9–69. Cl. 2.
- Princetonian Hairstyling For Men, Princeton, N.J. 881,385, pub. 9–9–69. Multiple Class (Classes 51 and 52).
- Prismo Safety Corp., Huntington, Pa. 881,260, pub. 9–9–69. Cl. 33.
- Procter & Gamble Co., The, Cinncinnati, Ohio. 881,405, pub. 9–9–69. Cl. 52.
- Pump-Mates, Inc., Long Beach, Calif. 881,142, pub. 9–9–69. Cl. 13.
- Quality Products Mfg. Co., Inc., Gardena, Calif. 881,375, pub. 9–9–69. Cl. 50.
- RJS Corp., Akron, Ohio. 881,211, pub. 9–9–69. Cl. 23.
- Radio Corp. of America, New York, N.Y. 881,267–8, pub. 9–9–69. Cl. 34.
- Radio Corp. of America, New York, N.Y. 881,286–7, pub. 9–9–69. Cl. 36.
- Ralston Purina Co., St. Louis, Mo. 881,370, pub. 9–9–69. Cl. 46.
- Ralston Purina Co., St. Louis, Mo. 881,494. Cl. 46.
- Rapid Foods, Inc., Miami, Fla. 881,368, pub. 9–9–69. Cl. 46.
- Raymond, Samuel O., d.b.a. Raymond Development Co., Watertown, Mass. 739,733, canc. Cl. 26.
- Recht, William, Co., Inc., New York, N.Y. 881,122, pub. 9–9–69. Cl. 6.
- Recht, William, Co., Inc., New York, N.Y. 881,123, pub. 9–9–69. Cl. 6.
- Red Devil Inc.: *See*—
  - Smith, Landon P., Inc.
- Redstone, Isaiah, d.b.a. Albert Weinberg, London, England, to Gallaher Ltd., Belfast, Northern Ireland. 261,652, ren. 11–25–69. Cl. 17.
- Regional Services Corp., Washington, D.C. 881,275–6, pub. 9–9–69. Cl. 35.
- Reliance Mfg. Co., The, Massillon, to Eaton Yale & Town Inc., Cleveland, Ohio. 267,010, ren. 11–25–69. Cl. 13.
- Restaurant Associates Industries, Inc., New York, N.Y. 881,418, pub. 9–9–69. Cl. 100.
- Restorz Products, Inc., Prospect, Conn. 758,216, canc. Cl. 52.
- Rexall Drug & Chemical Co.: *See*—
  - Dart Industries, Inc.
  - Seamless Rubber Co., The.
- Rexall Drug Co., to Dart Industries Inc., d.b.a. Rexall Drug Co., Los Angeles, Calif. 520,296, ren. 11–25–69. Cl. 27.
- Ricky Ties, Inc., Washington, D.C., to M. Aron Corp., New York, N.Y. 516,552, ren. 11–25–69. Cl. 39.
- Robertshaw-Fulton Controls Co., Richmond, Va. 758,093, canc. Cl. 26.
- Robins, A. H., Co., Inc., Richmond, Va. 881,347, pub. 9–9–69. Cl. 46.
- Rock Road Construction Co., Chicago, Ill. 881,466, pub. 9–9–69. Cl. 103.
- Rokeby Chemical Co., Marietta, Ohio. 740,795, canc. Cl. 6.
- Roth, Chester H., Co., Inc., to Kayser-Roth Corp., New York, N.Y. 522,055, ren. 11–25–69. Cl. 39.
- Rothenberg & Schloss Cigar Co., Kansas City, Mo. 516,015, ren. 11–25–69. Cl. 17.
- Royal Chemical Corp., Carteret, N.J. 881,153, pub. 9–9–69. Cl. 18.
- Royal Mfg. Co., Inc., Allentown, Pa. 758,138, canc. Cl. 39.
- S. & S. Soap Co., Bronx, N.Y. 881,401, pub. 9–9–69. Cl. 52.
- St. Louis Blues Hockey Club, Inc., St. Louis, Mo. 881,473, pub. 9–9–69. Cl. 107.
- Sarad, Walter J., Denver, Colo. 735,667, canc. Cl. 36.
- Savarin Corp., New York, N.Y. 881,341, pub. 9–9–69. Cl. 46.
- Scalawag Productions, Inc., Murray Hill, N.J. 758,134, canc. Cl. 38.
- Schenley Distillers, Inc., New York, N.Y. 881,496. Cl. 49.
- Schleider Foods, Inc., Baltimore, Md. 881,365, pub. 9–9–69. Cl. 46.
- School Employers Trust, Lansing, Mich. 881,457, pub. 9–9–69. Cl. 102.
- Scripps-Howard Broadcasting Co., Cincinnati, Ohio. 758,225, canc. Cl. 107.
- Seaboard Lemon Associates: *See*—
  - Somis Lemon Association.
- Seedkem, Inc., Evansville, Ind. 881,432–3, pub. 9–9–69. Cl. 101.
- Seilon, Inc., Toledo, Ohio. 881,215, pub. 9–9–69. Cl. 23.
- Selfpack Ges. m.b.H., Klagenfurt, Austria. 881,147, pub. 9–9–69. Multiple Class (Classes 14, 23, and 37).
- Service Engineering Associates, Inc., Atlanta, Ga. 881,472, pub. 9–9–69. Cl. 107.
- Servo Corp. of America, Hicksville, Ky. 881,188, pub. 9–9–69. Cl. 21.
- Sexauer, J. A., Mfg. Co., Inc., White Plains, N.Y. 268,242, ren. 11–25–69. Cl. 35.
- Sexton, John, & Co., Chicago, Ill. 516,072, ren. 11–25–69. Cl. 52.
- Shakespeare Co., to Shapespeare Co., Kalamazoo, Mich. 443,590–1, ren. 11–25–69. Cl. 22.
- Shannon Mfg. Co., North Hollywood, Calif. 881,317, pub. 9–9–69. Cl. 39.
- Sharp & Dohme, Inc., Philadelphia, Pa., to Merck & Co., Inc., Rahway, N.J. 522,780, ren. 11–25–69. Cl. 18.
- Shelby Singleton Productions, Inc., Nashville, Tenn. 881,284, pub. 9–9–69. Cl. 36.
- Sherwin-Williams Co., The: *See*—
  - Acme White Lead & Color Works.
- Sherwin-Williams Co., The, Cleveland, Ohio. 518,349, ren. 11–25–69. Cl. 16.
- Shrimp Boats, Inc., The, Macon, Ga. 881,424, pub. 9–9–69. Cl. 100.
- Siemens Aktiengesellschaft, Munchen, Germany. 881,463, pub. 9–9–69. Multiple Class (Classes 103 and 106).
- Sigma Alpha Mu Fraternity, Inc., New York, N.Y. 881,456, pub. 9–9–69. Cl. 102.
- Silent Daddy, Inc., St. Petersburg, Fla. 758,108, canc. Cl. 32.
- Simmons Co., New York, N.Y. 881,255, pub. 9–9–69. Cl. 32.
- Simon, Franklin, & Co., Inc., to City Stores Co., New York, N.Y. 260,852, ren. 11–25–69. Cl. 39.
- Simoniz Co., Chicago, Ill. 758,230, canc. Cl. 4.
- Simons, Philip W., d.b.a. Raymor Food Products Co., to Raymor Food Products Inc., Chicago, Ill. 512,238, ren. 11–25–69. Cl. 18.
- Skagit Corp.: *See*—
  - Skagit Steel & Iron Works.
- Skagit Steel & Iron Works, to Skagit Corp., Sedro-Woolley, Wash. 517,046, ren. 11–25–69. Cl. 23.
- Skelly Oil Co., Kansas City, Mo. 508,998, ren. 11–25–69. Cl. 15.
- Slip-Prug Service Corp., Baton Rouge, La. 881,138, pub. 9–9–69. Cl. 12.
- Sloan Valve Co., Chicago, Ill. 263,424, ren. 11–25–69. Cl. 13.
- Smith, A. O., Harvestore Products, Kankakee, Ill., from Farm Automation, Inc., Escalon, Calif. 758,203, canc. Cl. 50.
- Smith, Landon P., Inc., Irvington, to Red Devil Inc., Union, N.J. 263,383, ren. 11–25–69. Cl. 13.
- Synder, Richard W., d.b.a. Snyder & Snyder, Bloomsburg, Pa. 881,161, pub. 9–9–69. Multiple Class (Classes 19 and 22).
- Snyder & Snyder: *See*—
  - Snyder, Richard W.
- Societe Jacques F. Fath, Les Parfums Jacques Fath, Societe Anonyme, Paris, France. 511,998. Am. 7(d). Cl. 6.
- Society of Chemical Industry in Basle, Basel, Switzerland, to Ciba Corp., Summit, N.J. 266,366, ren. 11–25–69. Cl. 18.
- Sola Basic Industries, Inc., Milwaukee, Wis. 881,189, pub. 9–9–69. Cl. 21.
- Somis Lemon Association, to Seaboard Lemon Associates, Oxnard, Calif. 443,620, ren 11–25–69. Cl. 46.
- Sorensen & Co., Inc., Stamford, Conn., to Raytheon Co., Lexington, Mass. 516,190, ren. 11–25–69. Cl. 21.
- Soul Brands, Inc., Memphis, Tenn. 881,289, pub. 9–9–69. Cl. 37.
- Southern Cross Steel Co. (Proprietary Ltd.), Johannesburg, South Africa. 881,148, pub. 9–9–69. Cl. 14.
- Speare's, Alden, Sons Co., The, Somerville, Mass. 515,293, ren. 11–25–69. Cl. 23.
- Spencer Food Co., Los Angeles, Calif. 522,474–5, ren. 11–25–69. Cl. 46.
- Sperry Rand Corp., New York, N.Y. 881,210, pub. 9–9–69. Cl. 23.
- Spicer, Charles R., d.b.a. The Pelvo Medicine Co., to The Charles R. Spicer Co., Memphis, Tenn. 262,768, ren. 11–25–69. Cl. 18.
- Spicer, Charles R., Co., The: *See*—
  - Spicer, Charles R.
- Spoken Word, Inc., The, New York, N.Y. 881,281, pub. 9–9–69. Cl. 36.
- Stahlgruber Otto Gruber & Co., Munich, Germany. 758,234, canc. Cl. 35.
- Standard, Inc., Little Rock, Ark. 758,101, canc. Cl. 31.
- Standard Laboratories, Inc., New York, N.Y., to Richard Hudnut, Morris Plains, N.J. 518,392, ren. 11–25–69. Cl. 23.
- Standard Motor Products, Inc., Long Island City, N.Y. 517,415, ren. 11–25–69. Cl. 21.
- Standard Oil Co. of California, San Francisco, Calif. 521,798, ren. 11–25–69. Cl. 6.
- Stanfield, Michael, Holdings Ltd., London, England. 881,197, pub. 9–9–69. Cl. 22.
- Steen, Curtis R., Madison, Tenn. 881,288, pub. 9–9–69. Cl. 36.
- Sterling Co., Inc., The, St. Louis, Mo. 743,210–11, canc. Cl. 6.
- Stewart, J. Leonard, Norwalk, Conn. 758,054, canc. Cl. 22.
- Stilwell Frozen Foods, Inc., Stilwell, Okla. 758,188, canc. Cl. 46.
- Stitzel-Weller Distillery, Louisville, Ky. 881,495. Cl. 49.
- Stonehill & Tree, Inc., Chicago, Ill. 758,016, canc. Cl. 10.
- Stovall Batteries, Inc., Athens, Ala. 881,180, pub. 9–9–69. Cl. 21.
- Strassle Sohne & Co., Kircheerg, St. Gall, Switzerland. 881,253–4, pub. 9–9–69. Cl. 32.
- Strum & Drum, Inc., Wheeling, Ill. 881,282, pub. 9–9–69. Cl. 36.
- Sue Records, Ltd., New York, N.Y. 881,279, pub. 9–9–69. Cl. 36.
- Sullivan, Henry J., Lewisville, Tex. 881,198, pub. 9–9–69. Cl. 22.
- Sun Chemical Corp., New York, N.Y. 757,993, canc. Cl. 6.
- Sunline, Inc., St. Louis, Mo. 881,364, pub. 9–9–69. Cl. 46.
- Susquehanna Corp., The, Alexandria, Va. 881,128, pub. 9–9–69. Cl. 9.

Swank, Inc., Attleboro, Mass. 881,107, pub. 9–9–69. Cl. 3.
Swap-Meet, Inc., Atlantic, N.J. 881,428, pub. 9–9–69. Cl. 101.
Sweeney, W. R., Mfg., to W. R. Sweeney Mfg., Inc., Salisbury, Mo. 521,149, ren. 11–25–69. Cl. 6.
Sweeney, W. R., Mfg., Inc.: *See—*
  Sweeney, W. R., Mfg.
Swieco, Inc., Fort Worth, Tex. 758,082, canc. Cl. 26.
Swift & Co., Chicago, Ill. 758,199, canc. Cl. 46.
Systron-Donner Corp., Concord, Calif. 881,225, pub. 9–9–69. Cl. 26.
Tanzer Industries Ltd., Dorion, Quebec, Canada. 881,173, pub. 9–9–69. Cl. 19.
Taterstate Frozen Foods, Washburn, Maine. 881,342, pub. 9–9–69. Cl. 46.
Teijun Kabushiki Kaisha (Teijin Ltd.), Osaka, Japan. 881,312, pub. 9–9–69. Multiple Class (Classes 39 and 42).
Teijin Kabushiki Kaisha (Teijin Ltd.), Osaka, Japan. 881,315, pub. 9–9–69. Multiple Class (Classes 39 and 42).
Television, Radio & Film Commission of The Methodist Church, The, Nashville, Tenn. 758,130, canc. Cl. 38.
Terry, George A., to Alfa D. Dodge, d.b.a. George A. Terry Co., Buffalo, N.Y. 512,117, ren. 11–25–69. Cl. 23.
Texstar Construction Corp., San Antonio, Tex. 738,112, canc. Cl. 12.
Tiffany & Co., New York, N.Y. 261,711, ren. 11–25–69. Cl. 28.
Tip-Top Products Co., Omaha, Nebr., to Faberge, Inc., New York, N.Y. 514,864, ren. 11–25–69. Cl. 5.
Tizer Ltd., New Moston, England. 734,268, canc. Cl. 45.
Tizer Ltd., New Moston, England. 734,603, canc. Cl. 45.
Tohato Tokyo Seika Kabushiki Kaisha, Tokyo-to, Japan. 881,348, pub. 9–9–69. Cl. 46.
Tompkins' Label Service, Philadelphia, Pa. 881,465, pub. 9–9–69. Cl. 103.
Trans Global Records of America: *See—*
  Horn, Joseph S.
Traute Franke, Vienna, Austria. 758,150, canc. Cl. 39.
Trinka Imports: *See—*
  Wolf, Vivienne H.
Tri-Point Industries, Inc., Commack, N.Y. 881,187, pub. 9–9–69. Cl. 21.
Tripp, C. H., Finishing Co., San Diego, Calif. 881,140, pub. 9–9–69. Cl. 12.
Tri-Valley Growers, San Francisco, Calif. 881,493. Cl. 46.
Trolex Corp., Kenilworth, N.J. 881,262, pub. 9–9–69. Cl. 34.
True Temper Corp., Cleveland, Ohio. 881,205, pub. 9–9–69. Cl. 22.
Tsuyama Mfg. Co., Ltd., Osaka, Japan. 881,160, pub. 9–9–69. Cl. 19.
Tyco Industries, Inc., Woodbury Heights, N.J. 881,206, pub. 9–9–69. Cl. 22.
Ugo Ravizza Sas per l'Industria Chimica e Farmaceutica, Muggio, Milan, Italy. 881,383, pub. 9–9–69. Cl. 51.
United Aircraft Corp., East Hartford, Conn. 881,181, pub. 9–9–69. Cl. 21.
United Chair Co.: *See—*
  U.S. Industries, Inc.
United Fireclay Products Ltd., West Lothian, Scotland. 881,119, pub. 9–9–69. Cl. 6.
United States Industrial Diamond Corp., New York, N.Y., to L. M. Van Moppes & Sons, Ltd., Hampshire, England. 515,999, ren. 11–25–69. Cl. 1.
United States Plywood Corp., to U.S. Plywood-Champion Papers Inc., New York, N.Y. 518,438, ren. 11–25–69. Cl. 12.
U.S. Industries, Inc., d.b.a. United Chair Co., South Leeds, Ala. 881,258, pub. 9–9–69. Cl. 32.
USV Pharmaceutical Corp., New York, N.Y. 881,157, pub. 9–9–69. Cl. 18.
U.S. Plywood-Champion Papers Inc.: *See—*
  United States Plywood Corp.
Unitog Co.: *See—*
  Unitos Mfg. Co., The.
Unitos Mfg. Co., The, to Unitog Co., Kansas City, Mo. 267,670, ren. 11–25–69. Cl. 39.
Usinger, Fred, Inc., d.b.a. Usinger's, Milwaukee, Wis. 881,350, pub. 9–9–69. Cl. 46.
V.F. Corp., from Vanity Fair Mills, Inc., Wyomissing, Reading, Pa. 881,318–19, pub. 7–1–69. Cl. 39.
Van Buren Packing Co., Hartford, Mich. 881,343, pub. 9–9–69. Cl. 46.
Van Moppes, L. M., & Sons, Ltd.: *See—*
  United States Industrial Diamond Corp.
Vanadium-Alloys Steel Co., to Vasco Metals Corp., Latrobe, Pa. 522,499, ren. 11–25–69. Cl. 14.
Vanity Fair Mills, Inc.: *See—*
  V.F. Corp.
Vargo Industries, Inc., New York, N.Y. 881,327–8, pub. 9–9–69. Cl. 42.
Velmex, Inc., Holcomb, N.Y. 881,182, pub. 9–9–69. Cl. 21.
Ventline, Inc., Bristol, Ind. 881,480. Cl. 19.
Veron, Emile, Lyon, France. 881,200, pub. 9–9–69. Cl. 22.
Villager, Inc., The: *See—*
  Villager Industries, Inc.
Villager Industries, Inc., from The Villager, Inc., Philadelphia, Pa. 881,104, pub. 9–9–69. Multiple Class (Classes 3 and 39).
Villager Industries, Inc., from The Villager, Inc., Philadelphia, Pa. 881,316, pub. 6–3–69. Cl. 39.
Vineland Chemical Co., Vineland, N.J. 757,998, canc. Cl. 6.
WSM, Inc., Nashville, Tenn. 881,475, pub. 9–9–69. Cl. 107.
Waldensian Hosiery Mills, to Alba-Waldensian, Inc., Valdese, N.C. 267,755, ren. 11–25–69. Cl. 39.
Wales Mfg. Co., Boston, Mass. 758,152, canc. Cl. 39.
Walgreen Co., Chicago, Ill. 516,758, ren. 11–25–69. Cl. 29.
Weller Brush Co., Cresco, Pa. 881,243, pub. 9–9–69. Cl. 29.
Weinstein, Frederick, Laurelton, N.Y. 881,191, pub. 9–9–69. Cl. 21.
Wellgro, Inc., Greeley, Colo. 881,369, pub. 9–9–69. Cl. 46.
Wellman, Inc., Boston, Mass. 881,096, pub. 9–9–69. Cl. 1.
Westall, Evelyn, to Evyan Perfumes, Inc., New York, N.Y. 443,704, ren. 11–25–69. Cl. 51.
Western Geophysical Co. of America, Los Angeles, Calif. 758,217, canc. Cl. 100.
Wheeling Machine Products Co., Wheeling, W. Va. 513,318, ren. 11–25–69. Cl. 13.
Williams, Beverly E.: *See—*
  Hodges Research & Development Co.
Waite Laboratories, Inc., Kenilworth, N.J. 881,155, pub. 9–9–69. Cl. 18.
Whitehead & Kales Co., Detroit, Mich. 515,896, ren. 11–25–69. Cl. 19.
Wilson, H. A., Co., The, to Engelhard Minerals & Chemicals Corp., Newark, N.J. 518,656, ren. 11–25–69. Cl. 14.
Wolf, Vivienne H., d.b.a. Trinka Imports, Clayton, Mo. 881,165, pub. 9–9–69. Cl. 19.
Wood County Agricultural Society, Bowling Green, Ohio. 881,445, pub. 9–9–69. Cl. 101.
Wood, G. H., & Co., Ltd., Ontario, Canada. 881,098, pub. 9–9–69. Multiple Class (Classes 2, 4, 16, 23, and 52).
World Wide Baraca and Philathea Union, Mount Vernon, Va. 881,306–7, pub. 9–9–69. Cl. 38.
Wright Engineering Co., Mountain Lakes, N.J., to The Machlett Laboratories, Inc., Stamford, Conn. 515,911, ren. 11–25–69 Cl. 44.
Yardley of London, Inc., Totowa, N.J. 881,376, pub. 9–9–69. Cl. 51.
Yardley of London, Inc., Totowa, N.J. 881,499. Cl. 51.
Y-Tex Corp., San Antonio, Tex. 881,105, pub. 9–9–69. Cl. 3.
Zacroisky, Abraham, & Sons, Inc., Miami, Fla. 881,239, pub. 9–9–69. Cl. 28.
Zirconium Technology Corp., Albany, Oreg. 881,146, pub. 9–9–69. Cl. 13.
Zyrotron Industries, Inc., South Hackensack, N.J. 875,097, cor. Cl. 26.

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